



# A3 Mono Copier

MultiXpress K4 series

SL-K4350LX / SL-K4300LX /

SL-K4250LX / SL-K4250RX

(Ver 1.32)

# ***SERVICE*** MANUAL

A3 Mono Copier

Contents



1. Precautions
2. Product Specifications and Description
3. Disassembly and Reassembly
4. Troubleshooting
5. Connection Diagram
6. Reference Information

Refer to the service manual in the GSPN (see the rear cover) for more information.

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# 1. Precautions

In order to prevent accidents and damages to the equipment please read the precautions listed below carefully before servicing the product and follow them closely.

## 1.1. Safety warning

- 1) Only to be serviced by a factory trained service technician.

High voltages and lasers inside this product are dangerous. This product should only be serviced by a factory trained service technician.

- 2) Use only Samsung replacement parts.

There are no user serviceable parts inside the product. Do not make any unauthorized changes or additions to the product as these could cause the product to malfunction and create an electric shocks or fire hazards.

- 3) Laser Safety Statement

The printer is certified in the U.S. to conform to the requirements of DHHS 21 CFR, chapter 1 Subchapter J for Class I(1) laser products, and elsewhere is certified as a Class I laser product conforming to the requirements of IEC/EN 60825-1:2014. Class I laser products are not considered to be hazardous. The laser system and printer are designed so there is never any human access to laser radiation above a Class I level during normal operation, user maintenance or prescribed service condition.

- Wavelength: 800 nm
- Beam divergence
  - Parallel: 11 degrees
  - Perpendicular: 35 degrees
- Maximum power of energy output: 12 mW



### WARNING

**Never operate or service the product with the protective cover removed from Laser/Scanner assembly. The reflected beam, although invisible, can damage your eyes.**

**When using this product, these basic safety precautions should always be followed to reduce risk of fire, electric shock, and personal injury.**



- 4) Lithium battery not replaceable by user

## 1.2. Caution for safety

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### 1.2.1. Toxic material

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This product contains toxic materials that could cause illness if ingested.

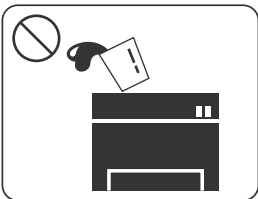
- 1) Please keep imaging unit and toner cartridge away from children. The toner powder contained in the imaging unit and toner cartridge may be harmful, and if swallowed, you should contact a doctor.

### 1.2.2. Electric shock and fire safety precautions

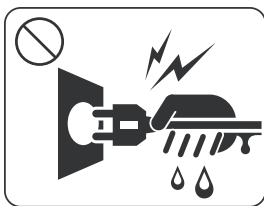
---

Failure to follow the following instructions could cause electric shock or potentially cause a fire.

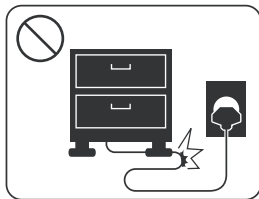
- 1) Use only the correct voltage, failure to do so could damage the product and potentially cause a fire or electric shock.
- 2) Use only the power cable supplied with the product. Use of an incorrectly specified cable could cause the cable to overheat and potentially cause a fire.
- 3) Do not overload the power socket, this could lead to overheating of the cables inside the wall and could lead to a fire.
- 4) Do not allow water or other liquids to spill into the product, this can cause electric shock. Do not allow paper clips, pins or other foreign objects to fall into the product, these could cause a short circuit leading to an electric shock or fire hazard.



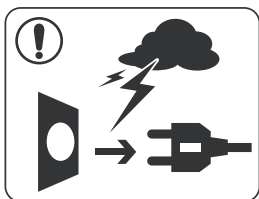
- 5) Never touch the plugs on either end of the power cable with wet hands, this can cause electric shock. When servicing the product, remove the power plug from the wall socket.



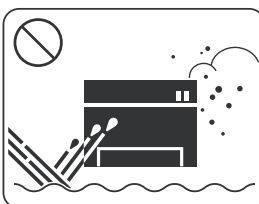
- 6) Use caution when inserting or removing the power cord. When removing the power cord, grip it firmly and pull. The power cord must be inserted completely, otherwise a poor contact could cause overheating leading to a fire.
- 7) Take care of the power cable. Do not allow it to become twisted, bent sharply around corners or power cable may be damaged. Do not place objects on top of the power cable. If the power cable is damaged it could overheat and cause a fire. Exposed cables could cause an electric shock. Replace the damaged power cable immediately, do not reuse or repair the damaged cable. Some chemicals can attack the coating on the power cable, weakening the cover or exposing cables causing fire and shock risks.



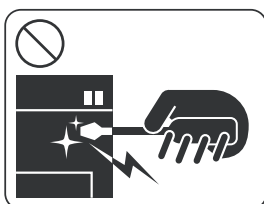
- 8) Ensure that the power sockets and plugs are not cracked or broken in any way. Any such defects should be repaired immediately. Take care not to cut or damage the power cable or plugs when moving the machine.
- 9) Use caution during thunder or lightning storms. Samsung recommends that this machine be disconnected from the power source when such weather conditions are expected. Do not touch the machine or the power cord if it is still connected to the wall socket in these weather conditions.




- 10) Avoid damp or dusty areas, install the product in a clean well ventilated location. Do not position the machine near a humidifier or in front of an air conditioner. Moisture and dust built up inside the machine can lead to overheating and cause a fire or cause parts to rust.



- 11) Do not position the product in direct sunlight. This will cause the temperature inside the product to rise possibly leading to the product failing to work properly and in extreme conditions could lead to a fire.
- 12) Do not insert any metal objects into the machine through the ventilator fan or other part of the casing, it could make contact with a high voltage conductor inside the machine and cause an electric shock.



- 13)  When replacing the SMPS board, please wait 5 minutes after unplugging the power cord, then replace it. You can get a shock by the electric discharge.

### 1.2.3. Handling precautions

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The following instructions are for your own personal safety to avoid injury and so as not to damage the product.

- 1) Ensure the product is installed on a level surface, capable of supporting its weight. Failure to do so could cause the product to tip or fall.
- 2) The product contains many rollers, gears and fans. Take great care to ensure that you do not catch your fingers, hair or clothing in any of these rotating devices.
- 3) Do not place any small metal objects, containers of water, chemicals or other liquids close to the product which if spilled could get into the machine and cause damage or a shock or fire hazard.
- 4) Do not install the machine in areas with high dust or moisture levels, beside an open window or close to a humidifier or heater. Damage could be caused to the product in such areas.
- 5) Do not place candles, burning cigarettes, etc on the product, These could cause a fire.
- 6) Ensure that the machine is installed and used in proper area to meet the temperature and humidity specifications.
  - If the machine is stored at below zero Celsius for a long time, do not use the machine instantly after movement. It can malfunction. Take care of the machine storage. If the machine is stored at below zero Celsius for a long time, keep the machine at room temperature and install it.

### 1.2.4. Assembly and Disassembly precautions

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- 1) Replace parts carefully and always use Samsung parts. Take care to note the exact location of parts and also cable routing before dismantling any part of the machine. Ensure all parts and cables are replaced correctly. Please carry out the following procedures before dismantling the product or replacing any parts.
- 2) Ensure that power is disconnected before servicing or replacing any electrical parts.
- 3) Disconnect interface cables and power cables.
- 4) Only use approved spare parts. Ensure that part number, product name, any voltage, current or temperature rating are correct.
- 5) When removing or re-fitting any parts do not use excessive force, especially when fitting screws into plastic.
- 6) Take care not to drop any small parts into the machine.
- 7) Handling of the OPC Drum
  - The OPC Drum can be irreparably damaged if it is exposed to light. Take care not to expose the OPC Drum either to direct sunlight or to fluorescent or incandescent room lighting. Exposure for as little as 5 minutes can damage the surface of the photoconductive properties and will result in print quality degradation. Take extra care when servicing the product. Remove the OPC Drum and store it in a black bag or other lightproof container. Take care when working with the Covers (especially the top cover) open as light is admitted to the OPC area and can damage the OPC Drum.
  - Take care not to scratch the green surface of the OPC Drum Unit. If the green surface of the Drum Cartridge is scratched or touched the print quality will be compromised.

### 1.2.5. Disregarding this warning may cause bodily injury

- 1) Be careful with the high temperature part.

The fuser unit works at a high temperature. Use caution when working on the printer. Wait for the fuser unit to cool down before disassembly.



- 2) Do not put fingers or hair into the rotating parts.

When operating a printer, do not put hand or hair into the rotating parts (Paper feeding entrance, motor, fan, etc.). If do, you can get harm.



- 3) When you move the printer, use safe lifting and handling techniques.

This printer is heavy. Use the lifting handles located on each side of the machine. Back injury could be caused if you do not lift carefully.

- 4) Ensure the printer is installed safely.

Ensure the printer is installed on a level surface, capable of supporting its weight. Failure to do so could cause the printer to tip or fall possibly causing personal injury or damaging the printer.

- 5) Do not install the printer on a sloping or unstable surface. After installation, double check that the printer is stable.

## 1.3. ESD precautions

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Certain semiconductor devices can be easily damaged by static electricity. Such components are commonly called “Electrostatically Sensitive (ES) Devices” or ESDs. Examples of typical ESDs are: integrated circuits, some field effect transistors, and semiconductor “chip” components. The techniques outlined below should be followed to help reduce the incidence of component damage caused by static electricity.



### CAUTION

**Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.**

- 1) Immediately before handling a semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, employ a commercially available wrist strap device, which should be removed for your personal safety reasons prior to applying power to the unit under test.
- 2) After removing an electrical assembly equipped with ESDs, place the assembly on a conductive surface, such as aluminum or copper foil, or conductive foam, to prevent electrostatic charge buildup in the vicinity of the assembly.
- 3) Use only a grounded tip soldering iron to solder or desolder ESDs.
- 4) Use only an “anti-static” solder removal device. Some solder removal devices not classified as “anti-static” can generate electrical charges sufficient to damage ESDs.
- 5) Do not use Freon-propelled chemicals. When sprayed, these can generate electrical charges sufficient to damage ESDs.
- 6) Do not remove a replacement ESD from its protective packaging until immediately before installing it. Most replacement ESDs are packaged with all leads shorted together by conductive foam, aluminum foil, or a comparable conductive material.
- 7) Immediately before removing the protective shorting material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.
- 8) Maintain continuous electrical contact between the ESD and the assembly into which it will be installed, until completely plugged or soldered into the circuit.
- 9) Minimize bodily motions when handling unpackaged replacement ESDs. Normal motions, such as the brushing together of clothing fabric and lifting one’s foot from a carpeted floor, can generate static electricity sufficient to damage an ESD.



## 2. Product Specifications and Description

### 2.1. Product Overview



- **Printing Speed**
  - K4350LX
    - Up to 35 ppm in A4/Letter
    - Up to 19 ppm in A3
  - K4300LX
    - Up to 30 ppm in A4/Letter
    - Up to 16 ppm in A3
  - K4250LX/RX
    - Up to 25 ppm in A4/Letter
    - Up to 14 ppm in A3
- **Processor**
  - Dual Core 1GHz
- **Memory**
  - 4GB (2GB for Android OS)
- **Document Feeder**
  - DSDF (Dual Scan Document Feeder) : K4350LX, K4300LX, K4250LX
  - RADF (Reverse Automatic Document Feeder) : K4250RX
- **LCD**
  - 10.1 inch Touch Color LCD

## 2.2. Specifications

Product Specifications are subject to change without notice.

### 2.2.1. General Specification

Item		Specification
Processor	CPU	1 GHz (Chorus4N Dual Core)
	Image Processor	Embedded in Chorus4N
User Interface	Operational Panel	10.1" Color Touch-Panel LCD (960x600)
	LED	2 ea (Power / Status)
	Key / Button	1 ea (Power)
Memory	Standard	2 GB
	Max. (Option)	N/A
Storage	Standard	320 GB HDD
	Option	N/A
Interface	USB (Device)	Yes (Hi-Speed USB 2.0)
	USB (Host)	Yes (Hi-Speed USB 2.0)
	USB (EDI)	N/A
	Wired LAN	Std (Ethernet 10/100/1G Base TX)
	Additional Wired LAN Support	Opt
	Wireless LAN	Opt (IEEE 802.11b/g/n + NFC Active Type)
	NFC	Opt (IEEE 802.11b/g/n + NFC Active Type)
	Other	N/A
Warmup Time	From Ready	Less than 25 sec
	From Sleep	Less than 23 sec
Power Consumption	Ready	Less than 250 Wh
	Normal operation	Less than 800 Wh
	Max/Peak	Less than 1200 Wh
	Sleep	Less than 1.5 W
	Power Off	Less than 0 W
	TEC	<ul style="list-style-type: none"> <li>• K4350LX : Less than 2.279 Wh</li> <li>• K4300LX : Less than 1.798 Wh</li> <li>• K4250RX : Less than 1,478 Wh</li> </ul>
Default Sleep Delay Time		2 min
Max. Sleep Delay Time		<ul style="list-style-type: none"> <li>• K4350LX : 120 min</li> <li>• K4300LX / K4250RX : 60 min</li> </ul>

Item		Specification
Power Requirement		<ul style="list-style-type: none"> <li>• Input Voltage (Europe): AC 220 - 240 V (-10 % - 6 %)</li> <li>• Input Voltage (USA): AC 110 - 127 V (-10 % - 6 %)</li> <li>• Input Voltage (Korea): AC 220 - 240 V (-10 % - 6 %)</li> <li>• Rated Frequency: 50 / 60 Hz</li> </ul>
Acoustic Noise Level (Sound Power / Pressure)	Printing Simplex / Duplex	<ul style="list-style-type: none"> <li>• K4350LX : Less than 52 dBA (Sound Pressure)</li> <li>• K4300LX : Less than 51 dBA (Sound Pressure)</li> <li>• K4250RX : Less than 50 dBA (Sound Pressure)</li> </ul>
	Copying	<ul style="list-style-type: none"> <li>• K4350LX : Less than 55 dBA (Sound Pressure)</li> <li>• K4300LX : Less than 55 dBA (Sound Pressure)</li> <li>• K4250RX : Less than 53 dBA (Sound Pressure)</li> </ul>
	Standby	Less than 30 dBA (Sound Pressure)
	Sleep	Less than 27 dBA (Sound Pressure)
Dimension (W x D x H)	Set (inc. ADF hinge depth)	566 x 640 x 829 mm (22.3" x 24" x 32.6")
Weight	Net (SET with Supplies)	<ul style="list-style-type: none"> <li>• K4350LX : 68.13 kg (150.2 lb)</li> <li>• K4300LX : 68.13 kg (150.2 lb)</li> <li>• K4250RX : 66.195 kg (145.93 lb)</li> </ul>
Recommended Monthly Print Volume		<ul style="list-style-type: none"> <li>• K4350LX : 7,000 pages</li> <li>• K4300LX : 6,000 pages</li> <li>• K4250RX : 5,000 pages</li> </ul>
Max Monthly Duty Cycle		<ul style="list-style-type: none"> <li>• K4350LX : 85,000 pages</li> <li>• K4300LX : 76,000 pages</li> <li>• K4250RX : 65,000 pages</li> </ul>

## 2.2.2. Print Specifications

Item		Specification
Print Speed	Simplex	<ul style="list-style-type: none"> <li>• K4350LX               <ul style="list-style-type: none"> <li>• Up to 35 ppm in A4/Letter</li> <li>• Up to 19 ppm in A3</li> </ul> </li> <li>• K4300LX               <ul style="list-style-type: none"> <li>• Up to 30 ppm in A4/Letter</li> <li>• Up to 16 ppm in A3</li> </ul> </li> <li>• K4250RX               <ul style="list-style-type: none"> <li>• Up to 25 ppm in A4/Letter</li> <li>• Up to 14 ppm in A3</li> </ul> </li> </ul>
	Duplex (Simplex to Duplex)	<ul style="list-style-type: none"> <li>• K4350LX               <ul style="list-style-type: none"> <li>• Up to 23 ipm in A4/Letter without 2nd Exit</li> <li>• Up to 35 ipm in A4/Letter with 2nd Exit</li> <li>• Up to 12 ipm in A3</li> </ul> </li> <li>• K4300LX               <ul style="list-style-type: none"> <li>• Up to 20 ipm in A4/Letter without 2nd Exit</li> <li>• Up to 30 ipm in A4/Letter with 2nd Exit</li> <li>• Up to 11 ipm in A3</li> </ul> </li> <li>• K4250RX               <ul style="list-style-type: none"> <li>• Up to 19 ipm in A4/Letter without 2nd Exit</li> <li>• Up to 25 ipm in A4/Letter with 2nd Exit</li> <li>• Up to 9 ipm in A3</li> </ul> </li> </ul>
FPOT	From Ready	<ul style="list-style-type: none"> <li>• K4350LX : Less than 7.5 sec</li> <li>• K4300LX : Less than 8.0 sec</li> <li>• K4250RX : Less than 8.5 sec</li> </ul>
	From Sleep	<ul style="list-style-type: none"> <li>• K4350LX : Less than 30.5 sec</li> <li>• K4300LX : Less than 31 sec</li> <li>• K4250RX : Less than 31.5 sec</li> </ul>
Resolution	Optical	600 x 600 dpi
	Enhanced	Up to 1,200 x 1,200 dpi with reduced speed
Printer Languages		PCL5ce / PCL6 / PostScript3 / PDF V1.7
Font	PCL	95 Scalable Fonts (Include OCR-A / OCR-B) / 1 Bitmap
	Postscript3	136 Scalable Fonts
Client OS Support	Windows	XP (32 / 64 bit) / 2003 Server (32 / 64 bit) / Vista (32 / 64 bit) / 2008 server (32 / 64 bit) / Windows 7 (32 / 64 bit) / 2008 Server R2 (64 bit) / Windows 8 (32 / 64 bit) / Windows 8.1 (32 / 64 bit) / Windows Server 2012 (64 bit) / Windows Server 2012 R2 (64 bit)

Item		Specification
	Linux	<ul style="list-style-type: none"> <li>• Red Hat Enterprise Linux 5, 6</li> <li>• Fedora 11, 12, 13, 14, 15, 16, 17, 18, 19</li> <li>• openSUSE 11.0, 11.1, 11.2, 11.3, 11.4, 12.1, 12.2, 12.3</li> <li>• Ubuntu 10.04, 10.10, 11.04, 11.10, 12.04, 12.10, 13.04</li> <li>• SUSE Linux Enterprise Desktop 10, 11</li> <li>• Debian 5.0, 6.0, 7.0, 7.1</li> <li>• Mint 13, 14, 15</li> </ul>
	UNIX	<ul style="list-style-type: none"> <li>• Sun Solaris 9, 10, 11 (x86, SPARC)</li> <li>• HP-UX 11.0, 11i v1, 11i v2, 11i v3 (PA-RISC, Itanium)</li> <li>• IBM AIX 5.1, 5.2, 5.3, 5.4, 6.1, 7.1 (PowerPC)</li> </ul>
	Mac OS	Mac OS X 10.5 - 10.9
Network Protocol		IP Management(DHCP, BOOTP, AutoIP, SetIP, Static) / Discovery Protocol (SLP, UPnP, Bonjour, DNS, WINS) / Printing Protocol(TCP/IP, LPR, IPP, WSD) / Management Protocol(SNMPv1.2, SNMP3, SMTP, Talnet) / Scan Protocol(SMTP, FTP, SMB, WSD) / Security Protocol(SMB, Kerberos, LDAP, IPsec, EAP)
Duplex Print		Built-in
Direct Print		PRN / PDF / TIFF / JPEG / XPS
Print Features		WSD print / Secure print / Stored print / Booklet / N-up / Cover page / Insert page / Except page / Barcode / Eco / Poster / Glossy / Watermark / Tray Priority setting / Auto tray setting / Tray Protection / USB print / Secure PDF print / Google Cloud print

### 2.2.3. Scan specification

Item		Specification
Scan Speed	B/W (Lineart, Halftone)	<ul style="list-style-type: none"> <li>• K4350LX               <ul style="list-style-type: none"> <li>• Simplex : Up to 80 ipm (@ 300 dpi)</li> <li>• Duplex : Up to 120 ipm (@ 300 dpi)</li> </ul> </li> <li>• K4300LX               <ul style="list-style-type: none"> <li>• Simplex : Up to 80 ipm (@ 300 dpi)</li> <li>• Duplex : Up to 120 ipm (@ 300 dpi)</li> </ul> </li> <li>• K4250RX               <ul style="list-style-type: none"> <li>• Simplex : Up to 45 ipm (@ 300 dpi)</li> <li>• Duplex : Up to 18 ipm (@ 300 dpi)</li> </ul> </li> </ul>
	Gray	<ul style="list-style-type: none"> <li>• K4350LX               <ul style="list-style-type: none"> <li>• Simplex : Up to 80 ipm (@ 300 dpi)</li> <li>• Duplex : Up to 100 ipm (@ 300 dpi)</li> </ul> </li> <li>• K4300LX               <ul style="list-style-type: none"> <li>• Simplex : Up to 80 ipm (@ 300 dpi)</li> <li>• Duplex : Up to 100 ipm (@ 300 dpi)</li> </ul> </li> <li>• K4250RX               <ul style="list-style-type: none"> <li>• Simplex : Up to 45 ipm (@ 300 dpi)</li> <li>• Duplex : Up to 18 ipm (@ 300 dpi)</li> </ul> </li> </ul>
	Color	<ul style="list-style-type: none"> <li>• K4350LX               <ul style="list-style-type: none"> <li>• Simplex : Up to 80 ipm (@ 300 dpi)</li> <li>• Duplex : Up to 100 ipm (@ 300 dpi)</li> </ul> </li> <li>• K4300LX               <ul style="list-style-type: none"> <li>• Simplex : Up to 80 ipm (@ 300 dpi)</li> <li>• Duplex : Up to 100 ipm (@ 300 dpi)</li> </ul> </li> <li>• K4250RX               <ul style="list-style-type: none"> <li>• Simplex : Up to 45 ipm (@ 300 dpi)</li> <li>• Duplex : Up to 18 ipm (@ 300 dpi)</li> </ul> </li> </ul>
Color Mode		Mono / Gray / Color
Compatibility		Network TWAIN / Network SANE
Scan method		MMT
File Formats		PDF / Searchable PDF / Compact PDF/ PDF Encryption / Digital Signature in PDF / PDF/A / Single-Page-PDF / Multi-Page-PDF / TIFF / Single-Page-TIFF / Multi-Page-TIFF / XPS / Single-Page-XPS / Multi-Page-XPS / JPEG
Resolution	Optical (ADF)	Up to 600 x 600 dpi
	Optical (Platen)	Up to 600 x 600 dpi
	Enhanced (ADF)	Up to 4,800 x 4,800 dpi
	Enhanced (Platen)	Up to 4,800 x 4,800 dpi
Scan Destinations		Email / FTP / SMB / HDD / USB / WSD / PC
Multi Destinations		Yes
Communication Protocol		SMTP(IPv4, IPv6, SSL/TLS) / FTP(IPv4, IPv6) / SMB(IPv4, IPv6) / WSD / T4Net

Item		Specification
Scan Size	ADF	Max. 297 x 437 mm (11.7" x 17.2")
	Platen	Max. 297 x 437 mm (11.7" x 17.2")
Scan Original Types		Text / Text & Photo / Photo

### 2.2.4. Copy specification

Item		Specification
Copy Speed	SDMC (Single Document Multiple Copy)	<ul style="list-style-type: none"> <li>• K4350LX : Up to 35 cpm in A4/Letter</li> <li>• K4300LX : Up to 30 cpm in A4/Letter</li> <li>• K4250RX : Up to 25 cpm in A4/Letter</li> </ul>
	MDMC (Multiple Document Multiple Copy)	<ul style="list-style-type: none"> <li>• K4350LX                             <ul style="list-style-type: none"> <li>• Simplex to Simplex : Up to 35 / 35 ipm in A4/Letter</li> <li>• Simplex to Duplex : Up to 23 / 23 ipm in A4/Letter</li> <li>• Duplex to Simplex : Up to 35 / 35 ipm in A4/Letter</li> <li>• Duplex to Duplex : Up to 23 / 23 ipm in A4/Letter</li> </ul> </li> <li>• K4300LX                             <ul style="list-style-type: none"> <li>• Simplex to Simplex : Up to 30 / 30 ipm in A4/Letter</li> <li>• Simplex to Duplex : Up to 20 / 20 ipm in A4/Letter</li> <li>• Duplex to Simplex : Up to 30 / 30 ipm in A4/Letter</li> <li>• Duplex to Duplex : Up to 20 / 20 ipm in A4/Letter</li> </ul> </li> <li>• K4250RX                             <ul style="list-style-type: none"> <li>• Simplex to Simplex : Up to 25 / 25 ipm in A4/Letter</li> <li>• Simplex to Duplex : Up to 19 / 19 ipm in A4/Letter</li> <li>• Duplex to Simplex : Up to 14 / 14 ipm in A4/Letter</li> <li>• Duplex to Duplex : Up to 14 / 14 ipm in A4/Letter</li> </ul> </li> </ul>
FCOT	From Ready	<ul style="list-style-type: none"> <li>• K4350LX : Less than 4.9 sec</li> <li>• K4300LX : Less than 5.5 sec</li> <li>• K4250RX : Less than 6.2 sec</li> </ul>
Resolution	ADF (DSDF/RADF)	<ul style="list-style-type: none"> <li>• Scan: 600 x 600 dpi</li> <li>• Printing: 600 x 600 dpi</li> </ul>
	Platen	<ul style="list-style-type: none"> <li>• Scan: 600 x 600 dpi</li> <li>• Printing: 600 x 600 dpi</li> </ul>
Reduce / Enlarge	ADF (DSDF/RADF)	25 - 400 %
	Platen	25 - 400 %
	Preset	25% / 50% A3→A5 / 61% A3→B5 / 64% Ledger→Letter / 70% A3→A4   B4→B5   A4→A5 / 77% Ledger→Legal / 78% Legal→Letter / 81% B4→A4   B5→A5 / 86% A3→B4   A4→B5 / 104% Executive→Letter / 115% B4→A3 / 121% Legal→Ledger / 122% A4→B4 / 129% Letter→Ledger / 141% A4→A3   A5→A4 / 150% / 200% A5→A3 / 400% /
Darkness Control		11 Levels
Contrast Control		11 Levels
Multi Copy		1 - 9,999
Duplex Copy		Built-in
Copy Original Type		Text / Text & Printed Photo / Text & Glossy Photo / Newspaper / Printed Photo / Glossy Photo / Copied Original / Map / Light Original /
Copy Features		ID Copy / N-up / Booklet / Image Repeat / Auto Fit / Book Copy / Poster Copy / Watermark / Image Overlay / Stamp / Covers / Job Build / Preview / Erase Edge / Image Shift / Image Adjustment / Background Adjustment



## 2.2.5. Fax specification

Item		Specification
Communication System		PSTN/PABX
Modem Speed		33.6 Kbps
TX Speed		3sec/1page ( based on ITU-T No. 1 chart )
Scan speed	Standard	1 Sec / LTR
	Fine	1 Sec / LTR
	S.Fine	1 Sec / LTR
Resolution (Mono)	Std	203 x 98 dpi
	Fine	203 x 196 dpi
	S.Fine	300 x 300 dpi
	Ultra Fine	600 x 600 dpi
Resolution (Color)	Std	N/A
	Fine	N/A
	S.Fine	N/A
Compression Method		MH / MR / MMR / JBIG
Fax Memory (Standard / Max.)		N/A
Dual Lines		Option
Fax Features	Handset	N/A
	On hook Dial	Yes
	Search	Yes (Address Book)
	1-Touch Dial	N/A
	Speed Dial	500 locations
	TAD I/F	Yes(First Line)
	Tone/Pulse	Yes (Selectable in Tech Mode)
	Pause	Yes
	Auto Redial	Yes
	Last Number Redial	Yes
	Distinctive Ring	No
	Caller ID	Yes
	External Phone Interface	Yes(First Line)
	Fax Forward to E-Mail	Yes
	Fax to PC	N/A
	Broadcasting	Yes
	Delayed Fax	Yes
Color Fax	N/A	

## 2. Product Specifications and Description

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Item		Specification
Report & List Print out	Tx/Rx Journal	Yes
	Confirmation	2 Types Available (With Image TCR / Without Image TCR)
	Auto Dial List	N/A
	System Data List	N/A

## 2.2.6. Paper Handling specification

Item		Specification
Input Capacity	Standard	1,040 sheets
	Multipurpose	100 sheets
	Other Options	520 x 2 sheets DCF
	Maximum	2,180 sheets (1,040 Std + 100 MP + 1,040 DCF)
Standard Cassette Tray	Capacity	520 sheets x 2
	Media sizes	<ul style="list-style-type: none"> <li>Cassette 1 : 148.5 x 210 mm ~ 297 x 354 mm (5.8" x 8.2" ~ 11.7" x 14")</li> <li>Cassette 2 : 148.5 x 210 mm ~ 297 x 432 mm (5.8" x 8.2" ~ 11.7" x 17")</li> </ul>
	Media types	Plain / Thin / Bond / Hole Punched / Pre-Printed / Recycled / Thin CardStock / Letterhead / Thick / Cotton / Colored / Archive / Thin Glossy/ Heavy weight/ Extra heavy weight
	Media weight	<ul style="list-style-type: none"> <li>Plain Paper: 70-90 g/m<sup>2</sup> (18.5-24 lb/ Duplex)</li> <li>Thick Paper: 91-105 g/m<sup>2</sup> (25-28 lb / Duplex)</li> <li>Heavy Weight Paper : 106-176 g/m<sup>2</sup> (Duplex)</li> <li>Extra Heavy Weight 1 Paper : 177-220 g/m<sup>2</sup></li> <li>Thin Paper: 60-69 g/m<sup>2</sup> (16-19 lb/ Duplex)</li> <li>Cotton paper : 75-90 g/m<sup>2</sup> (Duplex)</li> <li>Colored : 75-90 g/m<sup>2</sup> (Duplex)</li> <li>Pre-Printed : 71-90 g/m<sup>2</sup> (Duplex)</li> <li>Recycled : 60-90 g/m<sup>2</sup> (Duplex)</li> <li>Bond Paper: 105-120 g/m<sup>2</sup> (Duplex)</li> <li>Letterhead : 75-90 g/m<sup>2</sup> (Duplex)</li> <li>Hole Punched Paper: 75-90 g/m<sup>2</sup> (Duplex)</li> <li>Thin CardStock : 105-163 g/m<sup>2</sup> (Duplex)</li> <li>Thin Glossy : 106-163 g/m<sup>2</sup> (Duplex)</li> </ul>
	Sensing	<ul style="list-style-type: none"> <li>H/W Install Detect: Yes</li> <li>Paper Empty &amp; Low Level Detect: Yes</li> <li>Paper Type Detect: No</li> <li>Paper Size Detect: Yes</li> </ul>
Multipurpose Tray	Capacity	100 sheets
	Media sizes	98 x 148 mm ~ 297 x 432 mm (3.8" x 5.8" ~ 11.7" x 17")
	Media types	Plain / Thin / Bond / Hole Punched / Pre-Printed / Recycled / Thin CardStock / Letterhead / Thick / Cotton / Colored / Archive / Thin Glossy/Heavy weight/ Envelope/ Label
	Media weight	16~47lb (60 to 176 g/m <sup>2</sup> ): Simplex, Duplex Envelope(75~90 g/m <sup>2</sup> ) Label(120~150 g/m <sup>2</sup> ): Simplex
	Sensing	<ul style="list-style-type: none"> <li>Paper Empty Detect: Yes</li> <li>Paper Size Detect: Yes</li> </ul>

## 2. Product Specifications and Description

Item		Specification
ADF	Capacity	100 sheets
	Duplex Document Scanning	Yes
	Document Size	<ul style="list-style-type: none"> <li>Width: 128 - 297 mm (5" - 11.7")</li> <li>Length: 140 - 432 mm (5.5" - 17")</li> </ul>
	Document Weight	<ul style="list-style-type: none"> <li>K4350LX &amp; K4300LX                             <ul style="list-style-type: none"> <li>Simplex : 42 - 163 g/m<sup>2</sup> (11.25 ~ 43.25 lb)</li> <li>Duplex : 50 - 163 g/m<sup>2</sup> (13.25 ~ 43.25 lb)</li> </ul> </li> <li>K4250RX                             <ul style="list-style-type: none"> <li>Simplex : 42 - 163 g/m<sup>2</sup> (11.25 ~ 43.25 lb)</li> <li>Duplex : 50 - 128 g/m<sup>2</sup> (13.25 ~ 34 lb)</li> </ul> </li> </ul>
	Sensor	Document Size Sensing: Potentiometer
	Auto Detected Size	A3 / A4 / A5 / B4/ B5/ Letter / Lgeal / Statement / Folio / Executive
Output Capacity	Standard	500 sheets Face Down
	Maximum	615 sheets [ 500 sheets (Standard) + 125 sheets (Job Separator) ]
Printing size	Max. Size	297 x 432 mm (11.7" x 17")
	Min. Size	98 x 148 mm (3.8" x 5.8")
Max. Printing Area	Simplex	Top: 4.23+/-1.5 mm / Left : 4.23+/-1.5 mm
	Duplex	Top: 4.23+/-2 mm / Left: 4.23+/-2 mm
Duplex Printing	Support	Built-in
	Media sizes	148.5 x 210 mm ~ 297 x 432 mm (5.8" x 8.2" ~ 11.7" x 17")
	Media types	Plain / Thin / Bond / Hole Punched / Pre-Printed / Recycled / Thin CardStock / Letterhead / Thick / Cotton / Colored / Archive / Thin Glossy/ Heavy weight/
	Media weight	16~47 lb (60 to 176 g/m <sup>2</sup> )

### 2.2.7. Software and Solution specification

Item		Specification
Application	Anyweb Print	N/A
	Easy Printer Manager	Windows / Mac
	Easy Color Manager	N/A
	Easy Document Creator	Windows
	Net PC Fax	Windows / Mac
	Direct Printing Utility	Windows
	Easy Deployment Manager	Windows
	Easy Eco Driver	Windows

Item		Specification
	Universal Printer Driver	Windows
	Universal Scan Driver	Windows
Mobile Printing	GCP (Google Cloud Print)	Yes
	AirPrint	Yes ('14.09)
Solution	Device Management	SyncThru 6.0
	Output Management	CounThru Enterprise / Pro
	Document Management and Distribution	SmarThru Workflow 3.0
	Security	SecuThru Pro 1.0
	Mobility	SCP 1.0 ('14.09)
Security	Authentication (Local)	Yes
	Authentication (Network)	Yes (SMB / Kerberos / LDAP / IPsec / EAP)
	IP Address Filtering	Yes (IPv4 Filtering / IPv6 Filtering / MAC Filtering)
	HDD Overwrite (Standard)	Yes
	HDD Overwrite (Max. Overwrites)	9
	Secure Print	Yes
	Encrypted Secure Print	Yes
	Encrypted PDF Mode (Encrypted Scanning)	Yes
	IP Sec	Yes
	Smart Card Authentication	Yes

### 2.2.8. Supplies

Item		Model Name	Average yield	Conditions for yield
Toner Cartridge	(Standard)	MLT-D708S	Approx. 25,000 pages	@ A4/Letter LEF , Continuous job , Simplex Mode , 6% Coverage
	(High Capacity)	MLT-D708L	Approx. 35,000 pages	@ A4/Letter LEF , Continuous job , Simplex Mode , 6% Coverage
OPC Drum Unit		MLT-R708	Approx. 200,000 pages	@ A4/Letter LEF , 2 pages/job , Simplex Mode , 6% Coverage
Waste Toner Container		MLT-W708	Approx 100,000 pages	@ A4/Letter LEF , Continuous job , Simplex Mode , 6% Coverage



**NOTE**

- Depending on the print pattern and job mode used, the consumable's lifespan may differ.

## 2.2.9. Maintenance Parts

Item	Part Code	Life	Remark
Developer Unit	JC96-09250A	400,000 pages	@ A4/Letter LEF , 2 pages/job , Simplex Mode , 6% Coverage
Fuser Unit	<ul style="list-style-type: none"> <li>• JC91-01163A (220V)</li> <li>• JC91-01164A (110V)</li> </ul>	250,000 pages	
Transfer roller	JC95-01943A	150,000 pages	
Pick-Up / Reverse / Forward roller (for Tray1,2,3,4, MP Tray)	JC93-00540A	200,000 pages	
DSDF Pick-Up roller Assy	JC97-04587A	200,000 pages	K4350LX / K4300LX
DSDF Reverse roller Assy	JC97-04588A	100,000 pages	K4350LX / K4300LX
RADF Pick-Up roller Assy	JC97-04470A	200,000 pages	K4250RX
RADF Reverse roller Assy	JC97-04471A	100,000 pages	K4250RX



### NOTE

Depending on the print patterns and job mode used, the lifespan may differ.

**2.2.10. Option**

**Option List**

Image	Item	Model
	DCF (Dual Cassette Feeder)	SL-PFP502D
	Cabinet Stand	SL-DSK502T
	550-Sheet Inner Finisher	SL-FIN501L
	3,250-Sheet Stapling Finisher (High Volume Finisher)	SL-FIN701H
	2,250-sheet Booklet Finisher	SL-FIN701B
	Second Exit Unit	SL-DPX501
	Job Separator	SL-JSP500S
	Staples (Inner, Saddle for Booklet)	SCX-STP000
-	Staples (High Volume , Regular for Booklet)	SL-STP000



Image	Item	Model
	2 and 3 hole punch (For America & Asia & Africa)	SL-HPU501T
	2 and 4 hole ( For Europe)	SL-HPU501F
	Swedish 4 hole (For Sweden)	SL-HPU501S
	2 and 3 hole punch (For America & Asia & Africa)	SL-HPU701T
	2 and 4 hole ( For Europe)	SL-HPU701F
	Swedish 4 hole (For Sweden)	SL-HPU701S
	Working Table (Large)	SL-WKT101
	Working Table	CLX-WKT101
	Wireless/NFC Kit	SL-NWE001X
	Additional LAN Kit	SL-NWA001N
	FDI Kit	CLX-KIT10F
	Fax Kit	CLX-FAX160
	Dual Fax Kit	SL-FAX2501

### Option Specification

Item	Specification	
Dual Cassette Tray	Model Name	SL-PFP502D
	Capacity	520 x 2 Sheets
	Media Sizes	<ul style="list-style-type: none"> <li>Cassette 3 : 148.5 x 210 mm ~ 297 x 432 mm (5.8" x 8.2" ~ 11.7" x 17")</li> <li>Cassette 4 : 148.5 x 210 mm ~ 297 x 432 mm (5.8" x 8.2" ~ 11.7" x 17")</li> </ul>
	Media types	Plain / Thin / Bond / Hole Punched / Pre-Printed / Recycled / Thin CardStock / Letterhead / Thick / Cotton / Colored / Archive / Thin Glossy/ Heavy weight/ Extra heavy weight

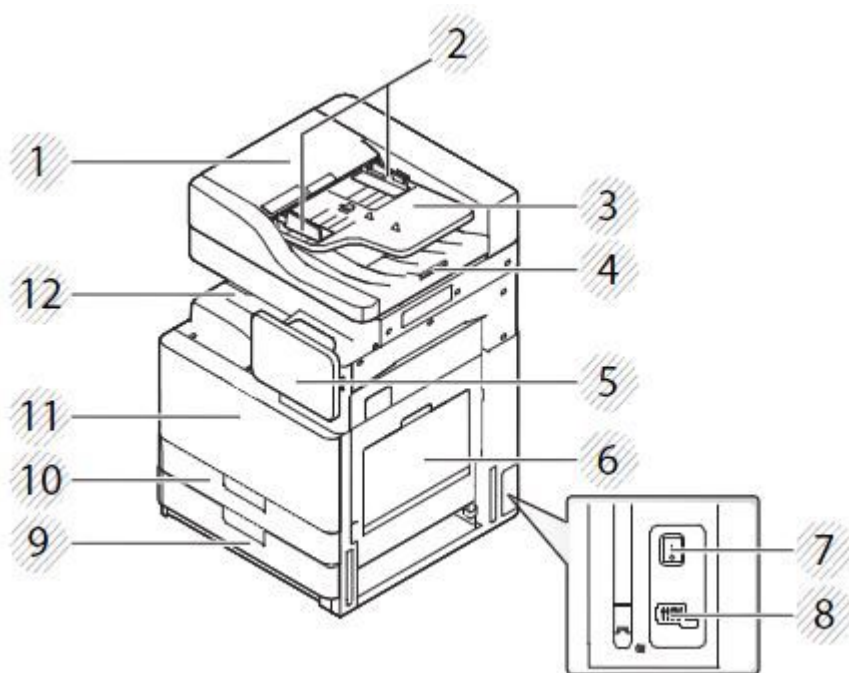
2. Product Specifications and Description

Item		Specification
	Media weight	<ul style="list-style-type: none"> <li>• Plain Paper: 70-90 g/m<sup>2</sup>(18.5-24 lb/ Duplex)</li> <li>• Thick Paper: 91-105 g/m<sup>2</sup>(25-28 lb / Duplex)</li> <li>• Heavy Weight Paper : 106-176 g/m<sup>2</sup>(Duplex)</li> <li>• Extra Heavy Weight 1 Paper : 177-220 g/m<sup>2</sup></li> <li>• Thin Paper: 60-69 g/m<sup>2</sup> (16-19 lb/ Duplex)</li> <li>• Cotton paper : 75-90 g/m<sup>2</sup> (Duplex)</li> <li>• Colored : 75-90 g/m<sup>2</sup> (Duplex)</li> <li>• Pre-Printed : 71-90 g/m<sup>2</sup> (Duplex)</li> <li>• Recycled : 60-90 g/m<sup>2</sup> (Duplex)</li> <li>• Bond Paper: 105-120 g/m<sup>2</sup> (Duplex)</li> <li>• Letterhead : 75-90 g/m<sup>2</sup> (Duplex)</li> <li>• Hole Punched Paper: 75-90 g/m<sup>2</sup> (Duplex)</li> <li>• Thin CardStock : 105-163 g/m<sup>2</sup> (Duplex)</li> <li>• Thin Glossy : 106-163 g/m<sup>2</sup> (Duplex)</li> </ul>
	Sensing	<ul style="list-style-type: none"> <li>• H/W Install Detect: Yes</li> <li>• Paper Empty &amp; Low Level Detect: Yes</li> <li>• Paper Type Detect: No</li> <li>• Paper Size Detect: Yes</li> </ul>
	Dimension	566 x 610 x 265 mm (22.3" x 24" x 10")
	Weight	Net 20 kg, Packing 23.5 kg
Stand	Model Name	SL-DSK502T
	Dimension	566 x 610 x 265 mm (22.3 x 24 x 10.4 inch)
	Weight	15 kg (33.07 lb)
Job Separator	Model Name	SL-JSP500S
	Capacity	125 sheets
	Dimension (W x D x H)	464 x 394.7 x 124.5mm (18.3 x 15.5 x 4.9")
	Weight	2.36kg (5.2lb)
Inner Finisher	Model Name	SL-FIN501L
	Capacity	550 Sheets (Main 500, Top 50) @ 80gsm
	Sensing	Paper Jam / Tray Sensing / Stapler / Cover Open
	Media Sizes	<ul style="list-style-type: none"> <li>• Main : 148 ~ 320 mm x 140~457.2 mm (58.3~126 inch x 55.1~180 inch)</li> <li>• Top : 98 ~ 297 mm x 140~432 mm (38.6~116.9 inch x 55.1~170.1 inch)</li> </ul>
	Media types	Plain / Thick / Heavy weight / Thin / Cotton / Colored / Recycled / Bond / Archive / Pre-Punched / Cardstock / Glossy / Envelope
	Media Weight	<ul style="list-style-type: none"> <li>• Main : 52~256 gsm (13.9~68.3 lb.)</li> <li>• Top : 52~325 gsm (13.9~86.7 lb.)</li> </ul>
	Number of Bin	2 (Main/Top)
	Dimension (W x D x H)	458 x 491 x 173 mm (18.0 x 19.3 x 6.8 inch)
	Weight	15 kg (33 lb.)
Tray1 Finishing Capacity	50 Sheets @ 80gsm	

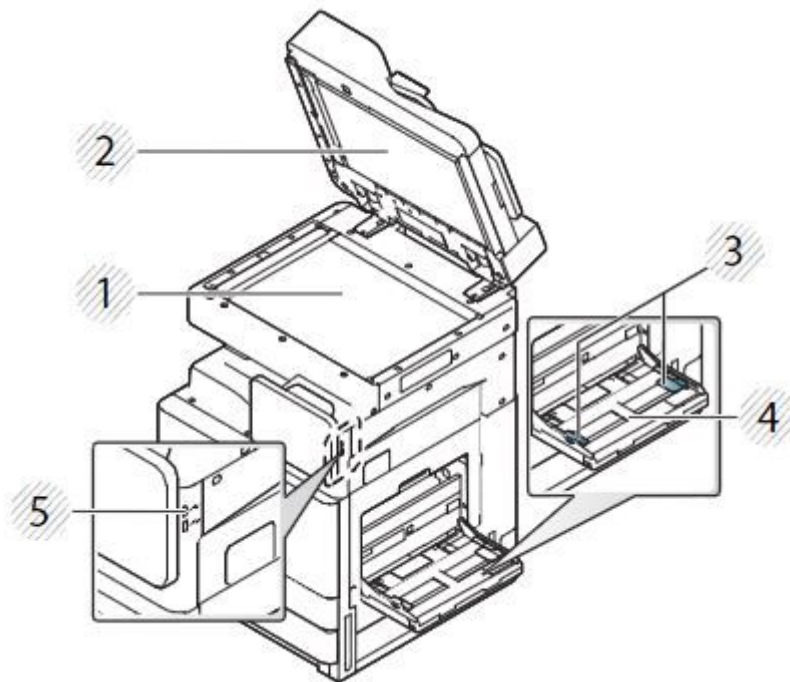
Item		Specification
	Tray1 Finishing Mode	Stapling (Left, Right, Center) / Punch (2/3, 2/4, Swedish)
	Tray2 Finishing Capacity	500 Sheets @ 80 gsm
Punch Kit (2/3 hole)	Model Name	SL-HPU501T
	Type	2/3 hole punch
	Paper weight	256gsm (68.3lb.)
	Dimension (WxDxH)	440 x 105 x 75mm (17.3x4.1x3.0 inch)
	Weight	1.2kg (2.65lb.)
Punch Kit (2/4 hole)	Model Name	SL-HPU501F
	Type	2/4 hole punch
	Paper weight	256gsm (68.3lb.)
	Dimension (WxDxH)	440 x 105 x 75mm (17.3x4.1x3.0 inch)
	Weight	1.2kg (2.65lb.)
Working Table	Model Name	CLX-WKT001
	Dimension (WxDxH)	153 x 124 x 39.7 mm (6 x 4.9 x 1.6 inch)
	Weight	82 g (0.18 lb)
Working Table	Model Name	SL-WKT101
	Dimension (WxDxH)	282 x 468 x 99 mm (11.1 x 18.4 x 3.9 inch)
	Weight	828 g (1.825 lb)

## 2.3. Machine External View

### 1) Front view 1

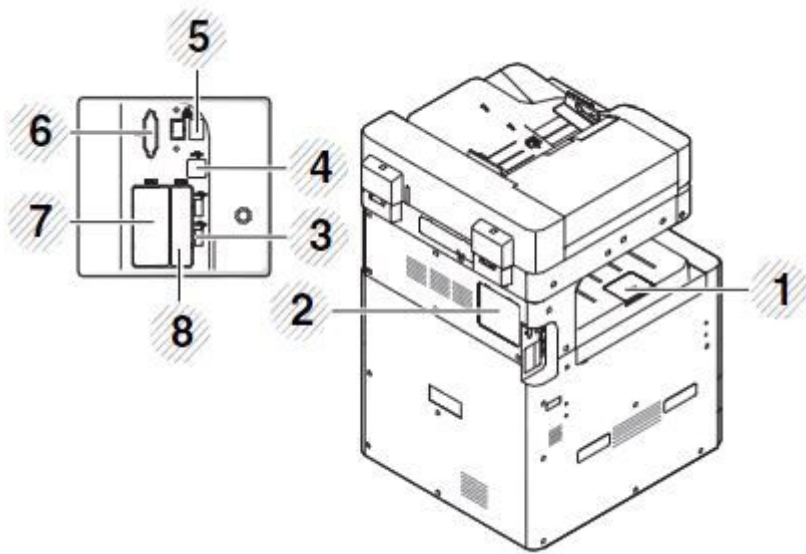


1	DSDF (K4350/K4300) / RADF (K4250) cover
2	DSDF (K4350/K4300) / RADF (K4250) width guides
3	DSDF (K4350/K4300) / RADF (K4250) input tray
4	DSDF (K4350/K4300) / RADF (K4250) output tray
5	Control panel
6	Multi-purpose tray
7	Power-switch
8	Power receptacle
9	Standard tray (tray 1)
10	Standard tray (tray 2)
11	Front door
12	Paper output tray

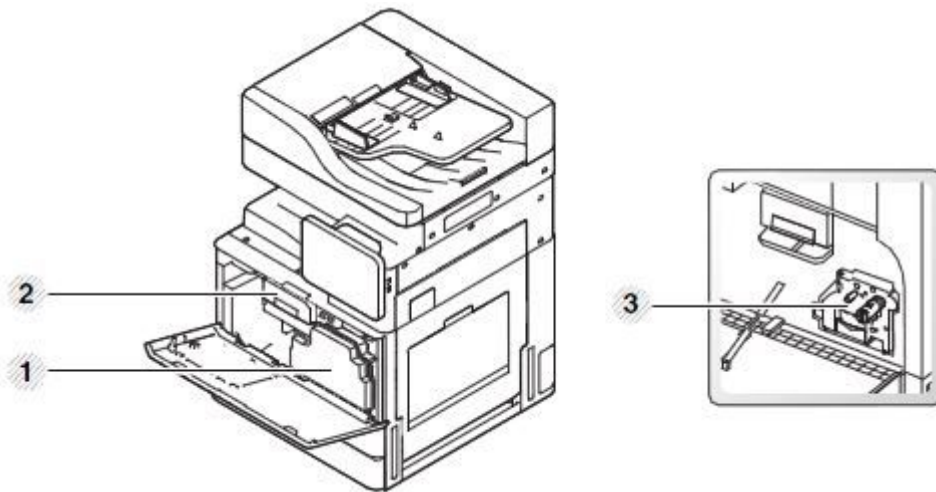
**2) Front view 2**

1	Scanner glass
2	White sheet
3	Multi-purpose tray paper width guide
4	Multi-purpose tray
5	USB port

Rear view



1	Output support tray
2	Control board cover
3	USB port
4	USB printer port
5	Network port
6	FDI (Optional) cover
7	Fax1 (Optional) port cover
8	Fax2 (Optional) port cover

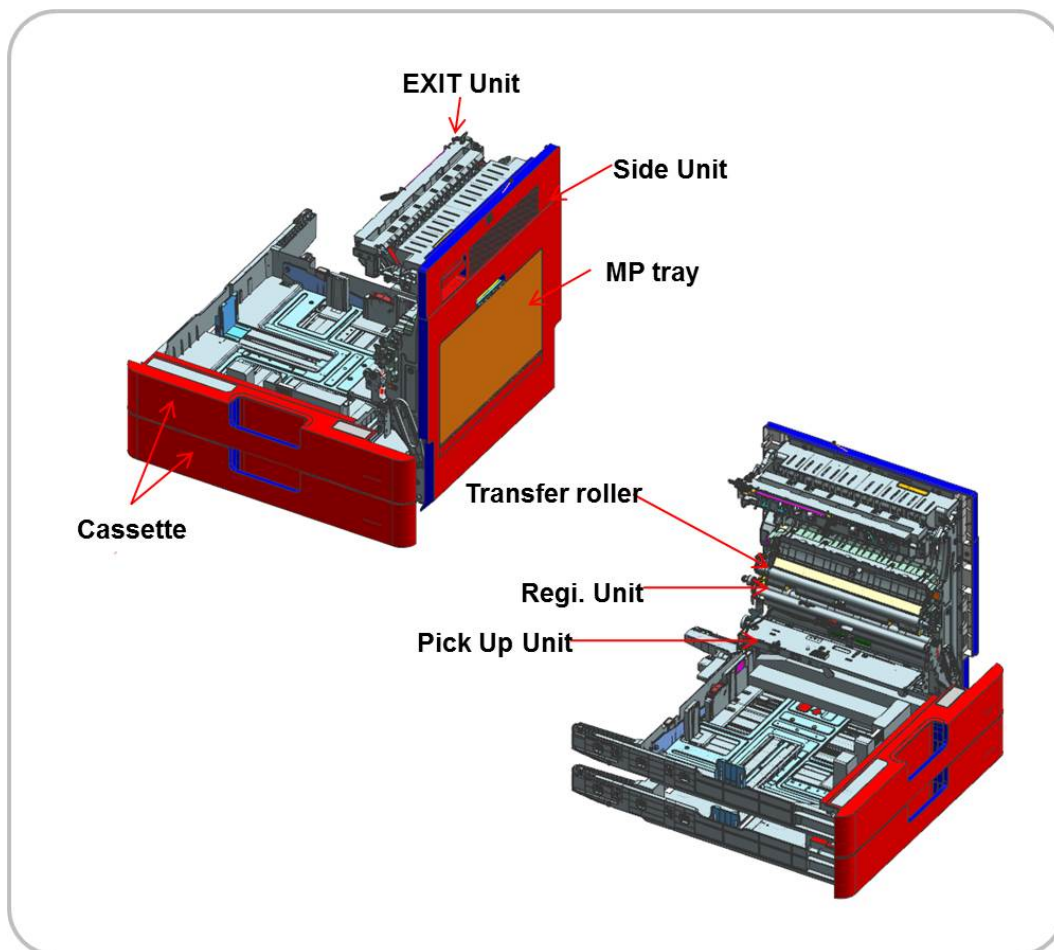
**Inner view**

1	Waste toner container
2	Toner Cartridges
3	Imaging units

## 2.4. Feeding System

### 2.4.1. Feeding System Overview

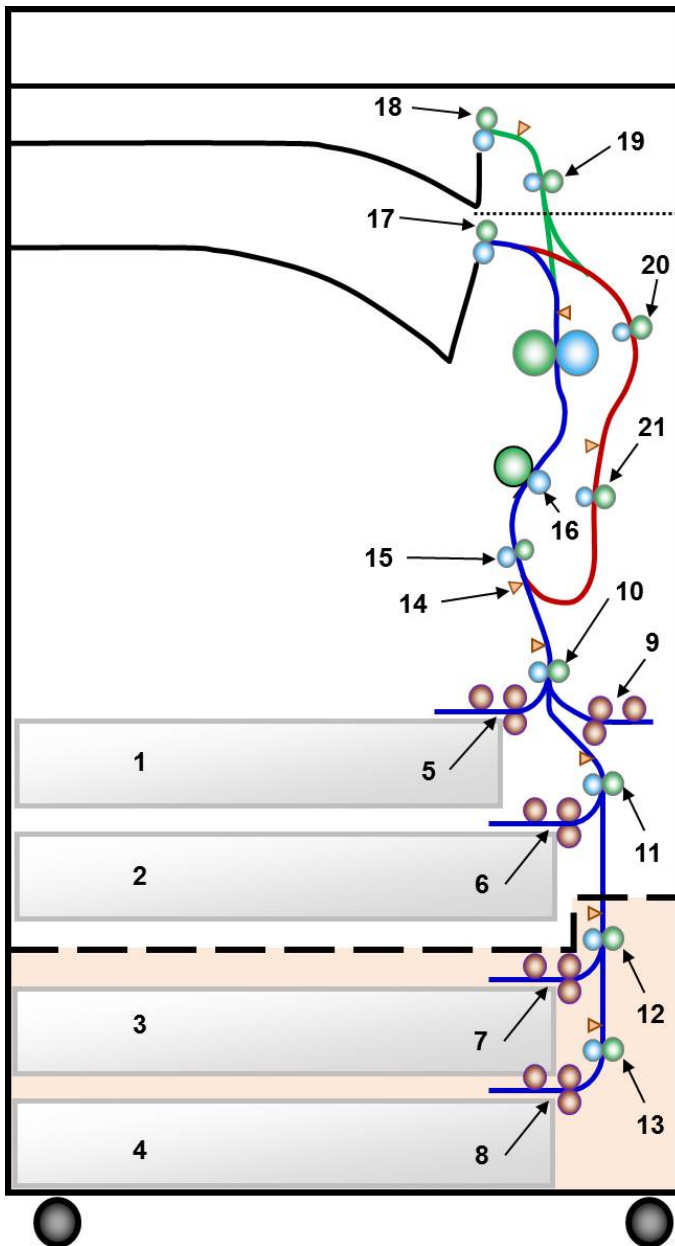
The feeding system picks up a paper from the cassette or MP tray and transports it to the machine inside. It mainly consists of the pick up unit, registration unit, transfer roller Assy, Exit unit.





## 2.4.2. Main Components and functions

### a) Rollers

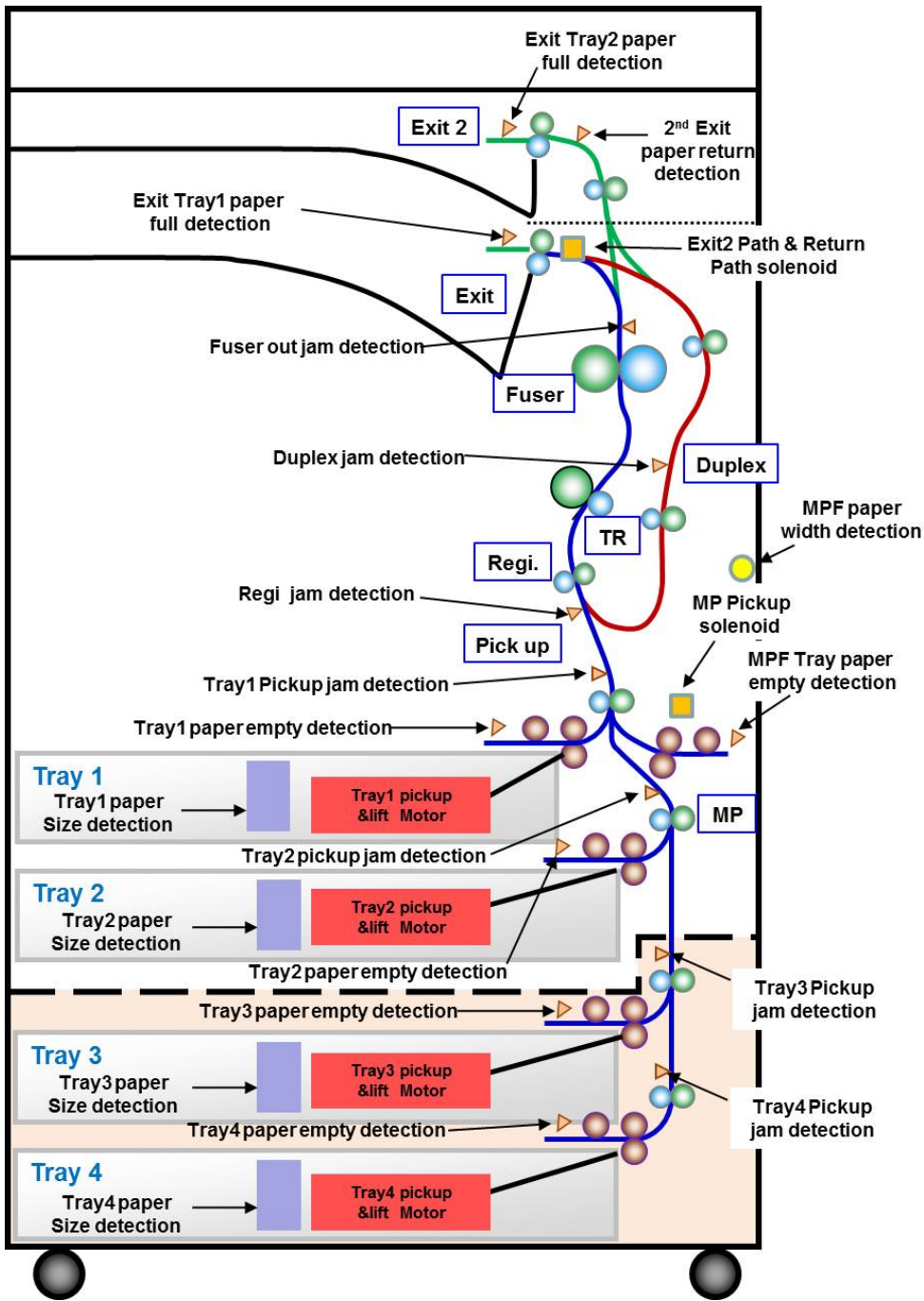


1	Tray 1 Paper tray
2	Tray 2 Paper tray
3	Tray 3 Paper tray(Optional)
4	Tray 4 Paper tray(Optional)
5	Tray 1 pick up / reverse / forward rollers
6	Tray 2 pick up / reverse / forward rollers
7	Tray 3 pick up / reverse / forward rollers(Optional)
8	Tray 4 pick up / reverse / forward rollers(Optional)
9	MP Tray pick up / reverse / forward rollers
10	Tray 1 feed roller
11	Tray 2 feed roller

12	Tray 3 feed roller(Optional)
13	Tray 4 feed roller(Optional)
14	Sensor registration
15	Roller registration
16	Roller transfer
17	Roller Exit 1st
18	Roller Exit 2nd (Optional)
19	Roller Invert (Optional)
20	Roller Duplex1
21	Roller Duplex2


- **Pick-Up roller (Tray 1,2,3,4 and MP Tray)**
  - This roller picks up the paper from the tray.
- **Forward roller (Tray 1,2,3,4 and MP Tray)**
  - This roller is placed against the reverse roller. It transports the paper from the pick up roller to feed roller.
- **Reverse roller (Tray 1,2,3,4 and MP Tray)**
  - This roller is placed against the forward roller and transports only one sheet to the feed roller. When two sheets of paper or more are transported from the pick up roller, the load of the torque limiter of the reverse roller is heavier than the frictional force between the sheets. As a result, the reverse roller is stopped and the lower paper does not advance any further.
- **Feed roller**
  - This roller transports the paper sent from the forward/reverse roller to the registration roller.
- **Registration roller**
  - This roller aligns the leading edge of the paper and transports the paper to the transfer roller Assy.

b) Sensor, Motor, Solenoid



Name	Function
Tray1 paper size detection sensor	Detects tray1 paper size
Tray1 paper empty detection sensor	Detects tray1 paper empty
Tray1 upper limit detection sensor	Detects tray1 upper limit
Tray1 paper feed jam detection sensor	Detects Feed1 jam
Tray2 paper size detection sensor	Detects tray2 paper size
Tray2 paper empty detection sensor	Detects tray2 paper empty
Tray2 upper limit detection sensor	Detects tray2 upper limit
Tray2 paper feed jam detection sensor	Detects Feed2 jam
Tray3 paper size detection sensor (Option)	Detects tray3 paper size

2. Product Specifications and Description

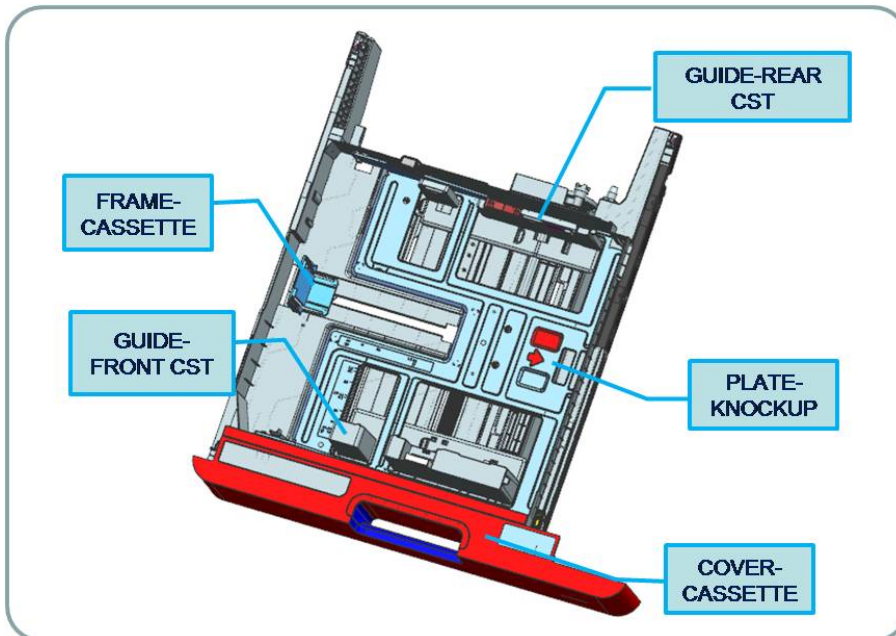
Name	Function
Tray3 paper empty detection sensor (Option)	Detects tray3 paper empty
Tray3 upper limit detection sensor (Option)	Detects tray3 upper limit
Tray3 paper feed jam detection sensor (Option)	Detects Fee3 jam
Tray4 paper size detection sensor (Option)	Detects tray4 paper size
Tray4 paper empty detection sensor (Option)	Detects tray4 paper empty
Tray4 upper limit detection sensor (Option)	Detects tray4 upper limit
Tray4 paper feed jam detection sensor (Option)	Detects Feed4 jam
Paper regi. jam detection sensor	Detects regi. jam
Paper fuser-out jam detection sensor	Detects fuser unit jam
Exit tray1 paper full detection sensor	Detects paper full on Exit tray1
Exit2 tray path &Return path solenoid	Changes paper path
Duplex Motor	Controls duplex driving
Duplex jam detection sensor	Detects duplex jam
Exit tray2 paper full detection sensor	Detects paper full on Exit tray2
Exit 2 paper return detection sensor	Detects Duplex Return position
MPF Paper empty detection sensor	Detects MP tray paper empty   <b>NOTE</b> If paper is loaded in the MP tray, that tray takes priority over trays 1,2,3, or 4.
MPF solenoid	Controls MPF pick up roller
MPF paper width detection sensor	Detects MPF paper width
Tray1 Pickup & Lift Motor	Drives the pickup roller Drives the knock up plate
Tray2 Pickup & Lift Motor	Drives the pickup roller Drives the knock up plate
Tray3 Pickup & Lift Motor	Drives the pickup roller Drives the knock up plate
Tray4 Pickup & Lift Motor	Drives the pickup roller Drives the knock up plate

### 2.4.3. Cassette

The Cassette stores papers.

Paper size is set using the Size Guides in each tray.

#### Basic Cassette



- **Specification**

- 1) Structure : Drawer Type
- 2) Capacity : 520 Sheets ( 80g/ paper standard)
- 3) Paper
  - Plain paper : A5, A4, A3, B5, B4, Letter, 11"×17"(Ledger), Statement, Legal
- 4) Weight : plain paper 60 ~ 216 g/m<sup>2</sup>
- 5) Plate knock up lift type : Lift Motor + Up Limit Sensor

### 2.4.4. Pick-Up Unit

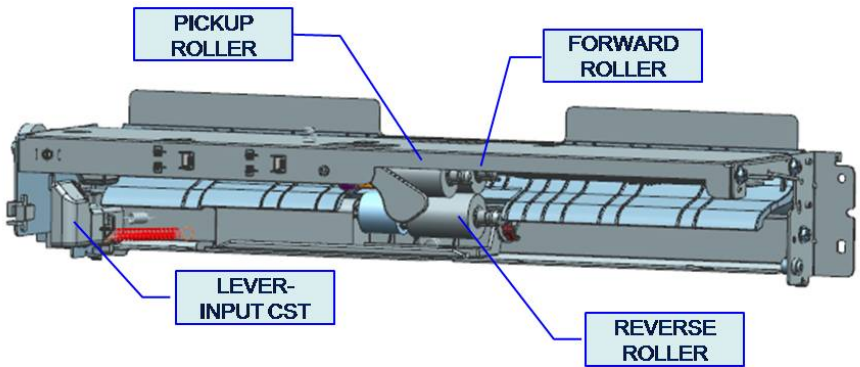
When pick-up takes place, the pickup roller moves down to come into contact with the surface of the paper. If the cassette is installed, the LEVER-INPUT CST is pushed and pick up roller moves down. The forward roller and the reverse roller serve to make sure that a single sheet of paper is moved to the paper path, and the paper is moved as far as the registration roller by the work of the feed roller.



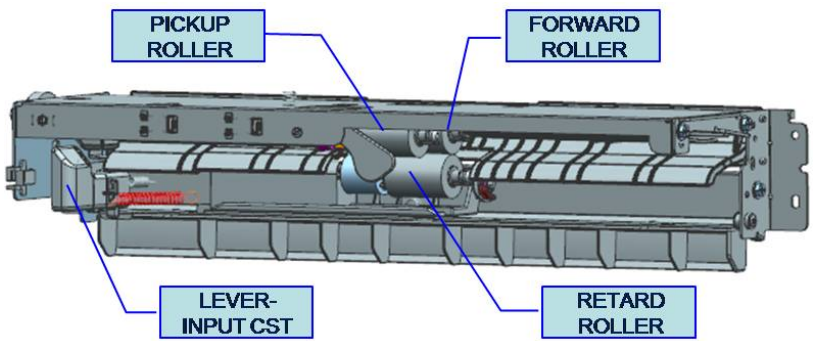
**NOTE**

The Pick-Up Unit1 and Pick-Up Unit2 can't be swapped over.

#### Pick-Up Unit1

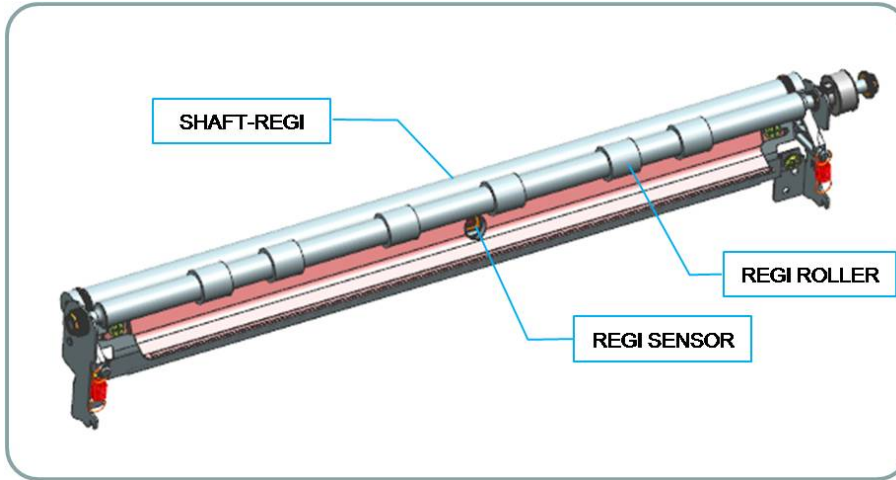


#### Pick-Up Unit2



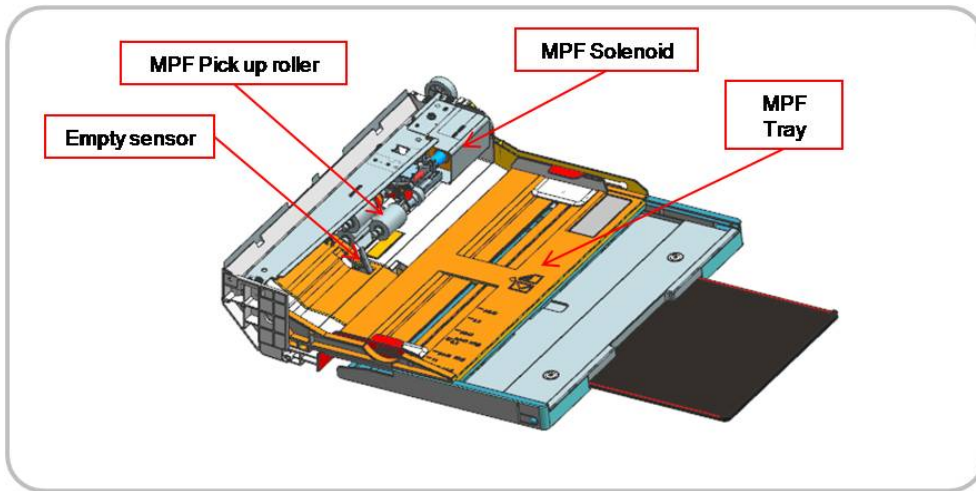
### 2.4.5. Registration Unit

The registration(Regi.) roller is driven by the Regi./MP motor. The Regi. clutch is located between the Regi. clutch and Regi./MP motor, and it controls ON/OFF of the registration roller in order to match paper and an image on the drum at the predetermined registration point.



### 2.4.6. MPF(Multi-Purpose Feeder) Unit

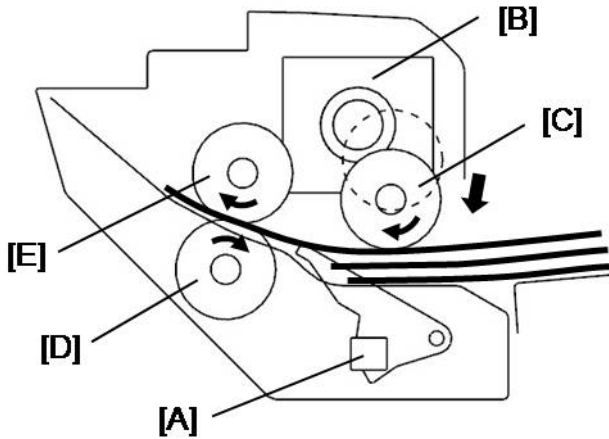
The MPF Unit allows feeding of specialty media stock, envelopes, and custom size paper.



#### ■ Specification

- 1) Capacity : 100 sheets ( 80g/ paper standard)
- 2) Media Size : Max 11. 7” ×17” (297×432 ) / Min 3.87”×5.8” (98×148 )
- 3) Media Weight : Plain paper 60 ~ 176 g/m<sup>2</sup>
- 4) Feeding Speed : 35 ppm (K4350), 30 ppm (K4300), 25 ppm (K4250) Letter/A4 LEF (Long Edge Feeding)

#### ■ Paper Separation



When the MP paper detection[A] sensor detects paper and the machine gets a MP printing job, the MP solenoid[B] drops the pick-up roller[C] onto the top of the paper stack on the MP tray.

This machine uses an FRR (Feed and Reverse Roller) system for feeding paper. The friction between the reverse roller[D] and forward roller[E] separates the top sheet of paper from the stack.

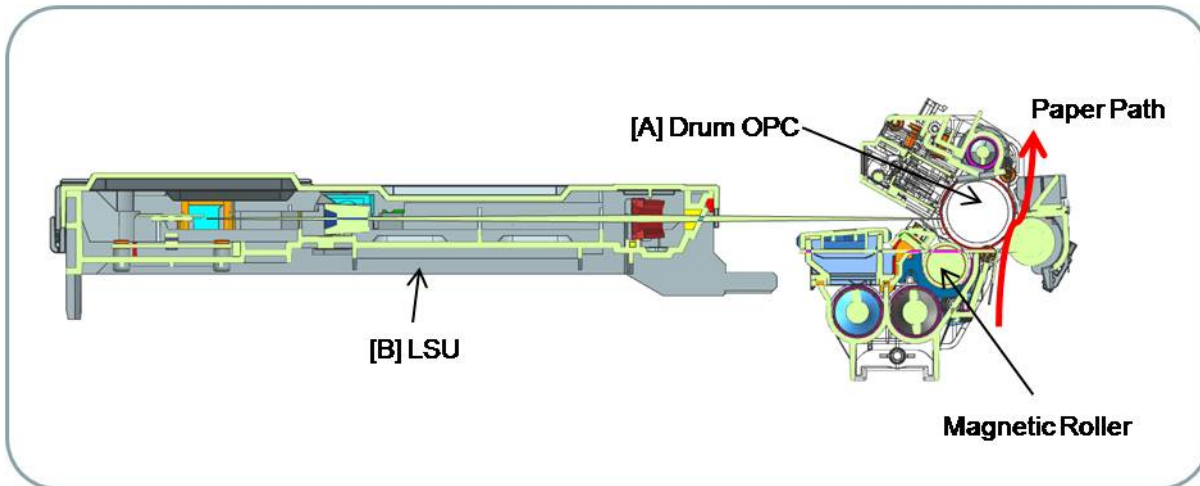


## 2.5. Image Creation

### 2.5.1. Printing process overview

This machine uses one imaging unit and one laser beam for mono printing. Imaging unit consists of a Drum unit and Developer unit.

Drum unit has an OPC drum, Scorotron, Cleaning blade.



The OPC drum [A] is charged with a negative voltage and is exposed by the light from the LSU (Laser Scanning unit) [B]. The light produced by a laser creates a latent image by discharging on the surface of the OPC drum. The negatively charged toners are attracted to the latent image due to an electric field. The toners (real image) on the OPC drum are moved to the transfer media by the positive bias applied to the transfer roller.

- 1) **OPC drum charge** : The charge roller gives the drum a negative charge.
- 2) **Laser exposure** : Light produced by a laser diode hits the charged OPC through the lens and mirrors.
- 3) **Development** : The developing roller carries negatively charged toner to the latent image on the drum surface.
- 4) **Transfer** : The transfer roller opposite the OPC drum transfers toner from the drum to the paper.
- 5) **Cleaning for OPC drum** : The cleaning blade removes remaining toner on the drum surface after image transfer to the paper.
- 6) **Quenching for OPC drum** : Discharge cleaning is done by illuminating the whole area of the drum with the cleaning lamp at the end of every job.

## 2.5.2. Imaging Unit

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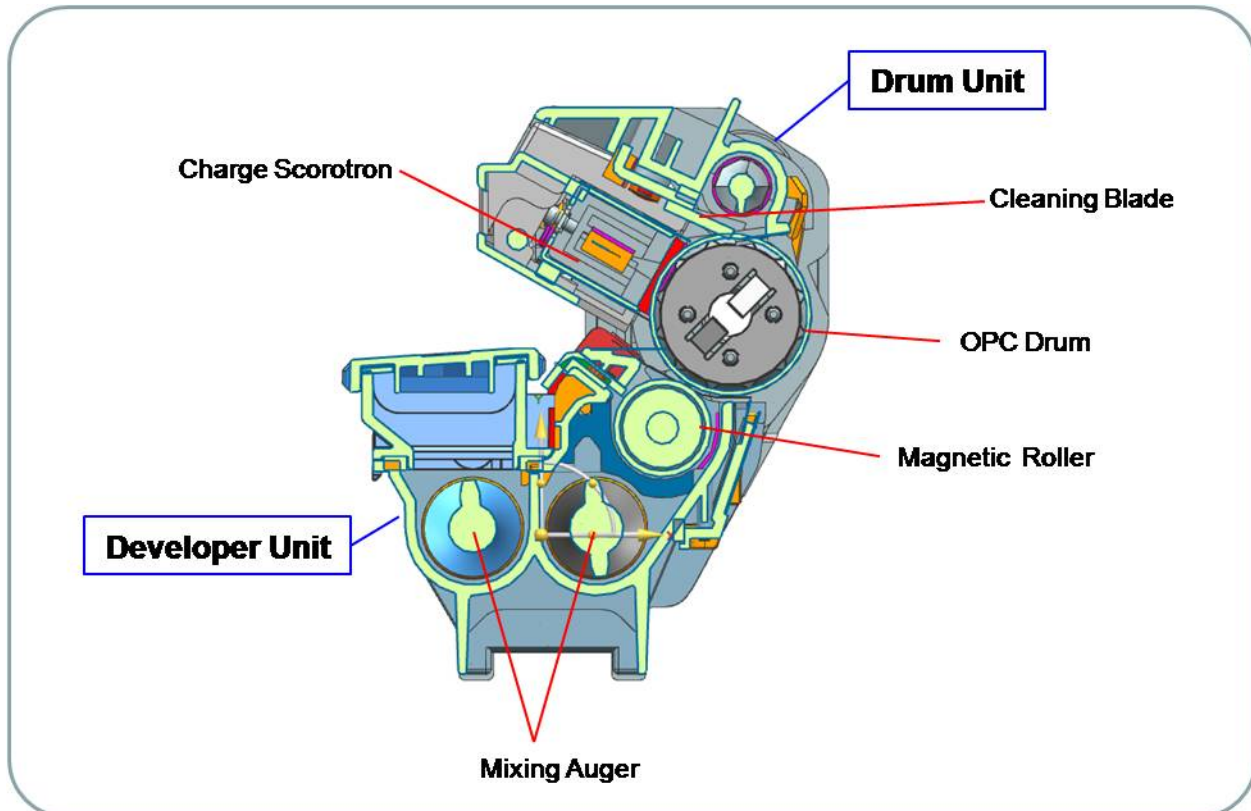
### 2.5.2.1. Imaging Unit overview

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The Imaging Unit consists of the Drum unit and the Developer unit.

The diameter of the drum is 30 mm (circumference: about 94.2 mm).

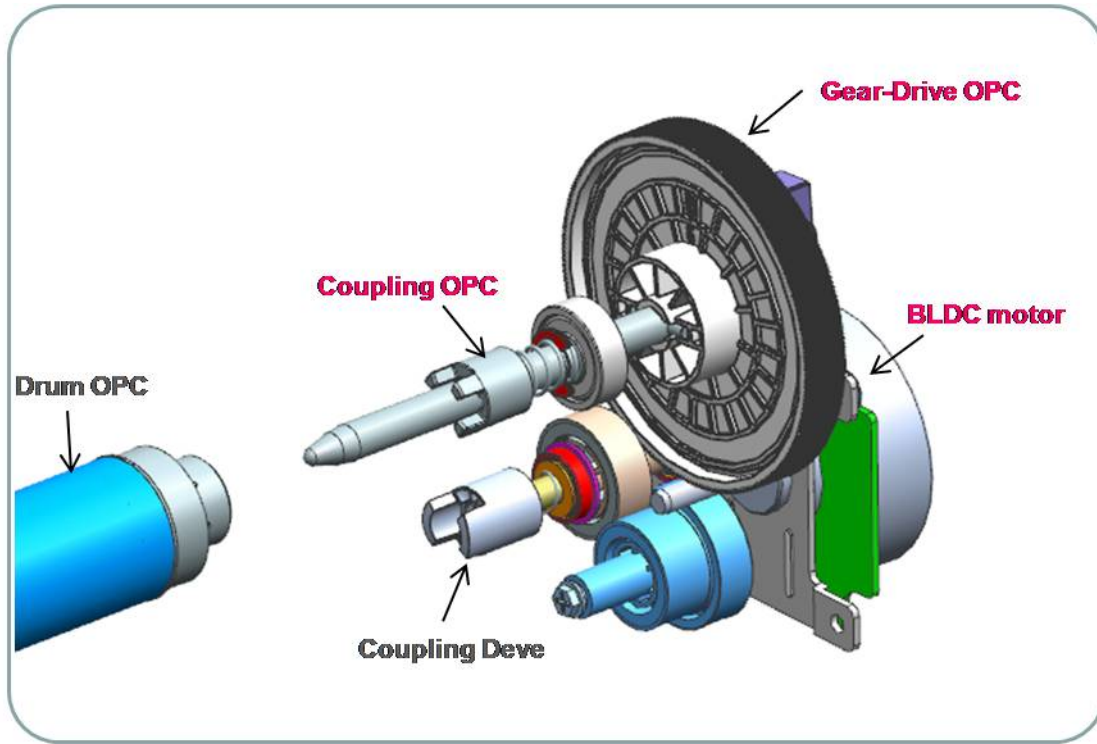
The developing gap between a drum and the corresponding magnetic roller cannot be adjusted. The ID chip is the sub part of the Drum unit. It stores the count information and several data.



### 2.5.2.2. Drum Drive

The OPC drum and magnetic roller are driven by one BLDC motor and supplied with power from the coupling.

The drive shaft is directly inserted to the OPC drum to fix the drum unit. This structure provides the stable printing quality.

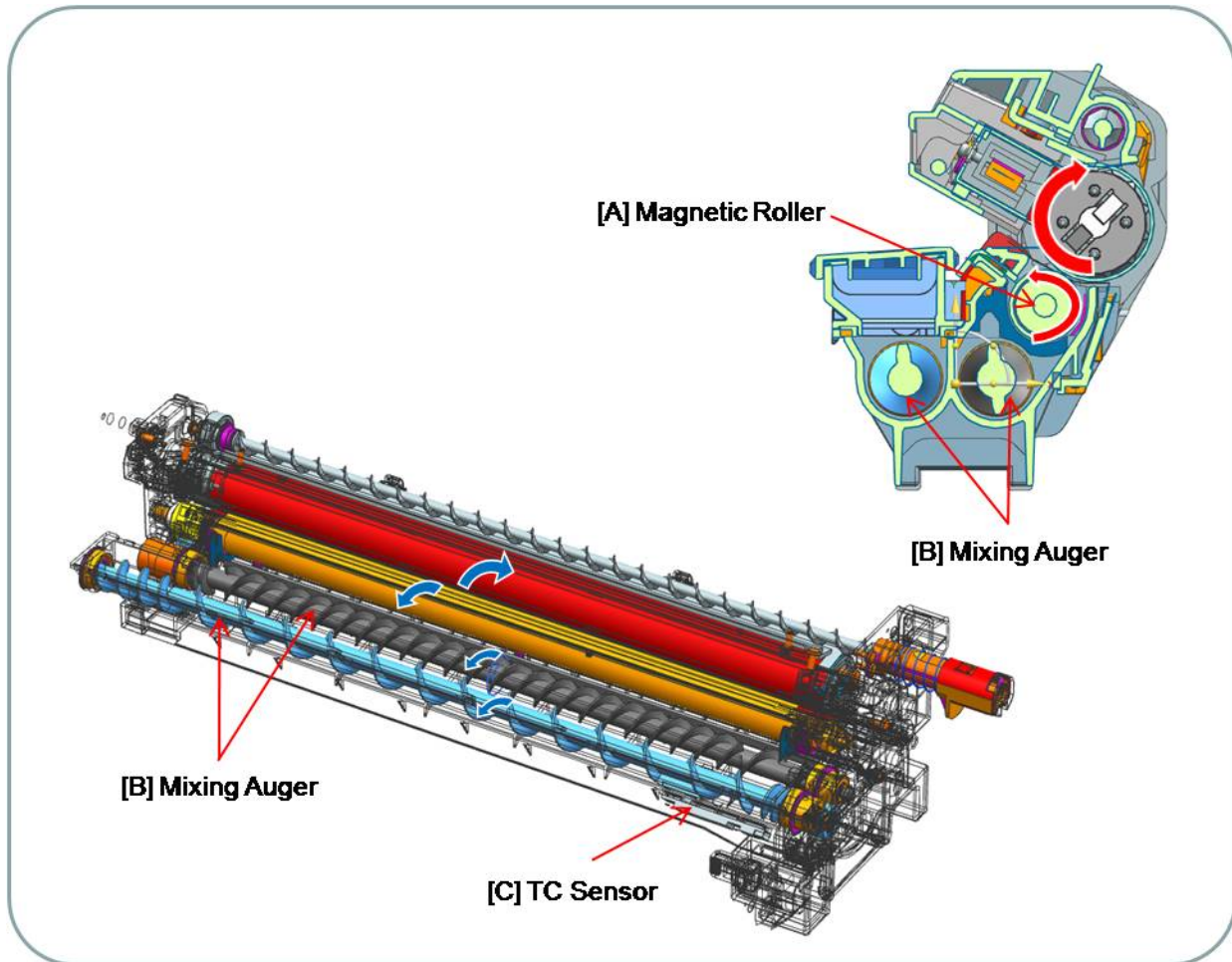


### 2.5.2.3. Developer Unit

This machine uses a dual-component development system

The developer unit contains 345g of magnetic toner carrier that is supplied to the magnetic(development) roller[A] by the two mixing augers[B]. The diameter of the magnetic roller is 18.2 mm.

The developer unit has a TC(Toner Concentration) sensor[C]. It is used for controlling the operating range of toner density.



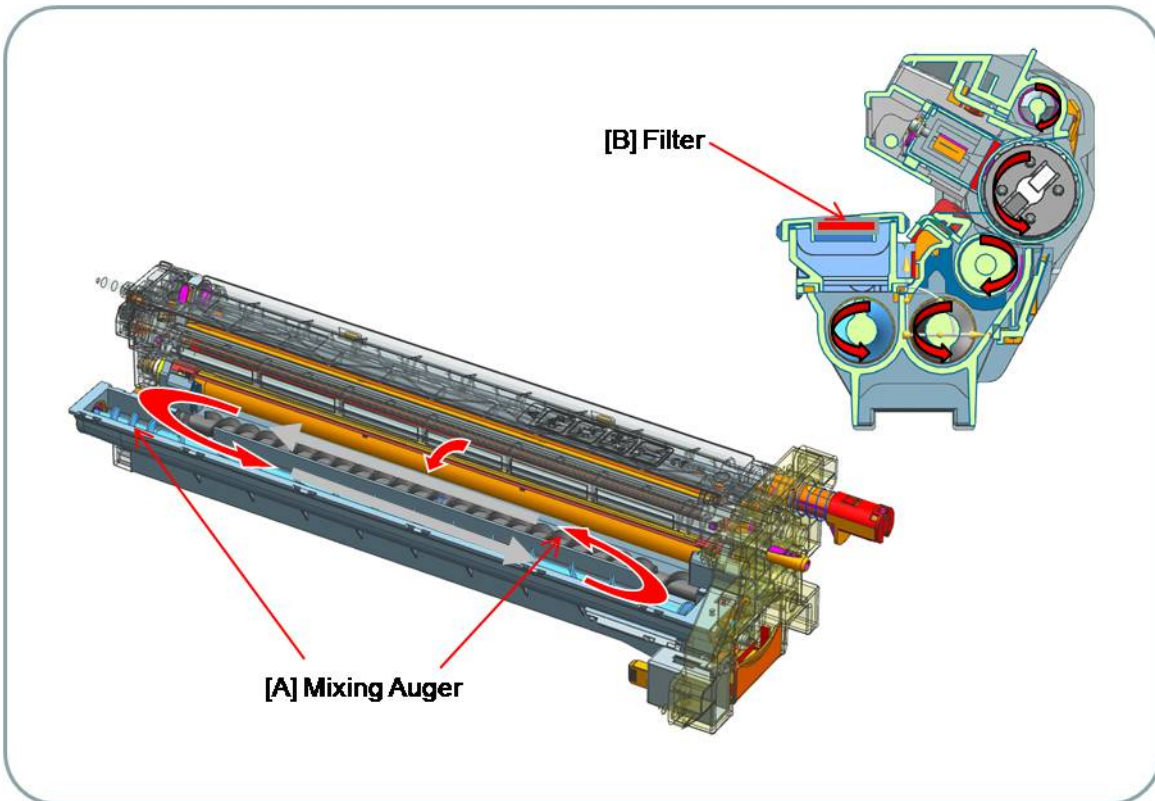
#### ■ Developer Circulation

Two mixing augers[A] circulate the developer forward and backward to agitate the developer in order to mix the developer and toner well.

This occurs at the following times :

- During the process control self-checking
- During toner supply job
- During development job

If the developer unit is stored at temperature above 50 degrees C, it does not work normally. The toner in developer unit is easy to harden at temperature above 50 degrees C.

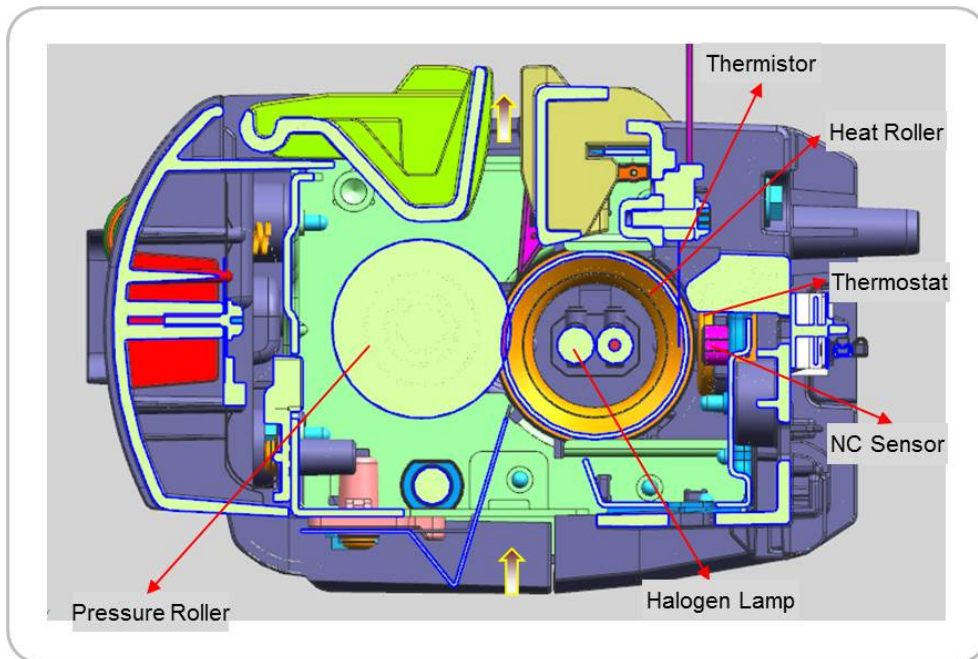


## 2.6. Fuser unit

This section describes the image fusing process used by the machine.

### 2.6.1. Fuser Unit overview

This unit fuses the toner that was transferred by the transfer roller onto the paper, by applying heat and pressure to complete fusing process. This machine applied the 2-Roller fusing system and used the thinner heat roller to improve the warm-up time.



1) **Halogen Lamp**

The fuser unit has two halogen lamps. One heats the center of the heat roller, the other heats the end of axial direction. These halogen lamps are lit alternately to heat the heat roller. Each lamp has its coil in a different location. The coil of the center heater lamp is in the center, those of the side heater lamp are on both sides. The lamps are fixed inside of the heat roller. When rotating the heat roller, these lamps do not rotate.

2) **Heat Roller**

The heat roller is made of aluminum and gets heat from the halogen lamp and transfers it to toner and paper. The thinner heat roller reduces the warm-up time and the mode switching time. To prevent the heat roller from adhering to the toner, its surface is coated with PFA. The gear located on the side of the heat roller rotates the roller.

3) **Pressure Roller**

The pressure roller is a rubber roller which ensures proper nip width between the pressure roller and heat roller. To adhere the toner on paper effectively, the pressure roller pushes the heat roller by using the spring.

4) **NC sensor**

NC sensors (non-contact type thermistors), located near the center of the heat roller, control the temperature.

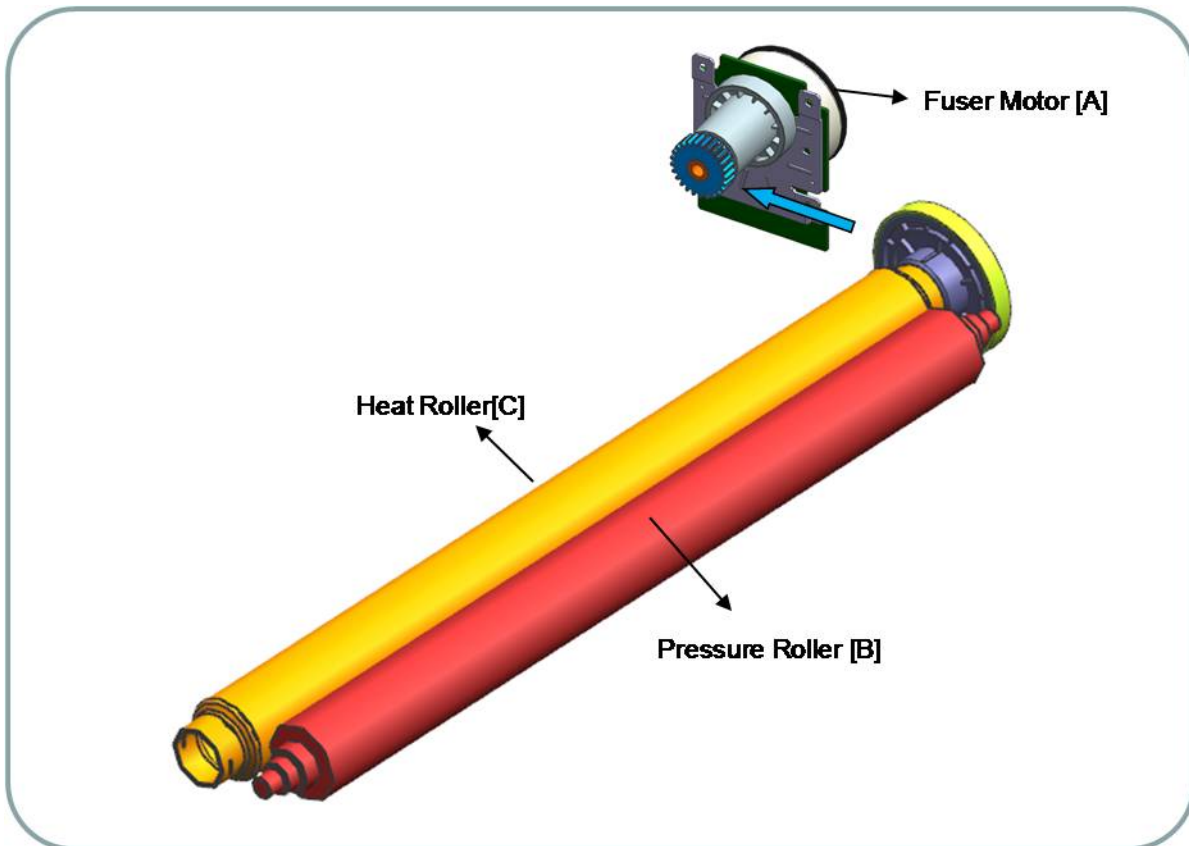
5) **Thermistor**

Thermistor detects the temperature on the surface of the heat roller and controls the halogen lamp.

## 6) Thermostat

Thermostats cut off the power supply to the halogen lamp by opening the circuit when the heat roller becomes abnormally hot as a result of problems such as NC sensor malfunction. These thermostats are used to prevent abnormal operation. When the thermostat is triggered, it must be replaced (as well as the other damaged parts in the fuser unit).

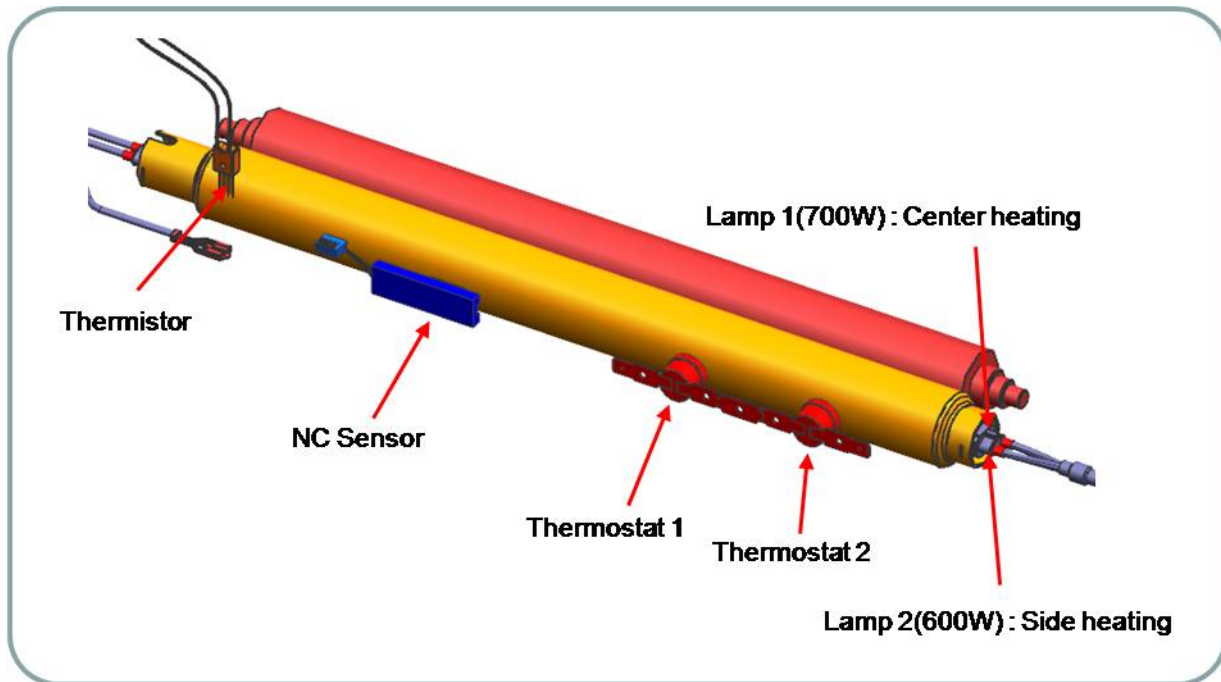
## 2.6.2. Fuser unit drive



The fuser motor[A] drives the heat roller[C] through the gear train. The pressure roller[B] pressurized by the heat roller[C] is rotated by driving it.

### 2.6.3. Fuser unit temperature control

When the main switch turns on, the CPU turns on the fusing lamp. The lamp stays on until the NC sensors detect the standby temperature. Then the CPU raises the temperature up to the printing temperature.



#### ■ Overheat Protection

The CPU cuts power to the fusing lamp in the following cases :

- The temperature detected by the NC sensors keeps higher than 240°C for 20 sec.

The following components are used when thermistor overheat protection fails :

- Two thermostats get into line with the common ground wire of the fusing lamp.
- If one of the thermostat temperatures becomes higher than 195°C, it opens and cuts power to the fusing lamp. If the other thermostat temperature becomes higher than 195°C, it also opens and cuts power to the fusing lamp.

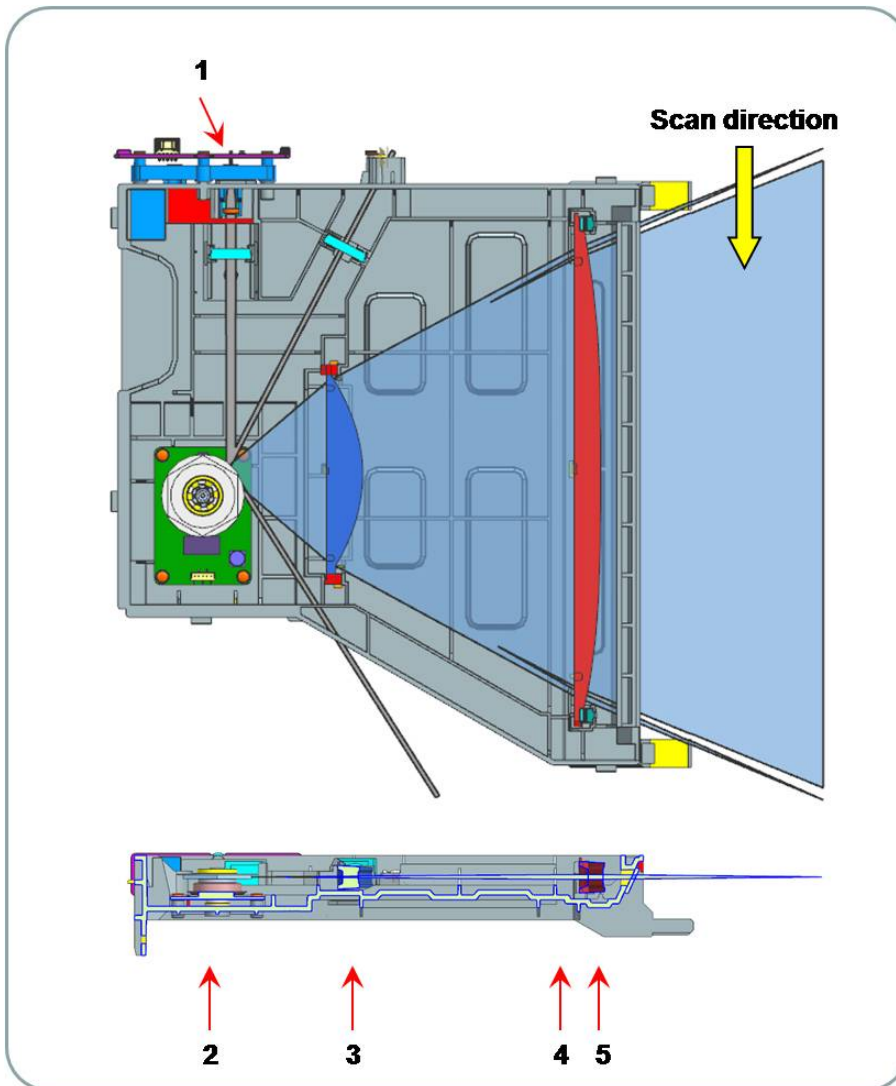


## 2.7. Laser Scanning Unit (LSU)

### 2.7.1. LSU overview

LSU consists of 1 polygon motor and 1 LD unit. It forms a latent image on the surface of the OPC drum. For this process, LSU has the collimating lens, cylindrical lens and F-Theta lens on optical path.

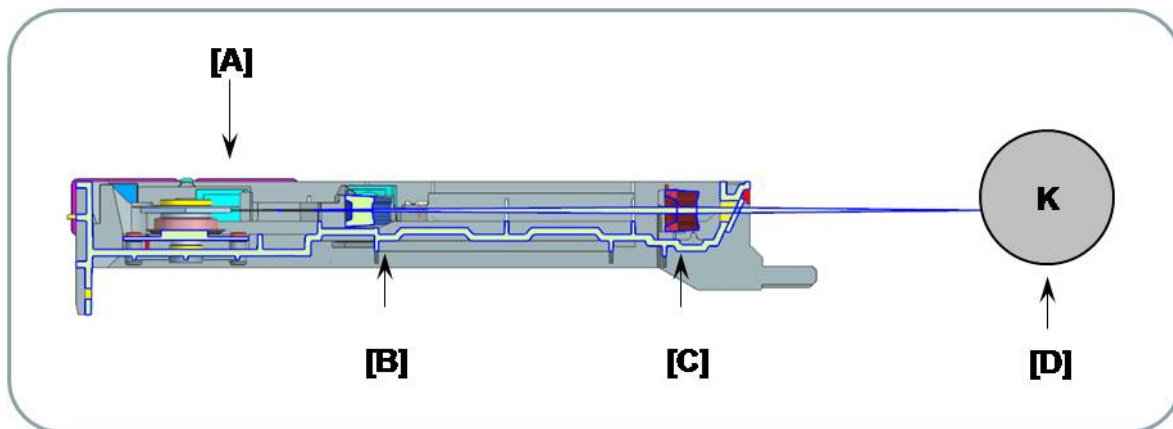
And LSU has the cover glass to protect the glass on the optical path from the contamination. The LD PBA interfaces with the machine.



1	LD PBA
2	P/Mirror Motor
3	F1 Lens
4	F2 Lens
5	Cover Glass

### 2.7.2. Laser Scanning Optical path

The laser beam moves from the polygon motor[A] to OPC drum[D]. The F1 lens[B] and F2 lens[C] determines the scanning line and the image position. This is adjusted at the factory.



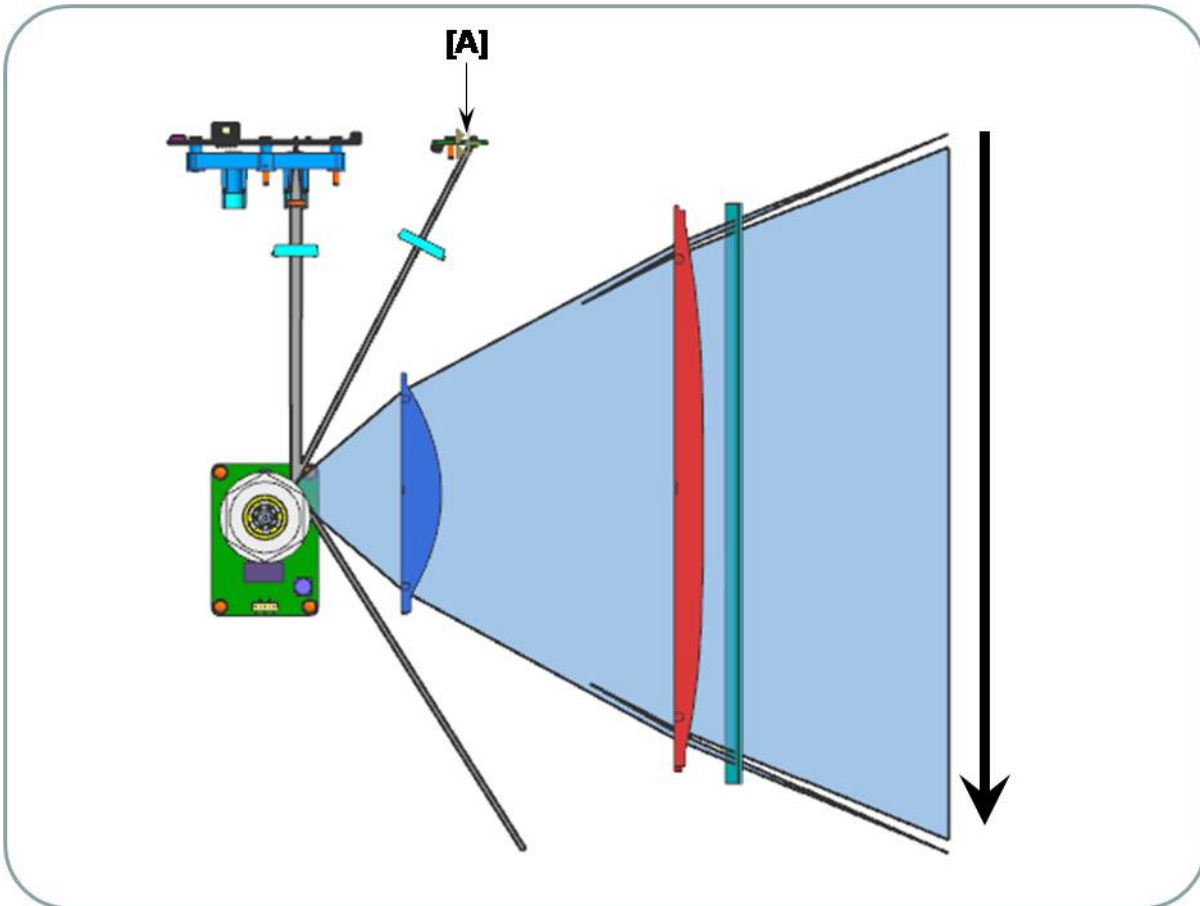
### 2.7.3. Laser synchronizing detectors

The LSU has the beam detector sensor board (PD PBA). It is located at [A] point and detects the scanning start point.

#### Main Scan Start Detection

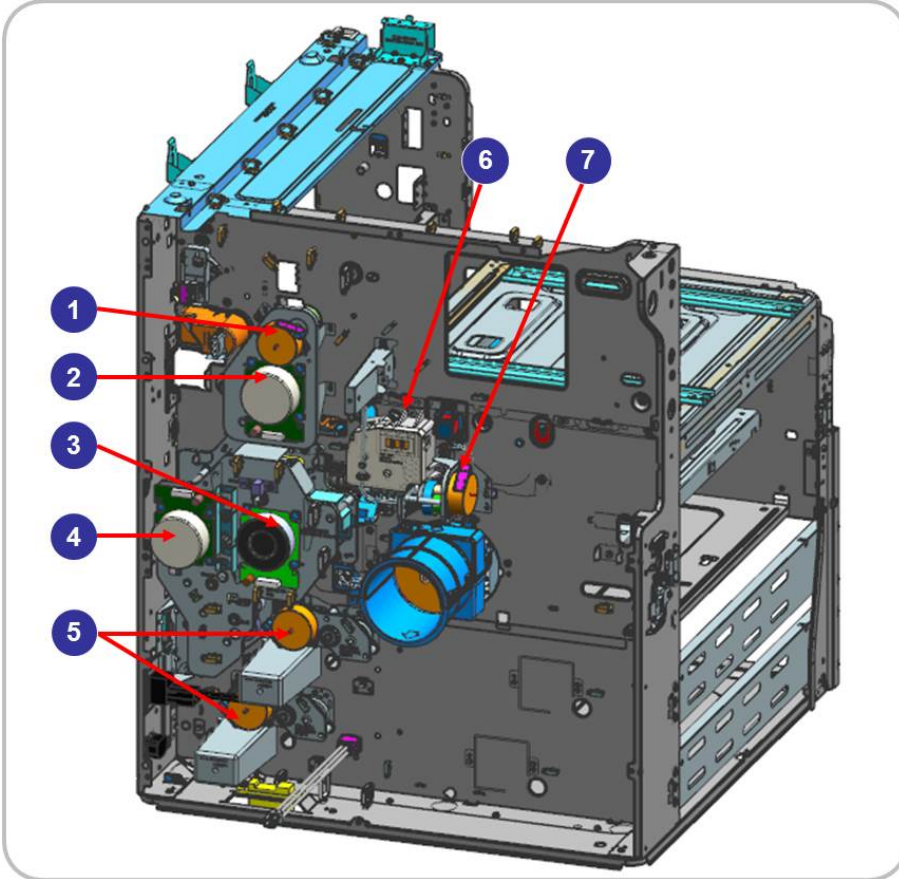
The beam is detected by the PD PBA at the scanning start point and creates the horizontal sync signal(Hsync).

The following diagram shows the data scanning direction.



## 2.8. Drive System

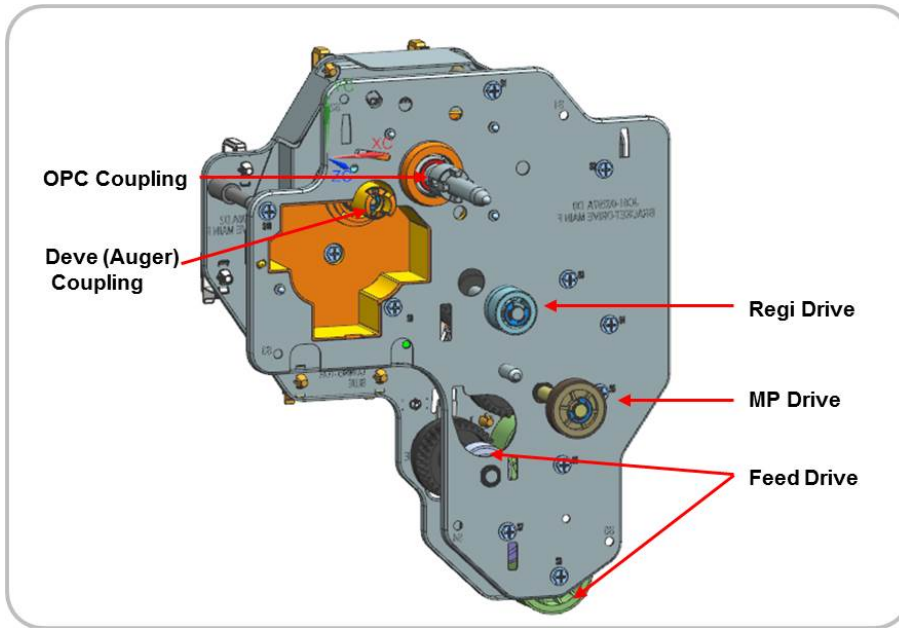
### 2.8.1. Drive Motors



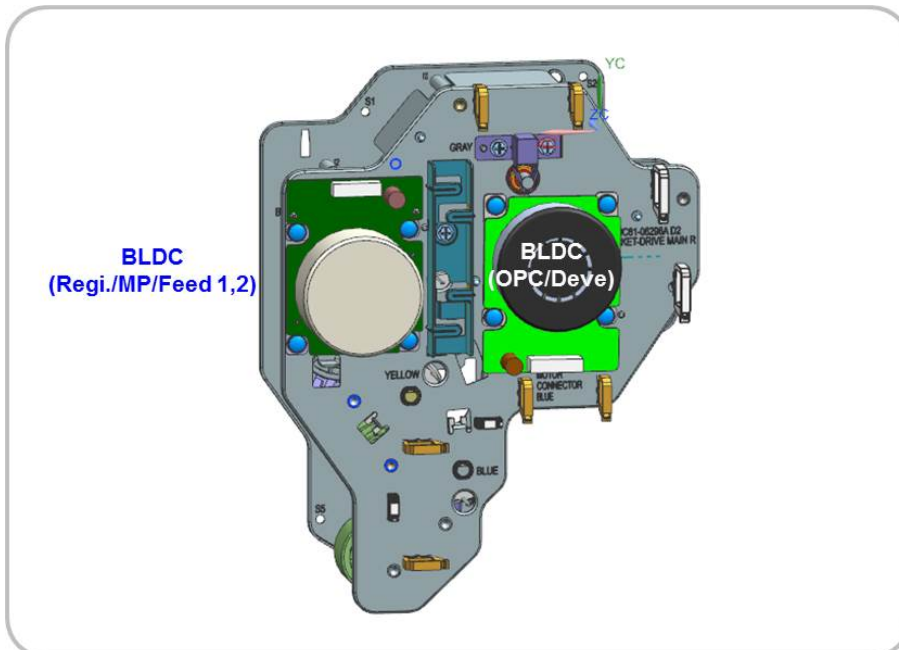
No.	Motor	Motor type	Qty	Function
1	Exit	PM-STEP	1	Exit driving (Reverse driving at Duplex job)
2	Fuser	BLDC	1	Fuser driving/Fuser pressure mode (Reverse driving at pressure mode)
3	OPC / DEVE	BLDC	1	OPC/DEVE driving
4	Regi./ MP Feed 1,2	BLDC	1	Regi / MP/ Feed 1,2 driving
		E-Clutch	3	Regi / MP / Feed driving control
5	Pick-Up	PM-STEP	2	Pick-Up Roll / CST Lift driving (Reverse driving at CST Lift driving)
6	Toner Supply	DC	1	Toner cartridge driving
7	Toner Duct	PM-STEP	1	Toner transfer in toner cartridge driving Duct

## 2.8.2. Main Drive Unit (OPC\_DEVE\_Regi\_MP\_Feed)

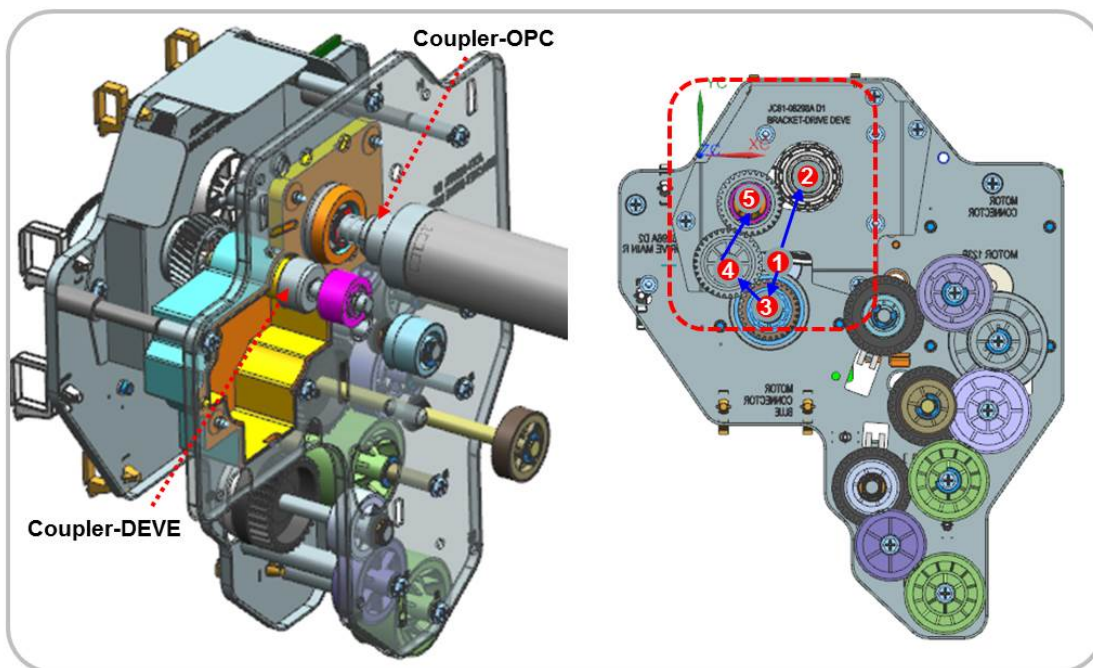
### 1) Front View



### 2) Rear View

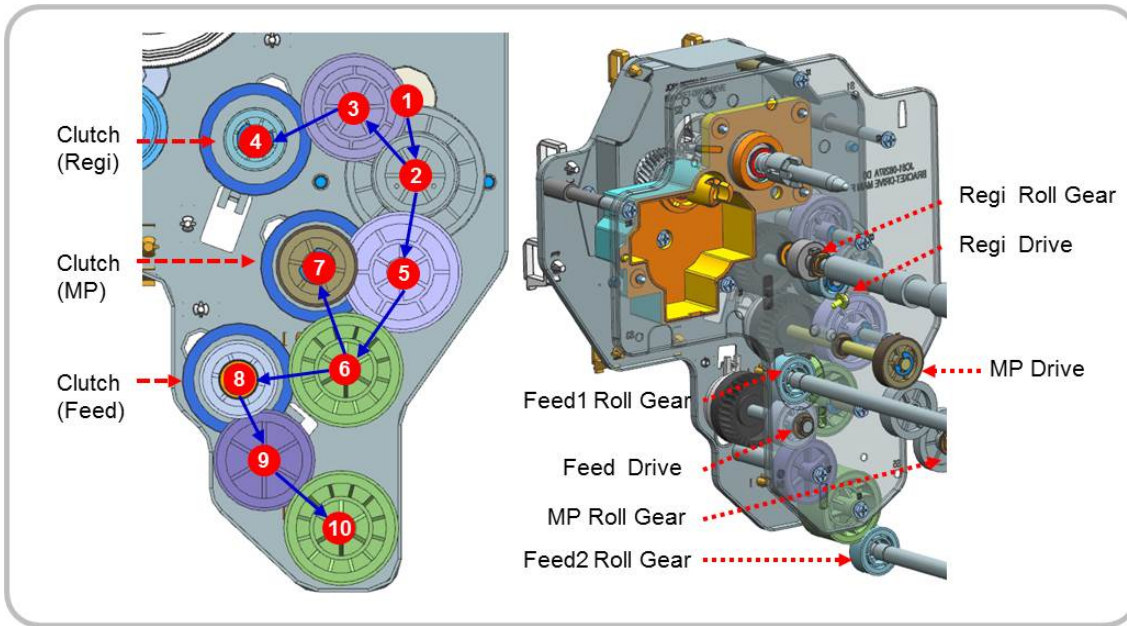


3) Main drive (OPC/ Deve)



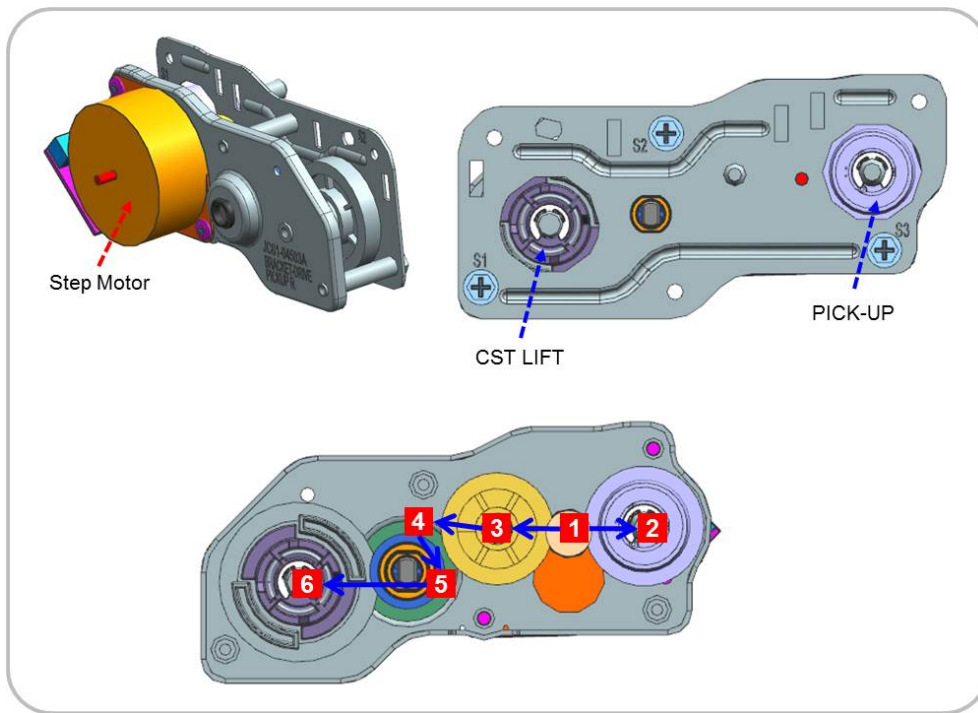
Power Train	OPC / DEVE : BLDC driving
<ul style="list-style-type: none"> <li>• 1 → 2 (OPC driving)</li> <li>• 1 → 3 → 4 (Mag. roller driving)</li> </ul>	

#### 4) Main drive (Regi./ MP/ Feed 1,2)



Power Train	Regi / MP / Feed 1,2 : BLDC driving, Clutch driving control
<ul style="list-style-type: none"> <li>• 1 → 2 → 3 → 4 Clutch/Gear (Regi Input)</li> <li>• 1 → 2 → 5 → 6 → 7 Clutch/ Gear (MP Input)</li> <li>• 1 → 2 → 5 → 6 → 8 Clutch/ Gear (Feed1 Input) → 9 → 10 (Feed2 Input)</li> </ul>	

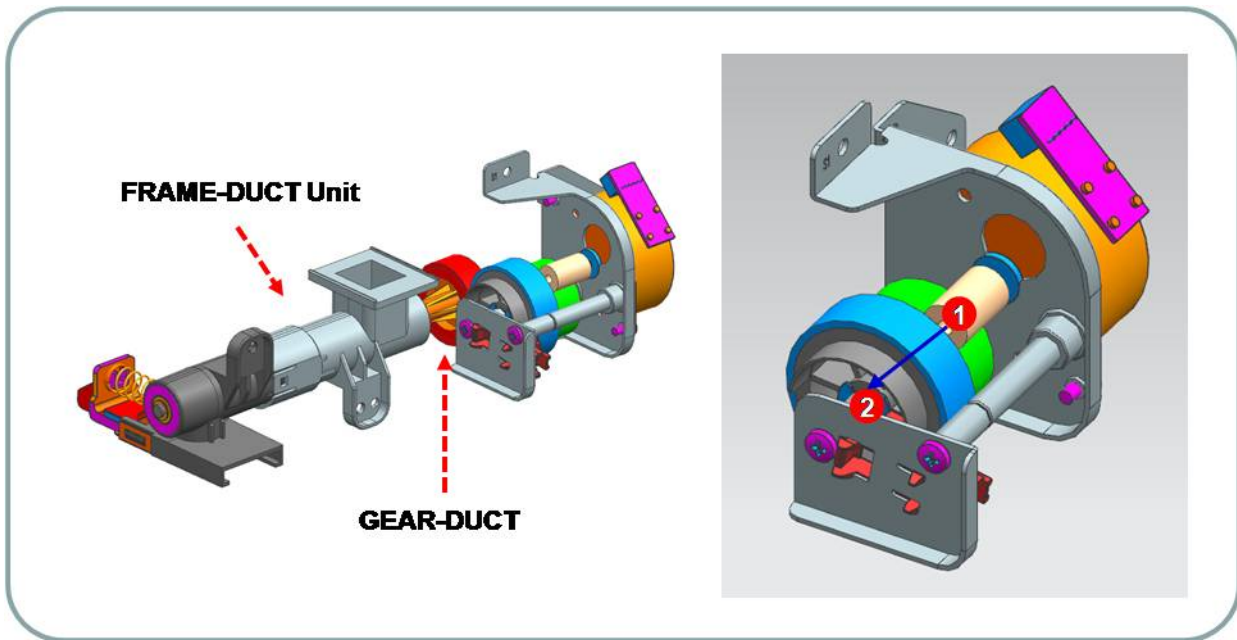
### 2.8.3. Pick Up Drive



Power Train	Pick-Up : rotating (Pick-up input) / counter rotating (Cst Lift input)
<ul style="list-style-type: none"> <li>• Step → Forward rotation → Gear 1 → Gear 2 (Pick-up)</li> <li>• Step → Reverse rotation → Gear 1 → Gear 3 → Gear 4 → Gear 5 → Gear 6 (CST Lift)</li> </ul>	

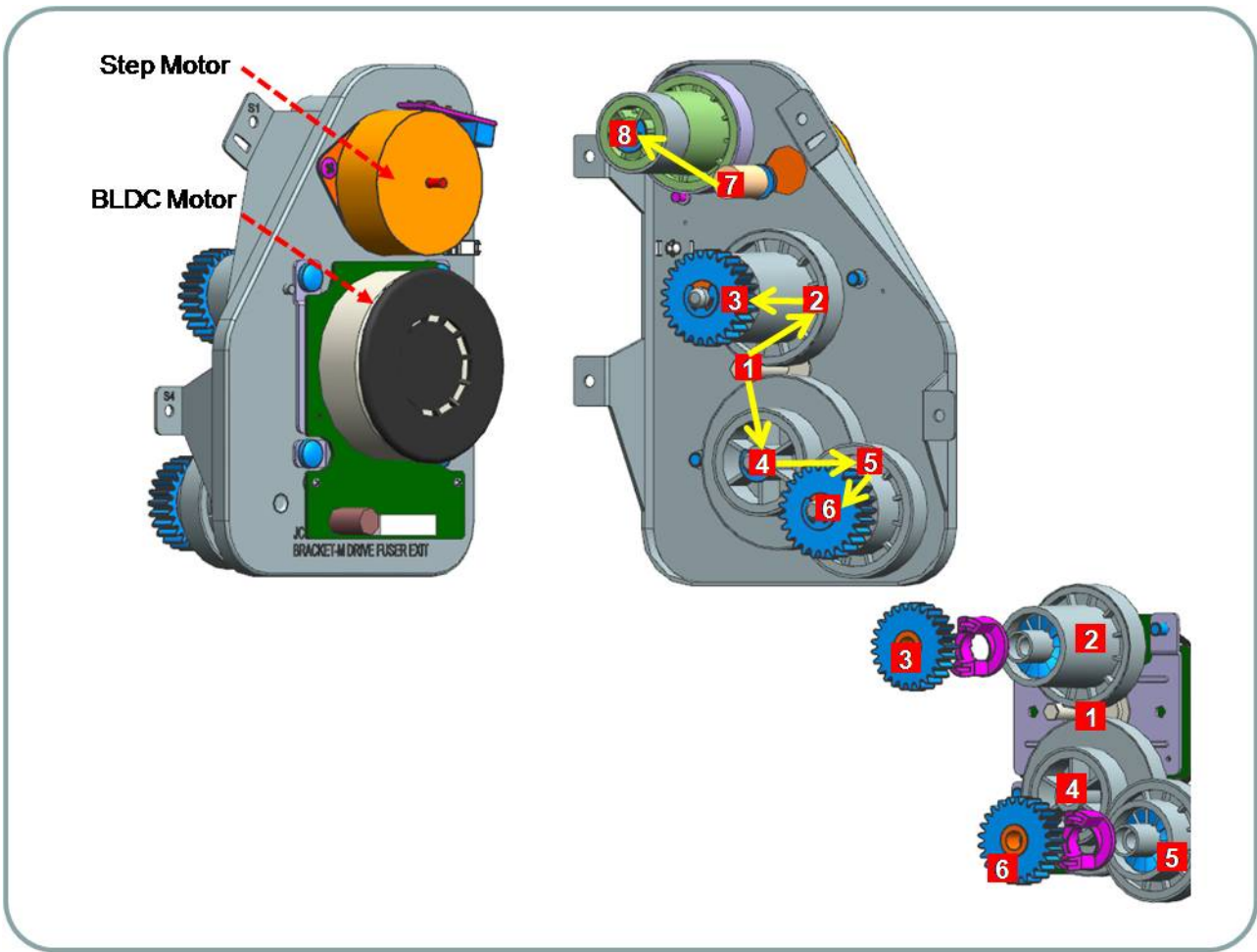


### 2.8.4. Duct Drive



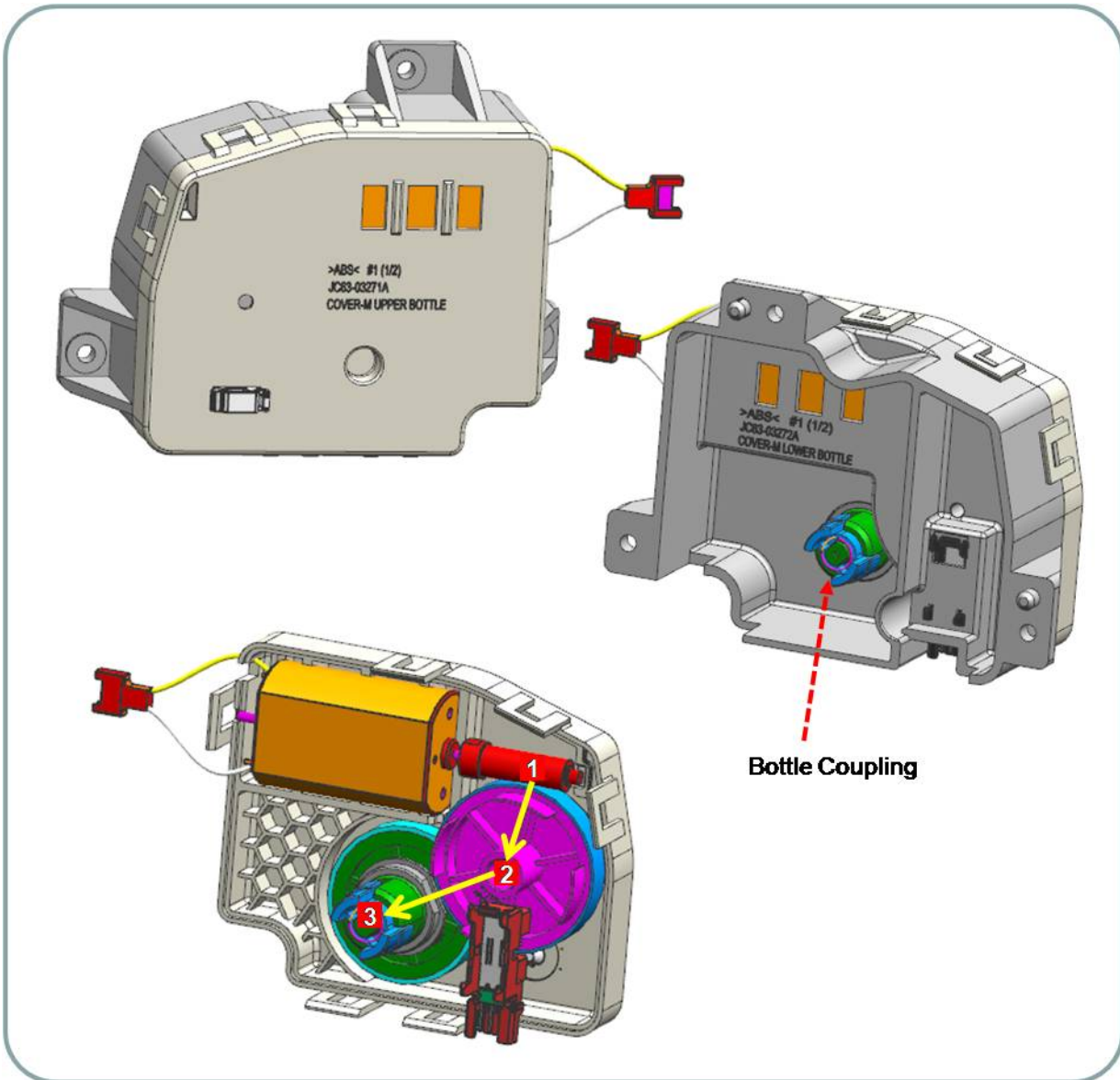
Power Train	Duct : PM-STEP driving
<ul style="list-style-type: none"> <li>• 1 PM-Step → 2 Gear → Gear Duct driving</li> </ul>	

### 2.8.5. Fuser/ Exit Drive



Power Train	<ul style="list-style-type: none"> <li>• Fuser : BLDC Motor driving</li> <li>• Exit : Step Motor driving</li> <li>• Fuser and Fuser relase One way gear are used.</li> </ul>
<ul style="list-style-type: none"> <li>• 1 BLDC Motor → counterclockwise rotation(ccw) → 2(cw) → 3(cw) (Fuser driving)</li> <li>• 1 BLDC Motor → clockwise rotation(cw) → 4(ccw) → 5(cw) → 6(cw) (Fuser Release driving)</li> <li>• 7 Step Motor → 8 RDCN Exit (Exit driving)</li> </ul>	

### 2.8.6. Toner Supply Drive



Power Train	Toner Cartridge driving
<ul style="list-style-type: none"> <li>1 DC Motor → 2 Gear-M RDCN SUPPLY → 3 Gear-M SUPPLY (Toner Cartridge driving)</li> </ul>	

## 2.9. Scanner System

This section describes the printer scanner system parts and functions.

