



SAMSUNG

A3 Color Copier

MultiXpress X7 series

SL-X7600GX / X7500GX /

X7400GX, SL-X7600LX / X7500LX

/ X7400LX

(Ver 1.15)

SERVICE **MANUAL**

A3 Color Copier

Contents



1. Precautions
2. Product Specifications and Description
3. Disassembly and Reassembly
4. Troubleshooting
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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: 795 nm
- Beam divergence
 - Parallel: 13 degrees
 - Perpendicular: 35 degrees
- Maximum power of energy output: 17 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

1.2.1. Toxic material

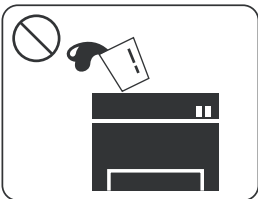
This product contains toxic materials that could cause illness if ingested.

- 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.

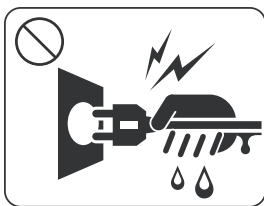
1.2.2. Electric shock and fire safety precautions

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

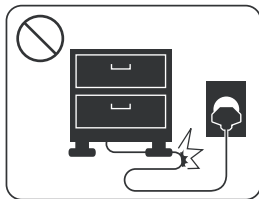
- 1) Use only the correct voltage, failure to do so could damage the product and potentially cause a fire or electric shock.
- 2) Use only the power cable supplied with the product. Use of an incorrectly specified cable could cause the cable to overheat and potentially cause a fire.
- 3) Do not overload 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.



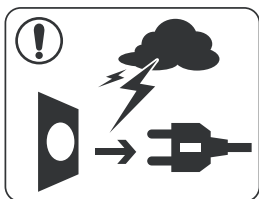
- 5) Never touch the plugs on either end of the power cable with wet hands, this can cause electric shock. When servicing the product, remove the power plug from the wall socket.



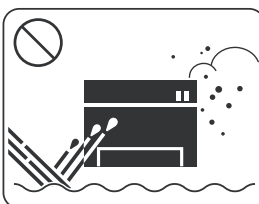
- 6) Use caution when inserting or removing the power cord. When removing the power cord, grip it firmly and pull. The power cord must be inserted completely, otherwise a poor contact could cause overheating leading to a fire.
- 7) Take care of the power cable. Do not allow it to become twisted, bent 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.



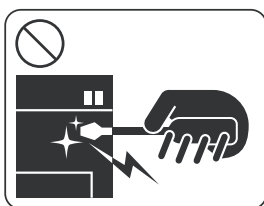
- 8) Ensure that the power sockets and plugs are not cracked or broken in any way. Any such defects should be repaired immediately. Take care not to cut or damage the power cable or plugs when moving the machine.
- 9) Use caution during thunder or lightning storms. Samsung recommends that this machine 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

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

- 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

Certain semiconductor devices can be easily damaged by static electricity. Such components are commonly called “Electrostatic discharge”. 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

	<ul style="list-style-type: none">• Printing Speed (Mono/Color)<ul style="list-style-type: none">• X7600 series<ul style="list-style-type: none">- Up to 60 / 60 ppm in A4/Letter (Up to 31 ppm in A3)• X7500 series<ul style="list-style-type: none">- Up to 50 / 50 ppm in A4/Letter (Up to 26 ppm in A3)• X7400 series<ul style="list-style-type: none">- Up to 40 / 40 ppm in A4/Letter (Up to 21 ppm in A3)• Processor<ul style="list-style-type: none">• Quad Core 1.5GHz• Memory<ul style="list-style-type: none">• 6GB (2GB for Android OS)• Document Feeder<ul style="list-style-type: none">• DSDF (Dual Scan Document Feeder)<ul style="list-style-type: none">- DSDF-H Model : X7600GX / X7500GX / X7400GX- DSDF-L Model : X7600LX / X7500LX / X7400LX• LCD<ul style="list-style-type: none">• 10.1 inch Touch Color LCD
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2.2. Specifications

2.2.1. General Specification

Item		Specification
Processor	CPU	1.5 GHz (Quad Core)
User Interface	Operational Panel	10.1" Color Touch-Panel LCD
	LED	2 ea (Power / Status)
	Key / Button	1 ea (Power)
Memory	Total (with Android OS)	6 GB
	Standard (without Android OS)	4 GB
	Expansion (Optional)	N/A
Storage	Standard	320 GB HDD
Interface	USB (Host)	Yes (Hi-Speed USB 3.0, 2.0)
	USB (Device)	Yes (Hi-Speed USB 3.0, 2.0)
	USB (EDI)	N/A
	Wired LAN	Std (Ethernet 10/100/1G Base TX)
	Additional Wired LAN Support	Yes (Optional)
	Wireless LAN / NFC	<ul style="list-style-type: none"> • Optional (IEEE 802.11b/g/n + NFC Active Type) • Optional (IEEE 802.11b/g/n/ac + BLE + NFC Active Type)
Warmup Time	from Power off (power on to ready)	23 sec
	from sleep	12 sec
Power Consumption	Ready	Less than 30W
	Normal operation	Less than 900W
	Max/Peak	Less than 1300W
	Sleep/Low Power Mode	Less than 2.0W
	TEC (Default mode)	<ul style="list-style-type: none"> • X7600 series : 3.05 KWh • X7500 series : 2.717 KWh • X7400 series : 2.1 KWh
Power Requirement	<ul style="list-style-type: none"> • Input Voltage (Europe): AC 220 - 240 V (-10 % - 6 %) • Input Voltage (USA): AC 110 - 127 V (-10 % - 6 %) • Input Voltage (Korea): AC 220 - 240 V (-10 % - 6 %) • Rated Frequency: 50 / 60 Hz 	

Item		Specification
Acoustic Noise Level (Sound Power / Pressure)	Printing mode	<ul style="list-style-type: none"> • Simplex <ul style="list-style-type: none"> • X7600 series <ul style="list-style-type: none"> - Tray 1: Less than 56 dB (A) - Multi-purpose tray/Optional trays: Less than 58 dB (A) • X7500 / X7400 series <ul style="list-style-type: none"> - Tray 1: Less than 54 dB (A) - Multi-purpose tray/Optional trays: Less than 56 dB (A) • Duplex <ul style="list-style-type: none"> • X7600 series <ul style="list-style-type: none"> - Tray 1: Less than 59 dB (A) - Multi-purpose tray/Optional trays: Less than 61 dB (A) • X7500 / K7400 series <ul style="list-style-type: none"> - Tray 1: Less than 57 dB (A) - Multi-purpose tray/Optional trays: Less than 59 dB (A)
	Copying mode	<ul style="list-style-type: none"> • Simplex <ul style="list-style-type: none"> • X7600 / X7500 series <ul style="list-style-type: none"> - Tray 1: Less than 59 dB (A) - Multi-purpose tray/Optional trays: Less than 61 dB (A) • X7400 series <ul style="list-style-type: none"> - Tray 1: Less than 58 dB (A) - Multi-purpose tray/Optional trays: Less than 60 dB (A) • Duplex <ul style="list-style-type: none"> • X7600 series <ul style="list-style-type: none"> - Tray 1: Less than 61 dB (A) - Multi-purpose tray/Optional trays: Less than 64 dB (A) • X7500 series <ul style="list-style-type: none"> - Tray 1: Less than 61 dB (A) - Multi-purpose tray/Optional trays: Less than 63 dB (A) • X7400 series <ul style="list-style-type: none"> - Tray 1: Less than 60 dB (A) - Multi-purpose tray/Optional trays: Less than 62 dB (A)
	Ready mode	30 dB(A)
Dimension (W x D x H)	Set (without stand)	<ul style="list-style-type: none"> • X7600GX / X7500GX / X7400GX <ul style="list-style-type: none"> • 585 x 670 x 932.2 mm (23 x 26.4 x 36.7 inches) • X7600LX / X7500LX / X7400LX <ul style="list-style-type: none"> • 585 x 670 x 883.7 mm (23 x 26.4 x 34.8 inches)
Weight	Set (with supplies)	<ul style="list-style-type: none"> • X7600GX / X7500GX / X7400GX : 122 Kg (269 lbs) • X7600LX / X7500LX / X7400LX : 109 Kg (240.3 lbs)
Recommended AMPV		<ul style="list-style-type: none"> • X7600 series : 30,000 pages • X7500 series : 25,000 pages • X7400 series : 20,000 pages
Max Monthly Duty Cycle		<ul style="list-style-type: none"> • X7600GX : 330,000 pages • X7600LX : 300,000 pages • X7500 series : 250,000 pages • X7400 series : 200,000 pages

2.2.2. Print Specifications

Item		Specification
Engine Speed	Simplex	<ul style="list-style-type: none"> • X7600 series <ul style="list-style-type: none"> • B&W : Up to 60 ppm in A4 (60 ppm in Letter) • Color : Up to 60 ppm in A4 (60 ppm in Letter) • B&W : Up to 31 ppm in A3 (31 ppm in 11x17) • Color : Up to 31 ppm in A3 (31 ppm in 11x17) • X7500 series <ul style="list-style-type: none"> • B&W : Up to 50 ppm in A4 (50 ppm in Letter) • Color : Up to 50 ppm in A4 (50 ppm in Letter) • B&W : Up to 26 ppm in A3 (26 ppm in 11x17) • Color : Up to 26 ppm in A3 (26 ppm in 11x17) • X7400 series <ul style="list-style-type: none"> • B&W : Up to 40 ppm in A4 (40 ppm in Letter) • Color : Up to 40 ppm in A4 (40 ppm in Letter) • B&W : Up to 21 ppm in A3 (20 ppm in 11x17) • Color : Up to 21 ppm in A3 (20 ppm in 11x17)
	Duplex(Simplex to Duplex)	<ul style="list-style-type: none"> • X7600 series <ul style="list-style-type: none"> • Up to 60 ipm in A4 (60 ipm in Letter) • Up to 31 ipm in A3 (31 ipm in 11x17) • X7500 series <ul style="list-style-type: none"> • Up to 50 ipm in A4 (50 ipm in Letter) • Up to 26 ipm in A3 (26 ipm in 11x17) • X7400 series <ul style="list-style-type: none"> • Up to 40 ipm in A4 (40 ipm in Letter) • Up to 21 ipm in A3 (21 ipm in 11x17)
FPOT	From Ready	<ul style="list-style-type: none"> • X7600 series : as fast as 8.3 sec (Color) / 6.8 sec (Mono) • X7500 series : as fast as 8.9 sec (Color) / 7.2 sec (Mono) • X7400 series : as fast as 9.9 sec (Color) / 8.0 sec (Mono)
	From Sleep	<ul style="list-style-type: none"> • X7600 series : as fast as 20.3 sec (Color) / 18.8 sec (Mono) • X7500 series : as fast as 20.9 sec (Color) / 19.2 sec (Mono) • X7400 series : as fast as 21.9 sec (Color) / 20.0 sec (Mono)
Resolution		1200 x 1200 dpi (Full Speed)
Printer Languages		PCL5 / PCL6(XL) / PostScript Level 3 / PDF V1.7
Font	PCL	95 Scalable Fonts (Include OCR-A / OCR-B) / 1 Bitmap
	Postscript3	136 Scalable Fonts

Item		Specification
Printer Driver Supporting OS	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)
	Linux	<ul style="list-style-type: none"> • RedHat Enterprise Linux WS 5, 6 (32/64bit) • Fedora 12, 13, 14, 15, 16, 17, 18, 19, 20 (32/64bit) • OpenSuSE 11.2, 11.3, 11.4, 12.1, 12.2, 12.3, 13.1 (32/64bit) • Ubuntu 10.04, 11.04, 11.10, 12.04, 12.10, 13.04, 13.10, 14.04 (32/64bit) • SuSE Linux Enterprise Desktop 10, 11 (32/64bit) • Debian 6, 7 (32/64bit) • Mint 13, 14, 15, 16 (32/64bit)
	Mac OS	Mac OS X 10.6 ~ 10.10
USB Memory Direct Print		PRN / PDF / TIFF / JPEG / XPS
Print Features		WSD print / Secure print / Stored print / Booklet / N-up / Cover 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		<ul style="list-style-type: none"> • X7600GX / X7500GX / X7400GX <ul style="list-style-type: none"> • Simplex : Up to 120 ipm (@ 300 x 300 dpi) • Duplex : Up to 240 ipm (@ 300 x 300 dpi) • X7600LX / X7500LX / X7400LX <ul style="list-style-type: none"> • Simplex : Up to 80 ipm (@ 300 x 300 dpi) • Duplex : Up to 160 ipm (@ 300 x 300 dpi)
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 / Internet FAX
Multi Destinations		Yes
Communication Protocol		SMTP(IPv4, IPv6, SSL/TLS) / POP3(IPv4, IPv6, SSL/TLS) / FTP(IPv4, IPv6) / SMB(IPv4, IPv6) / WSD / T4Net
Scan Size	ADF	<ul style="list-style-type: none"> • X7600GX / X7500GX / X7400GX <ul style="list-style-type: none"> • Min. A6 SEF(105 X 148mm) • Max. 297 x 437 mm (11.7" x 17.2") • X7600LX / X7500LX / X7400LX <ul style="list-style-type: none"> • 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 (DSDF)	SDMC (Single Document Multiple Copy) (Mono / Color)	<ul style="list-style-type: none"> X7600 series <ul style="list-style-type: none"> up to 60/60 cpm in A4 X7500 series <ul style="list-style-type: none"> up to 50/50 cpm in A4 X7400 series <ul style="list-style-type: none"> up to 40/40 cpm in A4
	MDMC (Multiple Document Multiple Copy) (Mono / Color)	<ul style="list-style-type: none"> X7600 series <ul style="list-style-type: none"> Simplex to Simplex : Up to 60/60 cpm in A4/Letter Duplex to Simplex : Up to 60/60 ipm in A4/Letter X7500 series <ul style="list-style-type: none"> Simplex to Simplex : Up to 50/50 cpm in A4/Letter Duplex to Simplex : Up to 50/50 ipm in A4/Letter X7400 series <ul style="list-style-type: none"> Simplex to Simplex : Up to 40/40 cpm in A4/Letter Duplex to Simplex : Up to 40/40 ipm in A4/Letter
FCOT	From Ready	<ul style="list-style-type: none"> X7600 series : 4.5 sec (color) / 3.1 sec (mono) X7500 series : 5.1 sec (color) / 3.4 sec (mono) X7400 series : 6.1 sec (color) / 4.2 sec (mono)
Resolution	ADF (DSDF)	<ul style="list-style-type: none"> Scan: 600 x 600 dpi Printing: 600 x 600 dpi
	Platen	<ul style="list-style-type: none"> Scan: 600 x 600 dpi Printing: 600 x 600 dpi
Reduce & Enlarge	ADF (DSDF)	25% ~ 400% in 1% increments
	Platen	25% ~ 400% in 1% increments
	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%

2. Product Specifications and Description



Item	Specification
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	
Compatibility	ITU-T G3 / Super G3	
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

Item		Specification
	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
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
	Maximum	6140 sheets  NOTE MP(100) + 2 Tray(1.040) + HCF bottom(2,000)+ HCF side(3,000)
Standard Cassette Tray	Capacity	<ul style="list-style-type: none"> • 520 sheets x 2 (Based on Xerox Premier 80g/m²) • Envelope : 50 sheets (only Tray1 support)  NOTE Support Envelope : Monarch, DL, C4, C5, C6, No10 No9
	Media sizes	<ul style="list-style-type: none"> • Cassette 1: 98 x 139.7 mm ~ 297 x 390 mm (3.9" x 5.5" ~ 11.7" x 15.4") • Cassette 2: 148.5 x 182 mm ~ 320 x 457 mm (5.8" x 7.2" ~ 12.6" x 18")
	Media types	Plain / Thin / Bond / Hole Punched / Pre-Printed / Recycled / Thin CardStock / Thick CardStock / Heavy Cardstock/Heavy Cardstock/Extra Heavy Cardstock 1/Letterhead / Thick / Cotton / Colored / Archive / Thin Glossy / Thick Glossy/Heavy Glossy / Heavy weight / Extra Heavy weight1,2,3,4/ Label/ Transparency/ Envelope(Casette1 Only)

Item	Specification	
	Media weight	<ul style="list-style-type: none"> • Plain Paper: 70-90 g/m² (18.5-24 lb/ Duplex) • Thick Paper: 91-105 g/m² (25-28 lb / Duplex) • Heavy Weight Paper : 106-176 g/m² (Duplex) • Extra Heavy Weight 1 Paper : 177-220 g/m² • Extra Heavy Weight2 : 221~256g/m²(Duplex) • Extra Heavy Weight3 : 257~300g/m² • Thick Cardstock : 164~216g/m² (Duplex) • Heavy Cardstock : 217~256g/m²(Duplex) • Extra Heavy Cardstock1 : 257~300g/m² • Thick Glossy : 164~216g/m² • Heavy Glossy : 217~256g/m² • Transparency : 138~146g/m² • Label : 120~150g/m² • Envelope : 75~90g/m²(Only Tray1 Support) • Thick Envelope : 91~120g/m²(Only Tray1 Support) • Thin Paper: 60-69 g/m² (16-19 lb/ Duplex) • Cotton paper : 75-90 g/m² (Duplex) • Colored : 75-90 g/m² (Duplex) • Pre-Printed : 71-90 g/m² (Duplex) • Recycled : 60-90 g/m² (Duplex) • Bond Paper: 105-120 g/m² (Duplex) • Letterhead : 75-90 g/m² (Duplex) • Hole Punched Paper: 75-90 g/m² (Duplex) • Thin CardStock : 105-163 g/m² (Duplex) • Thin Glossy : 106-163 g/m² (Duplex)
	Sensing	<ul style="list-style-type: none"> • H/W Install Detect: Yes • Paper Empty & Low Level Detect: Yes • Paper Type Detect: No • Paper Size Detect: Yes
Multipurpose Tray	Capacity	<ul style="list-style-type: none"> • Plain Paper: 100 sheets @ 80 g/m² • Envelopes: 10 sheets @ 75 g/m² <div style="background-color: #cccccc; padding: 5px; margin: 5px 0;">  NOTE Support Envelope : Monarch, DL, C4, C5, C6, No10 No9 </div> <ul style="list-style-type: none"> • Labels: 20 sheets @ 120~159 g/m² • Thick Paper: 10 sheets @ 176 g/m²
	Media sizes	98 x 139.7 mm ~ 320 x 1200 mm (3.8" x 5.5" ~ 12.6" x 47.2")
	Media types	Plain / Thin / Bond / Hole Punched / Pre-Printed / Recycled / Thin CardStock / Letterhead / Thick / Cotton / Colored / Archive / Thin Glossy / Thick Glossy / Heavy Glossy / Heavy weight / Extra Heavy weight1,2,3,4 / Envelope / Transparency / Label
	Media weight	<ul style="list-style-type: none"> • 60 to 256g/m² : Simplex, Duplex • 257 to 325g/m² : Simplex • Envelope : 75~90g/m² , Simplex • Label : 120~150g/m² , Simplex

2. Product Specifications and Description

Item		Specification
	Sensing	<ul style="list-style-type: none"> Paper Empty Detect: Yes Paper Size Detect: Yes
DSDF (LX model)	Capacity	100 sheets
	Document Size	<ul style="list-style-type: none"> Width: 128 - 297 mm (5" - 11.7") Length: 140 - 432 mm (5.5" - 17")
	Document Weight	<ul style="list-style-type: none"> Simplex : 42 - 163 g/m² (11.25 ~ 43.25 lb) Duplex : 50 - 163 g/m² (13.25 ~ 43.25 lb)
	Auto Detected Size	A3 / A4 / A5 / B4/ B5/ Letter / Lgeal / Statement / Folio / Executive
DSDF (GX model)	Capacity	250 sheets
	Document Size	<ul style="list-style-type: none"> Width: 105 - 297 mm (4.13" - 11.7") Length: 140 - 432 mm (5.5" - 17")
	Document Weight	<ul style="list-style-type: none"> Simplex : 60 - 163 g/m² (11.25 ~ 43.25 lb)(Guarantee) 42~60 & 163~220g/m² (Support) Duplex : 60 - 163 g/m² (13.25 ~ 43.25 lb)(Guarantee) 50~60 & 163~220g/m² (Support)
	Auto Detected Size	A3 / A4 / A5 / A6 SEF / B4/ B5/ Letter / Lgeal / Statement / Folio / Executive
Platen Unit	Document Size	<ul style="list-style-type: none"> Width: 140 - 297 mm (5.5" - 11.7") Length: 140 - 432 mm (5.5" - 17")
Output Capacity	Standard	500 sheets Face Down
	Maximum	615 sheets [500 sheets (Standard) + 125 sheets (Job Separator)]
Printing size	Max. Size	320 x 457 mm (12.6" x 18")
	Min. Size	98 x 139.7 mm (3.8" x 5.5")
Max. Printing Area	Simplex	Top: 4.2+/-1.5 mm / Left: 4.2+/-1.5mm
	Duplex	Top: 4.2+/-2.0 mm / Left: 4.2+/-2.0mm
Duplex Printing	Support	Built-in
	Media sizes	139.7 x 182 mm ~ 320 x 457 mm (5.5" x 7.2" ~ 12.6" x 18")
	Media types	Plain / Thin / Bond / Hole Punched / Pre-Printed / Recycled / Thin CardStock / Letterhead / Thick / Cotton / Colored / Archive / Thin Glossy / Thick Glossy / Heavy Glossy / Heavy weight / Extra Heavy weight ^{1,2}
	Media weight	16~47 lb (60 to 256 g/m ²)

2.2.7. Network and Software specification

Network Interface

Item		Specifications
Network OS		[Windows] <ul style="list-style-type: none"> Microsoft Windows XP(32/64bits) / 2003(32/64bits) / Vista(32/64bits) / Win7 / Win8 [Mac] <ul style="list-style-type: none"> Mac OS 10.5 ~ 10.8 [Linux] <ul style="list-style-type: none"> RedHat 8 ~ 9 Fedora Core 1~4 Mandrake 9.2 ~ 10.1 SuSE 8.2 ~ 9.2 [Novell] <ul style="list-style-type: none"> Netware 5.x, 6.x(TCP/IP Only) [Others] <ul style="list-style-type: none"> Unix (HP-UX, Solaris, SunOS, SCO)
NW Protocols	TCP/IP	TCP/IPv4, HTTP, SNMPv1/v2c/v3, LDAP, SMTP, SSL/TLS, IPSec, DNS, WINS, SLP, Bonjour, SSDP, DDNS, DHCP/BOOTP, IPv6
	IPX/SPX	No
	Ether Talk	No
	NetBIOS over TCP/IP	Yes
	Others	HTTPS, IPSec, 802.1x
IP Addressing	Static IP	Yes
	Auto IP	Yes
	BOOTP	Yes
	DHCP	Yes
SNMP/MIB Access	MIB-2(RFC 1213)	Yes
	Host Resource MIB (RFC 2790)	Yes
	Printer MIB (RFC 3805)	Yes
	Finisher MIB (RFC 3806)	Yes
	Samsung Private MIB	Yes
	HP Compatibility	Yes - Partially
	SNMP Trap	Yes
Printing Protocols	Window Printing (SMB)	No
	LPR/LPD	Yes
	IPP	Yes
	Netware I-Print	No
	Netware NDPS	No
	Ether Talk	No
	Port 9100	Yes

2. Product Specifications and Description

Item		Specifications
Device Discovery	DNS	Yes
	Dynamic DNS	Yes
	Multicast DNS(Bonjourne)	Yes
	WSD (incl. Print & Scan)	Yes (Print & Scan)
	SLP	Yes
	uPNP(SSDP)	Yes

Software and Solution

Item		Specifications
Application	Anyweb Print	N/A
	Easy Printer Manager	Windows / Mac
	Easy Color Manager	Windows / Mac
	Easy Document Creator	Windows
	Net PC Fax	Windows / Mac
	Direct Printing Utility	Windows
	Easy Deployment Manager	Windows
	Easy Eco Driver	Windows
	Universal Printer Driver	Windows
	Universal Scan Driver	Windows
Mobile Printing	GCP (Google Cloud Print)	Yes
	AirPrint	Yes
Smart App	Smart Workspace	Yes
	Workbook Composer	Yes
	Smart Color Manager	Yes
	Smart Service App	Yes
	Hancom Office	Yes
Solution	Device Management	Fleet Admin Pro (UniThru)
	Output Management	CounThru Enterprise / Pro
	Document Management and Distribution	SmarThru Workflow 3.0
	Security	SecuThru Pro 1.0
	Mobility	SCP 1.0 ('14.09)

Item		Specifications
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
Initial Toner Cartridge	Black	-	Approx. 30,000 pages	@ A4/Letter LEF , Continuous job , Simplex Mode , 5% Coverage
	Cyan Magenta Yellow	-	Approx. 20,000 pages	@ A4/Letter LEF , Continuous job , Simplex Mode , 5% Coverage
Toner Cartridge	Black	CLT-K806S	Approx. 45,000 pages	@ A4/Letter LEF , Continuous job , Simplex Mode , 5% Coverage
	Cyan	CLT-C806S	Approx. 30,000 pages	@ A4/Letter LEF , Continuous job , Simplex Mode , 5% Coverage
	Magenta	CLT-M806S	Approx. 30,000 pages	@ A4/Letter LEF , Continuous job , Simplex Mode , 5% Coverage
	Yellow	CLT-Y806S	Approx. 30,000 pages	@ A4/Letter LEF , Continuous job , Simplex Mode , 5% Coverage
OPC Drum Unit	Black	CLT-R806K	Approx. 220,000 pages	@ A4/Letter LEF , 4 pages/job , Mono Mode , Simplex Mode , 5% Coverage
	Cyan Magenta Yellow	CLT-R806X	Approx. 180,000 pages	@ A4/Letter LEF , 4 pages/job , Simplex Mode , 5% Coverage
	Waste Toner Container	CLT-W806	Approx 71,000 pages	@ A4/Letter LEF , 4 pages/job , Color Ratio(C30% : M70%) , Simplex Mode , 5% Coverage

 **NOTE**

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


 **CAUTION**

When purchasing new toner cartridges or other supplies, these must be purchased in the same country as the machine you are using. Otherwise, new toner cartridges or other supplies will be incompatible with your machine due to different configurations of toner cartridges and other supplies according to the specific country conditions.

2.2.9. Maintenance Parts

Some of the machine's parts have shorter life span than machine's life.

To ensure that the machine produces good copies and to extend its service life, it is recommended that these maintenance parts at specific intervals be replaced as instructed.

Item	Part Code	Life	Remark	
Development Unit	Yellow	JC96-09837A	720,000 pages	@ A4/Letter LEF , 4 pages/job , Simplex Mode , 5% Coverage
	Magenta	JC96-09838A	720,000 pages	@ A4/Letter LEF , 4 pages/job , Simplex Mode , 5% Coverage
	Cyan	JC96-09839A	720,000 pages	@ A4/Letter LEF , 4 pages/job , Simplex Mode , 5% Coverage
	Black	JC96-09840A	720,000 pages	@ A4/Letter LEF , 4 pages/job , Mono Mode , Simplex Mode , 5% Coverage
Fuser Unit	220V	JC91-01194A	360,000 pages	
	110V	JC91-01195A	360,000 pages	
ITB	JC93-00984A	360,000 pages	 NOTE When replacing ITB, ACR sensor cleaning is needed.	
ITB Cleaner	JC93-00986A	180,000 pages		
Transfer roller Assy	JC93-01078A	360,000 pages		
Pick-Up / Forward / Reverse(Separation) roller (for Tray X)	JC93-01092A	360,000 pages		
MP Pick-Up / Forward / Reverse(Separation) roller	JC93-00540B	200,000 pages		
DSDF Pick-Up roller Assy	JC97-04624A	200,000 pages	For LX model	
DSDF Reverse(Separation) roller Assy	JC97-04636A	100,000 pages	For LX model	
DSDF Pick-Up roller Assy	JC97-04650A	200,000 pages	For GX model	
DSDF Reverse(Separation) roller Assy	JC97-04661A	100,000 pages	For Gx model	

NOTE

- Depending on the print patterns and job mode used, the lifespan may differ.
- Refer to Chapter 3.2.2 for replacing the maintenance parts.

Maintenance Table

- EM : Emergency Maintenance (as Needed)
- C : Clean
- R : Replace



NOTE

The period as shown in the table means lifespan for each maintenance parts.

When replacing the fuser unit, engineer should not need to replace Paper path and DSDP's material items such as pick-up/forward/separation rollers etc.

The usage of fuser unit and pick-up/forward/separation roller will be different as mixing Copy/Scan/Print job.

Section	Item	EM	30K	45K	72K	100K	180K	200K	220K	360K	720K
Waste Toner	Waste Toner Container	C			R						
	Around Waste Toner Container	C									
Imaging Unit	Toner Cartridge Y,M,C	C	R								
	Toner Cartridge K	C		R							
	Drum Unit Y,M,C	C					R				
	Drum Unit K	C							R		
	Development Unit	C									R
	Around Toner Pipe	C									
	Paper Dust Stick	C									
Fuser Unit	Fuser Unit	C								R	
Transfer Unit	ITB Unit	C								R	
	ACR sensor									C	
	ITB Cleaner						R				
	Transfer Roller Assy (T2)	C								R	
Paper Path	Pick-Up / Forward / Reverse(Separation) roller * (for Tray X)	C								R	
	MP Pick-Up / Forward / Reverse(Separation) roller *	C						R			
	Regi / Feed / Duplex roller	C									
	Regi sensor	C									
	Feed sensor	C									
	Pre-feed sensor	C									





Section	Item	EM	30K	45K	72K	100K	180K	200K	220K	360K	720K
DSDF	DSDF Pick-Up roller Assy	C						R			
	DSDF Reverse(Separation) roller Assy	C				R					
	White sheet / White sponge / Feed roller	C									








* Replace those three parts at the same time.

2.2.10. Option


Option Configuration

Paper Output Option





Job Separator SL-JSP501S ¹⁾	
Inner Finisher SL-FIN502L	
High Volume Finisher SL-FIN701H	Booklet Finisher SL-FIN701B
	
Staples (Inner, Booklet) SCX-STP000	Staples (Main for Booklet) SL-STP000
Punch Kit (Inner - 2/3, 2/4, Swedish) SL-HPU501T, HPU501F, HPU501S	
Punch Kit (Booklet - 2/3, 2/4, Swedish) SL-HPU700T, HPU700F, HPU700S	

Multi Purpose Table SL-WKT101	
Working Table CLX-WKT001	
Wireless/NFC Kit SL-NWE001X	
Wireless/NFC/BLE⁴⁾ Kit SL-NWE002X	
Additional Network Kit SL-NWA001N	
FDI Kit CLX-KIT10F	
Fax Kit CLX-FAX160 Dual Fax Kit SL-FAX2501	

DSDF-L²⁾
DSDF-H³⁾




Paper Input Option

Cabinet SL-DSK501T	DCF SL-PFP501D
	
Heater for DCF CLX-DHK12C(220V) CLX-DHK11C(110V)	
HCF SL-HCF501B	HCF-Side SL-HCF501S
	
Heater for HCF/Side SL-DHK512C(220V) SL-DHK511C(110V)	

- 1) Job Separator is different model code with MX4 series
- 2) DSDF-L for LX Model, 80/160ipm Simplex/Duplex Scan Speed
- 3) DSDF-H for GX Model, 120/240ipm Simplex/Duplex Scan Speed
- 4) BLE: Bluetooth Low Energy for wireless connection with mobile device

Option List

Item	Model	Remark
Cabinet Stand	SL-DSK501T	
Double(Dual) Cassette Feeder	SL-PFP501D	
High Capacity Feeder - Under(Bottom)	SL-HCF501B	
High Capacity Feeder - Side (LCT : Large Capacity Tray)	SL-HCF501S	
Working Table	CLX-WKT001	
Multi Purpose Table	SL-WKT101	
Fax Kit	CLX-FAX160	
Fax Multiline Kit	SL-FAX2501	
FDI(Foreign Device Interface)Kit	CLX-KIT10F	
Job Separator	SL-JST501S	
Cassette Locking Kit	SL-CLK501	
Dehumidifying Heater Kit	CLX-DHK11C	For DCF
	CLX-DHK12C	For DCF
	SL-DHK511C	For HCF/LCT
	SL-DHK512C	For HCF/LCT
Wireless / NFC Kit	SL-NWE001X	
Wireless / NFC / BLE Kit	SL-NWE002X	
Additional Network Kit (Dual Network Kit)	SL-NWA001N	
550-Sheet Inner Finisher	SL-FIN502L	
3,250-Sheet Stapling Finisher (High Volume Finisher)	SL-FIN701H	
2,250-sheet Booklet Finisher	SL-FIN701B	
Punch Kit for 500- sheet Inner Finisher	SL-HPU501T	2 and 3 hole punch (For America & Asia & Africa)
	SL-HPU501F	2 and 4 hole (For Europe)
	SL-HPU501S	Swedish 4 hole (For Sweden)
Punch Kit for 3,250- sheet Finisher	SL-HPU701T	2 and 3 hole punch (For America & Asia & Africa)
	SL-HPU701F	2 and 4 hole (For Europe)
	SL-HPU701S	Swedish 4 hole (For Sweden)
Staples	• SCX-STP000	• Regular staples for Inner Finisher • Saddle staples for Booklet Finisher
	SL-STP000	Regular staples for High Volume and Booklet Finisher
 NOTE FIN701B has 2 staple slots.		

Option Specification

Item		Specification
Dual Cassette Feeder	Model Name	SL-PFP501D
	Capacity	520 x 2 Sheets
	Media Sizes	<ul style="list-style-type: none"> Cassette 1 : 148.5 x 210 mm ~ 297 x 432 mm (5.8" x 8.2" ~ 12" x 18") Cassette 2 : 148.5 x 210 mm ~ 297 x 432 mm (5.8" x 8.2" ~ 12" x 18")
	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"> Plain Paper: 71-90 g/m²(18.5-24 lb/ Duplex) Thick Paper: 91-105 g/m²(25-28 lb / Duplex) Heavy Weight Paper : 106-176 g/m²(Duplex) Extra Heavy Weight 1 Paper : 177-216 g/m² (Duplex) Extra Heavy Weight 2 Paper : 217-256 g/m² (Duplex) Extra Heavy Weight 3 Paper : 257-300 g/m² Thin Paper: 60-69 g/m² (16-19 lb/ Duplex) Cotton paper : 75-90 g/m² (Duplex) Colored : 75-90 g/m² (Duplex) Pre-Printed : 71-90 g/m² (Duplex) Recycled : 60-90 g/m² (Duplex) Bond Paper: 105-120 g/m² (Duplex) Letterhead : 75-90 g/m² (Duplex) Hole Punched Paper: 75-90 g/m² (Duplex) Thin CardStock : 105-163 g/m² (Duplex) Thin Glossy : 106-163 g/m² (Duplex)
	Sensing	<ul style="list-style-type: none"> H/W Install Detect: Yes Paper Empty & Low Level Detect: Yes Paper Type Detect: No Paper Size Detect: Yes
	Dimension	566 x 610 x 265 mm (22.3" x 24" x 10")
	Weight	Net 20 kg, Packing 23.5 kg
High-Capacity Feeder - Bottom (2k)	Model Name	SL-HCF501B
	Capacity	2000 sheets @ 20lb (80 g/m ²)
	Media sizes	A4,Letter
	Media types	Plain Paper, Thin Paper, Thick Paper, Punched Paper
	Media weight	60 to 300gsm
	Sensing	<ul style="list-style-type: none"> H/W Install Detect : Yes Paper Empty & Low Level Detect : Yes Paper Type Detect : No Paper Size Detect : No

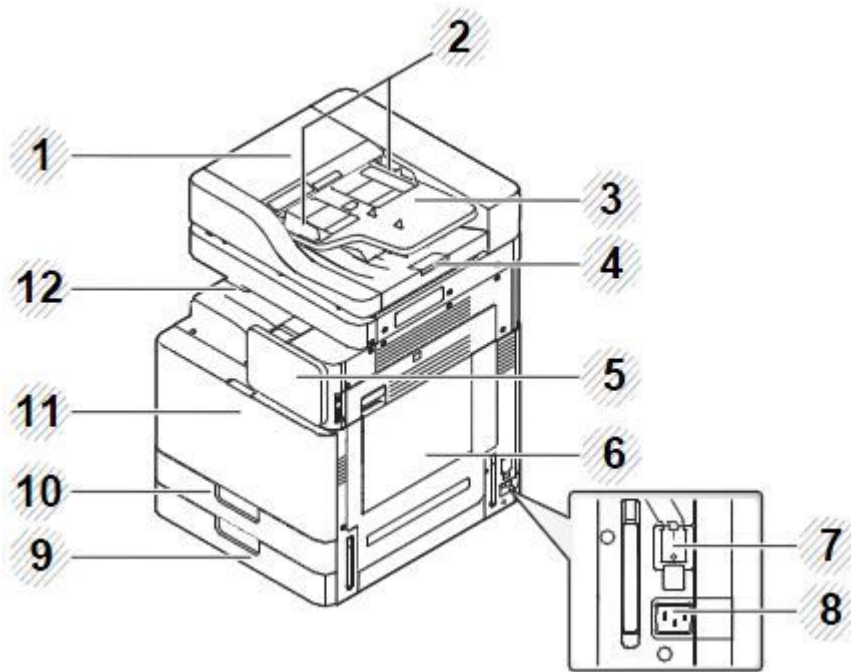
Item		Specification
High-Capacity Feeder - Side (3K)	Model Name	SL-HCF501S
	Capacity	3000 sheets @ 20lb (80 g/m ²)
	Media sizes	A4,Letter
	Media types	Plain Paper, Thin Paper, Thick Paper, Punched Paper
	Media weight	60 to 300gsm
	Sensing	<ul style="list-style-type: none"> • H/W Install Detect : Yes • Paper Empty & Low Level Detect : Yes • Paper Type Detect : No • Paper Size Detect: No
Stand	Model Name	SL-DSK501T
	Dimension	585 x 670 x 257 mm
	Weight (Net)	18 kg
Job Separator	Model Name	SL-JST501S
	Capacity	125 sheets @ (80g/m ²)
Inner Finisher	Model Name	SL-FIN502L
	Capacity	500 sheets stacking, internal
	Staple Cartridge capacity	5000 staples / cartridge
	Stacking	<ul style="list-style-type: none"> • Top Tray : 50 sheets (A4/LT @ 80gsm) • Finishing Tray : 500 sheets (A4/LT @ 80gsm)
	Stapling	<ul style="list-style-type: none"> • Max. Number of Sheets : 50 sheets stapling with 90g/m² sheet • Stapling Positions : Front flat & corner(45) / Dual / Rear flat & corner(45)
	Saddle Stapling	N/A
	Offline Stapling	N/A
	Offset at Non Staple job	Yes
	Offset at Staple job	N/A
	Output Stacking	Face Down
3250-sheet Finisher	Model Name	SL-FIN701H
	Capacity	65 sheets stapling / 3250 sheets stacking
	Staple Cartridge capacity	5000 staples / cartridge
	Stacking	<ul style="list-style-type: none"> • Top Tray : 250 sheets (A4/LT @ 80gsm) • Finishing Tray : 3000 sheets (A4/LT @ 80gsm)
	Stapling	<ul style="list-style-type: none"> • Max. Number of Sheets : 65 sheets stapling with 90g/m² sheet • Stapling Positions : 2 Corners (Single, 45 degree), Center (Double)
	Offline Stapling	Yes
	Offset at Non Staple job	Yes
	Offset at Staple job	Yes
	Output Stacking	Face Down

2. Product Specifications and Description

Item		Specification
2250-sheet Booklet Finisher	Model Name	SL-FIN701B
	Capacity	65 sheets stapling / 2000 sheets stacking
	Staple Cartridge capacity	5000 staples / cartridge
	Stacking	<ul style="list-style-type: none"> • Top Tray : 250 sheets (A4/LT @ 80gsm) • Finishing Tray : 2000 sheets (A4/LT @ 80gsm)
	Stapling	<ul style="list-style-type: none"> • Max. Number of Sheets : 65 sheets stapling with 90 g/m² sheet • Stapling Positions : 2 Corners (Single), Center (Double)
	Saddle Stapling	<ul style="list-style-type: none"> • Max. Number of Sheets : 25 sheets stapling with 80 g/m² sheet
	Offline Stapling	Yes
	Offset at Non Staple job	Yes
	Offset at Staple job	Yes
	Output Stacking	Face Down
Punch Kit	Model Name	SL-HPU701T/SL-HPU701F/SL-HPU701S
	Available Unit	Auto change 2/3 hole or auto change 2/4 hole, Swedish 4
	Paper weight	52~300 g/m ²
Punch Kit (Inner)	Model Name	SL-HPU501T/SL-HPU501F/SL-HPU501S
	Available Unit	Auto change 2/3 hole or auto change 2/4 hole, Swedish 4
	Paper weight	52~256 g/m ²
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)

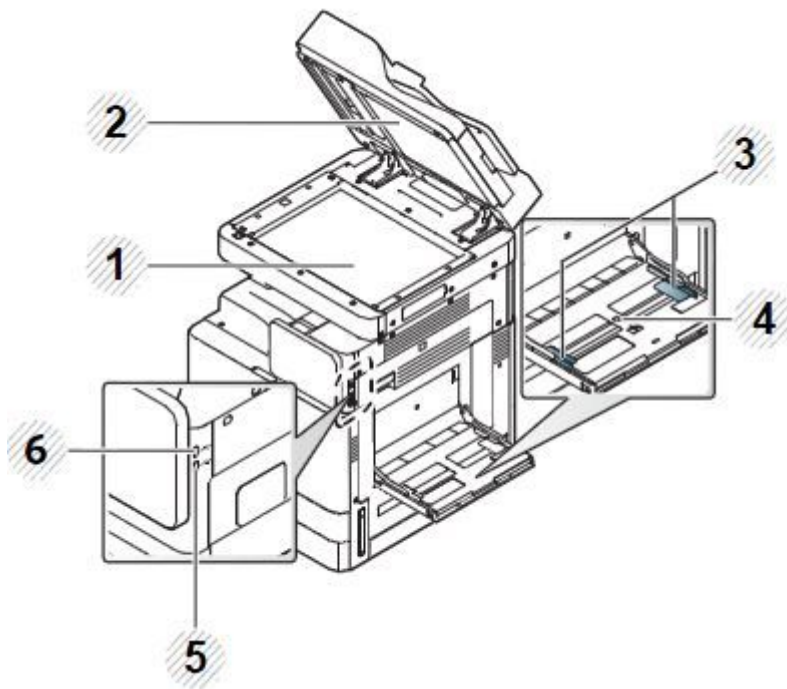
2.3. Machine External View

1) Front view 1

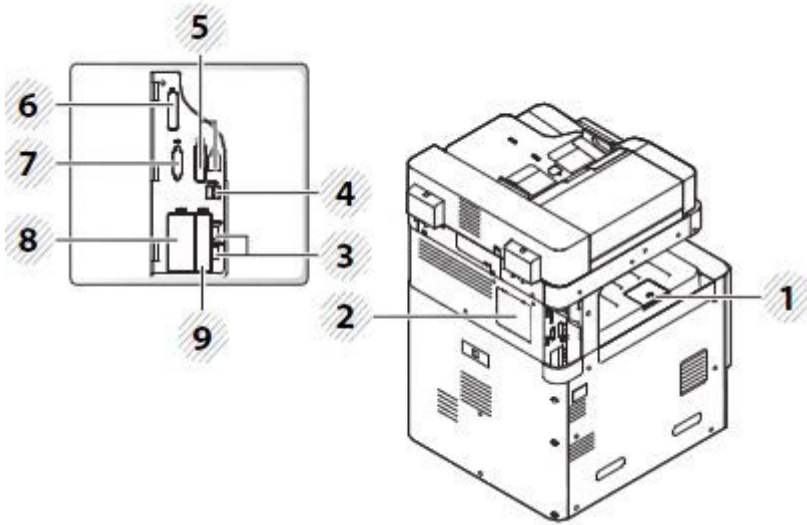


1	ADF(Auto Document Feeder) cover
2	ADF width guides
3	ADF input tray
4	ADF output tray
5	Control panel
6	Multi-purpose tray
7	Power-switch
8	Power receptacle
9	Tray2
10	Tray1 (Top tray)
11	Front door
12	Paper output tray

2) Front view 2

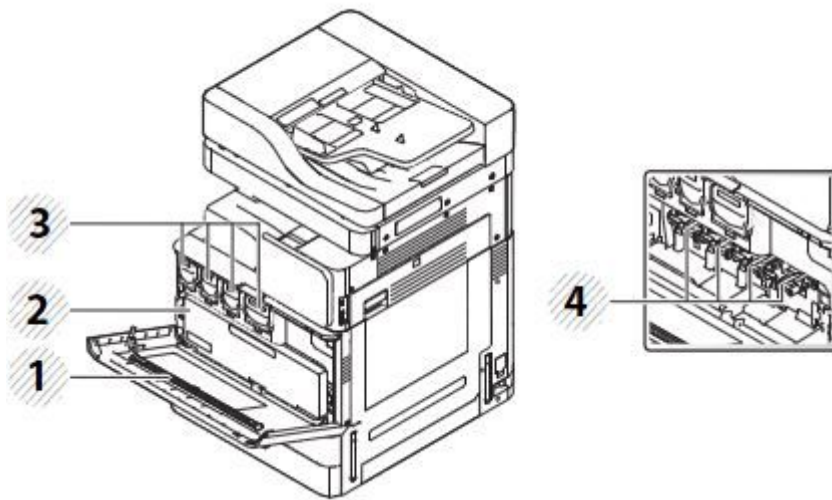


1	Scanner glass
2	White sheet
3	Multi-purpose tray paper width guide
4	Multi-purpose tray
5	USB keyboard port
6	USB port

Rear view

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

Inner view

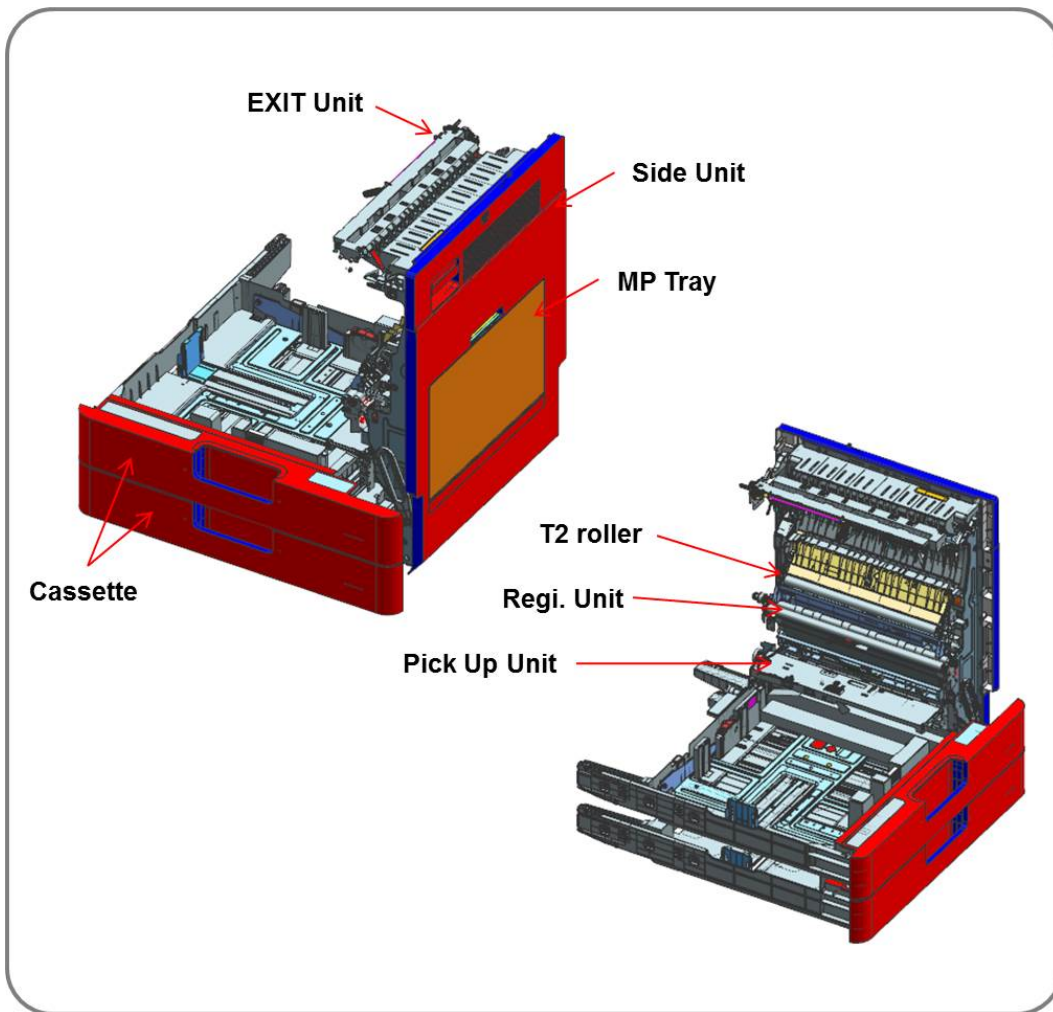


1	LSU window cleaning stick
2	Waste toner container
3	Toner Cartridges
4	Imaging units

2.4. Feeding System

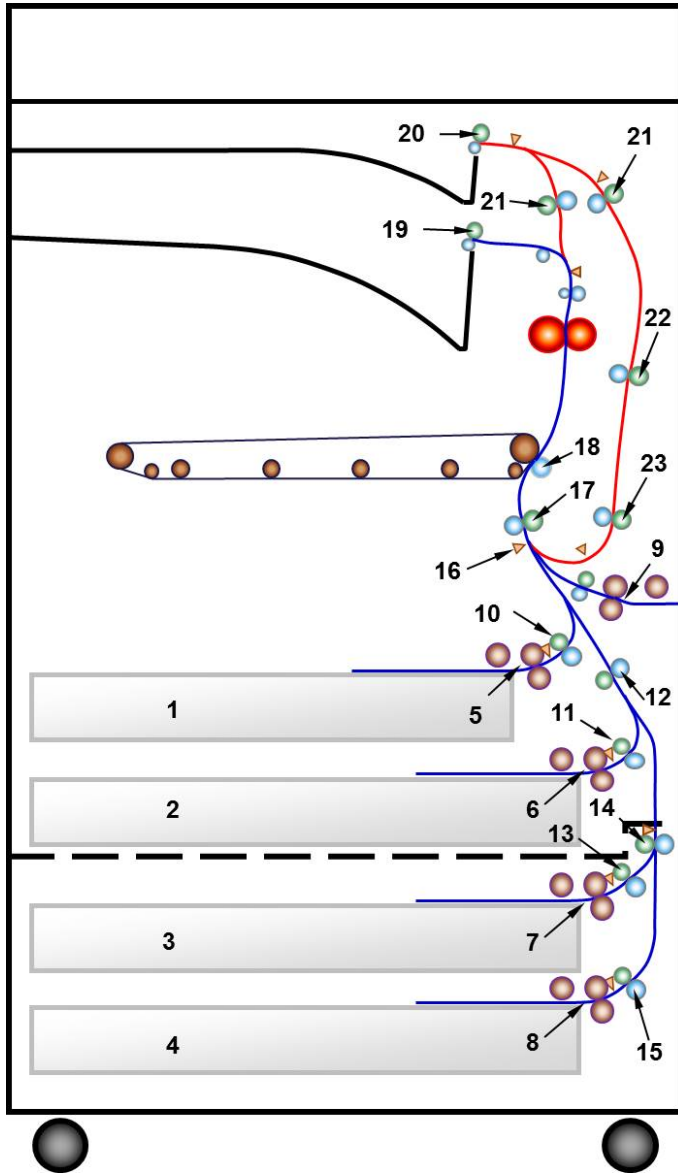
2.4.1. Feeding System Overview

The feeding system picks up a paper from the cassette or MP tray and transports it to the machine inside. After printing process, the paper is put out on the exit tray. The feeding system 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 / retard / forward rollers
6	Tray 2 pick up / retard / forward rollers
7	Tray 3 pick up / retard / forward rollers(Optional)
8	Tray 4 pick up / retard / forward rollers(Optional)
9	MP Tray pick up / retard / forward rollers
10	Tray 1 feed roller
11	Tray 2 feed roller
12	Tray 2 trans roller

13	Tray 3 feed roller(Optional)
14	Tray 3 trans roller(Optional)
15	Tray 4 feed roller(Optional)
16	Sensor registration
17	Roller registration
18	Roller transfer
19	Roller Exit 1st
20	Roller Exit 2nd
21	Roller Exit trans
22	Roller Duplex1
23	Roller Duplex2
23	Roller Duplex3

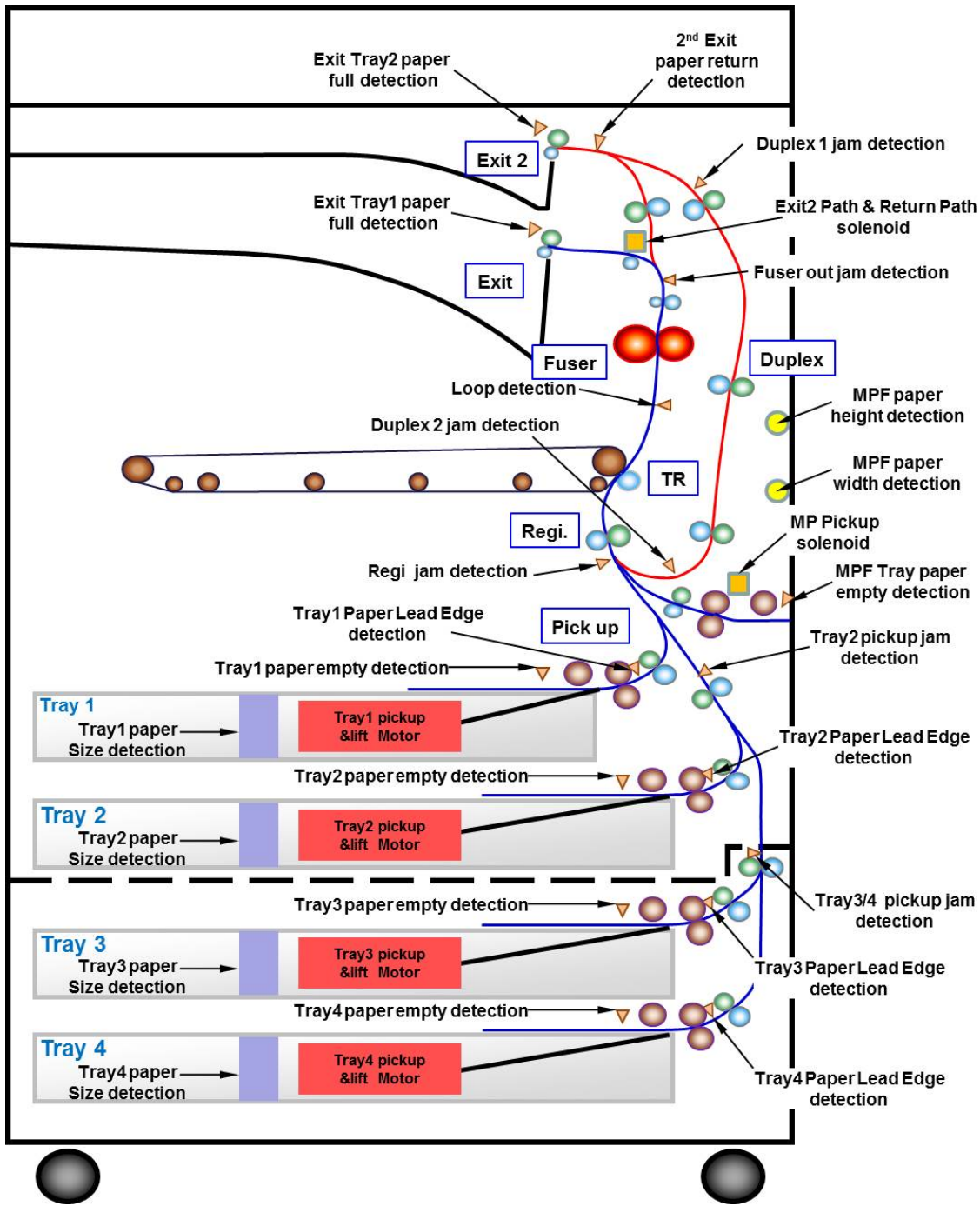
- **Pick-Up roller (Tray 1,2,3,4 and MP Tray)**
 - This roller picks up the paper from the tray.
- **Forward roller (Tray 1,2,3,4 and MP Tray)**
 - This roller is placed against the reverse roller. It transports the paper from the pick up roller to feed roller.
- **Reverse roller (Tray 1,2,3,4 and MP 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.

**NOTE**


[Roller period table]

Roller	Periodic
OPC/Drum	94.5 mm
Charge Roller (CR)	37.7 mm
Magnetic roller (MR)	36.79 mm
Transfer Roller (T1)	44.0 mm
Transfer Roller (T2)	59.7 mm
Fuser Belt (HR)	109.96 mm
Fuser Pressure Roller (PR)	116.24 mm

b) Sensor, Motor, Solenoid



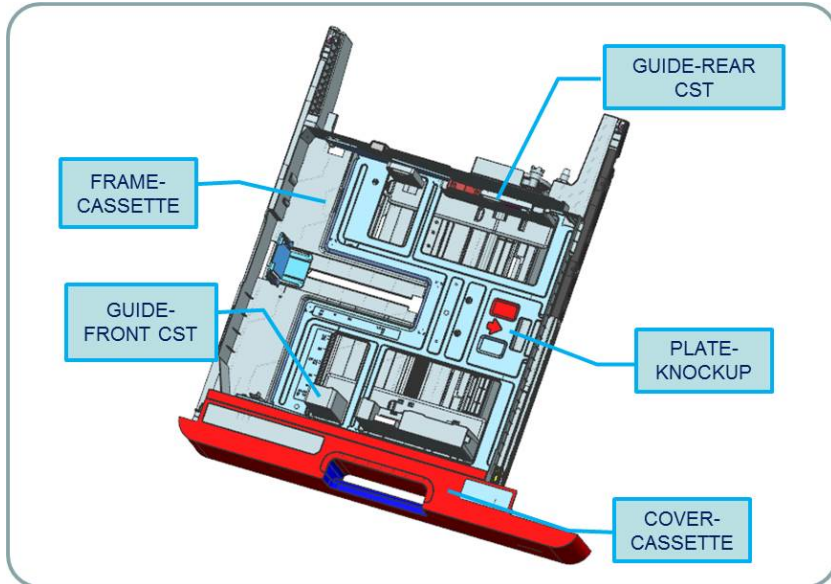
Item	Function
Tray1 paper size detection sensor	Detects Tray1 paper size
Tray1 paper empty detection sensor	Detects Tray1 paper empty
Tray1 upper limit detection sensor	Detects Tray1 upper limit
Tray1 paper Lead Edge detection sensor	Detects Tray1 paper Lead Edge
Tray2 paper size detection sensor	Detects Tray2 paper size
Tray2 paper empty detection sensor	Detects Tray2 paper empty
Tray2 upper limit detection sensor	Detects Tray2 upper limit
Tray2 paper Lead Edge detection sensor	Detects Tray2 paper Lead Edge

Item	Function
Tray2 paper feed jam detection sensor	Detects Tray2 paper feed jam
Tray3 paper size detection(Optional) sensor	Detects Tray3 paper size
Tray3 paper empty detection(Optional) sensor	Detects Tray3 paper empty
Tray3 upper limit detection(Optional) sensor	Detects Tray3 upper limit
Tray3 paper Lead Edge detection (Option) sensor	Detects Tray3 paper Lead Edge
Tray3/4 paper feed jam detection (Option) sensor	Detects Tray3/4 paper feed jam
Tray4 paper size detection(Optional) sensor	Detects Tray4 paper size detection
Tray4 paper empty detection(Optional) sensor	Detects Tray4 paper empty
Tray4 upper limit detection(Optional) sensor	Detects Tray4 upper limit
Tray4 paper Lead Edge detection (Option) sensor	Detects Tray4 paper Lead Edge
Paper regi. jam detection sensor	Detects Paper regi. jam
Paper fuser-out jam detection sensor	Detects Paper fuser-out jam
Exit tray1 paper full detection sensor	Detects Exit tray1 paper full
Exit2 tray path &Return path solenoid	Changes paper path
Return motor	Controls 2nd Exit Tray and duplex printing
Exit tray2 paper full detection sensor	Detects Exit tray2 paper full
Exit 2 paper return detection sensor	Detects Duplex Return position
1st Duplex motor	Controls duplex printing
2nd Duplex motor	Controls duplex printing
Duplex1 jam detection sensor	Detects Duplex1 jam
Duplex2 jam detection sensor	Detects Duplex2 jam
MPF Paper empty detection sensor	Detects MPF Paper empty  NOTE If paper is loaded in the MP tray, that tray takes priority over trays 1,2,3, or 4.
MPF	Controls MPF pick up roller
MPF paper width detection sensor	Detects MPF paper width
Tray1 Pickup & Lift motor	Drives the pickup roller and the knock up plate
Tray2 Pickup & Lift motor	Drives the pickup roller and the knock up plate
Tray3 Pickup & Lift motor	Drives the pickup roller and the knock up plate
Tray4 Pickup & Lift motor	Drives the pickup roller and the knock up plate
Paper Loop Detection sensor	Detects paper loop between transfer Nip and fusing Nip At warm-up, Detects the fuser jam.

2.4.3. Cassette (Tray)

The Cassette stores papers.

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



Specification

- 1) Structure : Drawer Type
- 2) Capacity : 520 Sheets (80 g/m² paper standard)
- 3) Paper support
 - Plain paper : A5, A4, A3(not support in tray1), B5, B4, Letter, 11"×17"(Ledger), Statement, Legal
 - Special Paper : Envelope(Tray1 Only), Label, Transparency
- 4) Paper weight : plain paper 60 ~ 300 g/m²
- 5) Plate knock up lift type : Lift Motor + Up Limit Sensor

2.4.4. Pick-Up Unit

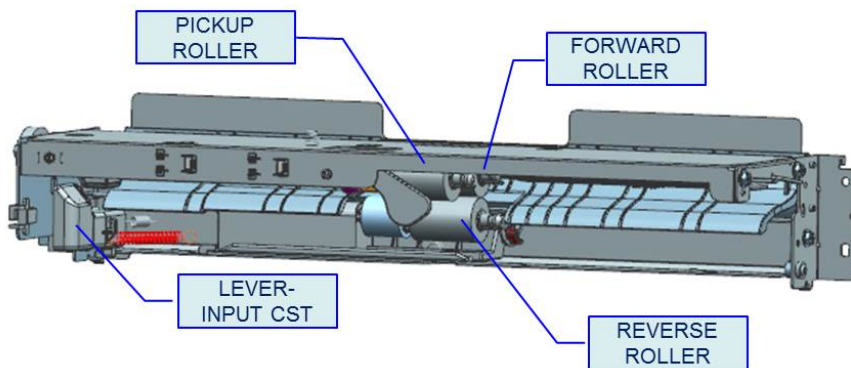
When pick-up takes place, the pickup roller moves down to come into contact with the surface of the paper. If the cassette is installed, the LEVER-INPUT CST is pushed and pick up roller moves down. The forward roller and the reverse roller serve to make sure that a single sheet of paper is moved to the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



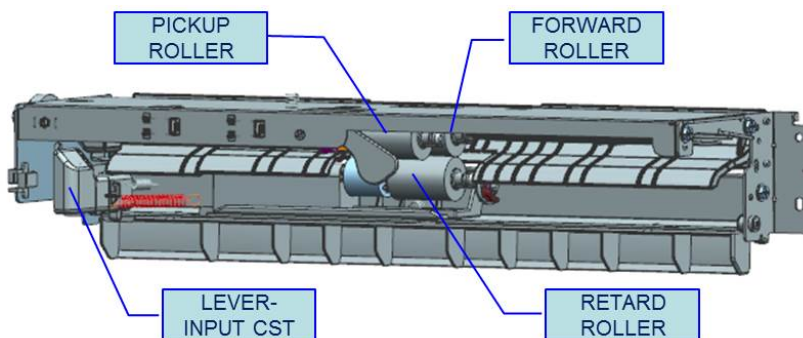
NOTE

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

Pick-Up Unit 1

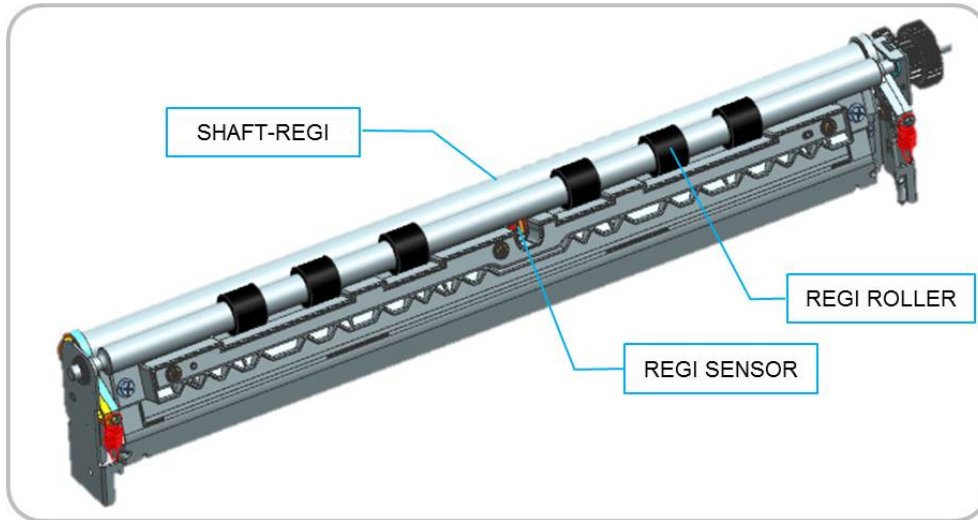


Pick-Up Unit 2



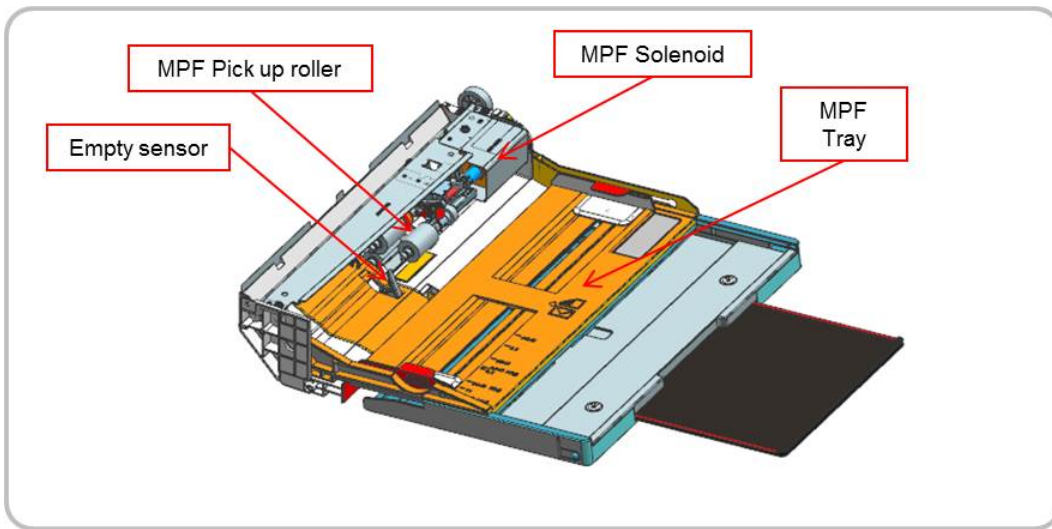
2.4.5. Registration Unit

The registration (Regi.) roller is driven by the Regi./MP motor. The Regi. clutch itself is located between the Regi. clutch and Regi./MP motor. The registration roller ON/OFF signal is used to match the ledege of the toned image on the ITB with that of the ledege of the paper.



2.4.6. MPF(Multi-Purpose Feeder) Unit

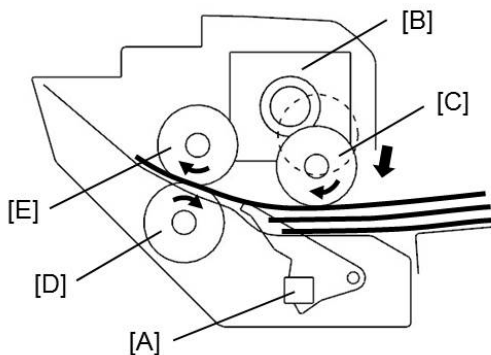
The MPF Unit allows feeding of specialty media stock, envelopes, and custom size paper.



■ Specification

- 1) Capacity : 100 sheets (80g/ paper standard)
- 2) Media Size : 98 x 148 mm ~ 320 x 1200 mm (3.8" x 5.8" ~ 12.6" x 47.2")
- 3) Media Weight : Plain paper 60 ~ 320 g/m²
- 4) Feeding Speed : 48 ppm (X7600/K7600) , 40 ppm (X7500/K7500), 32 ppm (X7400/K7400) Letter/A4 LEF (Long Edge Feeding)

■ Paper Separation



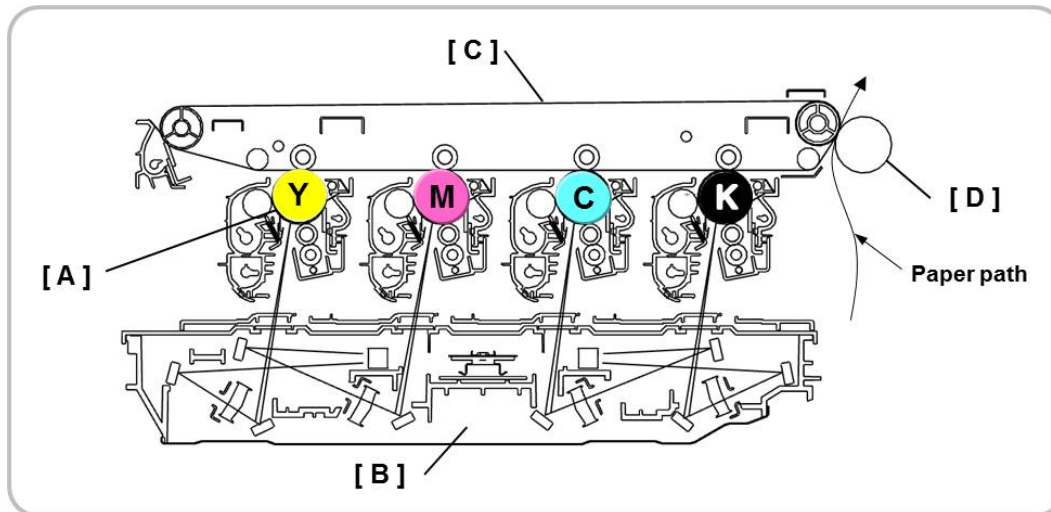
When the MP paper detection[A] sensor detects paper and the machine gets a MP printing job, the MP solenoid[B] drops the pick-up roller[C] onto the top of the paper stack on the MP tray.

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 four drum units, four deve unit, and four laser beams for color printing. Each drum unit consists of a drum, charge roller, cleaning blade. Each deve unit consists of a magnetic roller, mixing auger.



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 the laser creates a latent image by discharging on the surface of the OPC drum. The negatively charged toner is attracted to the latent drum image due to an electric field. The toner (real image) on each OPC drum is moved to the transfer belt [C] by the positive bias applied to the first transfer roller. All four toners (color image) are transferred to the paper by a positive charge applied to the second transfer roller [D].

- 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. This machine uses four independent drum units and deve units.
- 4) **Transfer**
 - Image transfer : The first transfer rollers opposite the OPC drums transfer toner from the drums to the transfer belt. Four toner images are super-imposed onto the belt.
 - Paper transfer : The second transfer roller transfers the toner from the transfer belt to the media.
- 5) **Cleaning for OPC drum** : The cleaning brush and blade remove remaining toner on the drum surface after image transfer to the paper.
- 6) **Quenching for OPC drum** : Quenching is done by illuminating the whole area of the drum with the laser at the end of every job.

2.5.2. Imaging Unit

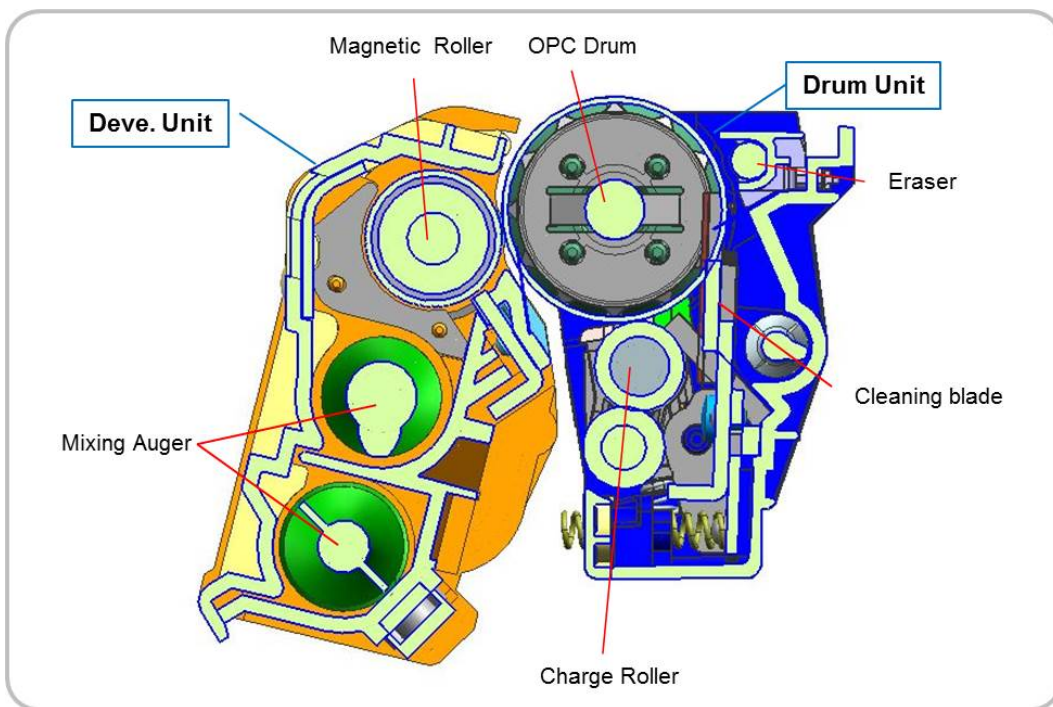
2.5.2.1. Imaging Unit Overview

This machine uses the tandem type drum units and deve units. It makes 4 color developing during one paper path and increase the productivity for color printing.

The deve units are not interchangeable but the drum units for YMC color are interchangeable. The black drum unit is independent. The diameter of the drum is 30 mm (circumference: about 94.2 mm).

The drum unit has the charge roller to charge the drum surface and cleaning roller to clean the charge roller.

The CRUM is the sub part of the Drum unit. It stores the count information and several data. If the drum unit is replaced, the count information stored by the old drum unit could not be kept.

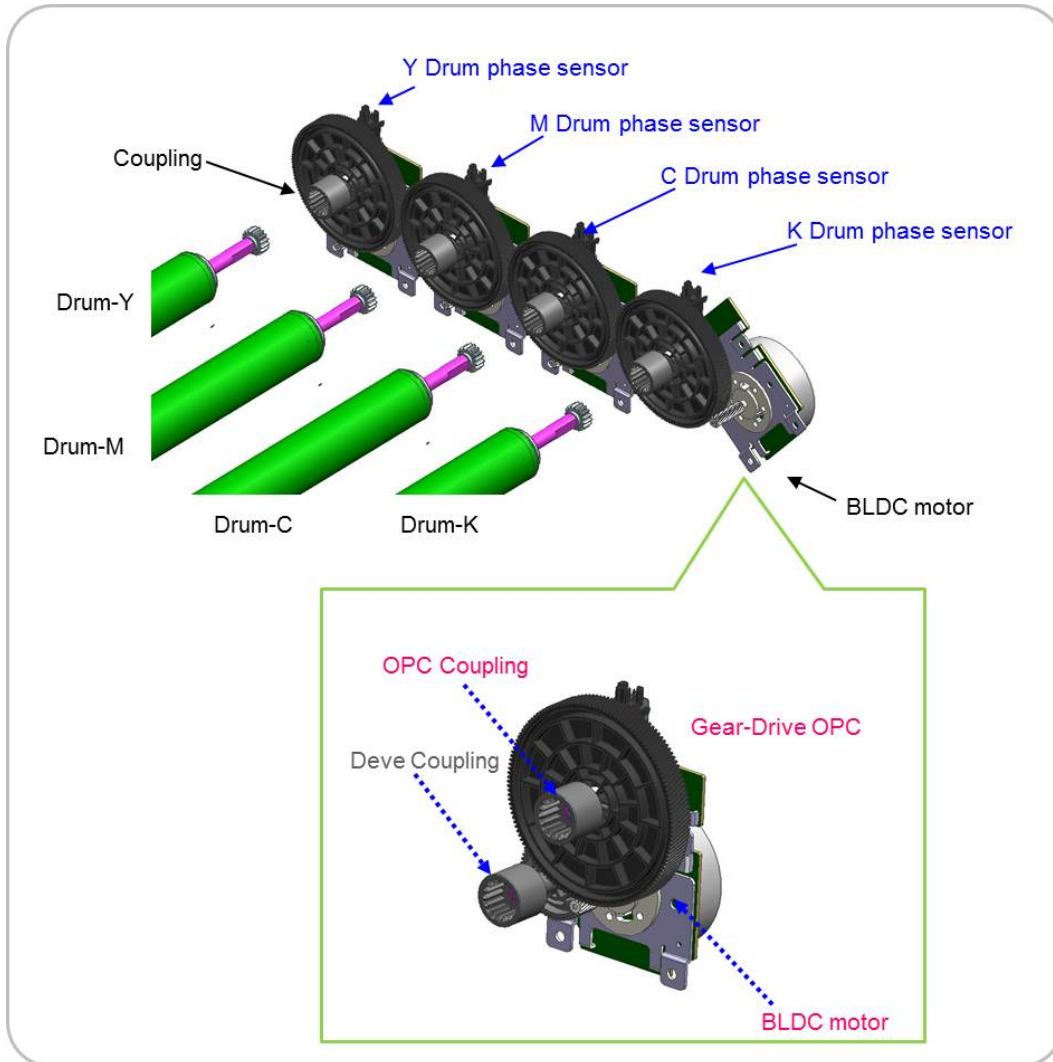


2.5.2.2. Drum drive

Each color OPC drum and Magnetic roller is driven by each color motor. The OPC Drum and Magnetic roller are supplied with power from the coupling.

The BLDC motor maintains the constant speed. So, the speed sync for each color depends on the BLDC motor without the additional device.

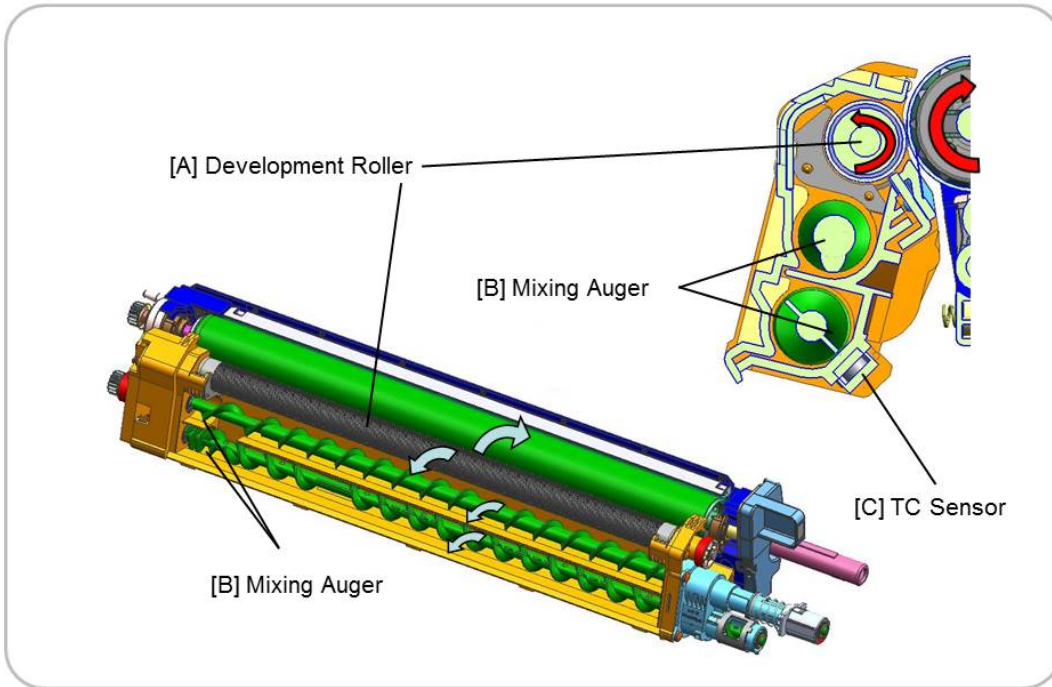
Phase sync for each OPC runout prints the pattern on the ITB and is adjusted by the data automatically.



2.5.2.3. Deve(Development) Unit

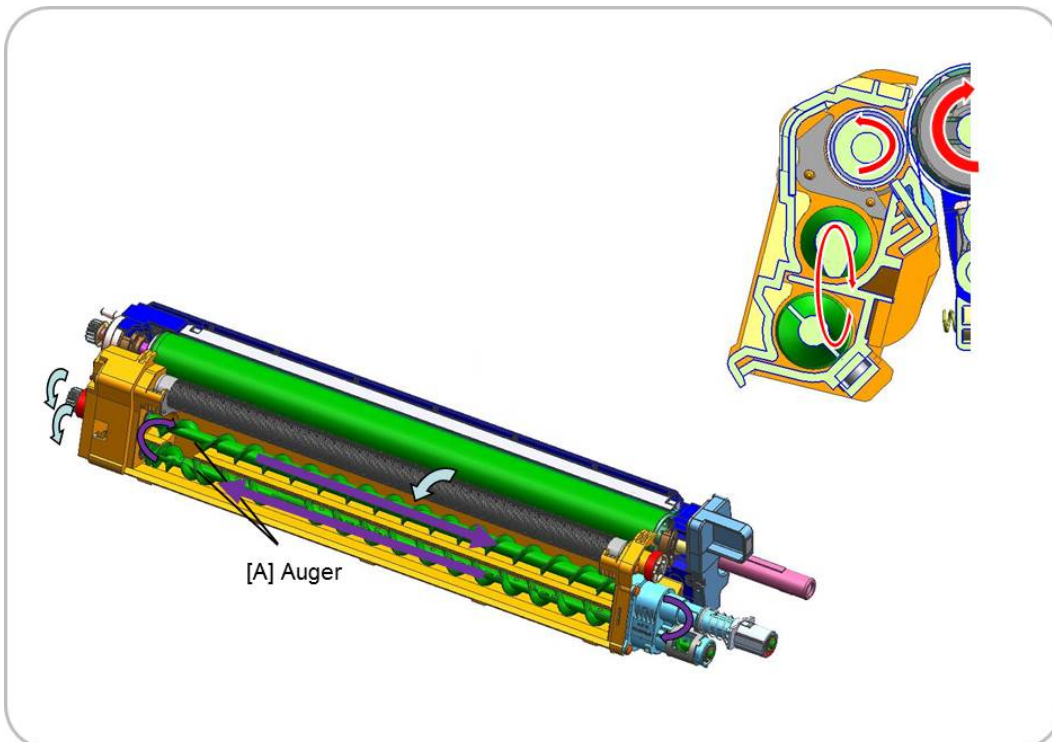
This machine uses a dual-component development system and has four deve units. Each new unit contains 245g of magnetic toner carrier(developer powder). The developer powder is supplied to the magnetic(development) roller[A] by the two mixing augers[B]. The diameter of the magnetic roller is 18 mm.

Each deve unit has a TC(Toner Carrier) sensor[C]. They are used for controlling the operating range of toner density.



■ Developer Agitation

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



Agitation job occurs at the following times. :

- During the process control self-checking (Warm up)
- During toner supply job
- During development job

If the deve unit is stored at temperature above 45°C (113°F), it does not work normally. The toner in deve unit is easy to harden at temperature above 45°C (113°F). If the toner in deve unit is harden, the installation error occurs when installing it.

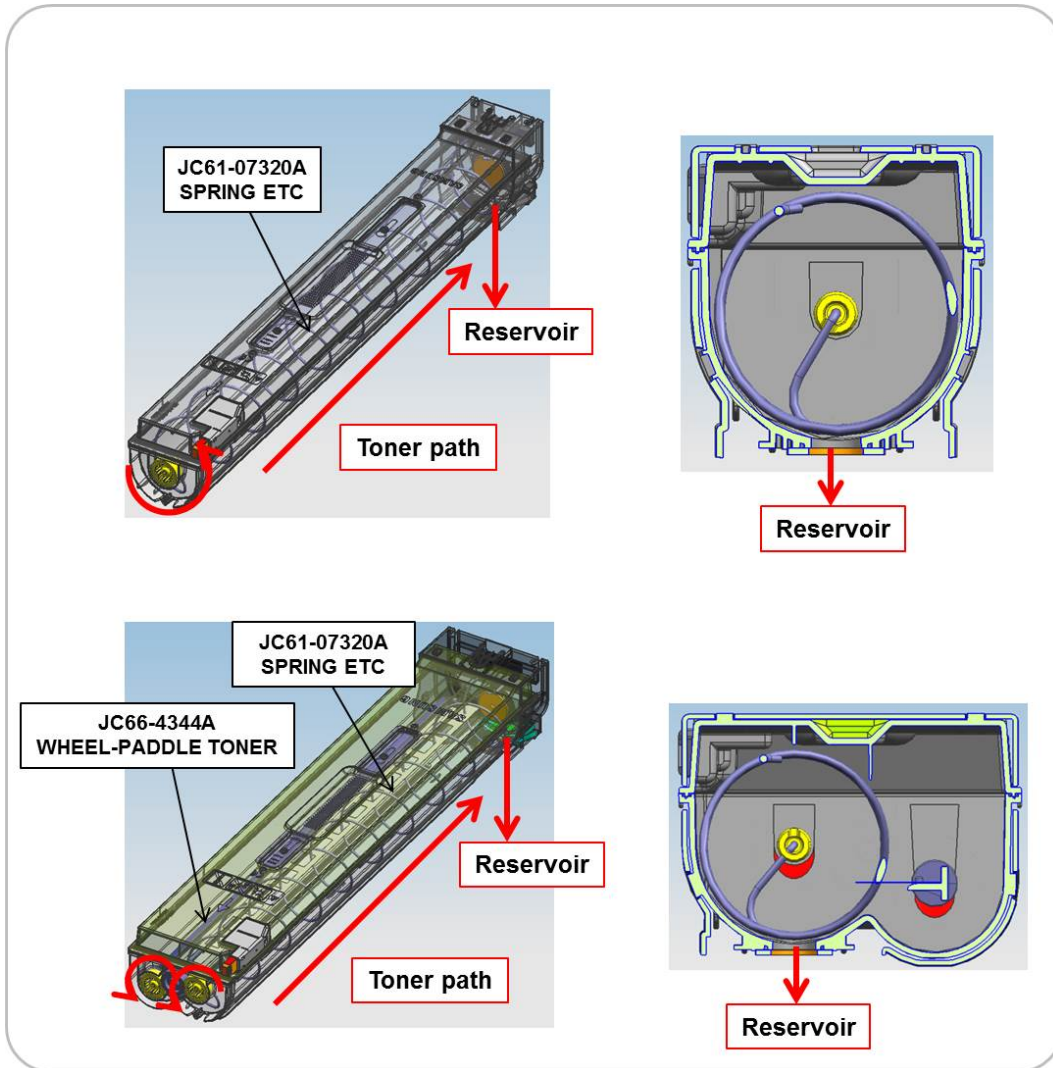
2.5.3. Toner Cartridge

The toner and carrier in the toner cartridge is mixing.

Y/M/C cartridge contains 570g of toner and K cartridge contains 840g of toner. Y/M/C cartridge contains 55g of carrier and K cartridge contains 80g of carrier.

Toner in the Y/M/C cartridge is transferred to the Reservoir by the Spring-ETC.

Toner in the K cartridge is transferred to the Spring-ETC by the Wheel-Paddle Toner and transferred to the Reservoir by Spring-ETC.



2.5.4. ITB (Intermediate Transfer Belt) Unit

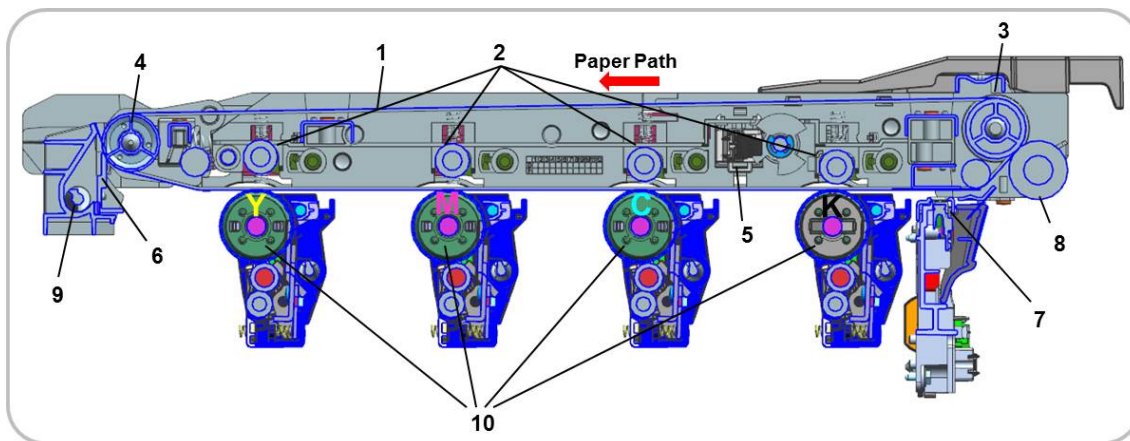
2.5.4.1. ITB unit overview

The toner on the four drums is moved to the Transfer-ITB by four first transfer rollers.

The image overlapped by four colors is moved to the paper by the second transfer roller. The remaining toners are removed by the cleaning blade and moved to the waste toner container.

This process is done with one rotation of the ITB. The arrow above the C and M drums on the diagram shows the direction of ITB rotation. The rotation is made by the friction between the drive roller and transfer belt. The tension roller provides tension to block slip.

There are three ACR sensor and one photo sensor. Two of them are for the line position adjustment and the other is for process control. One photo sensor controls the position of the first transfer roller.

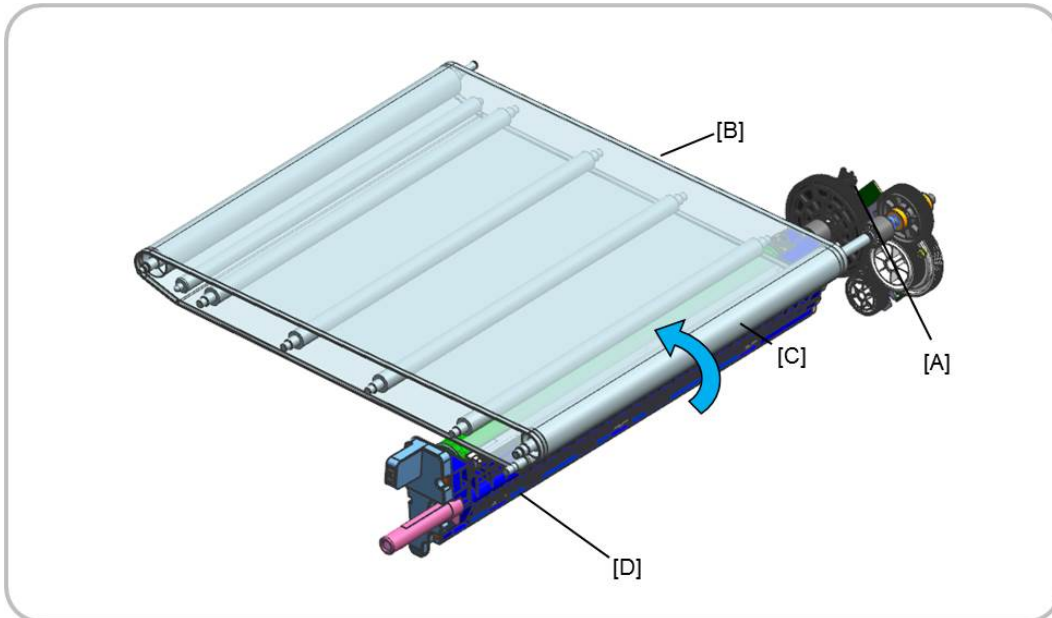


1	Image Transfer Belt (ITB)
2	1st Transfer Roller
3	ITB Drive Roller
4	Tension Roller
5	Photo Interruptor
6	Cleaning Blade
7	ACR Sensor
8	2nd Transfer Roller
9	Toner Collection Auger
10	Drum Unit

2.5.4.2. Transfer belt drive

The drive motor[A] drives the transfer belt[B] by using gears and the ITB drive roller[C].

The transfer belt[B] and black OPC[D] is synchronized by the drive motor[A].

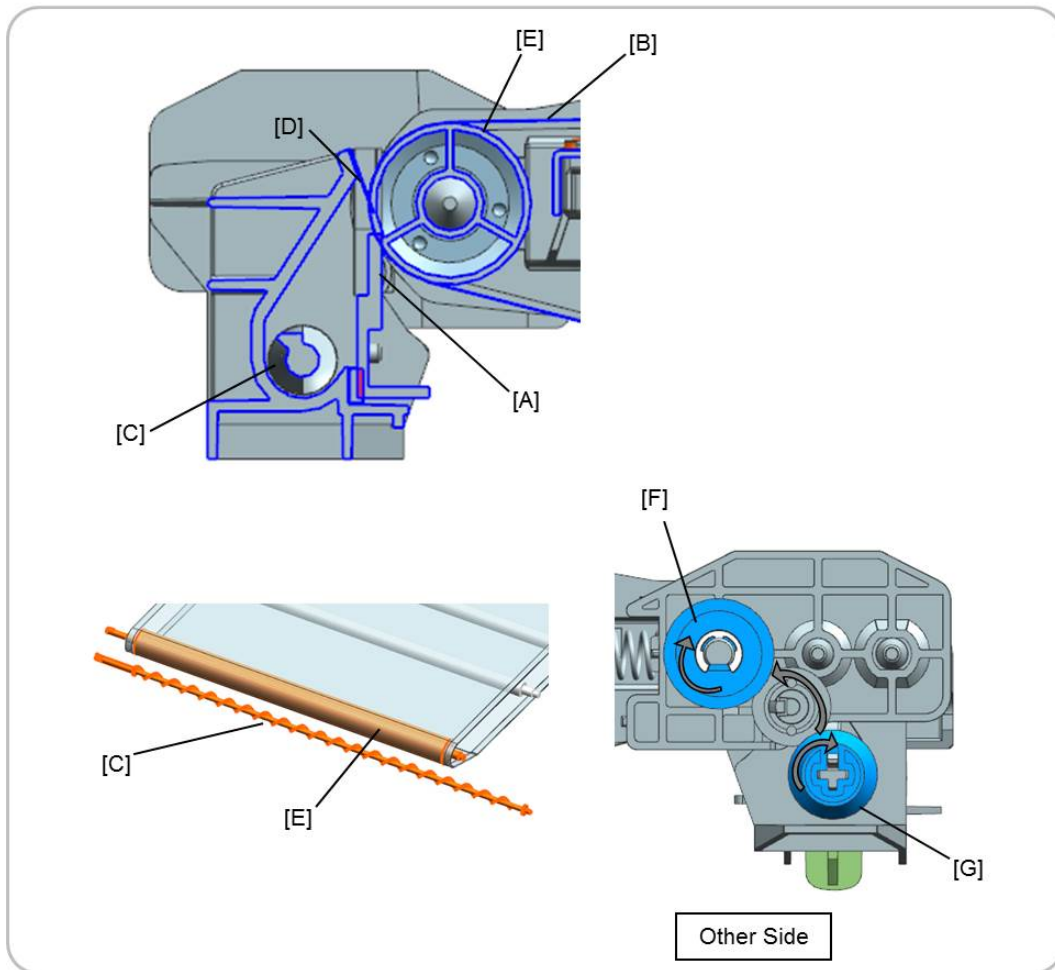


2.5.4.3. Transfer belt cleaning

The ITB-cleaner removes toner (during printing) and the ACR sensor patterns (during process control or automatic line position adjustment) from the belt. Belt cleaning is completed while the transfer belt makes one rotation. The ITB drive motor drives the ITB-cleaning motor.

The cleaning blade[A] in the ITB cleaner always contacts the transfer belt[B], and removes the used toner from the belt. Then the toner collection auger[C] transports the waste toner to the waste toner container.

The film[D] on the ITB cleaner protects against toner contamination. The driving power by driver roller is transferred to the tension roller[E] and the toner collection auger gear[F] drives the gear[G], and collects the toner.



2.5.5. Toner Reservoir Unit

1) Main Function

- Toner Buffer Space (about 0.6K Page Volume) which enable users to continue printing until new toner cartridge is delivered from purchase
- More accurate toner supplying unit by Toner full sensing algorithm
 - Minimize the remaining toner in Toner Cartridge
 - Uniform toner supply volume per second prevent abnormal case of toner-density control error in development unit

2) Working Mechanism

- Toner level sensing method in Reservoir.
 - Toner level checked by time which floating actuator shuttering light sensor(Toner full sensor) window.
- Toner supply to Reservoir
 - As toner level in reservoir(High, Middle, Low), operate toner bottle supply motor 1500ms, 900ms, 600ms.

3) Troubleshooting

- 1) Enter service mode and execute the toner dispense motor.

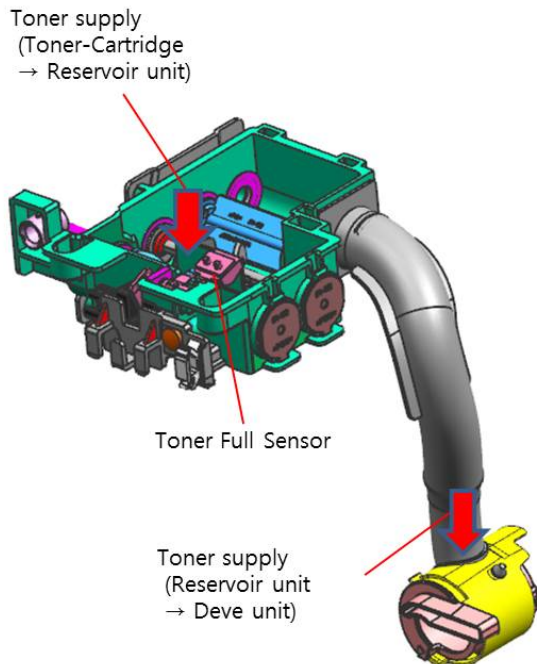
Service Mode > Diagnostics Engine Diagnostics Engine Test Routines > Toner Dispense Motor (Y,M,C,BK)

NOTE

There is no test routine for toner full sensor in the reservoir unit.

- 2) Check the gear noise and motor operation.

If the reservoir driving gear is working without abnormal noise, the each reservoir unit has no problem mechanically.



2.6. Fuser Unit

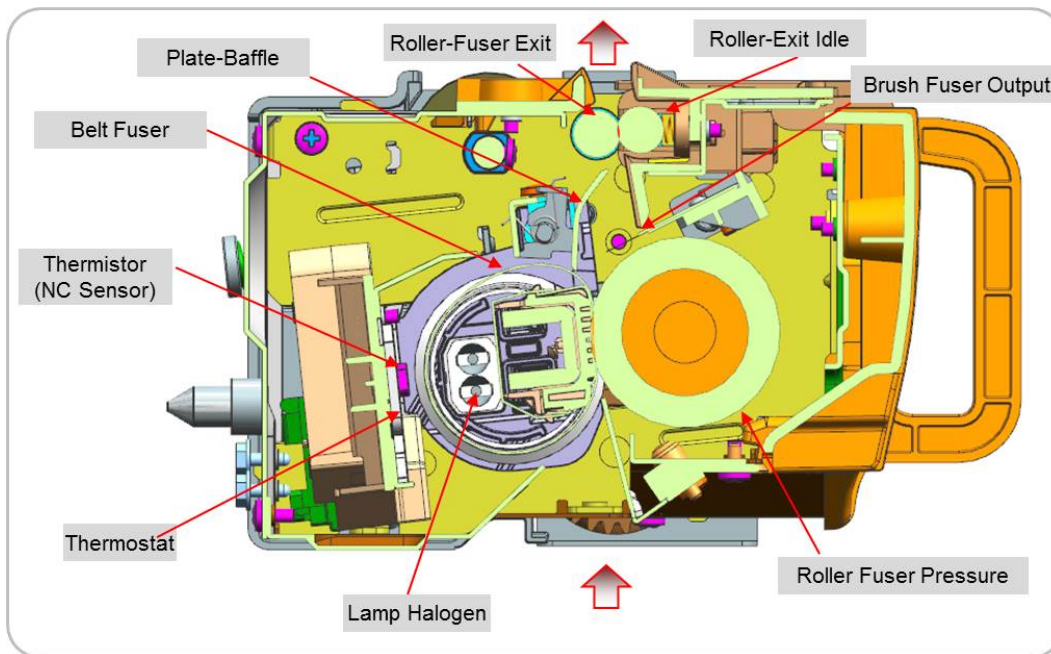
This section describes the image fusing process used by the machine.

2.6.1. Fuser Unit Overview

This unit fuses the toner that was transferred by the transfer roller onto the paper, by applying a combination of heat and pressure to complete the fusing process.. This machine uses an instant fusing system (NIF type). The fuser unit design for this series has improved. The Fuser Belt has been changed to require less heat capacity and still fuse the toner properly. Additionally, the life has been improved by incorporating a Sub-Bush system with a lubricant storage design.

NOTE

This Fuser Unit is common for both the Color and Mono series.



1) **Lamp Halogen**

The fuser unit has two halogen lamps. One heats the center of the fusing belt, the other heats the end of axial direction. These halogen lamps are lit alternately to heat the fusing belt. 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 fusing belt. When rotating the fusing belt, these lamps does not rotate.

2) **Belt Fuser**

The belt fuser gets heat from the halogen lamp and transfer it to toner and paper. The belt fuser consists of three thin-layers. The thin fusing belt reduces warming up time and mode changing time. To prevent the fusing belt from adhering to the toner, the surface of the fuser belt is fluorinated. There is a Nip inside the fusing belt. Tension springs are used to keep a constant Nip Area where the Fusing Belt contacts the Pressure Roller.

3) **Roller Fuser Pressure**

The pressure roller ensures proper nip width between the pressure roller and fusing belt. It is made up of the soft silicone sponge rubber. And, it is driven by the driving system and drives the fusing belt.

4) Thermistor (NC sensor)

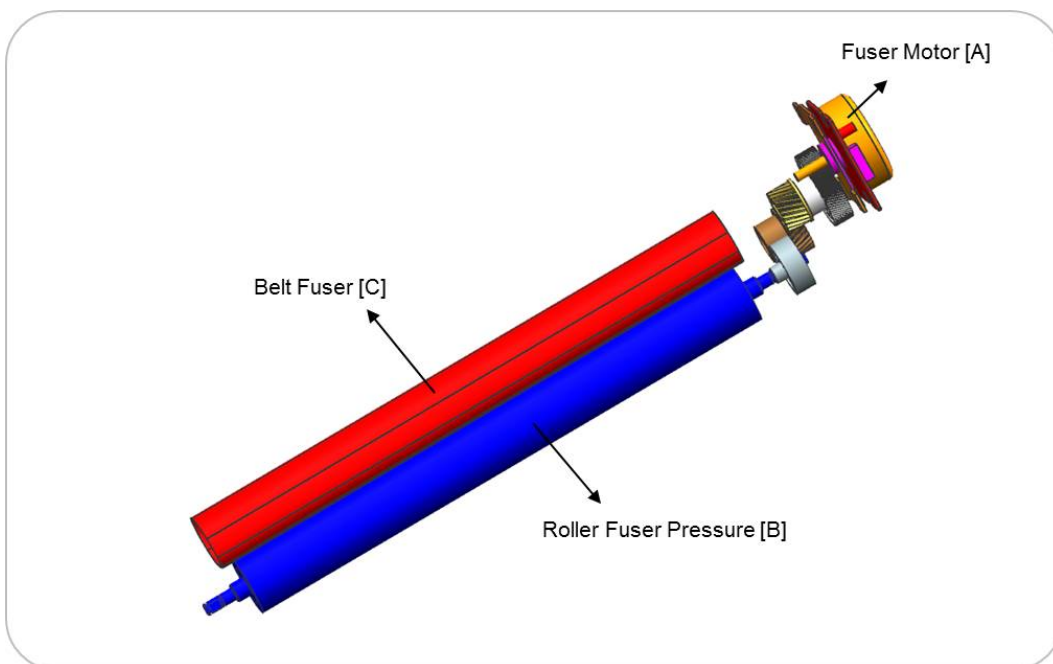
The temperature of the fusing belt is monitored by NC sensors (non-contact type thermistors) located near the center and the end of the fusing belt.

5) Thermostat

Thermostats cut off the power supply to the halogen lamp by opening the circuit when the fusing belt 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).

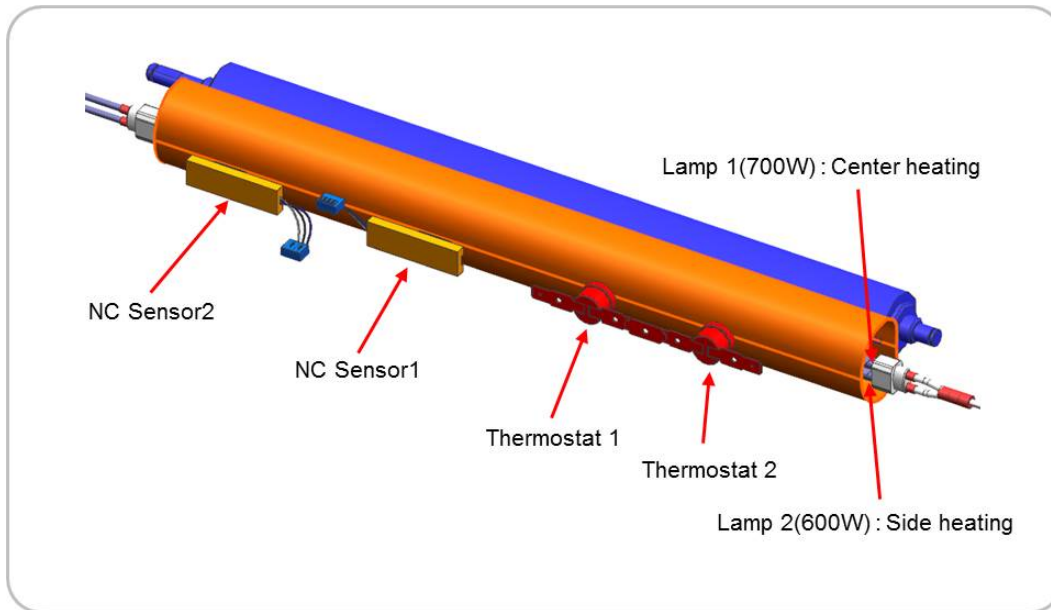
2.6.2. Fuser Unit drive

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



2.6.3. Fuser unit temperature control

When the main switch is turned on, the CPU turns on the fuser lamps. The lamps stay on until the NC sensors detect that the standby temperature has been attained; then the CPU raises the temperature up to the printing level temperature.



■ Overheat Protection

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

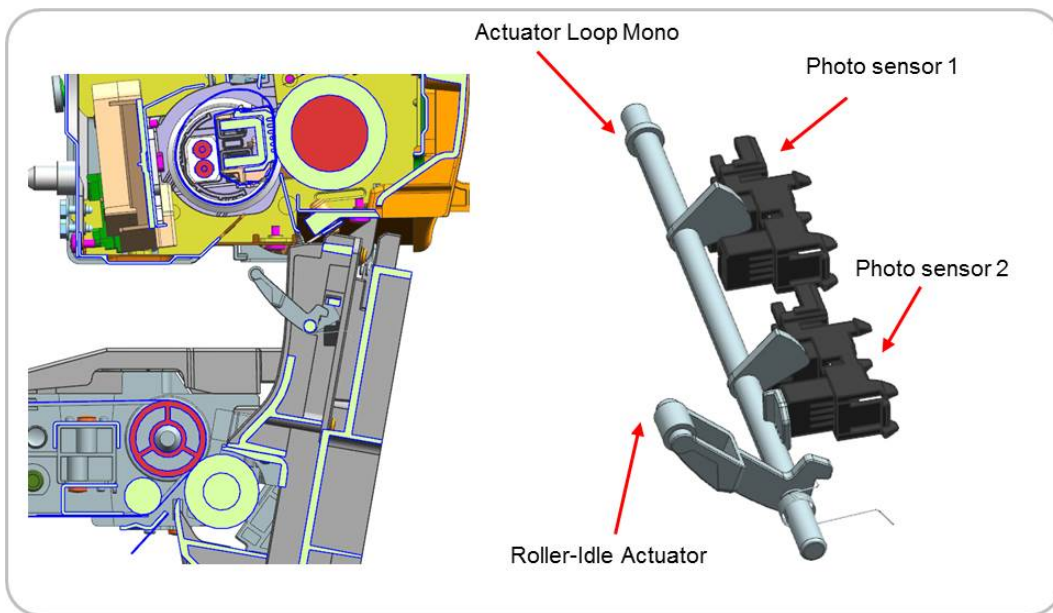
- The belt temperature detected by the NC sensors keeps higher than 220°C for 20 sec.
- The belt temperature detected by the NC sensors keeps higher than 230°C for 3 sec.
- The relay off works when belt temperature detected by the NC sensors is higher than 230°C

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.

2.6.4. Loop Control

When paper passes between OPC Nip and Fuser Nip, the fuser unit controls paper loop level.



■ Loop control

The fuser unit detects the signal for photo sensor 1,2 and decides paper loop level. And it controls motor speed as paper loop level.

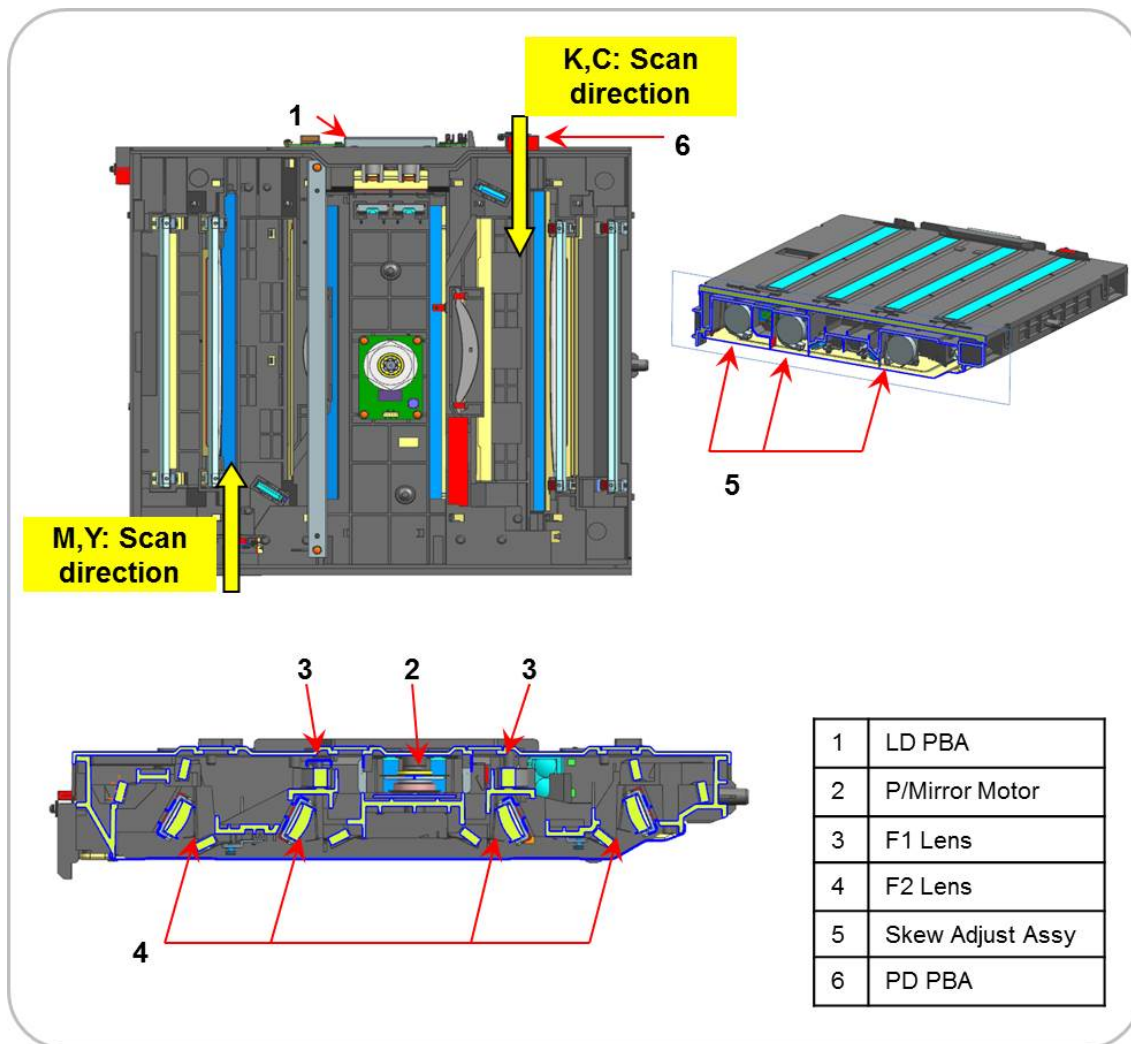
2.7. Laser Scanning Unit (LSU)

2.7.1. LSU overview

LSU consists of 1 polygon motor and 4 laser diodes(LD) units and forms a latent image on the surface of 4 OPC drums. For this process, LSU has a collimator lens, cylindrical lens, 2 F-Theta Lens, 2 reflective mirrors on optical path for each color.

This LSU adopted the cross scan type scanning. K Color and C Color scan the laser beam from the rear to the front, M Color and Y Color scan the laser beam from the front to the rear.

Also, the LSU has a skew adjustment function which adjusts the scanning line by step motor.

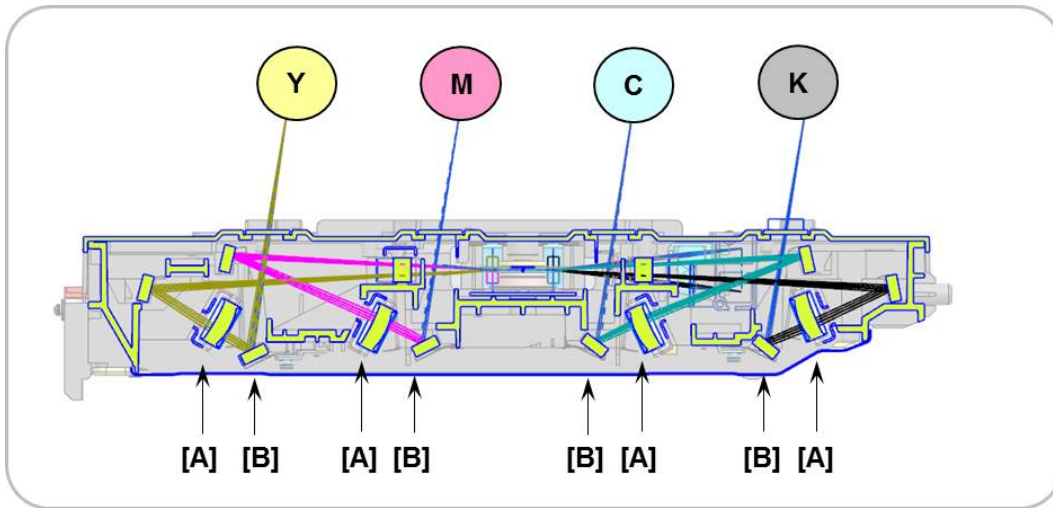


2.7.2. Laser Scanning Optical path

The laser beam from the LSU is placed at intervals of 78mm for each color. All colors uses the same polygon motor for oblique incidence.

F2 Lens [A] determines the slope of the primary scanning line and the image position of the secondary scanning direction. This is adjusted at the factory. The primary scanning line slope by the machine difference is adjusted by skew adjustment in the LSU.

Reflecting mirrors [B] on each color path adjust the curvature of primary scanning. This is adjusted at the factory.



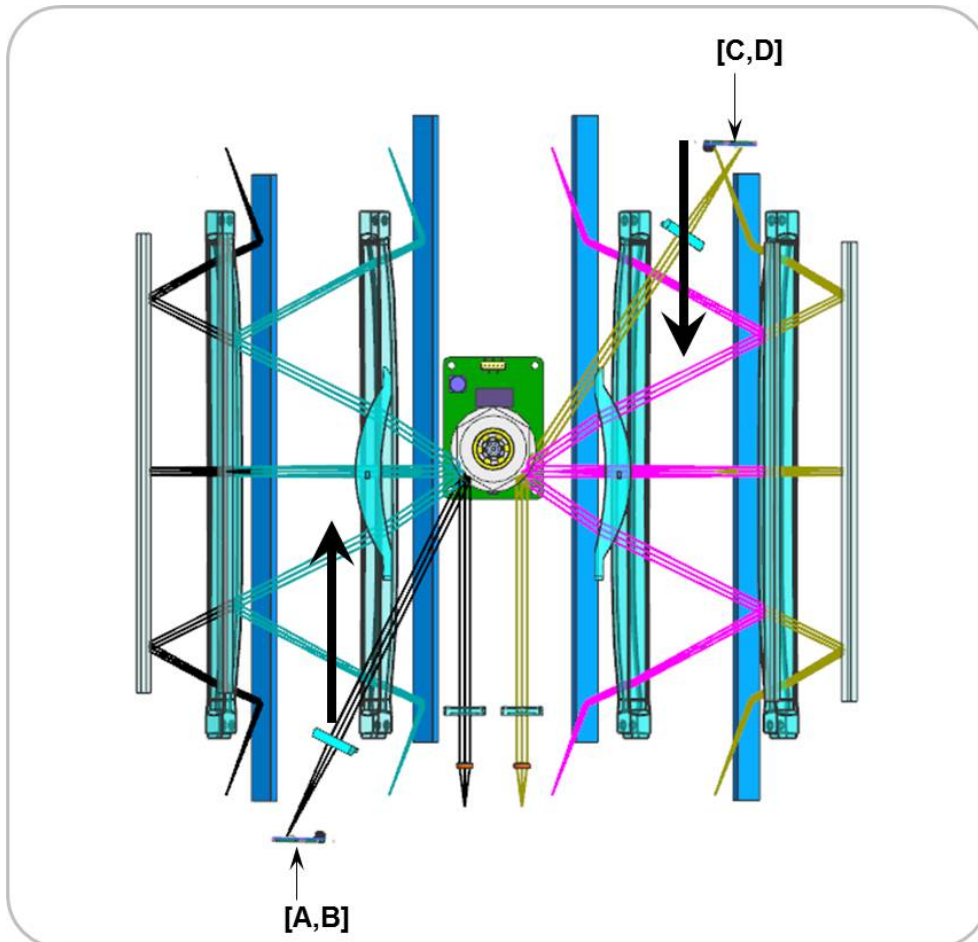
Item	Specification	Remark
LD Unit	Laser Diode : Quad Beam Driving IC : Dual LD x 8	LD x 4 (for each color)
P/Motor speed	<ul style="list-style-type: none"> X7600 : 33,071 rpm X7500 : 27,520 rpm X7400 : 22,087 rpm 	
Speed	<ul style="list-style-type: none"> X7600 : 280 mm/sec X7500 : 233 mm/sec X7400 : 187 mm/sec 	
H/W interface	Interface with machine : 50 Pin + 60 pin + 8 Pin	FFC + FFC + Wire

2.7.3. Laser synchronizing detectors

The machine has two beam detector sensor boards (PD PBA includes 4 sensors.). They are located at each corner of the laser optics-housing unit.

The two PD PBA detect the following :

- [A,B]: Scanning start position for K, C
- [C,D]: Scanning start position for M, Y



Main Scan Start Detection

4 beams are detected by the PD PBA at the scanning start point and create the horizontal sync (Hsync) signal. Data is scanned by Hsync.

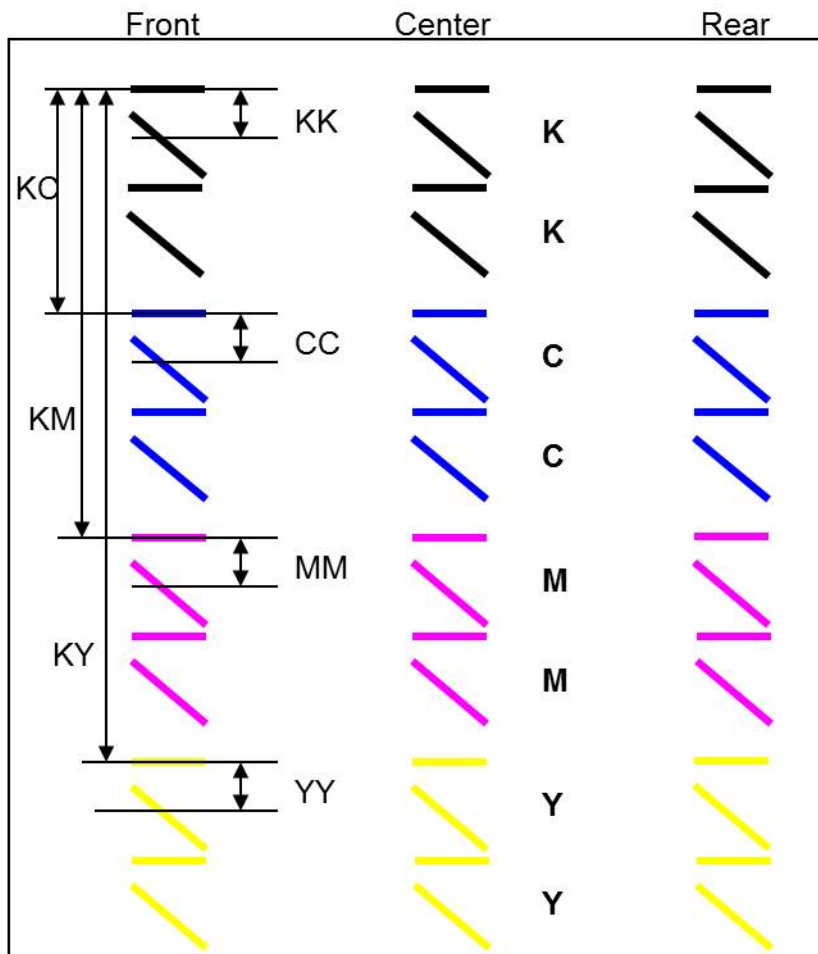
The arrow in the above diagram shows the data scanning direction for each color. Black (& Cyan) and Yellow (& Magenta) use the same polygon motor scanning in opposite directions.

2.7.4. Automatic line position adjustment

During automatic line position adjustment, the line patterns below are created eight times on the transfer belt. The spaces between the lines (KK, CC, MM, YY, KC, KM, KY) are measured by the front, center, and rear ID sensors. The controller takes the average of the spaces, then adjusts the following positions and magnification :

- Sub scan line position for CMY
- Main scan line position for CMY
- Magnification ratio for CMY
- Skew for CMY

The transfer belt-cleaning unit cleans the transfer belt after the patterns are measured.



- KK, CC, MM, YY: Spaces between two lines of the same color.
- KC, KM, KY: Spaces between a black line and each color line.

■ Adjustment

- **Sub Scan Line Position for CMY**

The adjustment of the sub-scan line position for CMY is based on the line position for K. The machine measures the gaps between the lines of each color in the pattern on the transfer belt. When the gaps for a color are not correct, the machine moves the image of the color up or down the sub scan axis. To do this, it changes the laser write timing for that color.

- **Main Scan Line Position for CMY**

When the machine detects that the image is out of position in the main scan direction, it changes the laser write start timing for each scan line.

- **Magnification Adjustment for CMY**

When the machine detects that magnification adjustment is necessary, it changes the LD clock frequency for the required color.

- **Skew for CMY**

The adjustment of the skew for CMY is based on the line position for K.

■ Adjustment Conditions

Line position adjustment can be turned on or off. However, it is normally recommended to turn on this function.

Line position adjustment timing depends on several settings. These settings include the following :

- ΔT = Temperature change of LSU (Laser Scanning Unit) between the temperature of the previous line position adjustment and the current temperature.
- Pages = Total printed pages after previous line position adjustment.

Interval During Print Job :

Line position adjustment interrupts printing and then starts automatically when one of these conditions occurs when the machine checks at the sheet interval.

- 1) $\Delta T >$ Temperature threshold (LSU temperature: [default: 2°C])
- 2) Pages $>$ Output threshold for all outputs (default: 200 pages)

Waste Toner Container Not-Installed / Installed :

- 1) Line position adjustment starts automatically when waste toner container is removed and reinstalled.

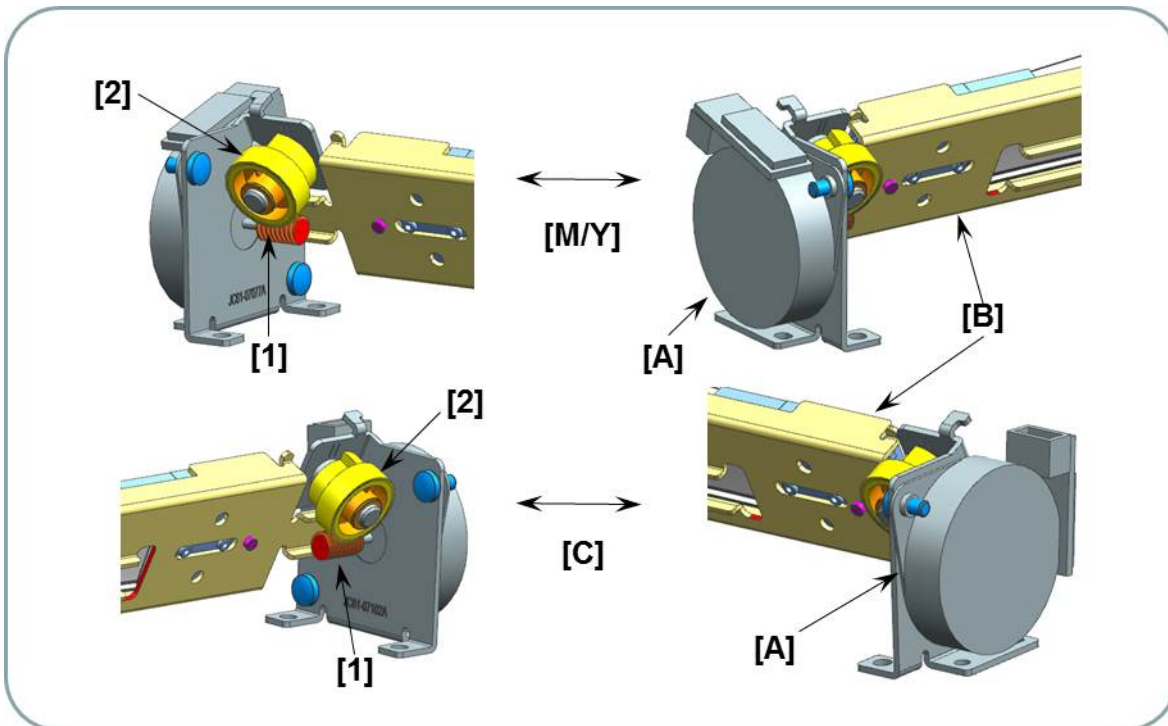
Drum Unit or Developer Unit replaced :

- 1) When the machine detects a new drum unit or developer unit, line position adjustment is automatically performed.

ITB replaced :

- 1) When the machine detects a new ITB or other ITB, SVC engineer have to execute the adjustment manually.

■ Main Scan Skew Adjustment



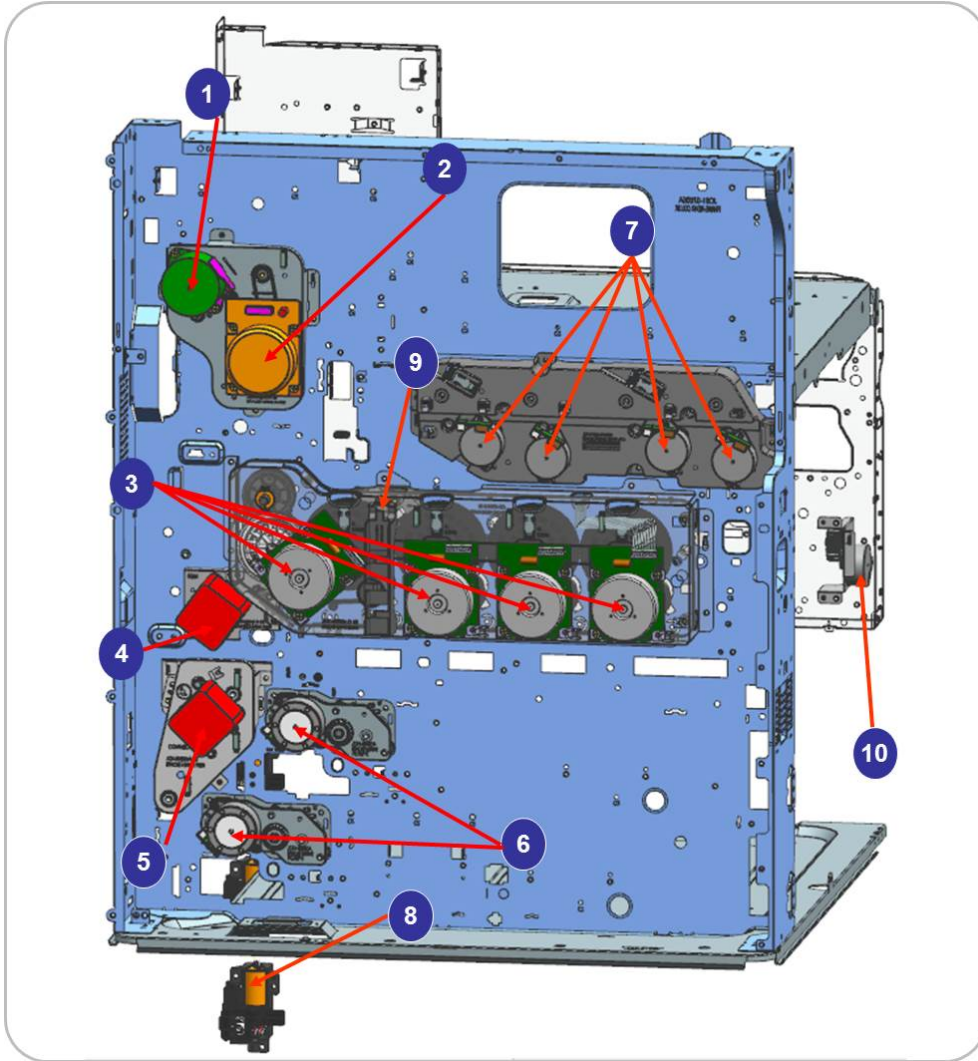
Skew adjustment assembly[A] consists of the worm gear[1] for adjustment and worm gear[2]. When ACR executes, it detects and adjusts the scanning line slope automatically.

Skew adjustment assembly[A] for magenta, cyan, and yellow adjusts the skew angle of the F2 lens[B]. This mechanism corrects main scan skew.

2.8. Drive System

2.8.1. Drive Motors

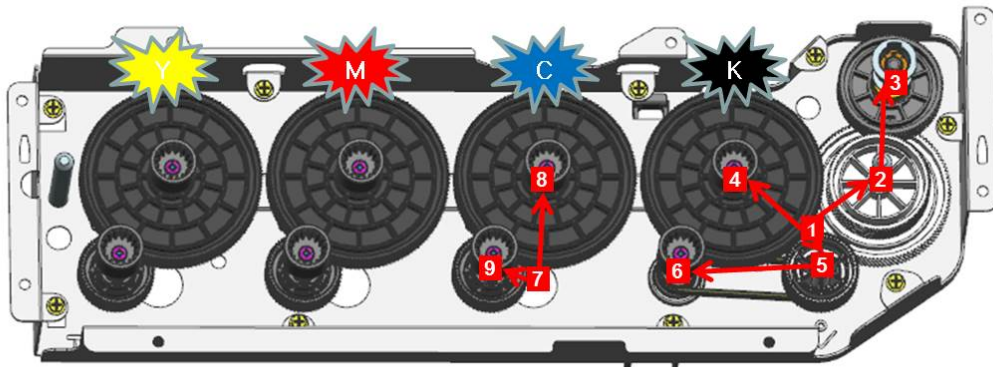
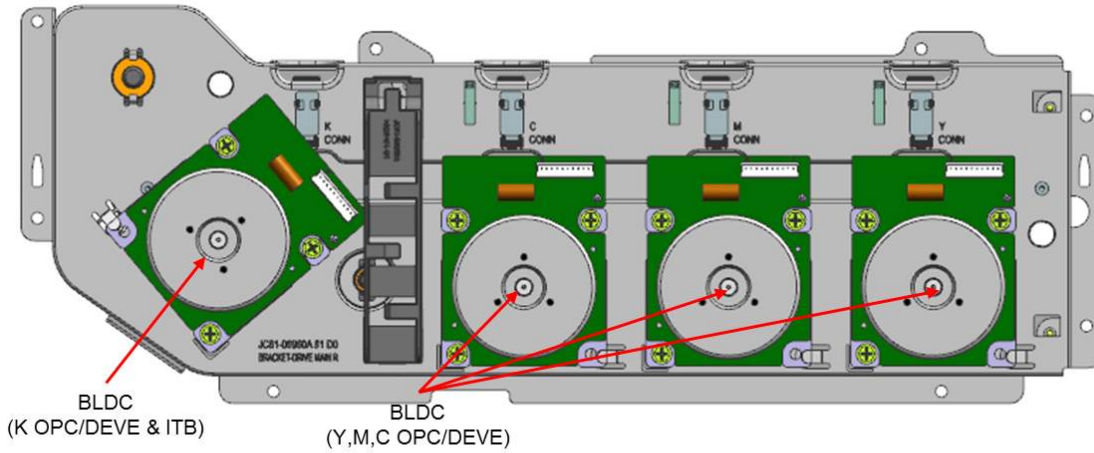
The following diagram displays the locations of the printer drive motors.



	Motor	Motor Type	Qty	Function
1	Fuser Release	PM-STEP	1	Fuser Release driving
2	Fuser & Exit	BLDC	1	Fuser and Exit driving
3	Main OPC & Deve & ITB	BLDC	4	OPC and PTB Belt driving
4	Regi.	HB-STEP	1	Regi driving
5	Feed/MP	HB-STEP	1	Feed roller 1, 2, 3 driving
		E-CLT	1	Feed / MP driving control
6	Pick-Up	PM-STEP	2	Pick-Up roller / CST Lift driving (Reverse driving at CST Lift driving)
7	Toner Supply & Reservoir	PM-STEP	4	Toner transfer (Reservoir → Deve Unit)
8	CST Lock	DC	4	CST lock function On/Off

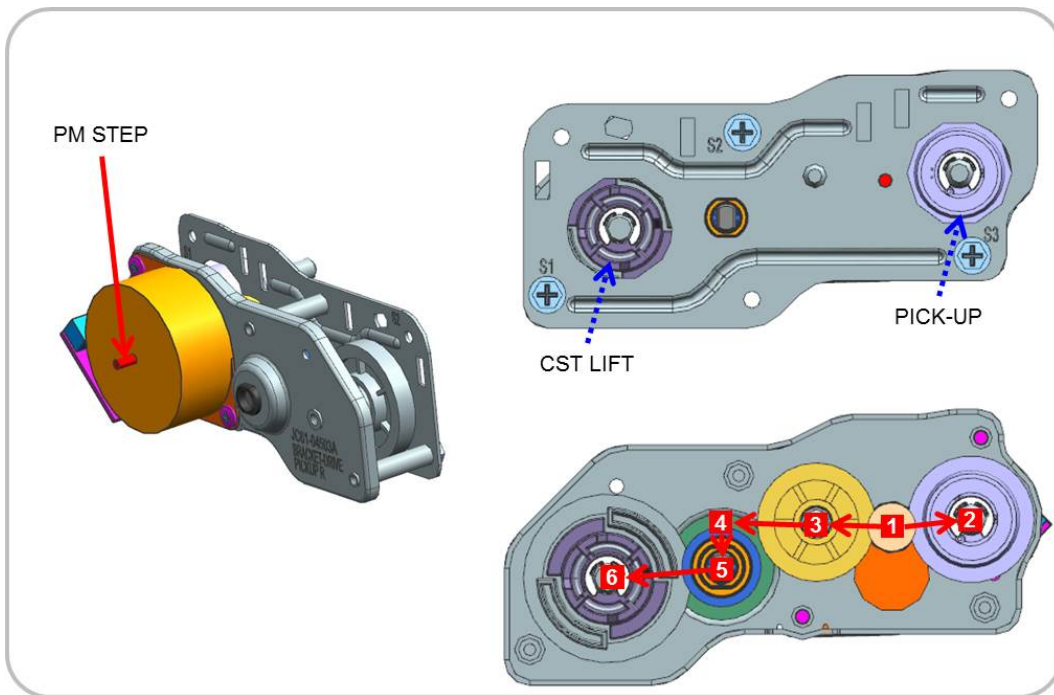
	Motor	Motor Type	Qty	Function
9	Engage T1	PM-STEP	1	T1 Engage / Disengage driving
10	WTB	PM-STEP	1	WTB driving

2.8.2. Main Drive Unit(OPC_Deve_ITB)



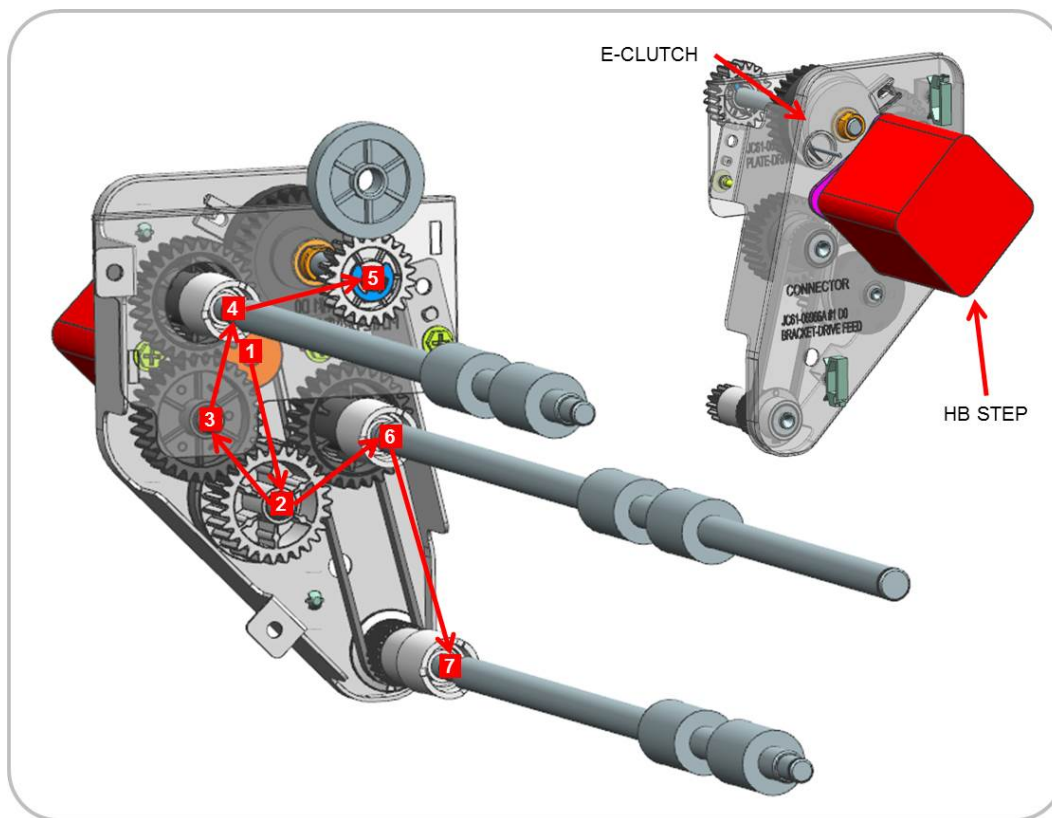
Power Train	BLDC → OPC & Deve & ITB driving
<ul style="list-style-type: none"> • 1 BLDC → 2 Gear → 3 Gear & Coupler (ITB driving) • 1 BLDC → 4 Gear & Coupler (K OPC driving) • 1 BLDC → 5 Gear & Pulley → 5 Gear & Coupler (K Deve driving) • 7 BLDC → 8 Gear & Coupler (Y,M,C OPC driving) • 7 BLDC → 9 Gear & Coupler (Y,M,C Deve driving) 	

2.8.3. Pick-Up and CST Lift drive



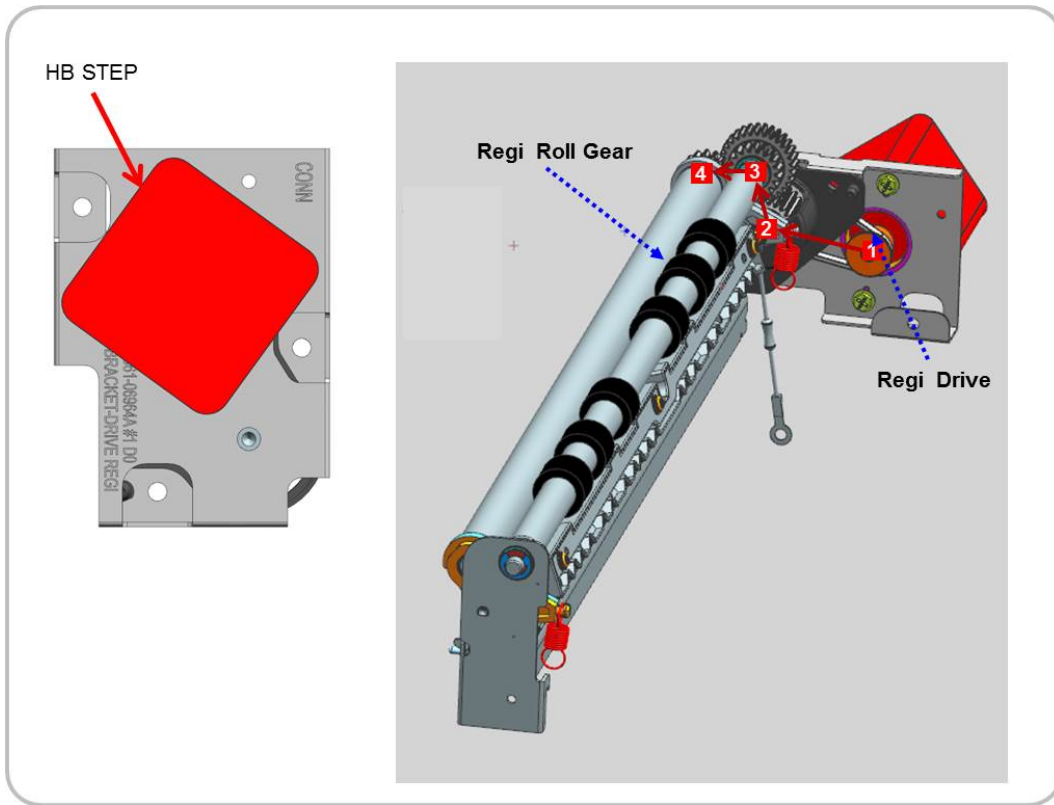
Power Train	Pick-up : normal rotation (Pick-up input) / counter rotation (Cst Lift input)
<ul style="list-style-type: none"> • 1 PM STEP → normal rotation → 2 Gear (Pick-Up driving) • 1 PM STEP → counter rotation → 3 Gear → 4 5 Gear → 6 Gear & Coupler (Cst Lift driving) 	

2.8.4. Feed Drive



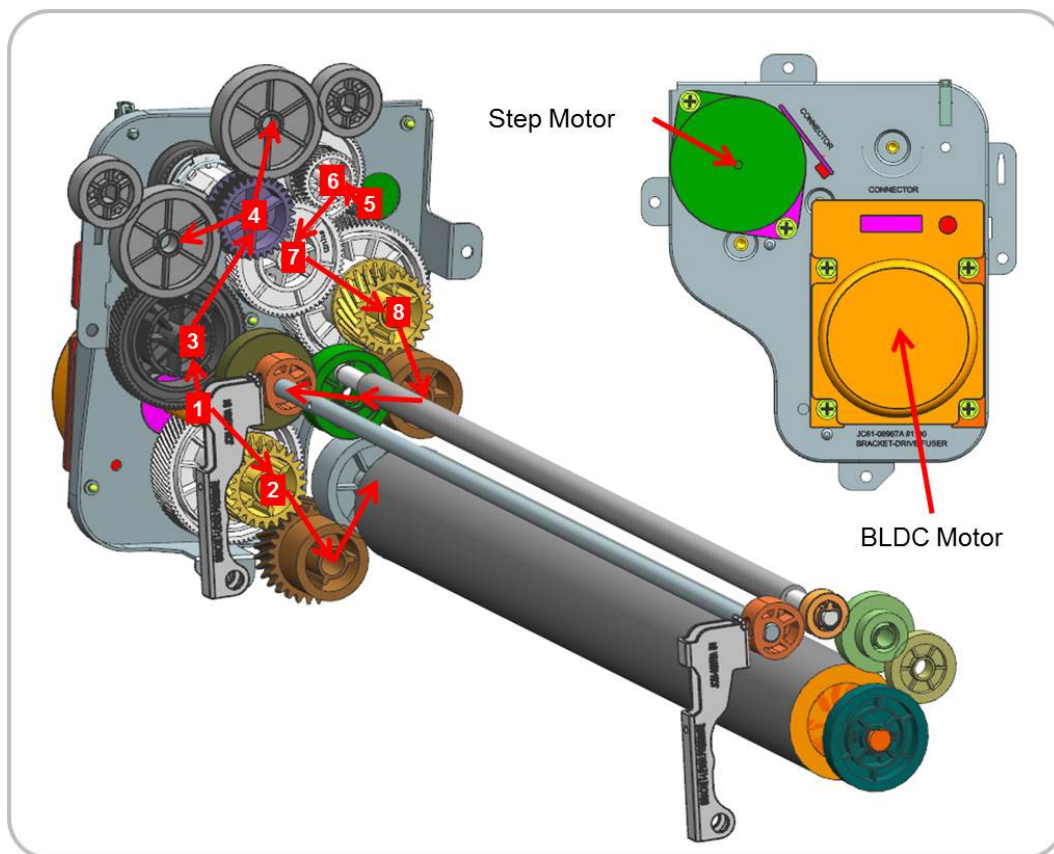
Power Train	HB STEP → Feed & MP drive
<ul style="list-style-type: none"> • 1 HB STEP → 2 Pulley & Coupler → 3 Gear → 4 Gear & Coupler (Feed Roller driving) → 5 E-Clutch & Gear (MP driving) • 1 HB STEP → 2 Pulley & Coupler → 6 Gear & Coupler (Feed Roller driving) → 7 Pulley & Coupler (Feed Roller driving) 	

2.8.5. Regi Drive



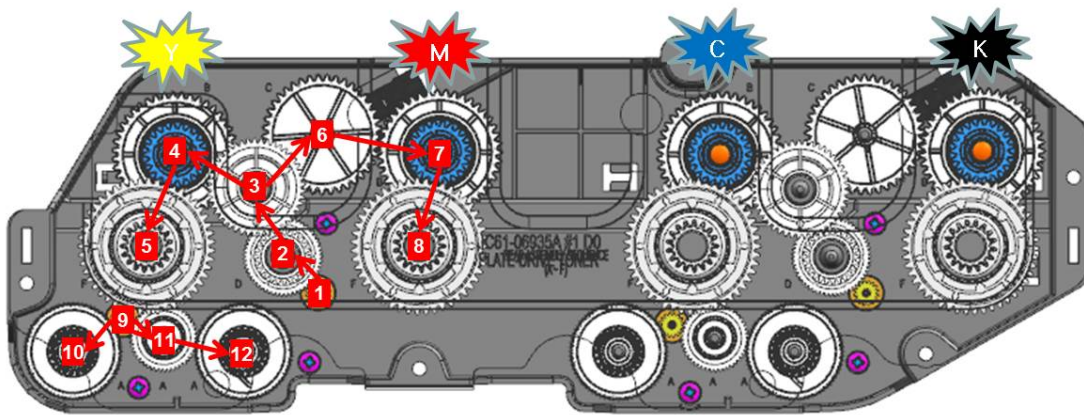
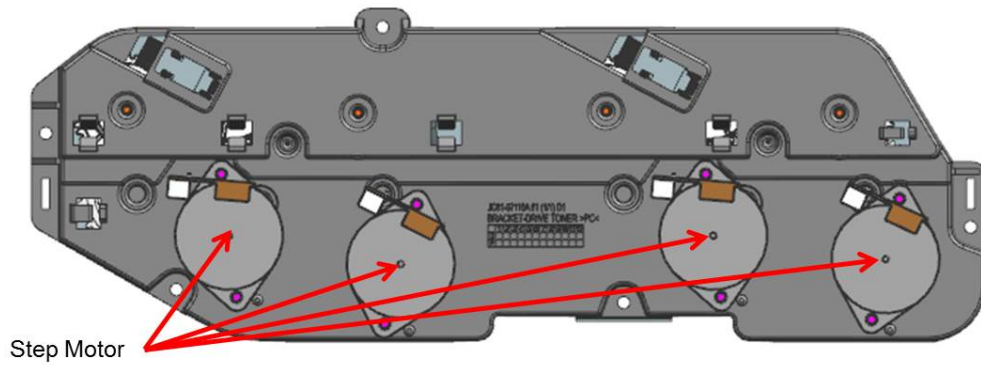
Power Train	HB STEP → Regi driving
<ul style="list-style-type: none"> 1 HB STEP → 2 Gear → 3 Gear (Regi Roller driving) 	

2.8.6. Fuser(Release)_Exit Drive



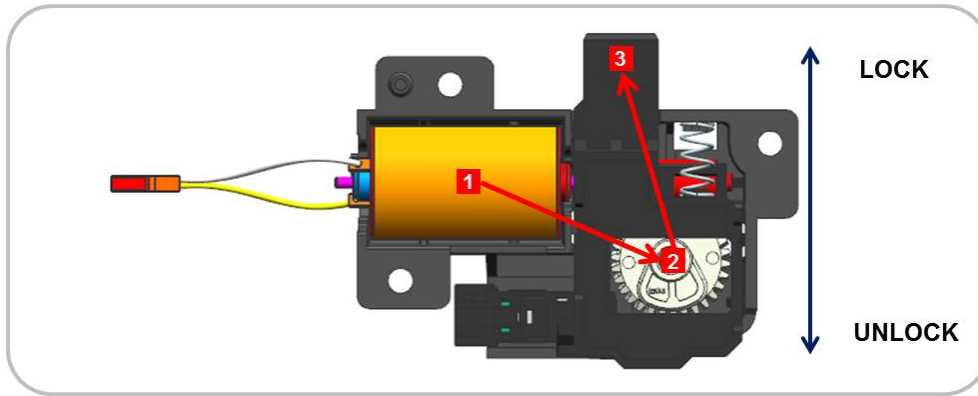
Power Train	BLDC → Fuser & Exit driving PM Step → Fuser Release driving
<ul style="list-style-type: none"> • 1 BLDC → 2 Gear (Fuser P/R driving) • 1 BLDC → 3 Gear & Pulley → 4 Gear (Exit driving) • 5 PM Step → 6 Gear → 7 Gear → 8 Gear (Fuser Release driving) 	

2.8.7. Toner Supply_Reservoir Drive



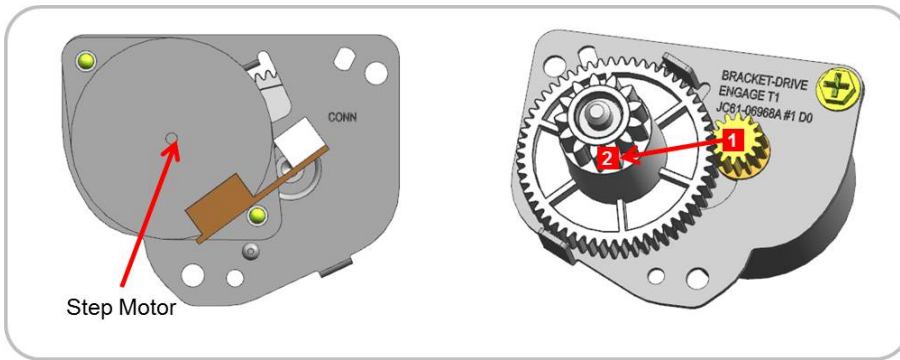
Power Train	PM Step → Toner Supply, Reservoir driving
	<ul style="list-style-type: none"> • 1 PM Step → 2 Gear → 3 Gear → 4 Gear & Latch → 5 Gear (Y,C Toner Supply driving) • 1 PM Step → 2 Gear → 6 Gear (Photo Interrupt) → 7 Gear & Latch → 8 Gear (M,K Toner Supply driving) • 9 PM Step → 10 Gear (Y,C Toner Reservoir driving) • 9 PM Step → 11 Gear → 12 Gear (M,K Toner Reservoir driving)

2.8.8. CST Lock Drive



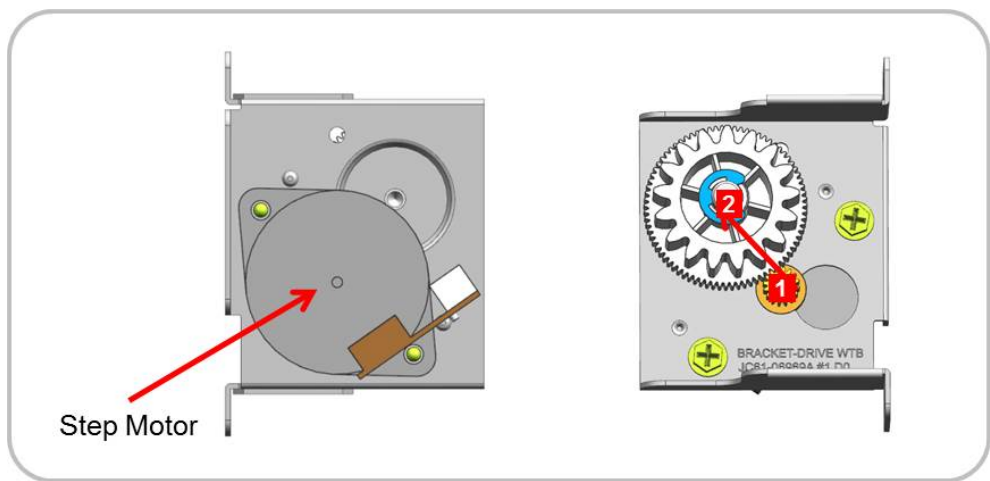
Power Train	DC Motor → CST Lock driving
• 1 DC Motor → 2 Gear & Cam → 3 Holder (CST Lock driving)	

2.8.9. Engage T1 Drive



Power Train	PM Step → Engage T1 driving
<ul style="list-style-type: none"> 1 PM Step → 2 Gear (Engage T1 driving) 	

2.8.10. WTB Drive



Power Train	PM Step → WTB driving
• 1 PM Step → 2 Gear (WTB driving)	

2.9. Scanner System

This section describes the printer scanner system parts and functions.

2.9.1. Scanner System Overview

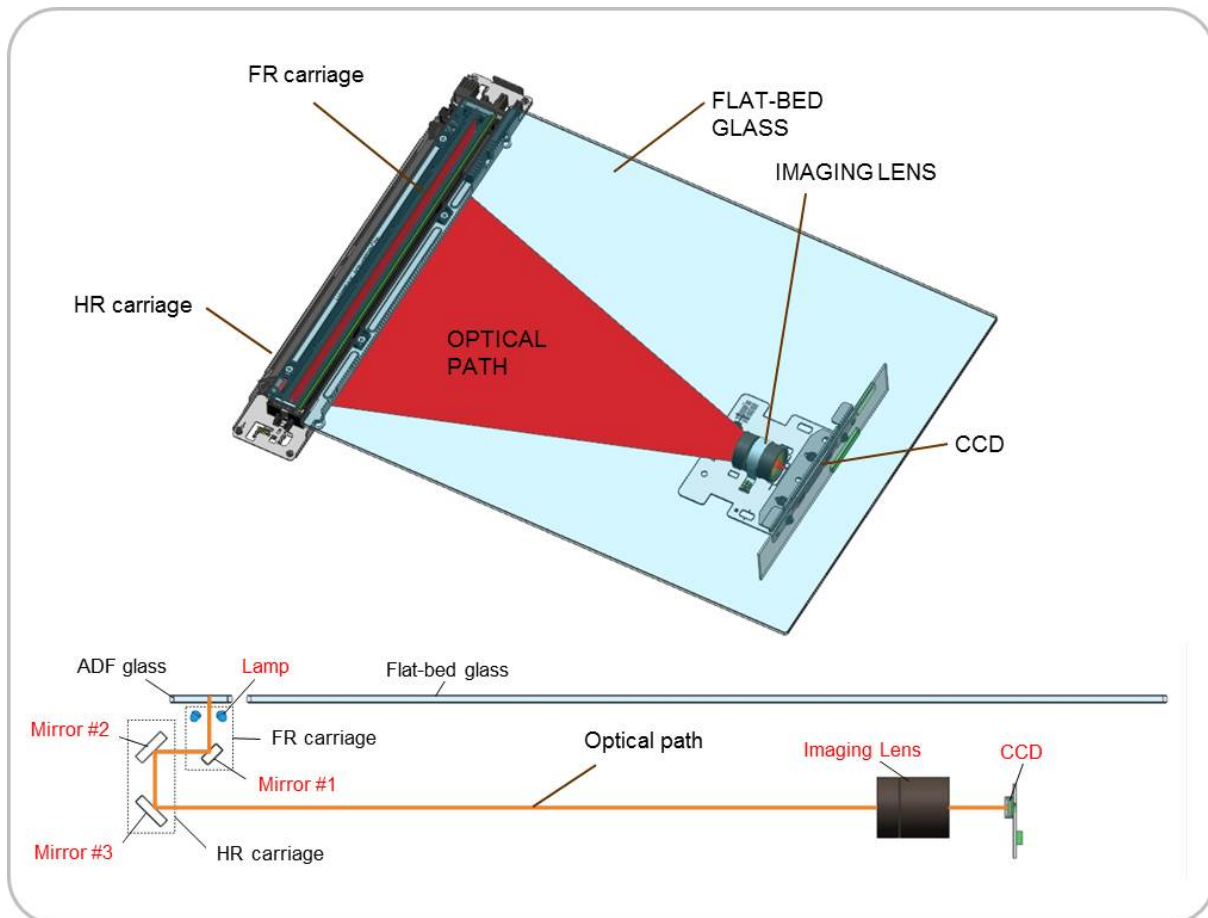
The scanner is used to scan the document on the Platen Glass and/or using the ADF [Slit Glass Area] using a CCD (Charge Coupled Device). It then transfers the converted digital image and to the printer engine where it is converted to a Bitmap Image and printed.

The scanner itself uses FR carriage and HR carriage that is moved by a drive cable, and it scans the original document on the scan platen glass or ADF (Auto Document Feeder).

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.

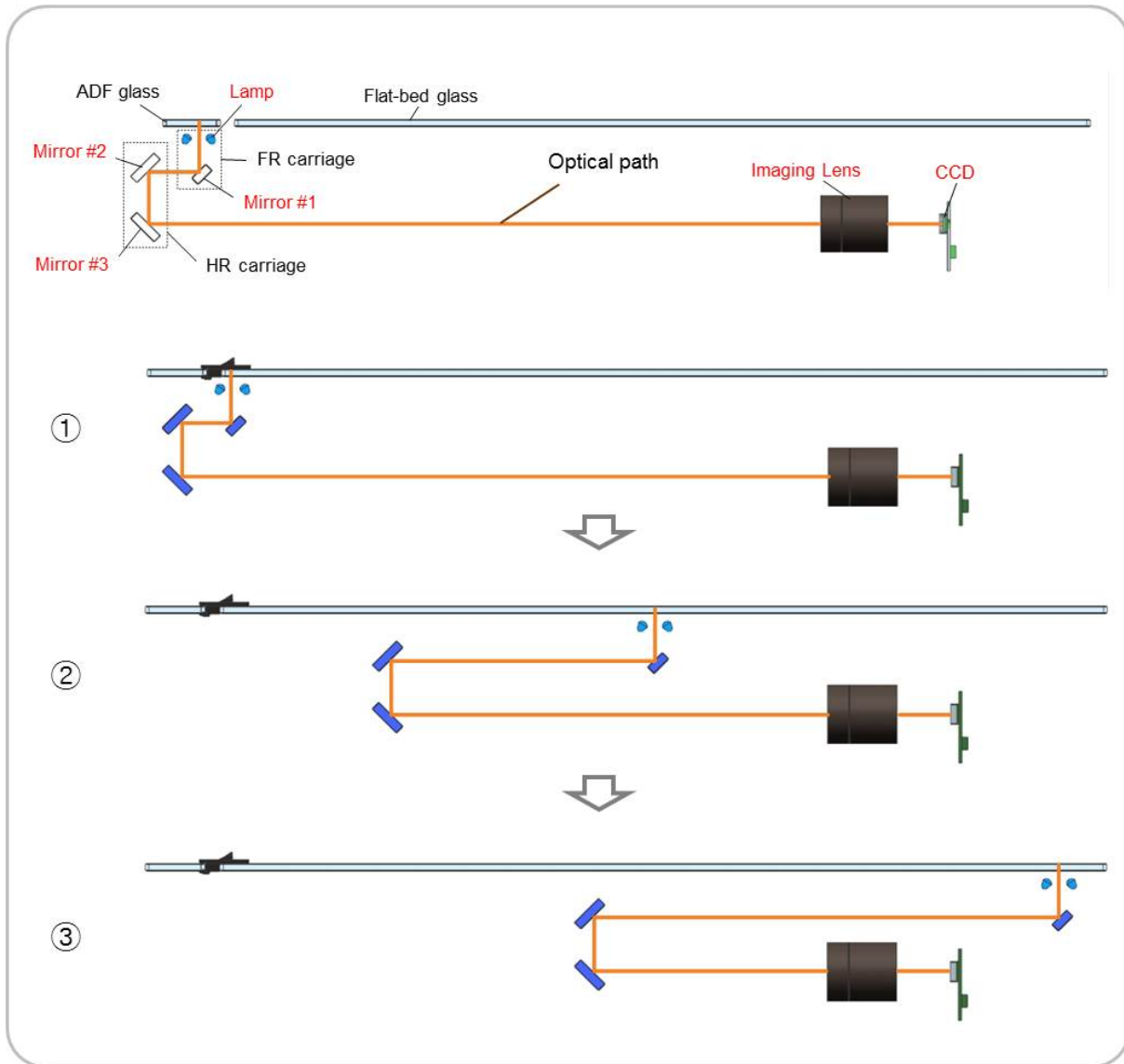


2. Product Specifications and Description

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.

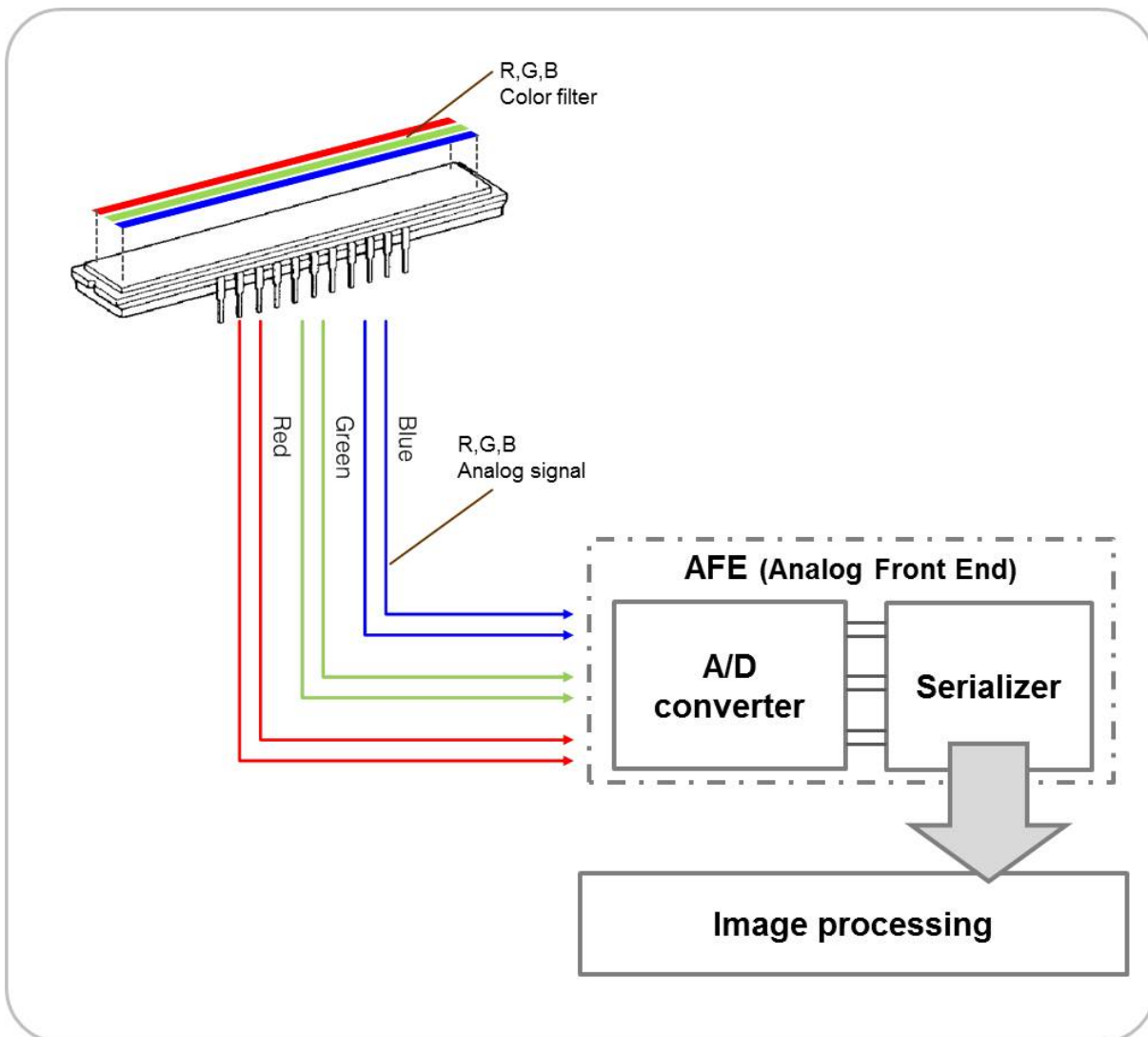
Each color element signal in optical image is separated by CCD sensor to Red, Green, Blue.

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.

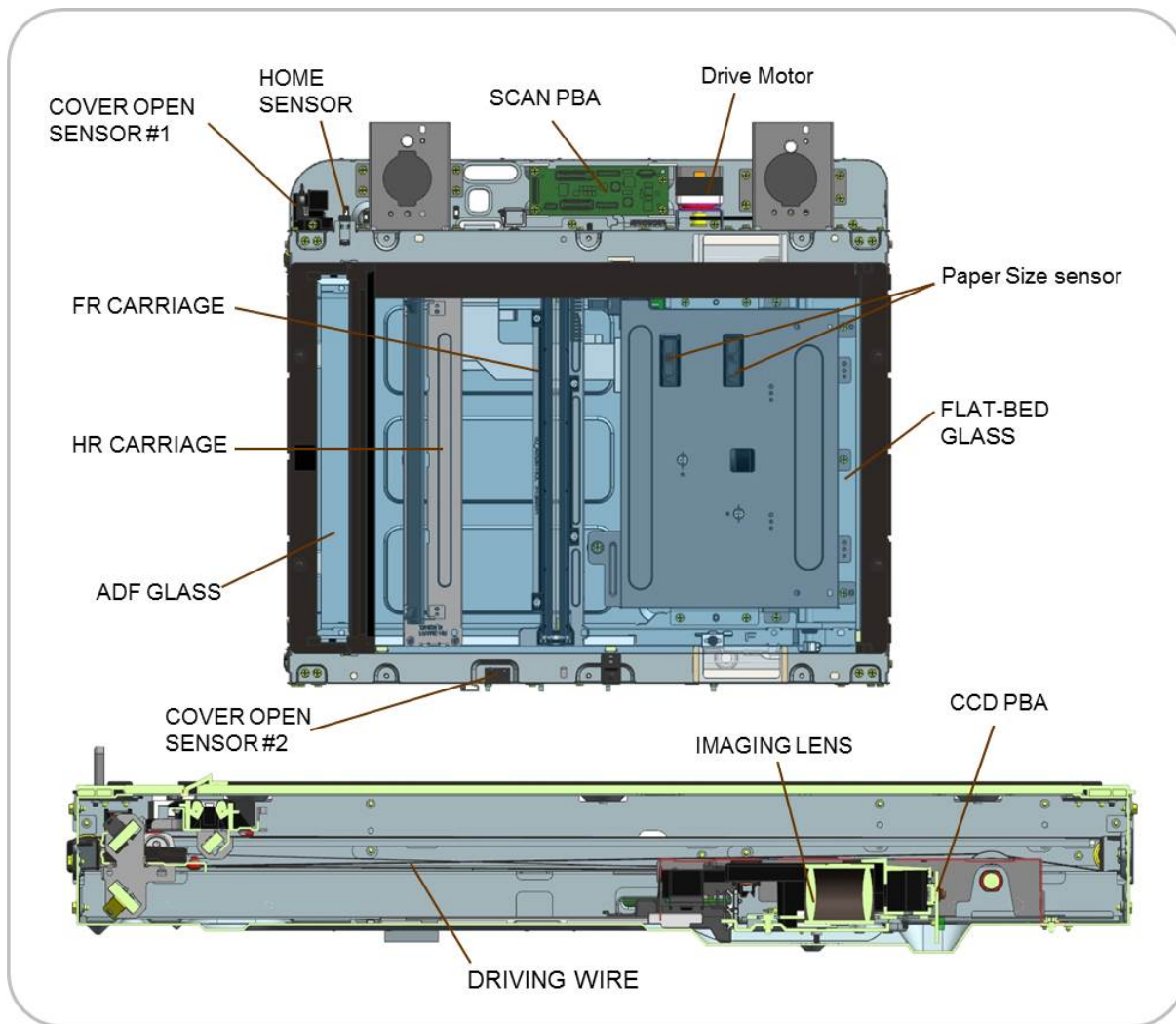


2.9.2. Scanning System Components

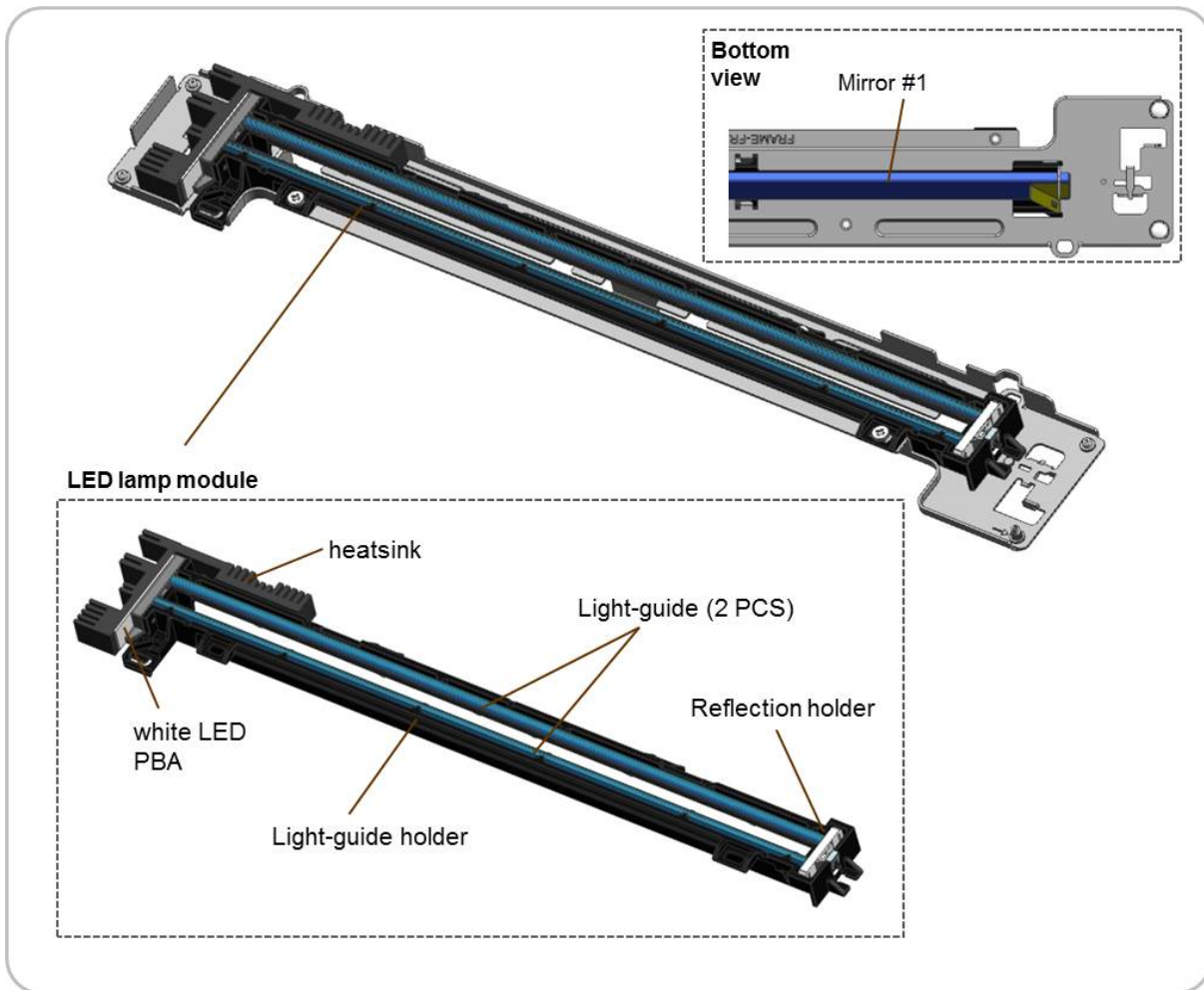
The following shows the construction and purpose of the scanning system :

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 drive wire. The drive 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.

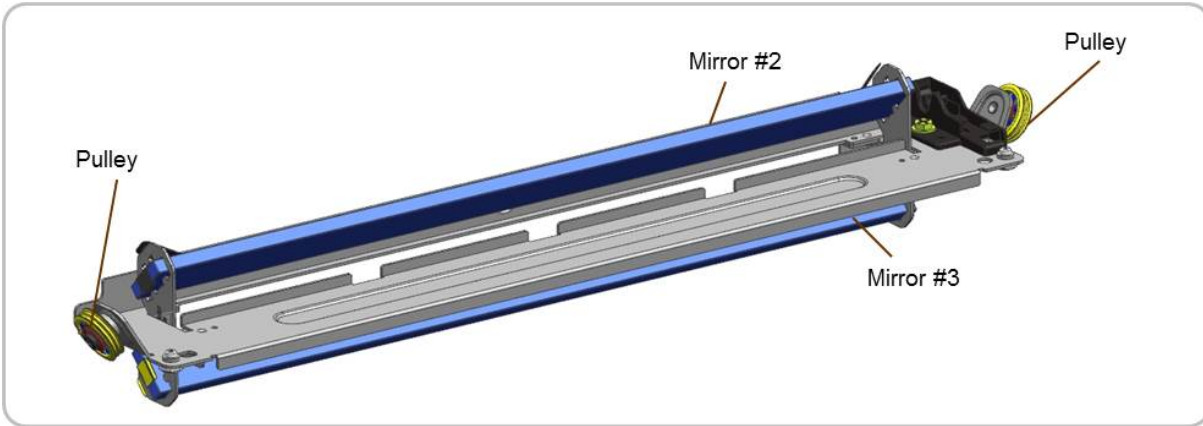
- Reflection holder

This reflects the passed light through Light-guide.

2) Mirror #1

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

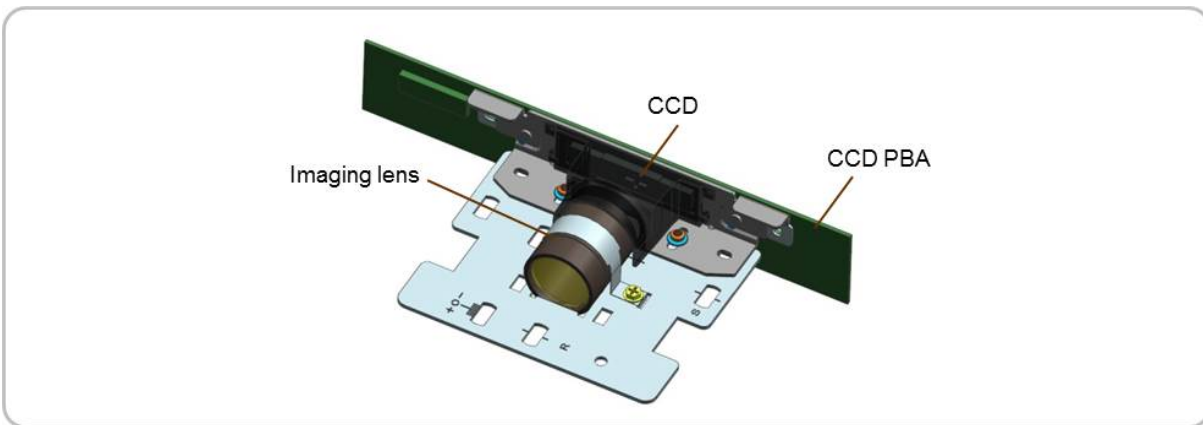
2) HR Carriage (Mirror unit)



- 1) Mirror #2, #3
To changes the light direction, Mirror #2,3 is assembled at a 45 degree angle. The reflected light from Mirror #1 is send 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 moves the half distance of the FR carriage.

3) Imaging unit

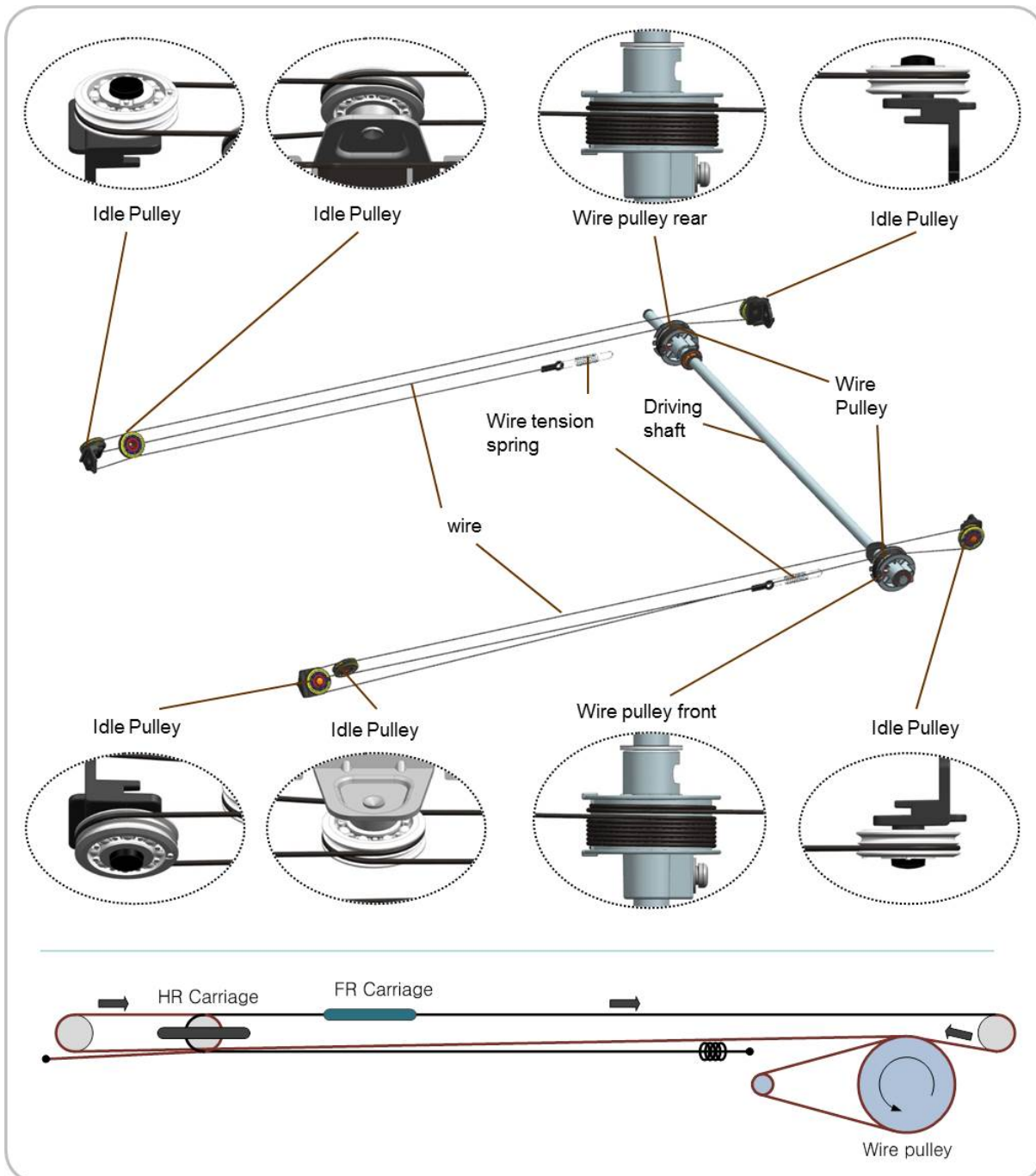
Image unit changes from the optical image to electrical signal.



- 1) Imaging lens
The reflected light through the imaging lens is focused on CCD. The image reduces to fix 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

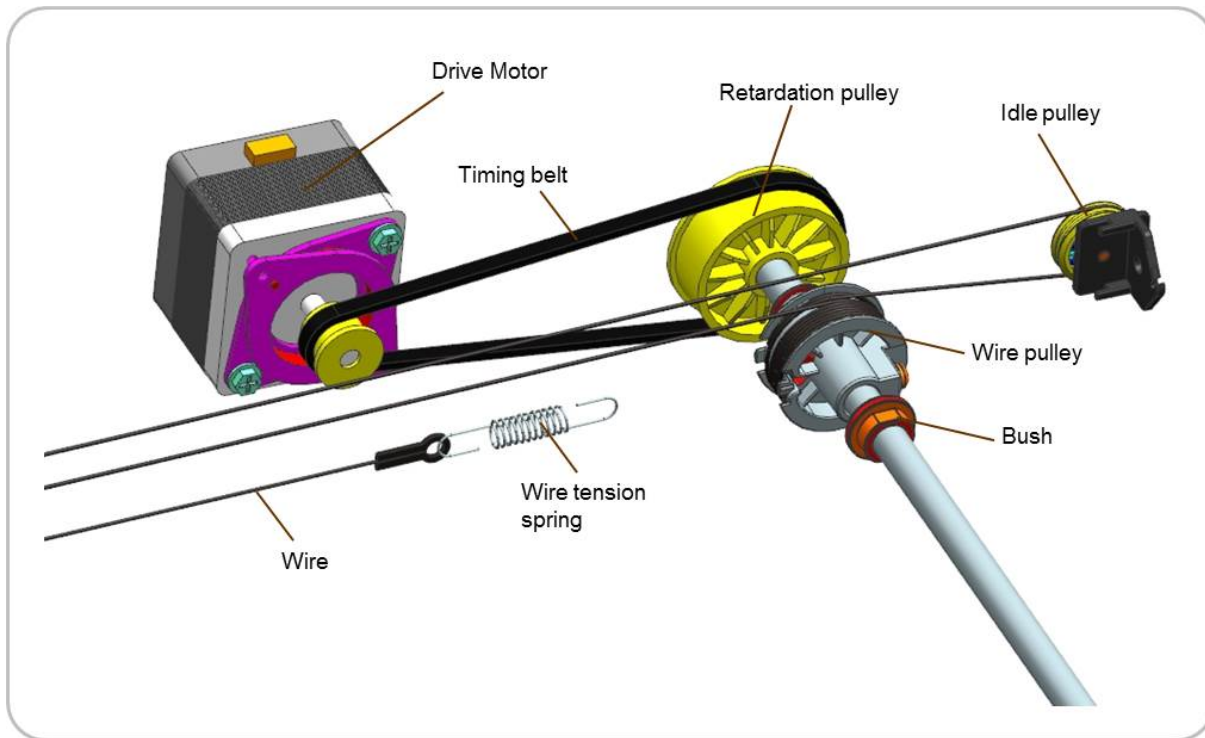
The original is placed on the flat-bed glass for scan or copy. This is made by the tempered glass and is fixed by the frame to prevent the distortion.

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

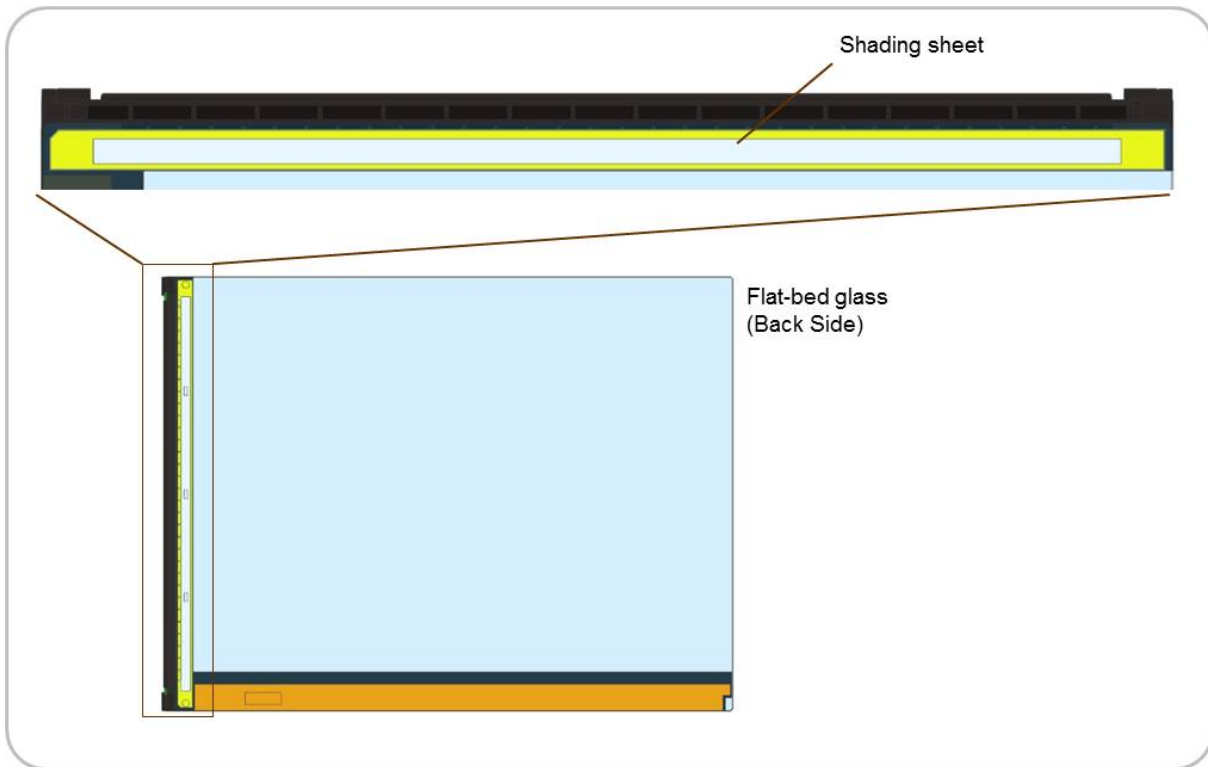
This is the reed switch to detect that the ADF unit is closed. It uses the magnetic force for ADF close detection.

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.



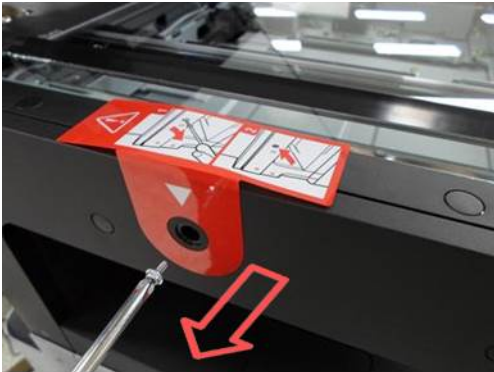
2.9.3. Caution for moving the scanner

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

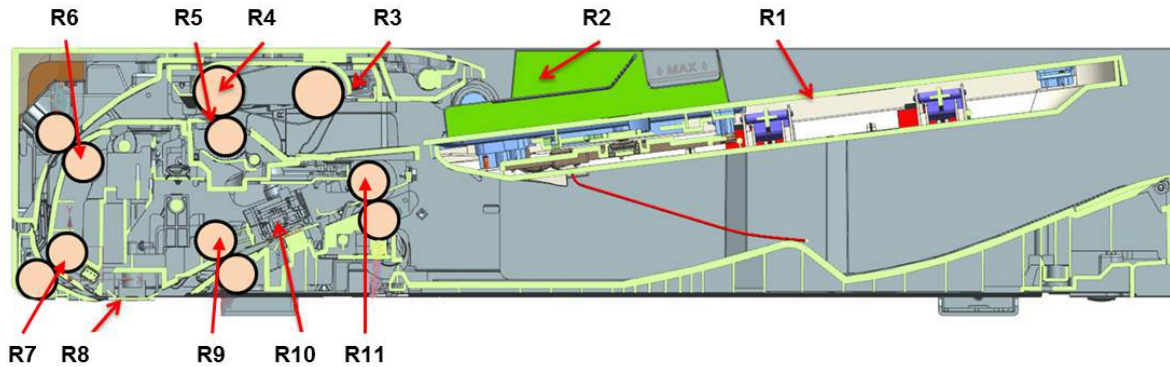
When moving the machine, tighten the scan locking screw to prevent the damage of the carriage.

- 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.



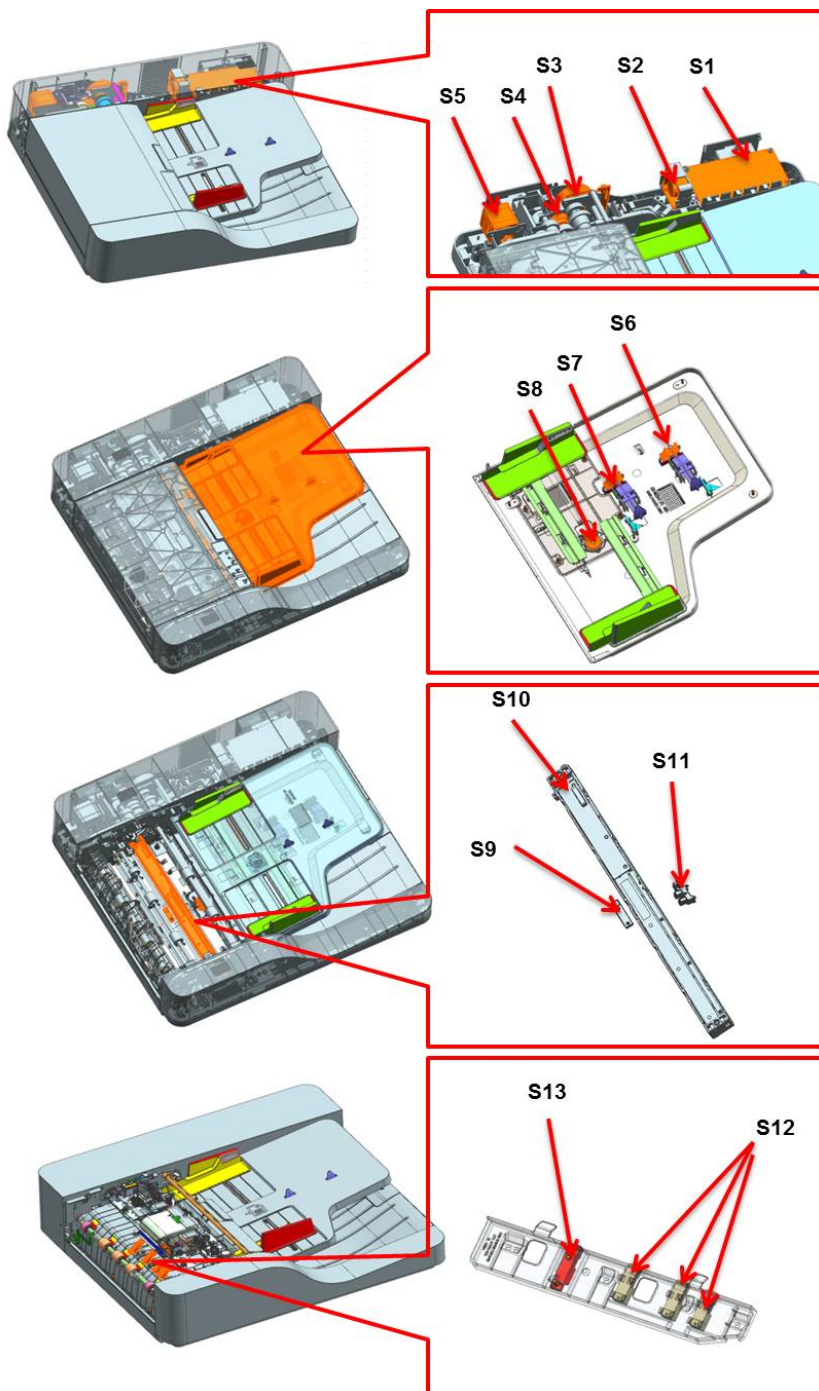
2.10. Dual Scan Document Feeder(DSDF) for LX model

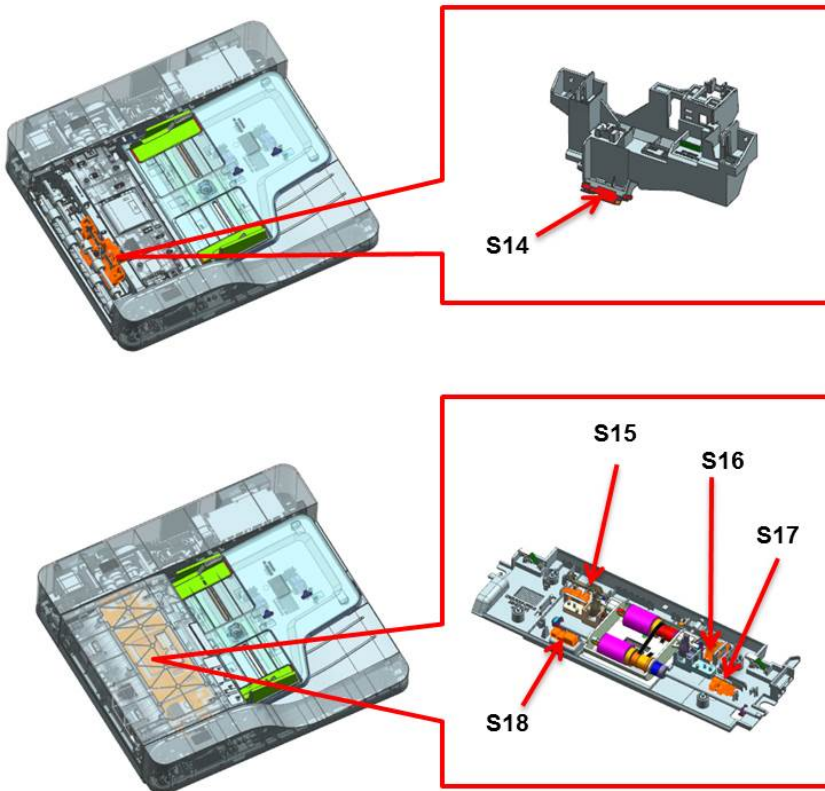
2.10.1. DSDF overview



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

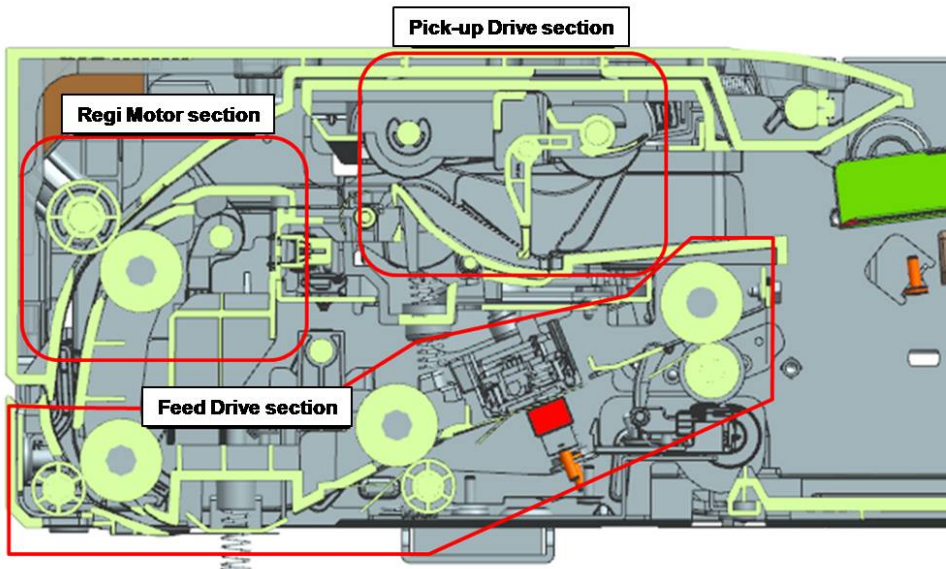




Ref.	Description	Part Code	Controller board
S1	ADF-PBA	JC92-02729A	ADF-PBA
S2	FAN	JC31-00146A	ADF-PBA
S3	MOTOR-BLDC TYPE1(PICK-UP/FEED)	JC31-00163A	ADF-PBA
S4	CLUTCH-ELECTRIC	JC47-00038A	ADF-PBA
S5	STEP-MOTOR(REGI)	JC31-00163A	ADF-PBA
S6	PHOTO-INTERRUPTER(PAPER-WIDTH 2)	0604-001394	ADF-PBA
S7	PHOTO-INTERRUPTER(PAPER-WIDTH 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(MSO)	0604-001490	ADF-PBA
S13	PHOTO-INTERRUPTER(REGI)	0604-001381	ADF-PBA
S14	PHOTO-INTERRUPTER(SCAN IN)	0604-001381	ADF-PBA
S15	PHOTO-INTERRUPTER(DETECT)	0604-001394	ADF-PBA
S16	PHOTO-INTERRUPTER(PICKUP)	0604-001394	ADF-PBA
S17	PHOTO-INTERRUPTER(COVER OPEN)	0604-001394	ADF-PBA
S18	PHOTO-INTERRUPTER(FEED OUT)	0604-001490	ADF-PBA

2.10.3. DSDF Drive System

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

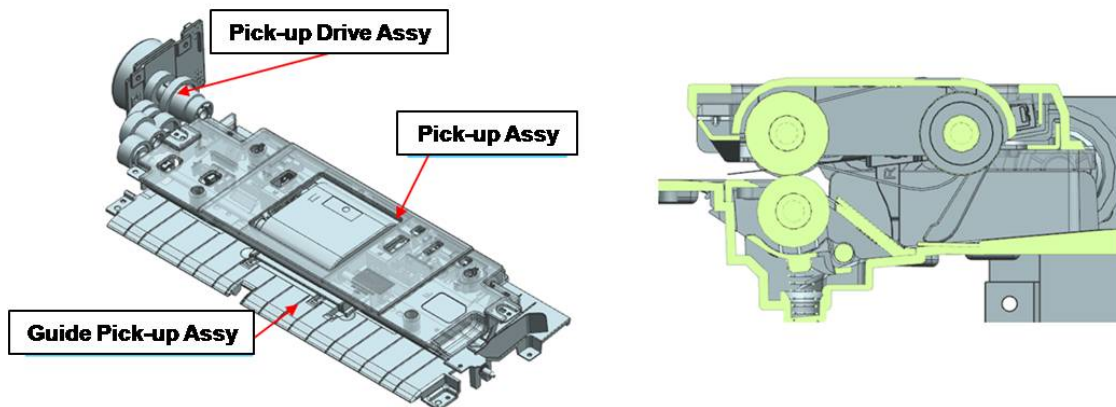


1 BLDC motor and 1 step motor drive the system for simplex and duplex job.

- 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

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

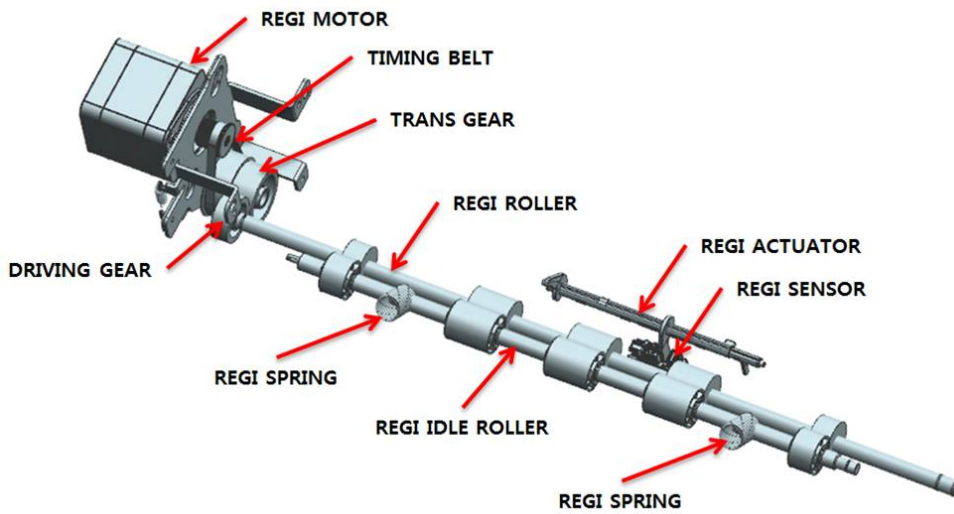


- **Operation Procedure**

- 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.