### 2.9.1. Scanner System Overview

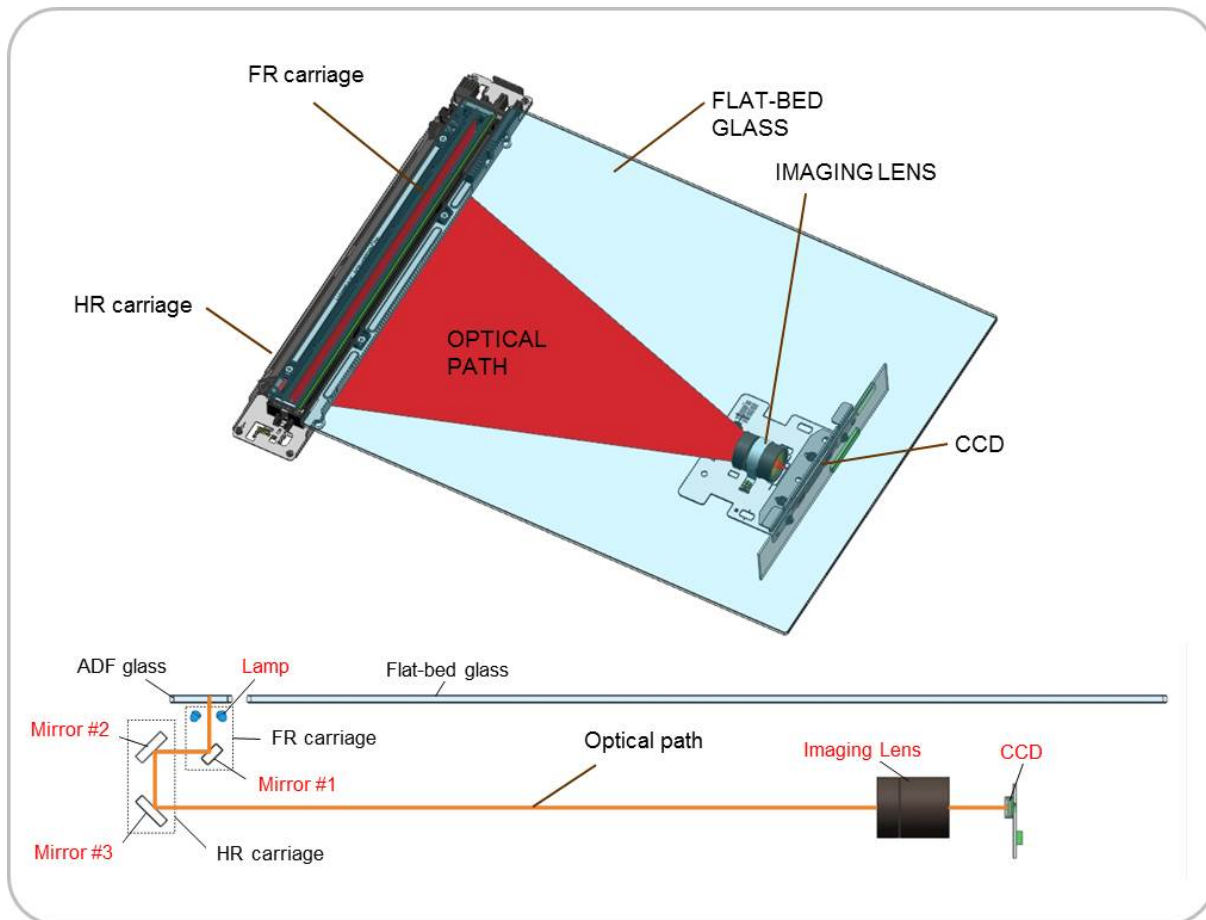
The scanner is a device to change from the image to the data. To scan the picture, image on the original, it uses the lens and CCD(Charge Coupled Device). It stores and transfers the converted image to the storage space or transfers the scanned data to the printer engine for copy.

For scan operation, the scanner uses FR carriage and HR carriage that is moved by the wire. And it scans the original document on the scan glass or ADF(Auto Document Feeding).

The scanner system consists of 3 modules following below.

- **FR(Full Rate) carriage:** Illuminates the original and reflects the light at a 90 degree angle.
- **HR(Half Rate) carriage:** Transfers the reflected light from the FR carriage to the lens.
- **Imaging module:** Make an image on CCD

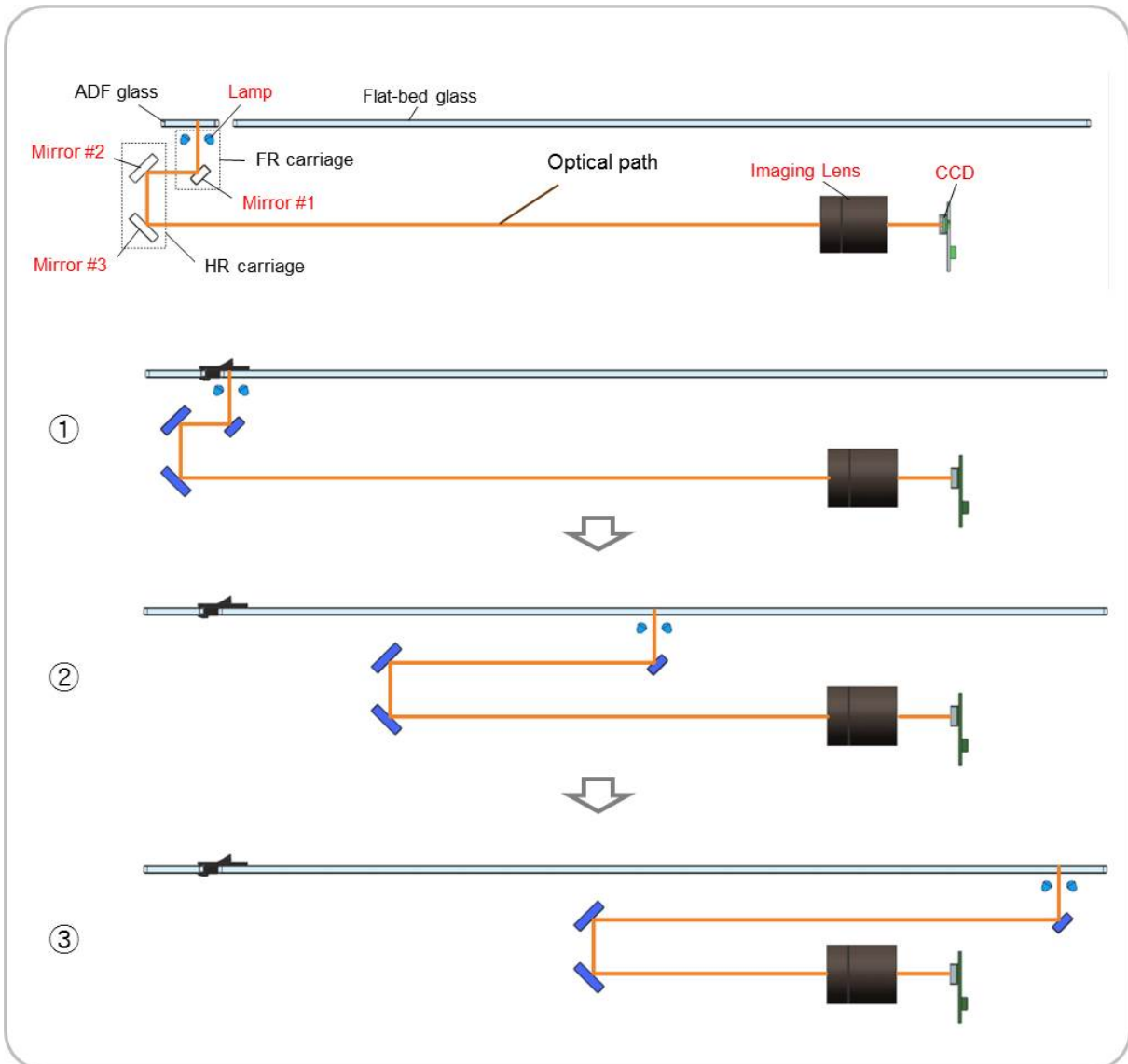
HR carriage moves at half distance and half speed of FR carriage. This principle keeps a regular gap between the original and imaging lens.



The following describes the scan process.

- 1) Lamp installed to FR carriage illuminates the original. The reflected light is moved to Mirror #1.
- 2) The reflected light from Mirror #1 is send to imaging lens through the Mirror #2,3.
- 3) The light becomes smaller and makes an optical image.
- 4) The optical image is generated to the electrical signal by the CCD sensor.

To make a stable image, the gap between original and lens must be kept. For this, HR carriage moves at half distance and half speed of FR carriage.



Optical image made by CCD sensor is changed to electrical-analog signal.

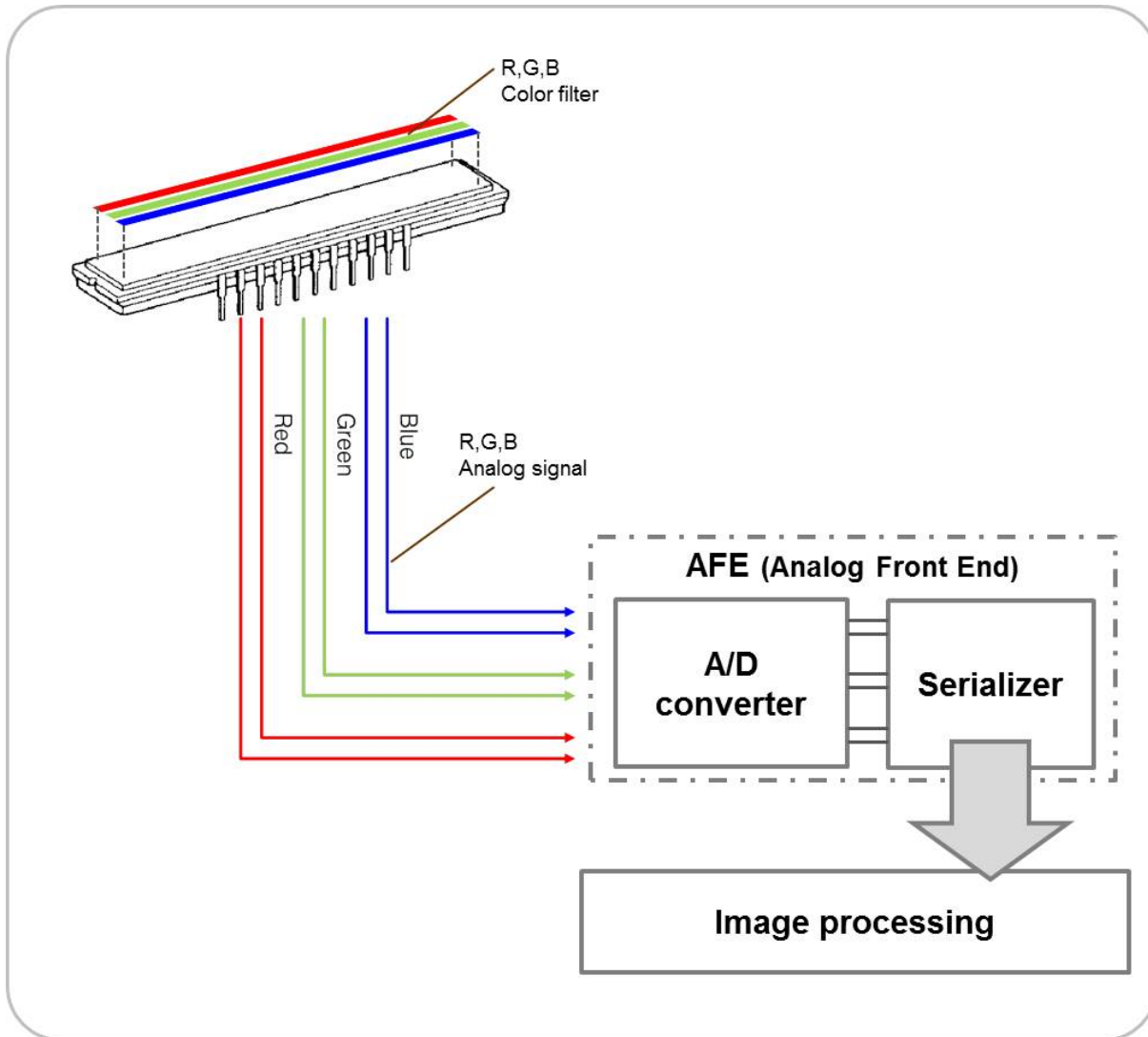
Each color element signal in optical image is separated by CCD sensor to Red, Green, Blue.

Red CCD sensor element extracts the red color from optical image, green CCD sensor element extracts the green color from optical image, and blue CCD sensor element extracts the blue color from optical image. After extraction, each color is changed to electrical-analog signal.

Analog image signal is changed to digital image signal by A/D converter and transfers to the processor.

Image scan of the main scanning direction is performed by CCD sensor. CCD sensor consist of approx. 7500 pixel. Image scan of sub scanning direction is performed by FR carriage and HR carriage. The carriage is moved by the wire driven the scan motor.

Scan resolution is 600dpi.

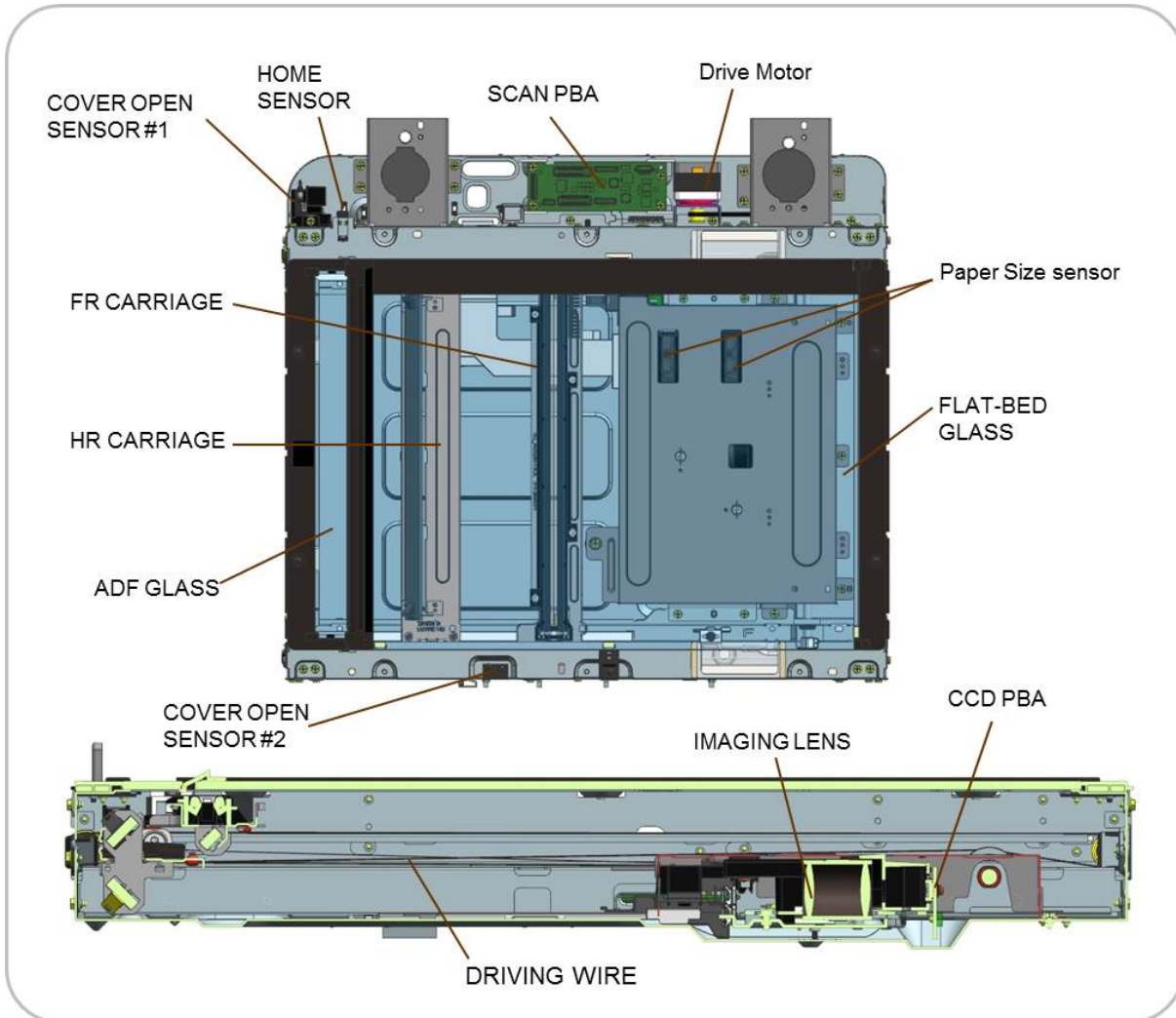


## 2.9.2. Scanning System Components

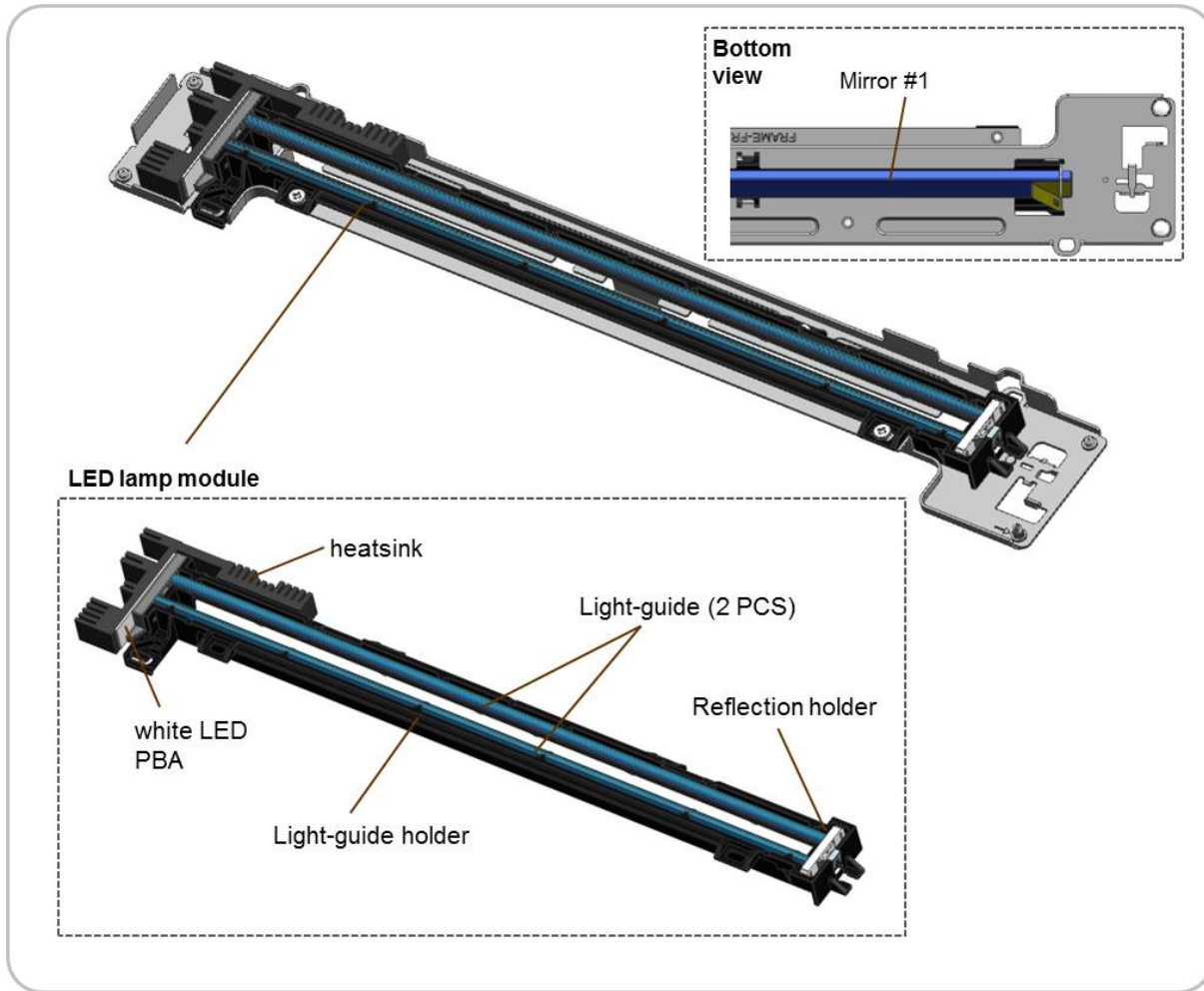
The following shows the construction and purpose of the scanning system :

To scan the original on scan glass, two carriages driven the motor moves at a regular speed. The motor drives the timing belt, pulley, and wire. The wire pulley rolls and releases the wire to move carriage.

The scanner consists of the scan glass, FR carriage, HR carriage, Imaging unit, and Driving unit.



### 1) FR Carriage



#### 1) LED lamp module

This module illuminates the light on original. Two–white LED is assembled to the side of the module. The original is illuminated by the light-guide. The heat sink is assembled to the LED PCB. When it is broken or its life is expired, engineer needs to replace it.

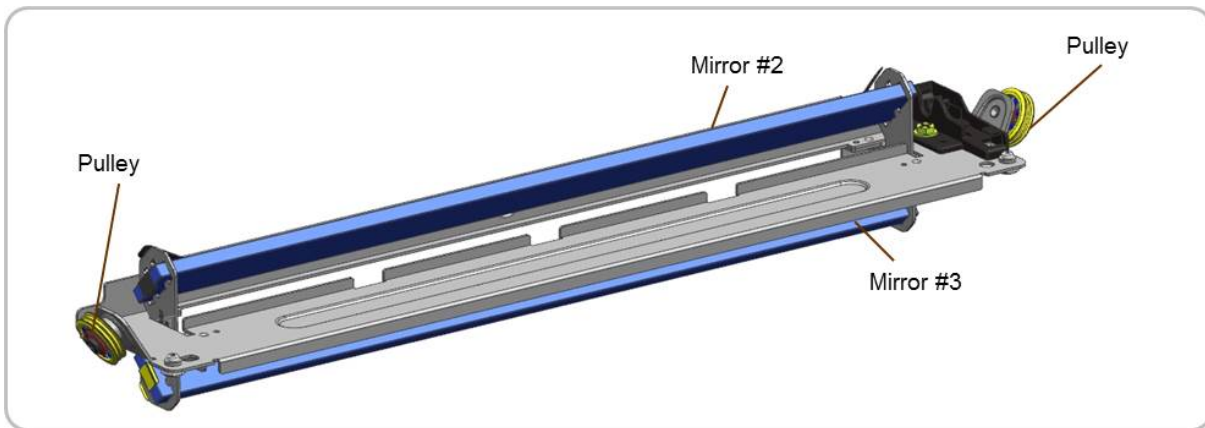
- Light-Guide  
Light-guide changes the light from the point type to the line type. It is made by the transparent resin and controls the amount of light in scan area uniformly.
- White LED  
White LED emits the white light. The heat sink assembled to the PBA prevents a heat deterioration.
- Reflection holder  
This reflects the passed light through Light-guide.

#### 2) Mirror #1

This changes the direction of reflected light at a 90 degree angle.



## 2) HR Carriage (Mirror unit)



### 1) Mirror #2, #3

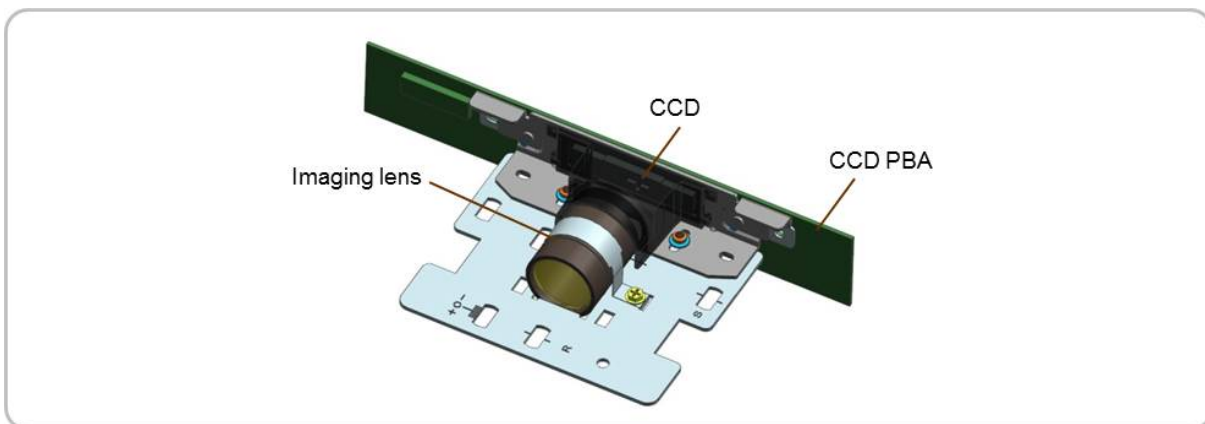
To change the light direction, Mirror #2,3 is assembled at a 45 degree angle. The reflected light from Mirror #1 is sent to imaging lens through the Mirror #2,3.

### 2) Pulley

This is Ball bearing type. Pulley rolls and release the wire. This makes the HR carriage move the half distance of the FR carriage.

## 3) Imaging unit

Image unit changes from the optical image to electrical signal.



### 1) Imaging lens

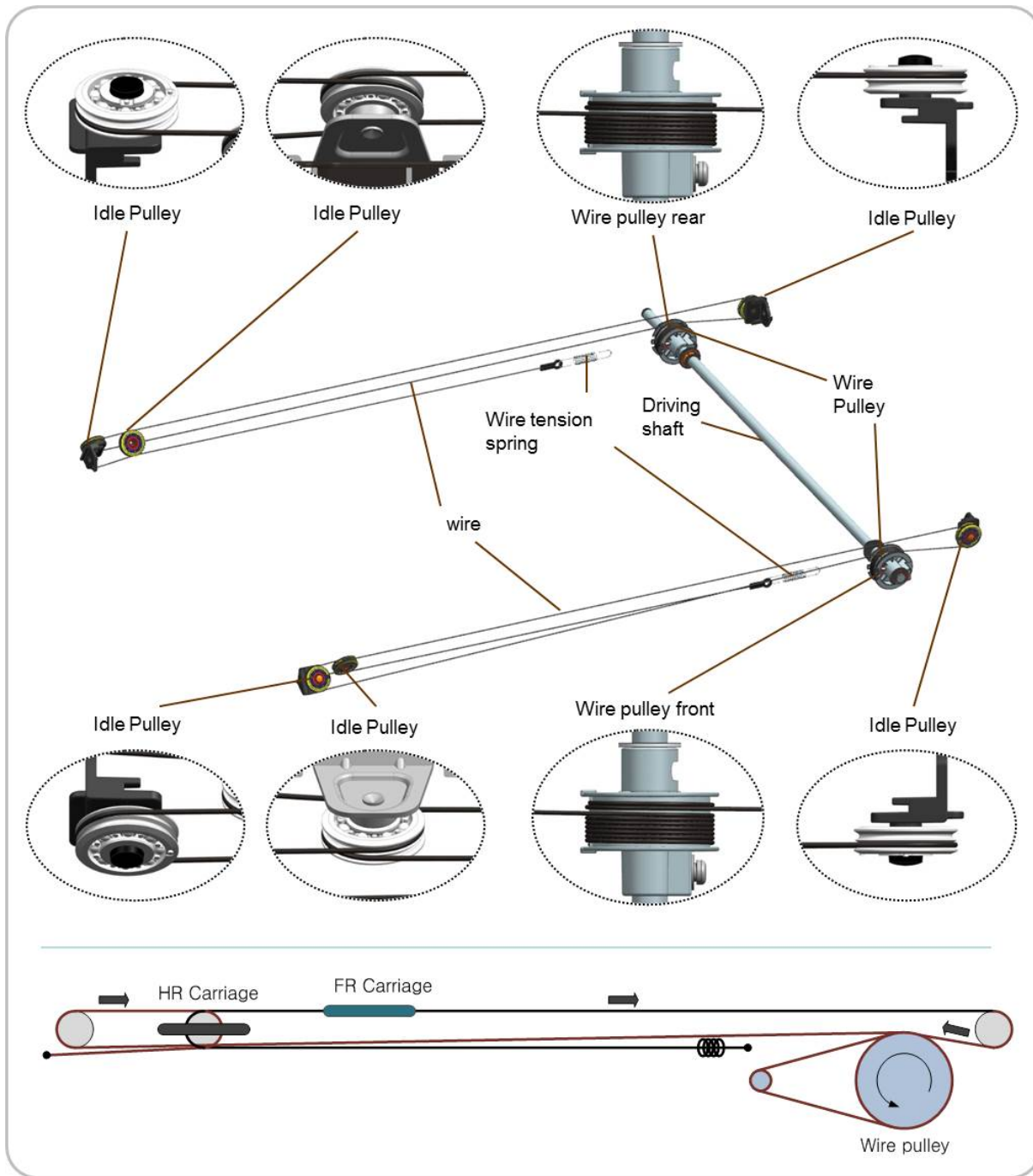
The reflected light through the imaging lens is focused on CCD. The image reduces to fit the CCD sensor size and pixel size CCD.

### 2) CCD PBA

The image made by lens is changed to the electrical signal by CCD. CCD consists of 3 channel line sensor for color image creation. The brightness and darkness of image is settled to the voltage level from CCD. The output voltage is changed to the digital signal. The digital signal makes the scan image through image process.

## 4) Wire driving

To move the carriage stably, the wire is assembled in the front and rear position of the scanner. Pulley rolls and release the wire to move the FR carriage and HR carriage.



### 5) Flat-bed glass

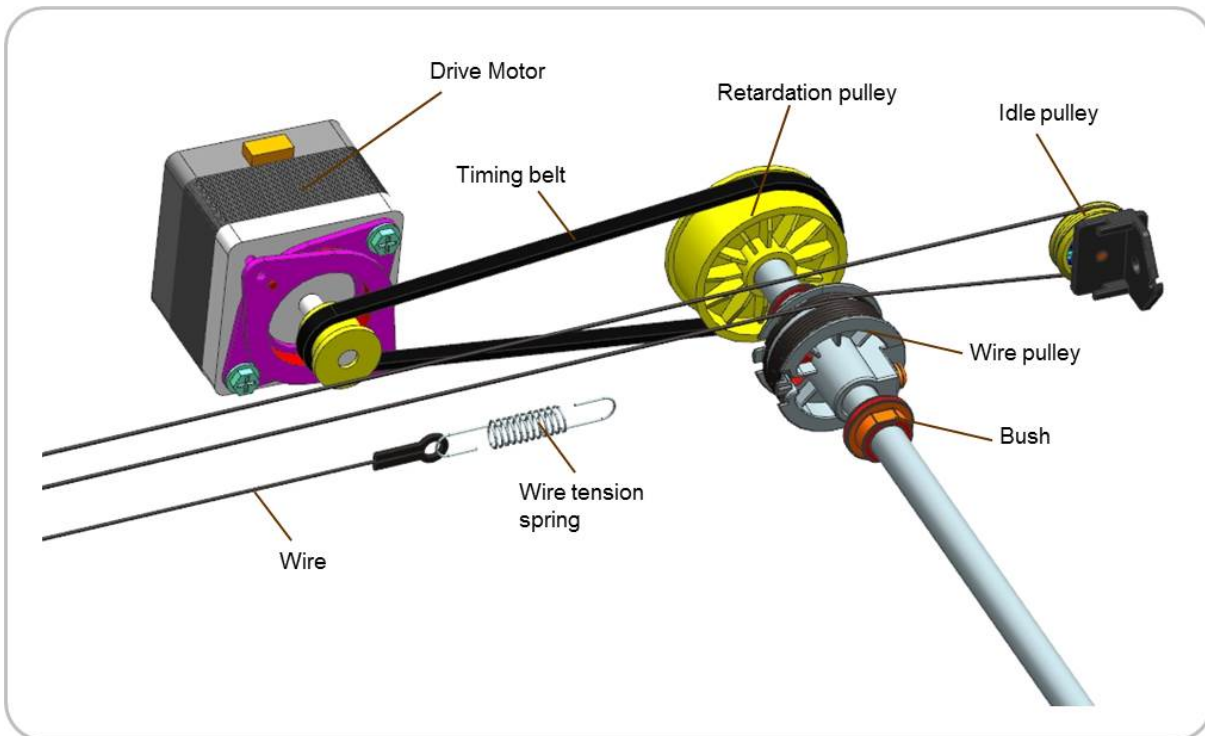
The original is placed on the flat-bed glass for scan or copy. This is made by the tempered glass and is fixed by the frame to prevent the distortion.

### 6) Drive motor

Scanner drive system uses the step motor to move the carriage. It controls the position and constant speed. The motor power is transferred to the wire through timing belt and pulley.

### 7) Timing Belt

Timing belt has the regular sawtooth and transfers the motor power to the pulley.



### 8) Paper size sensor

This detects the paper size on scan glass automatically. It has 2 sensors. It uses the infrared LED to detect the dark original.

### 9) Home sensor

This is to detect the FR carriage position. It is a transmission photosensor.

### 10) Cover open sensor #1

When the ADF unit open and close, this has trigger function to detect the on/off of paper size sensor. And this detects the width of the original.

### 11) Cover open sensor #2

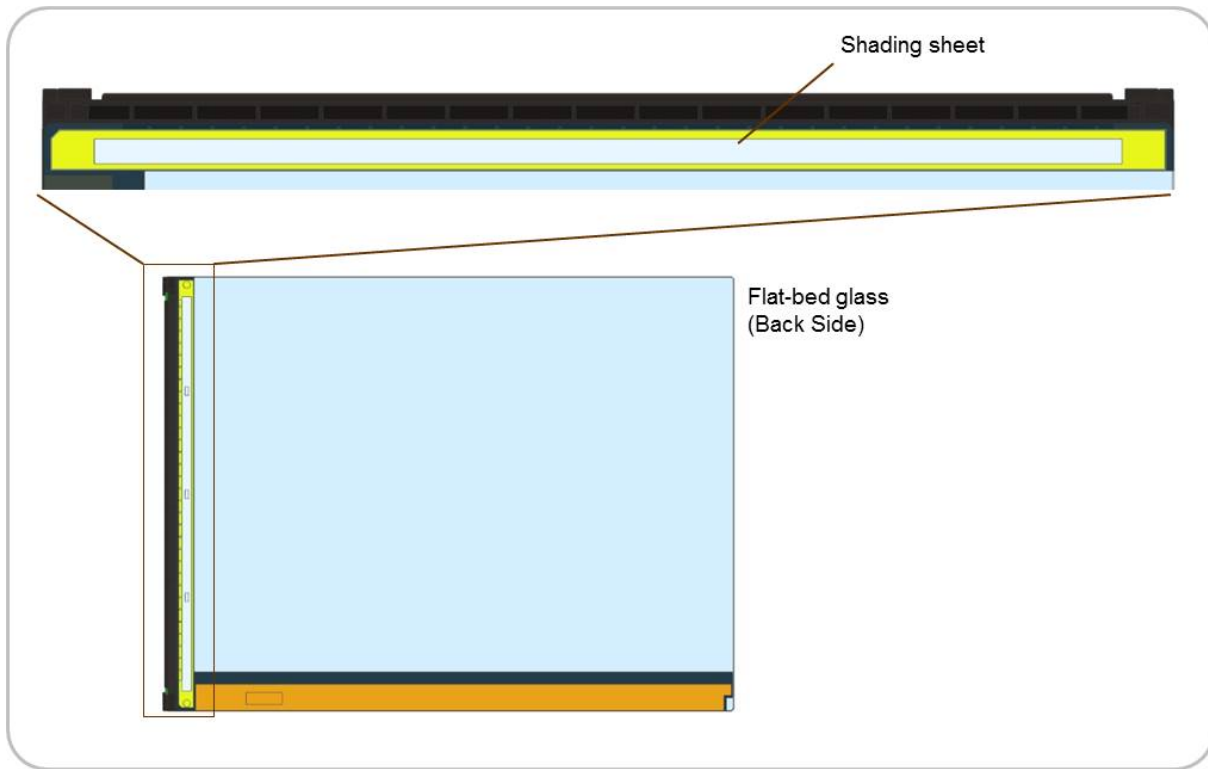
This is the reed switch to detect that the ADF unit is closed. It uses the magnetic force for ADF close detection.

### 12) ADF glass

ADF glass scans the original through ADF unit. When the original passes on this, FR carriage reads the original. If it is contaminated, the horizontal black line or white line can be created.

### 13) Shading sheet

This makes the scan module detect the base for white color. Before every scan-job, scan module reads the shading sheet to scan image as same color and brightness. If it is contaminated, the vertical image can be created.



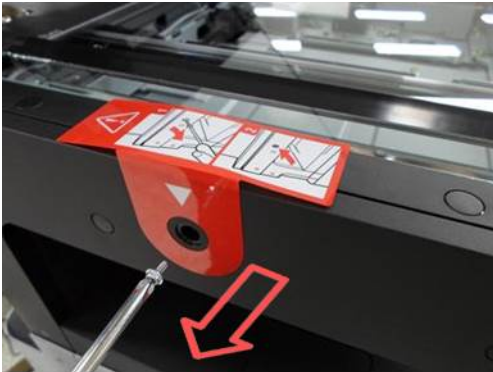
### 2.9.3. Caution for moving the scanner

When shipping or moving, the FR and HR carriage in scanner is slipped or swayed. To prevent the damage of the FR and HR carriage, carriages must be fixed.

#### 1) When installing

After unpacking, before turning the machine on, the scan locking screw must be removed. If not, it causes the scanner failure.

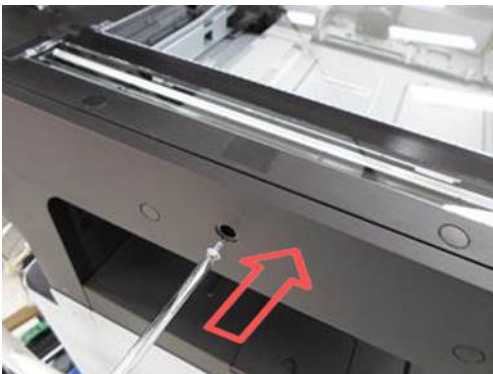
- 1) When installing the machine, remove the scan locking screw.
- 2) After removing the screw, assemble the screw cap from accessory package.



#### 2) When moving

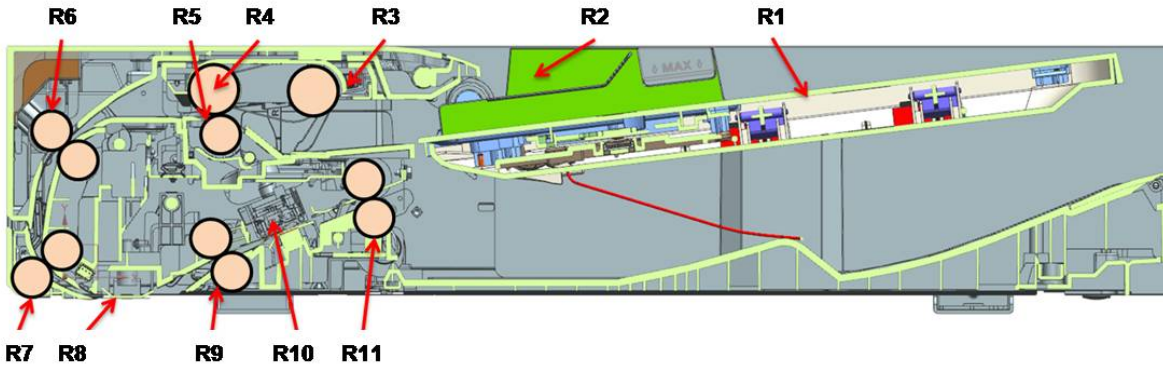
When moving the machine, tighten the scan locking screw to prevent the damage of the carriage.

- 1) Check if the FR carriage is located to the home position.
- 2) Remove the screw cap.
- 3) Tighten the M3×8 screw to fix the FR carriage.



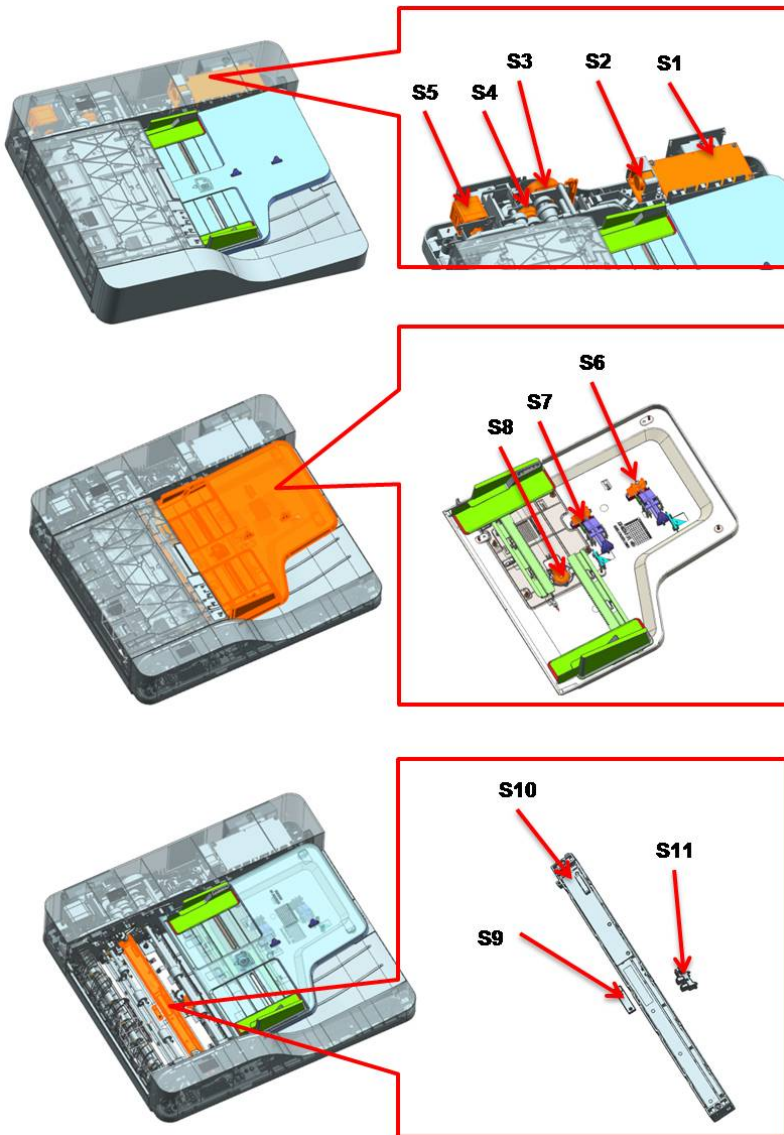
## 2.10. Dual Scan Document Feeder(DSDF) for K4350 and K4300

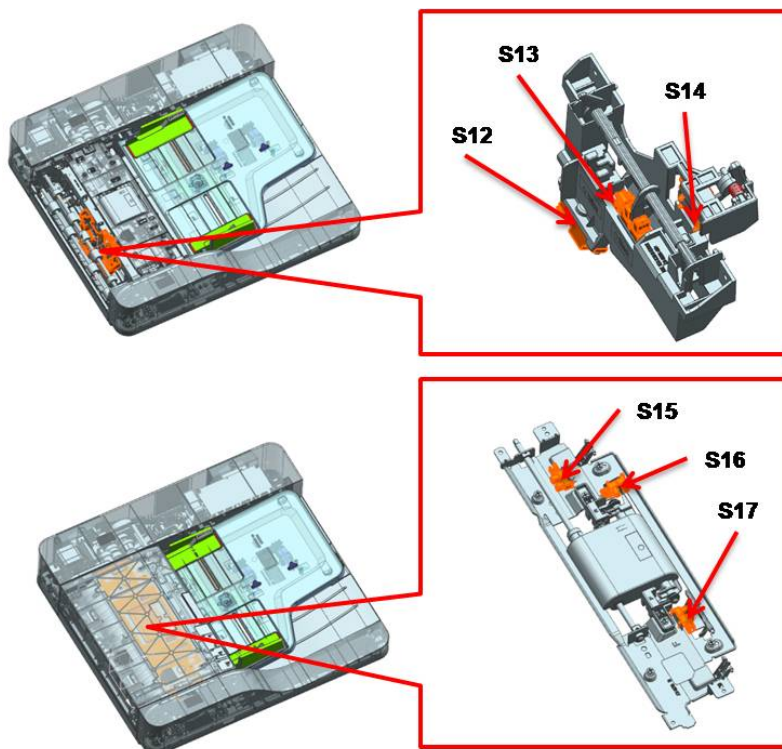
### 2.10.1. DSDF overview



Symbol	Part Name	Function
R1	Stacker Assy	Paper input tray
R2	GUIDE-DOCU F&R	Paper guide for skew prevention
R3	Pick-Up roller	Picks up an original from the tray.
R4	ADF roller	Separates an original from the tray and transfers it to the paper path.
R5	Reverse roller	Prevent the multi-feeding.
R6	Regi. roller	Aligns the leading edge of the paper for registration.
R7	Scan In roller	Feeds an original before simplex scanning.
R8	Simplex White-Bar	Supports a stable scanning.
R9	Scan Out roller	Feeds an original before duplex scanning.
R10	D-CIS module	Scans a back page of original.
R11	Exit roller	Transfers a scanned original to the exit tray.

## 2.10.2. Electrical parts location



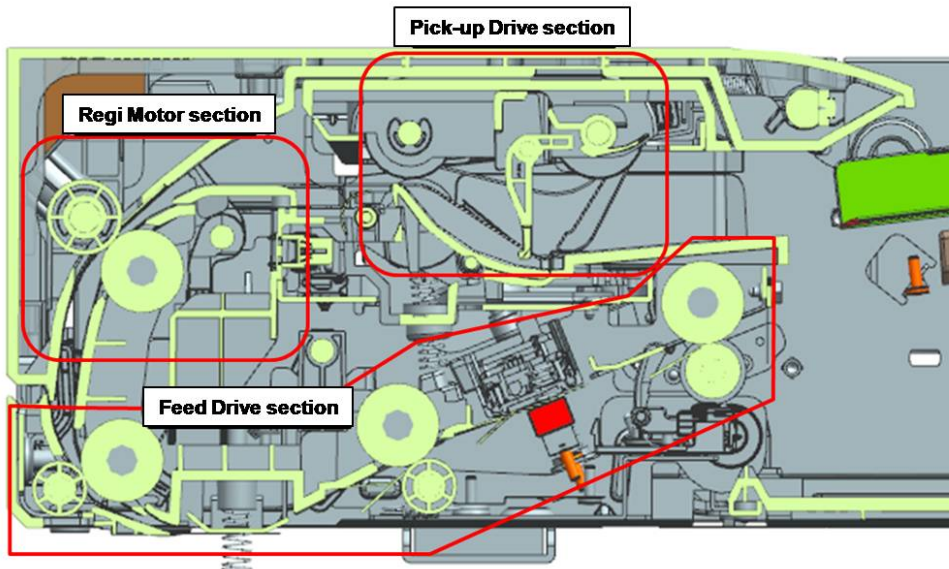


Ref.	Description	Part Code	Controller board
S1	ADF-PBA	JC92-02729A	ADF-PBA
S2	FAN	JC31-00146A	ADF-PBA
S3	MOTOR-BLDC TYPE1(PICK-UP/FEED)	JC31-00163A	ADF-PBA
S4	CLUTCH-ELECTRIC	JC47-00038A	ADF-PBA
S5	STEP-MOTOR(REGI)	JC31-00163A	ADF-PBA
S6	PHOTO-INTERRUPTER(PAPER-WIDTH 2)	0604-001394	ADF-PBA
S7	PHOTO-INTERRUPTER(PAPER-WIDTH 1)	0604-001394	ADF-PBA
S8	HARNESS-MP SIZE SENSOR	JC39-02087A	ADF-PBA
S9	PHOTO-INTERRUPTER(SCAN OUT)	0604-001381	ADF-PBA
S10	CONTACT IMAGE SENSOR	0609-001558	MAIN PBA
S11	PHOTO-INTERRUPTER(EXIT)	0604-001394	ADF-PBA
S12	PHOTO-INTERRUPTER(SCAN IN)	0604-001381	ADF-PBA
S13	PHOTO-INTERRUPTER(REGI)	0604-001394	ADF-PBA
S14	PHOTO-INTERRUPTER(FEED OUT)	0604-001394	ADF-PBA
S15	PHOTO-INTERRUPTER(COVER OPEN)	0604-001394	ADF-PBA
S16	PHOTO-INTERRUPTER(PICKUP)	0604-001394	ADF-PBA
S17	PHOTO-INTERRUPTER(DETECT)	0604-001394	ADF-PBA



### 2.10.3. DSDF Drive System

DSDF drive system consists of two motors and one clutch to transfer paper.



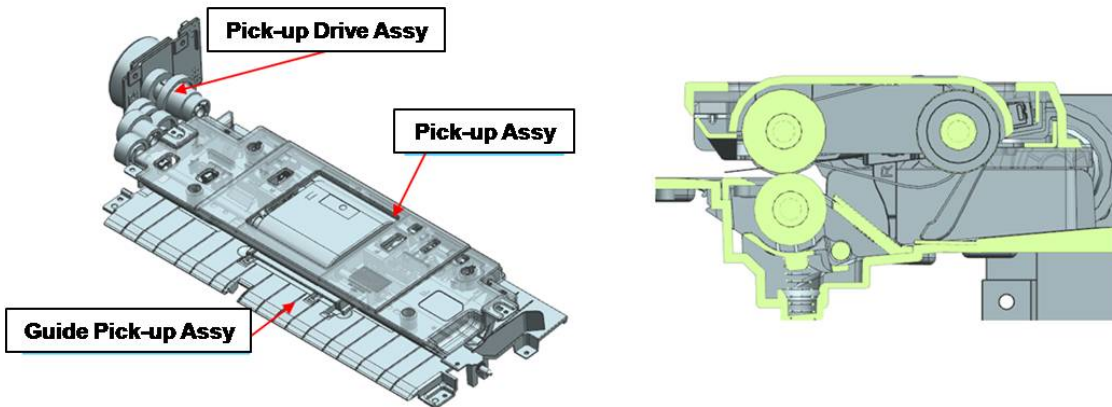
1 BLDC motor and 1 step motor drive the system for simplex and duplex job.

- BLDC motor is used for picking up original and pick up is controlled by the clutch.
- Step motor is used for the original registration.
- BLDC motor is used for feeding a original.

### 2.10.3.1. DSDF Original Pick-Up Assembly

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DSDF Original Pick-Up Assembly consists of Pick-up Drive Assy, Pick-up Assy, and Guide Pick-up Assy.

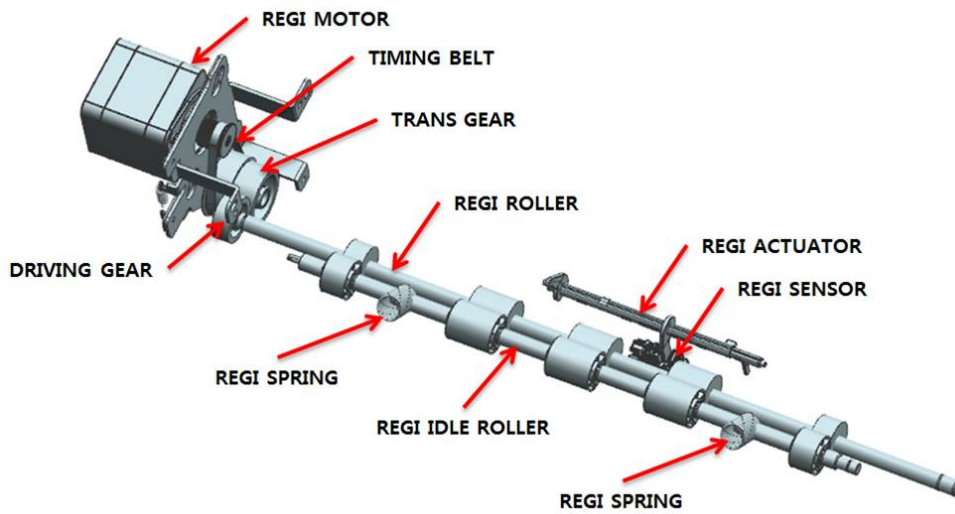


- **Operation Procedure**

- 1) Checks a paper detection.
- 2) Checks the original width size.
- 3) Holds the original not to be moved in paper path before pick up driving.
- 4) Starts pick up driving.
- 5) Separates an original by the reverse roller.

### 2.10.3.2. DSDF Original Regi. Drive

DSDF Original Regi Drive consists of Regi motor, Regi roller, Regi sensor etc.

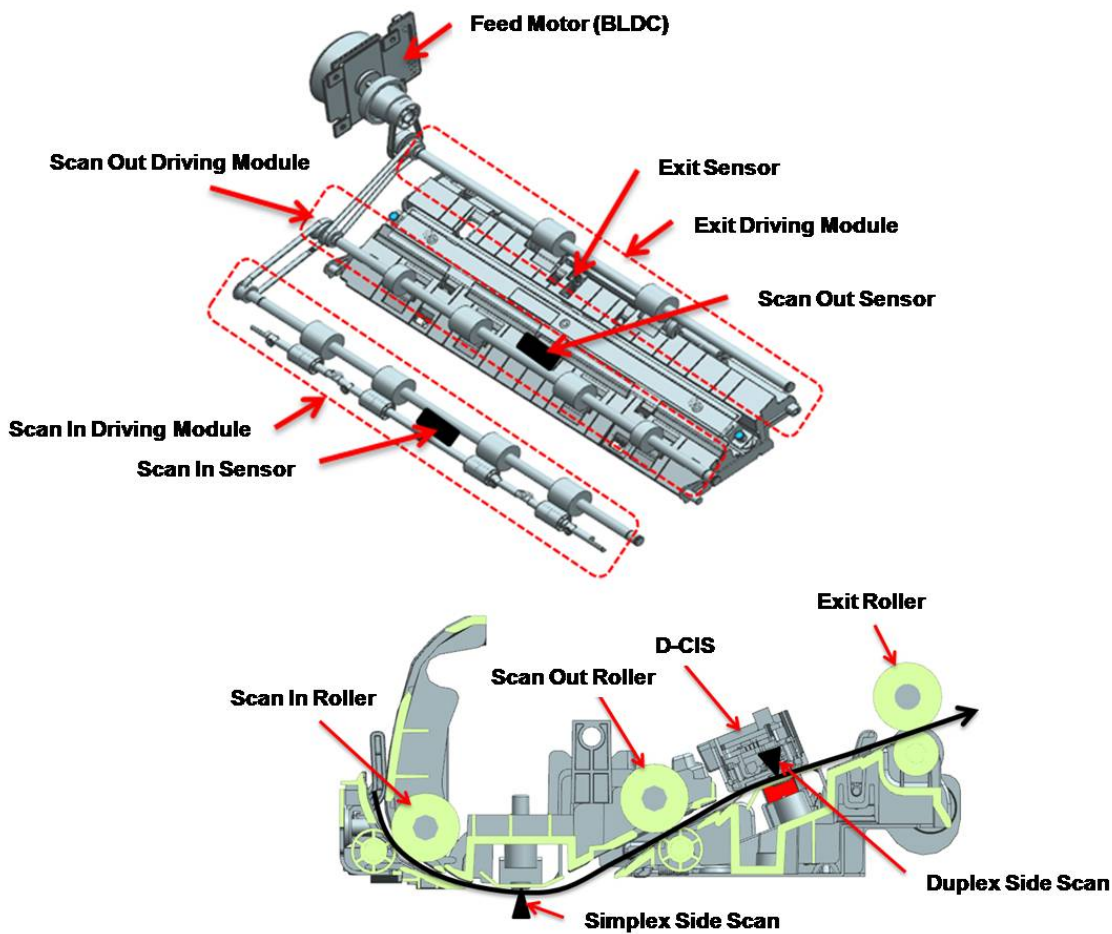


- **Operation Procedure**

- 1) The picked up original is detected by Regi-Actuator and the regi sensor is on. At this time, the regi motor is stopped and the original is aligned.
- 2) After the regi sensor is on, regi motor rotates.
- 3) After the transferred original passes the regi. actuator, the regi sensor is off and the regi motor stops.

### 2.10.3.3. Original Scanning and Feed-Out Drive

Feed-Out Drive consists of Feed motor, Scan In driving module, Scan Out driving module, and Exit driving module etc.

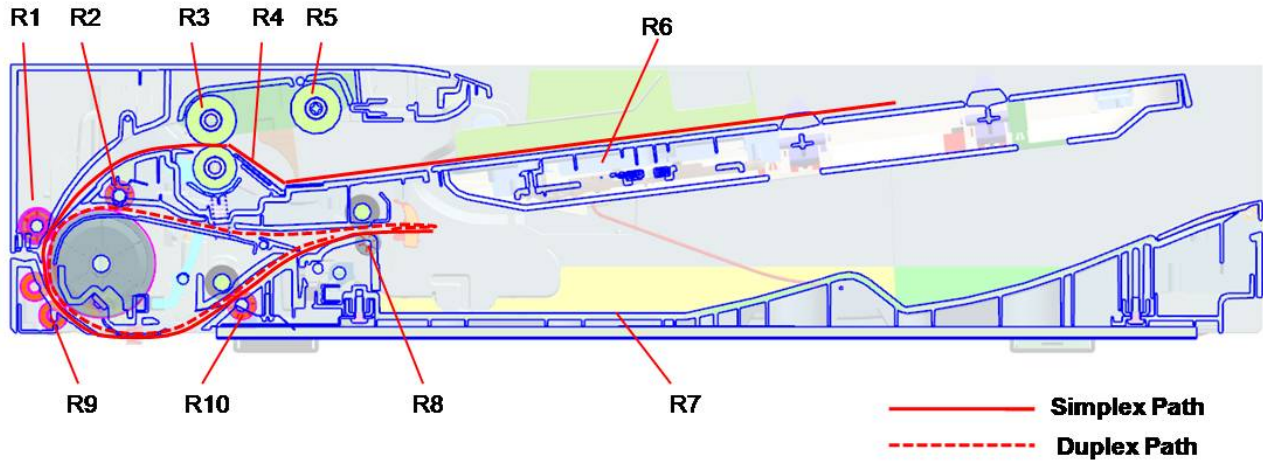


- **Operation Procedure**

- 1) The feed motor transfers the power by the timing-belt.
- 2) When original passes the scan in sensor, simplex scan starts.
- 3) Simplex white-bar functions to prevent the wrinkle and background.
- 4) When original passes the scan out actuator, duplex scan starts.
- 5) Duplex white-bar functions to prevent the wrinkle and background.
- 6) Original is transferred to exit tray.

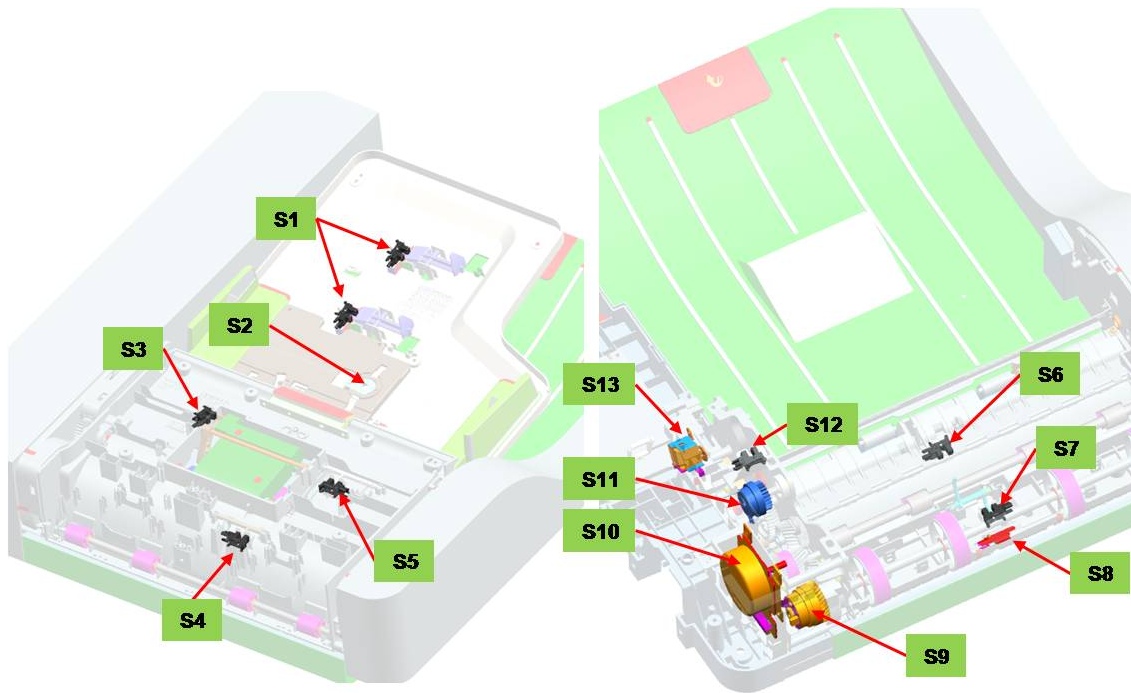
## 2.11. Reverse Automatic Document Feeder(RADF) for K4250

### 2.11.1. RADF overview



Symbol	Part	Function
R1	Simplex registration roller	In simplex mode, this roller aligns the leading edge of the paper for registration and then sends the paper to the next feed step.
R2	Duplex registration roller	In duplex mode, this roller aligns the leading edge of the paper for registration and then sends the paper to the next feed step.
R3	RADF forward roller	Separates an original from the tray and transfers it to the paper path.
R4	RADF friction pad	Prevent the multi-feeding.
R5	RADF pick up roller	Picks up an original from the tray.
R6	Original document tray	Paper input tray
R7	Exit tray	Paper output tray
R8	Exit roller	Sends an original to the exit tray and forms the duplex reverse path.
R9	Feed in roller	Feeds an original before scanning.
R10	Feed out roller	Transfers a scanned original to the exit roller.

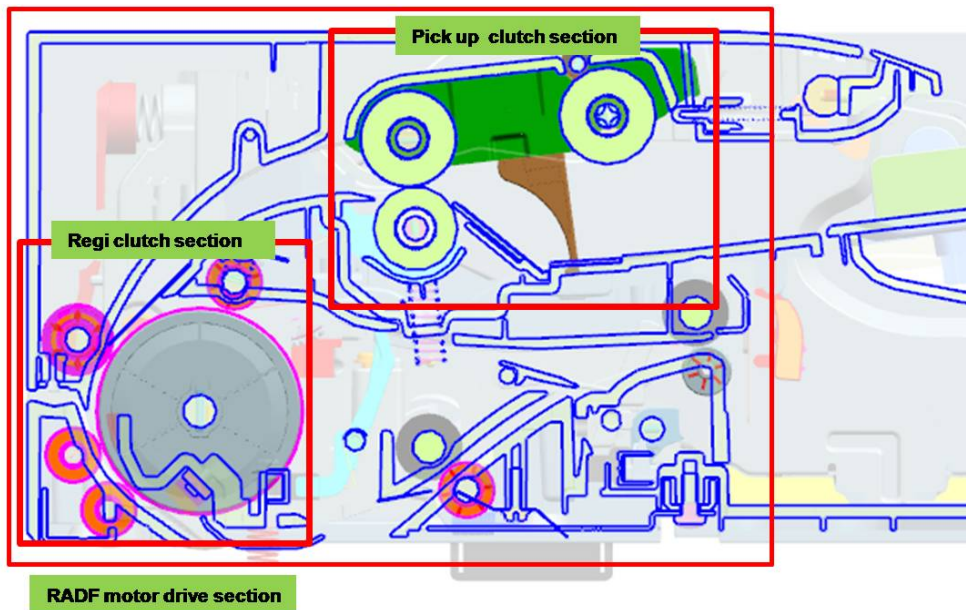
### 2.11.2. Electrical parts location



Symbol	Description	Part code	Controller board
S1	PHOTO-INTERRUPTER (Paper Length)	0604-001393	PBA-ADF
S2	HARNESS-MP SIZE SENSOR (Paper Width)	JC39-02087A	PBA-ADF
S3	PHOTO-INTERRUPTER (Pick Up)	0604-001393	PBA-ADF
S4	PHOTO-INTERRUPTER(Regi)	0604-001393	PBA-ADF
S5	PHOTO-INTERRUPTER(Detect)	0604-001393	PBA-ADF
S6	PHOTO-INTERRUPTER(Exit)	0604-001393	PBA-ADF
S7	PHOTO-INTERRUPTER(Duplex)	0604-001393	PBA-ADF
S8	PHOTO-INTERRUPTER(Scan)	0604-001381	PBA-ADF
S9	CLUTCH-ELECTRIC (Regi)	JC66-00994B	PBA-ADF
S10	BLDC-MOTOR	JC31-00156A	PBA-ADF
S11	CLUTCH-ELECTRIC (Pick Up)	JC47-00033A	PBA-ADF
S12	PHOTO-INTERRUPTER (Cover)	0604-001393	PBA-ADF
S13	SOLENOID-PICK UP (Cover)	JC33-00032A	PBA-ADF

### 2.11.3. RADF Drive System

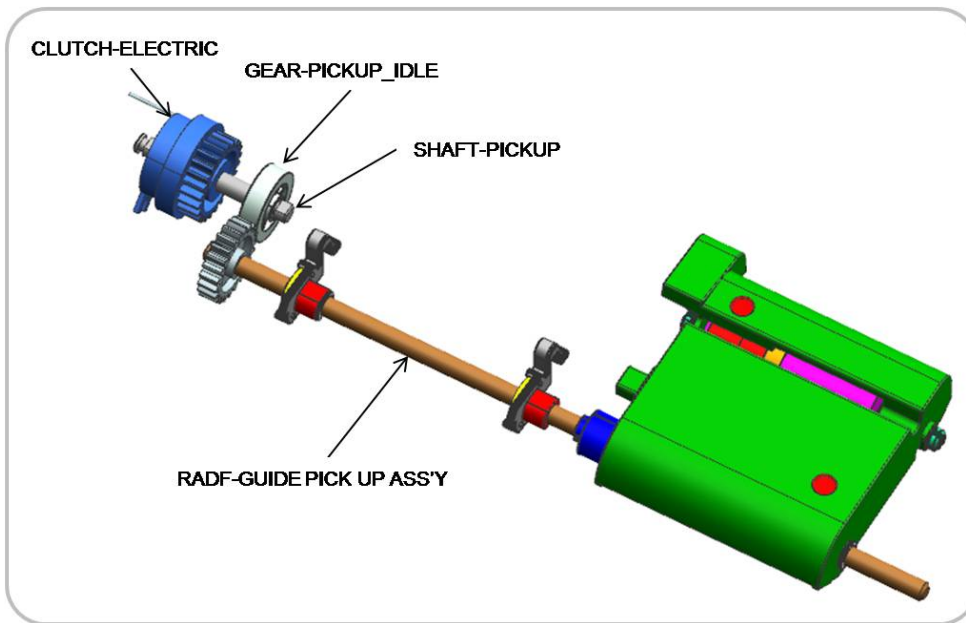
RADF drive system consists of one motor and two clutch to transfer the paper.



- A BLDC motor drives the system for simplex and duplex job.
- The Pick up and Regi clutch control the driving on/off.
- The Cam type gear and solenoid is used for duplex reverse.

### 2.11.3.1. RADF Original Pick-Up Assembly

---



After detecting the paper, one motor controls the drive system totally.

The CLUTCH-ELECTRIC provides the power to pick up the paper.

The CLUTCH can't rotate inversely. The Spring that is included in RADF-GUIDE PICK UP ASS'Y is connected to COVER-OPEN. When the CLUTCH does not drive, it makes Stand-by status and fix the stopper operation.

The ADF roller and Pick up Roller is connected by the belt.

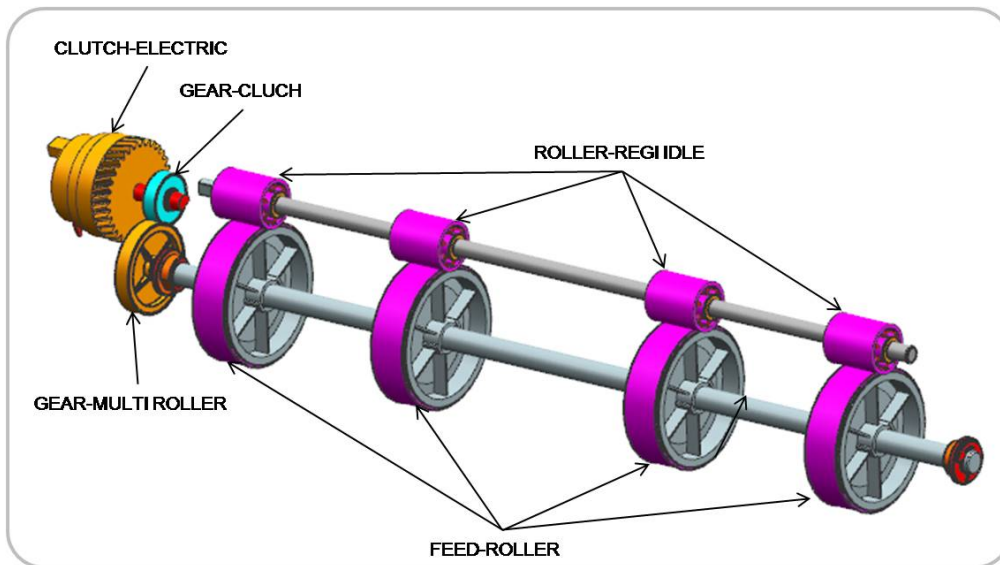
The ADF roller is provided with the power while the paper is picked up and transferred to the Registration roller. When the pick up drive is stopped and Registration roller is driven, the ADF roller become idle.

The normal process is :

- When the original is setting up, the detect-sensor is activated, and printing job starts, the motor and pick up clutch work. Then, the pick-up roller moves down and contacts an original in the tray.
- When the Registration sensor detects the paper, the pick up clutch stops.
- When the Detect-Sensor detects that the tray is empty, the motor stops and the machine enters stand-by status.



### 2.11.3.2. RADF Registration (Regi) Drive Assembly



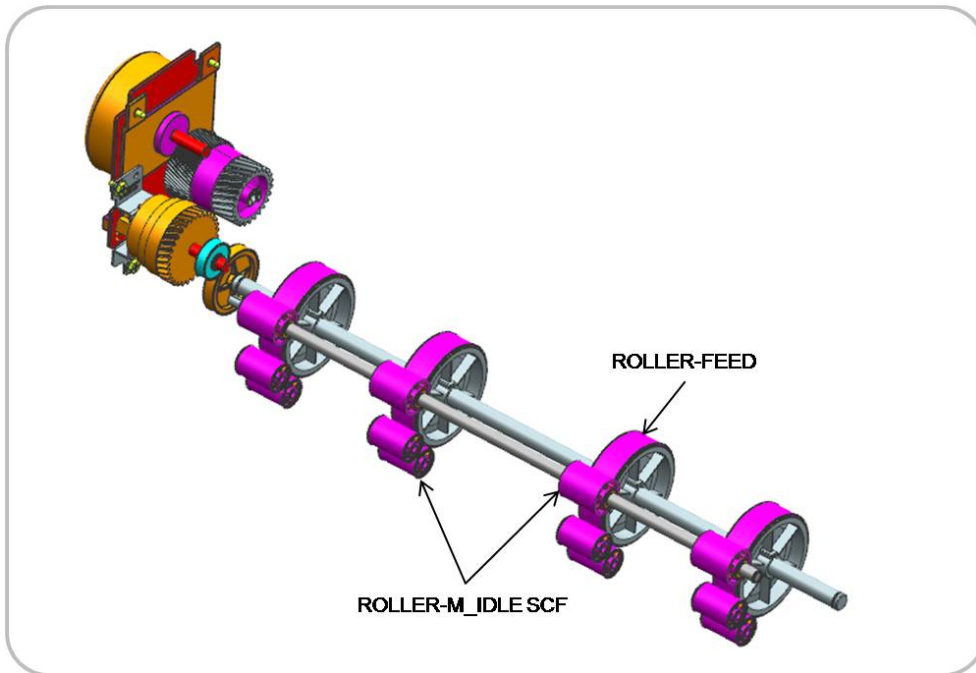
The Regi drive uses the CLUTCH-ELECTRIC to drive the Registration Roller and transfer the paper to ROLLER FEED.

The Registration Roller aligns the leading edge of the original. When original is placed in the Nip, the roller is rotated for alignment.

The CLUTHC-ELETRIC repeats on/off to align each paper.

### 2.11.3.3. RADF Feed Drive Assembly

---

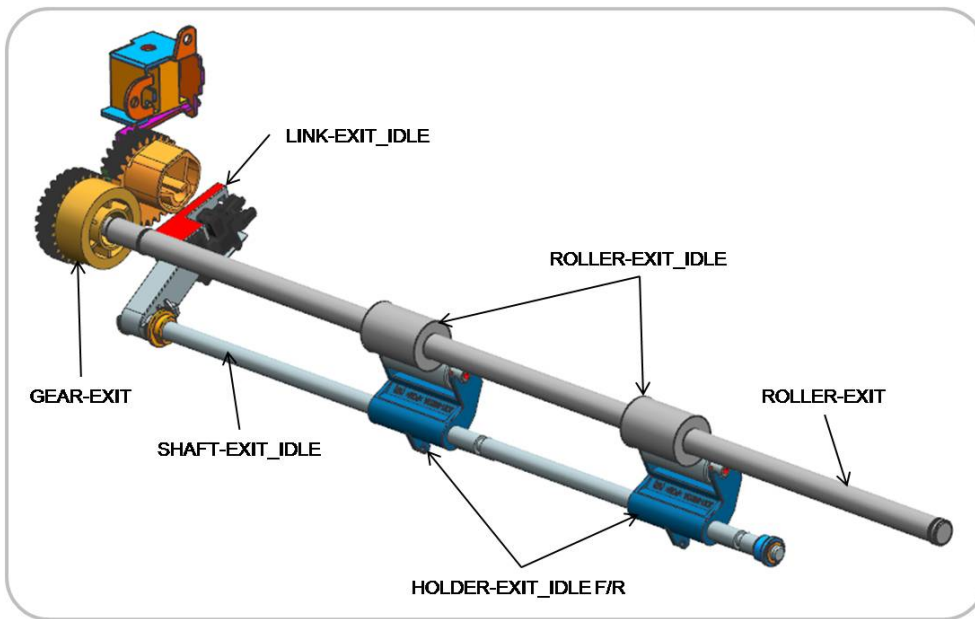


The ROLLER FEED is driven by the gear that is connected to Motor.

The ROLLER-FEED and ROLLER-M IDLE SCF make the feeding force by using a spring pressure method.

The Motor transfers the paper through interlocking the Roller-Feed in and the Roller-Feed out. At scan, the Motor is driven continually to maintain stable paper transfer.

### 2.11.3.4. RADF Exit Drive Assembly



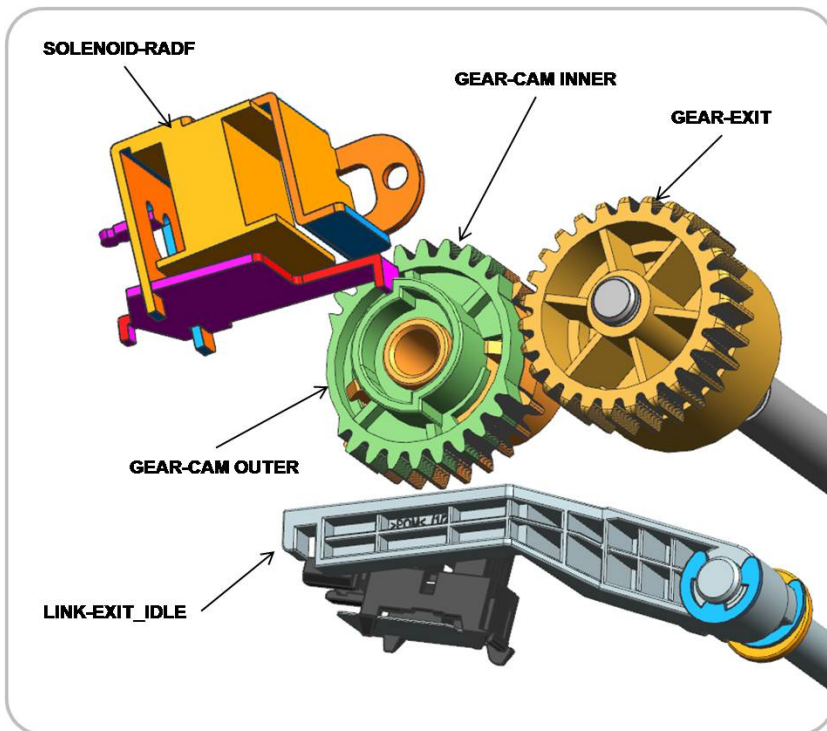
The power from the Motor is transferred to GEAR-EXIT and ROLER-EXIT. The paper is transferred to the exit. At duplex mode, counter rotation occurs.

To keep the pressure of the Exit Roller, the ROLLER-EXIT\_IDLE is pressurized by spring. At duplex mode, when it is rotated inversely, it make the space between rollers to protect the jam.

The space between rollers is adjusted by LINK-EXIT\_IDLE and SHAFT-EXIT\_IDLE.

### 2.11.3.5. Original Return Drive

---



Basically, the solenoid works at only duplex mode.

At Duplex Mode, when the motor rotates inversely, the solenoid is on and the GEAR-CAM OUTER and GEAR-EXIT are driven.

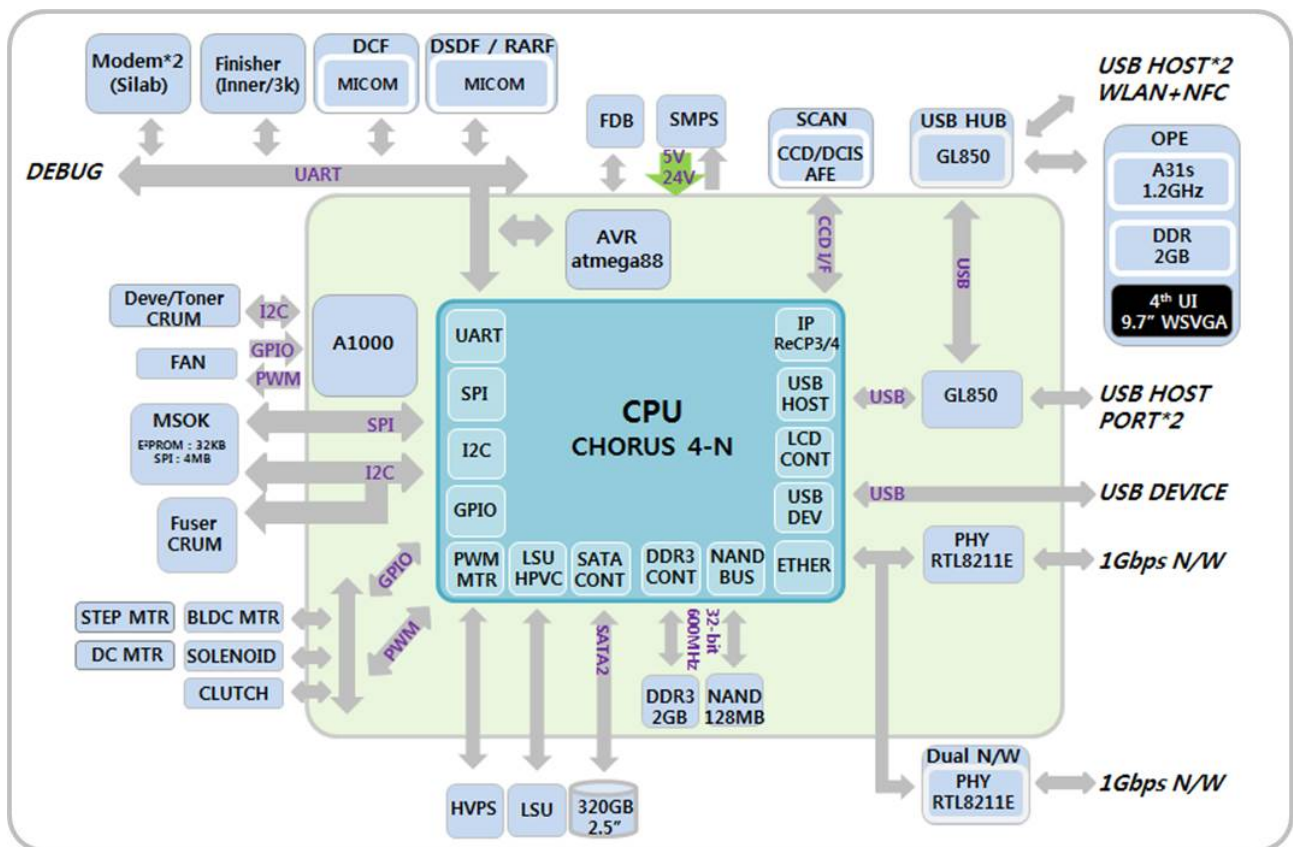
When the GEAR-EXIT rotates, the solenoid drives the GEAR-CAM and it makes the space between the Roller-Exit and Idle Roller.

## 2.12. Hardware Configuration

The MultiXpress K4350LX / K4300LX /X4250RX Electrical Circuit System consists of the following :

- Main Controller (Main board)
- OPE Unit
- ADF(DSDF / RADF) Controller
- HVPS board
- SMPS board
- FDB board

**Diagram of the K4350LX / K4300LX /X4250RX Series Electrical Circuit**



The main controller handles the video controller, engine controller and scan controller.

The main controller receives print data from the host through the network or USB port, and it receives copy data from the Scan Controller. It takes this information and generates printable video bitmap data. It controls all modules required to print, that is, LSU, HVPS, FAN, Fuser, etc.

The main controller communicates with the drive system and other devices through UART(Universal Asynchronous Receiver Transmitter). It communicates with the toner cartridge and drum/developer unit through I2C to check their life.

The main controller adopted Dure Core CPU 1GHZ, DDR3 2GB memory, Flash NAND 128MB, 320GB SATA HDD to control the engine driving, video signal processing, interface, etc. successfully.

A MICOM at the main controller controls the fuser lamp on/off and system power according to an optimized energy-saving algorithm for optimal efficiency. It also communicates with the OPE Controller through the USB 2.0 protocol to display the system information on LCD.

The OPE Unit displays the status of the system by using the WSVGA TFT LCD in response to user actions or the main controller.

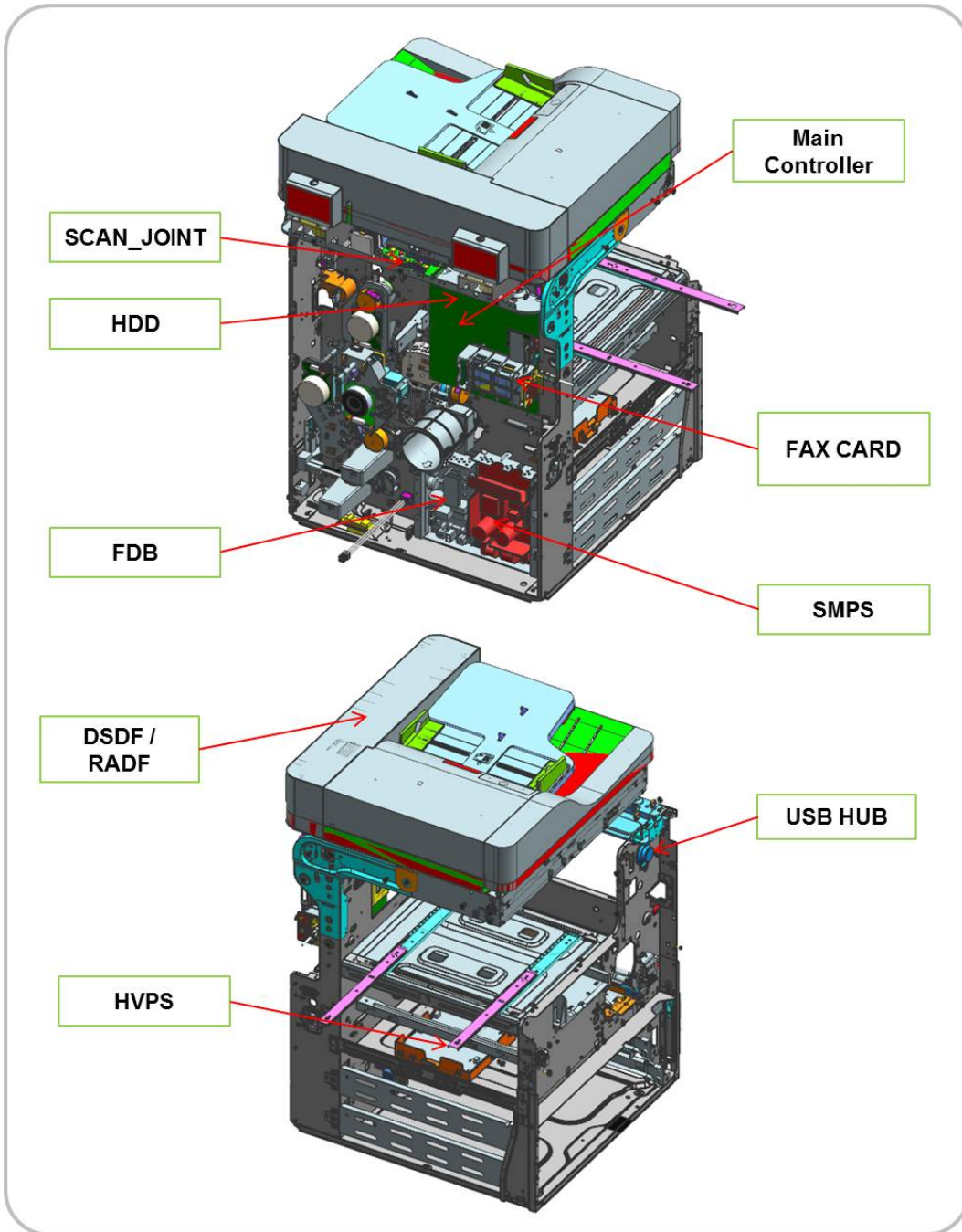
The soft power switch in the OPE Unit is used to safely shut down the system power.

The ADF Controller controls some mechanisms required to scan by feeder continuously and communicates with the main controller to synchronize the scanning timing.

The HVPS board generates high-voltage channels and controls it. The FDB board controls the fuser lamp On/Off. The SMPS board generates the 5V, 24V for system power.

### Circuit Board Locations

The following diagrams show the locations of the printer circuit boards:

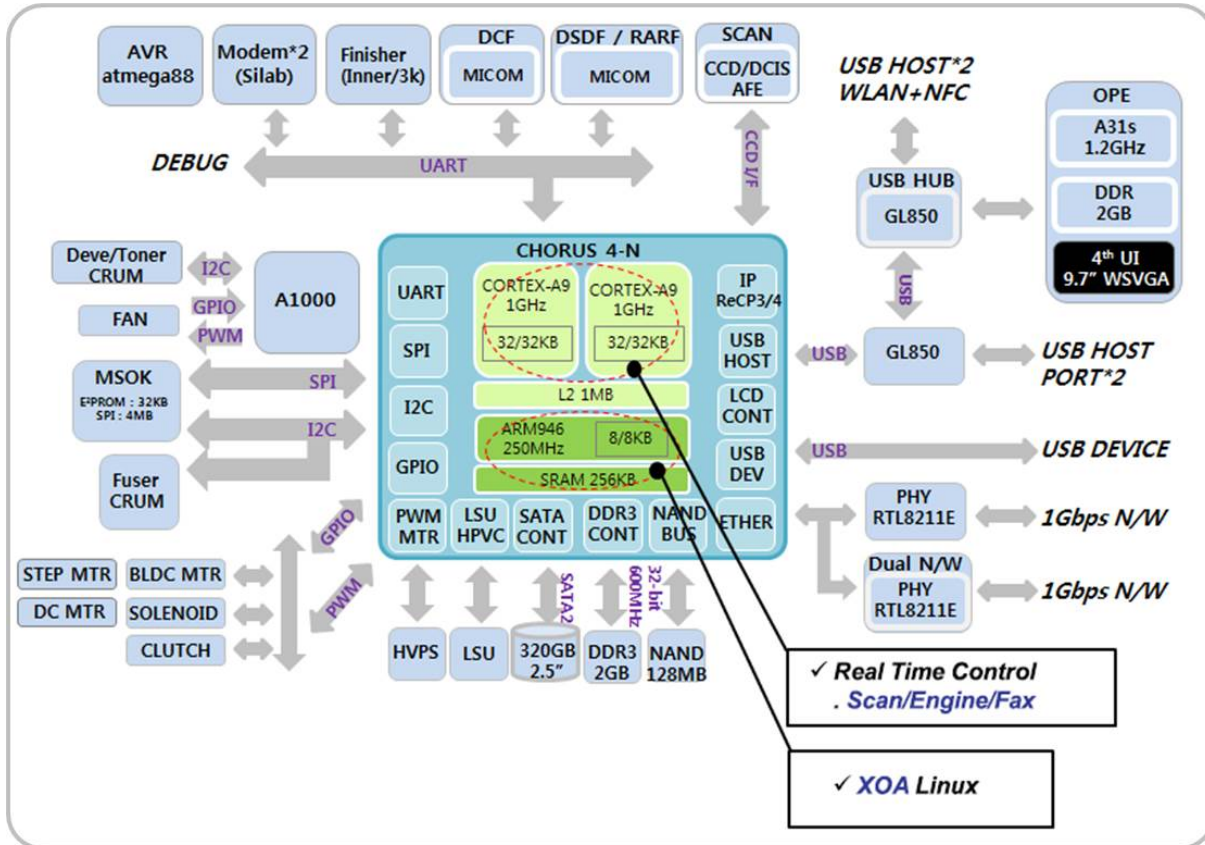


### 2.12.1. Main Controller (Main Board)

The main controller consists of the main processor(Chorus4N), memory(DDR3 2GB), flash(128MB), 1G Ethernet PHY,USB2.0 HUB, Micom(Power/Fuser control), can/Video/UI/FAX signal interface connection, motor driving IC, Engine signal interface connection, power interface.

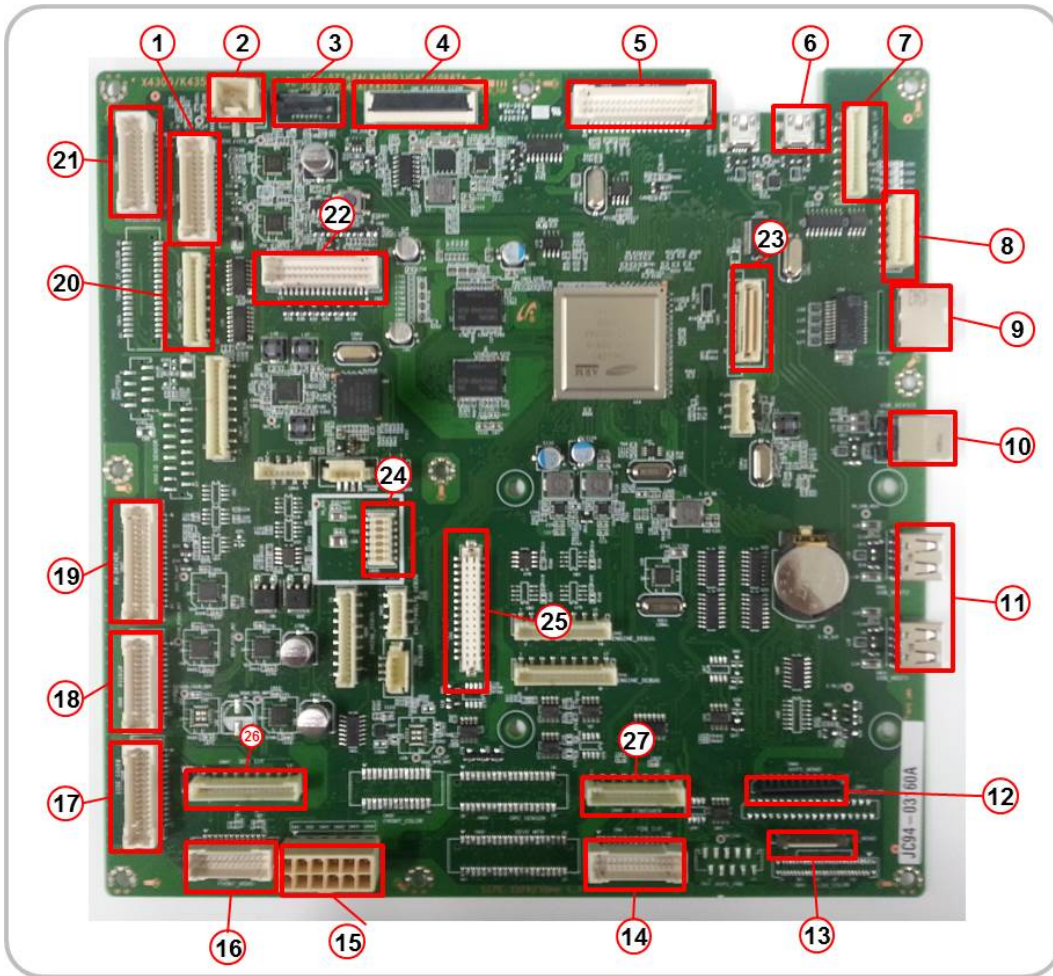
The main processor (Dual Core 1GHz CPU) controls video, engine, UI display and communicates the various devices. The HDD is connected to the main controller by SATA cable and to the other device (ADF, DCF, Finisher, Modem) by UART.

#### 1) Main Controller Diagram





**2) Main Controller Connection Information (K4350LX / K4300LX / K4250RX)**



• **Connection**

1	EXIT
2	HDD POWER
3	HDD I/F
4	PLATEN CCDM
5	DSDF DCIS
6	FRONT USB HUB
7	OPE POWER I/F
8	FDI I/F
9	GIGA N/W RJ45
10	USB HOST 1 / 2

11	USB DEVICE
12	HVPS_MONO
13	LSU MONO
14	FDB I/F
15	POWER I/F
16	FRONT_MONO
17	SIDE COVER
18	PICKUP
19	PH DRIVER
20	TONER I/F MONO

21	FUSER
22	SCAN I/F
23	2nd GIGA NPC
24	MSOK I/F
25	MODEM JOINT
26	DCF I/F
27	FINISHER

• **Information**

- Part Code : JC92-02746A



This main board is for all models of the K4350 / K4300 / K4250 series

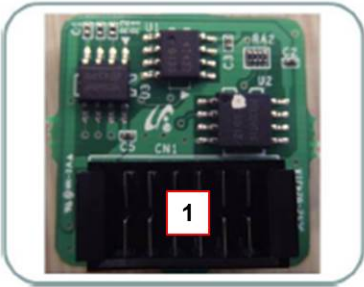
- Part Name : PBA-MAIN

### 3) Master System Operation Key (MSOK)

MSOK PBA is used to store all system information and consists of serial flash memory, a EEPROM and a X-CRUM. The flash memory(4MByte), EEPROM(256Kbit) and X-CRUM are used for all system operation(system parameter, device status, tech information, and service information).

**NOTE**

When a main board needs to be exchanged, the MSOK PBA should be re-installed to the new main board to retain the system information.

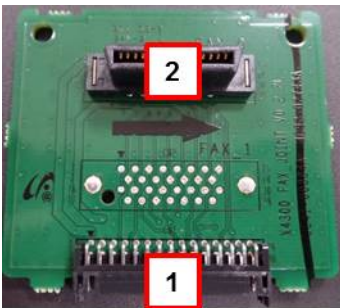


**Information**

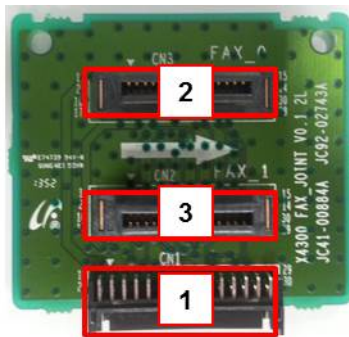
- Part Code : JC92-02431A
- Part Name : PBA-MSOK

### 4) FAX JOINT PBA

The FAX JOINT PBA is used for interfacing between the main board and modem PBA. It uses UART for interface.



[ JC92-02743B ]



[ JC92-02743A ]

**Information**

- Part Code : JC92-02743A (for Dual Fax) / JC92-02743B (for Single Fax)
- Part Name : PBA-FAX JOINT

**Connection**

1	Main PBA I/F connector
2	Modem Card I/F connector (1st)
3	Modem Card I/F connector (2nd)

### 5) Fax Card (Optional)

The fax card is used to transfer and receive the fax data through a telephone line. This PBA is controlled by the main board.

#### 1) 1st modem



- **Information**

- Part Code : JC92-02558A
- PBA name : PBA-FAX CARD

- **Connection**

1	FAX JOINT I/F connector
2	TEL Line I/F connector
3	External Phone I/F connector

#### 2) 2nd Modem



- **Information**

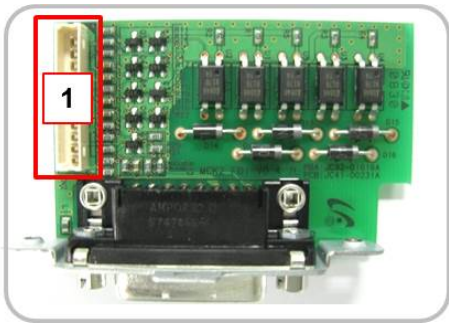
- Part Code : JC92-02559A
- PBA name : PBA-FAX CARD

- **Connection**

1	FAX JOINT I/F connector
2	TEL Line I/F connector

### 6) Foreign Device Interface (FDI) (Optional)

The FDI Module as a option is used to track machine usage such as the number of print or copy pages for some special users. This module interfaces to the main board.



• **Information**

- Part Code : JC92-02068A
- PBA name : PBA-SUB FDI

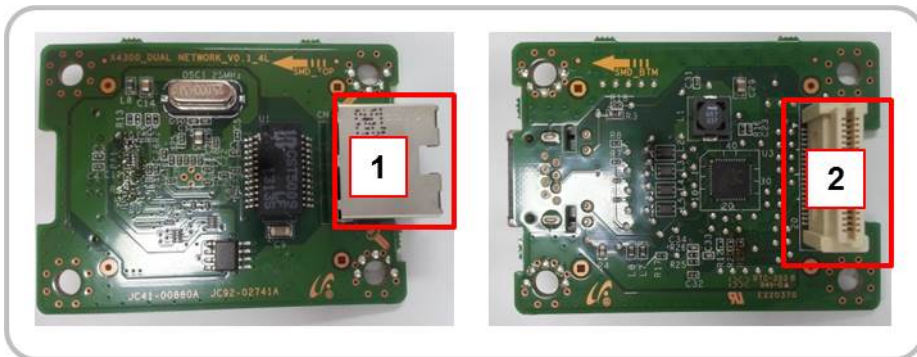
• **Connection**

1	Connector to Main controller
---	------------------------------

### 7) Dual Network board (Optional)

The Dual Network board as a option is used to make Dual Network environment.

It provides 2nd Network Port.



• **Information**

- Part Code : JC92-02741A
- PBA name : PBA-NPC

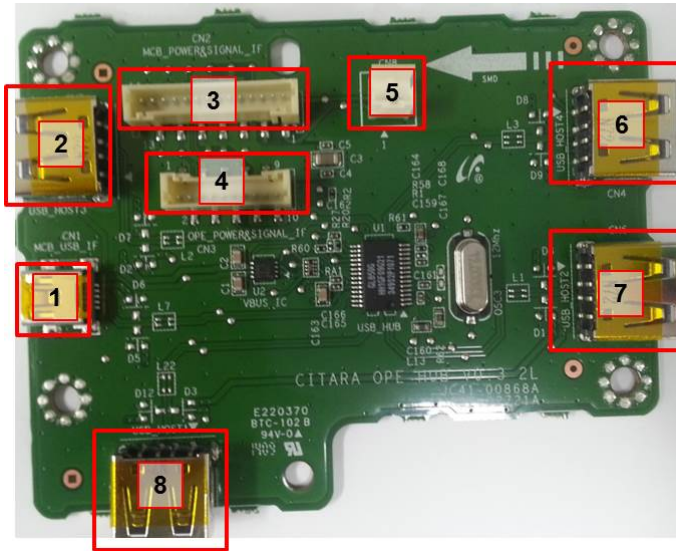
• **Connection**

1	GIGA N/W RJ45
2	Main PBA I/F connector

## 2.12.2. OPE HUB PBA

OPE Hub PBA is used to interface with Main PBA, 4G UI, USB Memory stick, NFC, Wireless module.

It interfaces through USB communication



- **Information**

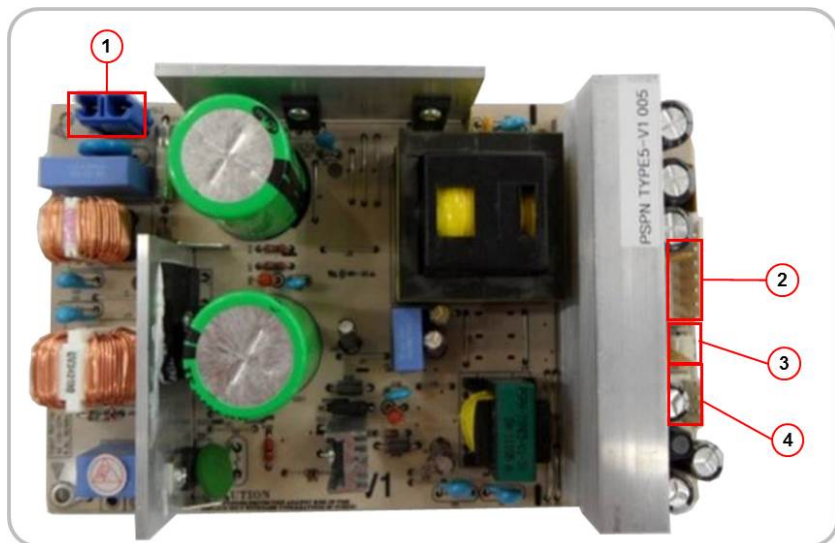
- Part Code : JC92-02721A
- PBA Name : PBA-OPE HUB

- **Connection**

1	MAIN Board I/F Connector
2	OPE Unit I/F Connector
3	Power Input Connector
4	OPE Unit Power
5	Speaker
6	External USB Host Slot
7	External USB Host Slot
8	WLAN / NFC

### 2.12.3. SMPS (Switching Mode Power Supply) board

SMPS board supplies electric power to the Main Board and other boards. The voltage provided includes +5V, and +24V from a 110V/220V power input. It has safety protection modes for over current and overload.



• **Specification**

General Input/ Output Voltage

- 1) AC 110V (90V ~ 135V)
- 2) AC 220V (180V ~ 270V)
- 3) Input Current: 13.7A (110V) / 6.8A (220V)
- 4) Output Power: 1500W
  - DC 5V : 55W / DC 5VS : 30W / DC 24V : 432W

• **Information**

	110V	220V
Part Code	JC44-00093D	JC44-00100D
Part Name	SMPS Type 5 V1	SMPS Type 5 V2

• **Connection**

1	INPUT_AC
2	OUTPUT_24V1/2/3/4/5/6 (to Main PBA)
3	SMPS Enable
4	OUTPUT_5V1/2/3/4/S1/S2 (to Main PBA)

- **Input / Output connector**

- **AC Input Connector (CN1)**

PIN Assign	PIN NO	Description
1	AC_L	AC Input
2	AC_N	

- **AC Input Connector (CN2)**

PIN Assign	PIN Name	Description
1	GND	AC Input
2	24VOn_Off	
3	GND	

- **DC Output Connector (CN3)**

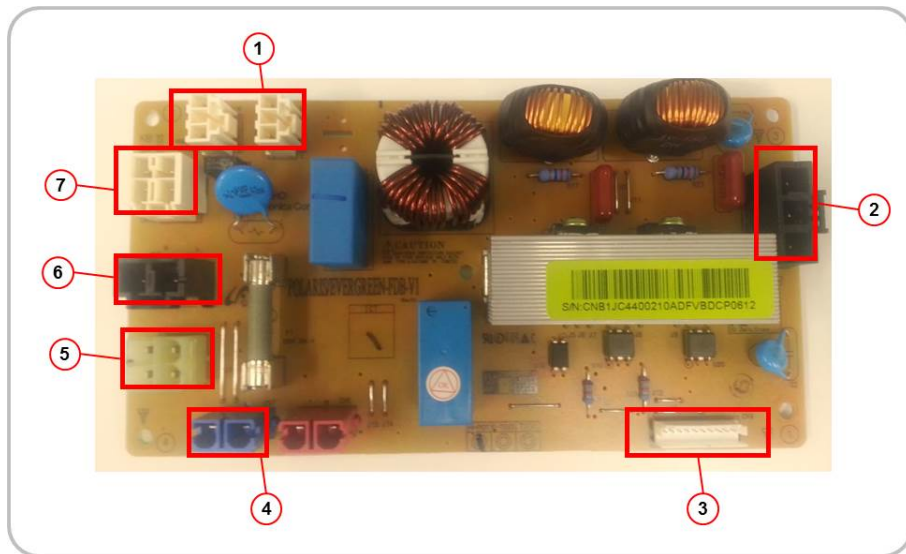
PIN Assign	PIN Name	Description
1	+24V1	Power
2	GND	24V Ground
3	+24V2	Power
4	+GND	24V Ground
5	+24V3	Power
6	GND	24V Ground
7	+24V4	Power
8	GND	24V Ground

- **DC Output Connector (CN4)**

PIN Assign	PIN Name	Description
1	+5V1	Power
2	GND	5V Ground
3	+5V2	Power
4	GND	5V Ground

### 2.12.4. Fuser Drive Board (FDB)

This board supplies the voltage to Fuser AC, Heater, Main board.



• **Information**

	110V	220V
SEC CODE	JC44-00210A	JC44-00211A
PBA NAME	FDB V1	FDB V2

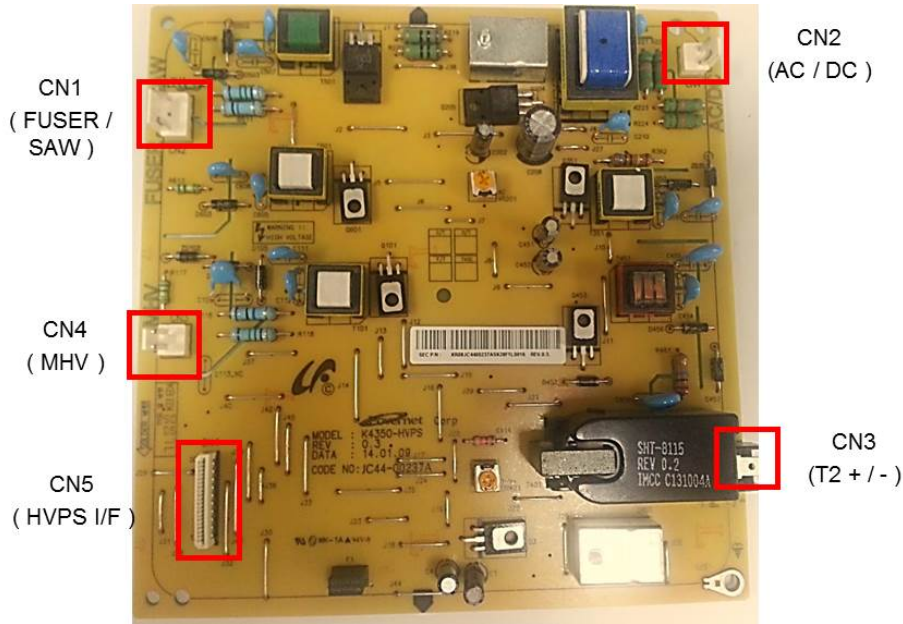
• **Connection**

1	Heater I/F
2	Fuser AC
3	FDB I/F
4	Type 5
5	Main S/W
6	Inlet
7	Heater S/W



### 2.12.5. HVPS board

HVPS board generates 5 high-voltage channels, which include FUSER, SAW, AC/DC, T2+/-, MHV.



• **Specification**

- Input Voltage : DC 24V, 3.3V
- Output Voltage :
  - MHV : -1200V
  - DEV DC : -497V, AC : Vpp 1000V
  - THV+ : 39.6uA, THV- : -1300V
  - SAW : -990V
  - FUSER : 400V

• **Information**

- Part Code : JC44-00237A
- Part Name : HVPS

• **Connection**

CN1		
Description	PIN NAME	PIN ASSIGN
Output Voltage	FUSER	1
Output Voltage	SAW	2

CN2		
Description	PIN NAME	PIN ASSIGN
Output Voltage	AC/DC	1,2

CN3		
Description	PIN NAME	PIN ASSIGN
Output Voltage	T2 + / -	1

CN4		
Description	PIN NAME	PIN ASSIGN
Output Voltage	MHV	1,2

CN5		
Description	PIN NAME	PIN ASSIGN
PWM signal	PWM SAW	1
PWM signal	PWM DEVE AC	2
PWM signal	PWM FUSER BIAS	3
PWM signal	PWM VPP AC	4
PWM signal	PWM MHV	5
nEN signal	nEN DEVE AC	6
Output signal	ADC MHV READ	7
PWM signal	PWM DEVE DC	8
nEN signal	nEN MHV	9
nEN signal	nEN THV	10
Input Voltage	3.3V PS	11
PWM signal	PWM THV	12
Output signal	ADC_HVPS_24V	13
Output signal	ADC THV READ	14
GND	GND	15,16,17
-	NC	18
Input Voltage	24V	19, 20

### 2.12.6. Eraser PBA

Eraser PBA has one LED. This LED is used for erasing the negative charges on the surface of the drum after printing.

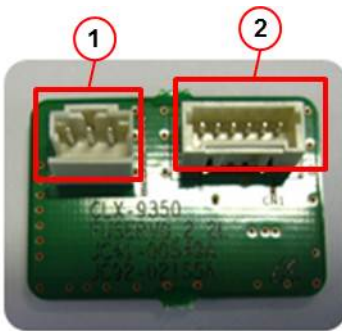


- **Information**

- Part Code : JC92-02747A
- Part Name : PBA-ERASER

### 2.12.7. Fuser PBA

The Fuser PBA includes CRU memory for Fuser Unit Life Cycle counting. It also provides a connection interface for the Fuser Step Motor position detecting sensor.



- **Connection**

1	Fuser EEPROM, Pressure Sensor I/F
2	Pressure Sensor

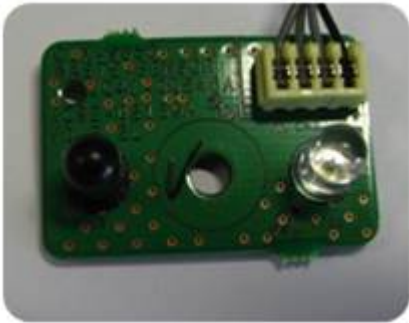
- **Information**

- Part Code : JC92-02470A
- Part Name : PBA-FUSER

### 2.12.8. Waste Sensor PBA

---

The Waste Sensor PBA detects the waste toner level inside the waste toner container.



- **Information**
  - Part Code : JC92-02471A
  - Part Name : WASTE SENSOR RX

### 2.12.9. CRUM PBA

---

The CRUM PBA includes CRU memory for developer unit, drum unit, toner cartridge life cycle counting.



- **Information**
  - Part Code : JC92-02626A
  - Part Name : PBA-ZCRUM

### 2.12.10. Toner CRUM Joint PBA

---

The Toner CRUM Joint PBA is the interface PBA between the toner cartridge and the machine.



- **Information**
  - Part Code : JC92-02164A
  - Part Name : TONER CRUM I/F

### 2.12.11. Paper Size sensor PBA

---

The paper size sensor PBA is used for sensing paper size of tray.



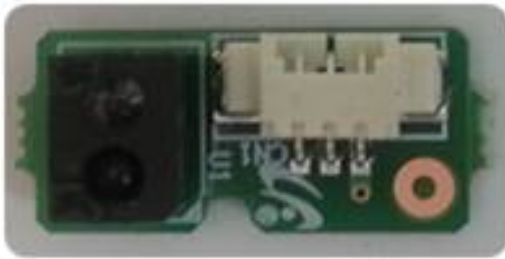
- **Information**

- Part Code : JC92-02622A
- Part Name : PBA-PAPER SIZE SENSOR

### 2.12.12. CTD PBA

---

The CTD PBA is used for adjusting density of print and copy.



- **Information**

- Part Code : JC92-02745A
- Part Name : PBA-CTD

### 2.12.13. OPE Unit

---

The OPE Unit consists of a Quad-Core, Cortex-A7 SOC ( A31s-1.2GHz ), 2GB DDR3 SDRAM, eMMC4GB memory, 9.7 inch touch LCD(960x600).

The A31s is used to interface with users through the touch screen.

The A31s has a GPU(SGX544MP2), which supports the Graphic Accelationfor better UI.



- **Information**

- Part Code : JC97-04499A
- Part Name : OPE

- **Connection**

1	USB host in OPE Hub PBA
2	Input POWER Connector in OPE Hub PBA

## 2.13. Cassette Heater

The Cassette Heater is located at the bottom of the cassette where it improves paper handling quality and print quality by heightening internal cassette temperature in very humid environments.



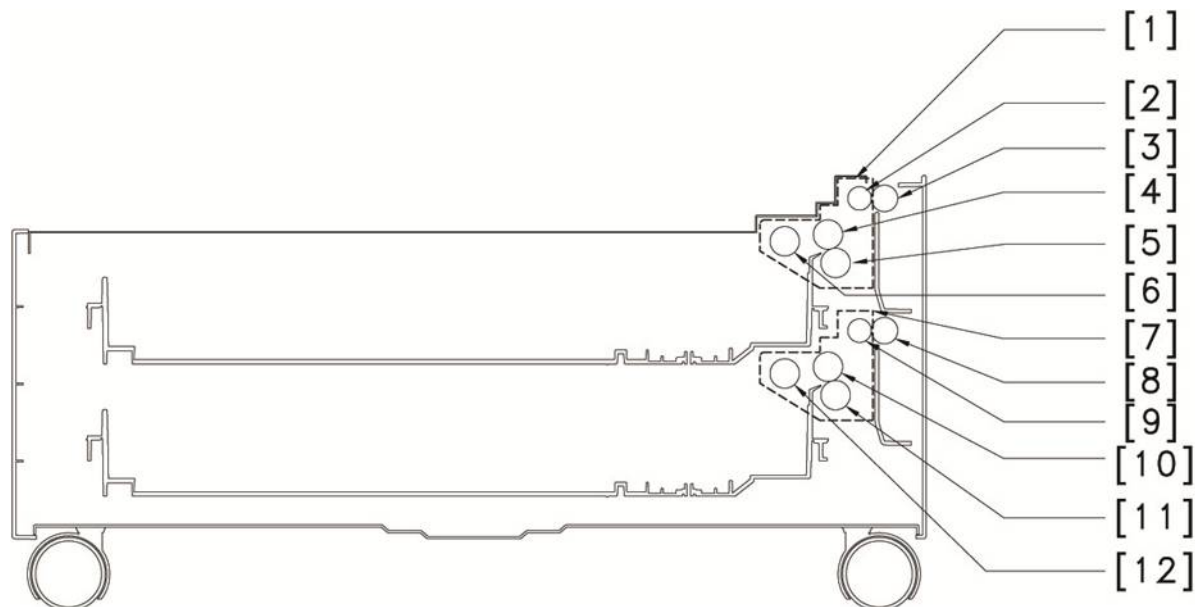
 **NOTE**

- For tray 1,2, cassette heater is installed in factory or optional depending on country.
- For tray 3,4, cassette heater is optional.

## 2.14. DCF Unit

DCF (Double Cassette Feeder) is an optional device to store more papers.