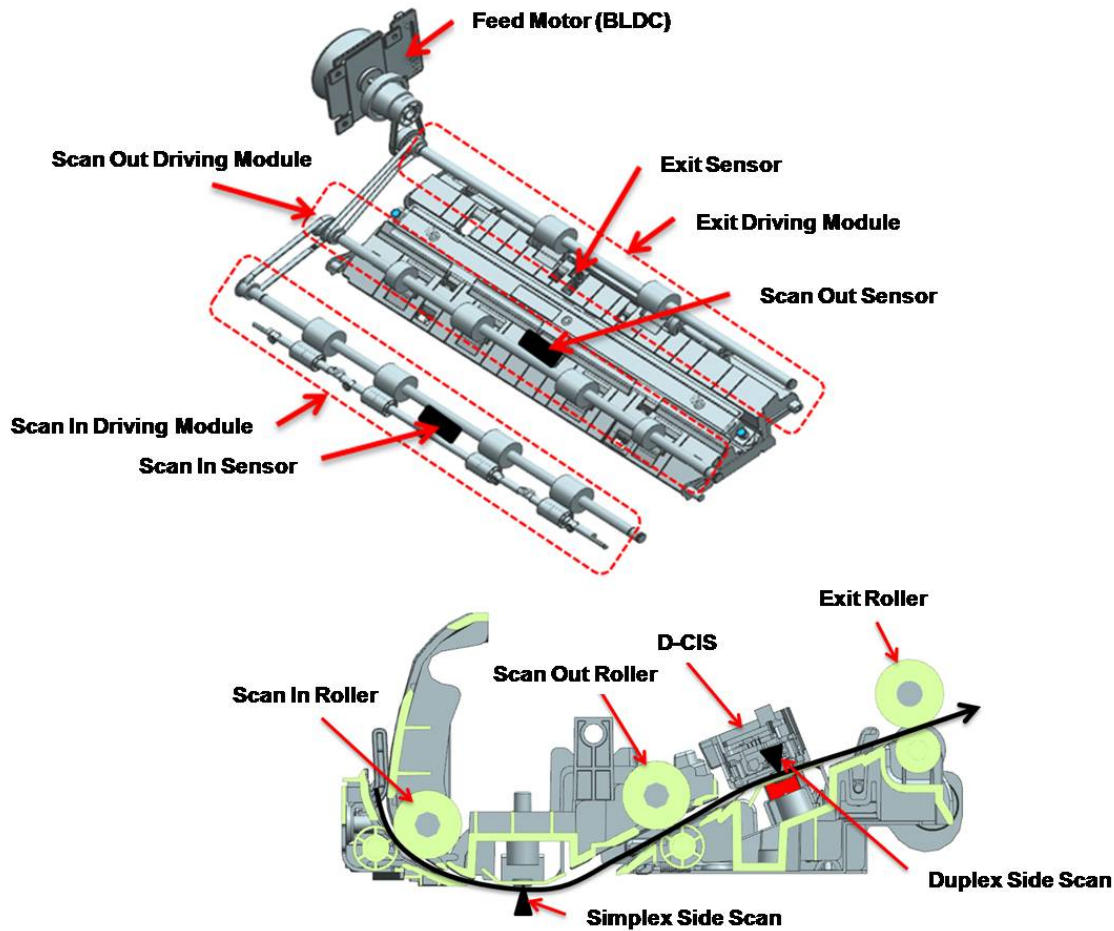


- **Operation Procedure**

- 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.

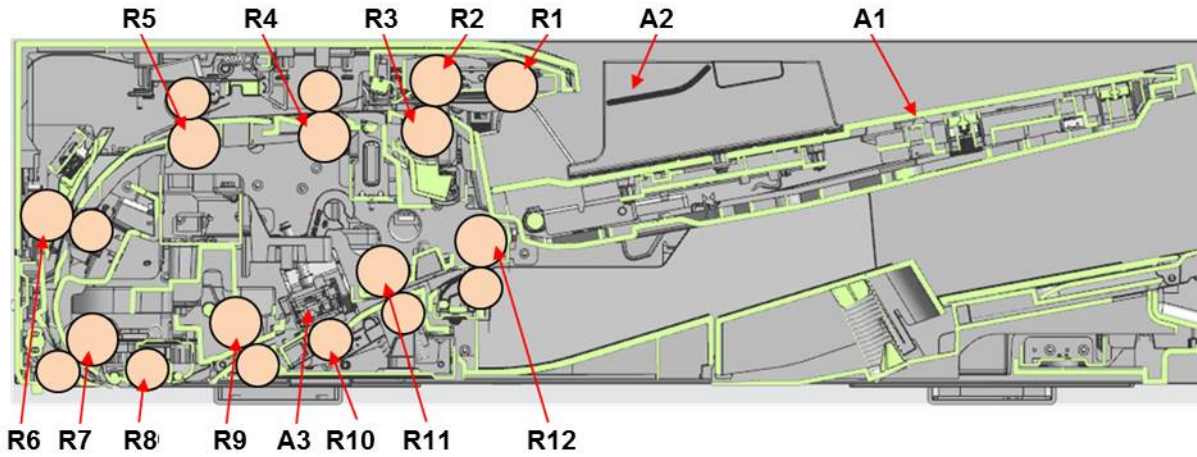


- **Operation Procedure**

- 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.

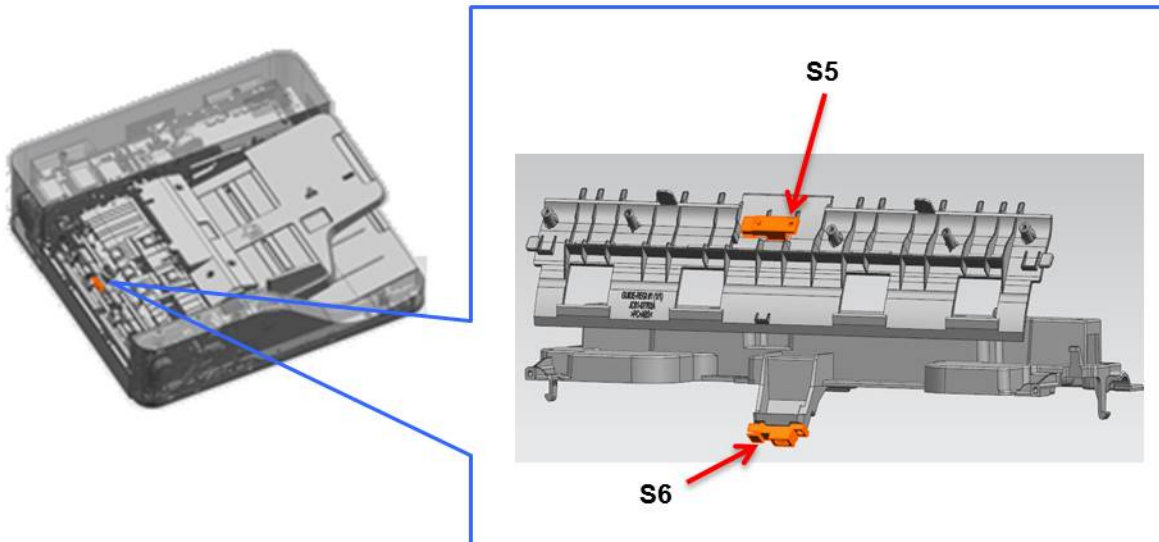
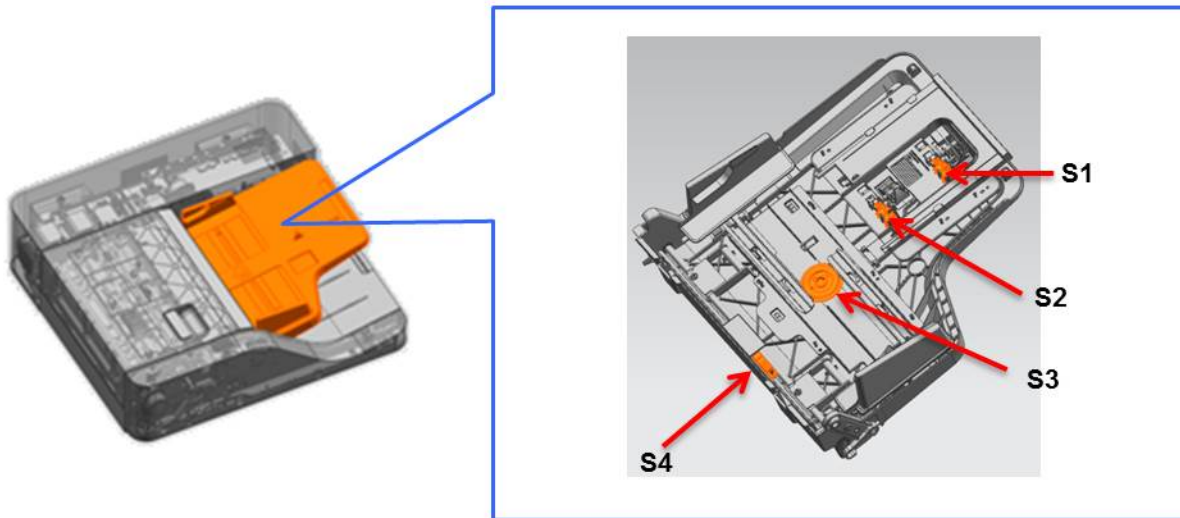
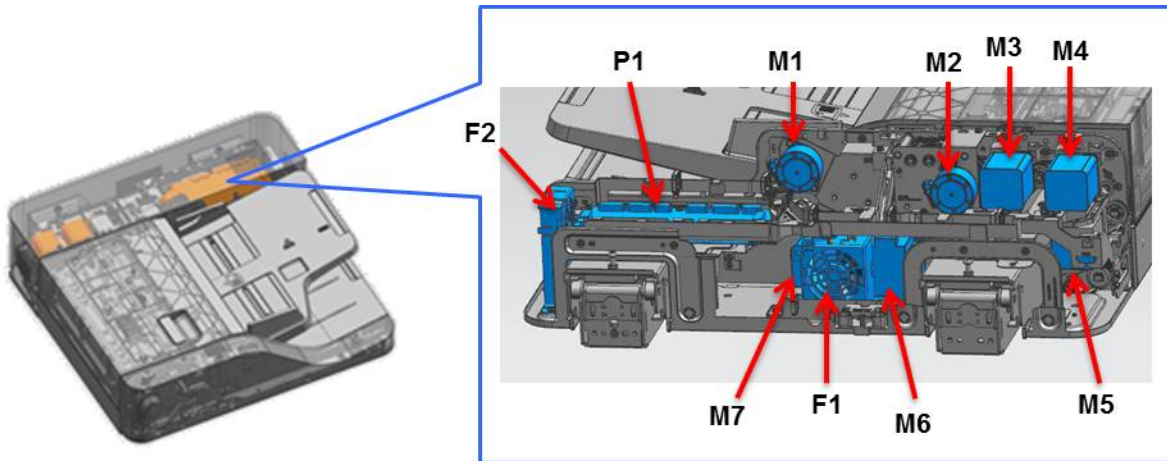
2.11. Dual Scan Document Feeder(DSDF) for GX model

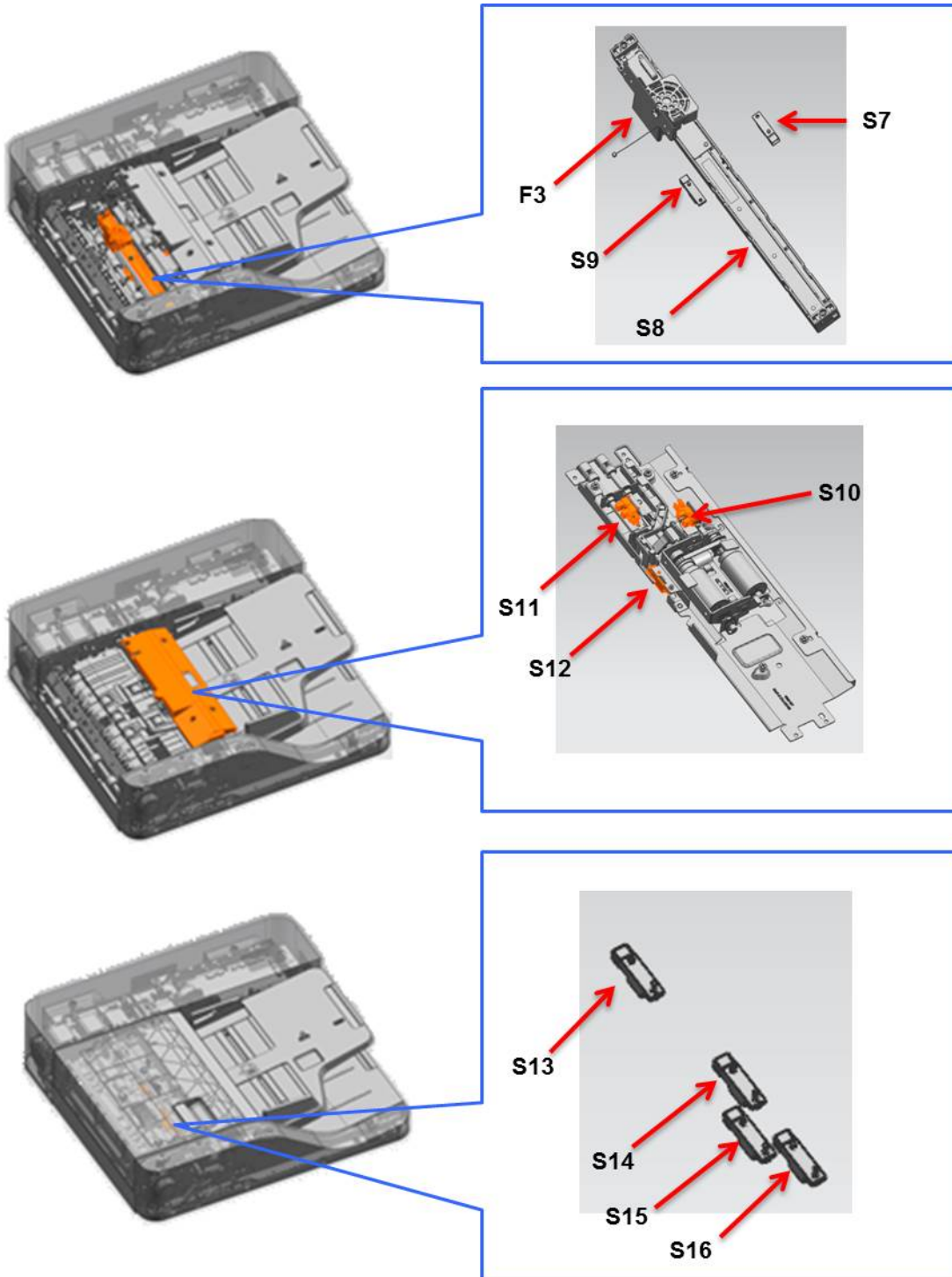
2.11.1. DSDF overview

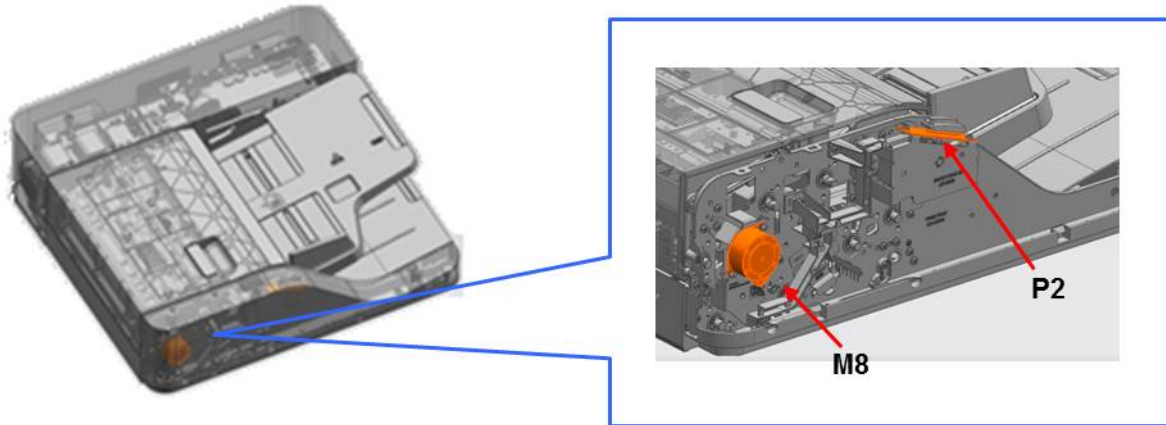


Symbol	Part Name	Function
A1	Stacker Assy	Paper input tray
A2	GUIDE-DOC F&R	Paper guide for skew prevention
A3	D-CIS module	Scans a back page of original.
R1	Pick-Up roller	Picks up an original from the tray.
R2	ADF roller	Separates an original from the tray and transfers it to the paper path.
R3	Reverse roller	Prevent the multi-feeding.
R4	Feed Roller	Transfers a original.
R5	Pre Regi Roller	Aligns the leading edge of the paper for registration. (skew prevention)
R6	Regi. roller	Aligns the leading edge of the paper for registration. (skew prevention)
R7	Simplex Scan In roller	Feeds an original before simplex scanning.
R8	Simplex White Roller	Supports a stable scanning.
R9	Duplex Scan In roller	Feeds an original before duplex scanning.
R10	Duplex White Roller	Supports a stable duplex scanning.
R11	Scan Out roller	Transfers a scanned original.
R12	Exit roller	Stacks a scanned original on the exit tray.

2.11.2. Electrical parts location



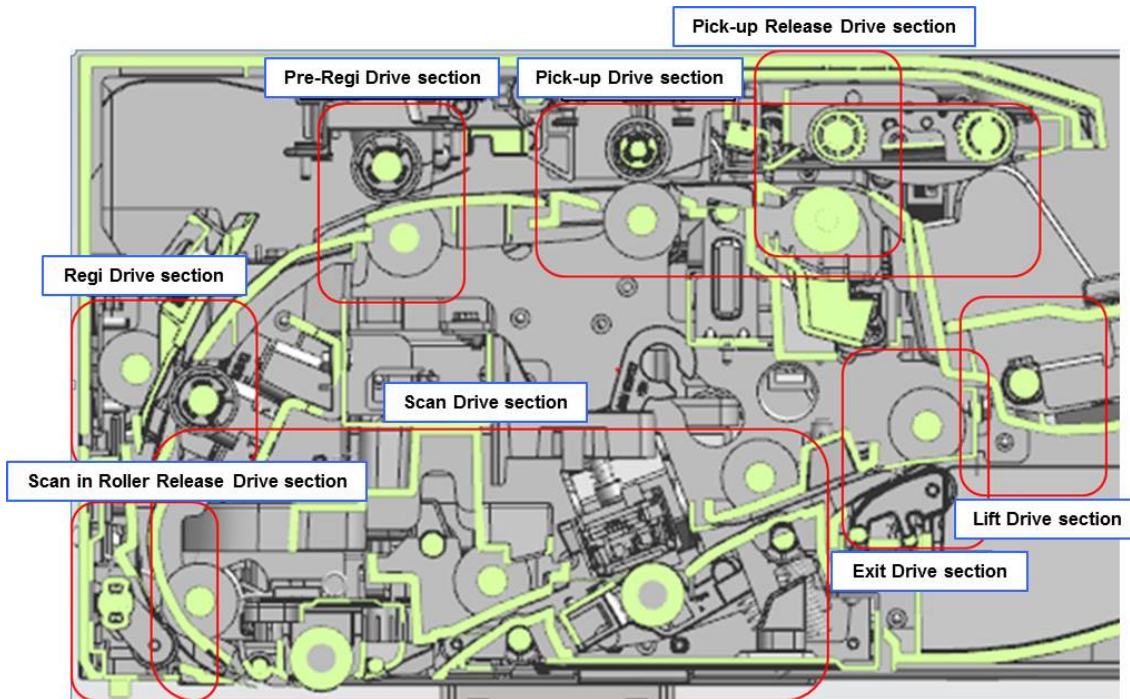




Ref.	Description	Part Code	Controller board
P1	PBA-DSDF HIGH	JC92-02828A	ADF-PBA
P2	PBA-WLED INDICATION	JC92-02829A	ADF-PBA
M1	MOTOR STEP 1P	JC31-00009C	ADF-PBA
M2	MOTOR STEP 1P	JC31-00009C	ADF-PBA
M3	MOTOR STEP	JC31-00132A	ADF-PBA
M4	MOTOR STEP	JC31-00132A	ADF-PBA
M5	MOTOR STEP	JC31-00132A	ADF-PBA
M6	MOTOR STEP 1P	JC31-00177A	ADF-PBA
M7	MOTOR STEP	JC31-00132A	ADF-PBA
M8	MOTOR STEP 1P	JC31-00009C	ADF-PBA
F1	FAN-DC	JC31-00168A	ADF-PBA
F2	FAN	JC31-00146A	ADF-PBA
F3	FAN-TYPE 1	JC31-00152B	ADF-PBA
S1	PHOTO INTERRUPTER	0604-001393	ADF-PBA
S2	PHOTO INTERRUPTER	0604-001393	ADF-PBA
S3	HARNESS-MP SIZE SENSOR	JC39-02087A	ADF-PBA
S4	PHOTO INTERRUPTER	0604-001381	ADF-PBA
S5	PHOTO INTERRUPTER	0604-001381	ADF-PBA
S6	PHOTO INTERRUPTER	0604-001381	ADF-PBA
S7	PHOTO INTERRUPTER	0604-001381	ADF-PBA
S8	CONTACT IMAGE SENSOR	0609-001558	MAIN PBA
S9	PHOTO INTERRUPTER	0604-001381	ADF-PBA
S10	PHOTO INTERRUPTER	0604-001393	ADF-PBA
S11	PHOTO INTERRUPTER	0604-001393	ADF-PBA
S12	PHOTO INTERRUPTER	0604-001381	ADF-PBA
S13	PHOTO INTERRUPTER	0604-001381	ADF-PBA
S14	PHOTO INTERRUPTER	0604-001381	ADF-PBA
S15	PHOTO INTERRUPTER	0604-001381	ADF-PBA
S16	PHOTO INTERRUPTER	0604-001381	ADF-PBA

2.11.3. DSDF Drive System

DSDF drive system consists of 8 motors to transfer paper.

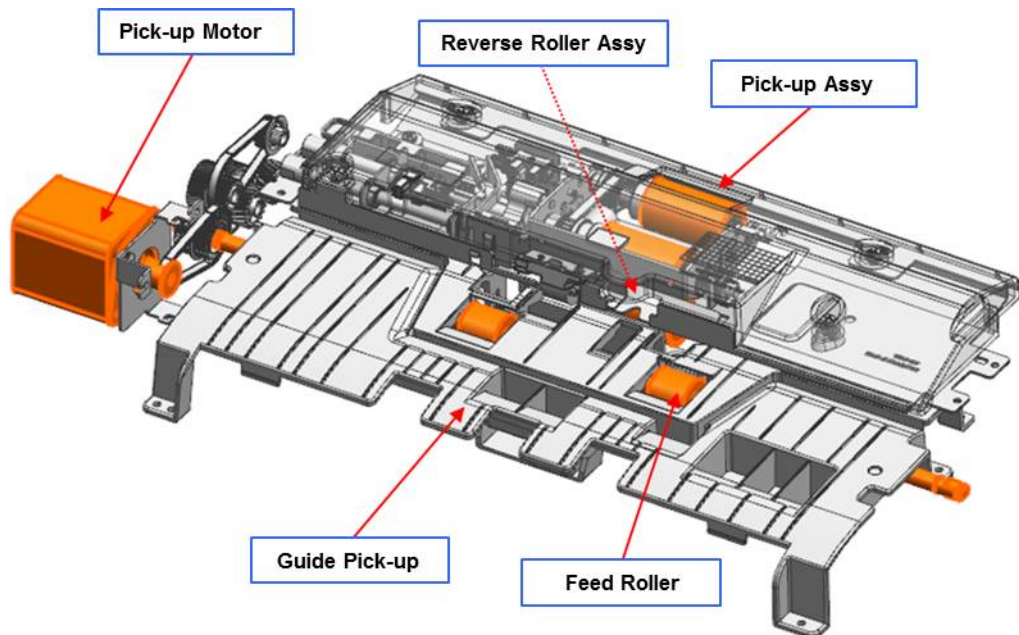


8 Step motors control roller and CAM of the DSDF drive system.

- Pick-up roller is controlled by a step motor and transfers paper to the DSDF inside.
- Pre-Regi roller is controlled by a step motor and aligns paper.
- Regi roller is controlled by a step motor and aligns paper.
- Scan-in/out roller and white roller are controlled by a step motor.
- Exit roller is controlled by a step motor and stacks papers on the tray.
- Stacker Lift is controlled by a step motor and lift paper to the pick up roller.
- Pick up roller, Reverse roller and Scan-in roller are released by a step motor and CAM.
-

2.11.3.1. DSDF Original Pick-Up Assembly

DSDF Original Pick-Up Assembly consists of Pick-up motor, Pick-up Assy, Reverse roller, Feed roller and Guide Pick-up Assy.

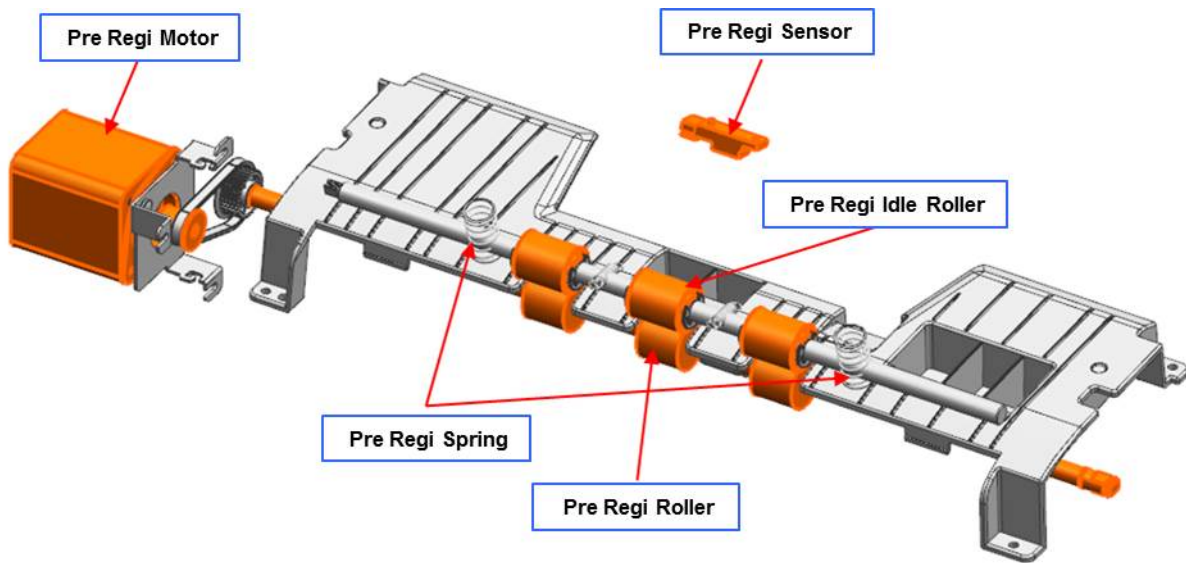


- **Operation Procedure**

- 1) Checks a paper detection.
- 2) Starts pick-up driving by supplying power to motor.
- 3) Transfers a paper to the ADF roller by driving the pick up roller.
- 4) Separates an original by the reverse roller.
- 5) Transfers a paper to the pre-regi roller by driving the feed roller.

2.11.3.2. DSDF Original Pre-Regi Assembly

DSDF Original Pre-Regi Assembly consists of Pre-Regi Motor, Pre-Regi Roller, Pre-Regi Idle Roller, and Pre-Regi Sensor.

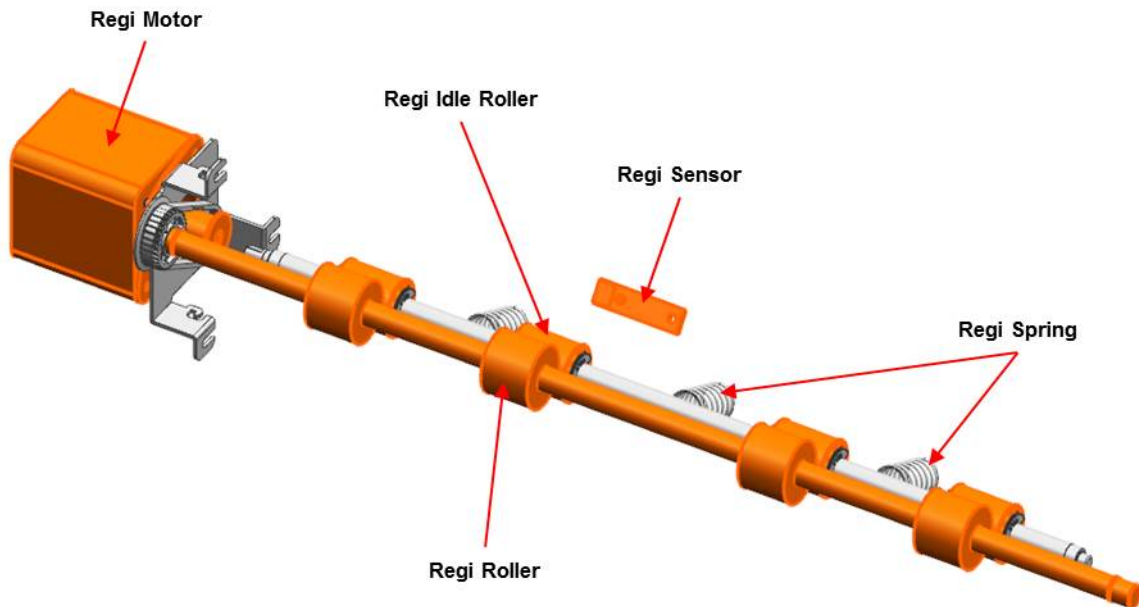


- **Operation Procedure**

- 1) When a picked up original is detected, the Pre-Regi sensor is on. At this time, the Pre-Regi motor is stopped and the original is aligned.
- 2) After the Pre-Regi sensor is on, Pre-Regi motor rotates.
- 3) After the transferred original passes the Pre-Regi. sensor, the Pre-Regi sensor is off and the Pre-Regi motor stops.

2.11.3.3. DSDF Original Regi Assembly

DSDF Original Regi Assembly consists of Regi Motor, Regi Roller, Regi Idle Roller, and Regi Sensor.

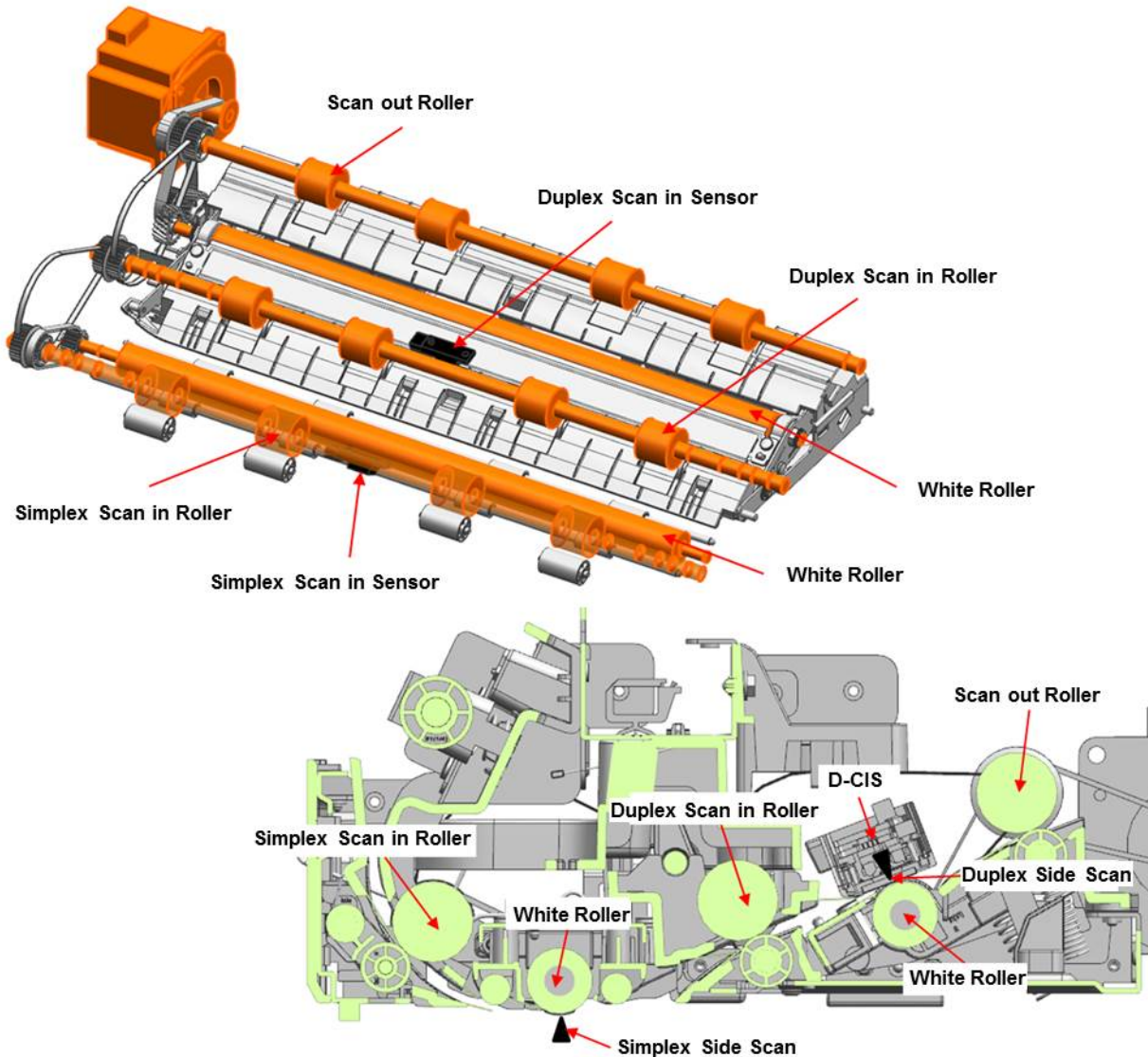


- **Operation Procedure**

- 1) When a picked up original is detected, 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. sensor, the Regi sensor is off and the Regi motor stops.

2.11.3.4. DSDF Original Scanning Drive Assembly

DSDF Original Scanning Drive Assembly consists of Scan Motor, Scan In/Out Roller, White Roller, Scan In Sensor, and D-CIS.

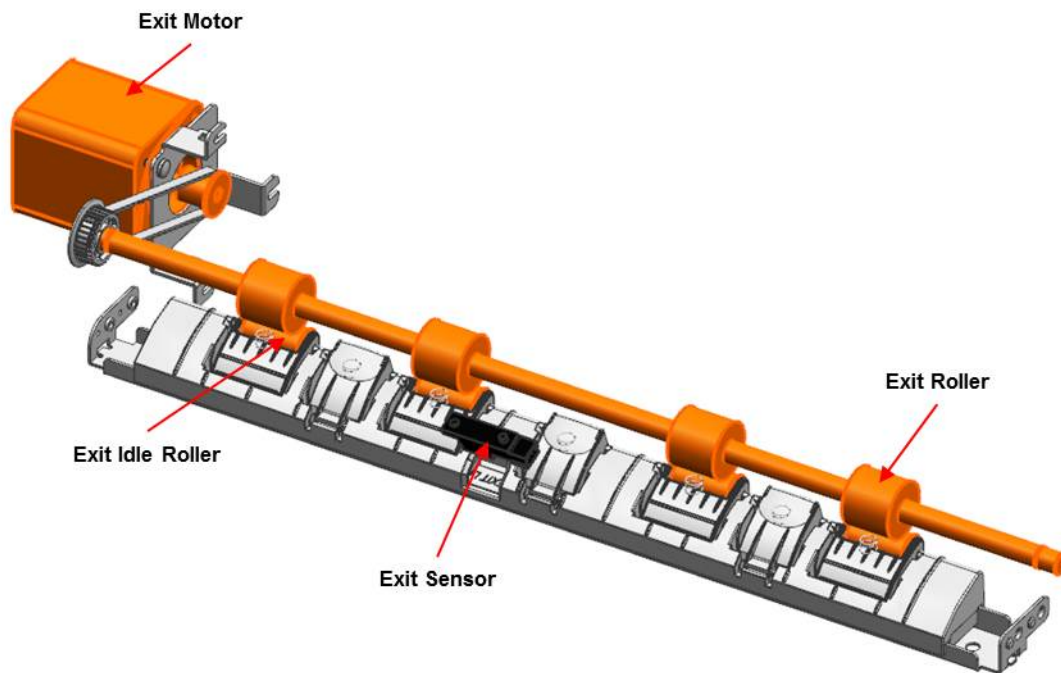


- **Operation Procedure**

- 1) The scan motor and timing-belt make the roller rotate.
- 2) When original passes the scan in sensor, simplex scan starts.
- 3) Simplex white roller functions to prevent the wrinkle and background.
- 4) When original passes the duplex scan in sensor, duplex scan starts.
- 5) Duplex white roller functions to prevent the wrinkle and background.
- 6) Scanned original is transferred to the exit roller by the scan out roller.

2.11.3.5. DSDF Original Exit Assembly

DSDF Original Exit Assembly consists of Exit Motor, Exit Roller, Exit Idle Roller, Exit Sensor.

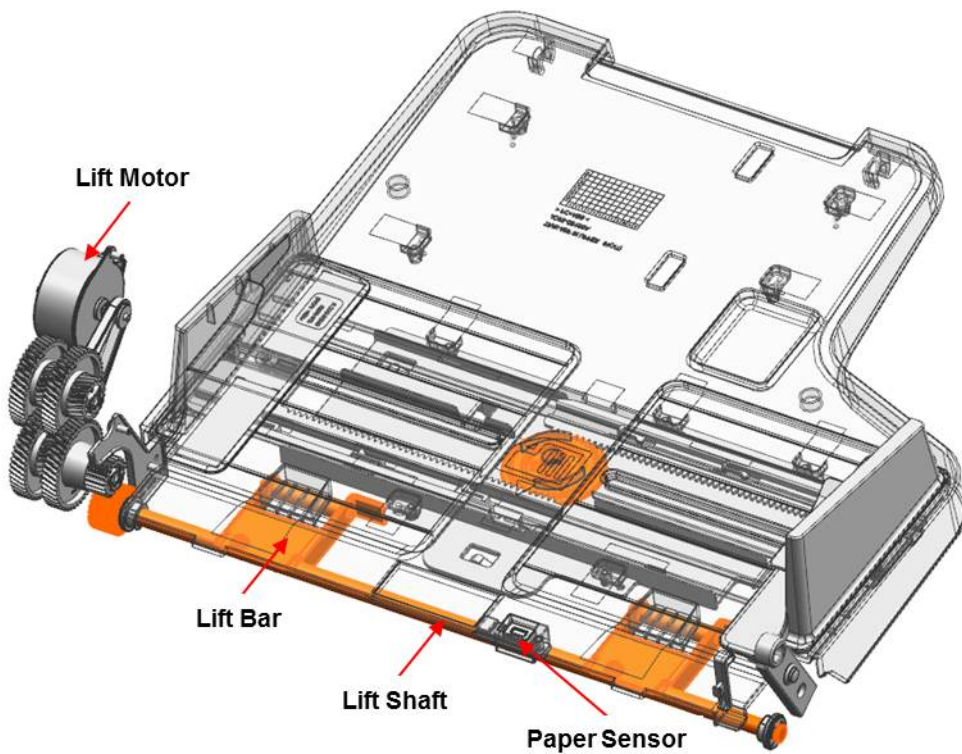


- **Operation Procedure**

- 1) When a passed original from scan out roller is detected, the exit sensor is on. At this time, the speed of the exit roller is the same with the scan out roller.
- 2) When the exit sensor is off, the exit motor speed will be slow for the stable stacking.

2.11.3.6. DSDF Original Lifting Assembly

DSDF Original Lifting Assembly consists of Lift Motor, Lift Shaft, Lift Bar, Paper Sensor.

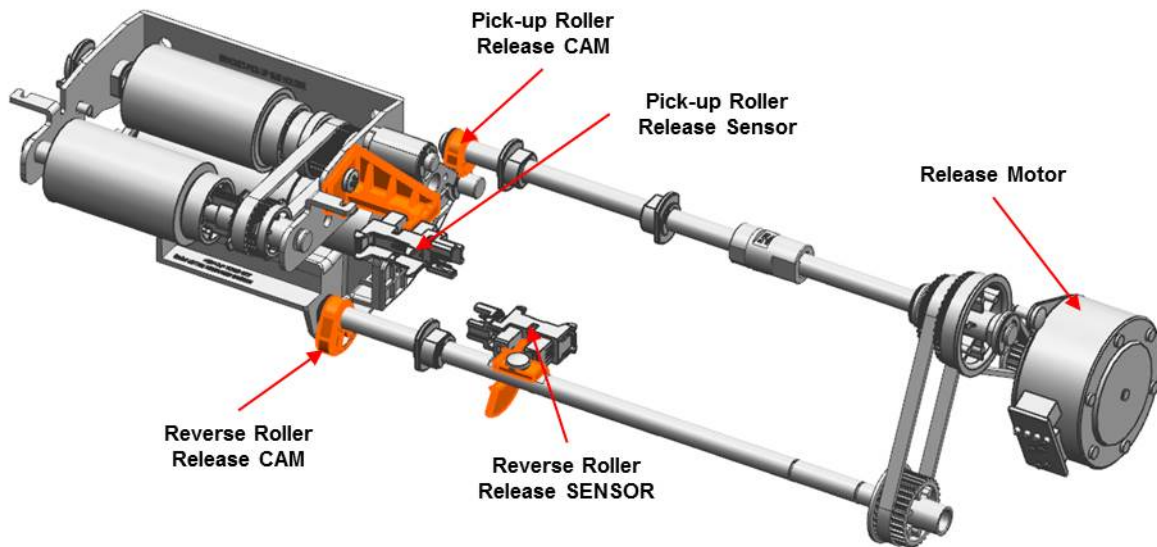


- **Operation Procedure**

- 1) Checks a paper detection.
- 2) Starts lifting driving by supplying power to motor.
- 3) Lift up the tray by a Lift Bar.
- 4) When the paper contacts to the pick up roller, the motor driving stops.

2.11.3.7. DSDF Original Pick-up_Reverse roller Release Assembly

DSDF Original Pick-up_Reverse roller Release Assembly consists of Release Motor, Pick-up / Reverse Roller Release CAM , Detecting Sensor.

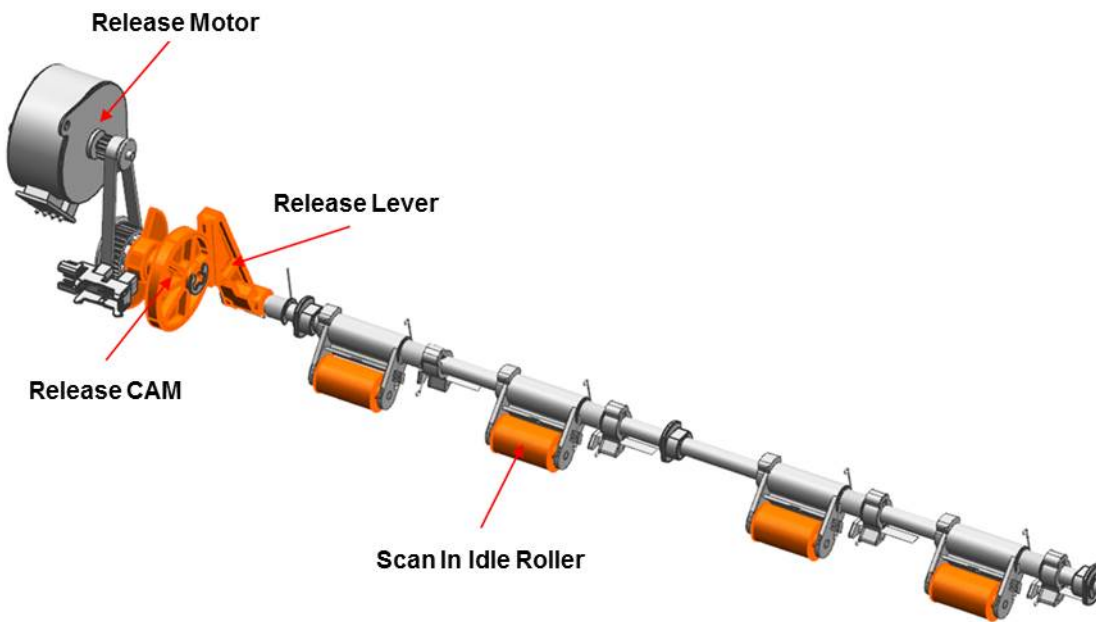


- **Operation Procedure**

- 1) When starting a scanning job, pick up roller contacts the reverse roller.
- 2) When completing a scanning job or occurring the jam, these rollers are separated.
- 3) Two CAMs are controlled by a motor and one-way bearing.
(Normal rotation : Pick-up CAM operates / Reverse rotation : Reverse CAM operates)

2.11.3.8. DSDF Scan in Roller Release Assembly

DSDF Scan in Roller Release Assembly consists of Release Motor, Release CAM, Scan In Idle Roller.



- **Operation Procedure**

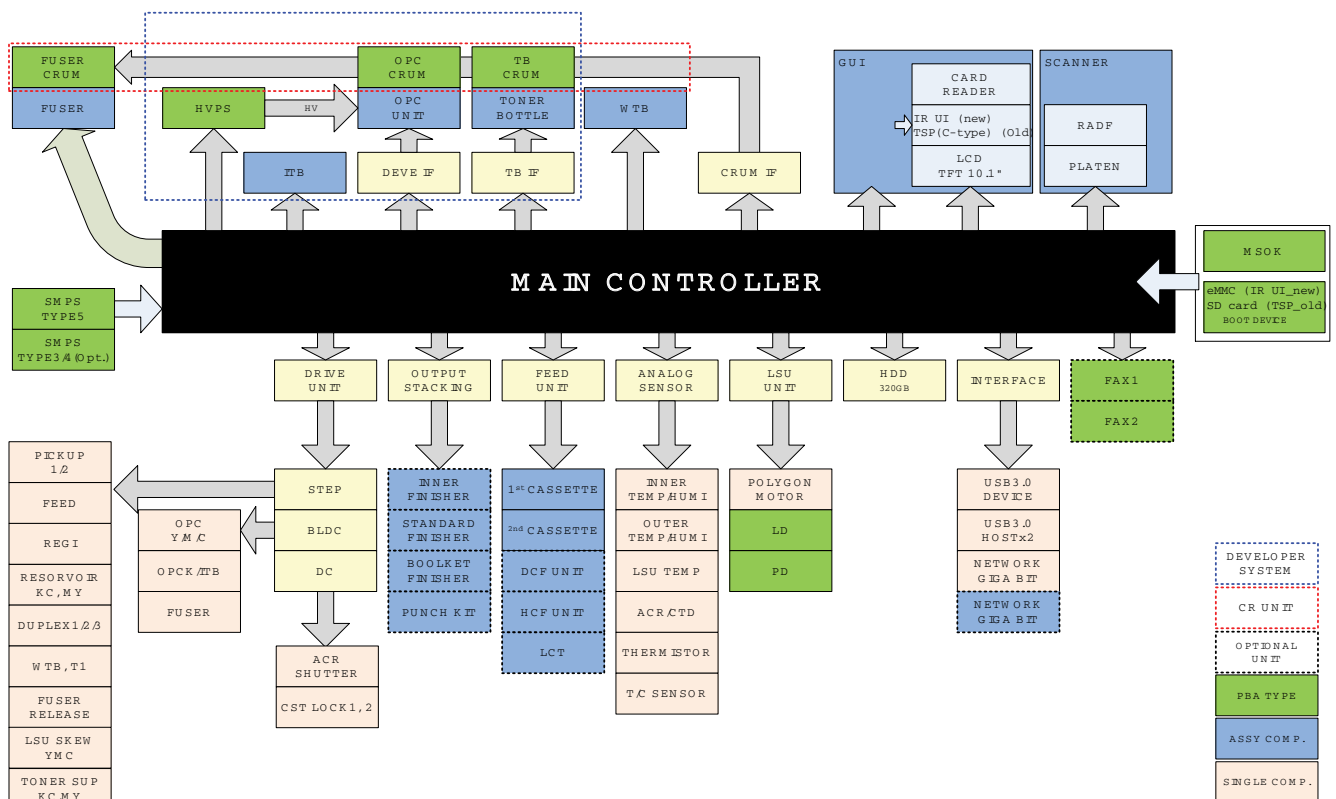
- 1) Release CAM controls the Idle roller to keep the stable scanning quality.
- 2) Motor and CAM operation repeats per one paper.

2.12. Hardware Configuration

The SL-X7600/7500/7400GX , SL-X7600LX, SL-X703GX 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 MX X7 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 uses a Quad Core CPU 1.5GHZ, DDR3 4GB(old model)/6GB(new model(IR UI) memory, Micro SD 4GB(old model)/eMMC 4GB(new model(IR UI)), 320GB SATA HDD to control the engine driving, video signal processing, and user interface. 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 3.0 protocol to display the system information on LCD.

Main controller for new model(IR UI) communicates with the OPE Controller through the A3000 LCD Control Block and LVDS Data cable to display the system information on LCD.

The OPE Unit displays the status of the system by using the WQXGA(old model)/WSVGA(new model((IR UI)) TFT LCD in response to user actions or the main controller.

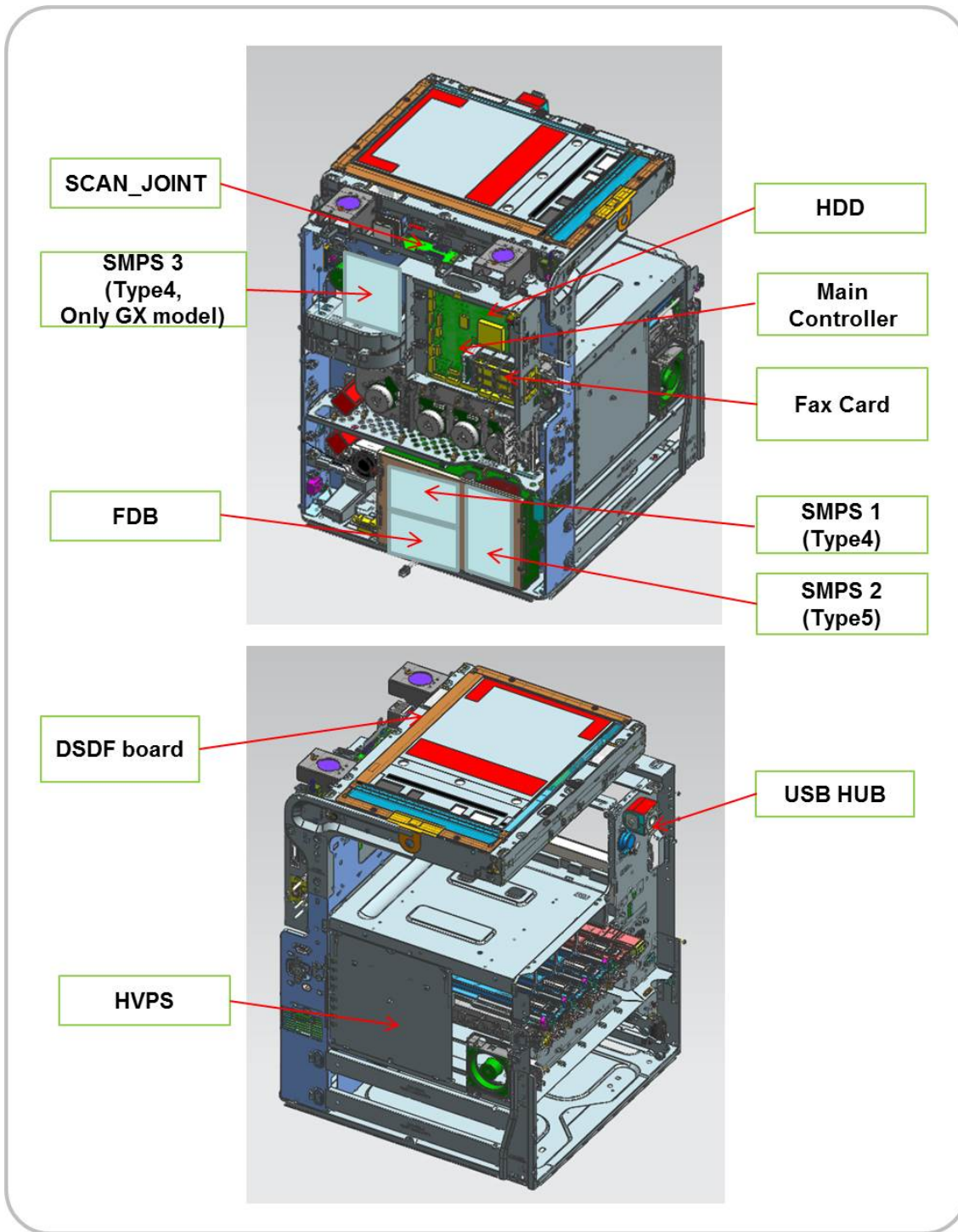
The soft power switch in the OPE Unit is used to safely shut down the system power.

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)

NOTE

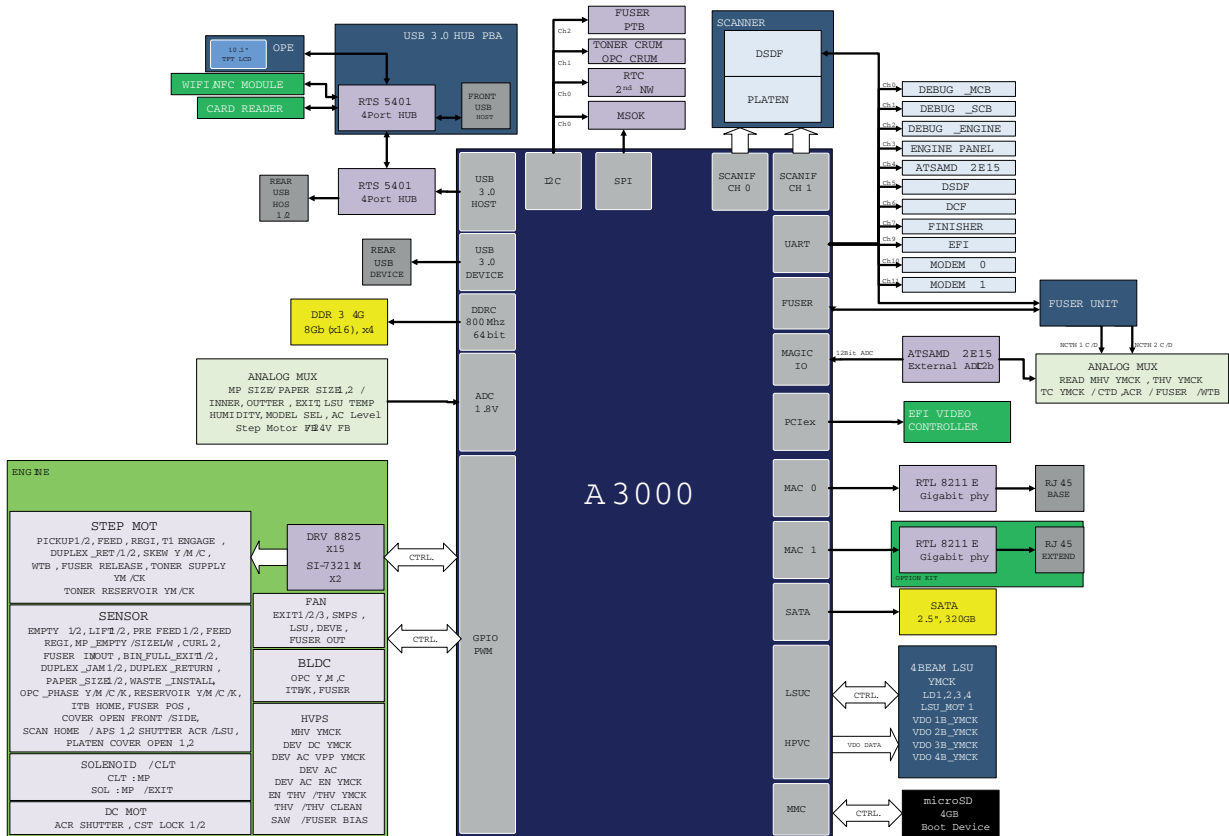
The main controller for previous model is not compatible with new model(IR UI). When replacing the main controller, be careful not to be replaced with incompatible one.

Main Controller for previous model

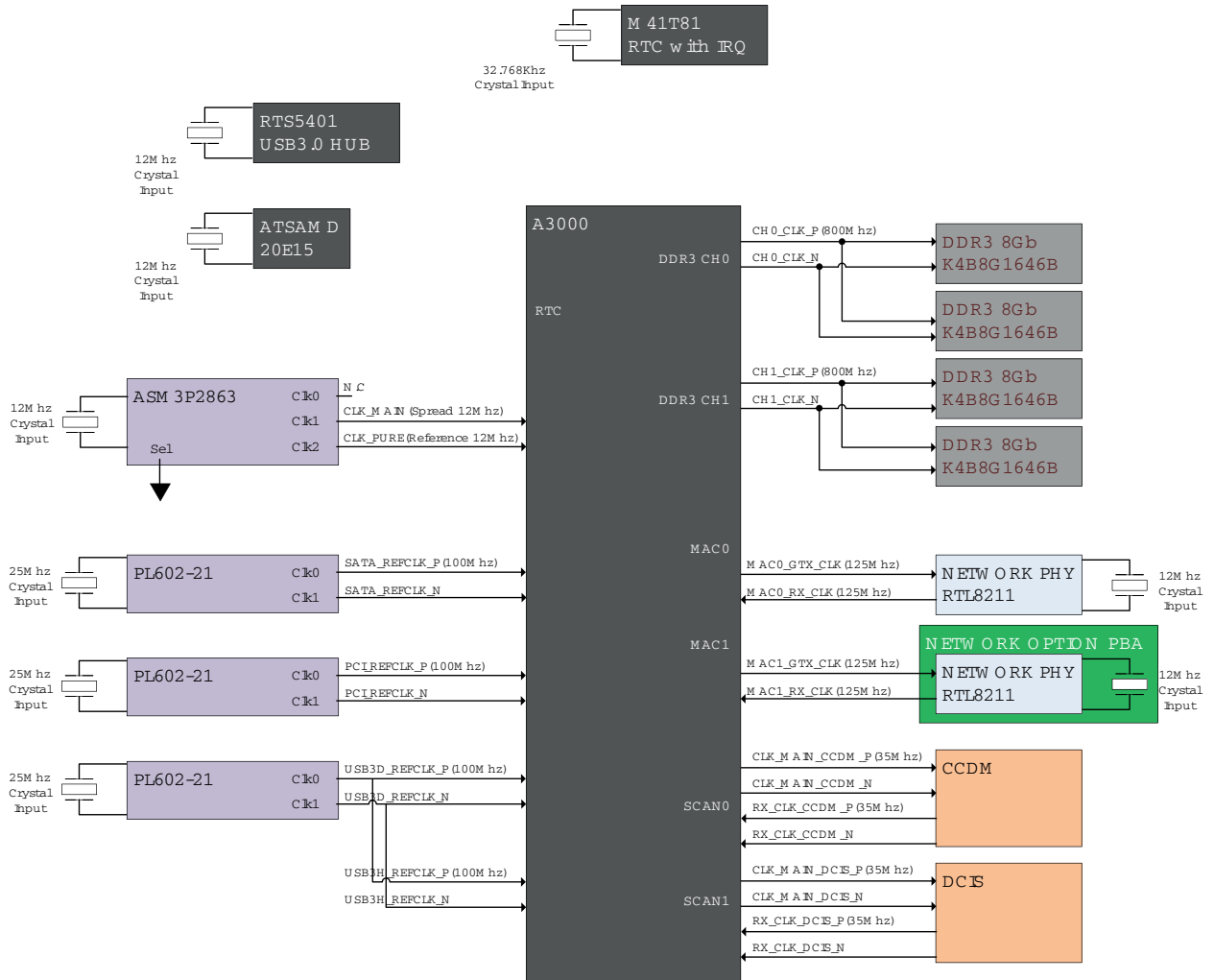
The main controller consists of the main processor(A3000), memory(DDR3 4GB), Micro SD(4GB), 1G Ethernet PHY,USB3.0 HUB, Micom(Power/Fuser control) and can control Video/UI/FAX signal interface connection, motor driving IC, Engine signal interface connection, power interface.

The main processor (Quad Core 1.5GHz CPU) controls video, engine, UI display and communicates with 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.

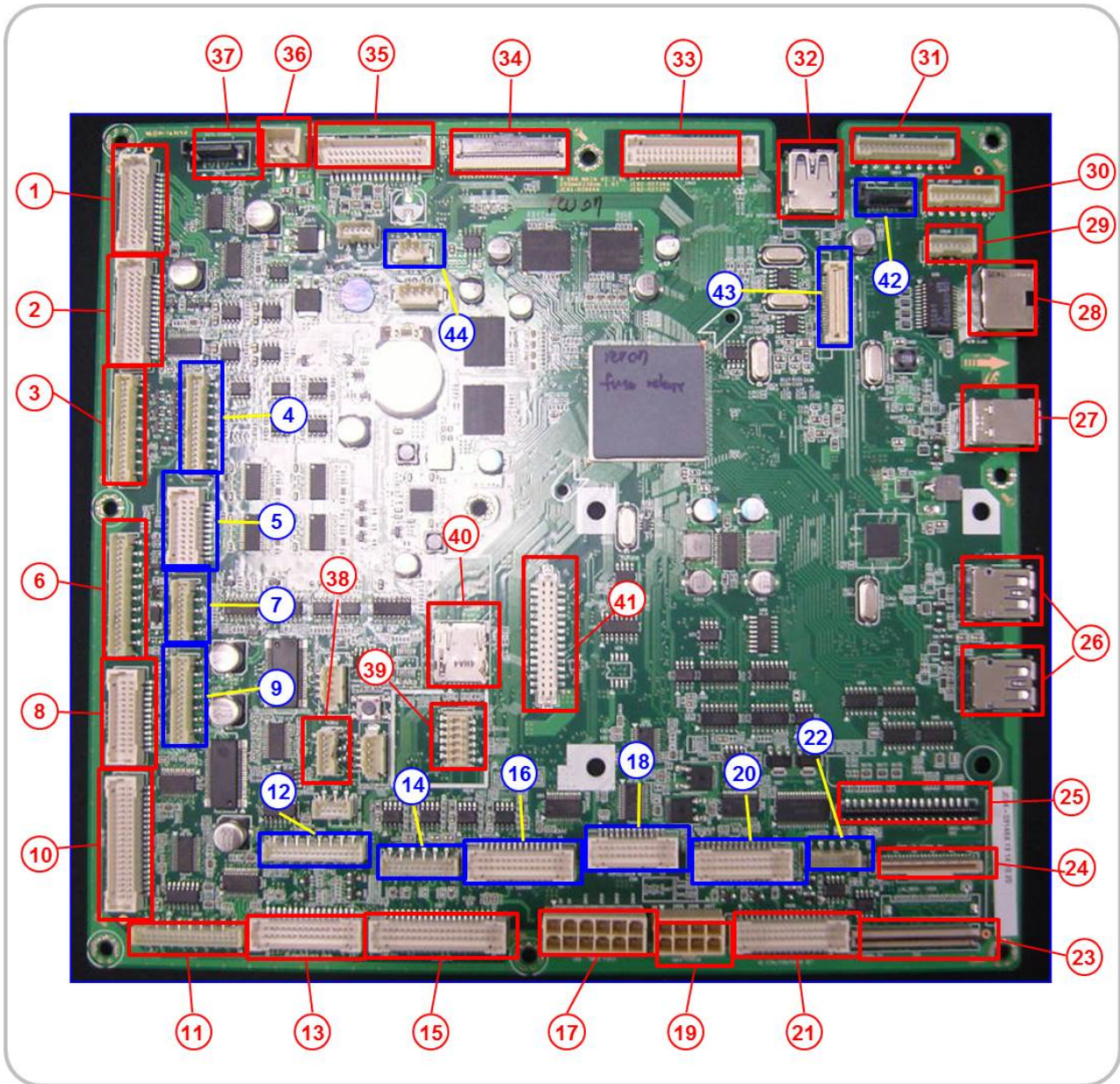
1) Main Controller Block Diagram



2) Main Controller Clock Diagram



3) Main Controller Connection Information



• Connection

1	EXIT
2	FUSER DRIVE
3	FUSER DRAWER
4	TB_CRUM
5	TONER SUP_RES
6	ACR_CTD COLOR
7	REGI_T1 POS SENS
8	PICKUP 1/2
9	FEED_REGI MOT
10	SIDE
11	DCF IF
12	FINISHER
13	OPC CRUM_T1

14	OPC HOME SENS
15	OPC BLDC COLOR
16	TC SENS_RES FULL
17	SMPS TYPE5
18	HVPS POWER_LSU SKEW
19	SMPS TYPE4
20	FRONT IF COLOR
21	FDB IF
22	LSU PD
23	LSU 1 COLOR
24	LSU 2 COLOR
25	HVPS COLOR

26	USB HOST 1/2
27	USB DEVICE
28	NETWORK
29	EFI POWER
30	FDI JOINT
31	UI IF
32	USB HOST_HUB
33	DCIS
34	CCDM
35	DSDF
36	HDD POWER
37	HDD SIGNAL
38	SIDE FAN

39	MSOK
40	SD CARD
41	FAX JOINT
42	2ND NETWORK
43	EFI SIGNAL
44	CPU FAN

• Information

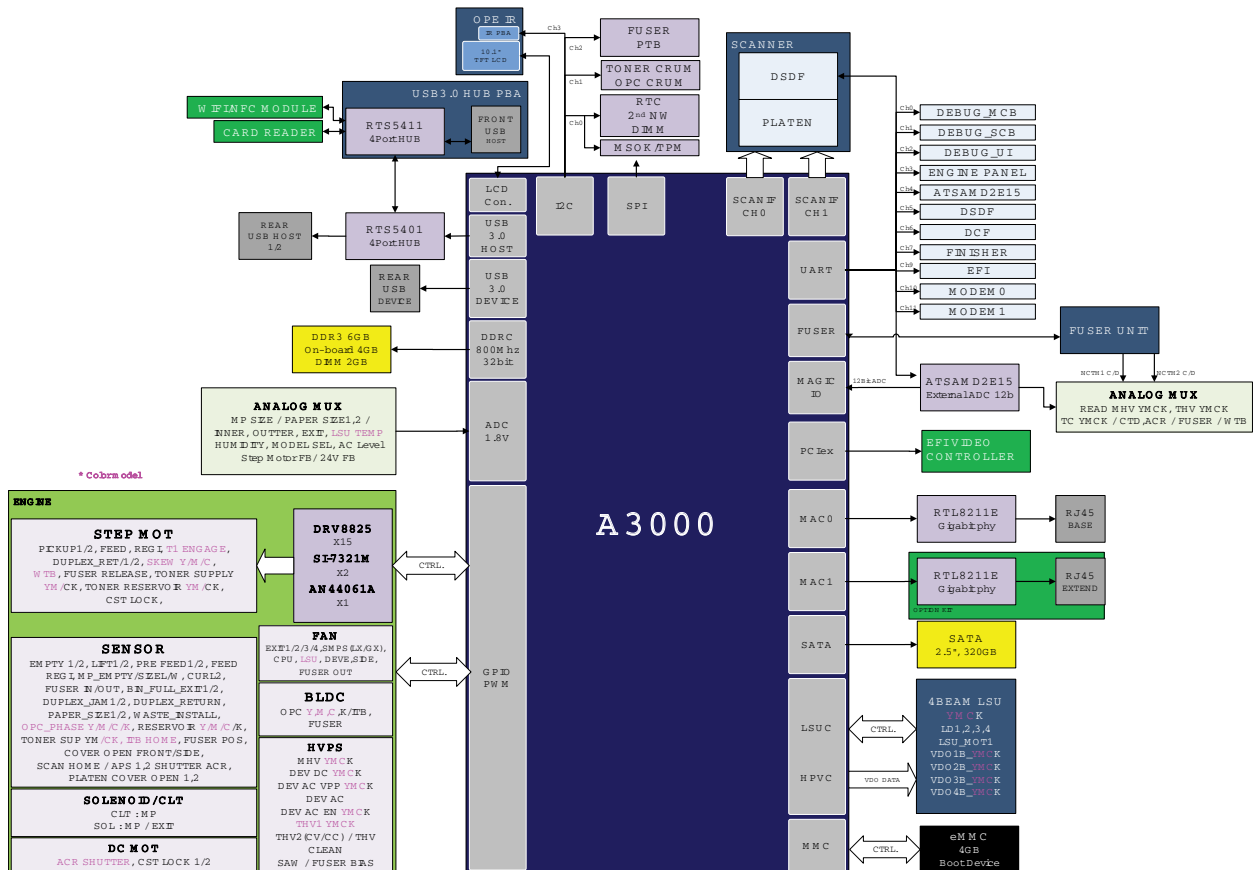
- Part Code :
 - JC92-02737A for LX model (X7600LX, X7500LX, X7400LX)
 - JC92-02737B for GX model (X7600GX, X7500GX, X7400GX)
- Part Name : PBA-MAIN

Main Controller for new model(IR UI)

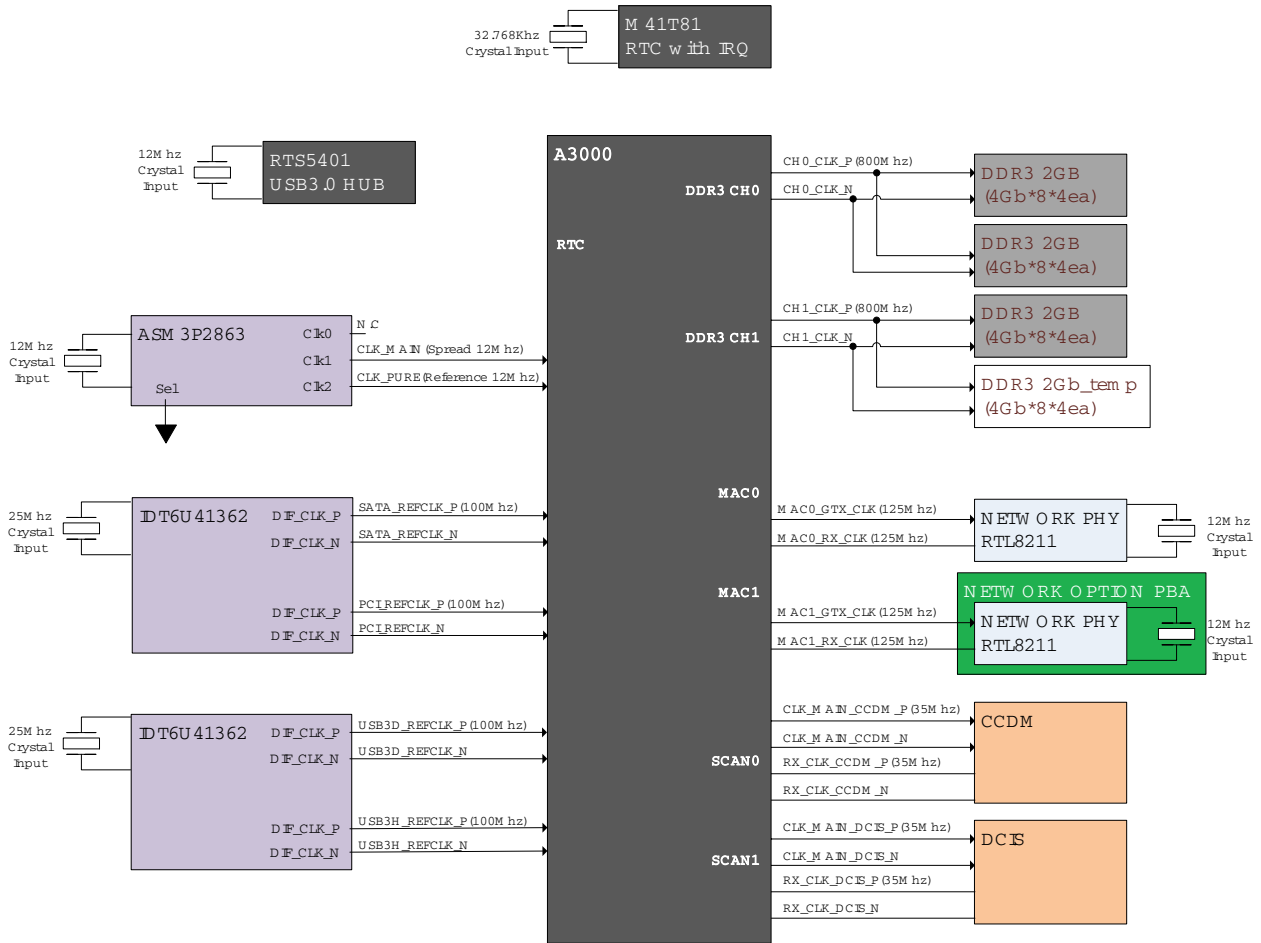
The main controller consists of the main processor(A3000), memory(DDR3 6GB), eMMC(4GB), 1G Ethernet PHY,USB3.0 HUB, Micom(Power/Fuser control), can control Video/UI/FAX signal interface connection, motor driving IC, Engine signal interface connection, power interface.

The main processor (Quad Core 1.5GHz 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.

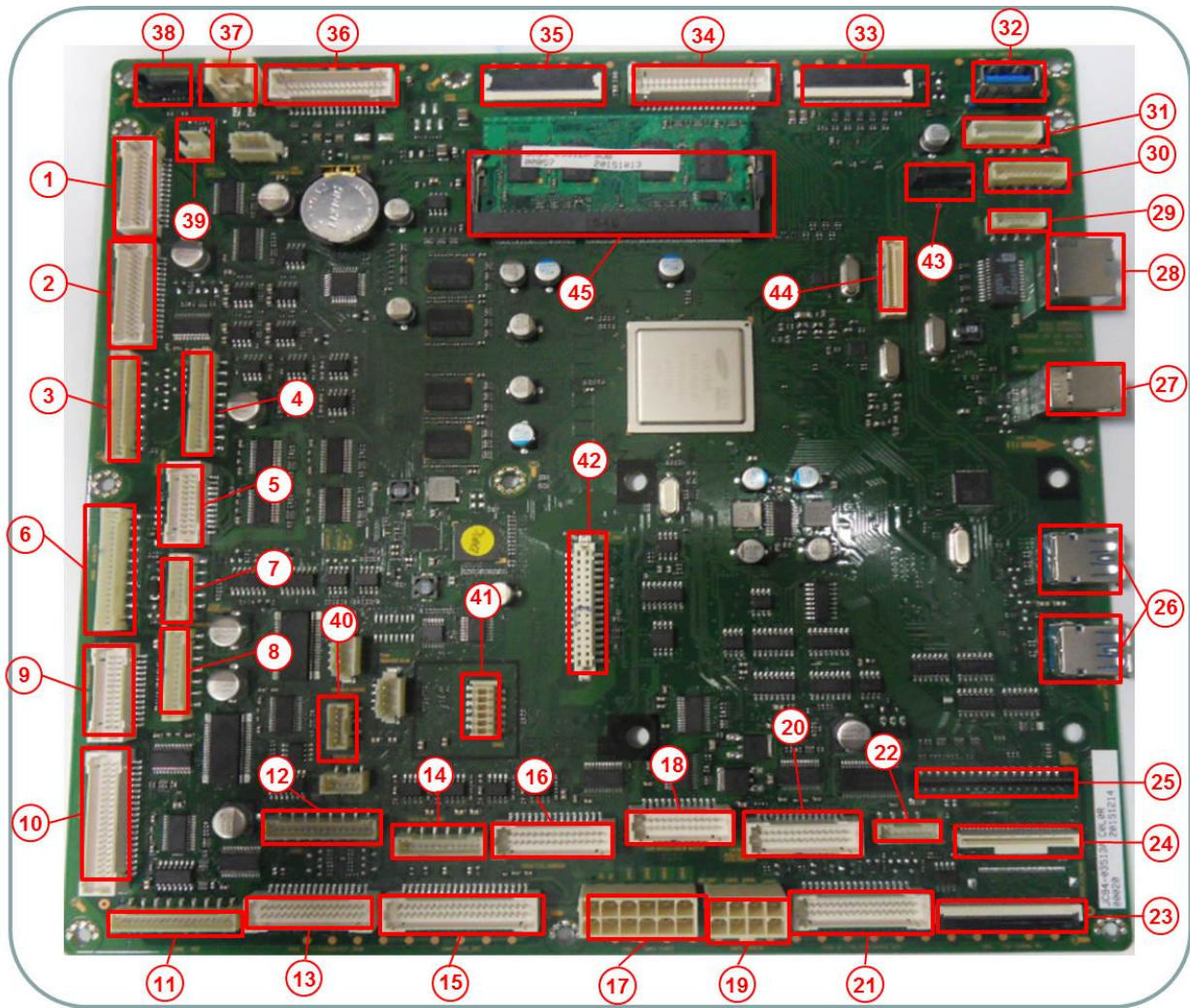
1) Main Controller Block Diagram



2) Main Controller Clock Diagram



3) Main Controller Connection Information



• **Connection**

1	EXIT
2	FUSER DRIVE
3	FUSER DRAWER
4	TB_CRUM
5	TONER SUP_RES
6	ACR_CTD COLOR
7	REGI_T1 POS SENS
8	PICKUP 1/2
9	FEED_REGI MOT
10	SIDE
11	DCF IF
12	FINISHER
13	OPC CRUM_T1
14	OPC HOME SENS
15	OPC BLDC COLOR
16	TC SENS_RES FULL

17	SMPS TYPE5
18	HVPS POWER_LSU SKEW
19	SMPS TYPE4
20	FRONT IF COLOR
21	FDB IF
22	LSU PD
23	LSU 1 COLOR
24	LSU 2 COLOR
25	HVPS COLOR
26	USB HOST 1/2
27	USB DEVICE
28	NETWORK
29	EFI POWER
30	FDI JOINT
31	HUB IF

32	USB HOST_HUB
33	UI IF
34	DCIS
35	CCDM
36	DSDF
37	HDD POWER
38	HDD SIGNAL
39	CPU FAN
40	SIDE FAN
41	MSOK
42	FAX JOINT
43	EFI SIGNAL
44	2ND NETWORK
45	DDR3 DIMM

• **Information**

2. Product Specifications and Description

- Part Code:
 - JC92-02922A for LX model (X7600LX, X7500LX, X7400LX)
 - JC92-02922B for GX model (X7600GX, X7500GX, X7400GX)
- Part Name : PBA-MAIN

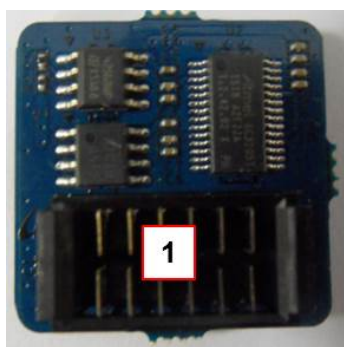
Master System Operation Key (MSOK)

MSOK PBA is used to store all system information and consists of MICOM, a EEPROM and a A-CRUM. The MICOM(400KHz), EEPROM(256Kbit) and A-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.



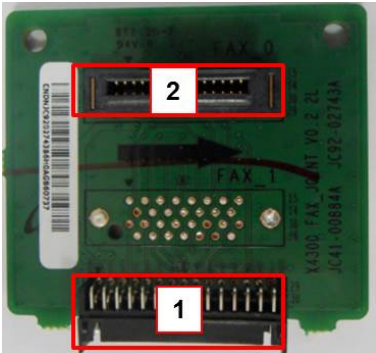
• Connection

1	Main PBA I/F connector
---	------------------------

Fax Joint PBA

The FAX JOINT PBA is used for interfacing between the main board and modem PBA.

It uses UART for interface.



- **Information**

- Part Code : JC92-02743B
- Part Name : PBA-FAX JOINT

- **Connection**

1	Main PBA I/F connector
2	Modem Card I/F connector

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
- Part 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**



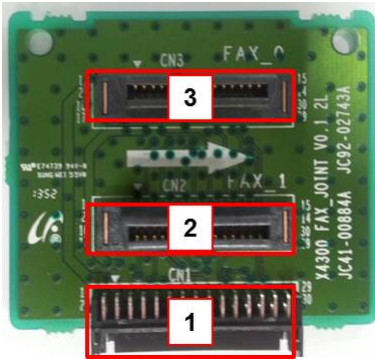
• **Information**

- Part Code : JC92-02599A
- Part Name : PBA-FAX CARD

• **Connection**

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

3) Fax Joint PBA (Only used dual fax kit)



- **Information**

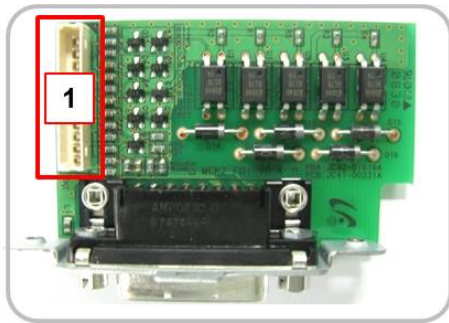
- Part Code : JC92-02743A
- Part Name : PBA-FAX JOINT

- **Connection**

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

Foreign Device Interface (FDI)

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
- Part Name : PBA SUB-FDI

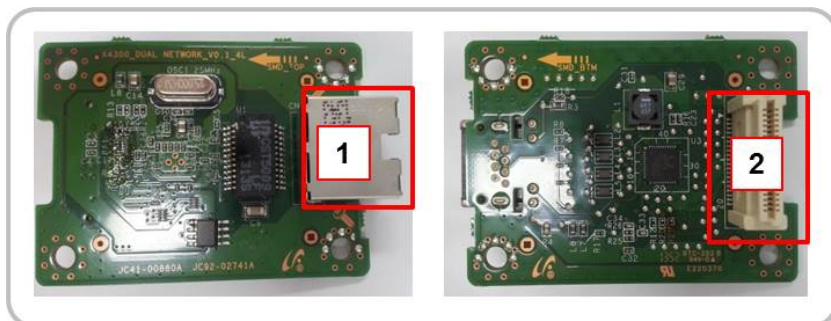
- **Connection**

1	Connector to Video Controller
---	-------------------------------

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
- Part Name : PBA-NPC

- **Connection**

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

2.12.2. HUB PBA

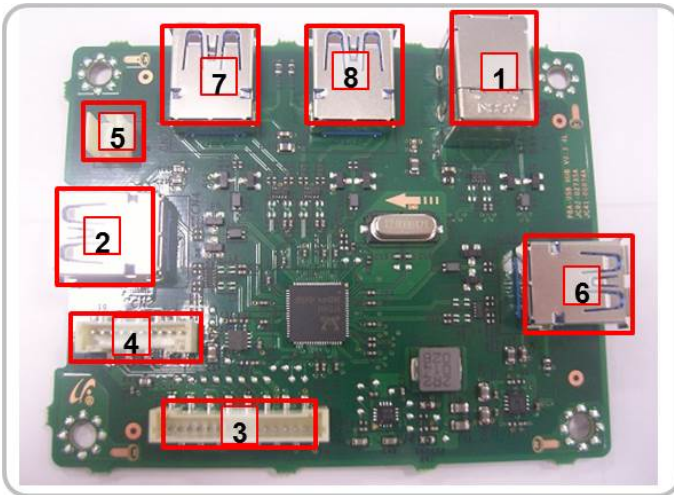
NOTE

The HUB PBA for previous model is not compatible with new model(IR UI). When replacing the HUB PBA, be careful not to be replaced with incompatible one.

USB HUB PBA for previous model

USB Hub PBA is used to interface with the main board, UI, USB Memory stick, NFC, Wireless module.

It interfaces through USB communication.



- **Information**

- Part Code : JC92-02735A
- Part Name : PBA-USB HUB

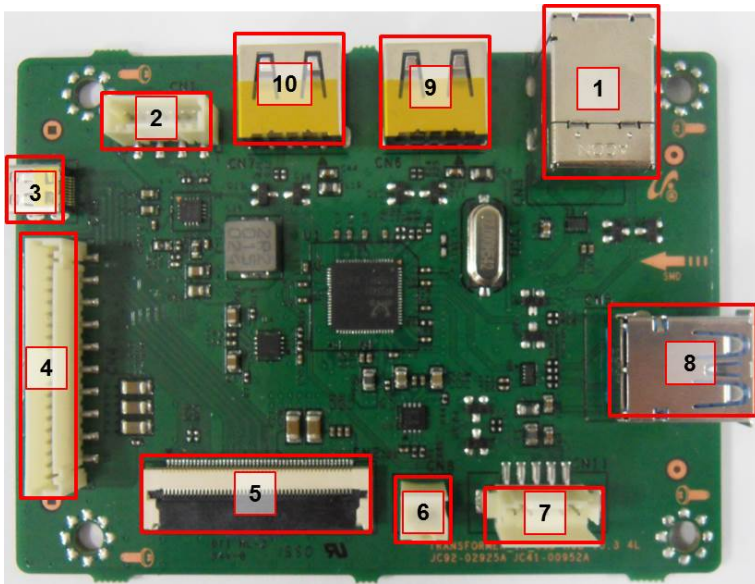
- **Connection**

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

OPE HUB PBA for new model(IR UI)

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

It interfaces through USB communication.



• **Information**

- Part Code : JC92-02925A
- Part Name : PBA-OPE HUB

• **Connection**

1	MAIN Board USB I/F
2	Reset & Speaker I/F
3	OPE LVDS I/F
4	Main Borad Power I/F
5	Main Borad LVDS I/F
6	Speaker
7	Keyborad
8	External USB Host Slot
9	WLAN / NFC
10	WLAN / NFC

2.12.3. SMPS (Switching Mode Power Supply) PBA (Type5)

NOTE

- MX X7 LX series have 2 SMPS boards. (Type5 x 1 EA , Type4 x 1 EA)
- MX X7 GX series have 3 SMPS boards. (Type5 x 1 EA , Type4 x 2 EA)

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

- AC 110V (110V ~ 127V)
- AC 220V (220V ~ 240V)
- Input Current: 8.0A (110V) / 5.0A (220V)
- Output Power: 275W
 - DC 5V : 35W / DC 24V : 240W

• Information

	110V	220V
Part Code	JC44-00093D	JC44-00100D
PBA Name	PSPN2-TYPE5-V1	PSPN2-TYPE5-V2

• Connection

1	INPUT_AC
2	OUTPUT_DC +24V1/2/3/4 (to Main PBA)
3	24V on/off
4	OUTPUT_DC +5V1/2 (to Main PBA)

• **Input / Output connector**

- AC Input connector (CN1)

PIN Assign	PIN NO	Description
1	AC_L	AC Input
2	AC_N	

- DC Output connector (CN2)

PIN Assign	PIN NO	Description
1	+5V1	Power
2	GND	5V Ground
3	+5V2	Power
4	GND	5V Ground

- DC Output Connector (CN3)

PIN Assign	PIN NO	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

- Signal Connector (CN4)

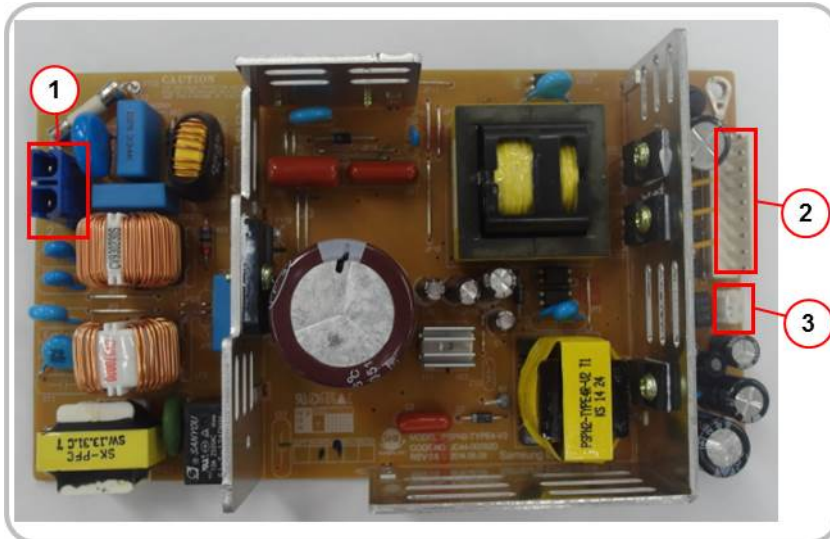
PIN Assign	PIN NO	Description
1	GND	Active Low
2	24V On_Off	
3	GND	

2.12.4. SMPS (Switching Mode Power Supply) PBA (Type4)

NOTE

- MX X7 LX series have 2 SMPS boards. (Type5 x 1 EA , Type4 x 1 EA)
- MX X7 GX series have 3 SMPS boards. (Type5 x 1 EA , Type4 x 2 EA)

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

- AC 110V (110V ~ 127V)
- AC 220V (220V ~ 240V)
- Input Current : 6.3A (110V) / 5A (220V)
- Output Power: 205W
 - DC 5V : 25W / DC 24V : 180W

Information

	110V	220V
Part Code	JC44-00091D	JC44-00092D
PBA Name	PSPN2 -TYPE4-V1	PSPN2-TYPE4-V2

Connection

1	INPUT_AC
2	OUTPUT_DC +24V1/2/3 and DC +5V 1/2 (to Main PBA)
3	24V on/off

• **Input / Output connector**

- AC Input connector (CN1)

PIN Assign	PIN NO	Description
1	AC_L	AC Input
2	AC_N	

- DC Output Connector (CN4)

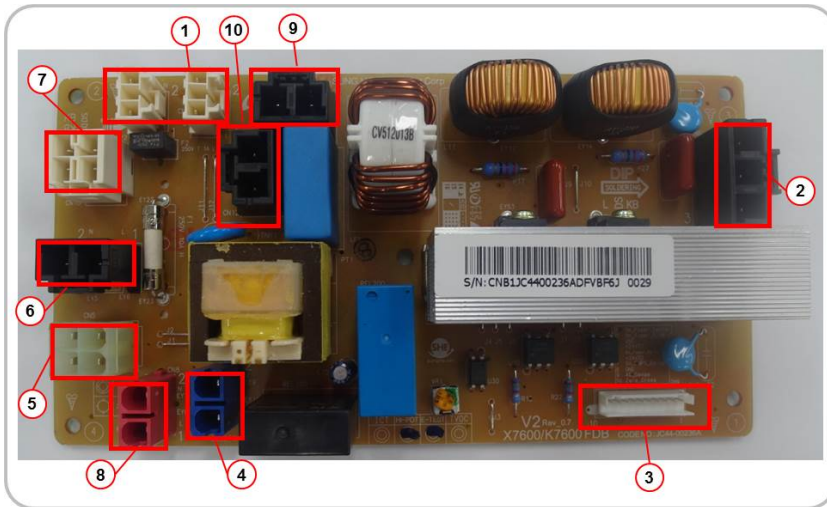
PIN Assign	PIN NO	Description
1	+5V1	Power
2	GND	5V Ground
3	+5V2	Power
4	GND	5V Ground
5	+24V1	Power
6	GND	24V Ground
7	+24V2	Power
8	GND	24V Ground
9	+24V3	Power

- Signal Connector (CN3)

PIN Assign	PIN NO	Description
1	GND	Active Low
2	24V On_Off	
3	GND	

2.12.5. Fuser Drive Board (FDB)

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



- Information**

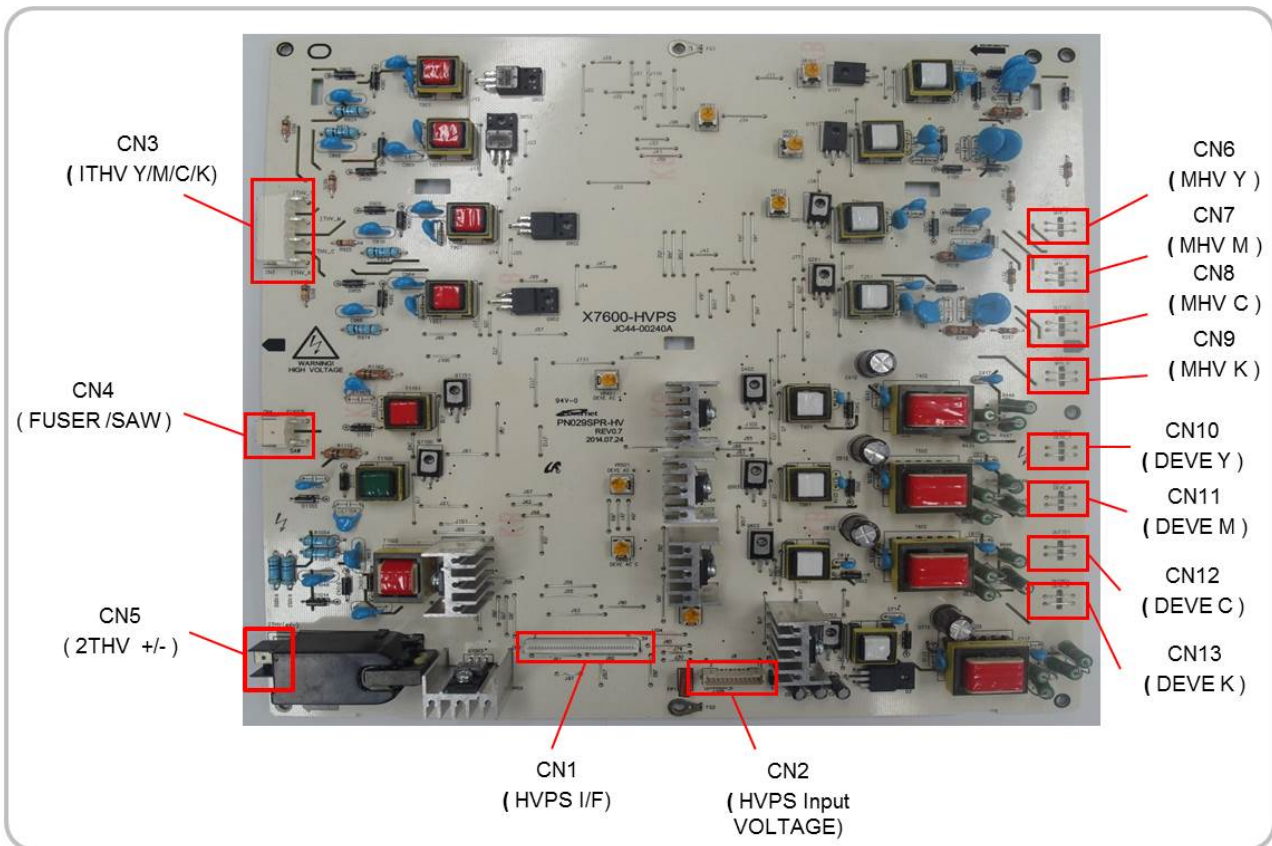
	110V	220V
Part Code	JC44-00235A	JC44-00236A
PBA Name	X7600/K7600 FDB-V1	X7600/K7600 FDB-V2

- Connection**

1	Option Heater
2	Fuser Lamp
3	FDB I/F
4	SMPS (Type 5)
5	Main Switch
6	AC Inlet
7	Option Heater Switch
8	SMPS (Type4)
9 / 10	Reactor

2.12.6. HVPS (High Voltage Power Supply) PBA

HVPS board generates 15 high-voltage channels, which include ITHV(4), MHV(4), DEV(4), FUSER, SAW, 2THV(+/-).



- **Specification**

- 1) Input Voltage : DC 24V, 3.3V
- 2) Output Voltage :
 - MHV Y/M/C/K : -1395V
 - DEVE DC Y/M/C/K : -606V
 - DEV AC Y/M/C/K : V_{pp} 920V
 - THV1 Y/M/C/K : 45.5uA
 - THV2+(CV) : 2020V
 - THV2+(CC) : 25.5uA
 - THV2 - : -1310V
 - FUSER : 998V
 - SAW : -998V

- **Information**

- Part Code : JC44-00240A
- Part Name : HVPS

- **Connection**

CN1		
PIN Assign	PIN Name	Description
1	DETECT	
2	PWM_ITHV_C	PWM signal
3	PWM_ITHV_K	PWM signal
4	PWM_ITHV_M	PWM signal
5	READ_ITHV_C	Output voltage
6	PWM_ITHV_Y	PWM signal
7	READ_ITHV_K	Output voltage
8	READ_ITHV_M	Output voltage
9	PWM_FUSEBIAS	PWM signal
10	READ_ITHV_Y	Output voltage
11	PWM_SAW	PWM signal
12	READ_MHV_Y	Output voltage
13	PWM_THV2_MINUS	PWM signal
14	READ_MHV_M	Output voltage
15	PWM_THV2_P_CV	PWM signal
16	READ_MHV_C	Output voltage
17	READ_THV2	Output voltage
18	PWM_MHV_Y	PWM signal
19	PWM_DEVE_DC_K	PWM signal
20	PWM_MHV_M	PWM signal
21	PWM_DEVE_AC_VPP_K	PWM signal
22	PWM_MHV_C	PWM signal
23	PWM_DEVE_DC_C	PWM signal
24	PWM_MHV_K	PWM signal
25	PWM_DEVE_AC_VPP_C	PWM signal
26	PWM_THV2_P_CC	PWM signal
27	PWM_DEVE_DC_M	PWM signal
28	THV2_CV_SELECT	Input signal
29	PWM_DEVE_AC_VPP_M	PWM signal
30	N.C	
31	PWM_DEVE_DC_Y	PWM signal
32	READ_MHV_K	Output voltage
33	PWM_DEVE_AC_VPP_Y	PWM signal
34	PWM_DEVE_AC_VFREQ	PWM signal
35	DETECT	

CN2		
PIN Assign	PIN Name	Description
1	24V	Input Voltage
2	24V	Input Voltage

CN2		
PIN Assign	PIN Name	Description
3	24V	Input Voltage
4	3.3V	Input Voltage
5	GND	GND
6	GND	GND
7	GND	GND
8	READ_HVPS_24	Output voltage
9	nEN_DEVE_AC_Y	nEN signal
10	nEN_DEVE_AC_M	nEN signal
11	nEN_DEVE_AC_C	nEN signal
12	nEN_DEVE_AC_K	nEN signal

Assign	PIN Name	Description
CN3	ITHV Y/M/C/K	Output Voltage
CN5	2THV +/-	Output Voltage
CN6	MHV Y	Output Voltage
CN7	MHV M	Output Voltage
CN8	MHV C	Output Voltage
CN9	MHV K	Output Voltage
CN10	DEVE Y	Output Voltage
CN11	DEVE M	Output Voltage
CN12	DEVE C	Output Voltage
CN13	DEVE K	Output Voltage

CN4		
PIN Assign	PIN Name	Description
1	FUSER_BIAS	Output Voltage
3	SAW_PLATE	Output Voltage

2.12.7. Eraser PBA

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

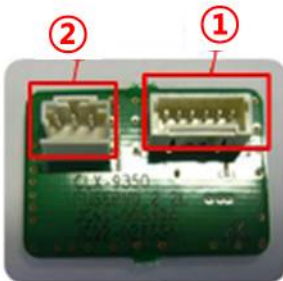


- **Information**

- Part Code : JC92-02244A
- Part Name : PBA-ERASER

2.12.8. Fuser PBA

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



- **Connection**

1	Fuser EEPROM, Pressure Sensor I/F
2	Pressure Sensor (Not used)

- **Information**

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

2.12.9. Waste Sensor PBA

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

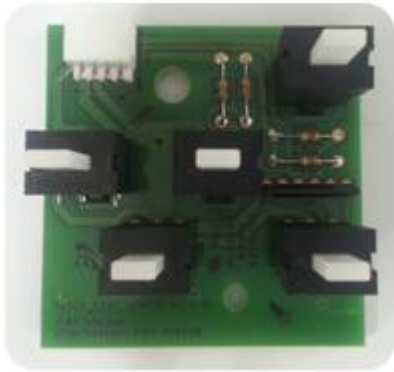


- **Information**

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

2.12.10. 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



2.12.11. OPE Unit

NOTE

The OPE Unit for previous model is not compatible with new model(IR UI). When replacing the OPE Unit, be careful not to be replaced with incompatible one.

NOTE

OPE Power button location between old model and new model

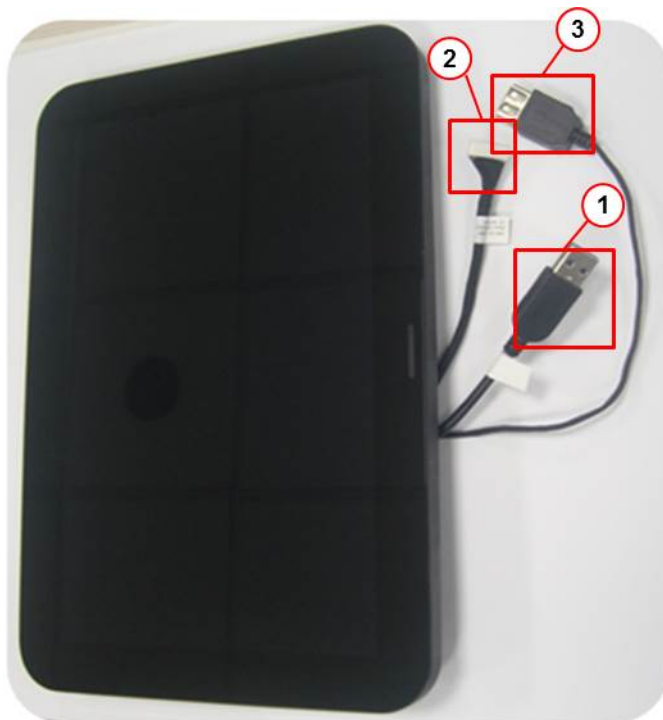
Old OPE Unit	New OPE Unit
	
Production models before April 1st, 2016	Production models after April 1st, 2016

OPE Unit for previous model

The OPE Unit consists of a Quad core, Cortex-A7 SOC(A31s -1.2GHz), 2GB DDR3 SDRAM, 4GB eMMCmemory, 10.1 inch WSVGA(1024X600) touch LCD .

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

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



• **Information**

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

• **Connection**

1	USB host in OPE Hub PBA
2	Input POWER Connector in OPE Hub PBA
3	USB host for external USB-keyboard option

OPE Unit for new model(IR UI)

The OPE Unit is IR TSP type, consist of infrared ray LED, light guide, 9.7 inch WSVGA(960x600) touch LCD.

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

The IR type has a speaker, which supports independent sound.



• **Information**

- Part Code : JC97-04775A
- Part Name : OPE

• **Connection**

1	Micro HDMI Interface
2	Power Interface

Caution for service

1) Firmware Rom

There are 3 firmware rom for old/new UI models.

	File Name (Based on V6.D6.27)	Remark
Universal Rom	Samsung K7600 Series_V6.D6.27_ALL.hds	<ul style="list-style-type: none"> This rom can support old/new models. File size is big.
IR UI Rom	Samsung K7600 Series_V6.D6.27_IR.hds	<ul style="list-style-type: none"> This rom is only for new model(IR UI).
Old UI Rom	Samsung K7600 Series_V6.D6.27.hds	<ul style="list-style-type: none"> This rom is only for old model.

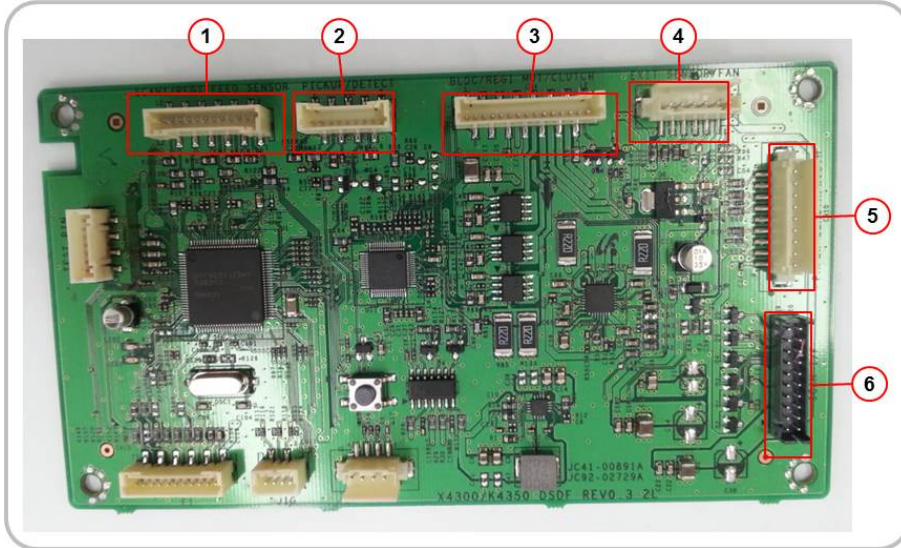
2) HDD replacement

- When replacing the HDD, the recovery by recovery rom is required.
- Recovery rom can support old/new models.
For example, the files below can be used for recovery of old/new models.
 - HDD format image: X7x00_series_V11.01.06.25_FS_V15.02.00.00.15.ehd
 - HDD format Onerom Version file : onerom_version.txt
- But, HDD can not be swapped between old and new model.
 - Old model HDD can't be installed to the new model.
 - New model HDD can't be installed to the old model.

2.12.12. DSDF PBA

The DSDF PBA uses the R5F562TAEDFP(100MHzMain Clock) for controlling the DSDF unit and interfaces with the main board through UART.

It has three Motor Driver ICs to control the BLDC/Step motor and controls 1 BLDC motor, 2 step motors, 1 clutch, 1, Fan , and 11 sensors.



• **Information**

- Part Code : JC92-02729A
- Part Name : PBA-DSDF

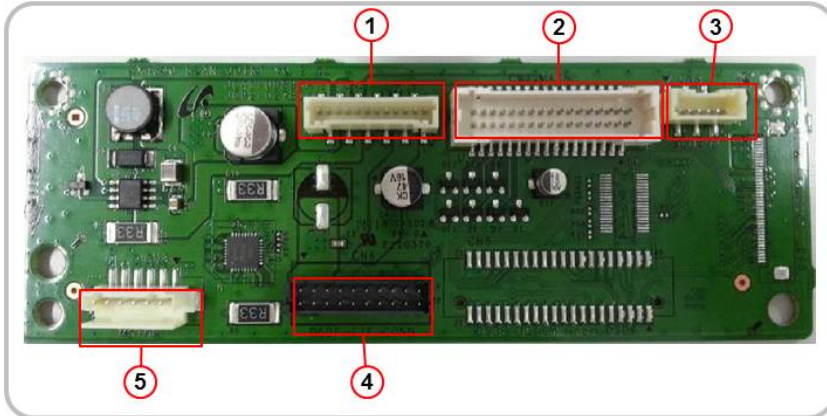
• **Connection**

1	Scan Position1/2, Regi, Feed Sensor
2	Pickup, Paper Detect, Cover Open Sensor
3	BLDC Motor, Regi Motor, Pickup Clutch
4	Exit Sensor, Fan
5	Paper Length1/2, Width Sensor
6	Scan Joint PBA

2.12.13. Scan Joint PBA

The Scan Joint PBA has a Bipolar Step Motor driving IC and interfaces with the WLED, APS sensor1,2, Cover open sensor1,2, Home position sensor and main board.

It also functions as the relay board to interface with the ADF I/F, Power board.



- **Information**

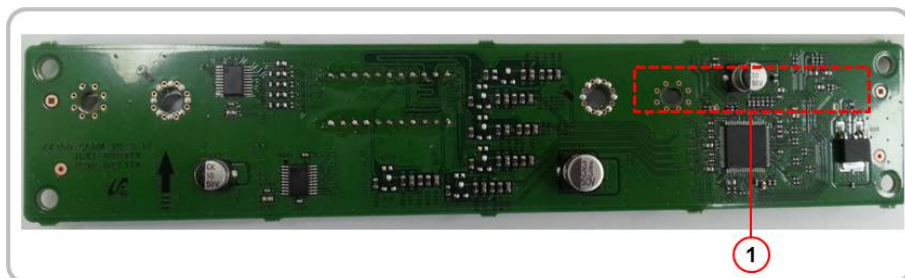
- Part Code : JC92-02781A
- Part Name : PBA-SCAN JOINT

- **Connection**

1	WLED IF PBA
2	MAIN PBA
3	Cover Open2, Home Sensor
4	RADF/DSDF PBA
5	Platen Motor

2.12.14. CCDM PBA

This is the CCD board used in the Scanner unit. The function of this board is to convert the reflected light from an original document to electrical signals. It includes the CCD, ADC, Logic IC, etc. The CCD converts the reflected light from an original document to three-color analog signals; red, green, blue. ADC converts each analog signal to digital. And for high speed data transmission, the digital data signal is converted to LVDS format with serialization.



- **Information**

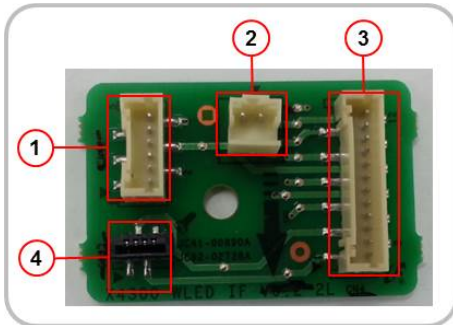
- Part Code : JC92-00894A
- Part Name : PBA-CCDM

- **Connection**

1	MAIN PBA
---	----------

2.12.15. WLED IF PBA

WLED IF PBA interfaces with the WLED and sensors inside the platen unit.



- **Information**

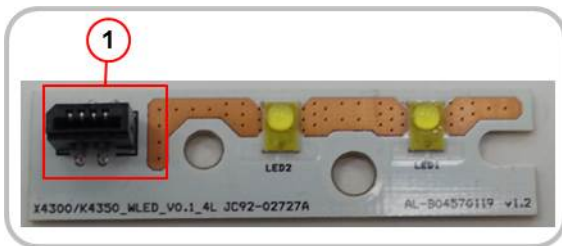
- Part Code : JC92-02728A
- Part Name : PBA-WLED IF

- **Connection**

1	APS1, APS2 Sensor
2	Cover Open1 Sensor
3	SCAN JOINT PBA
4	WLED PBA

2.12.16. WLED PBA

WLED PBA consists of two WLED used as scanner light.



- **Information**

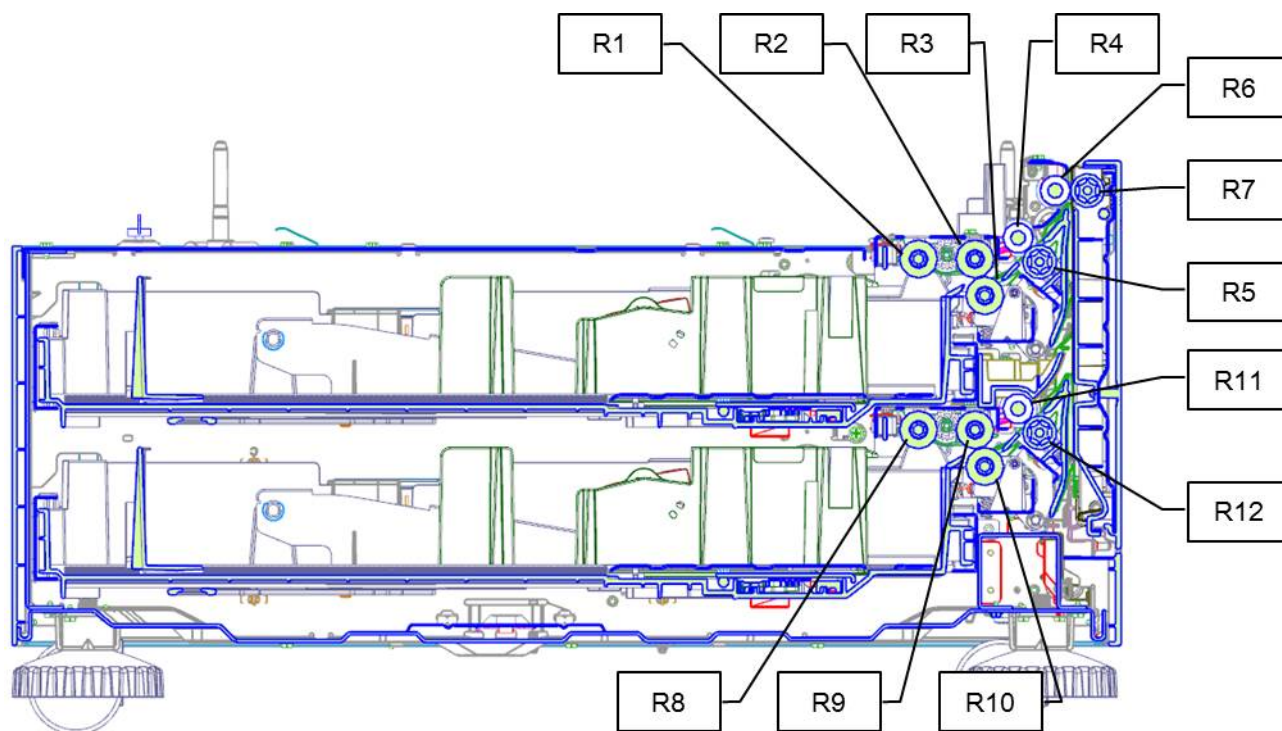
- Part Code : JC92-02727A
- Part Name : PBA-WLED

- **Connection**

1	WLED IF PBA
---	-------------

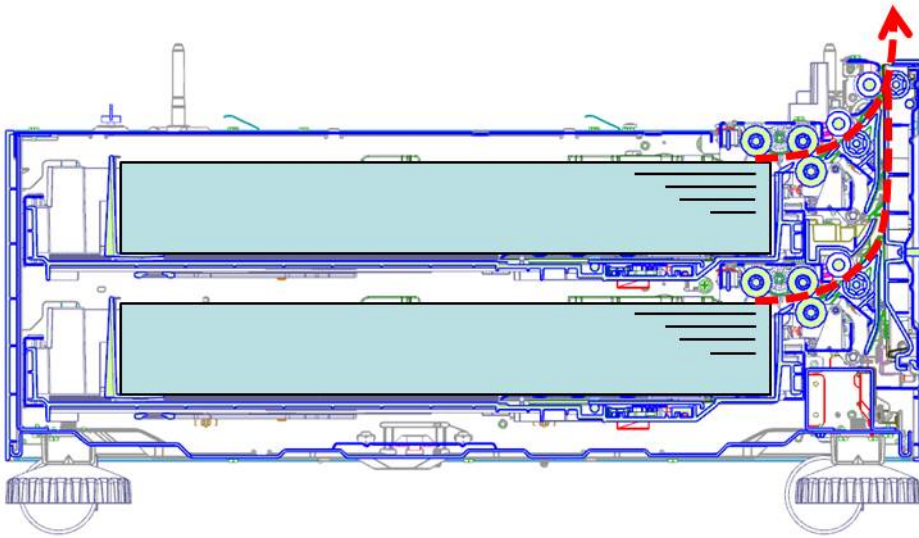
2.13. Double Cassette Feeder(DCF) Unit

1) Paper Feeding System (Rollers and Functions)

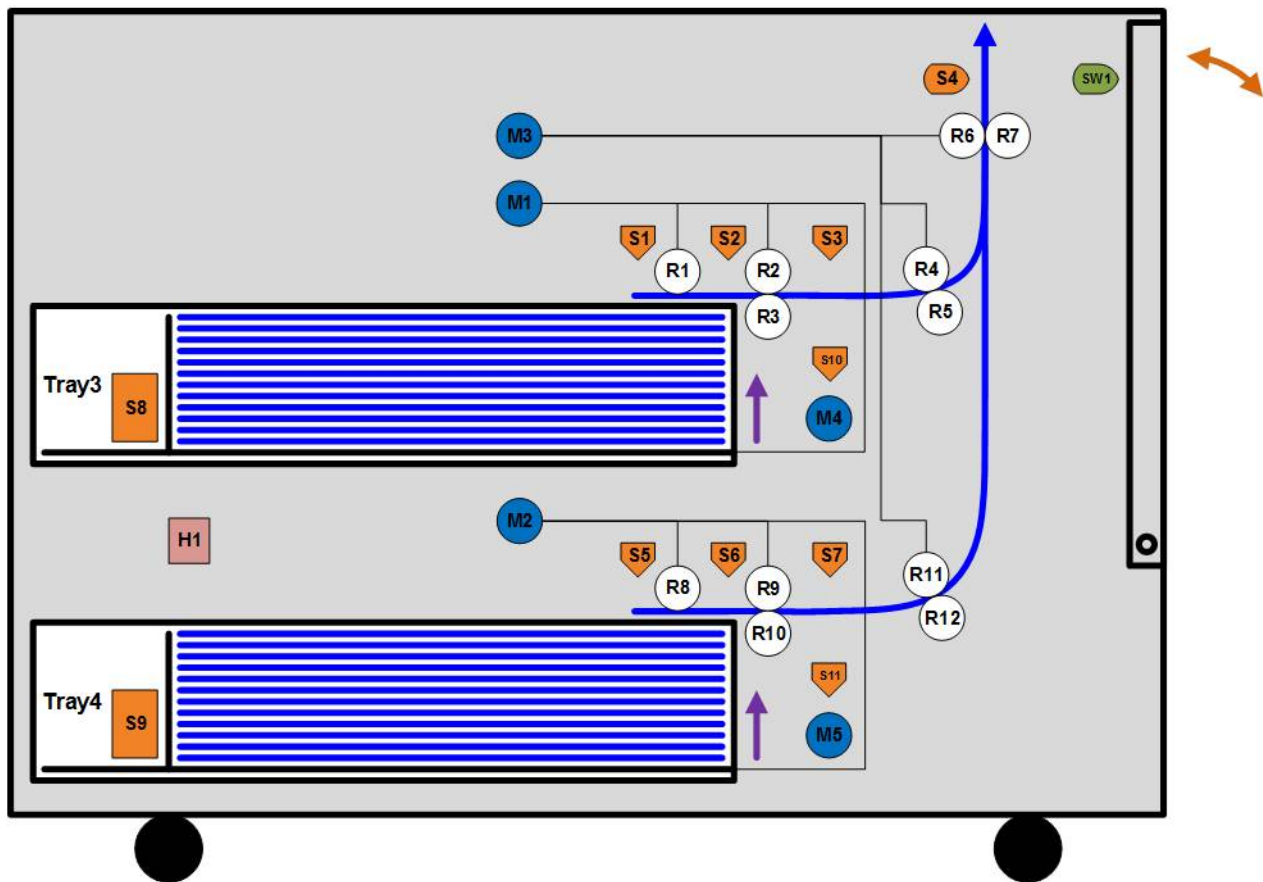


Tray No.	Roller No.	Roller Name	Function
3	R1	Pick-up roller	Transports paper from paper stack.
3	R2	Forward roller	Transports one sheet of paper to Pre feed roller.
3	R3	Reverse(Separation) roller	Assure paper transportation one by one.
3	R4	Pre feed roller	Transports paper to Feed roller.
3	R5	Idle roller	Makes paper transportation smooth.
3/4	R6	Feed roller	Transports one sheet of paper to the basic machine.
3/4	R7	Idle roller	Makes paper transportation smooth.
4	R8	Pick-up roller	Transports paper from paper stack.
4	R9	Forward roller	Transports one sheet of paper to Pre feed roller.
4	R10	Reverse(Separation) roller	Assure paper transportation one by one.
4	R11	Prefeed roller	Transports paper to Feed roller.
4	R12	Idle roller	Makes paper transportation smooth.

2) Paper Path

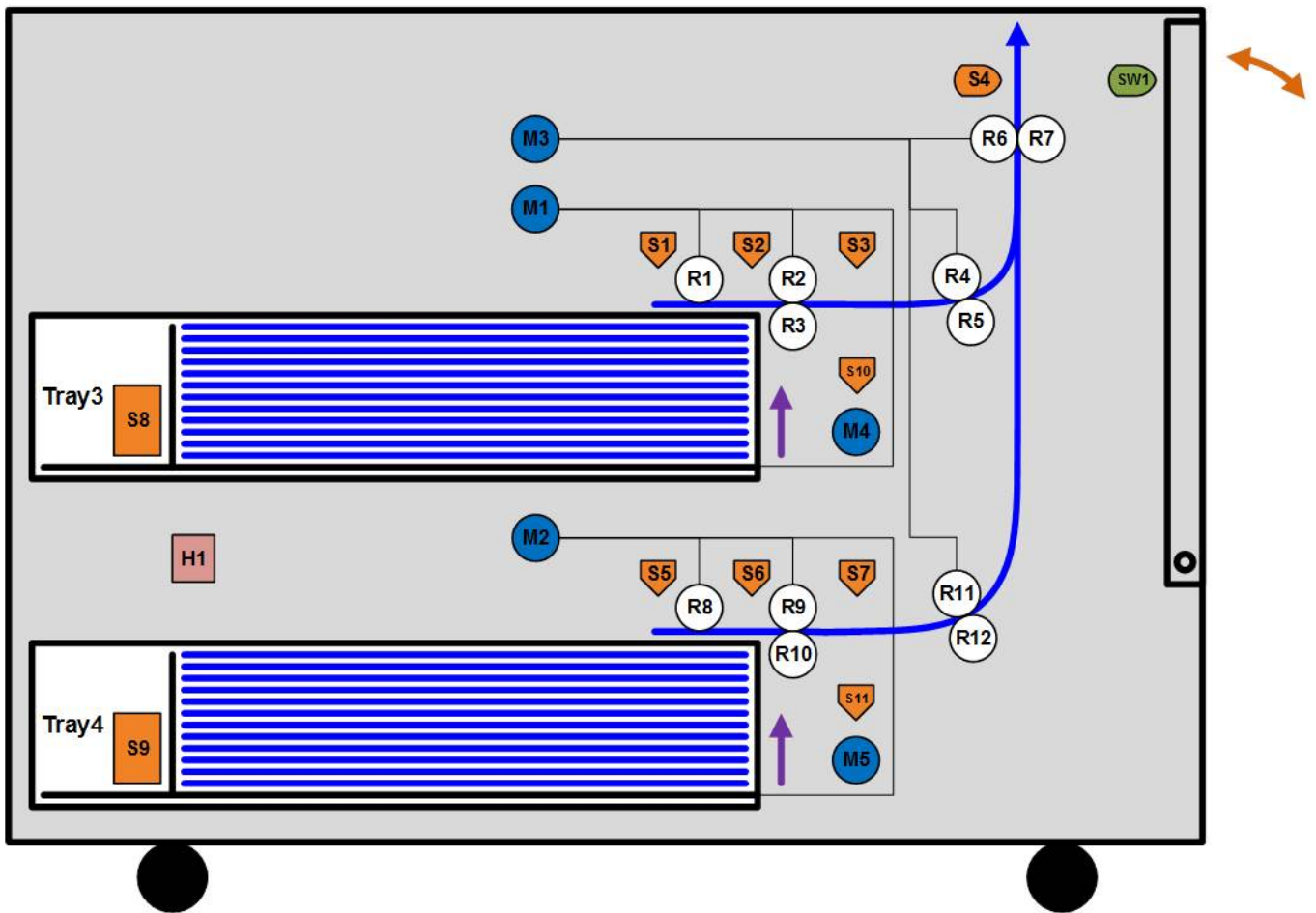


3) Electrical Parts Location / Parts Code / Connection Information



Tray No	Ref.	Description	Parts number	DC controller PCB
3	S1	Pickup No-paper Sensor	0604-001393	CN502-1 to 3
3	S2	Pickup Level Sensor	0604-001393	CN502-4 to 6
3	S3	Pre feed Sensor	0604-001490	CN502-7 to 9
3/4	S4	Path Sensor	0604-001393	CN502-10 to 12
4	S5	Pickup No-paper Sensor	0604-001393	CN501-1 to 3
4	S6	Pickup Level Sensor	0604-001393	CN501-4 to 6
4	S7	Prefeed Sensor	0604-001490	CN501-7 to 9
3	S8	Paper size sensor	JC32-00013A	CN802-2 to 4
4	S9	Paper size sensor	JC32-00013A	CN802-6 to 8
3	S10	Tray3 lock home sensor	0604-001393	CN701-3 to 5
4	S11	Tray4 lock home sensor	0604-001393	CN701-6 to 8
3/4	SW1	Side Door Open Switch	JC39-02268A	CN601-9 to 10
3	M1	Tray3 Pickup Motor	JC31-00009C	CN601-1 to 4
4	M2	Tray4 Pickup Motor	JC31-00009C	CN801-1 to 4
3/4	M3	Tray Feed Motor	JC31-00177A	CN601-5 to 8
3	M4	Tray3 lock motor	JC31-00078A	CN902-2 to 3
4	M5	Tray4 lock motor	JC31-00078A	CN902-4 to 5

4) Sensors and Functions



Tray No	Ref.	Description	Function
3	S1	Pickup No-paper Sensor	Detects paper empty in tray3.
3	S2	Pickup Level Sensor	Detects upper limit of lifting-up of tray3.
3	S3	Pre-feed Sensor	Detects paper between R2-R3 and R4-5.
3/4	S4	Path Sensor	Detects paper passing through R6-R7.
4	S5	Pickup No-paper Sensor	Detects paper empty in tray4.
4	S6	Pickup Level Sensor	Detects upper limit of lifting-up in tray4.
4	S7	Pre-feed Sensor	Detects paper between R9-R10 and R11-12.
3	S8	Paper size sensor	Detects tray insertion and paper size in tray3.
4	S9	Paper size sensor	Detects tray insertion and paper size in tray4.
3	S10	Tray3 lock home sensor	Detects home position of Tray3 locking unit.
4	S11	Tray4 lock home sensor	Detects home position of Tray4 locking unit.
3/4	SW1	Side Door Open Switch	Detects opening of right cover.

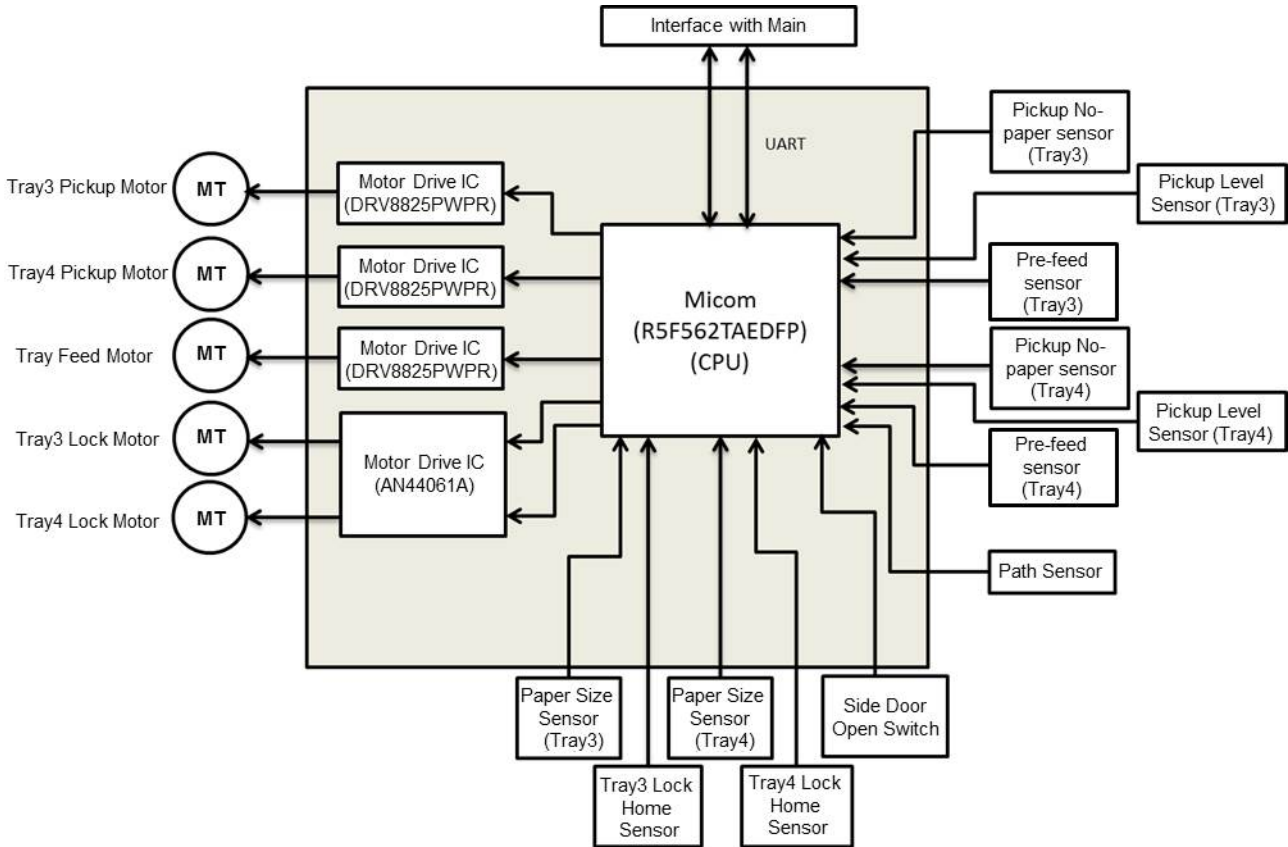
5) Block Diagram

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

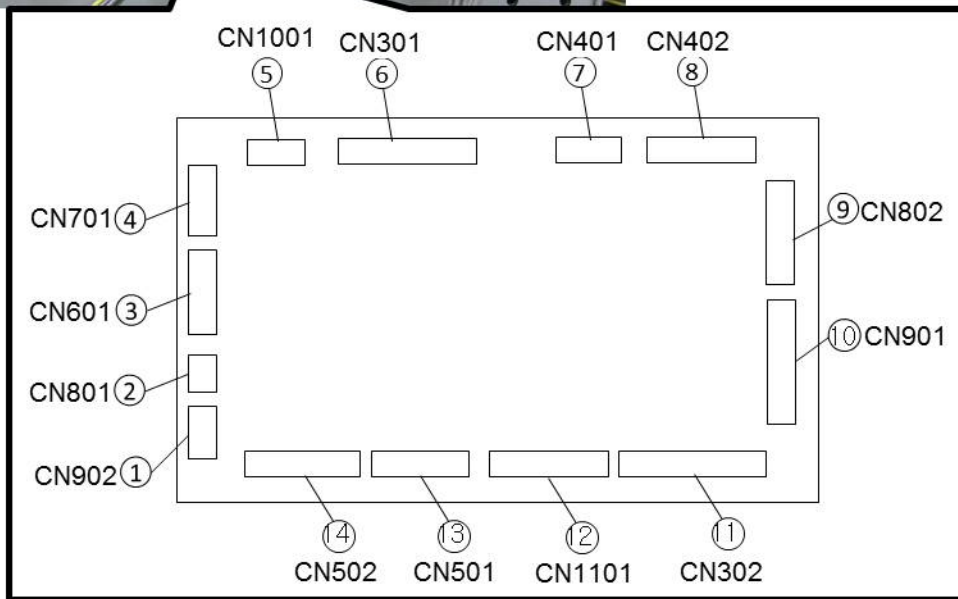
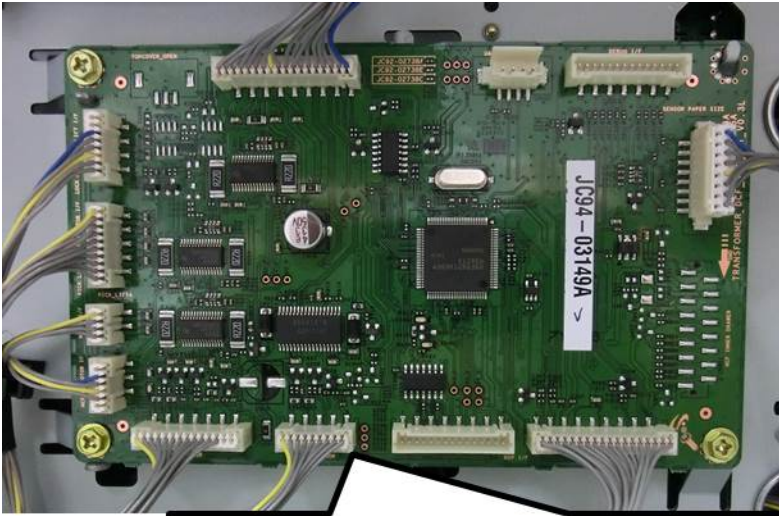
The Micom in the board receives the information from the paper size sensor, Pickup No-paper Sensor, Pickup Level Sensor, Prefeed sensor etc. and communicates with the copier main board through the UART.

When being received the print job command from the interface connector (CN301) through UART, DCF board drives the feed motor and pick up motor to pick up a paper.

This board has 2 LEDs. The lower LED is for checking 3.3V power supply and the upper LED is checking the micom operation.



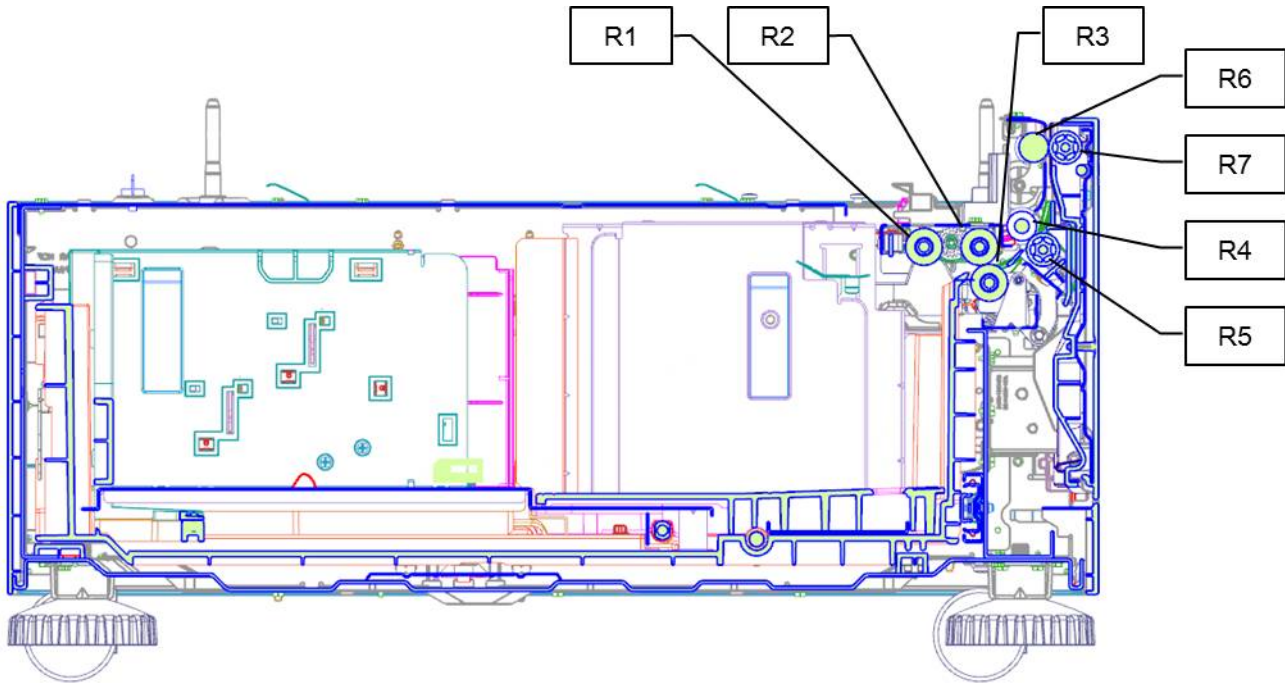
6) PBA Connection



Connector Number	Item Number	Connection
CN902	1	DC MOTOR I/F
CN801	2	PICK_LIFT4 MOTOR I/F
CN601	3	PICK_LIFT3 & FEED MOTOR I/F
CN701	4	LOCKMOT/MOT LIFT/LCT HOME I/F
CN1001	5	TOPCOVER_OPEN INTERLOCK
CN301	6	MAIN I/F
CN401	7	UART DEBUG I/F
CN402	8	E1 JTAG DEBUG I/F
CN802	9	SENSOR PAPER SIZE
CN901	10	HCF INNER DRAWER
CN302	11	SUB I/F
CN1101	12	BBP I/F
CN501	13	T4 SENSOR
CN502	14	T3 SENSOR

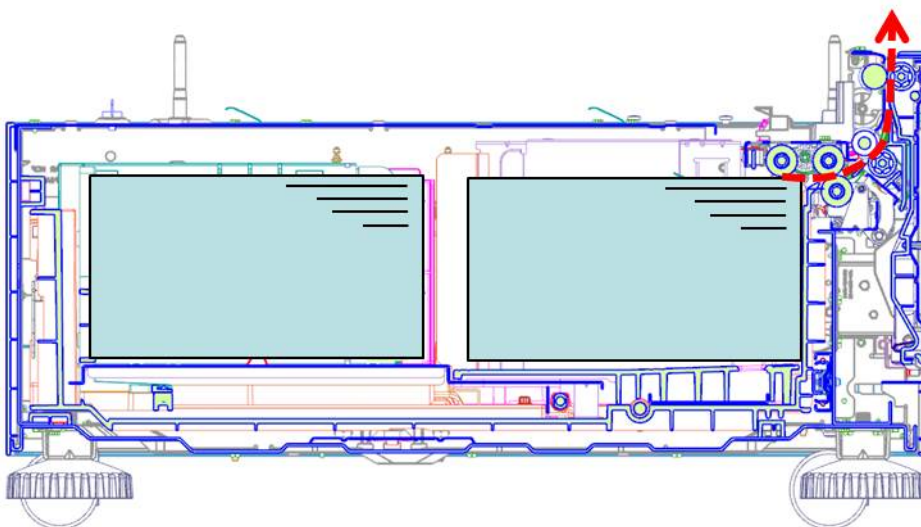
2.14. High Capacity Feeder(HCF) Unit

1) Paper Feeding System (Rollers and Functions)

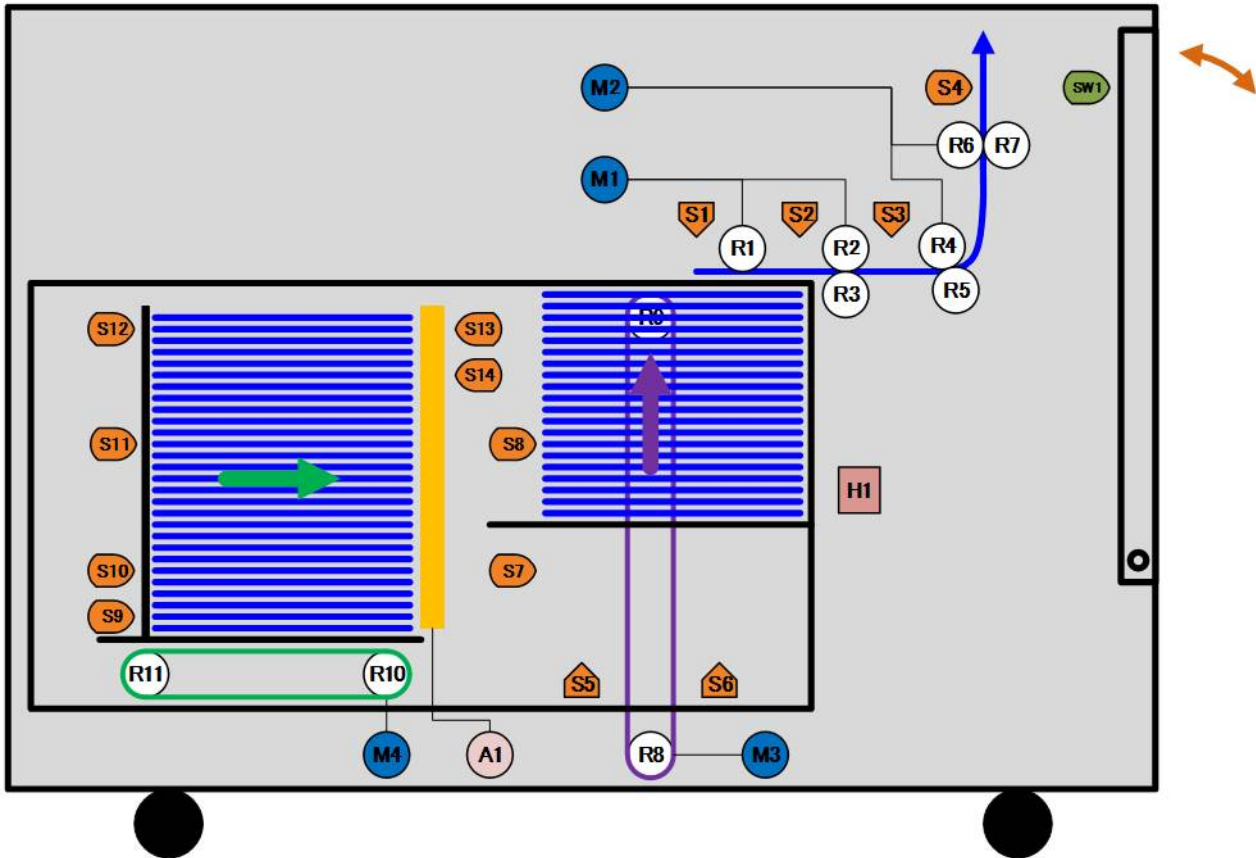


Tray No.	Roller No.	Roller Name	Function
3	R1	Pick-up roller	Transports paper from paper stack.
3	R2	Forward roller	Transports one sheet of paper to Pre feed roller.
3	R3	Reverse(Separation) roller	Assure paper transportation one by one.
3	R4	Pre feed roller	Transports paper to Feed roller.
3	R5	Idle roller	Makes paper transportation smooth.
3	R6	Feed roller	Transports one sheet of paper to the basic machine.
3	R7	Idle roller	Makes paper transportation smooth.

2) Paper Path

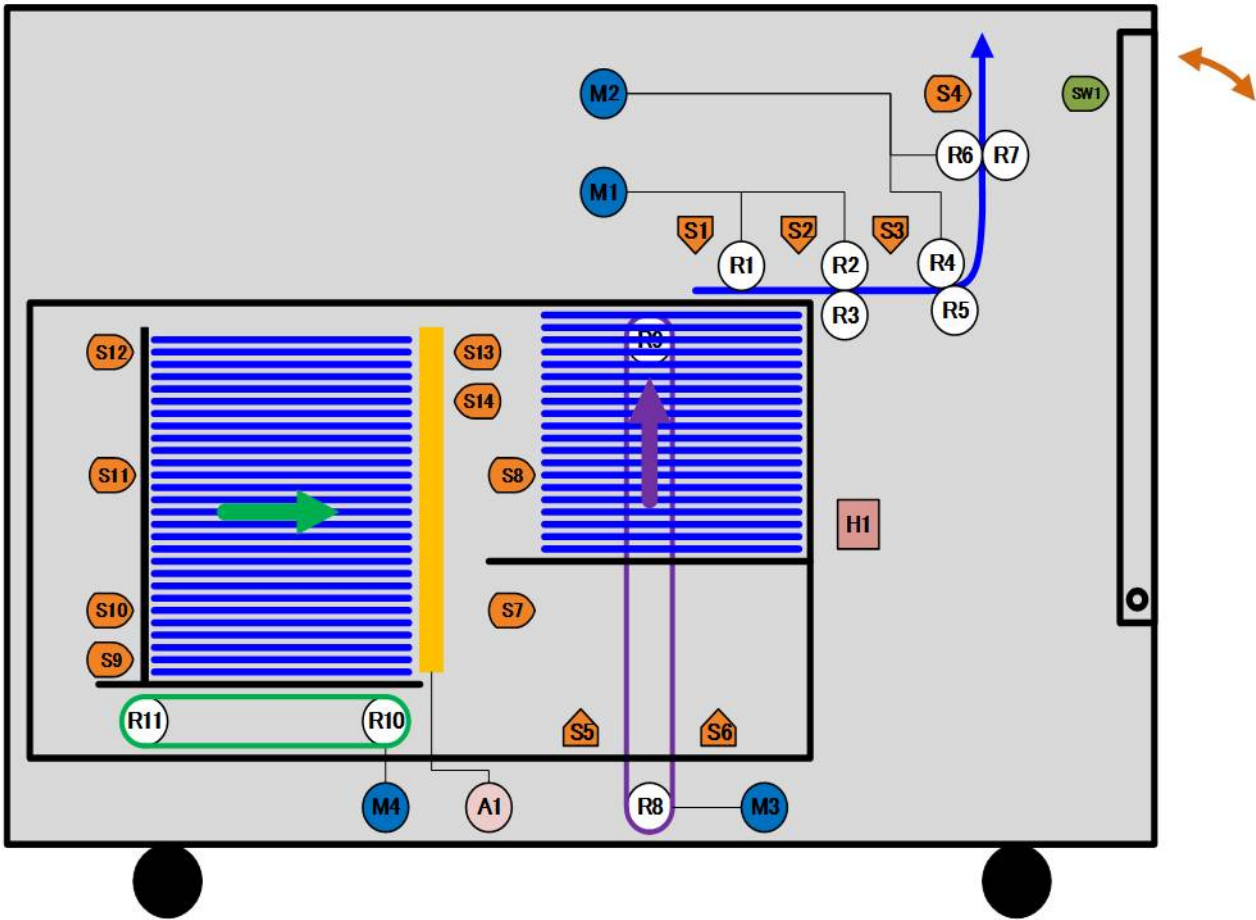


3) Electrical Parts Location / Parts Code / Connection Information



Tray No	Ref.	Description	Parts number	DC controller PCB
3	S1	Pickup No-paper Sensor	0604-001393	CN502-1 to 3
3	S2	Pickup Level Sensor	0604-001393	CN502-4 to 6
3	S3	Pre feed Sensor	0604-001490	CN502-7 to 9
3	S4	Path Sensor	0604-001393	CN502-10 to 12
3	S5	Tray Insertion Sensor	0604-001393	CN901-15 to 17
3	S6	Knockup Home Sensor	0604-001393	CN901-7
3	S7	Main Tray Level Sensor1	0604-001393	CN901-4
3	S8	Main Tray Level Sensor2	0604-001393	CN901-5
3	S9	Shift Tray No-paper Sensor	0604-001393	CN901-2
3	S10	Shift Tray Level Sensor1	0604-001393	CN901-10
3	S11	Shift Tray Level Sensor2	0604-001393	CN901-11
3	S12	Shift Plate Home Sensor	0604-001393	CN901-3
3	S13	Shift Plate End Sensor	0604-001393	CN901-6
3	S14	Solenoid Home Sensor	0604-001393	CN901-8
3	SW1	Side Door Open Switch	JC39-02279A	CN601-9 to 10
3	M1	Tray Pickup Motor	JC31-00009C	CN601-1 to 4
3	M2	Tray Feed Motor	JC31-00177A	CN601-5 to 8
3	M3	Tray Liftup Motor	JC31-00109A	CN902-1 to 2
3	M4	Paper Shift Motor	JC31-00125A	CN902-4 to 5
3	A1	Solenoid	JC33-00031B	CN901-12 to 14

4) Sensors and Functions



Tray No	Ref.	Description	DC controller PCB
3	S1	Pickup No-paper Sensor	Detects paper empty in main tray.
3	S2	Pickup Level Sensor	Detects upper limit of lifting-up of main tray.
3	S3	Pre-feed Sensor	Detects paper between R2-R3 and R4-5.
3	S4	Path Sensor	Detects paper passing through R6-R7.
3	S5	Tray Insertion Sensor	Detects tray insertion.
3	S6	Knock-up Home Sensor	Detects home position of knock-plate.
3	S7	Main Tray Level Sensor1	Detects paper residual paper quantity in main tray.
3	S8	Main Tray Level Sensor2	Detects paper residual paper quantity in main tray.
3	S9	Shift Tray No-paper Sensor	Detects paper empty in sub tray.
3	S10	Shift Tray Level Sensor1	Detects paper residual quantity in sub tray.
3	S11	Shift Tray Level Sensor2	Detects paper residual quantity in sin tray.
3	S12	Shift Plate Home Sensor	Detects home position of shift plate.
3	S13	Shift Plate End Sensor	Detects end position of shift plate
3	S14	Solenoid Home Sensor	Detects home position of solenoid
3	SW1	Side Door Open Switch	Detects opening of solenoid.

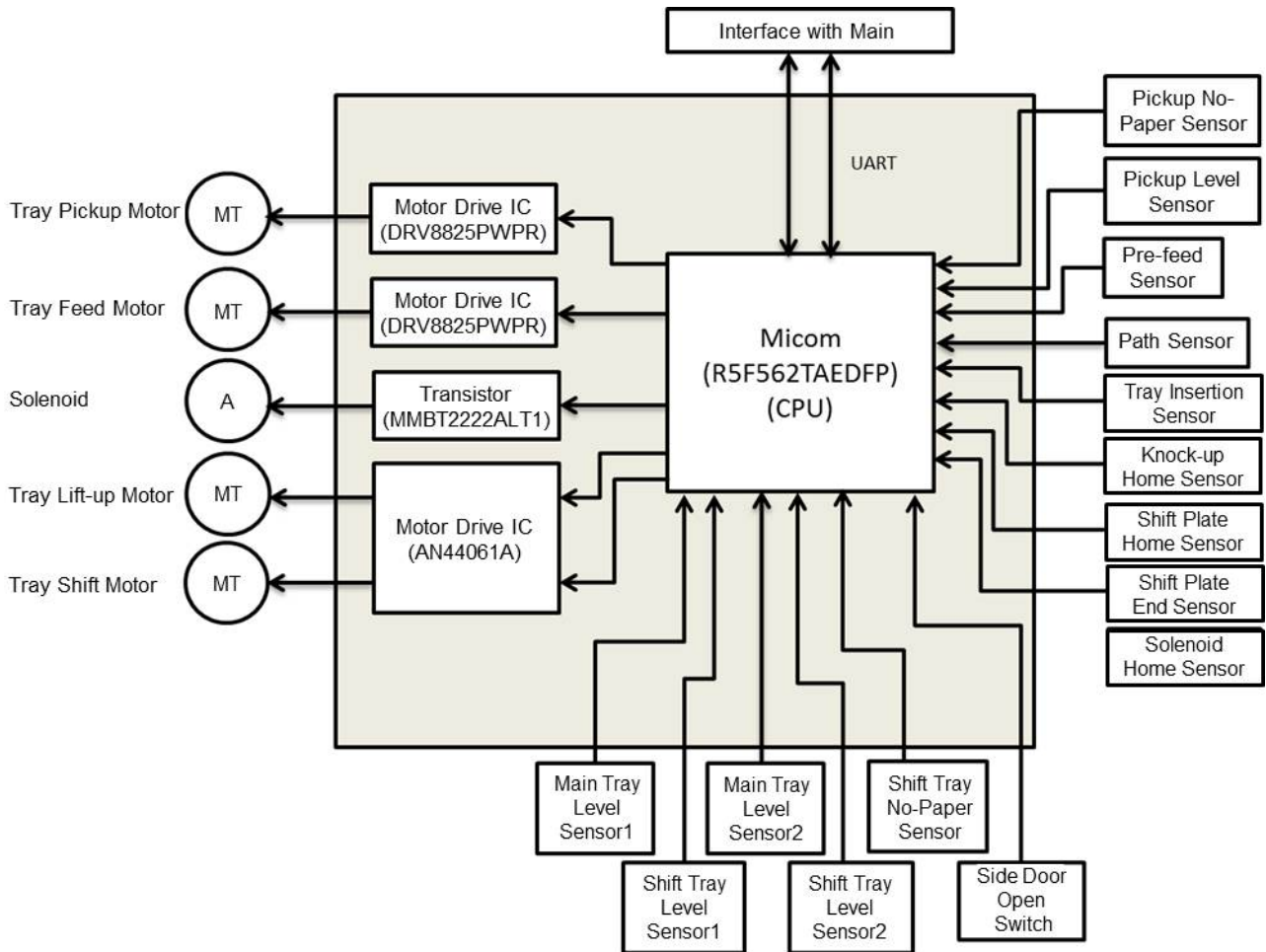
5) Block Diagram

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

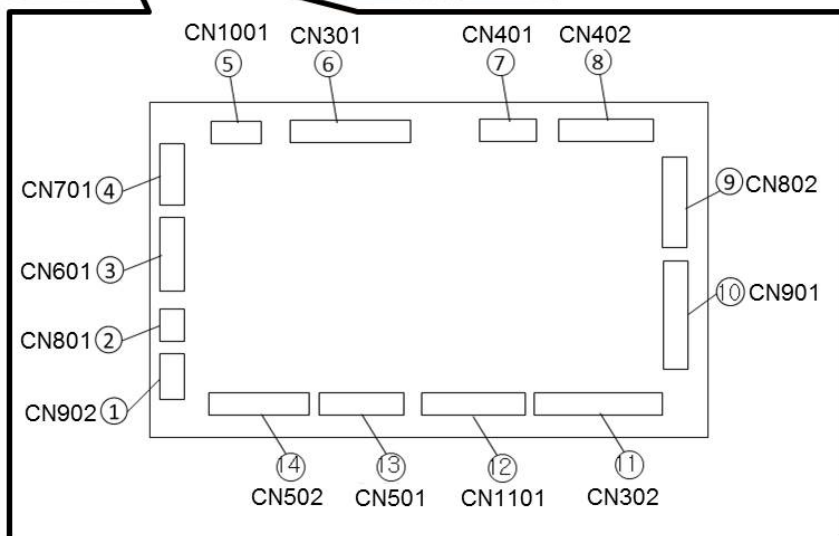
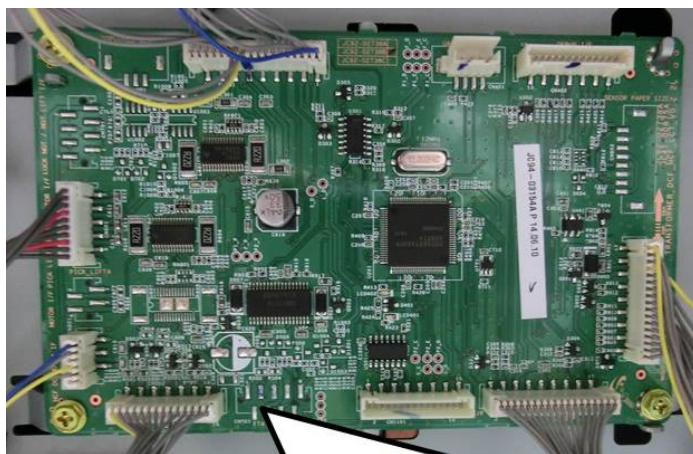
The Micom in the board receives the information from the Pickup No-paper Sensor, Pickup Level Sensor, Prefeed sensor etc. and communicates with the copier main board through the UART.

When being received the print job command from the interface connector (CN301) through UART, HCF board drives the feed motor and pick up motor to pick up a paper.

This board has 2 LEDs. The lower LED is for checking 3.3V power supply and the upper LED is checking the micom operation.



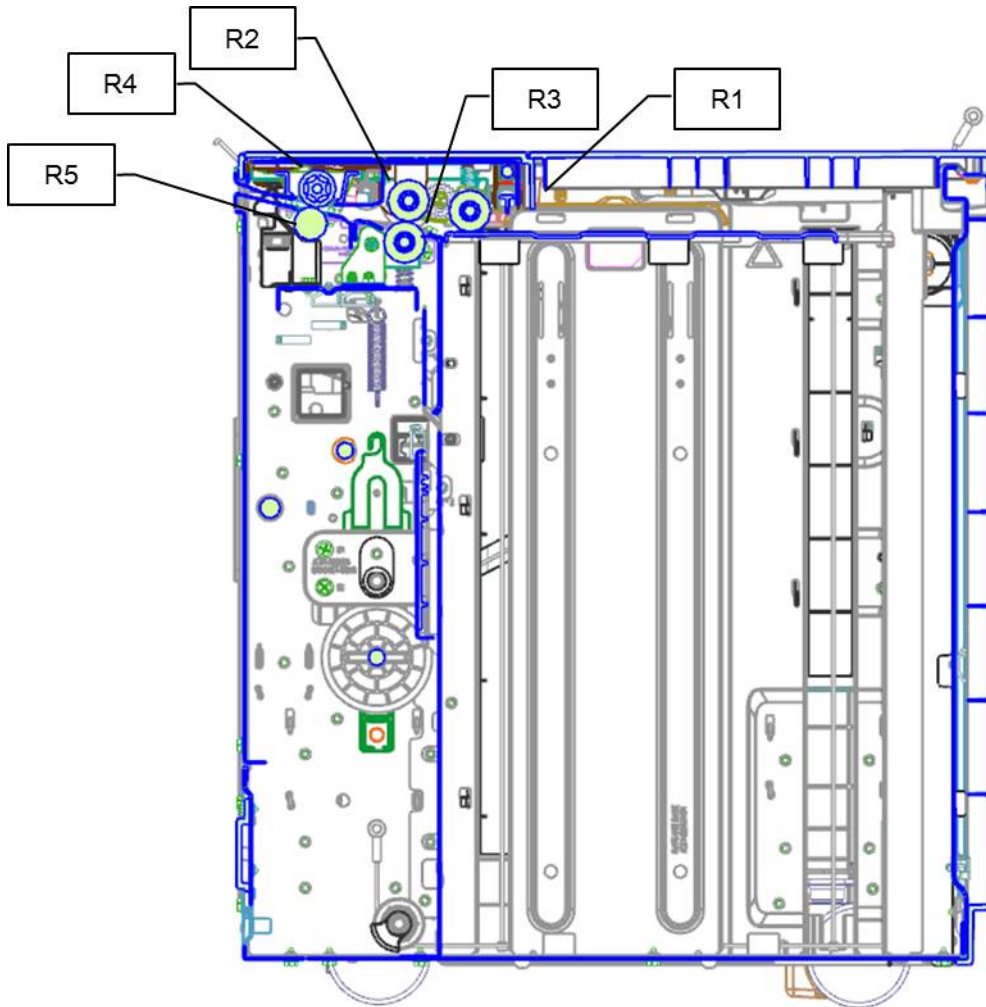
6) PBA Connection



Connector Number	Item Number	Connection
CN902	1	DC MOTOR I/F
CN801	2	PICK_LIFT4 MOTOR I/F
CN601	3	PICK_LIFT3 & FEED MOTOR I/F
CN701	4	LOCKMOT/MOT LIFT/LCT HOME I/F
CN1001	5	TOPCOVER_OPEN INTERLOCK
CN301	6	MAIN I/F
CN401	7	UART DEBUG I/F
CN402	8	E1 JTAG DEBUG I/F
CN802	9	SENSOR PAPER SIZE
CN901	10	HCF INNER DRAWER
CN302	11	SUB I/F
CN1101	12	BBP I/F
CN501	13	T4 SENSOR
CN502	14	T3 SENSOR

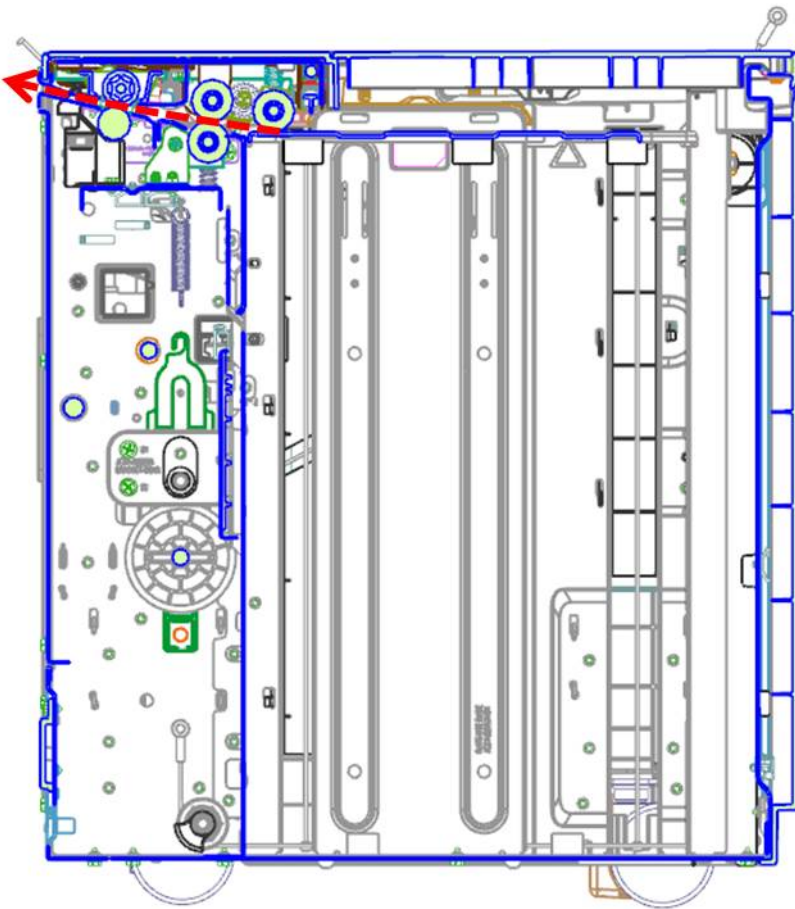
2.15. High Capacity Feeder Side Unit (Large Cassette Tray Unit)

1) Paper Feeding System (Rollers and Functions)

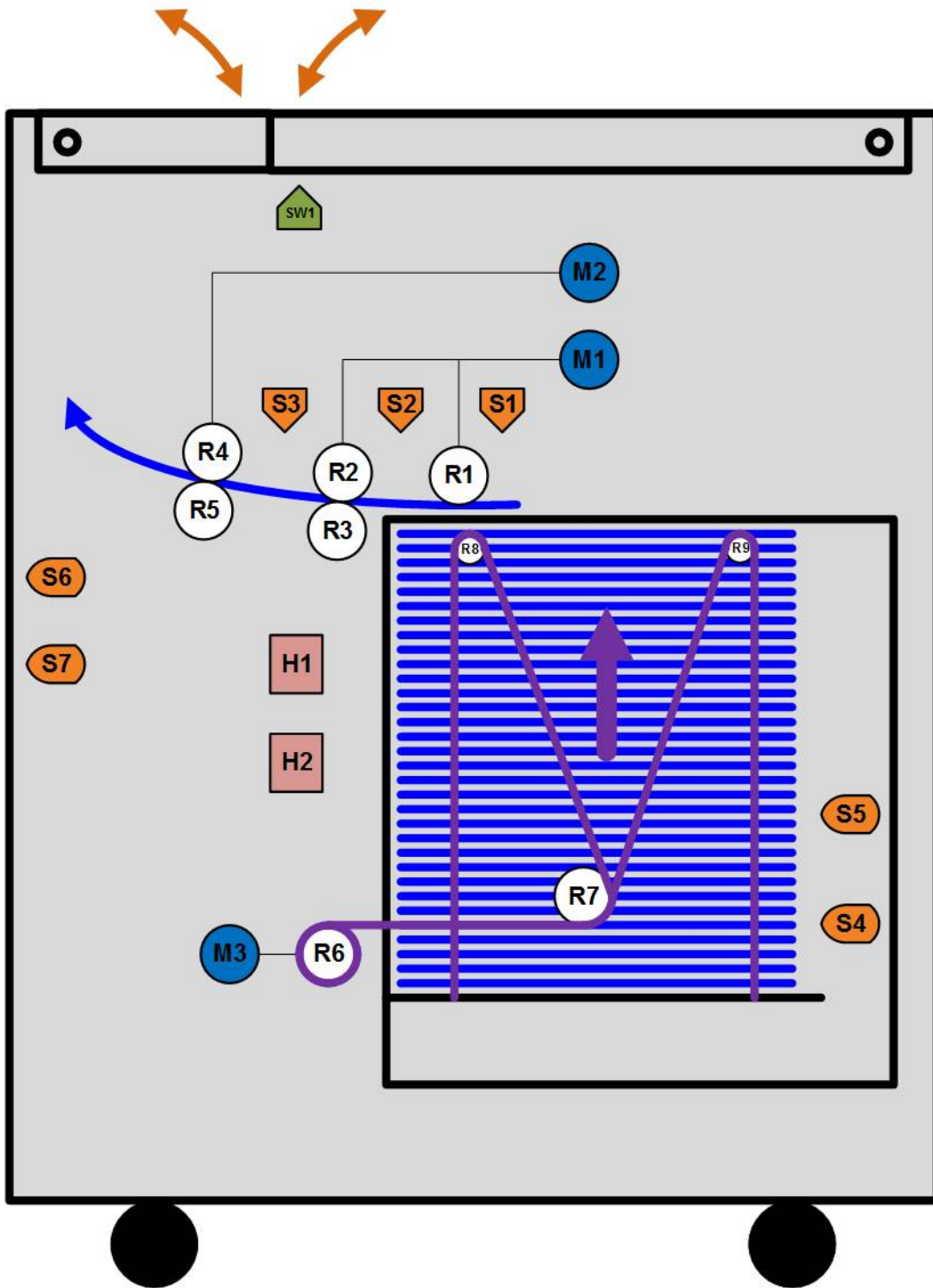


Roller No.	Roller Name	Function
R1	Pick-up roller	Transports paper from paper stack.
R2	Forward roller	Transports one sheet of paper to Pre feed roller.
R3	Reverse(Separation) roller	Assure paper transportation one by one.
R4	Idle roller	Transports paper to Feed roller.
R5	Feed roller	Makes paper transportation smooth.

2) Paper Path



3) Electrical Parts Location / Parts Code / Connection Information

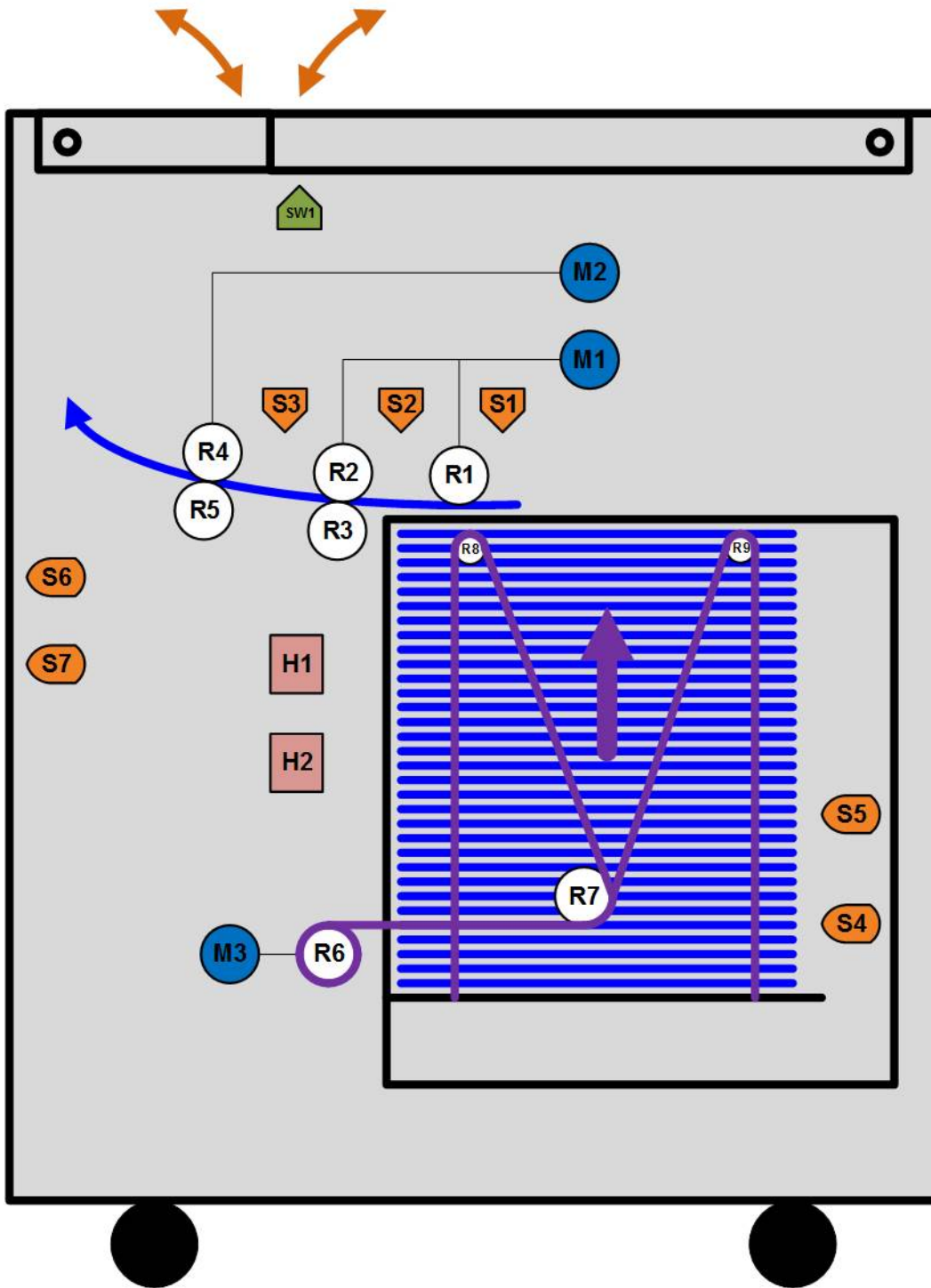


Ref.	Description	Parts number	DC controller PCB
S1	Pickup No-paper Sensor	0604-001393	CN502-1 to 3
S2	Pickup Level Sensor	0604-001393	CN502-4 to 6
S3	Pre feed Sensor	0604-001490	CN502-7 to 9
S4	Paper Level Sensor1	0604-001393	CN501-4 to 6
S5	Paper Level Sensor2	0604-001393	CN501-1 to 3
S6	Install Sensor1	0604-001393	CN701-3 to 5

2. Product Specifications and Description

Ref.	Description	Parts number	DC controller PCB
S7	Install Sensor2	0604-001393	CN701-6 to 8
SW1	Top Door Open Switch	JC39-02346A	CN1001-1 to 2
M1	Tray Pickup Motor	JC31-00009C	CN601-1 to 4
M2	Tray Feed Motor	JC31-00163A	CN601-5 to 8
M3	Tray Liftup Motor	JC31-00109A	CN701-1 to 2

4) Sensors and Functions



Ref.	Description	DC controller PCB
S1	Pickup No-paper Sensor	Detects paper empty in tray.
S2	Pickup Level Sensor	Detects upper limit of lifting-up of tray.
S3	Prefeed Sensor	Detects paper between R2-R3 and R4-5.
S4	Paper Level Sensor1	Detects paper residual paper quantity in tray.
S5	Paper Level Sensor2	Detects paper residual paper quantity in tray.
S6	Install Sensor1	Detects installation of SL-HCF501S to the basic machine.

2. Product Specifications and Description

Ref.	Description	DC controller PCB
S7	Install Sensor2	Detects installation of SL-HCF501S to the basic machine.
SW1	Top Door Open Switch	Detects opening of the top door
M1	Tray Pickup Motor	Drives pick up roller.
M2	Tray Feed Motor	Drives Feed Roller
M3	Tray Liftup Motor	Lifts up the tray.

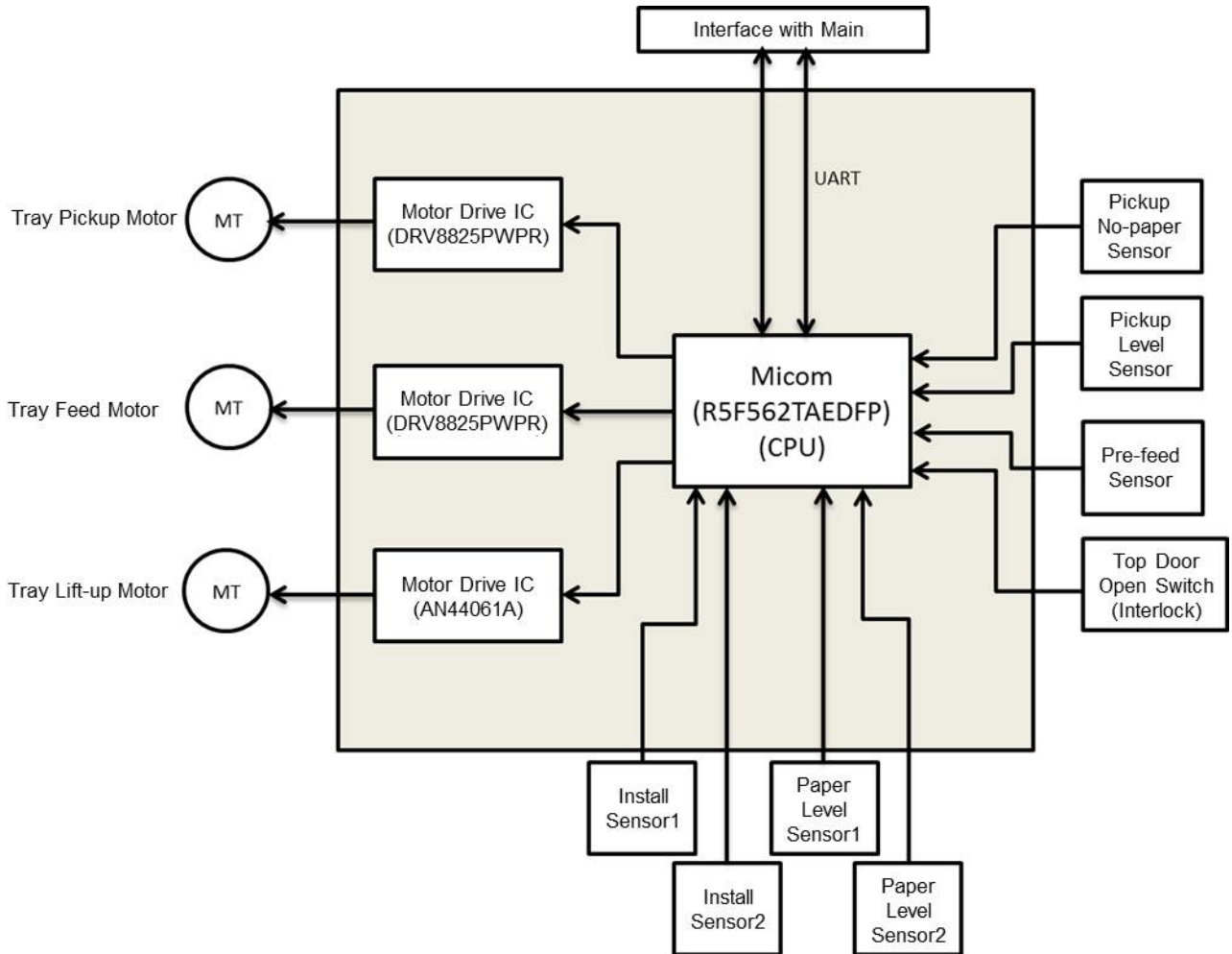
5) Block Diagram

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

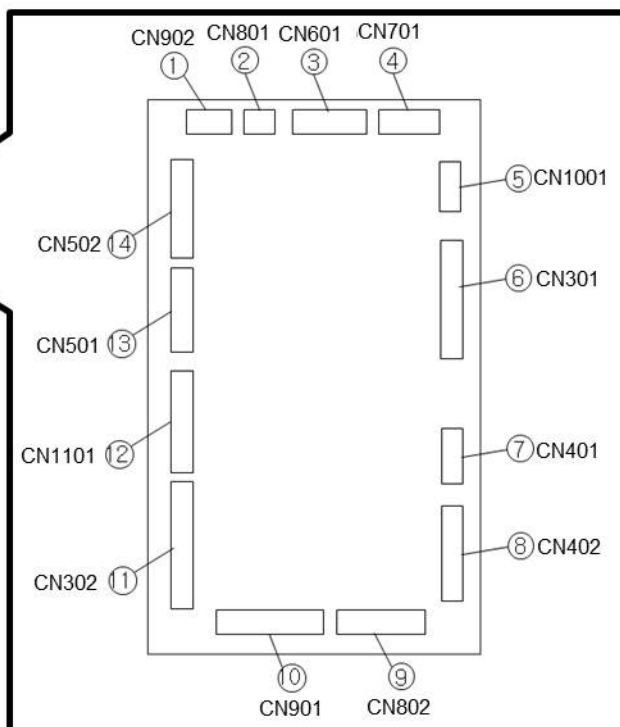
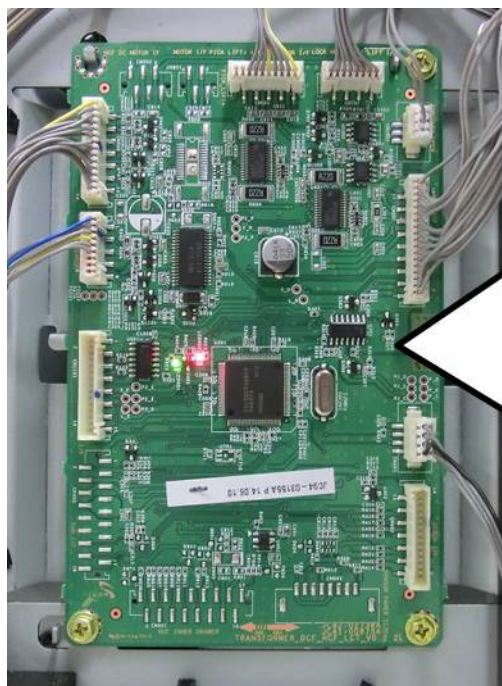
The Micom in the board receives the information from the Pickup No-paper Sensor, Pickup Level Sensor, Prefeed sensor etc. and communicates with the copier main board through the UART.

When being received the print job command from the interface connector (CN301) through UART, LCT board drives the Tray feed motor and Tray pickup motor to pick up a paper.

This board has 2 LEDs. The right LED is for checking 3.3V power supply and the left LED is checking the Micom operation.



6) PBA Connection



Connector Number	Item Number	Connection
CN902	1	DC MOTOR I/F
CN801	2	PICK_LIFT4 MOTOR I/F
CN601	3	PICK_LIFT3 & FEED MOTOR I/F
CN701	4	LOCKMOT/MOT LIFT/LCT HOME I/F
CN1001	5	TOPCOVER_OPEN INTERLOCK
CN301	6	MAIN I/F
CN401	7	UART DEBUG I/F
CN402	8	E1 JTAG DEBUG I/F
CN802	9	SENSOR PAPER SIZE
CN901	10	HCF INNER DRAWER
CN302	11	SUB I/F
CN1101	12	BBP I/F
CN501	13	T4 SENSOR
CN502	14	T3 SENSOR

3. Disassembly and Reassembly

3.1. Precautions when replacing parts

3.1.1. Precautions when assembling and disassembling

- 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

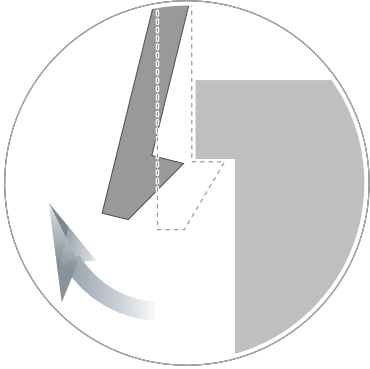
Static electricity can damage a PBA, always used approved anti-static precautions when handling or storing a PBA.

- **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.

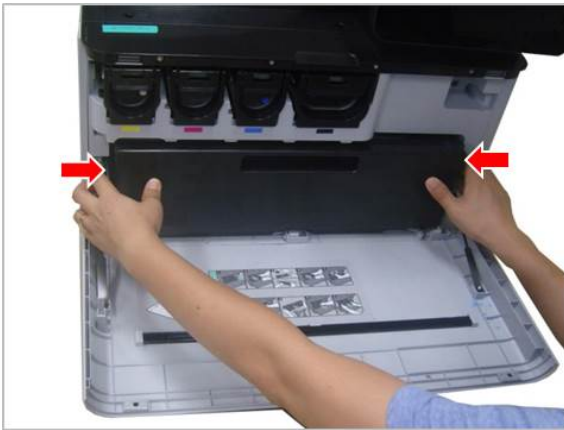


3.2. Maintenance

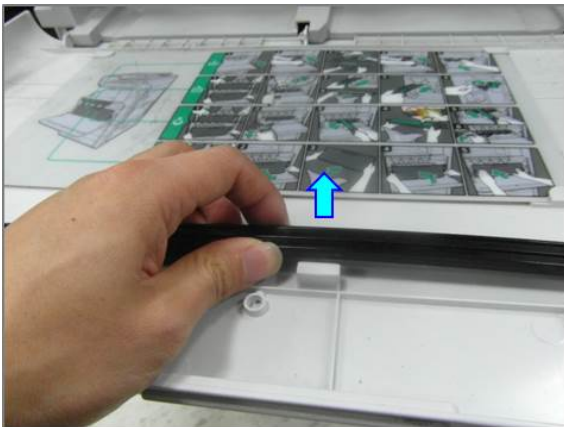
3.2.1. Machine Cleaning for maintenance

3.2.1.1. Cleaning the LSU window

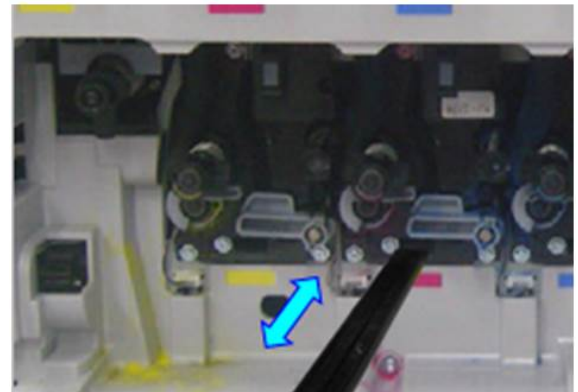
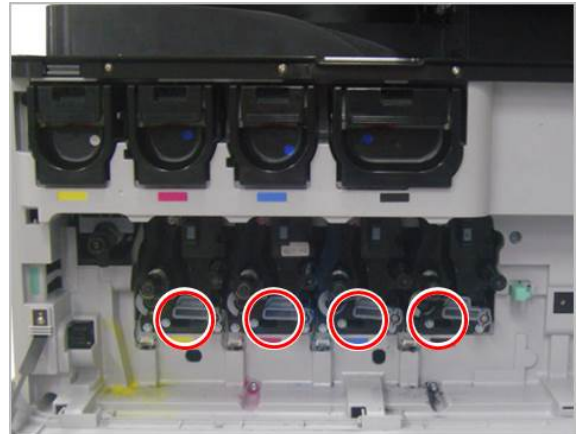
1. Open the front cover. Remove the waste toner container[A].



2. Take out the LSU window cleaning tool that is located on the front cover.



3. Insert the LSU window cleaning tool to each color hole.



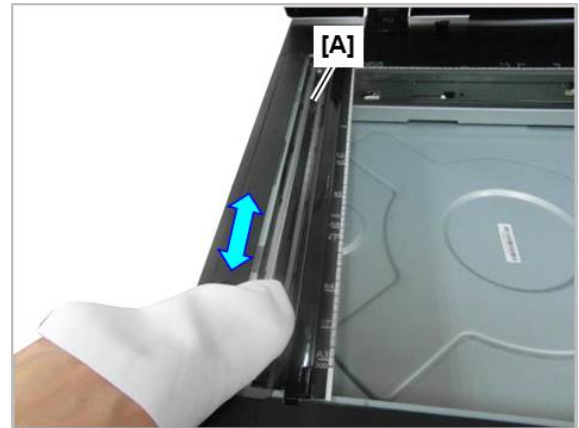
4. Slowly pull out and push the cleaning tool.
5. Repeat step 4 at least 5 times for each LSU window.

3.2.1.2. Cleaning the scan glass

1. Open the DSDF Unit.



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

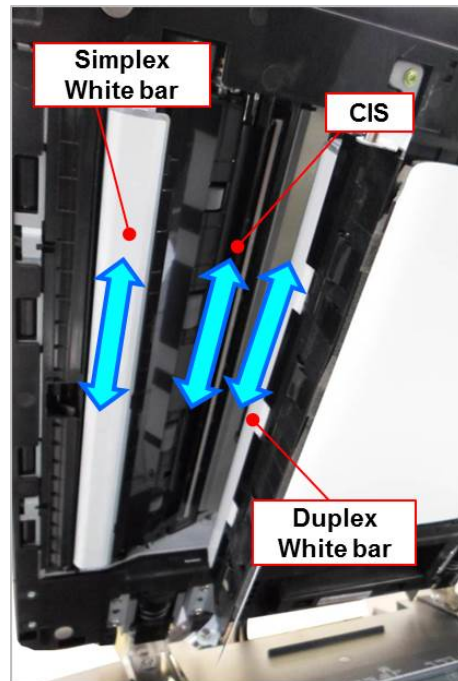


3.2.1.3. Cleaning the DSDF white bar_CIS

1. Open the DSDF Unit.



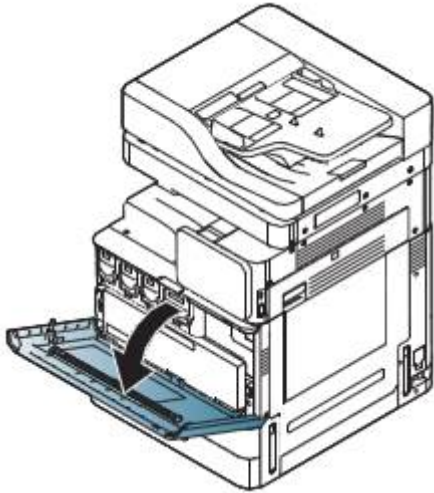
2. Clean the DSDF white bar and CIS by using a soft cloth.



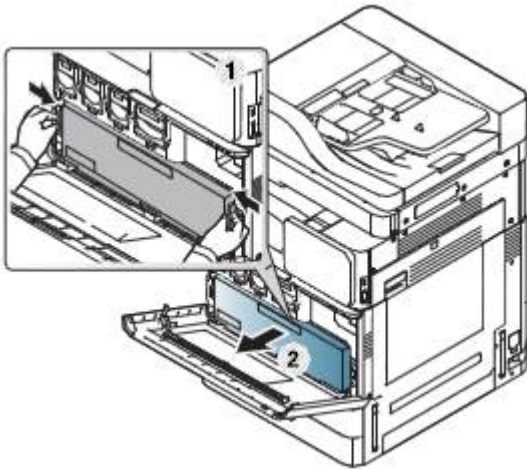
3.2.1.4. Cleaning the paper dust stick

The paper dust stick will need to be cleaned after a specified number of paper is printed out. When the message that demands you to clean the paper dust stick appears, you have to clean the paper dust stick. Follow the cleaning procedure below.

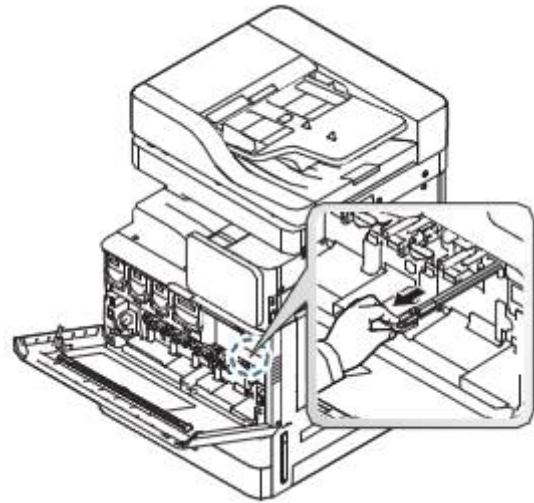
1. Open the front door.



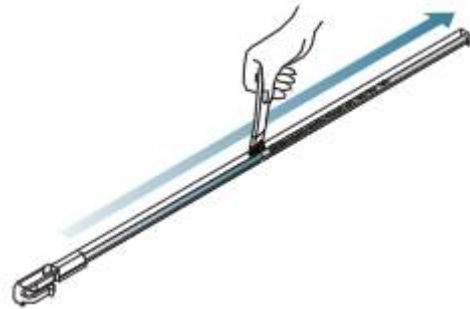
2. Remove the waste toner container.



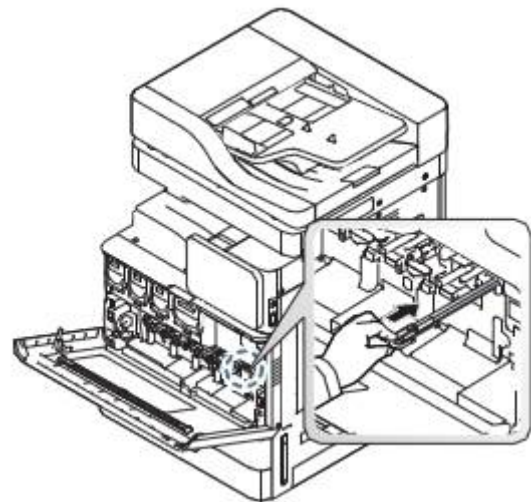
3. Pull the paper dust stick out.



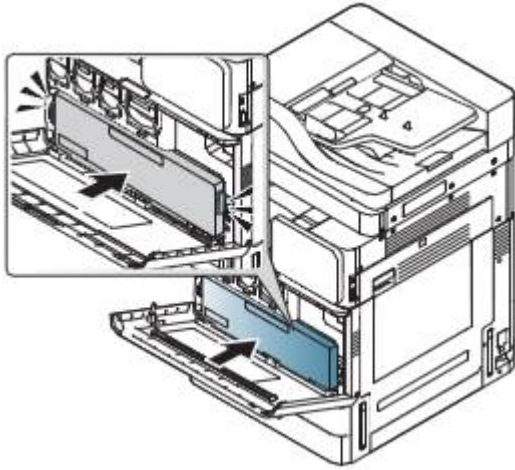
4. Remove the paper dust.



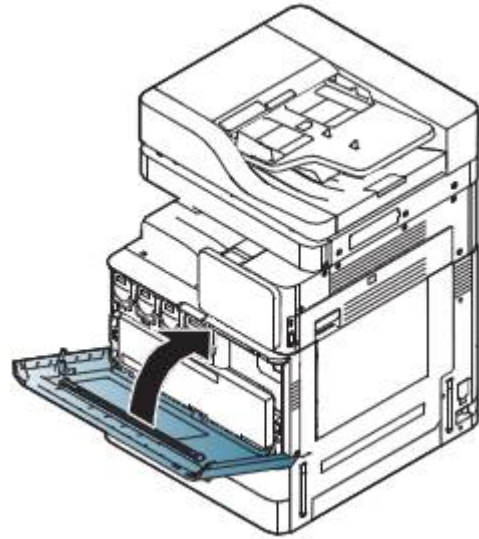
5. Insert the paper dust stick back.



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



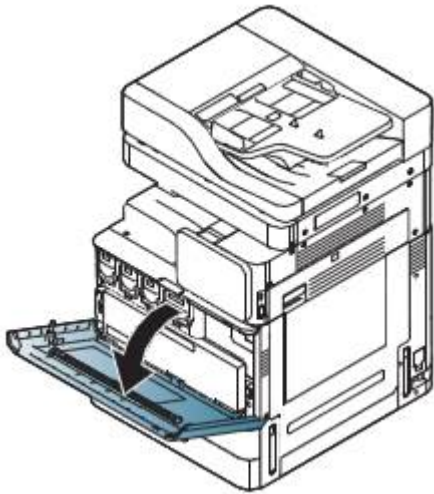
7. Close the front door. Ensure that the cover is securely closed.



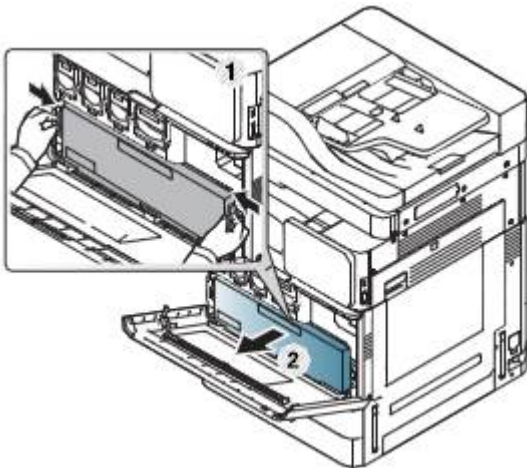
If the message still appears, do step 3 and 4 again.

3.2.1.5. Cleaning the LSU window

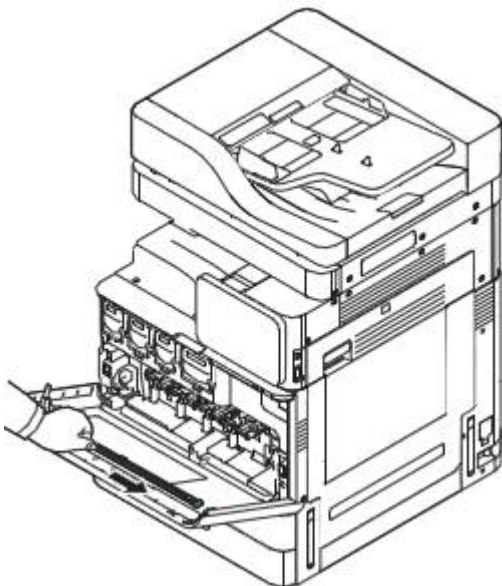
1. Open the front door.



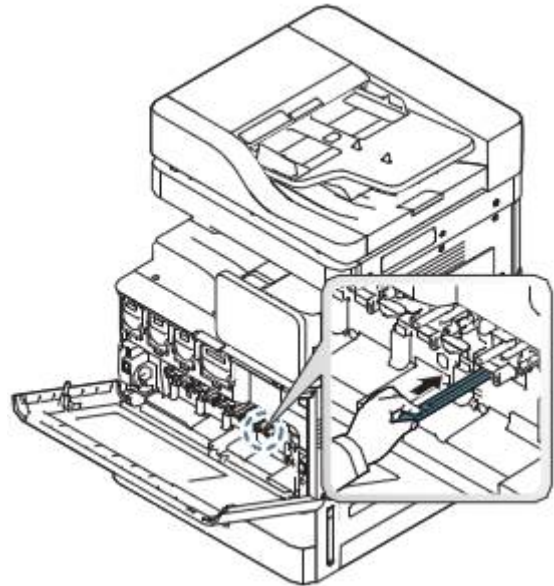
2. Remove the waste toner container.



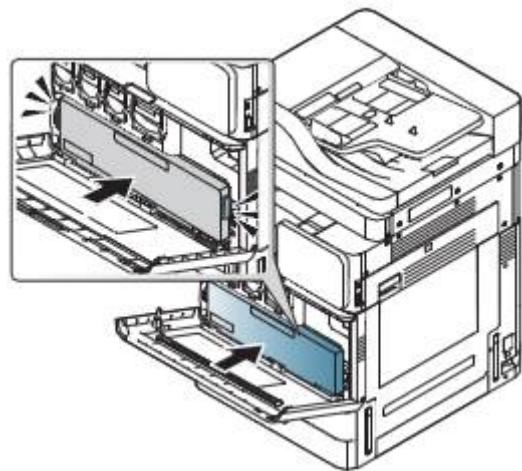
3. Take out the LSU window cleaning stick.



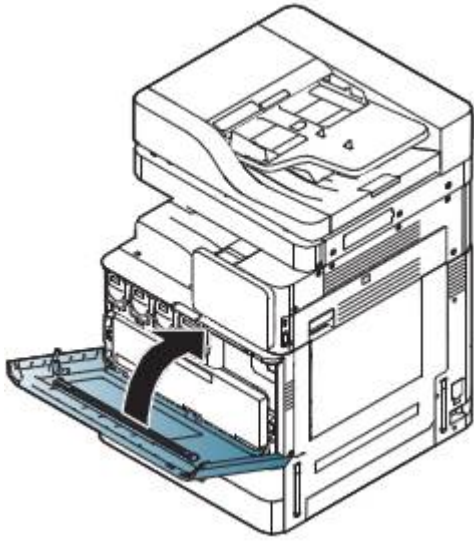
4. Locate the LSU window cleaning hole and insert the LSU window cleaning stick. Slowly push and pull the LSU window cleaning stick 4 or 5 times to clean the LSU window.



5. Insert LSU window cleaning stick back into its place.
6. Insert the waste toner container until it locks in place.



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



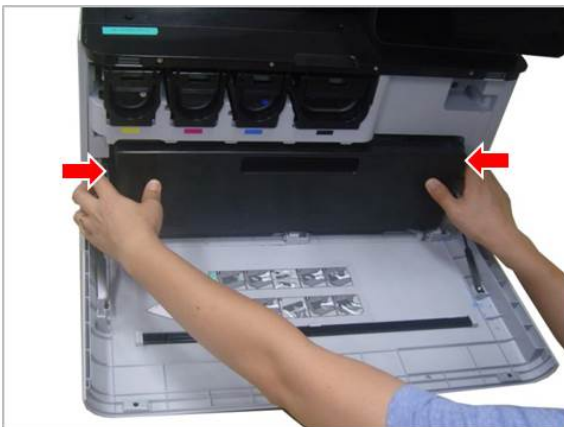
3.2.2. Replacing the maintenance part

3.2.2.1. Drum Unit

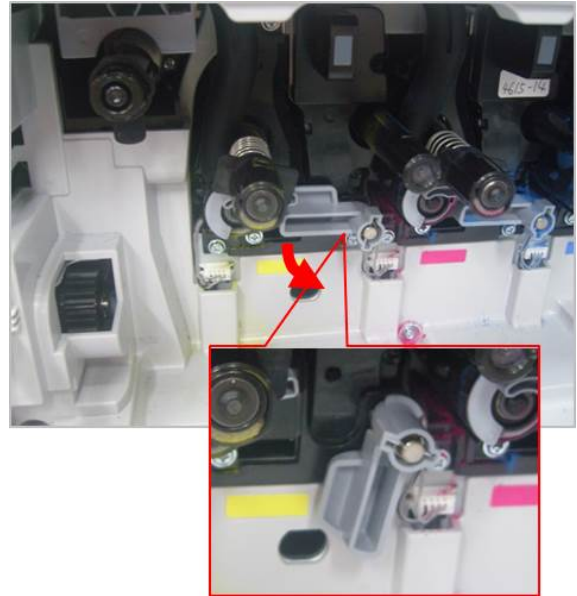
1. Open the front cover.



2. Release the waste toner container while pushing both hooks.



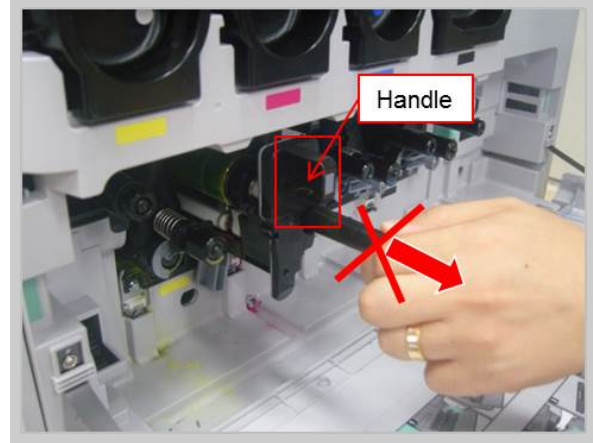
3. Pull down the fixing lever for corresponding drum unit.



4. Grip the handle and remove the drum unit.

NOTE

Do not grip the bulging part when removing the drum unit.

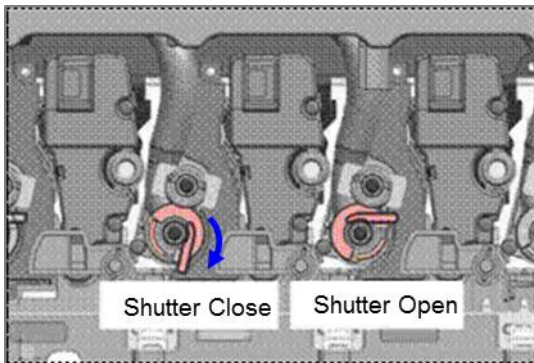


3.2.2.2. Development Unit (Deve Unit)

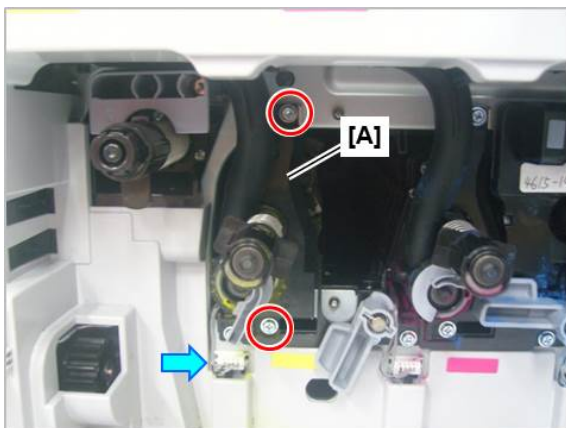
NOTE

Before replacing the development unit, update the firmware with the latest version.

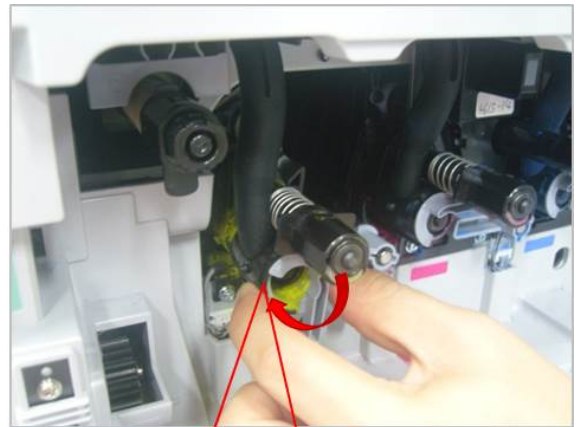
1. Remove the corresponding drum unit. (Refer to 3.2.2.1.)
2. Close the reservoir shutter.



3. Release the bracket [A] after removing 2 screws. Then unplug the connector.



4. Turn the toner supply pipe at a 90 degree angle in a clockwise direction. Then, pull it to the front.



5. Hold the grip point of deve unit with hand and remove the deve unit.

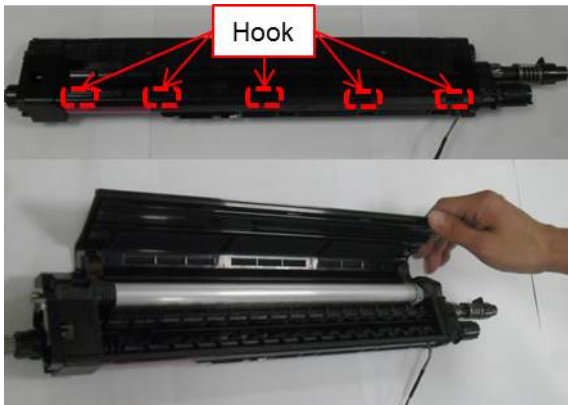
NOTE

Do not grip the bulging part when removing the deve unit.



6. Unpack the new deve unit box and check the components. (deve unit & silver pack)

7. Release 5 hooks and open the cover.



8. Pour the developer powder to the deve unit.



NOTE

Before filling the developer, shake silver pack about 3 times for preventing from toner scattering.



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

3.2.2.3. ITB cleaner

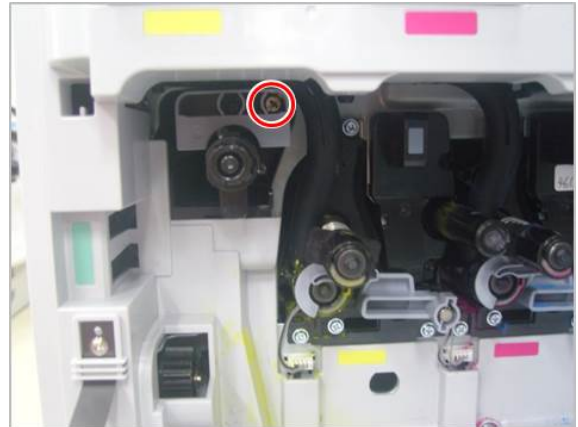
1. Open the front cover.



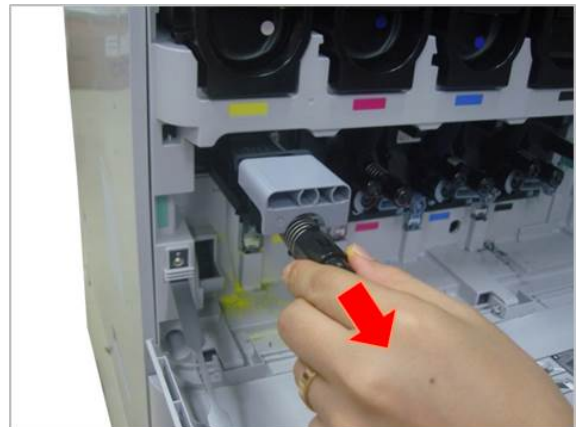
2. Release the waste toner container while pushing both hooks.