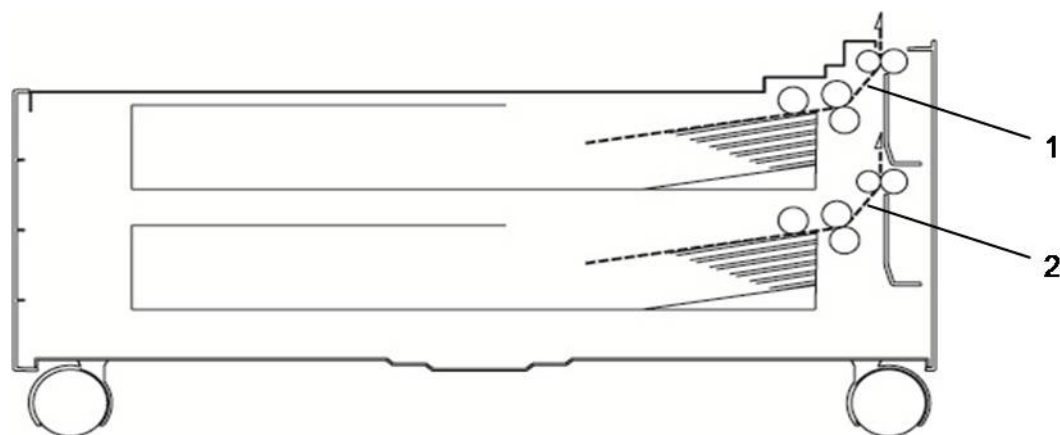
### 1) Front sectional view



1	Cassette 3 Pickup Assembly
2	Feed Roller (Cassette 3)
3	Idle Roller (Cassette 3)
4	Forward Roller (Cassette 3)
5	Retard Roller (Cassette 3)
6	Pickup Roller (Cassette 3)
7	Cassette 4 Pickup Assembly

8	Feed Roller (Cassette 4)
9	Idle Roller (Cassette 4)
10	Forward Roller (Cassette 4)
11	Retard Roller (Cassette 4)
12	Pickup Roller (Cassette 4)

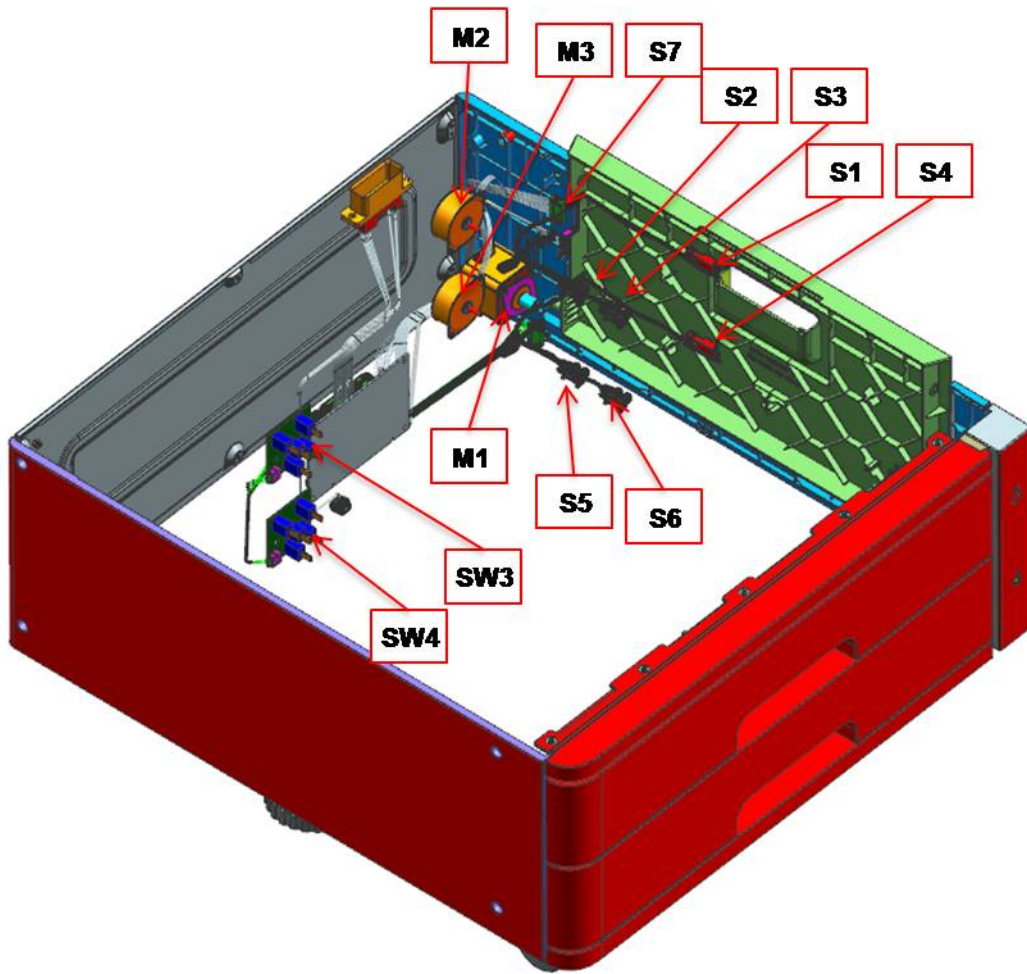
### 2) Paper path



1	Tray3 paper path
2	Tray4 paper path

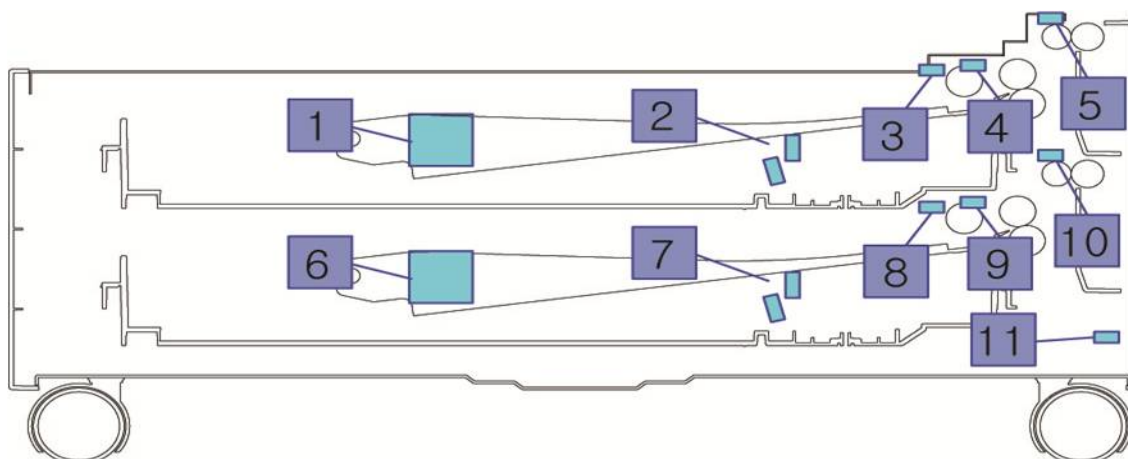


### 3) Layout of electrical parts



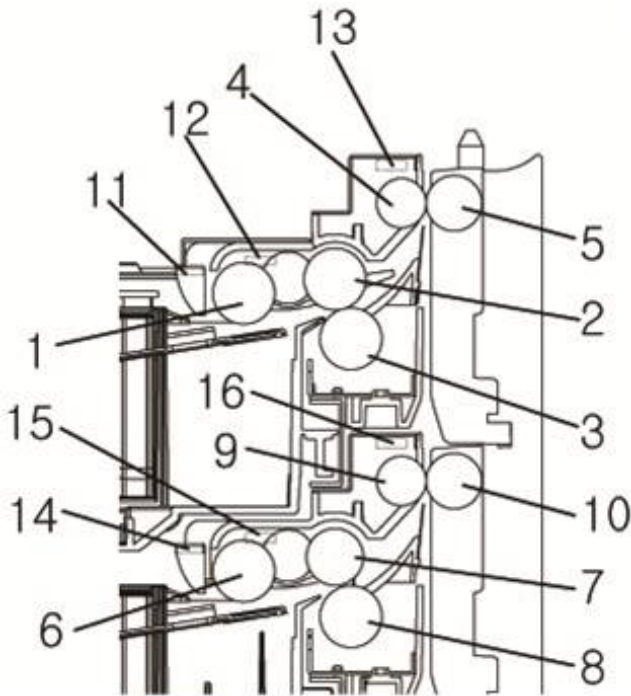
Ref.	Description	Parts number	DC controller PCB
M1	Feed motor	JC31-00033B	CN5 3 to 6
M2	Tray3 Pick up motor	JC31-00149A	CN5 9 to 12
M3	Tray4 Pick up motor	JC31-00149A	CN5 13 to 16
SW1	Tray3 auto size switch	JC32-00013A	CN9 1 to 4
SW2	Tray4 auto size switch	JC32-00013A	CN9 5 to 8
S1	Tray3 feed sensor	0604-001381	CN6 7 to 9
S2	Tray3 limit sensor	0604-001393	CN6 4 to 6
S3	Tray3 paper empty sensor	0604-001393	CN6 1 to 3
S4	Tray4 feed sensor	0604-001381	CN6 16 to 18
S5	Tray4 limit sensor	0604-001393	CN6 13 to 15
S6	Tray4 paper empty sensor	0604-001393	CN6 10 to 12
S7	Door open sensor	JC39-01696A	CN3 1 to 2

4) Sensor and signal



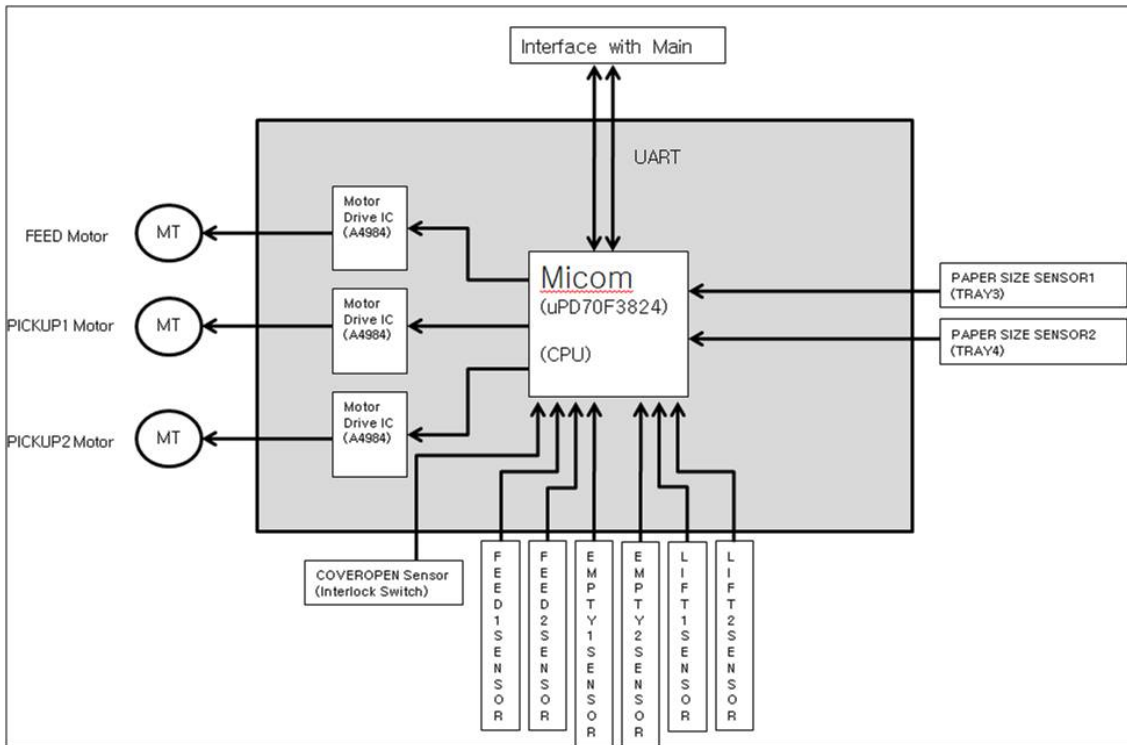
No.	Sensor	Signal
1	P_Size_DCF1	Tray3 Paper Size analog signal
3	nP_Empty_DCF1_IHCF	Tray3 Paper Empty signal
4	Limit_DCF1_IHCF	Tray3 Paper Limit signal
5	Feed_DCF1_IHCF	Tray3 Feed signal
6	P_Size_DCF2	Tray4 Paper Size analog signal
8	nP_Empty_DCF2	Tray4 Paper Empty signal
9	Limit_DCF2	Tray4 Paper Limit signal
10	Feed_DCF2	Tray4 Feed signal
11	nDoor_open	Door open signal

### 5) Paper feeding system



No.	Name	Description
1	Pickup Roller (Cassette 3)	This roller transports the paper from the cassette3 or 4.
6	Pickup Roller (Cassette 4)	
2	Forward Roller (Cassette 3)	This roller transports the paper from the pickup roller to the feed roller.
7	Forward Roller (Cassette 4)	
3	Retard Roller (Cassette 3)	When two sheets of paper or more are transported from the pickup roller, the torque limit load is bigger than the resistance between the sheets. As the result, retard roller is stopped and the lower paper is not advanced any further. When the last sheet is transported from the pick up roller, the retard roller rotates following the feed roller.
8	Retard Roller (Cassette 4)	
4	Feed Roller (Cassette 3)	This roller transports the paper from the forward roller to the basic machine.
9	Feed Roller (Cassette 4)	
5	Idle Roller (Cassette 3)	When the paper is passed at the feed roller, this roller makes paper transporting be smooth.
10	Idle Roller (Cassette 4)	
11	nP_Empty_DCF1	This sensor detects the paper in the cassette3 or 4.
14	nP_Empty_DCF2	
12	Limit_DCF1_IDCF	This sensor detects whether the paper is at pickup position or not.
15	Limit_DCF2_DCF	
13	Feed_DCF1_IDCF	This sensor detects the leading edge of the paper that is passing on the feed roller.
16	Feed_DCF2_DCF	

### 6) Block Diagram



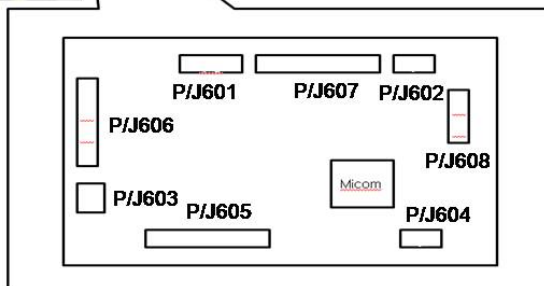
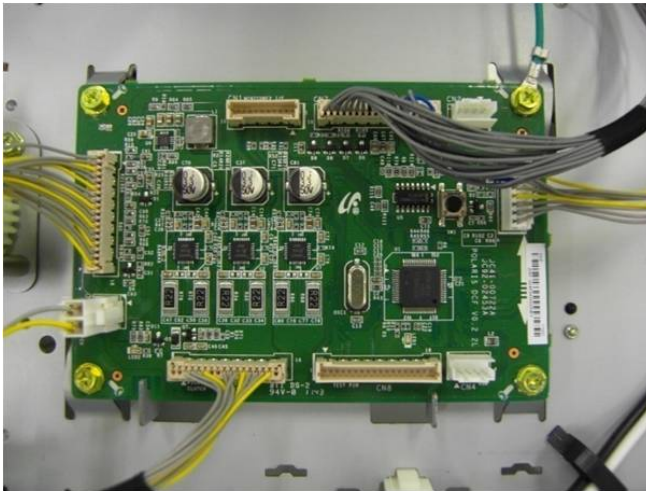
The DCF board controls all functions for DCF Assy. It consists of CPU, Motor drive IC.

The Microm in the board receives the information from the paper size sensor, empty sensor, feed sensor etc. and communicates with the copier main board through the UART.

When being received the print job command from the interface connector (CN7) through UART, DCF board drives the feed motor and pick up motor to pick up a paper.

This board has 2 LEDs. The left LED is for checking 5V power supply and the right LED is checking the microm operation.

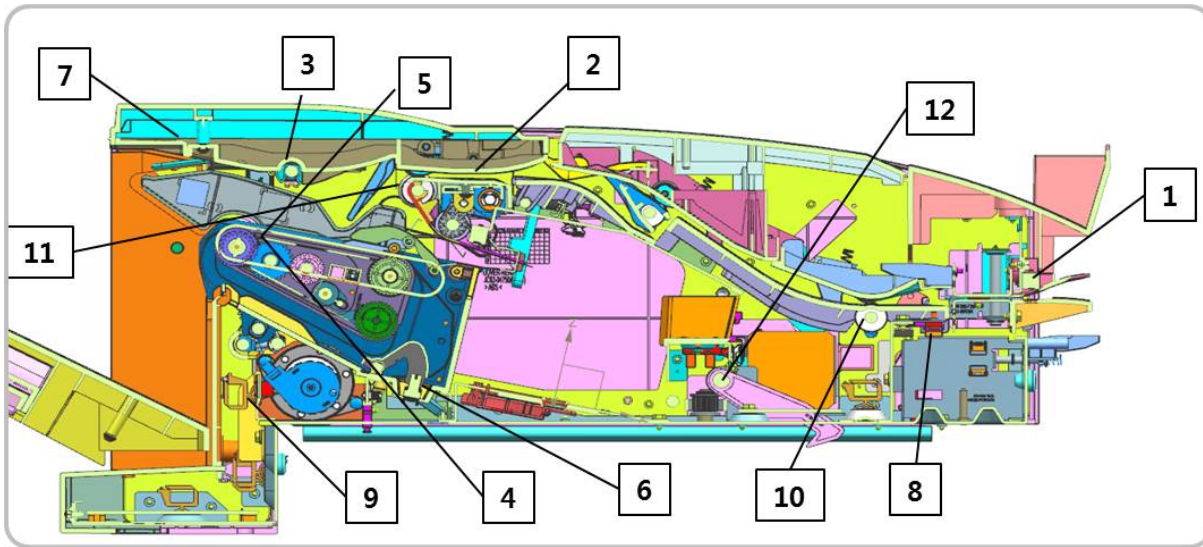
### 7) Plug and jack location list



Connector Number	Connection
P/J601	Download tool I/F(Minicube)
P/J602	Debug I/F
P/J603	Cover open Switch (24V interlock Switch)
P/J604	USB I/F
P/J605	EMPTY/LIFT/FEED(Tray3,4) Sensor
P/J606	FEED / PICKUP3,4 Motor
P/J607	Interface with Main
P/J608	Papersize sensor(Tray3,4)

## 2.15. Inner Finisher

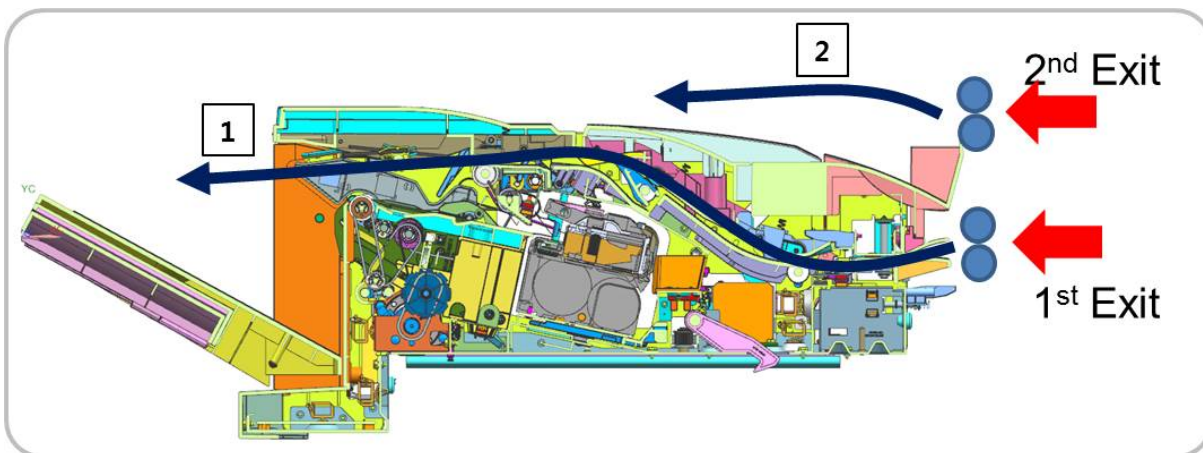
### 1) Sectional View



1	Entrance Sensor
2	Passthru Sensor
3	Paddle Home Sensor
4	Tamper Home_F Sensor
5	Tamper Home_R Sensor
6	Eject Home Sensor
7	Jam Door Open Sensor

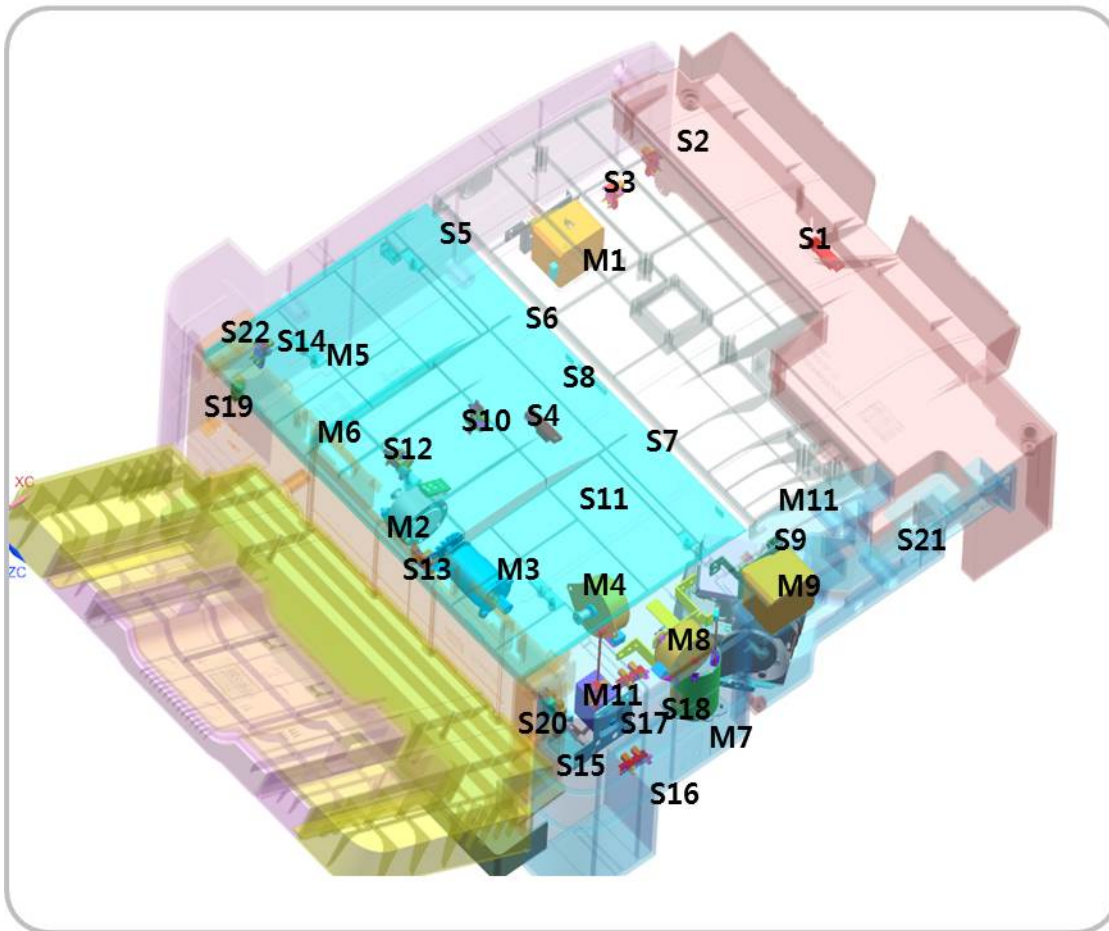
8	Front Door Open Sensor
9	Stacker Tray Home Sensor
10	Paper Feed roller
11	Paper Exit roller
12	Turning Knob

### 2) Paper Path



1	Finisher Main Tray – Staple / offset / Punch
2	Finisher Top Tray – Stack only

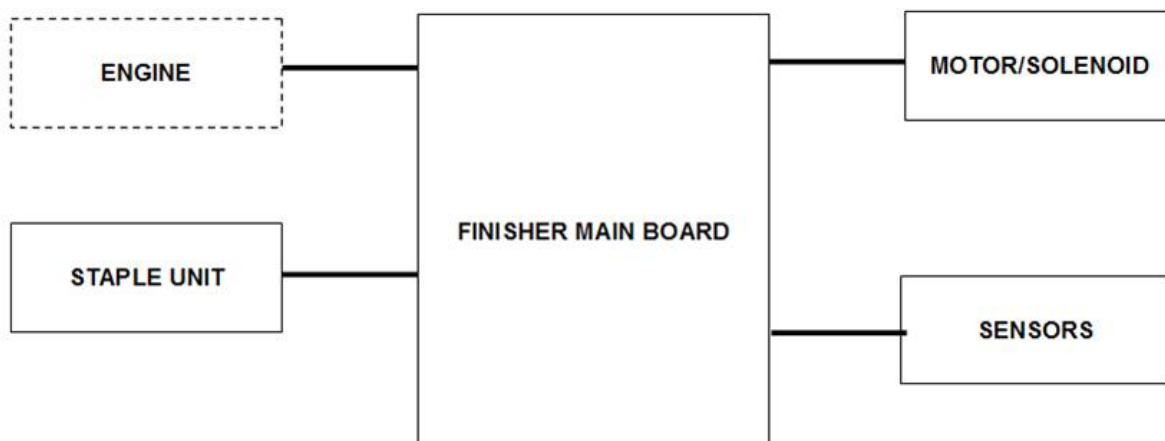
### 3) Electrical Parts Layout



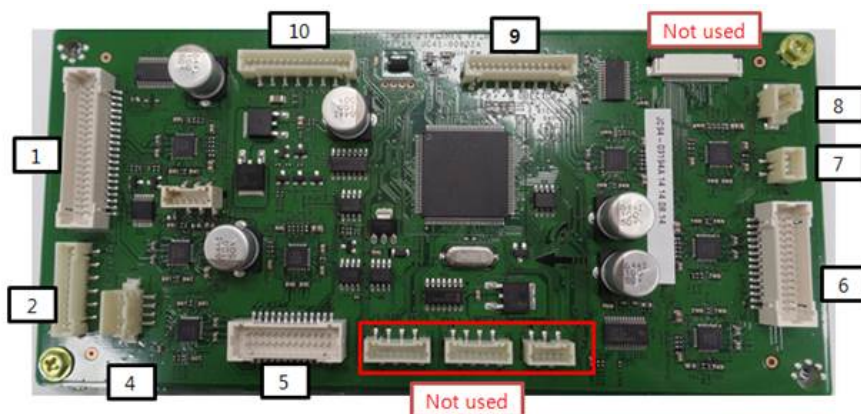
Ref.	Part Name	Function
S1	Photo- Interrupter (0604-001381)	Entrance Sensor
S2	Photo- Interrupter (0604-001415)	Shaft Docking Sensor
S3	Photo- Interrupter (0604-001415)	Dust Box Sensor
S4	Photo- Interrupter (0604-001381)	Sub Stay Sensor
S5	Photo- Interrupter (0604-001415)	Stapler Position Sensor_Rear
S6	Photo- Interrupter (0604-001415)	Staple Position Sensor_Center 1
S7	Photo- Interrupter (0604-001415)	Staple Position Sensor_Center 2
S8	Photo- Interrupter (0604-001415)	Exit Sensor
S9	Photo- Interrupter (0604-001415)	Stapler Position Sensor_Front
S10	Photo- Interrupter (0604-001415)	End Defence Sensor
S11	Photo- Interrupter (0604-001415)	Eject Sensor
S12	Photo- Interrupter (0604-001415)	Paper Support Sensor
S13	Photo- Interrupter (0604-001415)	Eject 2 Motor Sensor
S14	Photo- Interrupter (0604-001415)	Tamper Position Sensor_Rear
S15	Photo- Interrupter (0604-001415)	Paper Holder Position Sensor
S16	Photo- Interrupter (0604-001415)	Tray Home Position Sensor
S17	Photo- Interrupter (0604-001415)	Tamper Position Sensor_Front
S18	Photo- Interrupter (0604-001415)	Main Paddle Position Sensor

Ref.	Part Name	Function
S19	JC81-07403A	AS- Sensor
S20	JC81-07396A	AS- Sensor
S21	JC39-01610A	Switch Front cover open
S22	JC39-02175A	Switch Jam door open
M1	JC31-00169A	Entrance Motor
M2	JC31-00009C	EJECTOR_1_Motor
M3	Mabuchi	EJECTOR_2_Motor
M4	JC31-00149A	Tamper_Motor_Front
M5	JC31-00149A	Tamper_Motor_Rear
M6	JC31-00149A	Paper Support
M7	KIG	Tray Motor
M8	JC31-00149A	Main Paddle Motor
M9	JC31-00169A	Exit Motor
M10	JC31-00149A	Traverse Motor
M11	TDS-10SL	Paper Holder Solenoid

4) Block Diagram



5) PBA Connection Information





<b>No.</b>	<b>Connection</b>
1	CN3 : REAR Joint I/F
2	CN1 : REAR Sensor
3	CN10 : Traverse Mid Sensor
4	CN8 : Debug
5	CN2 : REAR I/F
6	CN7 : FRONT I/F
7	CN6 : Stacker Switch
8	CN9 : Solenoid
9	CN4 : Ejector & Supporter I/F
10	CN5 : Main I/F

## 3. Disassembly and Reassembly

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### 3.1. Precautions when replacing parts

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#### 3.1.1. Precautions when assembling and disassembling

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- Use only approved Samsung spare parts. Ensure that part number, product name, any voltage, current or temperature rating are correct. Failure to do so could result in damage to the machine, circuit overload, fire or electric shock.
- Do not make any unauthorized changes or additions to the printer, these could cause the printer to malfunction and create electric shock or fire hazards.
- Take care when dismantling the unit to note where each screw goes. There are 19 different screws. Use of the wrong screw could lead to system failure, short circuit or electric shock.
- Do not disassemble the LSU unit. Once it is disassembled dust is admitted to the mirror chamber and will seriously degrade print quality. There are no serviceable parts inside.
- Regularly check the condition of the power cord, plug and socket. Bad contacts could lead to overheating and fire. Damaged cables could lead to electric shock or unit malfunction.

#### 3.1.2. Precautions when handling PBA

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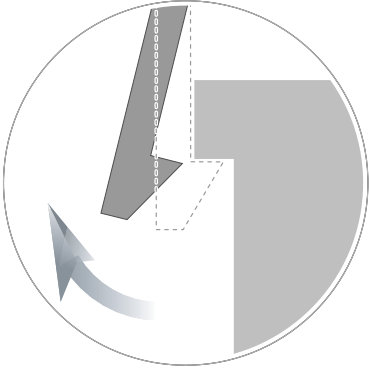
Static electricity can damage a PBA, always used approved anti-static precautions when handling or storing a PBA.

- **Precautions when moving and storing PBA**
  - 1) Please keep PBA in a conductive case, anti-static bag, or wrapped in aluminum foil.
  - 2) Do not store a PBA where it is exposed to direct sunlight.
- **Precautions when replacing PBA**
  - 1) Disconnect power connectors first, before disconnecting other cables.
  - 2) Do not touch any soldered connections, connector terminals or other electronic parts when handling insulated parts.
- **Precautions when checking PBA**
  - 1) Before touching a PBA, please touch other grounded areas of the chassis to discharge any static electrical charge on the body.
  - 2) Take care not to touch the PBA with your bare hands or metal objects as you could create a short circuit or get an electric shock. Take extra care when handling PBAs with moving parts fitted such as sensors, motors or lamps as they may get hot.
  - 3) Take care when fitting, or removing, screws. Look out for hidden screws. Always ensure that the correct screw is used and always ensure that when toothed washers are removed they are refitted in their original positions.

### 3.1.3. Releasing Plastic Latches

Many of the parts are held in place with plastic latches. The latches break easily; release them carefully.

To remove such parts, press the hook end of the latch away from the part to which it is latched.



## 3.2. Maintenance

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### 3.2.1. Machine Cleaning for maintenance

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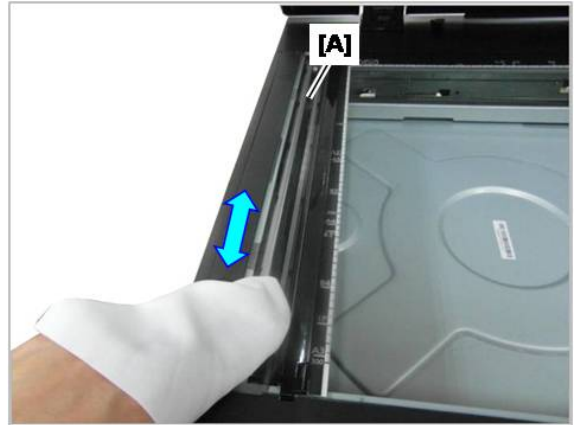
#### 3.2.1.1. Cleaning the scan glass

---

1. Open the DSDF(or RADF) Unit.



2. Clean the scan glass[A] by using a soft cloth.

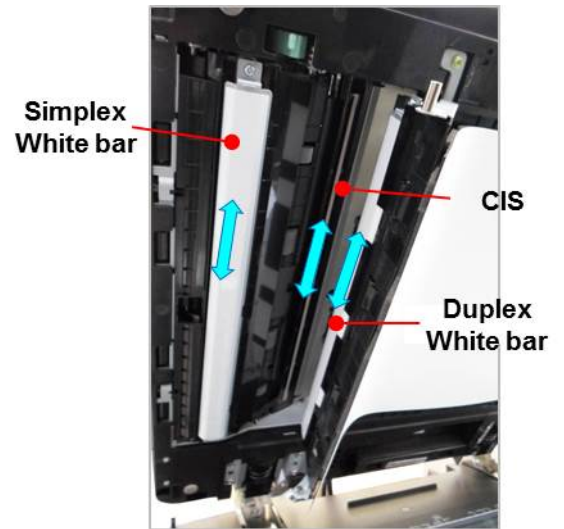


### 3.2.1.2. Cleaning the DSDF white bar\_CIS

1. Open the DSDF Unit.



2. Clean the DSDF white bar and CIS by using a soft cloth.



### 3.2.1.3. Cleaning the paper dust stick

**NOTE**

The paper dust stick (JC93-00078B\_FRAME-REGI HOLDER DUST) will need to be cleaned after a specified number of paper is printed out.

- Cleaning cycle : 25,000 pages

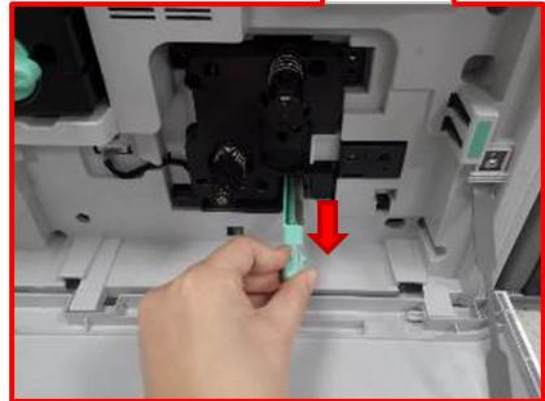
1. Open the front door.



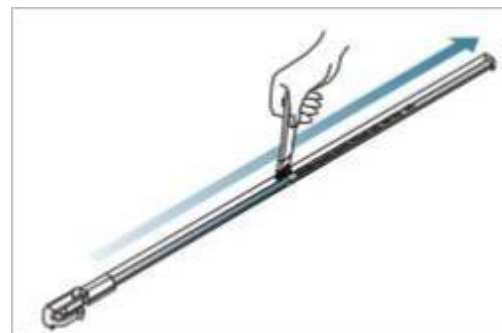
2. Remove the waste toner container.



3. Pull the paper dust stick out.



4. Remove the paper dust.



5. Insert the paper dust stick back.



6. Install the waste toner container until it locks in place.



7. Close the front door. Ensure that the cover is securely closed.



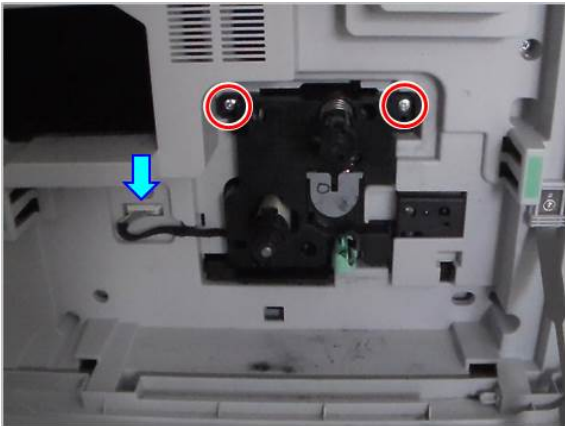
### 3.2.2. Replacing the maintenance part

#### 3.2.2.1. Drum Unit

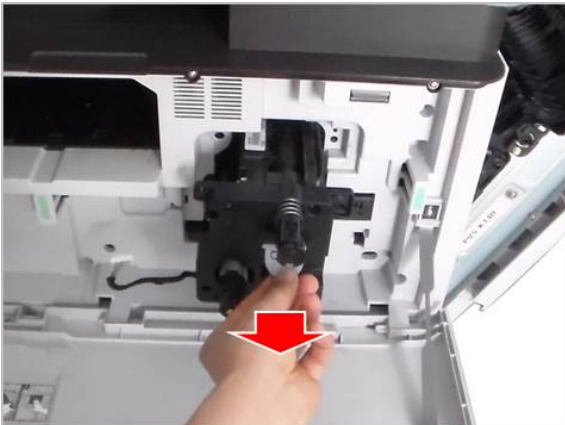
1. Open the front cover. Remove the waste toner container. And open the side cover.



2. Unplug the imaging unit connector. Remove 2 screws.



3. Remove the imaging unit.



4. Unplug the connector.



5. Remove 6 screws securing the rear cover.



**CAUTION**

When reassembling the rear cover, be careful not to miss the coupler as shown below.

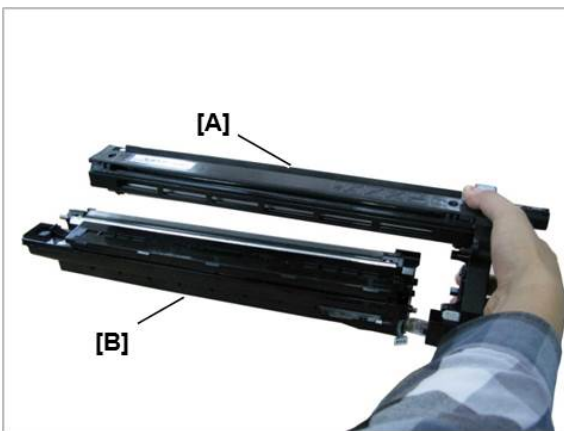




6. Remove the rear cover.



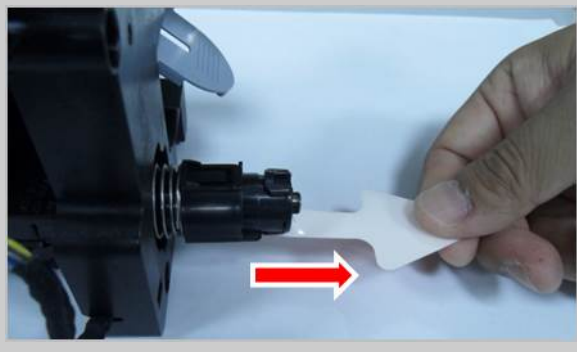
7. Separate the Developer Unit[B] from the Drum Unit[A].



8. The assembly is reverse order of disassembly.

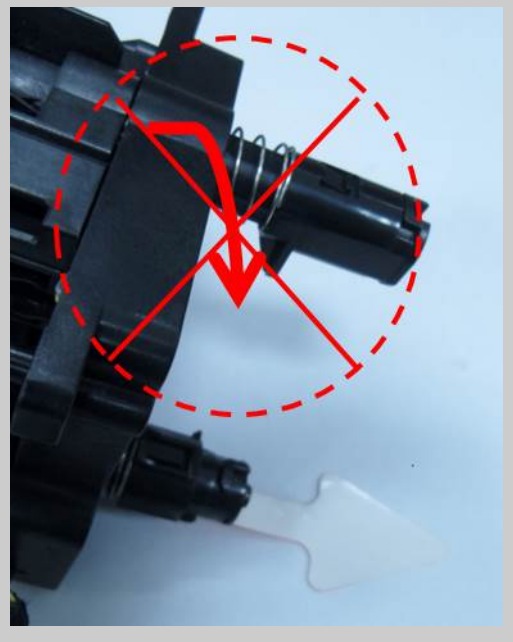
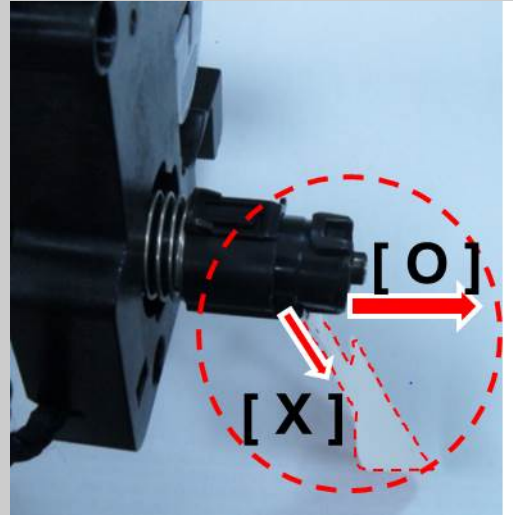
**NOTE**

When installing the initial imaging unit or replacing the deve kit, remove the arrow label horizontally.



**CAUTION**

Do not remove the arrow label to downward direction. Do not lean the imaging unit. Developer leak will occur.

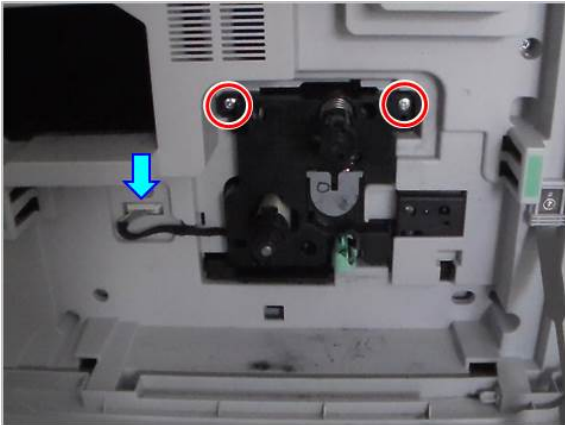


### 3.2.2.2. Development(Deve) Unit

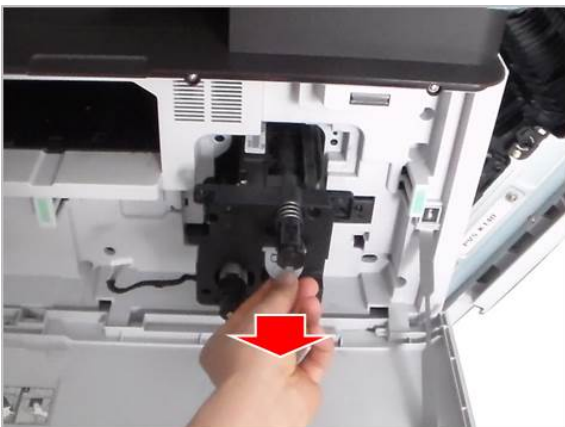
1. Open the front cover. Remove the waste toner container. And open the side cover.



2. Unplug the imaging unit connector. Remove 2 screws.



3. Remove the imaging unit.



4. Unplug the connector.



5. Remove 6 screws securing the rear cover.

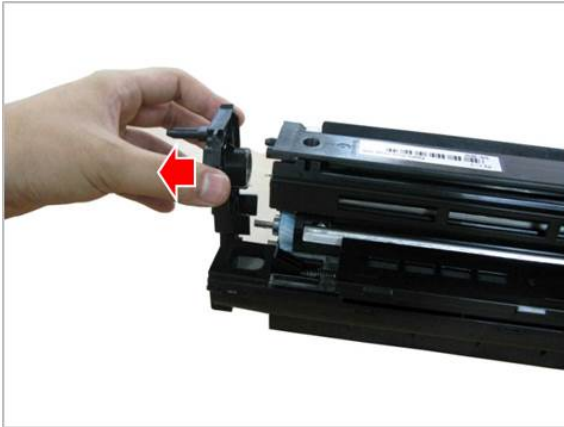


**CAUTION**

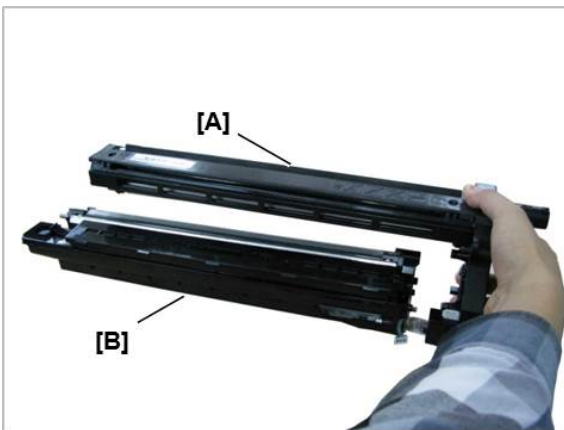
When reassembling the rear cover, be careful not to miss the coupler as shown below.



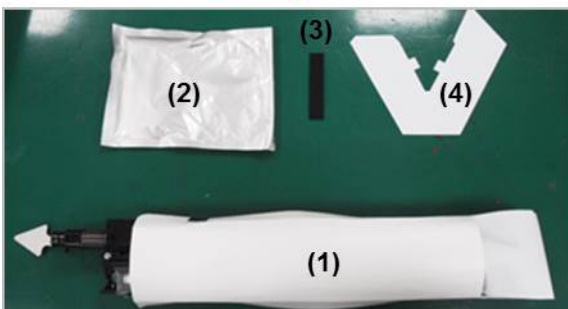
6. Remove the rear cover.



7. Separate the Deve unit[B] from the Drum Unit[A].



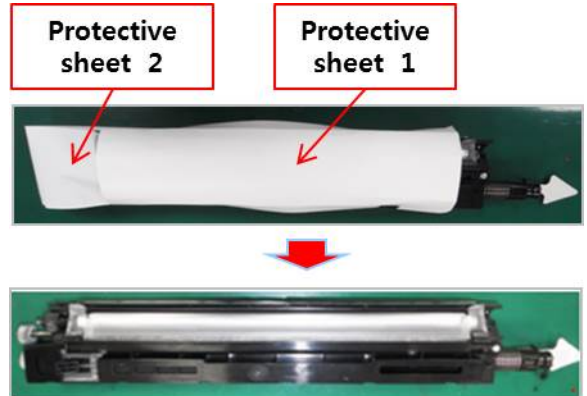
8. Unpack the Deve unit box and check the components. (4 items)



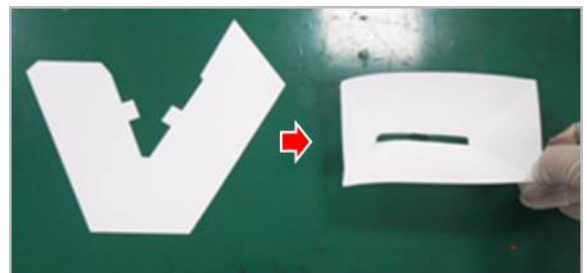
9. Remove two protective sheets.



- When removing the protective sheet1, be careful that the mag roller is not contaminated.
- When removing the protective sheet2, be careful to the grease contamination.

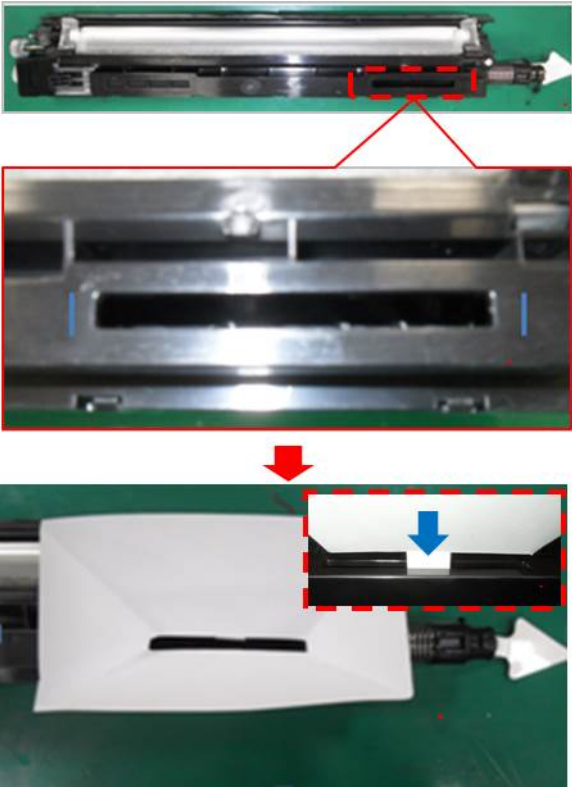


10. Make the sheet to the funnel shape.



3. Disassembly and Reassembly

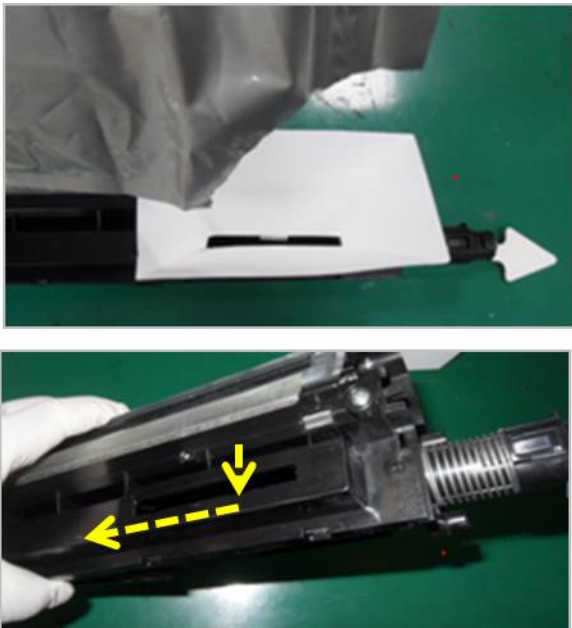
11. Insert the funnel paper to the hole of the Deve unit as shown below.



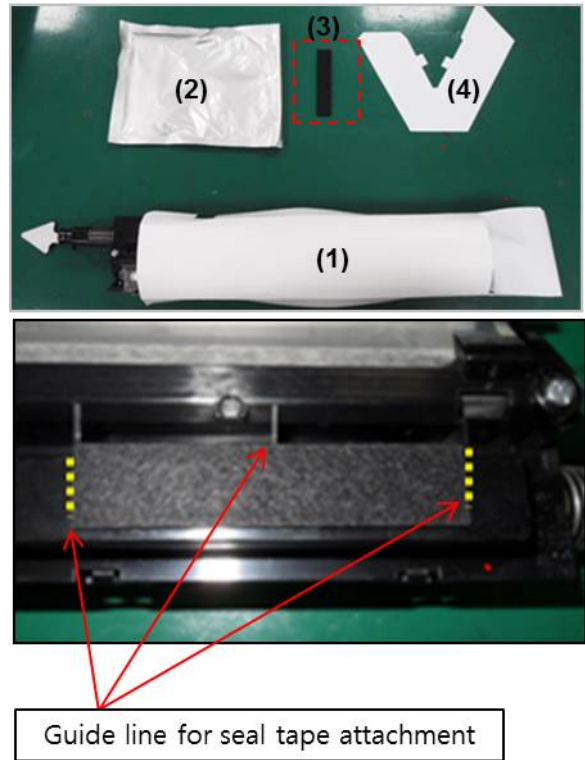
12. Pour the developer powder to the funnel.

**!** NOTE

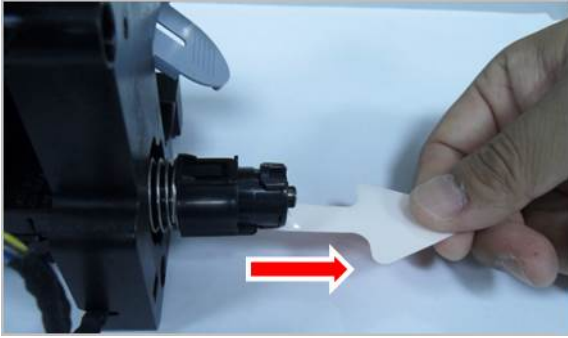
When filling the developer, intermittently, lean the deve unit to avoid overflow.



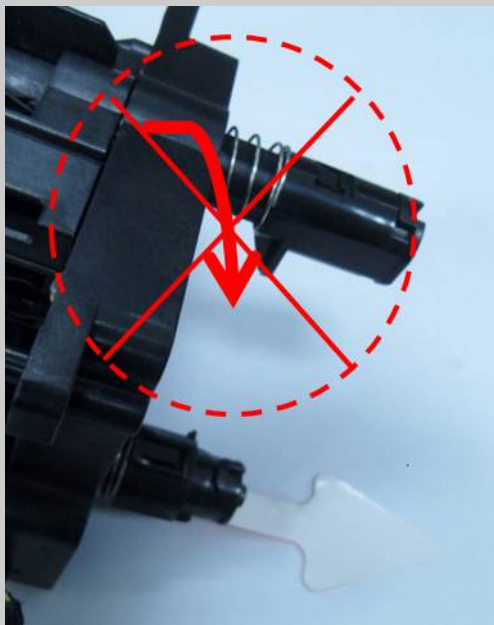
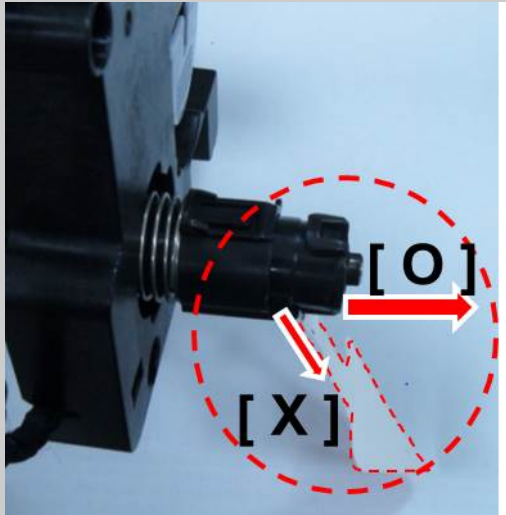
13. Attach the seal tape to the hole with attention after completing filling.



14. Remove the arrow label horizontally.

**CAUTION**

Do not remove the arrow label to downward direction. Do not lean the imaging unit. Developer leak will occur.

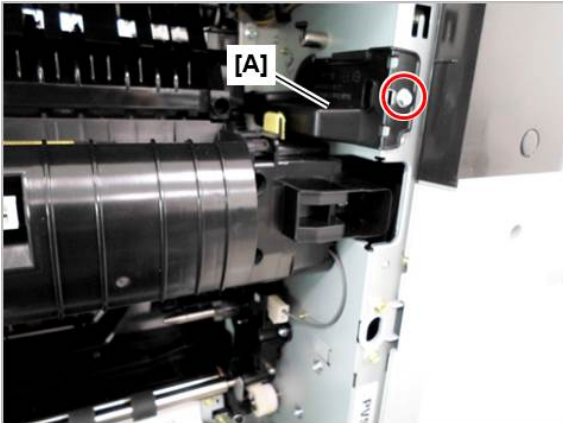


15. Reassemble the deve unit and drum unit in reverse order of disassembly.

### 3.2.2.3. Fuser Unit

---

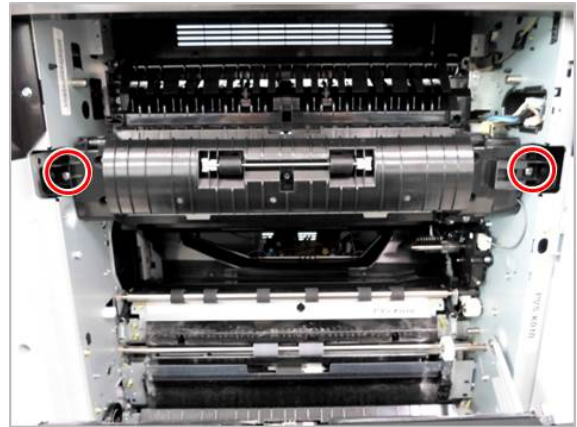
1. Open the side cover.
2. Remove the cover[A] after removing 1 screw.



3. Unplug the connector.

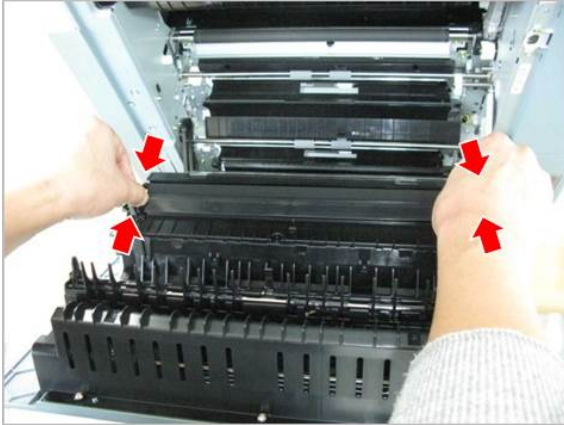


4. Remove the fuser unit after removing 2 screws.



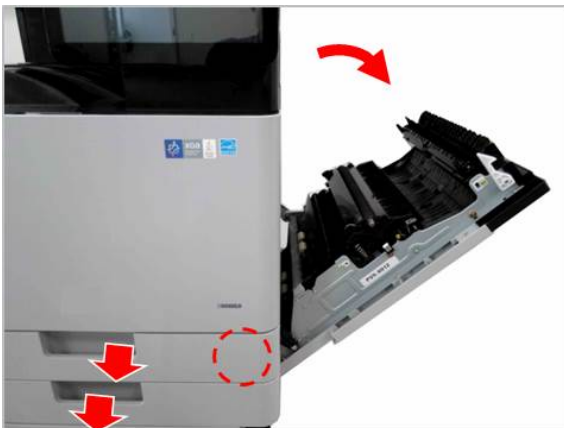
### 3.2.2.4. Transfer roller

1. Open the side cover.
2. Hold and release the both sides of the transfer roller.

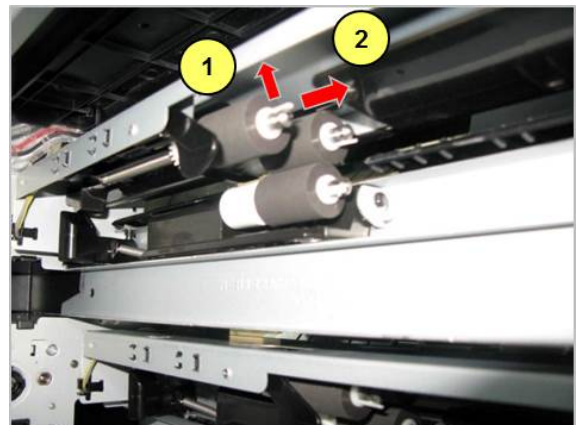


### 3.2.2.5. Pick Up\_Reverse\_Forward Roller

1. Open the side cover. Remove the tray1 and tray2.



2. Lift small tap, remove the pick up/ reverse/ forward roller.



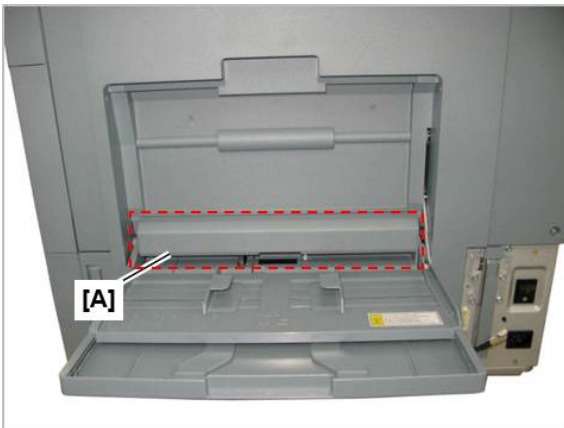
**!** NOTE

When replacing these rollers, it is recommended that you replace all three rollers at the same time.

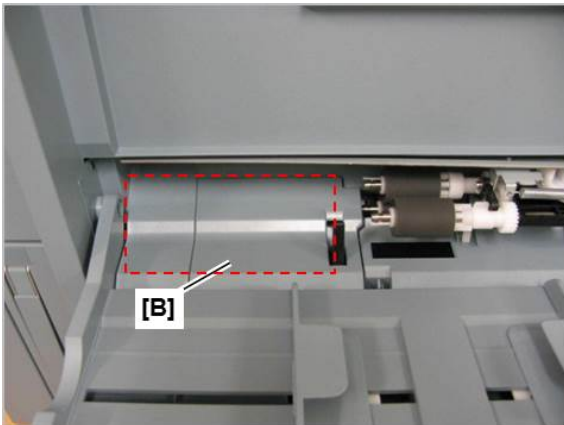
### 3.2.2.6. MP Pick Up\_Reverse\_Forward roller

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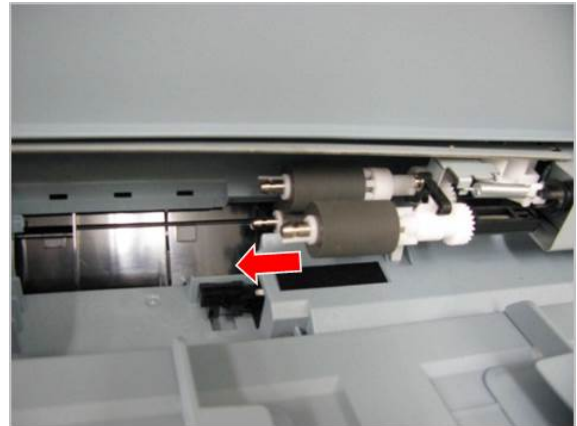
1. Open the MP Tray. Remove the cover[A].



2. Remove the cover[B].



3. Lift small tap, remove the pick up/ reverse/ forward roller.



 **NOTE**

When replacing these rollers, it is recommended that you replace all three rollers at the same time.

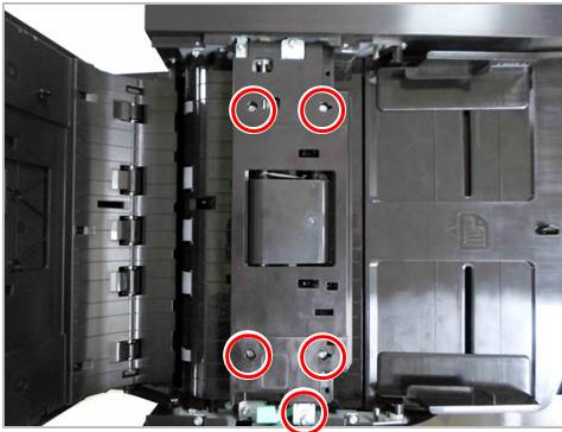


### 3.2.2.7. DSDF Pick-up roller Assy

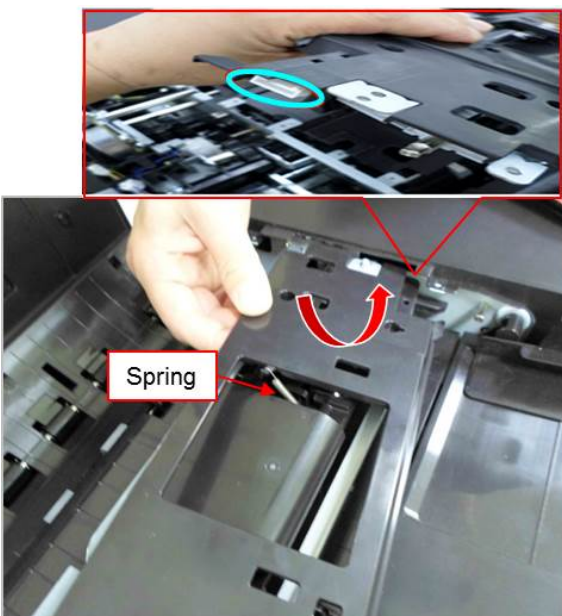
1. Open the DSDF-open cover.



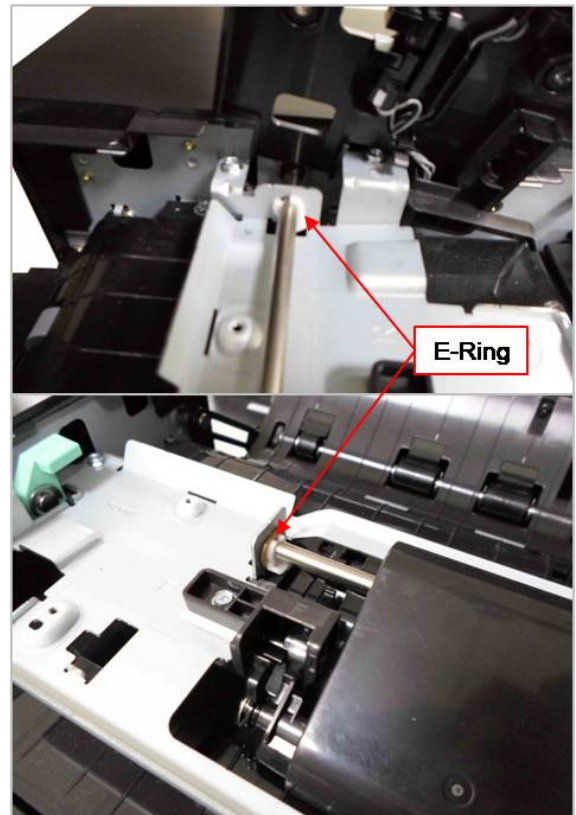
2. Remove 5 screws.



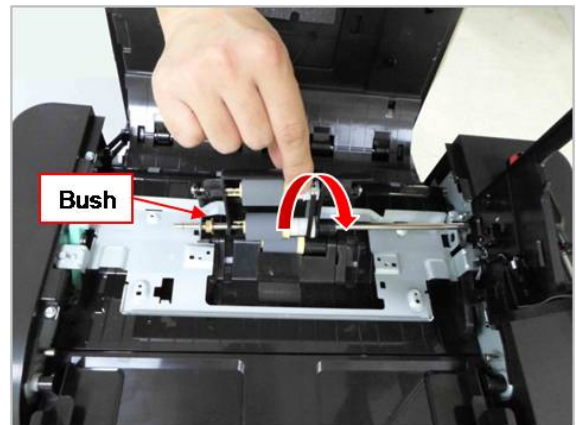
3. Release the pick up Assy cover after removing the spring and unplugging the connector.



4. Remove the both E-ring of the pick up Assy.



5. Release the pick up roller Assy after releasing the Bush.

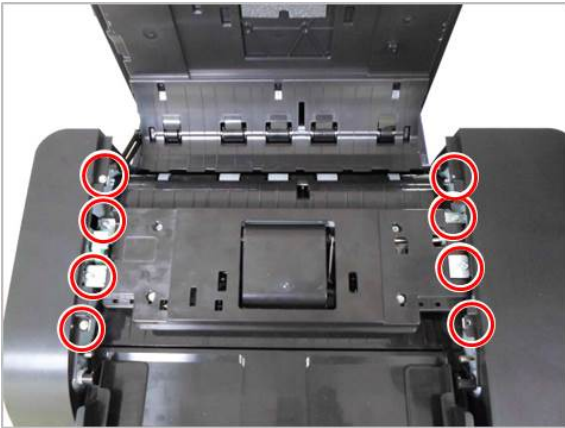


### 3.2.2.8. DSDF reverse roller

1. Open the DSDF unit. Remove 2 screws from the bottom of the DSDF unit.



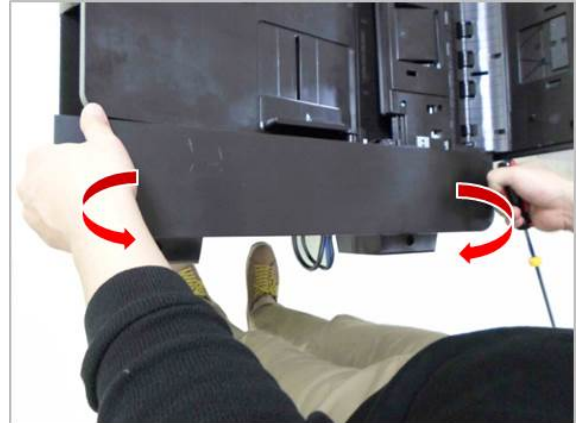
2. Open the DSDF-open cover. Remove 8 screws.



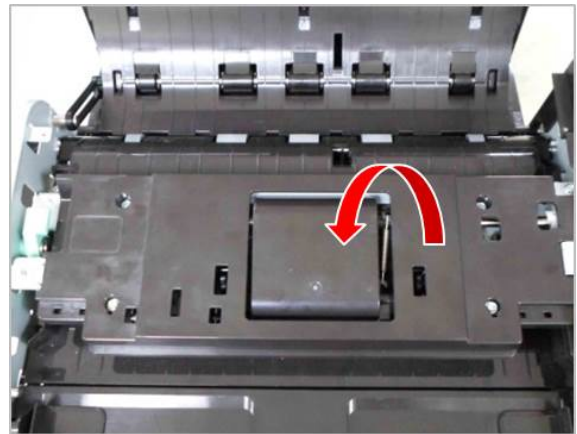
3. Release the DSDF front cover.



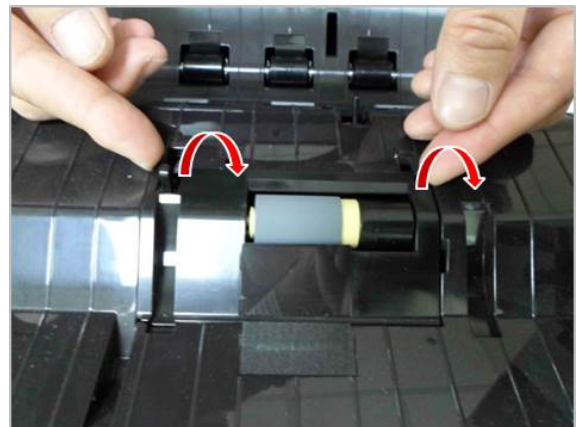
4. Release the DSDF rear cover.



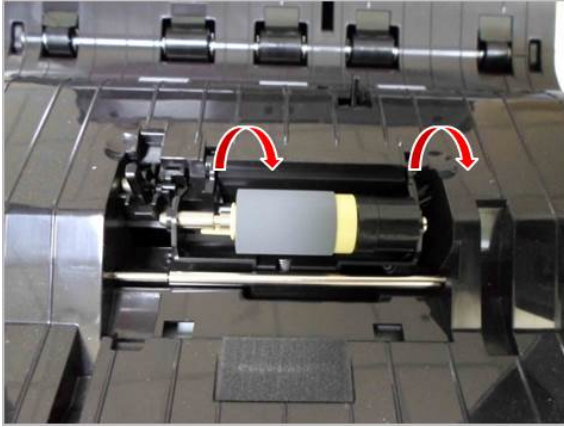
5. Remove the pick up Assy.



6. Remove the reverse roller cover.



7. Release the reverse roller Assy.



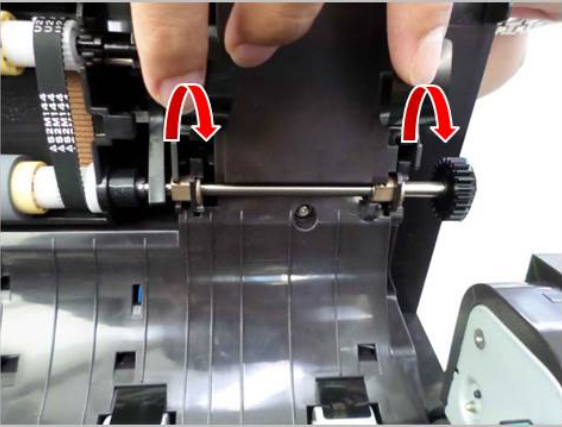
### 3.2.2.9. RADF pick up roller Assy

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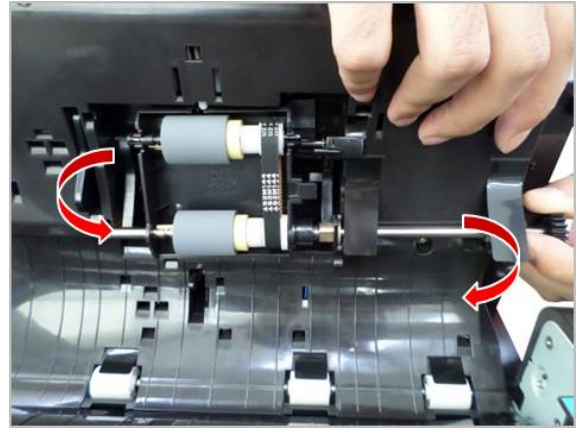
1. Open the RADF-open cover.



2. Pull down the shaft holder.



3. Release the RADF pick up roller Assy.



### 3.2.2.10. RADF reverse roller Assy

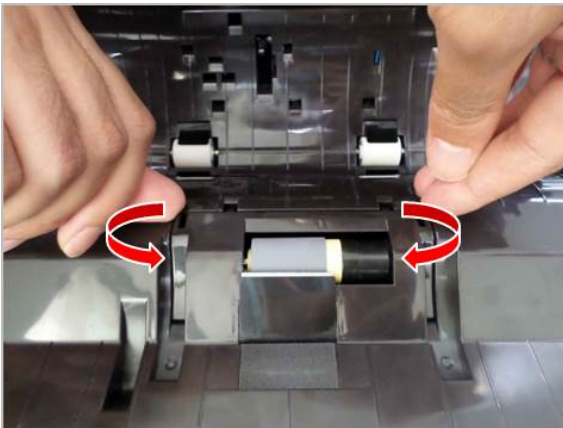
1. Open the RADF-open cover.



3. Release the RADF reverse roller Assy.



2. Remove the RADF reverse roller cover.



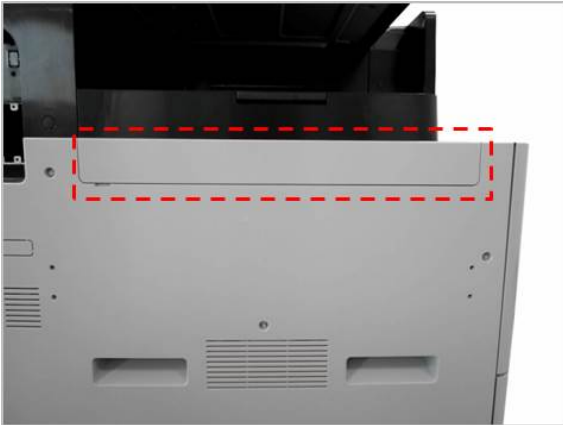
### 3.3. Replacing the main SVC part

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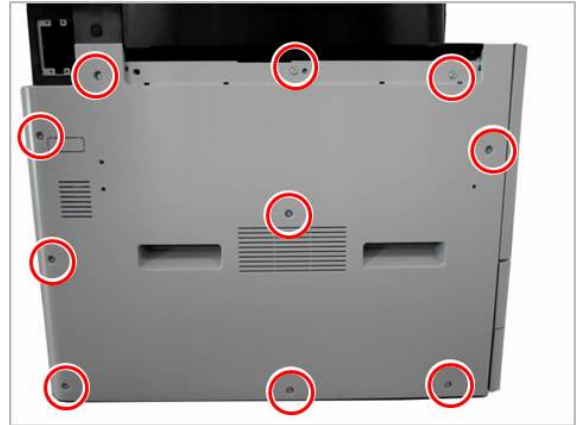
#### 3.3.1. Left cover

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1. Remove the left-top cover.



2. Remove the left cover after removing 10 screws.



#### 3.3.2. Rear Cover

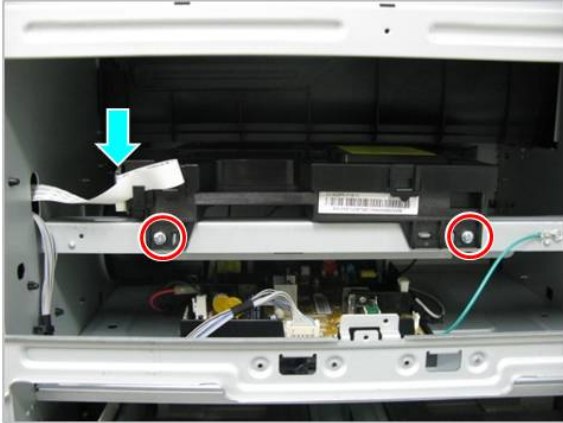
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1. Remove 5 screw-caps on the upper-rear cover. Remove 9 screws. And remove the rear cover.

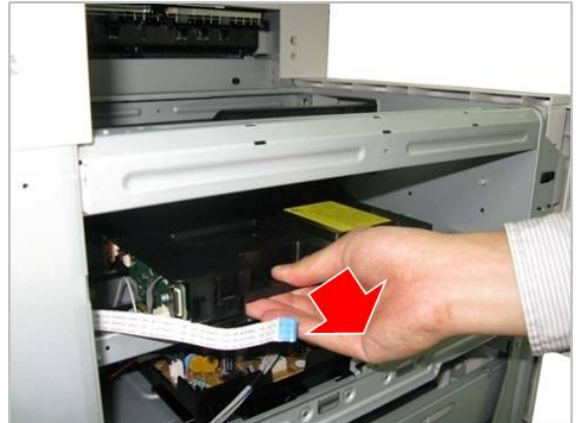


### 3.3.3. LSU

1. Remove the left cover. (Refer to 3.3.1)
2. Remove 2 screws. Unplug the flat cable.



3. Remove the LSU.



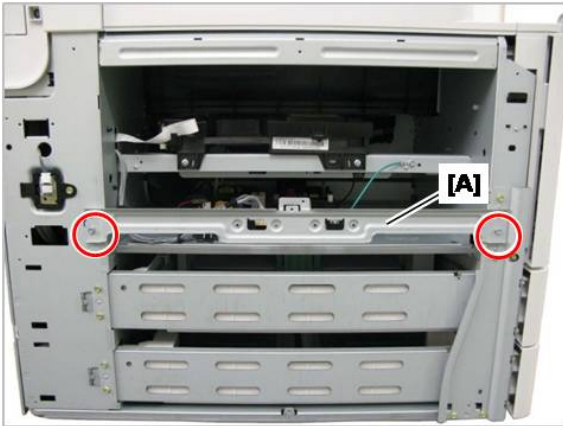
### 3.3.4. Temperature Sensor

1. Remove the left cover. (Refer to 3.3.1)
2. Remove the temperature sensor after unplugging the connector.



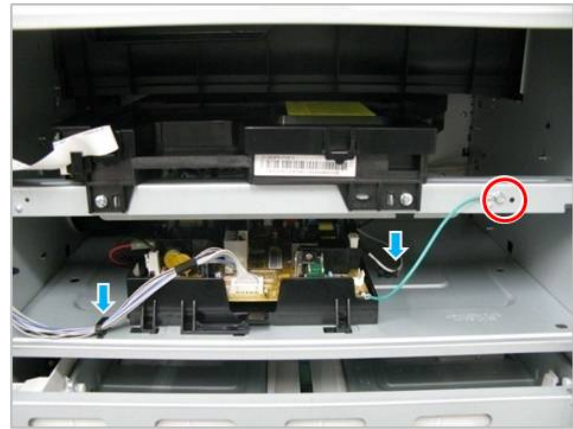
### 3.3.5. HVPS board

1. Remove the left cover. (Refer to 3.3.1)
2. Remove the bracket [A] after removing 2 screws.



3. Remove 1 screw connecting the ground wire. Open the harness saddle.

4. Unplug all connectors on the HVPS board. Take out the HVPS board holder.



**! NOTE**

If you remove the LSU, you can unplug the connector easily.

5. Release the HVPS board after removing 1 screw.



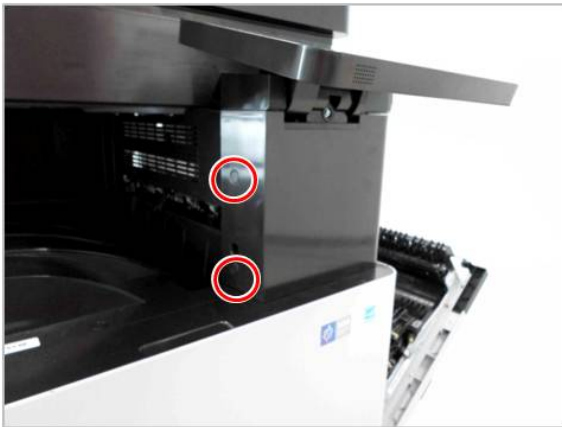


### 3.3.6. OPE Unit

1. Open the side cover.



2. Remove 2 screw-caps and 2 screws.



3. Remove 1 screw.



4. Remove the front-top cover.



5. Remove 5 screw-caps and 5 screws.



6. Lift up and release the scan front cover.



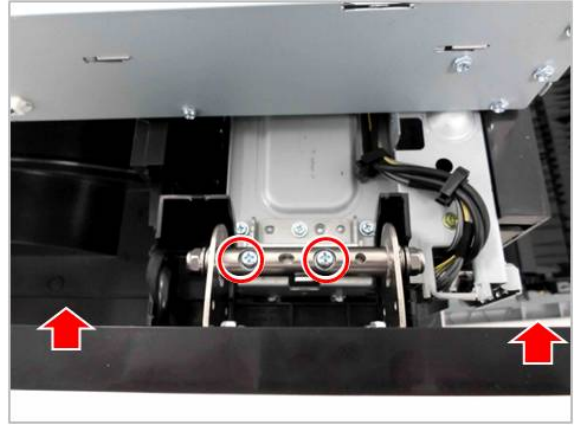
### 3. Disassembly and Reassembly

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7. Remove the scan hinge cover.

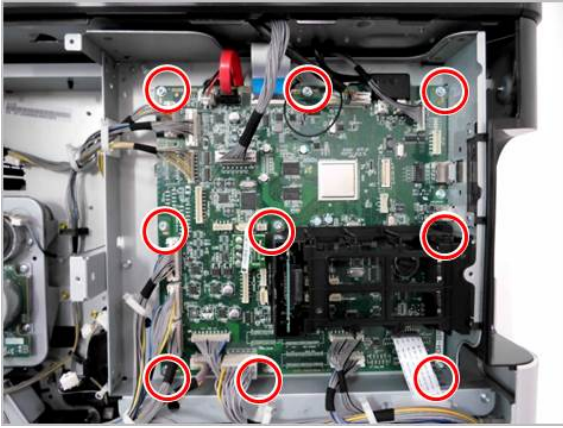


8. Remove 2 screws. Then release the OPE Assy.



### 3.3.7. Main board

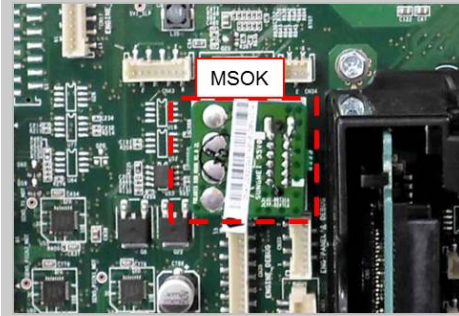
1. Remove the rear cover. (Refer to 3.3.2)
2. Unplug all connectors on the main board.
3. Remove the main board after removing 9 screws.



4. Install the new main board and insert the MSOK and memory.

**NOTE**

When inserting the MSOK, be careful its direction.

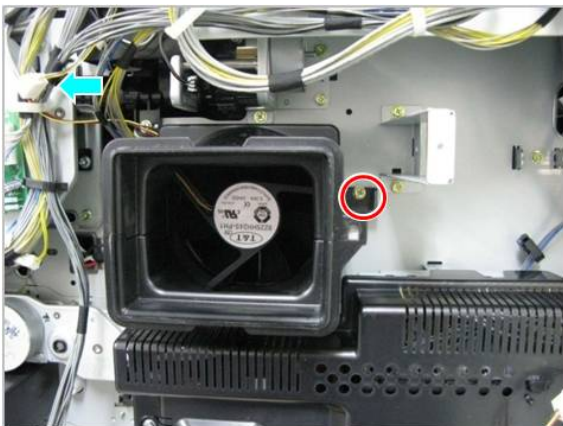


**NOTE**

Shading Test for ADF(DSDF) Unit must be carried out, after replacing the main board. (Refer to 4.5.5.3)

### 3.3.8. Deve Fan

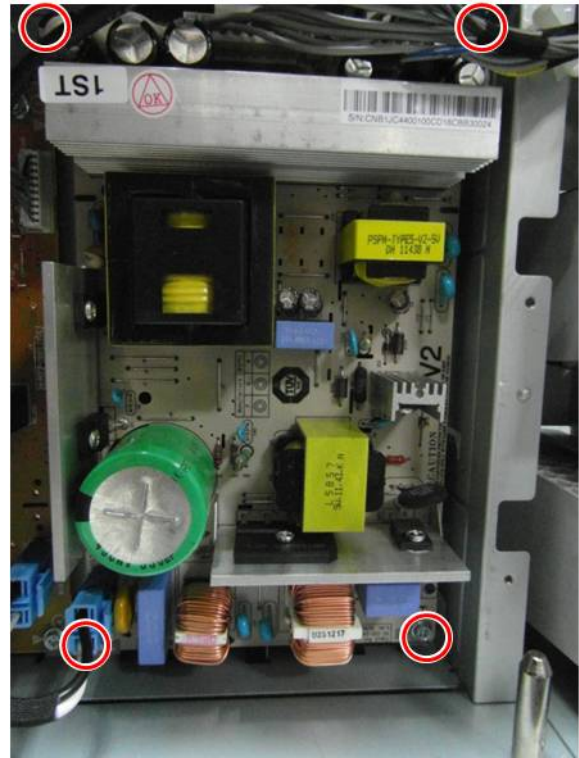
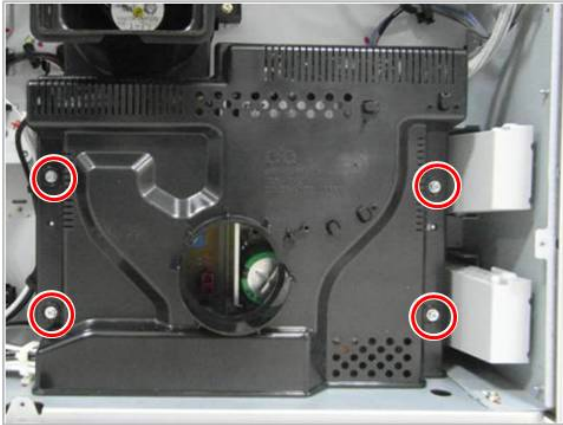
1. Remove the rear cover. (Refer to 3.3.2)
2. Unplug the connector. Remove 1 screw. And remove the fan.



### 3.3.9. SMPS board

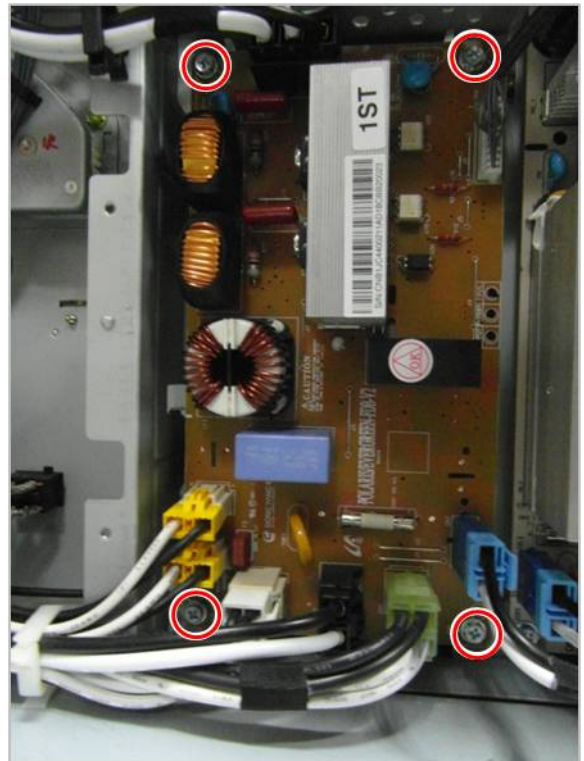
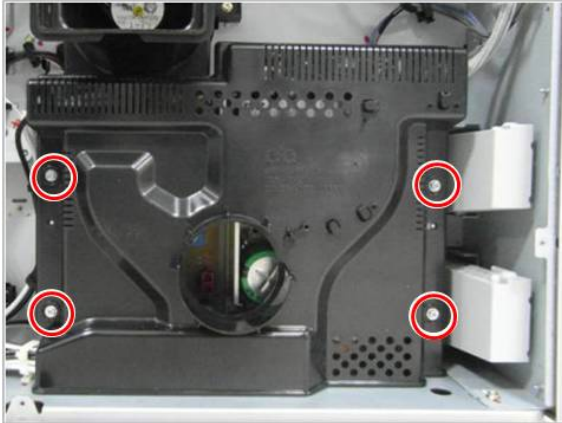
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1. Remove the rear cover. (Refer to 3.3.2)
2. Remove 4 screws. And remove the SMPS cover.
3. Unplug all connectors. Remove 4 screws. And remove the SMPS board.



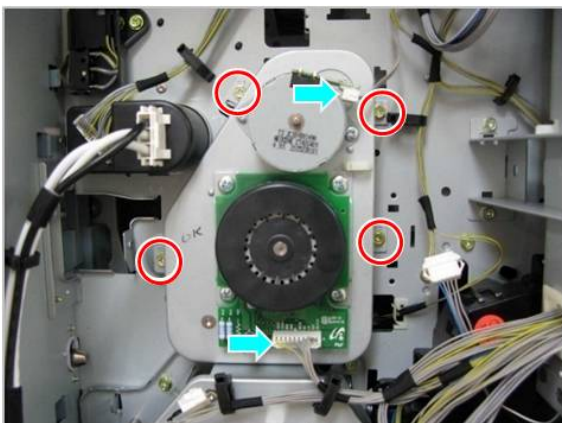
### 3.3.10. FDB board

1. Remove the rear cover. (Refer to 3.3.2)
2. Remove the SMPS cover after removing 4 screws.
3. Unplug all connectors on FDB board. Remove 4 screws. And remove the FDB board.



### 3.3.11. Fuser\_Exit Drive Unit

1. Remove the rear cover. (Refer to 3.3.2)
2. Unplug 2 connectors. Remove 4 screws. And remove the Fuser/Exit Drive unit.



### 3.3.12. Main Drive Unit

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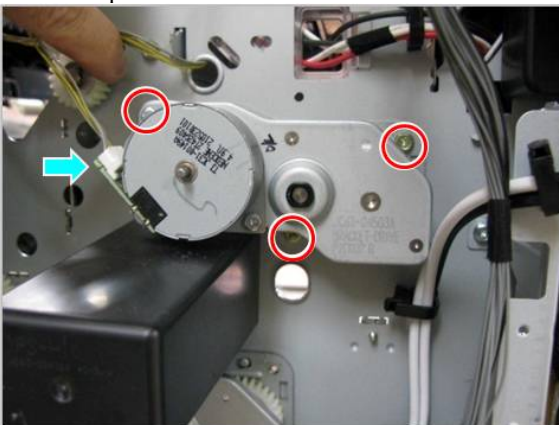
1. Remove the Imaging Unit.
2. Remove the rear cover. (Refer to 3.3.2)
3. Open the side cover.
4. Unplug 2 connectors. Remove 5 screws. And remove the Main Drive unit.



### 3.3.13. Pick-up Drive unit

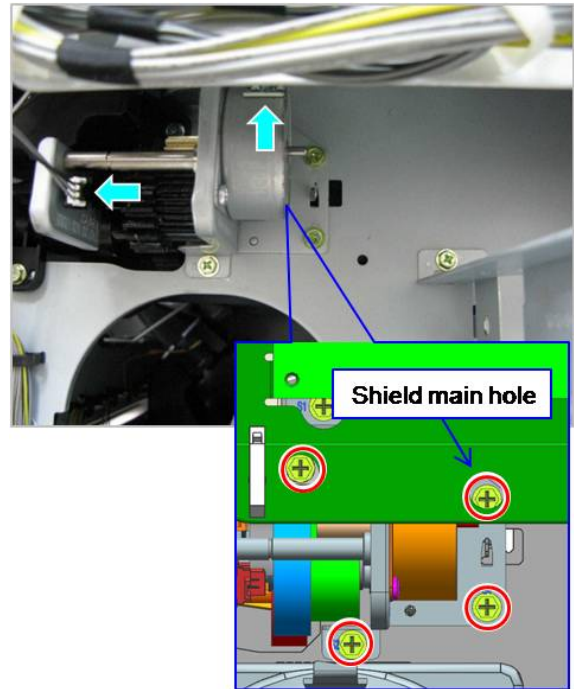
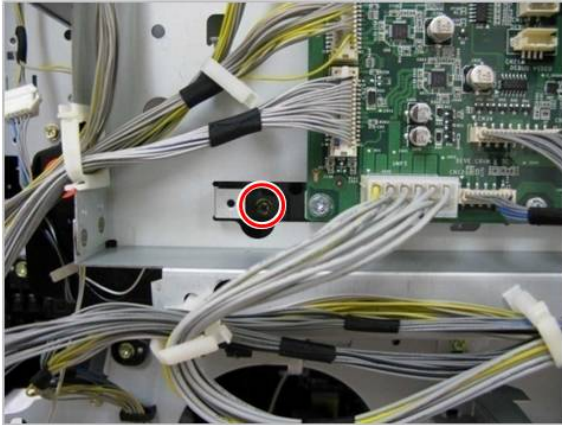
---

1. Remove the rear cover. (Refer to 3.3.2)
2. Unplug the connector. Remove 3 screws. And remove the Pick-up Drive unit.



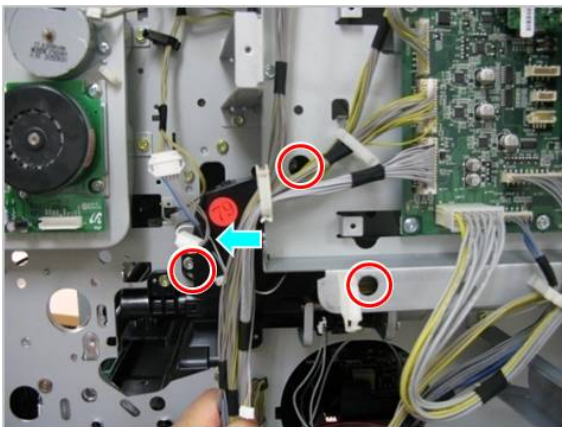
### 3.3.14. Toner Duct Drive Unit

1. Remove the rear cover. (Refer to 3.3.2)
2. Remove 1 screws.



### 3.3.15. Toner Supply Drive Unit

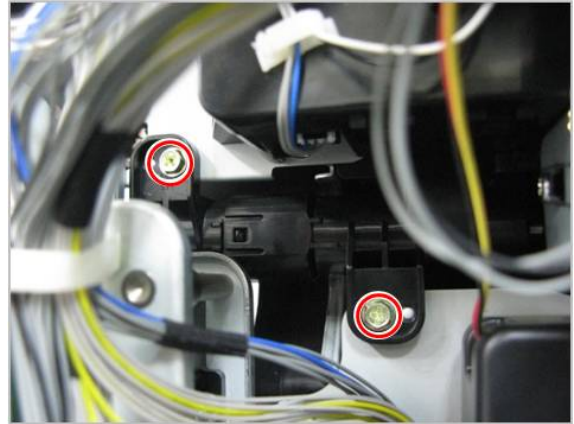
1. Remove the rear cover. (Refer to 3.3.2)
2. Unplug the connector. Remove 3 screws. And remove the Toner Supply Drive unit.



### 3.3.16. Toner Duct

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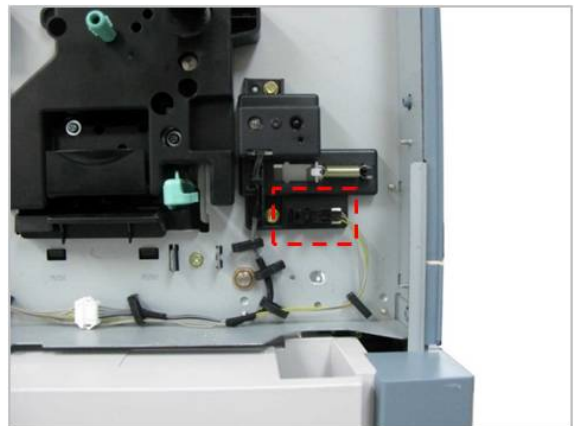
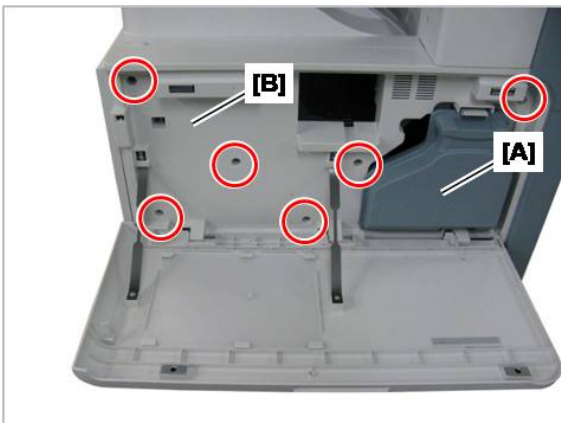
1. Remove the toner cartridge and imaging unit.
2. Remove the rear cover. (Refer to 3.3.2)
3. Remove the Main Drive unit and Toner Drive unit. (Refer to 3.3.14 and 3.3.17)
4. Remove the Toner Duct after removing 2 screws.



### 3.3.17. Waste Toner Container sensor

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1. Open the front cover. Remove the waste toner container[A].
2. Remove the inner cover[B] after removing 6 screws.
3. Unplug the connector. Remove the sensor.



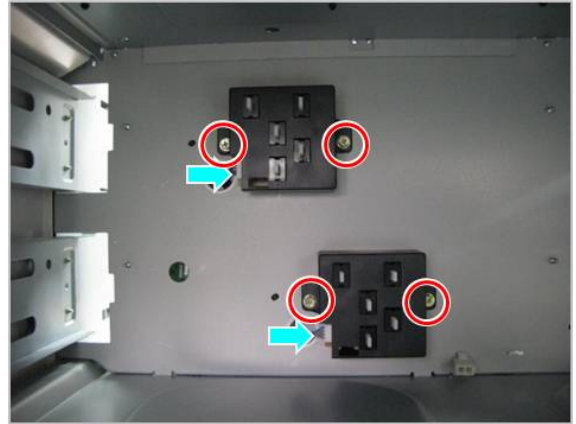


### 3.3.18. Auto Size Sensor

1. Remove the tray1 and tray2.



2. Unplug the connector. Remove 2 screws. And then remove the sensor.

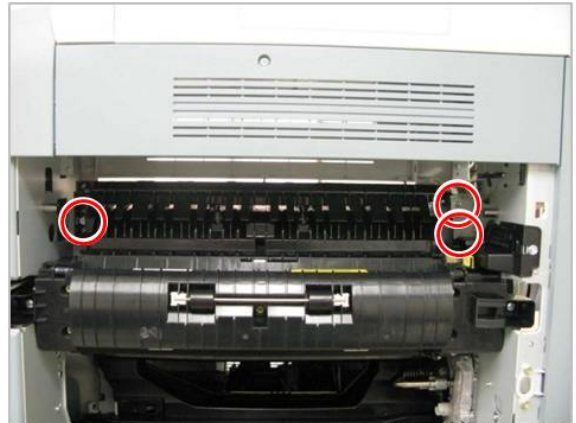


### 3.3.19. Exit Unit

1. Open the side cover. Unplug the Exit unit connector.



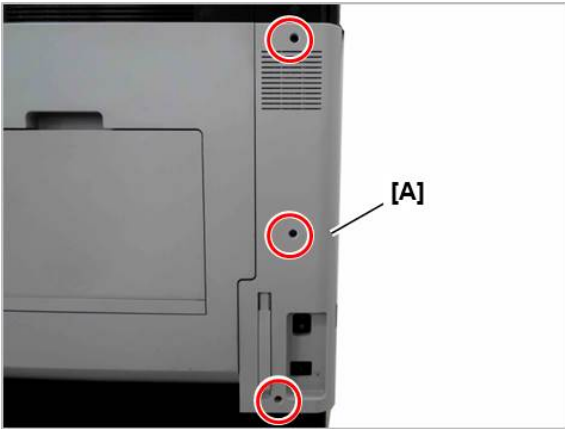
2. Remove the Exit unit after removing 3 screws.



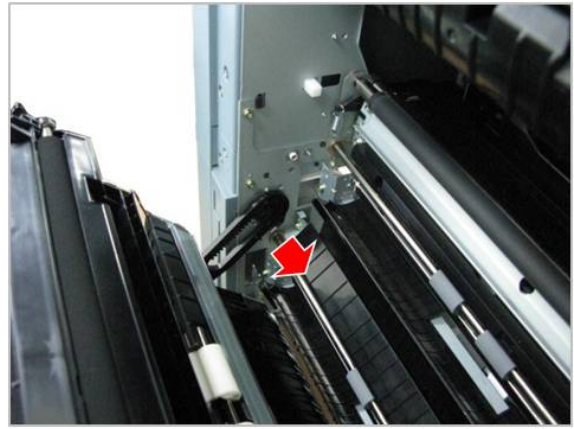
### 3.3.20. Side Unit

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1. Remove the cover [A] after removing 3 screws.



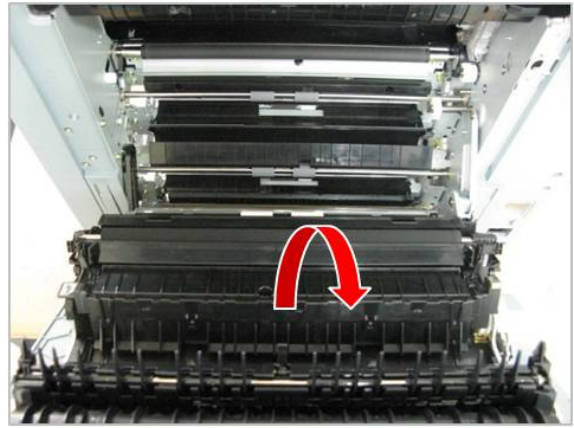
4. Release the left stopper.



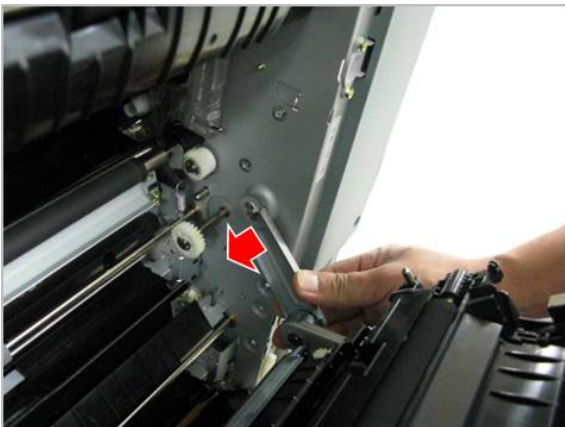
2. Unplug the side unit connector.



5. Remove the Side Unit.

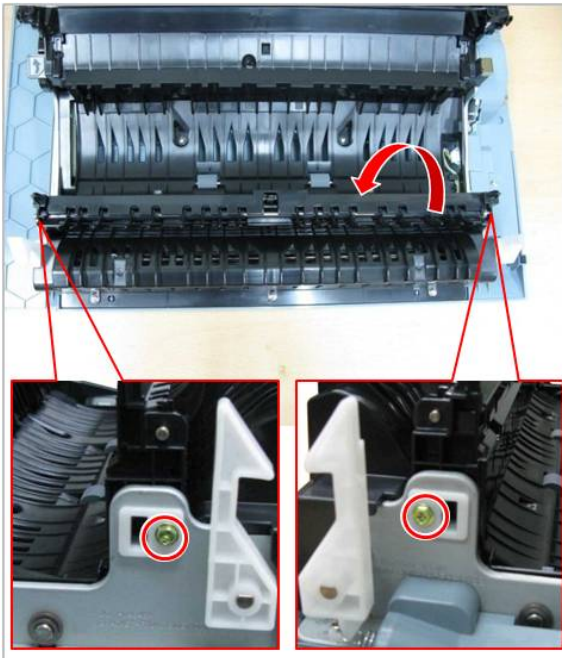


3. Release the right stopper.

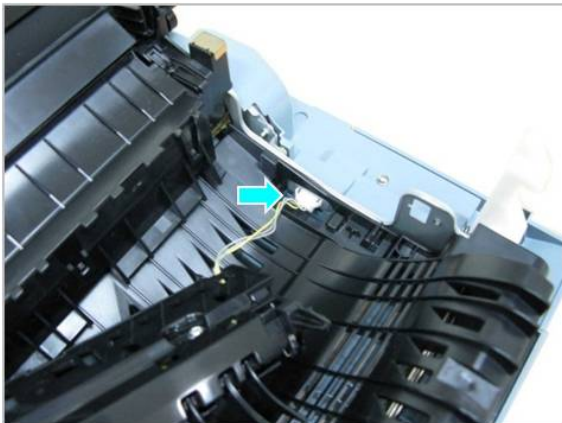


### 3.3.20.1. Fuser out sensor

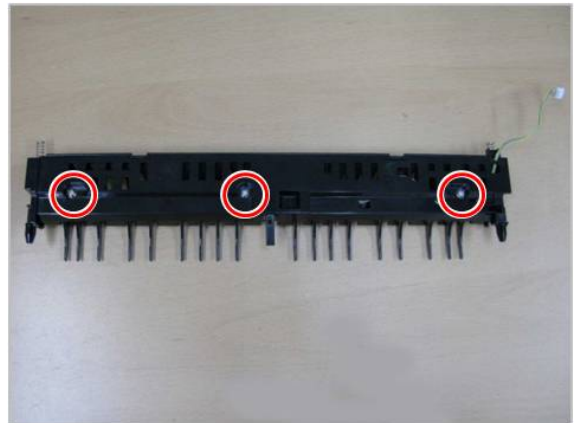
1. Remove 2 screws from the both sides. Lift up the Cover-side exit.



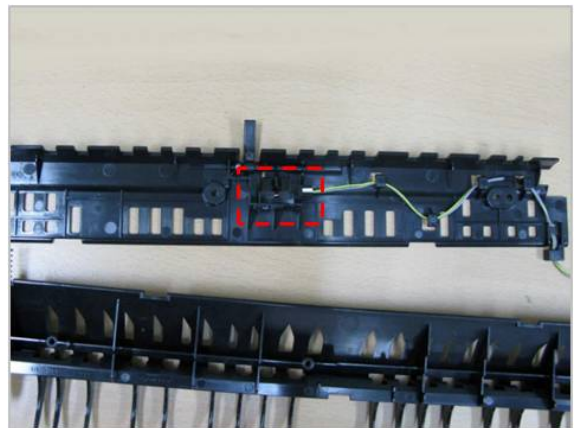
2. Remove the Cover-side exit after unplugging the connector.



3. Separate the Cover-side exit after removing 3 screws.



4. Unplug the connector. Remove the Fuser out sensor.

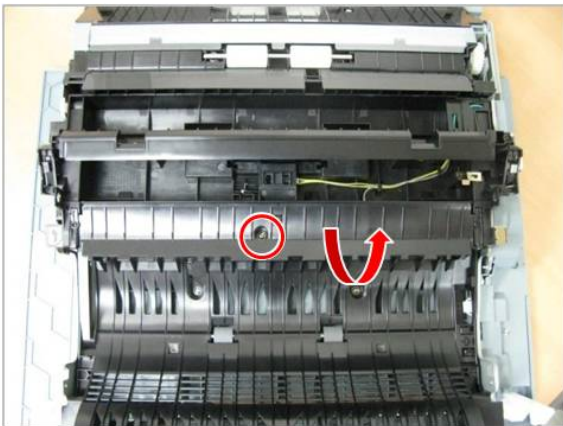


### 3.3.20.2. Temperature sensor and Duplex sensor

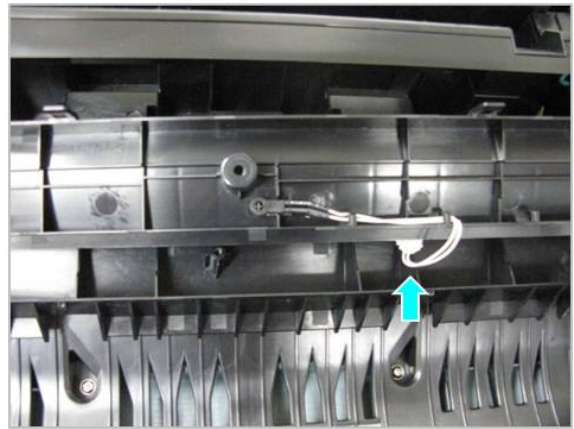
1. Remove the Transfer roller Assy.



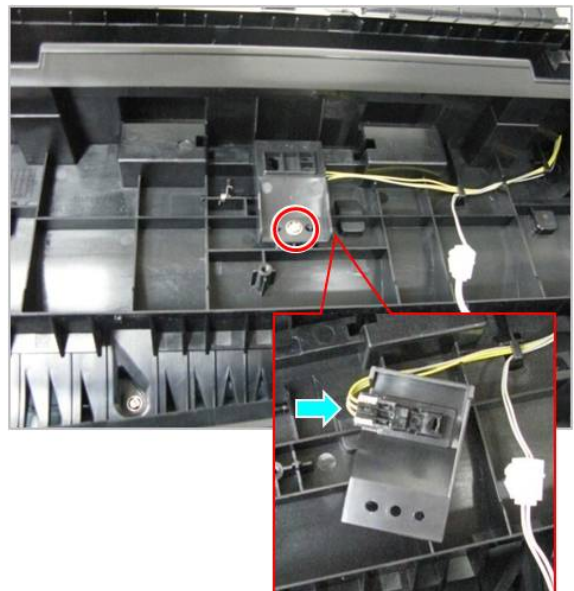
2. Turn up the Guide-TR Upper after removing 1 screw.



3. Remove the temperature sensor after unplugging the connector.

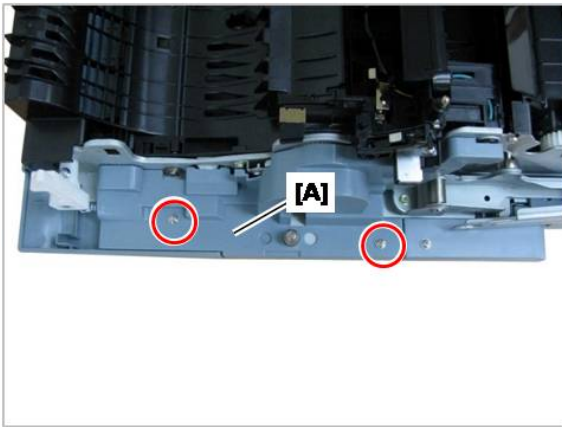


4. Remove 1 screw. Turn up the Holder-DUP SNR. And remove the duplex sensor after unplugging connector.

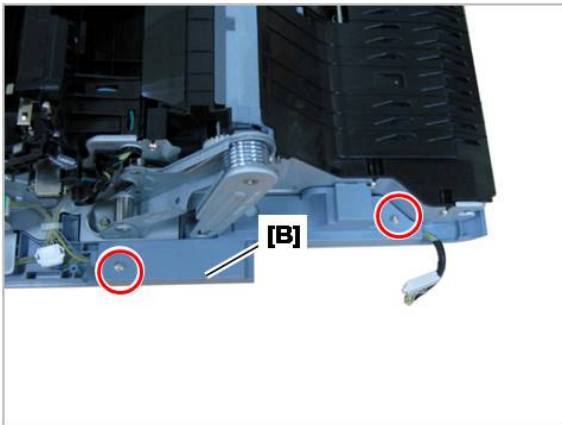


### 3.3.20.3. MP unit

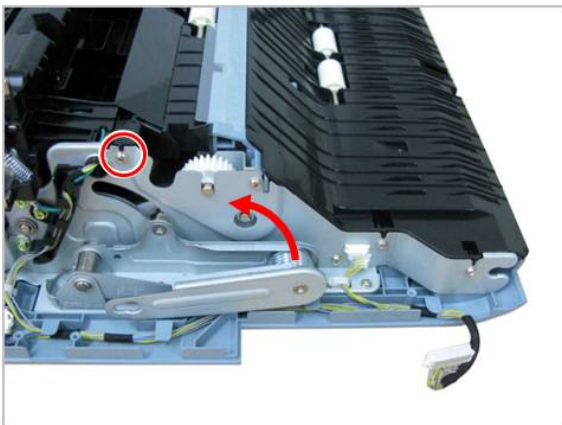
1. Remove the Harness-Cover Mono[A] after removing 2 screws.



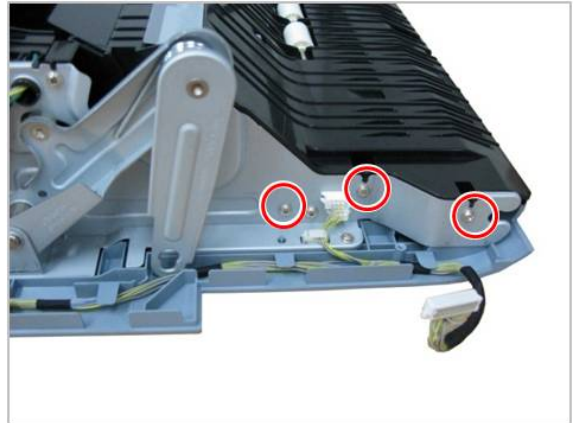
2. Remove the Harness-Cover Lower [B] after removing 2 screws.



3. Remove 1 screw. Stand the stopper.



4. Remove 3 screws.



5. Remove 1 screw.

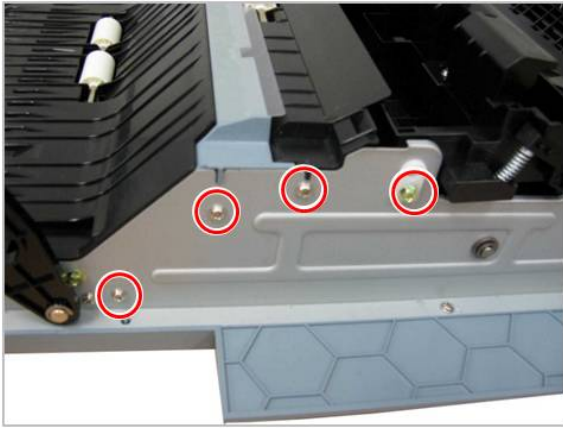


6. Remove 2 screws.

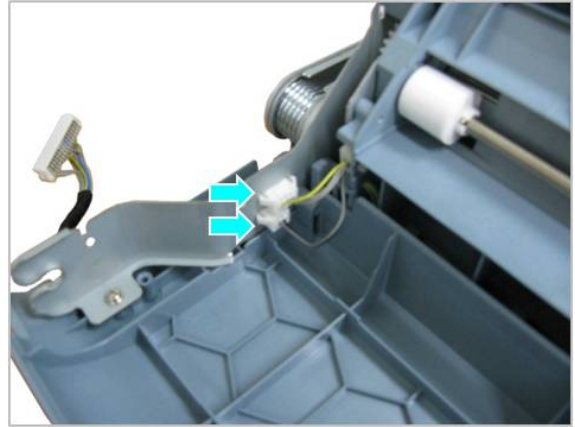


3. Disassembly and Reassembly

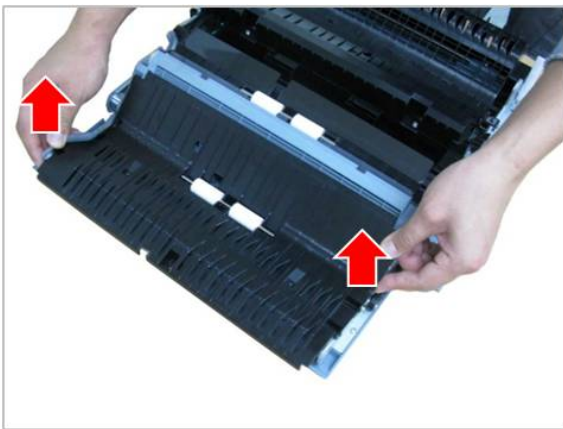
7. Remove 4 screws.



10. Unplug the connectors.



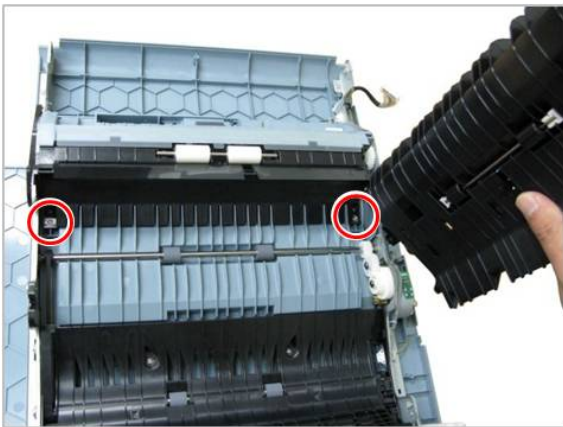
8. Lift up the Cover-Side Duplex Lower.



11. Remove the Cover-MP Front.



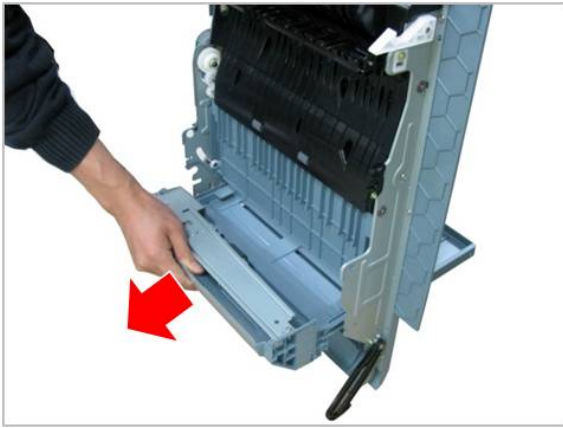
9. Remove 2 screws while you lift the Cover-Side Guide Feed.



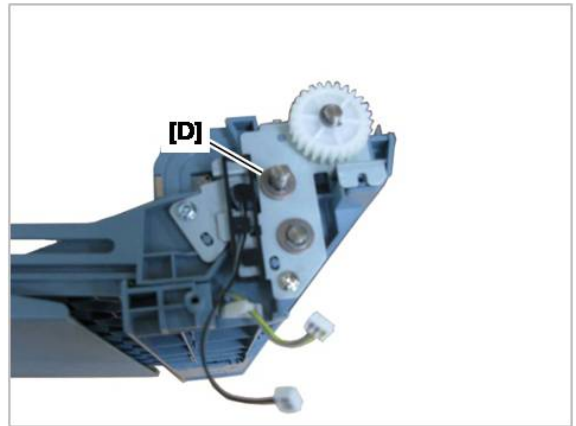
12. Release the Linker from the right of the MP tray.



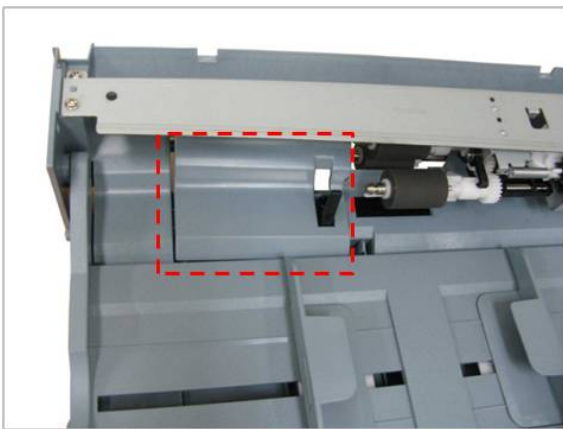
13. Remove the MP Unit.



16. Remove the Bush[D] after removing the E-ring.



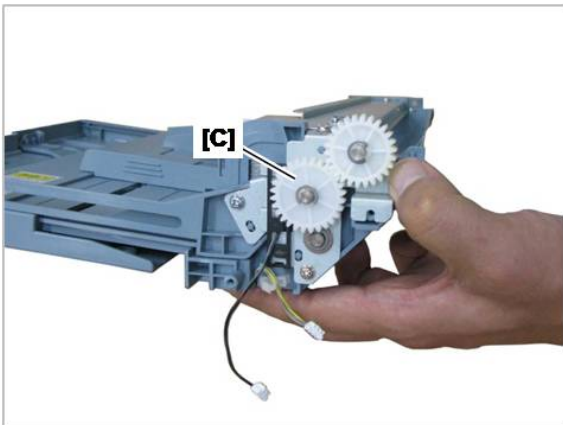
14. Remove the MP-cover base.



17. Remove the Bracket-Solenoid after removing 1 screw.



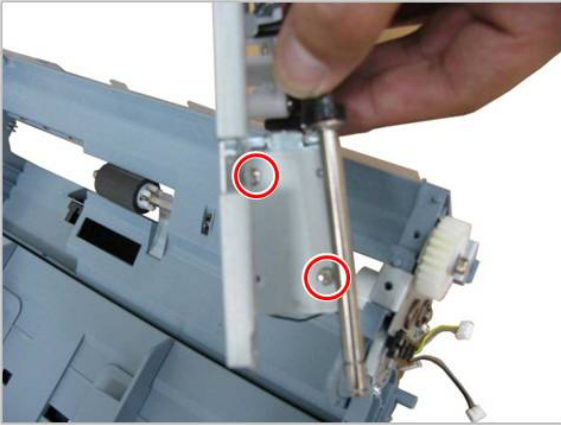
15. Remove the gear [C] after removing the E-ring.



18. Release the MP bracket pick-up after removing 4 screws.



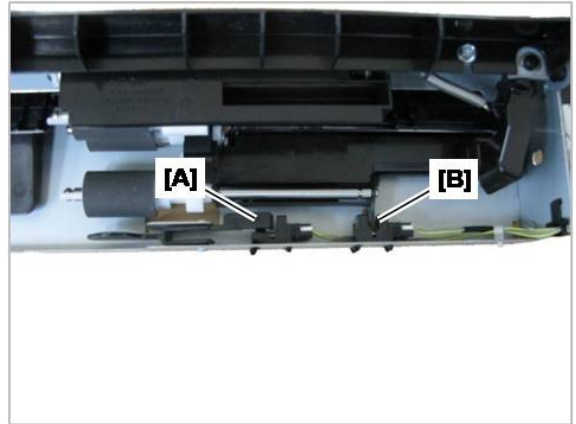
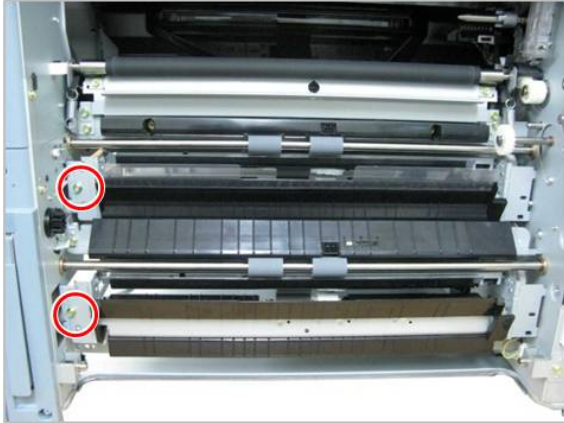
19. Remove the MP solenoid after removing 2 screws.





### 3.3.21. Pick-Up Unit and sensor

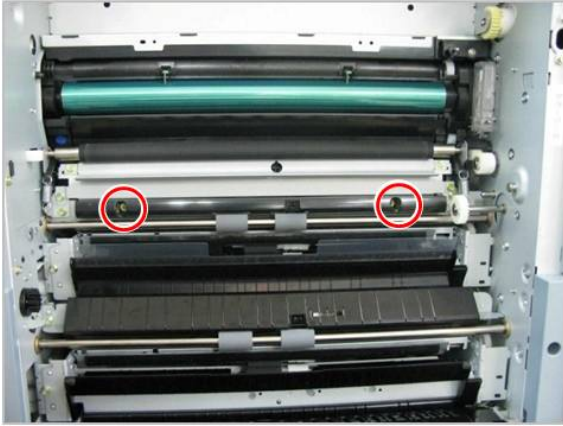
1. Remove the Side Unit. (Refer to 3.3.20)
2. Remove the Pick-up Unit1,2 after removing 2 screws.
3. Release the sensor after unplugging the connector. (Empty sensor[A], Level sensor[B])



### 3.3.22. Feed sensor 1

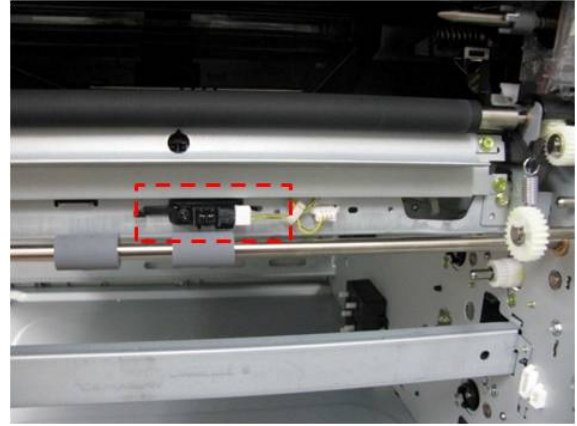
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1. Remove the sensor cover after removing 2 screws.



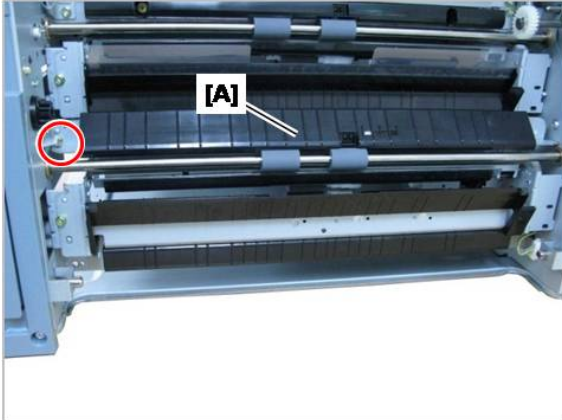
2. Release the sensor holder after removing 1 screw.

3. Remove the feed sensor after unplugging connector.

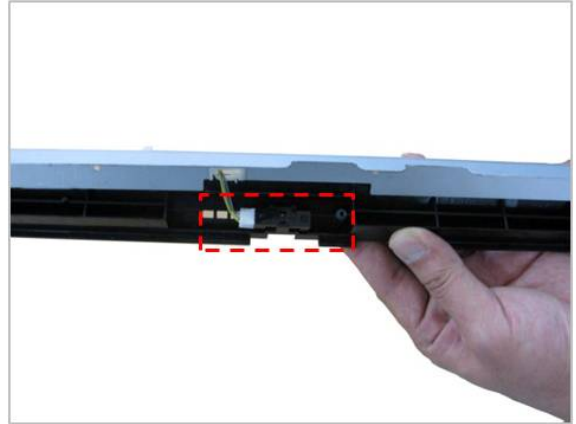


### 3.3.23. Feed Unit and Feed sensor 2

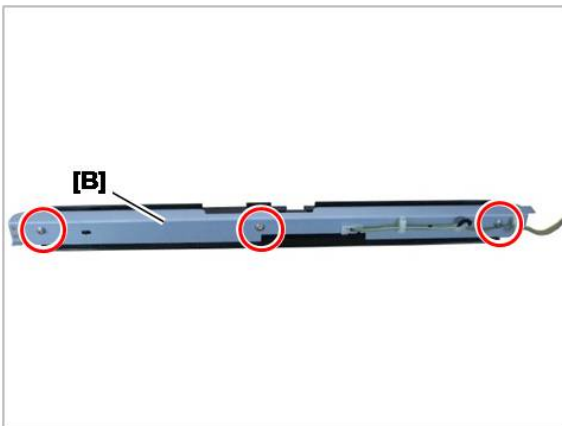
1. Remove the Side Unit. (Refer to 3.3.20)
2. Remove the Feed Unit[A] after removing 1 screw.



4. Remove the feed sensor after unplugging the connector.



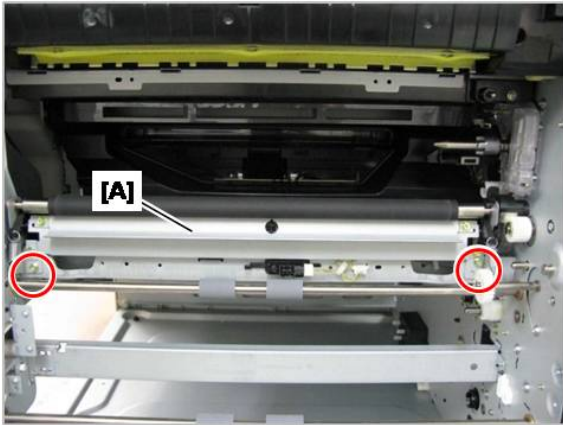
3. Remove the bracket[B] after removing 3 screws.



### 3.3.24. Registration(Regi.) Unit

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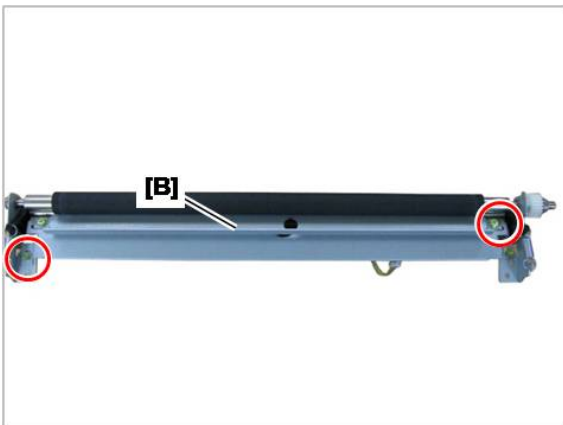
1. Remove the Side Unit. (Refer to 3.3.20)
2. Remove the Regi.unit [A] after removing 2 screws.



4. Remove the Regl. sensor after unplugging the connector.



3. Remove the bracket[B] after removing 3 screws.

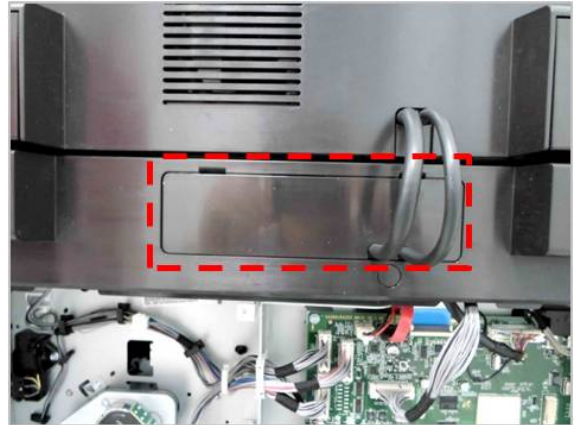


### 3.3.25. DSDF Unit

1. Remove 5 screw-caps and 5 screws.



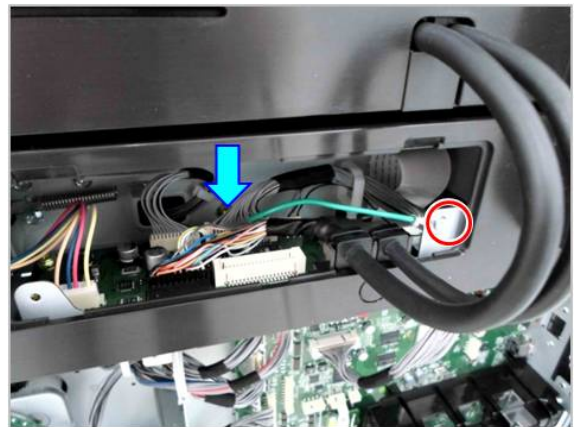
4. Remove the DSDF connector cover.



2. Remove 4 screws. Then release the rear cover.



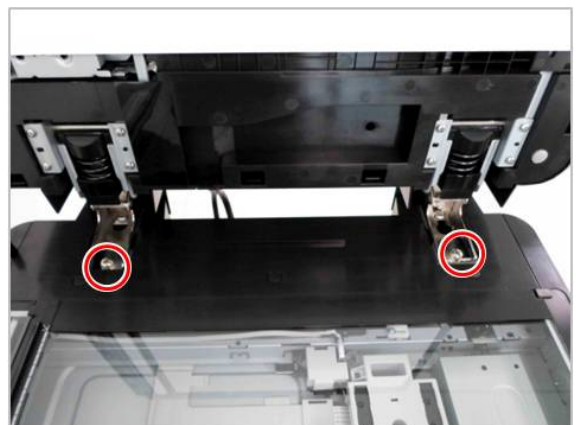
5. Unplug the DSDF harness from the scan joint board.



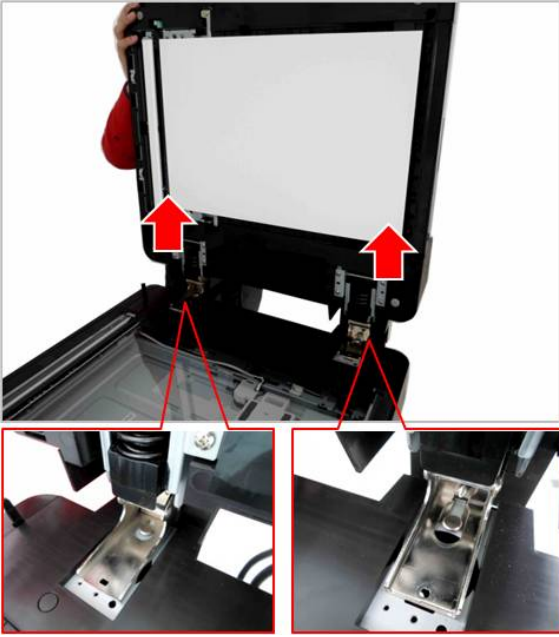
3. Remove 1 screw. Unplug the DSDF harness from the main board.



6. Open the DSDF unit. Remove 2 screws.



7. Lift up and release the DSDF unit.

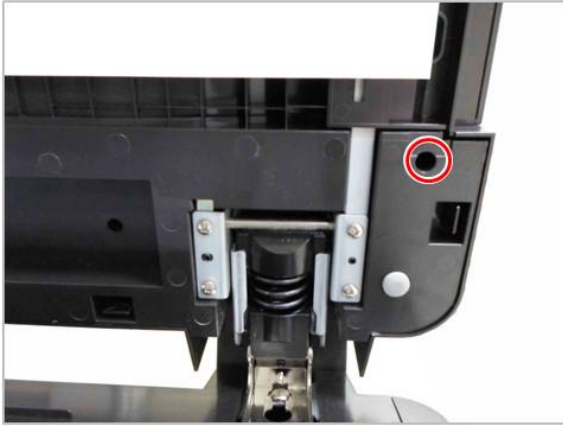


 **NOTE**

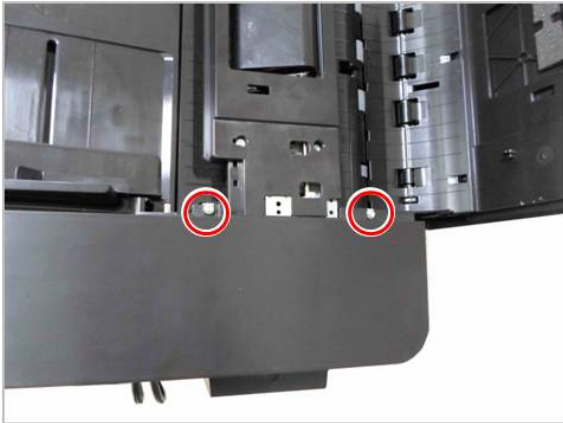
Shading Test for DSDF Unit must be carried out, after replacing the DSDF unit. (Refer to 4.5.5.3)

### 3.3.25.1. DSDF board

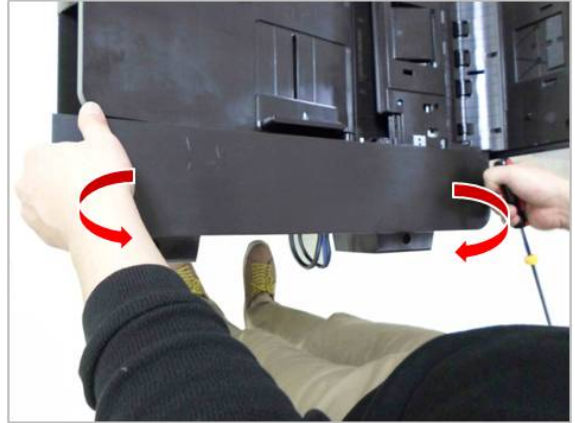
1. Open the DSDF unit. Remove 1 screw from the bottom of the DSDF. And close the DSDF unit.