3. Loosen the screw securing the ITB cleaner.

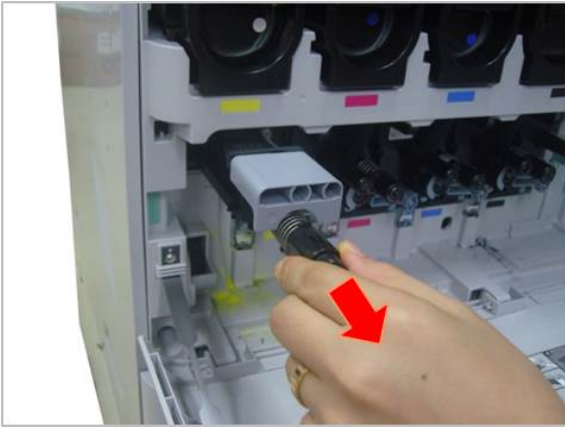


4. Remove ITB cleaner.



3.2.2.4. ITB Unit

1. Remove the ITB cleaner. (Refer to 3.2.2.3.)



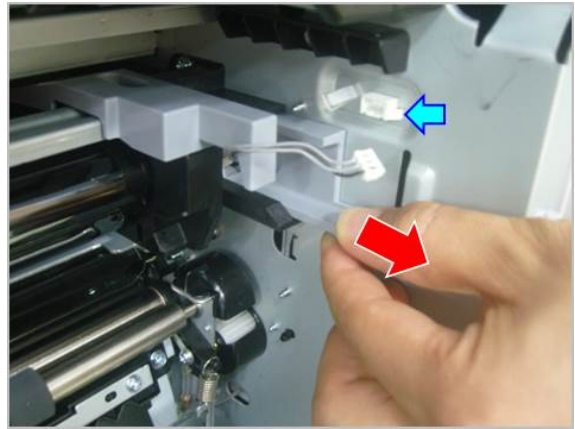
2. Open the side cover.



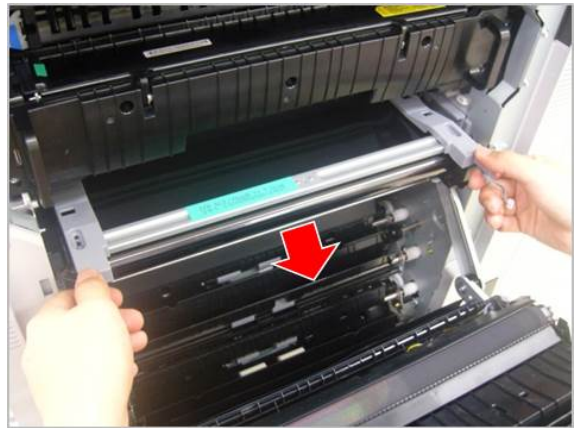
3. Remove 2 screws securing ITB unit.



4. Unplug the ITB connector from the right. Pull the holder to the front.

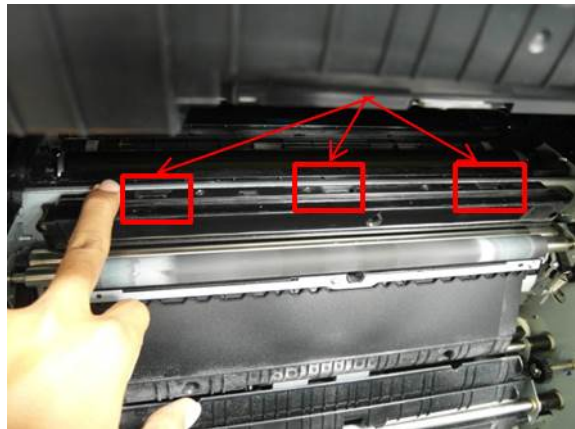


5. Pull out the ITB unit.



6. Install the new ITB unit.

7. While pushing the ACR shutter to the right, clean the ACR sensors with wet tissue.



3.2.2.5. Fuser Unit

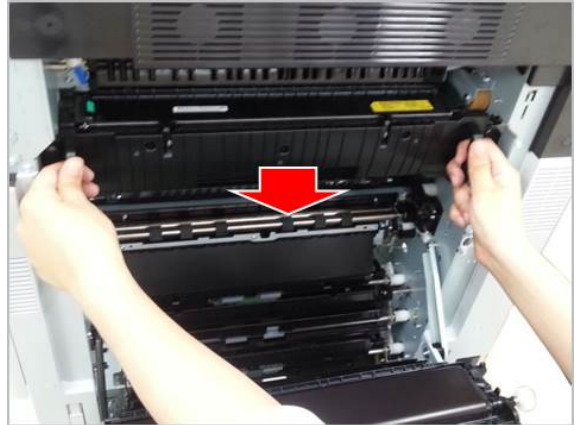
1. Open the side cover.



2. Remove 4 screws.



3. Pull out the fuser unit.

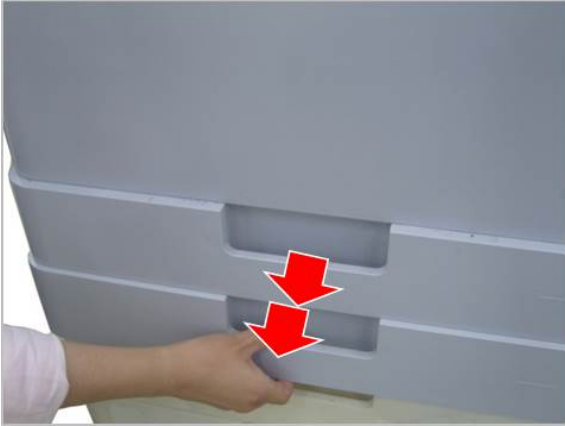


 **CAUTION**

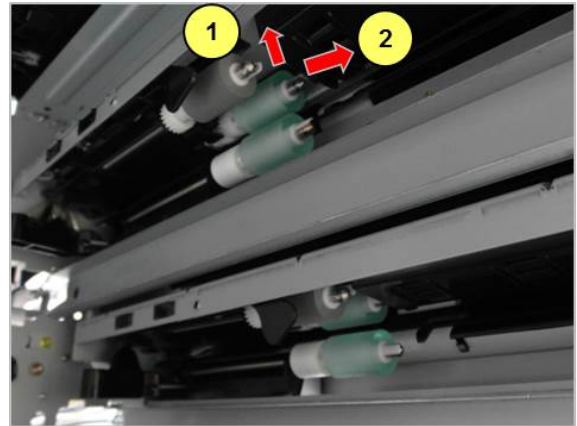
The temperature gets high in the vicinity of the fuser unit. When replacing it, you may get burned. Before replacing it, make sure that fuser unit has cooled.

3.2.2.6. Pick-Up_Separation_Forward roller

1. Remove 2 cassettes.

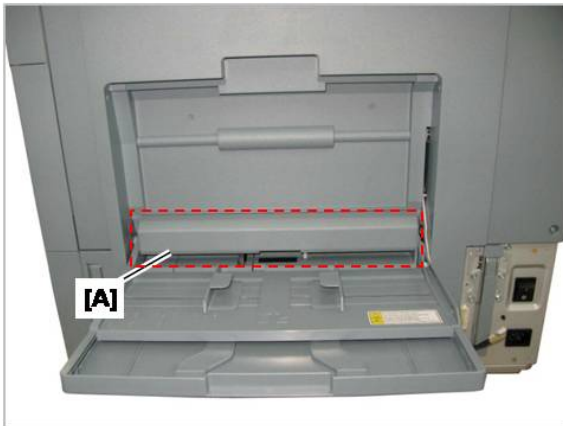


2. Lift small tap, remove the pick up / reverse/ forward roller.

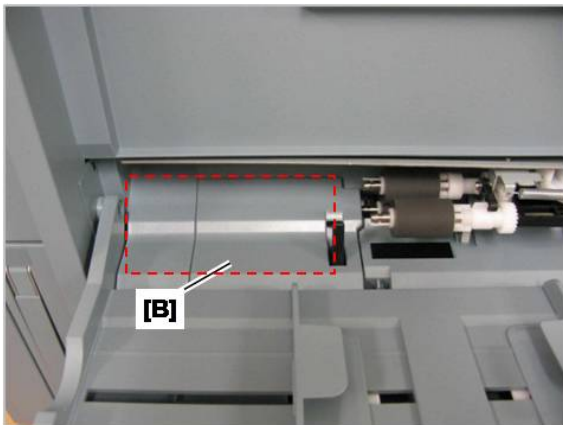


3.2.2.7. MP Pick up_Reverse_Forward roller

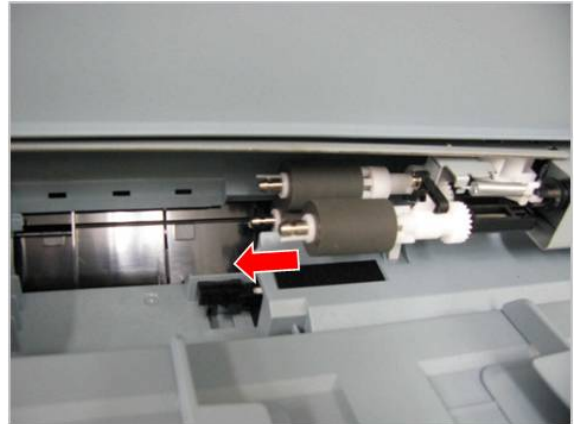
1. Open the MP tray. Remove the cover[A].



2. Remove the cover [B].



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



 **NOTE**

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

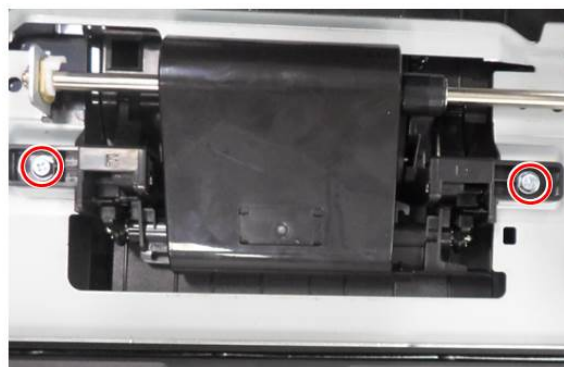
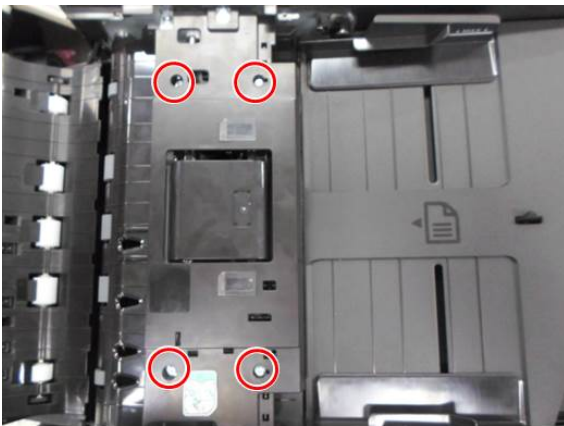
4. Enter SVC mode. Select the menu. (Information > Supply Status > Field Replacement Unit). Push “Reset” button to reset the current count to 0.

3.2.2.8. DSDF Pick-up roller Assy (LX model)

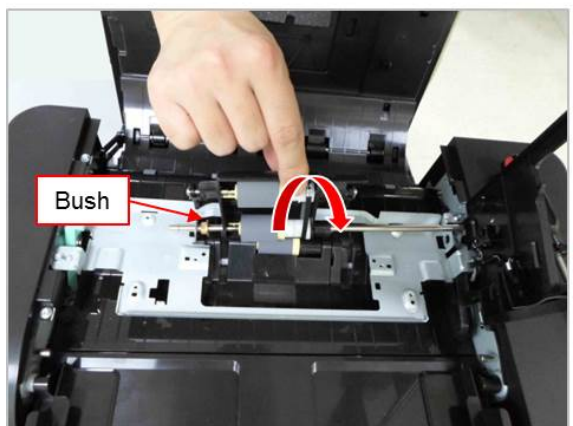
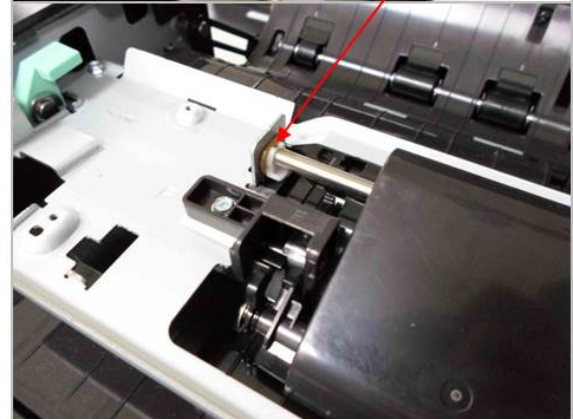
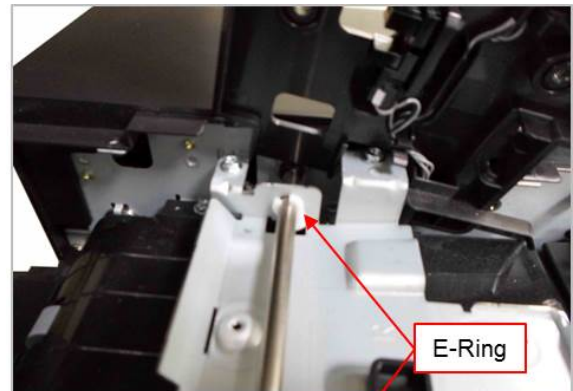
1. Open the DSDF-open cover.



2. Remove 6 screws. Then release the DSDF pick up cover.



3. Remove the E-ring and Bush. Then, release the DSDF pick up roller Assy.

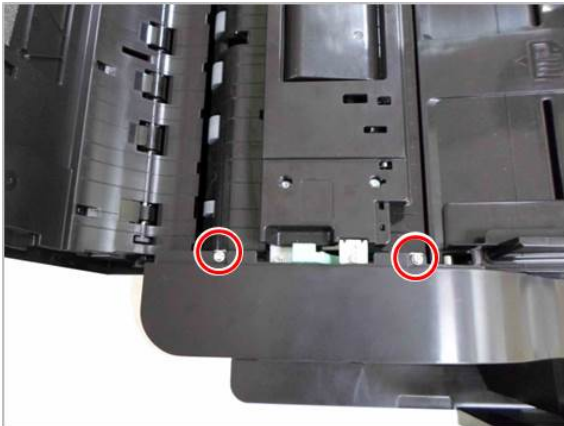


3.2.2.9. DSDF reverse roller (LX model)

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



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



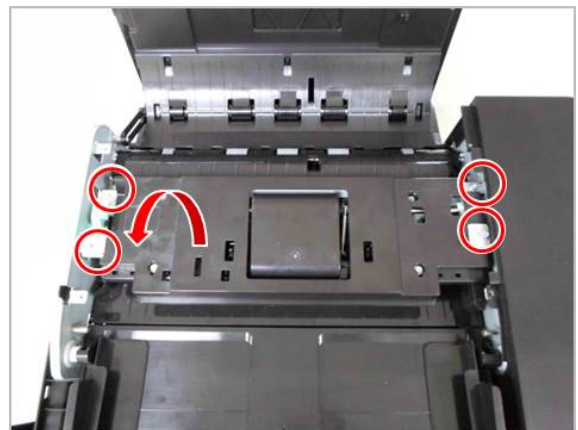
3. Release the DSDF link.



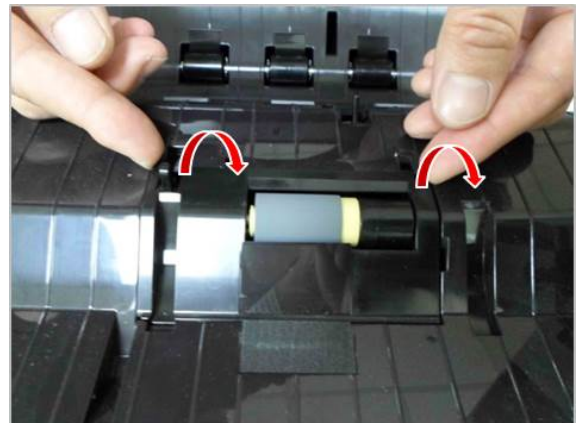
4. Remove the DSDF front cover.



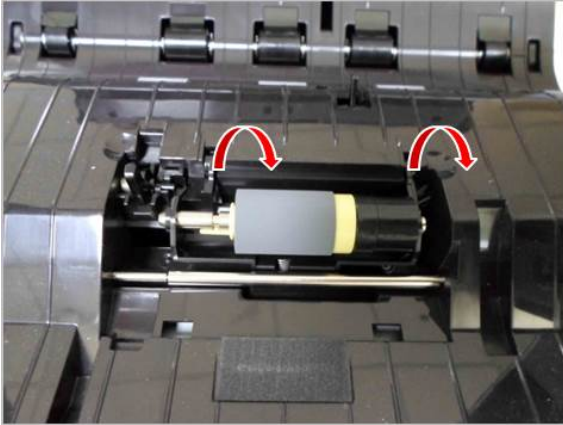
5. Remove 4 screws. Then, release the pick up module.



6. Remove the reverse roller cover.

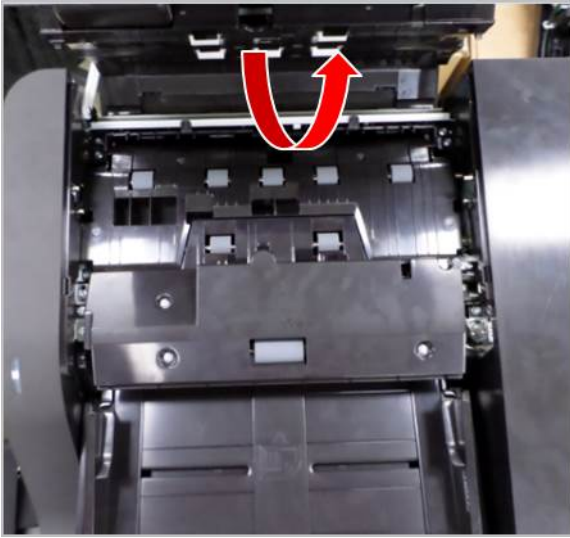


7. Release the reverse roller Assy.

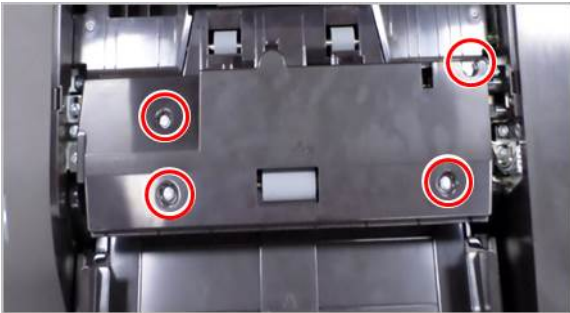


3.2.2.10. DSDF Pick-up roller Assy (GX model)

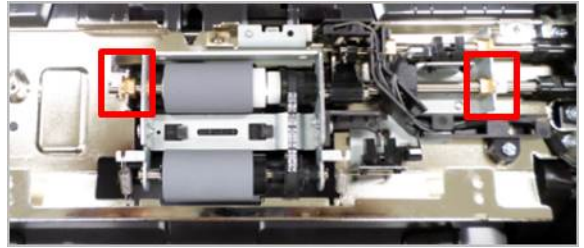
1. Open the DSDF-open cover.



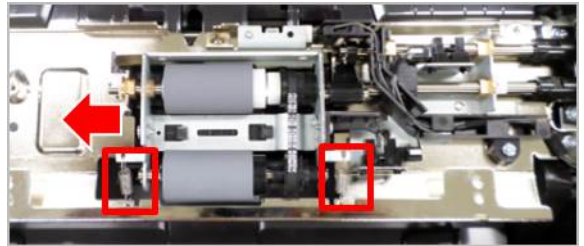
2. Remove 4 screws. Then, release the DSDF pick up cover.



3. Remove 2 Mold E-Rings.

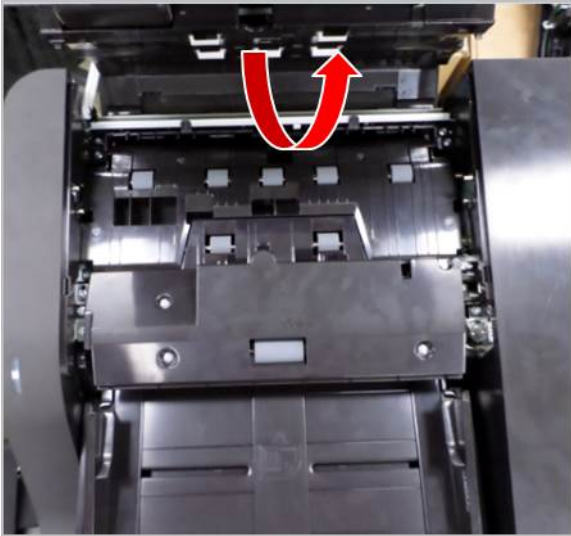


4. Remove 2 springs. Then, release the DSDF pick up roller Assy while pulling it to the left.

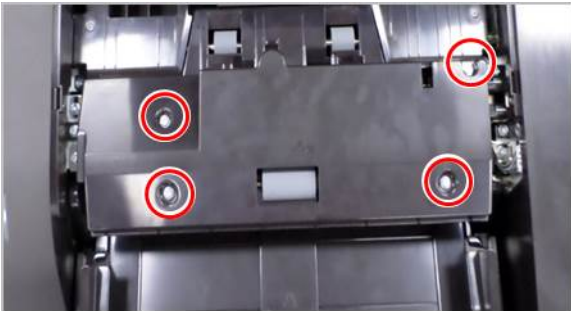


3.2.2.11. DSDF reverse roller Assy (GX model)

1. Open the DSDF-open cover.



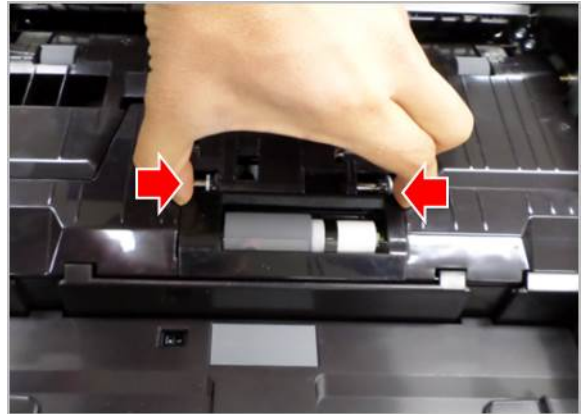
2. Remove 4 screws.



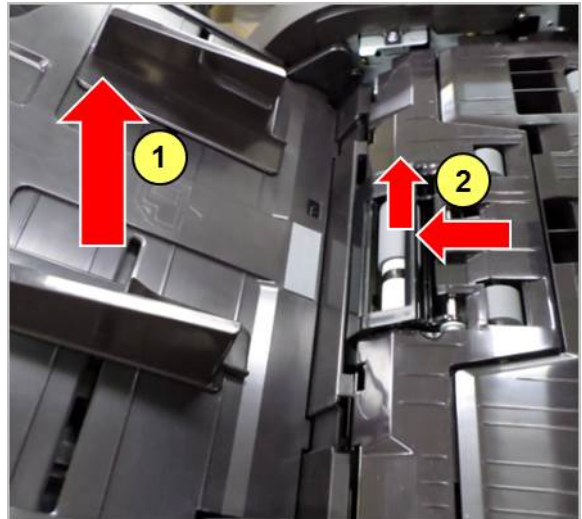
3. Pull the pick up module to the front and unplug the connector while lifting up its front.



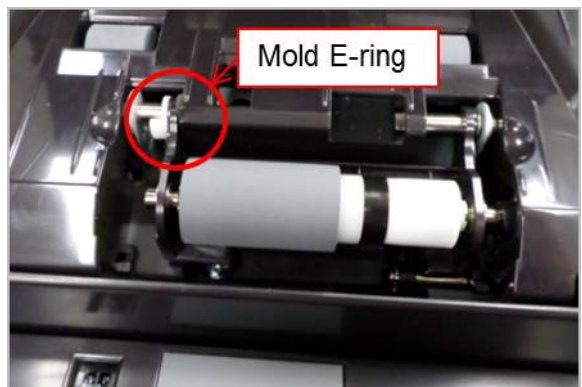
4. Release the roller cover locking.



5. Pull and release the roller cover while lifting the stacker up.



6. Remove the Mold E-ring.



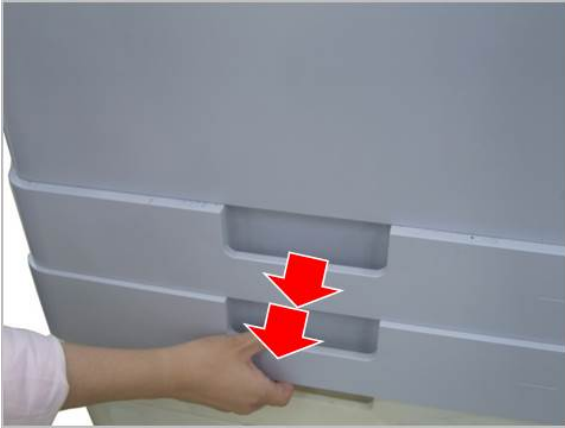
7. Pull the reverse roller Assy to the left until the pin is shown. Then, lift up and release it.



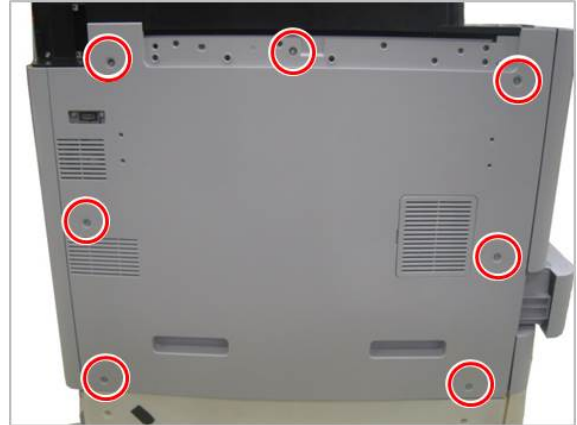
3.3. Replacing the main SVC part

3.3.1. Left Cover

1. Remove 2 cassettes.



3. Remove 6 screw-caps and 7 screws.



2. Remove the left-dummy cover.



4. Remove the left cover.



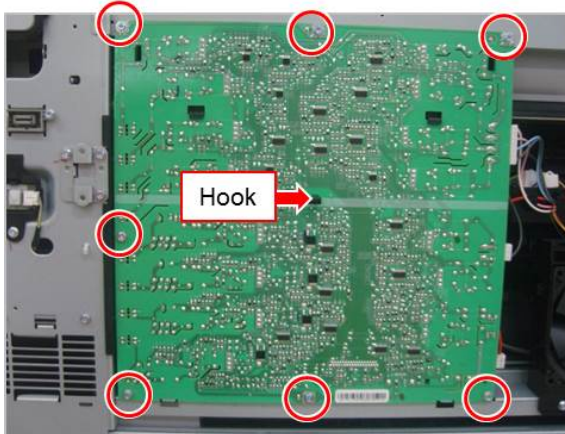
3.3.2. Rear Cover

1. Remove 12 screw-caps and 12 screws.

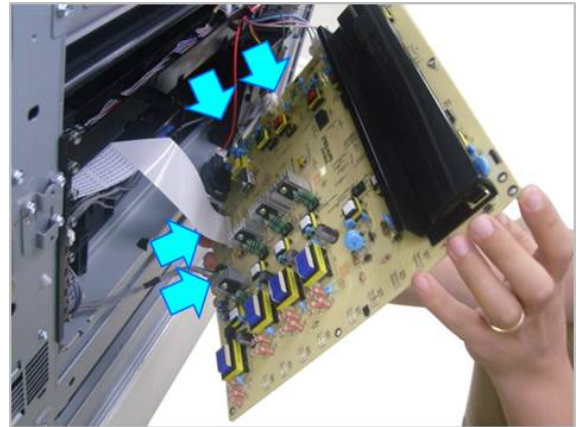


3.3.3. HVPS board

1. Remove the left cover. (Refer to 3.3.1.)
2. Remove 7 screws. Release the middle hook.



3. Unplug the connector. Remove the HVPS board.



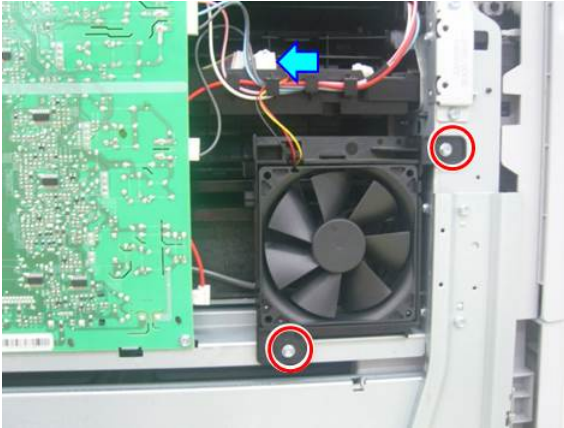
3.3.4. Temperature_Humidity Sensor

1. Remove the left cover. (**Refer to 3.3.1.**)
2. Unplug the sensor connector. Then release the temperature-humidity sensor.

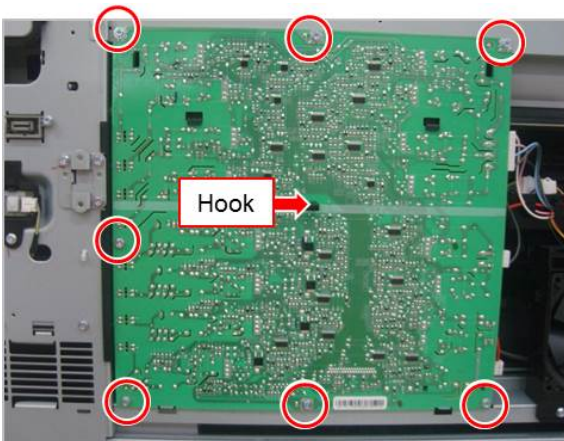


3.3.5. LSU

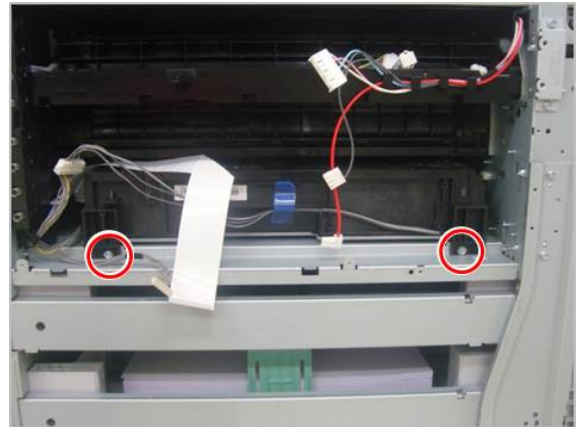
1. Remove the left cover. (**Refer to 3.3.1.**)
2. Remove 2 screws. Unplug the fan connector. And, release the LSU fan.



3. Remove 7 screws. Release the middle hook. And release the HVPS board.



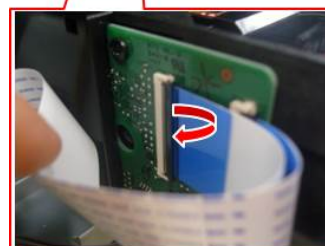
4. Remove 2 screws. Take out the LSU slowly.



CAUTION

If you yank the LSU, the LSU harness may be damaged.

5. Unplug the LSU harness from the left. Remove the LSU.



3.3.6. OPE Unit

1. Open the side cover.



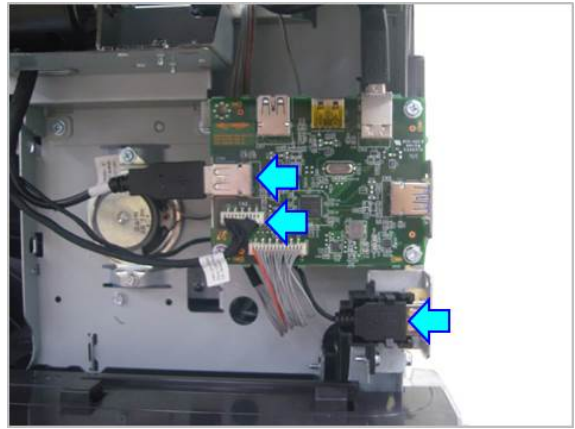
2. Remove 2 screw-caps and 2 screws. Then remove the front-top left cover.



3. Remove 2 screw-caps and 2 screws. Then remove the front-top right cover.



4. Unplug the OPE cables from the OPE Hub board.



5. Remove 2 screws securing the OPE Hinge.

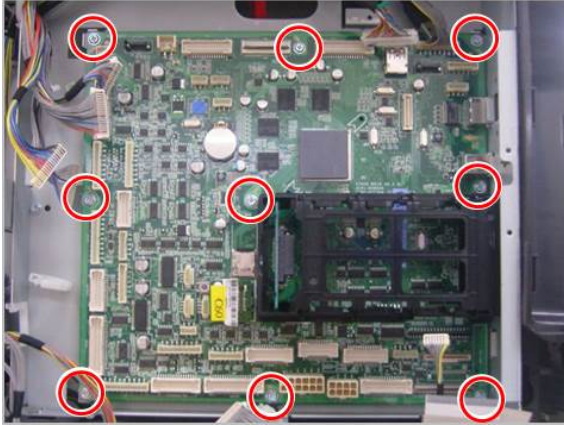


6. Release the OPE Assy.

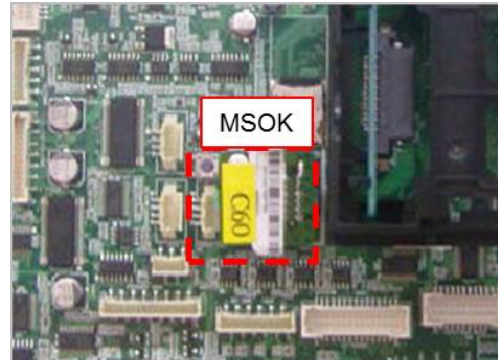


3.3.7. Main board

1. Remove the rear cover. (**Refer to 3.3.2.**)
2. Unplug all connectors on the main board. Remove 9 screws. And release the main board.



3. Install the new main board and insert the MSOK.

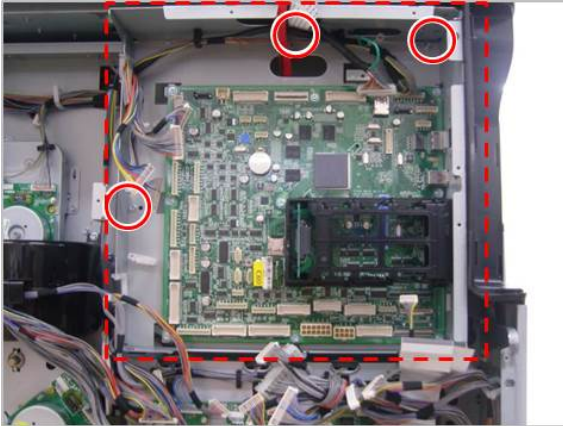


 **NOTE**

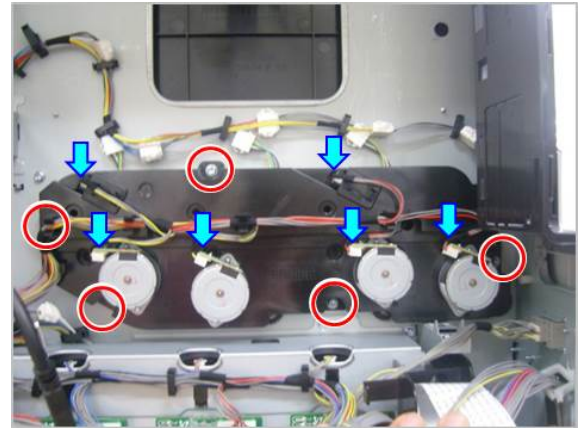
Shading Test for ADF(DSDF) Unit must be carried out, after replacing the main board. (**Refer to 4.5.5.3**)

3.3.8. Toner Supply Drive Unit

1. Remove the rear cover. (Refer to 3.3.2.)
2. Unplug all connectors on the main board. Remove 5 screws. And release the main board shield.



3. Unplug all connector. Remove 5 screws. And release the toner supply drive unit.



3.3.9. SMPS board

NOTE

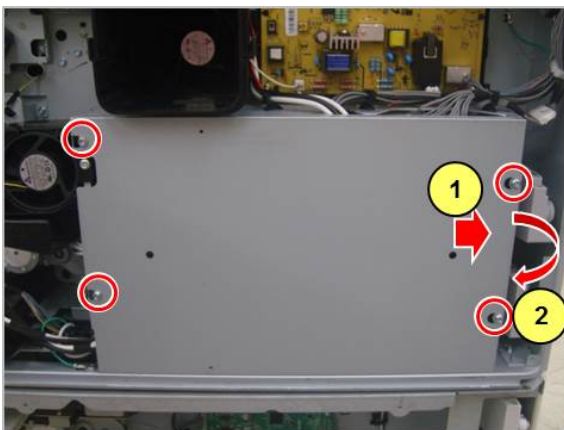
- LX model has 2 SMPS boards.
- GX model has 3 SMPS boards.

3.3.9.1. SMPS board 1

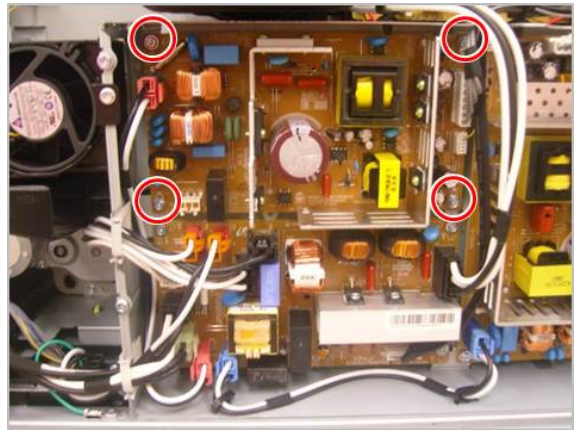
1. Remove 7 screw-caps and 7 screws. Then remove the Lower-Rear cover.



2. Loosen 4 screws. Pull the SMPS cover to the right and release it.



3. Unplug all connectors. Remove 4 screws. And release the SMPS board 1.

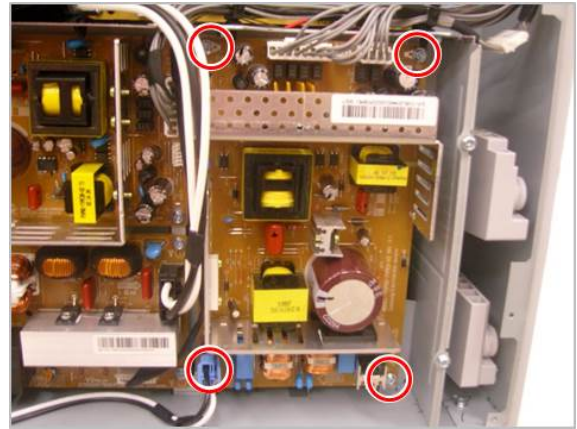


3.3.9.2. SMPS board 2

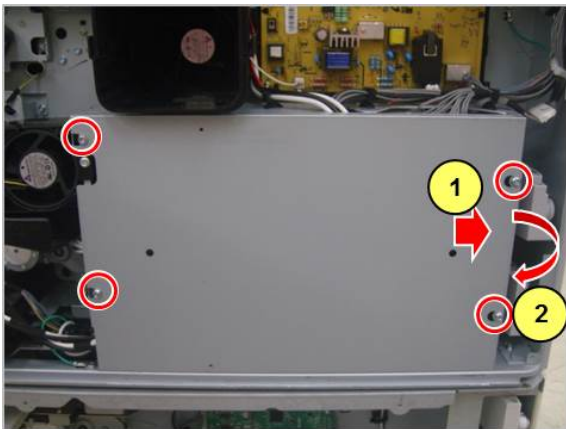
1. Remove 7 screw-caps and 7 screws. Then remove the Lower-Rear cover.



3. Unplug all connectors. Remove 4 screws. And release the SMPS board 2.



2. Loosen 4 screws. Pull the SMPS cover to the right and release it.



3.3.9.3. SMPS board 3

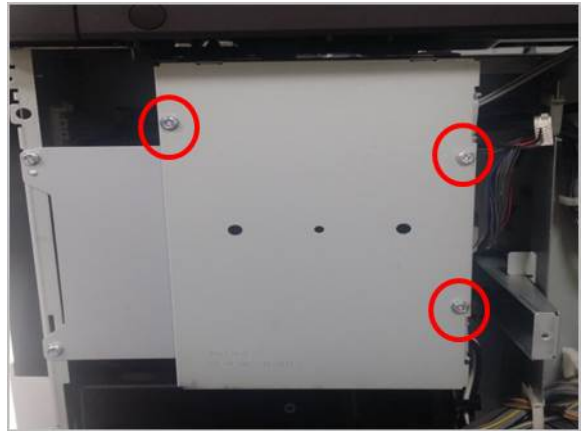
**NOTE**

This SMPS board is installed for only GX model.

1. Remove 11 screw-cap and 11 screws. Then remove the rear cover.



2. Remove 3 screws. Then remove the shield-SMPS sub upper.



3. Unplug all connectors. Remove 4 screws. And release the SMPS board 3.

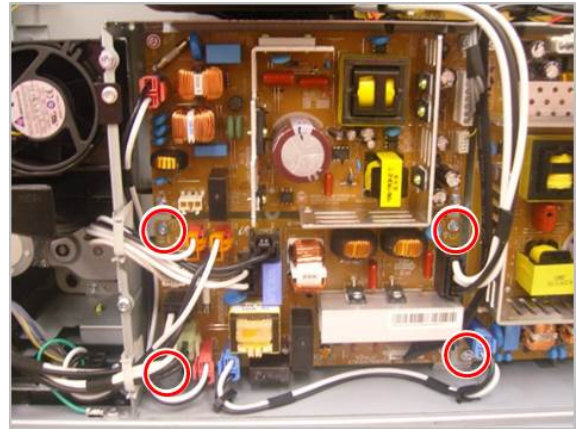


3.3.10. FDB (Fuser Drive Board)

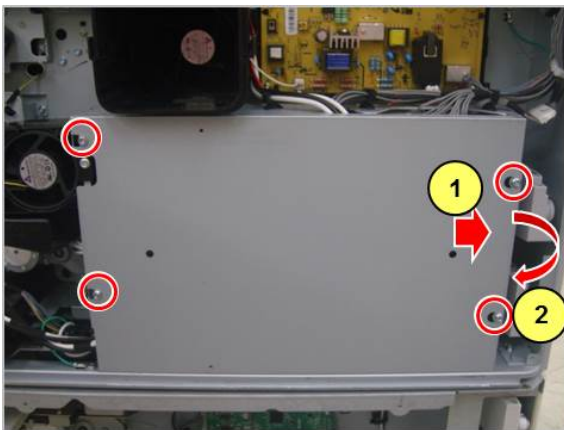
1. Remove 7 screw-caps and 7 screws. Then remove the Lower-Rear cover.



3. Unplug all connectors. Remove 4 screws. And release the FDB.

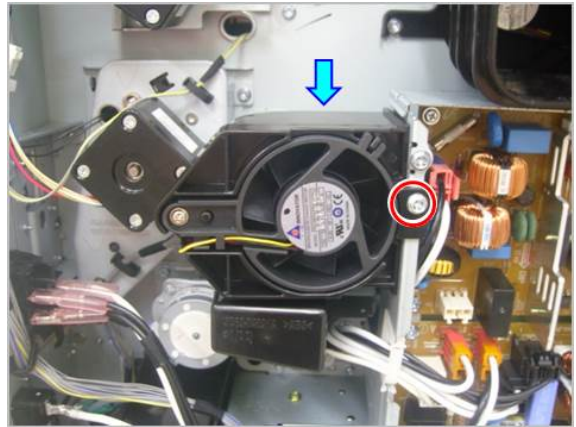


2. Loosen 4 screws. Pull the SMPS cover to the right and release it.



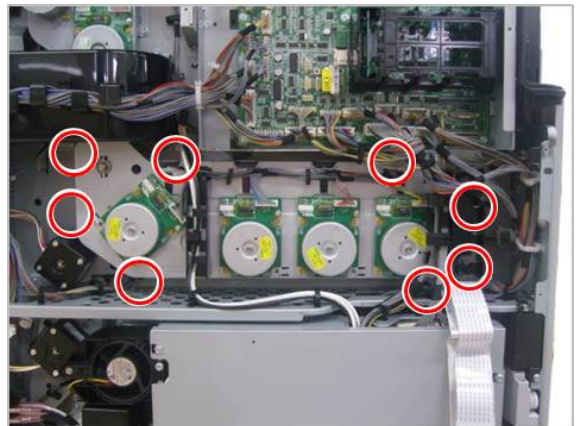
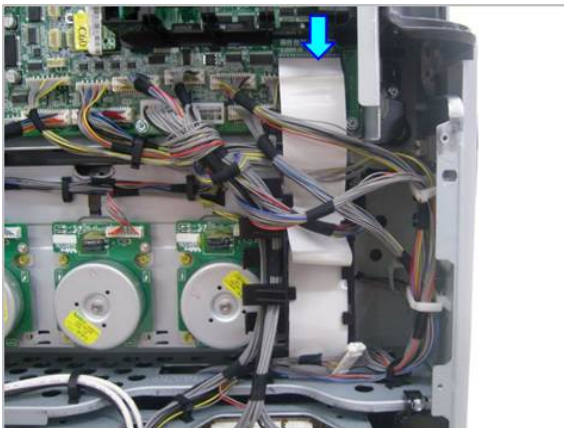
3.3.11. SMPS Fan

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



3.3.12. Main Drive Unit

1. Remove the rear cover. (Refer to 3.3.2.)
2. Unplug the flat cable.
3. Unplug and release the harness. Remove 8 screws. And release the Main drive unit.

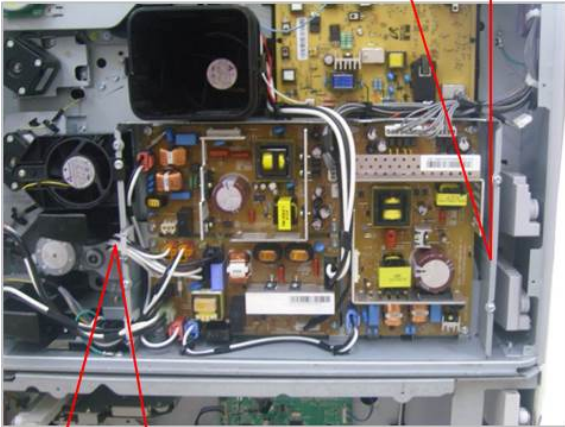


3.3.13. Inductor Unit

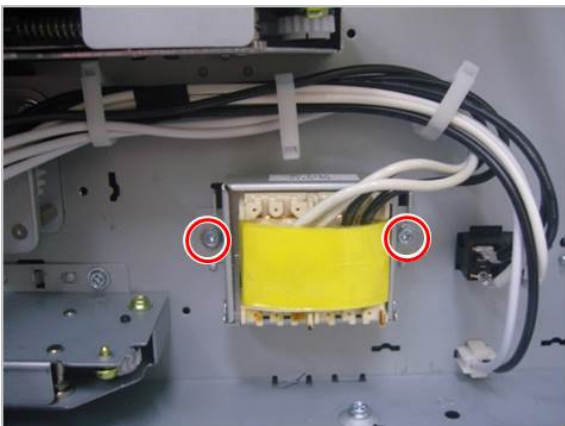
1. Remove the rear cover. (Refer to 3.3.2.)

3. Disassembly and Reassembly

2. Remove 2 screws. Unplug all connectors from the SMPS 1,2 boards and FDB. Then release the SMPS shield.

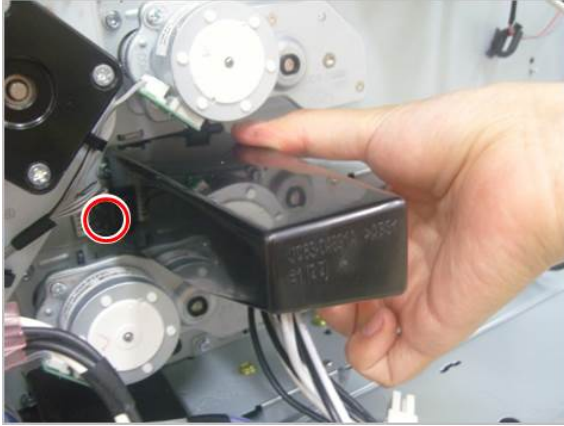


3. Remove 2 screws. Unplug the harness. And release the Inductor Unit.

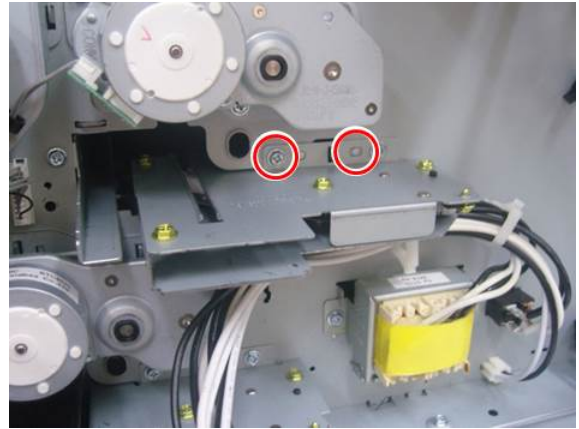


3.3.14. Auto Closing Unit

1. Remove the cassette.
2. Remove the rear cover. (**Refer to 3.3.2.**)
3. Remove the SMPS shield. (**Refer to 3.3.13.**)
4. Release the CST rail cover after removing 1 screw.

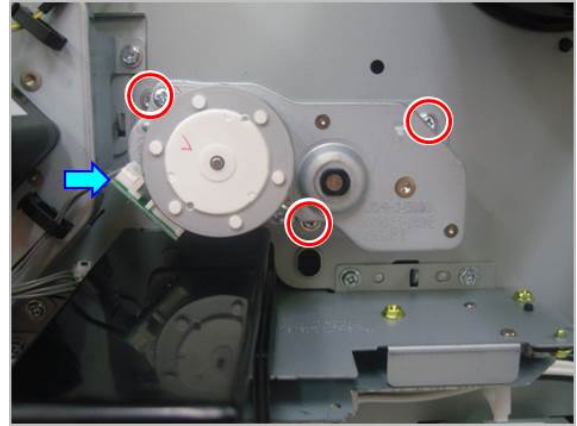


5. Release the Auto Closing unit after removing 2 screws.



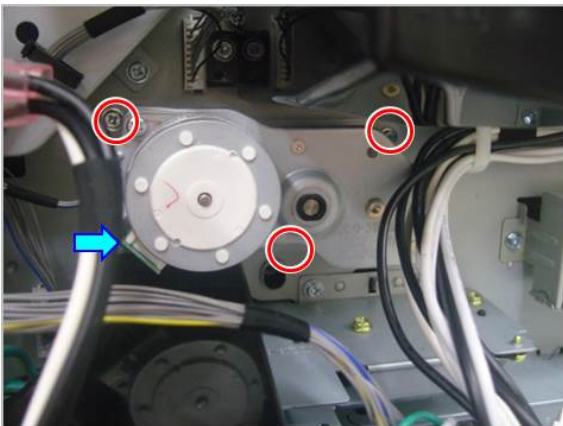
3.3.15. Pick-up Drive Unit 1

1. Remove the rear cover. (Refer to 3.3.2.)
2. Remove the SMPS shield. (Refer to 3.3.13.)
3. Unplug the motor connector. Remove 3 screws. And release the Pick-up Drive unit 1.



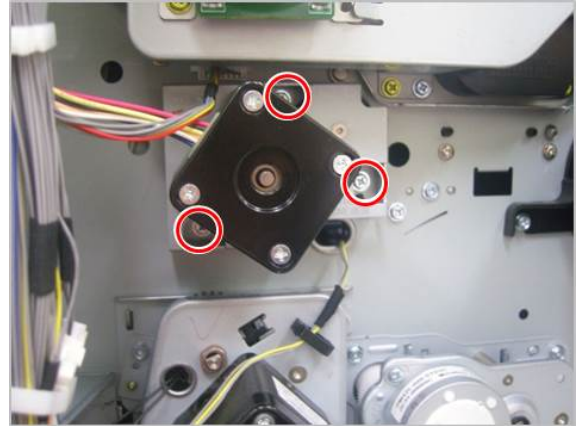
3.3.16. Pick-up Drive Unit 2

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



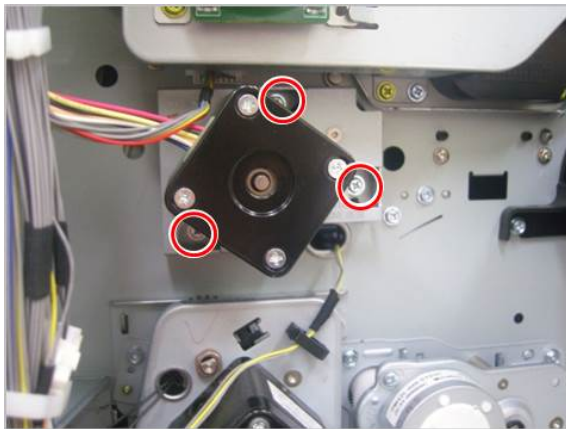
3.3.17. Regi Drive Unit

1. Remove the rear cover. (Refer to 3.3.2.)
2. Remove the main drive unit. (Refer to 3.3.12.)
3. Unplug the motor connector. Remove 3 screws. And release the Regi. Drive Unit.



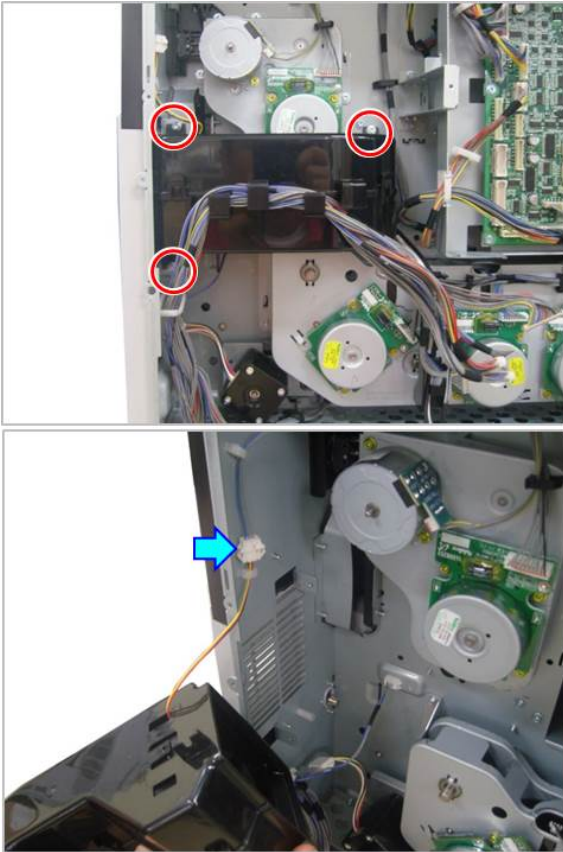
3.3.18. Feed_MP Drive Unit

1. Remove the rear cover. (Refer to 3.3.2.)
2. Unplug the motor connector. Remove 3 screws. And release the Feed/MP Drive Unit.



3.3.19. Fuser Fan

1. Remove the rear cover. (Refer to 3.3.2.)
2. Release the harness from its holder. Remove 3 screws. And release the Fuser Fan connector after unplugging its harness.

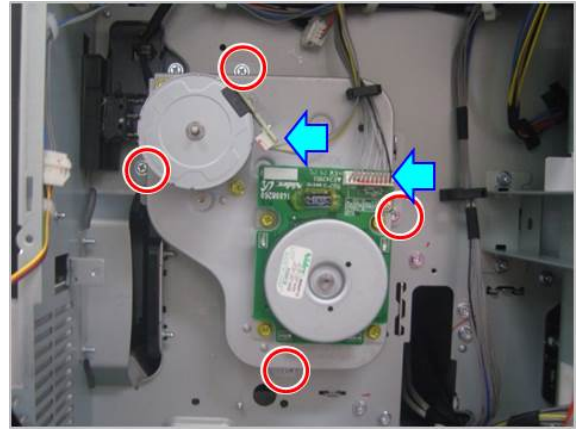


3. Separate the Fuser Fan Duct and release the fan.



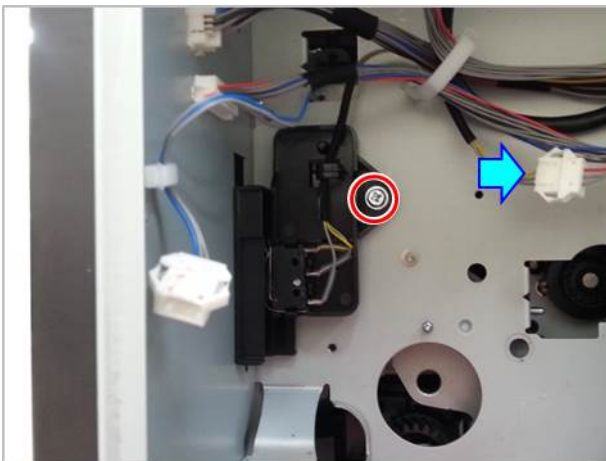
3.3.20. Fuser_Exit Drive unit

1. Remove the rear cover. (Refer to 3.3.2.)
2. Remove the Fuser Fan duct. (Refer to 3.3.19.)
3. Unplug the motor connector. Remove 4 screws. And release the Fuser/Exit Drive unit.



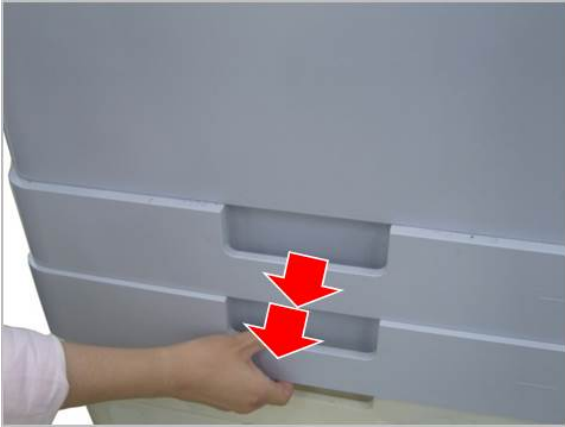
3.3.21. Side Door Open sensor

1. Remove the rear cover. (Refer to 3.3.2.)
2. Remove the Fuser/Exit Drive unit. (Refer to 3.3.20.)
3. Unplug the connector. Remove 1 screw. And release the side door open sensor.

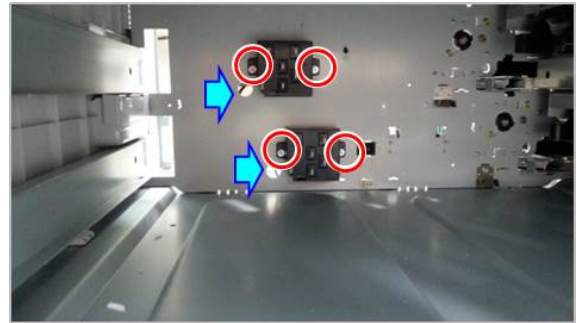


3.3.22. Auto Size sensor

1. Remove 2 cassettes.

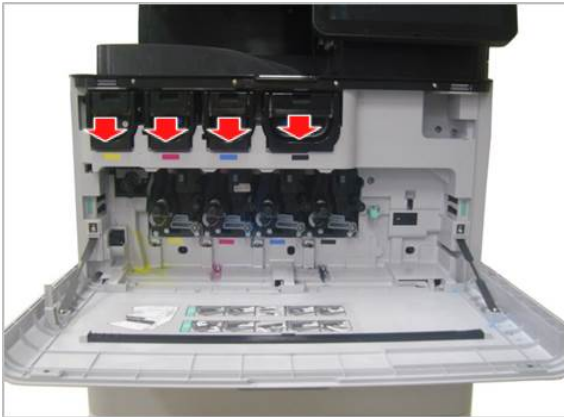


2. Unplug the sensor connector. Remove 2 screws. And release the auto size sensor.

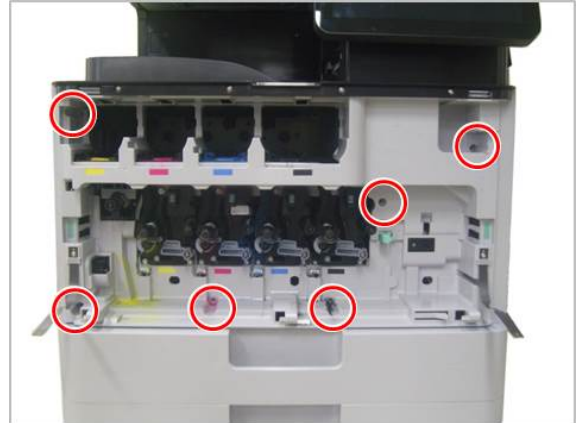


3.3.23. Inner Cover

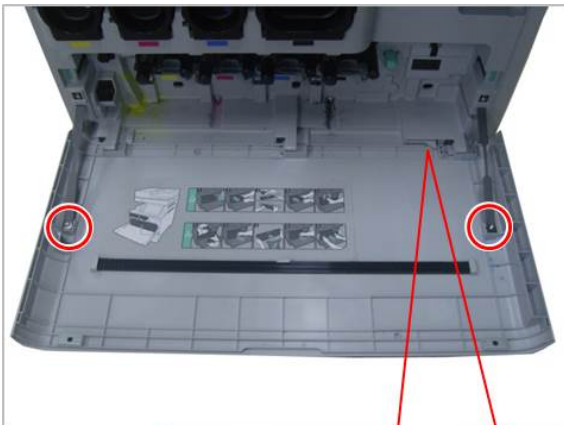
1. Remove YMCK toner cartridges.



3. Remove 6 screws.



2. Remove 2 screws securing the front cover. Remove the front cover while pushing the right hook.



4. Remove 2 screw-caps and 2 screws. Then remove the front-top left cover.

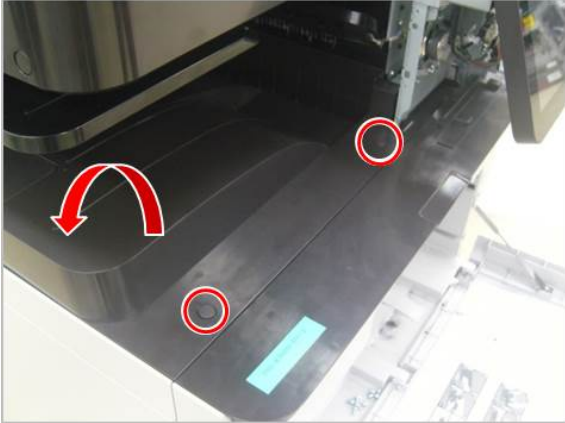


5. Remove 2 screw-caps and 2 screws. Then remove the front-top right cover.



3. Disassembly and Reassembly

6. Remove 2 screw-caps and 2 screws. Then release the Exit Tray.

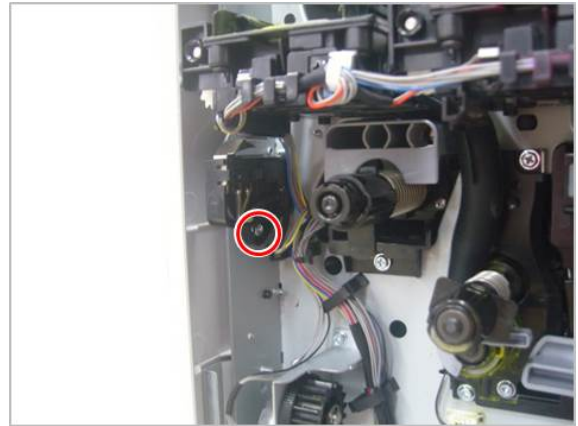


7. Release the inner cover.



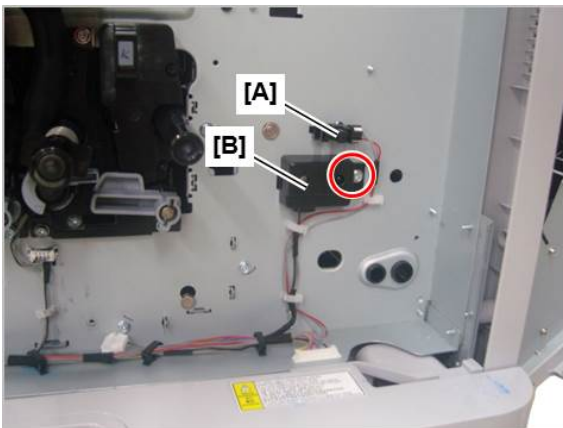
3.3.24. Front Cover Open sensor

1. Remove the inner cover. (Refer to 3.3.23.)
2. Remove 1 screw. Unplug the sensor connector. And release the front cover open sensor.



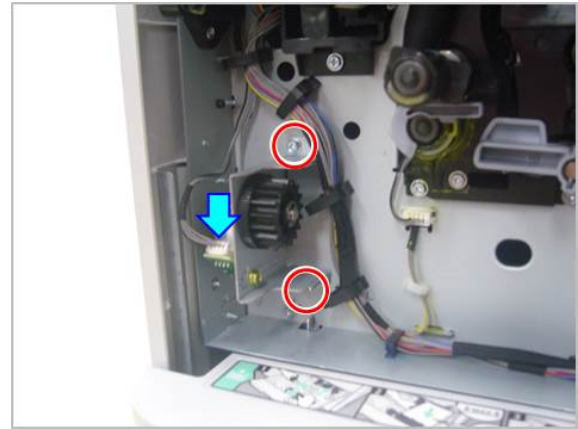
3.3.25. Waste Toner Container sensor

1. Remove the inner cover. (Refer to 3.3.23.)
2. Release the corresponding sensor.
 - [A] : Waste Toner Level sensor
 - [B] : Waste Toner Container Detect sensor



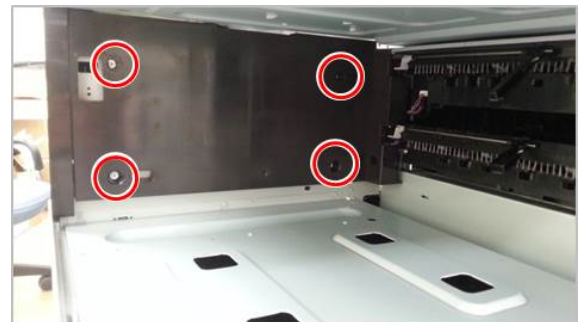
3.3.26. WTB Drive Unit

1. Remove the inner cover. (Refer to 3.3.23.)
2. Unplug the connector. Remove 2 screws. And release the WTB drive unit .

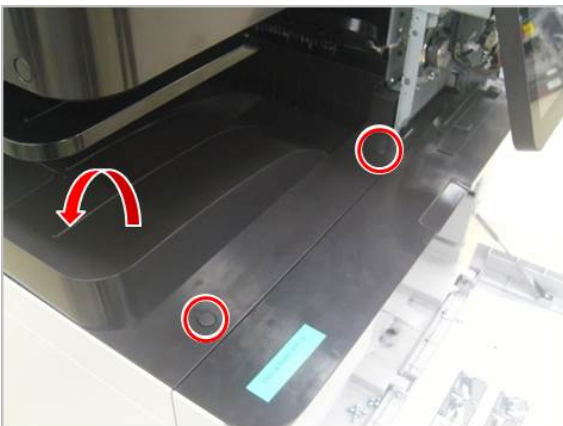


3.3.27. HDD (Hard Disk Drive)

1. Remove 2 screw-caps and 2 screws. Then remove the front-top left cover.
3. Release the HDD cover after removing 4 screws.

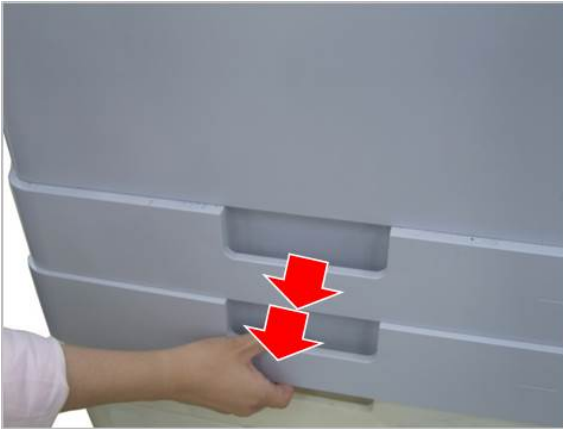


2. Remove 2 screw-caps and 2 screws. Then remove the Exit Tray.
4. Remove 4 screws. Unplug the HDD cable. And release the HDD with its holder.

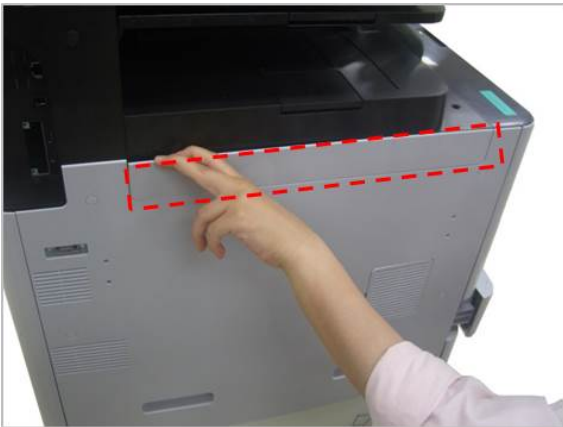


3.3.28. LSU Fan

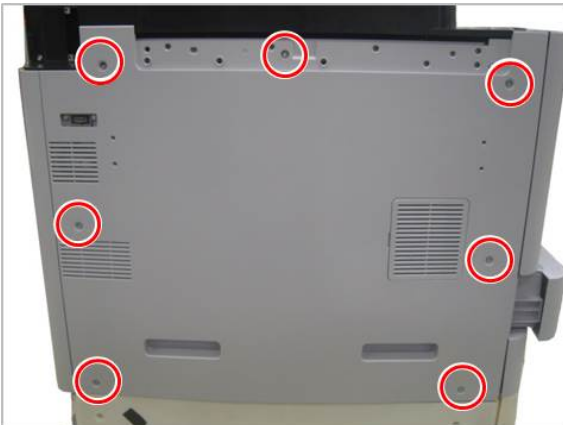
1. Open 2 cassettes.



2. Remove the left-dummy cover.



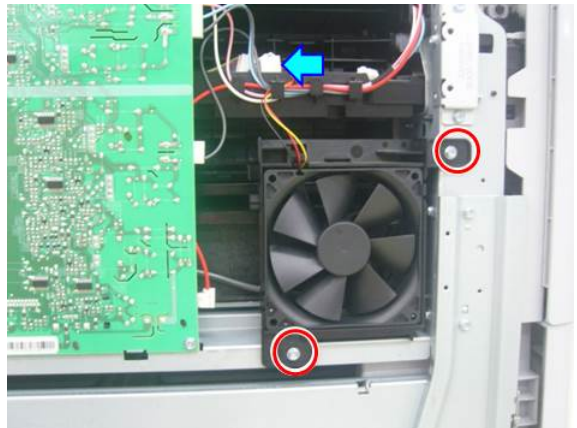
3. Remove 6 screw-caps and 7 screws.



4. Remove the left cover.

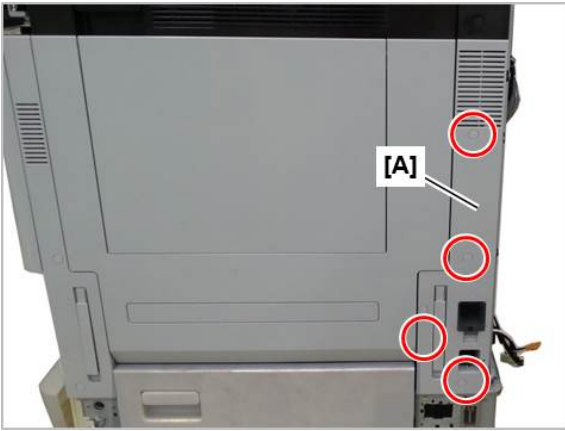


5. Remove 2 screws. Unplug the fan connector. And, release the LSU fan.

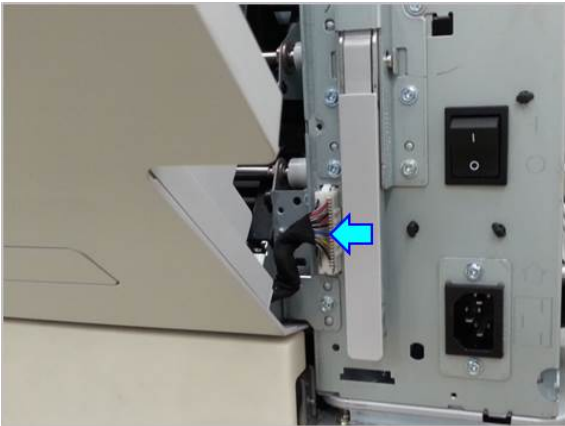


3.3.29. Side Unit

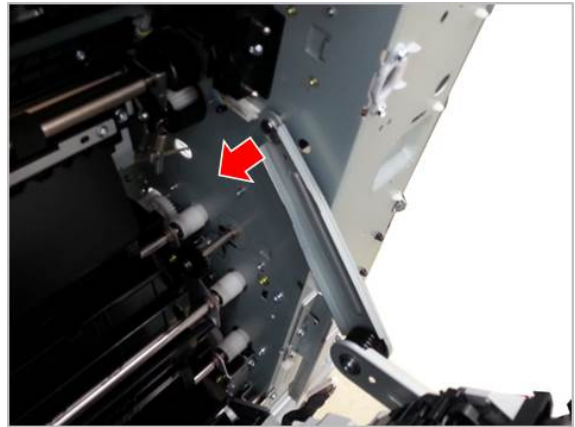
1. Remove 4 screw-caps and 4 screws. Then release the Right-Rear cover[A].



2. Unplug the side unit connector.



3. Release the right stopper.



4. Release the left stopper.

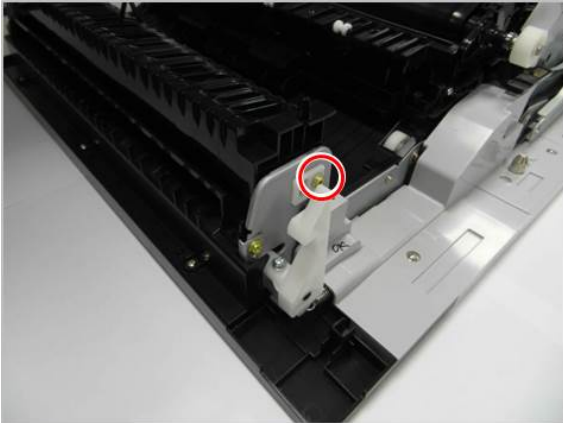


5. Release the side unit.



3.3.29.1. Fuser-Out Sensor

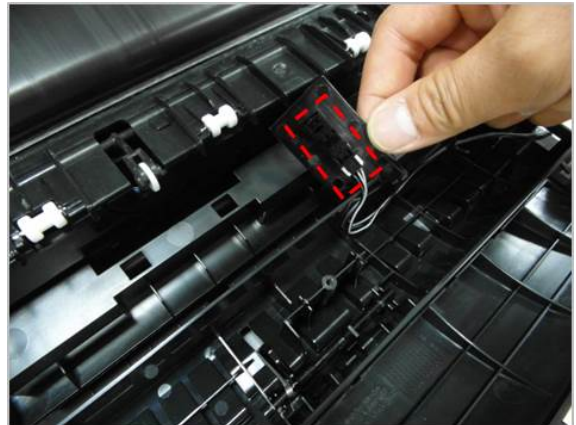
1. Remove the Side Unit. (Refer to 3.3.29.)
2. Remove both screws. Then turn up the Cover-Side Exit.



3. Remove 1 screw. Then turn up the sensor holder.



4. Unplug the sensor connector. Then release the Fuser-Out sensor from its holder.

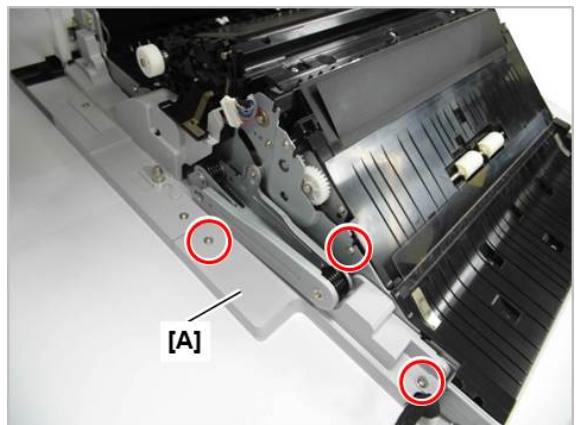


3.3.29.2. Feed 2 sensor

1. Remove the Side Unit. (Refer to 3.3.29.)
2. Remove 4 screws.

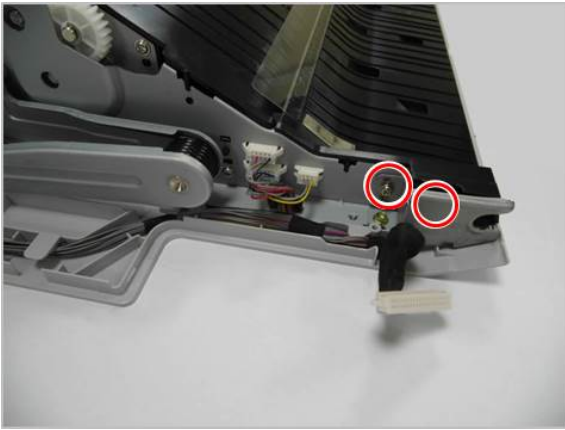


3. Remove 3 screws. Then remove the Cover-Harness Lower[A].

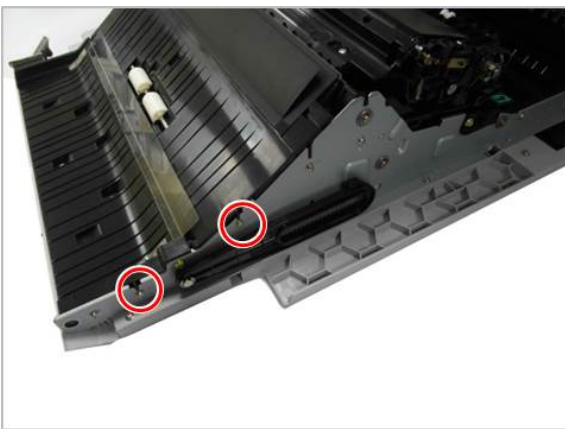


3. Disassembly and Reassembly

4. Remove 2 screws.



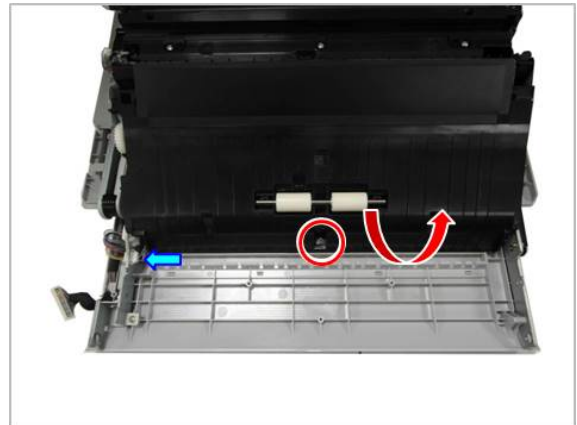
5. Remove 2 screws.



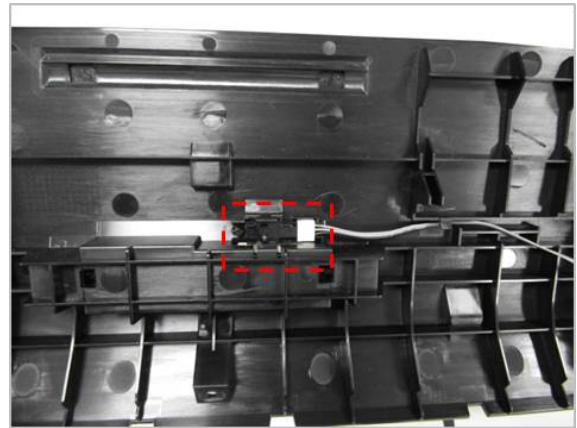
6. Remove the Guide-Take Away Lower.



7. Unplug the sensor connector. Remove 1 screw. And then remove the Guide-Take Away Upper.

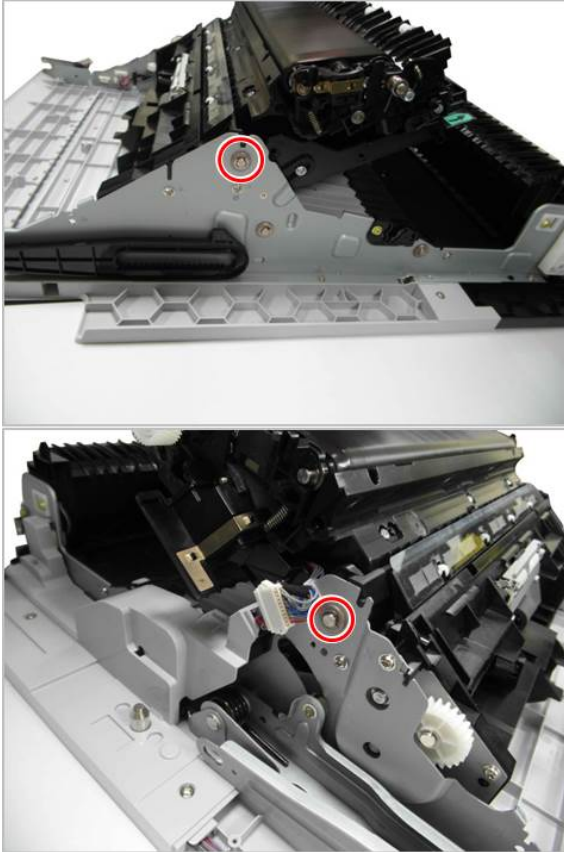


8. Unplug the sensor connector. Then release the Feed 2 sensor.

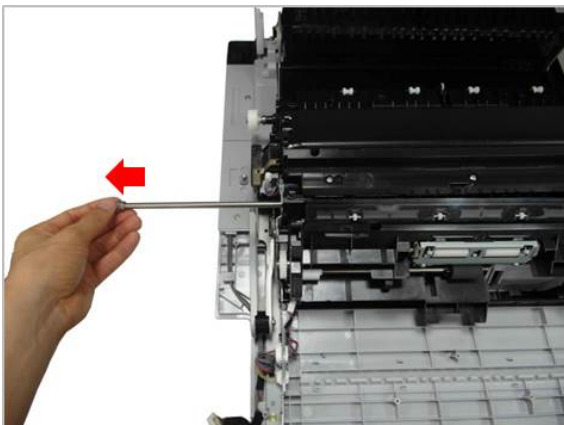


3.3.29.3. MP Unit

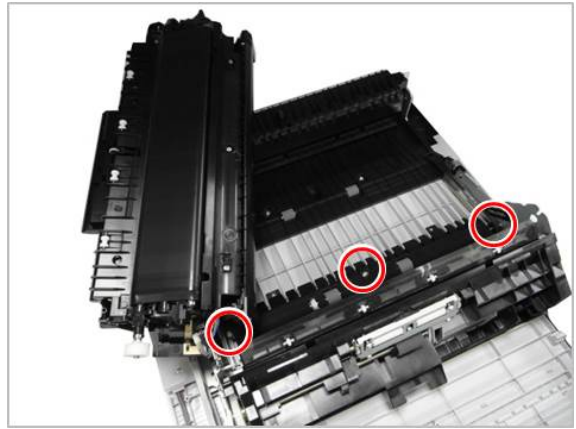
1. Remove the Side Unit. (Refer to 3.3.29.)
2. Remove the Guide-Take Away Lower and Upper. (Refer to 3.3.29.2)
3. Remove both E-ring and Bush.



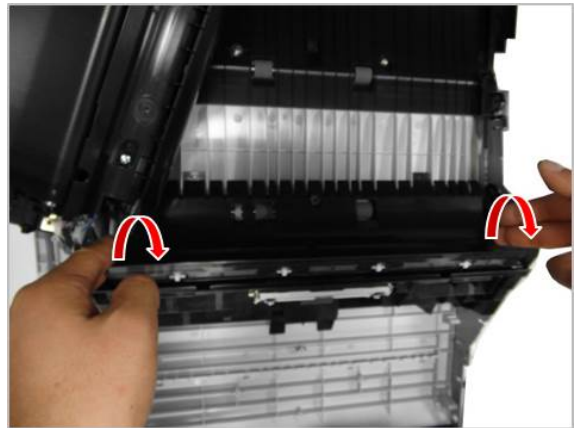
4. Remove the Shaft.



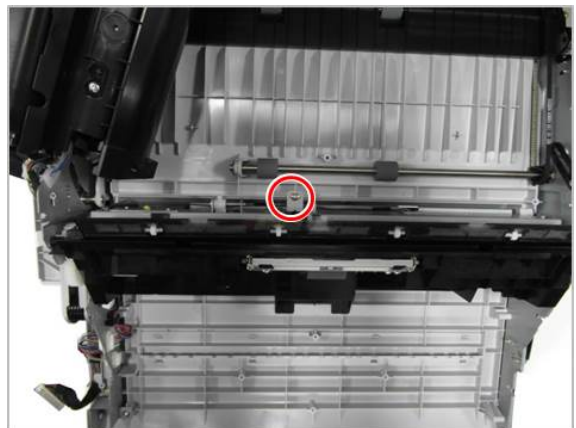
5. Release and place the PTB Assy as shown below. Then remove 3 screws.



6. Remove the Guide-Duplex Lower.

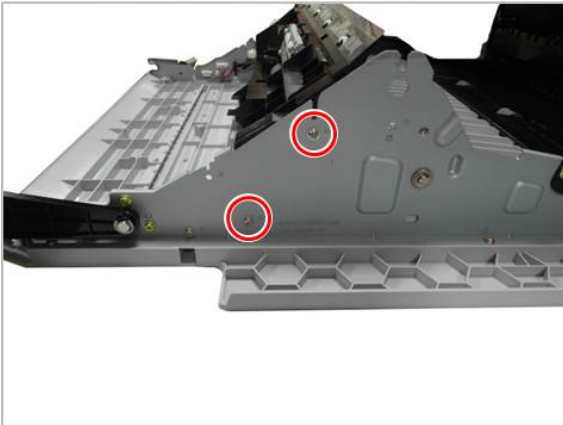
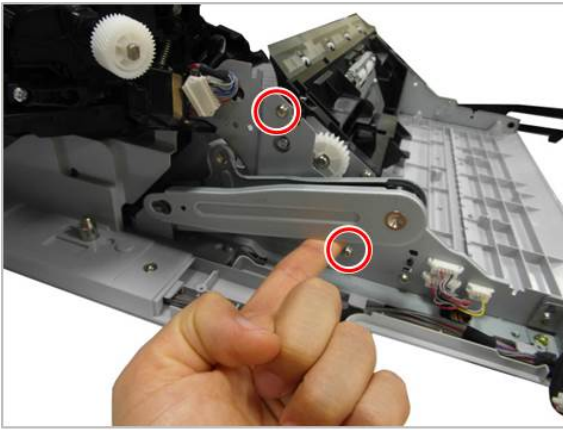


7. Remove 1 screw.

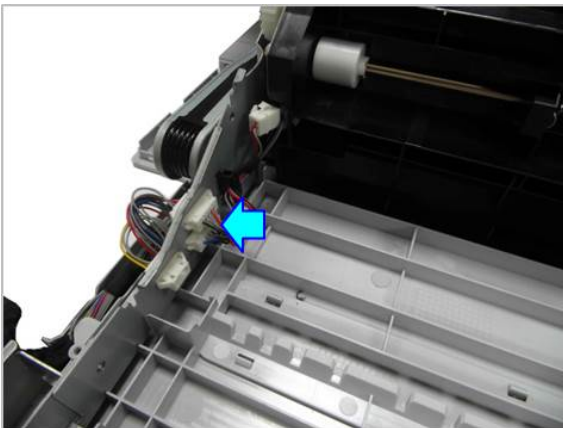


3. Disassembly and Reassembly

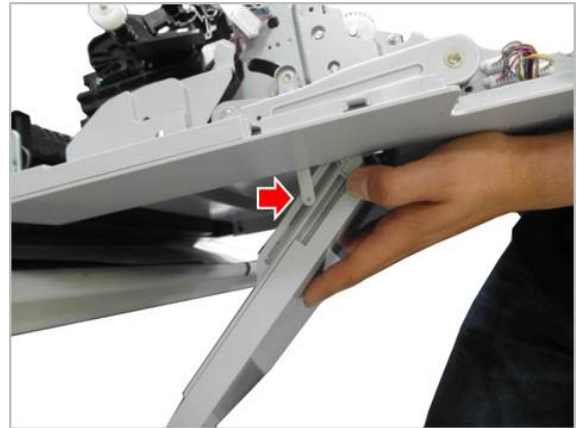
8. Remove 4 screws.



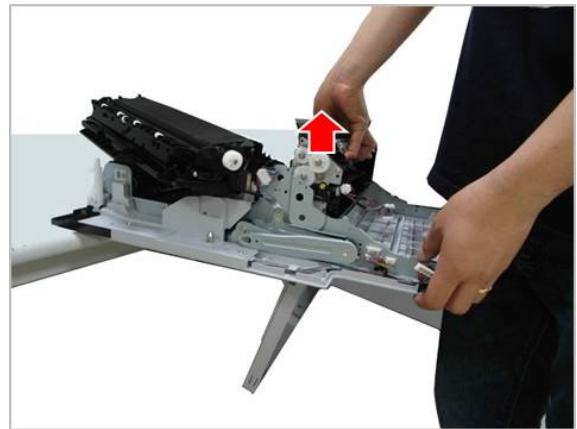
9. Unplug the sensor connector.



10. Release the MP Tray Linker.

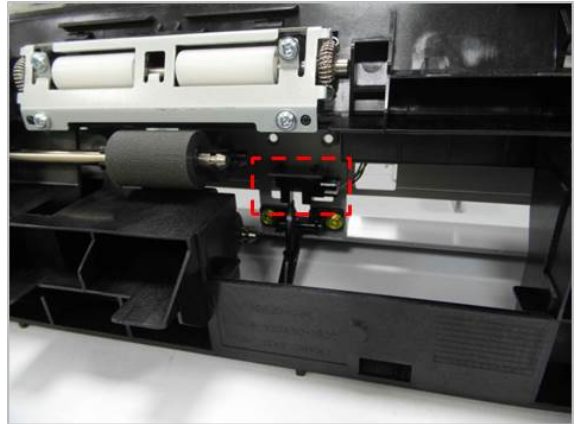


11. Release the MP Unit.



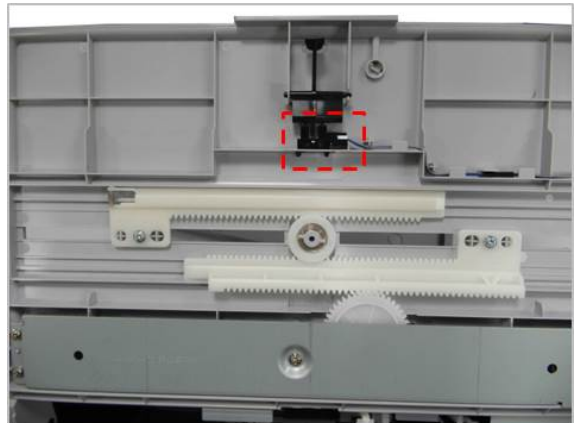
3.3.29.4. MP empty sensor

1. Remove the MP Unit. (Refer to 3.3.29.3.)
2. Unplug the connector. Then release the MP empty sensor.



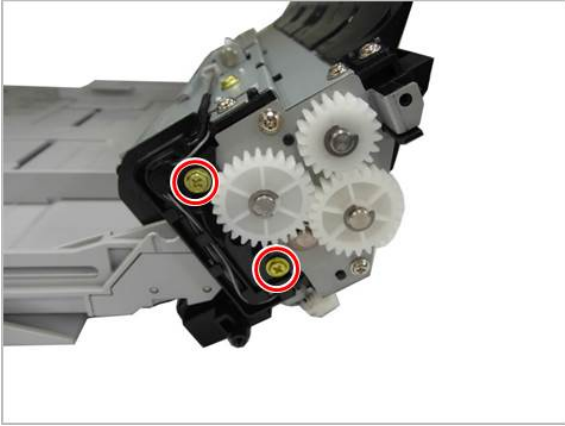
3.3.29.5. MP paper length sensor

1. Remove the MP Unit. (Refer to 3.3.29.3.)
2. Remove the MP Tray Upper.
3. Unplug the connector. Then remove the MP paper length sensor.



3.3.29.6. MP solenoid

1. Remove the MP Unit. (**Refer to 3.3.29.3.**)
2. Remove 2 screws. Remove 3 gears. And then release the MP tray.



3. Remove 2 screws. Remove 3 E-rings and Bushes. And then release the Bracket-Rear.



4. Remove 7 screws. Then release the Frame-Base.

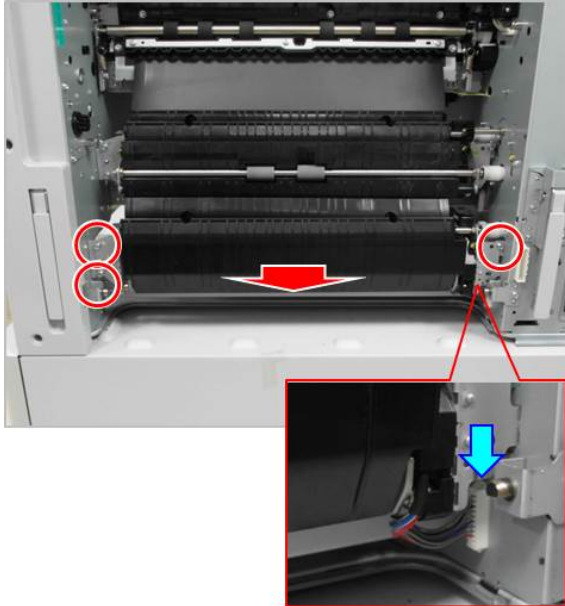


5. Remove 2 screws. Then release the MP solenoid.



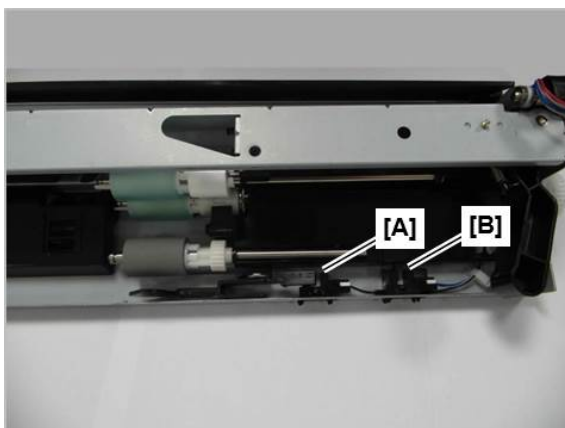
3.3.30. Pick-Up Unit 2

1. Remove the Side Unit. (Refer to 3.3.29.)
2. Remove 3 screws. Unplug the connector. And then release the Pick-Up Unit 2.



3.3.30.1. Pick up Lifting sensor and Empty sensor

1. Remove the Pick-Up Unit 2. (Refer to 3.3.30.)
2. Unplug the corresponding sensor connector. Then remove the sensor.
 - [A] : Empty sensor
 - [B] : Pick up Lifting sensor



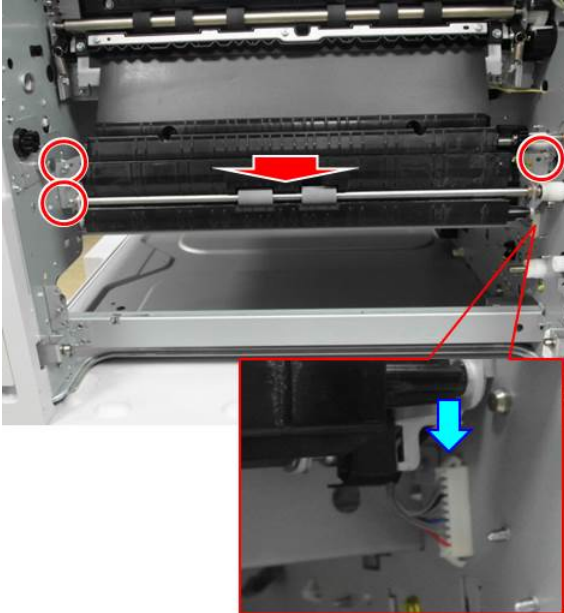
3.3.30.2. Pre-Feed sensor 2

1. Remove the Pick-Up Unit 2. (**Refer to 3.3.30.**)
2. Open the Guide-Pick up. Then remove the Pre-Feed sensor 2.



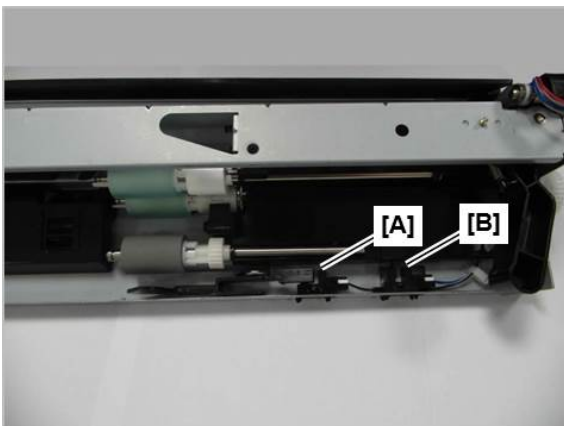
3.3.31. Pick-Up Unit 1

1. Remove the Side Unit. (Refer to 3.3.29.)
2. Remove the Pick-Up Unit 2. (Refer to 3.3.30.)
3. Remove 3 screws. Unplug the connector. And, release the Pick-Up Unit 1.



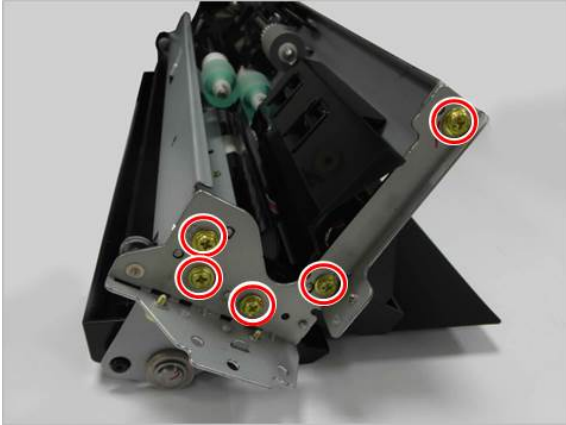
3.3.31.1. Pick-Up Lifting sensor and Empty sensor

1. Remove the Pick-Up Unit 1. (Refer to 3.3.31.)
2. Unplug the corresponding sensor connector. Then remove the sensor.
 - [A] : Empty sensor
 - [B] : Pick up Lifting sensor

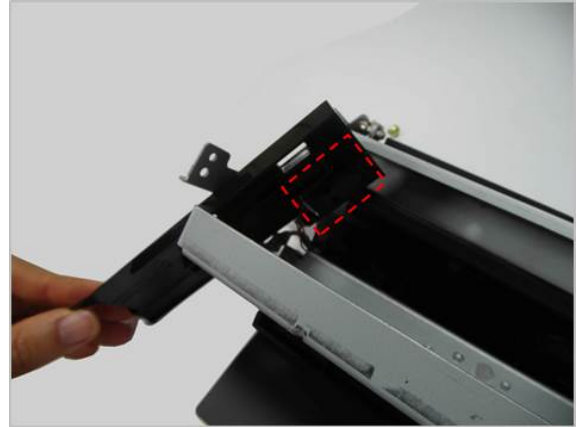


3.3.31.2. Pre-Feed sensor 1

1. Remove the Pick-Up Unit 1. (**Refer to 3.3.31.**)
2. Remove 5 screws. Then remove the bracket.



3. Release the sensor from its holder.



3.3.32. Exit Unit

1. Remove the Side Unit. (Refer to 3.3.29.)
2. Remove 2 screw-caps and 2 screws. Then remove the front-top right cover.



3. Remove 4 screws.



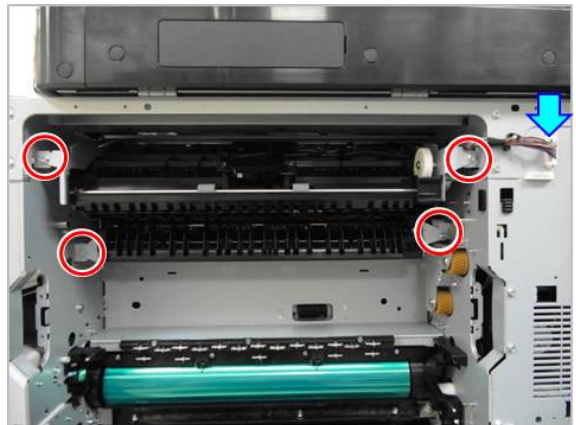
4. Unplug the connector. Then release the Right-top cover.



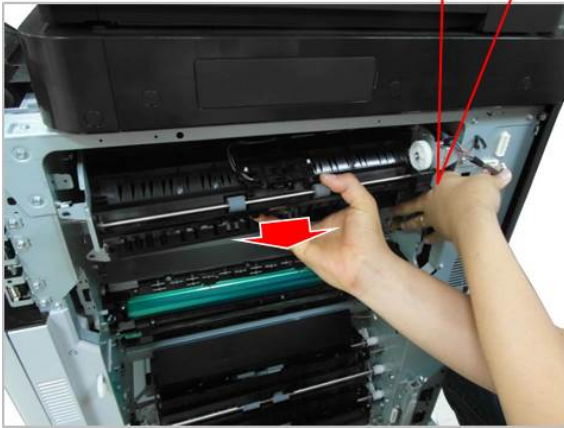
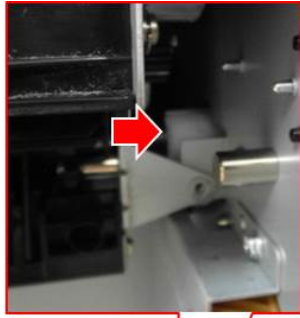
5. Remove 4 screws. Then pull out the fuser unit.