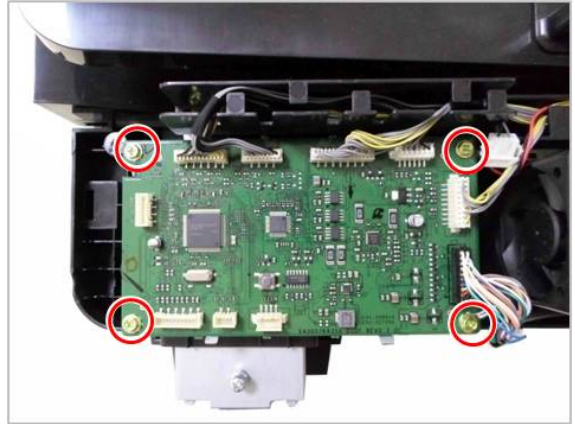
2. Open DSDF-open cover. Remove 2 screws.



3. Release the DSDF rear cover.

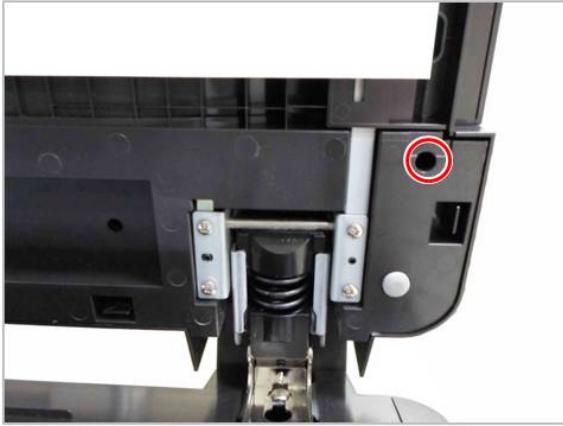


4. Unplug all harness on the DSDF board. Remove 4 screws. And release the DSDF board.

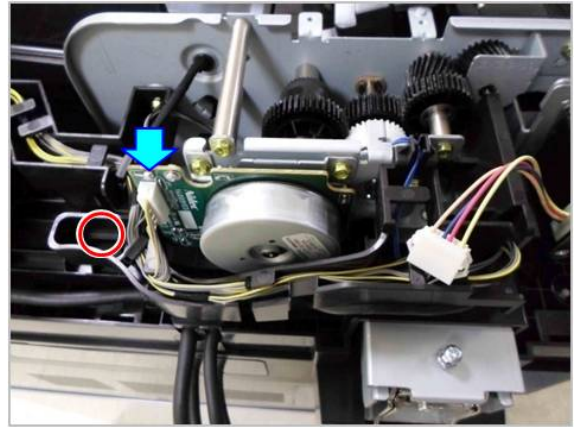


**3.3.25.2. DSDF main motor**

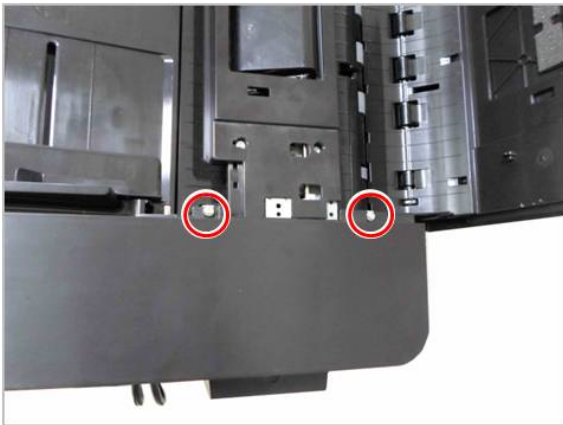
- 1. Open the DSDF unit. Remove 1 screw from the bottom of the DSDF. And close the DSDF unit.



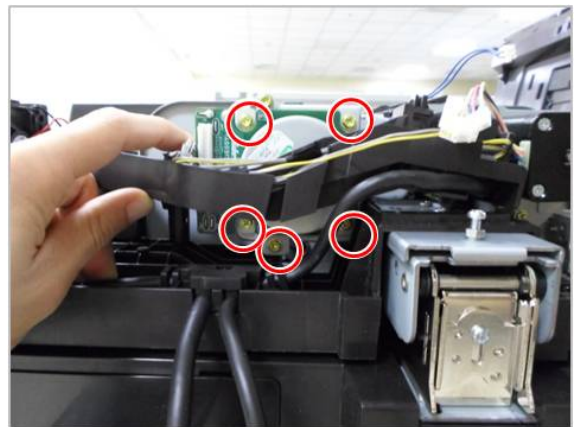
- 4. Unplug the motor connector. Remove 1 screw securing the harness guide.



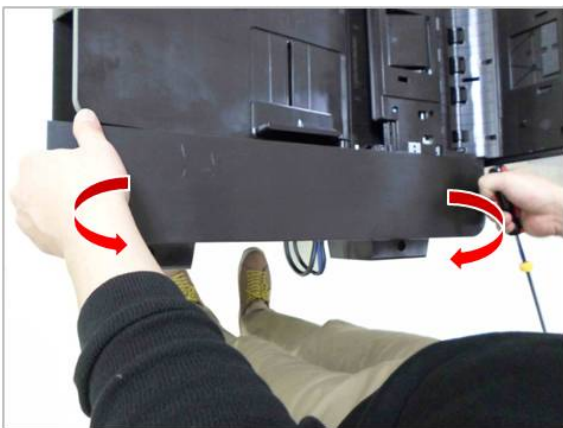
- 2. Open DSDF-open cover. Remove 2 screws.



- 5. Remove 5 screws. Release the DSDF main motor while pulling the harness guide.



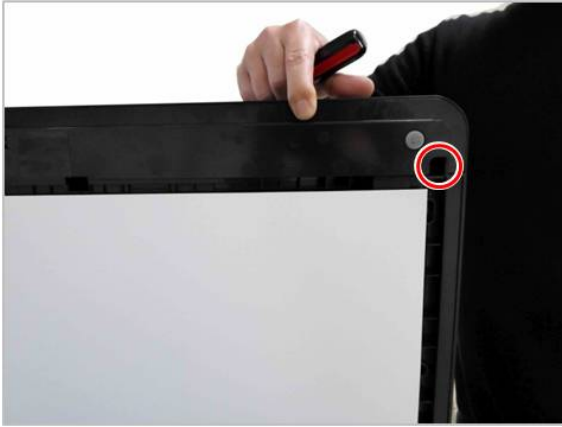
- 3. Release the DSDF rear cover.



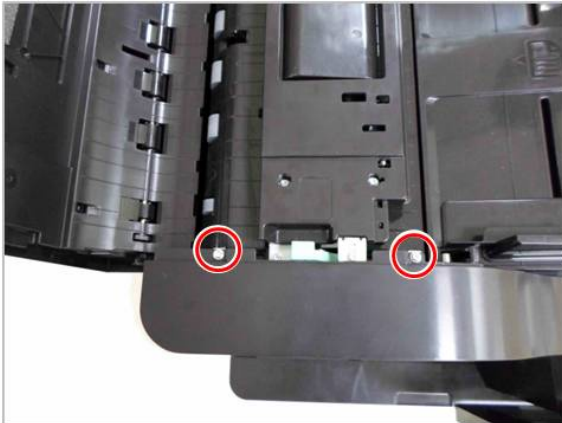


### 3.3.25.3. DSDF paper length sensor

1. Open the DSDF unit. Remove 1 screw from the bottom of the DSDF. And close the DSDF unit.



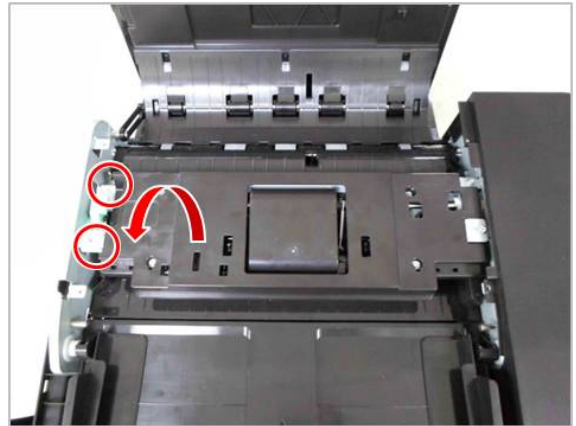
2. Open DSDF-open cover. Remove 2 screws.



3. Release the DSDF front cover.



4. Remove 2 screws. Then release the DSDF pick up Assy.



5. Open the DSDF unit. Remove 1 screw from the bottom of the DSDF. And close the DSDF unit.

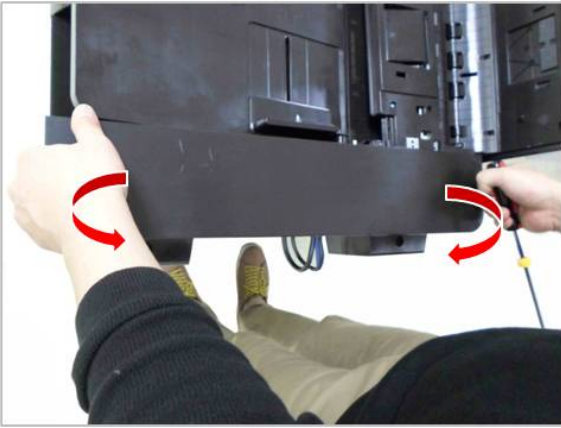


6. Open DSDF-open cover. Remove 2 screws.

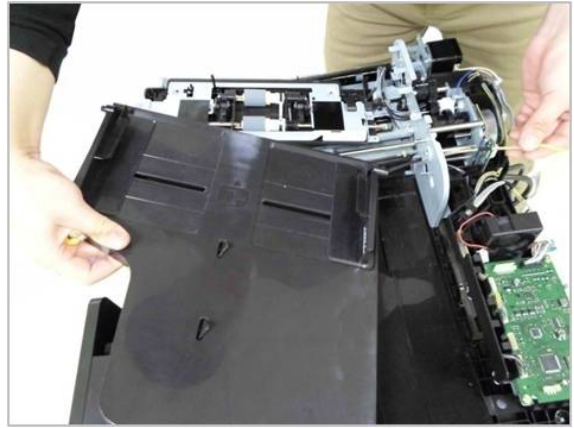


3. Disassembly and Reassembly

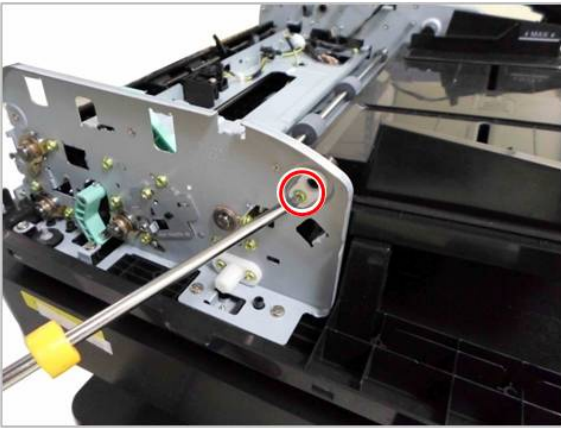
7. Release the DSDF rear cover.



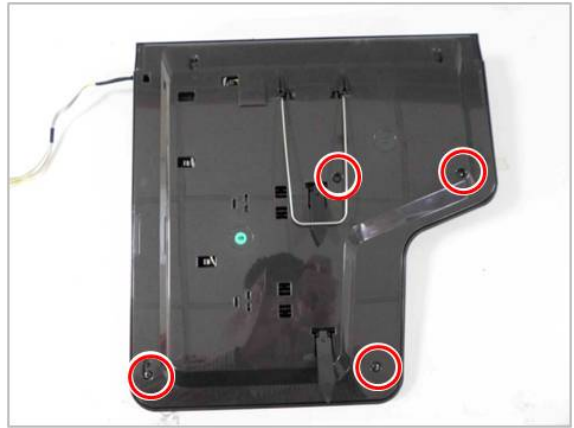
10. Release the stacker.



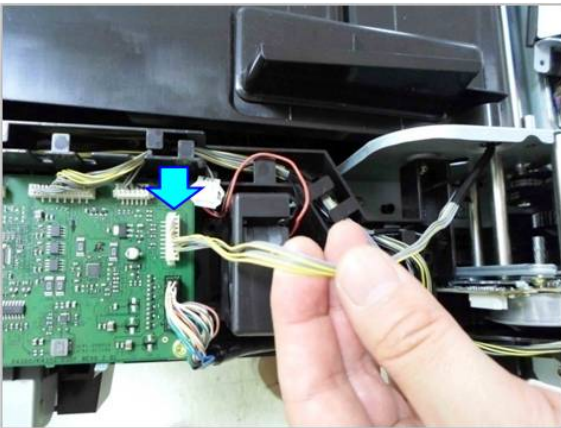
8. Remove 1 screw.



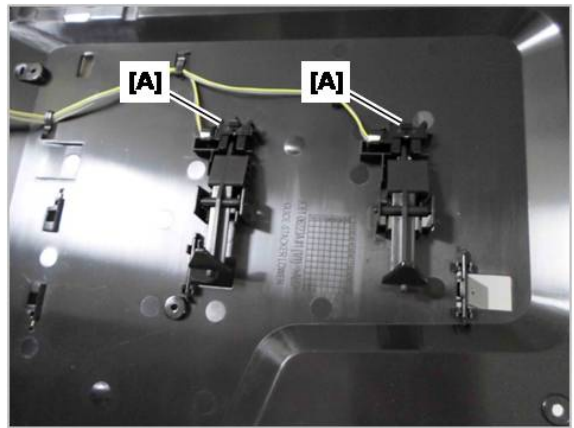
11. Remove 4 screws. Then remove the stacker lower.



9. Unplug the stacker connector from the DSDF board.

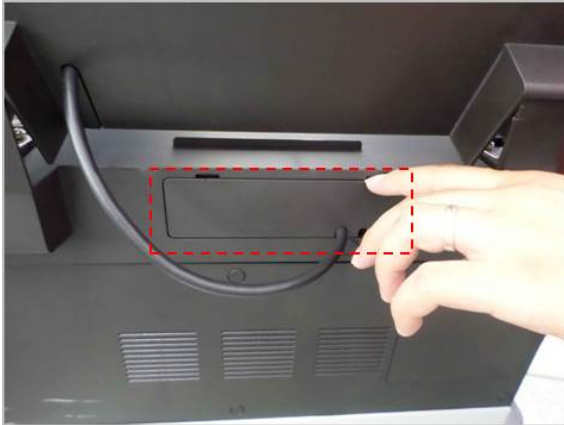


12. Remove the paper length sensor after unplugging the connector.



### 3.3.26. RADF Unit

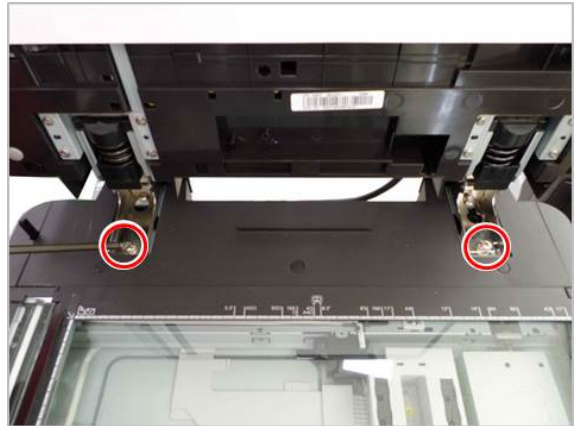
1. Remove the RADF connector cover.



2. Remove 1 screw. Unplug the RADF harness.



3. Open the RADF Unit. Remove 2 screws securing both hinge units.



4. Lift up and release the RADF Unit.



### 3.3.26.1. RADF Board

---

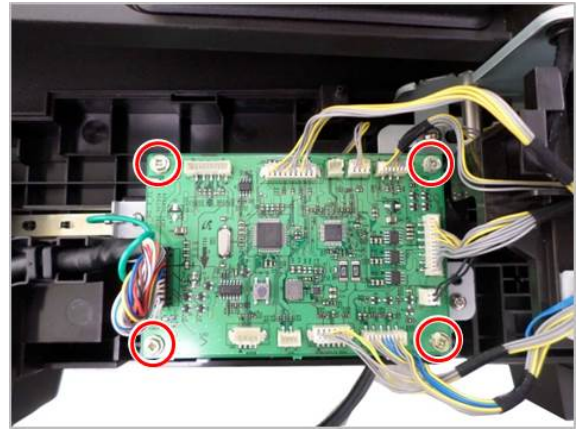
1. Open the RADF Unit. Remove 2 screws from the bottom of the RADF Unit.



2. Remove the RADF rear cover.



3. Unplug all harness. Remove 4 screws. And release the RADF board.



### 3.3.26.2. RADF Stacker

1. Open the RADF Unit. Remove 3 screws from the bottom of the RADF Unit.



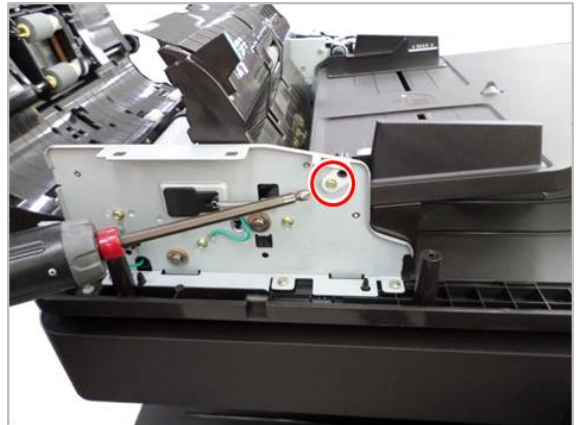
2. Open the RADF-Open cover. Then, release the linker.



3. Remove the RADF front cover.



4. Remove 1 screw.



5. Unplug the stacker harness.

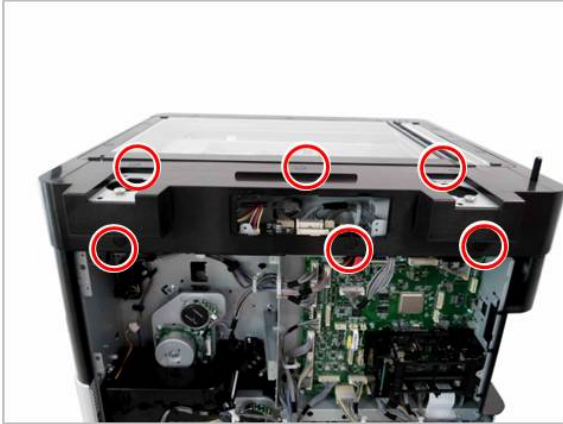


6. Release the RADF stacker.



### 3.3.27. Scanner Unit(Platen Unit)

1. Remove the DSDF unit. (Refer to 3.3.25.)
2. Remove 6 screw-caps and 6 screws. Then release the scan-rear cover.



3. Remove 5 screw-caps and 5 screws. Then release the scan-front cover.



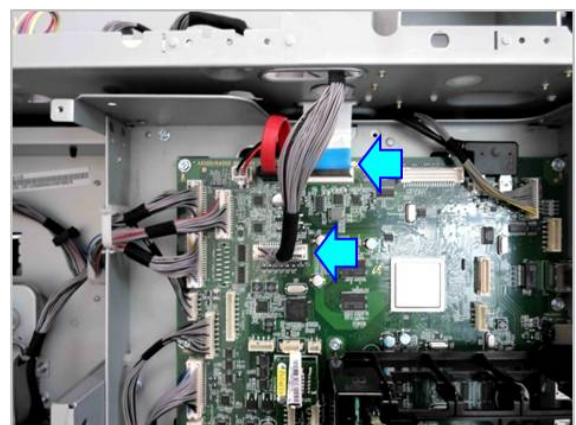
4. Remove 3 screw-caps and 3 screws. Then release the scan-left cover.



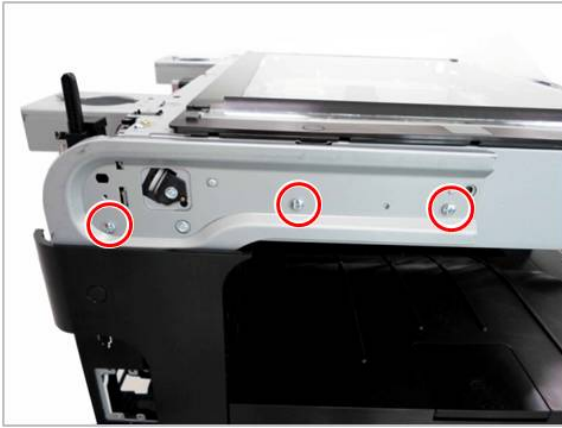
5. Remove 3 screw-caps and 3 screws. Then release the scan-right cover.



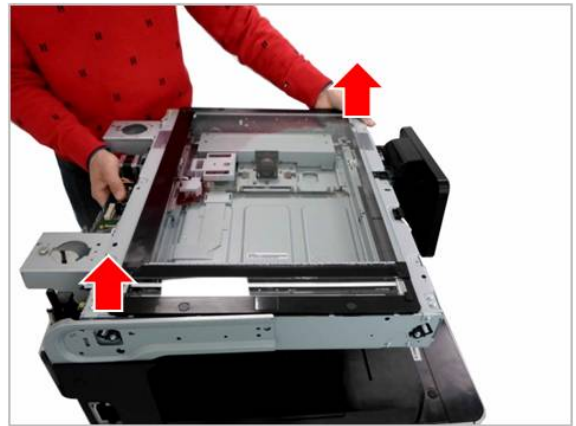
6. Unplug the scan cables.



7. Remove 3 screws from the left.



9. Lift up and release the platen unit.

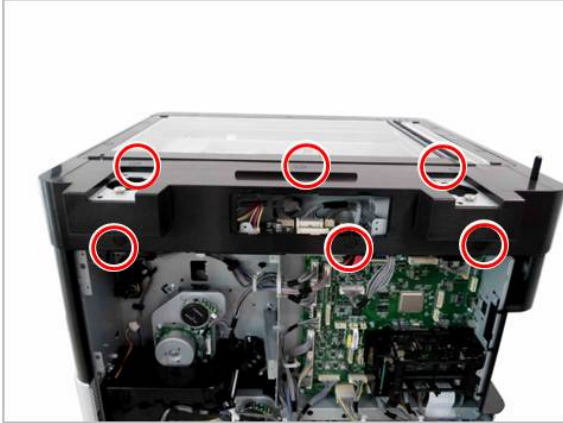


8. Remove 2 screws from the right.



### 3.3.27.1. Scan Glass

1. Remove the ADF unit (DSDF or RADF unit)
2. Remove 6 screw-caps and 6 screws. Then release the scan-rear cover.



3. Remove 5 screw-caps and 5 screws. Then release the scan-front cover.



4. Remove 3 screw-caps and 3 screws. Then release the scan-left cover.



5. Remove 3 screw-caps and 3 screws. Then release the scan-right cover.

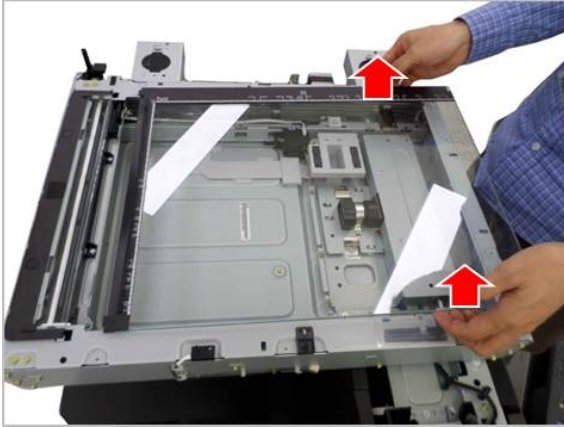


6. Remove 2 screw-caps and 2 screws.





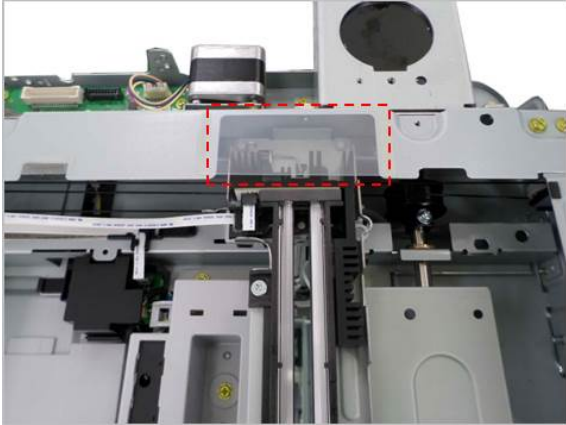
7. Remove the scan glass.



### 3.3.27.2. LED Lamp Module

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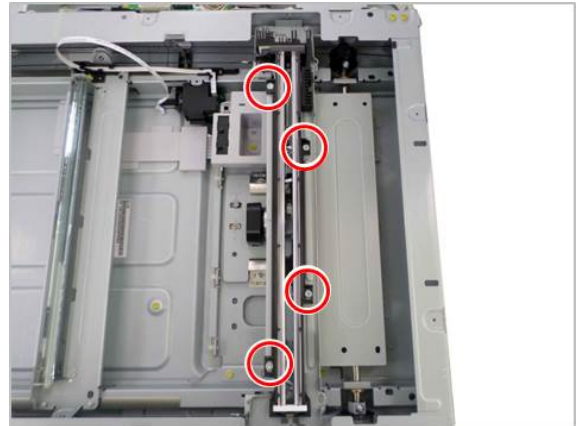
1. Remove the scan glass. (Refer to 3.3.30.1)
2. Remove the transparent tape.



3. Unplug the flat cable.

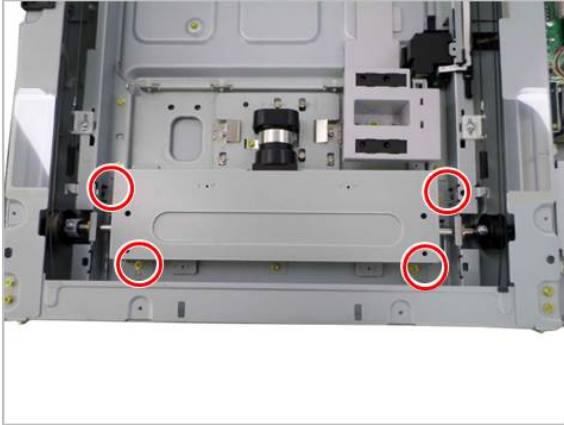


4. Remove 4 screws. Then, release the LED lamp module.



### 3.3.27.3. Scanner Imaging Unit

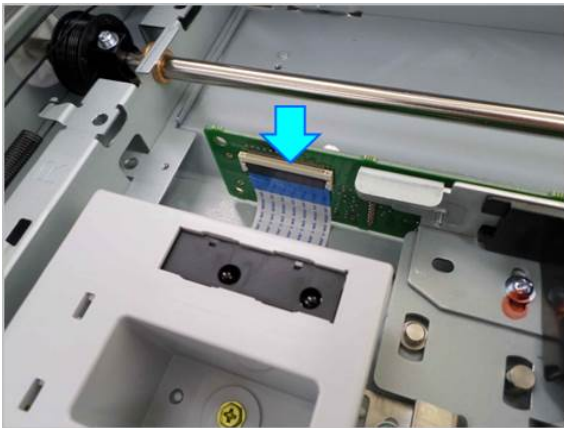
1. Remove the scan glass. (Refer to 3.3.30.1)
2. Release the imaging unit cover after removing 4 screws.



4. Release the scanner imaging unit after removing 2 screws.



3. Unplug the flat cable.



#### NOTE

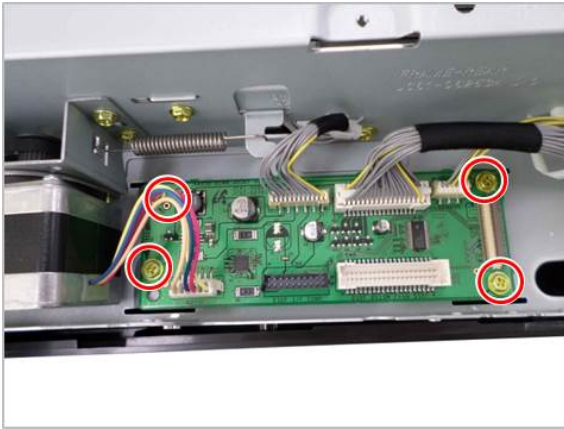
After replacing the imaging unit, match the value between the lens number and the scale.



### 3.3.27.4. Scan Joint Board

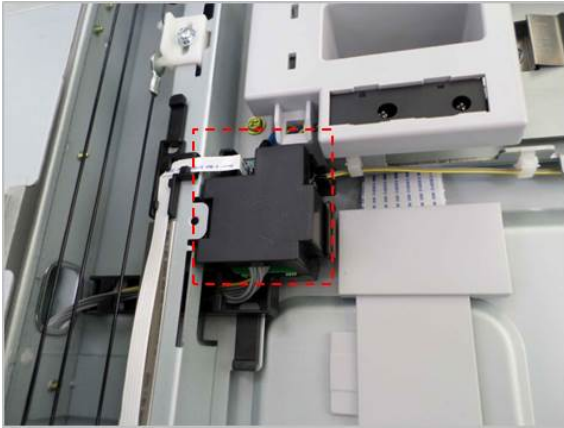
---

1. Unplug all harness. Remove 4 screws. And release the scan joint board.

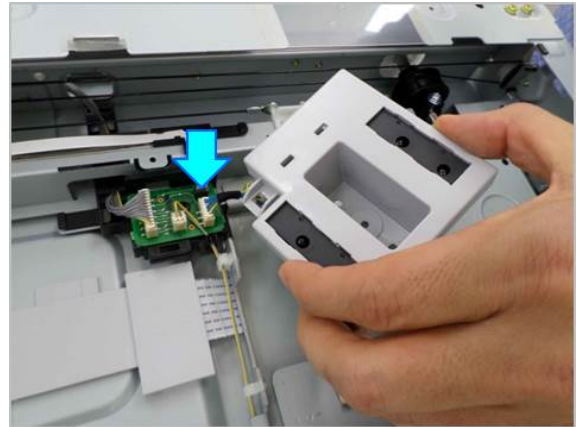


### 3.3.27.5. APS Sensor

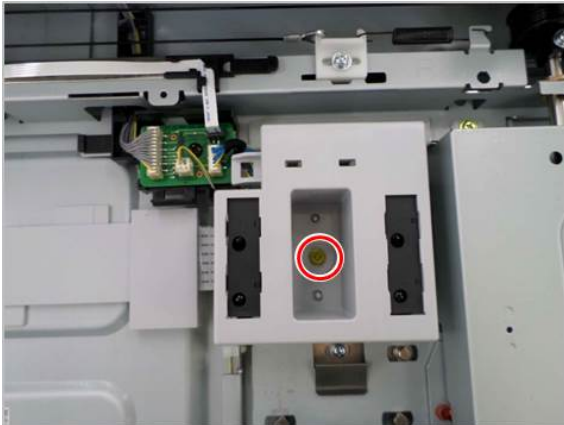
1. Remove the scan glass. (Refer to 3.3.30.1)
2. Remove the joint board cover.



4. Unplug the harness.



3. Remove 1 screw.



5. Release the APS sensor after removing 2 screws.



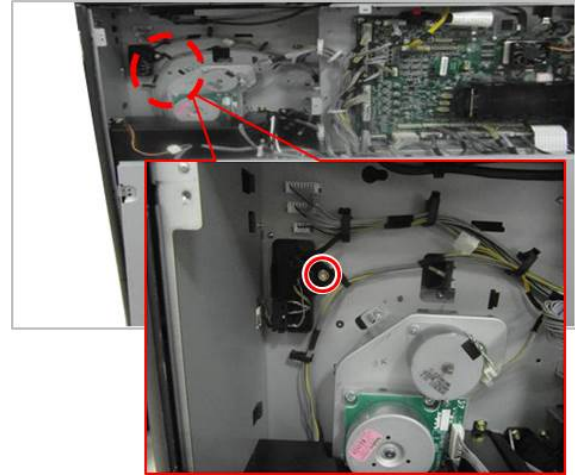
### 3.3.28. Side Cover Open Switch

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1. Remove the rear cover.

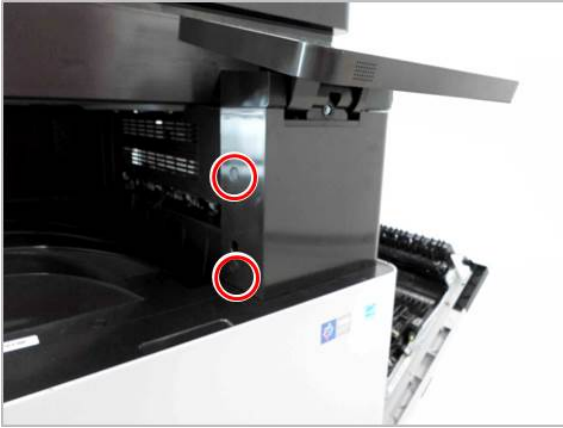


2. Unplug the connector. Remove 1 screw. And release the cover open switch.



### 3.3.29. Front Cover Open Switch

1. Open the side cover.
2. Remove 2 screw-caps and 2 screws.



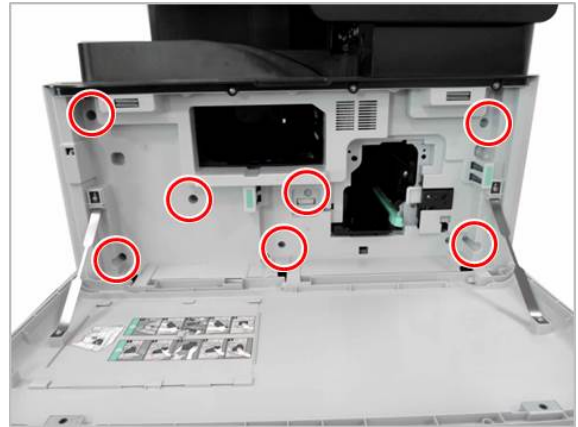
3. Remove 1 screw.



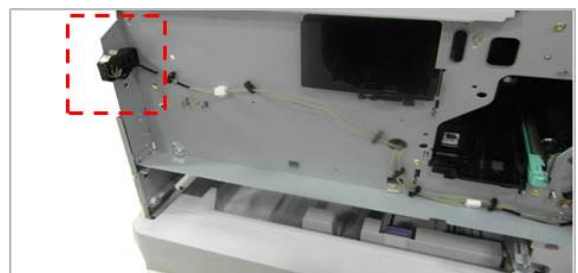
4. Remove the front-top cover.



5. Open the front cover. Remove all toner cartridges.
6. Remove 8 screws. Then release the front-inner cover.



7. Remove the cover open switch.



### 3.3.30. HDD

1. Remove the screw-cap and screw. Then release the exit tray.

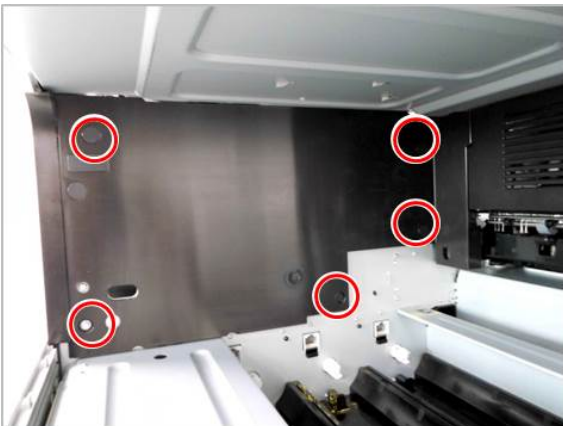


**NOTE**

If the finisher is installed, remove it.



2. Remove the COVER-EXIT REAR after removing 5 screws.



3. Remove 4 screws. Unplug the cable. And remove the HDD Assy.



4. Install the new HDD Assy.



### 3.3.31. Card Reader or NFC Kit Installation

#### 3.3.31.1. Installing the Card Reader or NFC Kit on Working table(BYOD) table

1. Remove 2 screws.

**NOTE**

If the Working table is not installed, install its lower first.

2. Remove the Table-Upper.



3. Attach the double-sided tape to the bottom of Card Reader or NFC Kit.



4. Install the Card Reader or NFC Kit on Table-Lower.



3. Disassembly and Reassembly

- 5. Connect the cable between the OPE-HUB PBA and Card Reader(or NFC Kit).



- 6. Assemble the Table-Upper.



- 7. Assemble 2 screws.

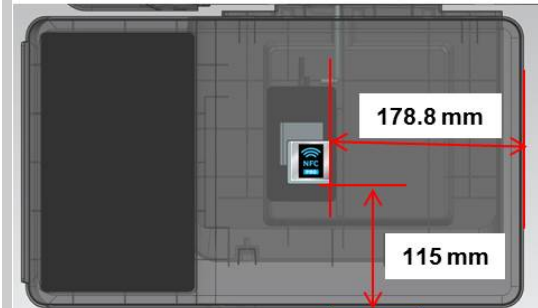
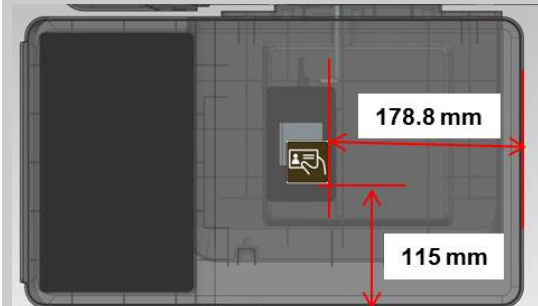


- 8. Attach the Tag label on the Working Table.



**! NOTE**

Refer to below for Tag label position.

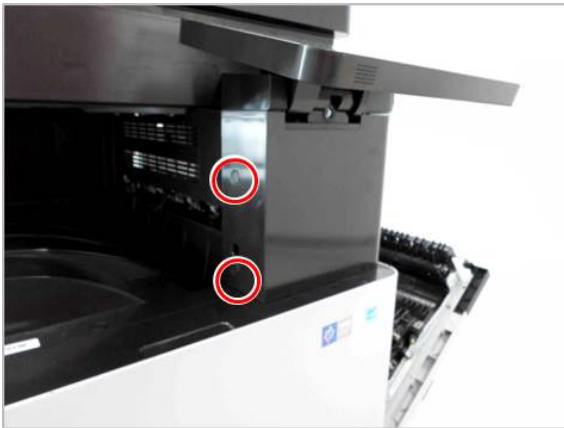


### 3.3.31.2. Installing the Card Reader or NFC Kit inside Cover-Scan Front

1. Open the side cover.



2. Remove 2 screw-caps and 2 screws.



3. Remove 1 screw.



4. Remove the front-top cover.



5. Lift up and release the Cover-Scan Front.



6. Remove the Cover-Scan Front.



### 3. Disassembly and Reassembly

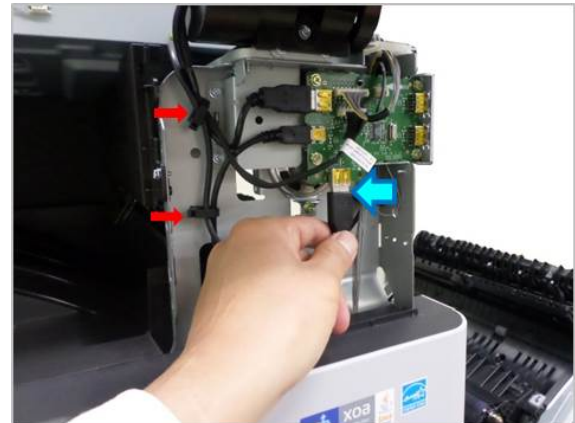
7. Attach the double-sided tape to the bottom of Card Reader or NFC Kit.



8. Install the Card Reader or NFC Kit on the front of Platen.



9. Open the cable clamp. Connect the cable between the OPE-HUB PBA and Card Reader(or NFC Kit). And, arrange the cable.



10. Assemble the Cover-Scan Front.



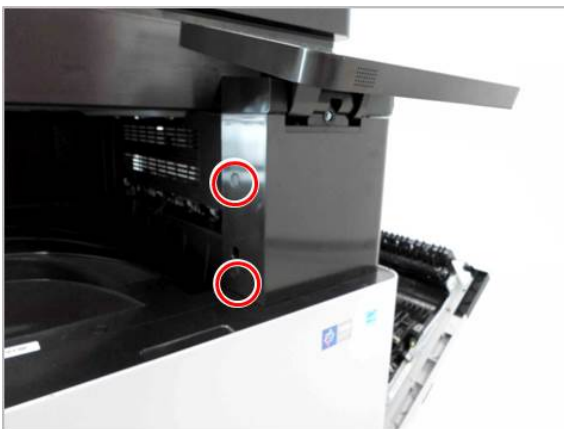
11. Assemble 5 screws and 5 Screw-caps.



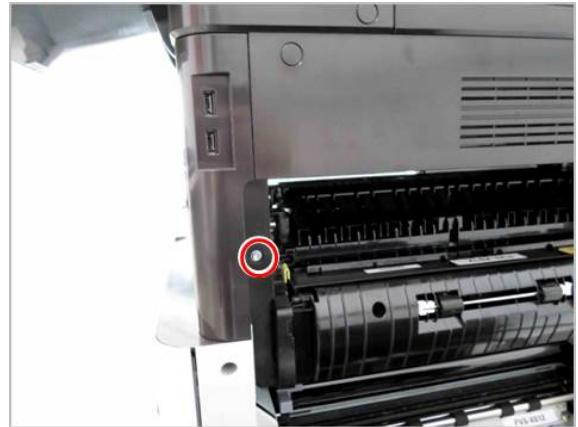
12. Assemble the front-top cover.



13. Remove 2 screws.



14. Remove 1 screw.



15. Close the side cover.

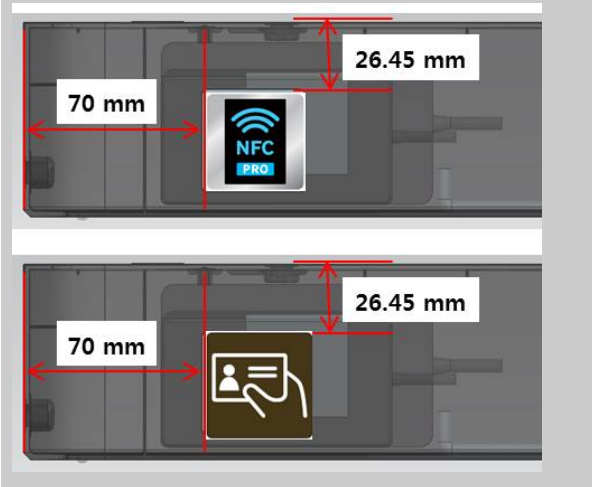


16. Attach the Tag label on the Cover-Scan Front.



**NOTE**

Refer to below for Tag label position.



### 3.3.32. Installing the Working table(BYOD) table

1. Remove the dummy cover.



2. Assemble the Table-Lower. Then, tighten 3 screws.



3. Assemble the Table-Upper.



4. Tighten 2 screws.



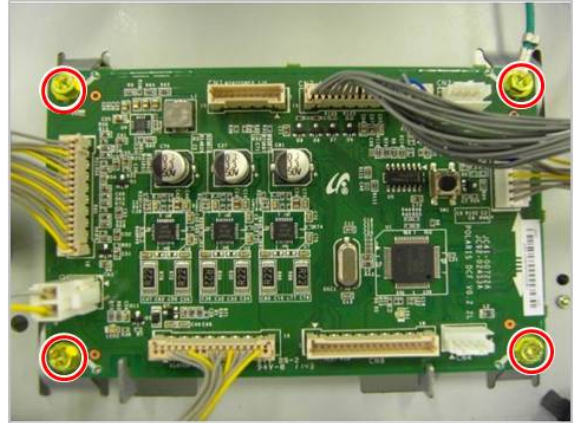
### 3.3.33. DCF (Double Cassette Feeder)

#### 3.3.33.1. DCF main board

1. Remove the Bracket Rear Cover after removing 6 screws.



2. Unplug all connectors. Remove 4 screws. And release the DCF main board.

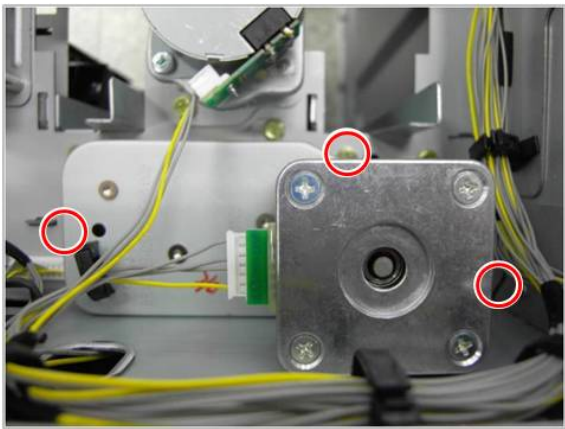


### 3.3.33.2. DCF Feed Motor

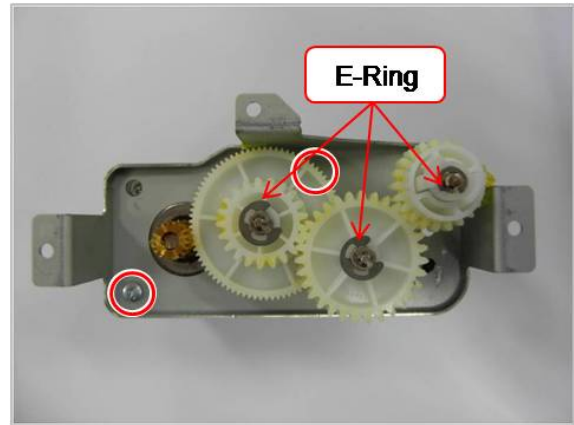
1. Remove the Bracket Rear Cover after removing 5 screws.



2. Unplug the connector. Remove 3 screws. And release the Feed Drive unit.



3. Remove 3 E-rings and 3 gears. Remove 2 screws. And release the feed motor.

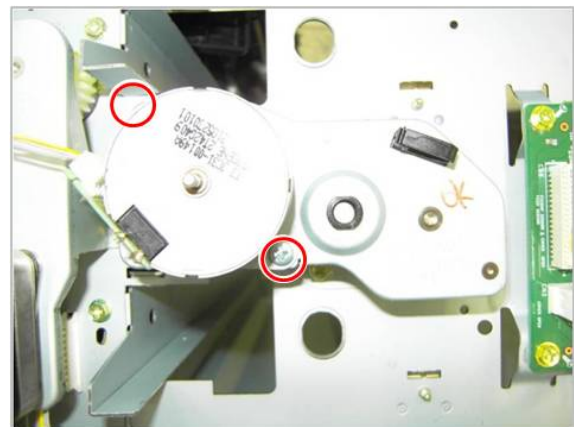


### 3.3.33.3. DCF Pick Up Motor

1. Remove the Bracket Rear Cover after removing 5 screws.



2. Unplug the pick up motor connector. Remove 2 screws. And release the DCF pick up motor.

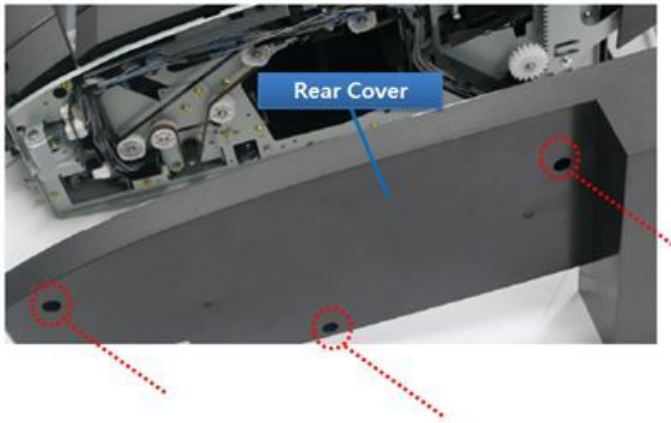




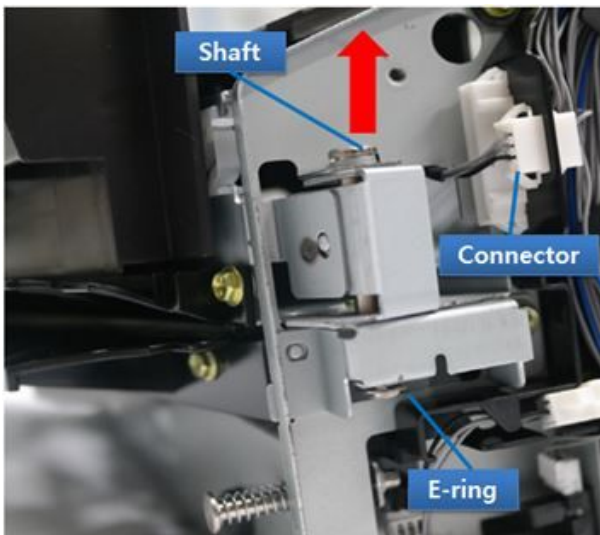
### 3.3.34. Finisher

#### 3.3.34.1. Entrance Sensor

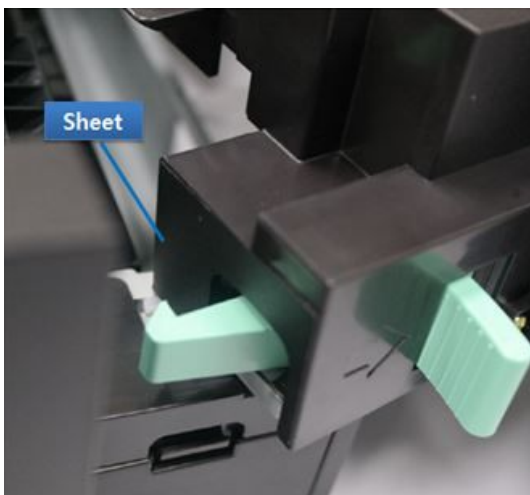
- 1) Remove 3 screws. Then, remove the rear cover.



- 2) Remove the E-Ring. Remove the shaft. And, unplug the connector.



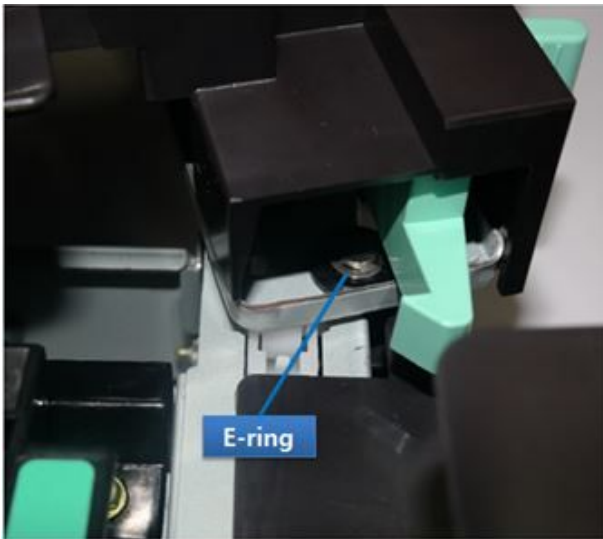
- 3) Remove the sheet.



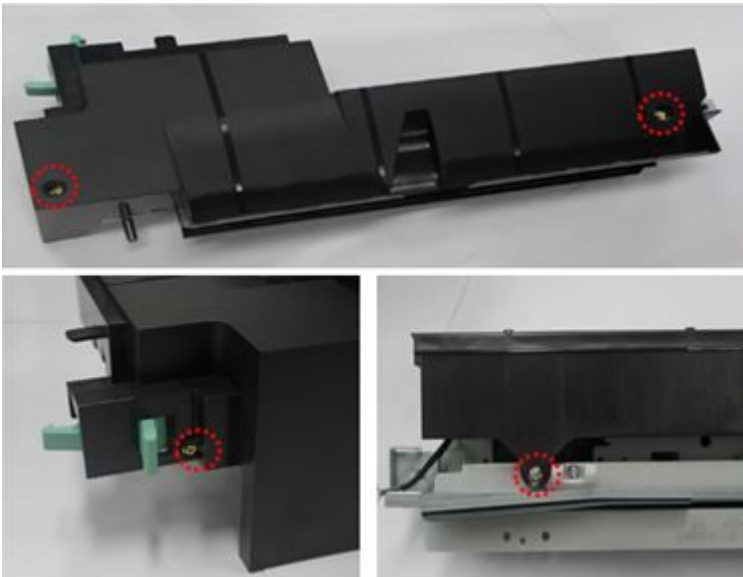
### 3. Disassembly and Reassembly

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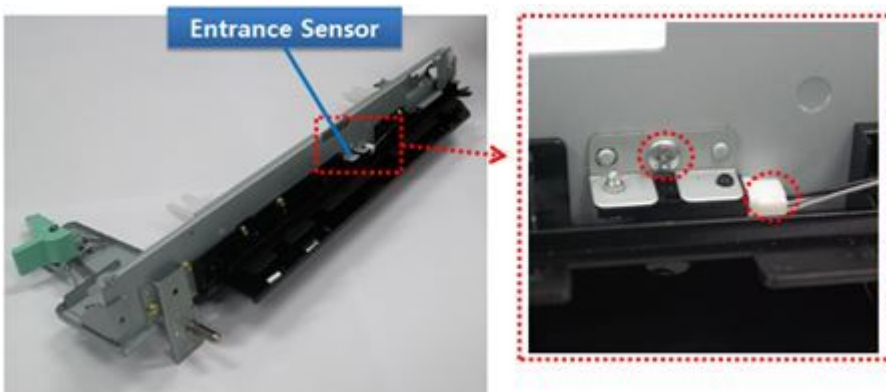
- 4) Remove the E-Ring and Washer. Then, remove the Punch Dummy.



- 5) Remove 4 screws. Then, remove the Punch Dummy cover.



- 6) Remove the screw. Unplug the connector. And release the sensor bracket.

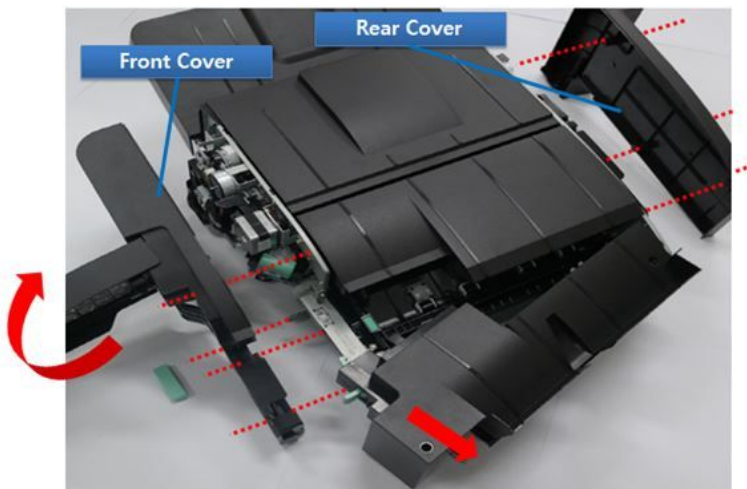


- 7) Remove 1 screw. Then, remove the sensor.

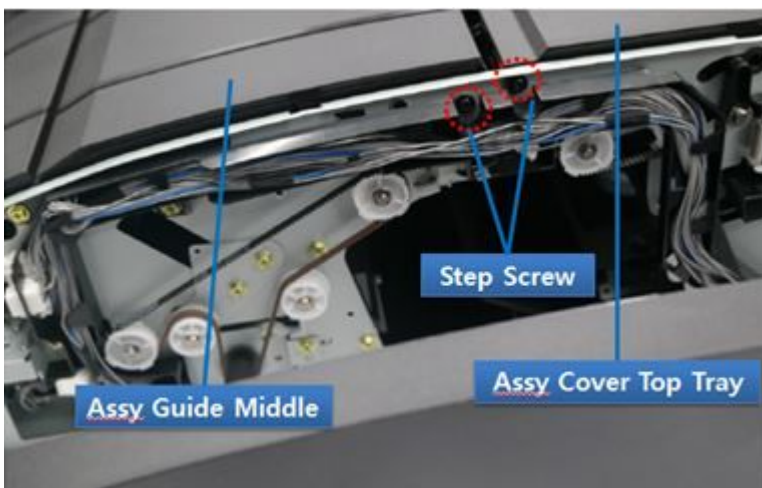


### 3.3.34.2. Entrance Motor

- 1) Remove the Front Cover and Rear Cover.

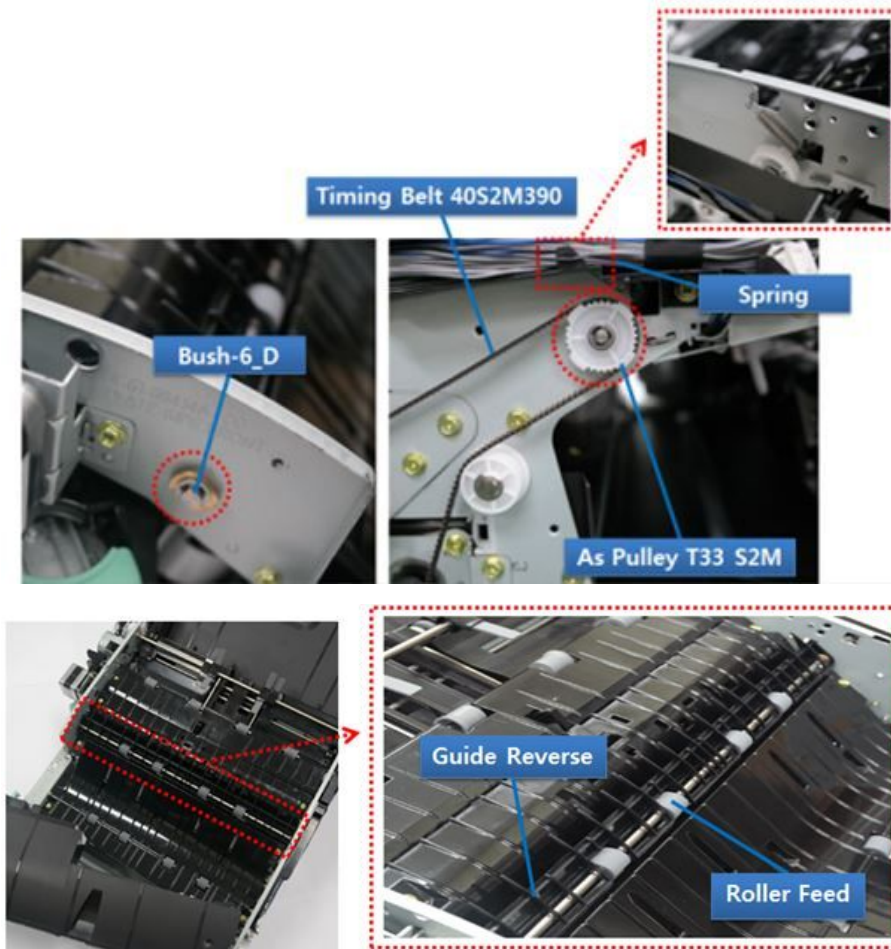


- 2) Remove 2 screws. Then, remove the Assy Guide Middle / Assy Cover Top Tray.



### 3. Disassembly and Reassembly

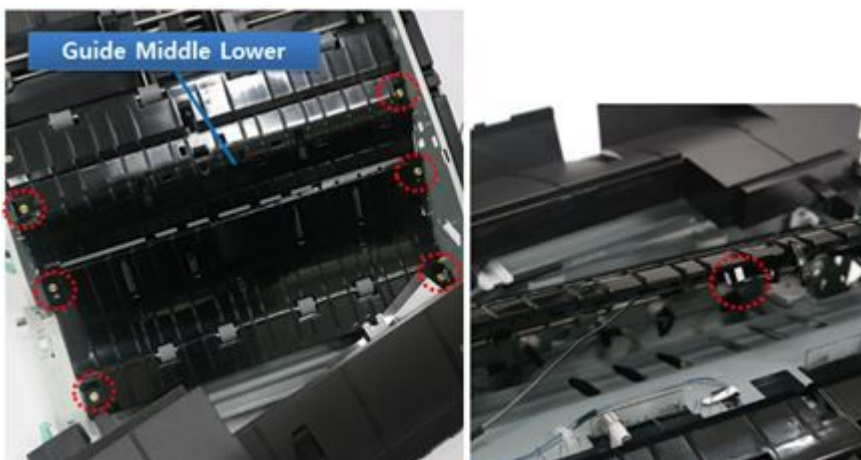
- 3) Remove the E-Ring(front), Bush, E-Ring(rear), As Pulley T33 S2M, Bush, Belt, Spring. Then, remove the Guide Reverse and Roller Feed.



- 4) Remove 6 screws. Then, remove the Guide Middle Lower.

#### NOTE

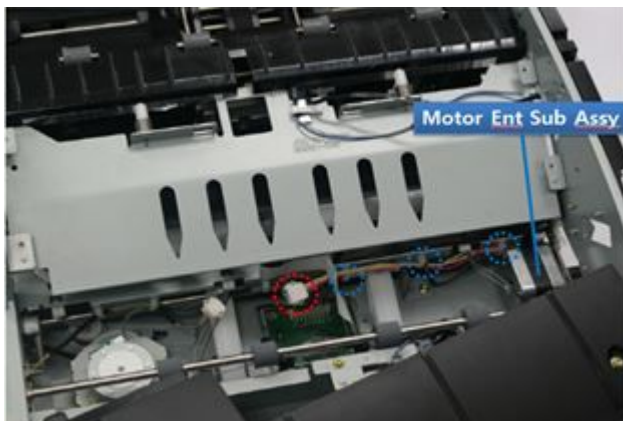
Be careful not to damage the sensor.



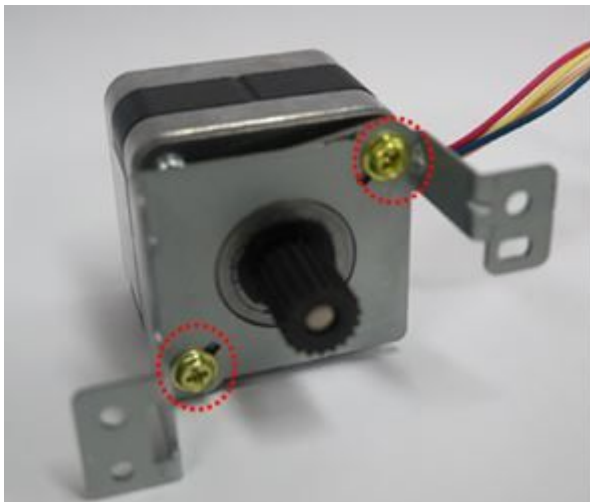
- 5) Remove 2 screws.



- 6) Open the clamps. Unplug the connector. Then, remove the Motor Ent Sub Assy.



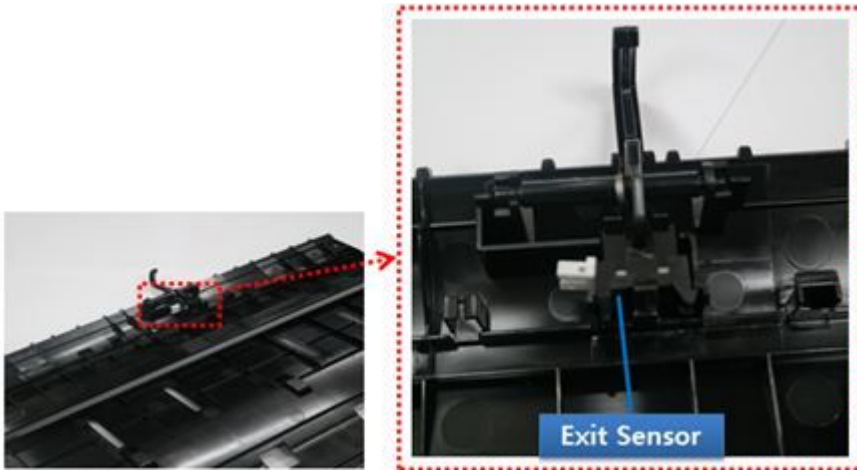
- 7) Remove 2 screws. Then, remove the motor.



### 3.3.34.3. Exit Sensor

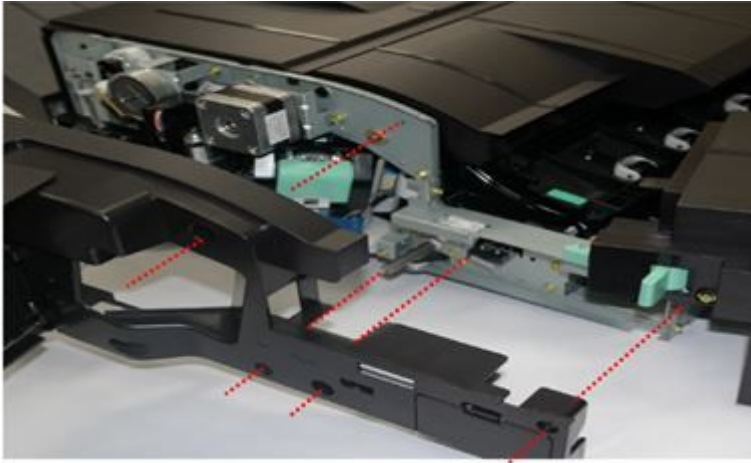
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- 1) Follow the step 1~4 in Exit Motor disassembly. (**Refer to 3.3.34.2.**)
- 2) Remove the Exit Sensor by releasing the hook.



### 3.3.34.4. Exit Motor

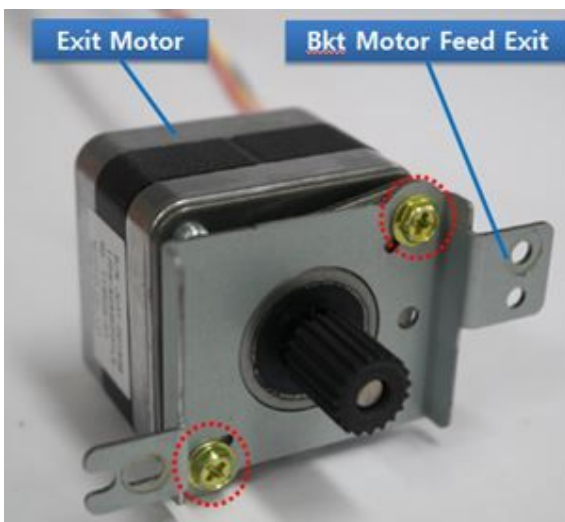
- 1) Remove the Front Cover.



- 2) Remove 2 screw. Unplug the motor connector. And, release the Motor Exit Sub Assy.



- 3) Remove 2 screws. Then, remove the Exit Motor from the Bkt Motor Feed Exit.



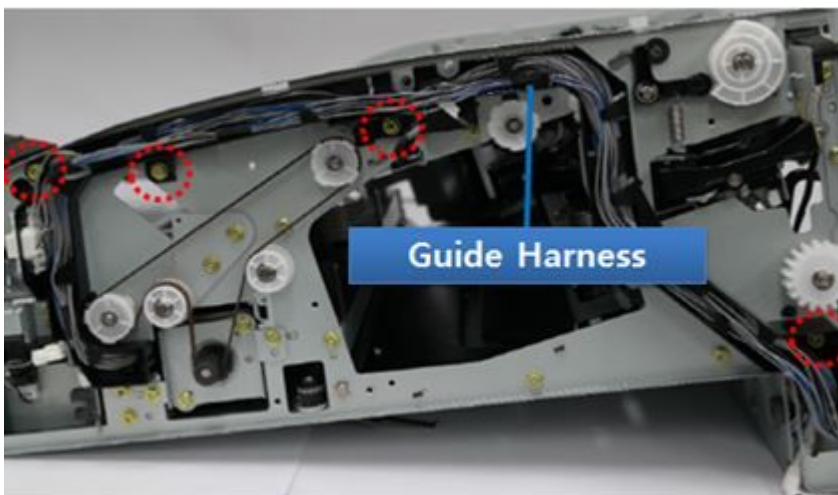
### 3.3.34.5. Sub Paddle Shaft Sub Assy

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- 1) Open the Cover Top Tray Sub Assy. Then, remove 1 screw securing the Sub Paddle Shaft Sub Assy.



- 2) Remove 4 screws securing the Guide Harness.

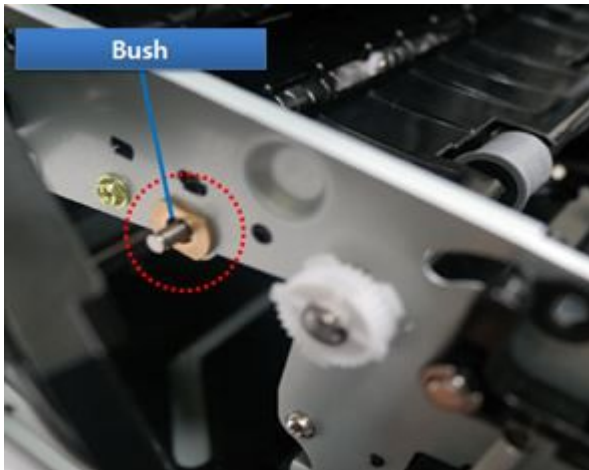


- 3) Remove the E-Ring. Then, remove the Pulley.

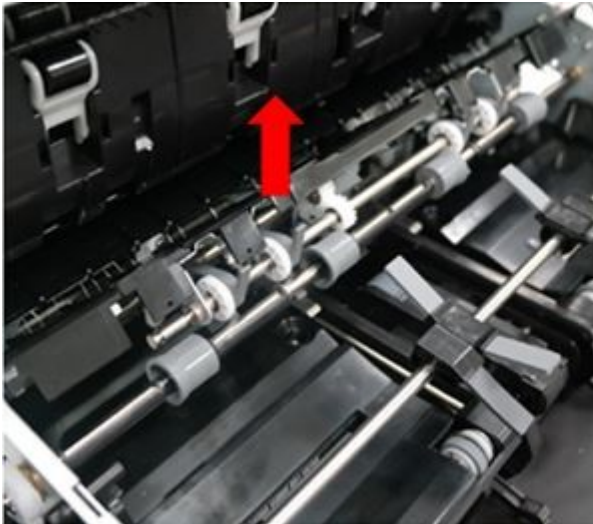




- 4) Remove the E-Ring. Then, remove the Bush.



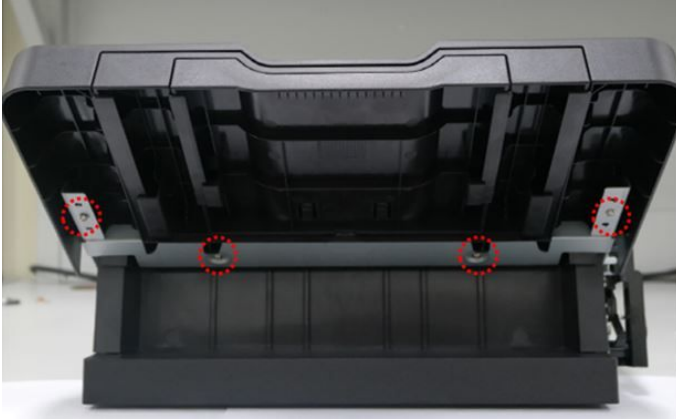
- 5) Lift up and release the Sub Paddle Shaft Sub Assy.



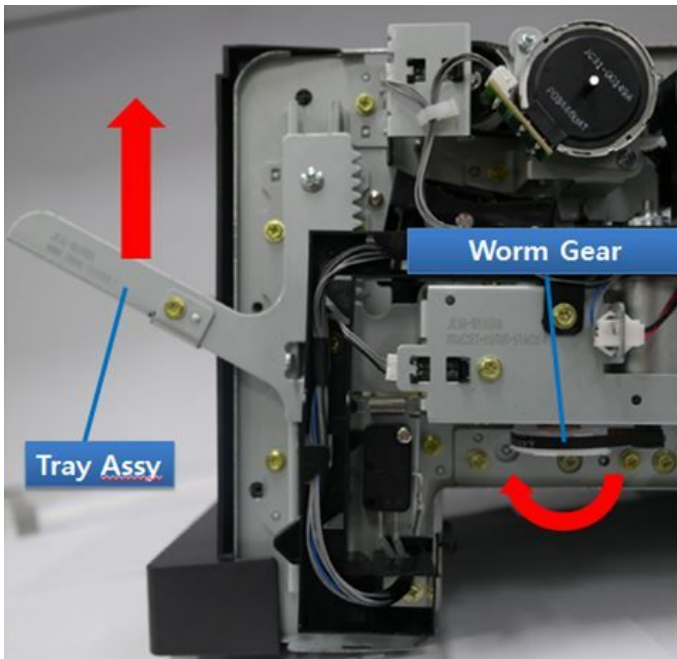
### 3.3.34.6. Front Jogger Motor

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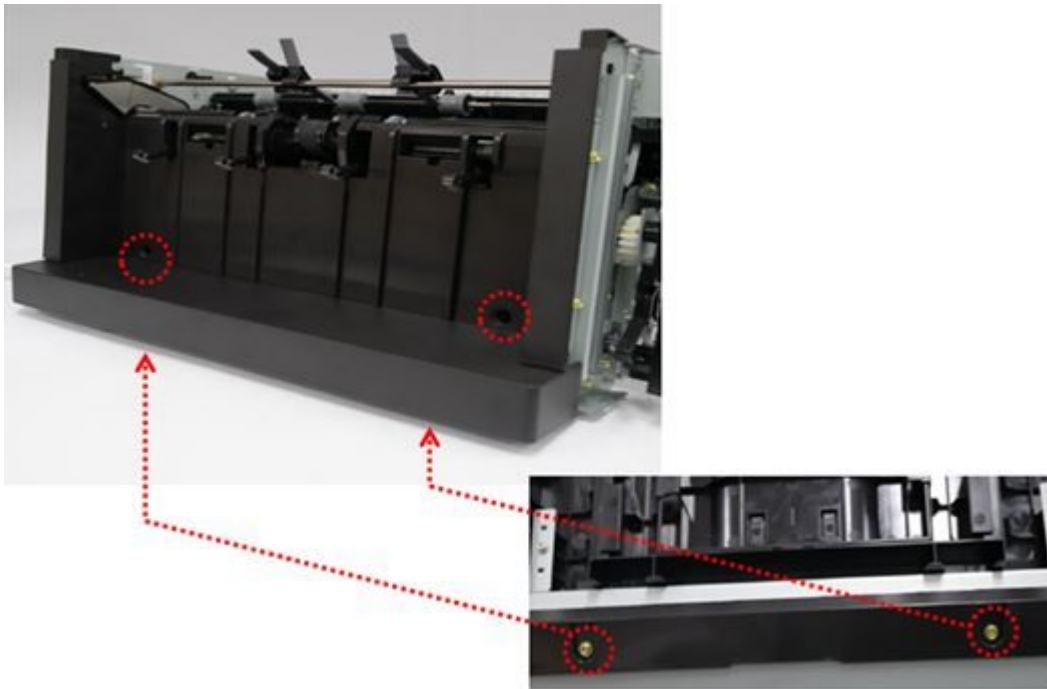
- 1) Follow the step 1~2 in Exit Motor disassembly. (**Refer to 3.3.34.2.**)
- 2) Remove 4 screws. Then, remove the tray.



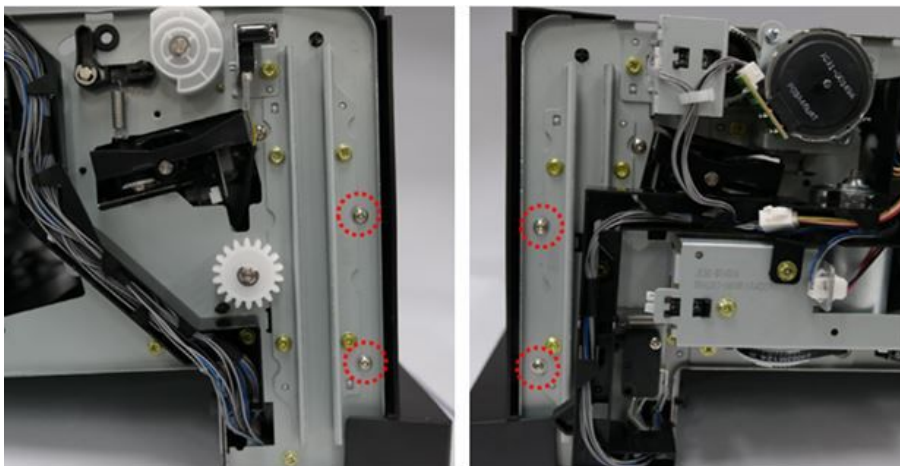
- 3) Remove the Tray Assy by rotating the Worm Gear.



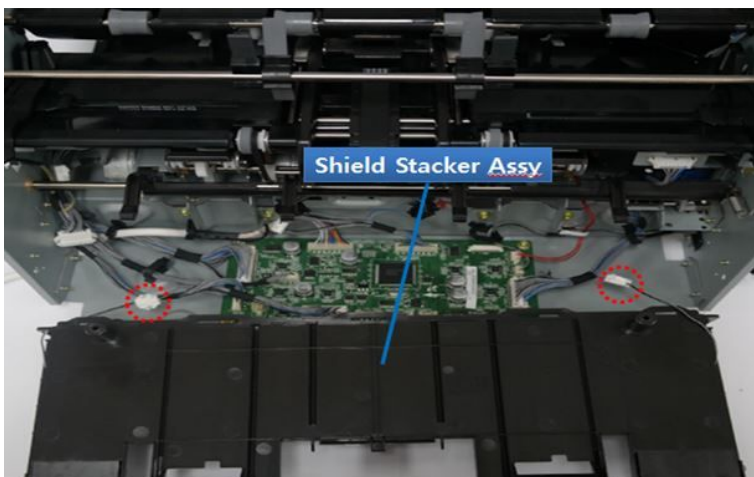
- 4) Remove 4 screws. Then, remove the PBA cover.



- 5) Remove 4 screws from both sides.



- 6) Unplug 2 connectors. Then, remove the Shield Stacker Assy.



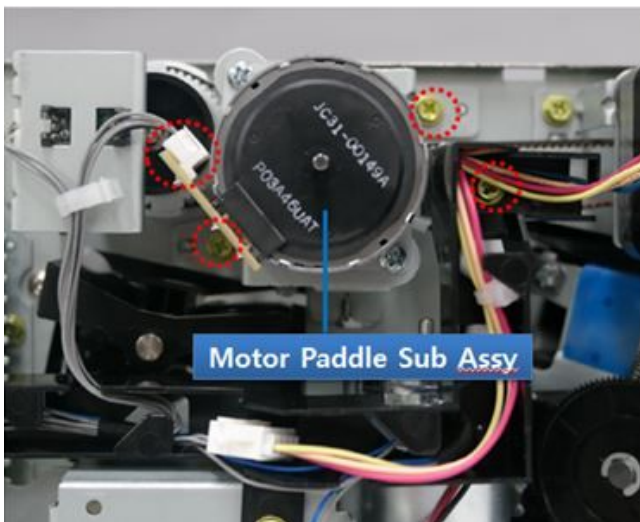
### 3. Disassembly and Reassembly

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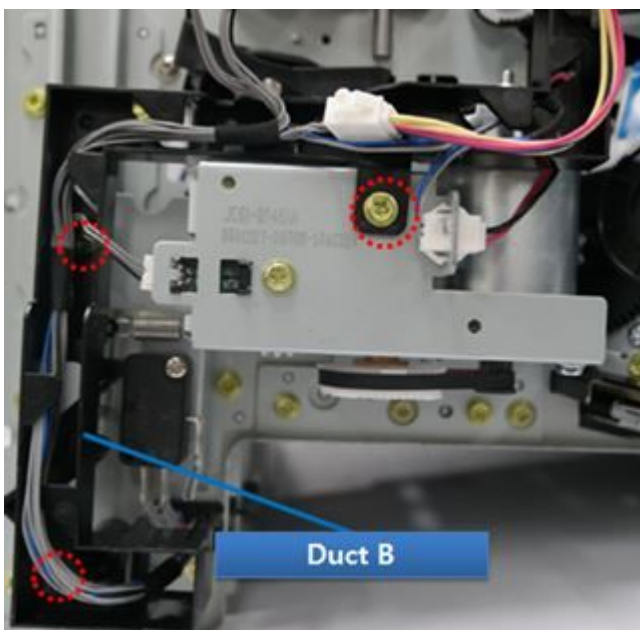
- 7) Remove 1 screw. Unplug the connector. And, remove the Main Paddle Home Sensor Sub Assy.



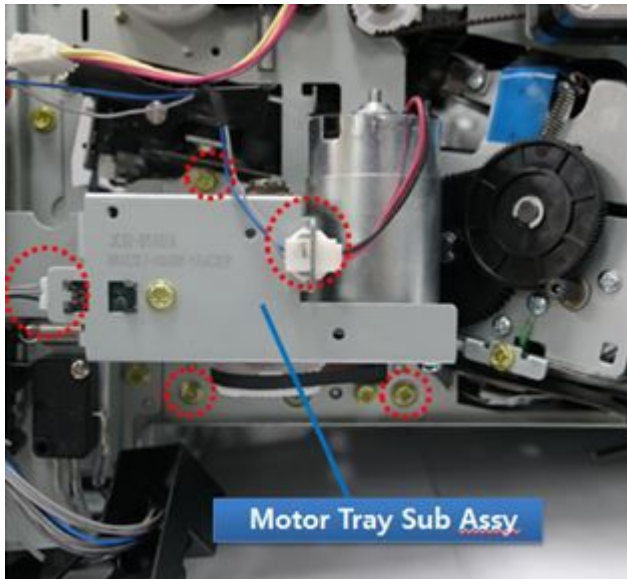
- 8) Remove 3 screws. Unplug the connector. And, release the Motor Paddle Sub Assy.



- 9) Remove 3 screws. Then, remove the Duct B.

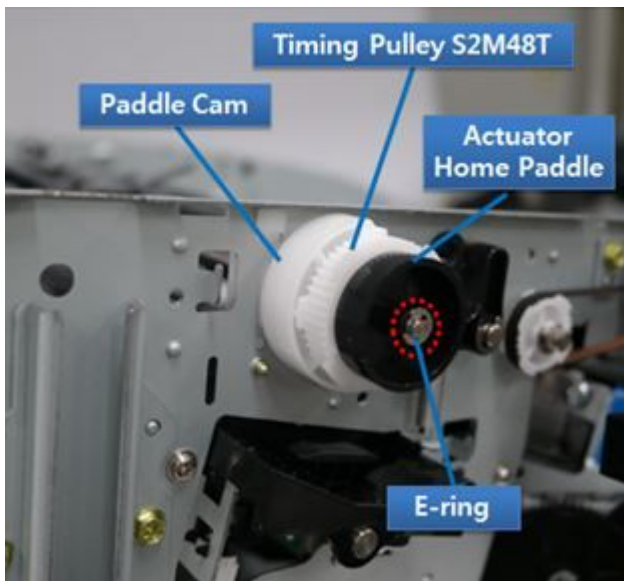


10) Remove 3 screws. Unplug 2 connectors. And, release the Motor Paddle Sub Assy.



11) Follow the step 1~5 in Paddle Shaft Sub Assy disassembly. (**Refer to 3.3.34.5.**)

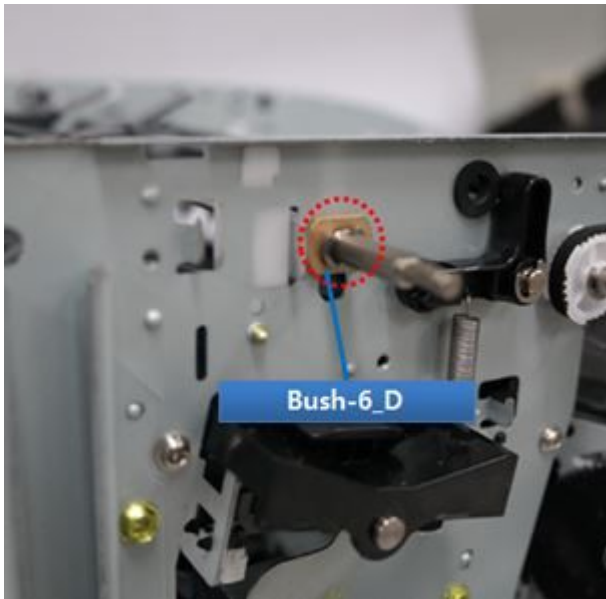
12) Remove the E-Ring, Actuator Home Paddle, Timing Pulley S2M48T, and Paddle Cam.



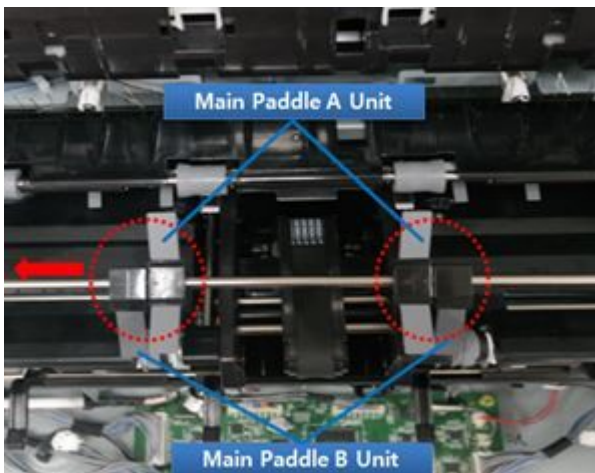
### 3. Disassembly and Reassembly

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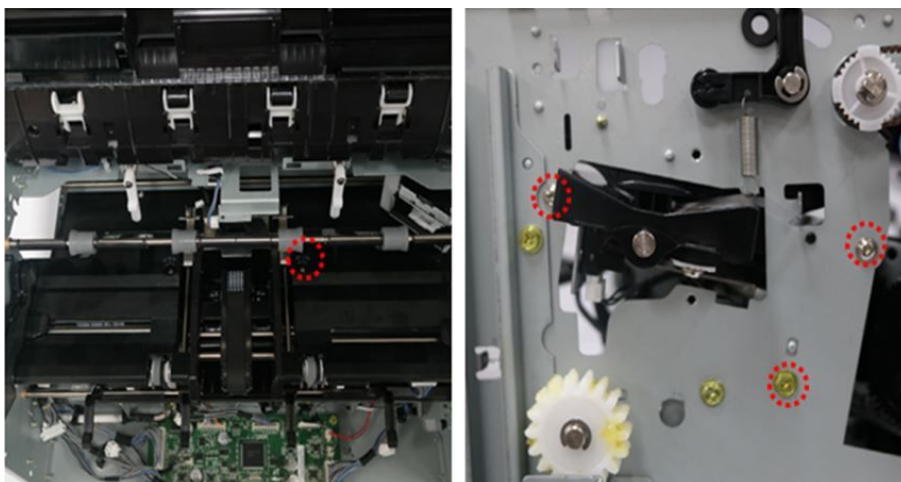
13) Remove the E-Ring and Bush.



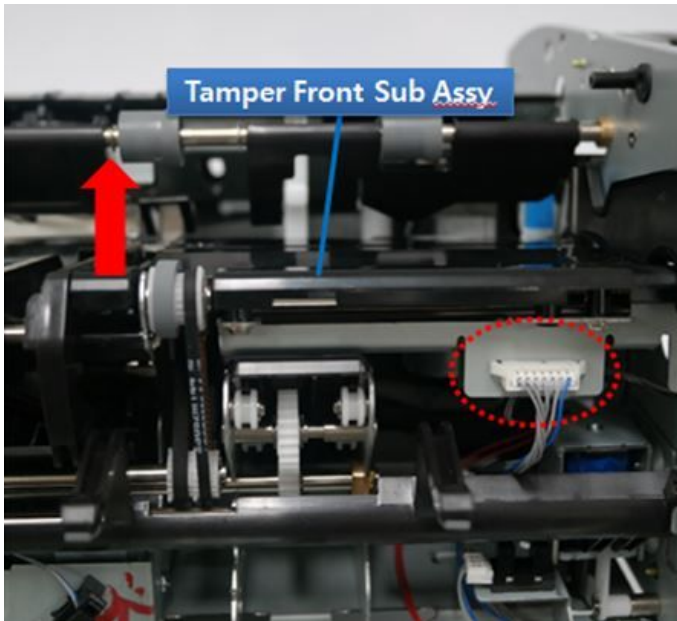
14) Remove the Main Paddle A Unit / B Unit. Then, remove the shaft.



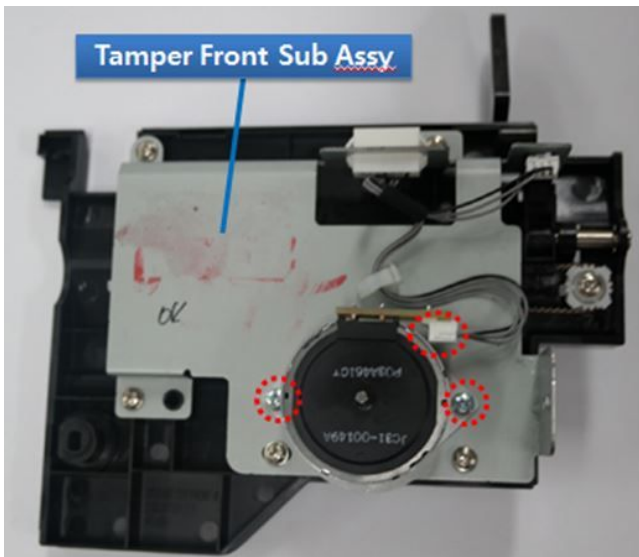
15) Remove 4 screws.



16) Unplug the connector. Then, pull the Tamper Front Sub Assy up and release it.



17) Remove 2 screws. Unplug the connector. And, release the motor.



### 3.3.34.7. Front Jogger Home Sensor

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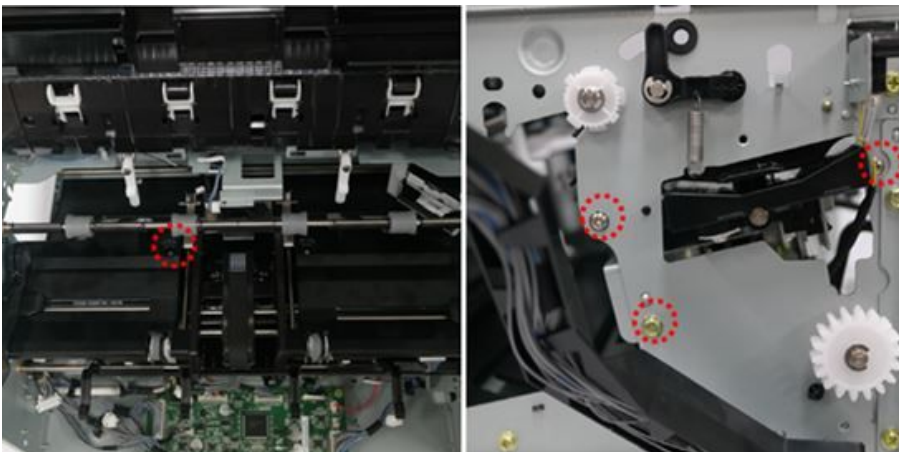
- 1) Follow the step 1~16 in Front Jogger Motor disassembly. Remove the Tamper Front Sub Assy. (**Refer to the 3.3.34.6.**)
- 2) Unplug the connector. Then, remove the Front Jogger Home Sensor.



### 3.3.34.8. Rear Jogger Motor

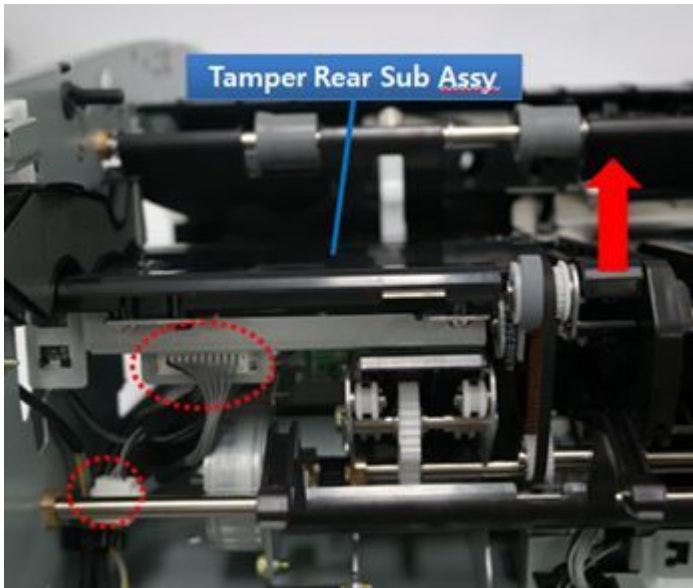
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- 1) Follow the step 1~8 in Front Jogger Motor disassembly. (**Refer to 3.3.34.6.**)
- 2) Follow the step 11~14 in Front Jogger Motor disassembly. (**Refer to 3.3.34.6.**)
- 3) Remove 4 screws.





- 4) Unplug 2 connectors. Then, remove the Tamper Rear Sub Assy.



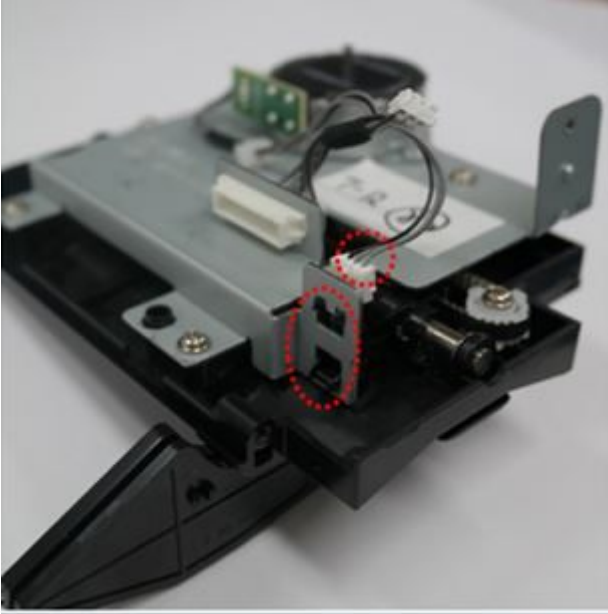
- 5) Remove 2 screws. Unplug the connector. And, release the Tamper Rear Sub Assy.



### 3.3.34.9. Rear Jogger Home Sensor

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- 1) Follow the step 1~4 in Rear Jogger Motor disassembly. (**Refer to 3.3.34.8.**)
- 2) Unplug the connector. Then, remove the Rear Jogger Home Sensor.



### 3.3.34.10. Stapler

- 1) Follow the step 1~2 in Exit Motor disassembly. (**Refer to 3.3.34.4.**)
- 2) Remove 1 screw. Unplug 2 connectors. And, remove the Stapler Unit.



- 3) Remove 2 screws. Then, remove the Stapler Unit from the Bkt ST.



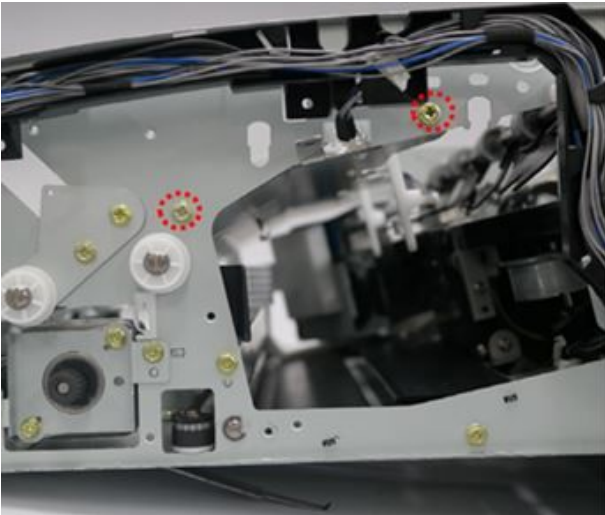
### 3.3.34.11. Traverse Home Sensor

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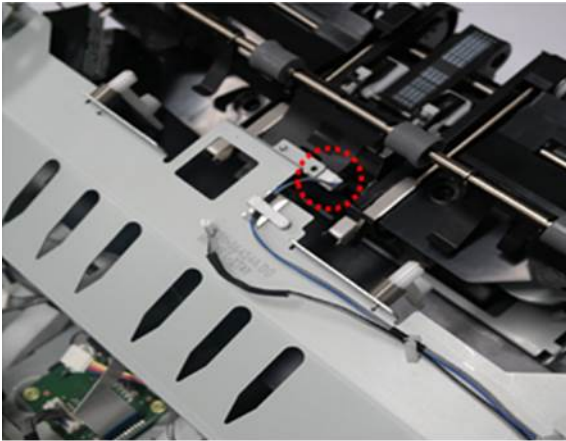
- 1) Follow the step 1~4 in Entrance Motor disassembly. (Refer to 3.3.34.2.)
- 2) Follow the step 1~5 in Su Paddle Shaft Sub Assy disassembly. (Refer to 3.3.34.5.)
- 3) Remove 2 screws from the front.



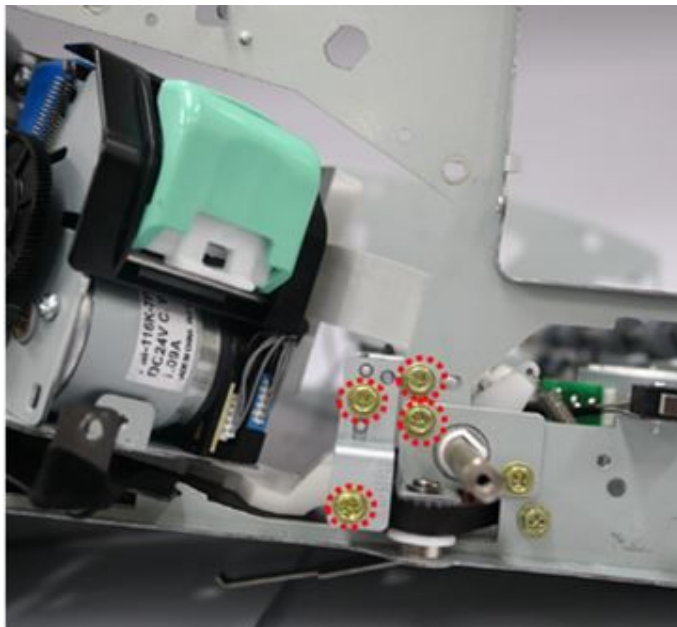
- 4) Remove 2 screws from the rear.



- 5) Unplug the connector. Then, remove the Bkt Stay Sub Assy.



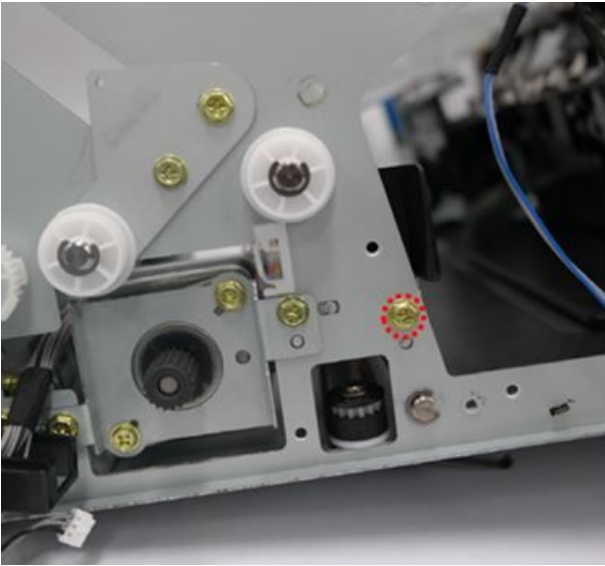
- 6) Remove 4 screws from the front.



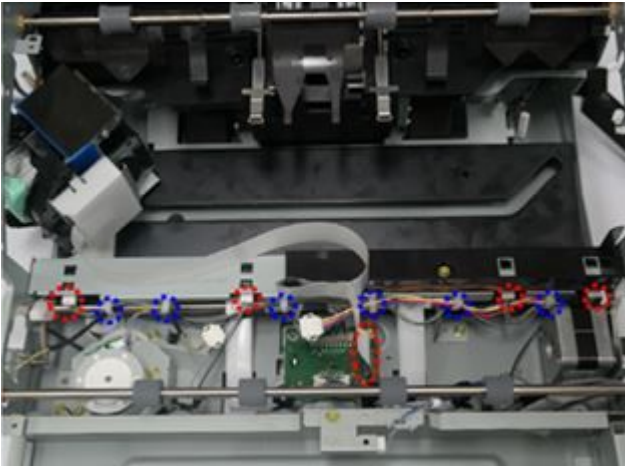
### 3. Disassembly and Reassembly

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- 7) Remove 1 screw.



- 8) Unplug 4 connectors. Open the 6 clamps. And, unplug the FFC cable.

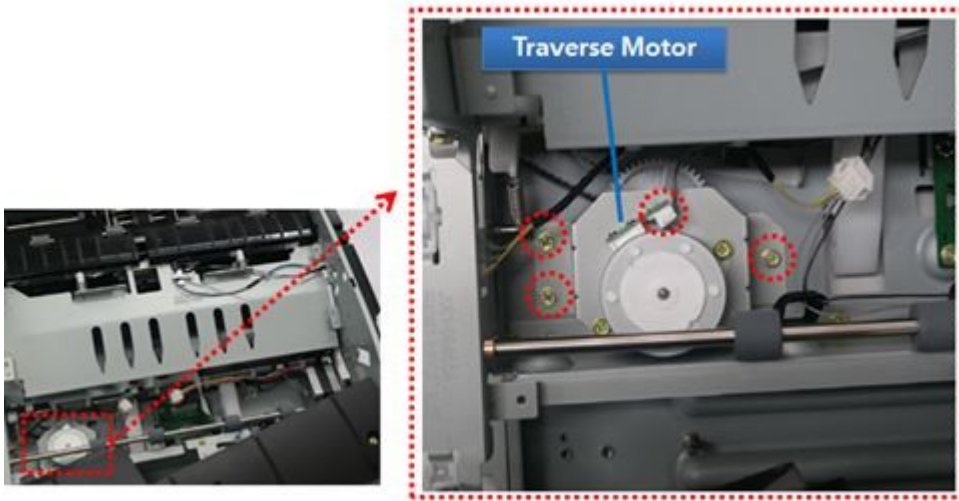


- 9) Remove the Assy. Then, release the sensor.



### 3.3.34.12. Traverse Motor

- 1) Follow the step 1~4 in Entrance Motor disassembly. (Refer to 3.3.34.2.)
- 2) Remove 3 screws. Unplug the motor connector. And, release the Traverse Motor Assy.



- 3) Remove 2 screws. Then, release the motor.



### 3.3.34.13. Stacker Motor

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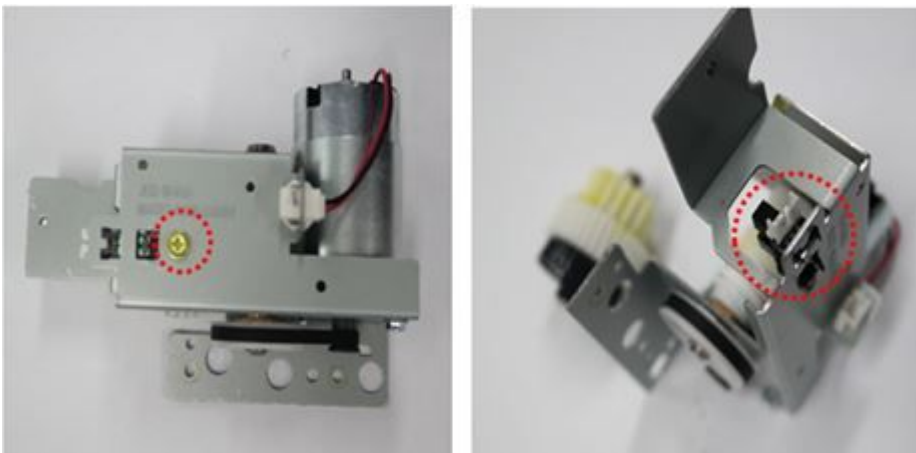
- 1) Follow the step 1~10 in Front Jogger Motor disassembly. (**Refer to 3.3.34.6.**)
- 2) Remove 2 screws. Unplug the connector. And, release the Stacker Motor.



### 3.3.34.14. Stacker Encoder Sensor

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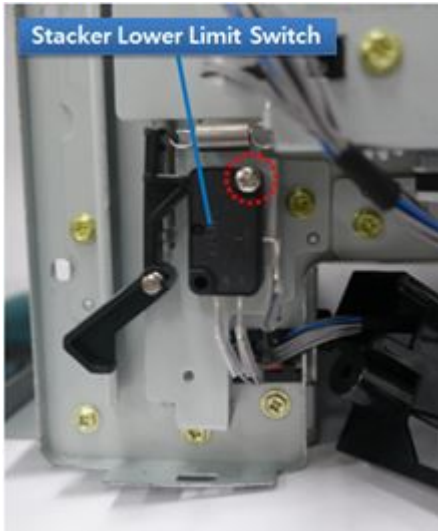
- 1) Follow the step 1~10 in Front Jogger Motor disassembly. (**Refer to 3.3.34.6.**)
- 2) Remove 1 screw. Remove the shaft. And, release the sensor.



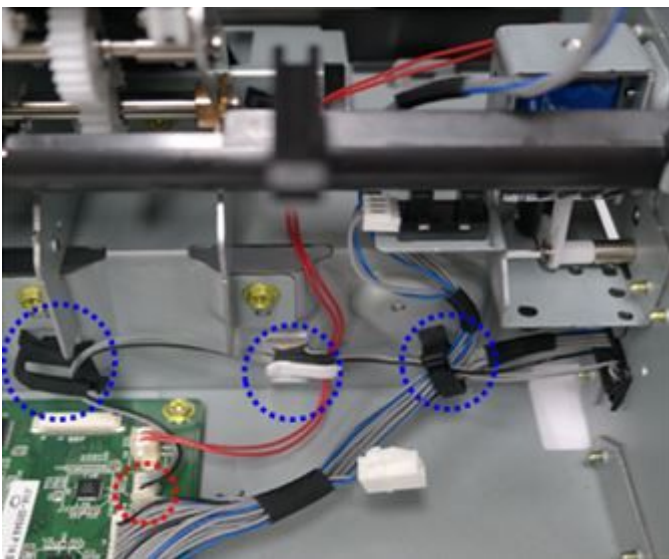


### 3.3.34.15. Stacker Lower Limit Switch

- 1) Follow the step 1~10 in Front Jogger Motor disassembly. (Refer to 3.3.34.6.)
- 2) Remove 1 screw.



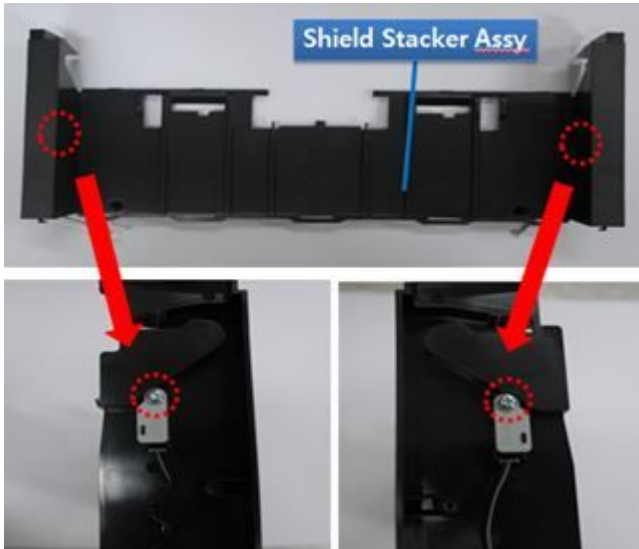
- 3) Open 3 clamps. Unplug the connector. And, release the sensor.



### 3.3.34.16. Stack Beam Sensor

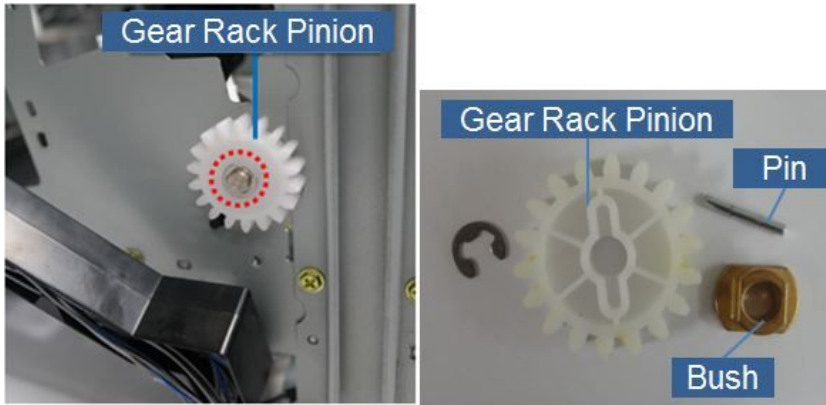
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- 1) Follow the step 1~6 in Front Jogger Motor disassembly. (**Refer to 3.3.34.6.**)
- 2) Remove 2 screws from both sides of the Shield Stacker Assy. Remove the bracket. And, remove the sensor.

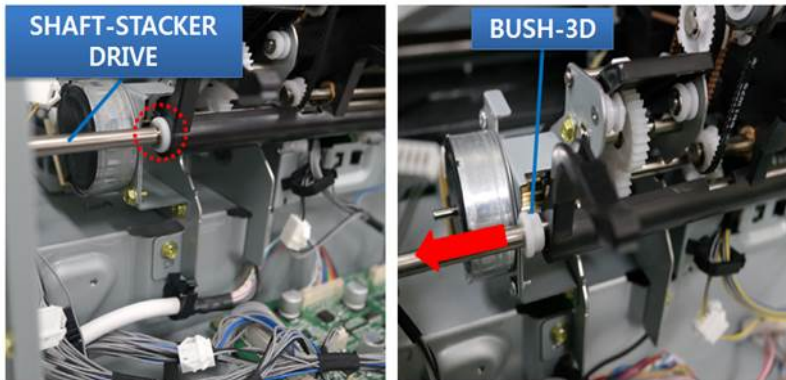


### 3.3.34.17. Stack Position Sensor

- 1) Follow the step 1~2 in Stacker Lower Limit Switch disassembly. (**Refer to 3.3.34.15.**)
- 2) Remove the E-Ring, GEAR-RACK PINION, Bush, and PIN-PARALLEL.



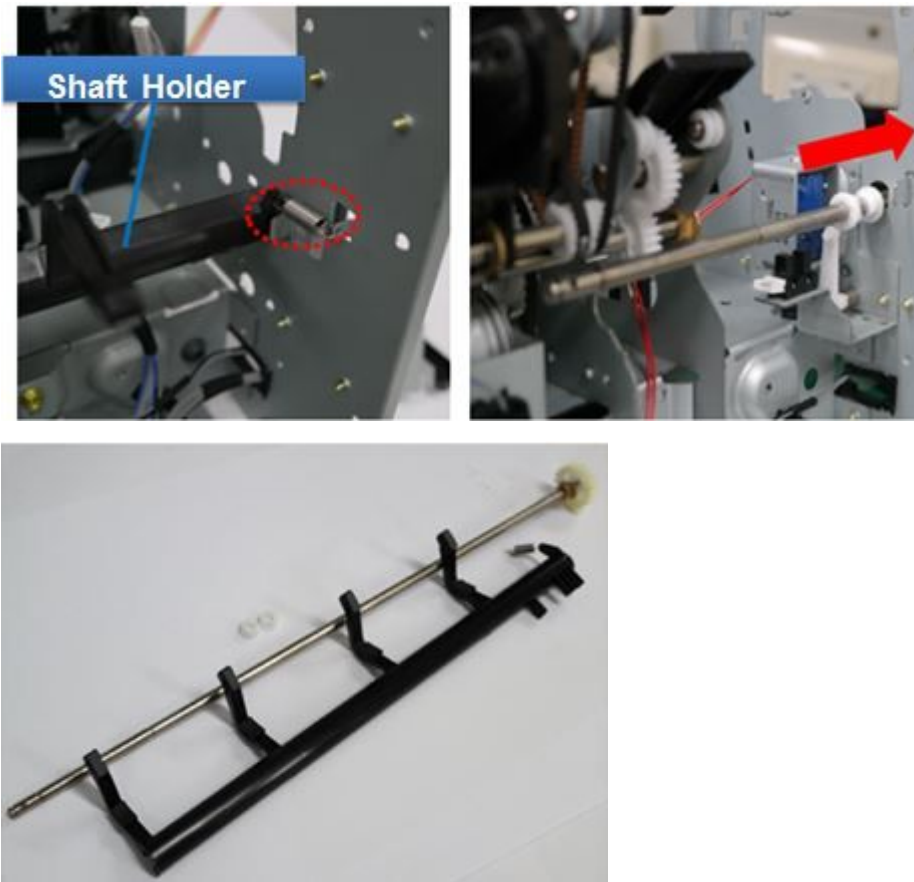
- 3) Remove the SHAFT-STACKER DRIVE and BUSH-3D.



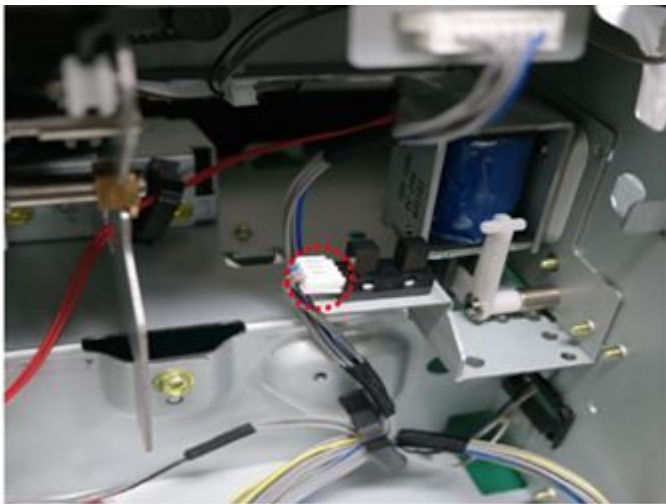
### 3. Disassembly and Reassembly

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- 4) Remove the Spring. Then, remove the Shaft holder.



- 5) Unplug the connector. Then, remove the sensor.

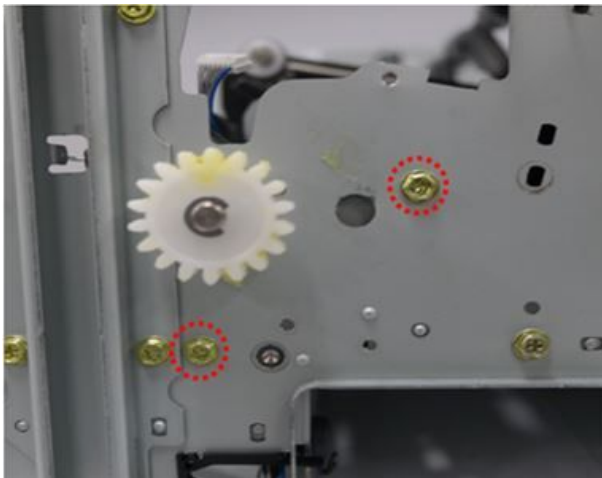


### 3.3.34.18. Paper Holding Lever Solenoid

- 1) Follow the step 1~10 in Front Jogger Motor disassembly. (**Refer to 3.3.34.6.**)
- 2) Remove 1 screw. Then, release the Stacker Lower Limit Sensor Assy.



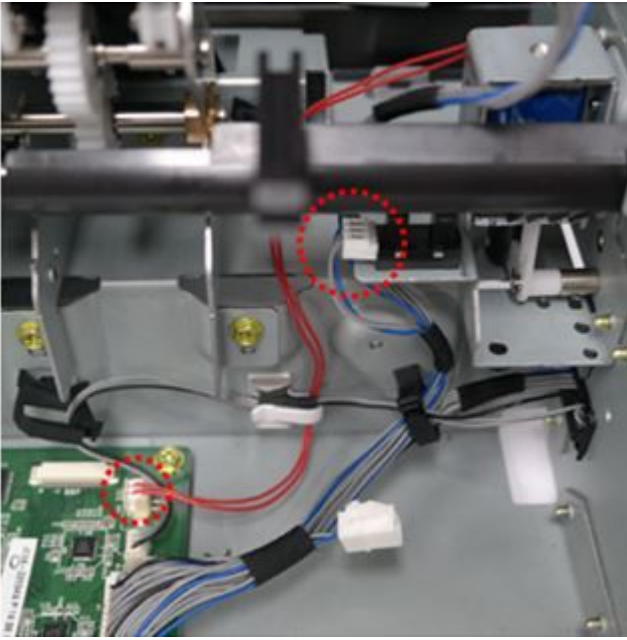
- 3) Remove 2 screws.



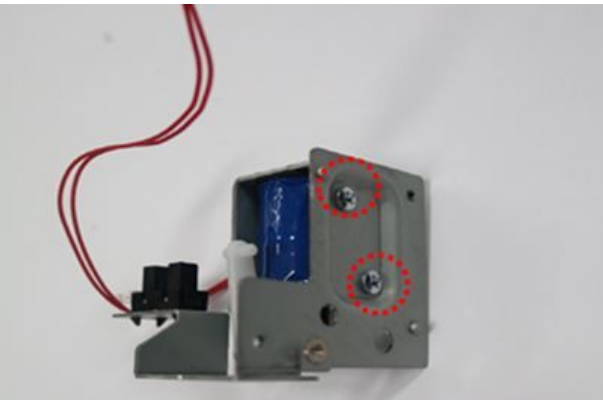
### 3. Disassembly and Reassembly

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- 4) Unplug 2 connectors. Then, release the Solenoid Assy.

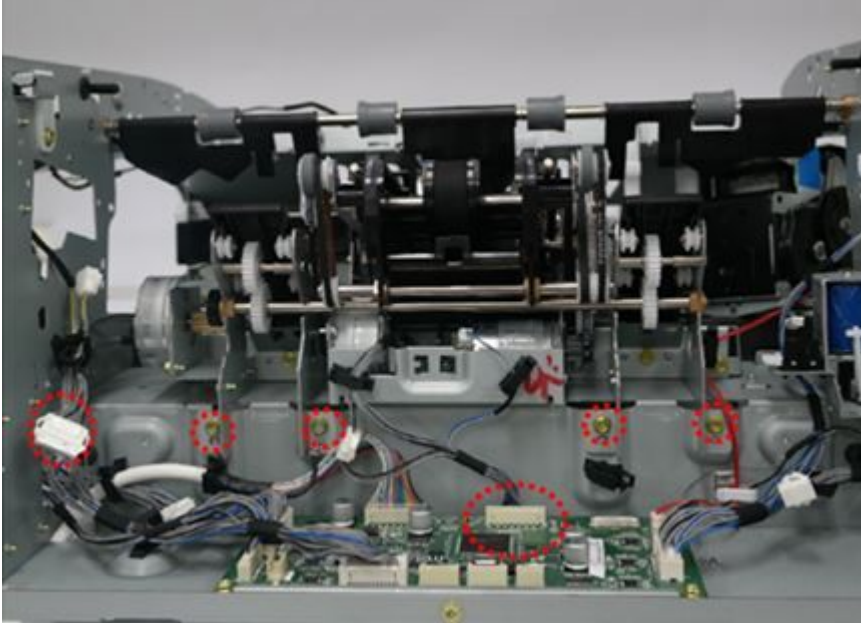


- 5) Remove 2 screws. Then, remove the solenoid.

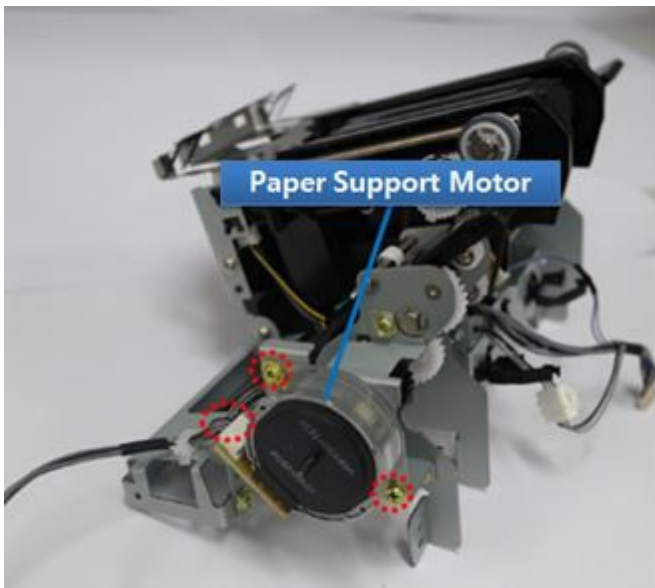


### 3.3.34.19. Paper Support Motor

- 1) Follow the step 1~5 in Stack Position Sensor disassembly. (**Refer to 3.3.34.17.**)
- 2) Remove 4 screws. Unplug 2 connectors. And, remove the Ejector Sub Assy.



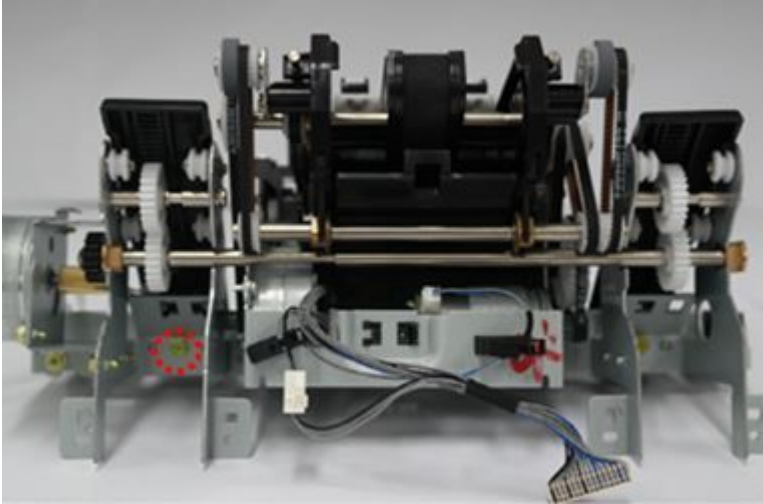
- 3) Remove 2 screws. Unplug the connector. And, release the Paper Support Motor.



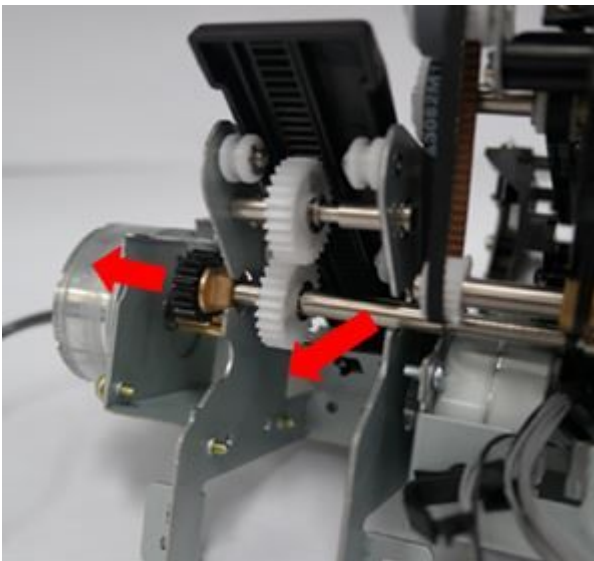
### 3.3.34.20. Paper Support Home Sensor

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- 1) Follow the step 1~2 in Paper Support Motor disassembly. (**Refer to 3.3.34.19.**)
- 2) Remove 1 screw.

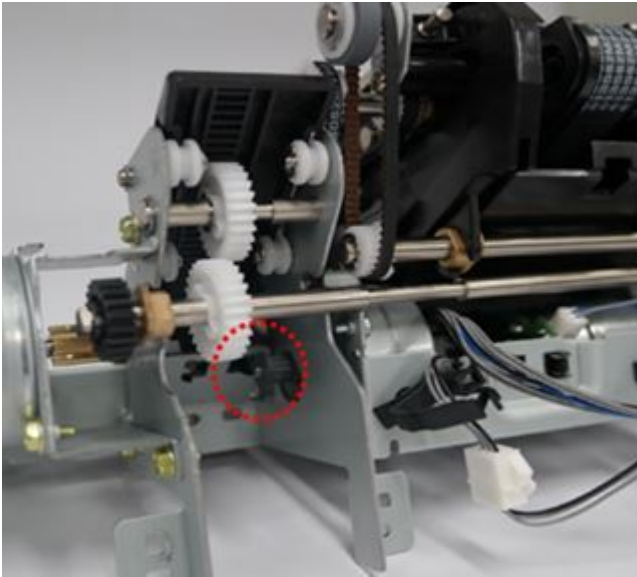


- 3) Release the shaft while pulling the Bush to the direction of arrow.





- 4) Release the Paper Support with attention for pinion.



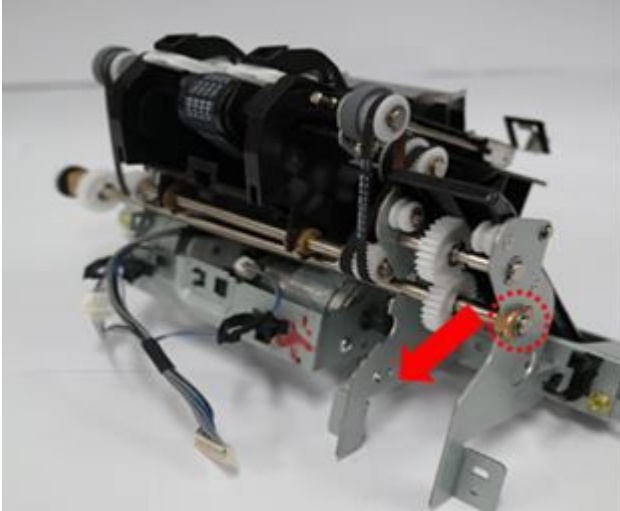
- 5) Remove the sensor from the Paper Support.



### 3.3.34.21. Ejector Motor Assy

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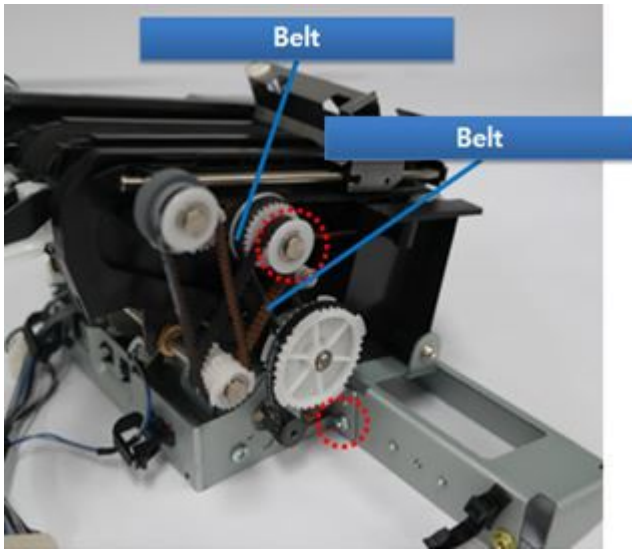
- 1) Follow the step 1~3 in Paper Support Home Sensor disassembly. (**Refer to 3.3.34.20.**)
- 2) Remove the Bush. Then, pull and release the shaft.



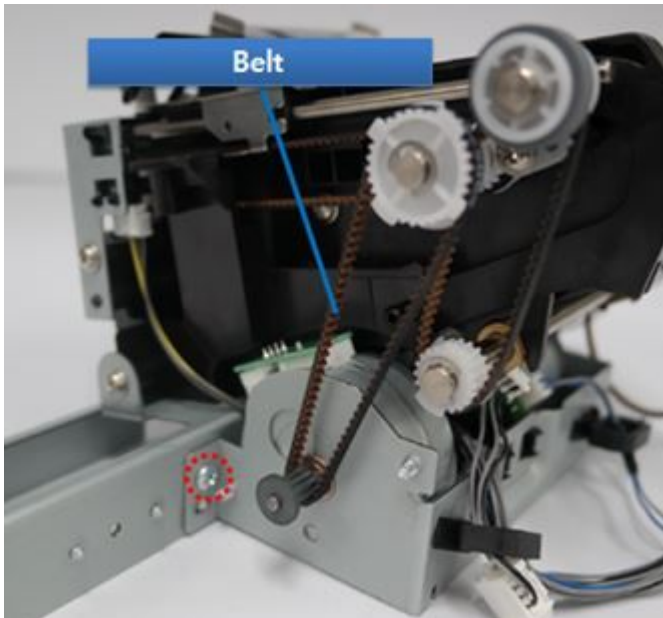
- 3) Remove 1 screw.