6. Unplug the connector. Remove 4 screws.

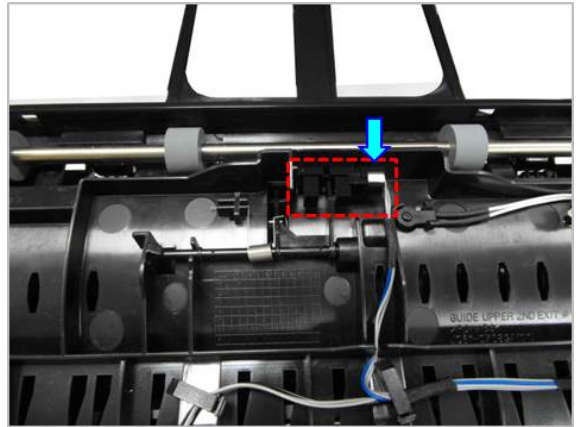


7. Remove the Exit Unit while pushing the gear to the right.



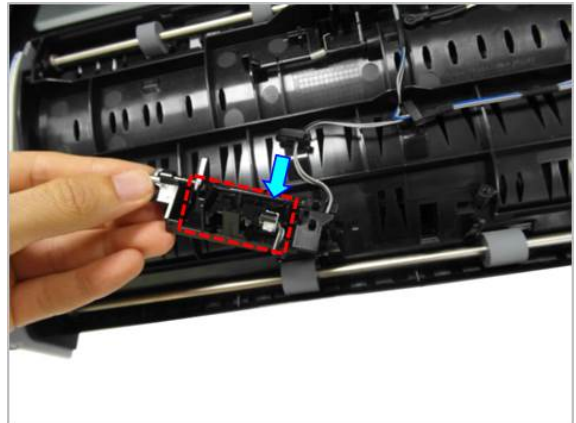
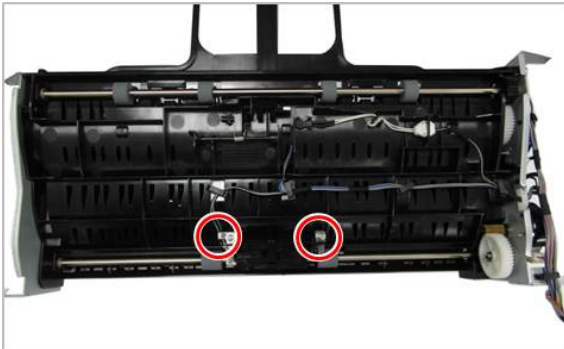
3.3.32.1. Return sensor

1. Remove the Exit Unit. (Refer to 3.3.33)
2. Unplug the sensor connector. Then remove the Return sensor.



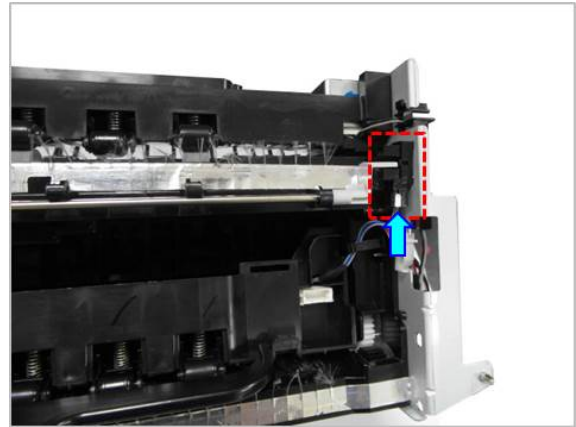
3.3.32.2. Duplex 1 sensor

1. Remove the Exit Unit. (Refer to 3.3.33)
2. Remove 2 screws. Then turn up the sensor holder.
3. Unplug the connector. Then release the Duplex 1 sensor.



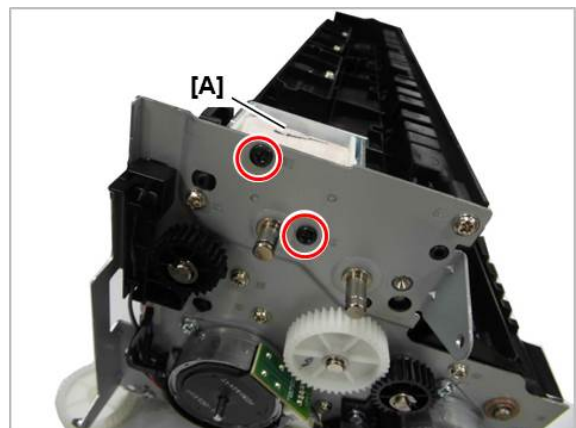
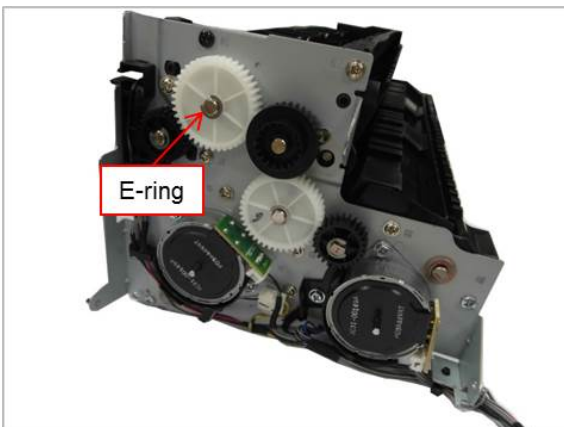
3.3.32.3. Exit 1 Bin Full sensor

1. Remove the Exit Unit. (Refer to 3.3.33.)
2. Unplug the sensor connector. Then release the Exit 1 Bin Full sensor.



3.3.32.4. Exit Gate Solenoid

1. Remove the Exit Unit. (Refer to 3.3.33.)
2. Remove the E-ring. Then remove the gear.
3. Remove 2 screws. Then remove the Exit Gate solenoid[A].

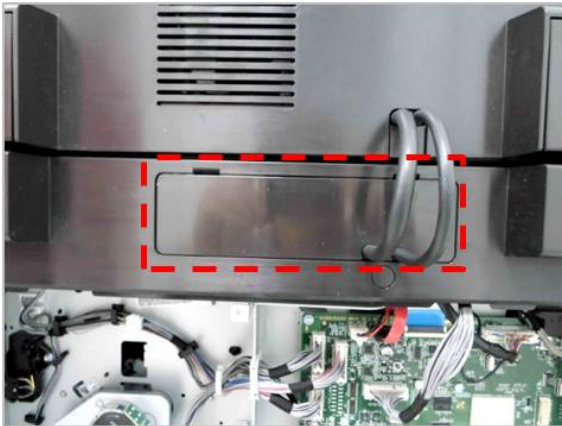


3.3.33. DSDF Unit for LX model

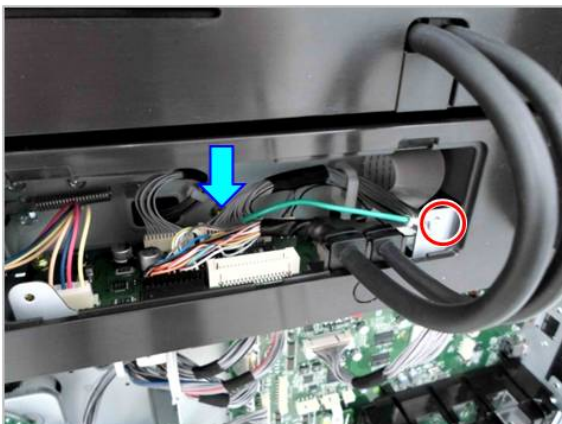
1. Remove the rear cover.
2. Remove 1 screw. Unplug the DSDF harness from the main board.



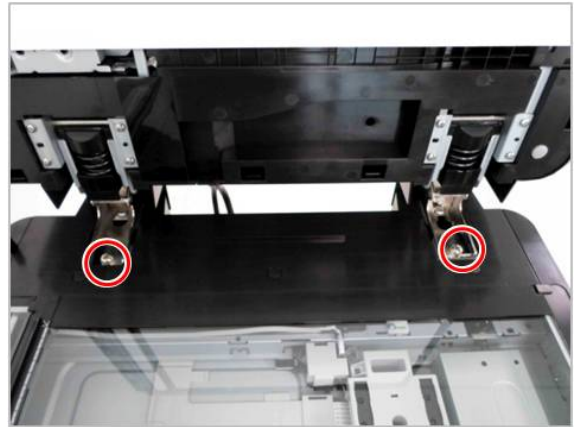
3. Remove the DSDF connector cover.



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



5. Open the DSDF unit. Remove 2 screws.



6. 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)

3.3.33.1. DSDF PBA

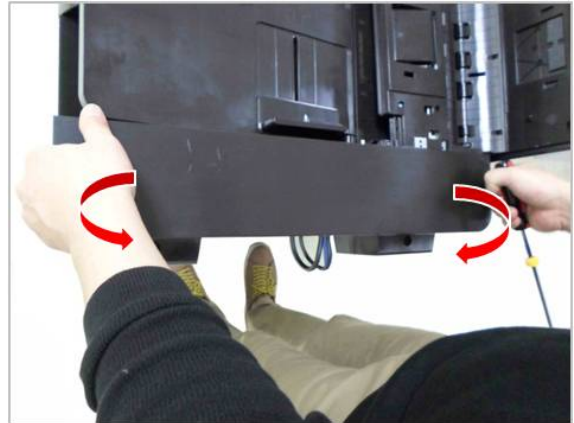
1. Open the DSDF unit. Remove 3 screws from the bottom of the DSDF. And close the DSDF unit.



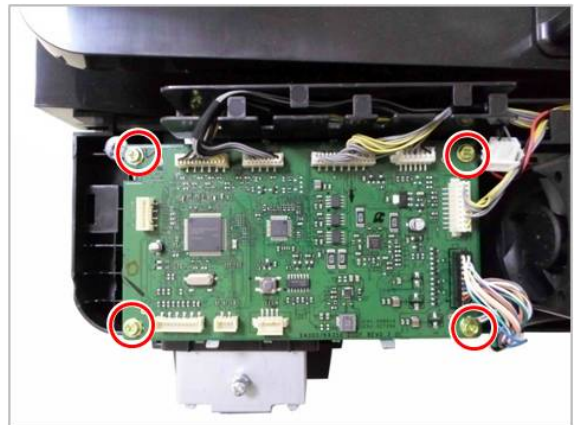
2. Open DSDF-open cover. Remove 2 screws.



3. Release the DSDF rear cover.



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

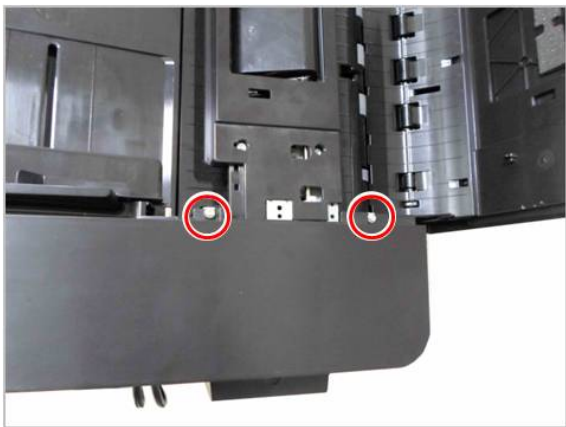


3.3.33.2. DSDF main motor

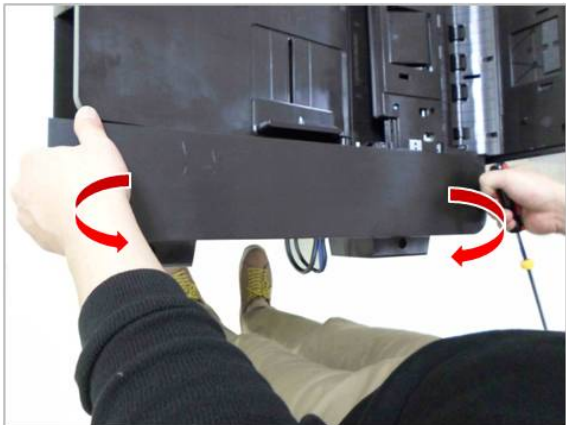
1. Open the DSDF unit. Remove 3 screws from the bottom of the DSDF. And close the DSDF unit.



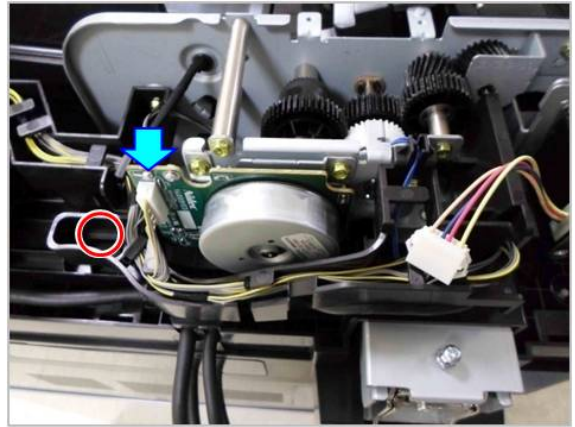
2. Open DSDF-open cover. Remove 2 screws.



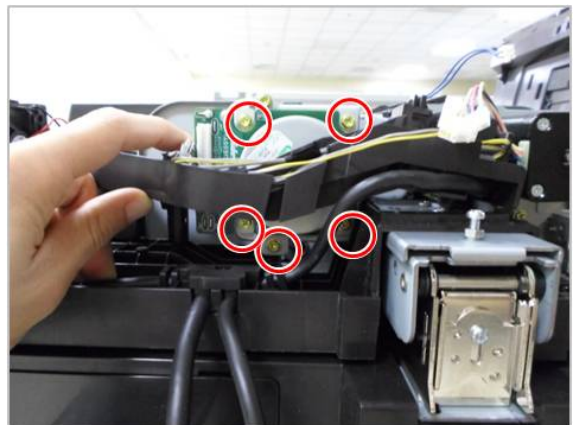
3. Release the DSDF rear cover.



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

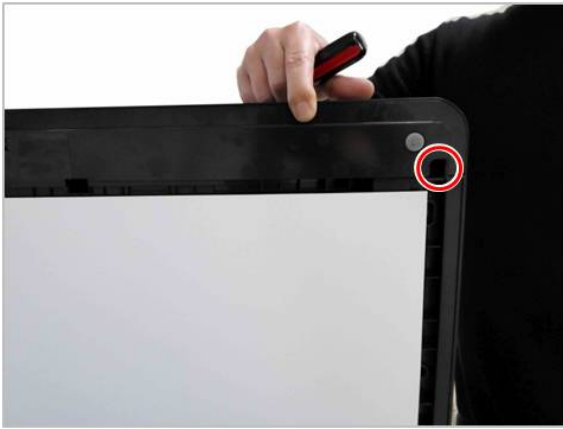


5. Remove 5 screws. Release the DSDF main motor while pulling the harness guide.

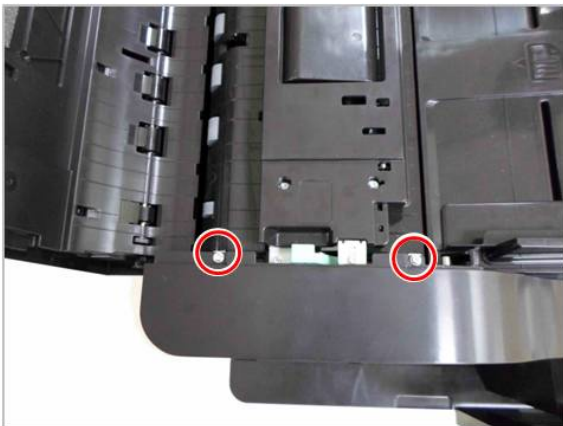


3.3.33.3. DSDF paper length sensor

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 cover-open link.



4. Release the DSDF front cover.



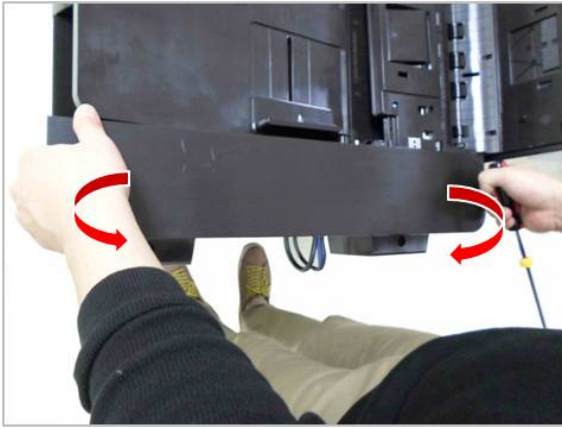
5. Open the DSDF unit. Remove 3 screws from the bottom of the DSDF. And close the DSDF unit.



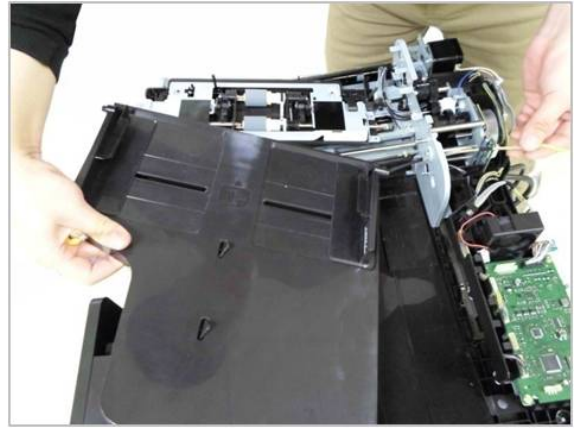
6. Open DSDF-open cover. Remove 2 screws.



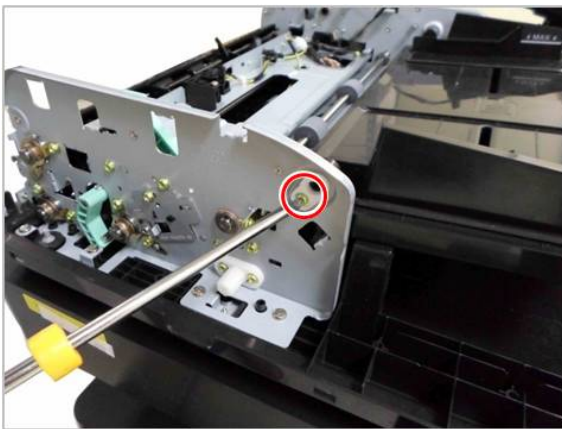
7. Release the DSDF rear cover.



10. Release the stacker.



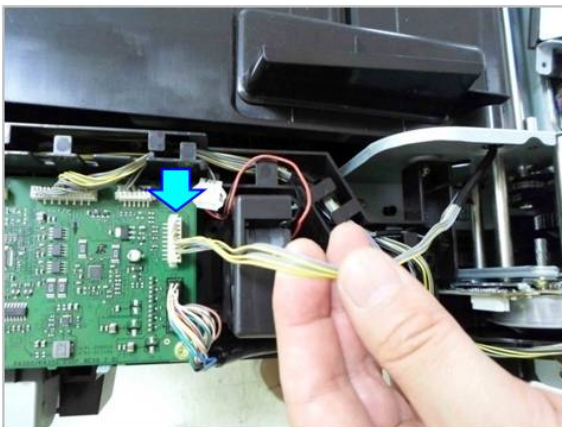
8. Remove 1 screw.



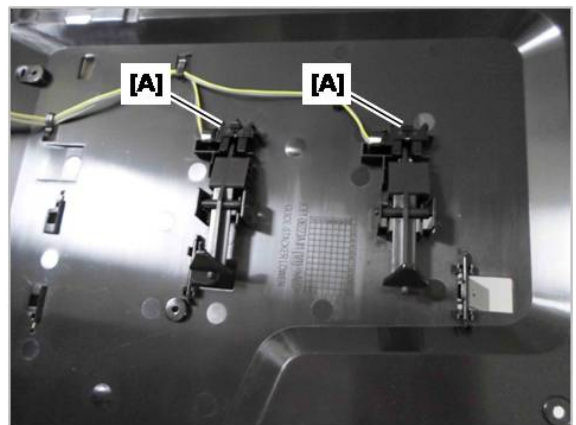
11. Remove 6 screws. Then remove the stacker lower.



9. Unplug the stacker connector from the DSDF board.

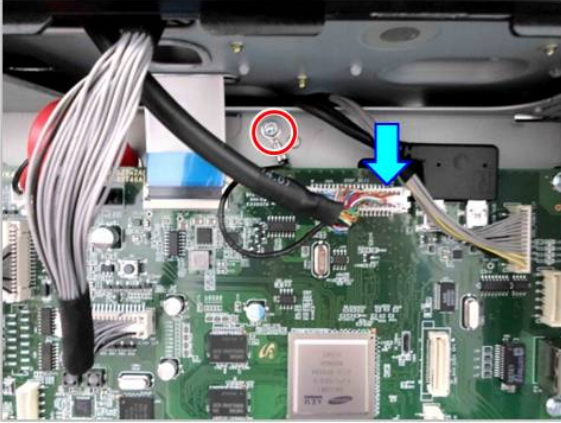


12. Remove the paper length sensor after unplugging the connector.

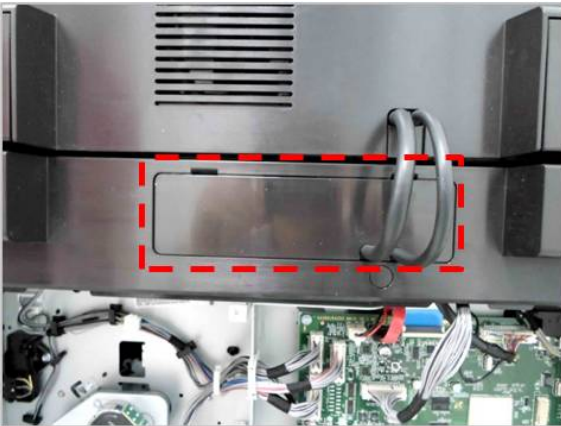


3.3.34. DSDF Unit for GX model

1. Remove the rear cover.
2. Remove 1 screw. Unplug the DSDF harness from the main board.



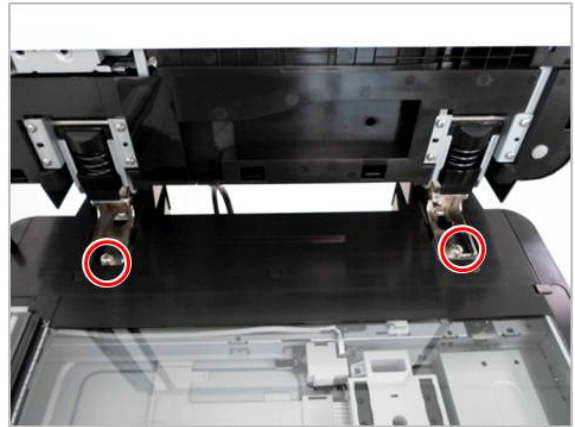
3. Remove the DSDF connector cover.



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



5. Open the DSDF unit. Remove 2 screws.



6. Lift up and release the DSDF unit.

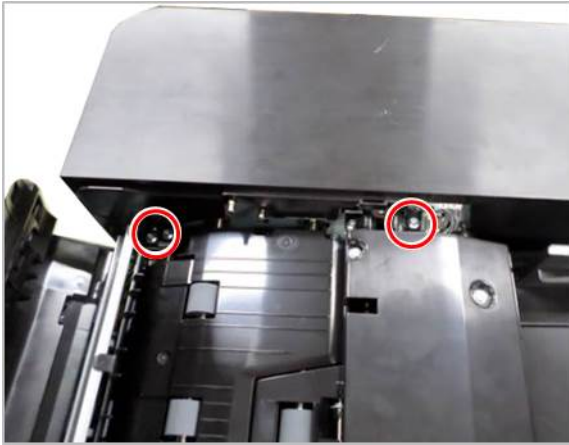


! NOTE

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

3.3.34.1. DSDF PBA

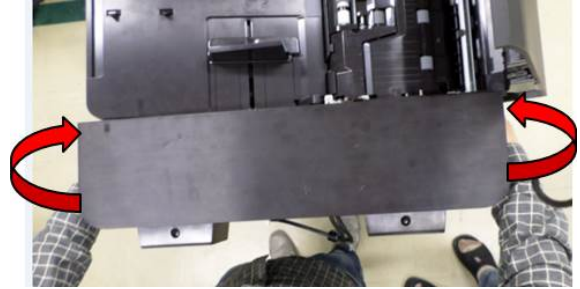
1. Open the DSDF-open cover. Then, remove 2 screws.



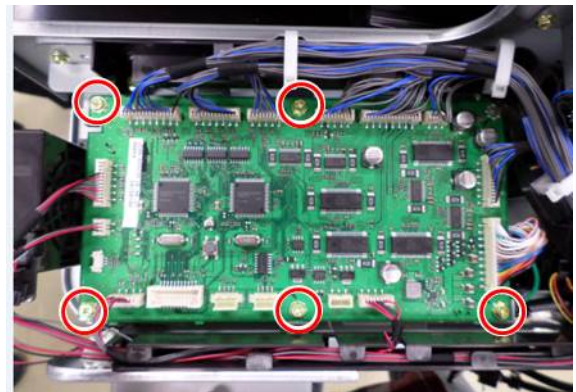
2. Remove 3 screws from the rear.



3. Remove the DSDF rear cover.

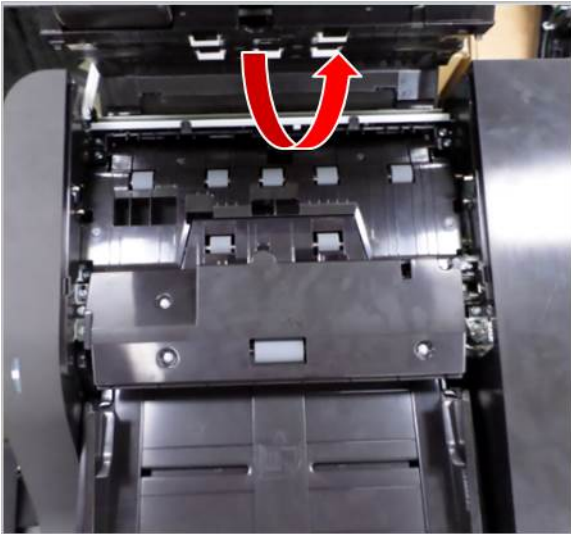


4. Unplug all harness on the DSDF PBA. Remove 5 screws. And release the DSDF PBA.



3.3.34.2. DSDF Stacker Sensor

1. Open the DSDF-open cover.



2. Remove 4 screws.



3. Pull the pick up module to the front and unplug the connector while lifting up its front.



4. Push the lower part of the cover to release the lock by stopper.



5. Release the Stacker Upper Assy while keep the status of step 4.



6. Release the harness from the marked position. Place the Stacker Upper Assy on the rear cover.



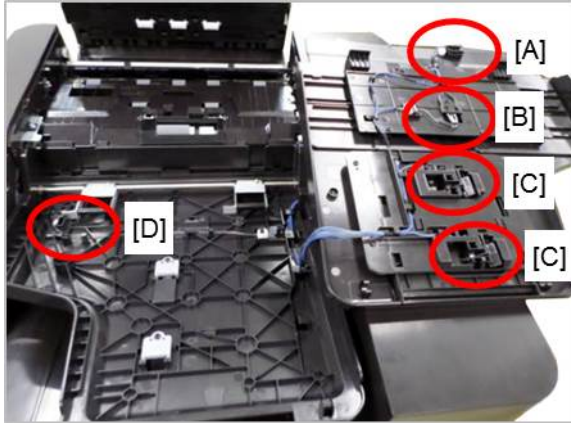
7. Check the connection and replace the defective sensor.

[A] : 0604-001381 , Stacker paper detection sensor

[B] : JC39-02087A , Paper width sensor

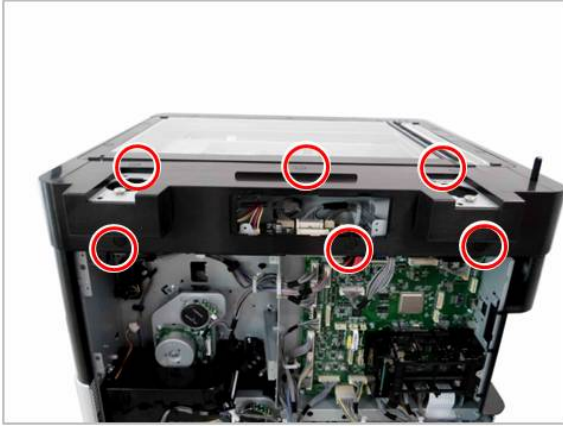
[C] : 0604-001393 , Paper Length sensor

[D] : 0604-001393 , Stacker elevator position detection sensor



3.3.35. Scanner Unit(Platen Unit)

1. Remove the DSDF 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.



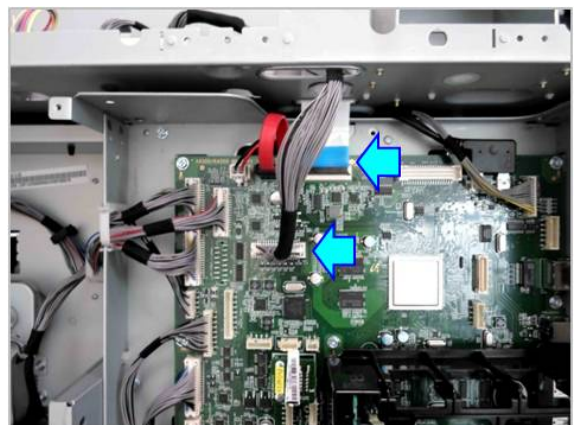
4. Remove 3 screw-caps and 3 screws. Then release the scan-left cover.



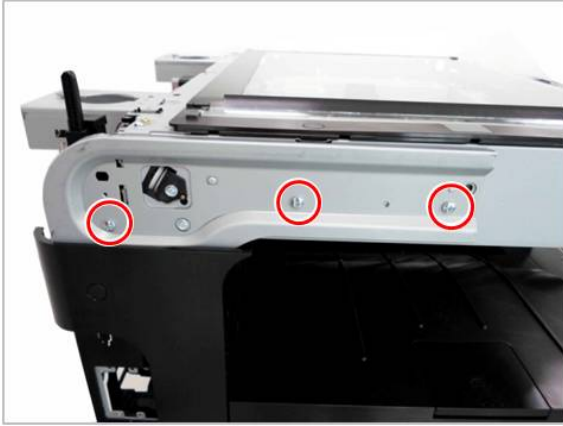
5. Remove 3 screw-caps and 3 screws. Then release the scan-right cover.



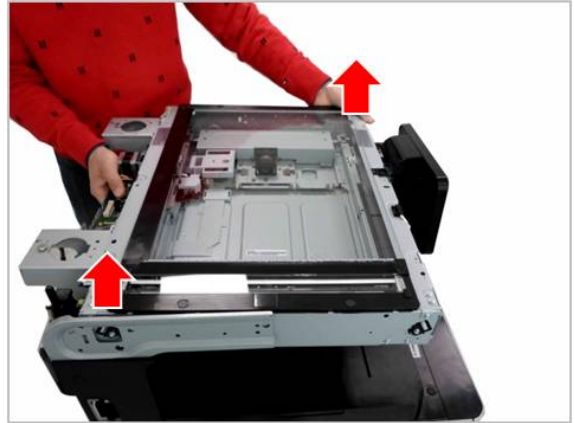
6. Unplug the scan cables.



7. Remove 3 screws from the left.



9. Lift up and release the platen unit.

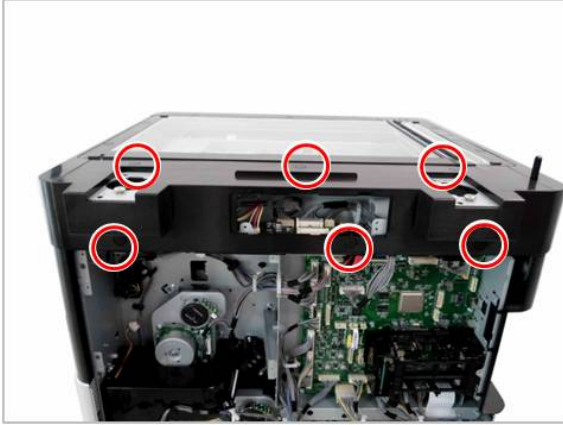


8. Remove 2 screws from the right.

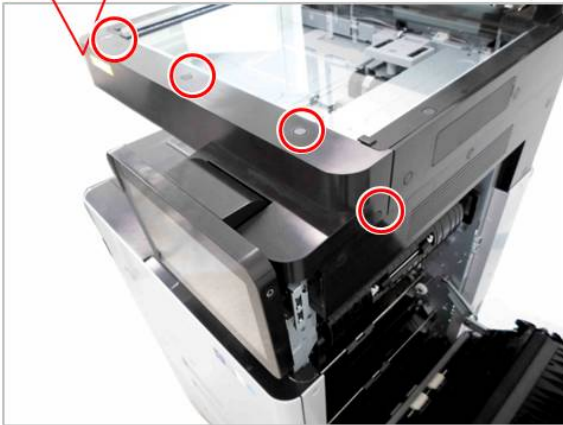


3.3.35.1. Scan Glass

1. Remove the DSDF 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.



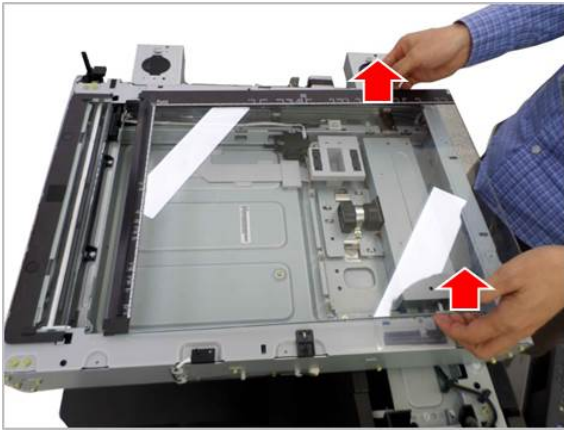
5. Remove 3 screw-caps and 3 screws. Then release the scan-right cover.



6. Remove 2 screw-caps and 2 screws.

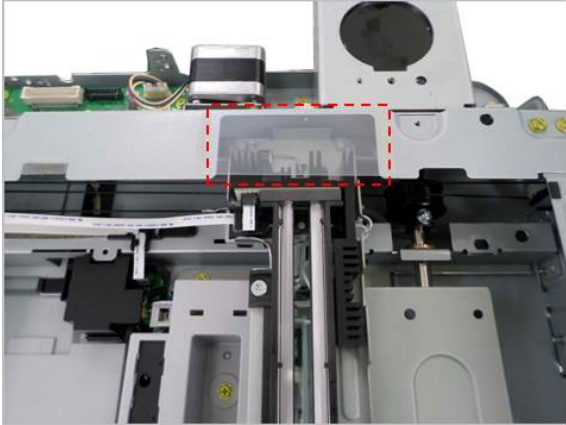


7. Remove the scan glass.



3.3.35.2. LED Lamp Module

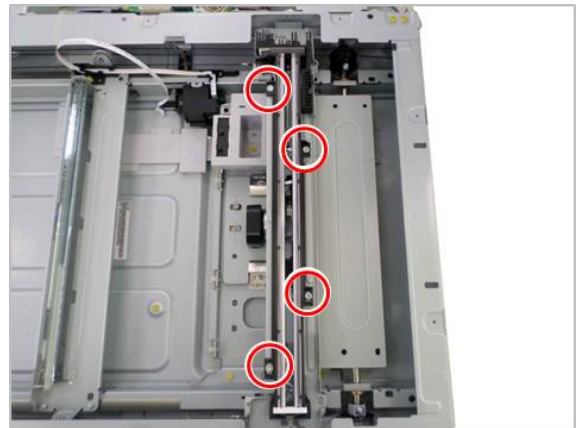
1. Remove the scan glass. (Refer to 3.3.35.1)
2. Remove the transparent tape.



3. Unplug the flat cable.

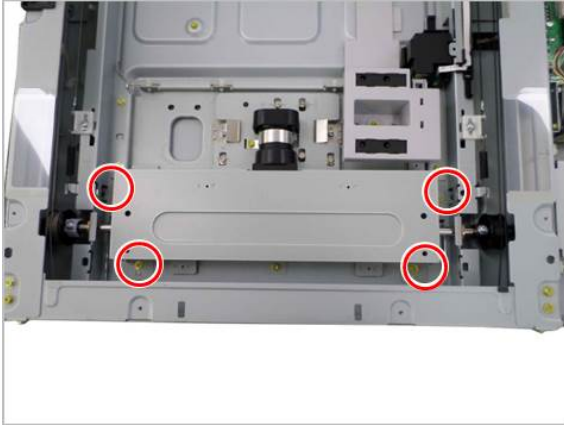


4. Remove 4 screws. Then, release the LED lamp module.

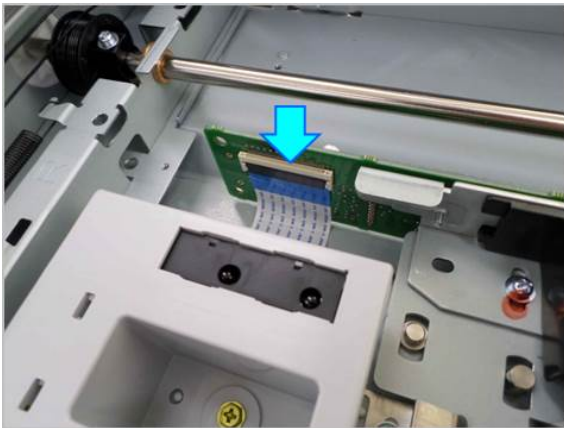


3.3.35.3. Scanner Imaging Unit

1. Remove the scan glass. (Refer to 3.3.35.1)
2. Release the imaging unit cover after removing 4 screws.



3. Unplug the flat cable.



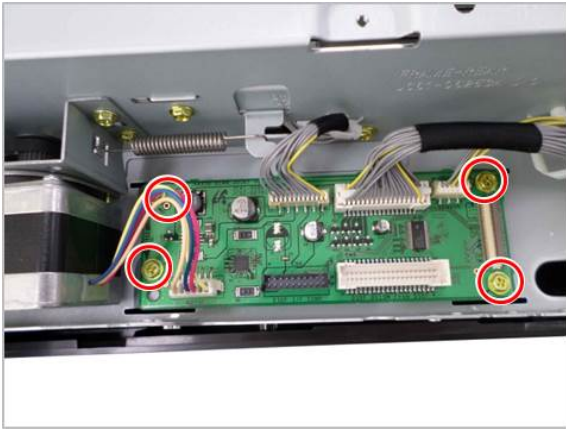
! NOTE

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



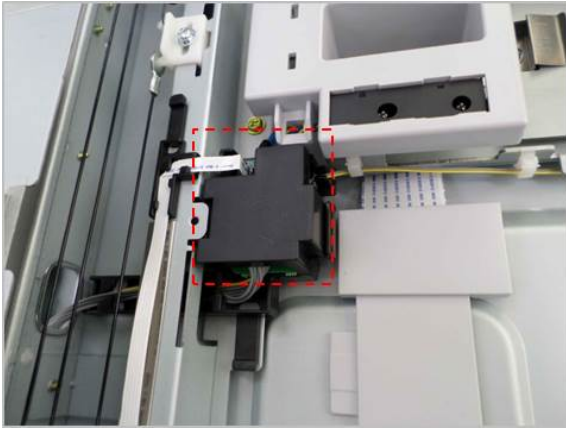
3.3.35.4. Scan Joint PBA

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

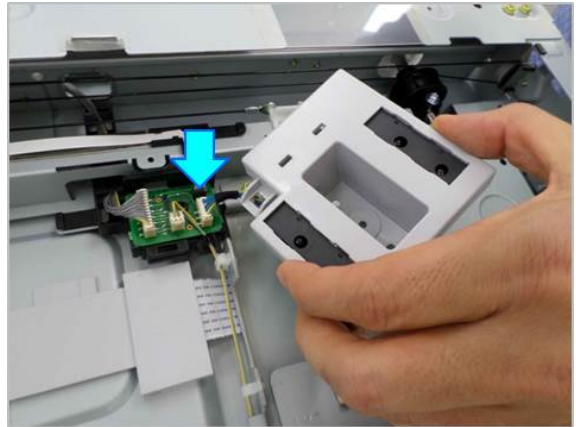


3.3.35.5. APS Sensor

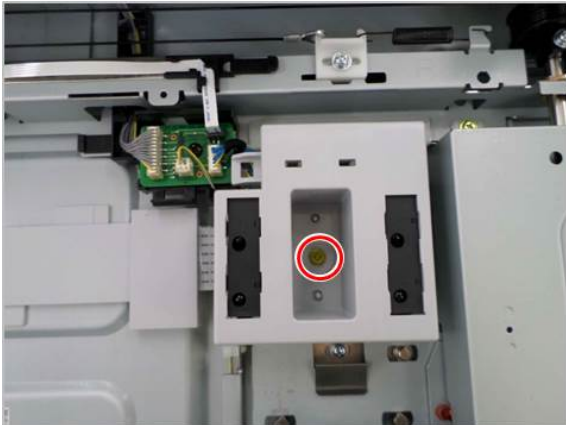
1. Remove the scan glass. (Refer to 3.3.35.1)
2. Remove the joint board cover.



4. Unplug the harness.



3. Remove 1 screw.



5. Release the APS sensor after removing 2 screws.



3.3.36. Reservoir Unit

1. Open the front cover. Then, remove YMCK toner cartridges and Waste Toner Container.



2. Remove 6 screws.



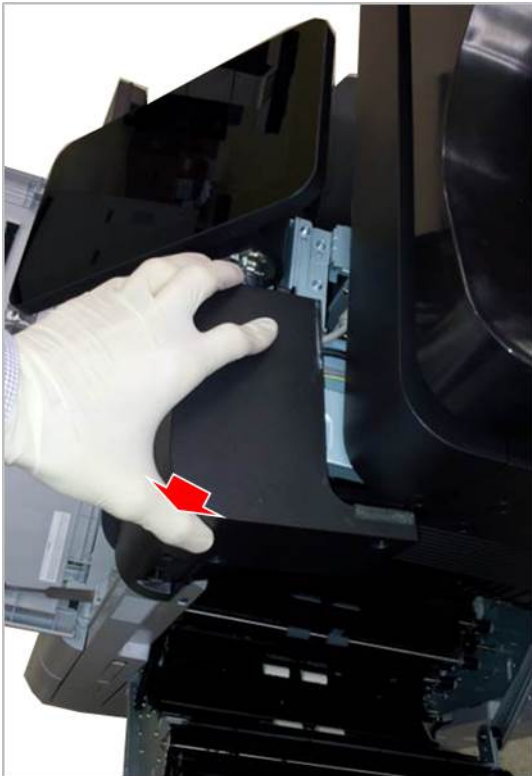
3. Remove the Front-Top Left cover.



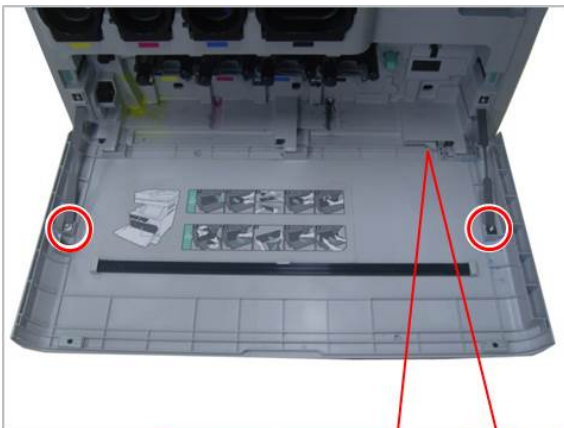
4. Open the side cover.



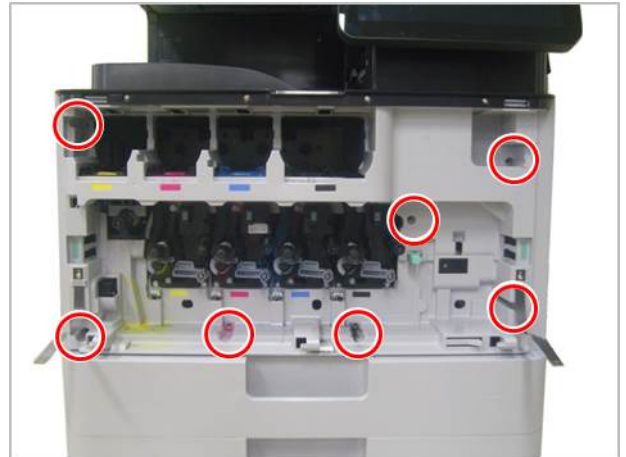
5. Remove the Front-Top Right cover.



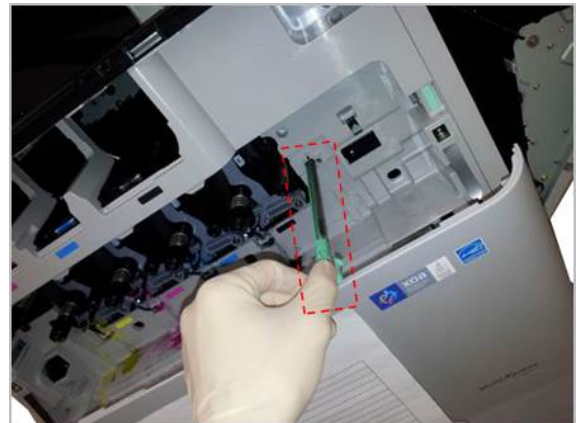
6. Remove 2 screws securing the front cover. Then, remove the front cover while pushing the right hook.



7. Remove 7 screws securing the inner cover.



8. Remove the Dust-cleaning bar.

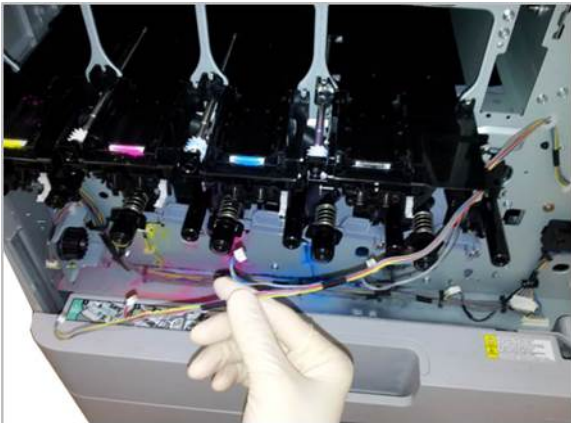


3. Disassembly and Reassembly

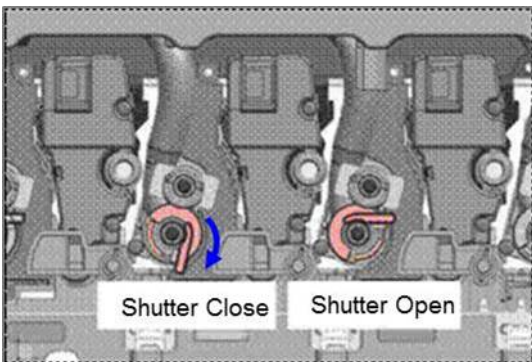
9. Remove the inner cover while lifting the exit tray.



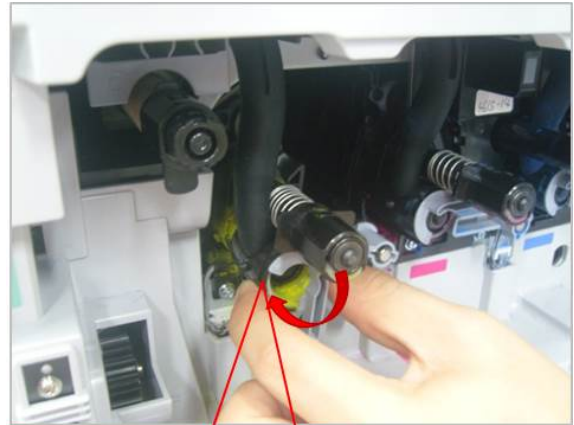
10. Release the harness.



11. Close YMCK shutters.



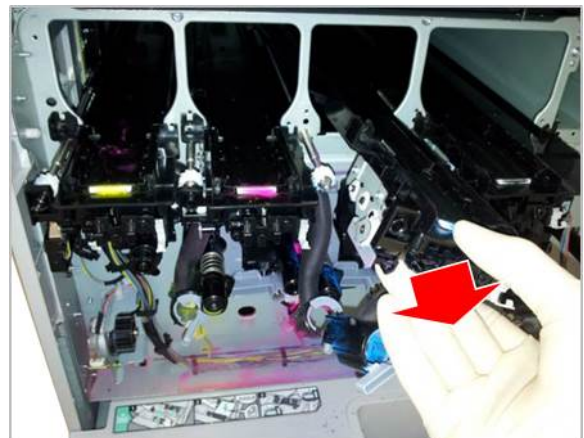
12. Turn the toner supply pipe at a 90 degree angle in a clockwise direction. Then, pull it to the front.



13. Remove 8 screws.



14. Remove the Reservoir Unit in following order. (BK → C → M → Y)



15. Assemble the Reservoir Unit in reverse order of the disassembly.

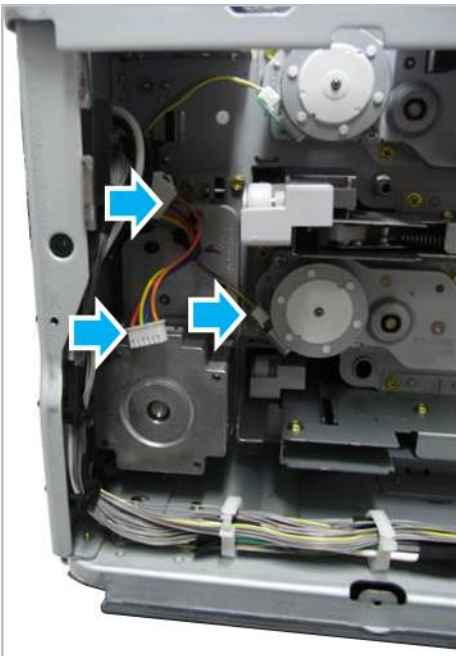
3.3.37. Double Cassette Feeder(DCF) Unit

3.3.37.1. DCF Feed Motor

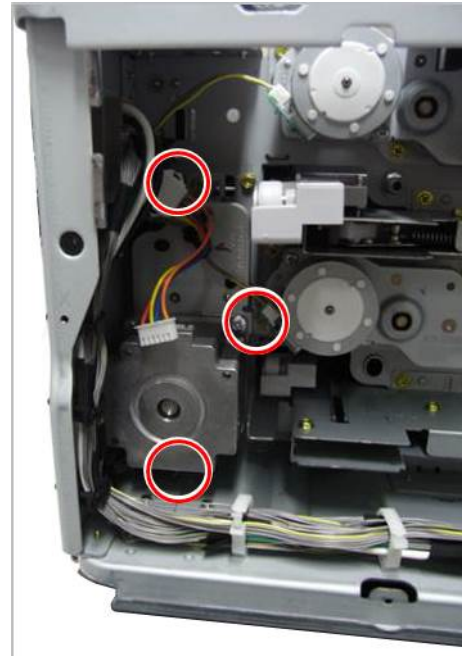
1. Remove 4 "CAP-SCREW". Remove 4 screws. And remove the COVER-REAR.



2. Unplug 2-motor connectors. Open the harness clamp.



3. Remove 3 screws. Then, remove the Feed Drive Unit.



4. Remove 2 screws. Then, replace the Feed Motor.

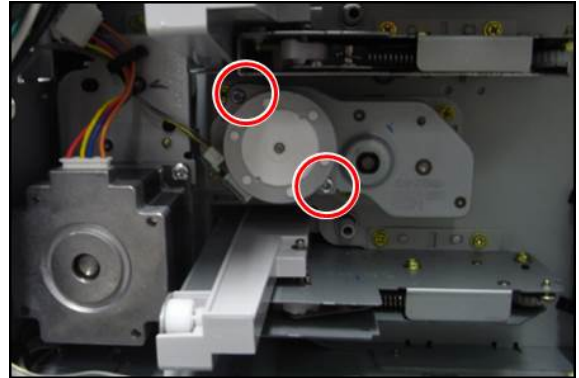


3.3.37.2. DCF Pick-up Motor

1. Remove 4 "CAP-SCREW". Remove 4 screws. And remove the COVER-REAR.



2. Unplug the motor connector. Remove 2 screws. And replace the DCF Pick-up Motor.

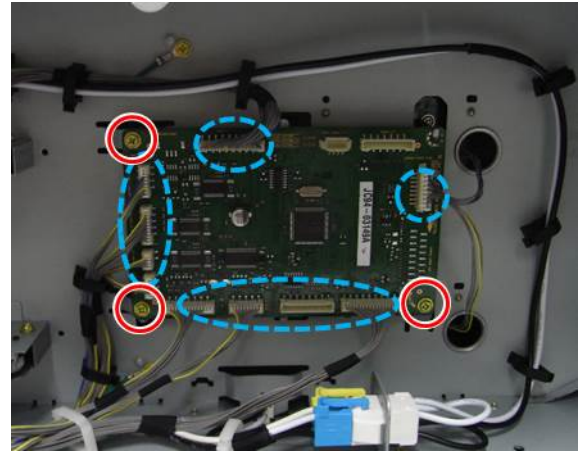


3.3.37.3. DCF PBA

1. Remove 4 “CAP-SCREW”. Remove 4 screws. And remove the COVER-REAR.



2. Unplug the 8 connectors. Remove 3 screws. And replace the DCF PBA.



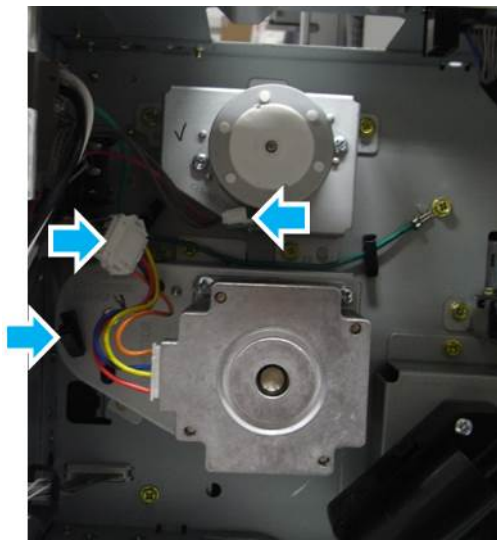
3.3.38. High Capacity Feeder(HCF) Unit

3.3.38.1. HCF Feed Motor

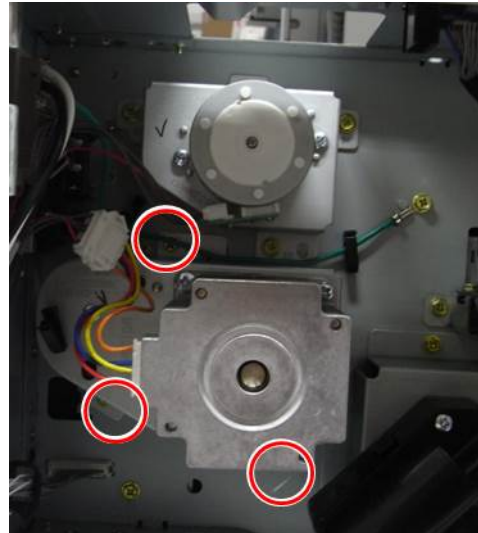
1. Remove 4 "CAP-SCREW". Remove 4 screws. And remove the COVER-REAR.



2. Unplug 2-motor connectors. Open the harness clamp.



3. Remove 3 screws. Then, remove the Feed Drive Unit.



4. Remove 2 screws. Then, replace the Feed Motor.

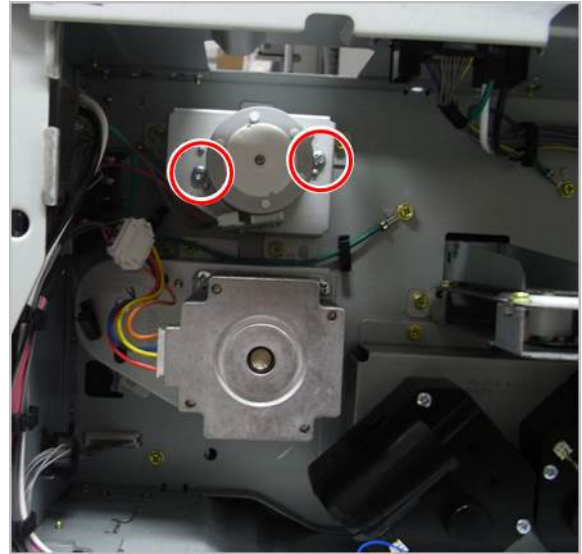


3.3.38.2. HCF Pick-up Motor

1. Remove 4 "CAP-SCREW". Remove 4 screws. And remove the COVER-REAR.



2. Unplug the motor connector. Remove 2 screws. And replace the HCF Pick-up Motor.

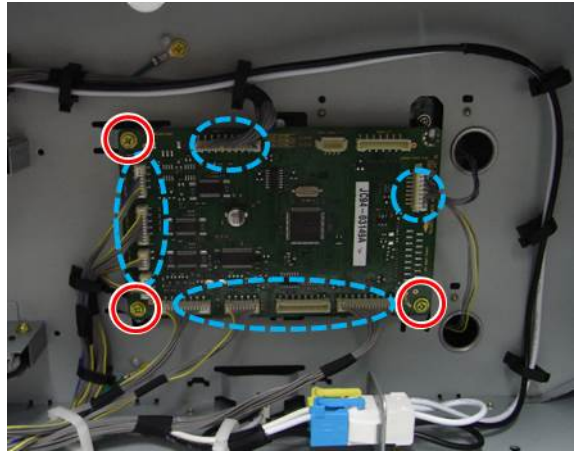


3.3.38.3. HCF PBA

1. Remove 4 “CAP-SCREW”. Remove 4 screws. And remove the COVER-REAR.

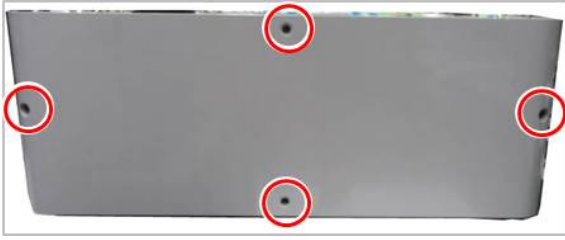


2. Unplug the 8 connectors. Remove 3 screws. And replace the HCF PBA.

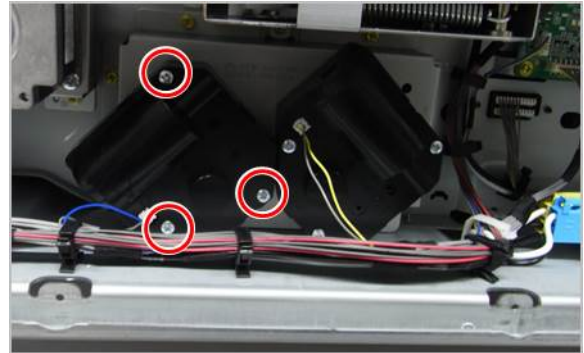


3.3.38.4. HCF Lift-up Motor

1. Remove 4 “CAP-SCREW”. Remove 4 screws. And remove the COVER-REAR.



2. Unplug the connector. Remove 3 screws. And replace the Lift-up Motor.

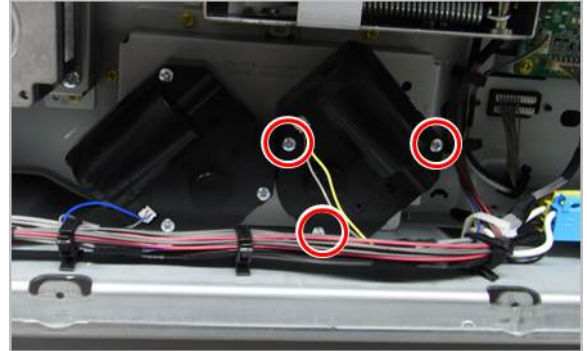


3.3.38.5. HCF Shaft Motor

1. Remove 4 "CAP-SCREW". Remove 4 screws. And remove the COVER-REAR.



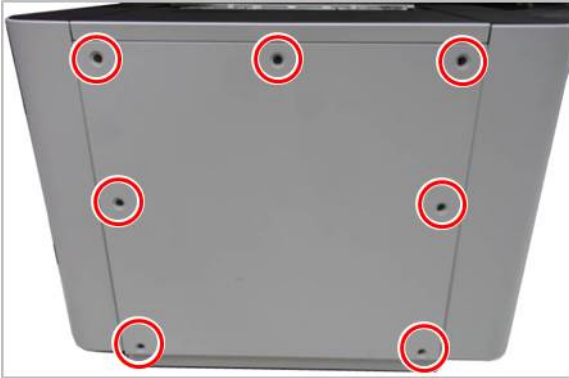
2. Unplug the connector. Remove 3 screws. And replace the Shaft Motor.



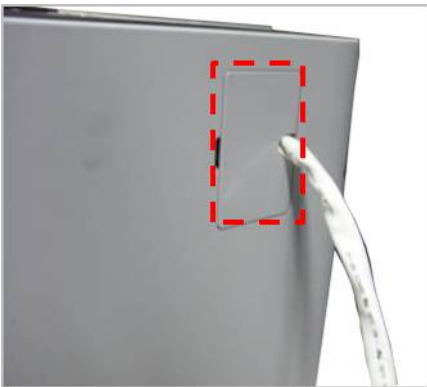
3.3.39. High Capacity Feeder Side Unit (Large Cassette Tray Unit)

3.3.39.1. LCT Feed Motor

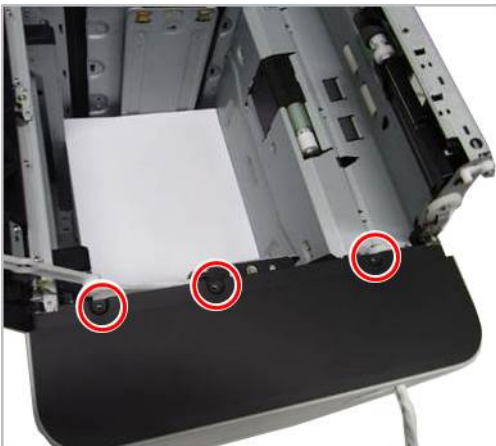
1. Remove 7 "CAP-SCREW". Remove 7 screws. And remove the COVER-RIGHT LCT.



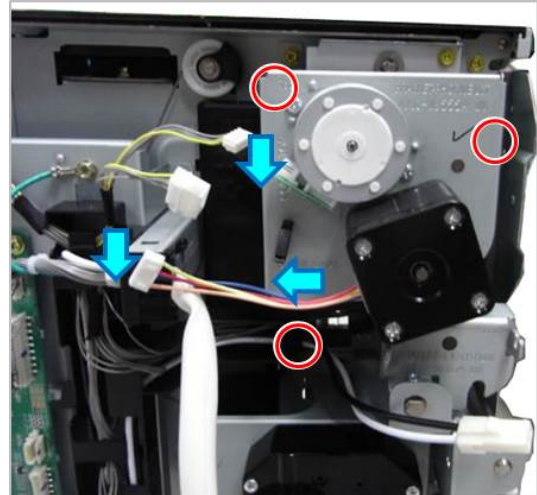
2. Remove the COVER-HARNESS LCT.



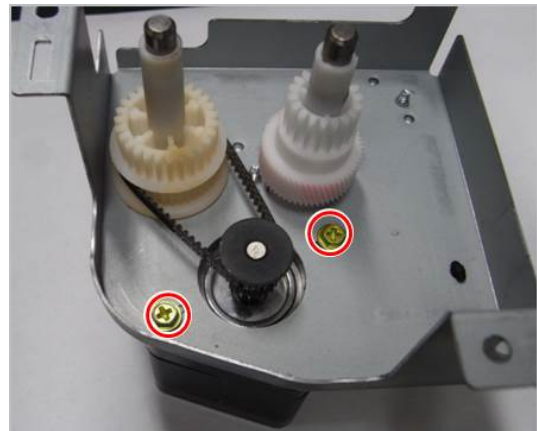
3. Remove 3 screws from the top side. Then, remove the COVER-REAR LCT.



4. Unplug 2 connectors. Open the harness clamp. Remove 3 screws. And, remove the DRIVE-PH.

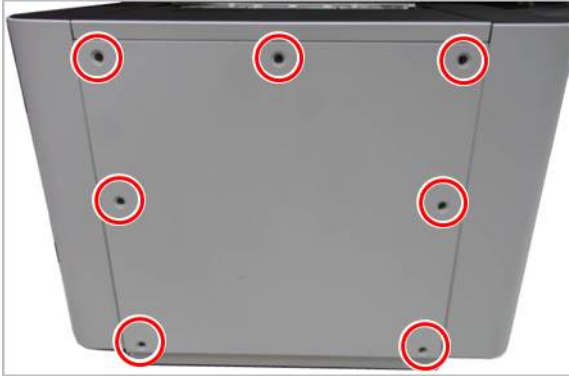


5. Remove 2 screws. Then, replace the Feed Motor.

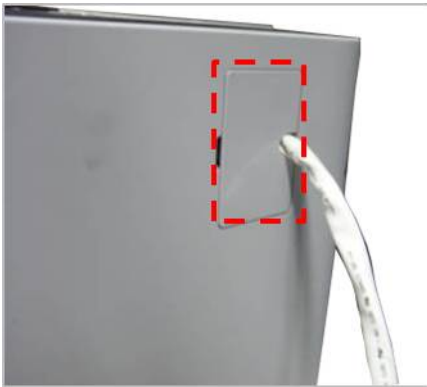


3.3.39.2. LCT Pick-up Motor

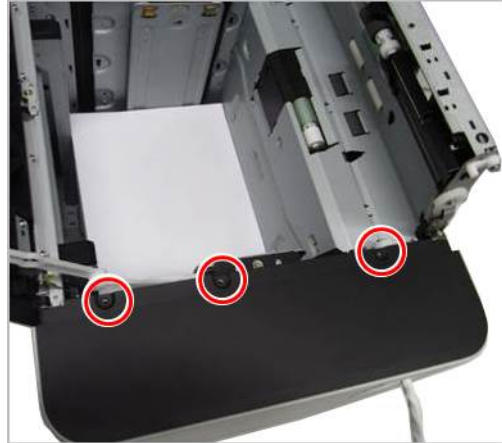
1. Remove 7 "CAP-SCREW". Remove 7 screws. And remove the COVER-RIGHT LCT.



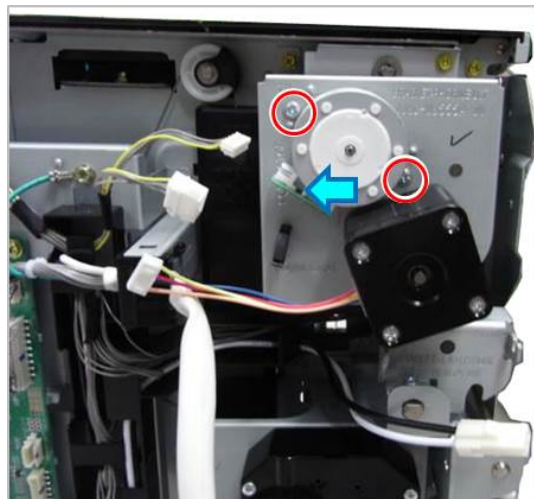
2. Remove the COVER-HARNESS LCT.



3. Remove 3 screws from the top side. Then, remove the COVER-REAR LCT.

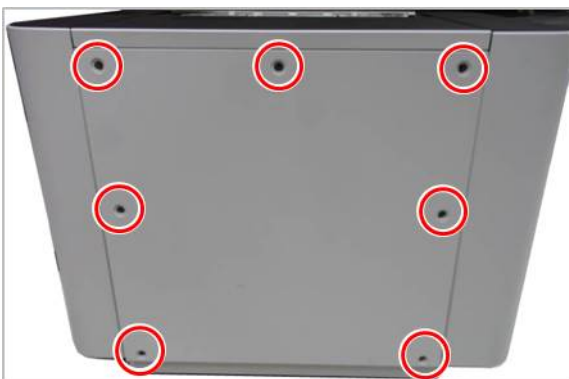


4. Unplug the motor connector. Remove 2 screws. And, replace the Pick-up Motor.



3.3.39.3. LCT PBA

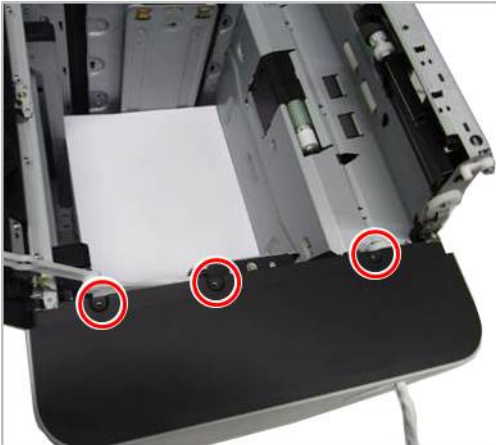
1. Remove 7 "CAP-SCREW". Remove 7 screws. And remove the COVER-RIGHT LCT.



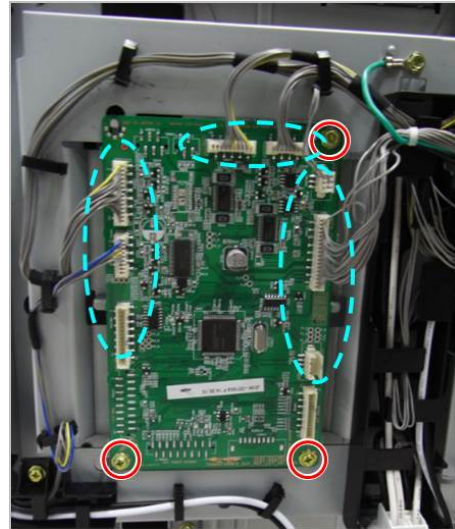
2. Remove the COVER-HARNESS LCT.



- 3. Remove 3 screws from the top side. Then, remove the COVER-REAR LCT.

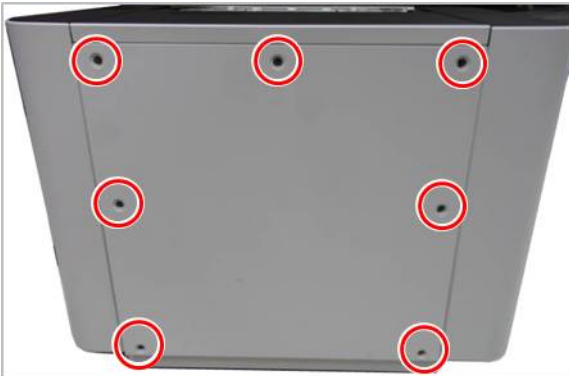


- 4. Unplug all connectors. Remove 3 screws. And, replace the LCT PBA.

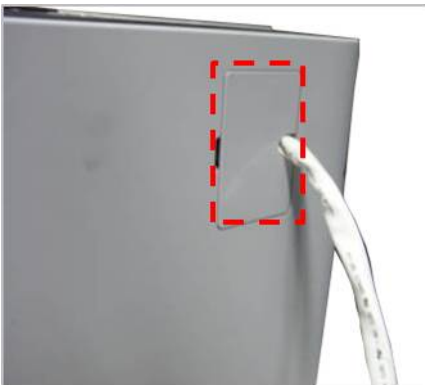


3.3.39.4. LCT Lift-up Motor

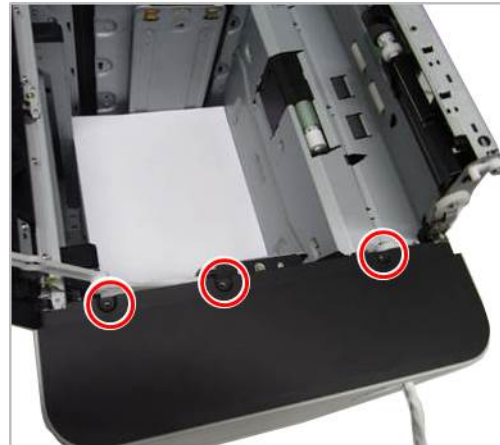
- 1. Remove 7 "CAP-SCREW". Remove 7 screws. And remove the COVER-RIGHT LCT.



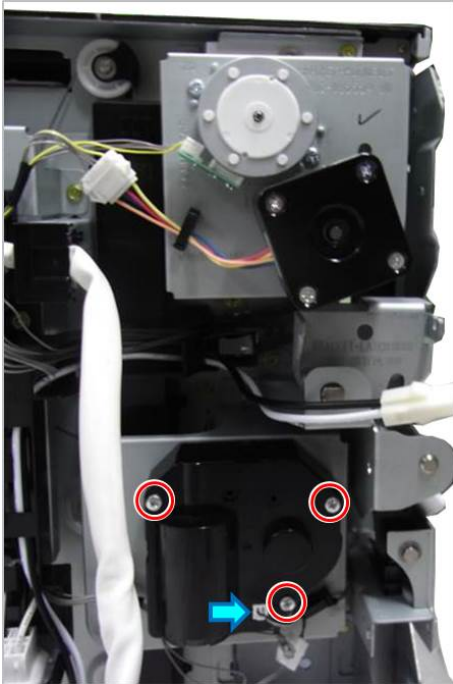
- 2. Remove the COVER-HARNESS LCT.



- 3. Remove 3 screws from the top side. Then, remove the COVER-REAR LCT.

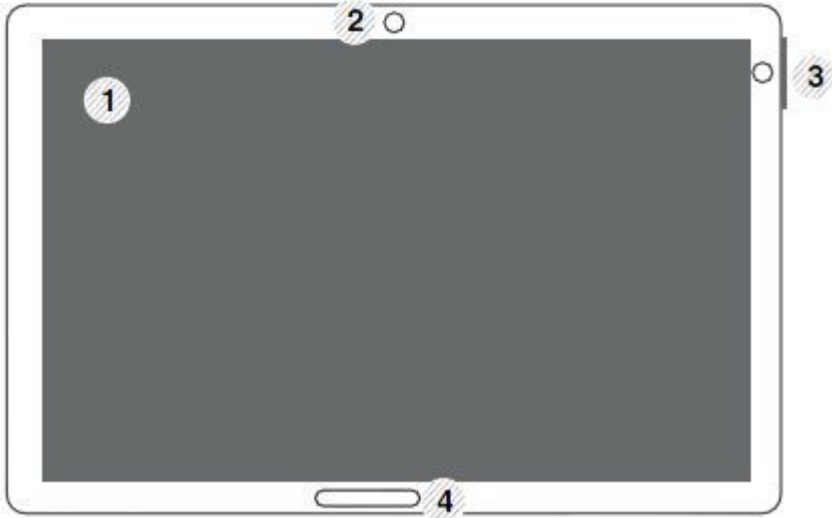


4. Unplug the motor connector. Remove 3 screws. And, replace the LCT Lift-up Motor.



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	Status LED	Shows machine status like ready, warning or error.



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"> The machine is off-line. The machine is in power save mode. When data is received, or any button is pressed, it switches to online automatically. 	
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"> When the status LED slowly blinks, the machine is receiving data from the computer. When the status LED blinks rapidly, the machine is printing data. 	
Red	On	<ul style="list-style-type: none"> The imaging unit is at the end of its lifespan. Remove the old imaging unit and install a new one. The toner cartridge life* is totally empty. Remove the old toner cartridge and install a new one. A paper jam has occurred. The door is open. Close the door. There is no paper in the tray. Load paper in the tray The machine has stopped due to a major error. Check the display message. The waste toner container is not installed in the machine, or full waste toner container. 	
	Blinking	<ul style="list-style-type: none"> 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. 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. 	

4.3. Updating Firmware

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

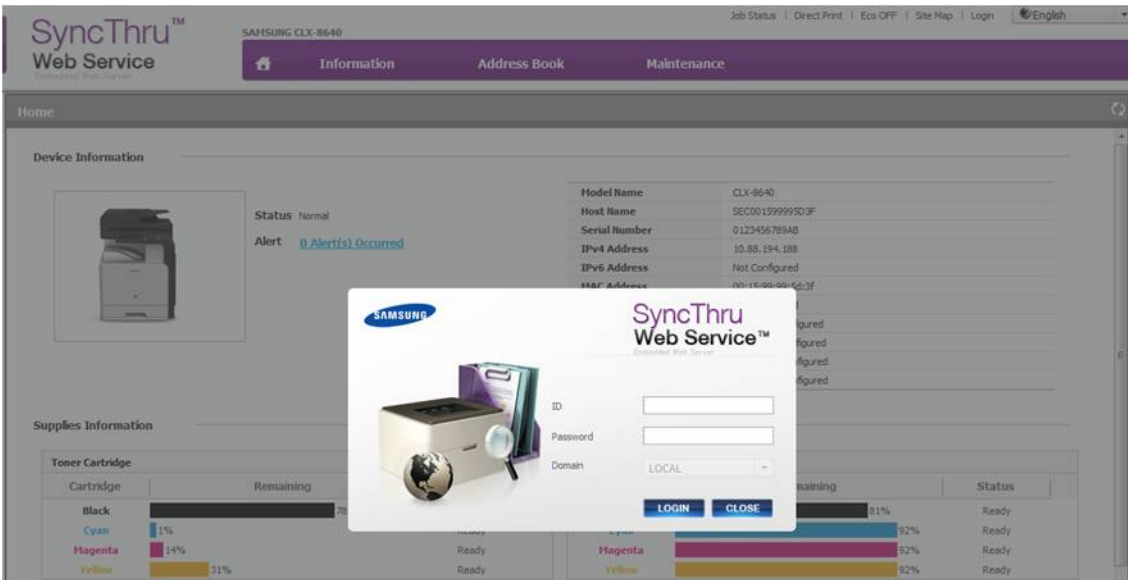
Failure to follow these instructions could lead to corruption issues and prevent the proper operation of this MFP. Follow all of the instructions carefully.

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

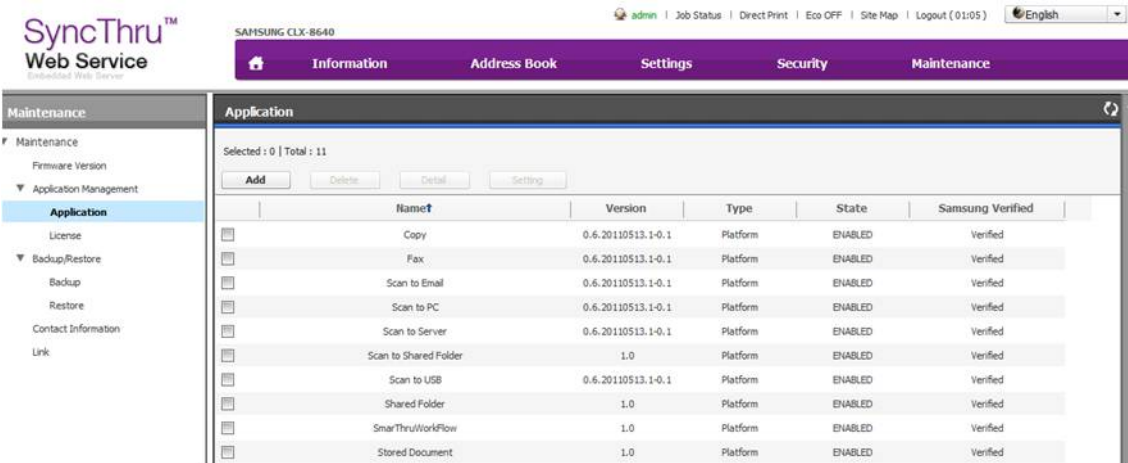
- 1) Go to the SyncThruWeb Service (SWS) main home page. Login as Admin in Sync Thru Web Service.

NOTE

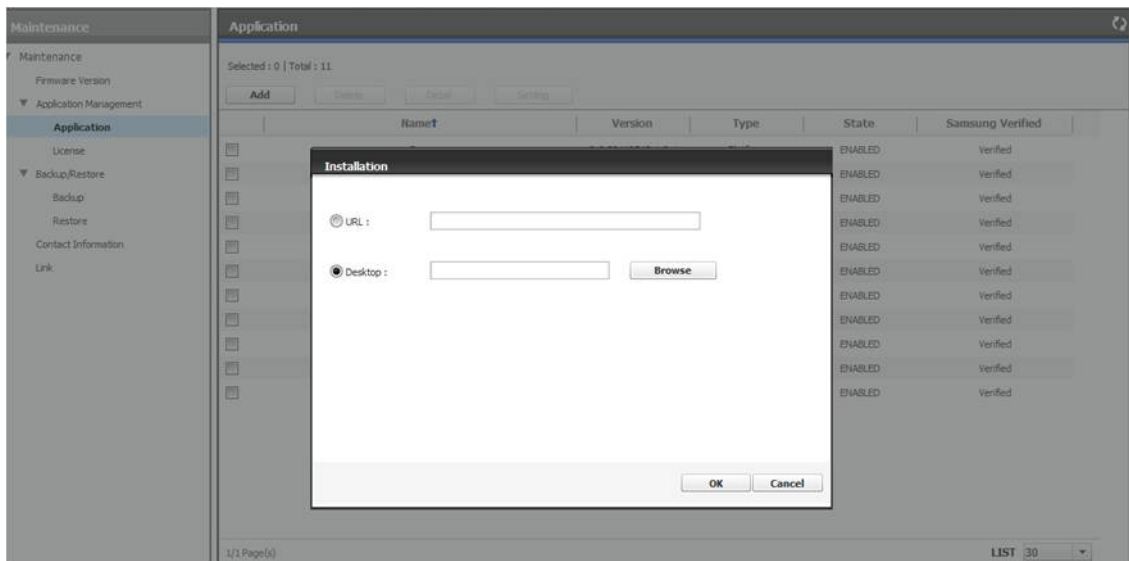
Login using the Administrator ID and Password established during initial machine setup.



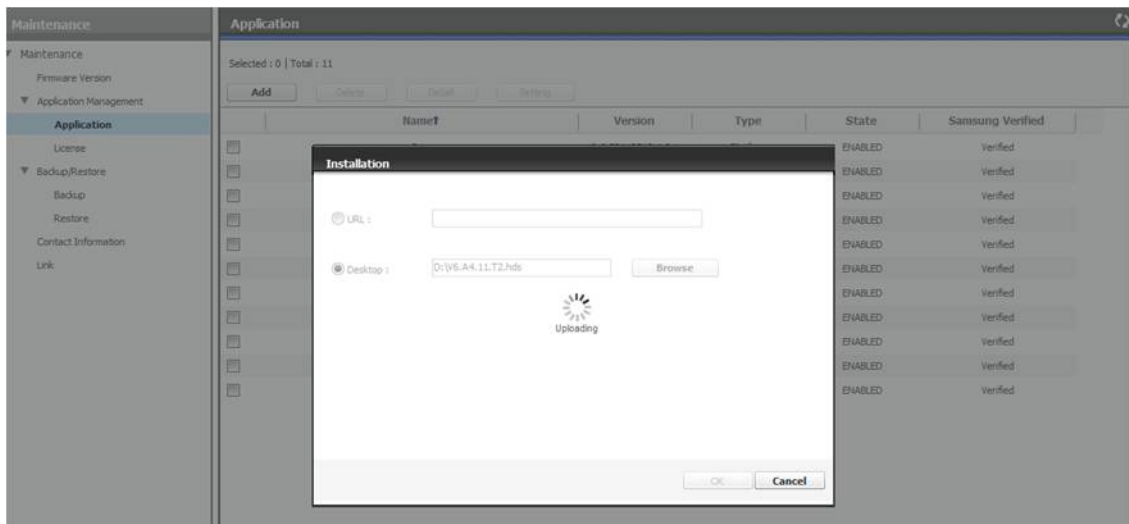
- 2) Click on **Maintenance > Application Management > Application > Add**.



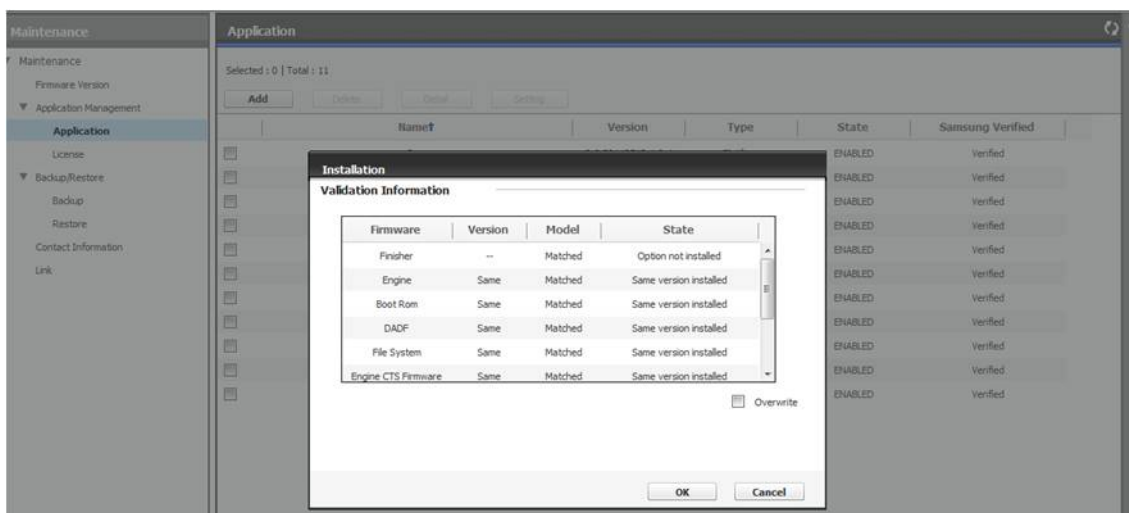
- 3) Choose installation file (F/W file) by browsing the file system and click [OK].



- 4) The uploading step will start.

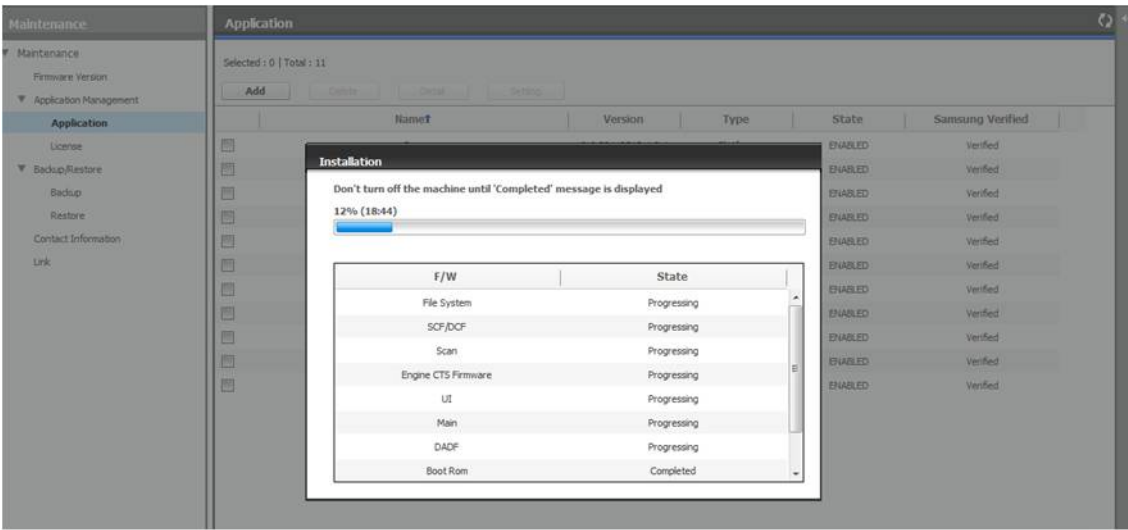


- 5) After uploading the f/w file on MFP, validation information will appear. Check the [Overwrite] check-box if you want to force the firmware update even if the firmware version to be installed is lower or same with the currently installed firmware in the device. Press [OK] to start the firmware upgrade.

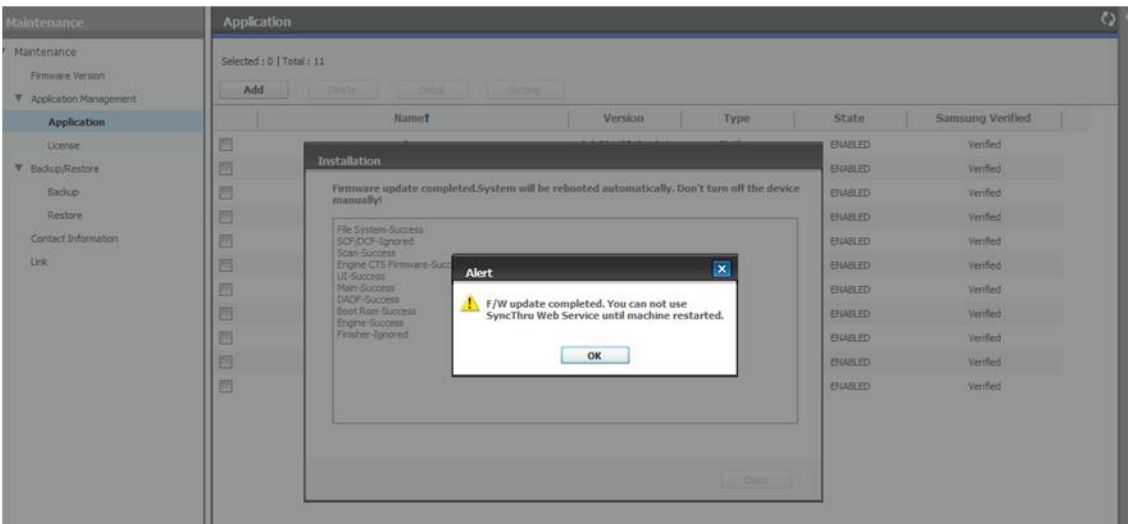


4. Troubleshooting

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, a warning message appears on the display screen.

 **CAUTION**

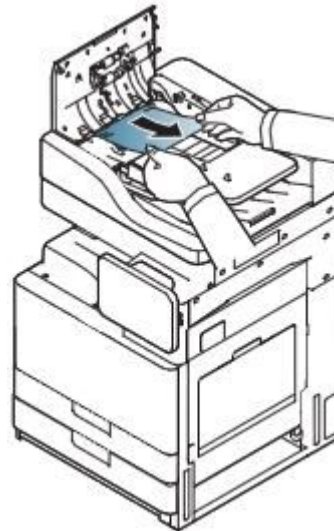
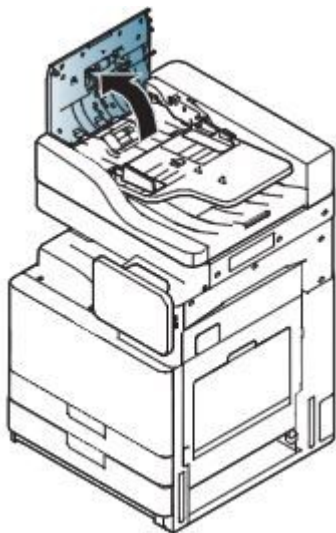
To avoid tearing the document, remove the jammed document slowly and gently.

 **NOTE**

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

Original paper jam in front of scanner

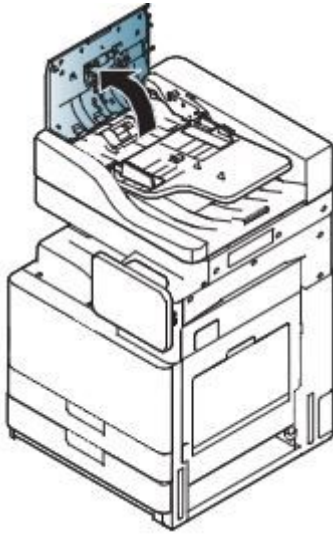
- 1) Remove any remaining pages from the ADF.
- 2) Open the ADF cover.
- 3) Gently remove the jammed paper from the ADF.



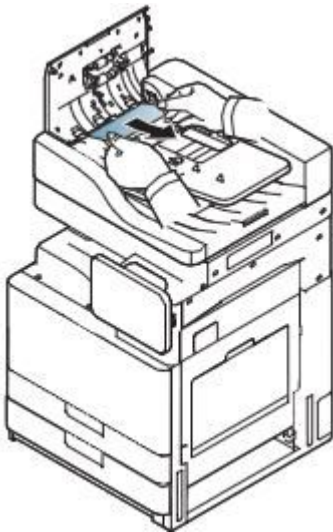
- 4) Close the ADF cover.

Original paper jam inside of scanner

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

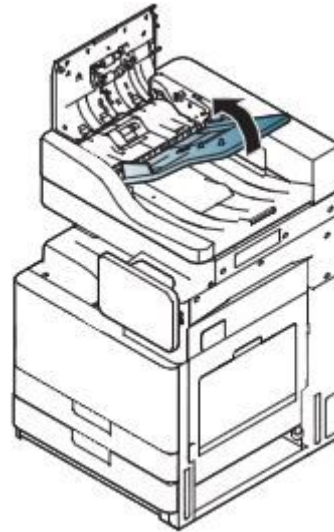


- 3) Gently remove the jammed paper from the ADF.

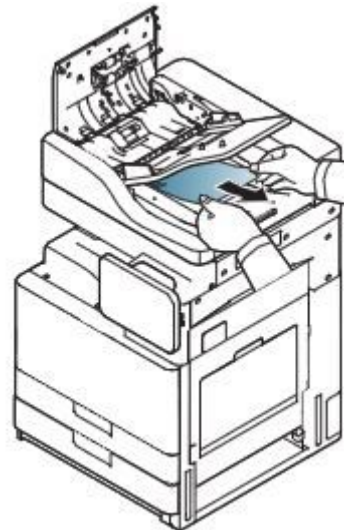


If you do not see paper in this area, go to the next step.

- 4) Open the input tray.



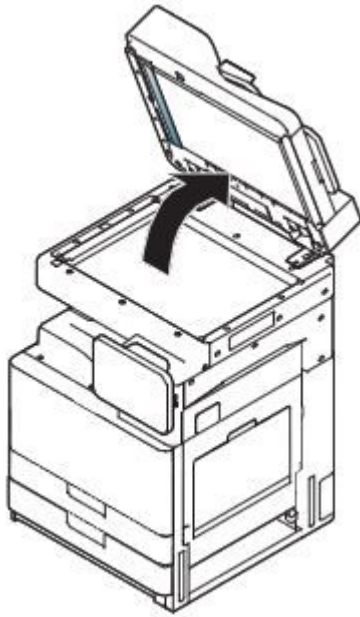
- 5) Pull the jammed paper gently out of the ADF.



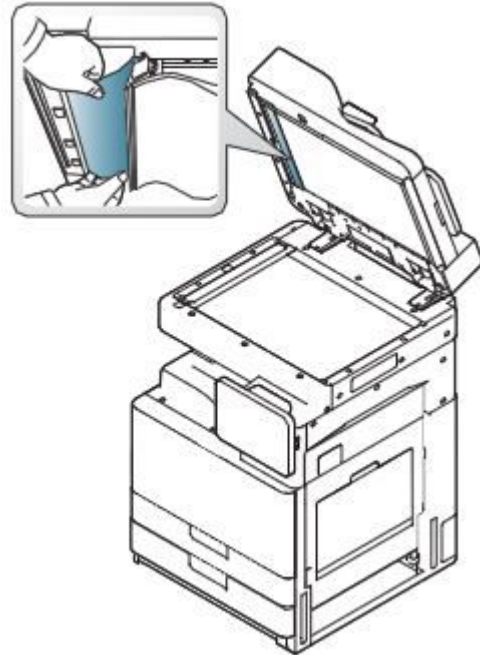
If you do not see paper in this area, go to the next step.

- 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

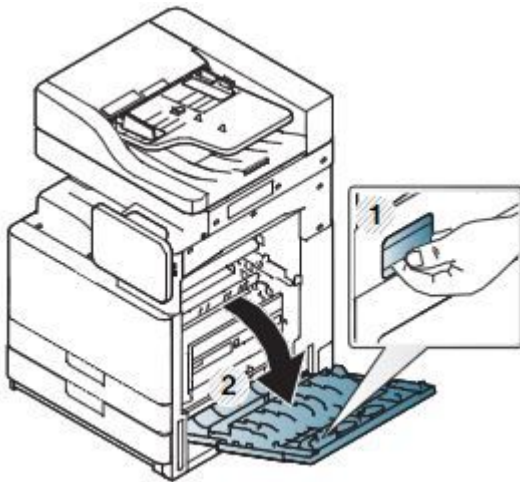
To avoid tearing the paper, pull the jammed paper out slowly and gently. Follow the instructions in the following sections to clear the jam.

Paper jam in tray 1, 2

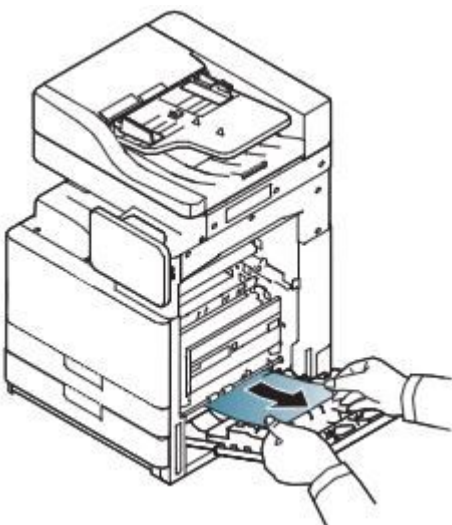
CAUTION

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

- 1) Open the right door.

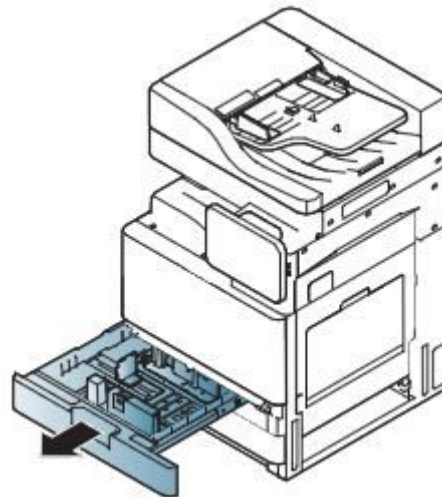


- 2) Remove the jammed paper by gently pulling it straight out.

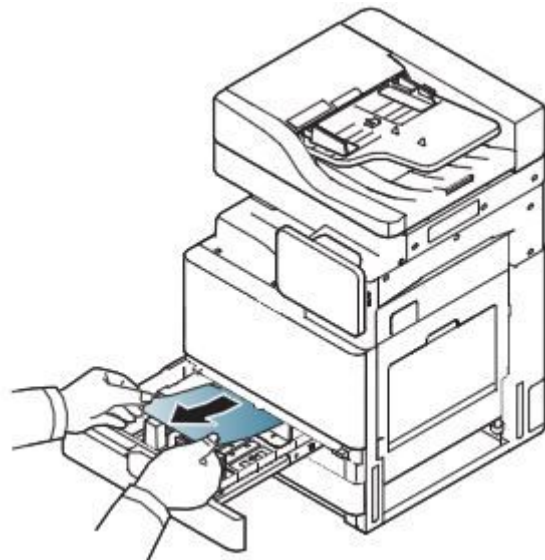


Close the right door. If you do not see paper in this area, go to the next step.

- 3) Pull out tray 1 or 2.



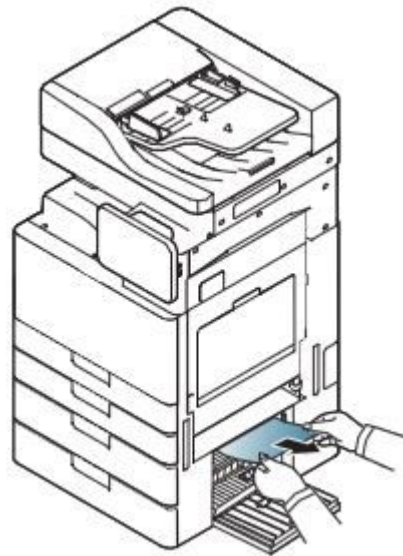
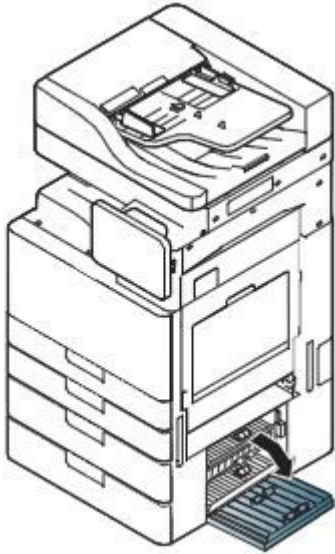
- 4) Remove the jammed paper from the machine.



- 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.

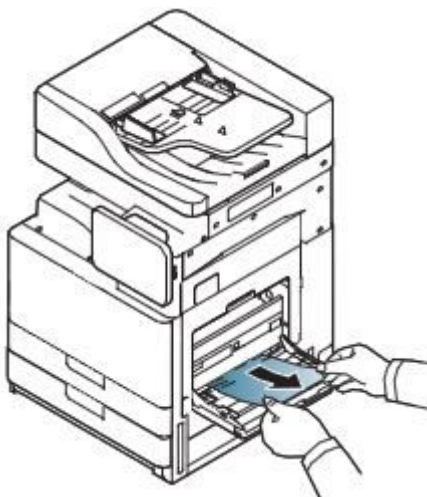


Close the dual cassette feeder right bottom door. If you do not see paper in this area, go to the next step.

- 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.



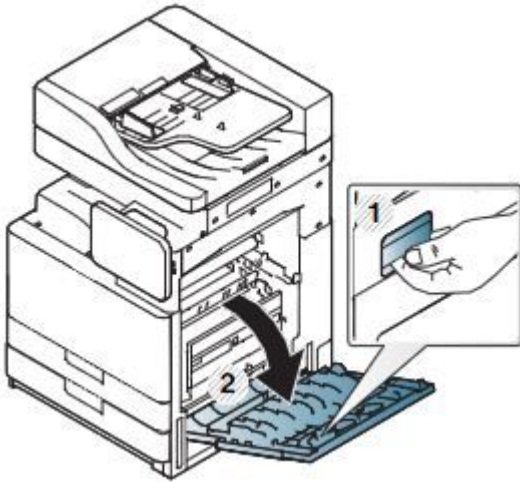
Paper jam inside the machine (Jam feed 1, Jam feed 2)



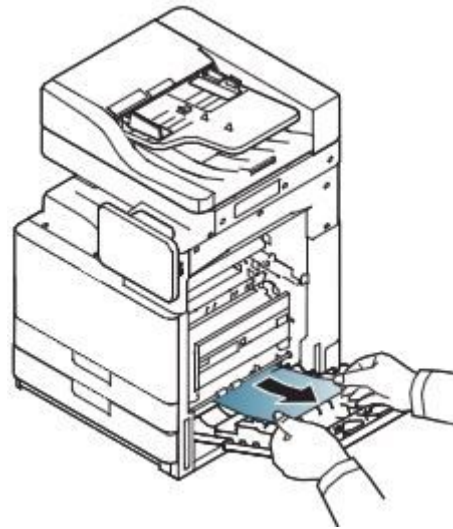
CAUTION

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

- 1) Open the right door.



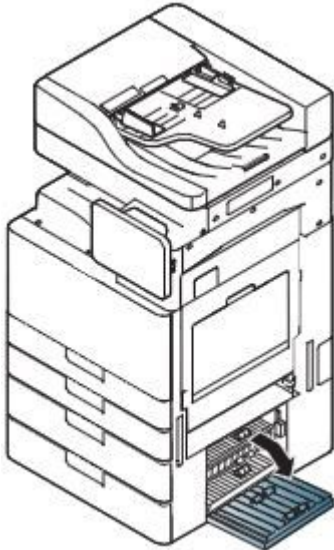
- 2) Remove the jammed paper by gently pulling it straight out.



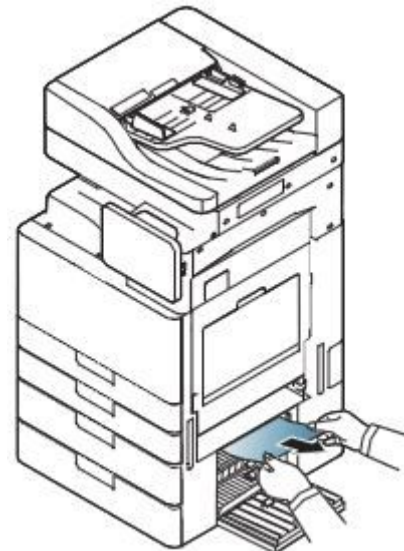
- 3) Close the right door.

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.



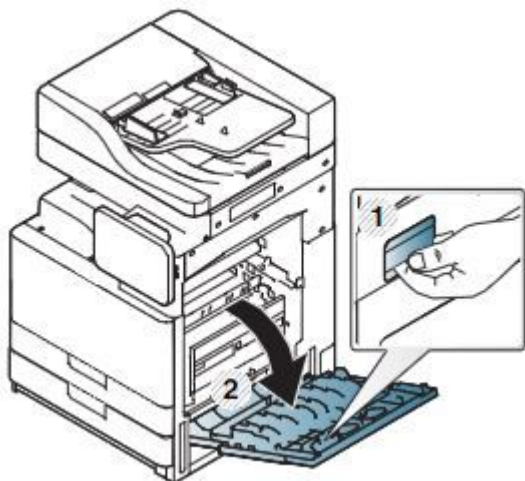
- 3) Close the dual cassette feeder right bottom door.

Paper jam inside the machine (Jam Registration)

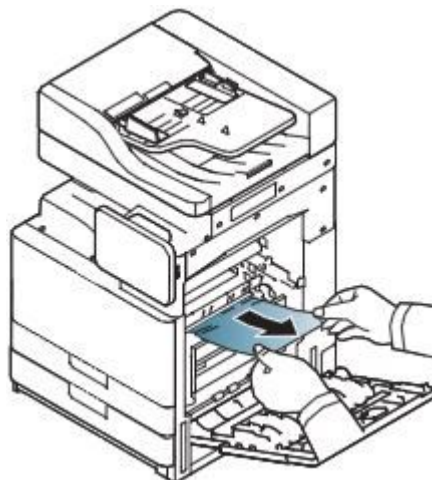
CAUTION

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.



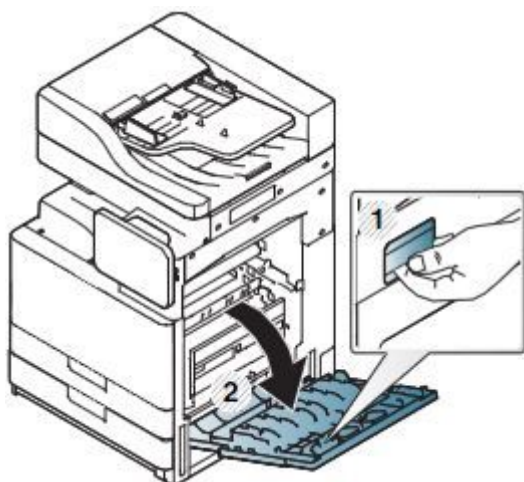
- 3) Close the right door.

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.



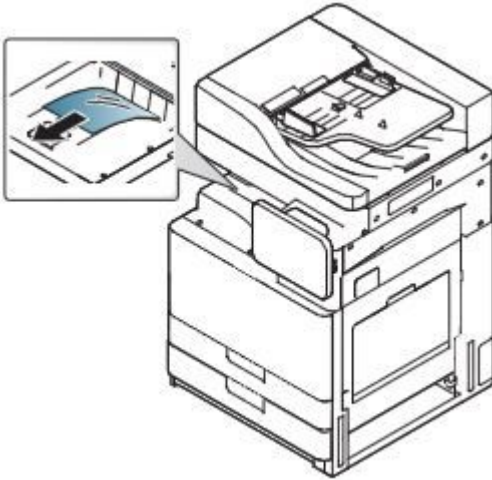
- 2) Open the fuser cover. Then remove the jammed paper by gently pulling it straight out.



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

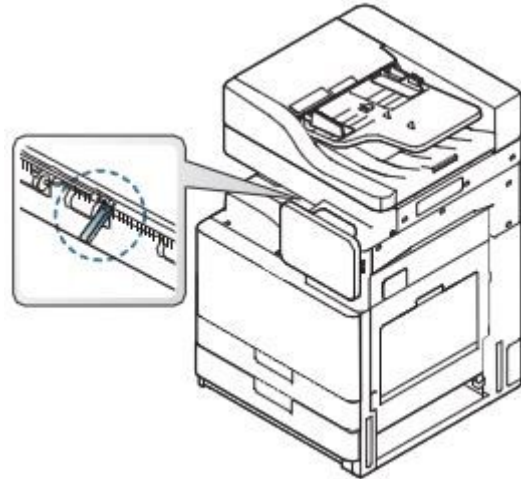
Paper jam in exit area (Jam Exit Face down)

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.

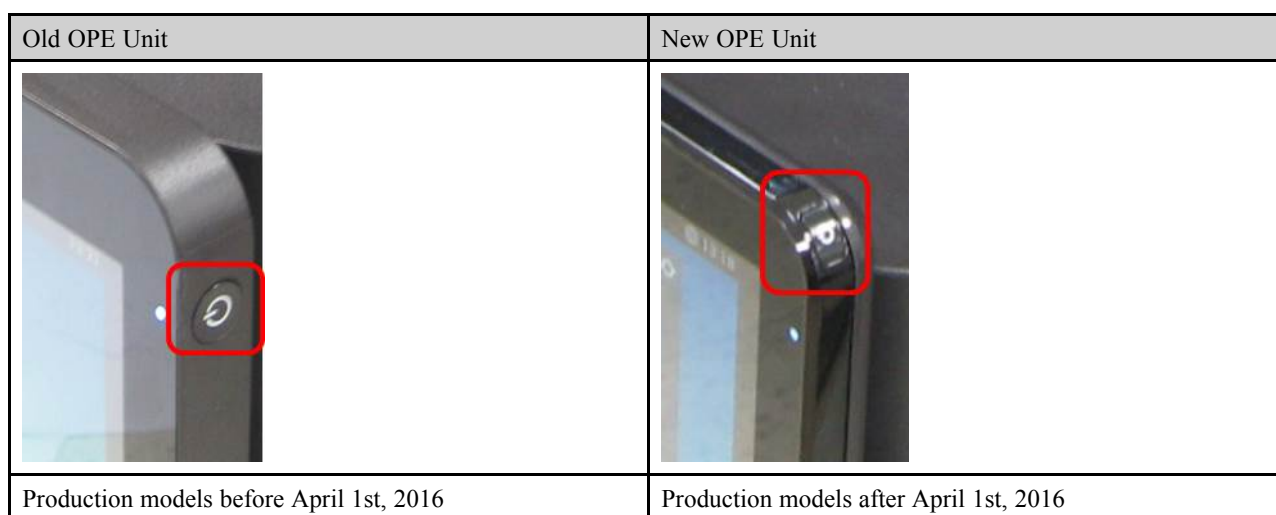


4.5. Service Mode (Tech Mode)

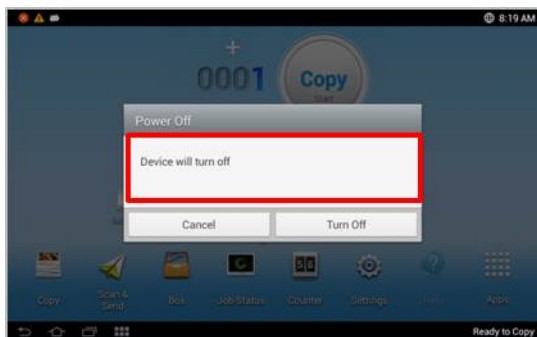
4.5.1. Entering the Service Mode

To enter the service mode,

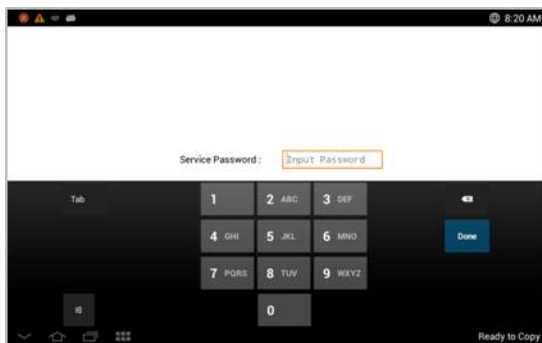
- 1) Press "Power button" until the pop up will be displayed.



- 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)			
		Auto Color Registration			
		Job Duty			
		Auto Toning History			
Full Auto Color Registration					
ID Calibration History					
Maintenance					
Toner Event					
Export Reports	RTF Format			P.4-28	
	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	
	ACS	ACS Level Adjustment	[1~5] : 3*	P.4-52	
		ACS Page Adjustment	[1~5] : 5*		
	Image Management	Auto Color Registration		Off	P.4-53
				On	
				Execute Now	
		Auto Tone Adjustment Activation	Normal	P.4-54	
			Full		
		Auto Tone Adjustment	Normal	P.4-55	
	Full				
	CTD Sensor Cleaning				
	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			
	Count Setting of Large Pages	HDD Encryption			P.4-56
		1 Count Up			
	Debug Log	2 Count Up			P.4-57
		Off			
		Job Status			
		Details			
	Capture Log	Activation for Boot Logs	Off/ On		P.4-57
		All			
	Network Packet Capture	Period	Start Date / End Date		P.4-58
		Packet Capture	Start/Stop		
		Capture File Download	Export		
	System Recovery	Capture File Delete	Clear		P.4-59
		SYS			
	TR Control Mode	ALL			P.4-61
		T1 Control Mode	Process Speed / Paper for Driver / T1 PWM		
	Clear System Cache	T2 Control Mode	Paper Group / Paper Side / Paper Direction / T2 PWM		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			
	Transfer Unit	Off / On			
	Transfer Belt Cleaner	Off / On			
FDI	Type A			P.4-62	
	Type B				
	Type C				
EIUL	Off			P.4-62	

4. Troubleshooting

Level 1	Level 2	Level 3	Level 4	Page	
		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	Yellow Drain		
			Cyan Drain		
			Magenta Drain		
		Black Drain			

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. Engineer 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. Engineer 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.

Engineer 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)
- Auto Color Registration
- Job Duty
- Auto Toning History
- Full Auto Color Registration
- ID Calibration History
- Maintenance
- Toner Event

Auto Color Registration

- **Information > Print Reports > Auto Color Registration**

This report lists last 10 Auto Color Registration results.

If there is color registration problem, and execution of Auto Color Registration does not solve the problem, service engineers can print out this report and check “Succeeded or Failed for ACR” field.

Result	Meaning
0	Success
256	Pattern Sensing Sensor LED calibration failure
1152	Machine can't read the pattern. So, the machine can't execute the calibration.

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

- **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. Engineer 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	S5 UI System
A2 Fan	M1 Input (Trays) System	S6 Network System
A3 Sensor	M2 Media Path System	S7 HDD System
C1 Toner Cartridge Unit	M3 Output (Bins) System	U1 Fusing Unit
C3 Imaging Unit	S1 Video System	U2 LSU Unit
C7 Fusing unit	S2 Engine System	U3 Auto Document Feeder System
H1 Input (Trays) System	S3 Scan System	

4.5.4.2. Jam Count

- **Maintenance Counts > Jam Count**

This menu displays the jam Counts of the system. Engineer 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. Engineer 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 (K)	Auto Sensing
	Toner (Y)	Auto Sensing
	Toner (M)	Auto Sensing
	Toner (C)	Auto Sensing
Imaging Unit	Imaging Unit (K)	Auto Sensing
	Imaging Unit (Y)	Auto Sensing
	Imaging Unit (M)	Auto Sensing
	Imaging Unit (C)	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
	Tray 5 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, Engineer can navigate through the list of codes with descriptions and saved values. Engineer 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	10	16 / 4
103-0032	Duplex Regi Curl Length	Buckle Control : Duplex Regi On Curl (x1)	10	16 / 4
103-0038	Regi Curl Fast Speed Length	Buckle Control : Regi On Curl (Fast Speed)	10	16 / 4
109-0000	StandBy Temperature offset	Target Temperature during standby mode.	10	15 / 5
109-0005	Warmup Temperature offset	Target Temperature during warmup Mode.	10	15 / 5
109-0055	Thin Temperature offset	Media type offset for fuser roll temperature.	10	15 / 5
109-0065	Plain Temperature offset	Media type offset for fuser roll temperature.	10	15 / 5
109-0070	Bond Temperature offset	Media type offset for fuser roll temperature.	10	15 / 5
109-0071	Heavy Temperature offset	Media type offset for fuser roll temperature.	10	15 / 5
109-0072	Extra Heavy Temperature offset	Media type offset for fuser roll temperature.	10	15 / 5
109-0080	Transparency Temperature offset	Media type offset for fuser roll temperature.	10	15 / 5
109-0100	Envelopes Temperature offset	Media type offset for fuser roll temperature.	10	15 / 5
109-0110	Labels Temperature offset	Media type offset for fuser roll temperature.	10	15 / 5
109-0130	Thick Temperature Offset	Media type offset for fuser roll temperature.	10	15 / 5
109-0131	Recycled Temperature offset	Media type offset for fuser roll temperature.	10	15 / 5
112-0120	Manual Color Regi X-offset Yellow	Distant from hsync to lsync (multi-hsync) for yellow	100	200 / 0
112-0130	Manual Color Regi X-offset Magenta	Distant from hsync to lsync (multi-hsync) for Magenta	100	200 / 0
112-0140	Manual Color Regi X-offset Cyan	Distant from hsync to lsync (multi-hsync) for Cyan	100	200 / 0
112-0150	Manual Color Regi X-offset Black	Distant from hsync to lsync (multi-hsync) for Black	100	200 / 0
112-0160	Manual Color Regi Y-offset Yellow	Distant from psync to Image area for yellow	200	400 / 0

Code	Display	Meaning	Default	Max/Min
112-0170	Manual Color Regi Y-offset Magenta	Distant from psync to Image area for Magenta	200	400 / 0
112-0180	Manual Color Regi Y-offset Cyan	Distant from psync to Image area for Cyan	200	400 / 0
112-0190	Manual Color Regi Y-offset Black	Distant from psync to Image area for Black	200	400 / 0
112-0240	Manual Color Regi Left Width Yellow	Image Area Left Width for Yellow	500	1000 / 0
112-0250	Manual Color Regi Right Width Yellow	Image Area Right Width for Yellow	500	1000 / 0
112-0260	Manual Color Regi Left Width Magenta	Image Area Left Width for Magenta	500	1000 / 0
112-0270	Manual Color Regi Right Width Magenta	Image Area Right Width for Magenta	500	1000 / 0
112-0280	Manual Color Regi Left Width Cyan	Image Area Left Width for Cyan	500	1000 / 0
112-0290	Manual Color Regi Right Width Cyan	Image Area Right Width for Cyan	500	1000 / 0
112-0300	Manual Color Regi Left Width Black	Image Area Left Width for Black	500	1000 / 0
112-0310	Manual Color Regi Right Width Black	Image Area Right Width for Black	500	1000 / 0
112-0320	Color Regi LSU Skew Yellow	LSU Skew for Yellow	200	400 / 0
112-0330	Color Regi LSU Skew Magenta	LSU Skew for Magenta	200	400 / 0
112-0340	Color Regi LSU Skew Cyan	LSU Skew for Cyan	200	400 / 0

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, engineer can navigate through the list of routines that display along with their descriptions. Engineer 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. Engineer can start/stop a desired test routine.
Verification	N/A
Specification	N/A
Reference	N/A

Code	Displayed Name	Meaning
100-0041	OPC Motor Y	Yellow Opc BLDC Motor is On/Off
100-0042	OPC Motor M	Magenta Opc BLDC Motor is On/Off
100-0043	OPC Motor C	Cyan Opc BLDC Motor is On/Off
100-0044	OPC Motor K	Black Opc BLDC Motor is On/Off
100-0046	Y OPC Motor Ready	Detect if Yellow OPC BLDC Motor runs at normal speed
100-0047	M OPC Motor Ready	Detect if Magenta OPC BLDC Motor runs at normal speed
100-0048	C OPC Motor Ready	Detect if Cyan OPC BLDC Motor runs at normal speed
100-0049	K OPC Motor Ready	Detect if Black OPC BLDC Motor runs at normal speed
100-0074	Opc Fan Run	Start/Stop Opc Fan run
100-0075	Opc Fan Ready	Detects if Opc Fan runs at normal speed.
100-0080	T1 Engage Motor	T1 Engage Motor On/Off

4. Troubleshooting

Code	Displayed Name	Meaning
100-0090	T1 Engage Sensor	Detect if the T1 Engage is On or Off.
100-0140	Duplex Motor Forward	Duplex Motor Forward On/Off
100-0141	Duplex Motor Forward Slow	Duplex Motor Forward Slow On/Off
100-0142	Duplex Motor Forward Slowest	Duplex Motor Forward Slowest 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)
100-0231	T5 Elevating Motor	T5 Elevate Motor On/Off (Optional)
100-0240	Waste Toner Motor	Waste Toner Motor On/Off
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
100-0341	Feed Motor Slow	Feed Motor Slow On/Off
100-0342	Feed Motor Slowest	Feed Motor Slowest On/Off
100-0370	Tray1 Pickup Motor	Tray1 Motor is On/Off
100-0371	Tray1 Pickup Motor Slow	Tray1 Motor Slow On/Off
100-0372	Tray1 Pickup Motor Slowest	Tray1 Motor Slowest On/Off
100-0380	Tray2 Pickup Motor	Tray2 Motor is On/Off
100-0381	Tray2 Pickup Motor Slow	Tray2 Motor Slow On/Off
100-0382	Tray2 Pickup Motor Slowest	Tray2 Motor Slowest On/Off
100-0390	Tray3 Pickup Motor	Tray3 Motor is On/Off
100-0391	Tray3 Pickup Motor Slow	Tray3 Motor Slow On/Off
100-0392	Tray3 Pickup Motor Slowest	Tray3 Motor Slowest On/Off
100-0400	Tray4 Pickup Motor	Tray4 Motor is On/Off
100-0401	Tray4 Pickup Motor Slow	Tray4 Motor Slow On/Off
100-0402	Tray4 Pickup Motor Slowest	Tray4 Motor Slowest On/Off
100-0410	Registration Motor	Registration Motor is On/Off
100-0411	Registration Motor Slow	Registration Motor Slow On/Off
100-0412	Registration Motor Slowest	Registration Motor Slowest On/Off
100-0420	MP Motor	MP Motor is On/Off
100-0421	MP Motor Slow	MP Motor Slow On/Off
100-0422	MP Motor Slowest	MP Motor Slowest On/Off
100-0430	Exit2 Motor Forward	Exit2 Motor is On/Off
100-0431	Exit2 Motor Forward Slow	Exit2 Motor Slow On/Off
100-0432	Exit2 Motor Forward Slowest	Exit2 Motor Slowest On/Off

Code	Displayed Name	Meaning
100-0490	Duplex2 Motor Forward	Duplex Motor Forward On/Off
100-0491	Duplex2 Motor Forward Slow	Duplex Motor Slow Forward On/Off
100-0492	Duplex2 Motor Forward Slowest	Duplex Motor Slowest Forward On/Off
100-0600	Return Motor Forward	Return Motor Forward On/Off
100-0601	Return Motor Forward Slow	Return Motor Slow Forward On/Off
100-0602	Return Motor Forward Slowest	Return Motor Slowest Forward On/Off
100-0603	Return Motor Backward	Return Motor Backward On/Off
100-0604	Return Motor Backward Slow	Return Motor Slow Backward On/Off
100-0605	Return Motor Backward Slowest	Return Motor Slowest Backward On/Off
100-0700	Tray5 Pickup Motor	Tray4 Motor is On/Off
100-0701	Tray5 Pickup Motor Slow	Tray4 Motor Slow On/Off
100-0702	Tray5 Pickup Motor Slowest	Tray4 Motor Slowest On/Off
101-0101	T3 Shift Gate Solenoid	Tray3 Shift Gate Solenoid On/Off
101-0140	T3 Feed Motor	T3 Feed Motor On/Off
101-0150	T4 Feed Motor	T4 Feed Motor On/Off
101-0151	T4 Feed Motor Slow	T4 Feed Motor Slow On/Off
101-0152	T4 Feed Motor Slowest	T4 Feed Motor Slowest On/Off
101-0160	T5 Feed Motor	T5 Feed Motor On/Off
101-0161	T5 Feed Motor Slow	T5 Feed Motor Slow On/Off
101-0162	T5 Feed Motor Slowest	T5 Feed Motor Slowest 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
101-0206	Dev Suction Fan Run	Start/Stop Dev Suction Fan run
101-0207	Dev Suction Fan Run Ready	Detects if Dev Suction Fan runs at normal speed.
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.
102-0001	Tray1 Lock Detect	Detect tray1 lock unit
102-0002	Tray1 Lock Position	Check tray1 lock position
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.
102-0071	Tray2 Lock Detect	Detect tray2 lock unit
102-0072	Tray2 Lock Position	Check tray2 lock position
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.

4. Troubleshooting

Code	Displayed Name	Meaning
102-0141	Tray3 Lock Detect	Detect tray3 lock unit
102-0142	Tray3 Lock Position	Check tray3 lock position
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.
102-0201	T3 Level Sensor 1	Detects when the stack height of tray3 Level Sensor 1
102-0202	T3 Level Sensor 2	Detects when the stack height of tray3 Level Sensor 2
102-0210	Tray4 Home Position	Detect when tray4 is closed.
102-0211	Tray4 Lock Detect	Detect tray4 lock unit
102-0212	Tray4 Lock Position	Check tray4 lock position
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.
102-0271	T4 Level Sensor 1	Detects when the stack height of tray4 Level Sensor 1
102-0272	T4 Level Sensor 2	Detects when the stack height of tray4 Level Sensor 2
102-0273	T4 Install Sensor1	Detect when Tray T4 install sensor 1
102-0274	T4 Install Sensor2	Detect when Tray T4 install sensor 2
102-0280	Bypass Paper Empty Sensor	Detects when paper is in Bypass Tray(MP Tray).
102-0281	Bypass Paper Size Read	Detects Paper MP size.
102-0292	Pre Feed1 Sensor	Detect when a paper is at Pre Feed1 sensor.
102-0300	T2 Feed Sensor (or Door Open)	Detect when a paper is at T2 Feed sensor. (optional)
102-0301	Pre Feed2 Sensor	Detect when a paper is at Pre Feed2 sensor.
102-0320	T3 Feed Sensor (or Door Open)	Detect when a paper is at T3 Feed sensor. (optional)
102-0321	Pre Feed3 Sensor	Detect when a paper is at Pre Feed3 sensor.
102-0330	T3 Door Open Sensor	Detect when T3 is closed.
102-0343	Pre Feed4 Sensor	Detect when a paper is at Pre Feed4 sensor.
102-0350	T4 Door Open Sensor	Detect when T4 is closed.
102-0351	T5Door Open Sensor	Detect when T5 is closed.
102-0353	Pre Feed5 Sensor	Detect when a paper is at Pre Feed5 sensor. (optional)
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.
102-0390	Duplex Jam2 Sensor	Detect when a paper is at Duplex Jam2 sensor.
102-0435	Front Cover Sensor	Detect status of Front cover.
102-0436	Side Cover Sensor	Detect status of Front cover.
102-0480	T5 Paper Empty Sensor	Detect when paper is in tray4.
102-0520	T5 Stack Height Sensor	Detects if paper in tray4 is elevated to the sensor.
102-0531	T5 Level Sensor 1	Detects when the stack height of tray5 Level Sensor 1
102-0532	T5 Level Sensor 2	Detects when the stack height of tray5 Level Sensor 2

Code	Displayed Name	Meaning
102-0533	T5 Install Sensor1	Detect when Tray T5 install sensor 1
102-0534	T5 Install Sensor2	Detect when Tray T5 install sensor 2
102-0730	T3 Knock Up Home Sensor	Detect when Tray T3 knock up home sensor.
102-0731	T3 ShiftTray Paper Empty Sensor	Detect when paper is in T3 ShiftTray
102-0732	T3 ShiftTray Level Sensor1	Detects when the stack height of T3 ShiftTray level sensor 1
102-0733	T3 ShiftTray Level Sensor2	Detects when the stack height of T3 ShiftTray level sensor 2
102-0734	T3 Shift Plate Home Sensor	Detect when T3 Shift Plate home sensor
102-0735	T3 Shift Plate End Sensor	Detect when T3 Shift Plate end sensor
102-0736	T3 Gate Solenoid Home Sensor	Detect when T3 Gate Solenoid home sensor
104-0000	Waste Install Sensor	Detect if Waste is installed.
105-0000	Yellow MHV Bias	Yellow MHV bias voltage on at normal drive level
105-0010	Magenta MHV Bias	Magenta MHV bias voltage on at normal drive level
105-0020	Cyan MHV Bias	Cyan MHV bias voltage on at normal drive level
105-0030	Black MHV Bias	Black MHV bias voltage on at normal drive level
106-0000	Yellow Dev Bias	Yellow Dev bias voltage on at normal drive level
106-0010	Magenta Dev Bias	Magenta Dev bias voltage on at normal drive level
106-0020	Cyan Dev Bias	Cyan Dev bias voltage on at normal drive level
106-0030	Black Dev Bias	Black Dev bias voltage on at normal drive level
106-0031	Black Dev AC Bias	Black Dev bias AC voltage on at normal drive level
106-0032	Cyan Dev AC Bias	Cyan Dev bias AC voltage on at normal drive level
106-0033	Magenta Dev AC Bias	Magenta Dev bias AC voltage on at normal drive level
106-0034	Yellow Dev AC Bias	Yellow Dev bias AC voltage on at normal drive level
106-0200	HVPS Installed	Detect HVPS Unit
107-0033	THV(-) Bias	THV minus bias voltage on at normal drive level
107-0034	THV CC Bias	THV constant current plus bias voltage
107-0035	THV CV Bias	THV constant voltage plus bias voltage
107-0162	Y Eraser On	Y Eraser Lamp On/Off
107-0163	M Eraser On	M Eraser Lamp On/Off
107-0164	C Eraser On	C Eraser Lamp On/Off
107-0165	K Eraser On	K Eraser Lamp On/Off
107-0166	Y Eraser Detect	Detect Y eraser status
107-0167	M Eraser Detect	Detect M eraser status
107-0168	C Eraser Detect	Detect C eraser status
107-0169	K Eraser Detect	Detect K eraser status
107-0201	ITHV Yellow Bias	T1 Yellow Bias On/Off
107-0202	ITHV Magenta Bias	T1 Magenta Bias On/Off
107-0203	ITHV Cyan Bias	T1 Cyan Bias On/Off
107-0204	ITHV Black Bias	T1 Black Bias On/Off
109-0000	Fuser Temperature A	Detects what the temperature A is on fuser.

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Code	Displayed Name	Meaning
109-0010	Fuser Temperature B	Detects what the temperature B is on fuser.
109-0011	LSU Temperature	LSU Temperature
109-0012	Inner Temperature	Inner Temperature
109-0013	Outer Temperature	Outer Temperature
109-0014	Humidity	Humidity
109-0020	Fuser Fan Run Ready	Detects if Fuser Fan Motor runs at normal speed.
109-0021	Exit2 Fan Run	Start/Stop Exit2 Fan run
109-0022	Exit2 Fan Run Ready	Detects if Exit2 Fan runs at normal speed.
109-0023	Exit3 Fan Run	Start/Stop Exit3 Fan run
109-0024	Exit3 Fan Run Ready	Detects if Exit3 Fan runs at normal speed.
109-0030	Fuser Motor Forward	Fuser Motor Forward On/Off
109-0034	Fuser Motor Ready	Detect if Fuser Motor runs at each speed
109-0040	Fuser Fan Run	Fuser Fan Motor On/Off
109-0046	Exit Fan Run	Exit Fan Motor On/Off
109-0047	Exit Fan Run Ready	Detects if Fuser Fan runs at normal speed.
109-0130	Fuser Gap Motor	Fuser press control motor On/Off
109-0140	Fuser Gap Home Sensor	Detect if the fuser press is located Home position.
109-0200	Detect Fuser Relay	Detect Fuser Relay Status
109-0210	Detect ZeroCross Period	Detect ZeroCross Period
109-0300	Fuser Installed	Detect Fuser Unit
110-0000	LSU Motor1 Run Ready	Detects if LSU motor1 runs at normal speed.
110-0020	LSU Fan1 Run Ready	Detects if LSU Fan Motor runs at normal speed.
110-0060	LSU Motor1 Run	LSU Motor1 On/Off
110-0080	LSU LD Power1	LSU LD1 Power On/Off (yellow)
110-0090	LSU LD Power2	LSU LD2 Power On/Off (magenta)
110-0100	LSU LD Power3	LSU LD3 Power On/Off (cyan)
110-0110	LSU LD Power4	LSU LD4 Power On/Off (black)
110-0120	LSU Fan1 Run	Start/Stop LSU Fan Run
110-0140	LSU HSync1	Detect LSU HSync1 (yellow)
110-0150	LSU HSync2	Detect LSU HSync2 (magenta)
110-0160	LSU HSync3	Detect LSU HSync3 (cyan)
110-0170	LSU HSync4	Detect LSU HSync4 (black)
110-0200	LSU Installed	Detect LSU Unit
111-0000	Toner Dispense Motor Yellow	Toner Dispense(Supply) Motor On/Off
111-0010	Toner Dispense Motor Magenta	Toner Dispense(Supply) Motor On/Off
111-0020	Toner Dispense Motor Cyan	Toner Dispense(Supply) Motor On/Off
111-0030	Toner Dispense Motor Black	Toner Dispense(Supply) Motor On/Off
111-0040	Toner Sensor Yellow	TC sensor in developer tank.
111-0050	Toner Sensor Magenta	TC sensor in developer tank.
111-0060	Toner Sensor Cyan	TC sensor in developer tank.

Code	Displayed Name	Meaning
111-0070	Toner Sensor Black	TC sensor in developer tank.
111-0110	Toner Control Voltage Y	Y Toner Voltage On/Off
111-0120	Toner Control Voltage M	M Toner Voltage On/Off
111-0130	Toner Control Voltage C	C Toner Voltage On/Off
111-0140	Toner Control Voltage K	K Toner Voltage On/Off
111-0200	Toner Supply Lock Sensor Y	Y Supply Motor Lock Sensor
111-0210	Toner Supply Lock Sensor M	M Supply Motor Lock Sensor
111-0220	Toner Supply Lock Sensor C	C Supply Motor Lock Sensor
111-0230	Toner Supply Lock Sensor K	K Supply Motor Lock Sensor
111-0300	Toner Reservoir Motor Y	Y Reservoir Motor On/Off
111-0310	Toner Reservoir Motor M	M Reservoir Motor On/Off
111-0320	Toner Reservoir Motor C	C Reservoir Motor On/Off
111-0330	Toner Reservoir Motor K	K Reservoir Motor On/Off
111-0340	Toner Reservoir Level Y	Y Reservoir Level Display
111-0350	Toner Reservoir Level M	M Reservoir Level Display
111-0360	Toner Reservoir Level C	C Reservoir Level Display
111-0370	Toner Reservoir Level K	K Reservoir Level Display
112-0010	Clear Manual Offset Value of Color Regi	Clear Manual Offset Value of Color Regi.
112-0101	Y OPC Home Sensor Status	Y OPC Home Sensor Status Display
112-0111	M OPC Home Sensor Status	M OPC Home Sensor Status Display
112-0121	C OPC Home Sensor Status	C OPC Home Sensor Status Display
112-0131	K OPC Home Sensor Status	K OPC Home Sensor Status Display
112-0200	ACR Shutter Motor Run	ACR Shutter Motor On/Off
112-0210	ACR Shutter Detect	Detect ACR Shutter
112-0220	ACR Shutter Open	ACR Shutter Open
112-0230	ACR Shutter Close	ACR Shutter Close
112-0300	Front ID Sensor P Read	Front ID Sensor P value display
112-0310	Front ID Sensor S Read	Front ID Sensor S value display
112-0320	Rear ID Sensor P Read	Rear ID Sensor P value display
112-0330	Rear ID Sensor S Read	Rear ID Sensor S value display
112-0340	Center ID Sensor P Read	Center ID Sensor P value display
112-0350	Center ID Sensor S Read	Center ID Sensor S value display
113-0000	Finisher Present Sensor	Detect if the Finisher is in place.
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
113-0361	Finisher Compile Paper Sensor	Detect when a paper is at Compile Sensor
113-0370	Finisher Paddle Home Sensor	Detect Paddle Home position
113-0380	Finisher Left Tamper Home Sensor	Detect Left Tamper Home position
113-0390	Finisher Right Tamper Home Sensor	Detect Right Tamper Home position
113-0410	Finisher Stapler Door Sensor	Detect Stapler Door Cover is closed

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Code	Displayed Name	Meaning
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
113-0451	Finisher Stapler Ready Sensor	Detect Stapler Ready Sensor
113-0461	Finisher Ejector1 Home Sensor	Detect Ejector1 Home position
113-0462	Finisher Ejector2 Home Sensor	Detect Ejector2 Home position
113-0463	Finisher Ejector2 Encoder Sensor	Detect Ejector2 Encoder Sensor
113-0470	Finisher Main Tray Home Sensor	Detect Main Tray Home position
113-0471	Finisher Main Tray Beam Sensor	Detect Main Tray Beam Sensor
113-0472	Finisher Main Tray LowLimit Sensor	Detect Main Tray Low Limit Sensor
113-0473	Finisher Main Tray Encoder Sensor	Detect Main Tray Encoder Sensor
113-0481	Finisher Paper Support Sensor	Detect Paper Support Home Sensor
113-0491	Finisher Traverse Front Sensor	Detect Traverse Front Home Sensor
113-0492	Finisher Traverse Rear Sensor	Detect Traverse Rear Home Sensor
113-0501	Finisher Entrance Motor	Finisher Entrance Motor On/Off
113-0502	Finisher Exit Motor	Finisher Exit 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
113-0550	Finisher Staple Unit Motor	Finisher Staple Unit Motor On/Off
113-0561	Finisher Ejector1 Motor	Finisher Ejector1 Motor On/Off
113-0562	Finisher Ejector2 Motor	Finisher Ejector2 Motor On/Off
113-0563	Finisher Ejector2 Reverse Motor	Finisher Ejector2 Reverse Direction On/Off
113-0570	Finisher Main Tray Motor	Finisher Main Tray Motor On/Off
113-0571	Finisher Paper Support Motor	Finisher Paper Support Motor On/Off
113-0581	Finisher Traverse Motor	Finisher Staple Unit Traverse Motor On/Off
113-0591	Finisher Paper Hold Solenoid	Finisher Paper Hold Solenoid On/Off
113-0600	Finisher Punch Motor	Finisher Punch Motor On/Off
113-0610	Finisher Punch Encoder Sensor	Detect Finisher Punch Encoder Sensor
113-0611	Finisher Punch Position Sensor	Detect Finisher Punch Position Sensor
113-0612	Finisher Punch Home Sensor	Detect Finisher Punch Home Sensor
113-0620	Finisher Hopper Install Sensor	Detect Finisher Punch Hopper Install Sensor
113-0621	Finisher Hopper Full Sensor	Detect Finisher Punch Hopper Full Sensor
113-2000	2BinFinisher Buffer lift Sensor	Detect 2Bin Finisher Buffer lift Sensor
113-2010	2BinFinisher Clamp home Sensor	Detect 2BinFinisher Clamp home Sensor
113-2020	2BinFinisher Diverter home Sensor	Detect 2BinFinisher Diverter home Sensor
113-2030	2BinFinisher Eject1 away Sensor	Detect 2BinFinisher Eject1 away Sensor
113-2031	2BinFinisher Eject1 home Sensor	Detect 2BinFinisher Eject1 home Sensor
113-2032	2BinFinisher Eject1 encoder Sensor	Detect 2BinFinisher Eject1 encoder Sensor
113-2040	2BinFinisher Eject2 home Sensor	Detect 2BinFinisher Eject2 home Sensor

Code	Displayed Name	Meaning
113-2041	2BinFinisher Eject2 encoder Sensor	Detect 2BinFinisher Eject2 encoder Sensor
113-2050	2BinFinisher End fence Sensor	Detect 2BinFinisher End fence Sensor
113-2060	2BinFinisher Paddle home Sensor	Detect 2BinFinisher Paddle home Sensor
113-2070	2BinFinisher Bridge entrance Sensor	Detect 2BinFinisher Bridge entrance Sensor
113-2071	2BinFinisher Bridge middle Sensor	Detect 2BinFinisher Bridge middle Sensor
113-2080	2BinFinisher Entrance Sensor	Detect 2BinFinisher Entrance Sensor
113-2090	2BinFinisher Main exit Sensor	Detect 2BinFinisher Main exit Sensor
113-2091	2BinFinisher Sub exit Sensor	Detect 2BinFinisher Sub exit Sensor
113-2100	2BinFinisher Buffer exit Sensor	Detect 2BinFinisher Buffer exit Sensor
113-2110	2BinFinisher Stapler home Sensor	Detect 2BinFinisher Stapler home Sensor
113-2111	2BinFinisher Stapler rear Sensor	Detect 2BinFinisher Stapler rear Sensor
113-2112	2BinFinisher Stapler front Sensor	Detect 2BinFinisher Stapler front Sensor
113-2113	2BinFinisher Stapler manual Sensor	Detect 2BinFinisher Stapler manual Sensor
113-2114	2BinFinisher Stapler head Sensor	Detect 2BinFinisher Stapler head Sensor
113-2115	2BinFinisher Stapler low Sensor	Detect 2BinFinisher Stapler low Sensor
113-2116	2BinFinisher Stapler ready Sensor	Detect 2BinFinisher Stapler ready Sensor
113-2120	2BinFinisher Front tamper Sensor	Detect 2BinFinisher Front tamper Sensor
113-2130	2BinFinisher Rear tamper Sensor	Detect 2BinFinisher Rear tamper Sensor
113-2140	2BinFinisher Main beam Sensor	Detect 2BinFinisher Main beam Sensor
113-2141	2BinFinisher Main Front level Sensor	Detect 2BinFinisher Main Front level Sensor
113-2142	2BinFinisher Main Rear level Sensor	Detect 2BinFinisher Main Rear level Sensor
113-2143	2BinFinisher Main Encoder Sensor	Detect 2BinFinisher Main Encoder Sensor
113-2144	2BinFinisher Main Full Sensor	Detect 2BinFinisher Main Full Sensor
113-2145	2BinFinisher Sub Full Sensor	Detect 2BinFinisher Sub Full Sensor
113-2150	2BinFinisher Booklet paper Sensor	Detect 2BinFinisher Booklet paper Sensor
113-2160	2BinFinisher Staple paper Sensor	Detect 2BinFinisher Staple paper Sensor
113-2161	2BinFinisher Staple button Sensor	Detect 2BinFinisher Staple button Sensor
113-2170	2BinFinisher Compile paper Sensor	Detect 2BinFinisher Compile paper Sensor
113-2180	2BinFinisher Bridge cover Sensor	Detect 2BinFinisher Bridge cover Sensor
113-2181	2BinFinisher Top cover Sensor	Detect 2BinFinisher Top cover Sensor
113-2182	2BinFinisher Front door Sensor	Detect 2BinFinisher Front door Sensor
113-2190	2BinFinisher Stack top Sensor	Detect 2BinFinisher Stack top Sensor
113-2200	2BinFinisher Bridge detect Sensor	Detect 2BinFinisher Bridge detect Sensor
113-2201	2BinFinisher Punch detect Sensor	Detect 2BinFinisher Punch detect Sensor
113-2202	2BinFinisher Booklet detect Sensor	Detect 2BinFinisher Booklet detect Sensor
113-2500	2BinFinisher Buffer lift Motor	2BinFinisher Buffer lift Motor On/Off
113-2510	2BinFinisher Clamp Motor	2BinFinisher Clamp Motor On/Off
113-2520	2BinFinisher Diverter Motor	2BinFinisher Diverter Motor On/Off
113-2530	2BinFinisher Eject1 Motor	2BinFinisher Eject1 Motor On/Off
113-2540	2BinFinisher Eject2 Motor	2BinFinisher Eject2 Motor On/Off

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Code	Displayed Name	Meaning
113-2560	2BinFinisher Bridge feed Motor	2BinFinisher Bridge feed Motor On/Off
113-2570	2BinFinisher Entrance Motor	2BinFinisher Entrance Motor On/Off
113-2580	2BinFinisher Exit feed Motor	2BinFinisher Exit feed Motor On/Off
113-2590	2BinFinisher End fence Motor	2BinFinisher End fence Motor On/Off
113-2600	2BinFinisher Paddle Motor	2BinFinisher Paddle Motor On/Off
113-2610	2BinFinisher Maintray Motor	2BinFinisher Maintray Motor On/Off
113-2620	2BinFinisher Staple move Motor	2BinFinisher Staple move Motor On/Off
113-2621	2BinFinisher Staple head Motor	2BinFinisher Staple head Motor On/Off
113-2630	2BinFinisher Front tamper Motor	2BinFinisher Front tamper Motor On/Off
113-2640	2BinFinisher Rear tamper Motor	2BinFinisher Rear tamper Motor On/Off
113-2650	2BinFinisher Manual blue LED	2BinFinisher Manual blue LED On/Off
113-2651	2BinFinisher Manual red LED	2BinFinisher Manual red LED On/Off
113-3000	Booklet Stopper home Sensor	Detect Booklet Stopper home Sensor
113-3010	Booklet Staple home Sensor	Detect Booklet Staple home Sensor
113-3020	Booklet Front Staple empty Sensor	Detect Booklet Front Staple empty Sensor
113-3030	Booklet Rear Staple empty Sensor	Detect Booklet Rear Staple empty Sensor
113-3040	Booklet Knife home Sensor	Detect Booklet Knife home Sensor
113-3050	Booklet Guide home Sensor	Detect Booklet Guide home Sensor
113-3060	Booklet Diverter home Sensor	Detect Booklet Diverter home Sensor
113-3080	Booklet Tamper home Sensor	Detect Booklet Tamper home Sensor
113-3090	Booklet Paddle home Sensor	Detect Booklet Paddle home Sensor
113-3100	Booklet Entrance paper Sensor	Detect Booklet Entrance paper Sensor
113-3110	Booklet Tray paper Sensor	Detect Booklet Tray paper Sensor
113-3120	Booklet Fold exit paper Sensor	Detect Booklet Fold exit paper Sensor
113-3130	Booklet Press home Sensor	Detect Booklet Press home Sensor
113-3500	Booklet Feed Motor	Booklet Feed Motor On/Off
113-3510	Booklet Fold Motor	Booklet Fold Motor On/Off
113-3520	Booklet Stopper Solenoid	Booklet Stopper Solenoid On/Off
113-3530	Booklet Stopper Motor	Booklet Stopper Motor On/Off
113-3540	Booklet Tamper Motor	Booklet Tamper Motor On/Off
113-3550	Booklet Knife Motor	Booklet Knife Motor On/Off
113-3560	Booklet Diverter Motor	Booklet Diverter Motor On/Off
113-3570	Booklet Press Motor	Booklet Press Motor On/Off
113-3580	Booklet Paddle Motor	Booklet Paddle Motor On/Off
113-3590	Booklet Guide Motor	Booklet Guide Motor On/Off
113-3600	Booklet Staple Motor	Booklet Staple Motor On/Off
113-4000	Punch Scan home Sensor	Detect Punch Scan home Sensor
113-4010	Punch Scan Edge1 Sensor	Detect Punch Scan Edge1 Sensor
113-4011	Punch Scan Edge2 Sensor	Detect Punch Scan Edge2 Sensor
113-4012	Punch Scan Edge3 Sensor	Detect Punch Scan Edge3 Sensor

Code	Displayed Name	Meaning
113-4013	Punch Scan Edge4 Sensor	Detect Punch Scan Edge4 Sensor
113-4020	Punch Home Sensor	Detect Punch Home Sensor
113-4030	Punch Position A Sensor	Detect Punch Position A Sensor
113-4031	Punch Position B Sensor	Detect Punch Position B Sensor
113-4040	Punch Encoder Sensor	Detect Punch Encoder Sensor
113-4050	Punch Hopper full Sensor	Detect Punch Hopper full Sensor
113-4060	Punch Type1 detect Sensor	Detect Punch Type1 detect Sensor
113-4061	Punch Type2 detect Sensor	Detect Punch Type2 detect Sensor
113-4500	Punch Scan Motor	Punch Scan Motor On/Off
113-4510	Punch Motor	Punch Motor 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	Range
20-200	Pause Dial Time	Pause Time (value * 1000ms)	Country Value	0~200
20-210	Dial Pulse M/B ratio	33 / 66 40 / 60	Country Value	0=OPTION_DP_33 1=OPTION_DP_40 2=OPTION_DP_37 3=OPTION_DP_50
20-220	Auto Dial Start Pause Time	Pause time before auto-dialing (second)	1	0~10
20-300	Ring On Time	Ring On Time (ms)	170	90~800
20-310	Ring Off Time	Ring Off Time (ms)	560	90~800
20-320	Ring Detection Freq	sets the Call Indication frequency range that will be detected by LIU	1	1=12-80hz 2=16-55hz 3=20-55hz 4=22-55hz
20-330	Ring On Max Time	Ring On Max Time (ms)	5100	3000~12000
20-340	Ring Off Max Time	Ring Off Max Time (ms)	11100	9000~22000
20-400	DTMF High-Freq Level	DTMF High-Freq. Level (dBm)	Country Value	0~15
20-410	DTMF Low-Freq Level	DTMF Low-Freq. Level (dBm)	Country Value	0~15
20-420	DTMF Timing	DTMF duration of on/off output (Ms)	8	1=80/80 2=70/70 3=70/150 4=60/60 5=80/100 6=150/50 7=150/240 8=100/100 9=100/80
20-500	Dial Mode	Select Tone / Pulse	Country Value	0=OPTION_TONE_MODE 1=OPTION_PULSE_MODE

Code	Name	Description	Default	Range
20-520	Error Rate	Adjust Error Rate (Off / 5% / 10% / 20%)	2	0=OPTION_RATE_OFF 1=OPTION_RATE_5 2=OPTION_RATE_10 3=OPTION_RATE_20
20-530	Dial Tone Detect	detect dial tone prior to sending	Country Value	0=OPTION_OFF 1=OPTION_ON
20-540	Loop Current Detect	detect if loop current is present prior to sending	Country Value	0=OPTION_OFF 1=OPTION_ON
20-550	Busy Signal Detect	detect busy signal to allow redials	Country Value	0=OPTION_OFF 1=OPTION_ON
20-560	TCF Duration	Adjust TCF duration (ms)	1500	1000~3000
20-800	Modem Speed	Select Modem Start Speed	24	
20-810	Fax Transmission Level	Adjust Fax Transmission Level (dBm)	Country Value	Country Value
20-830	Auto Dial Timeout	Adjust Auto Dial Timeout (second)	Country Value	30~150
20-920	CNG Detection Count	CNG Tone Detection check count during ANS/FAX mode.	2	1~15
20-930	Caller ID	This option is needed to guide Caller ID off for user environment.	Country Value	0=OPTION_OFF 1=OPTION_ON
20-940	Ext. Phone	Ext. Phone Detection Enable/Disable (Default : Enable 1)	1	0=Disable 1=Enable
21-999	Fax Line Setting	Fax Test Line Setting(Dual Fax)	0	0 = Line 1 1 = Line 2
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.

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
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

Code	Name	Description	State Displayed
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
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


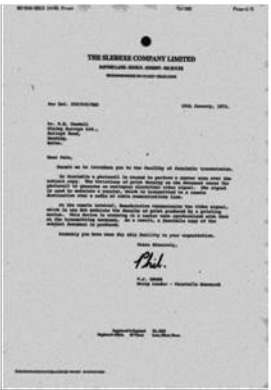

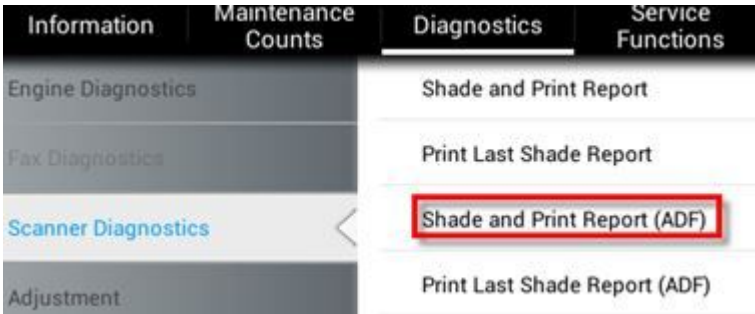
4. Troubleshooting

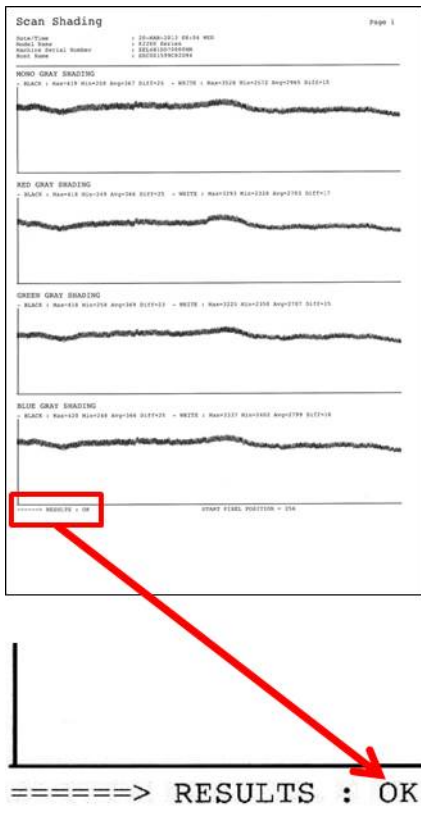
Code	Name	Description	State Displayed
21-058	V.34 24000 bps Line2	Emits V.34 24000 bps Line2	On / Off
21-059	V.34 26400 bps Line2	Emits V.34 26400 bps Line2	On / Off
21-060	V.34 28800 bps Line2	Emits V.34 28800 bps Line2	On / Off
21-061	V.34 31200 bps Line2	Emits V.34 31200 bps Line2	On / Off
21-062	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"> • To check quality of scanned images, especially defect in optical devices, including lens, mirror, lamp, and etc, are suspected. • To check quality problem as shown below <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>[For Platen Unit]</p> <p>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>[For ADF(DSDF) Unit]</p> <ol style="list-style-type: none"> 1) Load the shading sheet on the DSDF tray. 2) Enter SVC mdoe. Select the following menu. (Diagnostics > Scanner Diagnostics > Shading Test > Shade and Print Report(ADF)) <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"> 3) Check if RESULTS on the sheet is OK. <div style="background-color: #f0f0f0; padding: 10px; margin-top: 10px;"> <p>NOTE</p> <ul style="list-style-type: none"> • When executing DSDF shading, use only exclusive shading sheet(JC63-05055A : SHEET-SHADING). • Shading Test for ADF Unit must be carried out, after replacing the DSDF unit or main board. </div>

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

Code	Display	Default	LX model	GX model
05-0000	Pick Up Count	0	O	O
05-0001	Retard Roller Count	0	O	O
05-0030	Simplex Regi Value(Regi1)	0	O	O
05-0040	Duplex Regi Value(Regi2)	0	X	O
05-0050	Width Guide Max Value	0	O	O
05-0060	Width Guide Min Value	0	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	When the main scanner/ADF 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	Table below

Code	Item	Value	LX model	GX model
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
05-0002	Document Length .3 Sensor	High/Low	X	O
05-0020	Document Cover Open Sensor	High/Low	O	O
05-0040	Document Detect Sensor	High/Low	O	O
05-0050	Document Feed Sensor	High/Low	X	O
05-0060	Document Simplex Registration Sensor	High/Low	O	O
05-0070	Document Scan Read Sensor1	High/Low	O	O
05-0071	Document Scan Read Sensor2	High/Low	O	O
05-0080	Document Exit Sensor	High/Low	O	O
05-0090	Document Pick up Clutch	Start/Stop	O	X
05-0110	Document Motor Forward	Start/Stop	O	O
05-0111	Document Motor Backward	Start/Stop	O	O
05-0123	Document width1 MSO Sensor	High/Low	X	O
05-0124	Document width2 MSO Sensor	High/Low	X	O
05-0125	Document width3 MSO Sensor	High/Low	X	O
05-0130	Document Pickup Motor Forward	Start/Stop	X	O
05-0131	Document Pickup Motor Backward	Start/Stop	X	O
05-0140	Document Pickup Roller Detect Sensor	High/Low	O	X
05-0150	Document Stacker Lift Upper Sensor	High/Low	X	O
05-0151	Document Stacker Lift Lower Sensor	High/Low	X	O
05-0160	Document Regi1 Motor Forward	Start/Stop	O	O

4. Troubleshooting

Code	Item	Value	LX model	GX model
05-0162	Document Regi1 Motor Backward	Start/Stop	O	O
05-0170	Document Regi2 Motor Forward	Start/Stop	X	O
05-0171	Document Regi2 Motor Backward	Start/Stop	X	O
05-0180	Document Stacker Lift Motor Forward	Start/Stop	X	O
05-0181	Document Stacker Lift Motor Backward	Start/Stop	X	O
05-0190	Document Width Guide ADC Sensor	10Bit (0~1023)	O	O
05-0210	Document Jig Test Low Speed Simplex	Start/Stop	O	O
05-0230	Document Jig Test High Speed Simplex	Start/Stop	O	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"> 1) Press "Paper Supply" button and select a tray. 2) Press "Paper Size" button and select a paper size of the previously selected tray. 3) Press "Print" button. A test pattern will be printed out. 4) Place the printed pattern on platen. <ul style="list-style-type: none"> • The words "front side" on the chart face the glass • The arrows face left edge of the platen • Press "Scan 1" 5) Press "OK" button. Automatic scanning will occur . 6) Place the printed pattern on platen. <ul style="list-style-type: none"> • The words "back side" on the chart face the glass • The arrows face left edge of the platen • Press "Scan 2" 7) Press "OK" button. Automatic scanning will occur . 8) The system will automatically calculate the proper value based on scanning result of the test pattern. 9) The new values are set to the system.

• **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"> 1) Select a tray required adjustment. 2) Change the adjustment value with ”+”, “-” then press “OK” button to save changes. <ul style="list-style-type: none"> • Simplex Leading Edge • Simplex Side Edge • Duplex Leading Edge • Duplex Side Edge <div style="background-color: #cccccc; padding: 5px; margin: 10px 0;"> <p> NOTE</p> <ul style="list-style-type: none"> • Adjustment must be done for each tray (Tray X, MP). • It is recommended not to choose “ALL” for tray selection. • It is always better to adjust for a particular tray at each time. </div> 3) Print out the test pattern and check if the image is moved as you want. If not, repeat stpe2.

• **Diagnostics > Adjustment > Print Adjustment > Print Test Patterns**

This menu is to print out the test pattern manually.

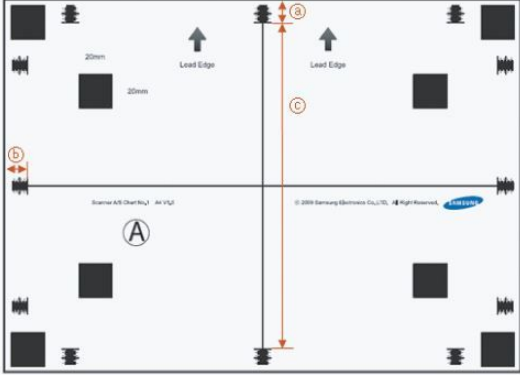

Copy Adjustment

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


Purpose	Manually adjust copied image position on paper in copy engine
Operation Procedure	<p> NOTE</p> <p>Before copy adjustment,</p> <ol style="list-style-type: none"> 1) Please make sure that initial values of margin adjustment must be the same as values of print adjustment. 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. 3) The Procedure for copy adjustment is almost same as “Print Adjustment”. <p> NOTE</p> <ul style="list-style-type: none"> • Adjustment must be done for each tray (Tray X, MP). • It is recommended not to choose “ALL” for tray selection. • It is always better to adjust for a particular tray at each time. <ol style="list-style-type: none"> 1) Select a tray required adjustment. 2) Change the adjustment value with ”+”, “-” then press “OK” button to save changes. <ul style="list-style-type: none"> • Simplex Leading Edge • Simplex Side Edge • Duplex Leading Edge • Duplex Side Edge 3) Print out the test pattern and check if the image is moved as you want. If not, repeat step 2.

Scan Area Adjustment

- Diagnostics > Adjustment > Scan Area Adjustment > Automatic Adjustment

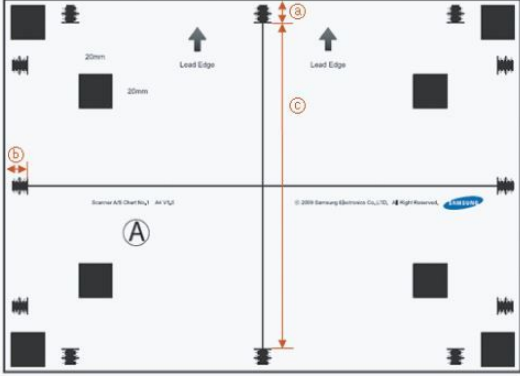
Purpose	To correct image position and magnification of scanned images automatically.
Operation Procedure	<p>1) Locate the Scanner A/S Chart at the scan glass.</p>  <p style="text-align: center;">A4 Scanner A/S Chart</p> <p>Note that “Lead Edge” arrows need to head to the left side of scan glass and to 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; margin-top: 10px;"> <p> NOTE</p> <p>Specification</p> <ul style="list-style-type: none"> • a,b : 10, ± 1.5 mm • c: 190, ± 1.5 mm </div>

• **Diagnostics > Adjustment > Scan Area 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"> • Image Position - Leading Edge (Unit : mm, Scale : 0.1, Min/Max : -6/+6) • Image Position - Side Edge (Unit : mm, Scale : 0.1, Min/Max : -6/+6) • Magnification - Vertical Direction (Unit : %, Min/Max: 98.5/101.5) <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) Scan the Scanner A/S Chart and send it to a PC. Scanning must be occur from the scan glass.</p> <p>8) To check the image position, compare the position of scale marks (a,b) of the chart to the scanned image.</p> <p>9) To check the magnification, compare the length of line “c” of the chart to the scanned image.</p> <div style="background-color: #e0e0e0; padding: 5px;"> <p> NOTE</p> <p>Specification</p> <ul style="list-style-type: none"> • a,b : 10, ± 1.5 mm • c: 190, ± 1.5 mm </div>

ADF Adjustment

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

Purpose	To correct image position and magnification of scanned images via DSDF automatically.
Operation Procedure	<p>1) Locate the Scanner A/S chart on the DSDF tray.</p>  <p style="text-align: center;">A4 Scanner A/S Chart</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.</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>! NOTE</p> <p>Specification</p> <ul style="list-style-type: none"> • a,b : 10, ± 1.5 mm • c: 190, ± 1.5 mm </div> <div style="background-color: #f0f0f0; padding: 5px; margin-top: 10px;"> <p>! NOTE</p> <p>After executing ADF adjustment, the shading test must be executed. (Refer to 4.5.5.3. Scanner Diagnostics.)</p> </div>

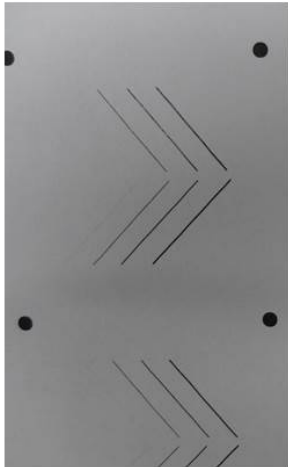
• **Diagnostics > Adjustment > ADF Adjustment > Manual Adjustment**

Purpose	To correct image position and magnification of scanned images manually.																																														
Operation Procedure	<p>NOTE After executing ADF adjustment, the shading test must be executed. (Refer to 4.5.5.3. Scanner Diagnostics.)</p> <ol style="list-style-type: none"> 1) Choose one item from the table. There are three items to choose. <ul style="list-style-type: none"> • Image Position - Leading Edge (Unit : mm, Scale : 0.1, Min/Max : -6/+6) • Image Position - Side Edge (Unit : mm, Scale : 0.1, Min/Max : -6/+6) • Magnification - Vertical Direction (Unit : %, , Min/Max : 98.5/101.5) 2) Select one item and press the “Edit” button. 3) Change the adjustment value with arrow button. 4) Image Position (a, b) : If the current value is smaller than the specification, press “+”. Otherwise, press “-”. 5) Magnification (c) : If the current value is smaller than the specification, press “-”. Otherwise, press “+”. <p>NOTE Specification</p> <ul style="list-style-type: none"> • a,b : 10, ± 1.5 mm • c: 190, ± 1.5 mm <ol style="list-style-type: none"> 6) Press the “OK” button to apply the new value to the system. 7) Copy the Scanner A/S Chart. Scanning must be occur from the DSDF. 8) To check the image position, compare the position of scale marks (a,b) of the chart to the copy. 9) To check the magnification, compare the length of line “c” of the chart to the copy. 10) If "Auto Skew Correction during job" box is checked, skewed image is corrected by digitally rotating the scanned images.  <table border="1"> <thead> <tr> <th rowspan="2">Item</th> <th rowspan="2">Send List</th> <th colspan="2">Front</th> <th colspan="2">Back</th> </tr> <tr> <th>Default</th> <th>Value</th> <th>Default</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Image Position</td> <td>Leading Edge</td> <td>0.0</td> <td>-0.6</td> <td>0.0</td> <td>0.0</td> </tr> <tr> <td>Image Position</td> <td>Side Edge</td> <td>0.0</td> <td>1.4</td> <td>0.0</td> <td>2.1</td> </tr> <tr> <td>Magnification</td> <td>Feed Direction</td> <td>100.0</td> <td>100.3</td> <td>100.0</td> <td>100.2</td> </tr> <tr> <td>Magnification</td> <td>Horizontal Direction</td> <td>100.0</td> <td>100.0</td> <td>100.0</td> <td>100.0</td> </tr> <tr> <td>Skew</td> <td>Top Skew</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> </tr> <tr> <td>Skew</td> <td>Side Skew</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> <td>0.0</td> </tr> </tbody> </table>	Item	Send List	Front		Back		Default	Value	Default	Value	Image Position	Leading Edge	0.0	-0.6	0.0	0.0	Image Position	Side Edge	0.0	1.4	0.0	2.1	Magnification	Feed Direction	100.0	100.3	100.0	100.2	Magnification	Horizontal Direction	100.0	100.0	100.0	100.0	Skew	Top Skew	0.0	0.0	0.0	0.0	Skew	Side Skew	0.0	0.0	0.0	0.0
Item	Send List			Front		Back																																									
		Default	Value	Default	Value																																										
Image Position	Leading Edge	0.0	-0.6	0.0	0.0																																										
Image Position	Side Edge	0.0	1.4	0.0	2.1																																										
Magnification	Feed Direction	100.0	100.3	100.0	100.2																																										
Magnification	Horizontal Direction	100.0	100.0	100.0	100.0																																										
Skew	Top Skew	0.0	0.0	0.0	0.0																																										
Skew	Side Skew	0.0	0.0	0.0	0.0																																										

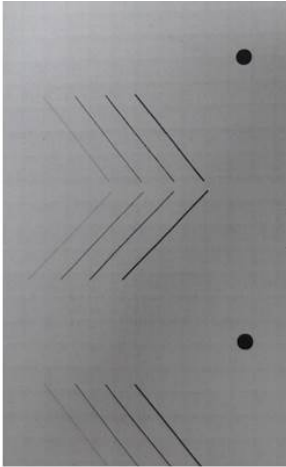
NOTE

When this function is enabled, visual artifact (like checkerboard patterns) may appear on the image depending on the original contents or copy option settings.

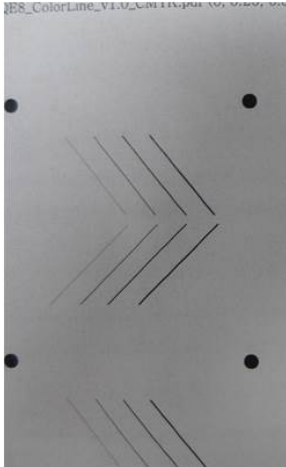
[Reference Image]



**Mixed Mode Copy
(Auto Skew Correction ON)**



**Map Mode Copy
with Background
Enhanced
(Auto Skew
Correction ON)**



**Map Mode Copy
with Background
Enhanced
(Auto Skew
Correction OFF)**

4.5.5.5. ACS (Auto Color Sensing)


• **Diagnostics > ACS**

Purpose	To set the color coverage ratio of auto color mode in copy function. <ul style="list-style-type: none"> Color Coverage Ratio : The ratio of color contents in the original document.
Operation Procedure	Change the level from 1 to 5. <ul style="list-style-type: none"> Classifies a document as color, if color coverage of the document is higher than predefined level. Level 1 has higher probability of classifying documents to color, while level 5 has lower probability.
Verification	Copy the 'mono copied' original with auto color mode and check if print out is monochrome.
Specification	[Color coverage] <ul style="list-style-type: none"> Level 1 : 0.01 % Level 2 : 0.05 % Level 3 : 0.1 % Level 4 : 0.25 % Level 5 : 0.5 %

4.5.5.6. Image Management

Auto Color Registration

- **Diagnostics > Image Management > Auto Color Registration**

Purpose	To correct color registration of the system when it shows color shift between the original and a copy.
Operation Procedure	<p>1) Select “On” or “Off” or “Execute Now” for ACR execution.</p> <ul style="list-style-type: none"> • If you select “Off”, ACR will not execute. • If you select “On”, ACR will execute as the determined conditions. • If you select “Execute Now”, ACR will execute now. <p>2) After selecting “On”, change execution condition(s) of the Automatic Color Registration.</p> <ul style="list-style-type: none"> • Page Condition : The system executes ACR based on the count of printed pages since the last ACR execution. • Inner Temperature : The system executes ACR when inner temperature of the device increases or decreases by the configured value since the last ACR execution. • LSU Temperature : The system executes ACR when LSU temperature of the device increases or decreases by the configured value since the last ACR execution. <p> NOTE</p> <ul style="list-style-type: none"> • ACR execution occurs when one of the ACR option meets the condition.
Verification	Compare the original with a copy after an execution of Auto Color Registration.
Specification	<ul style="list-style-type: none"> • Page Condition <ul style="list-style-type: none"> • Range : 100 ~ 5000 • Default : 200 • Inner Temperature <ul style="list-style-type: none"> • Range : 1 ~ 10 • Default : 4 • LSU Temperature <ul style="list-style-type: none"> • Range : 1 ~ 10 • Default : 2

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"> 1) Select “On” or “Off” for Normal TRC Control execution. <ul style="list-style-type: none"> • If you select “Off”, Normal TRC Control will not execute. • If you select “On”, Normal TRC Control will execute as the determined conditions. 2) Change execution condition(s) of Normal TRC Control. <ul style="list-style-type: none"> • Page Count: The system executes Normal TRC Control based on the count of printed pages since the last execution. • 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.
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"> 1) Select “On” or “Off” for Full TRC Control execution. <ul style="list-style-type: none"> • If you select “Off”, Full TRC Control will not execute. • If you select “On”, Full TRC Control will execute as the determined conditions. 2) Change execution condition(s) of Full TRC Control. <ul style="list-style-type: none"> • Page Count: The system executes Full TRC Control based on the count of printed pages since the last execution. • 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.
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.

- **Diagnostics > Image Management > Auto Tone Adjustment > CTD Sensor Cleaning**

Purpose	To solve the “CTD Sensor Failure” error.
Operation Procedure	After cleaning CTD/ACR sensor, execute this menu.

4.5.5.7. Print Test Patterns

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

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

4.5.6. Service Functions

4.5.6.1. Main Memory Clear

- **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

- **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. Debug Log

- **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.

4.5.6.5. Capture Log

- **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.

4.5.6.6. Network Packet Capture

- **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

4.5.6.7. 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.

4.5.6.8. 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	<ol style="list-style-type: none"> 1) T1 Control Problems <ul style="list-style-type: none"> • Choose the process speed (Full, Half, Lower) based on the type of paper to be used. • Adjust T1 PWM value based on the problem type. <ul style="list-style-type: none"> • Gray Spot : Increase T1 PWM value of the issued color • Non Cyclic White Line : Decrease T1 PWM value of the issued color • OPC Cyclic Ghost : Decrease T1 PWM value of the issued color 2) T2 Control Problems <ul style="list-style-type: none"> • Choose the paper group, paper side, and paper direction. • Adjust T1 PWM value based on the problem type. <ul style="list-style-type: none"> • Blur : Increase T1 PWM value • Poor Transfer : Increase T1 PWM value • Re-transfer : Decrease T1 PWM value • White Spot : Decrease T1 PWM value
Verification	Print out a test job and make sure the transfer problem has resolved.
Specification	N/A
Reference	N/A

4.5.6.9. Clear System Cache

- **Service Functions > Clear System Cache**

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

4.5.6.10. 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.

4.5.6.11. Paper Low Warning Message

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

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

4.5.6.12. 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

4.5.6.13. FDI

- **Service Functions > FDI**

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

4.5.6.14. EIUL (End of Image Unit Life)

- **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

4.5.6.15. 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.
002	The device always prints output as mono about PC printing.
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 LDAPs 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.
024	The device executes copy job as only mono even though color copy is started.
025	confidential
026	The device maintains HDD encryption as a default.
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.

4.5.6.16. Dealer ID

- **Service Functions > Dealer ID**

The SFE functions related to the dealer will be enable.

4.5.6.17. 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.4-73
11-2T11	Load tray 1 with [Letter], [Plain] paper	P.4-73
11-2T21	Load tray 2 with [Letter], [Plain] paper	P.4-73
11-2T31	Load tray 3 with [Letter], [Plain] paper	P.4-73
11-2T41	Load tray 4 with [Letter], [Plain] paper	P.4-73
11-2T51	Load tray 5 with [Letter], [Plain] paper	P.4-73
11-2T61	Load MP with [Letter], [Plain] paper	P.4-73

► **Error Code**

11-2T01 / 11-2T11 / 11-2T21 / 11-2T31 / 11-2T41 / 11-2T51 / 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 tray 5 with [Letter], [Plain] paper

Load MP with [Letter], [Plain] paper

► **Symptom**

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

► **Troubleshooting method**

 **NOTE**

To see the troubleshooting video for this error, click through to the link below.

- 11-2T01 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_11-2T01.html
- 11-2T11 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_11-2T11.html
- 11-2T21 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_11-2T21.html
- 11-2T31 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_11-2T31.html
- 11-2T41 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_11-2T41.html
- 11-2T51 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_11-2T51.html
- 11-2T61 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_11-2T61.html

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

4.6.2. 61–1xxx (System Error)

Error Code	Error Message	Troubleshooting Page
61-1111	Booting Failure: #61-1111. Turn off then on. Call for service if the problem persists	P.4–74
61-1Y70	Scanner Failure: #61-1Y70. Turn off then on. Call for service if the problem persists	P.4–74
61-C401	Job is completed with error: DNS Error	P.4–75

► 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



NOTE

To see the troubleshooting video for this error, click through to the link below.

(http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_61-1111.html)

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

► Error Code

61–1Y70

► Error message

Scanner Failure: #61-1Y70. Turn off then on. Call for service if the problem persists

► Symptom

Shading data is broken due to HDD/SD replacement or system format.

► Troubleshooting method



NOTE

To see the troubleshooting video for this error, click through to the link below.

(http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_61-1Y70.html)

- 1) Turn the machine off then on.
- 2) If the error persists, enter the SVC mode.
- 3) Execute the shading test.

▶ **Error Code**

61-C401

▶ **Error message**

Job is completed with error: DNS Error

▶ **Symptom**

Scan to Email Job or Scan to Server Job is failed because of DNS server error.

▶ **Troubleshooting method**

- 1) Connect to the SyncThru Web Service as administrator.
- 2) Check domain name. (Network > Interface > Ethernet > TCP/IP > Domain name)
- 3) Check DNS server address.
- 4) Retry the job.

4.6.3. A1-xxxx (Motor error)

Error Code	Error Message	Troubleshooting Page
A1-1111	Motor Failure: #A1-1111. Turn off then on. Call for service if the problem persists	P.4-78
A1-1113	Motor Failure: #A1-1113. Turn off then on. Call for service if the problem persists	P.4-78
A1-1211	Motor Failure: #A1-1211. Turn off then on. Call for service if the problem persists	P.4-79
A1-1213	Motor Failure: #A1-1213. Turn off then on. Call for service if the problem persists	P.4-79
A1-1611	Motor Failure: #A1-1611. Turn off then on. Call for service if the problem persists	P.4-80
A1-1612	Motor Failure: #A1-1612. Turn off then on. Call for service if the problem persists	P.4-80
A1-1613	Motor Failure: #A1-1613. Turn off then on. Call for service if the problem persists	P.4-80
A1-2211	Motor Failure: #A1-2211. Turn off then on. Call for service if the problem persists	P.4-81
A1-2212	Motor Failure: #A1-2212. Turn off then on. Call for service if the problem persists	P.4-81
A1-2213	Motor Failure: #A1-2213. Turn off then on. Call for service if the problem persists	P.4-81
A1-2311	Motor Failure: #A1-2311. Turn off then on. Call for service if the problem persists	P.4-82
A1-2312	Motor Failure: #A1-2312. Turn off then on. Call for service if the problem persists	P.4-82
A1-2313	Motor Failure: #A1-2313. Turn off then on. Call for service if the problem persists	P.4-82
A1-2411	Motor Failure: #A1-2411. Turn off then on. Call for service if the problem persists	P.4-83
A1-2412	Motor Failure: #A1-2412. Turn off then on. Call for service if the problem persists	P.4-83
A1-2413	Motor Failure: #A1-2413. Turn off then on. Call for service if the problem persists	P.4-83
A1-2511	Motor Failure: #A1-2511. Turn off then on. Call for service if the problem persists	P.4-84
A1-2512	Motor Failure: #A1-2512. Turn off then on. Call for service if the problem persists	P.4-84
A1-2513	Motor Failure: #A1-2513. Turn off then on. Call for service if the problem persists	P.4-84
A1-4310	Motor Failure: #A1-4310. Turn off then on. Call for service if the problem persists	P.4-85
A1-5212	Motor Failure: #A1-5212. Turn off then on. Call for service if the problem persists	P.4-86
A1-5213	Motor Failure: #A1-5213. Turn off then on. Call for service if the problem persists	P.4-86

4. Troubleshooting

Error Code	Error Message	Troubleshooting Page
A1-5312	Motor Failure: #A1-5312. Turn off then on. Call for service if the problem persists	P.4-87
A1-5313	Motor Failure: #A1-5313. Turn off then on. Call for service if the problem persists	P.4-87
A1-5412	Motor Failure: #A1-5412. Turn off then on. Call for service if the problem persists	P.4-88
A1-5413	Motor Failure: #A1-5413. Turn off then on. Call for service if the problem persists	P.4-88
A1-5512	Motor Failure: #A1-5512. Turn off then on. Call for service if the problem persists	P.4-89
A1-5513	Motor Failure: #A1-5513. Turn off then on. Call for service if the problem persists	P.4-89

► **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**

Feed/MP motor operation is abnormal.

► **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

- A1-1111 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-1111.html
- A1-1113 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-1113.html

- A1-1111 : Feed/MP motor is stopped but machine recognizes it as operational.
 - A1-1113 : Feed/MP motor is operating but machine recognizes status as "Stopped".
- 1) Turn the machine off then on. If the error persists, check the following.
 - 2) Open the side cover. Check if there are any foreign substances or paper around Feed/MP unit.
 - 3) Remove the rear cover.
 - 4) Check the connection between the motor and main board.
 - 5) If the connection is OK, enter SVC mode. Execute the motor test.
(Diagnostics > Engine Diagnostics > Engine Test Routines)
 - a) If the motor is not operational,
 - i) Check the motor signal(3.3V). If the signal is abnormal, replace the main board.
(Refer to 3.3.7 Main board)
 - ii) Check the power(24V). If the power is abnormal, check the SMPS board. If the SMPS board is defective, replace it.
(Refer to 3.3.9 SMPS board 1 and 2)
 - iii) If the motor signal and power is normal, replace the Feed/MP motor.
(Refer to 3.3.18 Feed_MP Drive Unit)
 - b) If the motor is operational, replace the main board.

▶ **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/Exit motor operation is abnormal.

▶ **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

- A1-1211 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-1211.html
- A1-1213 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-1213.html

- A1-1211 : Fuser/Exit motor is stopped but machine recognizes it as operational.

- A1-1213 : Fuser/Exit motor is operating but recognizes status as "Stopped".

- 1) Turn the machine off then on. If the error persists, check the following.
- 2) Open the side cover. Check if there are any foreign substances or paper around fuser unit.
- 3) Remove the rear cover.
- 4) Check the connection between the motor and main board.
- 5) If the connection is OK, enter SVC mode. Execute the motor test.

(Diagnostics > Engine Diagnostics > Engine Test Routines)

- a) If the motor is not operational,

- i) Check the motor signal(3.3V). If the signal is abnormal, replace the main board.

(Refer to 3.3.7 Main board)

- ii) Check the power(24V). If the power is abnormal, check the SMPS board. If the SMPS board is defective, replace it.

(Refer to 3.3.9 SMPS board 1 and 2)

- iii) If the motor signal and power is normal, replace the Fuser/Exit motor.

(Refer to 3.3.20 Fuser Exit Drive unit)

- b) If the motor is operational, replace the main board.

► **Error Code**

A1-1611

A1-1612

A1-1613

► **Error message**

Motor Failure: #A1-1611. Turn off then on. Call for service if the problem persists.

Motor Failure: #A1-1612. Turn off then on. Call for service if the problem persists.

Motor Failure: #A1-1613. Turn off then on. Call for service if the problem persists.

► **Symptom**

ITB motor operation is abnormal.

► **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

- A1-1611 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-1611.html
- A1-1612 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-1612.html
- A1-1613 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-1613.html

- A1-1611 : ITB motor is stopped but machine recognizes it as operational.
 - A1-1612 : ITB motor is not operated for print-job.
 - A1-1613 : ITB motor is operating but machine recognizes status as "Stopped".
- 1) Turn the machine off then on. If the error persists, check the following.
 - 2) Remove the ITB cleaner and ITB Unit. Check if there are any foreign substances in ITB unit.
 - 3) Remove the rear cover.
 - 4) Check the connection between the motor and main board.
 - 5) If the connection is OK, enter SVC mode. Execute the motor test.
(Diagnostics > Engine Diagnostics > Engine Test Routines)
 - a) If the motor is not operational,
 - i) Check the motor signal(3.3V). If the signal is abnormal, replace the main board.
(Refer to 3.3.7 Main board)
 - ii) Check the power(24V). If the power is abnormal, check the SMPS board. If the SMPS board is defective, replace it.
(Refer to 3.3.9 SMPS board 1 and 2)
 - iii) If the motor signal and power is normal, replace the ITB motor.
 - b) If the motor is operational, replace the main board.

► **Error Code**

A1-2211

A1-2212

A1-2213

► **Error message**

Motor Failure: #A1-2211. Turn off then on. Call for service if the problem persists

Motor Failure: #A1-2212. Turn off then on. Call for service if the problem persists

Motor Failure: #A1-2213. Turn off then on. Call for service if the problem persists

► **Symptom**

Yellow OPC motor operation is abnormal.

► **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

- A1-2211 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-2211.html
- A1-2212 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-2212.html
- A1-2213 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-2213.html

- A1-2211 : Yellow OPC motor is stopped but machine recognizes it as operational.
 - A1-2212 : Yellow OPC motor is not operated for print-job.
 - A1-2213 : Yellow OPC motor is operating but machine recognizes status as "Stopped".
- 1) Turn the machine off then on. If the error persists, check the following.
 - 2) Remove the yellow drum unit. Check if there are any foreign substances in yellow drum unit.
 - 3) Remove the rear cover.
 - 4) Check the connection between the yellow OPC motor and main board.
 - 5) If the connection is OK, enter SVC mode. Execute the motor test.

(Diagnostics > Engine Diagnostics > Engine Test Routines)

- a) If the motor is not operational,
 - i) Check the motor signal(3.3V). If the signal is abnormal, replace the main board.
(Refer to 3.3.7 Main board)
 - ii) Check the power(24V). If the power is abnormal, check the SMPS board. If the SMPS board is defective, replace it.
(Refer to 3.3.9 SMPS board 1 and 2)
 - iii) If the motor signal and power is normal, replace the yellow OPC motor.
- b) If the motor is operational, replace the main board.

► **Error Code**

A1-2311

A1-2312

A1-2313

► **Error message**

Motor Failure: #A1-2311. Turn off then on. Call for service if the problem persists

Motor Failure: #A1-2312. Turn off then on. Call for service if the problem persists

Motor Failure: #A1-2313. Turn off then on. Call for service if the problem persists

► **Symptom**

Magenta OPC motor operation is abnormal.

► **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

- A1-2311 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-2311.html
- A1-2312 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-2312.html
- A1-2313 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-2313.html

- A1-2311 : Magenta OPC motor is stopped but machine recognizes it as operational.
- A1-2312 : Magenta OPC motor is not operated for print-job.
- A1-2313 : Magenta OPC motor is operating but machine recognizes status as "Stopped".

- 1) Turn the machine off then on. If the error persists, check the following.
- 2) Remove the magenta drum unit. Check if there are any foreign substances in magenta drum unit.
- 3) Remove the rear cover.
- 4) Check the connection between the magenta OPC motor and main board.
- 5) If the connection is OK, enter SVC mode. Execute the motor test.

(Diagnostics > Engine Diagnostics > Engine Test Routines)

- a) If the motor is not operational,
 - i) Check the motor signal(3.3V). If the signal is abnormal, replace the main board.
(Refer to 3.3.7 Main board)
 - ii) Check the power(24V). If the power is abnormal, check the SMPS board. If the SMPS board is defective, replace it.
(Refer to 3.3.9 SMPS board 1 and 2)
 - iii) If the motor signal and power is normal, replace the magenta OPC motor.
- b) If the motor is operational, replace the main board.

► **Error Code**

A1-2411

A1-2412

A1-2413

► **Error message**

Motor Failure: #A1-2411. Turn off then on. Call for service if the problem persists

Motor Failure: #A1-2412. Turn off then on. Call for service if the problem persists

Motor Failure: #A1-2413. Turn off then on. Call for service if the problem persists

► **Symptom**

Cyan OPC motor operation is abnormal.

► **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

- A1-2411 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-2411.html
- A1-2412 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-2412.html
- A1-2413 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-2413.html

- A1-2411 : Cyan OPC motor is stopped but machine recognizes it as operational.
 - A1-2412 : Cyan OPC motor is not operated for print-job.
 - A1-2413 : Cyan OPC motor is operating but machine recognizes status as "Stopped".
- 1) Turn the machine off then on. If the error persists, check the following.
 - 2) Remove the cyan drum unit. Check if there are any foreign substances in cyan drum unit.
 - 3) Remove the rear cover.
 - 4) Check the connection between the cyan OPC motor and main board.
 - 5) If the connection is OK, enter SVC mode. Execute the motor test.

(Diagnostics > Engine Diagnostics > Engine Test Routines)

- a) If the motor is not operational,
 - i) Check the motor signal(3.3V). If the signal is abnormal, replace the main board.
(Refer to 3.3.7 Main board)
 - ii) Check the power(24V). If the power is abnormal, check the SMPS board. If the SMPS board is defective, replace it.
(Refer to 3.3.9 SMPS board 1 and 2)
 - iii) If the motor signal and power is normal, replace the cyan OPC motor.
- b) If the motor is operational, replace the main board.

► **Error Code**

A1-2511

A1-2512

A1-2513

► **Error message**

Motor Failure: #A1-2511. Turn off then on. Call for service if the problem persists

Motor Failure: #A1-2512. Turn off then on. Call for service if the problem persists

Motor Failure: #A1-2513. Turn off then on. Call for service if the problem persists

► **Symptom**

Black OPC motor operation is abnormal.

► **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

- A1-2511 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-2511.html
- A1-2512 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-2512.html
- A1-2513 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-2513.html

- A1-2511 : Black OPC motor is stopped but machine recognizes it as operational.
- A1-2512 : Black OPC motor is not operated for print-job.
- A1-2513 : Black OPC motor is operating but machine recognizes status as "Stopped".

- 1) Turn the machine off then on. If the error persists, check the following.
- 2) Remove the black drum unit. Check if there are any foreign substances in black drum unit.
- 3) Remove the rear cover.
- 4) Check the connection between the black OPC motor and main board.
- 5) If the connection is OK, enter SVC mode. Execute the motor test.

(Diagnostics > Engine Diagnostics > Engine Test Routines)

- a) If the motor is not operational,
 - i) Check the motor signal(3.3V). If the signal is abnormal, replace the main board.
(Refer to 3.3.7 Main board)
 - ii) Check the power(24V). If the power is abnormal, check the SMPS board. If the SMPS board is defective, replace it.
(Refer to 3.3.9 SMPS board 1 and 2)
 - iii) If the motor signal and power is normal, replace the black OPC motor.
- b) If the motor is operational, replace the main board.

▶ **Error Code**

A1-4310

▶ **Error message**

Motor Failure: #A1-4310. Turn off then on. Call for service if the problem persists

▶ **Symptom**

T1 engage motor operation is abnormal.

▶ **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

(http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-4310.html)

- 1) Turn the machine off then on. If the problem persists, check the followings.
- 2) Enter SVC mode. Execute the T1 engage motor test.
(Diagnostics > Engine Diagnostics > Engine Test Routines)
 - a) If the motor is not operational,
 - i) Check the T1 engage motor connection.
 - ii) Check the motor resistance. If the measured value is out of the standard area (7~10 ohm), replace the T1 engage motor.
 - iii) If the motor is normal, replace the main board.
 - b) If the motor is operational,
 - i) Open the side cover. Check if the ITB connector is connected correctly or is deformed.
 - ii) Remove the ITB cleaner and ITB unit. Check the photo sensor in ITB unit.
 - iii) Check the engage gear. If it is not operational, replace the main drive unit.

► **Error Code**

A1-5212

A1-5213

► **Error message**

Motor Failure: #A1-5212. Turn off then on. Call for service if the problem persists

Motor Failure: #A1-5213. Turn off then on. Call for service if the problem persists

► **Symptom**

Yellow toner is not supplied normally.

► **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

- A1-5212 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-5212.html
- A1-5213 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-5213.html

- A1-5212 : Toner supply is stopped during operation.
 - A1-5213 : Toner is not supplied.
- 1) Turn the machine off then on. If the problem persists, check the followings
 - 2) Open the front cover. If the yellow toner pipe is blocked, open it.
 - 3) Enter SVC mode. Execute the yellow toner supply motor test.
(Diagnostics > Engine Diagnostics > Engine Test Routines)
 - a) If the motor is not operational,
 - i) Check the power(24V). If the power is abnormal, check the SMPS board. If the SMPS board is defective, replace it.
(Refer to 3.3.9 SMPS board 1 and 2)
 - ii) If the SMPS board is normal, replace the main board.
(Refer to 3.3.7 Main board)
 - iii) If the error persists after replacing the main board, replace the yellow toner supply motor.
(Refer to 3.3.8 Toner Supply Drive Unit)
 - b) If the motor is operational,
 - i) Check the toner cartridge remains. If necessary, replace the yellow toner cartridge.
 - ii) If the toner cartridge remains is enough, replace the yellow drum unit.

► **Error Code**

A1-5312

A1-5313

► **Error message**

Motor Failure: #A1-5312. Turn off then on. Call for service if the problem persists

Motor Failure: #A1-5313. Turn off then on. Call for service if the problem persists

► **Symptom**

Magenta toner is not supplied normally.

► **Troubleshooting method**

 **NOTE**

To see the troubleshooting video for this error, click through to the link below.

- A1-5312 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-5312.html
- A1-5313 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-5313.html

- A1-5312 : Toner supply is stopped during operation.

- A1-5313 : Toner is not supplied.

1) Turn the machine off then on. If the problem persists, check the followings

2) Open the front cover. If the magenta toner pipe is blocked, open it.

3) Enter SVC mode. Execute the magenta toner supply motor test.

(Diagnostics > Engine Diagnostics > Engine Test Routines)

a) If the motor is not operational,

- i) Check the power(24V). If the power is abnormal, check the SMPS board. If the SMPS board is defective, replace it.

(Refer to 3.3.9 SMPS board 1 and 2)

- ii) If the SMPS board is normal, replace the main board.

(Refer to 3.3.7 Main board)

- iii) If the error persists after replacing the main board, replace the magenta toner supply motor.

(Refer to 3.3.8 Toner Supply Drive Unit)

b) If the motor is operational,

- i) Check the toner cartridge remains. If necessary, replace the magenta toner cartridge.

- ii) If the toner cartridge remains is enough, replace the magenta drum unit.

► **Error Code**

A1-5412

A1-5413

► **Error message**

Motor Failure: #A1-5412. Turn off then on. Call for service if the problem persists

Motor Failure: #A1-5413. Turn off then on. Call for service if the problem persists

► **Symptom**

Cyan toner is not supplied normally.

► **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

- A1-5412 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-5412.html
- A1-5413 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-5413.html

- A1-5412 : Toner supply is stopped during operation.
 - A1-5413 : Toner is not supplied.
- 1) Turn the machine off then on. If the problem persists, check the followings
 - 2) Open the front cover. If the cyan toner pipe is blocked, open it.
 - 3) Enter SVC mode. Execute the cyan toner supply motor test.
(Diagnostics > Engine Diagnostics > Engine Test Routines)
 - a) If the motor is not operational,
 - i) Check the power(24V). If the power is abnormal, check the SMPS board. If the SMPS board is defective, replace it.
(Refer to 3.3.9 SMPS board 1 and 2)
 - ii) If the SMPS board is normal, replace the main board.
(Refer to 3.3.7 Main board)
 - iii) If the error persists after replacing the main board, replace the cyan toner supply motor.
(Refer to 3.3.8 Toner Supply Drive Unit)
 - b) If the motor is operational,
 - i) Check the toner cartridge remains. If necessary, replace the cyan toner cartridge.
 - ii) If the toner cartridge remains is enough, replace the cyan drum unit.

► **Error Code**

A1-5512

A1-5513

► **Error message**

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

► **Symptom**

Black toner is not supplied normally.

► **Troubleshooting method**

 **NOTE**

To see the troubleshooting video for this error, click through to the link below.

- A1-5512 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-5512.html
- A1-5513 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A1-5513.html

- A1-5512 : Toner supply is stopped during operation.

- A1-5513 : Toner is not supplied.

1) Turn the machine off then on. If the problem persists, check the followings

2) Open the front cover. If the black toner pipe is blocked, open it.

3) Enter SVC mode. Execute the black toner supply motor test.

(Diagnostics > Engine Diagnostics > Engine Test Routines)

a) If the motor is not operational,

- i) Check the power(24V). If the power is abnormal, check the SMPS board. If the SMPS board is defective, replace it.

(Refer to 3.3.9 SMPS board 1 and 2)

- ii) If the SMPS board is normal, replace the main board.

(Refer to 3.3.7 Main board)

- iii) If the error persists after replacing the main board, replace the black toner supply motor.

(Refer to 3.3.8 Toner Supply Drive Unit)

b) If the motor is operational,

- i) Check the toner cartridge remains. If necessary, replace the black toner cartridge.

- ii) If the toner cartridge remains is enough, replace the black drum unit.

4.6.4. A2-xxxx (Fan error)

Error Code	Error Message	Troubleshooting Page
A2-1221	SMPS Fan Failure: #A2-1221. Open the door, then close it. Call for service if the problem persists	P.4-91
A2-1223	SMPS Fan Failure: #A2-1223. Open the door, then close it. Call for service if the problem persists	P.4-91
A2-1521	Duplex Fan Failure: #A2-1521. Open the door, then close it. Call for service if the problem persists	P.4-91
A2-1523	Duplex Fan Failure: #A2-1523. Open the door, then close it. Call for service if the problem persists	P.4-91
A2-1721	Exit Fan Failure: #A2-1721. Open the door, then close it. Call for service if the problem persists	P.4-91
A2-1723	Exit Fan Failure: #A2-1723. Open the door, then close it. Call for service if the problem persists	P.4-91
A2-1741	Exit Fan Failure: #A2-1741. Open the door, then close it. Call for service if the problem persists	P.4-91
A2-1743	Exit Fan Failure: #A2-1743. Open the door, then close it. Call for service if the problem persists	P.4-91
A2-1761	Exit Fan Failure: #A2-1761. Open the door, then close it. Call for service if the problem persists	P.4-91
A2-1763	Exit Fan Failure: #A2-1763. Open the door, then close it. Call for service if the problem persists	P.4-91
A2-1781	Exit Fan Failure: #A2-1781. Open the door, then close it. Call for service if the problem persists	P.4-91
A2-1783	Exit Fan Failure: #A2-1783. Open the door, then close it. Call for service if the problem persists	P.4-91
A2-2321	Fuser Fan Failure: #A2-2321. Open the door, then close it. Call for service if the problem persists	P.4-91
A2-2323	Fuser Fan Failure: #A2-2323. Open the door, then close it. Call for service if the problem persists	P.4-91
A2-2421	LSU Fan Failure: #A2-2421. Open the door, then close it. Call for service if the problem persists	P.4-91
A2-2423	LSU Fan Failure: #A2-2423. Open the door, then close it. Call for service if the problem persists	P.4-91
A2-2920	OPC Fan Failure: #A2-2920. Open the door, then close it. Call for service if the problem persists	P.4-91
A2-2921	OPC Fan Failure: #A2-2921. Open the door, then close it. Call for service if the problem persists	P.4-91

► **Error Code**

A2-1221 / A2-1223

A2-1521 / A2-1523

A2-1721 / A2-1723 / A2-1741 / A2-1743 / A2-1761 / A2-1763 / A2-1781 / A2-1783

A2-2321 / A2-2323

A2-2421 / A2-2423

A2-2920 / A2-2921

► **Error message**

SMPS Fan Failure: #A2-122x. Open the door, then close it. Call for service if the problem persists

Duplex Fan Failure: #A2-152x. Open the door, then close it. Call for service if the problem persists

Exit Fan Failure: #A2-17xx. Open the door, then close it. Call for service if the problem persists

Fuser Fan Failure: #A2-232x. Open the door, then close it. Call for service if the problem persists

LSU Fan Failure: #A2-242x. Open the door, then close it. Call for service if the problem persists

OPC Fan Failure: #A2-292x. Open the door, then close it. Call for service if the problem persists

► **Symptom**

SMPS / Duplex / Exit / Fuser / LSU / OPC fan operation is abnormal..

► **Troubleshooting method**



NOTE

- SMPS fan error : A2-1221 / A2-1223
- Duplex fan error : A2-1521 / A2-1523
- Exit 1 fan error : A2-1721 / A2-1723
- Exit 2 fan error : A2-1741 / A2-1743
- Exit 3 fan error : A2-1761 / A2-1763
- Exit 4 fan error : A2-1781 / A2-1783
- Fuser out fan error : A2-2321 / A2-2323
- LSU fan error : A2-2421 / A2-2423
- OPC in fan error : A2-2920 / A2-2921

1) Turn the machine off then on. If the problem persists, check the followings.

2) Check the connection of the corresponding fan and main board.

3) If the connection is OK, enter SVC mode. Execute the fan test.

(Diagnostics > Engine Diagnostics > Engine Test Routines)

- a) If the fan is not operational,
 - i) Check the power(24V).
 - If the power is abnormal, check the SMPS board. If the SMPS board is defective, replace it.
 - If the SMPS board is normal, replace the corresponding fan.
 - If the error persists after replacing the fan, replace the main board.
- b) If the fan is operational,
 - i) Check the fan signal (3.3V) as connected or disconnected.

- If the fan signal as disconnected is abnormal, replace the main board.
- If the fan signal as connected is abnormal, replace the corresponding fan.

4.6.5. A3–xxxx (Sensor error)

Error Code	Error Message	Troubleshooting Page
A3-2113	The CTD sensor is dirty. Please clean it with soft cloth or paper	P.4–93
A3-3111	Sensor Failure: #A3-3111. Turn off then on. Call for service if the problem persists	P.4–94
A3-3112	Sensor Failure: #A3-3112. Turn off then on. Call for service if the problem persists	P.4–94
A3-3113	Sensor Failure: #A3-3113. Turn off then on. Call for service if the problem persists	P.4–94
A3-3114	Sensor Failure: #A3-3114. Turn off then on. Call for service if the problem persists	P.4–94
A3-3210	Sensor Failure: #A3-3210. Turn off then on. Call for service if the problem persists	P.4–95
A3-3211	Sensor Failure: #A3-3211. Turn off then on. Call for service if the problem persists	P.4–95
A3-3212	Sensor Failure: #A3-3212. Turn off then on. Call for service if the problem persists	P.4–95
A3-3310	Sensor Failure: #A3-3310. Turn off then on. Call for service if the problem persists	P.4–96
A3-3311	Sensor Failure: #A3-3311. Turn off then on. Call for service if the problem persists	P.4–96
A3-3312	Sensor Failure: #A3-3312. Turn off then on. Call for service if the problem persists	P.4–96
A3-3410	Sensor Failure: #A3-3410. Turn off then on. Call for service if the problem persists	P.4–96
A3-3411	Sensor Failure: #A3-3411. Turn off then on. Call for service if the problem persists	P.4–96
A3-3412	Sensor Failure: #A3-3412. Turn off then on. Call for service if the problem persists	P.4–96
A3-4114	The ACR sensor is dirty. Please clean it with soft cloth or paper	P.4–93

▶ **Error Code**

A3-2113 / A3-4114

▶ **Error message**

The CTD/ACR sensor is dirty. Please clean it with soft cloth or paper.

▶ **Symptom**

CTD/ACR sensor window is contaminated.

▶ **Troubleshooting method**



NOTE

If the pop up window for cleaning is displayed, follow it.

- 1) Open the side cover.
- 2) Clean the sensor window with a soft cloth.
- 3) Close the side cover.
- 4) Enter SVC mode. Select the “CTD Sensor Cleaning”
(**Diagnostics Image Management > Auto Color Tone Adjustment Condition > CTD Sensor Cleaning**)
- 5) When pop up appears, select the “Yes” button.



NOTE

- a) CTD sensor calibration will start. Then “CTD sensor failure” error will be solved
- b) If you don't execute the CTD sensor cleaning in SVC mode, error message persists.

► **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**



NOTE

To see the troubleshooting video for this error, click through to the link below.

- A3-3111 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_A3-3111.html
- A3-3112 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_A3-3112.html
- A3-3113 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_A3-3113.html
- A3-3114 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_A3-3114.html

- 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) Turn the machine off then on. If the problem persists, check the followings.
 - 2) Enter SVC mode. Execute the fuser temperature test
(Diagnostics > Engine Diagnostics > Engine Test Routines)
 - a) If the temperature test is failed, replace the fuser unit.
 - b) If the temperature test is normal, replace the main board.

▶ 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



NOTE

To see the troubleshooting video for this error, click through to the link below.

- A3-3210 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A3-3210.html
- A3-3211 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A3-3211.html
- A3-3212 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_A3-3212.html

- 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) Turn the machine off then on.
 - 2) Check the connection between the inner temp sensor and main board. If the connection is OK, replace the inner temp sensor .
 - 3) If the sensor is normal, replace the main board.

► **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**



NOTE

To see the troubleshooting video for this error, click through to the link below.