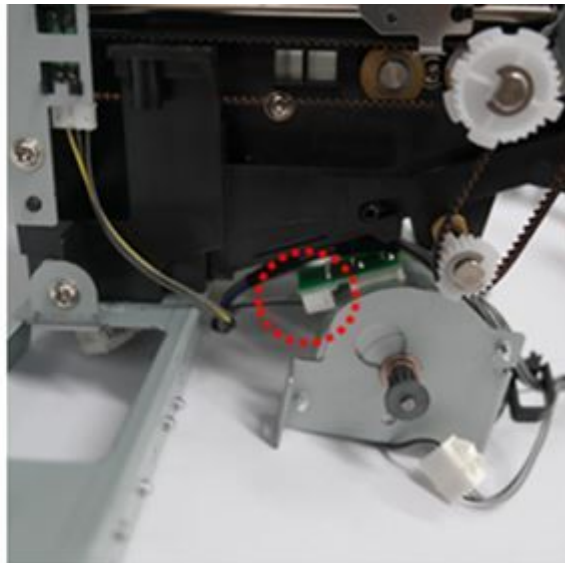
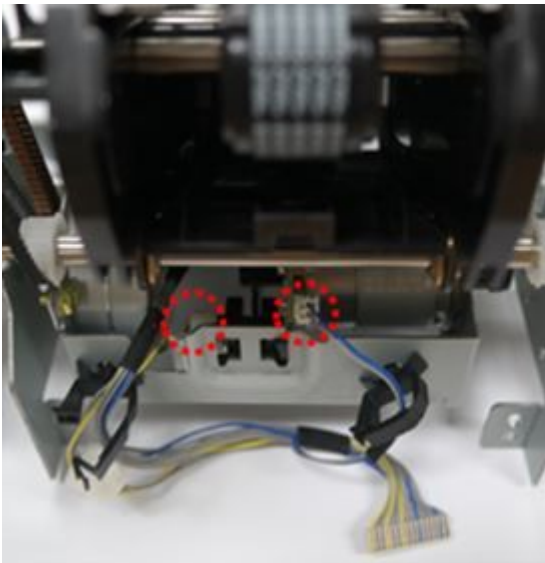
- 4) Remove the E-Ring and washer. Release 2 belts. And, remove 1 screw.



- 5) Remove the belt. Then, remove 1 screw.

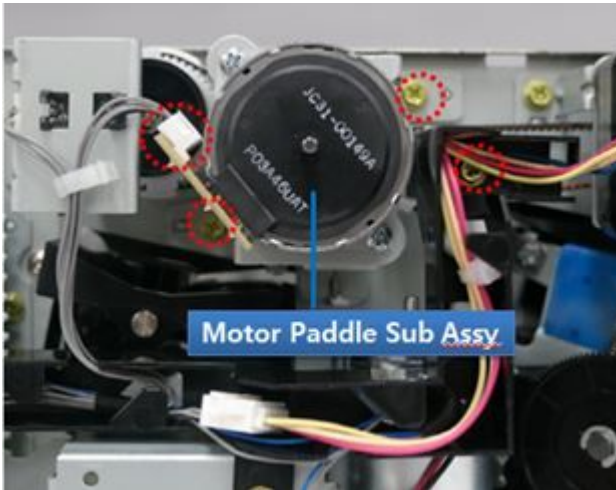


- 6) Unplug the motor connector. Then, release the motor Assy.



### 3.3.34.22. Main Paddle Motor

- 1) Remove the Front Cover.(Refer to 3.3.34.4.)
- 2) Remove 3 screws. Unplug the connector. And release the Motor Assy.



- 3) Remove 2 screws. Then, release the motor.



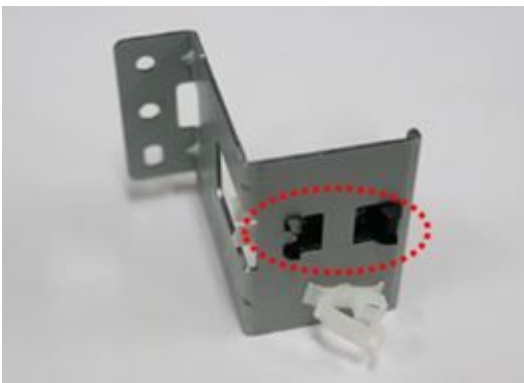
### 3.3.34.23. Main Paddle Home Sensor

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- 1) Remove the Front Cover. (Refer to 3.3.34.4.)
- 2) Remove 1 screw. Open the clamp. And, remove the Main Paddle Home Sensor Sub Assy.

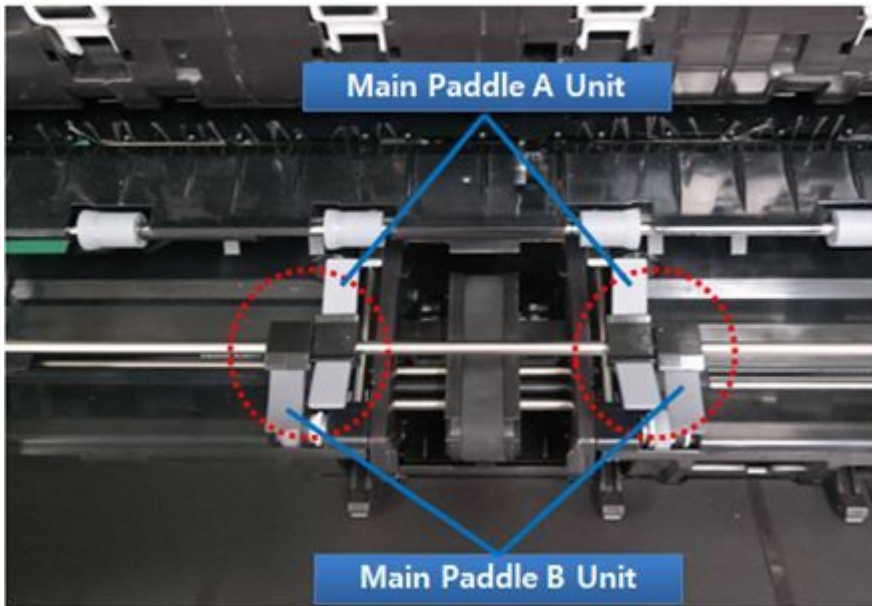


- 3) Remove the Main Paddle Home Sensor from the bracket.



### 3.3.34.24. Main Paddle

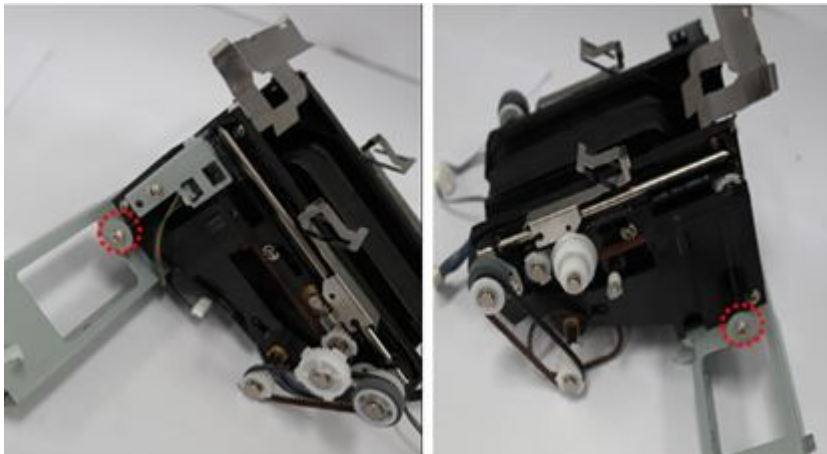
- 1) Open the Cover Top Tray Sub Assy. Then, remove the Main Paddle A Unit and Main Paddle B Unit.



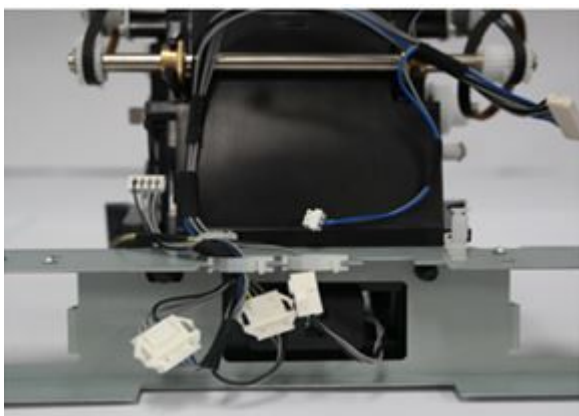
### 3.3.34.25. Ejector Assy

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- 1) Follow the step 1~6 in Ejector Motor disassembly. (**Refer to 3.3.34.21.**)
- 2) Remove 2 screws.



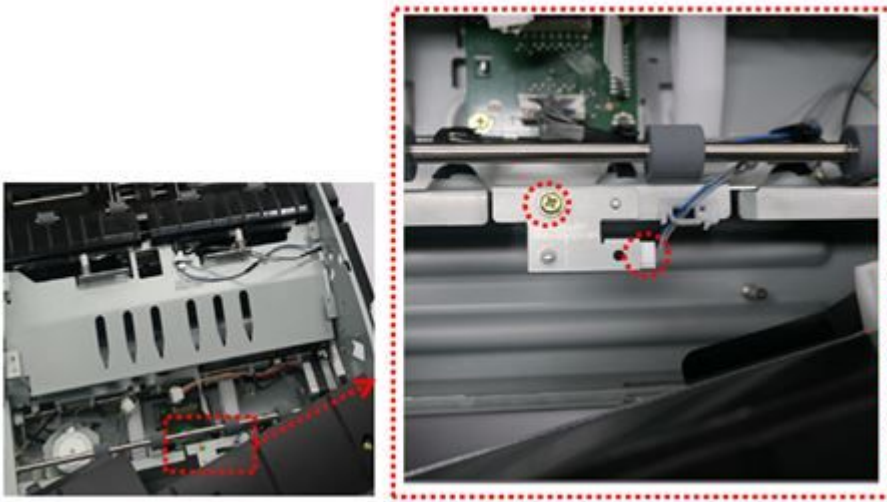
- 3) Unplug the harness. Then, remove the Ejector Assy.





### 3.3.34.26. Punch Dust Full Sensor

- 1) Follow the step 1~4 in Entrance Motor disassembly. (**Refer to 3.3.34.2.**)
- 2) Remove 1 screw. Unplug the connector. Then, remove the Punch Dust Full Sensor Sub Assy.



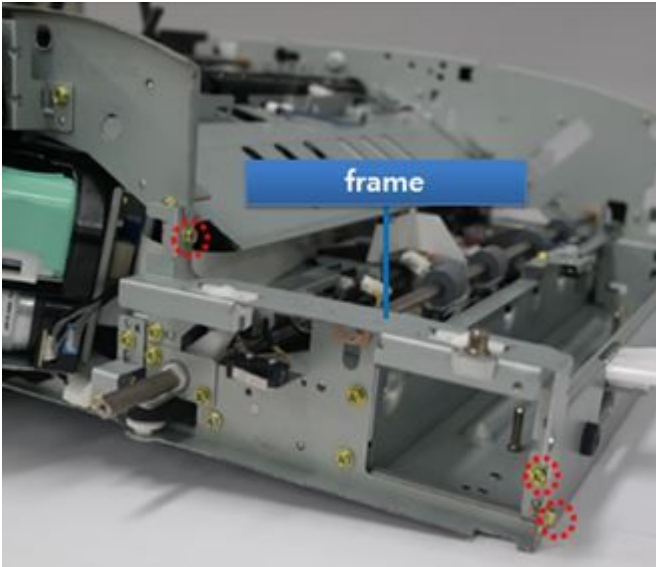
- 3) Remove 1 screw. Then, remove the Punch Dust Full Sensor.



### 3.3.34.27. Door Switch

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- 1) Follow the step 1~4 in Entrance Sensor disassembly. (Refer to 3.3.34.1.)
- 2) Remove 3 screws. Then, remove the frame.



- 3) Remove 2 screws. Unplug the connector. And, remove the Door Switch.



### 3.3.34.28. Top Door Switch

- 1) Follow the step 1~6 in Front Jogger Motor disassembly. (**Refer to 3.3.34.6**)
- 2) Remove 1 screw.



- 3) Unplug the connector. Then, remove the switch Assy.

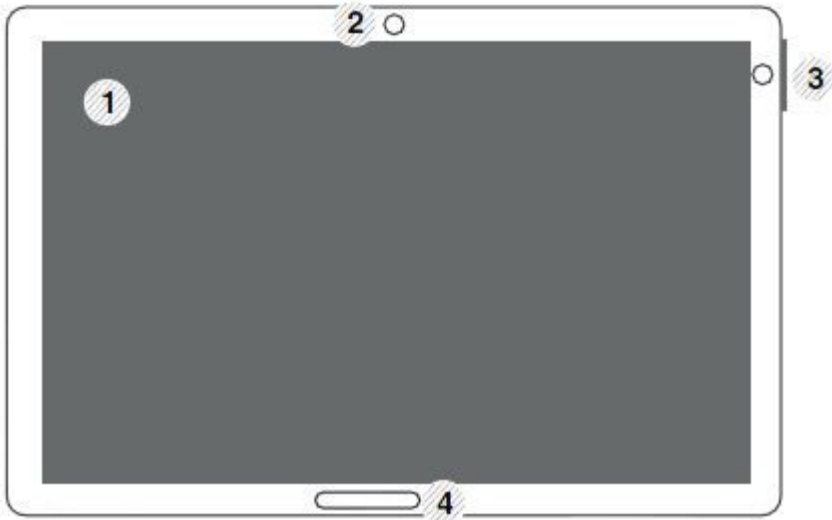


- 4) Remove 2 screws. Then, release the sensor.




# 4. Troubleshooting

## 4.1. Control panel



1	Display screen	Shows the current machine status and prompts during an operation. You can set menus easily using the display screen.
2	Motion sensor hole	Motion sensor.
3	(Power / Wakeup) button	Turn the power on or off. When the blue LED is on, the machine is powered on and you can use it. If you turn the machine off, press this button for more than two seconds. Then, confirmation window appears.
4	Power LED	Shows the power status of your machine.

 **CAUTION**

When you use the display screen, use your finger only. The screen may be damaged with a sharpen pen or anything else.

### 4.1.1. Display screen and useful buttons



#### NOTE

For more information, refer to the user guide.

#### 4.1.1.1. Menu navigation

##### Terms used in this manual

- **Tap**

Lightly touch items to select or launch them. For example:

- Tap the on screen keyboard to enter characters or text.
- Tap a menu item to select it.
- Tap an application's icon to launch the application.

- **Touch and Hold**

Activate on-screen items by a touch and hold gesture. For example:

- Touch and hold a widget on the home screen to move it.
- Touch and hold on a field to display a pop-up menu of options.

- **Swipe**

To swipe, lightly drag your finger vertically or horizontally across the screen. Use swipe when :

- Scrolling through the home screen or a menu

- **Panning**




To pan, touch and hold a selected icon, then move the device to the left or right to reposition it to another page. For example:

- Move icons on your home screens or application menus to another page.




##### Main Screen



### Command Keys


-  (Back) icon : Return to the previous screen, option or step.
-  (Home) icon : Display the main Home screen.
-  (Recent) icon : Display recently used apps.
- Quick launch : Excute applied settings.

### Add quick launch

- 1) Tap  (Setting) icon > **Display** > **More Settings** > **Quick Launch** from the display screen.
- 2) Select the quick launch option.
  - None: Icon not shows.
  - Screen Capture (  ): Capture the current screen.
  - Applications: Move to all apps.
  - Search: Move to search screen.
- 3) Tap  (Back) icon or other settings menu.

#### 4.1.1.2. Home Screen Overview

---

The main home screen is the starting point for many applications and functions, and it allows you to add items like application icons, shortcuts or widgets to give you instant access to information and applications. This is the default page and accessible from any menu by tap  icon . The display screen image in this user’s guide may differ from your machine depending on its options or models.

 **NOTE**

Depending on the authentication setting, the machine’s users have to enter an ID and a password. In this case, the machine can only be used by an authorized user who has registered an ID and a password on the machine. Contact the machine’s administrator.


### Navigating Through the Home Screens

The machine initially has six home screens. If you like, you can place different applications on each of the home screens.

 **NOTE**

From the main Home screen, sweep the screen with your finger in either direction. The main home screen is located in the middle with three Home screens on each side.

### Navigating through the application menus


This machine initially has four application menus available in main home screen. If you want to using all application menus and widgets, tap  icon. Then sweep the screen left or right to access the other menus and widgets.

**NOTE**

As you add applications, the number of Application menus that you have available will increase.

### Accessing recently-used apps

You can find the recently-used apps easily.

- 1) Tap  icon from any screen to open the recently-used applications window.
- 2) Tap an icon to open the selected application.


#### 4.1.1.3. Customizing your home screen

You can customize your Home screen.



### Creating shortcuts

Shortcuts are different from widgets. While widgets can only launch applications, shortcuts can do this and activate features and actions.

#### [ Adding a shortcut from the home screen ]

- 1) Tap  icon to activate the main home screen.
- 2) Touch and hold the home screen, shows list. Then select your desired shortcut.
  - Set wallpaper
    - Home Screen : You can setting the wallpaper of Home Screen.
    - Login Screen : You can setting the wallpaper of Login Screen.
    - Home and Login Screen : You can setting the wallpaper of both.
  - Apps, XOA Apps, Widgets and Programs : Place apps, XOA apps, widgets, and program icons on home screen.
  - Folder : You can create folder on home screen.
  - Page : You can add page.

#### [ Adding a shortcut from the Apps menu ]

- 1) Tap  icon to activate the main home screen.
- 2) Tap  icon to display your current applications.
- 3) Scroll through the list and locate the desired application.
- 4) Touch and hold the application icon. This creates a shortcut to the application and shows the main home screen.
- 5) Drag the shortcut to a desired position on the screen and release it. To move to a different page, drag the shortcut to the edge of the screen until the screen scrolls to the desired page.

#### [ Deleting a shortcut ]

- 1) Touch and hold a shortcut until it becomes movable.

- 2) You can drag shortcut and place a shortcut in the trash, both items turn red.





### NOTE

This action does not delete the shortcut, it just removes it from the current screen.

## Adding and removing widgets

Widgets are self-contained applications that reside on your widgets tab and on any page of the home screen. Unlike shortcuts, a widget appears as an on-screen application.

### [ Adding a widget ]

- 1) Tap  icon to activate the main home screen.
- 2) Tap  icon and tap the Widgets tap at the top of the screen.
- 3) Scroll through the list and locate your desired widget.
- 4) Touch and hold the widget icon. This creates a copy of the widget and opens the main home screen.
- 5) Drag the widget to the desired position on the screen and release it. To move the widget to a different page, drag it to the edge of the screen until the screen scrolls to the desired page.

### [ Removing a widget ]



- 1) Touch and hold a widget until it becomes movable.
- 2) You can drag shortcut and place a shortcut in the trash, both items turn red.



### NOTE

This action does not uninstall a widget, it only removes the copy from the home screen.

## Moving icons in the Apps menu

- 1) Tap  icon to go to the main home screen.
- 2) Tap  icon to display your current applications.
- 3) Tap the Apps tab at the top of the screen if it is not already selected.
- 4) Drag the icon to a desired position on the screen and release it. To move to a different page, drag the icon to the edge of the screen until the screen scrolls to the desired page.

## Changing the Wallpaper

You can customize the Wallpaper (background) of your home screens.

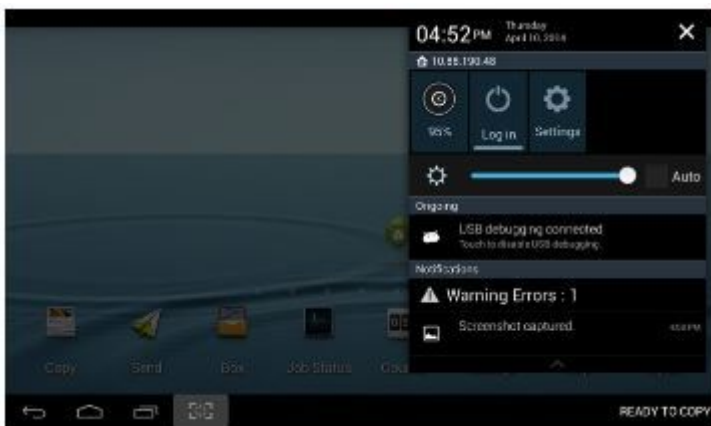
- 1) From any home screen, touch and hold on an empty area of the screen. Then select Set wallpaper option.
- 2) Tap one of the following options in the window that appears.
  - Home Screen : Set the wallpaper for the Home Screen.
  - Login Screen : Set the wallpaper for the Login Screen.
  - Home and Login Screen : Set the wallpaper for both screens.



- 3) Tap one of the following options in the next window that appears.
  - Gallery: Select a wallpaper from photographs and images in the machine's gallery.
  - Live wallpapers: Select an animated image.
  - Wallpapers: Select from several built-in stationary images.
- 4) Select a wallpaper and tap OK, Set wallpaper, or Cancel.

#### 4.1.1.4. Notification Bar

The notification bar includes a pull-down list to show information about processes that are running, toner status, darkness, recent notifications, and alerts.



#### NOTE

On the home screen, touch and hold the notification bar until the pull-down displays, then drag down vertically.

#### Accessing additional panel functions

In addition to notifications, this panel also provides quick and ready access to separate device functions. These can be quickly activated or deactivated by toggling them on or off. The following functions can either be activated (green) or deactivated (gray): ECO, Wi-Fi, NFC, Log in, Setup and darkness setting.

## 4.2. Understanding the LEDs

### Understanding the status LED

The color of the status LED indicates the machine's current status.

Status		Description	
Off		<ul style="list-style-type: none"> <li>The machine is off-line.</li> <li>The machine is in power save mode. When data is received, or any button is pressed, it switches to online automatically.</li> </ul>	
Ice-blue	On	The machine is on-line and can be used.	
	Blinking	Fax	The machine is sending or receiving faxes.
		Copy	The machine is copying documents.
		Scan	The machine is scanning documents.
	Print	<ul style="list-style-type: none"> <li>When the status LED slowly blinks, the machine is receiving data from the computer.</li> <li>When the status LED blinks rapidly, the machine is printing data.</li> </ul>	
Red	On	<ul style="list-style-type: none"> <li>The imaging unit is at the end of its lifespan. Remove the old imaging unit and install a new one.</li> <li>The toner cartridge life* is totally empty. Remove the old toner cartridge and install a new one.</li> <li>A paper jam has occurred.</li> <li>The door is open. Close the door.</li> <li>There is no paper in the tray. Load paper in the tray</li> <li>The machine has stopped due to a major error. Check the display message.</li> <li>The waste toner container is not installed in the machine, or full waste toner container.</li> </ul>	
	Blinking	<ul style="list-style-type: none"> <li>A minor error has occurred and the machine is waiting for the error to be cleared. Check the display message. When the problem is cleared, the machine resumes its original task.</li> <li>The toner cartridge life, imaging unit, or waste toner container is near the end of its life. Order a new toner cartridge, imaging unit, or waste toner container. You can temporarily improve print quality by redistributing the toner.</li> </ul>	

---

## 4.3. Updating Firmware

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This chapter includes instructions for updating the printer firmware. You can update the printer firmware by using one of the following methods :

- Update the firmware by using the printer control panel
- Update the firmware by using the network.

### 4.3.1. Updating from the Printer Control Panel

---

**WARNING**

**Failure to follow these instructions could lead to corruption issues and prevent the proper operation of this printer. Follow all of the instructions carefully.**

- 1) Download the firmware file from the Global Service Partner Network (GSPN) or Technical Support Portal (TSP) website.
- 2) Unzip the firmware file to a folder on your PC.
- 3) Copy the firmware file (\*.hds or \*.par) to a USB flash drive.
- 4) Plug the USB flash drive into the USB port.
- 5) Press the button on control panel in this order. (**Settings > Admin Settings > Application Management > Application > Install**)
- 6) The installation window will list the files on the USB drive. Touch the name of the firmware file to select it.
- 7) Press the “OK” button after selecting the file.
- 8) Once the installation is complete, “OK” button will be activated. Press “OK” button.

### 4.3.2. Updating from the Network



#### WARNING

Failure to follow these instructions could lead to corruption issues and prevent the proper operation of this MFP. Follow all of the instructions carefully.

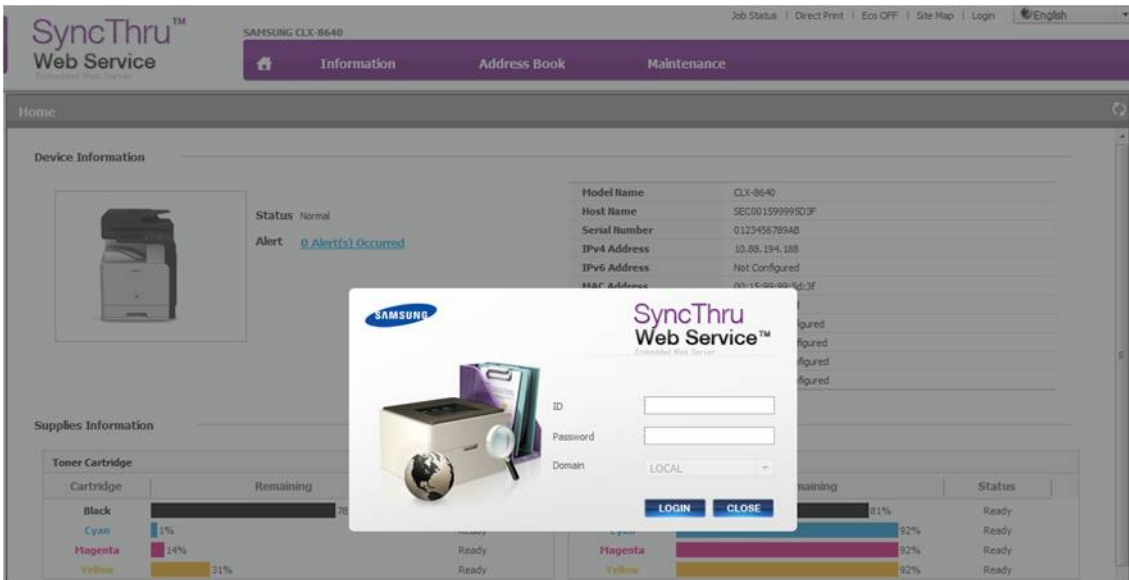
Perform the following procedure to update the MFP firmware from the network.

- 1) Go to the SyncThruWeb Service (SWS) main home page. Login as Admin in Sync Thru Web Service.

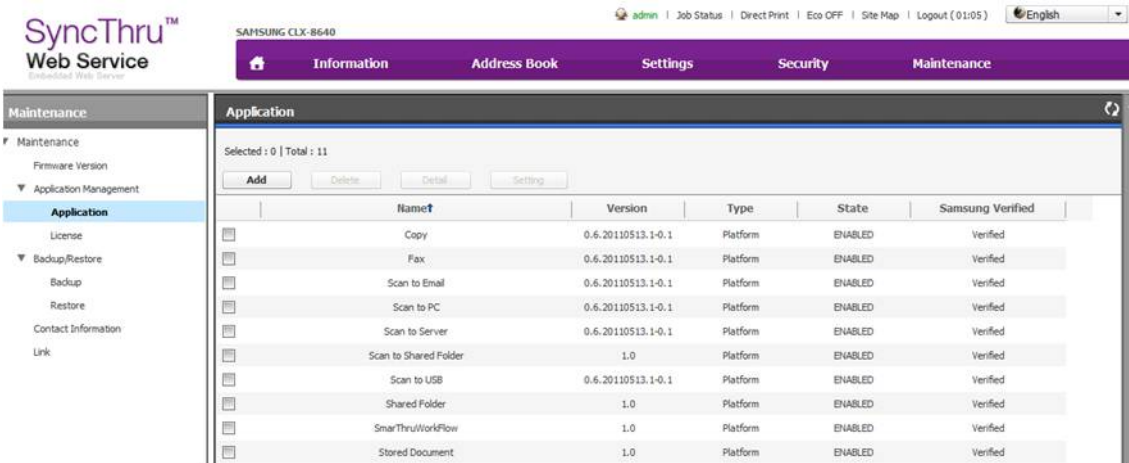


#### NOTE

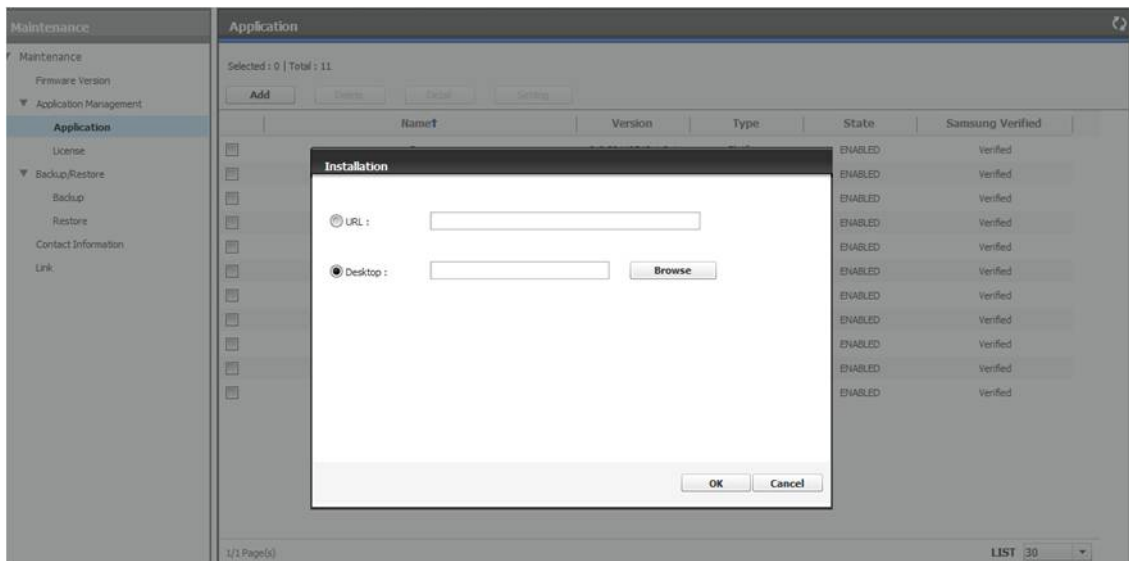
Login using the Administrator ID and Password established during initial machine setup.



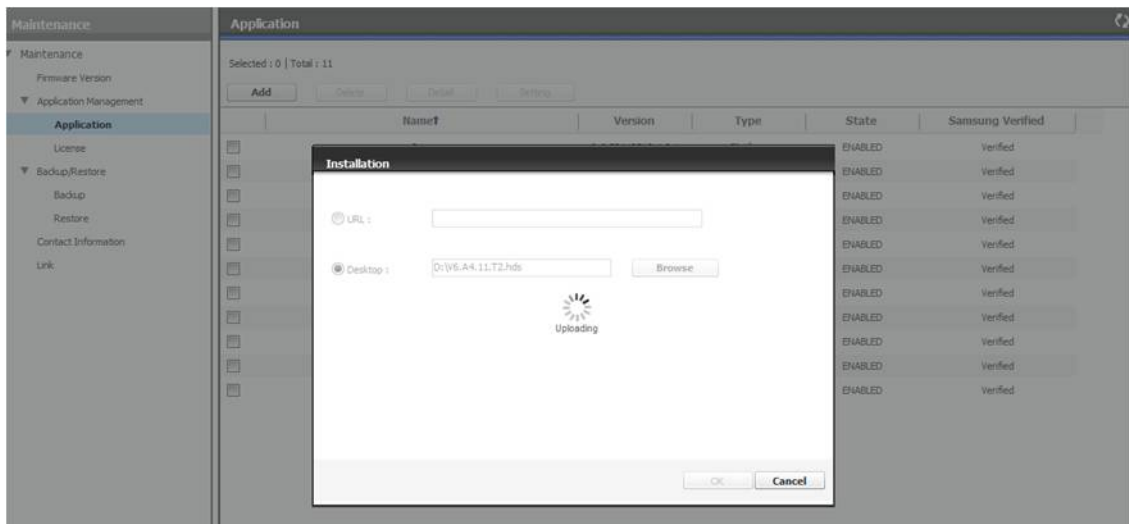
- 2) Click on **Maintenance > Application Management > Application > Add**.



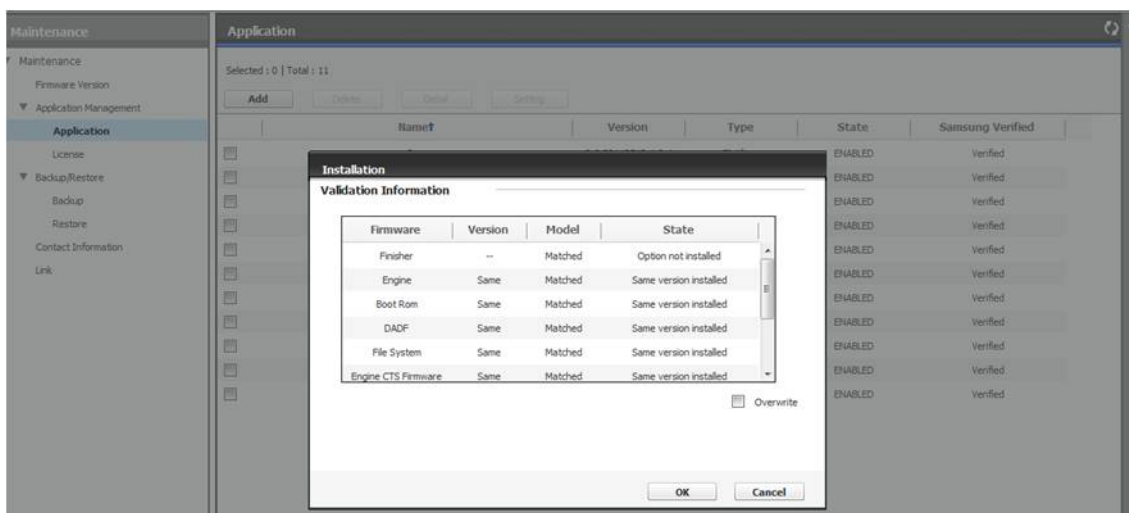
- 3) Choose installation file (F/W file) by browsing the file system and click [OK].



- 4) The uploading step will start.

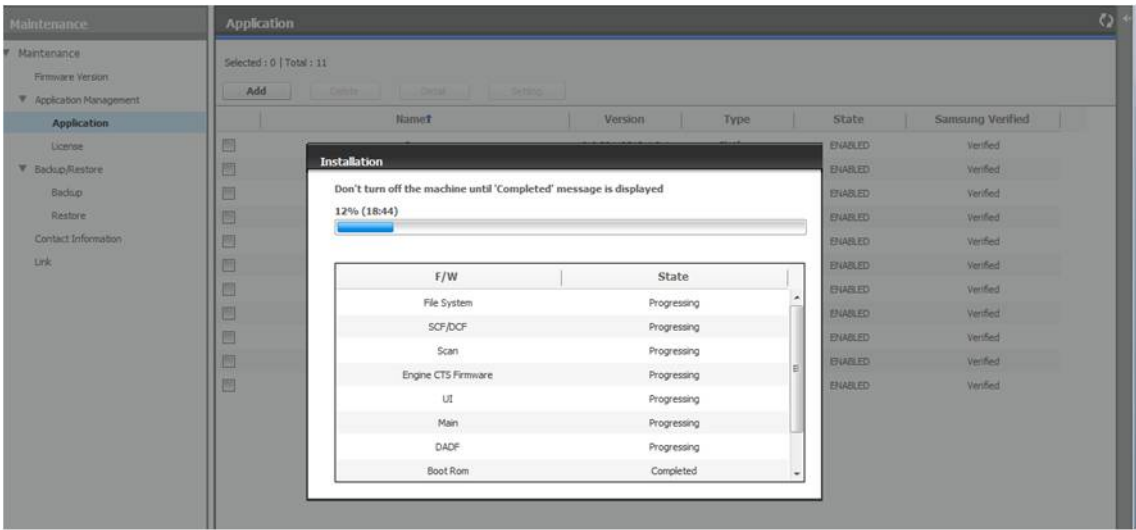


- 5) After uploading the f/w file on MFP, validation information will appear. Check the [Overwrite] check-box if you want to force the firmware update even if the firmware version to be installed is lower or same with the currently installed firmware in the device. Press [OK] to start the firmware upgrade.

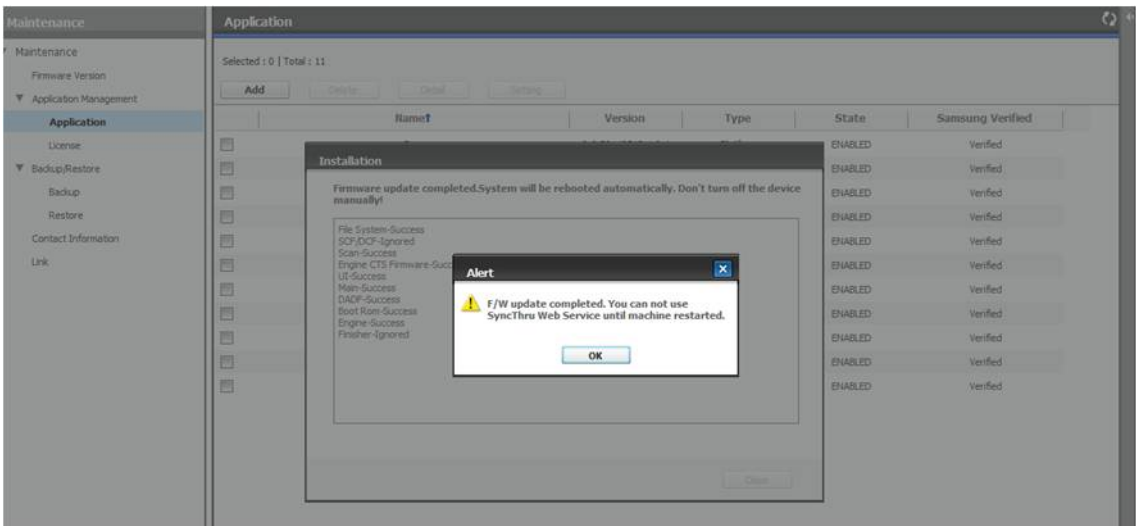


4. Troubleshooting

6) The firmware update will start.



7) Once the installation is complete, the machine power-off and power-on automatically.



## 4.4. JAM removal

### 4.4.1. Clearing original document jams

When an original jams while passing through the document feeder(DSDF(X4300/4250) or RADF(X4220)), a warning message appears on the display screen.

 **CAUTION**

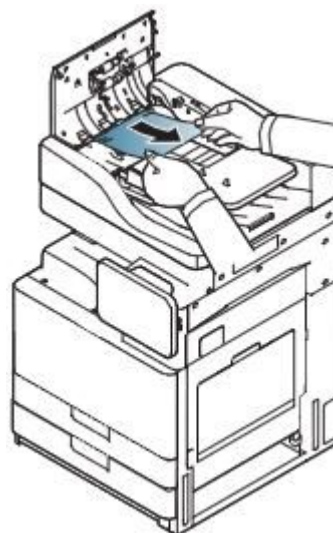
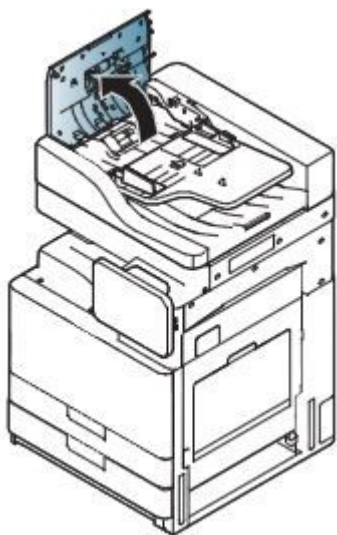
To avoid tearing the document, remove the jammed document slowly and gently.

 **NOTE**

To prevent document jams, use the scanner glass for thick, thin, or mixed paper-type originals.

#### Original paper jam in front of scanner

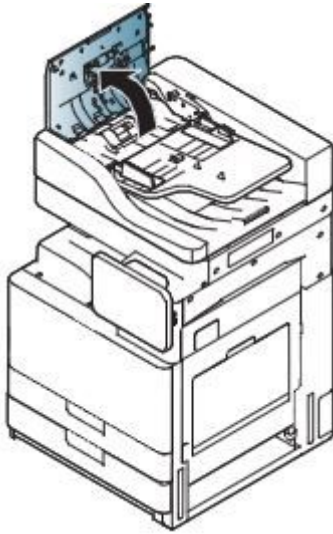
- 1) Remove any remaining pages from the ADF.
- 2) Open the ADF cover.
- 3) Gently remove the jammed paper from the ADF.



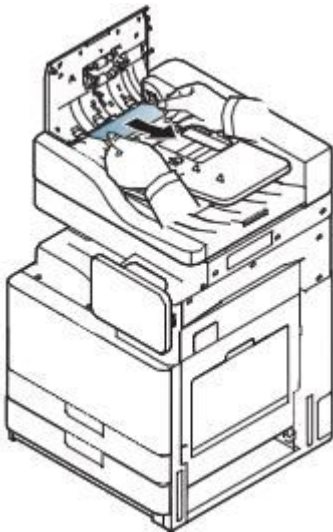
- 4) Close the ADF cover.

### Original paper jam inside of scanner

- 1) Remove any remaining pages from the ADF.
- 2) Open the ADF cover.

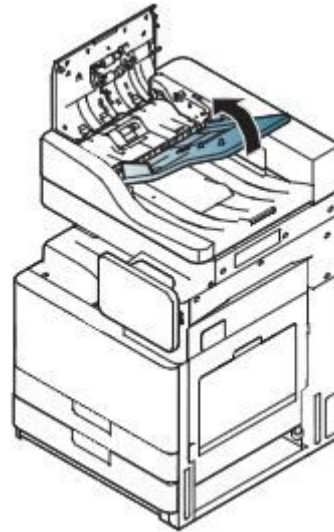


- 3) Gently remove the jammed paper from the ADF.



If you do not see paper in this area, go to the next step.

- 4) Open the input tray.



- 5) Pull the jammed paper gently out of the ADF.

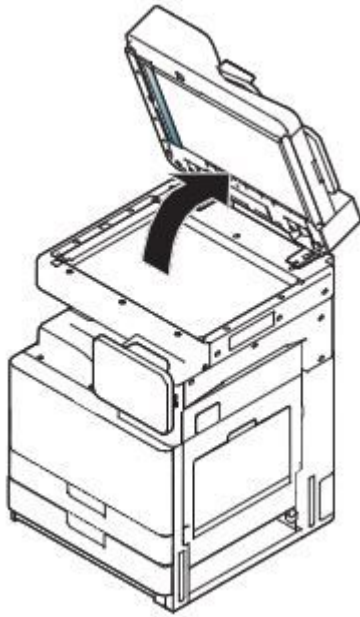


If you do not see paper in this area, go to the next step.

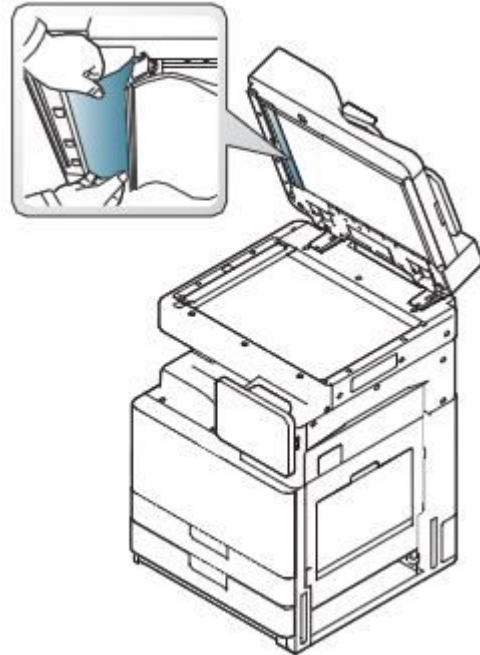
- 6) Close ADF cover and ADF input tray.



7) Open the ADF.



8) Grasp the misfed paper, and remove the paper from the feed area by carefully pulling it using both hands.



9) Close the ADF.

## 4.4.2. Clearing paper jams

When a paper jam occurs, a warning message appears on the display screen.

### NOTE

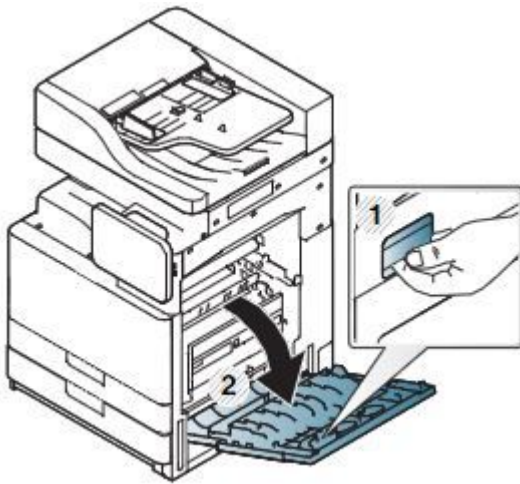
To avoid tearing the paper, pull the jammed paper out slowly and gently. Follow the instructions in the following sections to clear the jam.

### Paper jam in tray 1, 2

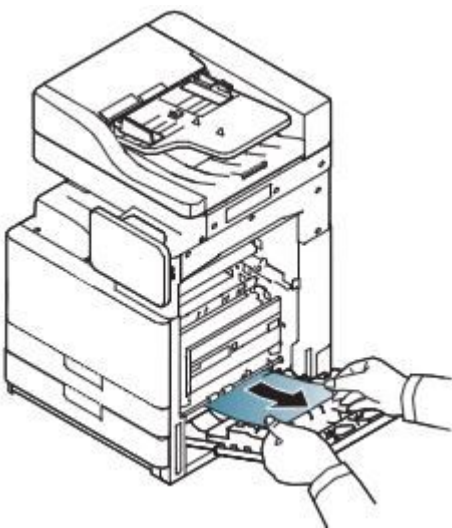
#### CAUTION

The fuser area is hot. Take care when removing paper from the machine.

- 1) Open the right door.

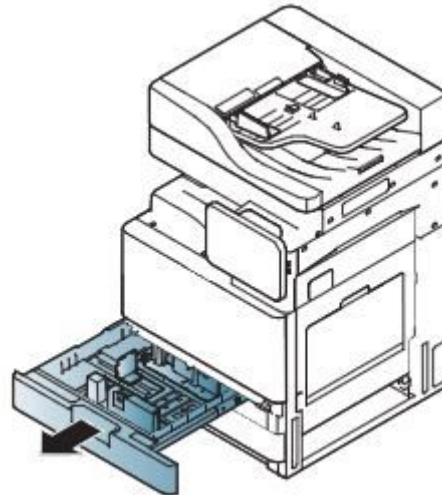


- 2) Remove the jammed paper by gently pulling it straight out.

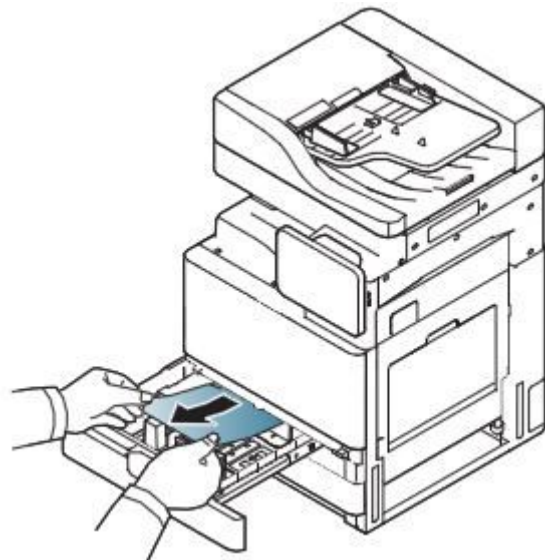


Close the right door. If you do not see paper in this area, go to the next step.

- 3) Pull out tray 1 or 2.



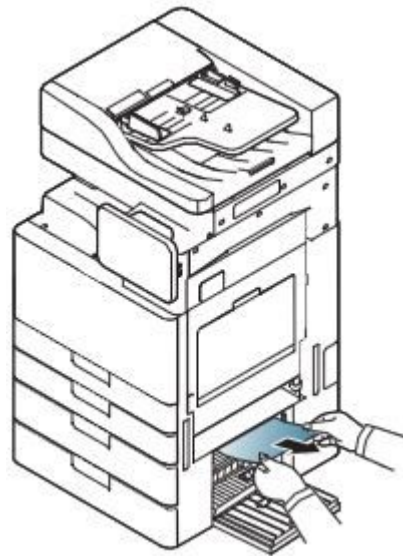
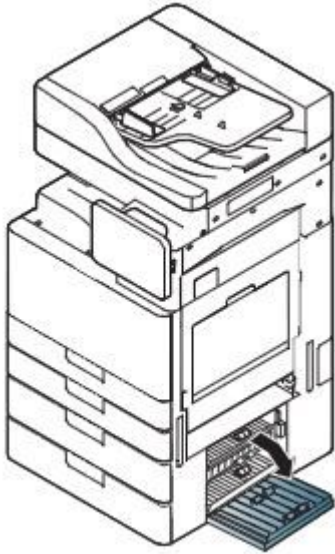
- 4) Remove the jammed paper from the machine.



- 5) Insert tray 1 or 2 back into the machine until it locks into place. Printing automatically resumes.

### Paper jam in tray 3, 4

- 1) Open the right bottom door of the dual cassette feeder.
- 2) Remove the jammed paper by gently pulling it straight out.

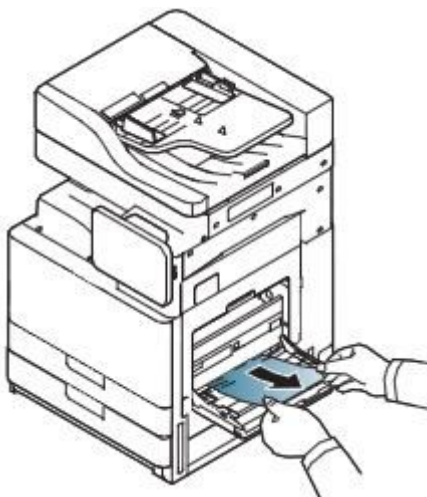


Close the dual cassette feeder right bottom door. If you do not see paper in this area, go to the next step.

- 3) Pull out tray 3 or 4.
- 4) Remove the jammed paper from the machine.
- 5) Insert tray 3 or 4 back into the machine until it locks into place. Printing automatically resumes.

### Paper jam in the multi-purpose tray

- 1) If the paper is not feeding properly, pull the paper out of the machine.
- 2) Open and close the front door to resume printing.



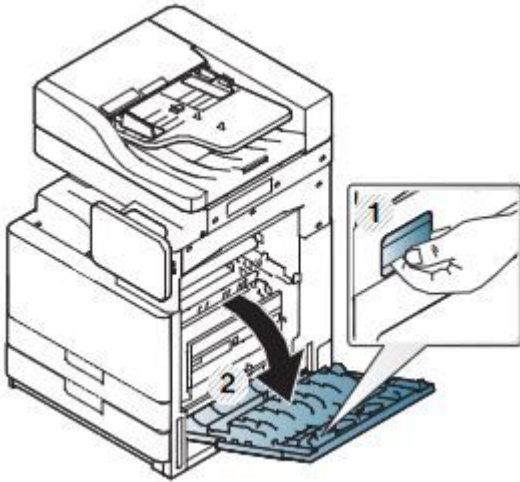
### Paper jam inside the machine (Jam feed 1, Jam feed 2)



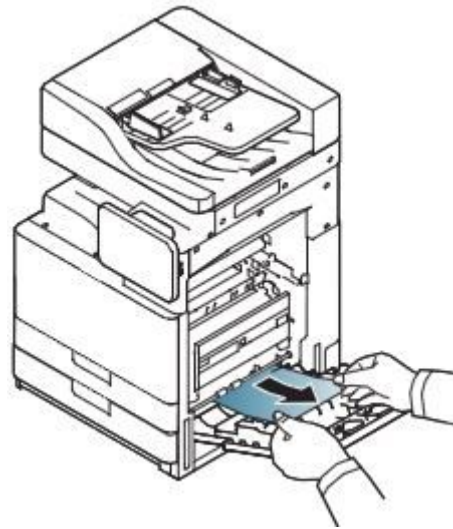
#### CAUTION

The fuser area is hot. Take care when removing paper from the machine.

- 1) Open the right door.



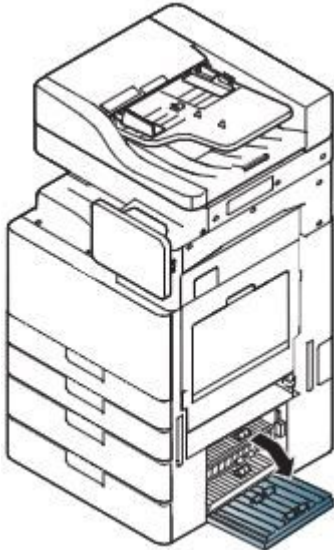
- 2) Remove the jammed paper by gently pulling it straight out.



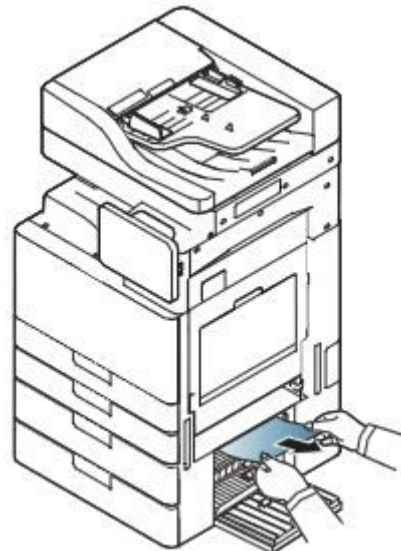
- 3) Close the right door.

### Paper jam inside the machine (Jam feed 3, Jam feed 4)

- 1) Open the right bottom door of the dual cassette feeder.



- 2) Remove the jammed paper by gently pulling it straight out.



- 3) Close the dual cassette feeder right bottom door.

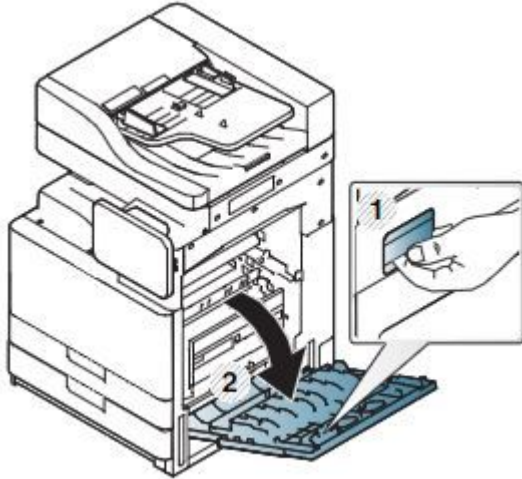
### Paper jam inside the machine (Jam Registration)



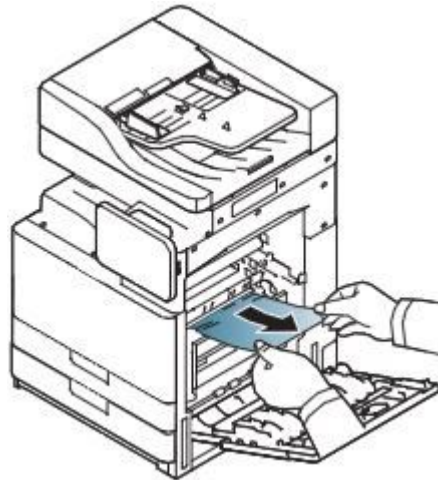
#### CAUTION

The fuser area is hot. Take care when removing paper from the machine.

- 1) Open the right door.



- 2) Remove the jammed paper by gently pulling it straight out.



- 3) Close the right door.

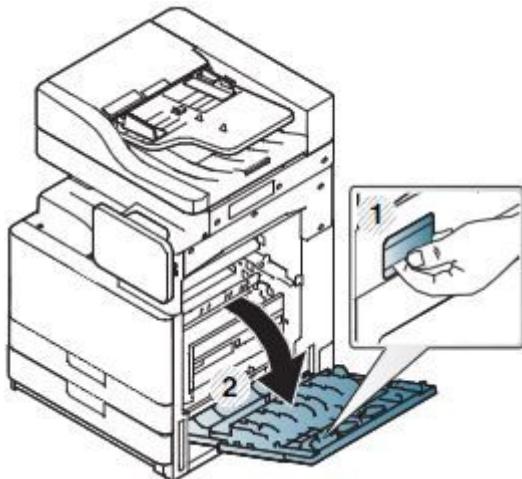
### Paper jam inside of the machine (Jam at Fuser out)



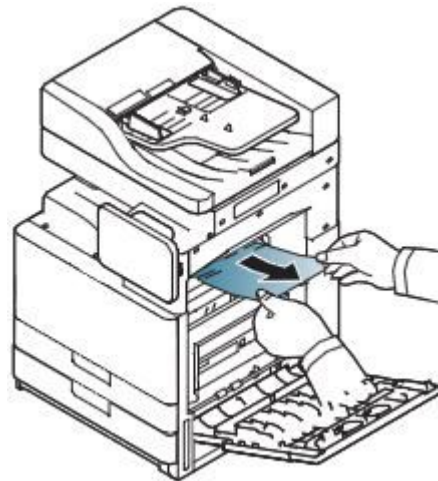
#### CAUTION

The fuser area is hot. Take care when removing paper from the machine.

- 1) Open the right door.



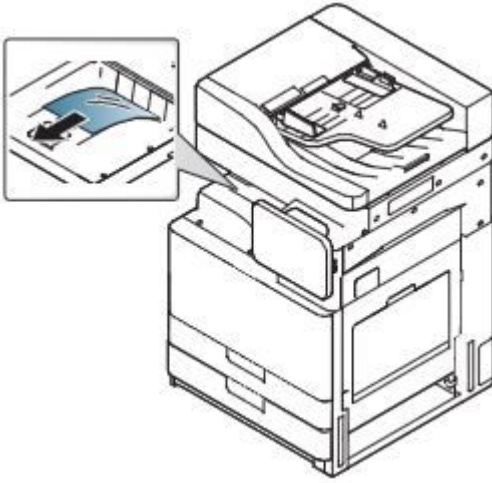
- 2) Open the fuser cover. Then remove the jammed paper by gently pulling it straight out.



- 3) Close the fuser cover and the right door.

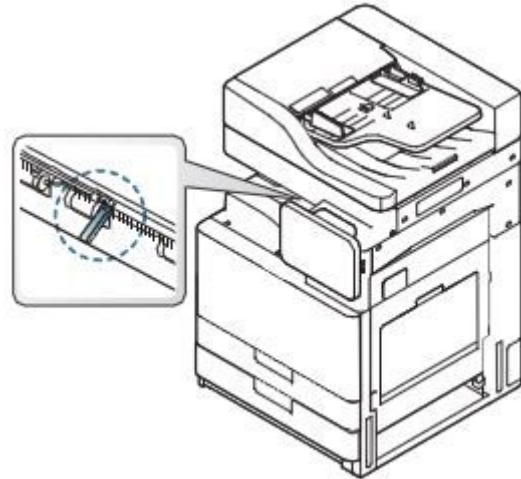
### Paper jam in exit area (Jam Exit Face down)

1) Gently pull the paper out of the output tray.



2) Open and close the front door. Printing automatically resumes.

If this paper jam persists, make sure the bin full sensor is unfolded. The bin full sensor is located in front of the output tray.



## 4.5. Service Mode (Tech Mode)

### 4.5.1. Entering the Service Mode

To enter the service mode,

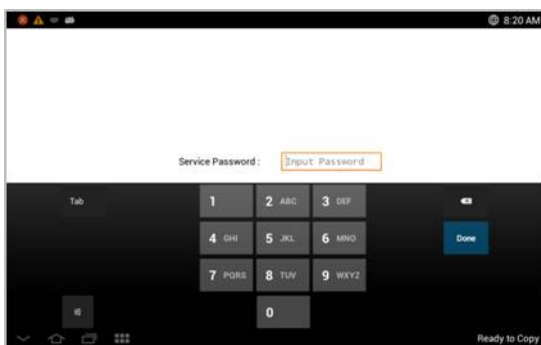
- 1) Press "Power button" until the pop up will be displayed.



- 2) Press pop-up area except "Cancel" and "Turn Off" button until the password window will be displayed.



- 3) Enter "1934" and press the "Done" button.



## 4.5.2. Service Mode Menu Tree

### a) Information Tab

Level 1	Level 2	Level 3	Level 4	Page	
Information	General			P.4-26	
	Supply Status	Customer Replacement Unit	Toner	P.4-26	
		Field Replacement Unit	Imaging Unit		
			Development Unit		
			Waste Toner Container		
			Transfer		
			Fuser		
			Roller		
	ADF Roller				
	Software Version			P.4-27	
	Service Hours	Power On Hours			P.4-27
		Power Save Hours			
	Fault Log				P.4-27
	Print Reports	Supplies Information			P.4-27
		Usage Counter			
		Error Information			
		Fax Protocol Dump (Line 1)			
		Fax Protocol Dump (Line 2)			
		Fax Diagnostics (Line 1)			
		Fax Diagnostics (Line 2)			
		Job Duty			
		Auto Toning History			
		Maintenance			
Export Reports	Toner Event			P.4-28	
	RTF Format				
	XML Format				
	PDF Format				



**b) Maintenance Counts Tab**

Level 1	Level 2	Level 3	Level 4	Page	
Maintenance Counts	Fault Count			P.4-29	
	Jam Count	Print Jam		Pick-up Jam	P.4-29
				Feed Jam	
				Duplex Jam	
				Exit Jam	
		Scan Jam		Feed Jam	
				Regi Jam	
				Scan Jam	
				Exit Jam	
				Duplex Regi Jam	
				Duplex Scan Jam	
	Part Replacement Count		Toner Cartridge		P.4-30
			Imaging Unit		
			Development Unit		
			Transfer		
			Fuser		
		Roller			
		ADF Roller			

**c) Diagnostics Tab**

Level 1	Level 2	Level 3	Level 4	Page	
Diagnostics	Engine Diagnostics	Engine NVM Initialization		P.4-31	
		Engine NVM Read/Write		P.4-31	
		Engine Test Routines		P.4-32	
	Fax Diagnostics	Fax NVM Read/Write		P.4-37	
		Fax Test Routines		P.4-39	
	Scanner Diagnostics	Shading Test	Shade and Print Report		P.4-42
			Print Last Shade Report		
			Shade and Print Report (ADF)		
			Print Last Shade Report (ADF)		
		Scanner/ADF NVM Read/Write		P.4-42	
		Scanner/ADF Test Routines		P.4-43	
	Adjustment	Print Adjustment	Automatic Adjustment		P.4-45
			Image Position		P.4-46
			Print Test Patterns		P.4-46
		Copy Adjustment	Image Position		P.4-47
		Scan Area Adjustment	Automatic Adjustment		P.4-48
			Manual Adjustment		P.4-49
		ADF Adjustment	Automatic Adjustment		P.4-50
			Manual Adjustment		P.4-51
	Image Management	Auto Tone Adjustment Activation	Normal		P.4-54
			Full		
		Auto Tone Adjustment	Normal		P.4-55
			Full		
	Print Test Patterns	Skew Pattern		P.4-56	

## d) Service Functions

Level 1	Level 2	Level 3	Level 4	Page
Service Functions	Main Memory Clear			P.4-56
	Hard Disk Maintenance	Device Configuration Data Clear		P.4-56
		Temporary & Spool Data Clear		
		User Saved Data & Log Clear		
		All Saved Data Clear		
		HDD Encryption		
	Count Setting of Large Pages	1 Count Up		P.4-56
		2 Count Up		
	Network Port	Enable Telnet		P.4-57
		Enable OSGI		
		Enable Samba		
		Enable SSH		
		Enable ADB		
	Debug Log	Off		P.4-57
		Job Status		
		Details		
		Activation for Boot Logs	Off/ On	
	Capture Log	All		P.4-57
		Period	Start Date / End Date	
	Network Packet Capture	Packet Capture	Start/Stop	P.4-58
		Capture File Download	Export	
		Capture File Delete	Clear	
	System Recovery	SYS		P.4-59
ALL				
TR Control Mode	T2 Control Mode	Paper Group / Paper Side / Paper Direction / T2 PWM		
Clear System Cache			P.4-62	
Hibernation	ON		P.4-62	
	OFF			
	CREATE NEW			
Paper Low Warning Message	Off		P.4-62	
	On			
Part Replacement Alert	Imaging Unit	Off / On	P.4-62	
	Development Unit	Off / On		
	Fuser	Off / On		
FDI	Type A		P.4-62	
	Type B			

4. Troubleshooting

Level 1	Level 2	Level 3	Level 4	Page	
		Type C			
	EIUL	Off		P.4-62	
		On			
	SFE	SFE Code List		P.4-63	
		Export			
		Import			
		Print			
		OK			
	Dealer ID	Off		P.4-63	
		On			Continent
					Branch
					Dealer ID
	Envelope Rotate	Off		P.4-63	
		90 degrees			
		180 degrees			
	Duplex Blur	Off		P.4-63	
		On			
	Drain	Off		P.4-64	
		On			

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### 4.5.3. Information

---

#### 4.5.3.1. General

---

- **Information > General**

This menu displays the following informations.

- Machine Serial Number
- Ethernet IP Address
- Ethernet Mac Address
- Optional Ethernet IP Address
- Optional Ethernet Mac Address
- Total Printed Impressions Machine
- Installed Date & Time

#### 4.5.3.2. Supply Status

---

##### Customer Replacement Unit (CRU)

- **Information > Supply Status > Customer Replacement Unit**

This menu displays the machine's customer replacement unit status. Users can select one item in the list to check the information of the selected unit.

##### Field Replacement Unit (FRU)

- **Information > Supply Status > Field Replacement Unit**

This menu displays the machine's field replacement unit status. Users can select one item in the list to check the information of the selected unit.

In this menu, there are five columns : Item, Threshold, Status, Count, Maximum Life.

- Status : This shows the current status of the selected item.
  - OK : The current count is smaller than the default warning value
  - Check : The current count is bigger than default warning value
  - OFF : The current count exceeds the max life.
- Count : This shows the current count of the selected item.
- Maximum life : This shows the max capacity of the selected item.

The technician can edit the default warning value within the given threshold.

Selecting some items will enable the reset button to reset the current count to 0 after replacing the unit.

#### 4.5.3.3. Software Version

---

- **Information > Software Version**

This menu displays all the version of the software installed in the system in detail.

#### 4.5.3.4. Service Hours

---

- **Information > Service Hours**

This menu displays two items, “Power on Hours”, “Power Save Hours”.

- Power on Hours : It indicates the hours of system power on since the first booting of the system.
- Power Save Hours : It indicates the hours of system power save since the first booting of the system.

#### 4.5.3.5. Fault Log

---

- **Information > Fault Log**

This menu displays faults occurred while the system was operating.

Pressing clear button will clear all the save fault log of the system.

#### 4.5.3.6. Print Reports

---

- **Information > Print Reports**

This menu displays reports which that can be printed from the system. The following reports will be available to print.

- Supplies Information
- Usage Counter
- Error Information
- Fax Protocol Dump (Line 1)
- Fax Protocol Dump (Line 2)
- Fax Diagnostics (Line 1)
- Fax Diagnostics (Line 2)
- Job Duty
- Auto Toning History
- Maintenance
- Toner Event

#### Auto Toning History

- **Information > Print Reports > Auto Toning History**



**NOTE**

TRC means “Tone Reproduction Curve”.

This report shows history of execution of TRC control. TRC control preserves color consistency against changes in supplies resulting from long-time use and environmental change. The purpose of the history report is to check if TRC control works normally.

- If TRC control performs normally, “Pass” count must be non-zero value and “Fail” count must be zero.
- If “Fail” count is not zero, the image density sensor needs to be checked.

#### 4.5.3.7. Export Reports

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- **Information > Export Reports**

This menu exports report to usb stick. Configuration, Error Information, Supplies Information, Usage Counter Reports are exported as the form of selected format.

### 4.5.4. Maintenance Counts

#### 4.5.4.1. Fault Count

- **Maintenance Counts > Fault Count**

This menu displays the fault counts of the system. Technician can select one fault group and press “OK” to see detailed fault descriptions. The detailed fault description window displays engine diagnostic code and descriptions of the fault along with the number of occurrences.

The following list shows the group of the faults defined for the system.

A1 Motor	H2 Output (Bins) System	S3 Scan System
A2 Fan	M1 Input (Trays) System	S5 UI System
A3 Sensor	M2 Media Path System	S6 Network System
C1 Toner Cartridge Unit	M3 Output (Bins) System	S7 HDD System
C3 Imaging Unit	M4 Auto Document Feeder System	U1 Fusing Unit
C7 Fusing unit	S1 Video System	U2 LSU Unit
H1 Input (Trays) System	S2 Engine System	

#### 4.5.4.2. Jam Count

- **Maintenance Counts > Jam Count**

This menu displays the jam Counts of the system. Users can select one jam group, which indicates the location of jams, and press “OK” to see a detailed jam location along with the occurrence of the jam.

The following table shows the jam groups defined for the system :

Level 1	Level 2
Print Jam	Pick-up Jam
	Feed Jam
	Duplex Jam
	Exit Jam
Scan Jam	Feed Jam
	Regi Jam
	Scan Jam
	Exit Jam
	Duplex Regi Jam
	Duplex Scan Jam
	Duplex Exit Jam



### 4.5.4.3. Part Replacement Count

- **Maintenance Counts > Part Replacement Count**

This menu displays the replacement Counts for the system parts. Users can select one part group and press “OK” to see the exact name of the part along with the occurrence of the replacement.

The following table shows groups of the replaceable parts of the system.

Unit	Item	Sensing Method
Toner Cartridge	Toner (Black)	Auto Sensing
Imaging Unit	Imaging Unit (Black)	Auto Sensing
Fuser	Fuser	Auto Sensing
Transfer	Transfer Roller	Count Clear
Roller	Tray 1 Roller	Count Clear
	Tray 2 Roller	Count Clear
	Tray 3 Roller	Count Clear
	Tray 4 Roller	Count Clear
ADF Roller	ADF Roller	Count Clear

## 4.5.5. Diagnostics

### 4.5.5.1. Engine Diagnostics

#### Engine NVM Initialization

- **Diagnostics > Engine Diagnostics > Engine NVM Initialization**

This menu initializes all engine NVM value to the default.

#### Engine NVM Read/Write

- **Diagnostics > Engine Diagnostics > Engine NVM Read/Write**

Purpose	To change a configuration value for engine firmware.
Operation Procedure	When the main “NVM Read/Write” window displays, users can navigate through the list of codes with descriptions and saved values. Users can also input a code to the text box to find a configuration value directly. After selecting one value, pressing “Edit” button will open an interface for user input.

Code	Display	Meaning	Default	Max/Min
103-0031	Regi Curl Length	Buckle Control : Regi On Curl	0	6 / -3
103-0032	Duplex Regi Curl Length	Buckle Control : Duplex Regi On Curl (x1)	0	6 / -3
103-0033	Double Speed Duplex Regi Curl Length	Buckle Control : Duplex Regi On Curl (x2)	0	6 / -3
109-0000	StandBy Temperature offset	Target Temperature during standby mode.	0	5 / -5
109-0005	Warmup Temperature offset	Target Temperature during warmup Mode.	0	5 / -5
109-0010	Run Temperature offset	Target Temperature during run mode.	0	5 / -5
109-0055	Thin Temperature offset	Media type offset for fuser roll temperature.	0	5 / -5
109-0065	Plain Temperature offset	Media type offset for fuser roll temperature.	0	5 / -5
109-0070	Bond Temperature offset	Media type offset for fuser roll temperature.	0	5 / -5
109-0090	Cardstock Temperature offset	Media type offset for fuser roll temperature.	0	5 / -5
109-0100	Envelopes Temperature offset	Media type offset for fuser roll temperature.	0	5 / -5
109-0110	Labels Temperature offset	Media type offset for fuser roll temperature.	0	5 / -5
109-0130	Thick Temperature Offset	Media type offset for fuser roll temperature.	0	5 / -5
109-0131	Recycled Temperature offset	Media type offset for fuser roll temperature.	0	5 / -5
109-0132	Special Temperature offset	Media type offset for fuser roll temperature.	0	5 / -5
111-0030	Toner Vcon Black	Toner Vcon Black	0	13/-13

## Engine Test Routines

- **Diagnostics > Engine Diagnostics > Engine Test Routines**

Purpose	To perform test routines for the engine.
Operation Procedure	When the main Engine Test Routines window displays, users can navigate through the list of routines that display along with their descriptions. Users can also directly input an EDC code to the text box to find a routine. Users can select a maximum of 3 routines at the same time. After selecting one or multiple routines, pressing the “OK” button will open the test window that lists selected routines. Users can start/stop a desired test routine.
Verification	N/A
Specification	N/A
Reference	N/A

Code	Displayed Name	Meaning
100-0000	Main BLDC Motor	Main BLDC Motor is On/Off
100-0001	Main BLDC Motor Slow	Main BLDC Motor Slow On/Off
100-0010	Main BLDC Motor Ready	Detect if Main BLDC Motor runs at normal speed
100-0044	OPC Motor K	Black OpC BLDC Motor is On/Off
100-0049	K OPC Motor Ready	Detect if Black OPC BLDC Motor runs at normal speed
100-0076	Ozone Suction Fan Run	Start/Stop Ozone Suction Fan run
100-0077	Ozone Suction Fan Ready	Detects if Ozone Suction Fan runs at normal speed.
100-0120	Exit Motor Forward Fast	Exit Motor Forward Fast On/Off
100-0130	Exit Motor Forward Slow	Exit Motor Forward Slow On/Off
100-0131	Exit Motor Backward	Exit Motor Forward Backward On/Off
100-0132	Exit Motor Backward Slow	Exit Motor Forward Backward Slow On/Off
100-0140	Duplex Motor Forward	Duplex Motor Forward On/Off
100-0141	Duplex Motor Forward Slow	Duplex Motor Forward Slow On/Off
100-0160	Duplex Fan1 Run	Start/Stop Duplex Fan1 run
100-0180	Duplex Fan1 Run Ready	Detects if Duplex Fan1 runs at normal speed.
100-0200	T1 Elevating Motor	T1 Elevate Motor On/Off
100-0210	T2 Elevating Motor	T2 Elevate Motor On/Off (Optional)
100-0220	T3 Elevating Motor	T3 Elevate Motor On/Off (Optional)
100-0230	T4 Elevating Motor	T4 Elevate Motor On/Off (Optional)
100-0241	Waste Toner Led	Waste Toner Led On/Off
100-0250	Waste Toner Full Sensor	Detect if the waste toner is full or not.
100-0260	SMPS Fan Run	Start/Stop SMPS Fan run
100-0270	SMPS Fan Run Ready	Detects if SMPS Fan runs at normal speed.
100-0340	Feed Motor	Feed Motor is On/Off
100-0370	Tray1 Pickup Motor	Tray1 Motor is On/Off
100-0371	Tray1 Pickup Motor Slow	Tray1 Motor Slow On/Off
100-0380	Tray2 Pickup Motor	Tray2 Motor is On/Off
100-0381	Tray2 Pickup Motor Slow	Tray2 Motor Slow On/Off
100-0390	Tray3 Pickup Motor	Tray3 Motor is On/Off

#### 4. Troubleshooting

Code	Displayed Name	Meaning
100-0391	Tray3 Pickup Motor Slow	Tray3 Motor Slow On/Off
100-0400	Tray4 Pickup Motor	Tray4 Motor is On/Off
100-0401	Tray4 Pickup Motor Slow	Tray4 Motor Slow On/Off
100-0430	Exit2 Motor Forward	Exit2 Motor is On/Off
100-0431	Exit2 Motor Forward Slow	Exit2 Motor Slow On/Off
100-0440	Exit2 Motor Backward	Exit2 Motor is On/Off
100-0441	Exit2 Motor Backward Slow	Exit2 Motor Slow Backward On/Off
100-0470	DCF Feed Motor	DCF Feed Motor is On/Off
100-0480	Duct Motor	Duct Motor On/Off.
100-0481	Duct Motor Sensor	Duct Motor Rib Sensing.
101-0000	Bypass Feed Clutch	Engages drive to pick up a paper from bypass Tray(MP Tray).
101-0050	Registration Clutch	Engages drive to registartion rolls.
101-0121	T1 Feed Motor Slow	T1 Feed Motor Slow On/Off
101-0131	T2 Feed Motor Slow	T2 Feed Motor Slow On/Off
101-0141	T3 Feed Motor Slow	T3 Feed Motor Slow On/Off
101-0151	T4 Feed Motor Slow	T4 Feed Motor Slow On/Off
101-0190	Out-Bin Full Sensor	Detect when a paper is at Out-Bin Full Sensor
101-0191	Out-Bin2 Full Sensor	Detect when a paper is at Out-Bin2 Full Sensor
101-0270	MP Clutch	MPClutch On/Off
101-0271	MP Solenoid	MP Solenoid On/Off
101-0280	Return Gate Solenoid	Return Gate Solenoid On/Off
102-0000	Tray1 Home Position	Detect when tray1 is closed.
102-0010	T1 Paper Empty Sensor	Detect when paper is in Tray1.
102-0041	T1 Paper Size Read	Detects Paper Tray1 size.
102-0050	T1 Stack Height Sensor	Detects if paper in tray1 is elevated to the sensor.
102-0070	Tray2 Home Position	Detect when tray2 is closed.
102-0080	T2 Paper Empty Sensor	Detect when paper is in tray2.
102-0111	T2 Paper Size Read	Detects Paper Tray2 size.
102-0120	T2 Stack Height Sensor	Detects if paper in tray2 is elevated to the sensor.
102-0140	Tray3 Home Position	Detect when tray3 is closed.
102-0150	T3 Paper Empty Sensor	Detect when paper is in tray3.
102-0181	T3 Paper Size Read	Detects Paper Tray3 size.
102-0190	T3 Stack Height Sensor	Detects if paper in tray3 is elevated to the sensor.
102-0210	Tray4 Home Position	Detect when tray4 is closed.
102-0220	T4 Paper Empty Sensor	Detect when paper is in tray4.
102-0251	T4 Paper Size Read	Detects Paper Tray4 size.
102-0260	T4 Stack Height Sensor	Detects if paper in tray4 is elevated to the sensor.
102-0280	Bypass Paper Empty Sensor	Detects when paper is in Bypass Tray(MP Tray).
102-0290	Feed Sensor	Detect when a paper is at Feed sensor.
102-0300	T2 Feed Sensor (or Door Open)	Detect when a paper is at T2 Feed sensor. (optional)

Code	Displayed Name	Meaning
102-0320	T3 Feed Sensor (or Door Open)	Detect when a paper is at T3 Feed sensor. (optional)
102-0340	T4 Feed Sensor (or Door Open)	Detect when a paper is at T4 Feed sensor. (optional)
102-0352	DCF Feed Cover Open	Detect DCF Cover is closed
102-0360	Regi. Sensor	Detect when a paper is at Regi. sensor.
102-0361	FuserOut Sensor	Detect when a paper is at FuserOut sensor.
102-0371	Exit2 Sensor	Detect when a paper is at Exit2 sensor.
102-0380	Duplex Jam1 Sensor	Detect when a paper is at Duplex Jam1 sensor.
102-0435	Front Cover Sensor	Detect status of Front cover.
102-0436	Side Cover Sensor	Detect status of Front cover.
104-0000	Waste Install Sensor	Detect if Waste is installed.
109-0030	Fuser Motor Forward	Fuser Motor Forward On/Off
109-0031	Fuser Motor Backward	Fuser Motor Backward On/Off
109-0034	Fuser Motor Ready	Detect if Fuser Motor runs at each speed
109-0140	Fuser Gap Home Sensor	Detect if the fuser press is located Home position.
110-0000	LSU Motor1 Run Ready	Detects if LSU motor1 runs at normal speed.
110-0060	LSU Motor1 Run	LSU Motor1 On/Off
111-0030	Toner Dispense Motor Black	Toner Dispense(Supply) Motor On/Off
111-0070	Toner Sensor Black	TC sensor in developer tank.
113-0350	Finisher Entrance Sensor	Detect when a paper is at Entrance Sensor
113-0360	Finisher Exit Sensor	Detect when a paper is at Exit Sensor
113-0370	Finisher Paddle Home Sensor	Detect Paddle Home position
113-0380	Finisher Left Tamper Home Sensor	Detect Lift Tamper Home position
113-0390	Finisher Right Tamper Home Sensor	Detect Right Tamper Home position
113-0400	Finisher Media Height Sensor	Detect Main Tray level.
113-0410	Finisher Stapler Door Sensor	Detect Stapler Door Cover is closed
113-0420	Finisher Jam Cover Sensor	Detect Jam Door Cover is closed
113-0430	Finisher Stapler Home Sensor	Detect Stapler Home position
113-0440	Finisher Stapler Low Sensor	Detect Stapler level
113-0450	Finisher Stapler Selfpriming Sensor	Detect Stapler Selfpriming Sensor
113-0460	Finisher Ejector Home Sensor	Detect Ejector Home position
113-0470	Finisher Main Tray Home Sensor	Detect Main Tray Home position
113-0480	Finisher Stacker Height sensor	Detect Stacker Height sensor
113-0490	Finisher Letter Size Sensor	Detect Paper Size
113-0500	Finisher Transport Motor	Finisher Transport Motor On/Off
113-0510	Finisher Paddle Motor	Finisher Paddle Motor On/Off
113-0520	Finisher Left Tamper Motor	Finisher Left Tamper Motor On/Off
113-0530	Finisher Right Tamper Motor	Finisher Right Tamper Motor On/Off
113-0540	Finisher Media Height Solenoid	Finisher Media Height Solenoid On/Off
113-0550	Finisher Staple Unit Motor	Finisher Staple Unit Motor On/Off
113-0560	Finisher Ejector Motor	Finisher Ejector Motor On/Off

#### 4. Troubleshooting

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<b>Code</b>	<b>Displayed Name</b>	<b>Meaning</b>
113-0570	Finisher Main Tray Motor	Finisher Main Tray Motor On/Off
113-0580	Finisher SCU Solenoid	Finisher SCU Solenoid On/Off
113-0590	Finisher Safety Cover Solenoid	Finisher Safety Cover Solenoid On/Off

### 4.5.5.2. Fax Diagnostics

#### Fax NVM Read/Write

- **Diagnostics > Fax Diagnostics Fax NVM Read/Write**

Purpose	To change a configuration value for fax firmware.
Operation Procedure	When the main “NVM Read/Write” window displays, users can navigate through the list of configuration values that display along with description. Users can also input a code to the text box to find a configuration value directly. After selecting one value, pressing “Edit” button will open an interface for user input.
Verification	N/A
Specification	N/A
Reference	N/A

Code	Name	Description	Default
20-200	Pause Dial Time	Pause Time (value * 1000ms)	Country Value
20-210	Dial Pulse M/B ratio	33 / 66 40 / 60	Country Value
20-220	Auto Dial Start Pause Time	Pause time before auto-dialing (second)	1
20-300	Ring On Time	Ring On Time (ms)	170
20-310	Ring Off Time	Ring Off Time (ms)	560
20-320	Ring Detection Freq	sets the Call Indication frequency range that will be detected by LIU	1
20-330	Ring On Max Time	Ring On Max Time (ms)	5100
20-340	Ring Off Max Time	Ring Off Max Time (ms)	11100
20-400	DTMF High-Freq Level	DTMF High-Freq. Level (dBm)	Country Value
20-410	DTMF Low-Freq Level	DTMF Low-Freq. Level (dBm)	Country Value
20-420	DTMF Timing	DTMF duration of on/off output ( Ms)	8
20-500	Dial Mode	Select Tone / Pulse	Country Value
20-520	Error Rate	Adjust Error Rate ( Off / 5% / 10% / 20% )	2
20-530	Dial Tone Detect	detect dial tone prior to sending	Country Value
20-540	Loop Current Detect	detect if loop current is present prior to sending	Country Value
20-550	Busy Signal Detect	detect busy signal to allow redials	Country Value
20-560	TCF Duration	Adjust TCF duration (ms)	1500
20-800	Modem Speed	Select Modem Start Speed	24
20-810	Fax Transmission Level	Adjust Fax Transmission Level (dBm)	Country Value
20-830	Auto Dial Timeout	Adjust Auto Dial Timeout (second)	Country Value

#### 4. Troubleshooting

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<b>Code</b>	<b>Name</b>	<b>Description</b>	<b>Default</b>
20-920	CNG Detection Count	CNG Tone Detection check count during ANS/FAX mode.	2
20-930	Caller ID	This option is needed to guide Caller ID off for user environment.	Country Value
20-940	Ext. Phone	Ext. Phone Detection Enable/Disable (Default : Enable 1) If disabled, Ext. Phone cannot be detected by the device.	1
21-999	Fax Line Setting	Fax Test Line Setting(Dual Fax)	0
21-800	Modem Speed Line2	Select Modem Start Speed for Line 2 This item shall be displayed only when Dual Line Fax Kit is Installed.	24



## Fax Test Routines

- **Diagnostics > Fax Diagnostics > Fax Test Routines**

Purpose	To perform test routines for the fax machine.
Operation Procedure	When the main Fax Test Routines window displays, users can navigate through the list of routines that display along with description. Users can also input a code to the text box to find a routine directly. After selecting one routine, pressing “OK” button will open the test window that lists selected routine. Users can start/stop a desired test routine.
Verification	N/A
Specification	N/A
Reference	N/A

Code	Name	Description	State Displayed
20-012	Sngl Tone 1100Hz Ln1	Emits single tone 1100Hz on line 1	On / Off
20-014	Sngl Tone 1650Hz Ln1	Emits single tone 1650Hz on line 1	On / Off
20-015	Sngl Tone 1850Hz Ln1	Emits single tone 1850Hz on line 1	On / Off
20-016	Sngl Tone 2100Hz Ln1	Emits single tone 2100Hz on line 1	On / Off
20-020	DTMF # Line1	Emits DTMF # on line 1	On / Off
20-021	DTMF * Line1	Emits DTMF * on line 1	On / Off
20-022	DTMF 0 Line1	Emits DTMF 0 on line 1	On / Off
20-023	DTMF 1 Line1	Emits DTMF 1 on line 1	On / Off
20-024	DTMF 2 Line1	Emits DTMF 2 on line 1	On / Off
20-025	DTMF 3 Line1	Emits DTMF 3 on line 1	On / Off
20-026	DTMF 4 Line1	Emits DTMF 4 on line 1	On / Off
20-027	DTMF 5 Line1	Emits DTMF 5 on line 1	On / Off
20-028	DTMF 6 Line1	Emits DTMF 6 on line 1	On / Off
20-029	DTMF 7 Line1	Emits DTMF 7 on line 1	On / Off
20-030	DTMF 8 Line1	Emits DTMF 8 on line 1	On / Off
20-031	DTMF 9 Line1	Emits DTMF 9 on line 1	On / Off
20-040	V.21 300 bps Line1	Emits V.21 300 bps Line1	On / Off
20-041	V.27ter 2400 bps Line1	Emits V.27ter 2400 bps Line1	On / Off
20-042	V.27ter 4800 bps Line1	Emits V.27ter 4800 bps Line1	On / Off
20-043	V.29 7200 bps Line1	Emits V.29 7200 bps Line1	On / Off
20-044	V.29 9600 bps Line1	Emits V.29 9600 bps Line1	On / Off
20-045	V.17 7200 bps Line1	Emits V.17 7200 bps Line1	On / Off
20-046	V.17 9600 bps Line1	Emits V.17 9600 bps Line1	On / Off
20-047	V.17 12000 bps Line1	Emits V.17 12000 bps Line1	On / Off
20-048	V.17 14400 bps Line1	Emits V.17 14400 bps Line1	On / Off
20-049	V.34 2400 bps Line1	Emits V.34 2400 bps Line1	On / Off
20-050	V.34 4800 bps Line1	Emits V.34 4800 bps Line1	On / Off
20-051	V.34 7200 bps Line1	Emits V.34 7200 bps Line1	On / Off
20-052	V.34 9600 bps Line1	Emits V.34 9600 bps Line1	On / Off
20-053	V.34 12000 bps Line1	Emits V.34 12000 bps Line1	On / Off

#### 4. Troubleshooting


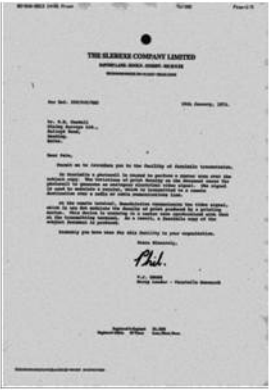

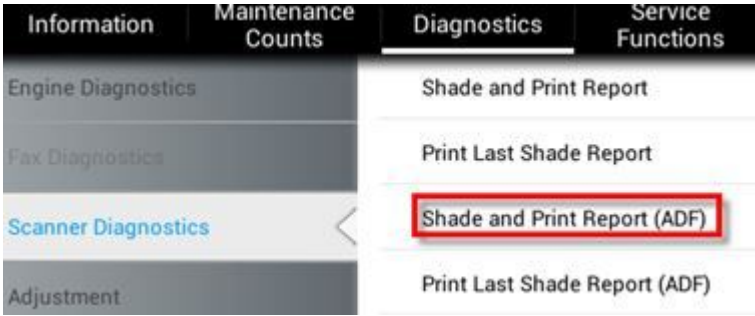
Code	Name	Description	State Displayed
20-054	V.34 14400 bps Line1	Emits V.34 14400 bps Line1	On / Off
20-055	V.34 16800 bps Line1	Emits V.34 16800 bps Line1	On / Off
20-056	V.34 19200 bps Line1	Emits V.34 19200 bps Line1	On / Off
20-057	V.34 21600 bps Line1	Emits V.34 21600 bps Line1	On / Off
20-058	V.34 24000 bps Line1	Emits V.34 24000 bps Line1	On / Off
20-059	V.34 26400 bps Line1	Emits V.34 26400 bps Line1	On / Off
20-060	V.34 28800 bps Line1	Emits V.34 28800 bps Line1	On / Off
20-061	V.34 31200 bps Line1	Emits V.34 31200 bps Line1	On / Off
20-062	V.34 33600 bps Line1	Emits V.34 33600 bps Line1	On / Off
21-012	Sngl Tone 1100Hz Ln2	Emits single tone 1100Hz on line 2	On / Off
21-014	Sngl Tone 1650Hz Ln2	Emits single tone 1650Hz on line 2	On / Off
21-015	Sngl Tone 1850Hz Ln2	Emits single tone 1850Hz on line 2	On / Off
21-016	Sngl Tone 2100Hz Ln2	Emits single tone 2100Hz on line 2	On / Off
21-020	DTMF # Line2	Emits DTMF # on line 2	On / Off
21-021	DTMF * Line2	Emits DTMF * on line 2	On / Off
21-022	DTMF 0 Line2	Emits DTMF 0 on line 2	On / Off
21-023	DTMF 1 Line2	Emits DTMF 1 on line 2	On / Off
21-024	DTMF 2 Line2	Emits DTMF 2 on line 2	On / Off
21-025	DTMF 3 Line2	Emits DTMF 3 on line 2	On / Off
21-026	DTMF 4 Line2	Emits DTMF 4 on line 2	On / Off
21-027	DTMF 5 Line2	Emits DTMF 5 on line 2	On / Off
21-028	DTMF 6 Line2	Emits DTMF 6 on line 2	On / Off
21-029	DTMF 7 Line2	Emits DTMF 7 on line 2	On / Off
21-030	DTMF 8 Line2	Emits DTMF 8 on line 2	On / Off
21-031	DTMF 9 Line2	Emits DTMF 9 on line 2	On / Off
21-040	V.21 300 bps Line2	Emits V.21 300 bps Line2	On / Off
21-041	V.27ter 2400 bps Line2	Emits V.27ter 2400 bps Line2	On / Off
21-042	V.27ter 4800 bps Line2	Emits V.27ter 4800 bps Line2	On / Off
21-043	V.29 7200 bps Line2	Emits V.29 7200 bps Line2	On / Off
21-044	V.29 9600 bps Line2	Emits V.29 9600 bps Line2	On / Off
21-045	V.17 7200 bps Line2	Emits V.17 7200 bps Line2	On / Off
21-046	V.17 9600 bps Line2	Emits V.17 9600 bps Line2	On / Off
21-047	V.17 12000 bps Line2	Emits V.17 12000 bps Line2	On / Off
21-048	V.17 14400 bps Line2	Emits V.17 14400 bps Line2	On / Off
21-049	V.34 2400 bps Line2	Emits V.34 2400 bps Line2	On / Off
21-050	V.34 4800 bps Line2	Emits V.34 4800 bps Line2	On / Off
21-051	V.34 7200 bps Line2	Emits V.34 7200 bps Line2	On / Off
21-052	V.34 9600 bps Line2	Emits V.34 9600 bps Line2	On / Off
21-053	V.34 12000 bps Line2	Emits V.34 12000 bps Line2	On / Off
21-054	V.34 14400 bps Line2	Emits V.34 14400 bps Line2	On / Off

<b>Code</b>	<b>Name</b>	<b>Description</b>	<b>State Displayed</b>
21-055	V.34 16800 bps Line2	Emits V.34 16800 bps Line2	On / Off
21-056	V.34 19200 bps Line2	Emits V.34 19200 bps Line2	On / Off
21-057	V.34 21600 bps Line2	Emits V.34 21600 bps Line2	On / Off
21-058	V.34 24000 bps Line2	Emits V.34 24000 bps Line2	On / Off
21-059	V.34 26400 bps Line2	Emits V.34 26400 bps Line2	On / Off
21-060	V.34 28800 bps Line2	Emits V.34 28800 bps Line2	On / Off
21-061	V.34 31200 bps Line2	Emits V.34 31200 bps Line2	On / Off
21-062	V.34 33600 bps Line2	Emits V.34 33600 bps Line2	On / Off

4.5.5.3. Scanner Diagnostics

Shading Test

- Diagnostics > Scanner Diagnostics > Shading Test

<p>Purpose</p>	<ul style="list-style-type: none"> <li>• To check quality of scanned images, especially defect in optical devices, including lens, mirror, lamp, and etc, are suspected.</li> <li>• To check quality problem as shown below</li> </ul> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Normal Image</p> </div> <div style="text-align: center;">  <p>Defected Image</p> </div> <div style="text-align: center;">  <p>Defected Image</p> </div> </div>
<p>Operation Procedure</p>	<p><b>[For Platen Unit]</b>          Press "Shade and Print report" to see if the current shading value is correct. Mono, red, green, blue gray shading values will be shown on the printed report. When the previous shading value is needed, press "Print Last Shade Report".</p> <p><b>[For ADF(DSDF) Unit]</b></p> <ol style="list-style-type: none"> <li>1) Load the shading sheet on the DSDF tray.</li> <li>2) Enter SVC mode. Select the following menu.  <b>(Diagnostics &gt; Scanner Diagnostics &gt; Shading Test &gt; Shade and Print Report(ADF) )</b></li> </ol> <div style="text-align: center;">  </div> <p>(When the previous shading value is needed, press "Print Last Shade Report(ADF)". )</p> <ol style="list-style-type: none"> <li>3) Check if RESULTS on the sheet is OK.</li> </ol> <div style="background-color: #f0f0f0; padding: 10px; margin-top: 10px;"> <p><b>! NOTE</b></p> <ul style="list-style-type: none"> <li>• When executing DSDF shading, use only enclosed sheet in accessory package.</li> <li>• Shading Test for ADF Unit must be carried out, after replacing the DSDF unit or main board.</li> </ul> </div>

Verification

Scan Shading Page 1

DATA TIME : 20-08-02 12:04:00  
 Model Name : 20-08-02 12:04:00  
 Machine Model Number : 20-08-02 12:04:00  
 Print Name :

MONO GRAY SHADING  
 - BLACK : Max=118 Min=238 Avg=167 S127=123 - WHITE : Max=1228 Min=2312 Avg=1765 S127=123

RED GRAY SHADING  
 - BLACK : Max=118 Min=238 Avg=167 S127=123 - WHITE : Max=1228 Min=2312 Avg=1765 S127=123

GREEN GRAY SHADING  
 - BLACK : Max=118 Min=238 Avg=167 S127=123 - WHITE : Max=1228 Min=2312 Avg=1765 S127=123

BLUE GRAY SHADING  
 - BLACK : Max=118 Min=238 Avg=167 S127=123 - WHITE : Max=1228 Min=2312 Avg=1765 S127=123

=====> RESULTS : OK

**Scanner/ADF NVM Read/Write**

- **Diagnostics > Scanner Diagnostics > Scanner/ADF NVM Read/Write**

Purpose	To read and/or write values in the scanner and ADF memory.
Operation Procedure	When the main “NVM Read/Write” window displays, users can navigate through the list of codes with descriptions and saved values. Users can also directly input a code to the text box to find a NVM. After selecting a code, the “Edit” button will be enabled only if the code is writable. If the selected code is writable and the “Edit” button is enabled, press the button to configure the desired value for the code.
Verification	N/A
Specification	N/A
Reference	N/A

Code	NVM Description	Default	DSDF	RADF
05-0000	Pick Up Count	0	O	O
05-0001	Retard Roller Count	0	O	O
05-0010	Document Duplex Reverse Point	0	X	O
05-0030	Simplex Regi Value(Reg1)	0	O	O
05-0040	Duplex Regi Value(Reg2)	0	X	O
05-0050	Width Guide Max Value	Depends on ADF	O	O
05-0060	Width Guide Min Value	Depends on ADF	O	O

## Scanner/ADF Test Routines

- **Diagnostics > Scanner Diagnostics > Scanner/DADF Test Routines**

Purpose	To perform test routines for the scanner and ADF.
Operation Procedure	<p>When the main scanner/ADF Test Routines window displays, users can navigate through the list of routines that display along with description.</p> <p>Users can also input a code to the text box to find a routine directly.</p> <p>After selecting one routine, pressing “OK” button will open the test window that lists selected routine. Users can start/stop a desired test routine.</p>
Verification	N/A
Specification	N/A
Reference	Table below

Code	Name	Value	DADF	RADF
06-0000	Scanner Original Size Detecting Sensor 1	High/Low	O	O
06-0001	Scanner Original Size Detecting Sensor 2	High/Low	O	O
06-0010	Scanner Cover Open/Close Sensor 1	High/Low	O	O
06-0011	Scanner Cover Open/Close Sensor 2	High/Low	O	O
06-0020	Scanner Platen Motor Forward	Start/Stop	O	O
06-0030	Scanner Platen Motor Backward	Start/Stop	O	O
06-0040	Scanner Platen Home Position Sensor	High/Low	O	O
05-0000	Document Length .1 Sensor	High/Low	O	O
05-0001	Document Length .2 Sensor	High/Low	O	O
05-0020	Document Cover Open Sensor	High/Low	O	O
05-0040	Document Detect Sensor	High/Low	O	O
05-0060	Document Simplex Registration Sensor	High/Low	O	O
05-0061	Document Duplex Registration Sensor	High/Low	X	O
05-0070	Document Scan Read Sensor1	High/Low	O	O
05-0071	Document Scan Read Sensor2	High/Low	O	X
05-0080	Document Exit Sensor	High/Low	O	O
05-0081	Document Exit IDLE Sensor	High/Low	X	O
05-0090	Document Pick up Clutch	Start/Stop	O	O
05-0100	Document Regi Clutch	Start/Stop	X	O
05-0101	Document Exit Solenoid	High/Low	X	O
05-0110	Document Motor Forward	Start/Stop	O	O
05-0111	Document Motor Backward	Start/Stop	O	O
05-0140	Document Pickup Roller Detect Sensor	High/Low	O	O
05-0160	Document Regi1 Motor Forward	Start/Stop	O	X
05-0162	Document Regi1 Motor Backward	Start/Stop	O	X
05-0190	Document Width Guide ADC Sensor	10Bit (0~1023)	O	O
05-0210	Document Jig Test Low Speed Simplex	Start/Stop	O	O
05-0220	Document Jig Test Low Speed Duplex	Start/Stop	X	O

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<b>Code</b>	<b>Name</b>	<b>Value</b>	<b>DSDF</b>	<b>RADF</b>
05-0230	Document Jig Test High Speed Simplex	Start/Stop	O	O
05-0240	Document Jig Test High Speed Duplex	Start/Stop	X	O

#### 4.5.5.4. Adjustment


### Print Adjustment

- **Diagnostics > Adjustment > Print Adjustment > Automatic Adjustment**

Purpose	To calibrate/adjust the lengths of vertical & horizontal image and image position automatically in print engine.
Operation Procedure	<ol style="list-style-type: none"> <li>1) Press "Paper Supply" button and select a tray.</li> <li>2) Press "Paper Size" button and select a paper size of the previously selected tray.</li> <li>3) Press "Print" button. A test pattern will be printed out.</li> <li>4) Place the printed pattern on platen. <ul style="list-style-type: none"> <li>• The words "front side" on the chart face the glass</li> <li>• The arrows face left edge of the platen</li> <li>• Press "Scan 1"</li> </ul> </li> <li>5) Press "OK" button. Automatic scanning will occur .</li> <li>6) Place the printed pattern on platen. <ul style="list-style-type: none"> <li>• The words "back side" on the chart face the glass</li> <li>• The arrows face left edge of the platen</li> <li>• Press "Scan 2"</li> </ul> </li> <li>7) Press "OK" button. Automatic scanning will occur .</li> <li>8) The system will automatically calculate the proper value based on scanning result of the test pattern.</li> <li>9) The new values are set to the system.</li> </ol>



- **Diagnostics > Adjustment > Print Adjustment > Image Position**



Purpose	Manually adjust printed image position on paper in print engine
Operation Procedure	<ol style="list-style-type: none"> <li>1) Select a tray required adjustment.</li> <li>2) Change the adjustment value with "+" , "-" then press "OK" button to save changes. <ul style="list-style-type: none"> <li>• Simplex Leading Edge</li> <li>• Simplex Side Edge</li> <li>• Duplex Leading Edge</li> <li>• Duplex Side Edge</li> </ul> <div style="background-color: #e0e0e0; padding: 5px; margin: 10px 0;"> <p> <b>NOTE</b></p> <ul style="list-style-type: none"> <li>• Adjustment must be done for each tray (tray1, tray2, tray3, tray4, MP).</li> <li>• It is recommended not to choose "ALL" for tray selection.</li> <li>• It is always better to adjust for a particular tray at each time.</li> </ul> </div> </li> <li>3) Print out the test pattern and check if the image is moved as you want. If not, repeat step 2.</li> </ol>

- **Diagnostics > Adjustment > Print Adjustment > Print Test Patterns**

This menu is to print out the test pattern manually.

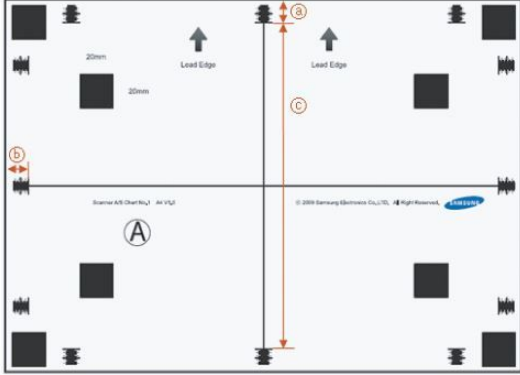
## Copy Adjustment

- **Diagnostics > Adjustment > Copy Adjustment > Image Position**


Purpose	Manually adjust copied image position on paper in copy engine
Operation Procedure	<div style="background-color: #f0f0f0; padding: 5px; margin-bottom: 10px;">  <b>NOTE</b>                      Before copy adjustment,                     <ol style="list-style-type: none"> <li>1) Please make sure that initial values of margin adjustment must be the same as values of print adjustment.</li> <li>2) It is recommended to perform adjustment for each tray at a time. i.e. do not select “All” for tray selection. It often causes confusing for the adjustment.</li> <li>3) The Procedure for copy adjustment is almost same as “Print Adjustment”.</li> </ol> </div> <div style="background-color: #f0f0f0; padding: 5px; margin-bottom: 10px;">  <b>NOTE</b> <ul style="list-style-type: none"> <li>• Adjustment must be done for each tray (tray1, tray2, tray3, tray4, MP).</li> <li>• It is recommended not to choose “ALL” for tray selection.</li> <li>• It is always better to adjust for a particular tray at each time.</li> </ul> </div> <ol style="list-style-type: none"> <li>1) Select a tray required adjustment.</li> <li>2) Change the adjustment value with ”+”, “-” then press “OK” button to save changes.                             <ul style="list-style-type: none"> <li>• Simplex Leading Edge</li> <li>• Simplex Side Edge</li> <li>• Duplex Leading Edge</li> <li>• Duplex Side Edge</li> </ul> </li> <li>3) Print out the test pattern and check if the image is moved as you want. If not, repeat stpe2.</li> </ol>

## Scan Area Adjustment

- **Diagnostics > Adjustment > Scan Area Adjustment > Automatic Adjustment**

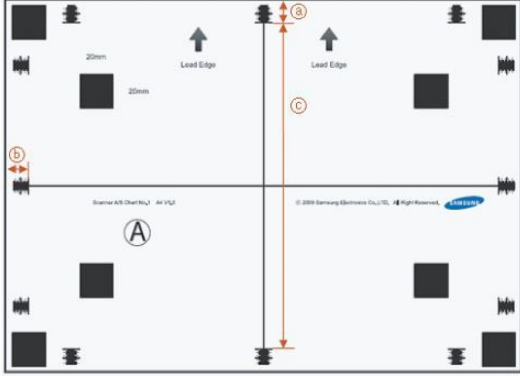
Purpose	To correct image position and magnification of scanned images automatically.
Operation Procedure	<p>1) Locate the Scanner A/S Chart at the scan glass.</p>  <p style="text-align: center;"><b>A4 Scanner A/S Chart</b></p> <p>Note that “Lead Edge” arrows need to head to the left side of scan glass and to be placed face down. Also note that the Scanner A/S Charts come in two sizes, A4 and Letter. Choose one size to meet your primary size of use.</p> <p>2) Press “OK” button. Automatic scanning will occur, and the system will automatically calculate the proper value based on scanning result of the chart .</p> <p>3) The new value set to the system.</p> <p>4) Scan the Scanner A/S Chart and send it to a PC. Scanning must be occur from the scan glass.</p> <p>5) To check the image position, compare the position of scale marks (a,b) of the chart to the scanned image.</p> <p>6) To check the magnification, compare the length of line “c” of the chart to the scanned image.</p> <div style="background-color: #e0e0e0; padding: 10px;"> <p><b>NOTE</b></p> <p>Specification</p> <ul style="list-style-type: none"> <li>• a,b : 10, ± 1.5 mm</li> <li>• c: 190, ± 1.5 mm</li> </ul> </div>

• **Diagnostics > Adjustment > Scan Area Adjustment > Manual Adjustment**



Purpose	To correct image position and magnification of scanned images manually.
Operation Procedure	<ol style="list-style-type: none"> <li>1) Choose one item from the table. There are three items to choose. <ul style="list-style-type: none"> <li>• Image Position - Leading Edge (Unit : mm, Scale : 0.1, Min/Max : -6/+6)</li> <li>• Image Position - Side Edge (Unit : mm, Scale : 0.1, Min/Max : -6/+6)</li> <li>• Magnification - Vertical Direction (Unit : %, Min/Max: 98.5/101.5)</li> </ul> </li> <li>2) Select one item and press the “Edit” button.</li> <li>3) Change the adjustment value with arrow button.</li> <li>4) Image Position (a, b) : If the current value is smaller than the specification, press “+”. Otherwise, press “-”.</li> <li>5) Magnification (c) : If the current value is smaller than the specification, press “-”. Otherwise, press “+”.</li> <li>6) Press the “OK” button to apply the new value to the system.</li> <li>7) Scan the Scanner A/S Chart and send it to a PC. Scanning must be occur from the scan glass.</li> <li>8) To check the image position, compare the position of scale marks (a,b) of the chart to the scanned image.</li> <li>9) To check the magnification, compare the length of line “c” of the chart to the scanned image.</li> </ol> <div style="background-color: #e0e0e0; padding: 10px; margin-top: 10px;"> <p> <b>NOTE</b></p> <p>Specification</p> <ul style="list-style-type: none"> <li>• a,b : 10, ± 1.5 mm</li> <li>• c: 190, ± 1.5 mm</li> </ul> </div>

## ADF Adjustment

- **Diagnostics > Adjustment > ADF Adjustment > Automatic Adjustment**

Purpose	To correct image position and magnification of scanned images via DSDF/RADF automatically.
Operation Procedure	<p>1) Locate the Scanner A/S chart on the DSDF/RADF tray.</p>  <p style="text-align: center;"><b>A4 Scanner A/S Chart</b></p> <p>2) Press “OK” button. Automatic scanning will occur, and the system will automatically calculate the proper value based on scanning result of the chart .</p> <p>3) The new value set to the system.</p> <p>4) Copy the Scanner A/S Chart. Scanning must be occur from the DSDF/RADF.</p> <p>5) To check the image position, compare the position of scale marks (a,b) of the chart to the copy.</p> <p>6) To check the magnification, compare the length of line “c” of the chart to the copy.</p> <div style="background-color: #f0f0f0; padding: 5px; margin-top: 10px;"> <p><b>! NOTE</b></p> <p>Specification</p> <ul style="list-style-type: none"> <li>• a,b : 10, ± 1.5 mm</li> <li>• c: 190, ± 1.5 mm</li> </ul> </div> <div style="background-color: #f0f0f0; padding: 5px; margin-top: 10px;"> <p><b>! NOTE</b></p> <p>After executing ADF adjustment, the shading test must be executed. (<u>Refer to 4.5.5.3. Scanner Diagnostics.</u>)</p> </div>

• **Diagnostics > Adjustment > ADF Adjustment > Manual Adjustment**

Purpose	To correct image position and magnification of scanned images manually.
Operation Procedure	<p>1) Choose one item from the table. There are three items to choose.</p> <ul style="list-style-type: none"> <li>• Image Position - Leading Edge (Unit : mm, Scale : 0.1, Min/Max : -6/+6)</li> <li>• Image Position - Side Edge (Unit : mm, Scale : 0.1, Min/Max : -6/+6)</li> <li>• Magnification - Vertical Direction (Unit : %, , Min/Max: 98.5/101.5)</li> </ul> <p>2) Select one item and press the “Edit” button.</p> <p>3) Change the adjustment value with arrow button.</p> <p>4) Image Position (a, b) : If the current value is smaller than the specification, press “+”. Otherwise, press “-”.</p> <p>5) Magnification (c) : If the current value is smaller than the specification, press “-”. Otherwise, press “+”.</p> <p>6) Press the “OK” button to apply the new value to the system.</p> <p>7) Copy the Scanner A/S Chart. Scanning must be occur from the DSDF/RADF.</p> <p>8) To check the image position, compare the position of scale marks (a,b) of the chart to the copy.</p> <p>9) To check the magnification, compare the length of line “c” of the chart to the copy.</p> <div style="background-color: #e0e0e0; padding: 5px; margin-top: 10px;"> <p> <b>NOTE</b></p> <p>Specification</p> <ul style="list-style-type: none"> <li>• a,b : 10, ± 1.5 mm</li> <li>• c: 190, ± 1.5 mm</li> </ul> </div> <div style="background-color: #e0e0e0; padding: 5px; margin-top: 10px;"> <p> <b>NOTE</b></p> <p>After executing ADF adjustment, the shading test must be executed. (<u>Refer to 4.5.5.3. Scanner Diagnostics.</u>)</p> </div>

#### 4.5.5.5. Image Management

##### Auto Tone Adjustment Activation

• **Diagnostics > Image Management > Auto Tone Adjustment Activation > Normal**

Purpose	To correct image quality when density of the image is poor. Normal TRC Control is recommended to be performed after changing a unit, such as toner cartridge, imaging unit, and ITB, and reboot.
Operation Procedure	<ol style="list-style-type: none"> <li>1) Select “On” or “Off” for Normal TRC Control execution. <ul style="list-style-type: none"> <li>• If you select “Off”, Normal TRC Control will not execute.</li> <li>• If you select “On”, Normal TRC Control will execute as the determined conditions.</li> </ul> </li> <li>2) Change execution condition(s) of Normal TRC Control. <ul style="list-style-type: none"> <li>• Page Count: The system executes Normal TRC Control based on the count of printed pages since the last execution.</li> <li>• Time Left Alone: The system executes Normal TRC Control when the system returns from a power save mode and the rest time exceeds the configured value.</li> </ul> </li> </ol>
Verification	Print out a test job and make sure the image quality has recovered.

• **Diagnostics > Image Management > Auto Tone Adjustment Activation > Full**

Purpose	To correct image quality when any OPC drum is replaced or the life of the OPC drum is changed. replacing any OPC drum or density of the image is poor. And this function will be performed when temperature and/or humidity in the room changes suddenly.
Operation Procedure	<ol style="list-style-type: none"> <li>1) Select “On” or “Off” for Full TRC Control execution. <ul style="list-style-type: none"> <li>• If you select “Off”, Full TRC Control will not execute.</li> <li>• If you select “On”, Full TRC Control will execute as the determined conditions.</li> </ul> </li> <li>2) Change execution condition(s) of Full TRC Control. <ul style="list-style-type: none"> <li>• Page Count: The system executes Full TRC Control based on the count of printed pages since the last execution.</li> <li>• Time Left Alone: The system executes Full TRC Control when the system returns from a power save mode and the rest time exceeds the configured value.</li> </ul> </li> </ol>
Verification	Print out a test job and make sure the image quality has recovered.

### Auto Tone Adjustment

- **Diagnostics > Image Management > Auto Tone Adjustment > Normal**

Purpose	To correct image quality when density of the image is poor. Normal TRC Control is recommended to be performed after changing a unit, such as toner cartridge, imaging unit, and ITB, and reboot.
Operation Procedure	When selecting “OK”, Normal TRC will execute now.
Verification	Print out a test job and make sure the image quality has recovered.

- **Diagnostics > Image Management > Auto Tone Adjustment > Full**

Purpose	To correct image quality when any OPC drum is replaced or the life of the OPC drum is changed. replacing any OPC drum or density of the image is poor. And this function will be performed when temperature and/or humidity in the room changes suddenly.
Operation Procedure	When selecting “OK”, Full TRC will execute now.
Verification	Print out a test job and make sure the image quality has recovered.

#### 4.5.5.6. Print Test Patterns

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- **Diagnostics > Print Test Patterns > Skew Pattern**

The skew pattern stored in the machine will be printed out as the size you select.



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## 4.5.6. Service Functions

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### 4.5.6.1. Main Memory Clear

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- **Service Functions > Main Memory Clear**

This function resets the main memory of the system to the factory default setting. It can be used to reset the system to the initial value when the product is functioning abnormally. All the user configured values return to the default values.

To clear the main memory, users need to select the country of the system locates, and rebooting of the system is required.

### 4.5.6.2. Hard Disk Maintenance

---

- **Service Functions > Hard Disk Maintenance > Device Configuration Data Clear**

- This function formats all device configuration data, for example, user profile, address book, and devices settings, on the hard disk.

- **Service Functions > Hard Disk Maintenance > Temporary and Spool Data Clear**

- This function formats all temporary and spool data saved on the hard disk.

- **Service Functions > Hard Disk Maintenance > User Saved Data and Log Data Clear**

- This function formats all the user data, for example, box data, pending secure jobs, font, form, macro, data related applications, and job log, on the hard disk.

- **Service Functions > Hard Disk Maintenance > All Saved Data Clear**

- This function formats all the data that can be erased with 3 functions above. The function will NOT format the hard disk entirely.

- **Service Functions > Hard Disk Maintenance > Hard Disk Check**

- This function checks a bad sector in the hard disk. If a bad sector is found, the system will display an error message and send an email notification to the system administrator.

### 4.5.6.3. Count Setting of Large Page

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- **Service Functions > Count Setting of Large Page**

This function sets count of large page, such as A3 and ledger size, to 1 count or 2 count of the total count.

For example, the total use of 100 A4 impressions and 100 A3 impressions will become 200 impressions if the configuration is set to “1 Count Up” while the total will be 300 impression if the configuration is set to “2 Count Up”.

#### 4.5.6.4. Network Port

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- **Service Functions > Network Port**

This function enables/disables remote connections to the system via telnet, OSGI command shell, and SMB(samba) protocol.

This function can be used when there is a problem that requires developers to access the system or when there is a need for developers to upload applications for a test.

Since enabling those ports can create a risk of damaging data stored in the device, agreement of the administrator of the customer site is necessary. The user must log in as the administrator to enable/disable the services.

#### 4.5.6.5. Debug Log

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- **Service Functions > Debug Log**

This function sets the system log message level. Users can select three options.

- Off : This option disables the logging option.
- Job Status: This option only enables the logging option of user created jobs.
- Details : This option enables all the logging options of the running tasks of the system. Note that this option might create a trade-off of performance in certain system operation. Use this option when the system behaves abnormally, and engineers need to investigate problems.

#### 4.5.6.6. Capture Log

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- **Service Functions > Capture Log**

This function copies all the saved log in the system to a UBS memory as a zip file. Note that the size of system log could reach up to 1GB. If the system log size become considerably huge, it will take longer time to copy to the plugged memory.

- 1) Connect USB memory to device.
- 2) Tap "Service Mode" app. When the pop-up appears, press the area below until the passcode window appears. Enter "1934" and press the "OK" button.
- 3) Go to "**Service Functions > Debug Log**" and change debug log level to "DETAILS".
- 4) Go to "**Service Functions > Capture Log**"
- 5) Select All or Period. When you select Period, input the start and end date.
- 6) Press Capture Log button.
- 7) Once it is completed, the message will be displayed. Then restore the debug log level to "JOB STATUS".



#### **NOTE**

If the system log size become considerably huge, it will take longer time to copy to the plugged memory.

- 8) Check is the Log file is created in the USB memory.

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### 4.5.6.7. Network Packet Capture

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- **Service Functions > Network Packet Capture**

- 1) Capture Packets

- Start button
  - a) Start to capture network packet between device and external peer mode
  - b) Start button shall be changed to Stop button

**NOTE**

The packet capture is implemented by using “tcpdump-leth0-s1200-w[filename]”

- Packet Size
  - Show the file size captured

- 2) Export Capture File

- Export button
  - Export network packet capture file to USB memory stick

- 3) Delete Capture File

- Delete button
  - Clear network packet capture file in a device

### 4.5.6.8. System Recovery

- **Service Functions > System Recovery**

 **NOTE**

There are 3 methods for entering System Recovery mode.

- In case of normal booting,
  - Enter SVC mode and select **System Recovery** menu.
- In case of abnormal booting,
  - If the HDD is broken, the machine will enter System Recovery at booting.
  - When turning the machine on while pushing the power button on OP panel, you can enter System Recovery forcibly.

This function repairs or formats the HDD of the system. To use this function, a HDD image need to be saved in a USB memory, and that USB memory needs to be plugged in the system before the execution.

 **NOTE**

- Memory stick file system type : FAT16 or FAT32 not NTFS
- Memory stick must contain the following 3 files only.
  - **unix script files x 2**
  - **HDD image file x1**

- 1) From the system recovery UI, Choose “SYS” to recover only the system partition of the HDD or “ALL” to recover all the partition of the HDD.
- 2) When the system recovery UI is appeared after reboot, choose “HDD Repair” to repair any corrupted data in the selected partition or choose “HDD Format” to format the data in the selected partition.
  - a) HDD Format
    - Hidden Partition : This can format and reinstall the only System Binary in HDD. User data is not deleted.
    - USB : This can format the HDD using USB stick. All data except the stored in MSOK will be deleted.
    - Network : This can format the HDD using network. All data except the stored in MSOK will be deleted.
  - b) HDD Repair : This can restore the internal system by checking the HDD error. This is for HDD recovery itself and irrelevant to the user data in device.
- 3) When pushing “Next” button, the login page for authentication will be displayed. The password will be **1934** as the factory setting password.
- 4) When pushing “Next” button, the following page will be displayed.
  - In case of selecting USB option :
 

The Next button is pressed after inserting the USB stick.

The system will check for the required packages in the USB stick. If all the packages are present in the USB stick then the system will be directed to the confirmation page otherwise an Error page will be displayed with an appropriate error message.
  - In case of selecting Network option :
 

This page contains two sections :

    - **Configure device IP address**
      - a) Device IP: IP address for the device
      - b) Gateway IP: Gateway IP address for the device

- c) Subnet Mask: Network Subnet Mask for the device
- **Configure samba settings**
  - a) Server IP : IP address of the server.
  - b) User ID : user ID of the server to login into the server system
  - c) Password : password of the server system
  - d) Shared folder : name of the shared folder on the server, where the packages for the system recovery are present.

The Next button is pressed after providing the above information.

The system will establish the provided IP to the device and try to connect to the server and check for the available packages on the server.

If Network is establish and all the packages are present in the shared folder of the server then the system will be directed to the Confirmation page otherwise an Error page will be displayed with an appropriate error message.

- 5) When pushing “Next” button on option selection page, the confirmation page will be displayed.
- 6) When pushing “Next” button, progress page will be displayed.
- 7) When completing HDD Recovery or HDD Repair successfully, reboot the machine.
- 8) After rebooting, the machine will start the system initialization.

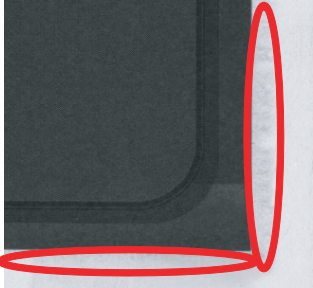
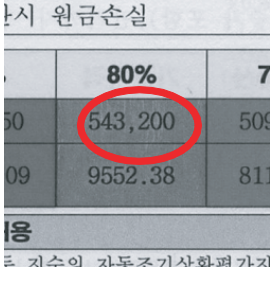



**NOTE**

If the system initialization is not executed, enter the svc mode and execute “Full memory clear”.  
If not, the machine may not work normally.

- 9) Execute the firmware update using the one ROM FW file after system initialization. This work is a must for all FW module level.

4.5.6.9. TR Control Mode

• Service Functions > TR Control Mode

Purpose	To correct transfer related problems. This function can be used to change the transfer value to optimize image quality to a certain type of paper.
Operation Procedure	<p>1) T2 Control Mode</p> <ul style="list-style-type: none"> <li>• Choose the paper group, paper side, and paper direction.</li> <li>• Adjust PWM value based on the problem type.             <ul style="list-style-type: none"> <li>• Blur : Increase PWM value</li> <li>• Poor Transfer : Increase PWM value</li> <li>• Re-transfer : Decrease PWM value</li> <li>• White Spot : Decrease PWM value</li> <li>• OPC Cyclic Ghost : Decrease PWM value</li> </ul> </li> </ul> <div style="display: flex; justify-content: space-around; align-items: flex-end; margin-top: 20px;"> <div style="text-align: center;">  <p><b>Blur</b></p> </div> <div style="text-align: center;">  <p><b>Poor Transfer</b></p> </div> <div style="text-align: center;">  <p><b>Retransfer</b></p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-end; margin-top: 20px;"> <div style="text-align: center;">  <p><b>White Spot</b></p> </div> <div style="text-align: center;">  <p><b>OPC Cyclic Ghost</b></p> </div> </div>
Verification	Print out a test job and make sure the transfer problem has resolved.
Specification	N/A
Reference	N/A

---

#### 4.5.6.10. Clear System Cache

---

- **Service Functions > Clear System Cache**

This function is to clear machine's cache data for it after installing the XOA app.

---

#### 4.5.6.11. Hibernation

---

- **Service Functions > Hibernation**

Hibernation mode makes the operating system image and it reduces operating time when you turn on the machine.

- ON : Hibernation mode ON
- OFF : Hibernation mode OFF
- Create New Image : Make the new Hibernation system image. When you enable the hibernation mode, you can use this menu.

---

#### 4.5.6.12. Paper Low Warning Message

---

- **Service Functions > Paper Low Warning Message**

This function enables / disables the warning message of the paper low status.

---

#### 4.5.6.13. Part Replacement Alert

---

- **Service Functions > Part Replacement Alert**

This function enables / disables the alert message of the consumable's life time.

- ON : Alert message on (Level : Low, Empty, Exhaust, Worn)
- OFF : Alert message off

---

#### 4.5.6.14. FDI

---

- **Service Functions > FDI**

In this function, user and administrator can choose the type of FDI.

---

#### 4.5.6.15. EIUL (End of Image Unit Life)

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- **Service Functions > EIUL**

The function is to set the machine hard stop when the drum life is expired.

- Off : No machine stop @ end of drum life
- On : Machine stop @ end of drum life

### 4.5.6.16. SFE (Special Feature Enablement)

- **Service Functions > SFE**

Special Feature Enablement (SFE) means to provide the configurable options (On/Off) in service mode for technicians or dealers to satisfy the requirements from B2B sites easily without changing the firmware installed in a device.


**NOTE**

The description for some codes like a 003, 020 can not be provided by HQ R&D policy.

#### SFE menu description

SFE Code	Description
001	In case of printing in directional media (Letterhead/Preprinted/Punched), the device prints as the same output direction regardless of simplex or duplex.
003	confidential
006	The device supports only user's own email address for scan to email.
007	[PCL6] The device prints as original 1 dot line without 2 dot line compensation.
008	[PCL5] The device ignores paper size command in PRN and prints as paper size in tray.
009	PJL readback response is changed with HPOS. 1) Add <CR><LF> to EOJ response. 2) No EOJ job but EOJ response occurs. 3) Device uses Job name instead of EOJ name.
010	Maximum value of 'Power save time' is increased as 240 min.
012	If the device is in jam status, all print jobs except secure or stored jobs are deleted automatically.
013	The device ignores the USB memory stick and detects only card reader.
014	When the authenticated user uses scan to email, user's email address is added automatically.
015	The device supports to connect to LDAP's server without any certificate.
016	The device fits image appearance in report page
018	The device blocks apk installation.
019	User ID is not case-sensitive for login
020	confidential
021	confidential
022	The device supports "A6 LEF" in original size for scan service.
023	The device rotates copy output 180 degrees when executed on flatbed.
025	confidential
026	The device maintains HDD encryption as a default.
027	The device enables banner printing
029	The device support 3 digit password for SMB
031	The device shall store confidential/store print without image processing.
032	The device shall print line even though that has less than 1 dot.



#### 4.5.6.17. Dealer ID

- **Service Functions > Dealer ID**

The SFE functions related to the dealer will be enable.

#### 4.5.6.18. Envelope Rotate

- **Service Functions > Envelope Rotate**

This menu is enabling rotate when printing on envelope. The machine usually guides to load envelope with SEF direction. If this function is enabled, the user can load envelope with LEF direction and the machine shall rotate image for printing exactly on envelope.

This function shall provide the setting options as follows:

- Off (default) : Load envelope SEF direction
- 90 degrees : Load envelope LEF direction
- 180 degrees : Load envelope SEF direction with flap is bottom side



#### NOTE

- 1) If the paper source is 'Auto', the device shall feed from MP Tray. Because the LEF envelope can be loaded only in MP Tray according to Paper Specification.
- 2) If the length of envelope is over max size of custom width, the device shall not rotate image and just determine the direction of envelope is SEF.  
For example, the A4 model support custom size like W 98-216 ~ L148-356. This model doesn't support C5 Env.(162x229) DL Env.(110x220), No9 Env.(98x225), No10 Env.(105x241) rotation.

## 4.6. Error Code and Troubleshooting

Messages appear on the control panel display to indicate the machine's status or errors.



### NOTE

Some messages may not appear on the display depending on the options or models.

### 4.6.1. 11-2Txx (Paper mismatch error)

Error Code	Error Message	Troubleshooting Page
11-2T01	Load tray with [Letter], [Plain] paper	P.4-63
11-2T11	Load tray 1 with [Letter], [Plain] paper	P.4-63
11-2T21	Load tray 2 with [Letter], [Plain] paper	P.4-63
11-2T31	Load tray 3 with [Letter], [Plain] paper	P.4-63
11-2T41	Load tray 4 with [Letter], [Plain] paper	P.4-63
11-2T61	Load MP with [Letter], [Plain] paper	P.4-63

#### ► Error Code

11-2T01

11-2T11

11-2T21

11-2T31

11-2T41

11-2T61

#### ► Error message

Load tray with [Letter], [Plain] paper

Load tray 1 with [Letter], [Plain] paper

Load tray 2 with [Letter], [Plain] paper

Load tray 3 with [Letter], [Plain] paper

Load tray 4 with [Letter], [Plain] paper

Load MP with [Letter], [Plain] paper

#### ► Symptom

Paper in tray is not matched to the machine paper setting.

#### ► Troubleshooting method

- 1) Check and change the paper setting of the corresponding tray properly.

## 4.6.2. 61–1111 (Hibernation Fail)

Error Code	Error Message	Troubleshooting Page
61-1111	Booting Failure: #61-1111. Turn off then on. Call for service if the problem persists	P.4-64

▶ **Error Code**

61-1111

▶ **Error message**

Booting Failure: #61-1111. Turn off then on. Call for service if the problem persists

▶ **Symptom**

Hibernation image creation is failed.

▶ **Troubleshooting method**

- 1) Turn the machine on with a normal booting.
- 2) Enter the SVC mode. Select “Hibernation On” again.

**4.6.3. A1–xxxx (Motor error)**

<b>Error Code</b>	<b>Error Message</b>	<b>Troubleshooting Page</b>
A1-1111	Motor Failure: #A1-1111. Turn off then on. Call for service if the problem persists	P.4–66
A1-1113	Motor Failure: #A1-1113. Turn off then on. Call for service if the problem persists	P.4–66
A1-1211	Motor Failure: #A1-1211. Turn off then on. Call for service if the problem persists	P.4–68
A1-1213	Motor Failure: #A1-1213. Turn off then on. Call for service if the problem persists	P.4–68
A1-2111	Motor Failure: #A1-2111. Turn off then on. Call for service if the problem persists	P.4–70
A1-2113	Motor Failure: #A1-2113. Turn off then on. Call for service if the problem persists	P.4–70
A1-5113	Motor Failure: #A1-5113. Turn off then on. Call for service if the problem persists	P.4–72
A1-5512	Motor Failure: #A1-5512. Turn off then on. Call for service if the problem persists	P.4–72
A1-5513	Motor Failure: #A1-5513. Turn off then on. Call for service if the problem persists	P.4–72
A1-5610	Motor Failure: #A1-5610. Turn off then on. Call for service if the problem persists	P.4–72

► **Error Code**

A1-1111

A1-1113

► **Error message**

Motor Failure: #A1-1111. Turn off then on. Call for service if the problem persists.

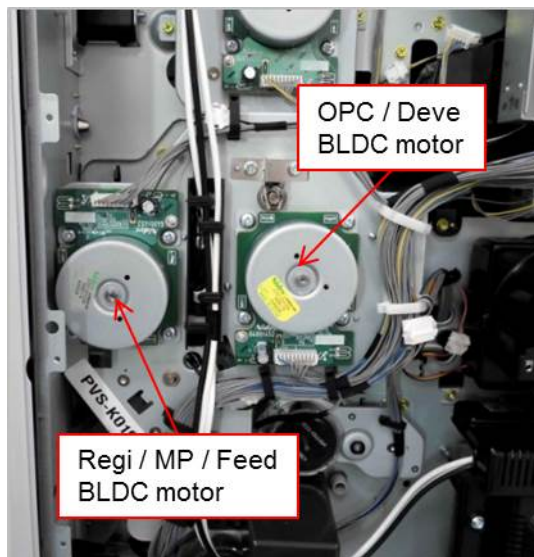
Motor Failure: #A1-1113. Turn off then on. Call for service if the problem persists.

► **Symptom**

Regi/MP motor does not operate. / Regi/MP motor is operating but machine recognizes status as "Stopped".

► **Troubleshooting method**

- 1) Turn the machine off then on. If the error persists, turn the machine off again.
- 2) Open the side cover. Check if there are any foreign substances or paper around Regi./MP unit.  
**(Refer to 3.3.20. Side unit)**
- 3) Remove the Rear-cover.  
**(Refer to 3.3.2. Rear cover)**
- 4) Check if the Regi/MP motor connector is connected correctly.



- 5) If the connection is OK, turn the machine on. Enter the SVC mode. Select the motor test.  
**(Diagnostics > Engine Diagnostics > Engine Test Routines >100-0000)**
  - a) If the motor does not operate,

i) Check the signal and power with the DVM.

Pin Num	Name	Checking point (Measurement error range $\pm 5\%$ )
1, 2	24V	24V
3, 4	GND	0V
5	Brake	-
6	Gain	-
7	Enable	At working : 0V, At stop : 3.3V
8	Ready	At working : 0V, At stop : 3.3V
9	CLK	At working : 1.5~ 1.8V, At stop : 0V or 3.3V
10	DIR	-

ii) If the checked result is normal, replace the BLDC motor([JC93-00448A](#)).

iii) If the checked result is abnormal, check the following.

- If 24V power is not generated, replace the SMPS board ([JC44-00100C \(220V\)](#) / [JC44-00093C \(110V\)](#))



- If the control signal is abnormal, replace the main board([JC92-02746A](#))

b) If the motor is operational, check the Pin Num 8.

i) If the value is abnormal, replace the main board.

ii) If the value is normal, replace the harness.

► **Error Code**

A1-1211

A1-1213

► **Error message**

Motor Failure: #A1-1211. Turn off then on. Call for service if the problem persists.

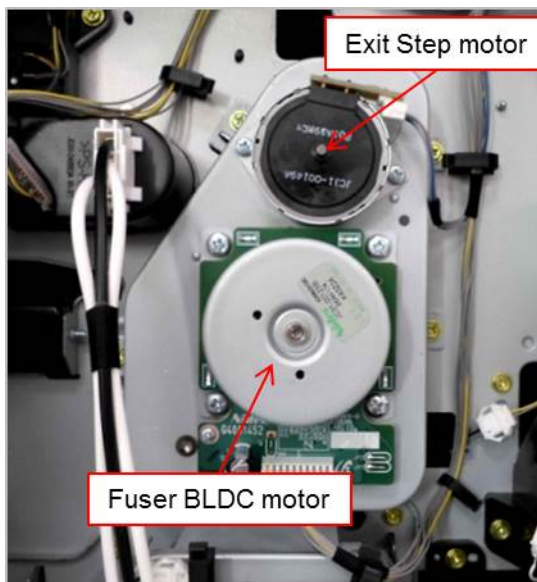
Motor Failure: #A1-1213. Turn off then on. Call for service if the problem persists.

► **Symptom**

Fuser motor does not operate. / Fuser motor is operational but machine recognizes status as stopped.

► **Troubleshooting method**

- 1) Turn the machine off then on. If the error persists, turn the machine off again.
- 2) Open the side cover. Check if there are any foreign substances or paper around fuser unit.  
**(Refer to 3.3.20. Side unit)**
- 3) Remove the rear cover  
**(Refer to 3.3.2. Rear cover)**
- 4) Check if the fuser motor connector is connected correctly.



- 5) If the connection is OK, turn the machine on. Enter the SVC mode. Select the motor test.  
**(Diagnostics > Engine Diagnostics > Engine Test Routines > 109-0030)**
  - a) If the motor does not operate,

- i) Check the signal and power with the DVM.

Pin Num	Name	Checking point (Measurement error range $\pm 5\%$ )
1, 2	24V	24V
3, 4	GND	0V
5	Brake	-
6	Gain	-
7	Enable	At working : 0V, At stop : 3.3V
8	Ready	At working : 0V, At stop : 3.3V
9	CLK	At working : 1.5~ 1.8V, At stop : 0V or 3.3V
10	DIR	-

- ii) If the checked result is normal, replace the BLDC motor([JC93-00448A](#)).

- iii) If the checked result is abnormal, check the following.

- If 24V power is not generated, replace the SMPS board ([JC44-00100C \(220V\)](#) / [JC44-00093C \(110V\)](#)).



- If the control signal is abnormal, replace the main board([JC92-02746A](#))

- b) If the motor is operational, check the Pin Num 8.
- i) If the value is abnormal, replace the main board.
  - ii) If the value is normal, replace the harness.



► **Error Code**

A1-2111

A1-2113

► **Error message**

Motor Failure: #A1-2111. Turn off then on. Call for service if the problem persists.

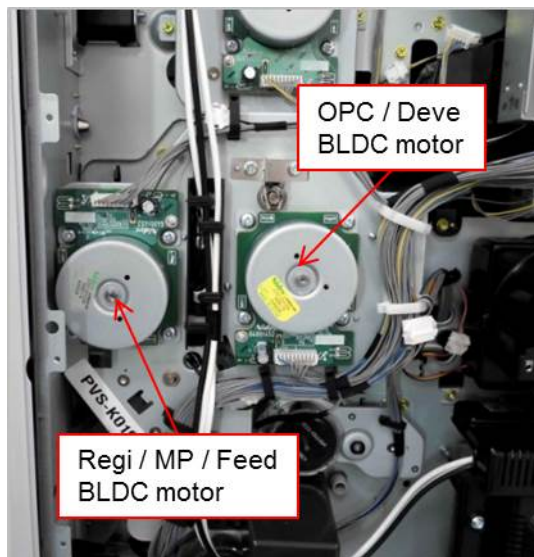
Motor Failure: #A1-2113. Turn off then on. Call for service if the problem persists.

► **Symptom**

OPC motor does not operate. / OPC motor is operational but machine recognizes status as stopped.

► **Troubleshooting method**

- 1) Turn the machine off then on. If the error persists, turn the machine off again.
- 2) Open the side cover. Check if there are any foreign substances or paper around drum drive unit.  
**(Refer to 3.3.20. Side unit)**
- 3) Remove the rear cover  
**(Refer to 3.3.2. Rear cover)**
- 4) Check if the OPC motor connector is connected correctly.



- 5) If the connection is OK, turn the machine on. Enter the SVC mode. Select the yellow OPC motor test.  
**(Diagnostics > Engine Diagnostics > Engine Test Routines > 100-0044)**
  - a) If the motor does not operate,

i) Check the signal and power with the DVM.

Pin Num	Name	Checking point (Measurement error range ±5%)
1, 2	24V	24V
3, 4	GND	0V
5	Brake	-
6	Gain	-
7	Enable	At working : 0V, At stop : 3.3V
8	Ready	At working : 0V, At stop : 3.3V
9	CLK	At working : 1.5~ 1.8V, At stop : 0V or 3.3V
10	DIR	-

ii) If the checked result is normal, replace the BLDC motor([JC31-00123B](#)).

iii) If the checked result is abnormal, check the following.

- If 24V power is not generated, replace the SMPS board ([JC44-00100C \(220V\)](#) / [JC44-00093C \(110V\)](#)).



- if the control signal is abnormal, replace the main board([JC92-02746A](#))

b) If the motor is operational, check the Pin Num 8.

i) If the value is abnormal, replace the main board.

ii) If the value is normal, replace the harness.

► **Error Code**

A1-5113

A1-5512

A1-5513

A1-5610

► **Error message**

Motor Failure: #A1-5113. Turn off then on. Call for service if the problem persists.

Motor Failure: #A1-5512. Turn off then on. Call for service if the problem persists.

Motor Failure: #A1-5513. Turn off then on. Call for service if the problem persists.

Motor Failure: #A1-5610. Turn off then on. Call for service if the problem persists.

► **Symptom**

The motor related to toner supply has a problem.

► **Troubleshooting method**

- 1) Open the front cover. If the toner pipe is blocked, open it.
- 2) Turn the machine off then on. If the error persists, check the following steps.
- 3) Enter the SVC mode. Select the toner supply motor test.  
(Diagnostics > Engine Diagnostics > Engine Test Routines > 111-0030)
- 4) If the motor does not operate, measure the motor power with DVM.  
- Measure two points together.



- a) If 24V power is supplied, replace the toner supply motor([JC31-00123B](#)).
- b) If 24V power is not supplied, check the SMPS and main board
  - i) If 24V power is not generated, replace the SMPS board([JC44-00100C \(220V\)](#) / [JC44-00093C \(110V\)](#)).



- ii) If the control signal is abnormal, replace the main board([JC92-02746A](#)).

**4.6.4. A2-xxxx (Fan error)**

<b>Error Code</b>	<b>Error Message</b>	<b>Troubleshooting Page</b>
A2-1510	Fan Failure: #A2-1510. Turn off then on. Call for service if the problem persists	P.4-74
A2-1511	Fan Failure: #A2-1511. Turn off then on. Call for service if the problem persists	P.4-74
A2-1521	Fan Failure: #A2-1521. Open the door, then close it. Call for service if the problem persists	P.4-74
A2-1523	Fan Failure: #A2-1523. Open the door, then close it. Call for service if the problem persists	P.4-74
A2-2611	Development Fan Failure: #A2-2611. Turn off then on. Call for service if the problem persists	P.4-74
A2-2613	Development Fan Failure: #A2-2613. Turn off then on. Call for service if the problem persists	P.4-74
A2-2810	Fan Failure: #A2-2810. Turn off then on. Call for service if the problem persists	P.4-74
A2-2811	Fan Failure: #A2-2811. Turn off then on. Call for service if the problem persists	P.4-74
A2-2821	Fan Failure: #A2-2821. Open the door, then close it. Call for service if the problem persists	P.4-74
A2-2823	Fan Failure: #A2-2823. Open the door, then close it. Call for service if the problem persists	P.4-74
A2-2910	Fan Failure: #A2-2910. Turn off then on. Call for service if the problem persists	P.4-74
A2-2911	Fan Failure: #A2-2911. Turn off then on. Call for service if the problem persists	P.4-74
A2-2920	Fan Failure: #A2-2920. Open the door, then close it. Call for service if the problem persists	P.4-74
A2-2921	Fan Failure: #A2-2921. Open the door, then close it. Call for service if the problem persists	P.4-74

► **Error Code**

A2-1510 / A2-1511 / A2-1521 / A2-1523 / A2-2611 / A2-2613 / A2-2810 / A2-2811 / A2-2821 / A2-2823 /  
A2-2910 / A2-2911 / A2-2920 / A2-2921

► **Error message**

Fan Failure: #A2-xxxx. Turn off then on. Call for service if the problem persists

Fan Failure: #A2-xxxx. Open the door, then close it. Call for service if the problem persists

► **Symptom**

Fan does not operate or fan signal is abnormal.

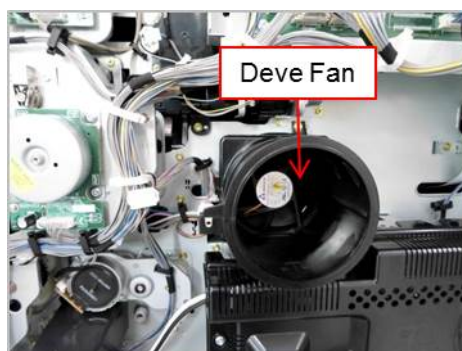
► **Troubleshooting method**



**NOTE**

- Duplex fan error : A2-1510 / A2-1511 / A2-1521 / A2-1523
- Deve fan error : A2-2611 / A2-2613 / A2-2810 / A2-2811 / A2-2821 / A2-2823
- OPC blow-in fan error : A2-2910 / A2-2911 / A2-2920 / A2-2921

- 1) Turn the machine off.
- 2) Remove the rear cover.  
**(Refer to 3.3.2. Rear Cover)**
- 3) Check if the corresponding fan connector is connected correctly.
- 4) If the connection is OK, enter the SVC mode and execute fan test.  
**(Diagnostics > Engine Dignostics > Engine Test Routines)**



- 5) If the fan does not operate, measure the fan power. (Red line)  
- Measure the red line



- a) If 24V power is generated, replace the defective fan.
- b) If 24V power is not generated, check the SMPS and main board.

- i) Measure 24V power on the SMPS board. If the SMPS board(*JC44-00100C (220V) / JC44-00093C (110V)*) is defective, replace it.



- ii) If the SMPS board is normal, replace the main board.
- 6) If the fan operation is normal but the error persists,
- a) Check the yellow line signal with DVM.

Fan Lock Signal (Yellow)	Measurement Value (Fan is connected)	Measurement Value (Fan is removed)
At operation	0 V	3.3V
At stop	3.3 V	3.3V

- b) Check fan operation as connection or disconnection.
- i) If the lock signal is 0V continually, check the harness.
- ii) If the harness is OK, replace the main board(*JC92-02746A*).
- iii) If the signal value is different from the table above, replace the defective fan.
- Deve fan : *JC31-00161A*
  - Duplex fan : *JC31-00160B*

### 4.6.5. A3-xxxx (Sensor error)

Error Code	Error Message	Troubleshooting Page
A3-3111	Sensor Failure: #A3-3111. Turn off then on. Call for service if the problem persists	P.4-77
A3-3112	Sensor Failure: #A3-3112. Turn off then on. Call for service if the problem persists	P.4-77
A3-3113	Sensor Failure: #A3-3113. Turn off then on. Call for service if the problem persists	P.4-77
A3-3114	Sensor Failure: #A3-3114. Turn off then on. Call for service if the problem persists	P.4-77
A3-3210	Sensor Failure: #A3-3210. Turn off then on. Call for service if the problem persists	P.4-78
A3-3211	Sensor Failure: #A3-3211. Turn off then on. Call for service if the problem persists	P.4-78
A3-3212	Sensor Failure: #A3-3212. Turn off then on. Call for service if the problem persists	P.4-78
A3-3310	Sensor Failure: #A3-3310. Turn off then on. Call for service if the problem persists	P.4-79
A3-3311	Sensor Failure: #A3-3311. Turn off then on. Call for service if the problem persists	P.4-79
A3-3312	Sensor Failure: #A3-3312. Turn off then on. Call for service if the problem persists	P.4-79
A3-3410	Sensor Failure: #A3-3410. Turn off then on. Call for service if the problem persists	P.4-79
A3-3411	Sensor Failure: #A3-3411. Turn off then on. Call for service if the problem persists	P.4-79
A3-3412	Sensor Failure: #A3-3412. Turn off then on. Call for service if the problem persists	P.4-79

► **Error Code**

- A3-3111
- A3-3112
- A3-3113
- A3-3114

► **Error message**

- Sensor Failure: #A3-3111. Turn off then on. Call for service if the problem persists
- Sensor Failure: #A3-3112. Turn off then on. Call for service if the problem persists
- Sensor Failure: #A3-3113. Turn off then on. Call for service if the problem persists
- Sensor Failure: #A3-3114. Turn off then on. Call for service if the problem persists

► **Symptom**

The NC sensor in the fuser unit is defective. / The sensor signal is abnormal due to a defective harness.

► **Troubleshooting method**

- A3-3111 : Center NC sensor is in short status.
  - A3-3112 : Center NC sensor is in open status.
  - A3-3113 : Side NC sensor is in short status.
  - A3-3114 : Side NC sensor is in open status.
- 1) Remove and disassemble the fuser unit.  
**(Refer to 3.3.23 Fuser Unit)**
  - 2) Measure the resistance value of the thermistor (*1404-001453*). If the measured value is out of 307KΩ~430KΩ @25°C, replace the thermistor.



Measurement Point	Resistance value (@ 25 °C)
1-2 (Blue - Black)	307KΩ~430KΩ
1-3 (Blue -White)	307KΩ~430KΩ

- 3) Install the fuser unit after replacing the thermistor.
- 4) If the error persists, replace the fuser unit (*JC91-01163A(220V) / JC91-01164A (110V)*).
- 5) If the error persists after replacing fuser unit, replace the main board(*JC92-02746A*).



**▶ Error Code**

A3-3210

A3-3211

A3-3212

**▶ Error message**

Sensor Failure: #A3-3210. Turn off then on. Call for service if the problem persists

Sensor Failure: #A3-3211. Turn off then on. Call for service if the problem persists

Sensor Failure: #A3-3212. Turn off then on. Call for service if the problem persists

**▶ Symptom**

Inner temperature sensor is defective.

**▶ Troubleshooting method**

- A3-3210 : Inner temperature sensor value is abnormal.
  - A3-3211 : Inner temperature sensor is in short status.
  - A3-3212 : Inner temperature sensor is in open status.
- 1) Open the side cover. Check the inner temperature sensor connection.
    - If the connection is OK, replace the photo sensor ([1404-001417](#)).
  - 2) If the sensor is normal, replace the main board([JC92-02746A](#)).

▶ **Error Code**

A3-3310

A3-3311

A3-3312

A3-3410

A3-3411

A3-3412

▶ **Error message**

Sensor Failure: #A3-3310. Turn off then on. Call for service if the problem persists

Sensor Failure: #A3-3311. Turn off then on. Call for service if the problem persists

Sensor Failure: #A3-3312. Turn off then on. Call for service if the problem persists

Sensor Failure: #A3-3410. Turn off then on. Call for service if the problem persists

Sensor Failure: #A3-3411. Turn off then on. Call for service if the problem persists

Sensor Failure: #A3-3412. Turn off then on. Call for service if the problem persists

▶ **Symptom**

Outer temperature/humidity sensor is defective.

▶ **Troubleshooting method**

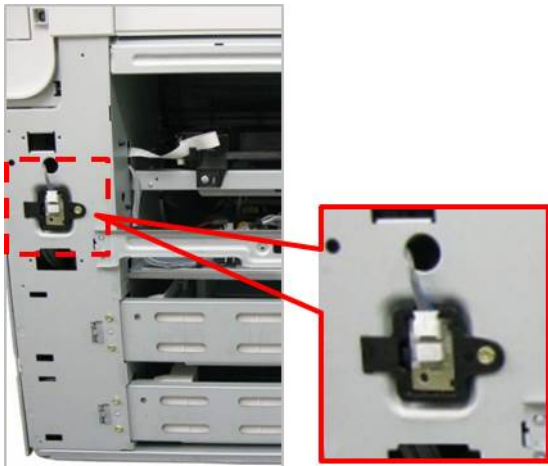
- A3-3310 / A3-3311 / A3-3312 : Temperature function is abnormal.
- A3-3410 / A3-3411 / A3-3412 : Humidity function is abnormal.

1) Remove the left cover.

**(Refer to 3.3.4 Temperature Sensor)**

Measure the resistance value of the connector at both ends.

If the value is not in 47.5KΩ ~ 52.5KΩ (@ 25 °C), replace the sensor([JC93-00486A](#)).



2) If the harness and sensor are normal, replace the main board ([JC92-02746A](#)).

#### 4.6.6. C1-xxxx (Toner cartridge error)

Error Code	Error Message	Troubleshooting Page
C1-1110	Prepare new toner cartridge	P.4-81
C1-111A	Shake toner cartridge and then install. Replace toner cartridge if the problem persists	P.4-81
C1-1140	End of life, Replace with new toner cartridge	P.4-81
C1-1150	Replace with new toner cartridge	P.4-81
C1-1160	Replace with new toner cartridge	P.4-81
C1-1170	End of life. Replace with new toner cartridge	P.4-81
C1-1311	Toner Cartridge Failure: #C1-1311. Install toner cartridge again	P.4-82
C1-1313	Shake toner cartridge and then install. Call for service if the problem persists	P.4-82
C1-1314	Did not supply enough toner. Remove seal tape of toner cartridge or shake it. Call for service if the problem persists	P.4-82
C1-1411	Toner cartridge is not installed. Install the cartridge	P.4-82
C1-1512	Toner cartridge is not compatible. Check users guide	P.4-82

▶ **Error Code**

C1-1110

C1-111A

▶ **Error message**

Prepare new yellow toner cartridge.

Shake toner cartridge and then install. Replace toner cartridge if the problem persists

▶ **Symptom**

Toner remained is 5 ~ 30% of its life.

▶ **Troubleshooting method**

- 1) Order new yellow toner cartridge because toner cartridge with level of “Low” will be exhausted soon.

▶ **Error Code**

C1-1140

C1-1150

C1-1160

C1-1170

▶ **Error message**

End of life, Replace with new toner cartridge

Replace with new toner cartridge

▶ **Symptom**

The toner cartridge is at the end of its life.

▶ **Troubleshooting method**

- 1) Open the front cover.
- 2) Remove the toner cartridge.
- 3) Install the new toner cartridge.
- 4) Close the toner cartridge.

▶ **Error Code**

C1-1311

C1-1313

C1-1314

▶ **Error message**

Toner Cartridge Failure: #C1-1311. Install toner cartridge again

Shake toner cartridge and then install. Call for service if the problem persists

Did not supply enough toner. Remove seal tape of toner cartridge or shake it. Call for service if the problem persists

▶ **Symptom**

Toner supply is inefficient or abnormal.

▶ **Troubleshooting method**

- 1) Turn the machine off. Open the front cover
- 2) Remove the toner cartridge. Shake the toner cartridge horizontally to distribute the toner evenly inside the cartridge.

- 3) If the problem persists, check the follows.
  - a) Check if the Toner Supply Drive Unit([JC93-00436A](#)) is defective.  
**(Refer to 3.3.15. Toner Supply Drive Unit)**
  - b) Check if the Toner Duct Drive Unit([JC93-00451A](#)) is defective.  
**(Refer to 3.3.14. Toner Duct Drive Unit)**
- 4) If the problem persists, replace the toner cartridge.
- 5) If the problem persists, replace the drum unit.

▶ **Error Code**

C1-1411

▶ **Error message**

Toner cartridge is not installed. Install it.

▶ **Symptom**

The toner cartridge is not installed. / The CRUM data is not detected.

▶ **Troubleshooting method**

- 1) Open the front cover. Check if the toner cartridge is installed.
- 2) Remove and reinstall the toner cartridge.
- 3) If the problem persists, check if the toner cartridge modular jack is contaminated or deformed.
- 4) Replace the toner cartridge with a new one.

▶ **Error Code**

C1-1512

▶ **Error message**

Toner cartridge is not compatible. Check users guide.

▶ **Symptom**

Toner cartridge is not compatible.

▶ **Troubleshooting method**

- 1) Open the front cover. Remove the toner cartridge and re-install it.
- 2) Print the supply information report. Check the toner cartridge information.
- 3) If the toner cartridge is not a Samsung genuine, replace it with a new one.

### 4.6.7. C3–xxxx (Drum unit error)

Error Code	Error Message	Troubleshooting Page
C3-1110	Prepare new imaging unit	P.4-84
C3-1130	Replace with new imaging unit	P.4-84
C3-1140	End of life, Replace with new imaging unit	P.4-84
C3-1211	Imaging Unit Failure: #C3-1211. Please turn off then on	P.4-85
C3-1312	Imaging Unit Failure: #C3-1312. Install imaging unit again	P.4-85
C3-1411	Imaging unit is not installed. Install the unit	P.4-86
C3-1414	Imaging Unit Failure: #C3-1414. Install imaging unit again	P.4-86
C3-1422	Imaging unit requires charging cleaning. Clean the unit	P.4-87
C3-1512	Imaging unit is not compatible. Check users guide	P.4-87

► **Error Code**

C3–1110

C3–1130

C3–1140

► **Error message**

Prepare new imaging unit

Replace with new imaging unit.

► **Symptom**

The Imaging unit has almost reached the end of life.

► **Troubleshooting method**

- 1) Open the front cover and remove the waste toner container.
- 2) Remove the imaging unit.  
**(Refer to 3.2.1. Developer Toner cartridge Drum unit)**
- 3) If its life is at the end, replace the drum unit and developer with new one.

▶ **Error Code**

C3-1211

▶ **Error message**

Imaging Unit Failure:#C3-1211. Please turn off then on.

▶ **Symptom**

Sensor calibration error that detects the toner density for image stabilization control has occurred.

▶ **Troubleshooting method**

- 1) Open the front cover and remove the waste toner container.
- 2) Remove the imaging unit.  
**(Refer to 3.2.1. Developer Toner cartridge Drum unit)**
- 3) If its life is at the end, replace the drum unit and developer with new one.

▶ **Error Code**

C3-1312

▶ **Error message**

Imaging Unit Failure: #C3-1312. Install imaging unit again

▶ **Symptom**

Toner supply is inefficient or abnormal.

▶ **Troubleshooting method**

- 1) Turn the machine off. Open the front cover
- 2) Remove the toner cartridge. Shake the toner cartridge horizontally to distribute the toner evenly inside the cartridge.
- 3) If the problem persists, check the follows.
  - a) Check if the Toner Supply Drive Unit(*JC93-00436A*) is defective.  
**(Refer to 3.3.15. Toner Supply Drive Unit)**
  - b) Check if the Toner Duct Drive Unit(*JC93-00451A*) is defective.  
**(Refer to 3.3.14. Toner Duct Drive Unit)**
- 4) If the problem persists, replace the toner cartridge.
- 5) If the problem persists, replace the drum unit.



**▶ Error Code**

C3-1411

**▶ Error message**

Imaging unit is not installed. Install the unit.

**▶ Symptom**

The imaging unit is not installed. / The data of CRUM is not detected.

**▶ Troubleshooting method**

- 1) Open the front cover and remove the waste toner container.
- 2) Remove the imaging unit.  
**(Refer to 3.2.1. Developer Toner cartridge Drum unit)**
- 3) If its life is at the end, replace the drum unit and developer with new one.

**▶ Error Code**

C3-1414

**▶ Error message**

Imaging Unit Failure: #C3-1414. Install imaging unit again

**▶ Symptom**

The machine can not read the charger resistance value of the imaging unit.

**▶ Troubleshooting method**

- 1) Turn the machine off then on.
- 2) Remove the imaging unit. If the contact terminal is contaminated, clean it.
- 3) Reinstall the imaging unit.
- 4) If the problem persists, check the circuit for high voltage and control.

▶ **Error Code**

C3-1422

▶ **Error message**

Imaging unit requires chargers cleaning. Clean the unit.

▶ **Symptom**

The imaging unit needs to clean.

▶ **Troubleshooting method**

- 1) Turn the machine off then on.
- 2) Open the front cover and remove the waste toner container.
- 3) Replace the drum unit with new one.

▶ **Error Code**

C3-1512

▶ **Error message**

Imaging unit is not compatible. Check user's guide

▶ **Symptom**

Imaging unit is not compatible.

▶ **Troubleshooting method**

- 1) Open the front cover and remove the waste toner container.
- 2) Remove the imaging unit.  
**(Refer to 3.2.1. Developer Toner cartridge Drum unit)**
- 3) If its life is at the end, replace the drum unit and developer with new one.

### 4.6.8. C6–xxxx (Fuser unit error)

Error Code	Error Message	Troubleshooting Page
C6-1120	Replace with new fuser unit	P.4–88
C6-1310	Fuser unit is not installed. Install it	P.4–88

▶ **Error Code**

C6–1120

▶ **Error message**

Replace with new fuser unit

▶ **Symptom**

The life of the fuser unit has expired.

▶ **Troubleshooting method**

- 1) Turn the machine off.
- 2) Replace the fuser unit(*JC91-01163A (220V) /JC91-01164A (110V)*).  
(Refer to 3.2.2.Fuser unit)
- 3) Turn the machine on.

▶ **Error Code**

C6–1310

▶ **Error message**

Fuser unit is not installed. Install it.

▶ **Symptom**

The fuser unit is not installed or fuser unit connector is not connected properly.

▶ **Troubleshooting method**

- 1) Turn the machine off then on.
- 2) If the problem persists, turn the machine off again.
- 3) Open the side cover. Check if the fuser unit is installed. If not, install the fuser unit.
- 4) If the fuser unit is installed, remove it.  
(Refer to 3.2.2.Fuser unit)
- 5) Check if the fuser draw connector is broken or defective.
- 6) Install the fuser unit.
- 7) If the problem persists, replace the fuser unit(*JC91-01163A (220V) /JC91-01164A (110V)*).



**CAUTION**

The temperature gets high in the vicinity of the fuser unit. When replacing it, you may get burned. Before replacing it, make sure that fuser unit has cooled.

### 4.6.9. C7-xxxx (Waste toner container error)

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Error Code	Error Message	Troubleshooting Page
C7-1110	Waste toner container is almost full. Order new one	P.4-89
C7-1130	Waste toner container is full. Replace it	P.4-89
C7-1311	Waste toner container is not installed. Install it	P.4-90

▶ **Error Code**

C7-1110

C7-1130

▶ **Error message**

Waste toner container is almost full. Order new one.

Waste toner container is full. Replace it.

▶ **Symptom**

The life of the waste toner container expires soon or has expired.

▶ **Troubleshooting method**

- 1) Open the front cover and remove the waste toner container.
- 2) Replace the waste toner container with new one.
- 3) Close the front cover.

**▶ Error Code**

C7-1311

**▶ Error message**

Waste toner container is not installed. Install it.

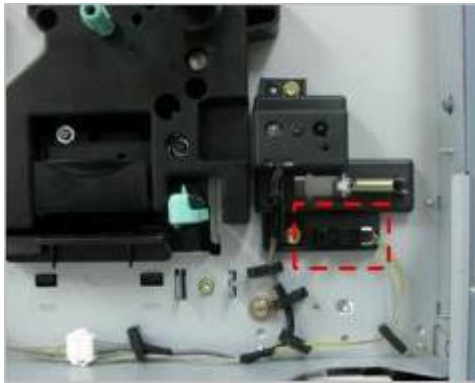
**▶ Symptom**

The waste toner container is not installed.

**▶ Troubleshooting method**

- 1) Open the front cover and check the waste toner container is installed correctly.
- 2) Check the waste toner container sensor operates correctly.

**(Refer to 3.3.18. Waste toner container sensor)**



- 3) If the waste toner container sensor is defective, replace it.
- 4) If the problem persists, replace the waste toner container with new one.

### 4.6.10. C8–xxxx (Developer error)

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Error Code	Error Message	Troubleshooting Page
C8-1130	Replace with new developer unit	P.4–91

▶ **Error Code**

C8-1130

▶ **Error message**

Replace with new magenta developer unit

▶ **Symptom**

The life of the developer unit has expired.

▶ **Troubleshooting method**

- 1) Turn the machine off.
- 2) Open the front cover and remove the waste toner container.
- 3) Remove the imaging unit.
- 4) If the life of the developer unit has expired, replace the developer unit with new one.

**(Refer to 3.2.1. Developer\_Toner cartridge\_Drum unit)**

### 4.6.11. C9-xxxx (Transfer roller error)

Error Code	Error Message	Troubleshooting Page
C9-2110	Prepare new transfer roller	P.4-92
C9-2120	Replace with new transfer roller	P.4-92
C9-2220	TR Failure: #C9-2220. Install transfer roller again	P.4-93

▶ **Error Code**

C9-2110

C9-2120

▶ **Error message**

Prepare new transfer roller

Replace with new Transfer roller.

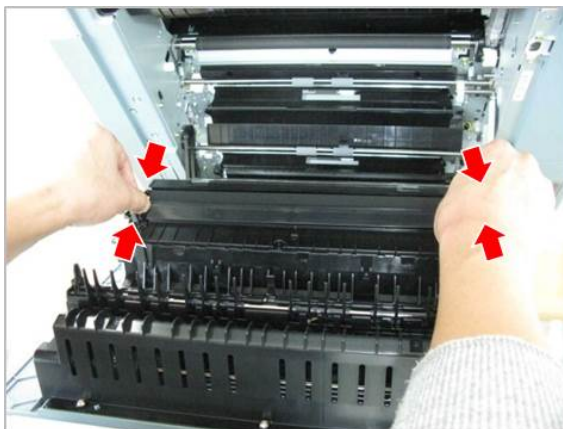
▶ **Symptom**

Transfer roller is at the end of its life.

▶ **Troubleshooting method**

- 1) Open the side-cover.
- 2) Replace the transfer roller([JC66-04205A](#)).

**(Refer to 3.2.3. Transfer roller)**



▶ **Error Code**

C9-2220

▶ **Error message**

TR Failure: #C9-2220. Install transfer roller again.

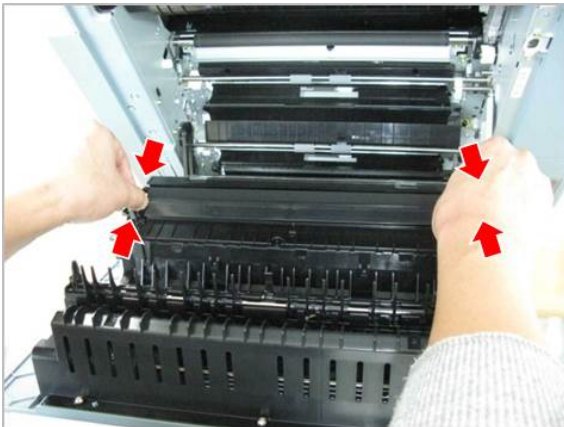
▶ **Symptom**

The resistance value of the transfer roller is abnormal.

▶ **Troubleshooting method**

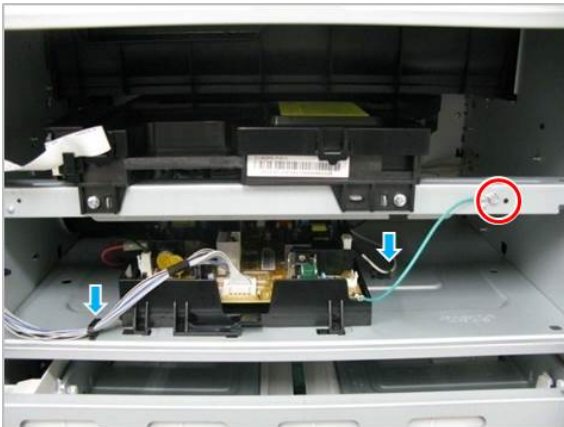
- 1) Open the side cover.
- 2) Replace the transfer roller(*JC66-04205A*).

**(Refer to 3.2.3. Transfer roller)**



- 3) If the problem persists, replace the HVPS board.

**(Refer to 3.3.5. HVPS board)**





#### 4.6.12. H1-xxxx (Optional tray error)

Error Code	Error Message	Troubleshooting Page
H1-1311	Paper jam in tray 3	P.4-95
H1-1312	Paper jam in tray 3	P.4-95
H1-1313	Paper jam in tray 3	P.4-95
H1-1314	Paper jam inside of machine	P.4-95
H1-1315	Paper jam in tray 3	P.4-95
H1-1317	Paper jam in tray 3	P.4-95
H1-1318	Paper jam in tray 3	P.4-95
H1-1322	Tray 3 cassette is pulled out. Insert it properly	P.4-97
H1-1351	Paper is low in tray 3. Load paper	P.4-98
H1-1352	Paper is empty in tray 3. Load paper	P.4-98
H1-1353	Input System Failure: #H1-1353. Pull tray 3 out and insert it	P.4-99
H1-1354	Paper is empty in tray 3. Load paper	P.4-98
H1-1411	Paper jam in tray 4	P.4-100
H1-1412	Paper jam in tray 4	P.4-100
H1-1417	Paper jam in tray 4	P.4-100
H1-1418	Paper jam in tray 4	P.4-100
H1-1422	Tray 4 cassette is pulled out. Insert it properly	P.4-102
H1-1451	Paper is low in tray 4. Load paper	P.4-103
H1-1452	Paper is empty in tray 4. Load paper	P.4-103
H1-1453	Input System Failure: #H1-1453. Pull tray 4 out and insert it	P.4-104
H1-1454	Paper is empty in tray 4. Load paper	P.4-103
H1-5323	Tray door is open. Close the door	P.4-105
H1-5330	DCF Failure: #H1-5330. Check internal DCF connection	P.4-106

### ▶ Error Code

H1-1311

H1-1312

H1-1313

H1-1314

H1-1315

H1-1317

H1-1318

### ▶ Error message

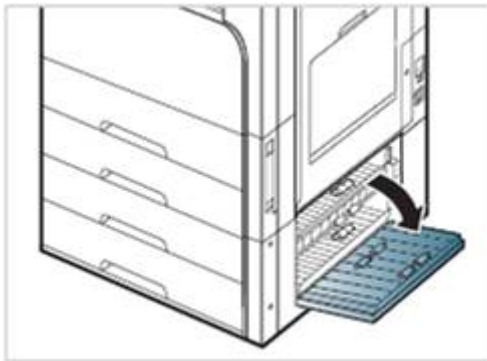
Paper jam in Tray 3.

### ▶ Symptom

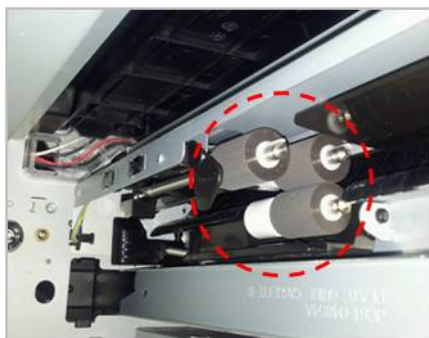
Paper jam has occurred in tray3. (Pick up unit connection is defective. / Pickup rollers are defective. / Feed sensor is defective.)

### ▶ Troubleshooting method

- 1) Open the DCF Take Away-Cover. Remove the jammed paper.



- 2) Remove tray3. Remove the jammed paper. Close the DCF Take Away-Cover and insert tray3.
- 3) If this jam error occurs frequently, check the rollers below.
  - a) Remove the tray3 and tray4.
  - b) Check if the pick up/ reverse/ forward rollers are assembled correctly.



- c) If the pick up/ reverse/ forward rollers are worn out or contaminated, replace the defective roller([JC93-00540A](#)).
- 4) If pick up/ reverse/ forward rollers have no problem, check the following.
    - a) Remove the DCF pick up unit1. Check if the feed sensor cable is connected correctly.
    - b) Check if the sensor cable on DCF board is connected correctly.
    - c) If the connection is OK, replace the feed sensor([0604-001381](#)).
    - d) Install the DCF pick up unit1.

- 5) If the problem persists after checking step 3~4, check the following :
  - a) Remove the DCF pick up unit1. Check if the sensor and actuator are assembled correctly.
  - b) When pushing the pickup lever, check if the pick up rollers are down.
  - c) Replace the DCF pick up unit1([JC93-00513A](#)) or defective part.
  
- 6) Check the DCF feed motor.
  - a) Check if the DCF feed motor cable is connected correctly.
  - b) If the connection is OK, replace the DCF feed drive unit([JC93-00447A](#)).  
**(Refer to 3.3.33.2 DCF Feed Motor)**
  
- 7) Check the DCF pick up motor.
  - a) Check if the DCF pick up motor cable is connected correctly.
  - b) If the connection is OK, replace the DCF pick up drive unit([JC93-00442A](#)).  
**(Refer to 3.3.33.3 DCF Pick Up Motor)**

▶ **Error Code**

H1-1322

▶ **Error message**

Tray 3 cassette is pulled out. Insert it properly.

▶ **Symptom**

Tray 3 is pulled out or the auto size sensor connector is not connected or broken.

▶ **Troubleshooting method**

- 1) Remove and insert tray3 correctly.
- 2) If the problem persists, remove tray3 and tray4. Look inside machine.
- 3) Check if the auto size sensor cable is connected correctly. Unplug and reconnect it.



- 4) If the connection is OK, replace the auto size sensor([JC93-00018A](#)).
- 5) If the problem persists, replace the DCF board([JC92-02453A](#)).  
**(Refer to 3.3.33.1. DCF Main Board)**

**▶ Error Code**

H1-1351

H1-1352

H1-1354

**▶ Error message**

Paper is low in Tray 3. Load paper.

Paper is empty in Tray 3. Load paper.

**▶ Symptom**

Paper in the tray is less than 10% of specification. / The photo sensor is defective.

**▶ Troubleshooting method**

- 1) Remove tray3. Load the paper in tray3.
- 2) If paper is loaded but error message has not disappeared, check the following.
  - a) Remove the DCF pick up unit1.
  - b) Check if the photo sensor in the DCF pick up unit1 is contaminated. If so, clean it.
  - c) If the photo sensor([0604-001393](#)) is defective, replace it.
  - d) If the actuator([JC66-03199A](#)) is defective, replace it.



▶ **Error Code**

H1-1353

▶ **Error message**

Input System Failure #H1-1353 : Pull Tray 3 out and insert it.

▶ **Symptom**

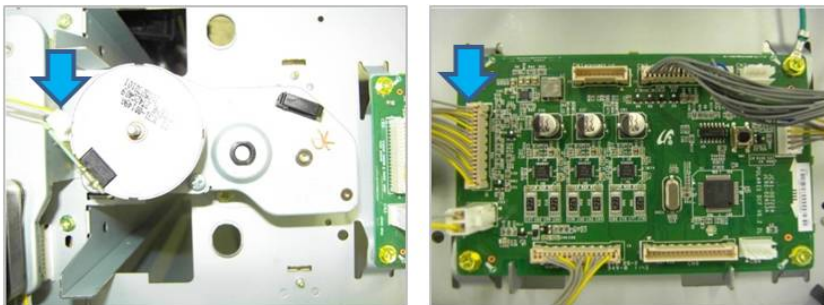
The paper is not fed from tray3.

▶ **Troubleshooting method**

- 1) Remove and insert tray3 correctly.
- 2) Turn the machine off then on.
- 3) If the problem persists, turn the machine off.
- 4) Remove the Bracket Rear Cover after removing 5 screws.



- 5) Check if the connection between the DCF pick up drive and DCF board is correct.



- 6) If the connection is OK, replace the pick up drive unit([JC93-00442A](#)).  
**(Refer to 3.3.33.3. DCF Pick Up Motor)**
- 7) If the problem persists, check the following.
  - a) Remove the DCF pick up unit1.
  - b) Check if the photo sensor in the DCF pick up unit1 is contaminated, clean it.
  - c) If the photo sensor([0604-001393](#)) is defective, replace it.



► **Error Code**

H1-1411

H1-1412

H1-1417

H1-1418

► **Error message**

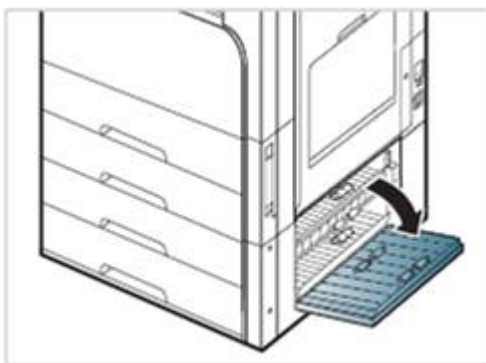
Paper jam in Tray 4.

► **Symptom**

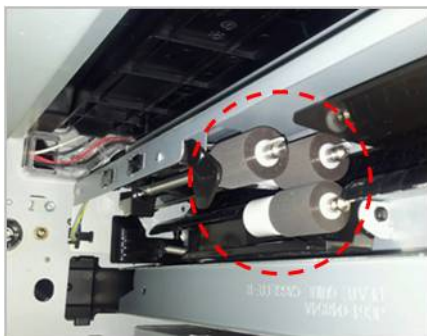
Paper jam has occurred in tray4. (Pick up unit connection is defective. / Pickup rollers are defective. / Feed sensor is defective.)

► **Troubleshooting method**

- 1) Open the DCF Take Away-Cover. Remove the jammed paper.



- 2) Remove tray4. Remove the jammed paper. Close the DCF Take Away-Cover and insert tray4.
- 3) If this jam error occurs frequently, check the rollers below.
  - a) Remove tray3 and tray4.
  - b) Check if the pick up/ reverse/ forward rollers are assembled correctly.



- c) If the pick up/ reverse/ forward rollers are worn out or contaminated, replace the defective roller([JC93-00540A](#)).
- 4) If pick up/ reverse/ forward rollers have no problem, check the following.
  - a) Remove the DCF pick up unit2. Check if the feed sensor cable is connected correctly.
  - b) Check if the sensor cable on DCF board is connected correctly.
  - c) If the connection is OK, replace the feed sensor([0604-001381](#)).
  - d) Install the DCF pick up unit2.
- 5) If the problem persists after checking step 3~4, check the following :
  - a) Remove the DCF pick up unit2. Check if the sensor and actuator are assembled correctly.
  - b) When pushing the pickup lever, check if the pick up rollers are down.

- c) Replace the DCF pick up unit2([JC93-00513A](#)) or defective part.
- 6) Check the DCF feed motor.
  - a) Check if the DCF feed motor cable is connected correctly.
  - b) If the connection is OK, replace the DCF feed drive unit([JC93-00447A](#)).  
**(Refer to 3.3.33.2 DCF Feed Motor)**
- 7) Check the DCF pick up motor.
  - a) Check if the DCF pick up motor cable is connected correctly.
  - b) If the connection is OK, replace the DCF pick up drive unit([JC93-00442A](#)).  
**(Refer to 3.3.33.3 DCF Pick Up Motor)**



**▶ Error Code**

H1-1422

**▶ Error message**

Tray 4 cassette is pulled out. Insert it properly.

**▶ Symptom**

Tray 4 is pulled out or the auto size sensor connector is not connected or is broken.

**▶ Troubleshooting method**

- 1) Remove and insert tray4 correctly.
- 2) If the problem persists, remove tray3 and tray4. Look inside machine.
- 3) Check if the auto size sensor cable is connected correctly. Unplug and reconnect it.



- 4) If the connection is OK, replace the auto size sensor([JC93-00018A](#)).
  - 5) If the problem persists, replace the DCF board([JC92-02453A](#)).
- (Refer to 3.3.33.1. DCF Main Board)**

▶ **Error Code**

H1-1451

H1-1452

H1-1454

▶ **Error message**

Paper is low in Tray 4. Load paper.

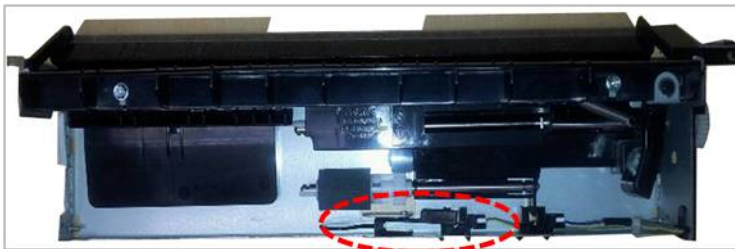
Paper is empty in Tray 4. Load paper.

▶ **Symptom**

Paper in tray4 is less than 10%. / The photo sensor is defective.

▶ **Troubleshooting method**

- 1) Remove tray4. Load the paper in tray4.
- 2) If paper is loaded but error message has not disappeared, check the following.
  - a) Remove the DCF pick up unit2.
  - b) Check if the photo sensor in the DCF pick up unit2 is contaminated. If so, clean it.
  - c) If the photo sensor([0604-001393](#)) is defective, replace it.
  - d) If the actuator([JC66-03199A](#)) is defective, replace it.



► **Error Code**

H1-1453

► **Error message**

Input System Failure #H1-1453 : Pull Tray 4 out and insert it.

► **Symptom**

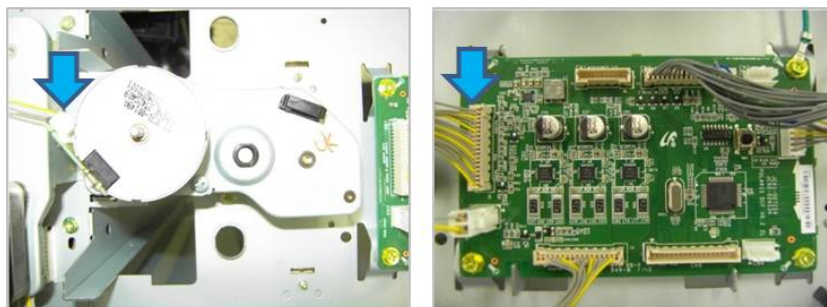
The paper is not fed from tray4.

► **Troubleshooting method**

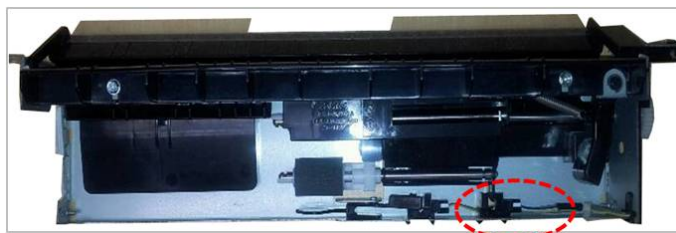
- 1) Remove and insert tray4 correctly.
- 2) Turn the machine off then on.
- 3) If the problem persists, turn the machine off.
- 4) Remove the Bracket Rear Cover after removing 5 screws.



- 5) Check if the connection between the DCF pick up drive and DCF board is correct.



- 6) If the connection is OK, replace the pick up drive unit([JC93-00442A](#)).  
(Refer to [3.3.33.3. DCF Pick Up Motor](#))
- 7) If the problem persists, check the following.
  - a) Remove the DCF pick up unit2.
  - b) Check if the photo sensor in the DCF pick up unit2 is contaminated. If so, clean it.
  - c) If the photo sensor([0604-001393](#)) is defective, replace it.



▶ **Error Code**

H1-5323

▶ **Error message**

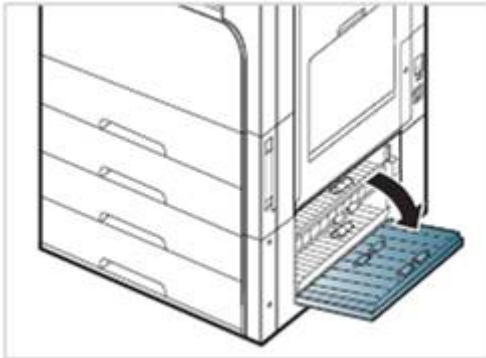
Tray door is open. Close the door

▶ **Symptom**

DCF Takeaway-Cover is open. / I/L-Switch harness or connector is defective.

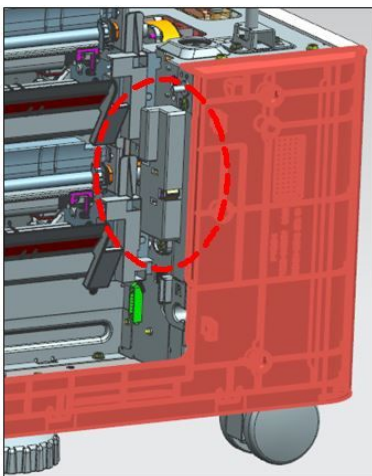
▶ **Troubleshooting method**

- 1) Open and close the DCF Take away-Cover correctly.



- 2) If the problem persists, check the following.

- a) Check if I/L-Switch(HARNESS-DCF COVER OPEN)([JC39-01696A](#)) is not operating normally. If it is defective, replace it.



- b) If the I/L Switch is OK, replace the DCF board([JC92-02453A](#)).  
**(Refer to 3.3.33.1. DCF Main Board)**

▶ **Error Code**

H1-5330

▶ **Error message**

DCF Failure #H1-5330. Check internal DCF connection.

▶ **Symptom**

A communication error between the optional tray and the main machine has occurred.

▶ **Troubleshooting method**

- 1) Lift up and release the DCF unit from the machine.
- 2) Remove the Bracket Rear Cover after removing 5 screws.



- 3) Check if the interface connector is connected to the DCF board. If the interface connector(*JC39-01690A*) is defective, replace it.
- 4) If the problem persists, replace the DCF board.  
**(Refer to 3.3.33.1. DCF Main Board)**

**4.6.13. H2–xxxx (Inner Finisher error)**

<b>Error Code</b>	<b>Error Message</b>	<b>Troubleshooting Page</b>
H2-6144	Finisher is pulled out. Insert it properly	P.4-110
H2-6211	Finisher Failure: #H2-6211. Check finisher. Call for service if the problem persists	P.4-111
H2-6212	Finisher Failure: #H2-6212. Check finisher. Call for service if the problem persists	P.4-111
H2-6213	Finisher Failure: #H2-6213. Check finisher. Call for service if the problem persists	P.4-111
H2-6214	Finisher Failure: #H2-6214. Check finisher. Call for service if the problem persists	P.4-111
H2-6221	Finisher Failure: #H2-6221. Check finisher. Call for service if the problem persists	P.4-112
H2-6222	Finisher Failure: #H2-6222. Check finisher. Call for service if the problem persists	P.4-112
H2-6223	Finisher Failure: #H2-6223. Check finisher. Call for service if the problem persists	P.4-112
H2-6224	Finisher Failure: #H2-6224. Check finisher. Call for service if the problem persists	P.4-112
H2-6231	Finisher Failure: #H2-6231. Check finisher. Call for service if the problem persists	P.4-113
H2-6232	Finisher Failure: #H2-6232. Check finisher. Call for service if the problem persists	P.4-113
H2-6233	Finisher Failure: #H2-6233. Check finisher. Call for service if the problem persists	P.4-113
H2-6234	Finisher Failure: #H2-6234. Check finisher. Call for service if the problem persists	P.4-113
H2-6241	Finisher Failure: #H2-6241. Check finisher. Call for service if the problem persists	P.4-114
H2-6242	Finisher Failure: #H2-6242. Check finisher. Call for service if the problem persists	P.4-114
H2-6243	Finisher Failure: #H2-6243. Check finisher. Call for service if the problem persists	P.4-114
H2-6244	Finisher Failure: #H2-6244. Check finisher. Call for service if the problem persists	P.4-114
H2-6311	Finisher Failure: #H2-6311. Check finisher. Call for service if the problem persists	P.4-115
H2-6321	Finisher Failure: #H2-6321. Check finisher. Call for service if the problem persists	P.4-116
H2-6322	Finisher Failure: #H2-6322. Check finisher. Call for service if the problem persists	P.4-116
H2-6323	Finisher Failure: #H2-6323. Check finisher. Call for service if the problem persists	P.4-116
H2-6324	Finisher Failure: #H2-6324. Check finisher. Call for service if the problem persists	P.4-116
H2-6331	Finisher Failure: #H2-6331. Check finisher. Call for service if the problem persists	P.4-116

Error Code	Error Message	Troubleshooting Page
H2-6332	Finisher Failure: #H2-6332. Check finisher. Call for service if the problem persists	P.4-116
H2-6333	Finisher Failure: #H2-6333. Check finisher	P.4-116
H2-6334	Finisher Failure: #H2-6334. Check finisher. Call for service if the problem persists	P.4-116
H2-6411	Finisher Failure: #H2-6411. Check finisher	P.4-117
H2-6421	Finisher Failure: #H2-6421. Check finisher. Call for service if the problem persists	P.4-118
H2-6422	Finisher Failure: #H2-6422. Check finisher. Call for service if the problem persists	P.4-118
H2-6423	Finisher Failure: #H2-6423. Check finisher. Call for service if the problem persists	P.4-118
H2-6424	Finisher Failure: #H2-6424. Check finisher. Call for service if the problem persists	P.4-118
H2-6440	Hole punch hopper is not installed. Install hopper	P.4-119
H2-6452	Hole punch hopper is full. Remove waste of hopper	P.4-119
H2-6511	Finisher Failure: #H2-6511. Check finisher. Call for service if the problem persists	P.4-120
H2-6512	Finisher Failure: #H2-6512. Check finisher. Call for service if the problem persists	P.4-120
H2-6531	Finisher Failure: #H2-6531. Check finisher. Call for service if the problem persists	P.4-121
H2-6532	Finisher Failure: #H2-6532. Check finisher. Call for service if the problem persists	P.4-121
H2-6551	Finisher Failure: #H2-6551. Check finisher. Call for service if the problem persists	P.4-122
H2-6552	Finisher Failure: #H2-6552. Check finisher. Call for service if the problem persists	P.4-122
H2-6700	Paper jam in front of finisher (Display animation)	P.4-123
H2-6701	Paper jam inside of finisher (Display animation)	P.4-123
H2-6702	Paper jam inside of finisher (Display animation)	P.4-123
H2-6703	Paper jam inside of finisher (Display animation)	P.4-123
H2-6704	Paper jam at exit of finisher (Display animation)	P.4-123
H2-6705	Paper jam at exit of finisher (Display animation)	P.4-123
H2-6706	Finisher Failure: #H2-6706. Check finisher	P.4-124
H2-6707	Finisher Failure: #H2-6707. Check finisher	P.4-125
H2-6708	Finisher Failure: #H2-6708. Check finisher	P.4-125
H2-6709	Finisher Failure: #H2-6709. Check finisher	P.4-125
H2-6710	Finisher Failure: #H2-6710. Check finisher	P.4-125
H2-6711	Finisher Failure: #H2-6711. Check finisher	P.4-126
H2-6712	Finisher Failure: #H2-6712. Check finisher	P.4-126
H2-6713	Finisher Failure: #H2-6713. Check finisher	P.4-126
H2-6714	Finisher Failure: #H2-6714. Check finisher	P.4-126
H2-6715	Finisher Failure: #H2-6715. Check finisher	P.4-127

#### 4. Troubleshooting

Error Code	Error Message	Troubleshooting Page
H2-6716	Finisher Failure: #H2-6716. Check finisher	P.4-127
H2-6717	Finisher Failure: #H2-6717. Check finisher	P.4-127
H2-6718	Finisher Failure: #H2-6718. Check finisher	P.4-127
H2-6719	Finisher Failure: #H2-6719. Check finisher	P.4-128
H2-6720	Finisher Failure: #H2-6720. Check finisher	P.4-128
H2-6721	Finisher Failure: #H2-6721. Check finisher	P.4-128
H2-6722	Finisher Failure: #H2-6722. Check finisher	P.4-128
H2-6723	Finisher Failure: #H2-6723. Check finisher	P.4-129
H2-6724	Finisher Failure: #H2-6724. Check finisher	P.4-130
H2-6725	Finisher Failure: #H2-6725. Check finisher	P.4-130
H2-6726	Finisher stapler door is open. Close it (Display animation)	P.4-131
H2-6727	Finisher jam door is open. Close it (Display animation)	P.4-131
H2-6728	Finisher Failure: #H2-6728. Check finisher	P.4-132
H2-6729	Finisher Failure: #H2-6729. Check finisher	P.4-132
H2-6730	Finisher Failure: #H2-6730. Check finisher	P.4-132
H2-6731	Finisher Failure: #H2-6731. Check finisher	P.4-132
H2-6732	Staple cartridge is low. Replace it	P.4-133
H2-6733	Staple cartridge is empty. Replace it	P.4-133
H2-6734	Finisher Failure: #H2-6734. Check finisher	P.4-134
H2-6735	Too much paper in finisher stacker. Remove printed paper	P.4-135
H2-6736	Finisher Failure: #H2-6736. Check finisher	P.4-136
H2-6737	Finisher Failure: #H2-6737. Check finisher	P.4-136
H2-6738	Finisher Failure: #H2-6738. Check finisher	P.4-136
H2-6739	Finisher Failure: #H2-6739. Check finisher	P.4-136
H2-6740	Finisher Failure: #H2-6740. Check finisher	P.4-137
H2-6741	Finisher Failure: #H2-6741. Check finisher	P.4-137
H2-6742	Finisher Failure: #H2-6742. Check finisher	P.4-137
H2-6743	Finisher Failure: #H2-6743. Check finisher	P.4-137
H2-6744	Staple cartridge not install. Install it	P.4-138
H2-6A50	Finisher Failure: #H2-6A50. Check finisher	P.4-139
H2-6A63	Staple cartridge is empty. Replace it	P.4-139



▶ **Error Code**

H2-6144

▶ **Error message**

Finisher is pulled out. Insert it properly

▶ **Symptom**

Finisher is pulled out. / Finisher is not installed correctly.

▶ **Troubleshooting method**

- 1) Check if the finisher cable is connected to the copier.
- 2) Remove and reinstall the finisher.
- 3) If the problem persists, replace the finisher main board.

► **Error Code**

H2-6211 / H2-6212 / H2-6213 / H2-6214

► **Error message**

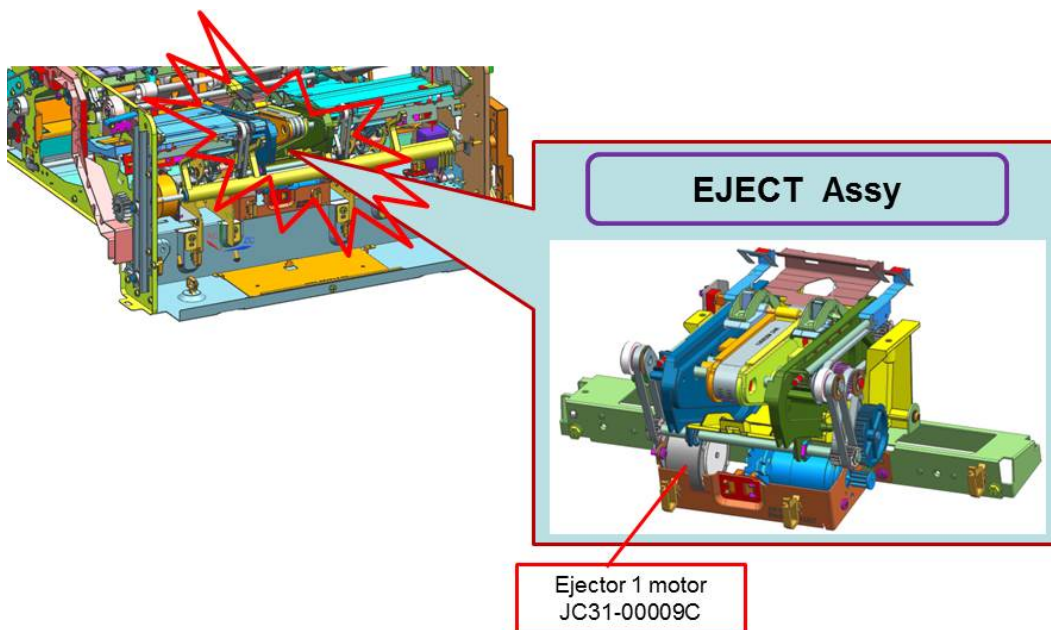
Finisher Failure: #H2-621x. Check finisher. Call for service if the problem persists

► **Symptom**

- Ejector1 failed to leave home position during initializing. (H2-6211)
- Ejector1 failed to reach home position during initializing. (H2-6212)
- Ejector1 failed to leave home position during printing job. (H2-6213)
- Ejector1 failed to reach home position during printing job. (H2-6214)

► **Troubleshooting method**

- 1) If there is jammed paper on the paper path, removing paper manually. Open and close finisher stapler door or jam cover to check if finisher executes initialization process. If component still doesn't go back to home position and error does not disappear, follow the instructions below :
- 2) Does finisher Ejector1 Assembly work well?
  - a) Make sure finisher input sensor cable is connected well to the sensor connector.
  - b) Make sure finisher input sensor cable is connected well to the main board connector.
  - c) Remove the cover.
  - d) Disassemble related parts.
  - e) Check the sensor position and harness condition.
  - f) Check sensor plug and encoder condition.
- 3) Does finisher Ejector1 gear set work well?
  - a) Make sure gear set can rotate smoothly.
  - b) Make sure each gear is not broken.
  - c) Replace the gear set.
- 4) Does finisher Ejector1 motor work well?
  - a) Check the Ejector 1 motor belt.
  - b) Replace Ejector 1 Motor.



► **Error Code**

H2-6221 / H2-6222 / H2-6223 / H2-6224

► **Error message**

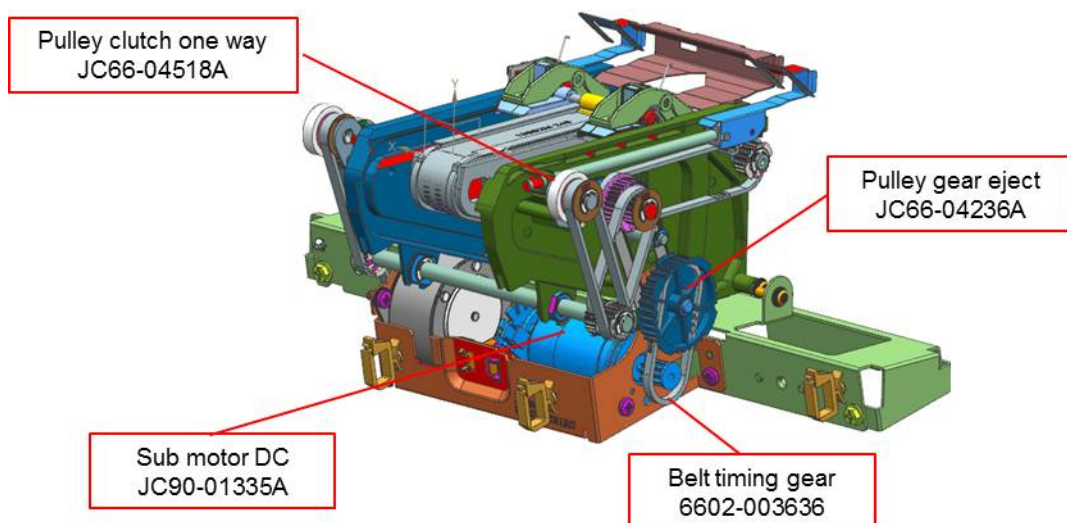
Finisher Failure: #H2-622x. Check finisher. Call for service if the problem persists

► **Symptom**

Ejector2 failed to leave home position during initializing. (H2-6221)  
 Ejector2 failed to reach home position during initializing. (H2-6222)  
 Ejector2 failed to leave home position during printing job. (H2-6223)  
 Ejector2 failed to reach home position during printing job. (H2-6224)

► **Troubleshooting method**

- 1) If there is jammed paper on the paper path, removing paper manually. Open and close finisher stapler door or jam cover to check if finisher executes initialization process. If component still doesn't go back to home position and error does not disappear, follow the instructions below:
- 2) Does finisher Ejector2 Assembly work well?
  - a) Make sure finisher input sensor cable is connected well to the sensor connector.
  - b) Make sure finisher input sensor cable is connected well to the main board connector.
  - c) Cover Remove.
  - d) Disassemble related parts.
  - e) Check the sensor position and harness condition.
  - f) Check sensor plug and encoder condition.
- 3) Does finisher Ejector2 gear set work well?
  - a) Make sure gear set can rotate smoothly.
  - b) Make sure each gear is not broken.
  - c) Replace the gear set. ([JC66-04236A](#) / [JC66-04518A](#))
- 4) Does finisher Ejector2 motor work well?
  - a) Check the Ejector 2 motor belt ([6602-003636](#)).
  - b) Replace Ejector2 Motor ([JC90-01335A](#)).



- 5) Check if any debris existed. Please make sure to remove any debris.

► **Error Code**

H2-6231 / H2-6232 / H2-6233 / H2-6234

► **Error message**

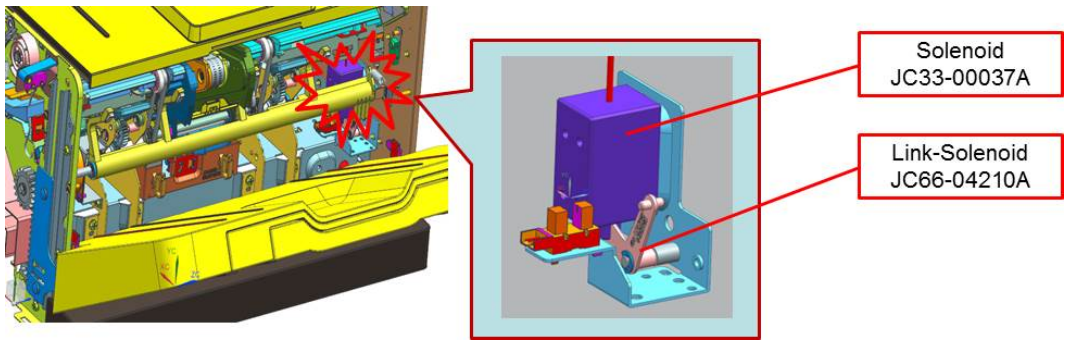
Finisher Failure: #H2-623x. Check finisher. Call for service if the problem persists

► **Symptom**

- Paper Holding Lever failed to leave home position during initializing. (H2-6231)
- Paper Holding Lever failed to reach home position during initializing. (H2-6232)
- Paper Holding Lever failed to leave home position during printing. (H2-6233)
- Paper Holding Lever failed to reach home position during printing. (H2-6234)

► **Troubleshooting method**

- 1) If there is jammed paper on the path, removing paper manually. Open and close finisher stapler door or jam cover to check if finisher executes initialization process. If Paper Holding Lever still doesn't go back to home position and error does not disappear, follow the instructions below :
- 2) Does finisher input sensor (Standby & Home sensor) work well?
  - a) Make sure finisher input sensor cable is connected well to the sensor connector.
  - b) Make sure finisher input sensor cable is connected well to the main board connector.
  - c) Replace the finisher input sensor.
  - d) Replace the finisher main board.
- 3) Does finisher Paper Holding Lever work well?
  - a) Make sure finisher Paper Holding Lever cable is connected well to the Solenoid connector.
  - b) Make sure finisher Paper Holding Lever cable is connected well to the main board connector.
  - c) Check the Paper Holding Lever Solenoid. If you need, replace the solenoid.
  - d) Check the paper holder return spring. If you need, replace the spring([JC61-07269A](#)).



- 4) Check if any debris existed. Please make sure to remove any debris.

► **Error Code**

H2-6241 / H2-6242 / H2-6243 / H2-6244

► **Error message**

Finisher Failure: #H2-624x. Check finisher. Call for service if the problem persists

► **Symptom**

Paper Support failed to leave home during initializing. (H2-6241)

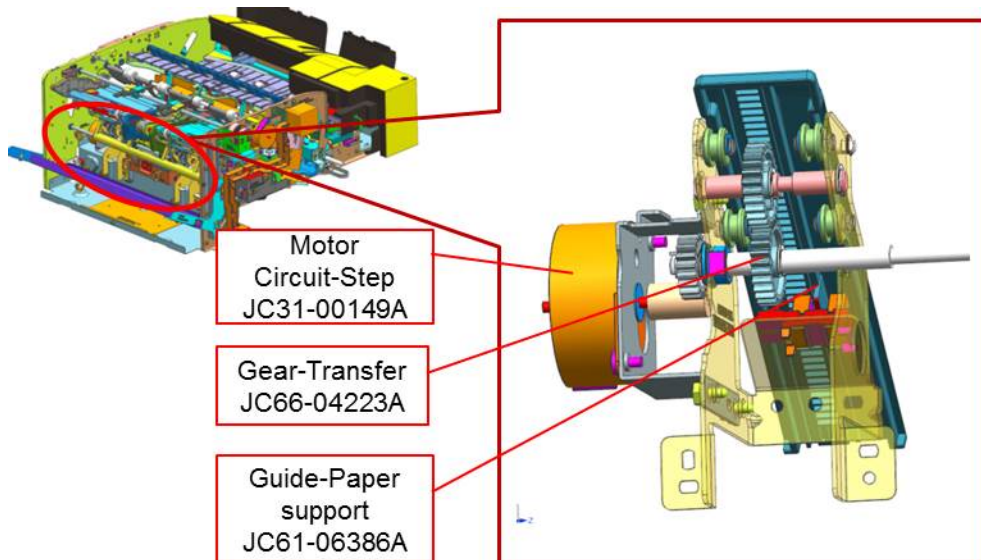
Paper Support failed to reach home during initializing. (H2-6242)

Paper Support failed to leave home during printing. (H2-6243)

Paper Support failed to reach home during printing. (H2-6244)

► **Troubleshooting method**

- 1) If there is jammed paper on the path, removing paper manually. Open and close finisher stapler door or jam cover to check if finisher executes initialization process. If Paper Support still doesn't go back to home position and error does not disappear, follow the instructions below :
- 2) Does paper support interrupt sensor work well?
  - a) Make sure interrupt sensor cable is connected well to the sensor connector.
  - b) Make sure interrupt sensor cable is connected well to the main board connector.
  - c) Check the paper support's sensor plug.
  - d) If you need, replace the interrupt sensor.
- 3) Does finisher Paper Support motor gear set work well?
  - a) Make sure gear set can rotate smoothly.
  - b) Make sure each gear is not broken.
  - c) Replace the gear set.



- 4) Check if any debris existed. Please make sure to remove any debris.

► **Error Code**

H2-6311

► **Error message**

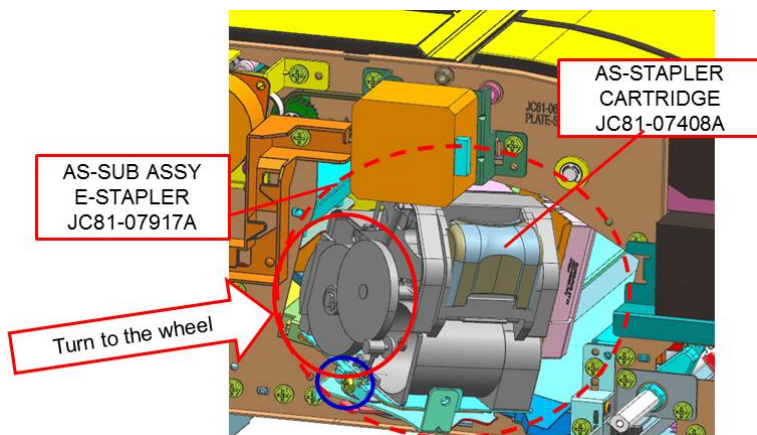
Finisher Failure: #H2-6311. Check finisher. Call for service if the problem persists

► **Symptom**

Stapler failed to return home position after stapling.

► **Troubleshooting method**

- 1) If there is jammed paper on the stapler, removing paper manually. Open and close finisher stapler door or jam cover to check if finisher executes initialization process. If stapler still doesn't go back to home position and error does not disappear, follow the instructions below :
- 2) Does finisher stapler cartridge can be pulled out?
  - a) Rotate stapler gear manually to move stapler head back to home (top) position.
  - b) Clear staple that is not stapling out completely from stapler cartridge.
  - c) Clear staple that is existed inside stapler.
  - d) Stapler cover or Jam cover open and close.( It's the Finisher Initializing)
- 3) Does finisher stapler input sensor work well?
  - a) Make sure finisher input sensor cable is connected well to the sensor connector.
  - b) Make sure finisher input sensor cable is connected well to the main board connector.
  - c) Replace the finisher stapler(JC81-07917A).
  - d) Replace the finisher main board.
- 4) Does finisher stapler motor work well?
  - a) Make sure finisher stapler motor cable is connected well to the stapler motor connector.
  - b) Make sure finisher stapler motor cable is connected well to the main board connector.
  - c) Replace the finisher stapler. (JC81-07917A)
  - d) Replace the finisher main board.



- 5) Check if any debris(staple) existed. Please make sure to remove any debris.

► **Error Code**

H2-6321 / H2-6322 / H2-6323 / H2-6324 / H2-6331 / H2-6332 / H2-6333 / H2-6334

► **Error message**

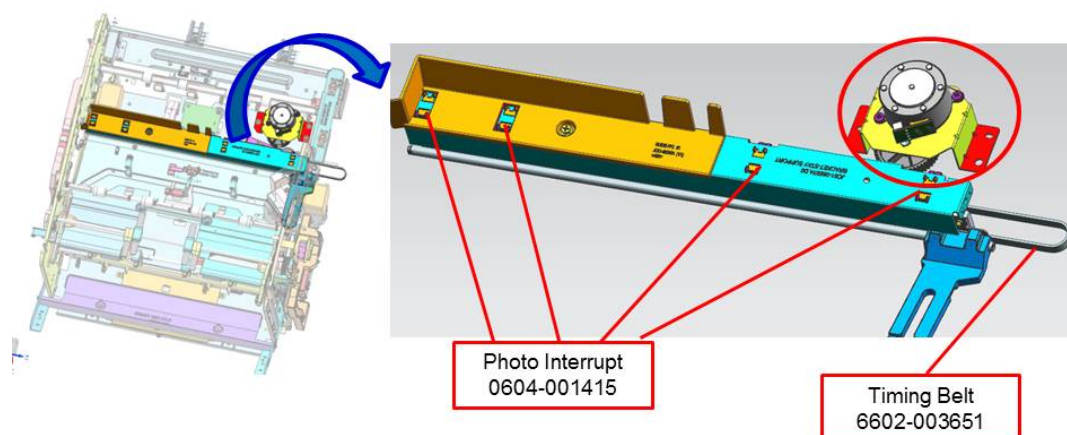
Finisher Failure: #H2-63xx. Check finisher. Call for service if the problem persists

► **Symptom**

Stapler Traverse failed to leave front home position during initializing. (H2-6321)  
 Stapler Traverse failed to reach front home position during initializing. (H2-6322)  
 Stapler Traverse failed to leave front home position during printing. (H2-6323)  
 Stapler Traverse failed to reach front home position during printing. (H2-6324)  
 Stapler Traverse failed to leave rear home position during initializing. (H2-6331)  
 Stapler Traverse failed to reach rear home position during initializing. (H2-6332)  
 Stapler Traverse failed to leave rear home position during printing. (H2-6333)  
 Stapler Traverse failed to reach rear home position during printing. (H2-6334)

► **Troubleshooting method**

- 1) If there is jammed paper on the path, removing paper manually. Open and close finisher stapler door or jam cover to check if finisher executes initialization process. If Stapler traverse still doesn't go back to home position and error does not disappear, follow the instructions below:
- 2) Does traverse interrupt sensor (Standby & Home sensor) work well?
  - a) Does traverse interrupt sensor (Standby & Home sensor) work well?
    - i) Make sure finisher input sensor cable is connected well to the sensor connector.
    - ii) Make sure finisher input sensor cable is connected well to the main board connector.
    - iii) Replace the finisher input sensor.
    - iv) Replace the finisher main board.
  - b) Does finisher Stapler traverse work well?
    - i) Make sure Stapler traverse cable is connected well to the Motor connector.
    - ii) Make sure finisher Stapler traverse cable is connected well to the main board connector.
    - iii) Make sure the belt is tight on the correct position, if it has the belt.
    - iv) Make sure gear set. If you can see the broken gear, replace the gear.
    - v) Check the traverse motor, If you need, replace the stapler traverse motor.



- c) Check if any debris existed. Please make sure to remove any debris.

▶ **Error Code**

H2-6411

▶ **Error message**

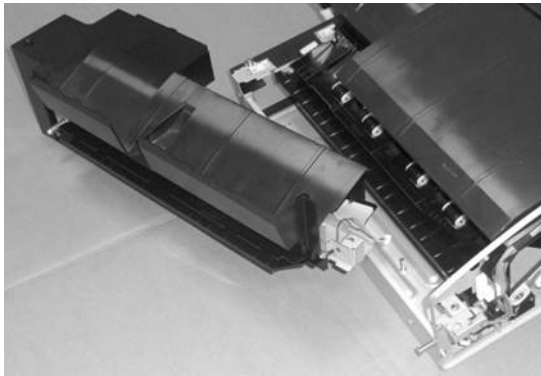
Finisher Failure: #H2-6411. Check finisher. Call for service if the problem persists

▶ **Symptom**

Punch unit failed to return home position after punching job.

▶ **Troubleshooting method**

- 1) If there is jammed paper on the path, removing paper manually. Open and close finisher stapler door or jam cover to check if finisher executes initialization process. If punch hopper still doesn't go back to home position and error does not disappear, follow the instructions below:
- 2) Does finisher Punch work well?
  - a) Clear Hole Punch Hopper
  - b) Stapler cover or Jam cover open and close.( It's the Finisher Initializing)
  - c) If fault persists, power Off/Power On.
  - d) If necessary, replace the punch unit.



- 3) Check if any debris existed. Please make sure to remove any debris.



**► Error Code**

H2-6421 / H2-6422 / H2-6423 / H2-6424

**► Error message**

Finisher Failure: #H2-64xx. Check finisher. Call for service if the problem persists

**► Symptom**

Punch unit failed to leave home position during initializing. (H2-6421)

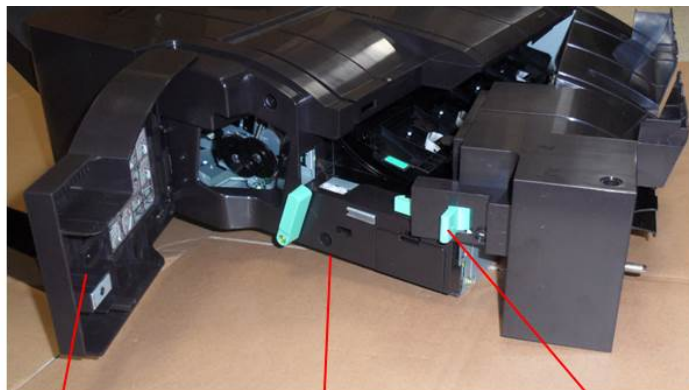
Punch unit failed to reach home position during initializing. (H2-6422)

Punch unit failed to leave home position during printing. (H2-6423)

Punch unit failed to reach home position during printing. (H2-6424)

**► Troubleshooting method**

- 1) If there is jammed paper on the paper path, removing paper manually. Open and close finisher stapler door or jam cover to check if finisher executes initialization process. If punch still doesn't go back to home position and error does not disappear, follow the instructions below :
- 2) Does punch interrupt sensor work well?
  - a) Make sure finisher input sensor cable is connected well to the sensor connector.
  - b) Make sure finisher input sensor cable is connected well to the main board connector.
  - c) Check the punch interrupt sensor position.
  - d) Check the punch motor's encoder position.
  - e) If the punch does not move, change the punch module.

Jam Door  
JC61-06484ARemove jam  
paper by handsLatch  
JC61-06484A

- 3) Check if any debris existed. Please make sure to remove any debris.

### ▶ Error Code

H2-6440

H2-6452

### ▶ Error message

Hole punch hopper is not installed. Install hopper.

Hole punch hopper is full. Remove waste of hopper.

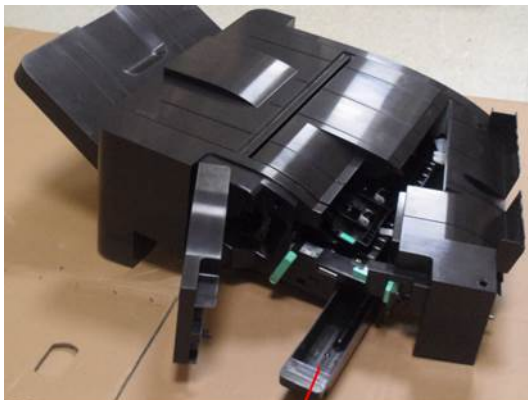
### ▶ Symptom

Hole punch hopper is not installed correctly. (H2-6440)

Hole punch hopper is full. (H2-6452)

### ▶ Troubleshooting method

- 1) If punch dust box is full, removing dust manually. Open and close finisher stapler door or jam cover to check if finisher executes initialization process. If error does not disappear, follow the instructions below :
- 2) Does punch interrupt sensor work well?
  - a) Make sure hopper's sensor cable is connected well to the sensor connector.
  - b) Make sure hopper's sensor cable is connected well to the main board connector.
  - c) Check the interrupt sensor position.
  - d) Check the hopper's plug position.



Dust box  
JC61-06484A

- 3) Check if any debris existed. Please make sure to remove any debris.

► **Error Code**

H2-6511 / H2-6512

► **Error message**

Finisher Failure: #H2-651x. Check finisher. Call for service if the problem persists

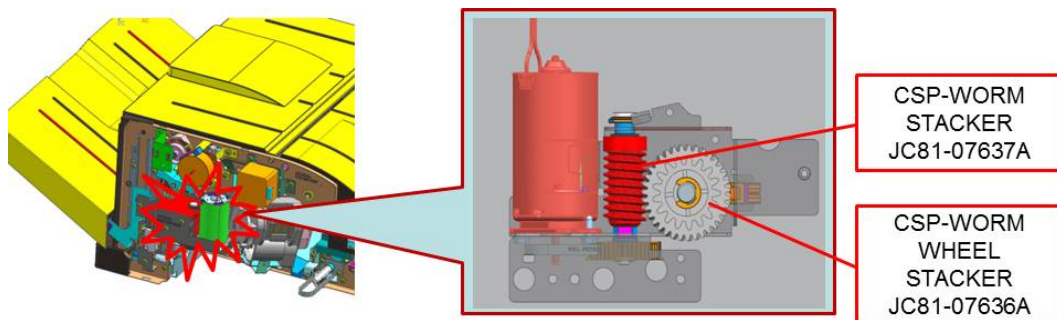
► **Symptom**

Stacker Motor fault has occurred during initializing. (H2-6511)

Stacker Motor Fault has occurred during printing. (H2-6512)

► **Troubleshooting method**

- 1) If there is jammed paper on the Main Tray, removing paper manually. Open and close finisher stapler door or jam cover to check if finisher executes initialization process. If Main Tray still doesn't go back to home position and error does not disappear, follow the instructions below:
- 2) Does main tray position sensor work well?
  - a) Make sure main tray position sensor cable is connected well to the sensor connector.
  - b) Make sure main tray position sensor cable is connected well to the main board connector.
  - c) Check the main tray position sensor.
  - d) Check the finisher main board.
- 3) Does finisher Main Tray motor(Stacker motor) work well?
  - a) Make sure finisher Main Tray motor cable is connected well to the motor connector.
  - b) Make sure finisher Main Tray motor cable is connected well to the main board connector.
  - c) Replace the finisher Main Tray motor.
  - d) If you need, replace the finisher main board.
- 4) Does finisher Main Tray motor gear set work well?
  - a) Make sure gear set can rotate smoothly.
  - b) Make sure each gear is not broken.
  - c) Replace the gear set. (*JC81-07637A / JC81-07636A*)



- 5) Check if any debris existed. Please make sure to remove any debris.

► **Error Code**

H2-6531 / H2-6532

► **Error message**

Finisher Failure: #H2-653x. Check finisher. Call for service if the problem persists

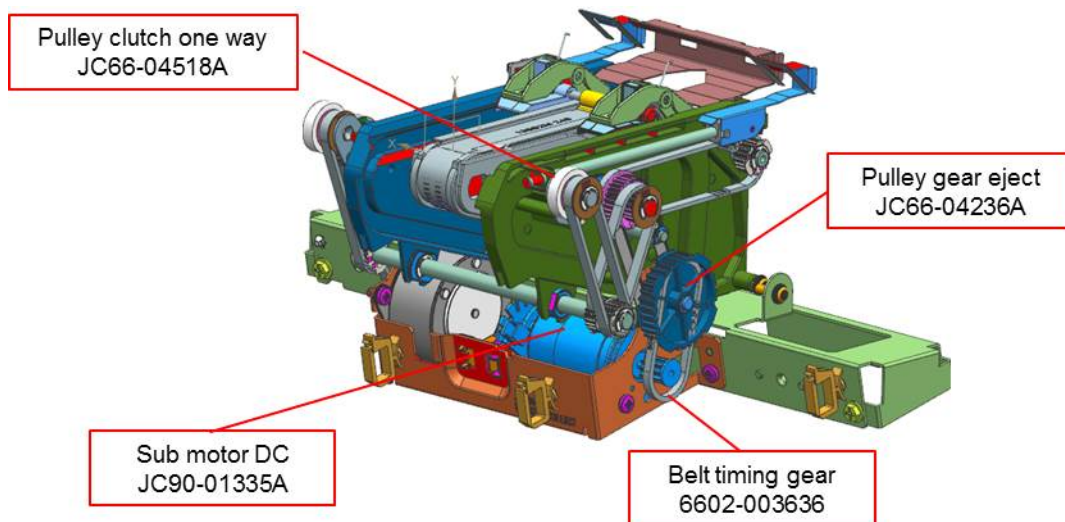
► **Symptom**

Ejector2 motor does not work during Initializing. (H2-6531)

Ejector2 motor does not work during printing. (H2-6532)

► **Troubleshooting method**

- 1) If there is jammed paper on the paper path, removing paper manually. Open and close finisher stapler door or jam cover to check if finisher executes initialization process. If component still doesn't go back to home position and error does not disappear, follow the instructions below:
- 2) Does finisher Ejector2 Assemble work well?
  - a) Make sure finisher input sensor cable is connected well to the sensor connector.
  - b) Make sure finisher input sensor cable is connected well to the main board connector.
  - c) Remove the cover.
  - d) Disassemble related parts.
  - e) Check the sensor position and harness condition.
  - f) Check sensor plug and encoder condition.
- 3) Does finisher Ejector2 gear set work well?
  - a) Make sure gear set can rotate smoothly.
  - b) Make sure each gear is not broken.
  - c) Replace the gear set (*JC66-04236A / JC66-04518A*)
- 4) Does finisher Ejector2 motor work well?
  - a) Check the Ejector 2 motor belt. (*6602-003636*)
  - b) Replace Ejector2 motor. (*JC90-01335A*)



- 5) Check if any debris existed. Please make sure to remove any debris.

**▶ Error Code**

H2-6551 / H2-6552

**▶ Error message**

Finisher Failure: #H2-655x. Check finisher. Call for service if the problem persists

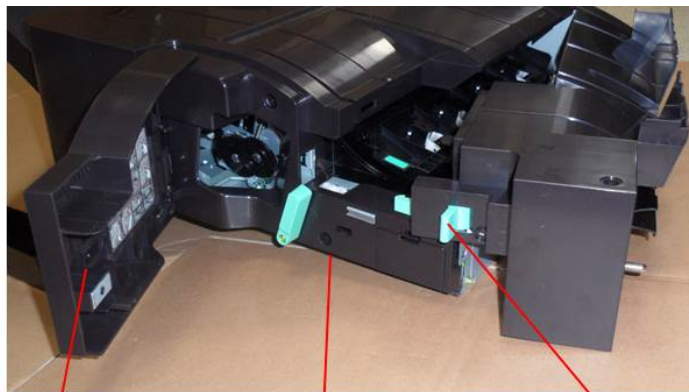
**▶ Symptom**

Punch motor does not work during Initializing. (H2-6551)

Punch motor does not work during printing. (H2-6552).

**▶ Troubleshooting method**

- 1) If there is jammed paper on the paper path, removing paper manually. Open and close finisher stapler door or jam cover to check if finisher executes initialization process. If punch still doesn't go back to home position and error does not disappear, follow the instructions below:
- 2) Does punch interrupt sensor work well?
  - a) Make sure finisher input sensor cable is connected well to the sensor connector.
  - b) Make sure finisher input sensor cable is connected well to the main board connector.
  - c) Check the punch interrupt sensor position.
  - d) Check the punch motor's encoder position.
  - e) If the punch does not move, change the punch module.



Jam Door  
JC61-06484A

Remove jam  
paper by hands

Latch  
JC61-06484A

- 3) Check if any debris existed. Please make sure to remove any debris.

### ► Error Code

H2-6700 / H2-6701 / H2-6702 / H2-6703 / H2-6704 / H2-6705

### ► Error message

Paper jam in front of finisher

Paper jam inside of finisher

Paper jam at exit of finisher

### ► Symptom

Sheet's lead edge failed to pass entrance position. (H2-6700)

Sheet's tail edge failed to pass entrance position. (H2-6701)

Jam Is not cleared on entrance sensor during initializing. (H2-6702)

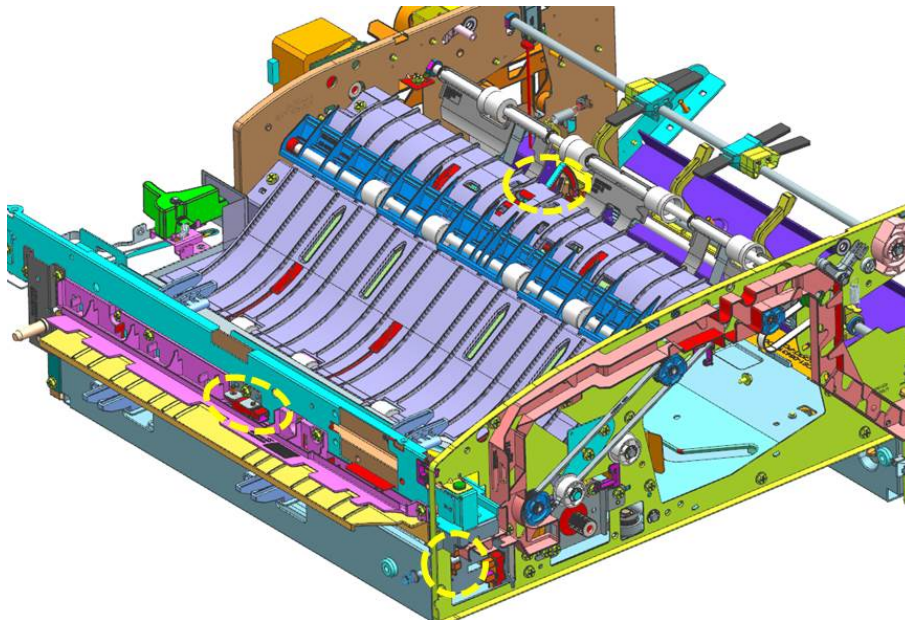
Sheet failed to reach finisher Passthrough sensor. (H2-6703)

Sheet failed to pass finisher Passthrough sensor. (H2-6704)

Jam Is not cleared on Passthrough sensor during initializing. (H2-6705)

### ► Troubleshooting method

- 1) Open finisher jam cover, and make sure that the paper is on the paper path. If there is paper, removing paper manually. If the error does not disappear even after removing paper and closing finisher jam door, follow the instructions below:
- 2) Does finisher input sensor work well?
  - a) Make sure finisher input sensor cable is connected well to the sensor connector.
  - b) Make sure finisher input sensor cable is connected well to the main board connector.
  - c) Replace the finisher input sensor. ([0604-001381](#) / [0604-001415](#))
  - d) Replace the finisher main board. ([JC92-02774A](#))



- 3) Check if any debris existed. Please make sure to remove any debris.

**▶ Error Code****H2-6706****▶ Error message****Finisher Failure: #H2-6706. Check finisher****▶ Symptom**

Transport motor does not work during Initializing.

**▶ Troubleshooting method**

- 1) If there is jammed paper on the paper path, removing paper manually. Open and close finisher stapler door or jam cover to check if finisher executes initialization process. If component still doesn't go back to home position and error does not disappear, follow the instructions below:
- 2) Does the transport motor work well?
  - a) Make sure transport motor cable is connected well to the motor connector.
  - b) Make sure transport motor cable is connected well to the finisher main board.
  - c) Replace the transport motor.
  - d) Replace the finisher main board.

► **Error Code**

H2-6707 / H2-6708 / H2-6709 / H2-6710

► **Error message**

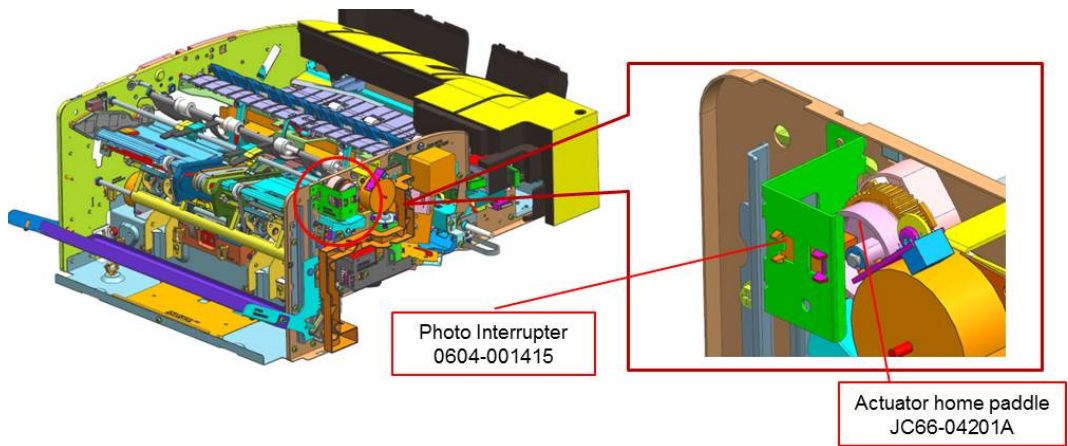
Finisher Failure: #H2-67xx. Check finisher

► **Symptom**

- Paddle unit failed to leave home position during initializing. (H2-6707)
- Paddle unit failed to reach home position during initializing. (H2-6708)
- Paddle unit failed to leave home position during printing. (H2-6709)
- Paddle unit failed to reach home position during printing. (H2-6710)

► **Troubleshooting method**

- 1) If there is jammed paper on the paper path, removing paper manually. Open and close finisher stapler door or jam cover to check if finisher executes initialization process. If component still doesn't go back to home position and error does not disappear, follow the instructions below:
- 2) Does the paddle home sensor work well?
  - a) Make sure the paddle home sensor cable is connected well to the sensor connector.
  - b) Make sure the paddle home sensor cable is connected well to the main board connector.
  - c) Check the paddle home sensor.
  - d) Check the actuator home paddle.
  - e) If necessary, replace the finisher main board.
- 3) Does the main paddle motor work well?
  - a) Make sure the main paddle motor cable is connected well to the motor connector.
  - b) Make sure the main paddle motor cable is connected well to the main board connector.
  - c) Replace the main paddle motor.





► **Error Code**

H2-6711 / H2-6712 / H2-6713 / H2-6714

► **Error message**

Finisher Failure: #H2-67xx. Check finisher.

► **Symptom**

Ejector unit failed to leave home position during initializing. (H2-6711)

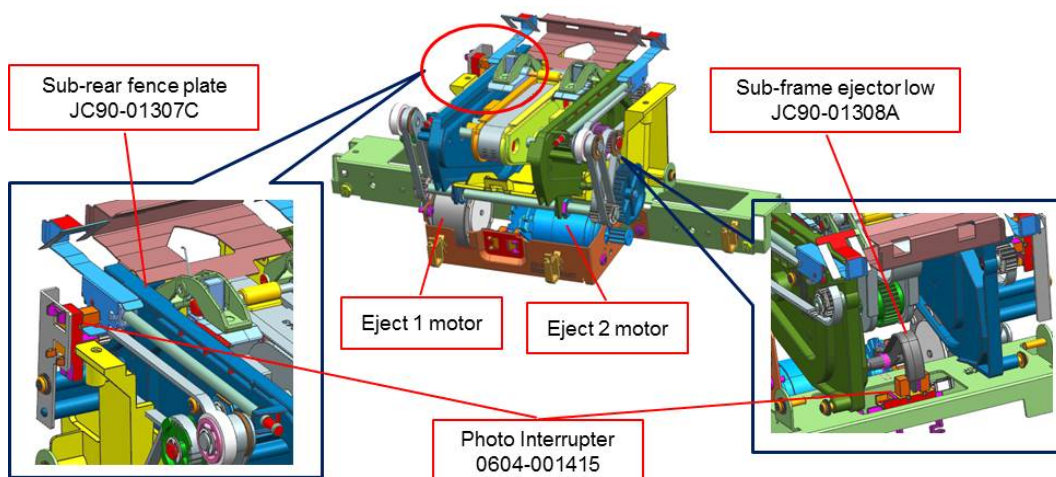
Ejector unit failed to reach home position during initializing. (H2-6712)

Ejector unit failed to leave home position during printing. (H2-6713)

Ejector unit failed to reach home position during printing. (H2-6714)

► **Troubleshooting method**

- 1) If there is jammed paper on the paper path, removing paper manually. Open and close finisher stapler door or jam cover to check if finisher executes initialization process. If component still doesn't go back to home position and error does not disappear, follow the instructions below:
- 2) Does the eject 1,2 motor work well?
  - a) Make sure the eject 1,2 motor cable is connected well to the motor connector.
  - b) Make sure the eject 1,2 motor cable is connected well to the main board connector.
  - c) Replace the eject 1,2 motor. ([JC31-00009C](#) / [JC90-01335A](#))
  - d) Replace the finisher main board.
- 3) Does the Eject-sub Assy component parts work well?
  - a) Make sure component parts can move or rotate smoothly.
  - b) Make sure there is no any mechanical interference to stop moving or rotating.
  - c) Make sure the belt is tight on the correct position, if it has the belt.
  - d) Make sure each gear is not broken.
  - e) Check home position sensor.
  - f) Replace the Eject-sub Assy.



### ► Error Code

H2-6715 / H2-6716 / H2-6717 / H2-6718

### ► Error message

Finisher Failure: #H2-67xx. Check finisher

### ► Symptom

Rear tamper unit failed to leave home position during initializing. (H2-6715)

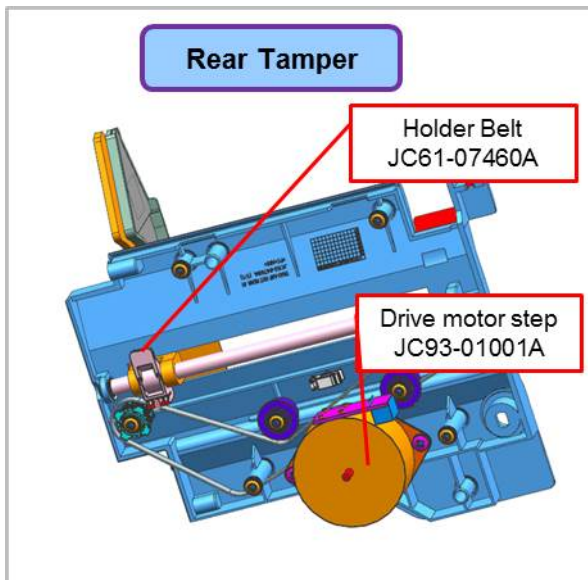
Rear tamper unit failed to reach home position during initializing. (H2-6716)

Rear tamper unit failed to leave home position during printing. (H2-6717)

Rear tamper unit failed to reach home position during printing. (H2-6718)

### ► Troubleshooting method

- 1) If there is jammed paper on the paper path, removing paper manually. Open and close finisher stapler door or jam cover to check if finisher executes initialization process. If component still doesn't go back to home position and error does not disappear, follow the instructions below:
- 2) Does the rear jogger home sensor work well?
  - a) Make sure the sensor harness is connected well to the rear jogger home sensor.
  - b) Make sure the sensor harness is connected well to the finisher main board.
  - c) Replace the rear jogger home sensor.
  - d) Replace the finisher main board.
- 3) Does the rear jogger motor work well?
  - a) Make sure the rear jogger motor cable is connected well to the motor connector.
  - b) Make sure the rear jogger motor cable is connected well to the finisher main board.
  - c) Replace the rear jogger motor.
  - d) Replace the finisher main board.



► **Error Code**

H2-6719 / H2-6720 / H2-6721 / H2-6722

► **Error message**

Finisher Failure: #H2-67xx. Check finisher

► **Symptom**

Front tamper unit failed to leave home position during initializing. (H2-6719)

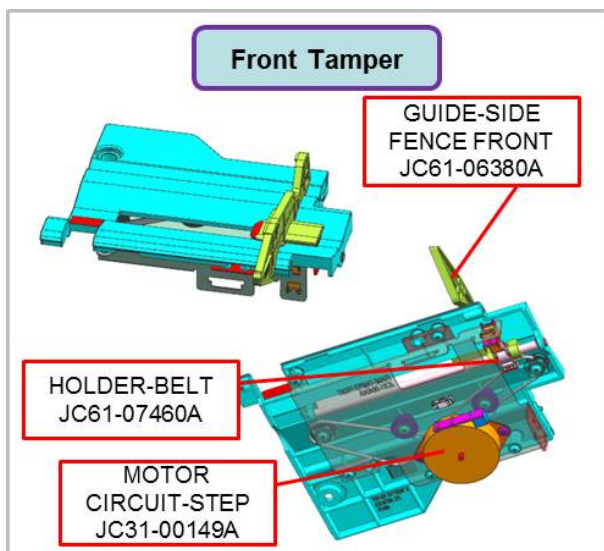
Front tamper unit failed to reach home position during initializing. (H2-6720)

Front tamper unit failed to leave home position during printing. (H2-6721)

Front tamper unit failed to reach home position during printing. (H2-6722)

► **Troubleshooting method**

- 1) If there is jammed paper on the paper path, removing paper manually. Open and close finisher stapler door or jam cover to check if finisher executes initialization process. If component still doesn't go back to home position and error does not disappear, follow the instructions below:
- 2) Does the front jogger home sensor work well?
  - a) Make sure the sensor harness is connected well to the front jogger home sensor.
  - b) Make sure the sensor harness is connected well to the finisher main board.
  - c) Replace the front jogger home sensor.
  - d) Replace the finisher main board.
- 3) Does the front jogger motor work well?
  - a) Make sure the front jogger motor cable is connected well to the motor connector.
  - b) Make sure the front jogger motor cable is connected well to the finisher main board.
  - c) Replace the front jogger motor.
  - d) Replace the finisher main board.



▶ **Error Code**

H2-6723

▶ **Error message**

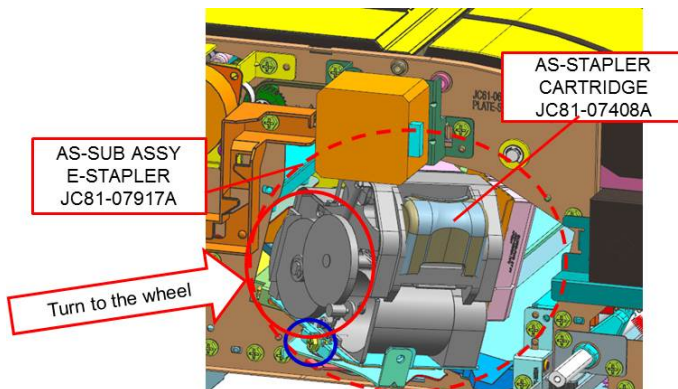
Finisher Failure: #H2-6A63. Check finisher.

▶ **Symptom**

Staple unit can not work stapling because paper is too thick.

▶ **Troubleshooting method**

- 1) Check the paper specification for stapling. If it is not proper, replace the paper.
- 2) Check the staple unit. If necessary, replace it.



**▶ Error Code**

H2-6724

H2-6725

**▶ Error message**

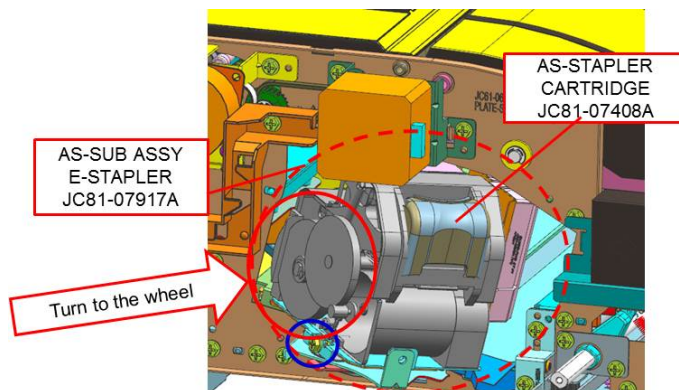
Finisher Failure: #H2-672x. Check finisher.

**▶ Symptom**

Paper can not be moved to stapling position.

**▶ Troubleshooting method**

- 1) Remove and reassemble the stapler unit.
- 2) Check the stapler unit. If necessary, replace it.



► **Error Code**

H2-6726

H2-6727

► **Error message**

Finisher Stapler door is open. Close it

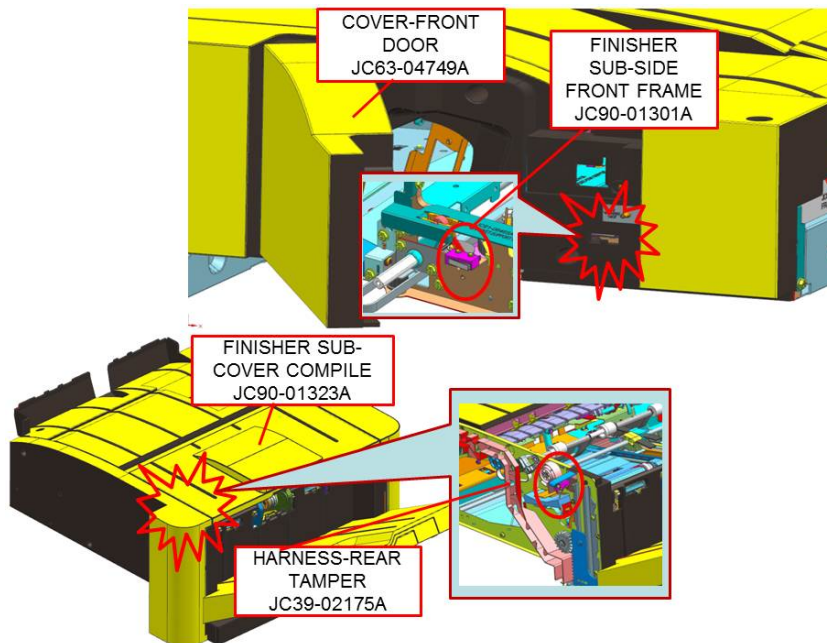
Finisher Top door is open. Close it

► **Symptom**

Finisher door is not closed.

► **Troubleshooting method**

- 1) Close door to do finisher initialization. If error does not disappear, follow the instructions below :
- 2) Does finisher door cover can close well?
  - a) The finisher door cover itself can be closed well.
  - b) The both of the finisher door covers can push door open sensor switch well.
  - c) The finisher door open sensor switch can be pushed well.
  - d) Replace finisher cover door or switch.
- 3) Does finisher input sensor work well?
  - a) Make sure finisher input sensor cable is connected well to the sensor connector.
  - b) Make sure finisher input sensor cable is connected well to the main board connector.
  - c) Replace the finisher input sensor(*JC90-01301A*).
  - d) Replace the finisher main board(*JC92-02774A*).



► **Error Code**

H2-6728 / H2-6729 / H2-6730 / H2-6731

► **Error message**

Finisher Failure: #H2-67xx. Check finisher.

► **Symptom**

Stapler failed to leave home position during Stapling. (H2-6728)

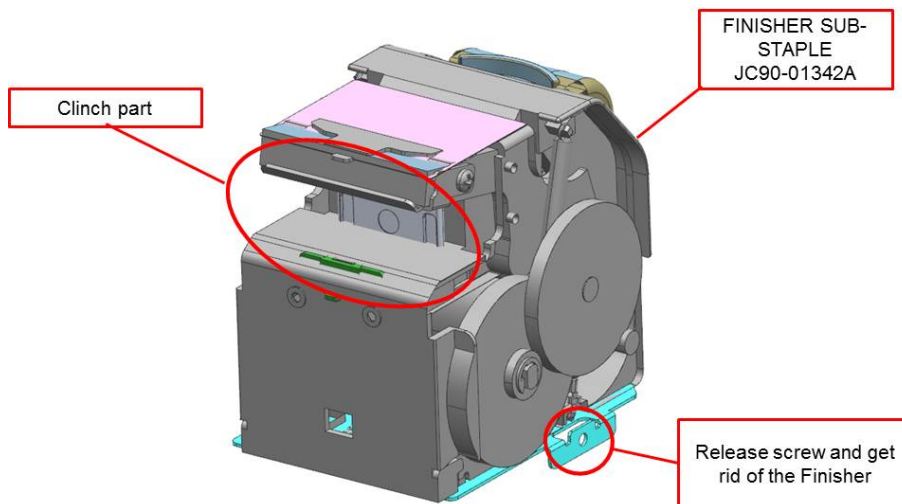
Stapler failed to reach home position during Stapling. (H2-6729)

Stapler failed to leave home position during Self-Priming. (H2-6730)

Stapler failed to reach home position during Self-Priming. (H2-6731)

► **Troubleshooting method**

- 1) If there is jammed paper on the stapler, removing paper manually. Open and close finisher stapler door or jam cover to check if finisher executes initialization process. If stapler still doesn't go back to home position and error does not disappear, follow the instructions below :
- 2) Does finisher stapler move well?
  - a) Make sure stapler moving motor cable is connected well to the stapler motor connector.
  - b) Make sure stapler moving motor cable is connected well to the main board connector.
  - c) Check the sensor position and harness condition.
  - d) Check the sensor plug or encoder condition.
- 3) Does finisher stapler's gear set move well?
  - a) Make sure gear set can rotate smoothly.
  - b) Make sure each gear is not broken.
  - c) If you need, replace the stapler assembly.



- 4) Check if any debris(staple) existed. Please make sure to remove any debris.

### ▶ Error Code

H2-6732

H2-6733

### ▶ Error message

Staple cartridge is low. Replace it.

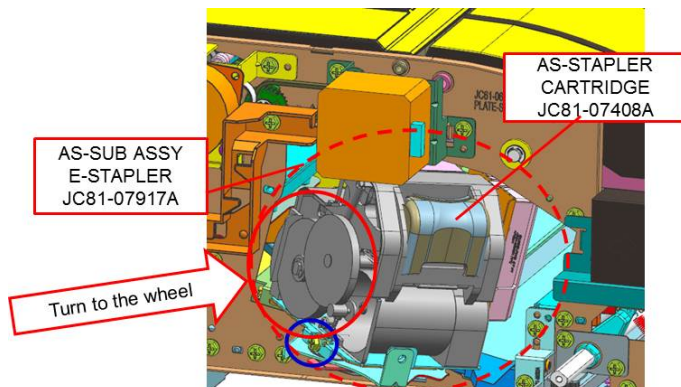
Staple cartridge is empty. Replace it.

### ▶ Symptom

Finisher stapler cartridge is necessary to refill.

### ▶ Troubleshooting method

- 1) Open finisher stapler door to refill cartridge and then close door. Self-Priming will be executed automatically if necessary. If stapler error or warning does not disappear, follow the instructions below :
- 2) Does finisher stapler cartridge refill box equip well?
  - a) Make sure stapler refill box equip well into cartridge. ([JC81-07408A](#))
  - b) Make sure staples doesn't jam near stapler head.
- 3) Does finisher stapler input sensor work well?
  - a) Make sure finisher input sensor cable is connected well to the sensor connector.
  - b) Make sure finisher input sensor cable is connected well to the main board connector.
  - c) Replace the finisher stapler([JC81-07917A](#)).
  - d) Replace the finisher main board.





**▶ Error Code**

H2-6734

**▶ Error message**

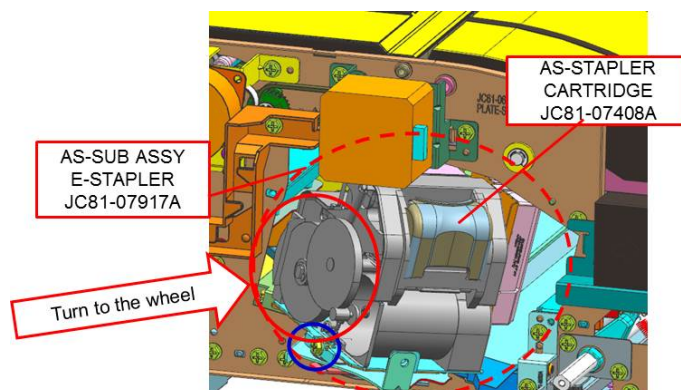
Finisher Failure: #H2-6734. Check finisher

**▶ Symptom**

Stapler initialization is failed.

**▶ Troubleshooting method**

- 1) Remove and reassemble the staple unit.
- 2) If necessary, replace the staple unit.
- 3) If necessary, replace the finisher main board.



► **Error Code**

H2-6735

► **Error message**

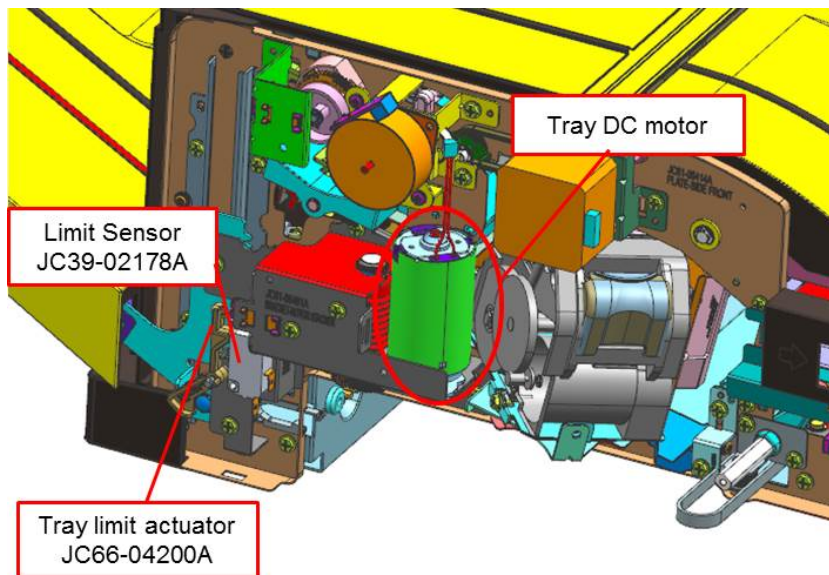
Too much paper in finisher stacker. Remove printed paper

► **Symptom**

Finisher Top tray is full.

► **Troubleshooting method**

- 1) Remove paper on the finisher main tray. Main tray will move downward and upward to clear stack full warning. If warning does not disappear, follow the instructions below :
- 2) Does Top tray limit sensor work well?
  - a) Make sure Top tray limit sensor cable is connected well to the sensor connector.
  - b) Make sure Top tray limit sensor cable is connected well to the main board connector.
  - c) Check the tray limit actuator's condition. (*JC66-04200A*)
  - d) Replace the Top tray limit sensor(*JC39-02178A*).



- e) Replace the finisher main board.
- 3) Does finisher main tray motor work well?
  - a) Make sure finisher top tray motor cable is connected well to the main tray motor connector.
  - b) Make sure finisher top tray motor cable is connected well to the main board connector.
  - c) Replace the finisher main tray motor.
  - d) Replace the finisher main board.
- 4) Check if any debris(staple)existed. Please make sure to remove any debris.

► **Error Code**

H2-6736 / H2-6737 / H2-6738 / H2-6739

► **Error message**

Finisher Failure: #H2-67xx. Check finisher

► **Symptom**

Main Tray failed to leave home sensor during initializing. (H2-6736)

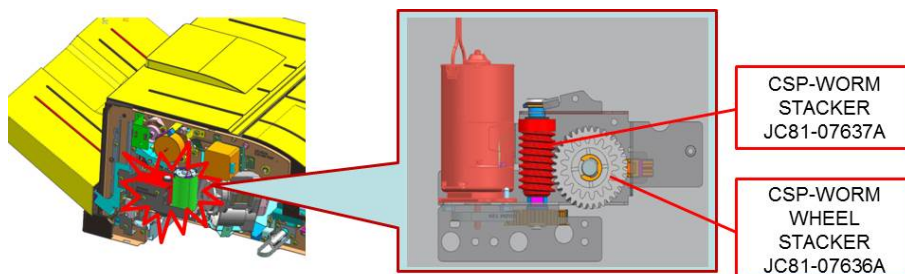
Main Tray failed to reach home sensor during initializing. (H2-6737)

Main Tray failed to leave home sensor during printing. (H2-6738)

Main Tray failed to reach home sensor during printing. (H2-6739)

► **Troubleshooting method**

- 1) If there is jammed paper on the Main Tray, removing paper manually. Open and close finisher stapler door or jam cover to check if finisher executes initialization process. If Main Tray still doesn't go back to home position and error does not disappear, follow the instructions below:
- 2) Does tray limit sensor (Standby & Home sensor) work well?
  - a) Make sure tray limit sensor cable is connected well to the sensor connector.
  - b) Make sure tray limit sensor cable is connected well to the main board connector.
  - c) Check the limit actuator condition.
  - d) If you need, replace the limit sensor.
- 3) Does finisher Main Tray motor work well?
  - a) Make sure finisher Main Tray motor cable is connected well to the motor connector.
  - b) Make sure finisher Main Tray motor cable is connected well to the main board connector.
  - c) Replace the finisher Main Tray motor.
- 4) Does finisher Main Tray parts work well?
  - a) Make sure Main Tray parts can move or rotate smoothly.
  - b) Make sure there is no any mechanical interference to stop moving or rotating.
  - c) Make sure the belt is tight on the correct position, if it has the belt.
- 5) Does finisher Main Tray motor gear set work well?
  - a) Make sure gear set can rotate smoothly.
  - b) Make sure each gear is not broken.
  - c) Replace the gear set. ([JC81-07637A](#) / [JC81-07636A](#))
- 6) Check if any debris existed. Please make sure to remove any debris.



► **Error Code**

H2-6740 / H2-6741 / H2-6742 / H2-6743

► **Error message**

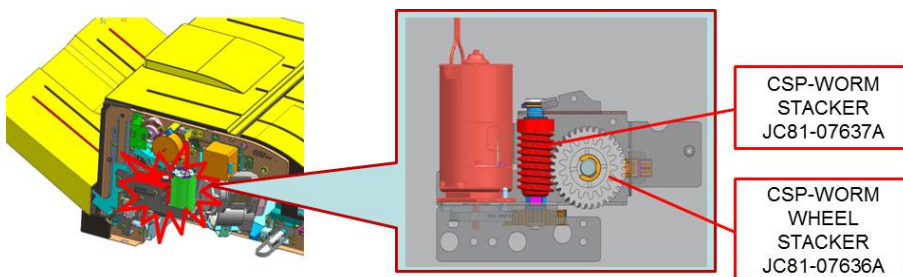
Finisher Failure: #H2-67xx. Check finisher

► **Symptom**

- Main Tray failed to leave stacker height sensor during initializing. (H2-6740)
- Main Tray failed to reach stacker height sensor during initializing. (H2-6741)
- Main Tray failed to leave stacker height sensor during printing. (H2-6742)
- Main Tray failed to reach stacker height sensor during printing. (H2-6743)

► **Troubleshooting method**

- 1) If there is jammed paper on the Main Tray, removing paper manually. Open and close finisher stapler door or jam cover to check if finisher executes initialization process. If Main Tray still doesn't go back to home position and error does not disappear, follow the instructions below:
- 2) Does finisher stacker height sensor work well?
  - a) Make sure stacker height sensor cable is connected well to the sensor connector.
  - b) Make sure stacker height sensor cable is connected well to the main board connector.
  - c) Replace the stacker height sensor.
  - d) Replace the finisher main board.
- 3) Does finisher Main Tray motor work well?
  - a) Make sure finisher Main Tray motor cable is connected well to the motor connector.
  - b) Make sure finisher Main Tray motor cable is connected well to the main board connector.
  - c) Replace the finisher Main Tray motor.
- 4) Does finisher Main Tray parts work well?
  - a) Make sure Main Tray parts can move or rotate smoothly.
  - b) Make sure there is no any mechanical interference to stop moving or rotating.
  - c) Make sure the belt is tight on the correct position, if it has the belt.
- 5) Does finisher Main Tray motor gear set work well?
  - a) Make sure gear set can rotate smoothly.
  - b) Make sure each gear is not broken.
  - c) Replace the gear set. ([JC81-07637A](#) / [JC81-07636A](#))
- 6) Check if any debris existed. Please make sure to remove any debris.



**► Error Code**

H2-6744

**► Error message**

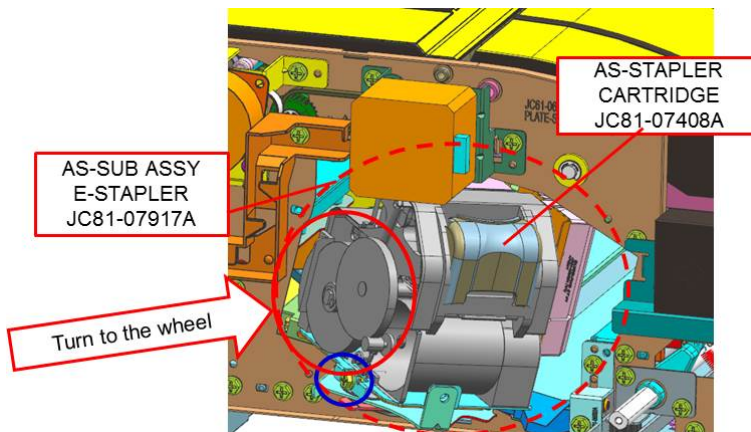
Finisher Failure: #H2-6A63. Check finisher.

**► Symptom**

Finisher stapler cartridge is not installed into stapler.

**► Troubleshooting method**

- 1) Open finisher stapler door to put back cartridge into stapler and then close door. Self-Priming will be executed automatically if necessary. If stapler warning does not disappear, follow the instructions below :
- 2) Does finisher stapler input sensor work well?
  - a) Make sure finisher input sensor cable is connected well to the sensor connector.
  - b) Make sure finisher input sensor cable is connected well to the main board connector.
  - c) Replace the finisher stapler cartridge. (*JC81-07408A*)
  - d) Replace the finisher stapler. (*JC81-07917A*)



- e) Replace the finisher main board.
- 3) Check if any debris(staple)existed. Please make sure to remove any debris.

▶ **Error Code**

H2-6A50

▶ **Error message**

Finisher Failure: #H2-6A50. Check finisher

▶ **Symptom**

Communication error with finisher

▶ **Troubleshooting method**

- 1) Copier power off and power on. If the error does not disappear, follow the instructions below:
- 2) Does finisher work well?
  - a) Make sure finisher interface cable is connected with main board.
  - b) Replace the finisher main board.

▶ **Error Code**

H2-6A63

▶ **Error message**

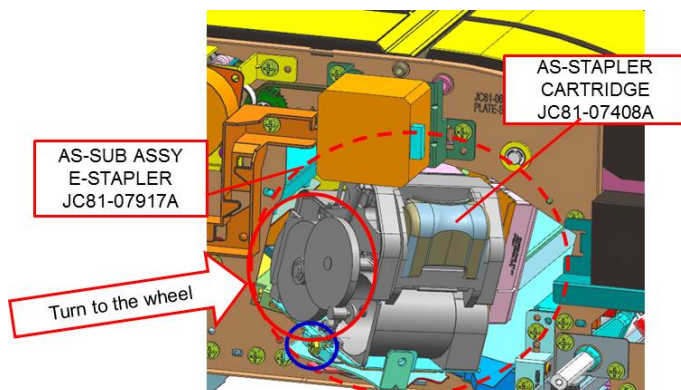
Staple cartridge is empty. Replace it

▶ **Symptom**

Finisher stapler cartridge is necessary to refill.

▶ **Troubleshooting method**

- 1) Open finisher stapler door to refill cartridge and then close door. Self-Priming will be executed automatically if necessary. If stapler error or warning does not disappear, follow the instructions below :
- 2) Does finisher stapler cartridge refill box equip well?
  - a) Make sure stapler refill box equip well into cartridge. ([JC81-07408A](#))
  - b) Make sure staples doesn't jam near stapler head.
- 3) Does finisher stapler input sensor work well?
  - a) Make sure finisher input sensor cable is connected well to the sensor connector.
  - b) Make sure finisher input sensor cable is connected well to the main board connector.
  - c) Replace the finisher stapler([JC81-07917A](#)).
  - d) Replace the finisher main board.



#### 4.6.14. Mx–xxxx (Jam error)

Error Code	Error Message	Troubleshooting Page
M1-1113	Paper jam in tray 1	P.4-141
M1-1213	Paper jam in tray 2	P.4-143
M1-1610	Paper jam in MP tray	P.4-145
M1-1613	Paper jam in MP tray	P.4-145
M2-1121	Paper jam in tray 1	P.4-141
M2-1124	Paper jam in tray 1	P.4-147
M2-1125	Paper jam inside of machine	P.4-147
M2-1131	Paper jam in tray 2	P.4-143
M2-1134	Paper jam in tray 2	P.4-148
M2-1135	Paper jam in tray 1	P.4-148
M2-1211	Paper jam inside of machine	P.4-149
M2-1213	Paper Mismatch at tray. Load tray with setting paper, and remove the jammed paper	P.4-149
M2-1214	Paper jam inside of machine	P.4-149
M2-1331	Paper jam inside of machine	P.4-150
M2-1333	Check whether the pieces of paper remain in the paper path	P.4-150
M2-1334	Paper jam inside of machine	P.4-150
M2-2111	Paper jam at the top of duplex path	P.4-150
M2-2113	Check whether the pieces of paper remain in the paper path	P.4-150
M2-2114	Paper jam at the top of duplex path	P.4-150
M3-1411	Paper jam in exit area	P.4-151
M3-1413	Check whether the pieces of paper remain in the paper path	P.4-151
M3-1414	Paper jam in exit area	P.4-151

► **Error Code**

M1-1113

M2-1121

► **Error message**

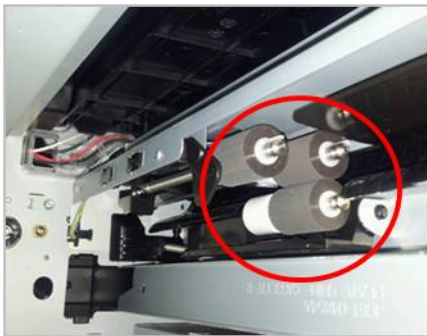
Paper jam in Tray 1.

► **Symptom**

Paper jam has occurred in tray1.

► **Troubleshooting method**

- 1) Open the side cover and check if a foreign substance or paper is jammed inside the machine.
- 2) Remove tray1 and remove the jammed paper.
- 3) If this jam error occurs frequently, check the rollers of the pick up unit1.
  - a) Remove tray1 and tray2.
  - b) Check if the pick up/ reverse/ forward rollers are assembled correctly.



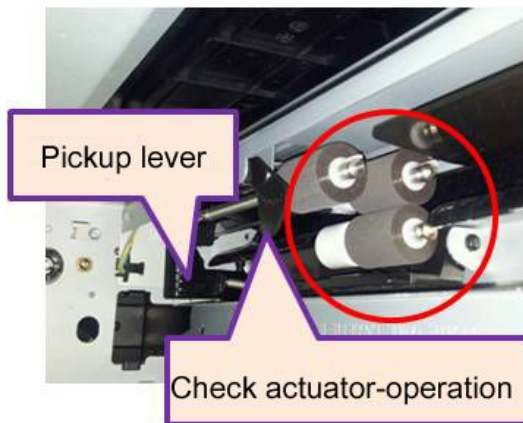
- c) If the pick up/ reverse/ forward rollers are worn out or contaminated, replace the defective roller([JC93-00540A](#)).  
**(Refer to 3.2.4. Pickup Reverse Forward roller)**
- 4) If the problem persists, check the pickup unit1 and feed sensor.
  - a) Check if the pickup unit1 and feed sensor operate correctly.
  - b) Check if the pickup unit1 harness is connected to the main board correctly.



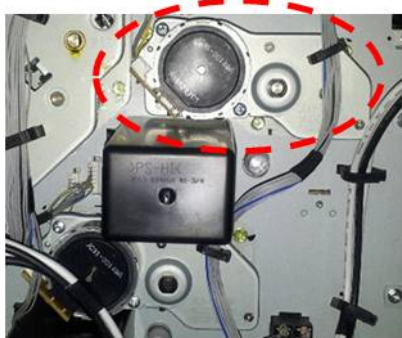
- c) Check if the connector of the Guide-feed assembly is connected correctly.
  - d) Check if the harness of pickup unit and feed sensor are connected correctly.
- 5) If the problem persists, check the pickup unit1.
  - a) Remove the pickup unit and check the actuator and photo-sensor.



- b) Push the pickup-lever and check if it operates correctly.



- 6) If the problem persists, replace the pickup drive unit(*JC93-00422A*) or Pickup unit1(*JC93-00511A*).  
**(Refer to 3.3.13. Pick-up Drive unit)**



- (Refer to 3.3.22. Pick-up Unit and Sensor)**

▶ **Error Code**

M1-1213

M2-1131

▶ **Error message**

Paper jam in Tray 2.

▶ **Symptom**

Paper jam has occurred in tray2.

▶ **Troubleshooting method**

- 1) Open the side cover and check if a foreign substance or paper is jammed inside the machine.
- 2) Remove tray2 and remove the jammed paper.
- 3) If this jam error occurs frequently, check the rollers of the pick up unit1.
  - a) Remove tray1 and tray2.
  - b) Check if the pick up/ reverse/ forward rollers are assembled correctly.

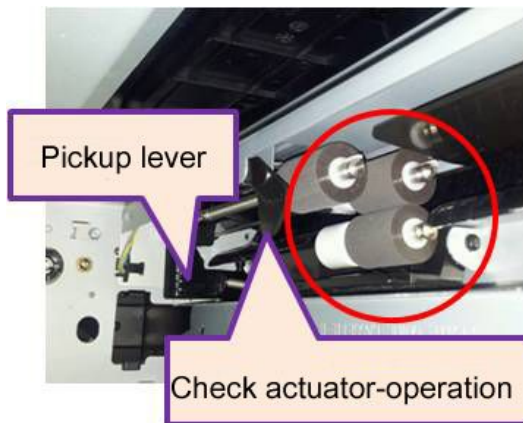


- c) If the pick up/ reverse/ forward rollers are worn out or contaminated, replace the defective roller([JC93-00540A](#)).  
**(Refer to 3.2.4. Pickup Reverse Forward roller)**
- 4) If the problem persists, check the pickup unit2 and feed sensor.
  - a) Check if the pickup unit2 and feed sensor operate correctly.
  - b) Check if the pickup unit2 harness is connected to the main board correctly.



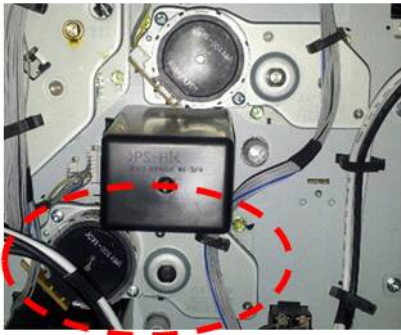
- c) Check if the connector of the Guide-feed assembly is connected correctly.
  - d) Check if the harness of pickup unit and feed sensor are connected correctly.
  - e)
- 5) If the problem persists, check the pickup unit2.
  - a) Remove the pickup unit2 and check the actuator and photo-sensor.

- b) Push the pickup-lever and check if it operates correctly.



- 6) If the problem persists, replace the pickup drive unit2(*JC93-00422A*) or Pickup unit1(*JC93-00512A*).

**(Refer to 3.3.13. Pick-up Drive unit)**



**(Refer to 3.3.22. Pick-up Unit and Sensor)**

▶ **Error Code**

M1-1610 / M1-1613

▶ **Error message**

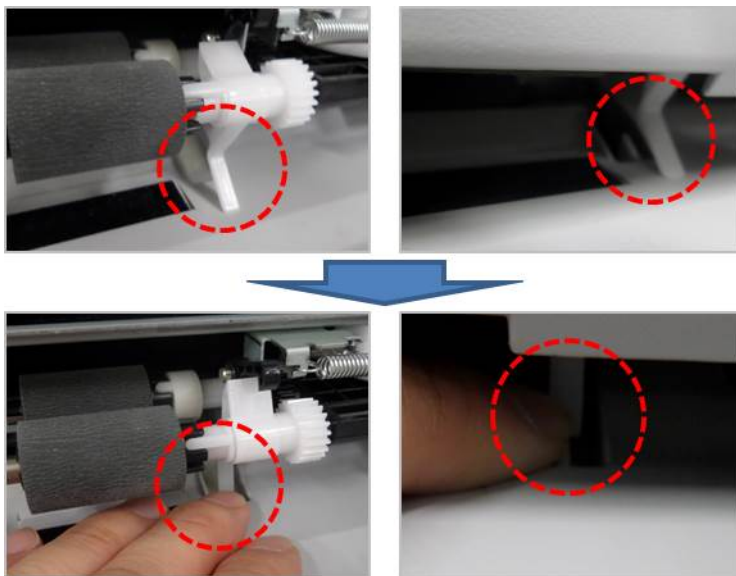
Paper jam in MP Tray.

▶ **Symptom**

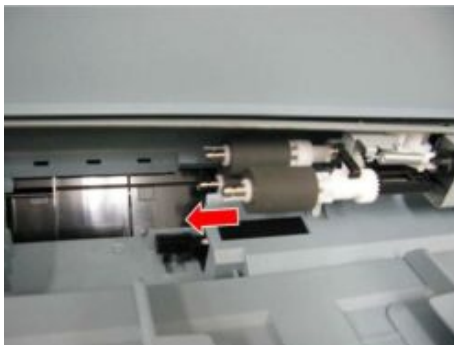
Paper jam has occurred in MP tray.

▶ **Troubleshooting method**

- 1) Open the side cover. Remove the jammed paper from the MP tray.
- 2) If this jam error occurs frequently, check the followings.
  - a) Check if the MP tray paper stopper is moved out of position. If yes, carefully push the MP tray paper stopper back into the detent as shown below.



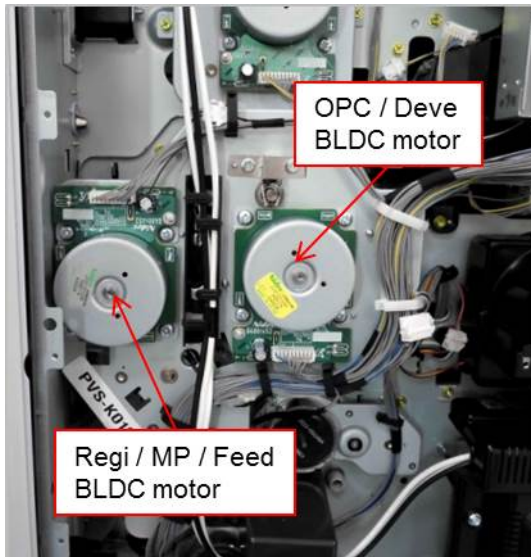
- b) Check if MP pick up/ reverse/ forward rollers are assembled correctly.
    - c) If the MP pick up/ reverse/ forward rollers are worn out or contaminated, replace the defective roller(JC93-00540A).



**(Refer to 3.2.5. MP Pick up Reverse Forward roller)**

- 3) If the problem persists, check if the MP solenoid operates correctly.
  - a) Enter SVC mode. Execute MP solenoid test.  
**(Diagnostics > Engine Diagnostics > Engine Test Routines > 101-0271)**
  - b) If the MP solenoid operation is abnormal, check the harness connection of MP unit.
  - c) If the harness has no defects, replace the MP solenoid(JC33-00029B).

- 4) If the problem persists, check the main drive unit.
  - a) Enter SVC mode. Execute Regi./MP/Feed motor test.  
**(Diagnostics > Engine Diagnostics > Engine Test Routines > 100-0000)**
  - b) Remove the rear cover.
  - c) Check if the motor harness is connected correctly.
  - d) If the problem occurs, replace the main drive unit([JC93-00912A](#)).



**(Refer to 3.3.12. Main Drive unit)**

▶ **Error Code**

M2-1124

M2-1125

▶ **Error message**

Paper jam inside of machine.

▶ **Symptom**

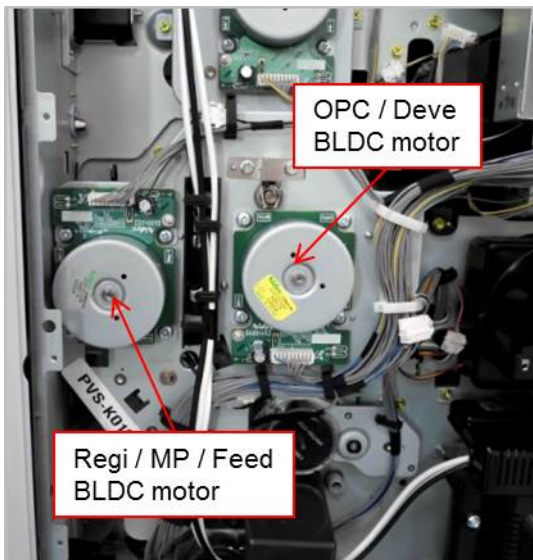
Paper jam has occurred inside the machine. (Feed drive unit is defective / Feed 1 sensor is defective.)

▶ **Troubleshooting method**

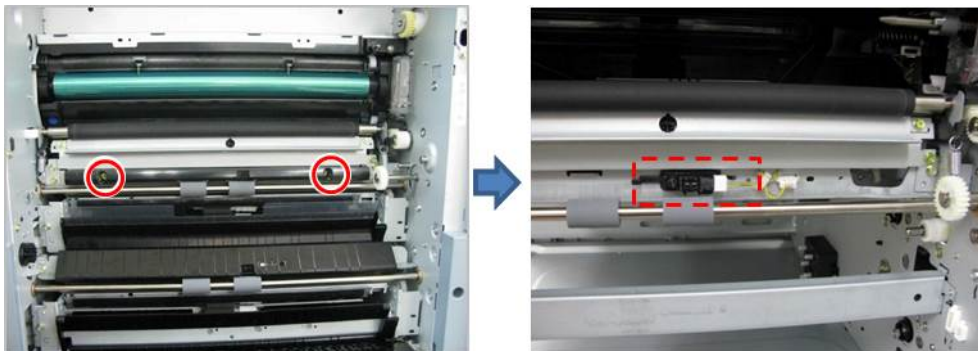
- M2-1124 : The leading edge of the paper has not reached the feed 1 sensor within the specified time.
- M2-1125 : The paper has not left from the feed 1 sensor within the specified time.

- 1) Open the side cover. Remove the jammed paper.
- 2) If jammed paper occurs continually, check the following.
  - a) Enter SVC mode. Execute feed motor test. If the motor operation is normal, go to step d).
  - b) Remove the rear cover. Check if the Regi/MP/feed motor cable is connected correctly.
  - c) If the connection is OK, replace the main drive unit([JC93-00912A](#)).

**(Refer to 3.3.12. Main Drive unit)**



- d) If the Regi/MP/feed motor operation is normal, check the pick up sensor.
- e) If the sensor operation is abnormal, check the harness.



- f) If the connection is OK, replace the pick up sensor([0604-001381](#)).

**(Refer to 3.3.23. Pick up sensor)**

▶ **Error Code**

M2-1134

M2-1135

▶ **Error message**

Paper jam in tray 2

Paper jam in tray 1

▶ **Symptom**

Paper jam has occurred inside the machine. (Feed drive unit is defective / Feed 2 sensor is defective.)

▶ **Troubleshooting method**

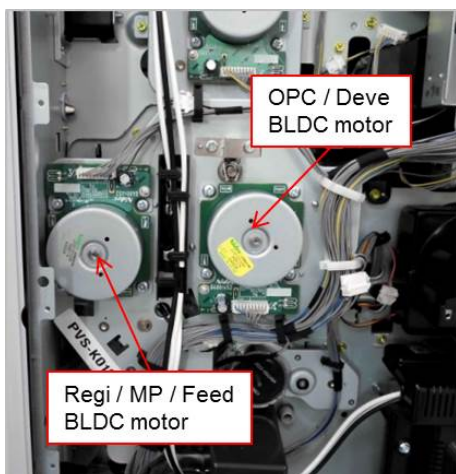
- M2-1134 : The leading edge of the paper has not reached the feed 2 sensor within the specified time.
- M2-1135 : The paper has not left from the feed 2 sensor within the specified time.

1) Open the side cover. Remove the jammed paper.

2) If jammed paper occurs continually, check the following.

- a) Enter SVC mode. Execute Regi/MP/feed motor test. If the motor operation is normal, go to step d).
- b) Remove the rear cover. Check if the Regi/MP/feed motor cable is connected correctly.
- c) If the connection is OK, replace the main drive unit([JC93-00912A](#)).

**(Refer to 3.3.12. Main Drive unit)**



d) If the Regi/MP/feed motor operation is normal, check the feed sensor.

e) If the sensor operation is abnormal, check the harness.



f) If the connection is OK, replace the feed sensor ([0604-001381](#)).

**(Refer to 3.3.24. Feed Unit)**

▶ **Error Code**

M2-1211

M2-1213

M2-1214

▶ **Error message**

Paper jam inside of machine.

▶ **Symptom**

Paper jam has occurred inside the machine. (Regi. roller drive is defective / Regi. sensor is defective.)

▶ **Troubleshooting method**

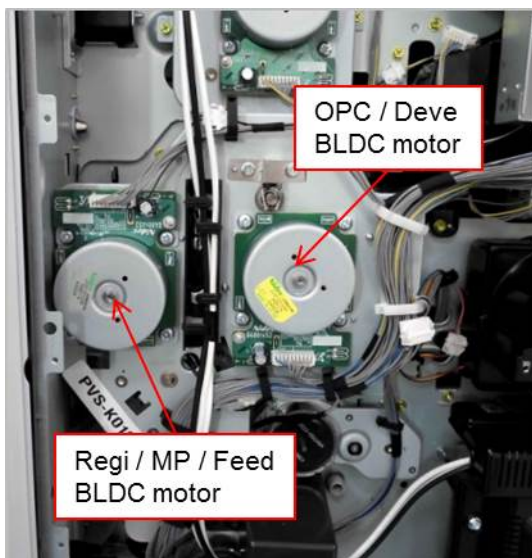
- M2-1211 : When the machine is warming-up, jammed paper inside machine is detected.
- M2-1213 : The leading edge of the paper has not reached the regi. sensor within the specified time.
- M2-1214 : The paper has not left from the regi. sensor within the specified time.

1) Open the side cover. Remove the jammed paper.

2) If jammed paper occurs continually, check the following.

- a) Enter SVC mode. Execute Regi. motor test. If the motor operation is normal, go to step d).
- b) Remove the rear cover. Check if the Regi/MP/feed motor cable is connected correctly.
- c) If the connection is OK, replace the main drive unit([JC93-00912A](#)).

**(Refer to 3.3.12. Main Drive unit)**



- d) If the Regi/MP/feed motor operation is normal, check the regi sensor.
- e) If the regi sensor operation is abnormal, check the harness.
- f) If the connection is OK, replace the regi. sensor ([0604-001381](#)).

**(Refer to 3.3.25. Registration Unit)**



**▶ Error Code**

M2-1331

M2-1333

M2-1334

M2-2111

M2-2113

M2-2114

**▶ Error message**

Paper jam inside of machine

Paper jam at the top of duplex path

**▶ Symptom**

Paper jam has occurred inside the machine.

**▶ Troubleshooting method**

- 1) Open the side cover. Remove jammed paper.
- 2) If the problem persists, check the following:
  - a) Check the Regi sensor harness. If the harness is normal, replace the Regi. sensor ([0604-001381](#)).  
**(Refer to 3.3.25. Registration Unit)**
  - b) Check the sensors in the Side Unit. If the harness is normal, replace the defective sensor ([0604-001393](#)).  
**(Refer to 3.3.20.1. Fuser out sensor / 3.3.20.2. Duplex sensor)**

▶ **Error Code**

M3-1411

M3-1413

M3-1414

▶ **Error message**

Paper jam in exit area.

▶ **Symptom**

Paper jam has occurred around the fuser unit.(At power-on / warm up , the machine detected paper jam in Inner tray Exit Sensor.)

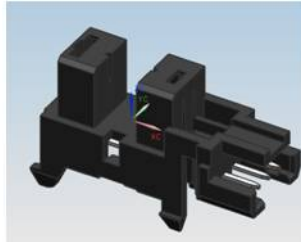
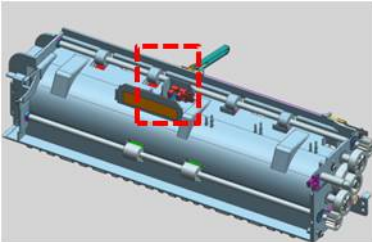
▶ **Troubleshooting method**

- M3-1413 : The leading edge of the paper has not reached the feed 1 sensor within the specified time.
- M3-1414 : The paper has not left from the feed 1 sensor within the specified time.

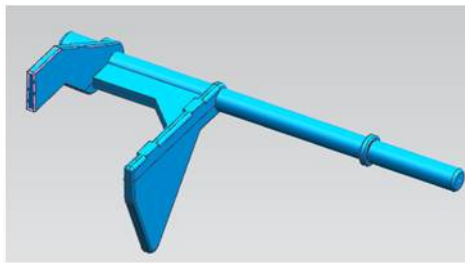
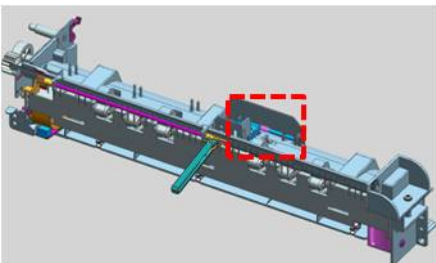
- 1) Open the side cover. Remove jammed paper.
- 2) If the problem persists, check the following:
  - a) Open the side cover. Check if the connector is connected correctly.



- b) Remove the JOB-SEPARATOR. Check if the photo sensor is assembled correctly.



- c) Check if ACTUATOR-EXIT is assembled correctly. If the ACTUATOR-EXIT ([JC66-02533A](#)) is deformed or broken, replace it.



- d) If the photo sensor([0604-001393](#)) is defective, replace it.

#### 4.6.15. Mx-xxxx (Tray not install\_Paper empty\_Outbin full)

Error Code	Error Message	Troubleshooting Page
M1-3122	Tray 1 cassette is pulled out. Insert it properly	P.4-153
M1-3222	Tray 2 cassette is pulled out. Insert it properly	P.4-154
M1-4111	Tray Failure: #M1-4111. Pull tray 1 out and insert it. Call for service if the problem persists	P.4-155
M1-4211	Tray Failure: #M1-4211. Pull tray 2 out and insert it. Call for service if the problem persists	P.4-156
M1-5111	Paper is low in tray 1. Load paper	P.4-157
M1-5112	Paper is empty in tray 1. Load paper	P.4-157
M1-5113	Paper is empty in tray 1. Load paper	P.4-157
M1-5120	Paper is empty in all tray. Load paper	P.4-157
M1-5211	Paper is low in tray 2. Load paper	P.4-158
M1-5212	Paper is empty in tray 2. Load paper	P.4-158
M1-5612	Paper is empty in MP tray. Load paper	P.4-159
M3-2230	Paper in output bin is full. Remove printed paper	P.4-160
M3-2430	Paper in output bin is full. Remove printed paper	P.4-160

▶ **Error Code**

M1-3122

▶ **Error message**

Tray 1 cassette is pulled out. Insert it properly.

▶ **Symptom**

Tray 1 is pulled out or the auto size sensor connector is not connected or broken.

▶ **Troubleshooting method**

- 1) Remove and insert Tray1 correctly.
- 2) If Tray1 is not locked or pulled out without holding the locking lever, remove Tray1.
- 3) Check if foreign substance or paper is inside the space between Tray1,2. If so, please remove it.
- 4) If the problem persists, check that the auto size sensor is connected properly.

**(Refer to 3.3.18. Auto Size sensor)**



- 5) If the problem persists, replace the main board([JC92-02452A](#)).

**▶ Error Code****M1-3222****▶ Error message****Tray 2 cassette is pulled out. Insert it properly.****▶ Symptom**

Tray 2 is pulled out or the auto size sensor connector is not connected or broken.

**▶ Troubleshooting method**

- 1) Remove and insert Tray2 correctly.
- 2) If Tray2 is not locked or pulled out without holding the locking lever, remove Tray2.
- 3) Check if foreign substance or paper is inside the space between Tray1,2. If so, please remove it.
- 4) If the problem persists, check that the auto size sensor is connected properly.

**(Refer to 3.3.18. Auto Size sensor)**

- 5) If the problem persists, replace the main board([JC92-02452A](#)).

### ▶ Error Code

M1-4111

### ▶ Error message

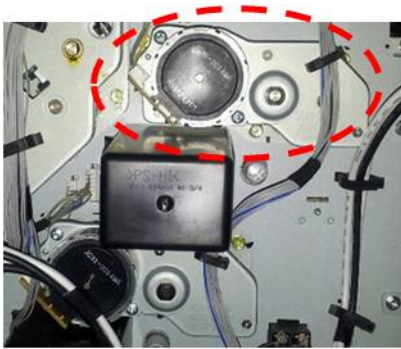
Input System Failure #M1-4111 : Pull Tray 1 out and insert it.

### ▶ Symptom

The paper is not fed from tray1.

### ▶ Troubleshooting method

- 1) Remove tray1 and re-install it.
- 2) If the problem persists, turn the machine off then on.
- 3) Enter SVC mode. Execute pickup motor test.  
(Diagnostics > Engine Diagnostics > Engine Test Routines > 100-0370)
- 4) If the pick up motor operation is abnormal, turn the machine off.
- 5) Remove the rear cover.
- 6) Check if the connection between pickup drive unit1 and main board is secure.



- 7) If the connection is OK, replace the pickup drive unit([JC93-00442A](#)).  
(Refer to 3.3.13. Pick-up Drive Unit)
- 8) If the problem persists, check the pickup unit1.  
(Refer to 3.3.22. Pick-Up Unit and Sensor)
  - a) Check if the photo sensor in the pickup unit1 is defective.



- b) If the sensor([0604-001393](#)) is defective, replace it.

► **Error Code**

M1-4211

► **Error message**

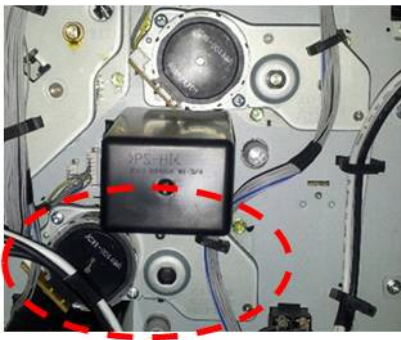
Input System Failure #M1-4211 : Pull Tray 2 out and insert it.

► **Symptom**

The paper is not fed from tray2.

► **Troubleshooting method**

- 1) Remove tray2 and re-install it.
- 2) If the problem persists, turn the machine off then on.
- 3) Enter SVC mode. Execute pickup motor test.  
(Diagnostics > Engine Diagnostics > Engine Test Routines > 100-0380)
- 4) If the pick up motor operation is abnormal, turn the machine off.
- 5) Remove the rear cover.
- 6) Check if the connection between pickup drive unit2 and main board is secure.



- 7) If the connection is OK, replace the pickup drive unit(*JC93-00442A*).  
(Refer to 3.3.13. Pick-up Drive Unit)
- 8) If the problem persists, check the pickup unit2.
  - a) Check if the photo sensor in the pickup unit2 is defective.



- b) If the sensor(*0604-001393*) is defective, replace it.

### ► Error Code

M1-5111

M1-5112

M1-5113

M1-5120

### ► Error message

Paper is low in Tray 1. Load paper.

Paper is empty in Tray 1. Load paper.

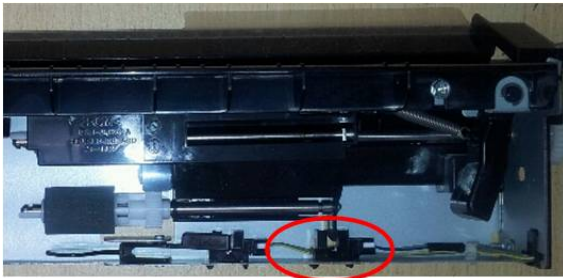
Paper is empty in all tray. Load paper

### ► Symptom

Paper in the tray1 is less than 10%. / The photo sensor is defective.

### ► Troubleshooting method

- 1) Remove tray 1. Load paper in the tray. And insert tray 1.
- 2) If paper is loaded but error message has not disappeared, check the following:
  - a) Turn the machine off. Open the Side Cover.
  - b) Remove Pick-Up Unit1.  
**(Refer to 3.3.22. Pick-Up Unit and Sensor)**
  - c) If the photo sensor is contaminated, clean it.



- d) If the photo sensor is defective, replace it([0604-001393](#)).
- e) If the actuator is defective, replace it([JC66-03199A](#)).



**► Error Code**

M1-5211

M1-5212

**► Error message**

Paper is low in Tray 2. Load paper.

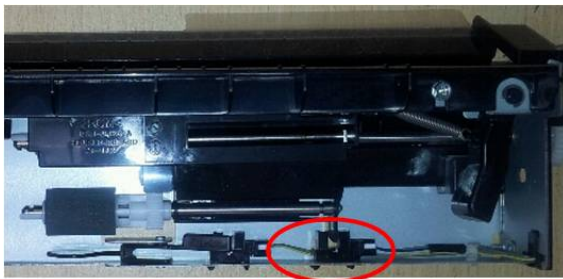
Paper is empty in Tray 2. Load paper.

**► Symptom**

Paper in the tray is less than 10% of specification. / The photo sensor is defective.

**► Troubleshooting method**

- 1) Remove tray 2. Load paper in the tray, and insert the tray 2.
- 2) If paper is loaded but error message has not disappeared, check the following :
  - a) Turn the machine off. Open the Side Cover.
  - b) Remove Pick-Up Unit2.  
**(Refer to 3.3.22. Pick-Up Unit and Sensor)**
  - c) If the photo sensor is contaminated, clean it.



- d) If the photo sensor is defective, replace it([0604-001393](#)).
- e) If the actuator is defective, replace it([JC66-03199A](#)).

▶ **Error Code**

M1-5612

▶ **Error message**

Paper is empty in MP Tray. Load paper.

▶ **Symptom**

Paper in the MP tray is less than 10%. / The photo sensor is defective.

▶ **Troubleshooting method**

- 1) Load the paper in the MP tray.
- 2) If paper is loaded but error message has not disappeared, check the following :

**(Refer to 3.3.22.3. MP unit)**

- a) If the photo sensor is contaminated, clean it.



- b) If the photo sensor is defective, replace it([0604-001393](#)).



- c) If the actuator is defective, replace it([JC66-03217A](#)).

► **Error Code**

M3-2230

M3-2430

► **Error message**

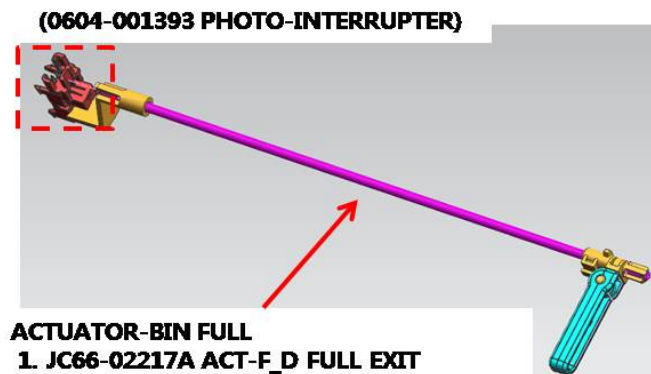
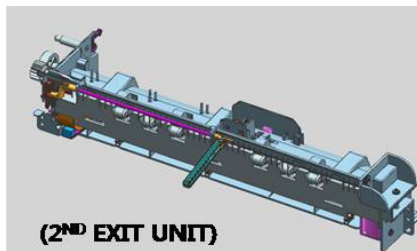
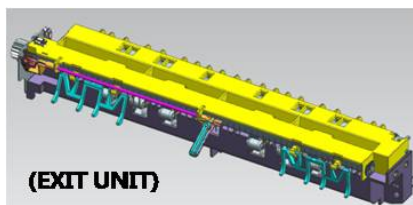
Output tray is full. Remove printed media.

► **Symptom**

There is too much paper in output bin tray or inner tray.

► **Troubleshooting method**

- M3-2230 : There is too much paper in output bin tray.
  - M3-2430 : There is too much paper in inner tray.
- 1) Remove the paper from output bin tray or inner tray.
  - 2) If this error occurs continually, check the following.
    - a) Check if the bin-full sensor and actuator is assembled correctly.



**ACTUATOR-BIN FULL**

1. JC66-02217A ACT-F\_D FULL EXIT
2. JC66-02423A SHAFT-ACT F\_D FULL EXIT
3. JC66-02218A LEVER-ACT F\_D FULL
4. JC66-02278A LEVER-ACT FULL EXIT
5. 6107-002654 SPRING-TS

- b) Check if the bin-full sensor(0604-001393) is defective.

**4.6.16. Sx-xxxx (System error)**

Error Code	Error Message	Troubleshooting Page
S1-1113	Video System Failure: #S1-1113. Turn off then on	P.4-162
S1-1114	Video System Failure: #S1-1114. Turn off then on	P.4-162
S1-1313	The clock became initial time. Set a time again	P.4-163
S1-2111	Video System Failure: #S1-2111. Turn off then on	P.4-163
S1-2411	HDD System Failure: #S1-2411. Turn off then on. Call for service if the problem persists	P.4-164
S1-2421	HDD System Failure: #S1-2421. Turn off then on	P.4-164
S1-2422	HDD System Failure: #S1-2422. Turn off then on	P.4-164
S1-2510	MSOK Failure: #S1-2510. Call for service and change MSOK	P.4-164
S1-2511	MSOK System Failure: #S1-2511. Turn off then on	P.4-164
S1-2520	MSOK Failure: #S1-2520. Call for service	P.4-164
S1-2521	MSOK Failure: #S1-2521. Call for service	P.4-164
S1-2523	PPM data is incorrect. Call for service and change MSOK	P.4-164
S1-2540	MSOK Failure: #S1-2540. Call for service & change MSOK	P.4-164
S1-2550	MSOK Failure: #S1-2550. Call for service & change MSOK	P.4-164
S1-4111	Video System Failure: #S1-4111. Turn off then on	P.4-165
S1-4311	Video System Failure: #S1-4311. Turn off then on	P.4-165
S1-5221	Wireless network card is not installed. Install the card	P.4-165
S2-1211	Engine System Failure: #S2-1211. Turn off then on	P.4-166
S2-2311	Engine System Failure: #S2-2311. Turn off then on	P.4-166
S2-3321	Supplying and mixing toner to developer unit. Please wait...	P.4-166
S2-3421	Calibrating image density. Please wait...	P.4-166
S2-4210	Front door is open. Close it	P.4-167
S2-4410	Right door is open. Close it	P.4-168
S3-3121	Scanner locked or another problem occurred.(No Switch Case)Scanner is locked	P.4-168
S3-3211	Scan System Failure: #S3-3211. Turn off then on	P.4-169
S3-3213	Scan System Failure: #S3-3213. Turn off then on	P.4-169
S3-3214	Scan System Failure: #S3-3214. Turn off then on	P.4-169
S3-3215	Scan System Failure: #S3-3215. Turn off then on	P.4-169
S3-3216	Scan System Failure: #S3-3216. Turn off then on	P.4-169
S3-3217	Scan System Failure: #S3-3217. Turn off then on	P.4-169
S4-3111	Fax System Failure: #S4-3111. Install fax modem card again	P.4-169
S5-3111	UI System Failure: #S5-3111. Call for service	P.4-170
S6-3122	Network cable is disconnected. Check it	P.4-171
S6-3123	This IP address conflicts with that of other system. Check it	P.4-171
S6-3128	802.1x authentication failed. Please contact the system administrator	P.4-171
S7-1110	Engine System Failure: #S7-1110. Turn off then on	P.4-172
S7-2110	Fuser Failure: #S7-2110. Turn off then on	P.4-172

**▶ Error Code**

S1-1113

**▶ Error message**

Video System Failure #S1-1113: Turn off then on.

**▶ Symptom**

The system has some problems due to CPU overheating.

**▶ Troubleshooting method**

- 1) Turn the machine off.
- 2) Wait until the machine is cool, and then turn the machine on.
- 3) If the problem persists, turn the machine off again.
- 4) Remove the rear cover.  
(Refer to 3.3.2 Rear Cover)
- 5) Replace the main board(JC92-02746A).  
(Refer to 3.3.7 Main board)

**NOTE**

Insert the MSOK to the new main board.

- 6) Assemble the rear cover. Turn the machine on.

**▶ Error Code**

S1-1114

**▶ Error message**

Video System Failure #S1-1114: Turn off then on.

**▶ Symptom**

CPU fan is not working

**▶ Troubleshooting method**

- 1) Turn the machine off.
- 2) Wait until the machine is cool. And then turn the machine on.
- 3) If the problem persists, turn the machine off again.
- 4) Remove the rear cover.  
(Refer to 3.3.2 Rear Cover)
- 5) Replace the main board(JC92-02746A).  
(Refer to 3.3.7 Main board)

**NOTE**

Insert the MSOK to the new main board.

- 6) Assemble the rear cover. Turn the machine on.

▶ **Error Code**

S1-1313

▶ **Error message**

The clock became initial time. Set a time again.

▶ **Symptom**

Saved time is invalid

▶ **Troubleshooting method**

- 1) Set up the time and reboot the machine.
  - a) Select “Machine Setup” on touch screen.
  - b) Select “General Setting”.
  - c) Select “Date and Time” and set the time.
- 2) If the problem persists, check the following.
  - a) Remove the rear cover.  
**(Refer to 3.3.2 Rear Cover)**
  - b) Remove the fax holder from the main board.
  - c) Measure the voltage of the battery. If the battery is normal, the measured value is over 3V.
- 3) If the battery is normal, replace the main board([JC92-02746A](#)).

▶ **Error Code**

S1-2111

▶ **Error message**

Video System Failure #S1-2111: Turn off then on.

▶ **Symptom**

The machine can't detect memory during booting.

▶ **Troubleshooting method**

- 1) Turn the machine off then on.
- 2) If the problem persists, turn the machine off again.
- 3) Remove the rear cover.  
**(Refer to 3.3.2 Rear Cover)**
- 4) Replace the main board([JC92-02746A](#)).  
**(Refer to 3.3.7 Main Board)**



**NOTE**

Insert the MSOK to the new main board.

- 5) Assemble the rear cover. Turn the machine on.

▶ **Error Code**

S1-2411

S1-2421

S1-2422

▶ **Error message**

HDD System Failure #S1-2411: Turn off then on.

HDD System Failure #S1-2421: Turn off then on.

HDD System Failure #S1-2422: Turn off then on.

▶ **Symptom**

Hard Disk is not installed in the machine. / Hard Disk is defective.

▶ **Troubleshooting method**

- 1) Check if the HDD is installed correctly.
  - a) Remove the rear cover.  
(Refer to 3.3.2 Rear Cover)
  - b) Check if the HDD cable is connected correctly.
- 2) If the problem persists, replace the HDD([JC59-00035A](#)).  
(Refer to 3.3.30 HDD)

▶ **Error Code**

S1-2510 / S1-2511 / S1-2520 / S1-2521 / S1-2523 / S1-2540 / S1-2550

▶ **Error message**

MSOK System Failure #S1-2510: Turn off then on.

MSOK System Failure #S1-2511: Turn off then on.

MSOK Failure: #S1-2520. Call for service.

MSOK Failure: #S1-2521. Call for service

PPM data is incorrect. Call for service & change MSOK

MSOK Failure: #S1-2540. Call for service & change MSOK

MSOK Failure: #S1-2550. Call for service and change MSOK

▶ **Symptom**

MSOK is not installed properly. / MSOK is defective.

▶ **Troubleshooting method**

- 1) Remove the rear cover.  
(Refer to 3.3.2 Rear Cover)
- 2) Check if the MSOK is inserted correctly. Remove and reinstall it.
- 3) If the problem persists, contact technical support to obtain help.

▶ **Error Code**

S1-4111

▶ **Error message**

Video System Failure #S1-4111: Turn off then on.

▶ **Symptom**

The main board can't send the data through the network channel.

▶ **Troubleshooting method**

- 1) Check if the green LED of the network port is on.
- 2) If not, unplug and reconnect the network cable.
- 3) If the problem persists, replace the main board([JC92-02746A](#)).  
(Refer to 3.3.7 Main Board)

▶ **Error Code**

S1-4311

▶ **Error message**

Video System Failure #S1-4311: Turn off then on.

▶ **Symptom**

The USB device chip is defective.

▶ **Troubleshooting method**

- 1) Turn the machine off then on.
- 2) If the problem persists, turn the machine off again.
- 3) Check if the OPE hub board harness are connected correctly. Reconnect the harness.
- 4) If the harness is OK, replace the OPE hub board.

▶ **Error Code**

S1-5221

▶ **Error message**

Wireless network card is not installed. Install the card

▶ **Symptom**

The machine can't detect the wireless network card.

▶ **Troubleshooting method**

- 1) Check if the wireless network card is installed properly.
- 2) If the wireless network card is defective, replace it.



**▶ Error Code**

S2-1211

S2-2311

**▶ Error message**

Engine System Failure: #S2-1211. Turn off then on

Engine System Failure: #S2-2311. Turn off then on

**▶ Symptom**

The main board is defective.

**▶ Troubleshooting method**

- 1) Turn the machine off then on.
- 2) If the problem persists, turn the machine off again.
- 3) Replace the main board([JC92-02746A](#)).
- 4) Turn the machine on.

**▶ Error Code**

S2-3321

**▶ Error message**

Supplying and mixing toner to developer unit. Please wait...

**▶ Symptom**

Toner supply is insufficient.

**▶ Troubleshooting method**

- 1) Machine will execute the toner supply job. Please wait until error message will be disappeared.
- 2) If the problem persists, check the toner supply drive unit.
- 3) If the problem persists, replace the toner cartridge.

**▶ Error Code**

S2-3421

**▶ Error message**

Calibrating image density. Please wait...

**▶ Symptom**

Machine is on TC calibration.

**▶ Troubleshooting method**

- 1) Machine will execute the toner calibration job. Please wait until error message will be disappeared.

▶ **Error Code**

S2-4210

▶ **Error message**

Front door is open. Close it.

▶ **Symptom**

Front cover or Side cover is opened.

▶ **Troubleshooting method**

- 1) Close the front cover correctly.
- 2) Check if the cover open sensor connector is connected properly. Reconnect it.
- 3) If the sensor is defective, replace it.  
(Refer to 3.3.29. Side Cover Open Switch.)

**▶ Error Code**

S2-4410

**▶ Error message**

Right door is open. Close it.

**▶ Symptom**

Front cover or Side cover is opened.

**▶ Troubleshooting method**

- 1) Close the side cover correctly.
- 2) Check if the cover open sensor connector is connected properly. Reconnect it.
- 3) If the sensor is defective, replace it.  
(Refer to 3.3.28. Front Cover Open Switch.)

**▶ Error Code**

S3-3121

**▶ Error message**

Scanner is locked.

**▶ Symptom**

Scanner module does not move.

**▶ Troubleshooting method**

- 1) Turn off the machine then on. Check if the scanner module works normally.
- 2) If the initial operation does not occurred normally, turn the machine off.
- 3) Remove the scan glass.
- 4) Check if the home position sensor cable is connected correctly.
- 5) Remove the scan rear cover. Check if all cables on scan joint board are connected correctly.
- 6) If the connection is OK, replace the scan joint board.

▶ **Error Code**

S3-3211

S3-3213

S3-3214

S3-3215

S3-3216

S3-3217

▶ **Error message**

Scan System Failure #S3-321x: Turn off then on.

▶ **Symptom**

DSDF is not connected or communication error occurs with CIP6 board.

▶ **Troubleshooting method**

- 1) Turn the machine off then on. If the problem persists, check the following:
- 2) Turn the machine off again.
- 3) Remove the scan rear cover. Check if the connector on scan joint board is connected correctly.
- 4) Remove the DSDF rear cover. Check if the connector on DSDF board is connected correctly.
- 5) If the connection is OK, replace the DSDF board([JC92-02446A](#)).

▶ **Error Code**

S4-3111

▶ **Error message**

Fax System Failure: #S4-3111. Install fax modem card again

▶ **Symptom**

Fax card is not installed properly. / Fax card is defective.

▶ **Troubleshooting method**

- 1) Remove and reinstall the fax card.
- 2) If the fax card is defective, replace it.

► **Error Code**

S5-3111

► **Error message**

UI System Failure #S5-3111:Turn off then on.

► **Symptom**

Main board has critical problem which make its lockup or USB connection between main board and OPE has some problem.

► **Troubleshooting method**

- 1) Turn off and turn on. And check if the problem disappears.
  - a) If yes, go to step 2)-a).
  - b) If no, go to step 2)-b).
- 2) Check the following procedure.
  - a) Print the Error Information Report.
    - Service Mode → General → Print Reports → Error Information
    - Check the error code which is printed on the report.
      - If S5-3111 has occurred, go to step 4).
      - If S5-3112 has occurred, go to step 5)-c).
      - If S5-3113 has occurred, go to step 5)-d).
  - b) Enter into System Recovery Mode.
    - How to enter System Recovery Mode : Turn on the machine with side cover open and power button on OPE is pressed state.
    - Check if entering System Recovery Mode is possible or not.
      - If entering System Recovery Mode is successful, go to step 3).
      - If entering System Recovery Mode fails, go to step 5)-d).
- 3) Execute the System Recovery.
  - Insert USB memory stick which has recovery one rom and execute recovery(HDD format).
  - Check if the problem disappears after system recovery(format complete).
    - If yes, go to step 4).
    - If no, go to step 5)-c).
- 4) Execute the firmware update.
  - Check if the problem disappears after one rom update.
    - If the problem disappears, go to step 5)-a).
    - If the problem happens sometimes, go to step 5)-b).
- 5) Check the following procedure.
  - a) No more action is required because machine is recovered from S5-3111 error state. Please monitor the machine if S5-3111 happens again.
  - b) Detailed analysis is required. Please capture the log and send it to development team in HQ.
  - c) It seems that HDD or main board has some problem. Please replace HDD or main board with new one and check if the problem disappears.
  - d) It seems that there is some critical issue in the USB connection between main board and OPE. Please try below steps.
    - i) If WiFi module is installed, replace WiFi module with new one.

- ii) Check USB cable state between main board and OPE.
- iii) Replace the main board with new one.
- iv) Replace the OPE board with new one.

▶ **Error Code**

S6-3122

▶ **Error message**

Network cable is disconnected. Check it.

▶ **Symptom**

Network cable is disconnected.

▶ **Troubleshooting method**

- 1) Check if the green LED of the network port is on.
- 2) If not, unplug and reconnect the network cable.
- 3) If the problem persists, replace the main board([JC92-02746A](#)).  
(Refer to 3.3.7 Main Board)

▶ **Error Code**

S6-3123

S6-3128

▶ **Error message**

This IP address conflicts with that of other system. Check it.

802.1x authentication failed. Please Contact the System Administrator.

▶ **Symptom**

Network error. (IP address conflicts with that of another system. / Communication error / There is no response when checking the ping test.)

▶ **Troubleshooting method**

- Change the machine's IP address.
  - 1) Select "Machine Setup" on the touch screen.
  - 2) Select "Networking Setting".
  - 3) "Log-In".
  - 4) Select "TCP/IP".
  - 5) Select the proper item for your machine.
  - 6) Select "IP Setting".
  - 7) Select the proper item for your machine.
  - 8) Change the IP address.

**▶ Error Code**

S7-1110

**▶ Error message**

Engine System Failure: #S7-1110. Turn off then on

**▶ Symptom**

24V power is abnormal.

**▶ Troubleshooting method**

- 1) Check the 24V pin on SMPS board. If it is abnormal, replace the SMPS board.
- 2) Check the related cable.
- 3) If the SMPS is normal, replace the main board.

**▶ Error Code**

S7-2110

**▶ Error message**

Fuser Failure: #S7-2110. Turn off then on

**▶ Symptom**

Heater control relay is abnormal.

**▶ Troubleshooting method**

- 1) Turn the machine off. Re-install the fuser unit, then turn the machine on.
- 2) If the problem persists, replace the Fuser unit(*JC91-01163A (220V)*, *JC91-01164A (110V)*).  
**(Refer to 3.2.2.5 Fuser unit)**

### 4.6.17. U1–xxxx (Fuser error)

Error Code	Error Message	Troubleshooting Page
U1-2113	Fuser Unit Failure: #U1-2113. Turn off then on	P.4-173
U1-2115	Fuser Unit Failure: #U1-2115. Turn off then on. Call for service if the problem persists	P.4-175
U1-2119	Fuser Unit Failure: #U1-2119. Turn off then on	P.4-173
U1-2132	Fuser Unit Failure: #U1-2132. Turn off then on. Call for service if the problem persists	P.4-176
U1-2135	Fuser Unit Failure: #U1-2135. Turn off then on	P.4-176
U1-2141	Fuser Unit Failure: #U1-2141. Turn off then on	P.4-178
U1-2142	Fuser Unit Failure: #U1-2142. Turn off then on	P.4-178
U1-2316	Fuser Failure: #U1-2316. Turn off then on	P.4-179
U1-2317	Fuser Failure: #U1-2317. Turn off then on	P.4-179
U1-2335	Fuser Failure: #U1-2335. Turn off then on	P.4-180
U1-2337	Fuser Failure: #U1-2337. Turn off then on	P.4-182
U1-233A	Fuser Failure: #U1-233A. Turn off then on	P.4-180
U1-233D	Fuser Failure: #U1-233D. Turn off then on	P.4-182

► **Error Code**

U1-2113

U1-2119

► **Error message**

Fuser Unit Failure: #U1-2113.

Fuser Unit Failure: #U1-2119.

► **Symptom**

The thermistor can't measure temperature. The hear-roller will not heat-up.

► **Troubleshooting method**

- U1-2113 : Error occurs at non-contact type Thermistor
  - U1-2119 : Error occurs at contact type Thermistor
- 1) Turn the machine off. Re-install the fuser unit, then turn the machine on.  
**(Refer to 3.2.2 Fuser unit)**
  - 2) Remove the fuser unit. After opening the jam cover, check if jammed or wrapped paper is in the fuser unit.



- 3) If the problem persists, check the following:

**(Refer to 3.3.23. Fuser unit)**

- a) Check if the Halogen lamp (*110V : 4713-001632 / 220V : 4713-001633*) is broken or disconnected.



- b) Check if the AC connection of the Halogen lamp is disconnected or contaminated.



- c) Check if the thermistor(4712-001098) is disconnected.



- d) Check if the contact type thermistor(1404-001567) or Non-contact type thermistor(1404-001453)is broken.



- 4) If the problem persists, replace the Fuser unit(220V : JC91-01163A / 110V : JC91-01164A).
- 5) If the problem persists, replace the main board(JC92-02746A) or FDB board(220V : JC44-00211A, 110V : JC44-0021A)or SMPS(220V : JC44-00100C, 110V : JC44-00093C)

▶ **Error Code**

U1-2115

▶ **Error message**

Fuser Unit Failure: #U1-2115. Turn off then on.

▶ **Symptom**

The pressure control unit(Cam unit)of the fuser is abnormal.

▶ **Troubleshooting method**

- 1) Turn the machine off. Re-install the fuser unit, then turn the machine on.

**(Refer to 3.2.2. Fuser Unit)**

- 2) If the problem persists, check the following:

**(Refer to 3.3.21. Fuser Unit)**

- a) When the side-cover closes, check if the operation sound of the pressure control unit occurs.
- b) Check if the parts of the pressure control unit are abnormal.
  - Check if the shape of the CAM-REAR(*JC66-03178A*) is broken.
  - Check if there are abnormal parts of the pressure control unit.



- c) Check if the fuser-motor is abnormal via service-mode.

**(Diagnostics > Engine Diagnostics > Engine Test Routines > 109-0140)**

- 3) If the problem persists, replace the Fuser unit(*220V : JC91-01163A / 110V : JC91-01164A*).

- 4) If the problem persists, replace the main board(*JC92-02746A*) or FDB board(*220V : JC44-00211A, 110V : JC44-0021A*)or SMPS(*220V : JC44-00100C, 110V : JC44-00093C*)

► **Error Code**

U1-2132

U1-2135

► **Error message**

Fuser Unit Failure: #U1-2132.

Fuser Unit Failure: #U1-2135.

► **Symptom**

Temperature of the fuser rises abnormally.

► **Troubleshooting method**

- U1-2132 : Error occurs at non-contact type Thermistor
  - U1-2135 : Error occurs at contact type Thermistor
- 1) Turn the machine off. Re-install the fuser unit, then turn the machine on.  
**(Refer to 3.2.2. Fuser unit)**
  - 2) Check if the power voltage is normal. (Is the voltage during the operation  $\pm 10\%$  of the rated voltage?)
  - 3) Remove the fuser unit. After opening the jam cover, check jammed or wrapped paper is in the fuser unit.



- 4) If the problem persists, Check the following:

**(Refer to 3.3.21. Fuser unit)**

- a) Check if the Halogen lamp (*110V : 4713-001632 / 220V : 4713-001633*) is broken or disconnected.
- b) Check if the AC connection of the Halogen lamp is disconnected or contaminated.



- c) Check if the thermistor (*4712-001098*) is disconnected.



- d) Check if the contact type thermistor (*1404-001567*) or Non-contact type thermistor (*1404-001453*) is broken.



- 5) If the problem persists, replace the Fuser unit(*220V : JC91-01163A / 110V : JC91-01164A*).
- 6) If the problem persists, replace the main board(*JC92-02746A*) or FDB board(*220V : JC44-00211A, 110V : JC44-0021A*) or SMPS(*220V : JC44-00100C, 110V : JC44-00093C*)

► **Error Code**

U1-2141

U1-2142

► **Error message**

Fuser Unit Failure: #U1-2141.

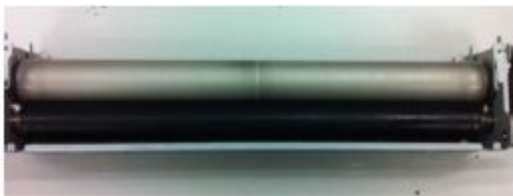
Fuser Unit Failure: #U1-2142.

► **Symptom**

Temperature of the thermistor is higher than the maximum allowable temperature.

► **Troubleshooting method**

- U1-2141 : Error occurs at non-contact type Thermistor
  - U1-2142 : Error occurs at contact type Thermistor
- 1) Turn the machine off. Re-install the fuser unit, then turn the machine on.  
**(Refer to 3.2.2. Fuser unit)**
  - 2) Check if the power voltage is normal. (Is the voltage during the operation  $\pm 10\%$  of the rated voltage?)
  - 3) Remove the fuser unit. After opening the jam cover, check if jammed or wrapped paper is in the fuser unit.



- 4) If the problem persists, Check the following:

**(Refer to 3.3.23. Fuser unit)**

- a) Check if the contact type thermistor(1404-001567) or Non-contact type thermistor(1404-001453) is broken.



- 5) If the problem persists, replace the Fuser unit(220V : JC91-01163A / 110V : JC91-01164A).
- 6) If the problem persists, replace the main board(JC92-02746A) or FDB board(220V : JC44-00211A, 110V : JC44-0021A) or SMPS(220V : JC44-00100C, 110V : JC44-00093C)

▶ **Error Code**

U1-2316

U1-2317

▶ **Error message**

Fuser Unit Failure: #U1-2316.

Fuser Unit Failure: #U1-2317.

▶ **Symptom**

Temperature of the fuser changes abnormally

▶ **Troubleshooting method**

- U1-2316 : Error occurs at non-contact type Thermistor
  - U1-2317 : Error occurs at contact type Thermistor
- 1) Turn the machine off. Re-install the fuser unit, then turn the machine on.  
**(Refer to 3.2.2. Fuser unit)**
  - 2) Check if the power voltage is normal. (Is the voltage during the operation  $\pm 10\%$  of the rated voltage?)
  - 3) If the problem persists, Check the following:  
**(Refer to 3.3.23. Fuser unit)**
    - a) Check if the Halogen lamp (*110V : 4713-001632 / 220V : 4713-001633*) is broken or disconnected.
    - b) Check if the AC connection of the Halogen lamp is disconnected or contaminated.



- c) Check if the thermistor(*4712-001098*) is disconnected.



- d) Check if the contact type thermistor(*1404-001567*) or Non-contact type thermistor(*1404-001453*) is broken.



- 4) If the problem persists, replace the Fuser unit(*220V : JC91-01163A / 110V : JC91-01164A*).
- 5) If the problem persists, replace the main board(*JC92-02746A*) or FDB board(*220V : JC44-00211A, 110V : JC44-0021A*) or SMPS(*220V : JC44-00100C, 110V : JC44-00093C*)

► **Error Code**

U1-2335

U1-233A

► **Error message**

Fuser Unit Failure: #U1-2335.

Fuser Unit Failure: #U1-233A.

► **Symptom**

Temperature of the thermistor is abnormally low.

► **Troubleshooting method**

- U1-2335 : Error occurs at non-contact type Thermistor
  - U1-233A : Error occurs at contact type Thermistor
- 1) Turn the machine off. Re-install the fuser uni, then turn the machine on.  
**(Refer to 3.3.2. Fuser unit)**
  - 2) Check if the power voltage is normal. (Is the voltage during the operation  $\pm 10\%$  of the rated voltage?)
  - 3) Remove the fuser unit. After opening the jam cover, check if jammed or wrapped paper is in the fuser unit.



- 4) If the problem persists, Check the follows.

**(Refer to 3.3.23. Fuser unit)**

- a) Check if the Halogen lamp (*110V : 4713-001632 / 220V : 4713-001633*) is broken or disconnected.
- b) Check if the AC connection of the Halogen lamp is disconnected or contaminated.



- c) Check if the thermistor (*4712-001098*) is disconnected.



- d) Check if the contact type thermistor (*1404-001567*) or Non-contact type thermistor (*1404-001453*) is broken.



- 5) If the problem persists, replace the Fuser unit(*220V : JC91-01163A / 110V : JC91-01164A*).
- 6) If the problem persists, replace the main board(*JC92-02746A*) or FDB board(*220V : JC44-00211A, 110V : JC44-0021A*) or SMPS(*220V : JC44-00100C, 110V : JC44-00093C*)



► **Error Code**

U1-2337

U1-233D

► **Error message**

Fuser Unit Failure: #U1-2337.

Fuser Unit Failure: #U1-233D.

► **Symptom**

When the fuser warms-up, the temperature of the thermistor is abnormally low.

► **Troubleshooting method**

- U1-2337 : Error occurs at non-contact type Thermistor
  - U1-233D : Error occurs at contact type Thermistor
- 1) Turn the machine off. Re-install the fuser unit, then turn the machine on.  
**(Refer to 3.2.2 Fuser unit)**
  - 2) Check if the power voltage is normal. (Is the voltage during the operation  $\pm 10\%$  of the rated voltage?)
  - 3) Remove the fuser unit. After opening the jam cover, check if jammed or wrapped paper is in the fuser unit.



- 4) If the problem persists, Check the follows.

**(Refer to 3.3.23. Fuser unit)**

- a) Check if the Halogen lamp (*110V : 4713-001632 / 220V : 4713-001633*) is broken or disconnected.
- b) Check if the AC connection of the Halogen lamp is disconnected or contaminated.



- c) Check if the thermistor (*4712-001098*) is disconnected.



- d) Check if the contact type thermistor (*1404-001567*) or Non-contact type thermistor (*1404-001453*) is broken.



- 5) If the problem persists, replace the Fuser unit(*220V : JC91-01163A / 110V : JC91-01164A*).
- 6) If the problem persists, replace the main board(*JC92-02746A*) or FDB board(*220V : JC44-00211A, 110V : JC44-0021A*) or SMPS(*220V : JC44-00100C, 110V : JC44-00093C*)

**4.6.18. U2-xxxx (LSU error)**

<b>Error Code</b>	<b>Error Message</b>	<b>Troubleshooting Page</b>
U2-1111	LSU Failure: #U2-1111. Turn off then on. Call for service if the problem persists	P.4-185
U2-1112	LSU Failure: #U2-1112. Turn off then on. Call for service if the problem persists	P.4-185
U2-1113	LSU Failure: #U2-1113. Turn off then on. Call for service if the problem persists	P.4-185
U2-1114	LSU Failure: #U2-1114. Turn off then on. Call for service if the problem persists	P.4-185
U2-6210	LSU Failure: #U1-6210. Turn off then on. Call for service if the problem persists	P.4-186

▶ **Error Code**

U2-1111 / U2-1112 / U2-1113 / U2-1114

▶ **Error message**

LSU Failure: #U2-111x. Turn off then on.

▶ **Symptom**

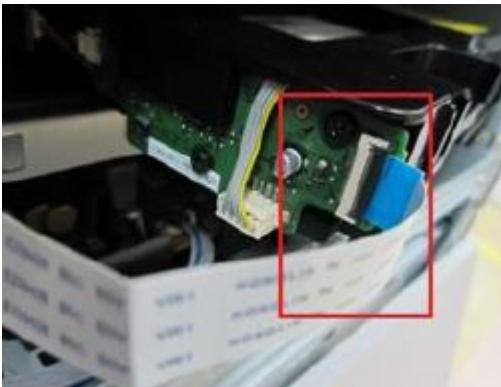
LSU motor does not operate or it operates abnormally. Motor ready signal is abnormal.

▶ **Troubleshooting method**

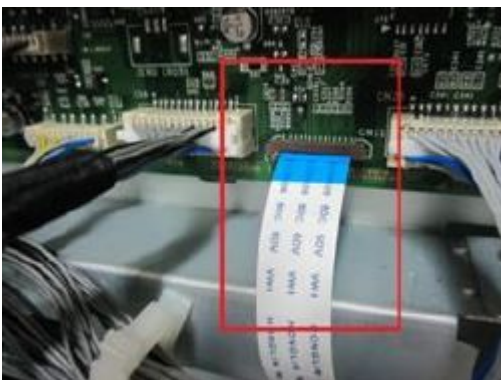
- 1) Turn the machine off then on. Check for the LSU motor operation sound during warm-up.
- 2) Print a Demo page and check the printout is normal.
- 3) If the problem persists, check the following:

**(Refer to 3.3.3. LSU)**

- If the LSU motor makes a sound,
  - a) By SVC mode, Check if the motor ready signal is occurred.  
**(Diagnostics > Engine Diagnostics > Engine Test Routines > 110-0000)**
  - b) If not, open the side-cover and replace the LSU([JC97-04017B](#))
- If the LSU motor does not make a sound,
  - a) Unplug and reconnect the LSU flat cable connecting the LSU. Then check the operation sound of LSU.



- b) Unplug and reconnect the LSU flat cable on main board. Then check the operation sound of LSU.



- c) If the LSU flat cable is defective, replace FFC.
- d) If the LSU cable is OK, replace the LSU([JC97-04017B](#))

▶ **Error Code**

U2-6210

**▶ Error message**

LSU Failure: #U1-6210. Turn off then on. Call for service if the problem persists

**▶ Symptom**

LSU is not installed correctly.

**▶ Troubleshooting method**

- 1) Turn the machine off then on.
- 2) If the problem persists, check the followings.
  - a) Check if the LSU harness is connected correctly.
  - b) If the LSU harness is OK, check the LSU installation status.
  - c) If the LSU installation is OK, replace the LSU.
  - d) If the LSU is OK, replace the main board.

**4.6.19. U3–xxxx (Document Feeder error\_DSDF)**

<b>Error Code</b>	<b>Error Message</b>	<b>Troubleshooting Page</b>
U3-3122	Documents are inserted incorrectly. After open the scanner's door, put it again. Call for service if the problem persists	P.4-188
U3-3211	Original paper jam inside of scanner	P.4-189
U3-3213	Original paper jam inside the scanner	P.4-189
U3-3214	Original paper jam inside the scanner	P.4-189
U3-3311	Original paper jam inside the scanner	P.4-189
U3-3313	Original paper jam inside the scanner	P.4-189
U3-3314	Original paper jam inside the scanner	P.4-189
U3-3413	Original paper jam inside the scanner	P.4-190
U3-3414	Original paper jam inside the scanner	P.4-190
U3-3513	Original paper jam inside the scanner	P.4-190
U3-3514	Original paper jam inside the scanner	P.4-190
U3-3611	Original paper jam in the exit area of scanner	P.4-191
U3-3613	Original paper jam in the exit area of scanner	P.4-191
U3-3614	Original paper jam in the exit area of scanner	P.4-191
U3-3713	Original paper jam in the exit area of scanner	P.4-191
U3-4210	Top door of scanner is open	P.4-192

▶ **Error Code**

U3-3122

▶ **Error message**

Documents are inserted incorrectly. After open the scanner's door, put it again. Call for service if the problem persists

▶ **Symptom**

DSDF pick up module has the problem.

▶ **Troubleshooting method**

- 1) Open and close the DSDF cover. Check if the error message is disappeared.
- 2) Open the DSDF cover. Push and release the pick up module. Check if the pick up module returns the original position.
  - Check if the spring is deformed. If the spring is defective, replace it([6107-003581](#)).



- 3) Check If the regi sensor is OK, check the scan sensor and scan actuator. If their operation is abnormal, replace the defective part.



### ▶ Error Code

U3-3211

U3-3213

U3-3214

U3-3311

U3-3313

U3-3314

### ▶ Error message

Original paper jam inside of scanner

### ▶ Symptom

Jam has occurred inside the DSDF unit.

### ▶ Troubleshooting method

- 1) Open the DSDF cover. If there is jammed paper, remove it.
- 2) If this error occurs continually, check the Regi. sensor and Regi actuator.  
Push and release the regi actuator. Check if the pick up module returns the original position.  
If the sensor is defective, replace it([0604-001393](#)).



- 3) If the regi sensor is OK, check the scan 1 sensor and reflect film.
  - If the scan 1 sensor is defective, replace it([0604-001381](#)).
  - If the reflect film is contaminated, clean it.





**▶ Error Code**

U3-3413

U3-3414

U3-3511

U3-3513

U3-3514

**▶ Error message**

Original paper jam inside of scanner.

**▶ Symptom**

Jam has occurred inside the DSDF unit.

**▶ Troubleshooting method**

- 1) Open the DSDF cover. If there is jammed paper, remove it.
- 2) If this error occurs continually, check the Regi. sensor and Regi actuator.  
Push and release the regi actuator. Check if the pick up module returns the original position.  
If the sensor is defective, replace it([0604-001393](#)).



- 3) If the regi sensor is OK, check the scan 2 sensor and exit sensor.
  - If the scan 2 sensor is defective, replace it([0604-001381](#)).
  - If the exit sensor is defective, replace it([6107-003581](#)).



▶ **Error Code**

U3-3611

U3-3613

U3-3614

U3-3713

▶ **Error message**

Original paper jam in the exit area of scanner

▶ **Symptom**

Jam has occurred in exit area of the DSDF unit.

▶ **Troubleshooting method**

- 1) Open the DSDF cover. If there is jammed paper, remove it.
- 2) If the regi sensor is OK, check the scan 2 sensor and exit sensor.
  - If the scan 2 sensor is defective, replace it([0604-001381](#)).
  - If the exit sensor is defective, replace it([6107-003581](#)).



**► Error Code**

U3-4210

**► Error message**

Top door of scanner is open.

**► Symptom**

DSDF cover is open.

**► Troubleshooting method**

- 1) Open and close the DSDF cover. Check if the error message is disappeared.
- 2) If the problem persists, check the cover open sensor.
  - a) Open the DSDF cover. Remove the spring.
  - b) Remove 4 screws.
  - c) Check if the sensor connector is connected correctly.

If the sensor is defective, replace it([0604-001393](#)).



## 4.7. Image quality problems and solutions

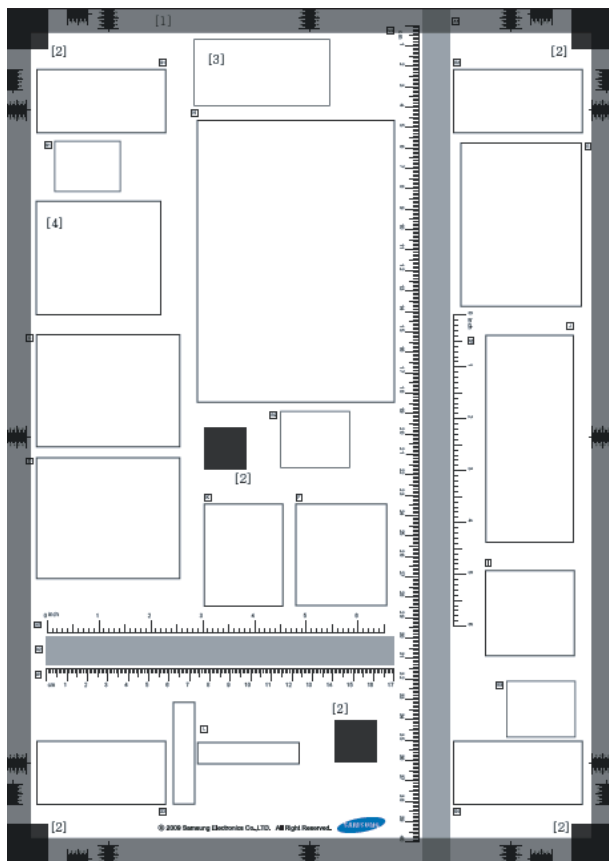
Print-quality defects can be attributed to printer components, consumables, media, internal software, external software applications and environmental conditions.

To successfully troubleshoot print-quality problems, as many variables as possible must be eliminated.

The first step is to generate prints using printable pages embedded in the printer on laser paper. The paper should be from an unopened ream that has been acclimated to room temperature and you should ensure that genuine Samsung Toner is installed in the printer.

### Samsung A/S chart (A3)





[1]	Grid pattern	For adjusting margin and magnification
[2]	Black patches	For adjusting skew error
[3]	Barcode	For checking the reproduction of barcode
[4]	Note area	For recording the date, conditions, etc.
[A]	Halftone band	For checking banding and jitter (K 50%)
[B, L]	Resolution patterns	For checking resolution
[C, D, E]	Images	For checking color reproduction
[F]	Map image	For checking fine line reproduction
[G]	Color patches	For checking color reproduction and uniformity
[H]	Gradation pattern	For checking tone reproduction of 7 colors (C, M, Y, K, R, G, B/ 10~100%)
[I]	Color/Mono text	For checking the reproduction of color, mono text
[J]	Multilingual Feature	For checking the reproduction of small text
[K]	White Gap pattern	For checking color to color, color to mono white gap
[M]	Rulers	For checking the magnification error (unit : cm)
[N]	Rulers	For checking the magnification error (unit : inch)

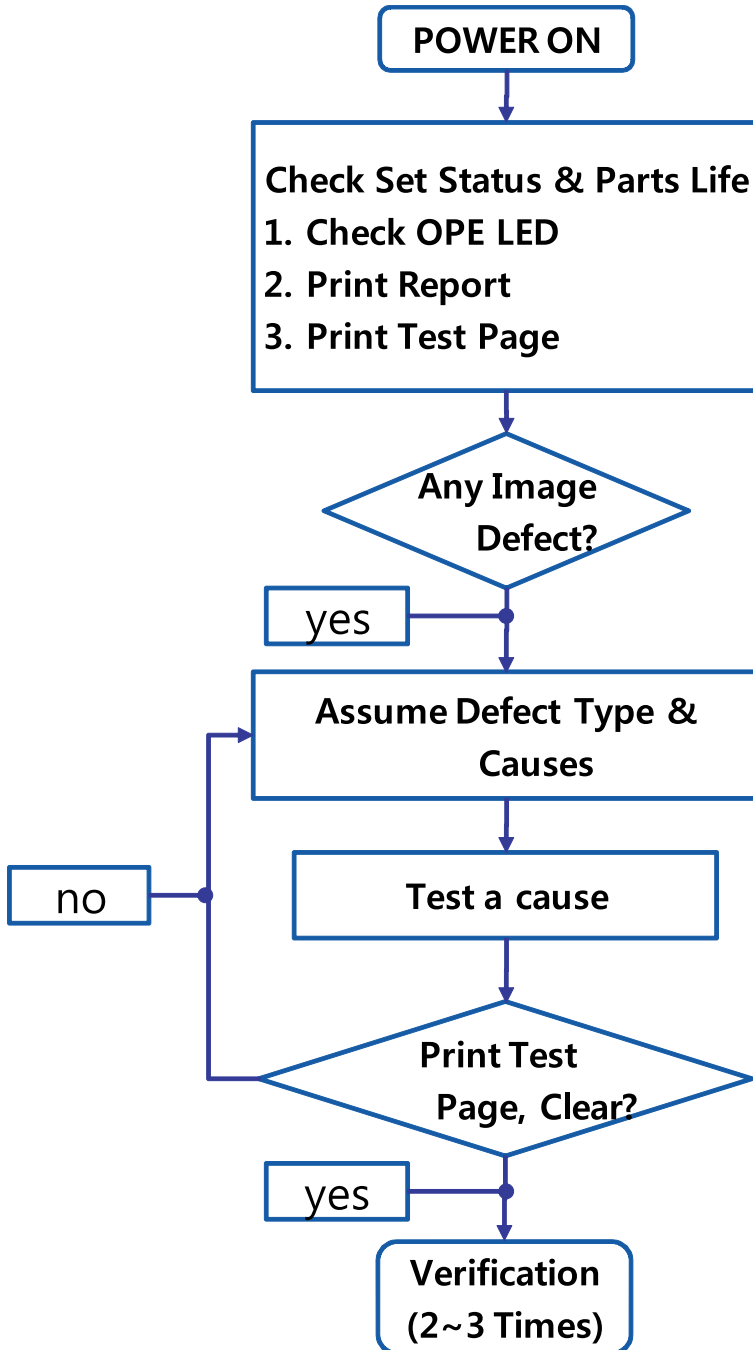
### How to analysis the defect image

See the next flow chart.



**TIP**

- 1) According to the part remain life, cause can vary. Check the part remain life.
- 2) Check the defect whether periodic or not.

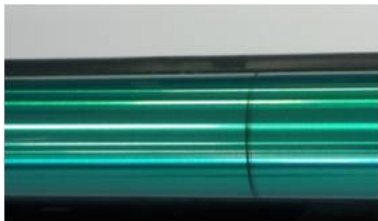


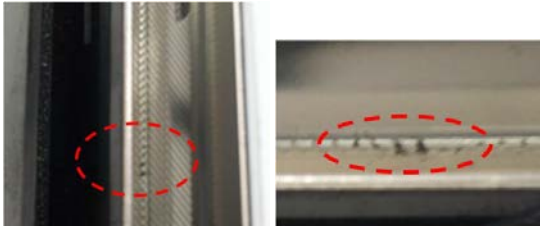


### 4.7.1. Vertical Black Lines

#### A. Typical faulty images

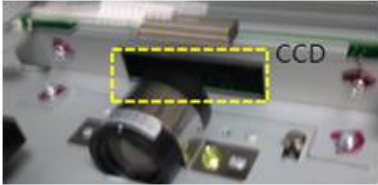


#### B. Troubleshooting procedure

Step	Check item	Action
1	OPC is scratched or contaminated in the vertical direction. 	Replace Drum unit. <u>(Refer to 3.2.1.)</u>
2	If Charge Scorotron saw in Developer unit is contaminated? 	Clean the Scorotron with the Cleaning bar. 
3	If the Charge Scorotron saw is defected? 	Replace Drum unit. <u>(Refer to 3.2.1.)</u>
4	Scanner unit is contaminated. (ADF Glass / Mirror / CCD Sensor)	Wipe the surface of contaminated parts with a soft cloth.

#### 4. Troubleshooting

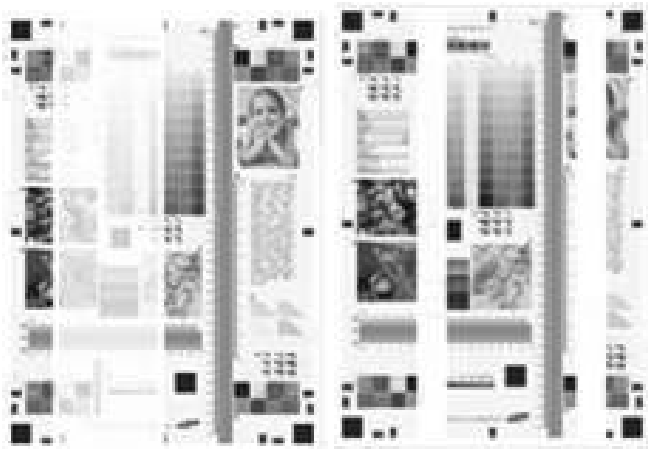
---

Step	Check item	Action
		<p><u>(Refer to 3.3.29.)</u></p>


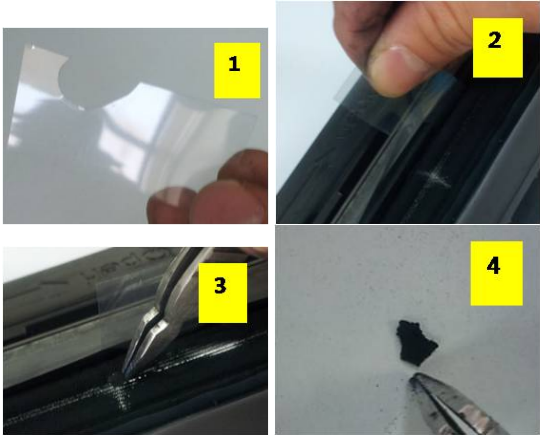
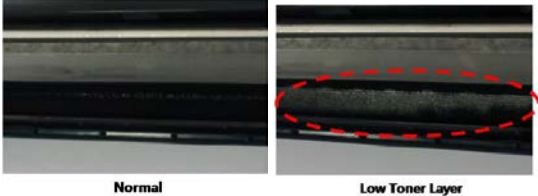


## 4.7.2. Vertical Light or White Lines


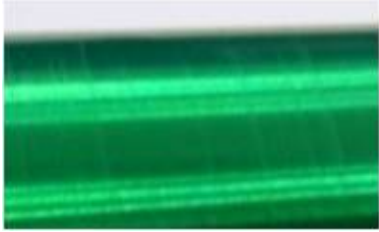
### A. Typical faulty images



### B. Troubleshooting procedure

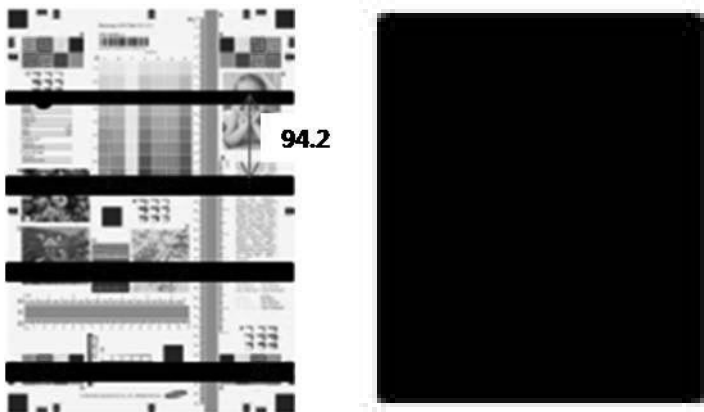
Step	Check item	Action
1	<p>Some foreign substance is stuck between DR and Blade. No toner on DR partially.</p> 	<p>Remove foreign substances.</p>  <ul style="list-style-type: none"> <li>– Make the hook (Transparency sheet is recommended.)</li> <li>– Put the hook into the gap between DR and Blade.</li> <li>– Pull out foreign substances.</li> </ul>
2	<p>Developer is empty</p>	<p>Replace Developer unit. Check the toner remain on Report page. Check the toner layer on Roller-Magnetic is uniform or not. <b>(Refer to 3.2.2.2.)</b></p>  <p style="text-align: center;"> <span>Normal</span> <span style="margin-left: 100px;">Low Toner Layer</span> </p>

#### 4. Troubleshooting

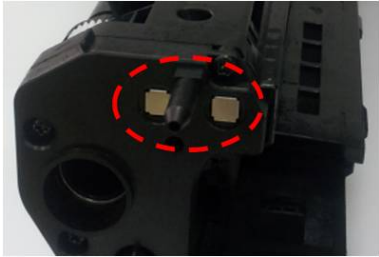
Step	Check item	Action
3	The path of Laser beam is blocked. (Foreign substance is on the LSU window.)	Clean the LSU window. 
4	OPC is scratched or contaminated in the vertical direction. 	Replace Drum unit. <b><u>(Refer to 3.2.1.)</u></b>

### 4.7.3. Horizontal Periodic Black Lines, Dots.

#### A. Typical faulty images



#### B. Troubleshooting procedure

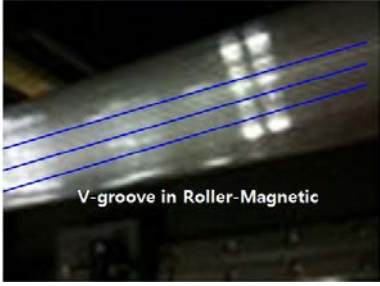
Step	Check item	Action
1	Poor connection between CR terminal and Set.	Wipe out the surface of contaminated CR terminal. 
2	Poor charge voltage of HVPS (MHV)	Check the connection between MHV terminal and connector. Replace HVPS. <b>(Refer to 3.3.5.)</b>

**4.7.4. Horizontal Periodic Light/Dark Lines, Dots.**

**A. Typical faulty images**

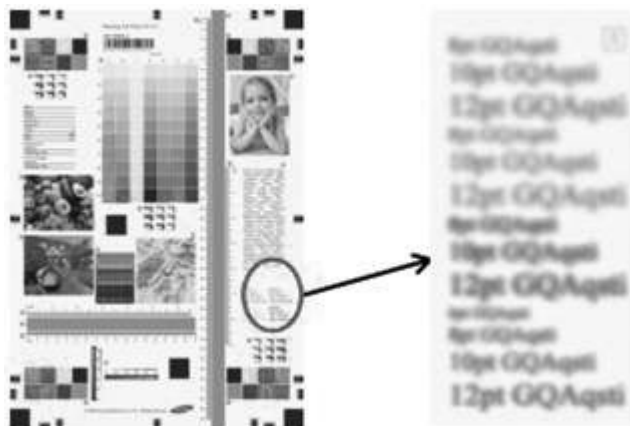


**B. Troubleshooting procedure**

Step	Check item	Action
1	Horizontal periodic bands (OPC, 94.2mm) – OPC was exposed for long hours. – Damaged by high voltage in a short time.	As some time passes, most of bands will disappear. Replace Drum unit. <b>(Refer to 3.2.1.)</b>
2	Horizontal periodic Light/Dark bands (Roller-Magnetic, 35.7mm) – Roller-Magnetic is inferior in quality. – V-groove of the surface of Roller-Magnetic is not uniform. 	Replace Deve unit. <b>(Refer to 3.2.2.)</b>

## 4.7.5. Blurred image

### A. Typical faulty images



### B. Troubleshooting procedure

Step	Check item	Action
1	Humidity of the circumstances and paper.	Change to the new and better grade paper.
2	Thv transfer voltage is low.	Turn up the THV transfer voltage. <b>(Refer to 4.4.6.7.)</b>
3	Connection between HVPS and THV is incorrect.	Check if the connection between THV high voltage terminal and HVPS THV terminal is correct. Check if the connection of HVPS and TR correct.

### 4.7.6. Foggy image

#### A. Typical faulty images



#### B. Troubleshooting procedure

Step	Check item	Action
1	Voltage of OPC is abnormally low.	Replace Drum unit. <b>(Refer to 3.2.1.)</b>
2	Toner is over supplied by abnormal TC sensor.	Replace the Toner cartridge. <b>(Refer to 3.2.2.)</b>
3	T1 Voltage is abnormally high	Check the connection in HVPS. – Connection of Transfer rollers in THV, TR Replace HVPS. <b>(Refer to 3.3.5.)</b>
4	HVPS operates abnormally. HVPS is damaged or broken.	Replace HVPS. <b>(Refer to 3.3.5.)</b>

### 4.7.7. Light image

#### A. Typical faulty images



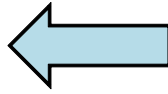
#### B. Troubleshooting procedure

Step	Check item	Action
1	Occur the poor Transfer.	Replace HVPS. <b>(Refer to 3.3.5.)</b>
2	Output voltage of HVPS is abnormally low. – Color density becomes low.	Replace HVPS. <b>(Refer to 3.3.5.)</b>
3	TC Sensor operates abnormally.	Replace Toner cartridge. <b>(Refer to 3.2.1.)</b>

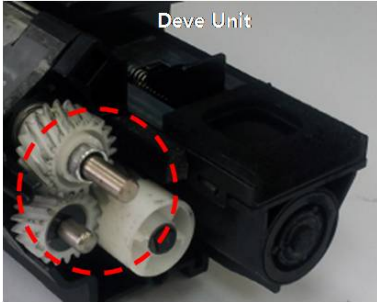
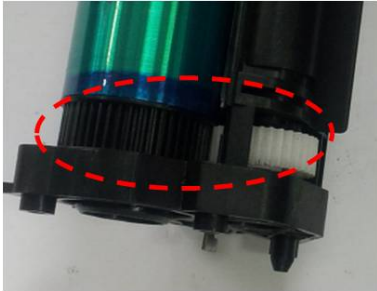
**4.7.8. Uneven pitch and jitter image**

**A. Typical faulty images**

**Paper feeding direction**



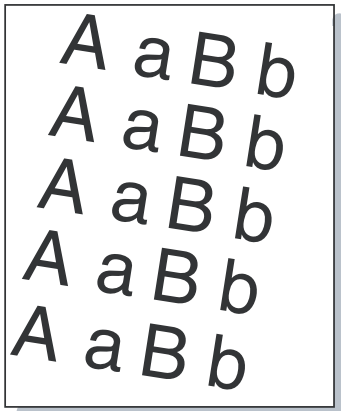
**B. Troubleshooting procedure**

Step	Check item	Action
1	Under 3mm periodic jitters or horizontal bands has occurred.	Remove foreign substances at the drive gears. Apply grease. - Toner cartridge gears.  - OPC unit gears.  - Main drive unit gears. Replace the abnormal units. - Toner cartridge. - Drum unit. - Main drive unit.
2	Under 1mm periodic jitter or horizontal bands has occurred.	Check if the LSU is assembled incorrectly, replace the screws. Replace LSU <b>(Refer to 3.3.3.)</b>



### 4.7.9. Skewed image

#### A. Typical faulty images



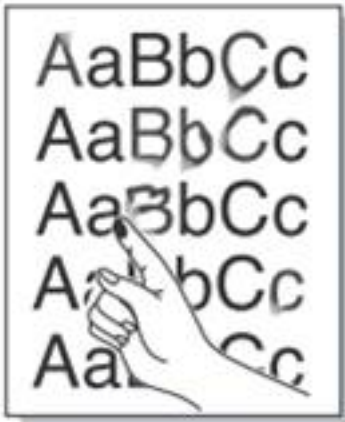
#### B. Troubleshooting procedure

Step	Check item	Action
1	Is the cassette properly installed?	Reinstall the cassette properly.
2	Is too much paper loaded in the cassettes?	Reduce paper.
3	Are the cassette side guides properly set?	Adjust the side guides.
4	Is the surface of pick up/ reverse/ forward roller dirty?	Clean or replace the contaminated roller. <b>(Refer to 3.2.5.)</b>
5	Is the transfer belt installed properly?	Reinstall ITB unit.
6	Is the DADF installed and adjusted properly?	Reinstall the DADF unit. Adjust DADF skew. <b>(Refer to 4.7.)</b>

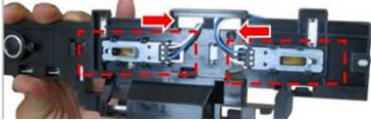


### 4.7.10. Poor fusing performance

#### A. Typical faulty images

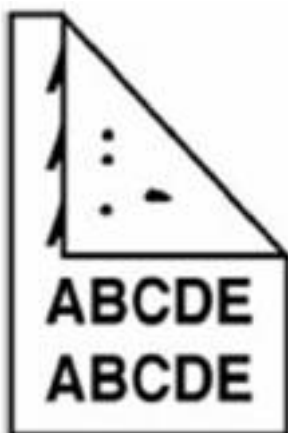


#### B. Troubleshooting procedure


Step	Check item	Action
1	<p>Check the paper type.</p> <p>Depending on what type of paper used, print speed will vary.</p> <p>(ex)</p> <ul style="list-style-type: none"> <li>- Plain (71~90g/), Thick (91~105g/) : 100%</li> <li>- Heavy weight (106~175g/) : 50%</li> <li>- Envelope (75~90 g/), Label (120~150 g/) : 50%</li> </ul>	<p>Check the paper type on control panel is same as paper user uses.</p> <p><b>(Refer to 2.2.7.)</b></p>
2	The fuser unit is worn out.	Replace the fuser unit.
3	Check if the surface of the fuser belt & pressure roller is scratched.	Replace the fuser unit.
4	<p>Check if the temperature control system has problems.</p> <ul style="list-style-type: none"> <li>- Thermistor is broken or operates abnormally</li> <li>- Halogen lamp is broken or operates abnormally.</li> </ul>	<p>Check the Non-contact thermistor sensor.</p>  <p>Check the Halogen lamp.</p> <p><b>(Refer to 4.5.7. U1-2113)</b></p> <p>If you find some problems, replace the broken parts or Fuser unit.</p>
5	Check if the pressure control system operates properly.	<p>Check the pressure control system.</p> <p><b>(Refer to 4.5.7. U1-2115)</b></p> <p>The problem persists, replace Fuser unit.</p>
6	Paper is wrapped on the Heating roller.	<p>Remove a wrapped paper and print the demo page.</p> <p>If there are some problems on the printout, replace Fuser unit.</p>

### 4.7.11. Stain on the paper back side

#### A. Typical faulty images



#### B. Troubleshooting procedure

Step	Check item	Action
1	Is the transfer roller dirty or worn out?	Clean or replace the Transfer roller Assembly. 
2	Are the fuser belt and pressure roller dirty?	Clean the fuser belt and pressure roller.
3	Check the pressure roller surface is damaged or scratched.	Replace Fuser unit. <b>(Refer to 3.2.2.5.)</b>

## 4.8. Other Errors

### 4.8.1. Image problem

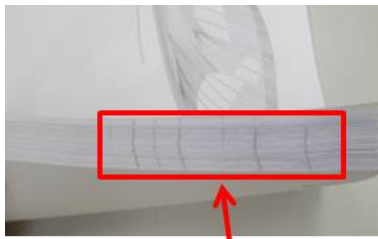
No	Problem Description	Troubleshooting Page
1	Toner cartridge detection error	P.4-209
2	Paper edge contamination	P.4-210

#### 1) Toner cartridge detection error

- **Symptom** : Toner cartridge is installed, but “Not Install” message occurs.
- **Cause** :
  - Toner cartridge is not installed properly.
  - CRUM harness of the toner cartridge is defective.
  - CRUM PBA or CRUM Chip is defective.
  - CRUM connection(Modular connector) is defective.
  - CRUM Joint PBA is defective.
  - Bad connection between the main board and the CRUM Joint PBA
- **Troubleshooting**
  - 1) Toner cartridge install problem
    - Check if the toner cartridge is installed properly.
    - If the cartridge comes out automatically from set, check the cartridge fixing hook.
    - If there are some problems of hook, replace cartridge cap or cartridge.
  - 2) CRUM harness problem of the toner cartridge
    - Check if CRUM harness of the toner cartridge is connected correctly.  
Check if modular jack of the toner cartridge is broken or assembled abnormally.
    - If the modular jack harness is defective, replace it with new one.  
If the modular jack is entered to the toner cartridge, pull out it with hands.
  - 3) CRUM PBA problem or CRUM data broken
    - Replace the toner cartridge with new one.
  - 4) CRUM connection(Modular connector) installation problem
    - a) Open the front cover. Pull out the toner cartridge.
    - b) Check the CRUM connection (Modular connector) is installed properly.
    - c) If the modular connector is not installed properly, open the rear cover and re-install.
  - 5) CURM Joint PBA problem
    - If CRUM Joint PBA has some problems of the modular jack pin or the main board interface connector etc, replace the PBA with new one like No.4.
  - 6) Bad connection between the main board and the CRUM Joint PBA
    - Check the connection between the main board and the CRUM Joint PBA.  
If the connection is bad, replace the harness or the CRUM Joint PBA or main board.

## 2) Paper edge contamination

- **Symptom** : Paper tail edge is contaminated by toner, and contamination positions correspond to paper guide rib positions.



Edge Contamination

- **Cause** : Paper guide Rib can be contaminated by flying toner from Deve unit after long term use of the machine. And the paper tail edge contamination can be occurred when paper edge touch the Rib.
- **Troubleshooting**
  - 1) This problem could be occurred after long term use. (150K above)
  - 2) So when service man replace the transfer roller unit (lifespan is 150K), he must clean up the contaminated paper guide rib. And we can prevent paper edge contamination from paper guide rib.



Cleaning Position

## 4.8.2. Fuser problem

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No	Problem Description	Troubleshooting Page
1	Acoustic noise in Fuser unit	P.4-211

### 1) Acoustic noise in Fuser unit

- **Symptom** : Acoustic noise from fuser assembly in early stage of printing
- **Cause** : Fuser gear is damaged.
- **Troubleshooting**
  - 1) Replace the fuser unit with new one.

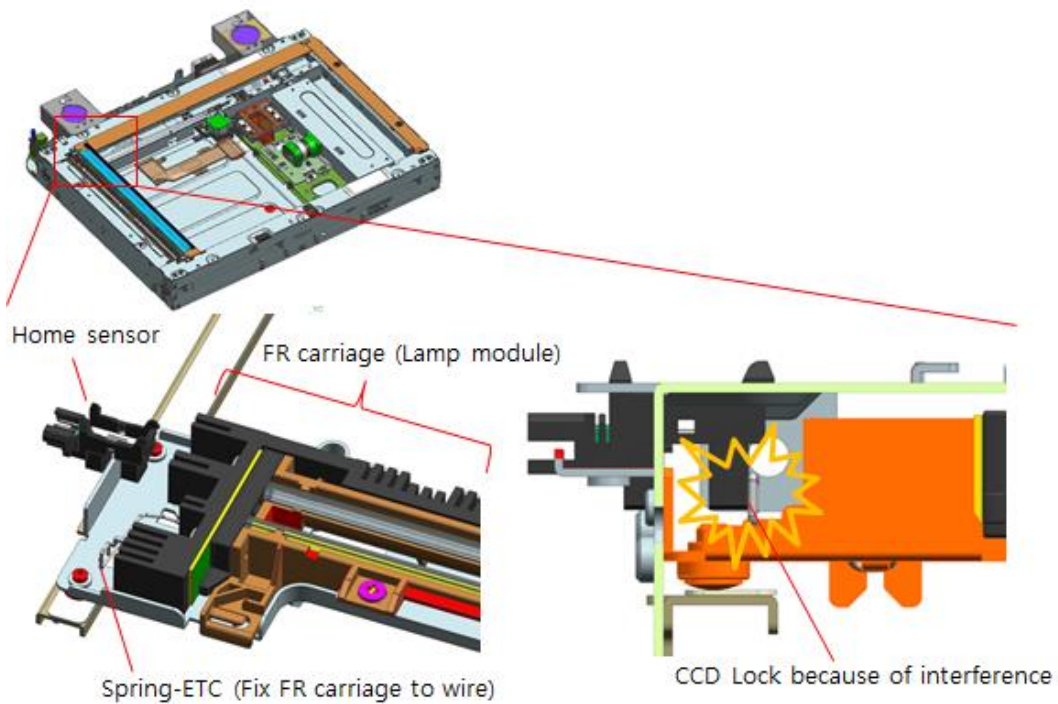
### 4.8.3. Scanner and Document Feeder problem

No	Problem Description	Troubleshooting Page
1	How to resolve CCD Lock because of spring-wire	P.4-213
2	Noise of ADF Hinge / Crack of ADF Hinge / ADF can't be fixed as open	P.4-214
3	ADF paper jam (Multi-feed)	P.4-215
4	Scanner Locked	P.4-216
5	How to adjust image distortion	P.4-217
6	Paper Jam occurs due to Registration ROLLER-IDLE of ADF	P.4-218
7	ADF is not recognized and an S3-3211 error occurs or copying must be performed from the platen.	P.4-219
8	During copy or scan job, the original paper JAM and U3-3213 error occur.	P.4-220

### 1) How to resolve CCD Lock because of spring-wire

- **Symptom :**

- When power on the copier machine, UI indicate CCD Lock message and FR-Carriage can't move on the rail.

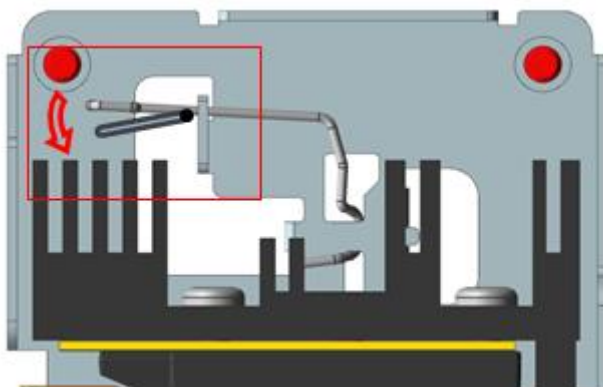


- **Cause :**

- Tilted copier set over 20 degree.
- When operate scanner in FR pushed condition.

- **Troubleshooting**

- 1) Open the scan glass
- 2) Bend the spring like picture





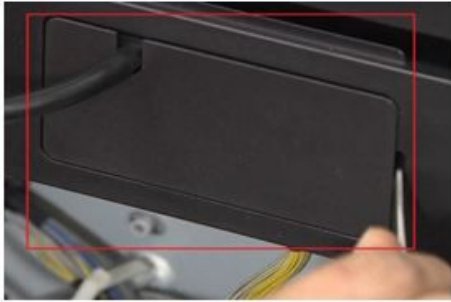
## 2) Noise of ADF Hinge / Crack of ADF Hinge / ADF can't be fixed as open

- **Symptom :**

- When ADF is opened or closed, the noise from its hinge happened.
- ADF hinge is cracked.
- When the ADF unit is lifted to access the platen glass, the unit should remain at a 50° angle ( $\pm 10^\circ$ ). ADF unit does not remain open as expected.

- **Troubleshooting**

- 1) Remove the ADF connector cover.



- 2) Remove the connector and 1 screw.



- 3) Lift up and remove the ADF unit.



- 4) Remove 4 screws from the each hinge unit. And then replace the hinge unit with new one.
- 5) Reassemble the ADF unit again.

### 3) ADF paper jam (Multi-feed)

- **Symptom** : Paper stops between the ADF roller and the registration roller of the ADF and a paper jam occurs.
- **Troubleshooting**  
Guide pickup replacement is required when a Regi Out Jam occurs during multi-feeding. This also stabilizes paper path.



#### NOTE

The friction pad is also replaced when the Guide Pickup is replaced.

#### [Replacement Procedure]

- 1) Open the Cover-Open Assembly.



- 2) Remove the ADF separation pad then replace it with new one.
- 3) Remove the Guide Pickup by pressing the side as shown below.

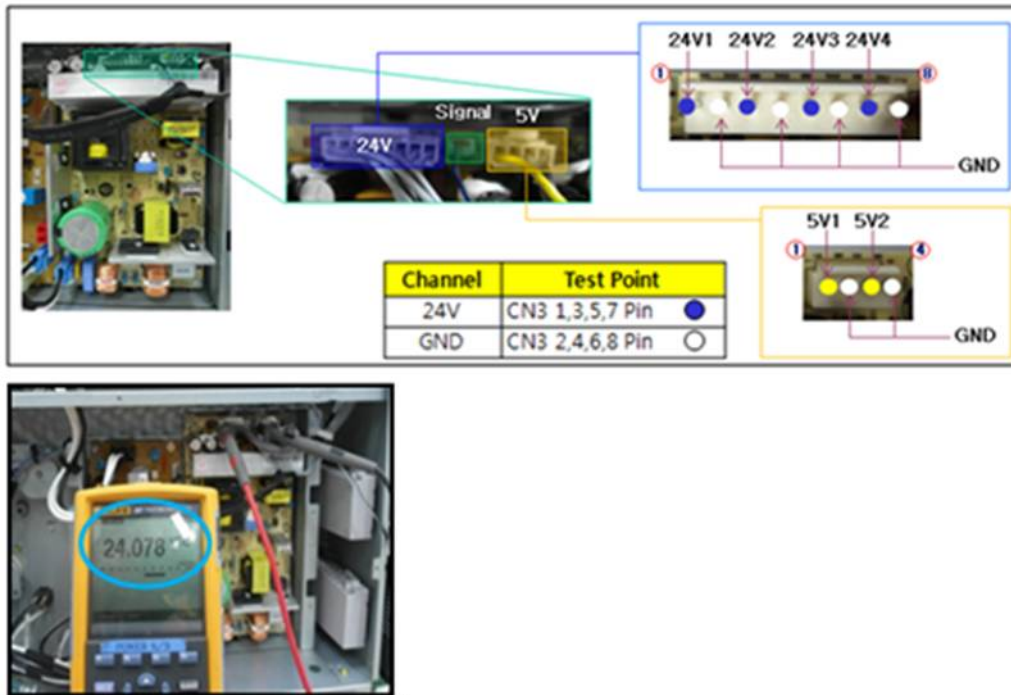


- 4) Assemble the new Guide Pickup.
- 5) Update the firmware as the latest version.

#### 4) Scanner Locked

- **Symptom** : Paper stops between the ADF roller and the registration roller of the ADF and a paper jam occurs.
- **Cause** : All 24V channels output voltage is off (24V output voltage is nearly 0V) and 5V channels output is normal.
- **Troubleshooting**

- 1) Check all 24V output channels (24VS1, 24VS2, 24VS3, 24VS4) whether 24V voltage comes out or not.



- 2) If 24V voltage doesn't come out, check '24V on/off signal pin' on the main board.
  - a) The voltage at '24V on/off signal pin' is 0V. → Main board and signal is normal.
  - b) The voltage at signal pin is 4~5.3V → Main board and signal is abnormal.
- 3) If the main board and signal is normal and all 24V output channels are nearly 0V, check other parts( i.e. Fuser, motor, scanner harness, etc.) driven by 24V voltage before replacing the SMPS.
- 4) If the main board and signal is normal and just one or two or three 24V output channels are nearly 0V, inspect some harness from abnormal 24V output channel before replacing the SMPS.
- 5) If the main board and signal is abnormal and all 24V output channels are nearly 0V, inspect the harness, connector and main board.

### 5) How to adjust image distortion

- **Symptom :**  
Image distortion occurs when paper is fed from ADF.
- **Troubleshooting**
  - 1) Loosen the 4 screws of the left hinge then loosen the 4 screws of the right side. Adjust the ADF.
  - 2) Perform a copy job from the ADF and see if image distortion occurs. Repeat steps 1 and 2 if there is distortion.
  - 3) If image distortion is removed then tighten the hinges' screws.

## 6) Paper Jam occurs due to Registration ROLLER-IDLE of ADF

- **Symptom :**

Paper Jam occurs due to Registration ROLLER-IDLE of ADF

When a document jam occurs during original document scanning, the registration sensor and spring tension need to be checked. Otherwise the Registration ROLLER-IDLE needs to be checked.

- **Cause :**

Screw was tightened too much during ADF COVER assembly. Cover plastic presses Registration ROLLER-IDLE and it cannot rotate smoothly, causing a paper jam.

- **Troubleshooting**

- 1) Open ADF Cover.

- 2) Rotate "Registration ROLLER-IDLE" by hand.

At this time which is close to screw does not rotate smoothly and rotates smoothly.

- 3) If roller does not rotate smoothly, loosen screw until roller does rotate smoothly.

- 4) When loosening screw still does not allow roller to rotate well, remove ADF cover and scrape away contact point with a knife until roller rotates smoothly. Install ADF and adjust screw .

[How to perform above step 4]

- a) Remove the ADF cover.

- b) Remove the ADF pick up Assy.

- c) Use a razor knife to shave the cover area which is binding with the Registration ROLLER-IDLE.

**7) ADF is not recognized and an S3-3211 error occurs or copying must be performed from the platen.**

- **Symptom :**
  - ADF installation is not recognized.
  - S3-3211 error occurs and copy must be performed using the platen.
- **Cause :**

ADF power cable fails.
- **Troubleshooting**
  - 1) Reassemble the ADF power cable and if it does not solve the problem, replace the cable.
  - 2) Adjust harness and make it fixed with cable tie.

## 8) During copy or scan job, the original paper JAM and U3-3213 error occur.

- **Symptom :**

- During copy or scan job, the original paper JAM and U3-3213 error occur. (SL-K7xxx LX series / SL-X7xxx LX series)

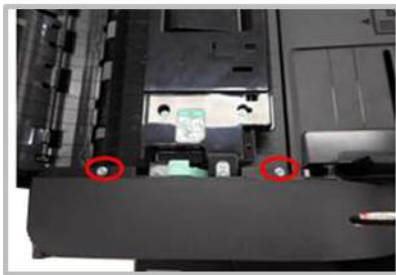
- **Troubleshooting**

- 1) Check if the “Sponge-Damper Separation” is moved to other position.



- 2) If yes, refer to following guide.

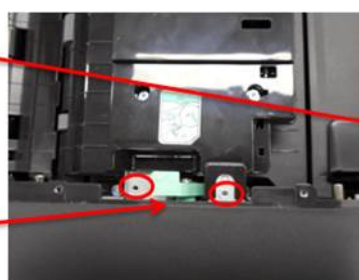
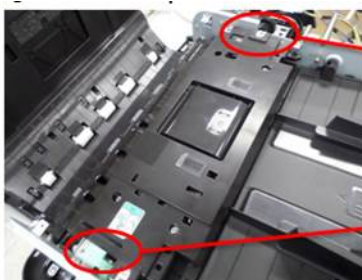
- a) Remove 3 screws.



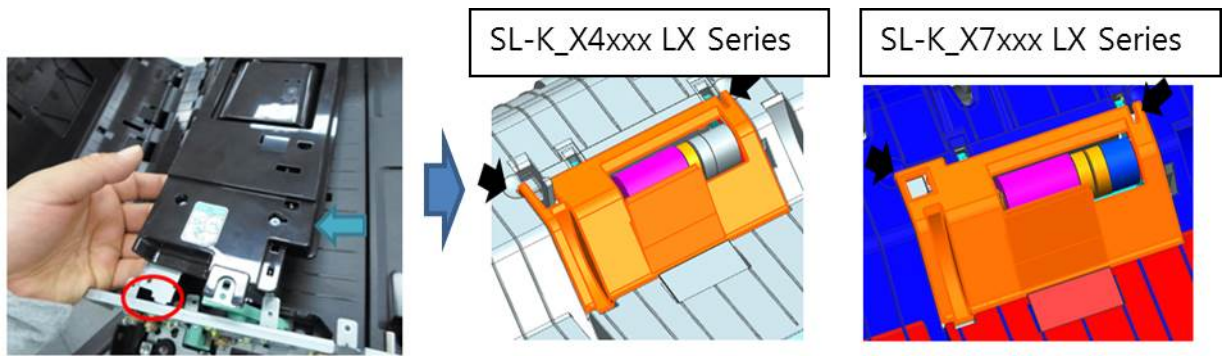
- b) Remove the linker pressing its upper side to the inner direction. And then, remove the front cover.



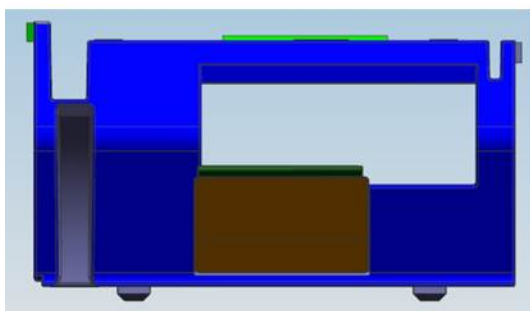
- c) Remove 4 screws.



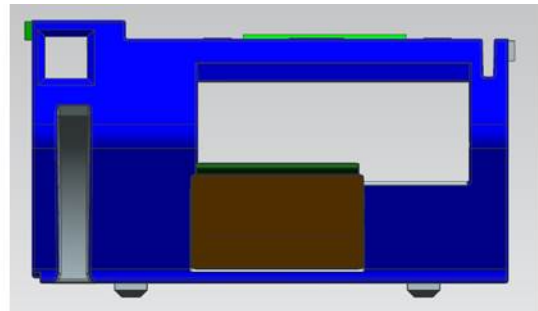
d) Remove the Pick up Assy.



e) Replace the DSDf-HOUSING SEPARATION.



SL-K\_X4xxx LX Series  
JC97-04586A\_DSDf-HOUSING SEPARATION



SL-K\_X7xxx LX Series  
JC97-04621A\_DSDf-HOUSING SEPARATION



#### 4.8.4. Drive unit problem

No	Problem Description	Troubleshooting Page
1	Machine makes noise when paper print out	P.4-222

##### 1) Machine makes noise when paper print out

- **Symptom** : Machine makes noise when paper print out
- **Cause** :
  - Lack of grease in gear-train
  - Old type gear is assembled.
- **Troubleshooting**
  - 1) Enter the service mode.
  - 2) Execute the fuser motor test.  
(Service Mode > Diagnostics > Engine Diagnostics > Engine Test Routines > Fuser Motor Forward)
  - 3) Remove the fuser unit. And execute the fuser motor test again.
  - 4) If the machine still makes noise, replace the “DRIVE-FUSER EXIT” Assy.
  - 5) If not, replace the fuser unit.

### 4.8.5. Feeding system problem

No	Problem Description	Troubleshooting Page
1	How to resolve Cassette Locking	P.4-223
2	Tray1, Tray2, MP Tray can not pick up the paper.	P.4-224
3	Machine can not feed the paper.	P.4-225

#### 1) How to resolve Cassette Locking

- **Symptom** : Cassette is not open well.



- **Cause** : Cassette operation is not smooth because Toner power is attached to the Cassette Locker.
- **Troubleshooting**

- 1) Wipe the Toner powder attached to the Cassette Locker.



- 2) Applying a small amount of the grease to Cassette Locker.
- 3) HANARL Grease
  - Product name : HANARL SN-250
  - Manufacture : KANTO KASEI, Inc.
  - Appearance : Orange
  - Directions for use : Soak an object in HANARL, or apply it by brushes.
  - After having been dried for 30 minutes, do ASSY.

**2) Tray1, Tray2, MP Tray can not pick up the paper.**

- **Symptom** : Tray1, Tray2, MP Tray can not pick up the paper.
- **Cause** :
  - Bad harness connection on the main board
  - Connector defect of the main board
- **Troubleshooting**
  - 1) Check the harness connection. If the harness is not connected correctly, reconnect it.
  - 2) Check the pick up unit connector on main board.  
If the connector has some problem of soldering, replace the main board.

### 3) Machine can not feed the paper.

- **Symptom** : The machine can not feed the paper from Tray1 or Tray2.
- **Cause** :
  - Feed motor problem
  - Feed motor connection problem
  - Main board defect

- **Troubleshooting**

- 1) Check the Feed motor operation.
  - a) Open the side cover, and push the cover switch with paper forcibly.



- b) Enter the service mode.
- c) Select the menu below.  
(EDC Mode > Diagnostics > Engine Diagnostics > Engine Test Routine > Feed motor > on/off )  
Check the two feed rollers operating status.



- d) If the feed rollers can not rotate, open the rear cover and check the motor and gears.
- 2) Check the connection between the main board(CN27) and feed motor.
  - 3) If the problem persists, replace the main board.

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### 4.8.6. LSU problem

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No	Problem Description	Troubleshooting Page
1	Loud noise sound of LSU motor	P.4-226

#### 1) Loud noise sound of LSU motor

- **Symptom** : The machine makes some noise like a siren from LSU motor in printing mode.
- **Cause** : LSU motor defect
- **Troubleshooting**
  - 1) Enter the service mode and execute the LSU motor test.
  - 2) If the LSU motor run sound is loud, replace the LSU.
  - 3) If not, check the other unit.

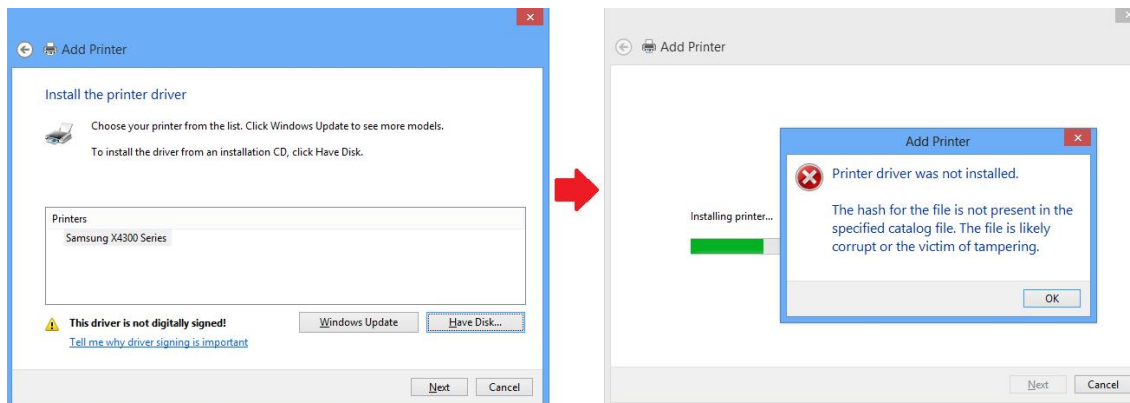
### 4.8.7. Software problem

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No	Problem Description	Troubleshooting Page
1	Driver installation problem	P.4-228
2	Job pause problem	P.4-229
3	Scan to PC login failure	P.4-230
4	Script error in Internet Explorer	P.4-231

## 1) Driver installation problem

- **Symptom** : The driver is not installed on Windows 8.1 OS.



- **Cause** :

- 1) The driver which doesn't obtain WHQL certification is not installed on 64bit OS above Windows 8 OS.
- 2) The sample CD doesn't apply WHQL certification.
- 3) The wrong version CD was applied to SOP product because couldn't confirm the exact CD version in Plant.

- **Troubleshooting**

- 1) Added the version information to the barcode on CD artwork in order to not apply wrong version CD when making SOP product at Plant.
- 2) Can confirm the exact CD information through barcode and can apply the exact CD to product.
  - Barcode information on CD Artwork (The sample for K4350)

- Before



JC46-00581A

- After



JC46-00581A V1.05

## 2) Job pause problem

- **Symptom** : Job is paused.
- **Cause** :
  - User press the stop key.
  - During job pausing process, job status is wrong.
- **Troubleshooting**
  - 1) During job pausing process, keep valid state of pause process.
    - a) Pausing → Paused
    - b) If user press cancel, paused → canceling → canceled.
    - c) If user press continue, paused → resuming → progressing.



### 3) Scan to PC login failure

- **Symptom** : Login failure popup is displayed when the user selects their Scan ID in the Scan to PC menu.
- **Cause** :
  - Anti-virus program blocks executable files if it tries to communicate with external device but it is not digitally signed.
  - Due to 3rd part library, boost ASIO does not work in certain user environment, EPM is not able to receive login event from MFP.

**NOTE**

If any network security device blocks SNMP protocol communication, login will be failed

- **Troubleshooting**
  - 1) If Login Failure problem is happened and Easy Printer Manager lower than 1.03.45.01 version is installed on customer PC, please update Easy Printer Manager to the latest version (from Download Center of Samsung web site)
  - 2) Launch Easy Printer Manager and check whether 'Enable Scan from Device Panel' is checked in the Scan to PC Settings menu.
  - 3) Even though 'Enable Scan from Device Panel' is checked but still Login Failure is occurred, please check SNMP communication between PC and MFP has been blocked or not and then allow SNMP communications.
  - 4) If your EPM is equal or higher than 1.05.10.00 but you faced Login Failure issue, Please execute attached S2PCTroubleshooter and then click the 'Run diagnose' button in the 'diagnose' tab. Once diagnose is performed, click the 'Save Log As' to get debug log. This debug log would be great help for us to analyze the problem.

#### 4) Script error in Internet Explorer

- **Symptom** : Some script error occurs and the machine can not print anything. – IE 9 or later version.
- **Cause** : In protected mode, the “RegOpenCurrentUser” function with write authority returns error or access denied.  
Can not write on the HKEY\_CURRENT\_USER registry.
- **Troubleshooting**
  - 1) Download the latest driver and install it.

### 4.8.8. Electrical circuit problem

No	Problem Description	Troubleshooting Page
1	Recognition error of the side cover problem	P.4-232
2	SMPS output voltage drop error	P.4-233
3	HDD makes a loud noise.	P.4-234
4	Networking is not working.	P.4-235
5	UI touch malfunction	P.4-236
6	No power problem	P.4-238
7	Active NFC doesn't detect NFC tag.	P.4-239

#### 1) Recognition error of the side cover problem

- **Symptom** : The side cover is closed, but the open message of the side cover displays on LCD.
- **Cause** : The spring plate of the side cover open sensor is deformed by the deformation of the stopper of the side cover.



<The stopper of the side cover>



< the spring plate of the side cover sensor >

- **Troubleshooting**

- 1) Replace the side cover open sensor Assy or deform the spring plate to normal shape.



< Normal Part >

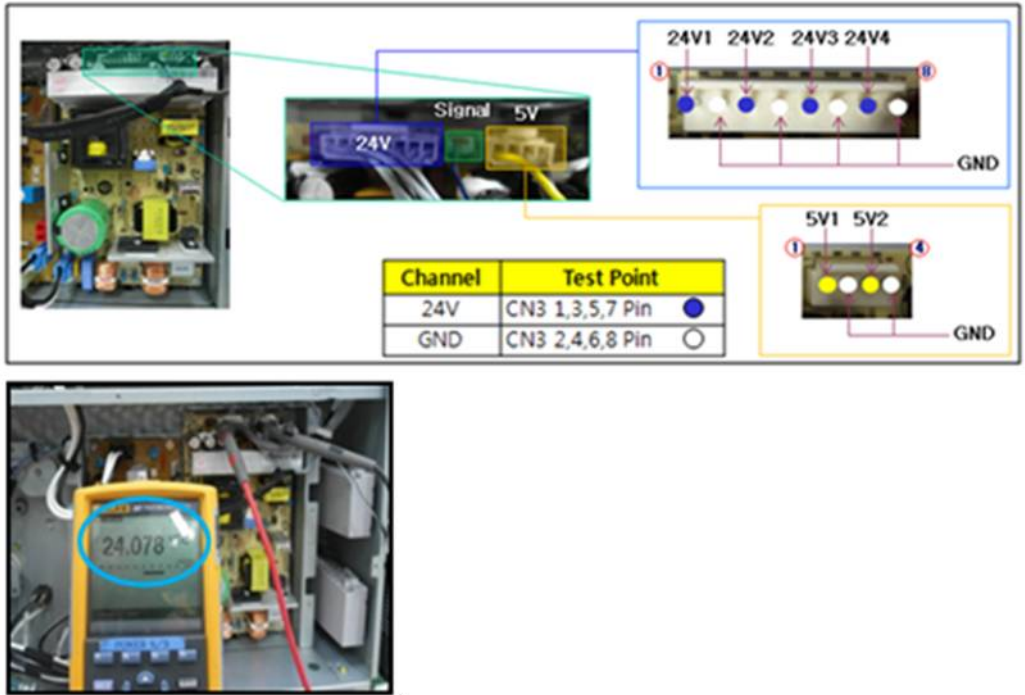


< Defective Part >

**2) SMPS output voltage drop error**

- **Symptom** : Some error messages occur on the OPE(C3-1312,S3-3121,M1-4111,M1-4211).
- **Cause** : 24V channels output voltage drop to under 21.6V and 5V channels output is normal.
- **Troubleshooting**

1) Check all 24V output channels (24VS1, 24VS2, 24VS3, 24VS4) whether 24V voltage comes out or not.



- 2) If 24V voltage doesn't come out, check '24V on/off signal pin' on the main board.
  - a) The voltage at '24V on/off signal pin' is 0V. → Main board and signal is normal.
  - b) The voltage at signal pin is 4~5.3V → Main board and signal is abnormal.
- 3) If Main board and signal is normal and all 24V output channels are nearly 0V, check other parts( i.e. Fuser, motor, scanner harness, etc.) driven by 24V voltage before replacing the SMPS.
- 4) If Main board and signal is normal and just one or two or three 24V output channels are nearly 0V, inspect some harness from abnormal 24V output channel before replacing the SMPS.
- 5) If Main board and signal is abnormal and all 24V output channels are nearly 0V, inspect the harness, connector and main board.

### 3) HDD makes a loud noise.

- **Symptom** : The Hard Disk Drive makes a loud noise when working.
- **Cause** : HDD itself has defects.
- **Troubleshooting**
  - 1) Replace the HDD with new one.

#### 4) Networking is not working.

- **Symptom** : Network is not working suddenly.
- **Cause** :
  - Network line itself is not working properly.
  - Network configuration is wrong.
  - Some related electronic components have the defect in the main board.
- **Troubleshooting**
  - 1) Do a ping test after connecting the network line which was used in the SET to a PC to check the network line itself.
  - 2) Do a ping test after connecting the network line to the SET. If it is okay, check the network configuration which may set wrong by some users without notice.
  - 3) If the result of the ping test is not good, then open the rear cover and see the main board if there are some visible defects on the network related components such as connector(CN16), capacitor(C192), and any other components nearby. Surge voltage from the outside may cause the defects.
  - 4) If those components have visible defects, then the main board should be changed.

## 5) UI touch malfunction

- **Symptom** : When touching a button, another button is entered.

※ For example,

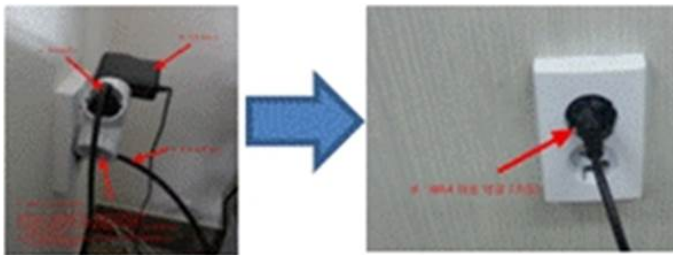


When touching home button, another menu is executed.



When touching "5" button, "4", "6", "cos" are entered.

- **Cause** :
  - Touch IC is influenced by the interference between TX frequency and power noise frequency.
- **Troubleshooting**
  - 1) If the power cord is connected to the multi tap, unplug and plug it to the independent outlet.



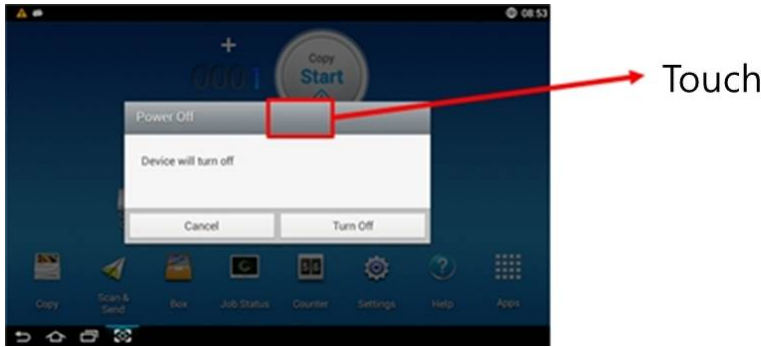
[ X ]

[ O ]

- 2) If the touch malfunction persists, check the followings.
  - a) Press "Power button" until the pop up will be displayed.



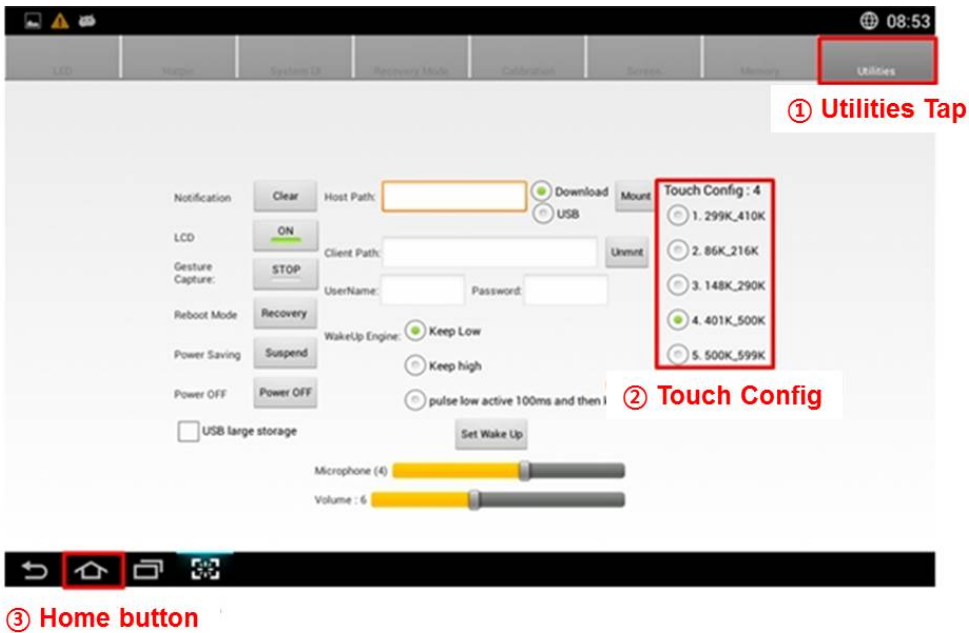
- b) Press pop-up area except "Cancel" and "Turn Off" button until the password window will be displayed.



c) Enter “8378” and press the “Done” button.



d) Select “Utilities” Tap.



e) Change “Touch Config” value.

- After changing “Touch Config”, press “Home” button.
- Priority : 1.(default) → 4. 401K\_500K → 5. 500K\_599K → 3. 148K\_290K → 2. 86K\_216K

f) Check the touch operation.

- If the touch malfunction persists, change “Touch Config” to another value and test the touch operation again.



## 6) How to resolve NO Power Problem

- **Symptom** : After turning the machine on, it can not turn on. And OPE lamp is not on.



- **Cause** :
  - The main board harness is not connected correctly.
- **Troubleshooting**
  - 1) Unplug all the harness from the main board. Then reconnect them.

### 7) Active NFC doesn't detect NFC tag.

- **Symptom** : Active NFC doesn't detect NFC tag.
- **Cause** : NFC Pro sticker block the electronic signal between NFC reader and NFC tag.
- **Troubleshooting**
  - If the meatallic sticker has attached on Active NFC module, NFC will not works fine.  
Because metallic sticker block electronic signal between NFC model and tag.  
If you attached following sticker on NFC module, remove it now.



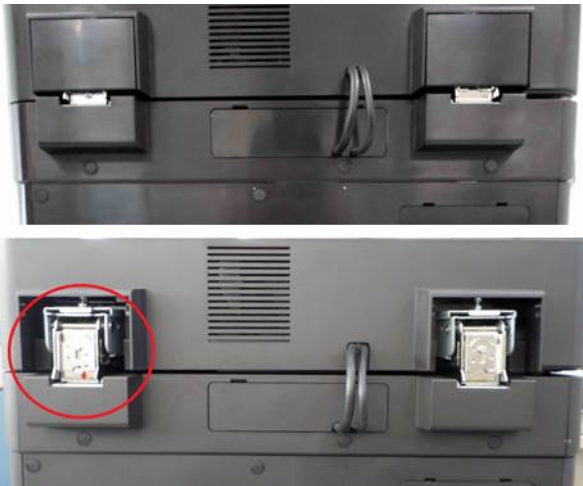
## 4.9. Adjusting the ADF(DSDF\_RADF) skew

- 1) Stand the ADF unit. Loosen 2 screws securing both hinge units slightly.

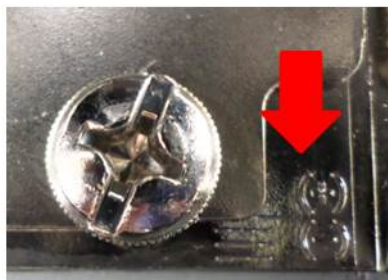
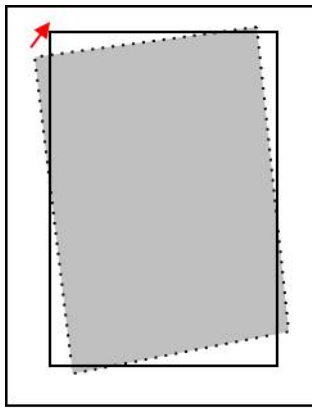


#### 4. Troubleshooting

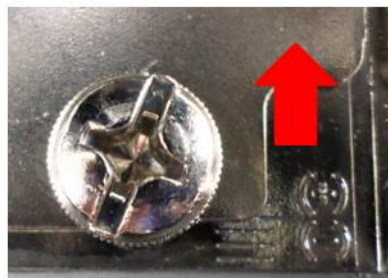
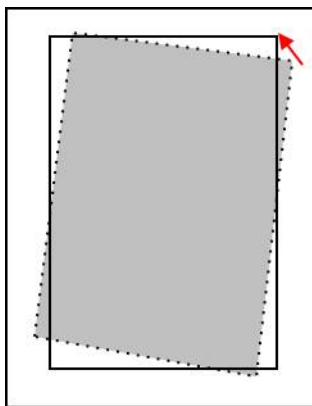
2) Adjust the position of the ADF hinge as the skew status.



a) If the skew image is like a below sample, adjust the hinge unit to the direction of arrow. (1 scale => 1.0 mm skew adjustment)



b) If the skew image is like a below sample, adjust the hinge unit to the direction of arrow. (1 scale => 1.0 mm skew adjustment)



- 3) Detach the ADF sponge after adjusting the skew. Place the ADF sponge on platen glass. And then close the ADF unit to stick the sponge.



## 4.10. SPDS (Smart Printer Diagnostic System) Application

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This application is based on Android and the purpose of SPDS is to help the service engineer when repairing a machine.

### Specification of SPDS App.

1) **Mobile**

- a) Support model : Galaxy series, All android phone.
  - Galaxy S series (S2, S3, S4,...)
  - Galaxy Note series (Note1, Note2, Note3,...)
  - Galaxy Tab series (Tab7.0, Tab7.7, Tab8.9, Tab10.1,...)
- b) Android version
  - Android 4.0 or later (Ice Cream Sandwich)

2) **Printer**

- a) USB support model
- b) Wifi-Direct support model

## 4.10.1. SPDS App Installation and Login

### 4.10.1.1. SPDS App Installation

#### 1) Run Google Play Store

- Run Google Play Store to download SPDS App.

#### 2) Search SPDS App

- SPDS App can be found by searching 'SPDS'.

#### 3) Start Installation

- Press 'INSTALL' after checking App information.

#### 4) Check Authority

- Press 'ACCEPT' after checking required authority.

#### 5) Installing

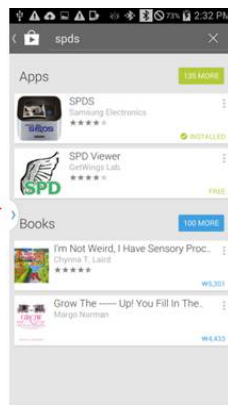
- SPDS App will be installed.

#### 6) Installation Complete

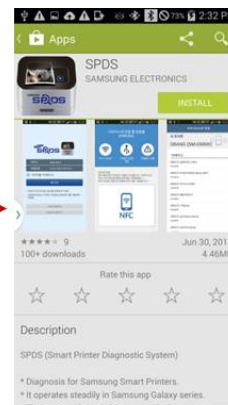
- After completing install App you can see installation result. If you want to run App press 'OPEN'.



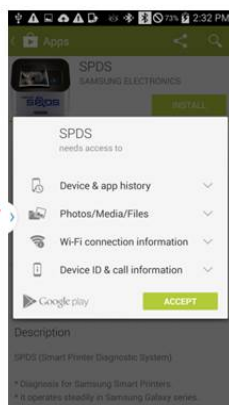
[Run Google Play Store]



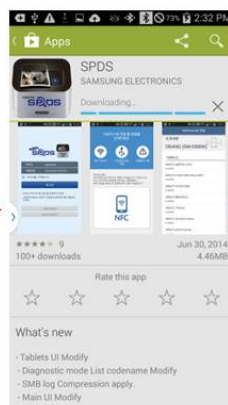
[Search SPDS App]



[Start Installation]



[Check Authority]



[Installing]



[Installation Complete]


### 4.10.1.2. User Registration Request

1) Screen that is running

- User registration is required for first time users. Press ‘User Registration Request’.

2) Input User Information

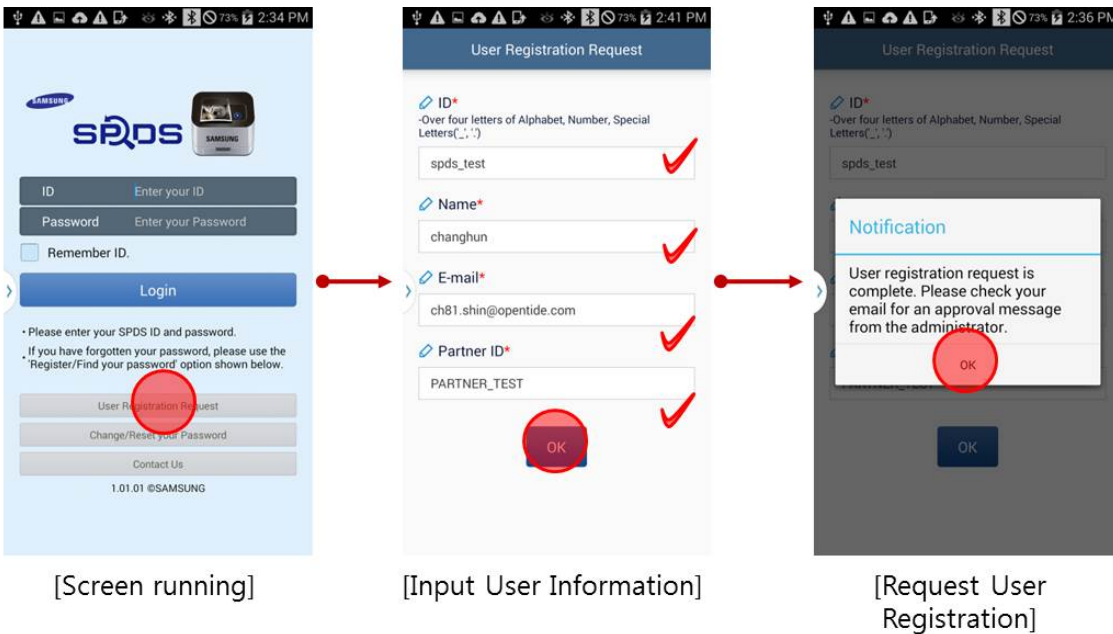
- Input ID, Name, E-mail, Partner ID. ID is required more than 4 characters. Blank spaces are not allowed. Utilize capital and small letters.

 **NOTE**  
If E-mail address is invalid you cannot progress to the next step.

- If Partner ID is invalid you cannot receive approval of administrator.

3) Request User Registration

- After request of user registration wait for approval of administrator.
- If approved by the administrator email notification will be sent out.





### 4.10.1.3. Change\_Reset Password

#### 1) Screen is running

- After approval of 'User Request Registration', you can proceed 'Change/Reset your Password'.
- Press 'Change/Reset your Password' at the bottom of screen.

#### 2) Registration Password

- Press 'OK' after ID input 'User Request Registration'.

#### 3) Send Authentication Code

- Confirm Authentication Code to e-mail of registered user.

#### 4) Input Authentication Code

- Press 'OK' after input authentication code.

#### 5) Registration Password

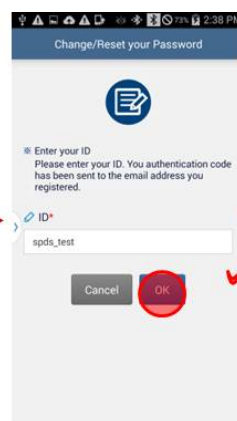
- Input your password.

#### 6) Complete Registration

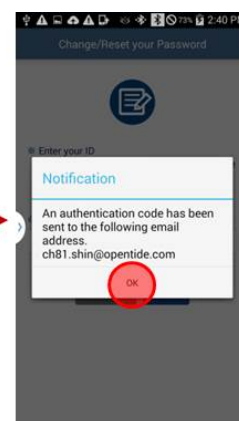
- Press 'OK' and then login at login screen.



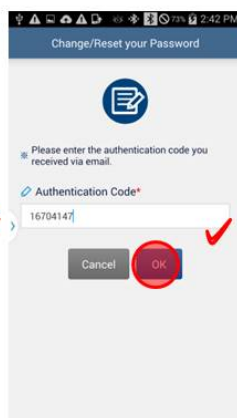
[Screen is running]



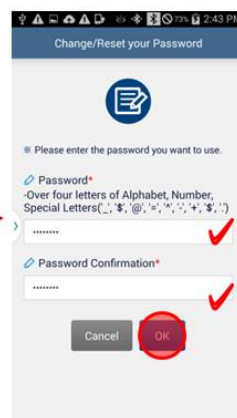
[Registration Password]



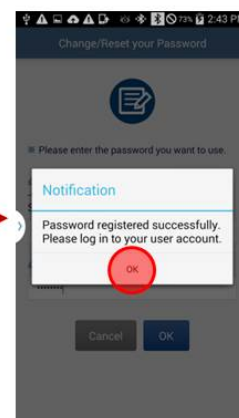
[Send Authentication Code]



[Input Authentication Code]



[Registration Password]



[Complete Registration]

### 4.10.1.4. Login

1) **Screen is running**

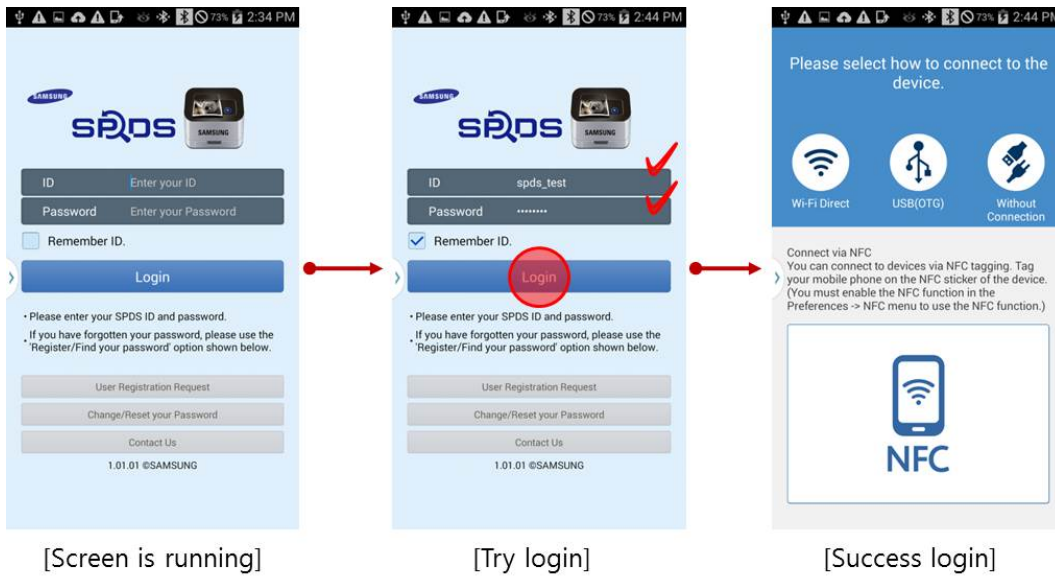
- Input ID and password that registered at ‘User Request Registration’, ‘Change/Reset your Password’.

2) **Try login**

- Try login after input ID and Password.
- If you forget your password, press ‘Change/Reset your Password’.

3) **Success login**

- If you have successful login you can see the four device connectivity method.



## Login (USIM Change)

### 1) Screen that is running

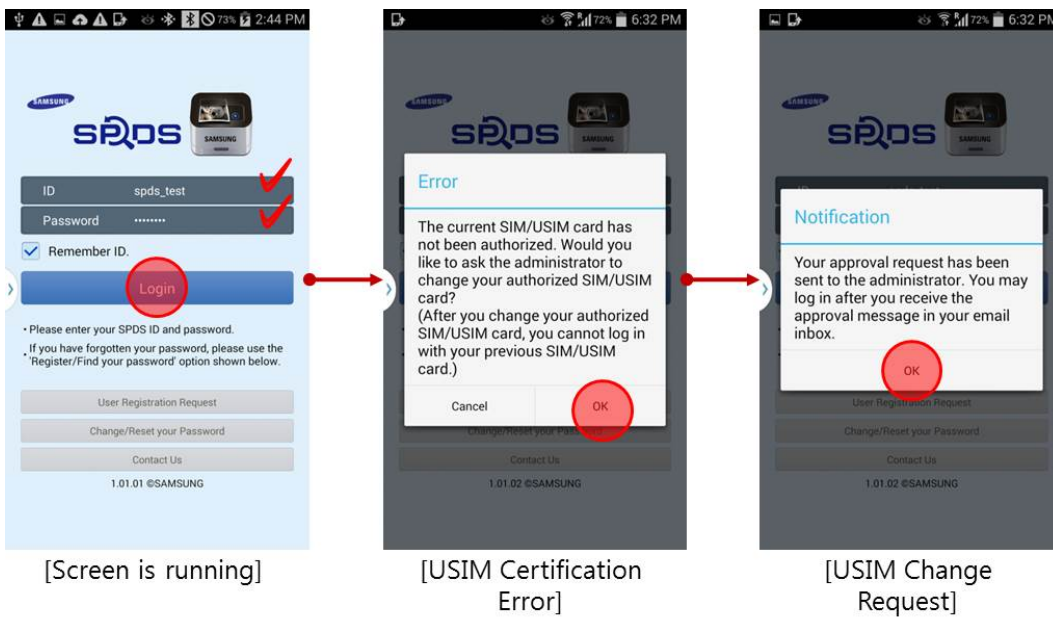
- Utilize your ID and password to login.

### 2) USIM Certification Error

- When present device USIM and USIM that used at sign up are different you can login after USIM Change Request.

### 3) USIM Change Request

- You can login via new ID and password after administrator approve USIM change.
- USIM information will be updated you cannot login with existing USIM.



### 4.10.1.5. Select Connect Method

#### WIFI-Direct

1) Device Connect Method

- Press 'Wi-Fi Direct'. If 'Wi-Fi' is disabled 'Wi-Fi' will be turn on automatically.

2) Select Device

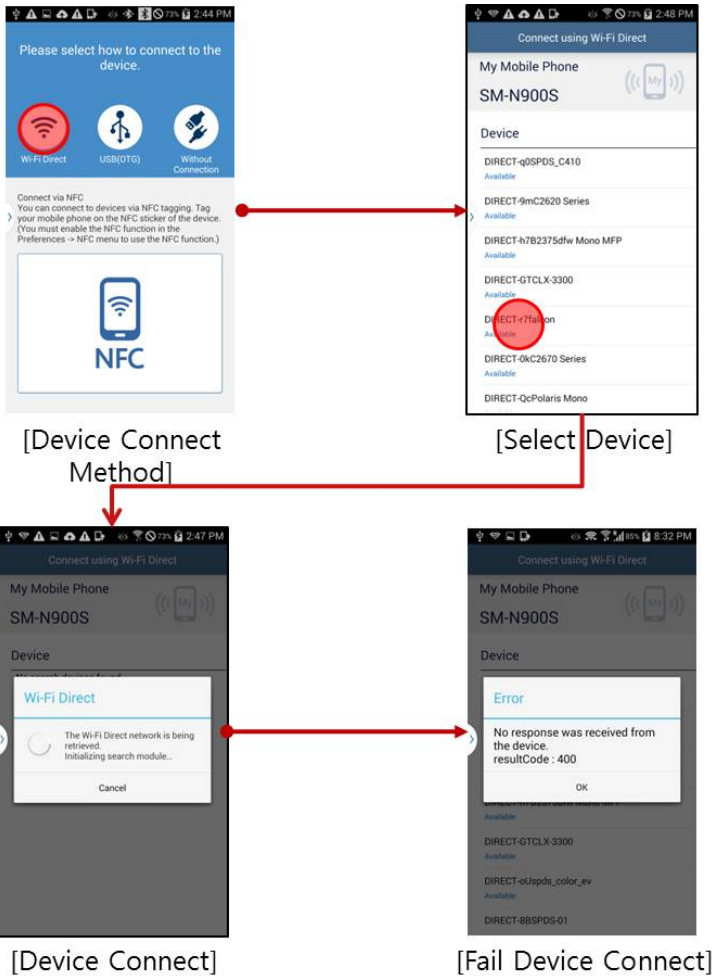
- After searching Peer you can see printer list that is available.
- Select printer for connectivity.

3) Device Connect

- Press WPS or Connect button of printer for connectivity.
- Once SPDS has connected you can see User Information Consent Screen.

4) Fail Device Connect

- When your printer firmware is not supported by SPDS a temporary device error pop-up message will occur.



## WIFI-Direct with NFC

### 1) Preparation

- After checking NFC availability of your device find NFC Tag.
- Go to Setting of your Phone, enable the NFC function.

### 2) NFC Tag

- After login select NFC protocol on your device at 'Device Connect Method'.

### 3) Connect Device

- When NFC tagging 'Wi-Fi Direct' device connection is made confirmation window pops up.
- Unlike 'Wi-Fi Direct' NFC Tagging method is directly connected to the printer. The list of available devices is omitted.



[Preparation]

[NFC Tag]

[Connect Device]

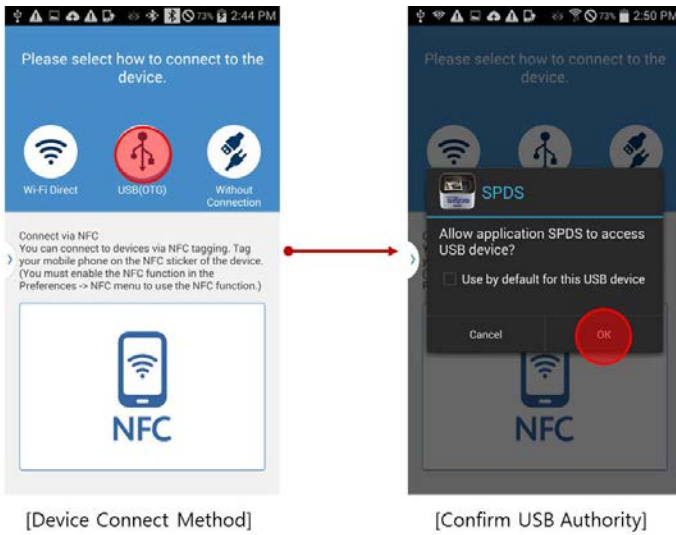
### USB-OTG

#### 1) Device Connect Method

- Connect to Printer using USB (OTG) cable.
- Press 'USB OTG' after 'printer is connected' message at the top of screen.

#### 2) Confirm USB Authority

- Press 'OK' when pop-up occurs. Once SPDS has connected you can see User Information Consent Screen.



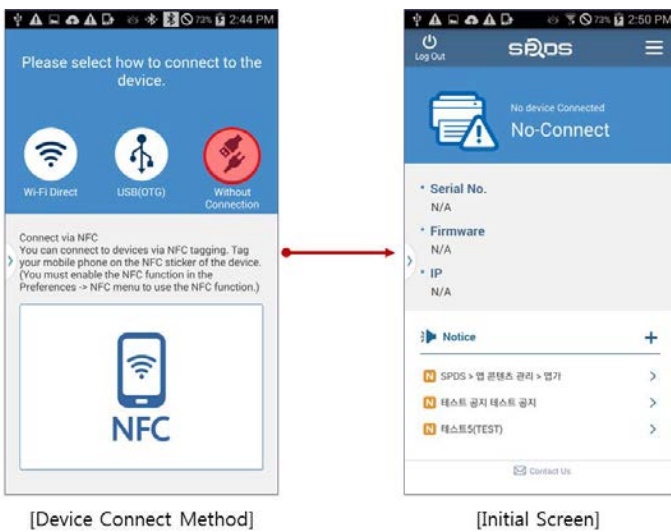
### Without Connection

#### 1) Device Connect Method

- Press 'Without Connection'.
- Need no connection to device 'Approval process of user information' is omitted.

#### 2) Initial Screen

- -You can see initial screen does not include any device information.



#### 4.10.1.6. Consent to customer information

##### 1) Confirm Registered User Information

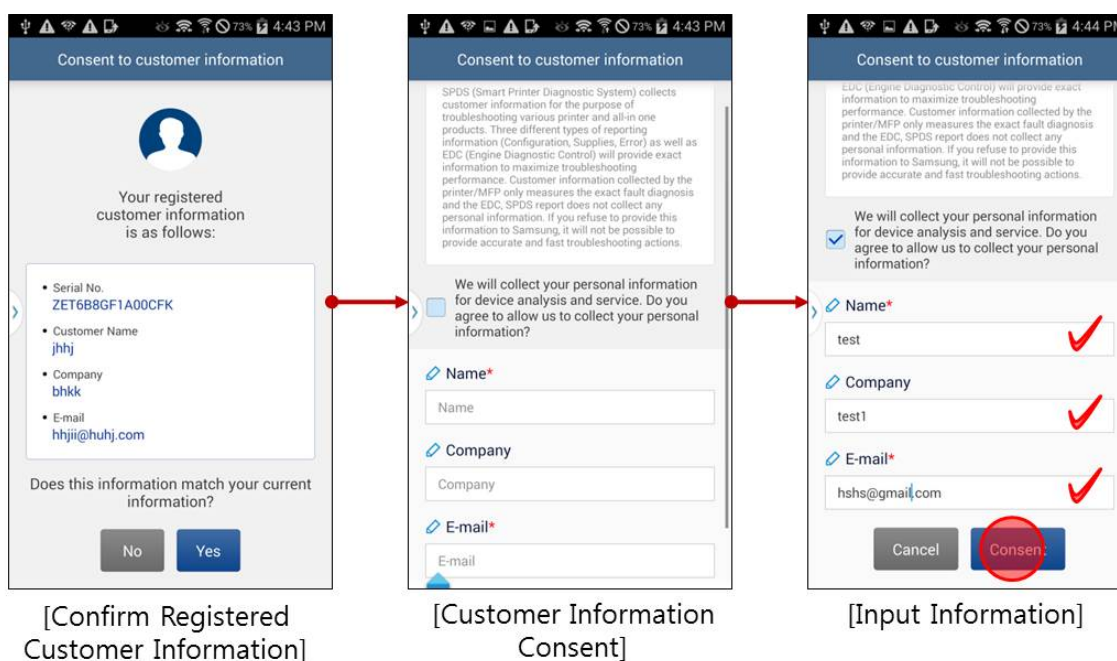
- When customer consent has been completed this screen comes out.
- If user information is correct press 'YES'. Press 'NO' for customer consent.

##### 2) Customer Information Consent

- Customer consent has not been completed this screen comes out.

##### 3) Input information

- Check the checkbox after reading terms.
- Input name, company, e-mail of customer, and then press 'Consent'.



## 4.10.2. SPDS Menu Introduction

### 4.10.2.1. Error Mode

#### Device Error Inquiry

1) Menu Screen

- At menu screen error mode menu comes out by press error icon.
- As a subordinate menu of error mode there are Device Error, Action Guide, Corrective History, Requesting Statistics, and Movie Guide.

2) Error Inquiry

- Error Code of Connected device shows by pressing ‘device error inquiry’.

3) Detailed Inquiry

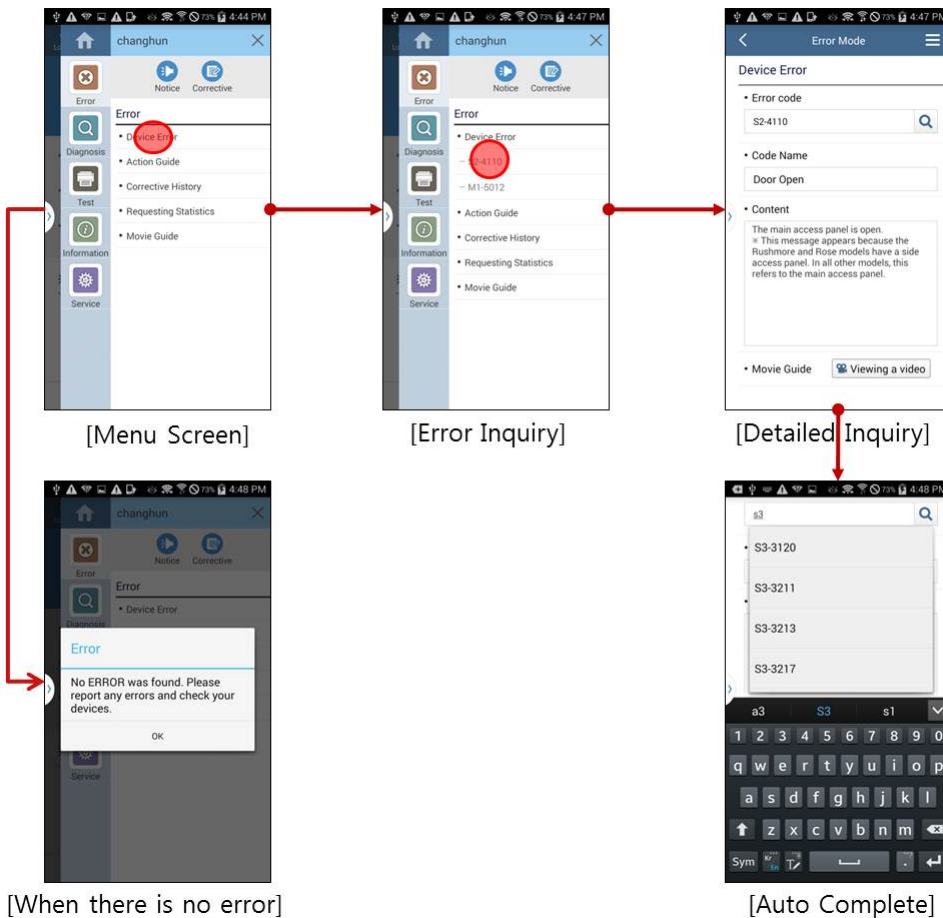
- You can see detailed information of connected device by selecting Error code.

4) When there is no error

- If connected device has no error code pop-up comes out.

5) Auto Complete

- If you input more than two characters, Error Code auto complete function is offered.





## Action Guide

### 1) Menu Screen

- Select Error → Action Guide → Service Bulletin.

### 2) Search Condition

- You can search by input Basic model, Title, Doc No, Start Date, End Date.
- Start Date and End date is requirement condition.

### 3) Select Date

- When click Start Date or End date, calendar comes out, you can select date.

### 4) Conduct Search

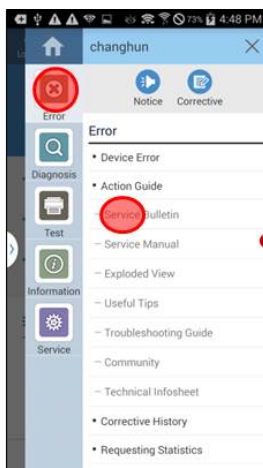
- After input search condition conduct search.

### 5) Result list

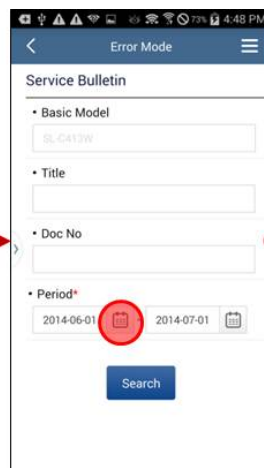
- The results of search condition comes out as a list.

### 6) See the detail

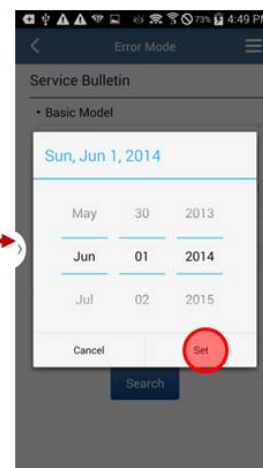
- By selecting items from list you can see detail.



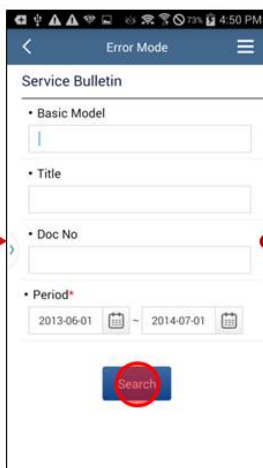
[Menu Screen]



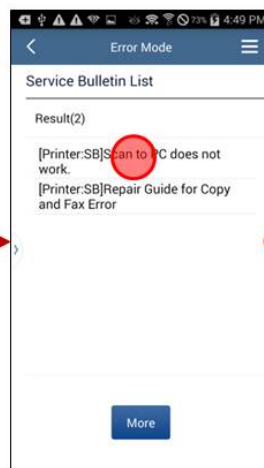
[Search Condition]



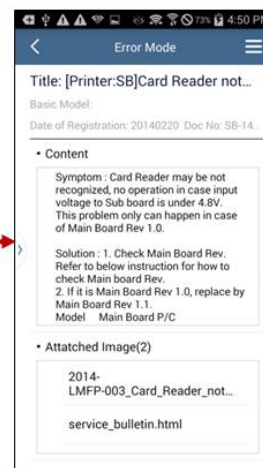
[Select Date]



[Conduct Search]



[Result list]



[See the detail]

### Connected Device History

1) **Menu Screen**

- Press Error → Corrective History → Connected Device History.

2) **Initial Screen**

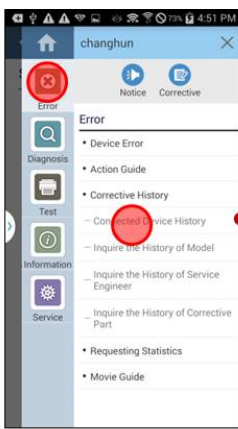
- As a subordinate menu of Connected Device History there are History of Each Error Code, History of Each Corrective Part and History of Each Service Engineer.

3) **Subordinate Menu Selection**

- Corrective Histories are listed by selecting menu.

4) **See the detail**

- Detailed Action comes out by selecting Corrective history list.



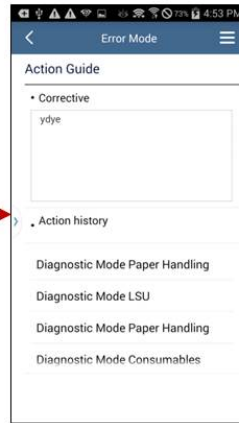
[Menu Screen]



[Initial Screen]



[Subordinate Menu Selection]



[See the detail]

## Requesting Statistics

### 1) Menu Screen

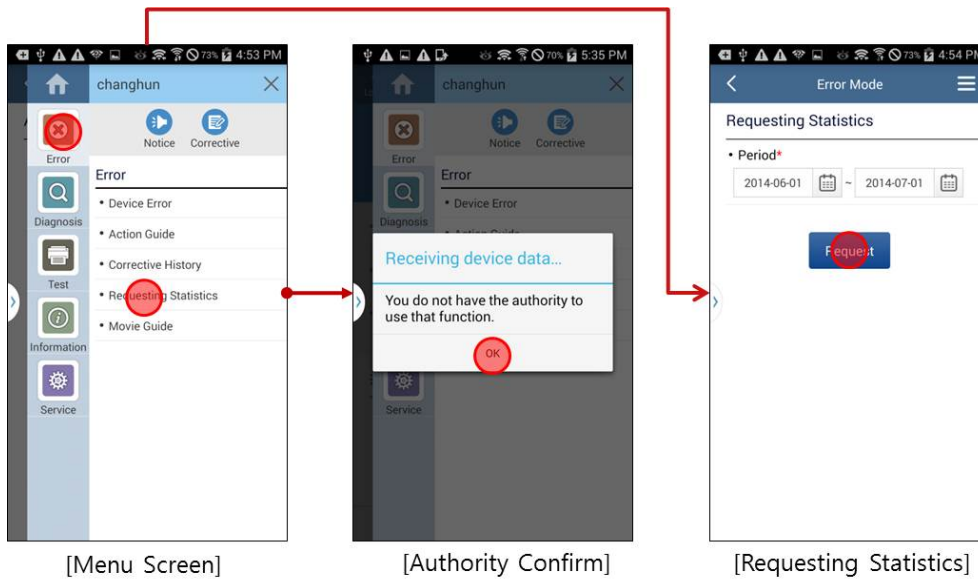
- Press 'Requesting Statistics' of Error mode.

### 2) Authority Confirm

- Requesting Statistics require administrator authority. So if you have no administrator authority, you cannot use this function.

### 3) Requesting Statistics

- Usage/Statistics History will be sent to e-mail of requester.



**Movie Guide**

1) **Menu Screen**

- Press ‘Movie Guide’ of Error Mode.

2) **Search Condition**

- Movie list comes out related to Error Code. Select movie that you want.

3) **Check SD Card**

- Check whether selected movie exist.

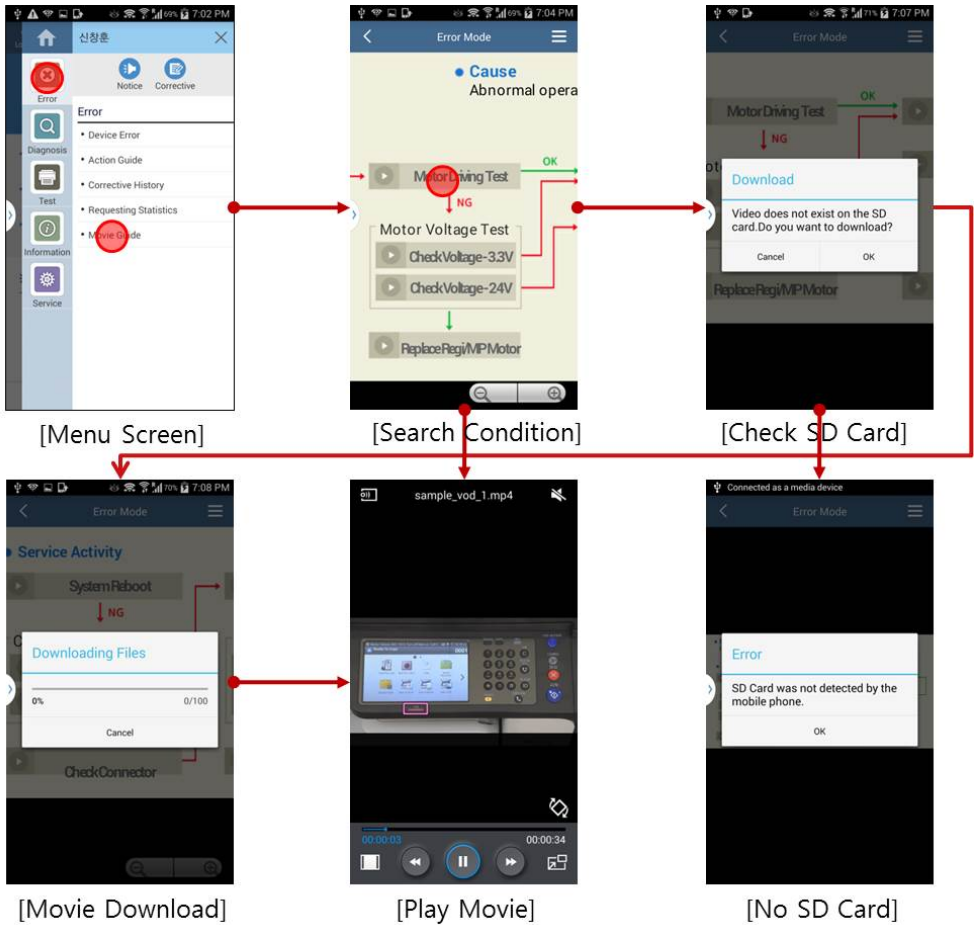
**NOTE**  
If SD Card of the mobile phone does not exist it is not downloaded.

- If there is movie at SD Card, movie will be played.
- If movie does not exist a download confirmation pop-up comes out.

**NOTE**  
Movie is saved to SD Card. (/Card/Android/data/com.sec.spds/files/video/)

4) **Play Movie**

- Play Movie that exist in SD card.
- Movie support landscape mode.



### 4.10.2.2. Diagnosis Mode

#### 1) Menu Screen

- Diagnosis mode allows user to diagnosis or check status of connected device.
- SHADING TEST is menu that report status of SCANNER.

#### 2) Subordinate Menu Selection

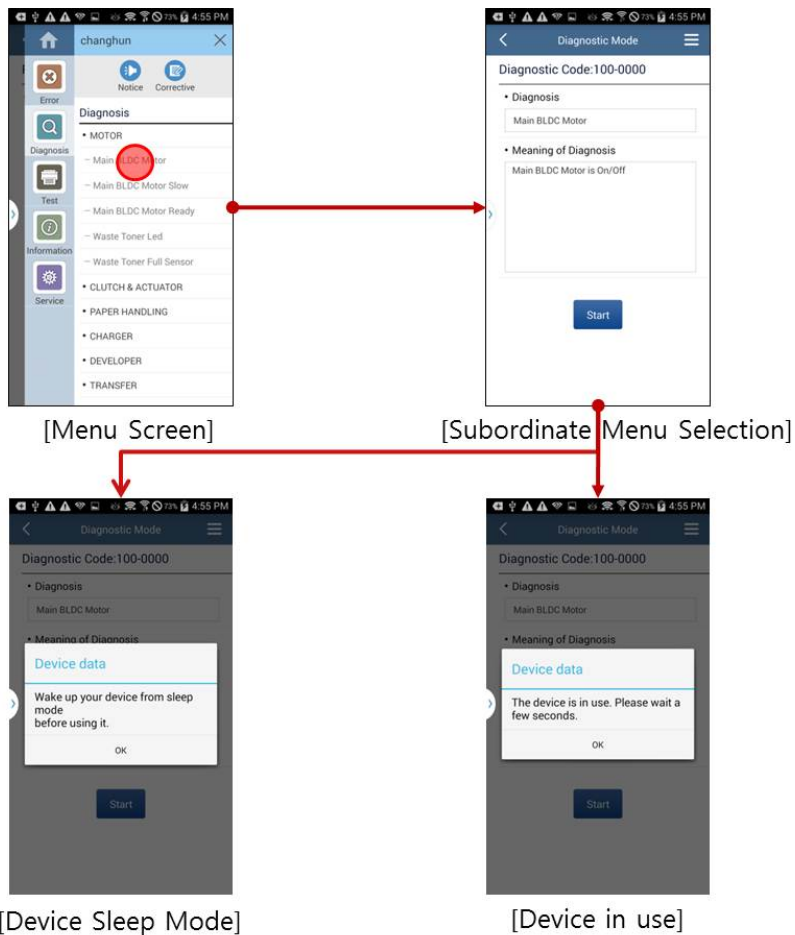
- Diagnosis mode consist of ON/OFF, HIGH/LOW, OPEN/CLOSE, INSTALL/UNINSTALL, 3DIGI.
- Only ON/OFF run diagnosis by Start Button.
- Other function except ON/OFF Diagnosis Mode indicate status value of connected device.

#### 3) Device Sleep Mode

- If device status is sleep you can use diagnosis mode after wake-up process.

#### 4) Device in use

- However, wake-up device you cannot use diagnosis before status become ready.



### 4.10.2.3. Test Mode

#### 1) Menu Screen

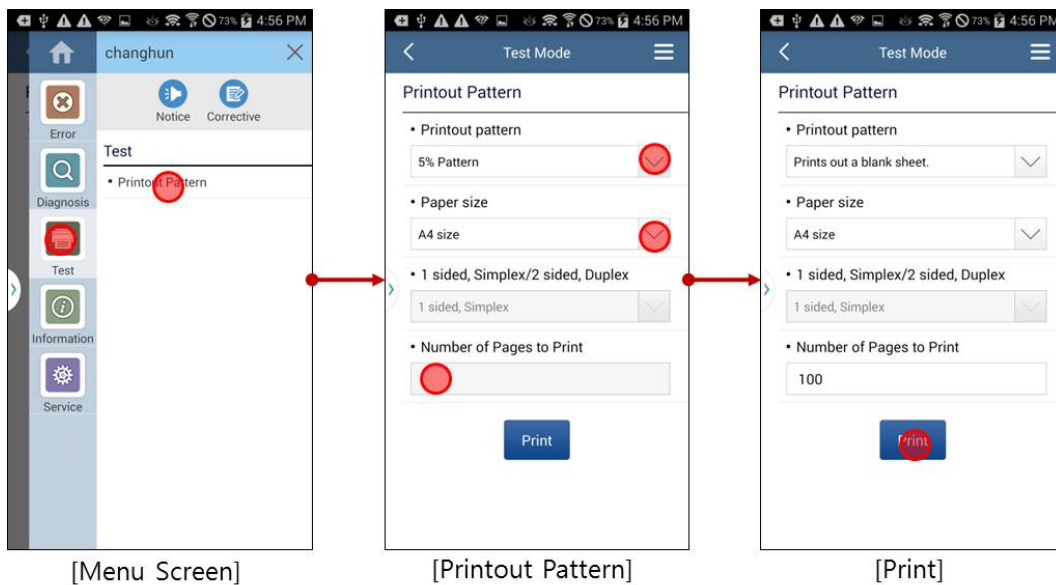
- Press Test → Printout Pattern.

#### 2) Printout Pattern

- You can print by selecting Printout pattern, Paper size, 1 sided, Simplex/2 sided, Duplex, Number of Pages to Print.
- There are five types of pattern. 5%, Skew, Black, Solid, Prints out a blank sheet.
- There are four types of pattern. A4, Letter, A3, Ledger.
- 1 sided, Simplex/2 sided, Duplex, Number of Pages to Print is only enable at 'Prints out a blank sheet'.
- 'Prints out a blank sheet' 1 to 100 can be entered.

#### 3) Print

- When press Print, options set in the print are utilized.



#### 4.10.2.4. Information Mode

##### Configuration Menu

###### 1) Menu Screen

- Information Mode consist of Configuration, Supplies, Network, Fax report, Tech mode.

###### 2) Configuration

- Configuration mode consist of Preferences Information, Date of First Set Installation, Firmware information.

###### 3) Preferences Information

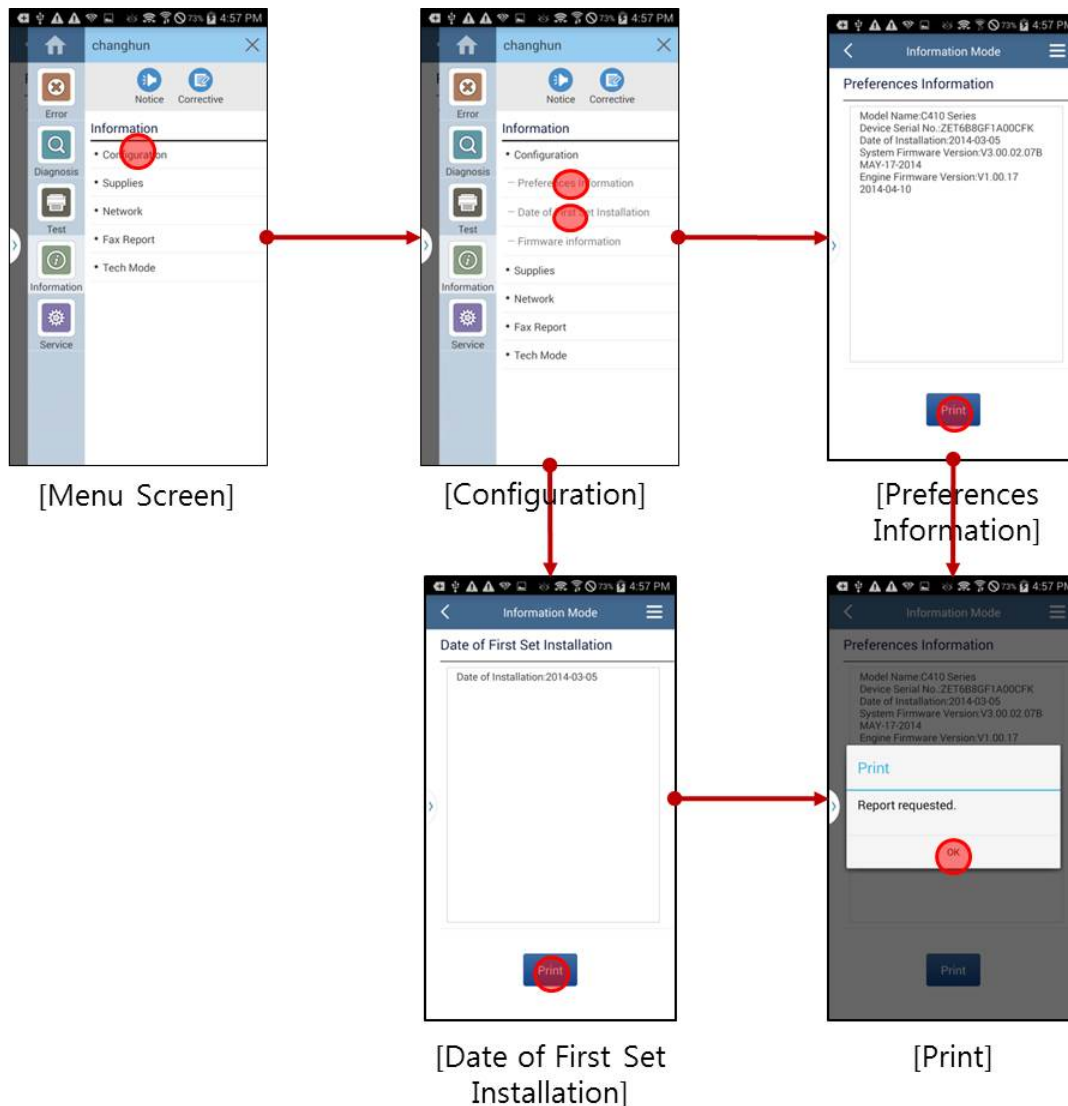
- Preferences Information indicates Model Name, Device Serial Number, Date of Installation, Firmware Version.

###### 4) Date of First Set Installation

- Date of First Set Installation, Firmware information indicate each information.

###### 5) Print

- Press 'Print', information indicated on UI will print out.



### Other Menu

1) Supplies

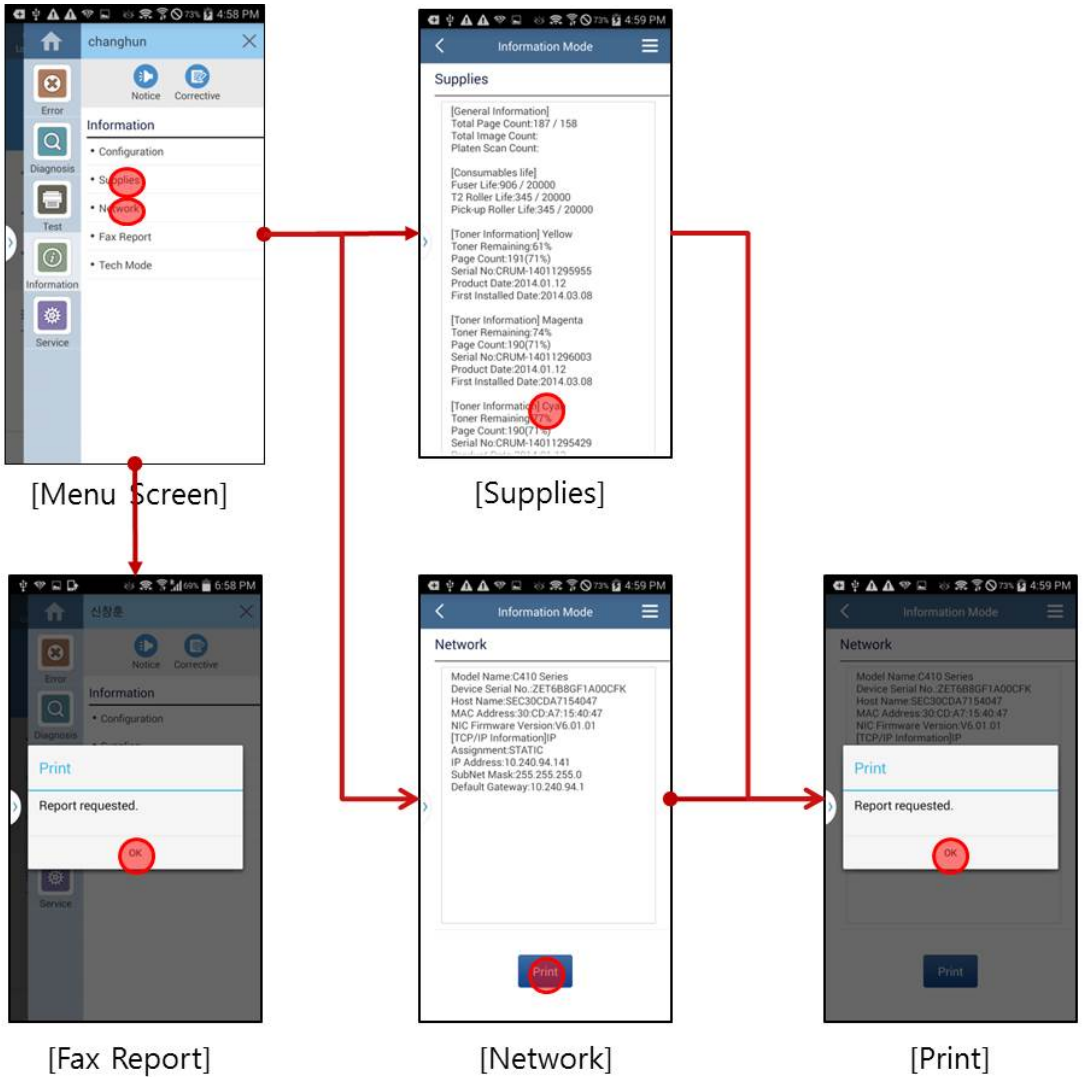
- Supplies indicate Supplies information of connected device.

2) Network

- Network indicate Network information of connected device.

3) Fax Report

- FAX REPORT Fax Sent, Fax Received, Fax Protocol Dump, Fax Diagnostics .





### 4.10.2.5. Service Mode

#### Cloning Menu

##### 1) Menu Screen

- Press Service button
- Press Cloning menu.

##### 2) Admin Login

- Input admin account of connected device and press Login Button.

##### 3) Export

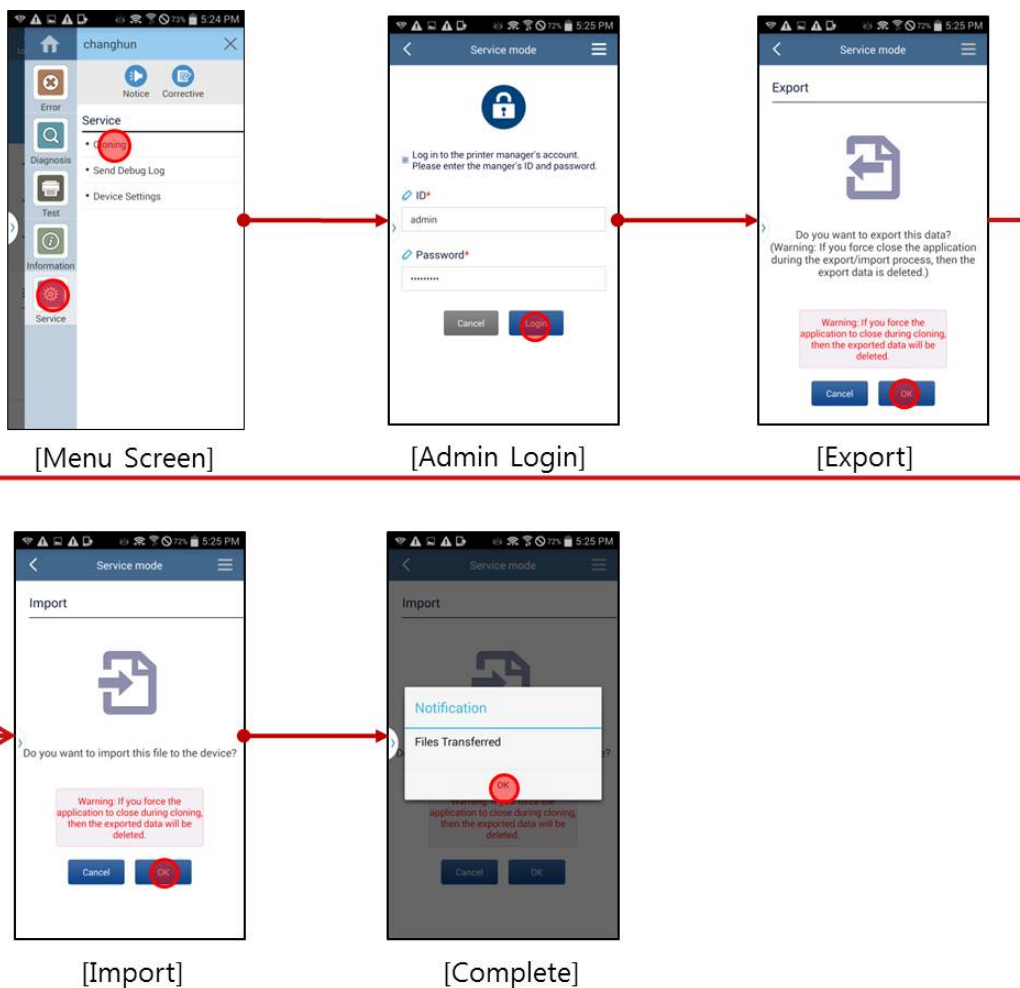
- Export data of printer press 'OK'.

##### 4) Import

- Importing data of data that exported from connected printer press 'OK'.

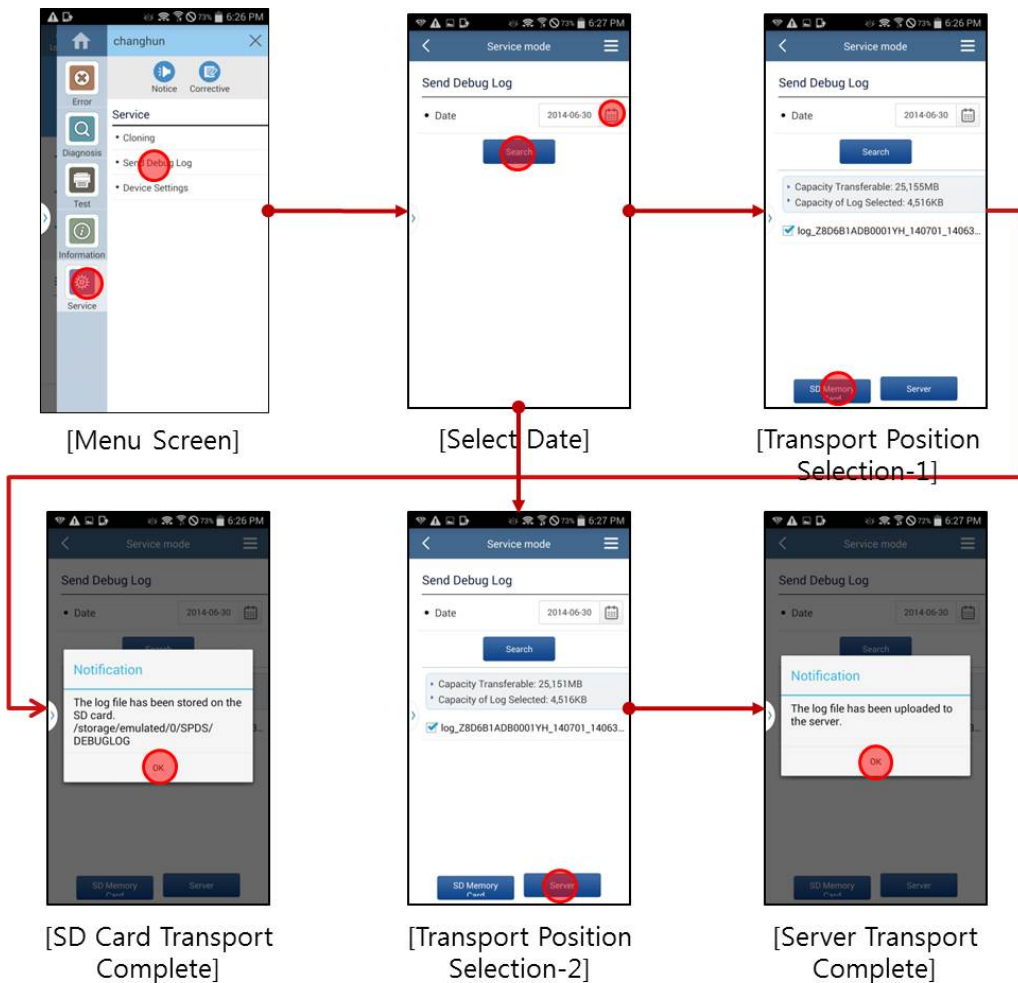
##### 5) Complete

- After end of Import press 'OK', Export menu ends.
- Device will reboot.



### Send Debug Log

- 1) **Menu Screen**
  - Press 'Service'.
  - Press 'Send Debug Log'.
- 2) **Select Date**
  - Select Date. Press request button.
- 3) **Transport Position Selection-1**
  - Log names that can transport are indicated on screen.
  - Select save method (SD Card)
- 4) **SD Card Transport Complete**
  - If you select SD Memory, Log will be saved at "/>Phone/SPDS/DEBUGLOG".
  - Press 'OK', then 'Send Debug Log' Menu end.
- 5) **Transport Position Selection-2**
  - Log names that can transport are indicated on screen. Select save method(Server)
- 6) **Server Transport Complete**
  - After completing upload pop-up comes out.
  - Press 'OK' then 'Send Debug Log' Menu end.



## IP Settings

### 1) Menu Screen

- Press Service → Device Settings. Press IP Settings.

### 2) IP Setting

- Input IP Address, Subnet Mask, Gateway.
- Press OK.

### 3) Change Complete

- If IP changing complete normally, above pop-up comes out.
- Press 'OK', then 'IP Setting' Menu end.



## Counter Initialization

### 1) Menu Screen

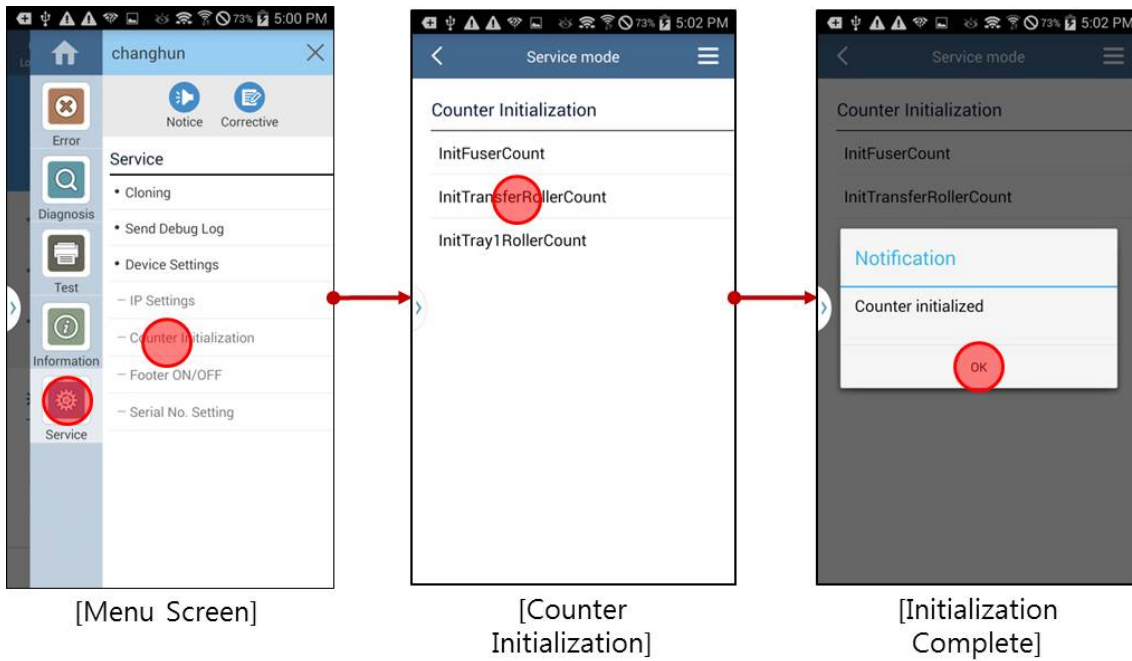
- Press Service → Device Settings. Press Counter Initialization

### 2) Counter Initialization

- Select item to initialize.

### 3) Initialization Complete

- If initialization complete normally, pop-up comes out. Press 'OK' you can initialize other counter value.



## Footer ON/OFF

### 1) Menu Screen

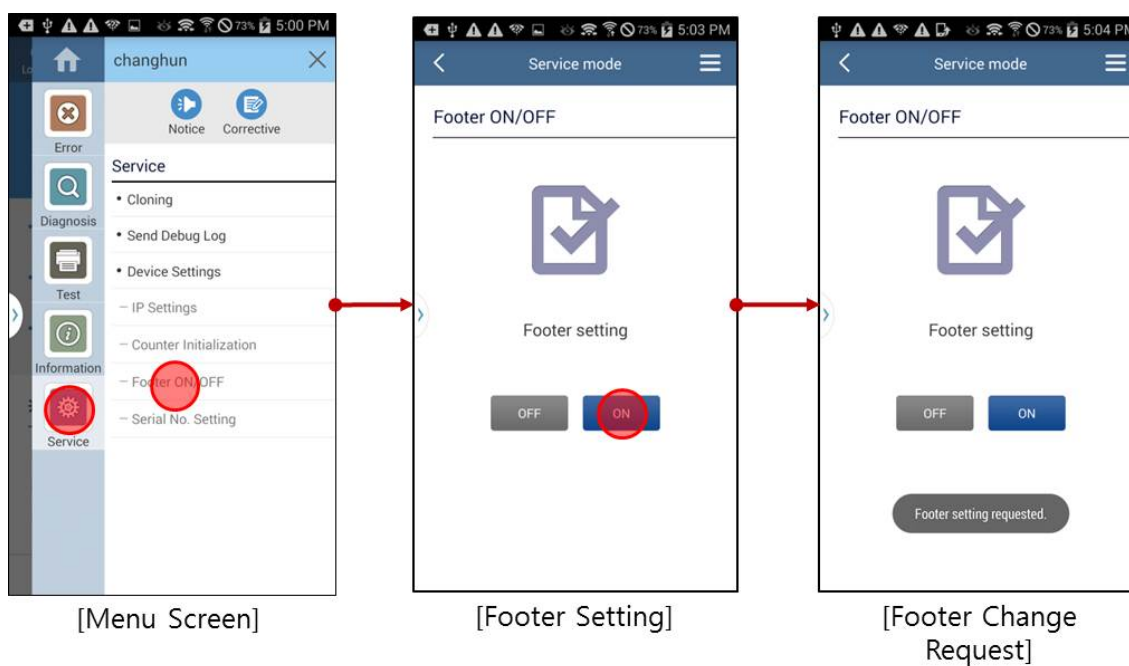
- Press Service → Device Settings. Press Footer ON/OFF.

### 2) Footer Setting

- When press 'ON' button, activate Footer value.
- When press 'OFF' button, inactivate Footer value.

### 3) Footer Change Request

- If Footer Setting is requested normally toast message will occur.



### 4.10.3. Corrective Upload

1) **Menu Screen**

- You can go to Corrective Screen by pressing ‘Corrective’.

2) **Confirmation Window before Shutdown.**

- Before shutdown App. upload Corrective is required.
- You can go to Corrective Screen by Press ‘OK’.
- If you shutdown App forcibly without upload Corrective will be aggregated with abnormal action.

3) **Corrective**

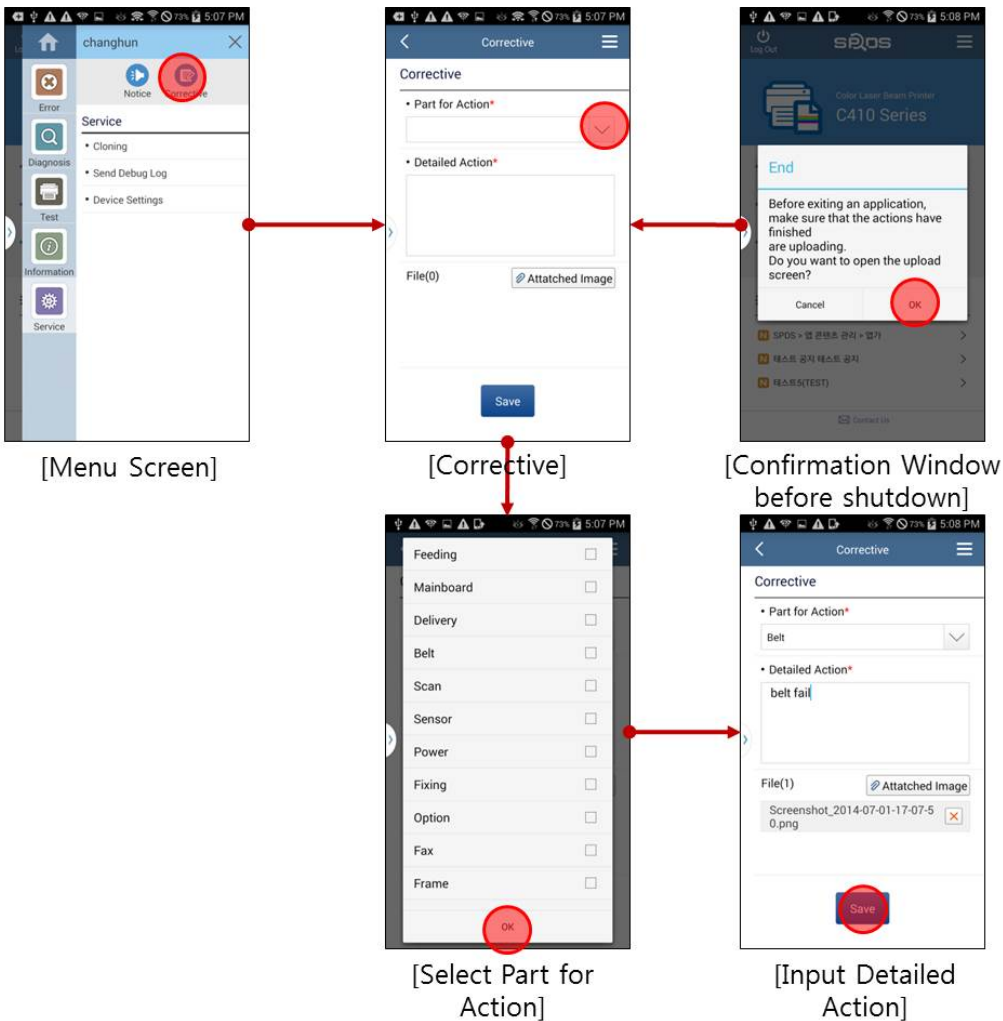
- In the Corrective you can input Part of Action, Detailed Action, Attached Image.

4) **Select Part for Action**

- Part for Actions are Feeding, Main board, Delivery, Belt, Scan, Sensor, Power, Fixing, Option, Fax, Frame, Phenomenon, LSU, Application, Driver, Firmware, Others.

5) **Input Detailed Action**

- Part of Action and Detailed Action are required.
- Input requirements and press ‘Upload’ button



## 4.10.4. Exceptions

### Exceptions (Device Interface)

#### 1) Menu Screen

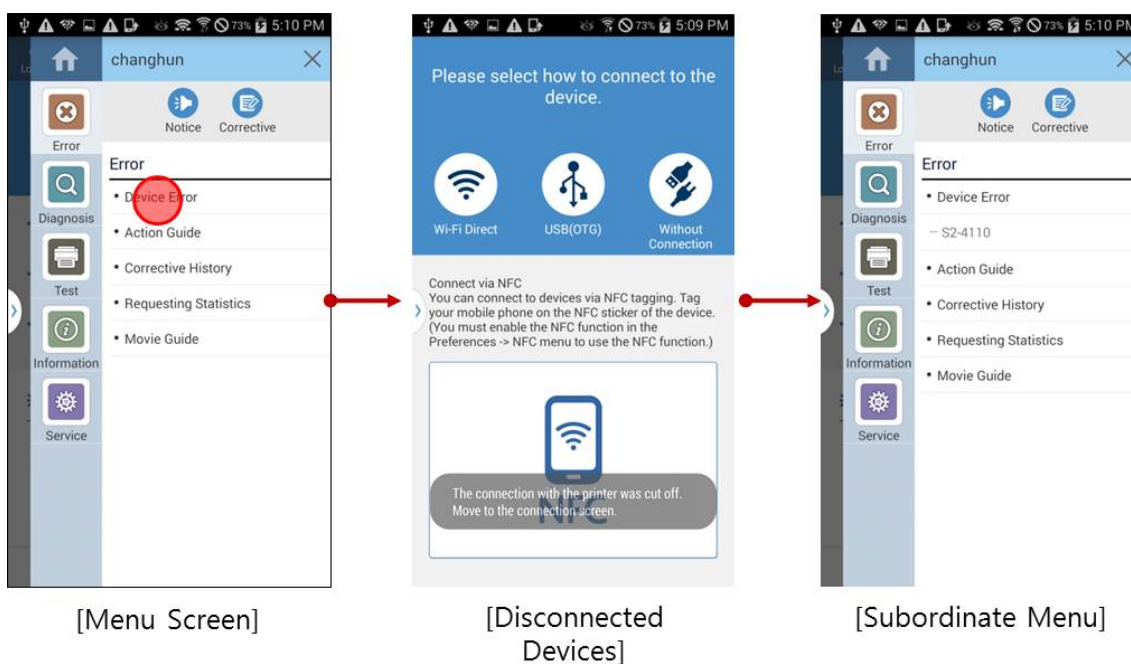
- Need to I/F the device menu first check the connection status of the device.
- If connection between App and device ( e.g. device reboot, Timeout ), go to device connection menu.

#### 2) Disconnected Devices

- For App reconnect to device go to device connection menu before indicate subordinate menu.

#### 3) Subordinate Menu

- If device connection perform normally you can see subordinate menu.



### Exceptions (Server Interface)

1) **Menu Screen**

- Need to Server I/F the device menu first check the connection status of network (3G, LTE, WIFI).

2) **Network Error Occurrence**

- When network isn't connected (3G, LTE, WIFI), try search.

3) **Error Message**

- If network error (3G, LTE, WIFI) occur, error message pop-up print out and cannot proceed.
- In this case it is necessary to check the network.

4) **Network Normal**

- When network (3G, LTE, WIFI) is connected normally, try search.

5) **Normal Result**

- Because there is no problem with the network App will show normal results.



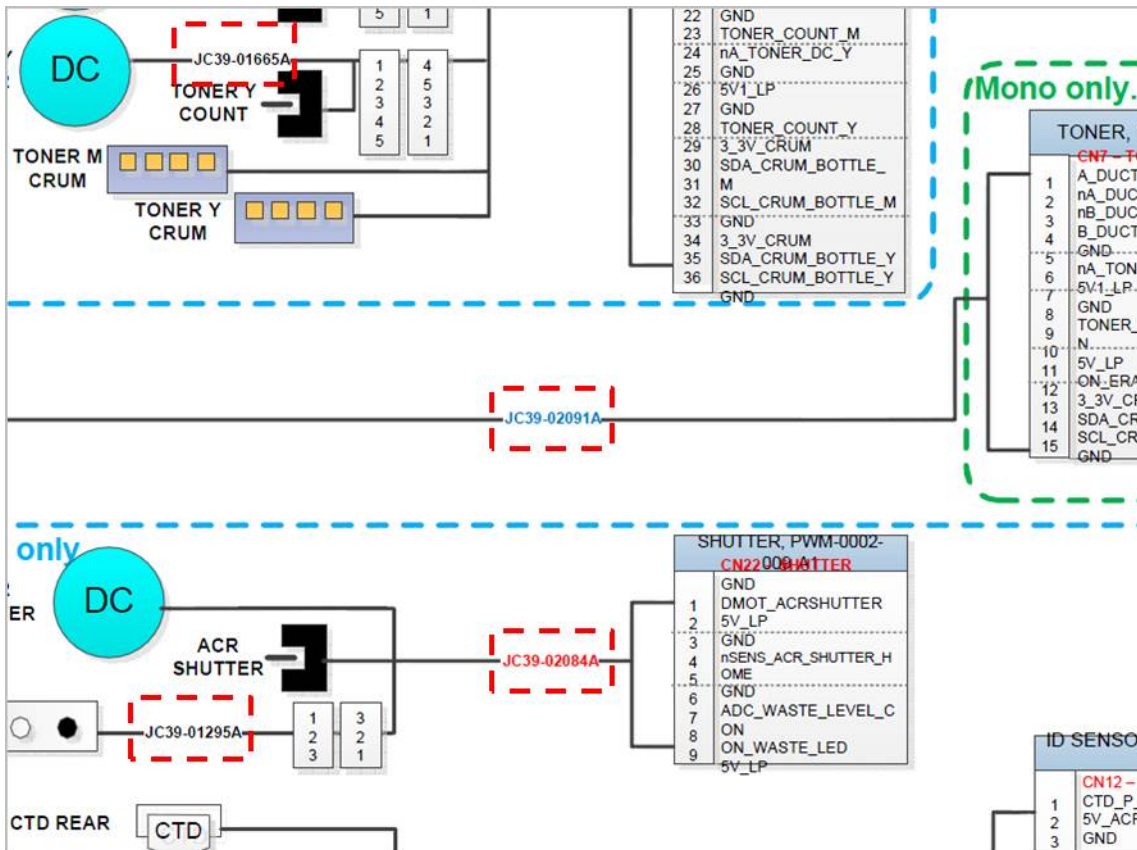


# 5. Connection Diagram

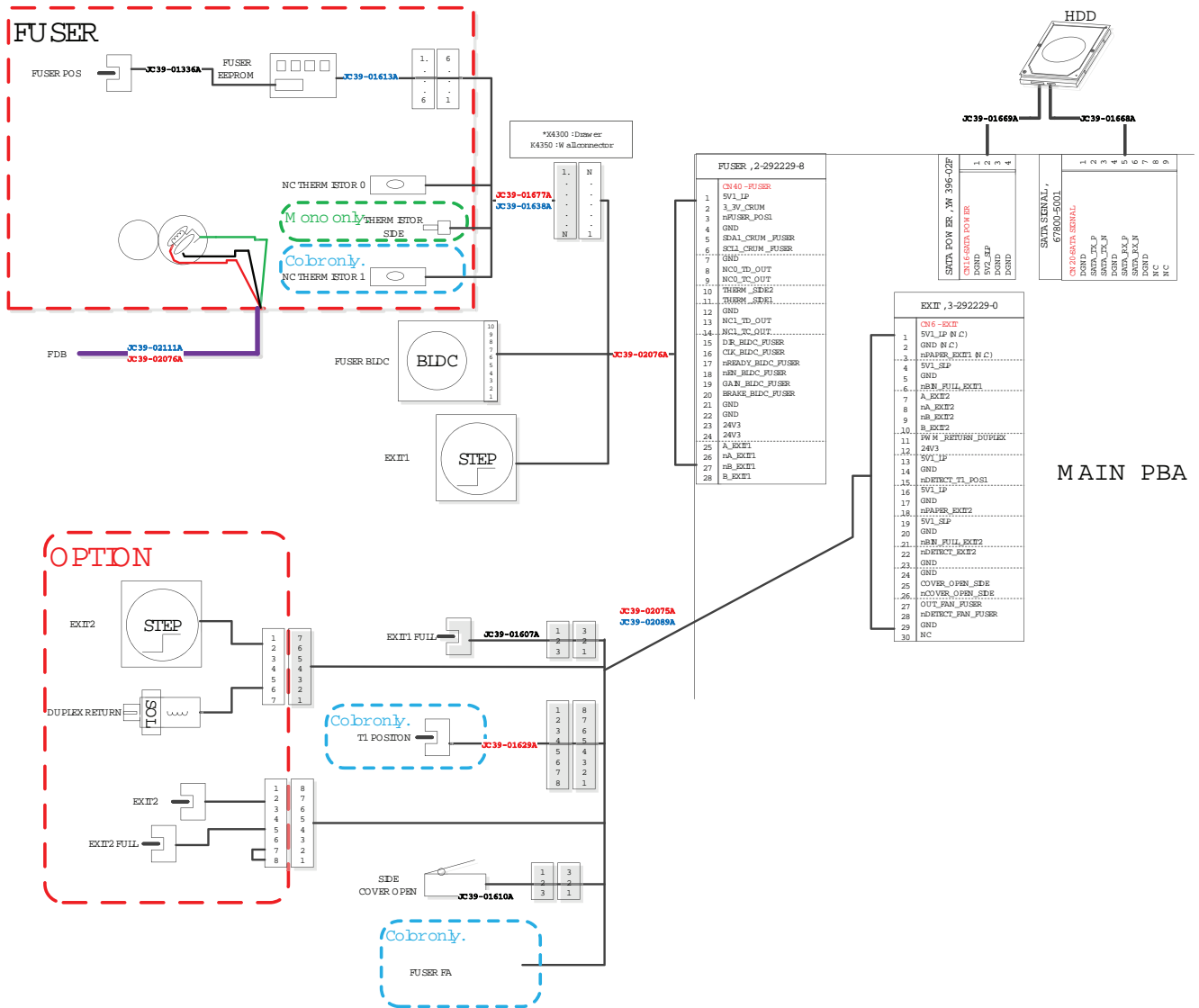
**NOTE**

The connection diagram includes the harness part code as shown below.

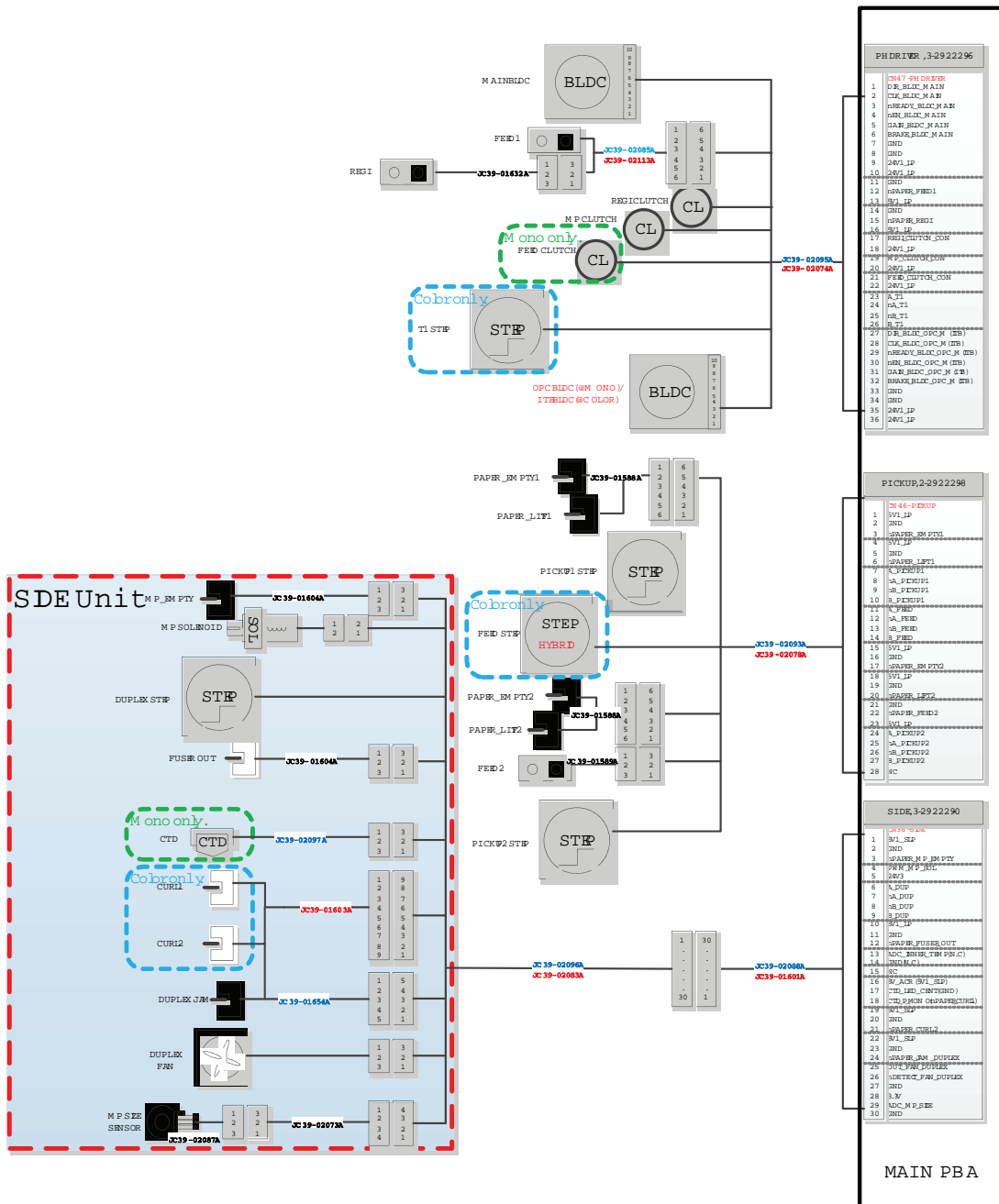
- Black text harness code is for color and mono model in common.
- Blue text harness code is for mono model.
- Red text harness code is for color model.



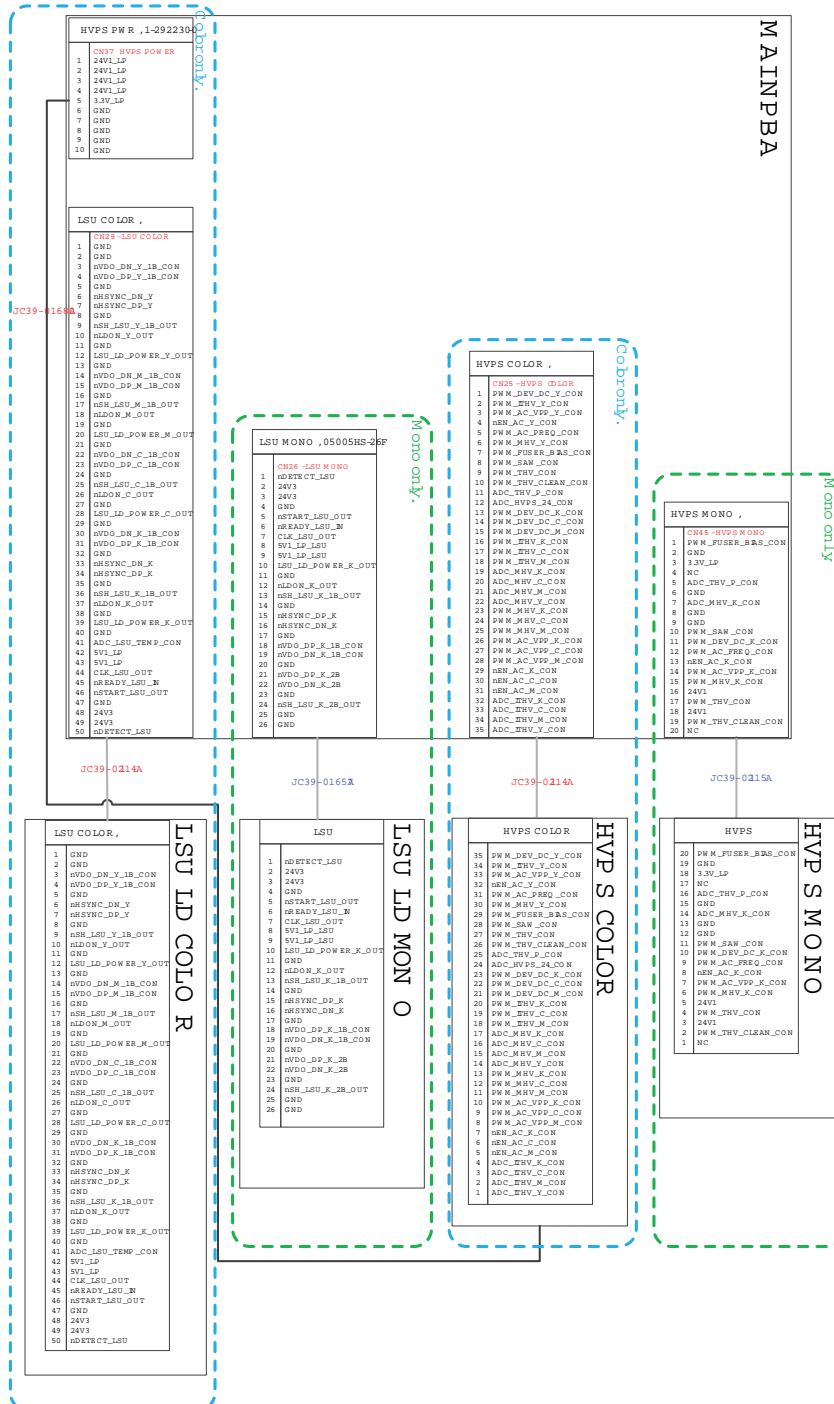
# 5.1. Connection Diagram (FUSER\_EXIT)



## 5.2. Connection Diagram (PICK UP\_PH DRIVE\_SIDE)

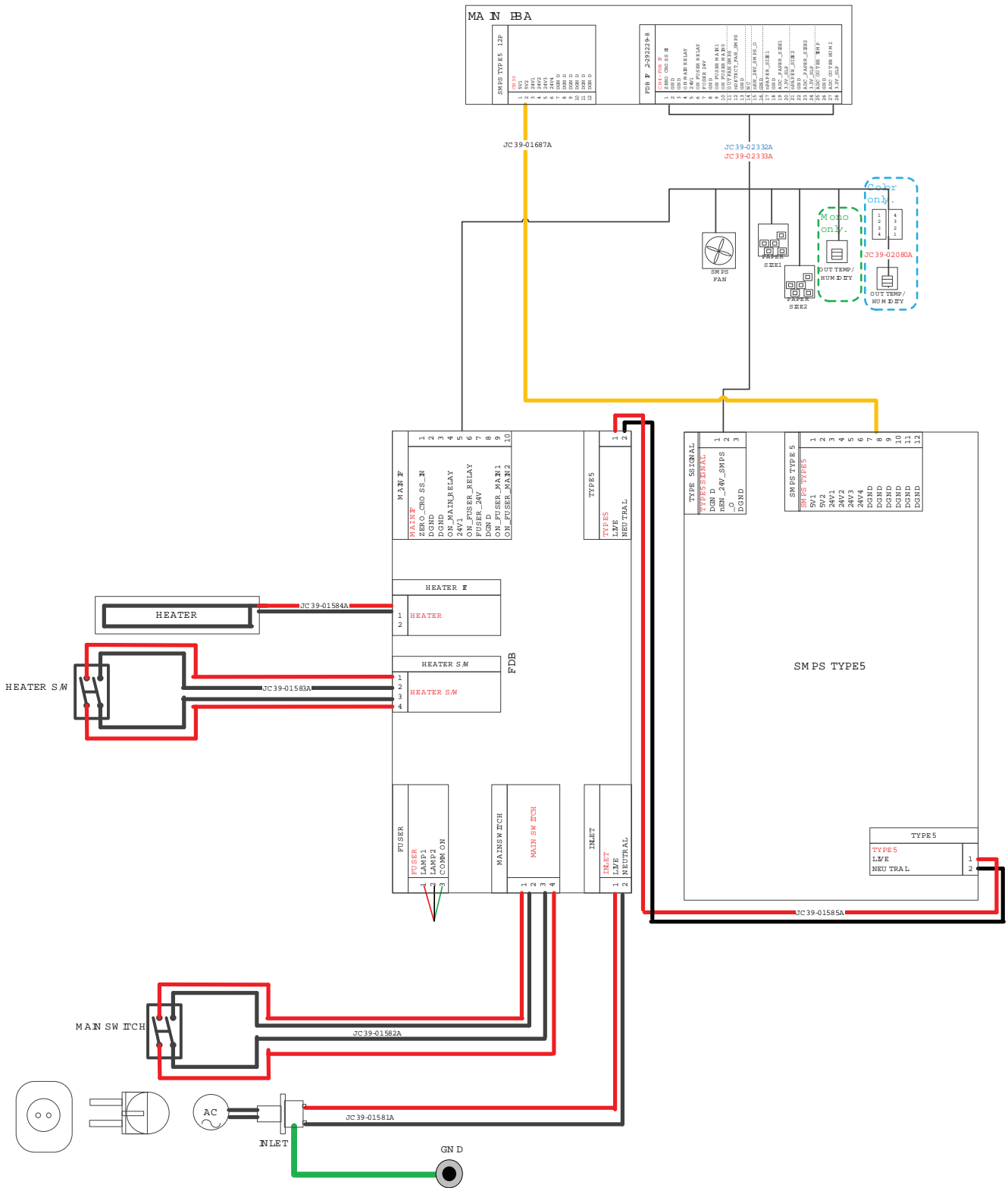


### 5.3. Connection Diagram (LSU\_HVPS)

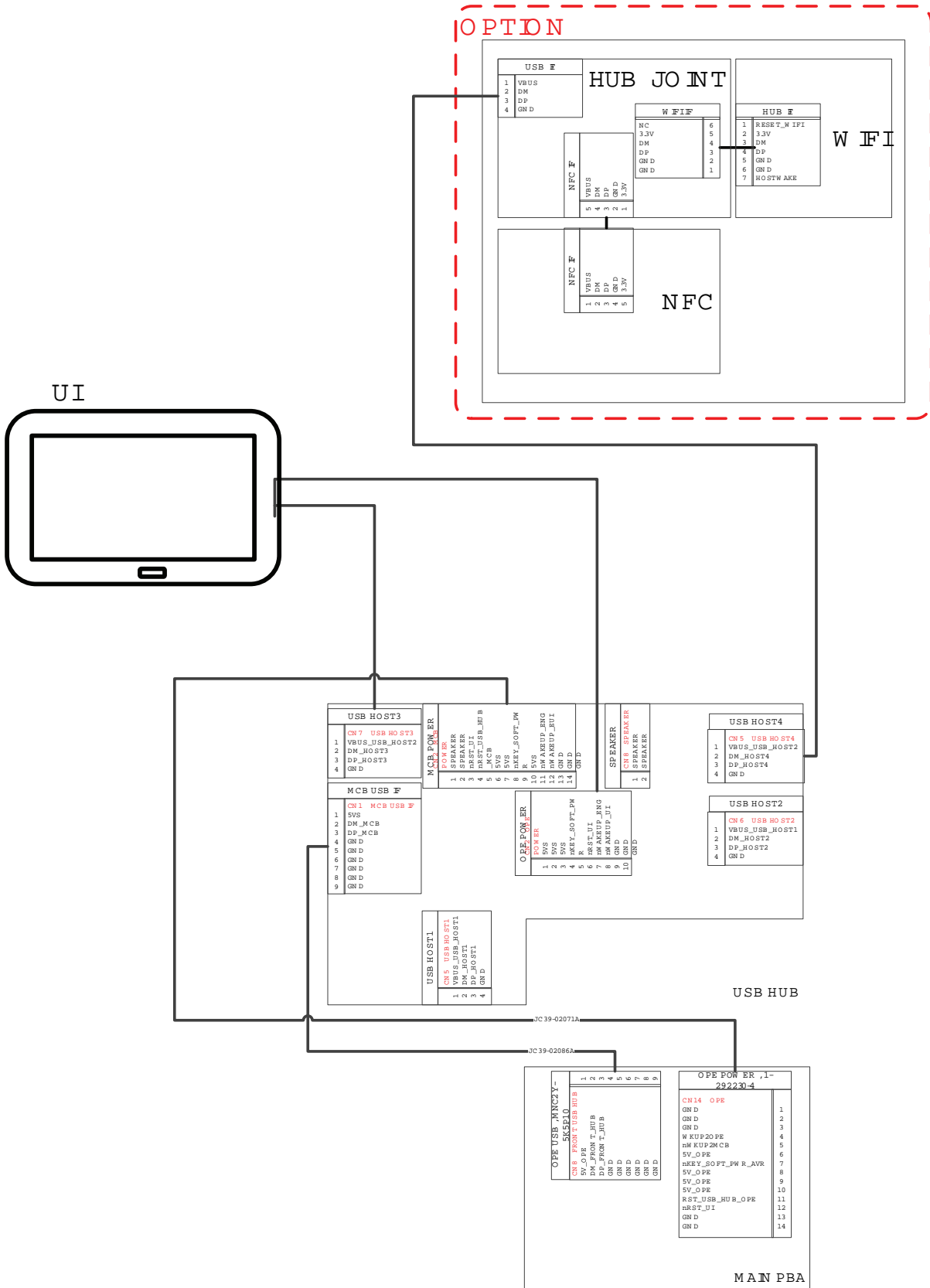




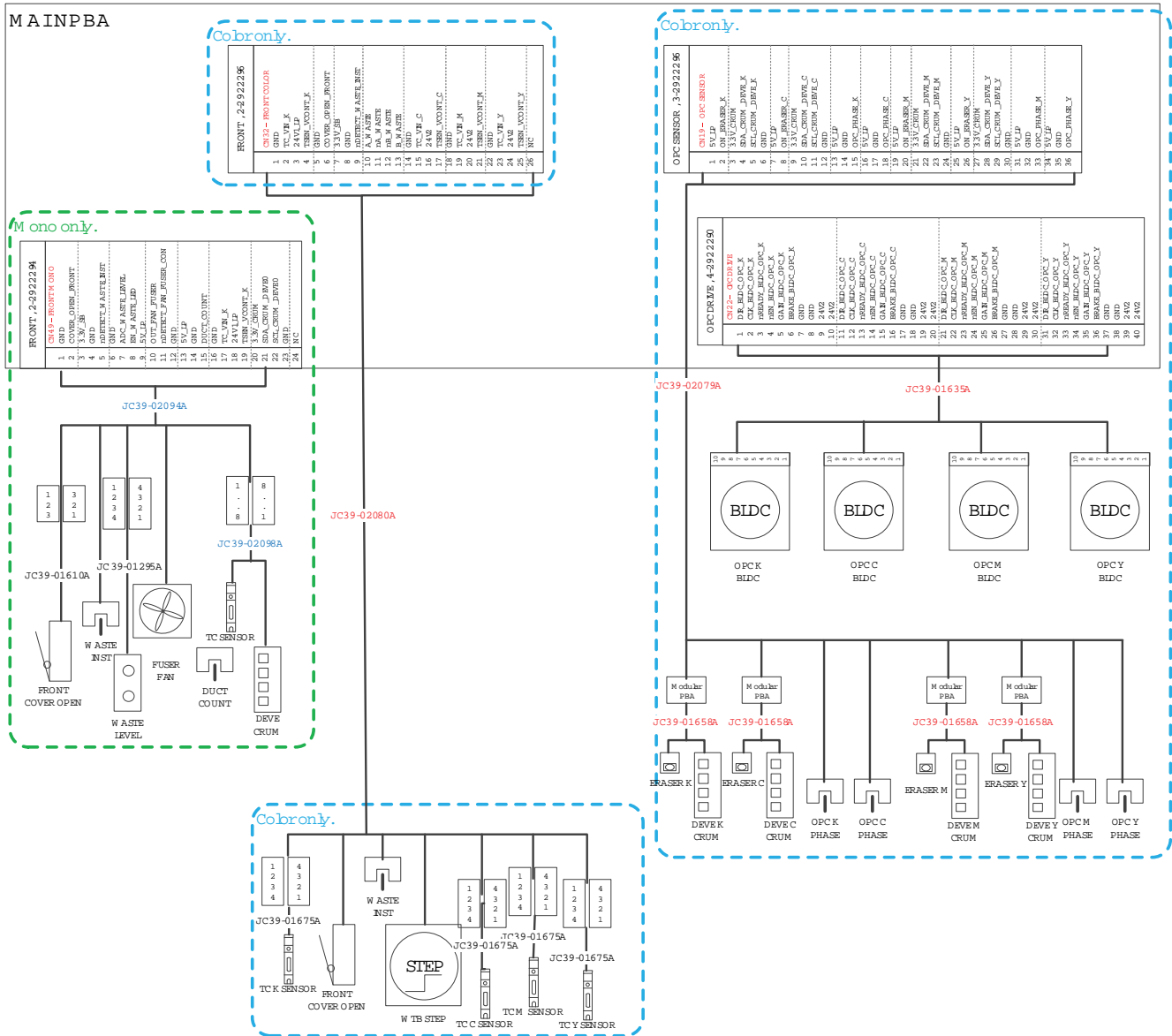
# 5.5. Connection Diagram (FDB\_SMPS)



## 5.6. Connection Diagram (UI)

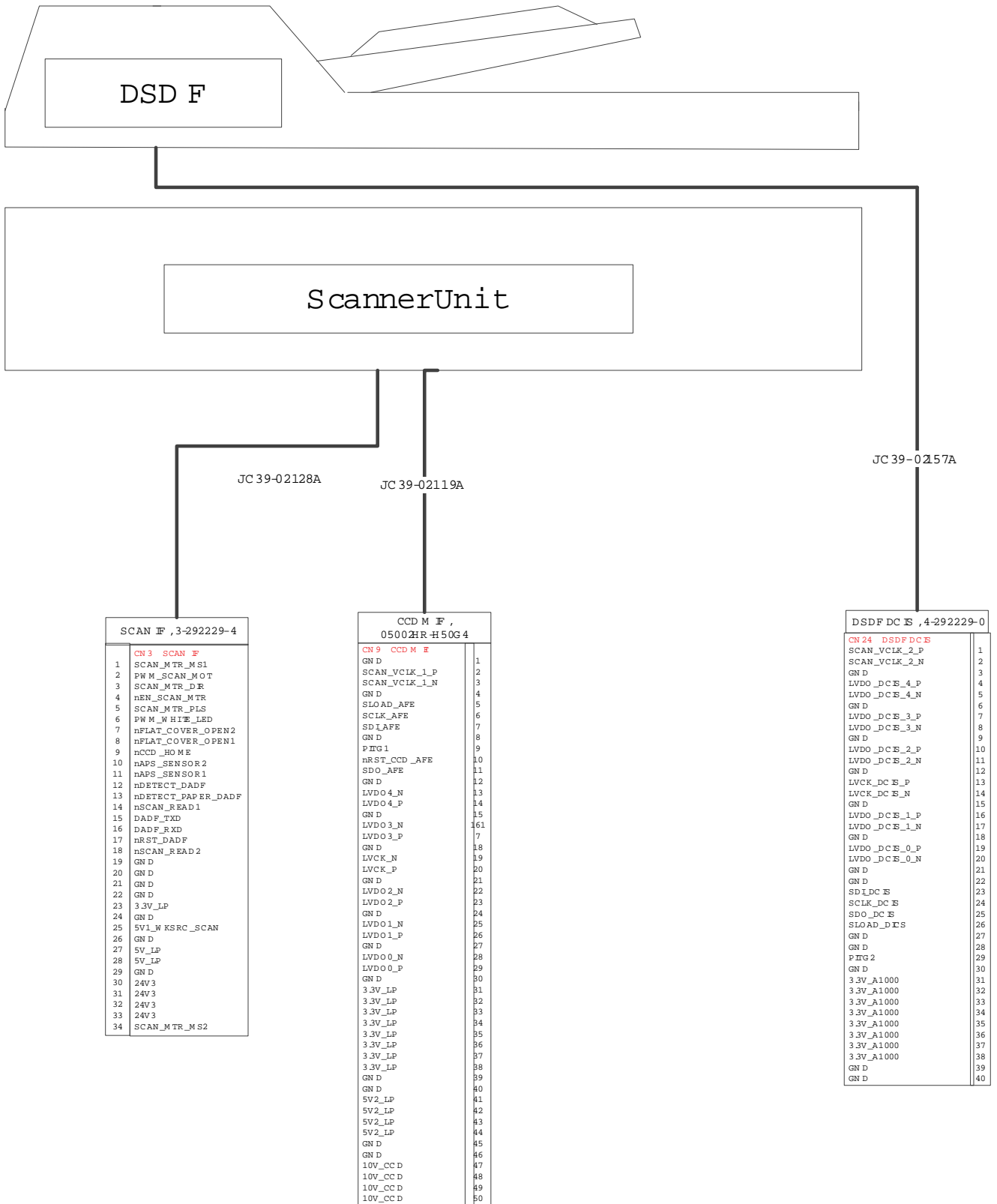


# 5.7. Connection Diagram (FRONT\_OPC)

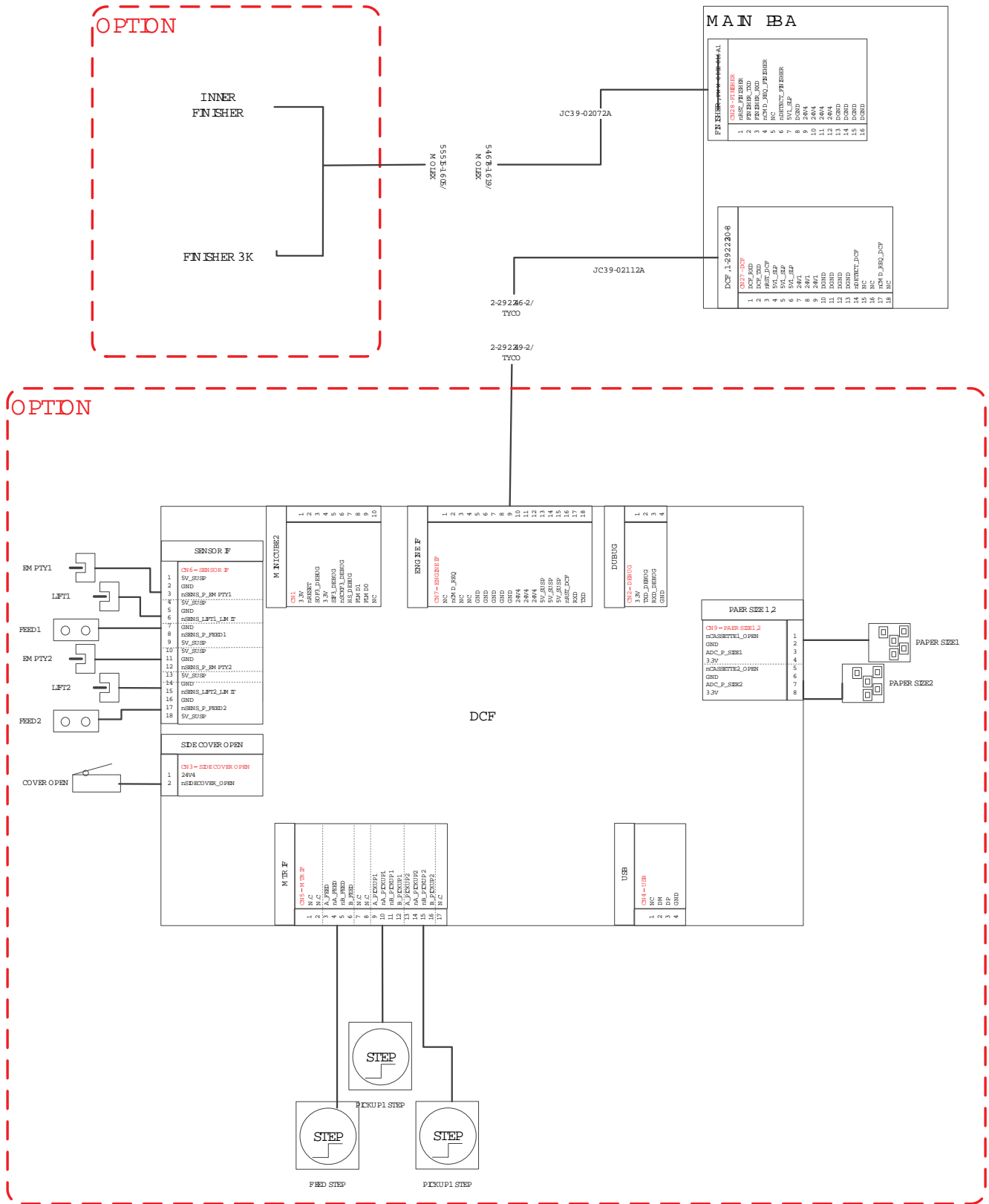




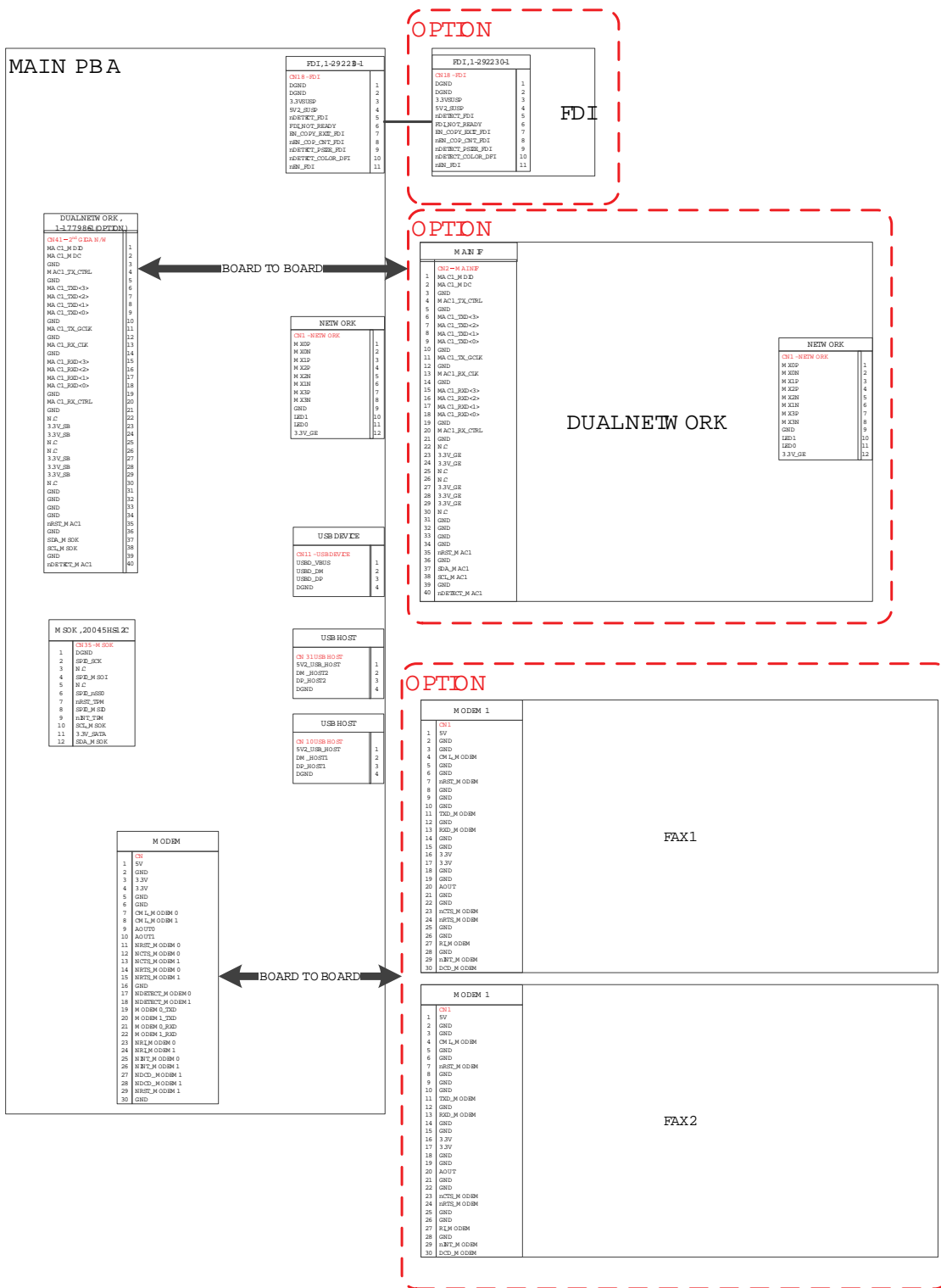
## 5.8. Connection Diagram (Scanner)



# 5.9. Connection Diagram (Double Cassette Feeder)



# 5.10. Connection Diagram (FAX\_DUAL NW\_FDI)

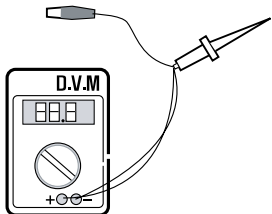


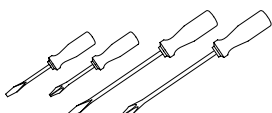




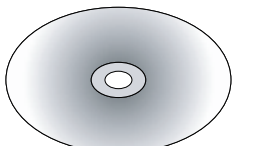


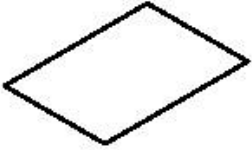

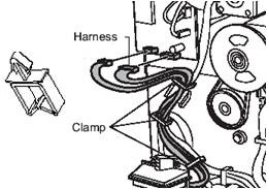
# 6. Reference Information

This chapter contains the tools list, list of abbreviations used in this manual, and a guide to the location space required when installing the printer. A definition of test pages and Wireless Network information definition is also included.

## 6.1. Tools for Troubleshooting

The following tools are recommended safe and easy troubleshooting as described in this service manual.

Tool	Image	Use	Remark
Hand DVM		Checking the fuser lamp. Checking the SMPS fuse.	Service
Spring hook		When disassembling the spring	Service
Small vacuum		To remove the toner and contamination inside of the machine.	Service
Driver		To tighten screws. To remove the hinge of the cover.	Service
Tweezers		To unplug the pin connector of the fuser unit. To remove the E-ring.	Service
Soft cloth		To clean the rollers To clean the frame and scan glass	Service
Black soft cloth		To cover the OPC drum	Service
Install guide, User guide, Admin guide		When installing the machine.	Installation
Software CD		When installing the machine.	Installation

Tool	Image	Use	Remark
Test Chart • A4 image, A3 image, Skew		To check the image quality	Service
Spare Kit • Screw, E-Ring		To fix the unit or parts	Service
Clamp		To form the harness	Service

## 6.2. Glossary

The following glossary helps you get familiar with the product by understanding the terminologies commonly used with printing as well as mentioned in this user's guide and service manual.

802.11	802.11 is a set of standards for wireless local area network (WLAN) communication, developed by the IEEE LAN/MAN Standards Committee (IEEE 802).
802.11b/g/n	802.11b/g/n can share same hardware and use the 2.4 GHz band. 802.11b supports bandwidth up to 11 Mbps, 802.11n supports bandwidth up to 150 Mbps. 802.11b/g/n devices may occasionally suffer interference from microwave ovens, cordless telephones, and Bluetooth devices.
Access point	Access Point or Wireless Access Point (AP or WAP) is a device that connects wireless communication devices together on wireless local area networks (WLAN), and acts as a central transmitter and receiver of WLAN radio signals.
ADF	An Automatic Document Feeder (ADF) is a scanning unit that will automatically feed an original sheet of paper so that the machine can scan some amount of the paper at once.
AppleTalk	AppleTalk is a proprietary suite of protocols developed by Apple, Inc for computer networking. It was included in the original Macintosh (1984) and is now deprecated by Apple in favor of TCP/IP networking.
BIT Depth	A computer graphics term describing the number of bits used to represent the color of a single pixel in a bitmapped image. Higher color depth gives a broader range of distinct colors. As the number of bits increases, the number of possible colors becomes impractically large for a color map. 1-bit color is commonly called as monochrome or black and white.
BMP	A bitmapped graphics format used internally by the Microsoft Windows graphics subsystem (GDI), and used commonly as a simple graphics file format on that platform.
BOOTP	Bootstrap Protocol. A network protocol used by a network client to obtain its IP address automatically. This is usually done in the bootstrap process of computers or operating systems running on them. The BOOTP servers assign the IP address from a pool of addresses to each client. BOOTP enables 'diskless workstation' computers to obtain an IP address prior to loading any advanced operating system.
CCD	Charge Coupled Device (CCD) is a hardware which enables the scan job. CCD Locking mechanism is also used to hold the CCD module to prevent any damage when you move the machine.
Collation	Collation is a process of printing a multiple-copy job in sets. When collation is selected, the device prints an entire set before printing additional copies.
Control Panel	A control panel is a flat, typically vertical, area where control or monitoring instruments are displayed. They are typically found in front of the machine.
Coverage	It is the printing term used for a toner usage measurement on printing. For example, 5% coverage means that an A4 sided paper has about 5% image or text on it. So, if the paper or original has complicated images or lots of text on it, the coverage will be higher and at the same time, a toner usage will be as much as the coverage.
CSV	Comma Separated Values (CSV). A type of file format, CSV is used to exchange data between disparate applications. The file format, as it is used in Microsoft Excel, has become a de facto standard throughout the industry, even among non-Microsoft platforms.
DADF	A Duplex Automatic Document Feeder (DADF) is a scanning unit that will automatically feed and turn over an original sheet of paper so that the machine can scan on both sides of the paper.
Default	The value or setting that is in effect when taking a printer out of its box state, reset, or initialized.
DHCP	A Dynamic Host Configuration Protocol (DHCP) is a client-server networking protocol. A DHCP server provides configuration parameters specific to the DHCP client host requesting, generally, information required by the client host to participate on an IP network. DHCP also provides a mechanism for allocation of IP addresses to client hosts.
DIMM	Dual Inline Memory Module (DIMM), a small circuit board that holds memory. DIMM stores all the data within the machine like printing data, received fax data.

DLNA	The Digital Living Network Alliance (DLNA) is a standard that allows devices on a home network to share information with each other across the network.
DNS	The Domain Name Server (DNS) is a system that stores information associated with domain names in a distributed database on networks, such as the Internet.
Dot Matrix Printer	A dot matrix printer refers to a type of computer printer with a print head that runs back and forth on the page and prints by impact, striking an ink-soaked cloth ribbon against the paper, much like a typewriter.
DPI	Dots Per Inch (DPI) is a measurement of resolution that is used for scanning and printing. Generally, higher DPI results in a higher resolution, more visible detail in the image, and a larger file size.
DRPD	Distinctive Ring Pattern Detection. Distinctive Ring is a telephone company service which enables a user to use a single telephone line to answer several different telephone numbers.
Duplex	A mechanism that will automatically turn over a sheet of paper so that the machine can print (or scan) on both sides of the paper. A printer equipped with a Duplex Unit can print on both sides of paper during one print cycle.
Duty Cycle	Duty cycle is the page quantity which does not affect printer performance for a month. Generally the printer has the lifespan limitation such as pages per year. The lifespan means the average capacity of print-outs, usually within the warranty period. For example, if the duty cycle is 48,000 pages per month assuming 20 working days, a printer limits 2,400 pages a day.
ECM	Error Correction Mode (ECM) is an optional transmission mode built into Class 1 fax machines or fax modems. It automatically detects and corrects errors in the fax transmission process that are sometimes caused by telephone line noise.
Emulation	Emulation is a technique of one machine obtaining the same results as another. An emulator duplicates the functions of one system with a different system, so that the second system behaves like the first system. Emulation focuses on exact reproduction of external behavior, which is in contrast to simulation, which concerns an abstract model of the system being simulated, often considering its internal state.
Ethernet	Ethernet is a frame-based computer networking technology for local area networks (LANs). It defines wiring and signaling for the physical layer, and frame formats and protocols for the media access control (MAC)/data link layer of the OSI model. Ethernet is mostly standardized as IEEE 802.3. It has become the most widespread LAN technology in use during the 1990s to the present.
EtherTalk	A suite of protocols developed by Apple Computer for computer networking. It was included in the original Macintosh (1984) and is now deprecated by Apple in favor of TCP/IP networking.
FDI	Foreign Device Interface (FDI) is a card installed inside the machine to allow a third party device such as a coin operated device or a card reader. Those devices allow the pay-for-print service on your machine.
FTP	A File Transfer Protocol (FTP) is a commonly used protocol for exchanging files over any network that supports the TCP/IP protocol (such as the Internet or an intranet).
Fuser Unit	The part of a laser printer that fuses the toner onto the print media. It consists of a heat roller and a pressure roller. After toner is transferred onto the paper, the fuser unit applies heat and pressure to ensure that the toner stays on the paper permanently, which is why paper is warm when it comes out of a laser printer.
Gateway	A connection between computer networks, or between a computer network and a telephone line. It is very popular, as it is a computer or a network that allows access to another computer or network.
Grayscale	A shades of gray that represent light and dark portions of an image when color images are converted to grayscale; colors are represented by various shades of gray.
Halftone	An image type that simulates grayscale by varying the number of dots. Highly colored areas consist of a large number of dots, while lighter areas consist of a smaller number of dots.
HDD	Hard Disk Drive (HDD), commonly referred to as a hard drive or hard disk, is a non-volatile storage device which stores digitally-encoded data on rapidly rotating platters with magnetic surfaces.

IEEE	The Institute of Electrical and Electronics Engineers (IEEE) is an international non-profit, professional organization for the advancement of technology related to electricity.
IEEE 1284	The 1284 parallel port standard was developed by the Institute of Electrical and Electronics Engineers (IEEE). The term "1284-B" refers to a specific connector type on the end of the parallel cable that attaches to the peripheral (for example, a printer).
Intranet	A private network that uses Internet Protocols, network connectivity, and possibly the public telecommunication system to securely share part of an organization's information or operations with its employees. Sometimes the term refers only to the most visible service, the internal website.
IP address	An Internet Protocol (IP) address is a unique number that devices use in order to identify and communicate with each other on a network utilizing the Internet Protocol standard.
IPM	The Images Per Minute (IPM) is a way of measuring the speed of a printer. An IPM rate indicates the number of single-sided sheets a printer can complete within one minute.
IPP	The Internet Printing Protocol (IPP) defines a standard protocol for printing as well as managing print jobs, media size, resolution, and so forth. IPP can be used locally or over the Internet to hundreds of printers, and also supports access control, authentication, and encryption, making it a much more capable and secure printing solution than older ones.
IPX/SPX	IPX/SPX stands for Internet Packet Exchange/Sequenced Packet Exchange. It is a networking protocol used by the Novell NetWare operating systems. IPX and SPX both provide connection services similar to TCP/IP, with the IPX protocol having similarities to IP, and SPX having similarities to TCP. IPX/SPX was primarily designed for local area networks (LANs), and is a very efficient protocol for this purpose (typically its performance exceeds that of TCP/IP on a LAN).
ISO	The International Organization for Standardization (ISO) is an international standard-setting body composed of representatives from national standards bodies. It produces world-wide industrial and commercial standards.
ITU-T	The International Telecommunication Union is an international organization established to standardize and regulate international radio and telecommunications. Its main tasks include standardization, allocation of the radio spectrum, and organizing interconnection arrangements between different countries to allow international phone calls. A -T out of ITU-T indicates telecommunication.
ITU-T No. 1 chart	Standardized test chart published by ITU-T for document facsimile transmissions.
JBIG	Joint Bi-level Image Experts Group (JBIG) is an image compression standard with no loss of accuracy or quality, which was designed for compression of binary images, particularly for faxes, but can also be used on other images.
JPEG	Joint Photographic Experts Group (JPEG) is a most commonly used standard method of lossy compression for photographic images. It is the format used for storing and transmitting photographs on the World Wide Web.
LDAP	The Lightweight Directory Access Protocol (LDAP) is a networking protocol for querying and modifying directory services running over TCP/IP.
LED	A Light-Emitting Diode (LED) is a semiconductor device that indicates the status of a machine.
MAC address	Media Access Control (MAC) address is a unique identifier associated with a network adapter. MAC address is a unique 48-bit identifier usually written as 12 hexadecimal characters grouped in pairs (e. g., 00-00-0c-34-11-4e). This address is usually hard-coded into a Network Interface Card (NIC) by its manufacturer, and used as an aid for routers trying to locate machines on large networks.
MFP	Multi Function Peripheral (MFP) is an office machine that includes the following functionality in one physical body, so as to have a printer, a copier, a fax, a scanner and etc.
MH	Modified Huffman (MH) is a compression method for decreasing the amount of data that needs to be transmitted between the fax machines to transfer the image recommended by ITU-T T.4. MH is a codebook-based run-length encoding scheme optimized to efficiently compress white space. As most faxes consist mostly of white space, this minimizes the transmission time of most faxes.
MMR	Modified Modified READ (MMR) is a compression method recommended by ITU-T T.6.



Modem	A device that modulates a carrier signal to encode digital information, and also demodulates such a carrier signal to decode transmitted information.
MR	Modified Read (MR) is a compression method recommended by ITUT T.4. MR encodes the first scanned line using MH. The next line is compared to the first, the differences determined, and then the differences are encoded and transmitted.
NetWare	A network operating system developed by Novell, Inc. It initially used cooperative multitasking to run various services on a PC, and the network protocols were based on the archetypal Xerox XNS stack. Today NetWare supports TCP/IP as well as IPX/SPX.
OPC	Organic Photo Conductor (OPC) is a mechanism that makes a virtual image for print using a laser beam emitted from a laser printer, and it is usually green or rust colored and has a cylinder shape. An imaging unit containing a drum slowly wears the drum surface by its usage in the printer, and it should be replaced appropriately since it gets worn from contact with the cartridge development brush, cleaning mechanism, and paper.
Originals	The first example of something, such as a document, photograph or text, etc, which is copied, reproduced or translated to produce others, but which is not itself copied or derived from something else.
OSI	Open Systems Interconnection (OSI) is a model developed by the International Organization for Standardization (ISO) for communications. OSI offers a standard, modular approach to network design that divides the required set of complex functions into manageable, self-contained, functional layers. The layers are, from top to bottom, Application, Presentation, Session, Transport, Network, Data Link and Physical.
PABX	A private automatic branch exchange (PABX) is an automatic telephone switching system within a private enterprise.
PCL	Printer Command Language (PCL) is a Page Description Language (PDL) developed by HP as a printer protocol and has become an industry standard. Originally developed for early inkjet printers, PCL has been released in varying levels for thermal, dot matrix printer, and laser printers.
PDF	Portable Document Format (PDF) is a proprietary file format developed by Adobe Systems for representing two dimensional documents in a device independent and resolution independent format.
PostScript(PS)	PostScript (PS) is a page description language and programming language used primarily in the electronic and desktop publishing areas. - that is run in an interpreter to generate an image.
Printer Driver	A program used to send commands and transfer data from the computer to the printer.
Print Media	The media like paper, envelopes, labels, and transparencies which can be used in a printer, a scanner, a fax or, a copier.
PPM	Pages Per Minute (PPM) is a method of measurement for determining how fast a printer works, meaning the number of pages a printer can produce in one minute.
PRN file	An interface for a device driver, this allows software to interact with the device driver using standard input/output system calls, which simplifies many tasks.
Protocol	A convention or standard that controls or enables the connection, communication, and data transfer between two computing endpoints.
PSTN	The Public-Switched Telephone Network (PSTN) is the network of the world's public circuit-switched telephone networks which, on industrial premises, is usually routed through the switchboard.
RADIUS	Remote Authentication Dial In User Service (RADIUS) is a protocol for remote user authentication and accounting. RADIUS enables centralized management of authentication data such as usernames and passwords using an AAA (authentication, authorization, and accounting) concept to manage network access.
Resolution	The sharpness of an image, measured in Dots Per Inch (DPI). The higher the dpi, the greater the resolution.
SMB	Server Message Block (SMB) is a network protocol mainly applied to share files, printers, serial ports, and miscellaneous communications between nodes on a network. It also provides an authenticated Interprocess communication mechanism.

SMTP	Simple Mail Transfer Protocol (SMTP) is the standard for e-mail transmissions across the Internet. SMTP is a relatively simple, text based protocol, where one or more recipients of a message are specified, and then the message text is transferred. It is a client server protocol, where the client transmits an email message to the server.
SSID	Service Set Identifier (SSID) is a name of a wireless local area network (WLAN). All wireless devices in a WLAN use the same SSID in order to communicate with each other. The SSIDs are case-sensitive and have a maximum length of 32 characters.
Subnet Mask	The subnet mask is used in conjunction with the network address to determine which part of the address is the network address and which part is the host address.
TCP/IP	The Transmission Control Protocol (TCP) and the Internet Protocol (IP); the set of communications protocols that implement the protocol stack on which the Internet and most commercial networks run.
TCR	Transmission Confirmation Report (TCR) provides details of each transmission such as job status, transmission result and number of pages sent. This report can be set to print after each job or only after failed transmissions.
TIFF	Tagged Image File Format (TIFF) is a variable-resolution bitmapped image format. TIFF describes image data that typically come from scanners. TIFF images make use of tags, keywords defining the characteristics of the image that is included in the file. This flexible and platform-independent format can be used for pictures that have been made by various image processing applications.
Toner Cartridge	A kind of bottle or container used in a machine like a printer which contains toner. Toner is a powder used in laser printers and photocopiers, which forms the text and images on the printed paper. Toner can be fused by a combination of heat/pressure from the fuser, causing it to bind to the fibers in the paper.
TWAIN	An industry standard for scanners and software. By using a TWAIN-compliant scanner with a TWAIN-compliant program, a scan can be initiated from within the program. It is an image capture API for Microsoft Windows and Apple Macintosh operating systems.
UNC Path	Uniform Naming Convention (UNC) is a standard way to access network shares in Window NT and other Microsoft products. The format of a UNC path is: \\<servername>\<sharename>\<Additional directory>
URL	Uniform Resource Locator (URL) is the global address of documents and resources on the Internet. The first part of the address indicates what protocol to use, the second part specifies the IP address or the domain name where the resource is located.
USB	Universal Serial Bus (USB) is a standard that was developed by the USB Implementers Forum, Inc., to connect computers and peripherals. Unlike the parallel port, USB is designed to concurrently connect a single computer USB port to multiple peripherals.
Watermark	A watermark is a recognizable image or pattern in paper that appears lighter when viewed by transmitted light. Watermarks were first introduced in Bologna, Italy in 1282; they have been used by papermakers to identify their product, and also on postage stamps, currency, and other government documents to discourage counterfeiting.
WEP	Wired Equivalent Privacy (WEP) is a security protocol specified in IEEE 802.11 to provide the same level of security as that of a wired LAN. WEP provides security by encrypting data over radio so that it is protected as it is transmitted from one end point to another.
WIA	Windows Imaging Architecture (WIA) is an imaging architecture that is originally introduced in Windows Me and Windows XP. A scan can be initiated from within these operating systems by using a WIA-compliant scanner.
WPA	Wi-Fi Protected Access (WPA) is a class of systems to secure wireless (Wi-Fi) computer networks, which was created to improve upon the security features of WEP.
WPA-PSK	WPA-PSK (WPA Pre-Shared Key) is special mode of WPA for small business or home users. A shared key, or password, is configured in the wireless access point (WAP) and any wireless laptop or desktop devices. WPA-PSK generates a unique key for each session between a wireless client and the associated WAP for more advanced security.

WPS	The Wi-Fi Protected Setup (WPS) is a standard for establishing a wireless home network. If your wireless access point supports WPS, you can configure the wireless network connection easily without a computer.
XPS	XML Paper Specification (XPS) is a specification for a Page Description Language (PDL) and a new document format, which has benefits for portable document and electronic document, developed by Microsoft. It is an XML-based specification, based on a new print path and a vector-based device-independent document format.

### 6.3. Model Name and Code

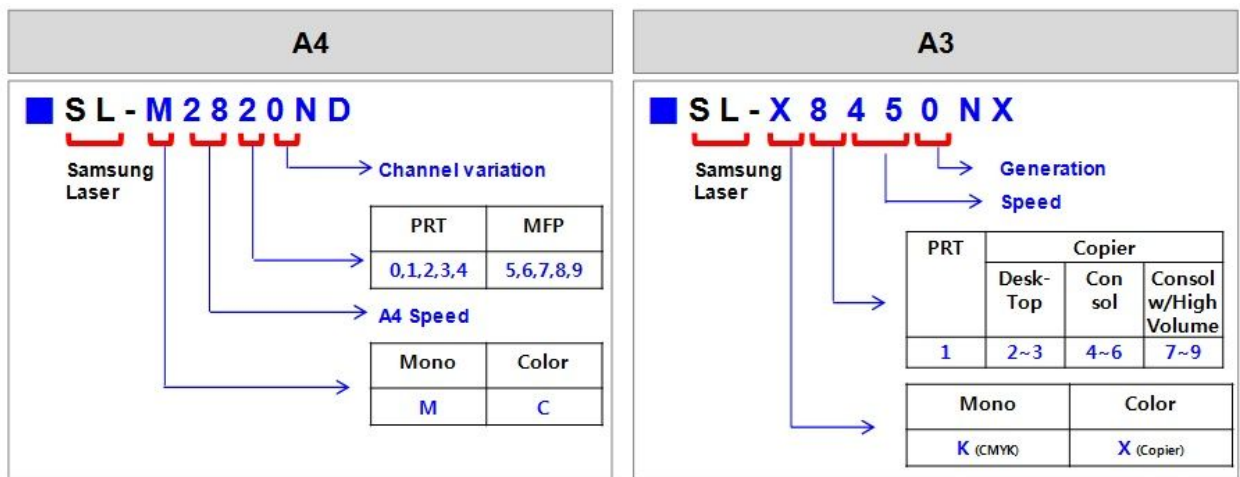
1) Sub brand name Information

- Applying Independent sub brand name by Segment : Xpress / ProXpress / MultiXpress



2) Model code Information

- Basic Structure : [SL-●○○■□◆◆]



- ◆◆ : Function Information

	Function
N	Network
W	Wireless Network
D	Duplex Printing
R	Reverse Type ADF
F	Fax
X	XOA (eXtensible Open Architecture)
H	Handset
A	Auto Document Feeder

## 6.4. Document Revision List

Version	Date	Page	Description
1.00	18/Jun/2014	-	Release
1.01	21/Jul/2014	P.3-57	Add card reader installation (Ch 3.3.31)
1.02	25/Jul/2014	P.4-42,50,51	Add note for shading test.
1.10	08/Aug/2014	P.4-148~	Add troubleshooting for error code of Inner Finisher. (Ch 4.6.14)
1.11	29/Aug/2014	P.3-5	Add note and caution for removing the imaging unit label.
1.12	15/Sep/2014	P.4-229	Add troubleshooting for touch malfunction.
1.13	10/Oct/2014	P.3-7 ~	Add deve unit replacement.
1.14	14/Oct/2014	P.3-69~	Modify Inner finisher disassembly.
1.20	18/Nov/2014	P.4-209~	Add troubleshooting for field issue
		P.4-240~	Add how to use SPDS application.
1.21	23/Dec/2014	P.5-1~	Update the connection diagram. (Add the harness code)
1.22	13/Jan/2015	P.4-60	Delete SFE menu description by R&D policy.
1.23	24/Feb/2015	P.4-41	Add explanation about shading test procedure.
		P.4-61	Add SFE menu description.
1.24	02/Mar/2015	P.2-84	Change FDI PBA code. (JC92-01616A → JC92-02068A)
1.25	22/Jul/2015	P.4-170	Update the trouble shooting for S5-3111 error.
1.26	16/Oct/2015	P.2-16	Modify option table.
1.27	21/Jan/2016	P.4-219	Add a troubleshooting for ADF.
1.28	30/May/2016	P.4-210	Add a troubleshooting for paper edge contamination.
1.29	26/Sep/2016	P.2-86	Change SMPS code. (220V : JC44-00100C → JC44-00100D / 110V : JC44-00093C → JC44-00093D)
1.30	11/Oct/2016	P.4-145	Update the troubleshooting for M1-1613 error.
1.31	03/Nov/2016	P.4-65 ~	Add missing errors (A2-2611/A2-2613/C3-1414/S1-2550/U2-6210)
1.32	26/Dec/2016	P.3-5	Add the paper dust stick cleaning.



### **GSPN (GLOBAL SERVICE PARTNER NETWORK)**

<b>Area</b>	<b>Web Site</b>
Europe, MENA, CIS, Africa	<a href="https://gspn1.samsungsportal.com">https://gspn1.samsungsportal.com</a>
E.Asia, W.Asia, China, Japan	<a href="https://gspn2.samsungsportal.com">https://gspn2.samsungsportal.com</a>
N.America, S.America	<a href="https://gspn3.samsungsportal.com">https://gspn3.samsungsportal.com</a>

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