- A3-3310 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_A3-3310.html
- A3-3311 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_A3-3311.html
- A3-3312 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_A3-3312.html
- A3-3410 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_A3-3410.html
- A3-3411 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_A3-3411.html
- A3-3412 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_A3-3412.html

- A3-3310 / A3-3311 / A3-3312 : Temperature function is abnormal.
 - A3-3410 / A3-3411 / A3-3412 : Humidity function is abnormal.
- 1) Turn the machine off then on.
 - 2) Check the connection between the outer temp sensor and main board. If the connection is OK, replace the outer temp sensor .
 - 3) If the sensor is normal, replace the main board.

4.6.6. C1–xxxx (Toner cartridge error)

Error Code	Error Message	Troubleshooting Page
C1-2110	Prepare new yellow toner cartridge	P.4-99
C1-2120	Replace with new yellow toner cartridge	P.4-99
C1-2130	End of life, Replace with new yellow toner cartridge	P.4-99
C1-2140	End of life, Replace with new yellow toner cartridge	P.4-99
C1-2311	Yellow Toner Cartridge Failure: #C1-2311. Install yellow toner cartridge again	P.4-100
C1-2313	Shake yellow toner cartridge and then install. Call for service if the problem persists	P.4-100
C1-2314	Did not supply enough yellow toner. Remove seal tape of Y toner cartridge or shake it. Call for service if the problem persists	P.4-100
C1-2411	Yellow toner cartridge is not installed. Install it	P.4-101
C1-2413	Shake yellow toner cartridge	P.4-101
C1-2510	Yellow toner cartridge is not compatible. Check users guide	P.4-101
C1-2512	Yellow toner cartridge is not compatible. Check users guide	P.4-101
C1-2711	Toner Cartridge Failure: #C1-2711. Call for service	P.4-101
C1-2712	Toner Cartridge Failure: #C1-2712. Call for service	P.4-101
C1-3110	Prepare new magenta toner cartridge	P.4-102
C1-3120	Replace with new magenta toner cartridge	P.4-102
C1-3130	End of life, Replace with new magenta toner cartridge	P.4-102
C1-3140	End of life, Replace with new magenta toner cartridge	P.4-102
C1-3150	Replace with new magenta toner cartridge.	P.4-102
C1-3160	Replace with new magenta toner cartridge	P.4-102
C1-3311	Magenta Toner Cartridge Failure: #C1-3311. Install magenta toner cartridge again	P.4-103
C1-3313	Shake magenta toner cartridge and then install. Call for service if the problem persists	P.4-103
C1-3314	Did not supply enough magenta toner. Remove seal tape of M toner cartridge or shake it. Call for service if the problem persists	P.4-103
C1-3411	Magenta toner cartridge is not installed. Install it	P.4-104
C1-3413	Shake magenta toner cartridge	P.4-104
C1-3512	Magenta toner cartridge is not compatible. Check users guide	P.4-104
C1-3711	Toner Cartridge Failure: #C1-3711. Call for service	P.4-104
C1-3712	Toner Cartridge Failure: #C1-3712. Call for service	P.4-104
C1-4110	Prepare new cyan toner cartridge	P.4-105
C1-411A	Shake cyan toner cartridge and then install. Replace toner cartridge if the problem persists	P.4-105
C1-4120	Replace with new cyan toner cartridge	P.4-105
C1-4130	End of life, Replace with new cyan toner cartridge	P.4-105
C1-4140	End of life, Replace with new cyan toner cartridge	P.4-105
C1-4150	Replace with new cyan toner cartridge.	P.4-105
C1-4160	Replace with new cyan toner cartridge	P.4-105

Error Code	Error Message	Troubleshooting Page
C1-4311	Cyan Toner Cartridge Failure: #C1-4311. Install cyan toner cartridge again	P.4-106
C1-4313	Shake cyan toner cartridge and then install. Call for service if the problem persists	P.4-106
C1-4314	Did not supply enough cyan toner. Remove seal tape of C toner cartridge or shake it. Call for service if the problem persists	P.4-106
C1-4411	Cyan toner cartridge is not installed. Install it	P.4-107
C1-4413	Shake cyan toner cartridge	P.4-107
C1-4512	Cyan toner cartridge is not compatible. Check users guide	P.4-107
C1-5110	Prepare new black toner cartridge	P.4-108
C1-511A	Shake black toner cartridge and then install. Replace toner cartridge if the problem persists	P.4-108
C1-5120	Replace with new black toner cartridge	P.4-108
C1-5130	Replace with black new toner cartridge	P.4-108
C1-5140	End of life, Replace with new black toner cartridge	P.4-108
C1-5150	Replace with black new toner cartridge	P.4-108
C1-5160	Replace with new black toner cartridge	P.4-108
C1-5311	Black Toner Cartridge Failure: #C1-5311. Install black toner cartridge again	P.4-109
C1-5313	Shake black toner cartridge and then install. Call for service if the problem persists	P.4-109
C1-5314	Did not supply enough black toner. Remove seal tape of K toner cartridge or shake it. Call for service if the problem persists	P.4-109
C1-5411	Black toner cartridge is not installed. Install it	P.4-110
C1-5413	Shake black toner cartridge	P.4-110
C1-5512	Black toner cartridge is not compatible. Check users guide	P.4-110

▶ **Error Code**

C1-2110 / C1-211A

▶ **Error message**

Prepare new yellow toner cartridge.

▶ **Symptom**

Yellow toner is almost empty.

▶ **Troubleshooting method**

- 1) Order new yellow toner cartridge because toner cartridge with level of “Low” will be exhausted soon.

▶ **Error Code**

C1-2120 / C1-2130 / C1-2140

▶ **Error message**

Replace with new yellow toner cartridge

End of life, Replace with new yellow toner cartridge

▶ **Symptom**

The yellow toner cartridge is at the end of its life.

▶ **Troubleshooting method**

- 1) Open the front cover.
- 2) Remove the yellow toner cartridge.
- 3) Install the new yellow toner cartridge.
- 4) Close the front cover.

▶ Error Code

C1-2311 / C1-2313 / C1-2314

▶ Error message

Yellow Toner Cartridge Failure: #C1-231x. Install yellow toner cartridge again

▶ Symptom

Yellow toner supply is inefficient or abnormal.

▶ Troubleshooting method**NOTE**

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C1-2311.html

- 1) Open the front cover.
- 2) Remove the yellow toner cartridge. Stand the toner cartridge vertically and tap its top section to distribute the toner evenly inside the cartridge. And turn over the toner cartridge and tap the top in the same way.
- 3) Shake the toner cartridge horizontally to distribute the toner evenly inside the cartridge.
- 4) Close the front cover.
- 5) Check if the toner supply pipe is blocked. Replace the reservoir Unit.
- 6) Check the toner supply motor operation. Reconnect the harness. If the motor is broken, replace it.

▶ **Error Code**

C1-2411 / C1-2413 / C1-2711 / C1-2712

▶ **Error message**

Yellow toner cartridge is not installed. Install it.

Shake yellow toner cartridge.

▶ **Symptom**

The yellow toner cartridge is not installed. / The CRUM data is not detected.

▶ **Troubleshooting method**



To see the troubleshooting video for this error, click through to the link below.

- C1-2411 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C1-2411.html
- C1-2413 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C1-2413.html

- 1) Open the front cover. Check if the yellow toner cartridge is installed.
- 2) Remove and reinstall the yellow toner cartridge.
- 3) If the problem persists, check if the toner cartridge modular jack is contaminated or deformed.
- 4) Replace the yellow toner cartridge with a new one.

▶ **Error Code**

C1-2510 / C1-2512

▶ **Error message**

Yellow toner cartridge is not compatible. Check users guide.

▶ **Symptom**

Yellow toner cartridge is not compatible.

▶ **Troubleshooting method**



To see the troubleshooting video for this error, click through to the link below.

- C1-2510 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C1-2510.html
- C1-2512 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C1-2512.html

- 1) Replace the yellow toner cartridge with a new one.

▶ Error Code

C1-3110

▶ Error message

Prepare new magenta toner cartridge.

▶ Symptom

Magenta toner is almost empty.

▶ Troubleshooting method

- 1) Order new magenta toner cartridge because toner cartridge with level of “Low” will be exhausted soon.

▶ Error Code

C1-3120 / C1-3130 / C1-3140 / C1-3150 / C1-3160

▶ Error message

Replace with new magenta toner cartridge

End of life, Replace with new magenta toner cartridge

▶ Symptom

The magenta toner cartridge is at the end of its life.

▶ Troubleshooting method

- 1) Open the front cover.
- 2) Remove the magenta toner cartridge.
- 3) Install the new magenta toner cartridge.
- 4) Close the front cover.
- 5) Check if the toner pipe is blocked. Replace it, if necessary.

▶ **Error Code**

C1-3311 / C1-3313 / C1-3314

▶ **Error message**

Magenta Toner Cartridge Failure: #C1-3311. Install magenta toner cartridge again

▶ **Symptom**

Magenta toner supply is inefficient or abnormal.

▶ **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

(http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C1-3311.html)

- 1) Open the front cover.
- 2) Remove the magenta toner cartridge. Stand the toner cartridge vertically and tap its top section to distribute the toner evenly inside the cartridge. And turn over the toner cartridge and tap the top in the same way.
- 3) Shake the toner cartridge horizontally to distribute the toner evenly inside the cartridge.
- 4) Close the front cover.
- 5) Check if the toner supply pipe is blocked. Replace the reservoir Unit.
- 6) Check the toner supply motor operation. Reconnect the harness. If the motor is broken, replace it.

▶ Error Code

C1-3411 / C1-3413 / C1-3711 / C1-3712

▶ Error message

Magenta toner cartridge is not installed. Install it.

Shake magenta toner cartridge.

▶ Symptom

The magenta toner cartridge is not installed. / The CRUM data is not detected.

▶ Troubleshooting method**NOTE**

To see the troubleshooting video for this error, click through to the link below.

- C1-3411 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C1-3411.html
- C1-3413 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C1-3413.html

- 1) Open the front cover. Check if the magenta toner cartridge is installed.
- 2) Remove and reinstall the magenta toner cartridge.
- 3) If the problem persists, check if the toner cartridge modular jack is contaminated or deformed.
- 4) Replace the magenta toner cartridge with a new one.

▶ Error Code

C1-3512

▶ Error message

Magenta toner cartridge is not compatible. Check users guide.

▶ Symptom

Magenta toner cartridge is not compatible.

▶ Troubleshooting method**NOTE**

To see the troubleshooting video for this error, click through to the link below.

(http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C1-3512.html)

- 1) Replace the magenta toner cartridge with a new one.

▶ **Error Code**

C1-4110 / C1-411A

▶ **Error message**

Prepare new cyan toner cartridge.

▶ **Symptom**

Cyan toner is almost empty.

▶ **Troubleshooting method**

- 1) Order new cyan toner cartridge because toner cartridge with level of “Low” will be exhausted soon.

▶ **Error Code**

C1-4120 / C1-4130 / C1-4140 / C1-4150 / C1-4160

▶ **Error message**

Replace with new cyan toner cartridge

End of life, Replace with new cyan toner cartridge

▶ **Symptom**

The cyan toner cartridge is at the end of its life.

▶ **Troubleshooting method**

- 1) Open the front cover.
- 2) Remove the cyan toner cartridge.
- 3) Install the new cyan toner cartridge.
- 4) Close the front cover.

▶ Error Code

C1-4311 / C1-4313 / C1-4314

▶ Error message

Cyan Toner Cartridge Failure: #C1-431x. Install yellow toner cartridge again

▶ Symptom

Cyan toner supply is inefficient or abnormal.

▶ Troubleshooting method**NOTE**

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C1-4311.html

- 1) Open the front cover.
- 2) Remove the cyan toner cartridge. Stand the toner cartridge vertically and tap its top section to distribute the toner evenly inside the cartridge. And turn over the toner cartridge and tap the top in the same way.
- 3) Shake the toner cartridge horizontally to distribute the toner evenly inside the cartridge.
- 4) Close the front cover.
- 5) Check if the toner supply pipe is blocked. Replace the reservoir Unit.
- 6) Check the toner supply motor operation. Reconnect the harness. If the motor is broken, replace it.

▶ Error Code

C1-4411 / C1-4413

▶ Error message

Cyan toner cartridge is not installed. Install it.

Shake cyan toner cartridge.

▶ Symptom

The cyan toner cartridge is not installed. / The CRUM data is not detected.

▶ Troubleshooting method



NOTE

To see the troubleshooting video for this error, click through to the link below.

- C1-4411 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C1-4411.html
- C1-4413 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C1-4413.html

- 1) Open the front cover. Check if the cyan toner cartridge is installed.
- 2) Remove and reinstall the cyan toner cartridge.
- 3) If the problem persists, check if the toner cartridge modular jack is contaminated or deformed.
- 4) Replace the cyan toner cartridge with a new one.

▶ Error Code

C1-4512

▶ Error message

Cyan toner cartridge is not compatible. Check users guide.

▶ Symptom

Cyan toner cartridge is not compatible.

▶ Troubleshooting method



NOTE

To see the troubleshooting video for this error, click through to the link below.

(http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C1-4512.html)

- 1) Replace the cyan toner cartridge with a new one.

▶ Error Code

C1-5110 / C1-511A

▶ Error message

Prepare new black toner cartridge.

▶ Symptom

Black toner is almost empty.

▶ Troubleshooting method

- 1) Order new black toner cartridge because toner cartridge with level of “Low” will be exhausted soon.

▶ Error Code

C1-5120 / C1-5130 / C1-5140 / C1-5150 / C1-5160

▶ Error message

Replace with new black toner cartridge

End of life, Replace with new black toner cartridge

▶ Symptom

The black toner cartridge is at the end of its life.

▶ Troubleshooting method

- 1) Open the front cover.
- 2) Remove the black toner cartridge.
- 3) Install the new black toner cartridge.
- 4) Close the front cover.

▶ **Error Code**

C1-5311 / C1-5313 / C1-5314

▶ **Error message**

Black Toner Cartridge Failure: #C1-5311. Install black toner cartridge again

▶ **Symptom**

Black toner supply is inefficient or abnormal.

▶ **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C1-5311.html

- 1) Open the front cover.
- 2) Remove the black toner cartridge. Stand the toner cartridge vertically and tap its top section to distribute the toner evenly inside the cartridge. And turn over the toner cartridge and tap the top in the same way.
- 3) Shake the toner cartridge horizontally to distribute the toner evenly inside the cartridge.
- 4) Close the front cover.
- 5) Check if the toner supply pipe is blocked. Replace the reservoir Unit.
- 6) Check the toner supply motor operation. Reconnect the harness. If the motor is broken, replace it.

▶ Error Code

C1-5411 / C1-5413

▶ Error message

Black toner cartridge is not installed. Install it.

Shake black toner cartridge.

▶ Symptom

The black toner cartridge is not installed. / The CRUM data is not detected.

▶ Troubleshooting method**NOTE**

To see the troubleshooting video for this error, click through to the link below.

- C1-5411 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C1-5411.html
- C1-5413 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C1-5413.html

- 1) Open the front cover. Check if the black toner cartridge is installed.
- 2) Remove and reinstall the black toner cartridge.
- 3) If the problem persists, check if the toner cartridge modular jack is contaminated or deformed.
- 4) Replace the black toner cartridge with a new one.

▶ Error Code

C1-5512

▶ Error message

Black toner cartridge is not compatible. Check users guide.

▶ Symptom

Black toner cartridge is not compatible.

▶ Troubleshooting method**NOTE**

To see the troubleshooting video for this error, click through to the link below.

- (http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C1-5512.html)

- 1) Replace the black toner cartridge with a new one.

4.6.7. C3–xxxx (Drum unit error)

Error Code	Error Message	Troubleshooting Page
C3-2110	Prepare new yellow imaging unit	P.4-112
C3-2130	End of life, Replace with new yellow imaging unit	P.4-112
C3-2140	End of life, Replace with new yellow imaging unit	P.4-112
C3-2411	Yellow imaging unit is not installed. Install it	P.4-113
C3-2511	Yellow imaging unit is not compatible. Check users guide	P.4-113
C3-2512	Yellow imaging unit is not compatible. Check users guide	P.4-113
C3-3110	Prepare new magenta imaging unit	P.4-114
C3-3130	End of life, Replace with new magenta imaging unit	P.4-114
C3-3140	End of life, Replace with new magenta imaging unit	P.4-114
C3-3411	Magenta imaging unit is not installed. Install it	P.4-115
C3-3512	Magenta imaging unit is not compatible. Check users guide	P.4-115
C3-4110	Prepare new cyan imaging unit	P.4-116
C3-4130	Replace with new cyan imaging unit	P.4-116
C3-4140	End of life, Replace with new cyan imaging unit	P.4-116
C3-4411	Cyan imaging unit is not installed. Install it	P.4-117
C3-4512	Cyan imaging unit is not compatible. Check users guide	P.4-117
C3-5110	Prepare new black imaging unit	P.4-118
C3-5130	Replace with new black imaging unit	P.4-118
C3-5140	Replace with new black imaging unit	P.4-118
C3-5411	Black Imaging unit is not installed. Install it	P.4-119
C3-5512	Black imaging unit is not compatible. Check users guide	P.4-119

▶ Error Code

C3-2110

▶ Error message

Prepare new yellow imaging unit

▶ Symptom

Yellow drum unit has almost reached the end of its life.

▶ Troubleshooting method

- 1) Order new yellow drum unit because drum unit with level of “Low” will be exhausted soon.

▶ Error Code

C3-2130

C3-2140

▶ Error message

End of life, Replace with new yellow imaging unit

▶ Symptom

Yellow drum unit is at the end of its life.

▶ Troubleshooting method

- 1) Open the front cover.
- 2) Remove the waste toner container.
- 3) Remove the yellow drum unit.
- 4) Install the new yellow drum unit.
- 5) Clean the LSU window.
- 6) Install the waste toner container.
- 7) Close the front cover.

▶ Error Code

C3-2411

▶ Error message

Yellow imaging unit is not installed. Install it.

▶ Symptom

The yellow drum unit is not installed.

▶ Troubleshooting method



NOTE

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C3-2411.html

- 1) Open the front cover.
- 2) Remove the waste toner container.
- 3) Remove and reinstall the yellow drum unit
- 4) Install the waste toner container.
- 5) Close the front cover.

▶ Error Code

C3-2511 / C3-2512

▶ Error message

Yellow imaging unit is not compatible. Check user's guide

▶ Symptom

Yellow drum unit is not compatible.

▶ Troubleshooting method



NOTE

To see the troubleshooting video for this error, click through to the link below.

- C3-2511 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C3-2511.html
- C3-2512 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C3-2512.html

- 1) Open the front cover.
- 2) Remove the waste toner container.
- 3) Remove the yellow drum unit. Check if the drum unit is compatible with the machine.
- 4) If the drum unit is not a samsung genuine, replace it with a new one.

▶ Error Code

C3-3110

▶ Error message

Prepare new magenta imaging unit

▶ Symptom

Magenta drum unit has almost reached the end of its life.

▶ Troubleshooting method

- 1) Order new magenta drum unit because drum unit with level of “Low” will be exhausted soon.

▶ Error Code

C3-3130

C3-3140

▶ Error message

End of life, Replace with new magenta imaging unit

▶ Symptom

Magenta drum unit is at the end of its life.

▶ Troubleshooting method

- 1) Open the front cover.
- 2) Remove the waste toner container.
- 3) Remove the magenta drum unit.
- 4) Install the new magenta drum unit.
- 5) Clean the LSU window.
- 6) Install the waste toner container.
- 7) Close the front cover.

▶ Error Code

C3-3411

▶ Error message

Magenta imaging unit is not installed. Install it.

▶ Symptom

The magenta drum unit is not installed.

▶ Troubleshooting method



To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C3-3411.html

- 1) Open the front cover.
- 2) Remove the waste toner container.
- 3) Remove and reinstall the magenta drum unit.
- 4) Install the waste toner container.
- 5) Close the front cover.

▶ Error Code

C3-3512

▶ Error message

Magenta imaging unit is not compatible. Check user's guide

▶ Symptom

Magenta drum unit is not compatible.

▶ Troubleshooting method



To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C3-3512.html

- 1) Open the front cover.
- 2) Remove the waste toner container.
- 3) Remove the magenta drum unit. Check if the drum unit is compatible with the machine.
- 4) If the drum unit is not a samsung genuine, replace it with a new one.

▶ Error Code

C3-4110

▶ Error message

Prepare new cyan imaging unit

▶ Symptom

Cyan drum unit has almost reached the end of its life.

▶ Troubleshooting method

- 1) Order new cyan drum unit because drum unit with level of "Low" will be exhausted soon.

▶ Error Code

C3-4130

C3-4140

▶ Error message

End of life, Replace with new magenta imaging unit

▶ Symptom

Cyan drum unit is at the end of its life.

▶ Troubleshooting method

- 1) Open the front cover.
- 2) Remove the waste toner container.
- 3) Remove the cyan drum unit.
- 4) Install the new cyan drum unit.
- 5) Clean the LSU window.
- 6) Install the waste toner container.
- 7) Close the front cover.

▶ **Error Code**

C3-4411

▶ **Error message**

Cyan imaging unit is not installed. Install it.

Cyan Imaging Unit Failure: #C3-4414. Install imaging unit again.

▶ **Symptom**

The cyan drum unit is not installed.

▶ **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C3-4411.html

- 1) Open the front cover.
- 2) Remove the waste toner container.
- 3) Remove and reinstall the cyan drum unit
- 4) Install the waste toner container.
- 5) Close the front cover.

▶ **Error Code**

C3-4512

▶ **Error message**

Cyan imaging unit is not compatible. Check user's guide

▶ **Symptom**

Cyan drum unit is not compatible.

▶ **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C3-4512.html

- 1) Open the front cover.
- 2) Remove the waste toner container.
- 3) Remove the cyan drum unit. Check if the drum unit is compatible with the machine.
- 4) If the drum unit is not a samsung genuine, replace it with a new one.

▶ Error Code

C3-5110

▶ Error message

Prepare new cyan imaging unit

▶ Symptom

Black drum unit has almost reached the end of its life.

▶ Troubleshooting method

- 1) Order new black drum unit because drum unit with level of “Low” will be exhausted soon.

▶ Error Code

C3-5130

C3-5140

▶ Error message

End of life, Replace with new magenta imaging unit

▶ Symptom

Black drum unit is at the end of its life.

▶ Troubleshooting method

- 1) Open the front cover.
- 2) Remove the waste toner container.
- 3) Remove the black drum unit.
- 4) Install the new black drum unit.
- 5) Clean the LSU window.
- 6) Install the waste toner container.
- 7) Close the front cover.

▶ Error Code

C3-5411

▶ Error message

Black imaging unit is not installed. Install it.

▶ Symptom

The black drum unit is not installed.

▶ Troubleshooting method



NOTE

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C3-5411.html

- 1) Open the front cover.
- 2) Remove the waste toner container.
- 3) Remove and reinstall the black drum unit
- 4) Install the waste toner container.
- 5) Close the front cover.

▶ Error Code

C3-5512

▶ Error message

Black imaging unit is not compatible. Check user's guide

▶ Symptom

Black drum unit is not compatible.

▶ Troubleshooting method



NOTE

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C3-5512.html

- 1) Open the front cover.
- 2) Remove the waste toner container.
- 3) Remove the black drum unit. Check if the drum unit is compatible with the machine.
- 4) If the drum unit is not a samsung genuine, replace it with a new one.

4.6.8. C5-xxxx (ITB unit error)

Error Code	Error Message	Troubleshooting Page
C5-1110	Prepare new transfer belt unit	P.4-120
C5-1120	Replace new transfer belt unit	P.4-121
C5-2120	Transfer belt cleaning unit is worn. Replace with new one	P.4-121

▶ **Error Code**

C5-1110

▶ **Error message**

Prepare new transfer belt unit.

▶ **Symptom**

The life of the ITB Unit expires soon

▶ **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C5-1110.html

- 1) Order new ITB unit.

▶ **Error Code**

C5-1120

▶ **Error message**

Replace new transfer belt unit.

▶ **Symptom**

The life of the ITB Unit has expired.

▶ **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C5-1120.html

- 1) Turn the machine off.
- 2) Remove the ITB cleaner.
- 3) Remove the ITB Unit.
- 4) Install new ITB Unit and ITB cleaner.
- 5) Turn the machine on.
- 6) Enter SVC mode.
- 7) Select “TRANSFER”
(**INFORMATION > Supply Status > Field Replacement Unit > TRANSFER**)
- 8) Select “ITB”. The “RESET” button will be activated. Click “RESET” to clear the ITB count.
- 9) Exit SVC mode by pushing the home button.

▶ **Error Code**

C5-2120

▶ **Error message**

Prepare new transfer belt unit.

▶ **Symptom**

The life of the ITB cleaner has expired.

▶ **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C5-2120.html

- 1) Turn the machine off.
- 2) Replace the ITB cleaner.
- 3) Turn the machine on.

4.6.9. C6–xxxx (Fuser unit error)

Error Code	Error Message	Troubleshooting Page
C6-1120	Replace with new fuser unit	P.4-122
C6-1310	Fuser unit is not installed. Install it	P.4-123

► **Error Code**

C6–1120

► **Error message**

Replace with new fuser unit

► **Symptom**

The life of the fuser unit has expired.

► **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

(http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_C6-1120.html)

- 1) Turn the machine off.
- 2) Replace the 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**



NOTE

To see the troubleshooting video for this error, click through to the link below.

(http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C6-1310.html)

- 1) Turn the machine off then on.
- 2) If the problem persists, turn the machine off again.
- 3) Open the side cover.
- 4) Remove and reinstall the fuser unit.
- 5) Turn the machine on.
- 6) If the problem persists, replace the fuser unit.



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.

4.6.10. C7-xxxx (Waste toner container error)

Error Code	Error Message	Troubleshooting Page
C7-1110	Waste toner container is almost full. Order new one	P.4-124
C7-1130	Waste toner container is full. Replace it	P.4-124
C7-1311	Waste toner container is not installed. Install it	P.4-125

▶ **Error Code**

C7-1110

▶ **Error message**

Waste toner container is almost full. Order new one.

▶ **Symptom**

The life of the waste toner container expires soon.

▶ **Troubleshooting method**

- 1) Order new waste toner container.

▶ **Error Code**

C7-1130

▶ **Error message**

Waste toner container is full. Replace it.

▶ **Symptom**

The life of the waste toner container has expired.

▶ **Troubleshooting method**

- 1) Open the front cover.
- 2) Remove the waste toner container. Install a new waste toner container.
- 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**



NOTE

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C7-1311.html

- 1) Open the front cover.
- 2) Remove and reinstall the waste toner container.
- 3) Close the front cover.

4.6.11. C8–xxxx (Developer error)

Error Code	Error Message	Troubleshooting Page
C8-2130	Replace with new yellow developer unit	P.4–127
C8-2210	Yellow Developer Failure: #C8-2210. Turn off then on	P.4–127
C8-2310	Yellow Developer Failure: #C8-2310. Install yellow developer unit again	P.4–127
C8-2313	Yellow Developer Failure: #C8-2313. Turn off then on. Please call for service if the problem persists	P.4–127
C8-231G	Y Development unit Failure: #C8-231G. Turn off then on. Please call for service if the problem persists	P.4–127
C8-3130	Replace with new magenta developer unit	P.4–128
C8-3210	Magenta Developer Failure: #C8-3210. Turn off then on	P.4–128
C8-3310	Magenta Developer Failure: #C8-3310. Install magenta developer unit again	P.4–128
C8-3313	Magenta Developer Failure: #C8-3313. Turn off then on. Please call for service if the problem persists	P.4–128
C8-331G	M Development unit Failure: #C8-331G. Turn off then on. Please call for service if the problem persists	P.4–128
C8-4130	Replace with new cyan developer unit	P.4–129
C8-4210	Cyan Developer Failure: #C8-4210. Turn off then on	P.4–129
C8-4310	Cyan Developer Failure: #C8-4310. Install cyan developer unit again	P.4–129
C8-4313	Cyan Developer Failure: #C8-4313. Turn off then on. Please call for service if the problem persists	P.4–129
C8-431G	C Development unit Failure: #C8-431G. Turn off then on. Please call for service if the problem persists	P.4–129
C8-5130	Replace with new black developer unit	P.4–130
C8-5210	Black Developer Failure: #C8-5210. Turn off then on	P.4–130
C8-5310	Black Developer Failure: #C8-5310. Install black developer unit again	P.4–130
C8-5313	Black Developer Failure: #C8-5313. Turn off then on. Please call for service if the problem persists	P.4–130
C8-531G	K Development unit Failure: #C8-531G. Turn off then on. Please call for service if the problem persists	P.4–130

▶ Error Code

C8-2130

▶ Error message

Replace with new yellow developer unit

▶ Symptom

The life of the yellow developer unit expires has expired.

▶ Troubleshooting method



NOTE

To see the troubleshooting video for this error, click through to the link below.

(http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C8-2130.html)

- 1) Turn the machine off.
- 2) Replace the yellow developer unit.
- 3) Turn the machine on then print the test page.

▶ Error Code

C8-2210 / C8-2310 / C8-2313 / C8-231G

▶ Error message

Yellow Developer Failure: #C8-2210. Turn off then on

Yellow Developer Failure: #C8-2310. Install yellow developer unit again

Yellow Developer Failure: #C8-2313. Turn off then on. Please call for service if the problem persists

Y Development unit Failure: #C8-231G. Turn off then on. Please call for service if the problem persists

▶ Symptom

The yellow developer unit has a problem with toner supply or sensor calibration.

▶ Troubleshooting method



NOTE

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C8-2210.html

- 1) Turn the machine off then on. If the error persists, check the following.
- 2) Open the front cover. Then, remove the waste toner container.
- 3) Check if the toner supply pipe is blocked. If it is closed, open it. (Lever is in horizontal position.)
- 4) Check if deve unit connector(4 pin) is connected correctly. Check if the pin is deformed.
- 5) Install the waste toner container. Close the front cover.
- 6) Turn the machine off then on.
- 7) If the problem persists, remove and reinstall the yellow developer unit.
- 8) If the problem persists, replace the yellow developer unit.
- 9) If the problem persists, check the toner supply motor. Check the motor harness connection. If the connection is OK, replace the toner supply motor.

10) If the problem persists, replace the main board.

▶ Error Code

C8-3130

▶ Error message

Replace with new magenta developer unit

▶ Symptom

The life of the magenta developer unit expires has expired.

▶ Troubleshooting method



NOTE

To see the troubleshooting video for this error, click through to the link below.

(http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C8-3130.html)

- 1) Turn the machine off.
- 2) Replace the magenta developer unit.
- 3) Turn the machine on then print the test page.

▶ Error Code

C8-3210 / C8-3310 / C8-3313 / C8-331G

▶ Error message

Magenta Developer Failure: #C8-3210. Turn off then on

Magenta Developer Failure: #C8-3310. Install magenta developer unit again

Magenta Developer Failure: #C8-3313. Turn off then on. Please call for service if the problem persists

M Development unit Failure: #C8-331G. Turn off then on. Please call for service if the problem persists

▶ Symptom

The magenta developer unit has a problem with toner supply or sensor calibration.

▶ Troubleshooting method



NOTE

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C8-3210.html

- 1) Turn the machine off then on. If the error persists, check the following.
- 2) Open the front cover. Then, remove the waste toner container.
- 3) Check if the toner supply pipe is blocked. If it is closed, open it. (Lever is in horizontal position.)
- 4) Check if deve unit connector(4 pin) is connected correctly. Check if the pin is deformed.
- 5) Install the waste toner container. Close the front cover.
- 6) Turn the machine off then on.
- 7) If the problem persists, remove and reinstall the magenta developer unit.
- 8) If the problem persists, replace the magenta developer unit.
- 9) If the problem persists, check the toner supply motor. Check the motor harness connection. If the connection is OK, replace the toner supply motor.

10) If the problem persists, replace the main board.

▶ Error Code

C8-4130

▶ Error message

Replace with new cyan developer unit

▶ Symptom

The life of the cyan developer unit expires has expired.

▶ Troubleshooting method



NOTE

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C8-4130.html

- 1) Turn the machine off.
- 2) Replace the cyan developer unit.
- 3) Turn the machine on then print the test page.

▶ Error Code

C8-4210 / C8-4310 / C8-4313 / C8-431G

▶ Error message

Cyan Developer Failure: #C8-4210. Turn off then on

Cyan Developer Failure: #C8-4310. Install cyan developer unit again

Cyan Developer Failure: #C8-4313. Turn off then on. Please call for service if the problem persists

C Development unit Failure: #C8-431G. Turn off then on. Please call for service if the problem persists

▶ Symptom

The cyan developer unit has a problem with toner supply or sensor calibration.

▶ Troubleshooting method



NOTE

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C8-4210.html

- 1) Turn the machine off then on. If the error persists, check the following.
- 2) Open the front cover. Then, remove the waste toner container.
- 3) Check if the toner supply pipe is blocked. If it is closed, open it. (Lever is in horizontal position.)
- 4) Check if deve unit connector(4 pin) is connected correctly. Check if the pin is deformed.
- 5) Install the waste toner container. Close the front cover.
- 6) Turn the machine off then on.
- 7) If the problem persists, remove and reinstall the cyan developer unit.
- 8) If the problem persists, replace the cyan developer unit.
- 9) If the problem persists, check the toner supply motor. Check the motor harness connection. If the connection is OK, replace the toner supply motor.

10) If the problem persists, replace the main board.

▶ Error Code

C8-5130

▶ Error message

Replace with new black developer unit

▶ Symptom

The life of the black developer unit expires has expired.

▶ Troubleshooting method



NOTE

To see the troubleshooting video for this error, click through to the link below.

(http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C8-5130.html)

- 1) Turn the machine off.
- 2) Replace the black developer unit.
- 3) Turn the machine on then print the test page.

▶ Error Code

C8-5210 / C8-5310 / C8-5313 / C8-531G

▶ Error message

Black Developer Failure: #C8-5210. Turn off then on

Black Developer Failure: #C8-5310. Install black developer unit again

Black Developer Failure: #C8-5313. Turn off then on. Please call for service if the problem persists

K Development unit Failure: #C8-531G. Turn off then on. Please call for service if the problem persists

▶ Symptom

The black developer unit has a problem with toner supply or sensor calibration.

▶ Troubleshooting method



NOTE

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C8-5210.html

- 1) Turn the machine off then on. If the error persists, check the following.
- 2) Open the front cover. Then, remove the waste toner container.
- 3) Check if the toner supply pipe is blocked. If it is closed, open it. (Lever is in horizontal position.)
- 4) Check if deve unit connector(4 pin) is connected correctly. Check if the pin is deformed.
- 5) Install the waste toner container. Close the front cover.
- 6) Turn the machine off then on.
- 7) If the problem persists, remove and reinstall the black developer unit.
- 8) If the problem persists, replace the black developer unit.
- 9) If the problem persists, check the toner supply motor. Check the motor harness connection. If the connection is OK, replace the toner supply motor.

10) If the problem persists, replace the main board.

4.6.12. C9–xxxx (Transfer roller error)

Error Code	Error Message	Troubleshooting Page
C9-2110	Prepare with new transfer roller	P.4-131
C9-2120	Replace with new transfer roller	P.4-132
C9-2220	TR Failure: #C9-2220. Install transfer roller again	P.4-132

▶ **Error Code**

C9-2110

▶ **Error message**

Prepare with new transfer roller.

▶ **Symptom**

The life of the second transfer roller(T2) expires soon.

▶ **Troubleshooting method**

- 1) Order the transfer roller Assy.

▶ **Error Code**

C9-2110

C9-2120

▶ **Error message**

Replace with new Transfer roller.

▶ **Symptom**

The life of the second transfer roller(T2) expires soon or has expired.

▶ **Troubleshooting method****NOTE**

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C9-2120.html

- 1) Open the side cover.
- 2) Replace the 2nd transfer roller with a new one.
- 3) Close the side cover.
- 4) Enter SVC mode.
- 5) Select "TRANSFER"
(**INFORMATION > Supply Status > Field Replacement Unit > TRANSFER**)
- 6) Select "T2 Roller". The "RESET" button will be activated. Click "RESET" to clear the T2 Roller count.
- 7) Exit the SVC mode by pushing the home button.

▶ **Error Code**

C9-2220

▶ **Error message**

TR Failure: #C9-2220. Install transfer roller again

▶ **Symptom**

The life of the second transfer roller(T2) is not installed.

▶ **Troubleshooting method****NOTE**

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_C9-2220.html

- 1) Open the side cover.
- 2) Remove and reinstall the second transfer roller.
- 3) Close the side cover.
- 4) If the problem persists, replace the HVPS board.

4.6.13. H1-xxxx (Double Cassette Feeder Unit Error)

Error Code	Error Message	Troubleshooting Page
H1-1311	Paper jam in Tray 3	P.4-134
H1-1312	Paper jam in Tray 3	P.4-134
H1-1313	Paper jam inside of machine	P.4-135
H1-1314	Paper jam inside of machine	P.4-134
H1-1315	Paper jam in Tray 3	P.4-134
H1-1317	Paper jam in Tray 3	P.4-134
H1-1318	Paper jam in Tray 3	P.4-134
H1-1322	Tray 3 cassette is pulled out. Insert it properly	P.4-136
H1-1351	Paper is low in Tray 3. Load paper	P.4-137
H1-1352	Paper is empty in Tray 3. Load paper	P.4-137
H1-1353	Input System Failure: #H1-1353. Pull Tray 3 out and insert it	P.4-138
H1-1354	Paper is empty in tray 3. Load paper	P.4-137
H1-1411	Paper jam in Tray 4	P.4-139
H1-1412	Paper jam in Tray 4	P.4-139
H1-1413	Paper jam inside of machine	P.4-135
H1-1417	Paper jam in Tray 4	P.4-139
H1-1418	Paper jam in Tray 4	P.4-139
H1-1422	Tray 4 cassette is pulled out. Insert it properly	P.4-141
H1-1451	Paper is low in Tray 4. Load paper	P.4-142
H1-1452	Paper is empty in Tray 4. Load paper	P.4-142
H1-1453	Input System Failure: #H1-1453. Pull Tray 4 out and insert it	P.4-143
H1-1454	Paper is empty in tray 4. Load paper	P.4-142
H1-5323	Tray door is open. Close the door	P.4-144
H1-5330	DCF Failure: #H1-5330. Check internal DCF connection	P.4-145

► **Error Code**

H1-1311 / H1-1312 / H1-1314 / H1-1315 / H1-1317 / H1-1318

► **Error message**

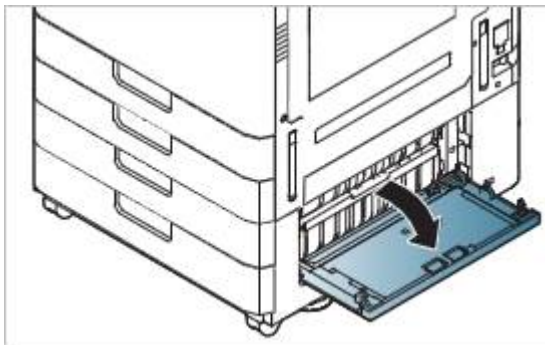
Paper jam in Tray 3.

► **Symptom**

Paper jam has occurred in tray3. (Pick up unit connection is defective. / Pickup rollers are defective. / pre 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.
- 4) If pick up/ reverse/ forward rollers have no problem, check the following.
 - a) Remove the DCF pick up unit1. Check if the pre feed sensor cable is connected correctly.
 - b) Check if the sensor cable on DCF PBA is connected correctly.
 - c) If the connection is OK, replace the pre feed sensor(0604-001490).
 - 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(JC93-01087A) 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(JC93-01135A).
- 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([JC93-01063A](#)).

▶ Error Code

H1-1313 / H1-1413

▶ Error message

Paper jam inside of machine

▶ Symptom

Paper jam has occurred inside the machine

▶ Troubleshooting method

- H1-1313 : (Media Feeding from Tray3) The leading edge of the paper has not reached the Feed 2 sensor within the specified time
 - H1-1413 : (Media Feeding from Tray4) The leading edge of the paper has not reached 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 the feed 2 sensor test.
 - b) Check connection between the feed 2 sensor and main board.
 - c) If the connection is OK, replace the feed 2 sensor.
 - d) If the feed 2 sensor is normal, check the feed motor.
 - e) Execute feed motor test.
 - f) Check if the feed motor cable is connected correctly.
 - g) If the connection is OK, replace the feed/MP drive unit.

▶ 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([JC32-00013A](#)).
- 5) If the problem persists, replace the DCF PBA([JC92-02738A](#)).

▶ **Error Code**

H1-1351 / H1-1352 / H1-1354

▶ **Error message**

Paper is low in Tray 3. Load paper.

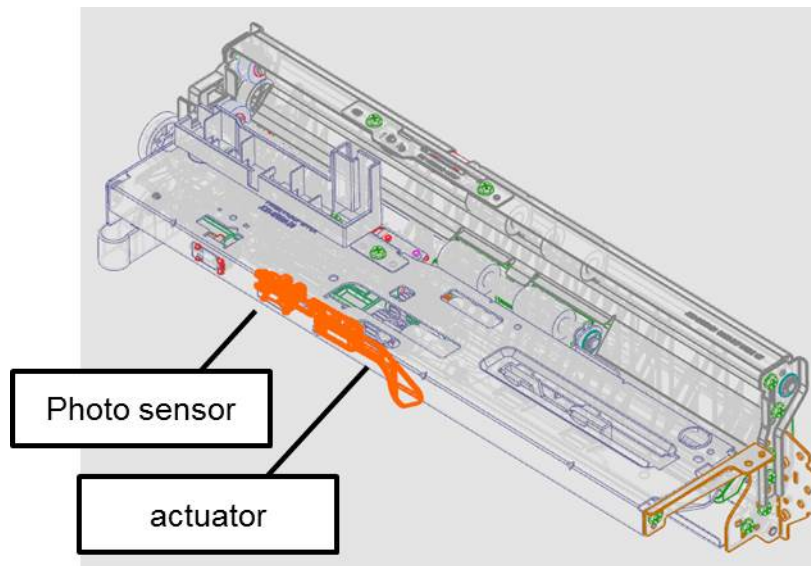
Paper is empty in Tray 3. Load paper.

▶ **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([JC66-04399A](#)) is defective, replace it.



► **Error Code**

H1-1353

► **Error message**

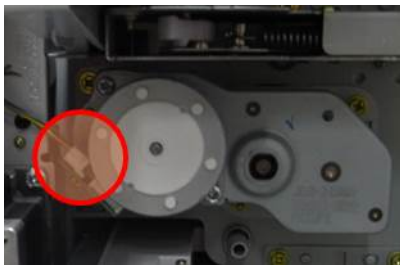
Input System Failure #H1-1353 : Pull Tray 3 out and insert it.

► **Symptom**

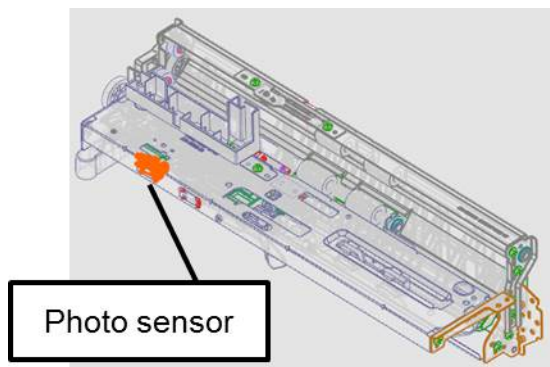
The paper is not fed from tray3.

► **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 Rear Cover.
- 5) Check if the connection between the DCF pick up drive unit and DCF PBA is correct.



- 6) If the connection is OK, replace the pick up drive unit([JC93-01063A](#)).
- 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

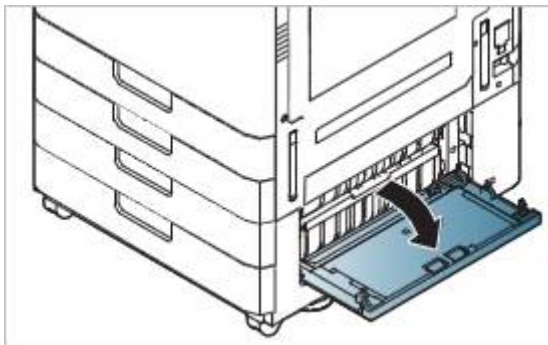
Paper jam in Tray 4.

▶ Symptom

Paper jam has occurred in tray4. (Pick up unit connection is defective. / Pickup rollers are defective. / Pre 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.
- 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 PBA is connected correctly.
 - c) If the connection is OK, replace the pre feed sensor(0604-001490).
 - 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(JC93-01135A).
 - 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([JC93-01063A](#)).

▶ **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([JC32-00013A](#)).
- 5) If the problem persists, replace the DCF PBA([JC92-02738A](#)).

▶ Error Code

H1-1451 / H1-1452 / H1-1454

▶ Error message

Paper is low in Tray 4. Load paper.

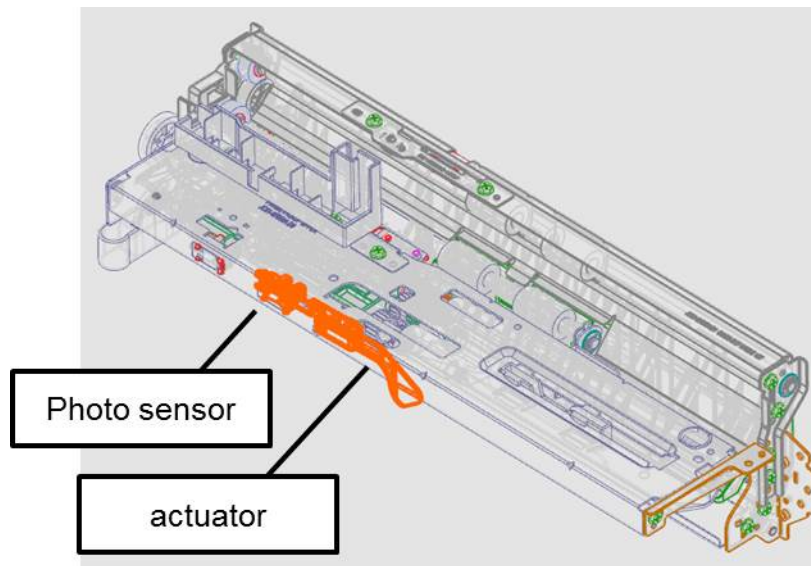
Paper is empty in Tray 4. Load paper.

▶ 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([JC66-04399A](#)) is defective, replace it.



▶ Error Code

H1-1453

▶ Error message

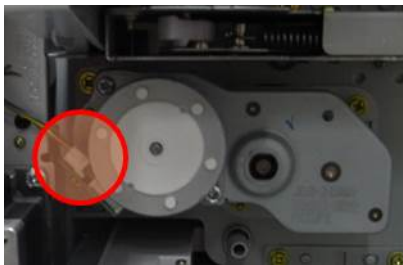
Input System Failure #H1-1453 : Pull Tray 4 out and insert it.

▶ Symptom

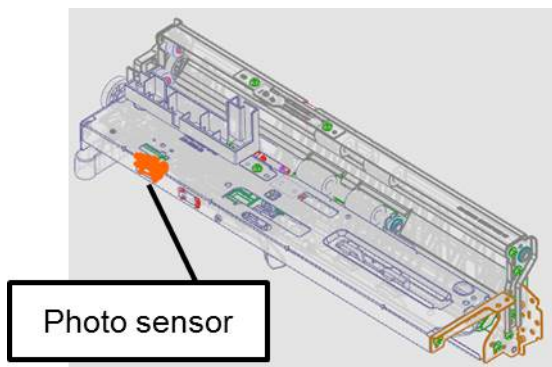
The paper is not fed from tray4.

▶ 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 Rear Cover.
- 5) Check if the connection between the DCF pick up drive and DCF PBA is correct.



- 6) If the connection is OK, replace the pick up drive unit([JC93-00442A](#)).
- 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

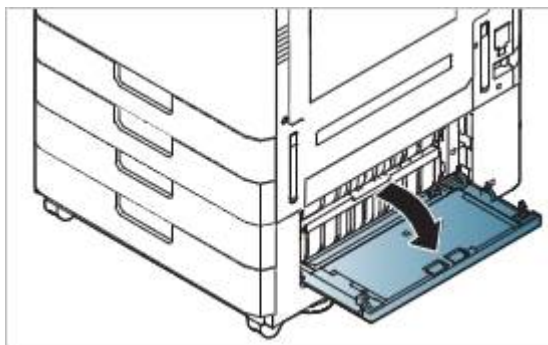
Tray door is open. Close the door

▶ 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(HARNES-DCF COVER OPEN)([JC39-02268A](#)) is not operating normally. If it is defective, replace it.



- b) If the I/L Switch is OK, replace the DCF PBA([JC92-02738A](#)).

▶ **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 Rear Cover.
- 3) Check if the interface connector is connected to the DCF PBA. If the interface connector([JC39-02276A](#)) is defective, replace it.



- 4) If the problem persists, replace the DCF PBA.

4.6.14. H1-xxxx (High Capacity Feeder Unit Error)

Error Code	Error Message	Troubleshooting Page
H1-2311	Paper Jam in tray 3. After open the door & remove paper, Close the door	P.4-147
H1-2312	Paper Jam in tray 3. After open the door & remove paper, Close the door	P.4-147
H1-2313	Paper jam inside of machine	P.4-148
H1-2317	Paper Jam in tray 3. After open the door & remove paper, Close the door	P.4-147
H1-2318	Paper Jam in tray 3. After open the door & remove paper, Close the door	P.4-147
H1-2320	HCF 3 door is open. Close it	P.4-149
H1-2322	HCF 3 cassette is pulled out. Insert it properly	P.4-149
H1-2330	Input System Failure: #H1-2330. Check HCF 3 connection	P.4-149
H1-2351	Paper is low in HCF 3. Load paper	P.4-150
H1-2352	Paper is empty in HCF 3. Load paper	P.4-150
H1-2353	Input System Failure #H1-2353 : Pull HCF 3 out and insert it	P.4-151

▶ Error Code

H1-2311 / H1-2312 / H1-2317 / H1-2318

▶ Error message

Paper Jam in tray 3. After open the door & remove paper, Close the door

▶ Symptom

Paper jam has occurred in HCF tray. (Pick up unit connection is defective. / Pickup rollers are defective. / pre feed sensor is defective.)

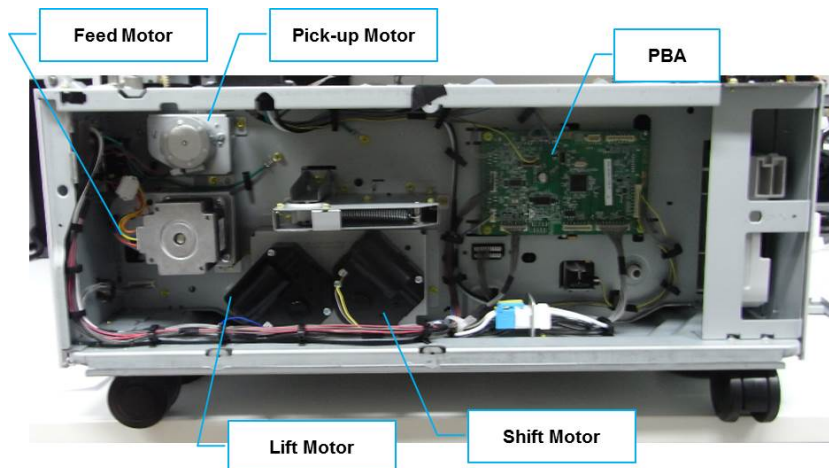
▶ Troubleshooting method

- 1) Open the HCF Take Away-Cover. Remove the jammed paper.
- 2) Remove HCF tray. Remove the jammed paper. Close the HCF Take Away-Cover and insert HCF tray.
- 3) If this jam error occurs frequently, check the rollers below.
 - a) Remove the HCF tray.
 - 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.
- 4) If pick up/ reverse/ forward rollers have no problem, check the following.
 - a) Remove the HCF pick up unit. Check if the pre feed sensor cable is connected correctly.
 - b) Check if the sensor cable on HCF PBA is connected correctly.
 - c) If the connection is OK, replace the pre feed sensor(0604-001490).
 - d) Install the HCF pick up unit.
- 5) If the problem persists after checking step 3~4, check the following :
 - a) Remove the HCF pick up unit. 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 HCF pick up unit(JC93-01139A) or defective part.
- 6) Check the HCF feed motor.
 - a) Check if the HCF feed motor cable is connected correctly.

- b) If the connection is OK, replace the HCF feed drive unit(*JC93-01114A*).



- 7) Check the HCF pick up motor.
- a) Check if the HCF pick up motor cable is connected correctly.
 - b) If the connection is OK, replace the HCF pick up drive unit(*JC93-01115A*).

► **Error Code**

H1-2313

► **Error message**

Paper jam inside of machine

► **Symptom**

The leading edge of the paper has not reached the Feed 2 sensor within the specified time

► **Troubleshooting method**

- 1) Open the side cover. Remove the jammed paper.
- 2) If jammed paper occurs continually, check the following.
 - a) Enter SVC mode. Execute the feed 2 sensor test.
 - b) Check connection between the feed 2 sensor and main board.
 - c) If the connection is OK, replace the feed 2 sensor.
 - d) If the feed 2 sensor is normal, check the feed motor.
 - e) Execute feed motor test.
 - f) Check if the feed motor cable is connected correctly.
 - g) If the connection is OK, replace the feed/MP drive unit.

▶ **Error Code**

H1-2320

▶ **Error message**

Tray 3 door is open. Close it.

▶ **Symptom**

HCF Takeaway-Cover is open. / Side door open switch harness or connector is defective.

▶ **Troubleshooting method**

- 1) Open and close the HCF Take away-Cover correctly.
- 2) Check if the side door open switch is connected correctly. Unplug and reconnect it.
- 3) If the connection is OK, replace the side door open switch([JC39-02279A](#)).
- 4) If the problem persists, replace the HCF PBA([JC92-02738B](#)).

▶ **Error Code**

H1-2322

▶ **Error message**

Tray 3 cassette is pulled out. Insert it properly.

▶ **Symptom**

HCF Tray is pulled out or the Tray insertion sensor connector is not connected or broken.

▶ **Troubleshooting method**

- 1) Remove and insert HCF tray correctly.
- 2) If the problem persists, remove HCF tray. Look inside machine.
- 3) Check if the tray insertion sensor is connected correctly. Unplug and reconnect it.
- 4) If the connection is OK, replace the tray insertion sensor([0604-001393](#)).
- 5) If the problem persists, replace the HCF PBA([JC92-02738B](#)).

▶ **Error Code**

H1-2330

▶ **Error message**

Tray Failure: #H1-2330. Check tray 3 connection & turn off then on. Call for service if the problem persists

▶ **Symptom**

A communication error between the optional tray and the main machine has occurred.

▶ **Troubleshooting method**

- 1) Turn the machine off.
- 2) Remove the Rear Cover.
- 3) Check the connection of HCF PBA. If the interface connector is defective, replace it.
- 4) If the problem persists, replace the HCF PBA.

▶ Error Code

H1-2351 / H1-2352

▶ Error message

Paper is low in Tray 3. Load paper.

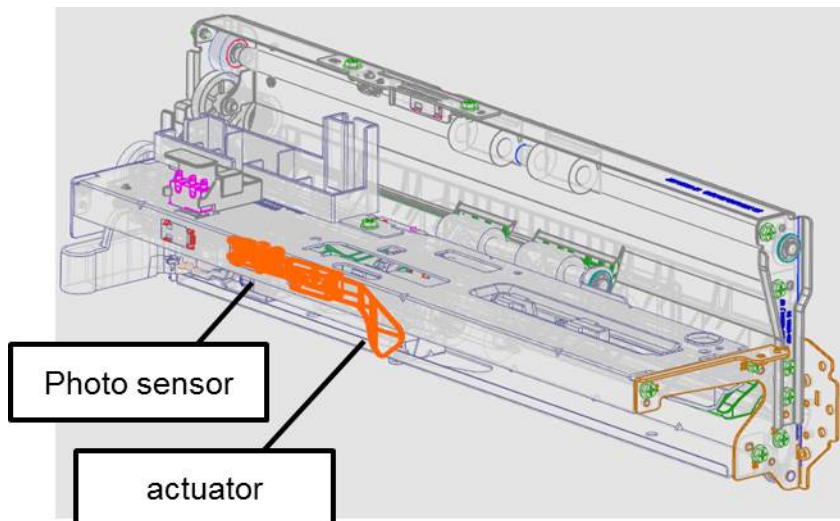
Paper is empty in Tray 3. Load paper.

▶ Symptom

Paper in the HCF tray is less than 10% of specification. / The photo sensor is defective.

▶ Troubleshooting method

- 1) Remove HCF tray. Load the paper in HCF tray.
- 2) If paper is loaded but error message has not disappeared, check the following.
 - a) Remove the HCF pick up unit.
 - b) Check if the photo sensor in the HCF pick up unit is contaminated. If so, clean it.
 - c) If the photo sensor([0604-001393](#)) is defective, replace it.
 - d) If the actuator([JC66-04399A](#)) is defective, replace it.



► Error Code

H1-2353

► Error message

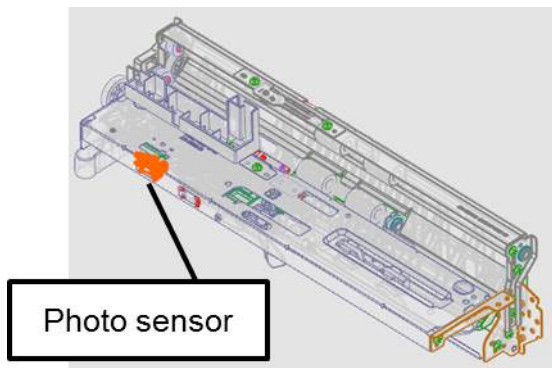
Tray Failure: #H1-2353. Pull tray 3 out and insert it. Call for service if the problem persists

► Symptom

The paper is not fed from HCF tray.

► Troubleshooting method

- 1) Remove and insert HCF tray correctly.
- 2) Turn the machine off then on.
- 3) If the problem persists, turn the machine off.
- 4) Remove the Rear Cover.
- 5) Check if the connection between the HCF pick up drive unit and HCF PBA is correct.
- 6) If the connection is OK, replace the HCF pick up drive unit([JC93-01115A](#)).
- 7) If the problem persists, check the following.
 - a) Remove the HCF pick up unit.
 - b) Check if the photo sensor in the HCF pick up unit is contaminated, clean it.
 - c) If the photo sensor([0604-001393](#)) is defective, replace it.



4.6.15. H1-xxxx (High Capacity Feeder Side Unit(LCT Unit) Error)

Error Code	Error Message	Troubleshooting Page
H1-4411	Paper jam in Tray 4	P.4-153
H1-4412	Paper jam in Tray 4	P.4-153
H1-4413	Paper jam in Tray 4	P.4-153
H1-4417	Paper jam in Tray 4	P.4-153
H1-4418	Paper jam in Tray 4	P.4-153
H1-4420	Tray 4 door is open. Close it	P.4-155
H1-4422	Tray 4 cassette is pulled out. Insert it properly.	P.4-156
H1-4430	Tray Failure: #H1-4430. Check tray 4 connection	P.4-157
H1-4451	Paper is low in Tray 4. Load paper.	P.4-158
H1-4452	Paper is empty in Tray 4. Load paper.	P.4-158
H1-4453	Input System Failure #H1-4453 : Pull Tray 4 out and insert it.	P.4-159
H1-4511	Paper jam in Tray 5	P.4-153
H1-4512	Paper jam in Tray 5	P.4-153
H1-4513	Paper jam in Tray 5.	P.4-153
H1-4517	Paper jam in Tray 5.	P.4-153
H1-4518	Paper jam in Tray 5	P.4-153
H1-4520	Tray 5 door is open. Close it	P.4-155
H1-4522	Tray 5 cassette is pulled out. Insert it properly.	P.4-156
H1-4530	Tray Failure: #H1-4530. Check tray 5 connection	P.4-156
H1-4551	Paper is low in Tray 5. Load paper.	P.4-158
H1-4552	Paper is empty in Tray 5. Load paper.	P.4-158
H1-4553	Input System Failure #H1-4553 : Pull Tray 5 out and insert it.	P.4-159

▶ Error Code

H1-4411 / H1-4412 / H1-4413 / H1-4417 / H1-4418 (HCF+LCT)

H1-4511 / H1-4512 / H1-4513 / H1-4517 / H1-4518 (DCF+LCT)

▶ Error message

Paper jam in Tray 4.

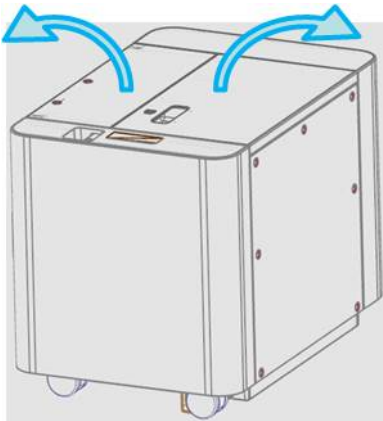
Paper jam in Tray 5.

▶ Symptom

Paper jam has occurred in LCT. (Pick up unit connection is defective. / Pickup rollers are defective. / Feed sensor is defective.)

▶ Troubleshooting method

- 1) Open the LCT Top Cover. Remove the jammed paper. And, close the LCT Top Cover.



- 2) If this jam error occurs frequently, check the rollers below.
 - a) Open the LCT Top Cover.
 - 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([JC93-01091A](#)).
- 3) If pick up/ reverse/ forward rollers have no problem, check the following.
 - a) Remove the LCT pick up unit. Check if the feed sensor cable is connected correctly.
 - b) Check if the sensor cable on LCT board is connected correctly.
 - c) If the connection is OK, replace the feed sensor([0604-001490](#)).
 - d) Check if the sensor and actuator are assembled correctly.
 - e) Install the LCT pick up unit.

- 4) Check the LCT feed motor and pick-up motor.
 - a) Check if the LCT feed motor and pick-up motor cables are connected correctly.
 - b) If the connection is OK, replace the LCT feed drive unit([JC93-01112A](#)).

▶ **Error Code**

H1-4420

H1-4520

▶ **Error message**

Tray 4 door is open. Close it

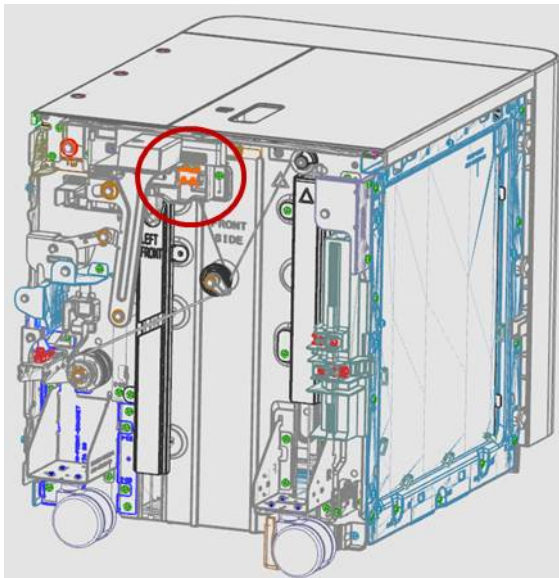
Tray 5 door is open. Close it

▶ **Symptom**

LCT Top Cover is open. / I/L-Switch harness or connector is defective.

▶ **Troubleshooting method**

- 1) Open and close the LCT Top Cover correctly.
- 2) If the problem persists, check the following.
 - a) Check if I/L-Switch(Top Door Open Switch)([JC39-02346A](#)) is not operating normally. If it is defective, replace it.



- b) If the Top Door Open Switch is OK, replace the LCT PBA([JC92-02738C](#)).

▶ Error Code

H1-4422

H1-4522

▶ Error message

Tray 4 cassette is pulled out. Insert it properly.

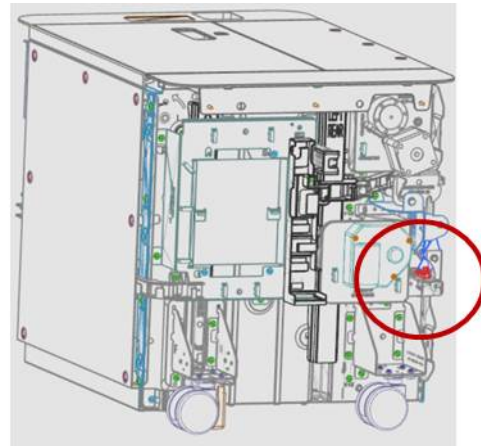
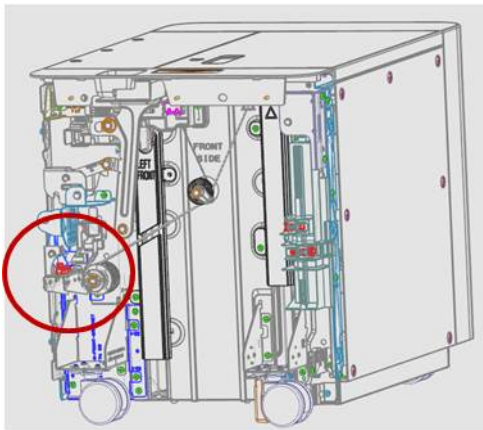
Tray 5 cassette is pulled out. Insert it properly.

▶ Symptom

LCT is pulled out or installation detect sensor is not connected or broken.

▶ Troubleshooting method

- 1) Detach and Attach the LCT
- 2) If the problem persists, detach LCT and check inside machine.
- 3) Remove the Front Cover and Rear Cover. Check the connection of the installation detect sensors. And, unplug and reconnect it.



- 4) If the connection is OK, replace the installation detect sensor ([0604-01393](#)).
- 5) If the problem persists, replace the LCT PBA ([JC92-02738C](#)).

▶ **Error Code**

H1-4430

H1-4530

▶ **Error message**

Tray Failure: #H1-4430. Check tray 4 connection

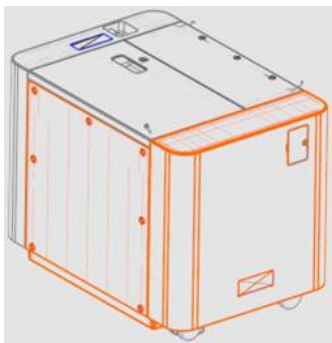
Tray Failure: #H1-4530. Check tray 5 connection

▶ **Symptom**

A communication error between the LCT and the main machine has occurred.

▶ **Troubleshooting method**

- 1) Turn the machine off.
- 2) Remove the LCT Cover-Right and LCT Cover-Rear.



- 3) Check the connection of LCT PBA. If the interface connector([JC39-02294A](#)) is defective, replace it.



- 4) If the problem persists, replace the LCT PBA.

▶ Error Code

H1-4451 / H1-4452

H1-4551 / H1-4552

▶ Error message

Paper is low in Tray 4. Load paper. / Paper is empty in Tray 4. Load paper.

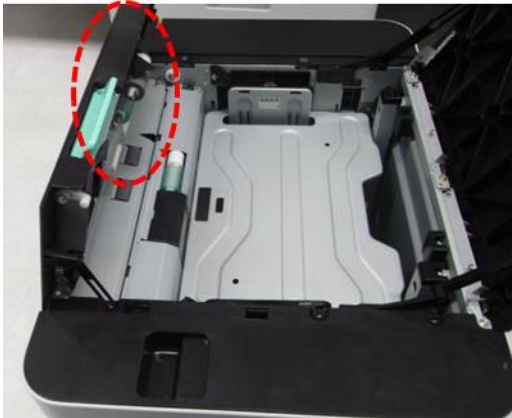
Paper is low in Tray 4. Load paper. / Paper is empty in Tray 4. Load paper.

▶ Symptom

Paper in the LCT is less than 20% of specification. / The photo sensor is defective.

▶ Troubleshooting method

- 1) Open the LCT Top Cover. Load the paper in LCT.
- 2) If paper is loaded but error message has not disappeared, check the following.
 - a) Remove the LCT pick up unit.
 - b) Check if the photo sensor in the LCT pick up unit1 is contaminated. If so, clean it.
 - c) If the photo sensor([0604-001393](#)) is defective, replace it.
 - d) If the actuator([JC66-04276A](#)) is defective, replace it.



▶ Error Code

H1-4453

H1-4553

▶ Error message

Input System Failure #H1-4453 : Pull Tray 4 out and insert it.

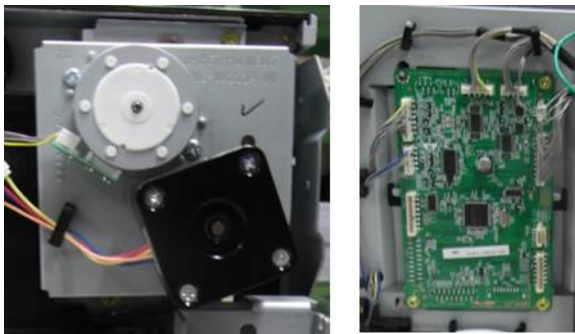
Input System Failure #H1-4553 : Pull Tray 5 out and insert it.

▶ Symptom

The paper is not fed from the LCT.

▶ Troubleshooting method

- 1) Turn the machine off then on.
- 2) If the problem persists, turn the machine off.
- 3) Remove the Cover-Right and Cover-Rear after removing 16 screws.
- 4) Check if the connection between the LCT pick up drive and LCT PBA is correct.



- 5) If the connection is OK, replace the drive unit([JC93-01112A](#)).
- 6) If the problem persists, check the following.
 - a) Remove the LCT pick up unit.
 - b) Check if the photo sensor in the LCT pick up unit is contaminated, clean it.
 - c) If the photo sensor([0604-001393](#)) is defective, replace it.



4.6.16. H2-xxxx (Finisher error)

**NOTE**

For H2-xxxx type error, refer to the Finisher Service Manual.

**NOTE**

- H2-6xxx : Inner Finisher (Refer to SL-FIN501L Service Manual.)
- H2-7xxx : 3K Finisher (Refer to SL-FIN701B/H Service Manual.)
- H2-8xxx : Booklet (Refer to SL-FIN701B/H Service Manual.)

4.6.17. Mx-xxxx (Jam error)

Error Code	Error Message	Troubleshooting Page
M1-1113	Paper jam in tray 1	P.4-162
M1-1121	Paper jam in tray 2	P.4-163
M1-1213	Paper jam in tray 2	P.4-163
M1-1610	Paper jam in MP tray	P.4-164
M1-1613	Paper jam in MP tray	P.4-164
M2-1114	Paper jam inside of machine	P.4-165
M2-1117	Paper jam at the bottom of duplex path	P.4-165
M2-1211	Paper jam inside of machine	P.4-166
M2-1213	Paper Mismatch at tray. Load tray with setting paper, and remove the jammed paper	P.4-166
M2-1214	Paper jam inside of machine	P.4-166
M2-1331	Paper jam inside of machine	P.4-167
M2-1332	Paper jam inside of machine	P.4-167
M2-1333	Check whether the pieces of paper remain in the paper path	P.4-167
M2-1334	Paper jam inside of machine	P.4-167
M2-2111	Paper jam at the top of duplex path	P.4-168
M2-2112	Paper jam at the top of duplex path	P.4-168
M2-2113	Check whether the pieces of paper remain in the paper path	P.4-168
M2-2114	Paper jam at the top of duplex path	P.4-168
M2-2311	Paper jam at the bottom of duplex path	P.4-168
M2-2312	Paper jam at the bottom of duplex path	P.4-168
M2-2314	Paper jam at the bottom of duplex path	P.4-168
M3-1411	Paper jam in exit area	P.4-169
M3-1412	Paper jam inside of machine	P.4-169
M3-1413	Check whether the pieces of paper remain in the paper path	P.4-169
M3-1414	Paper jam in exit area	P.4-169

▶ Error Code

M1-1113

▶ Error message

Paper jam in Tray 1.

▶ Symptom

Paper jam has occurred in tray1.

▶ Troubleshooting method**NOTE**

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M1-1113.html

- 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.
- 4) If the problem persists, check the pick-up unit1.
 - a) Check if the pre-feed sensor is connected correctly. If the sensor is defective, replace it.
 - b) If there is any defective part in pick-up unit 1, replace it or pick up unit 1.
- 5) If the problem persists, replace the pickup drive unit 1.

▶ **Error Code**

M1-1211 / M1-1213

▶ **Error message**

Paper jam in Tray 2.

▶ **Symptom**

Paper jam has occurred in tray2.

▶ **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

(http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M1-1211.html)

- 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 unit2.
 - 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.
- 4) If the problem persists, check the pick-up unit2.
 - a) Check if the pre-feed sensor is connected correctly. If the sensor is defective, replace it.
 - b) If there is any defective part in pick-up unit 2, replace it or pick up unit 2.
- 5) If the problem persists, check the followings.
 - a) Enter SVC mode, Execute Feed sensor test.
 - Check a connected harness between Feed sensor and main board.
 - If no matter at harness, Please replace Feed sensor.
 - b) If the feed sensor works, check a Pick up/Feed drive unit at SVC mode.
 - i) Check the connected harness at drive unit.
 - ii) If the harness is OK, please replace a drive unit.

► **Error Code**

M1-1610 / M1-1613

► **Error message**

Paper jam in MP Tray.

► **Symptom**

Paper jam has occurred in MP tray.

► **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

- M1-1610 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M1-1610.html
- M1-1613 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M1-1613.html

- 1) Open the side cover. Remove the jammed paper from the MP tray.
- 2) If this jam error occurs frequently, check the rollers of the MP unit.
 - a) Check if MP pick up/ reverse/ forward rollers are assembled correctly.
 - b) If the MP pick up/ reverse/ forward rollers are worn out or contaminated, replace the defective roller.
- 3) If the problem persists, check if the MP solenoid operates correctly.
 - a) Enter SVC mode. Execute MP solenoid test.
 - 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.
- 4) If the problem persists, please check the followings.
 - a) Enter SVC mode. Execute the regi sensor test.
 - i) If the Regi sensor doesn't work, check below.
 - Check the harness connection between Regi sensor and main board.
 - If the harness connection is OK, replace the Regi sensor.
 - ii) If the Regi sensor works normally, check the Feed/MP drive unit at SVC mode.
 - Check the harness connection of the Feed/MP drive unit.
 - If the harness connection is OK, replace the Feed/MP drive unit.

▶ **Error Code**

M2-1114 / M2-1117

▶ **Error message**

Paper jam inside of machine

Paper jam at the bottom of duplex path

▶ **Symptom**

Paper jam has occurred inside the machine.

▶ **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

- M2-1114 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_M2-1114.html
- M2-1117 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M2-1117.html

- M2-1114 : The paper has not left from the feed sensor within the specified time.
- M2-1117 : The paper passed duplex path has not reached the feed 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 the feed 1 sensor test.
 - b) Check connection between the feed 1 sensor and main board.
 - c) If the connection is OK, replace the feed 1 sensor.
 - d) If the feed 1 sensor is normal, check the feed motor.
 - e) Execute feed motor test.
 - f) Check if the feed motor cable is connected correctly.
 - g) If the connection is OK, replace the feed/MP drive unit.

▶ Error Code

M2-1211 / M2-1213 / M2-1214

▶ Error message

Paper jam inside of machine.

▶ Symptom

Paper jam has occurred inside the machine.

▶ Troubleshooting method**NOTE**

To see the troubleshooting video for this error, click through to the link below.

- M2-1211 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_M2-1211.html
- M2-1213 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_M2-1213.html
- M2-1214 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_M2-1214.html

- M2-1211 : When the machine is warming-up, jammed paper inside machine is detected.
- M2-1213 : The Media was fed has left from the regi. Sensor ahead of specified time. (Paper mismatch)
- 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 the regi sensor test.
 - b) Check connection between the regi sensor and main board.
 - c) If the connection is OK, replace the regi sensor.
 - d) If the regi sensor is normal, check the regi motor.
 - e) Execute regi motor test.
 - f) Check if the regi motor cable is connected correctly.
 - g) If the connection is OK, replace the regi drive unit.

▶ **Error Code**

M2-1331 / M2-1332 / M2-1333 / M2-1334

▶ **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**



NOTE

To see the troubleshooting video for this error, click through to the link below.

- M2-1331 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_M2-1331.html
- M2-1332 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_M2-1332.html
- M2-1333 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_M2-1333.html
- M2-1334 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_M2-1334.html

- M2-1331 : Paper is detected by the fuser out JAM sensor.
 - M2-1332 : Paper has not reached the fuser out JAM sensor within the specified time.
 - M2-1333 : Paper escaped from Regi sensor has reached to the fuser out JAM sensor faster than the specified time.
 - M2-1334 : The paper has not left from the fuser out JAM sensor within the specified time.
- 1) Open the side cover. Remove jammed paper.
 - 2) If the problem persists, check the followings:
 - a) Enter SVC mode, execute the fuser out sensor test.
 - i) If the sensor does not work, check below.
 - Check the harness connection between fuser out sensor and main board.
 - If the harness connection is OK, replace the fuser out sensor.
 - ii) If the sensor works normally, check the Regi/OPC/Fuser/Exit drive unit at SVC mode.
 - Check the harness connection of Regi/OPC/Fuser/Exit drive unit.
 - If the harness connection is OK, replace the corresponding drive unit.
(Regi/OPC drive is applied in case M2-1332)

► **Error Code**

M2-2111 / M2-2112 / M2-2113 / M2-2114 / M2-2311 / M2-2312 / M2-2314

► **Error message**

Paper jam inside of machine

Paper jam at the top of duplex path

► **Symptom**

Paper jam has occurred in duplex path.

► **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

- M2-2111 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M2-2111.html
- M2-2112 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M2-2112.html
- M2-2113 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M2-2113.html
- M2-2114 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M2-2114.html
- M2-2311 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M2-2311.html
- M2-2312 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M2-2312.html
- M2-2314 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M2-2314.html

- 1) Open the side cover. Remove jammed paper.
- 2) If the problem persists, check the following:
 - a) Enter SVC mode. Execute the Duplex1/Duplex2 sensor test.
 - i) If the sensor does not work, check the followings.
 - Check the harness connection between Duplex1/Duplex2 sensor and main board.
 - If the harness connection is OK, replace the Duplex1/Duplex2 sensor.
 - ii) If the sensor works normally, check the 2nd Exit/Duplex1/Duplex2 drive unit at SVC mode.
 - Check the harness connection of 2nd Exit/Duplex1/Duplex2 drive unit
 - If the harness connection is OK, replace the corresponding drive unit.

▶ **Error Code**

M3-1411 / M3-1412 / M3-1413 / M3-1414

▶ **Error message**

Paper jam in exit area.

Check whether the pieces of paper remain in the paper path

▶ **Symptom**

Paper jam has occurred around the fuser unit.(Job separator connection is defective. / Actuator-Exit is defective.)

▶ **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

- M3-1411 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M3-1411.html
- M3-1412 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M3-1412.html
- M3-1413 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M3-1413.html
- M3-1414 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M3-1414.html

- 1) Open the side cover. Remove the jammed paper.
- 2) If the problem persists, check the following:
 - a) Remove the exit unit.
 - b) Check if the return sensor is connected correctly. If the connection is OK, replace the sensor.
 - c) Check if the return sensor actuator is broken or deformed. If necessary, reassemble or replace it.
 - d) Check if the exit gate solenoid connected correctly. If the connection is OK, replace the solenoid.
 - e) If the problem persists, replace the fuser unit.

4.6.18. 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.4-171
M1-3222	Tray 2 cassette is pulled out. Insert it properly	P.4-172
M1-4111	Tray Failure: #M1-4111. Pull tray 1 out and insert it. Call for service if the problem persists	P.4-173
M1-4211	Tray Failure: #M1-4211. Pull tray 2 out and insert it. Call for service if the problem persists	P.4-174
M1-5111	Paper is low in tray 1. Load paper	P.4-175
M1-5112	Paper is empty in tray 1. Load paper	P.4-175
M1-5113	Paper is empty in tray 1. Load paper	P.4-175
M1-5120	Paper is empty in all tray. Load paper	P.4-175
M1-5211	Paper is low in tray 2. Load paper	P.4-176
M1-5212	Paper is empty in tray 2. Load paper	P.4-176
M1-5612	Paper is empty in MP tray. Load paper	P.4-177
M3-2230	Paper in output bin is full. Remove printed paper	P.4-178
M3-2430	Paper in output bin is full. Remove printed paper	P.4-178

▶ **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**



NOTE

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M1-3122.html

- 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.
- 5) Check some components are omitted at Cassette unit.
- 6) If the problem persists, replace the main board or Auto size sensor.

▶ 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**NOTE**

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M1-3222.html

- 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.
- 5) Check some components are omitted at Cassette unit.
- 6) If the problem persists, replace the main board or Auto size sensor.

▶ **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**



NOTE

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M1-4111.html

- 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)
- 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.
- 8) If the problem persists, check the pickup unit1.
 - a) Check if the photo sensor in the pickup unit1 is defective.
 - b) If the sensor 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**



NOTE

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M1-4211.html

- 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)
- 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.
- 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 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.

▶ **Symptom**

Paper in the tray1 is less than 10%. / The photo sensor is defective.

▶ **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

- M1-5111 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M1-5111.html
- M1-5112 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M1-5112.html
- M1-5113 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M1-5113.html
- M1-5120 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M1-5120.html

- 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.
 - c) If the photo sensor is contaminated, clean it.
 - d) If the photo sensor is defective, replace it.
 - e) If the actuator is defective, replace it.

▶ 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**NOTE**

To see the troubleshooting video for this error, click through to the link below.

- M1-5211 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M1-5211.html
- M1-5212 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M1-5212.html

- 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.
 - c) If the photo sensor is contaminated, clean it.
 - d) If the photo sensor is defective, replace it.
 - e) If the actuator is defective, replace it.

▶ **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**



NOTE

To see the troubleshooting video for this error, click through to the link below.

(http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M1-5612.html)

- 1) Load the paper in the MP tray.
- 2) If paper is loaded but error message has not disappeared, check the following :
 - a) If the photo sensor is contaminated, clean it.
 - b) If the photo sensor is defective, replace it.
 - c) If the actuator is defective, replace it.

▶ 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**NOTE**

To see the troubleshooting video for this error, click through to the link below.

- M3-2230 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M3-2230.html
 - M3-2430 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_M3-2430.html
-
- 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.
 - b) Check if the bin-full sensor is defective.

4.6.19. Sx–xxxx (System error)

Error Code	Error Message	Troubleshooting Page
S1-1113	Video System Failure: #S1-1113. Turn off then on	P.4-181
S1-1313	The clock became initial time. Set a time again	P.4-182
S1-1411	Video System Failure: #S1-1411. Turn off then on	P.4-182
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Error Code	Error Message	Troubleshooting Page
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▶ **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**



NOTE

To see the troubleshooting video for this error, click through to the link below.

(http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S1-1113.html)

- 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.
- 5) Replace the 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.
 - 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.

▶ Error Code

S1-1411 / S1-1413

▶ Error message

Video System Failure: #S1-1411. Turn off then on

Video System Failure: #S1-1413. Turn off then on

▶ Symptom

Video chip in main board is defective.

▶ Troubleshooting method

- 1) Turn the machine off then on.
- 2) If the problem persists, replace the main board.

**NOTE**

Insert the MSOK to the new main board.

▶ **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**



To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S1-2111.html

- 1) Turn the machine off then on.
- 2) If the problem persists, turn the machine off again.
- 3) Remove the rear cover.
- 4) Replace the main board.



Insert the MSOK to the new main board.

- 5) Assemble the rear cover. Turn the machine on.

▶ Error Code

S1-2433 / S1-2443 / S1-2444 / S1-2445 / S1-2446 / S1-2447 / S1-2448 / S1-2449

▶ Error message

HDD System Failure #S1-24xx: Turn off then on.

▶ Symptom

HDD partition is full or corrupted.

▶ Troubleshooting method**NOTE**

To see the troubleshooting video for this error, click through to the link below.

- S1-2433 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S1-2433.html
- S1-2443 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S1-2443.html
- S1-2444 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S1-2444.html
- S1-2445 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S1-2445.html
- S1-2446 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S1-2446.html
- S1-2447 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S1-2447.html
- S1-2448 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S1-2448.html
- S1-2449 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S1-2449.html

- 1) Enter SVC mode. Select “System Recovery” in Service Function menu.
- 2) Execute hard disk format and firmware re-installation.
- 3) If the problem persists, replace the HDD.

▶ Error Code

S1-2434 / S1-2435 / S1-2436 / S1-2437 / S1-2438 / S1-2439

▶ Error message

HDD Error #S1-243x. Check users guide.

▶ Symptom

HDD partition or memory is full.

▶ Troubleshooting method



NOTE

To see the troubleshooting video for this error, click through to the link below.

- S1-2434 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S1-2434.html
- S1-2435 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S1-2435.html
- S1-2436 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S1-2436.html
- S1-2437 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S1-2437.html
- S1-2438 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S1-2438.html
- S1-2439 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S1-2439.html



NOTE

- S1-2434 : Addresses in Address book / User data in User profile
- S1-2435 : Documents in Document box / Jobs in Secure job list / Fonts / Forms
- S1-2436 : System Logs
- S1-2437/3438/3439 : Printing Error / No Paper in Tray

- 1) Enter SVC mode. Select “Hard Disk Maintenance” in Service Function menu.
- 2) Execute hard disk format.
- 3) If the problem persists, replace the HDD.

▶ Error Code

S1-2510

S1-2521

▶ Error message

MSOK System Failure #S1-2510: Turn off then on.

MSOK Failure: #S1-2521. Call for service

▶ Symptom

MSOK is not installed properly. / MSOK is defective.

▶ Troubleshooting method**NOTE**

To see the troubleshooting video for this error, click through to the link below.

- S1-2510 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S1-2510.html
- S1-2521 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S1-2521.html

- 1) Remove the rear cover.
- 2) Check if the MSOK is inserted correctly. Remove and reinstall it.
- 3) If the problem persists, replace the main board.

▶ **Error Code**

S1-3110

▶ **Error message**

Video System Failure #S1-3110: Turn off then on.

▶ **Symptom**

The main board is defective.

▶ **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

(http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S1-3110.html)

- 1) Turn the machine off then on.
- 2) If the problem persists, turn the machine off again.
- 3) Replace the main board.
- 4) Turn the machine on.

▶ **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.

▶ Error Code

S1-4311

▶ Error message

Video System Failure #S1-4311: Turn off then on.

▶ Symptom

The USB device chip is defective.

▶ Troubleshooting method**NOTE**

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S1-4311.html

- 1) Turn the machine off then on.
- 2) If the problem persists, turn the machine off again.
- 3) Replace the OPE hub board.
- 4) Turn the machine on.

▶ Error Code

S1-5521

▶ Error message

FDI device is not installed. Install the device

▶ Symptom

FDI device was removed.

▶ Troubleshooting method

- 1) Check if the FDI is installed correctly. If necessary, re-install or replace it with new one.

▶ Error Code

S2-1211 / S2-2311 / S2-3110

▶ Error message

Engine System Failure: #S2-1211. Turn off then on

Engine System Failure: #S2-2311. Turn off then on

Engine System Failure: #S2-3110. Turn off then on

▶ Symptom

The main board is defective.

▶ Troubleshooting method

NOTE

To see the troubleshooting video for this error, click through to the link below.

- S2-1211 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S2-1211.html
- S2-2311 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S2-2311.html
- S2-3110 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S2-3110.html

- Power chip error
 - EEPROM detection error
 - Communication error
- 1) Turn the machine off then on.
 - 2) If the problem persists, turn the machine off again.
 - 3) Replace the main board([JC92-02737A](#)).
 - 4) Turn the machine on.

▶ Error Code

S2-3114

▶ Error message

Engine System Failure #S2-3114: Turn off then on.

▶ Symptom

ACR error has occurred.

▶ Troubleshooting method

NOTE

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_S2-3114.html

- 1) Execute “ACR calibration” manually.
(**Machine Setup > General Settings > Image Management > Auto Color Registration**)
- 2) Clean the ACR sensor.
- 3) If the problem persists, replace the main board([JC92-02737A](#)).

▶ Error Code

S2-33xx

S2-34xx

▶ Error message

Wait delay time for lower fixing temperature...

Supplying and mixing toner to xxxx developer unit. Please wait...

Calibrating xxxx image density. Please wait...

▶ Symptom

These error show the engine status.

▶ Troubleshooting method

- 1) Wait until error will be disappeared.

▶ Error Code

S2-4210

▶ Error message

Front door is open. Close it.

▶ Symptom

Front cover is opened.

▶ Troubleshooting method**NOTE**

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S2-4210.html

- 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.

▶ **Error Code**

S2-4410

▶ **Error message**

Right door is open. Close it.

▶ **Symptom**

Side cover is opened.

▶ **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

(http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S2-4410.html)

- 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.

▶ **Error Code**

S2-5111 / S2-5112 / S2-5120 / S2-5131 / S2-5132 / S2-5133 / S2-5135 / S2-5136 / S2-5161 / S2-5164 / S2-5210 / S2-5240

▶ **Error message**

Failed to adjust the color registration

▶ **Symptom**

ACR execution is failed.

▶ **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

- S2-5111 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_S2-5111.html
- S2-5112 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_S2-5112.html
- S2-5120 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_S2-5120.html
- S2-5131 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_S2-5131.html
- S2-5132 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_S2-5132.html
- S2-5133 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_S2-5133.html
- S2-5135 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_S2-5135.html
- S2-5136 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_S2-5136.html
- S2-5161 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_S2-5161.html
- S2-5164 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_S2-5164.html
- S2-5210 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_S2-5210.html
- S2-5240 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/X7/Webview/EN_X7_S2-5240.html

- 1) Turn the machine off then on.
- 2) If the problem persists, check the followings.
 - Check if the ACR sensor is contaminated or defective. Clean the ACR sensor or replace it.
 - Remove and reinstall the ITB unit. If the problem persists, replace the ITB unit.

▶ **Error Code**

S3-3121

▶ **Error message**

Scanner is locked.

▶ **Symptom**

Scanner module does not move.

▶ **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S3-3121.html

- 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

▶ **Error message**

Scan System Failure #S3-3211: Turn off then on.

▶ **Symptom**

ADF is not connected or communication error occurs with CIP6 board.

▶ **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S3-3211.html

- 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 ADF rear cover. Check if the connector on ADF board is connected correctly.
- 5) If the connection is OK, replace the ADF board.

▶ **Error Code**

S4-3131

▶ **Error message**

There has been a problem with fax modem card(Line 1). Install again. Call for service if the problem persists

▶ **Symptom**

1st Fax card is not installed properly. / Fax card is defective.

▶ **Troubleshooting method**

- 1) Remove and reinstall the 1st fax card.
- 2) If the 1st fax card is defective, replace it.

▶ **Error Code**

S4-3132

▶ **Error message**

There has been a problem with fax modem card(Line 1). Install again. Call for service if the problem persists

▶ **Symptom**

2nd Fax card is not installed properly. / Fax card is defective.

▶ **Troubleshooting method**

- 1) Remove and reinstall the 2nd fax card.
- 2) If the 2nd fax card is defective, replace it.

► **Error Code**

S5-311x

► **Error message**

UI System Failure #S5-311x: Turn off then on.

► **Symptom**

USB connection between main board and OPE has some problem.

► **Troubleshooting method**

- S5-3111 : The UI can display messages, but data communication with the video/main board is unavailable.



NOTE

S5-3114~3117 are the sub errors of the S5-3111. These occurs with S5-3111.

- S5-3114 : USB hub controller on Main Board is not working
 - S5-3115 : There is a USB hub board, but the board can't be recognized.
 - S5-3116 : System can recognize USB hub board but, it can't recognize OPE(UI Board) through USB.
 - S5-3117 : Bad USB device is connected then it can't recognize OPE(UI Board). Status: WIFI or NFC option kit connects through usb
- S5-3112 : The video board cannot communicate with the UI board.
 - S5-3113 : A critical error where the set malfunctions due to a problem in HDD may occur.
- 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)-c).
 - 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)-d).
 - 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 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.
 - d) 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.

▶ Error Code

S6-3113 / S6-3122

▶ Error message

Network Failure: #S6-3113. Turn off then on. Call for service if the problem persists

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.

▶ Error Code

S6-3114

▶ Error message

Network Failure: #S6-3114. Turn off then on. Call for service if the problem persists

▶ Symptom

Network chip in option network kit is defective.

▶ Troubleshooting method

- 1) Check if the green LED of the network port is on.
- 2) If not, unplug and reconnect the network cable.
- 3) Re-install the optional network kit.
- 4) If the problem persists, replace the optional network kit.
- 5) If the problem persists, replace the 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

S7-2110

▶ Error message

Fuser Failure: #S7-2110. Turn off then on

▶ Symptom

Heater control relay is abnormal.

▶ Troubleshooting method**NOTE**

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_S7-2110.html

- 1) Turn the machine off. Re-install the fuser unit, then turn the machine on.
- 2) If the problem persists, replace the fuser unit.

4.6.20. U1–xxxx (Fuser error)

Error Code	Error Message	Troubleshooting Page
U1-2113	Fuser Unit Failure: #U1-2113. Turn off then on	P.4-202
U1-2115	Fuser Unit Failure: #U1-2115. Turn off then on. Call for service if the problem persists	P.4-203
U1-2119	Fuser Unit Failure: #U1-2119. Turn off then on	P.4-202
U1-2132	Fuser Unit Failure: #U1-2132. Turn off then on. Call for service if the problem persists	P.4-202
U1-2135	Fuser Unit Failure: #U1-2135. Turn off then on. Call for service if the problem persists	P.4-202
U1-2141	Fuser Unit Failure: #U1-2141. Turn off then on	P.4-202
U1-2142	Fuser Unit Failure: #U1-2142. Turn off then on	P.4-202
U1-2315	Fuser Unit Failure: #U1-2315. Turn off then on. Call for service if the problem persists	P.4-202
U1-2316	Fuser Failure: #U1-2316. Turn off then on. Call for service if the problem persists	P.4-202
U1-2317	Fuser Failure: #U1-2317. Turn off then on. Call for service if the problem persists	P.4-202
U1-2320	Fuser Unit Failure: #U1-2320. Turn off then on. Call for service if the problem persists	P.4-202
U1-2330	Fuser Unit Failure: #U1-2330. Turn off then on. Call for service if the problem persists	P.4-202
U1-2334	Fuser Unit Failure: #U1-2334. Turn off then on. Call for service if the problem persists	P.4-202
U1-2335	Fuser Failure: #U1-2335. Turn off then on	P.4-202
U1-2337	Fuser Failure: #U1-2337. Turn off then on	P.4-202
U1-233A	Fuser Failure: #U1-233A. Turn off then on	P.4-202
U1-233D	Fuser Failure: #U1-233D. Turn off then on	P.4-202
U1-2340	Fuser Unit Failure: #U1-2340. Turn off then on. Call for service if the problem persists	P.4-202
U1-234H	Fuser Unit Failure: #U1-234H. Turn off then on. Call for service if the problem persists	P.4-202

► **Error Code**

U1-2xxx

► **Error message**

Fuser Unit Failure: #U1-2xxx Turn off then on

► **Symptom**

The thermistor can't measure temperature. The hear-roller will not heat-up. / Temperature of the fuser increases abnormally.

► **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

- U1-2316 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U1-2316.html
- U1-2317 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U1-2317.html
- U1-2320 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U1-2320.html
- U1-2321 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U1-2321.html
- U1-2323 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U1-2323.html
- U1-2332 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U1-2332.html
- U1-2339 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U1-2339.html
- U1-2341 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U1-2341.html
- U2-2342 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U1-2342.html
- U1-2343 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U1-2343.html
- U1-234H : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U1-234H.html

- 1) Remove the fuser unit. After opening the jam cover, check if jammed or wrapped paper is in the fuser unit.
- 2) Re-install the fuser unit, then turn the machine on.
- 3) If the problem persists, check the following :
 - a) Check if the Halogen lamp is broken or disconnected.
 - b) Check if the AC connection of the Halogen lamp is disconnected or contaminated.
 - c) Check if the thermostat is disconnected.
 - d) Check if the non-contact type thermistor is broken.
- 4) If the problem persists, replace the Fuser unit
- 5) If the problem persists, replace the Main board or FDB board or SMPS

▶ 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



NOTE

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U1-2115.html

- 1) Turn the machine off then open the side cover.
- 2) Remove and re-install the fuser unit, then turn the machine on.
- 3) If the problem persists, check the following :
 - 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 is broken.
 - Check if there are abnormal parts of the pressure control unit.
 - c) Check if the fuser-motor is abnormal via SVC mode.
- 4) If the problem persists, replace the Fuser unit.
- 5) If the problem persists, replace the pressure control unit or cam-motor or main board.

4.6.21. U2-xxxx (LSU error)

Error Code	Error Message	Troubleshooting Page
U2-2113	Yellow LSU Failure: #U2-2113. Turn off then on	P.4-205
U2-3114	Magenta LSU Failure: #U2-3114. Turn off then on	P.4-205
U2-4113	Cyan LSU Failure: #U2-4113. Turn off then on	P.4-205
U2-5113	Black LSU Failure: #U2-5113. Please turn off then on	P.4-205
U2-6120	LSU Failure: #U2-6120. Please turn off then on	P.4-206
U2-6121	LSU Failure: #U2-6121. Please turn off then on	P.4-206
U2-6122	LSU Failure: #U2-6122. Turn off then on. Call for service if the problem persists	P.4-206
U2-6123	LSU Failure: #U2-6123. Please turn off then on	P.4-206
U2-7110	LSU Failure: #U2-7110. Turn off then on	P.4-207
U2-7111	LSU Failure: #U2-7111. Turn off then on	P.4-207
U2-7112	LSU Failure: #U2-7112. Turn off then on	P.4-207

► Error Code

U2-2113 / U2-3114 / U2-4113 / U2-5113

► Error message

Yellow LSU Failure: #U2-2113. Turn off then on

Magenta LSU Failure: #U2-3114. Turn off then on

Cyan LSU Failure: #U2-4113. Turn off then on

Black LSU Failure: #U2-5113. Please turn off then on

► Symptom

Hsync signal of the LSU is abnormal.

► Troubleshooting method



NOTE

To see the troubleshooting video for this error, click through to the link below.

- U2-2113 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U2-2113.html
- U2-3114 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U2-3114.html
- U2-4113 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U2-4113.html
- U2-5113 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U2-5113.html



CAUTION

Before unplugging the LSU harness, the machine must be turned off and power cord must be removed.

- 1) Turn the machine off then on. Check for the LSU motor operation sound during warm-up.
- 2) Print a demo page to check that the machine operates normally.
- 3) If the problem persists, check the following :
 - a) Turn the machine off and open the side cover. Unplug and reconnect the LSU cable. Print a demo page to check that the machine operates normally.
 - b) Turn the machine off and open the side cover. Unplug and reconnect the LSU cable on main board. Print a demo page to check that the machine operates normally.
 - c) If the LSU cable is defective, replace it. Check that the LSU motor makes a sound after turning the machine on.
 - d) If the problem persists, replace the LSU.

► **Error Code**

U2-6120 / U2-6121 / U2-6122 / U2-6123

► **Error message**

LSU Failure: #U2-612x. Please turn off then on

► **Symptom**

LSU motor does not operate or it operates abnormally. Motor ready signal is abnormal.

► **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

- U2-6120 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U2-6120.html
- U2-6121 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U2-6121.html
- U2-6122 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U2-6122.html
- U2-6123 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U2-6123.html



CAUTION

Before unplugging the LSU harness, the machine must be turned off and power cord must be removed.

- 1) Turn the machine off then on. Check for the LSU motor operation sound during warm-up.
- 2) Print a demo page to check that the machine operates normally.
- 3) If the problem persists, check the following :
 - a) If the LSU motor makes a sound,
 - i) Enter SVC mode to check the LSU motor ready signal.
(**Diagnostics > Engine Diagnostics > Engine Test Routines**)
 - ii) Select “LSU Motor1 Run Ready”. (**Diagnostics > Engine Diagnostics > Engine Test Routines > 110-0000**)
 - iii) Press ‘Start’ button. Check that the status has changed to ‘Executing -> Low -> High’.
 - iv) If the status has not changed, the motor ready signal is abnormal. Replace the LSU.
 - b) If the LSU motor does not makes a sound,
 - i) Turn the machine off and open the side cover. Unplug and reconnect the LSU cable. Check that the LSU motor make a sound after turning the machine on.
 - ii) Turn the machine off and remove the rear cover. Unplug and reconnect the LSU cable on main board. Check that the LSU motor make a sound after turning the machine on.
 - iii) If the LSU cable is defective, replace it. Check that the LSU motor make a sound after turning the machine on.
 - iv) If the problem persists, replace the LSU.

► Error Code

U2-7110 / U2-7111 / U2-7112

► Error message

LSU Failure: #U2-711x. Turn off then on

► Symptom

Temperature sensor of the LSU is abnormal.

► Troubleshooting method



NOTE

To see the troubleshooting video for this error, click through to the link below.

- U2-7110 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U2-7110.html
- U2-7111 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U2-7111.html
- U2-7112 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U2-7112.html



CAUTION

Before unplugging the LSU harness, the machine must be turned off and power cord must be removed.

- 1) Turn the machine off then on. Check for the LSU motor operation sound during warm-up.
- 2) Print a demo page to check that the machine operates normally.
- 3) If the problem persists, check the following :
 - a) Turn the machine off and open the side cover. Unplug and reconnect the LSU cable. Print a demo page to check that the machine operates normally.
 - b) Turn the machine off and open the side cover. Unplug and reconnect the LSU cable on main board. Print a demo page to check that the machine operates normally.
 - c) If the LSU cable is defective, replace it. Check that the LSU motor makes a sound after turning the machine on.
 - d) If the problem persists, replace the LSU.

4.6.22. U3–xxxx (Document Feeder error_DSDF for LX model)

Error Code	Error Message	Troubleshooting Page
U3-3111	Original paper jam in front of the scanner	P.4-209
U3-3113	Original paper jam in front of the scanner	P.4-209
U3-3114	Original paper jam in front of the scanner	P.4-209
U3-3122	Documents are inserted incorrectly. After open the scanner's door, put it again. Call for service if the problem persists	P.4-210
U3-3211	Original paper jam inside of scanner	P.4-209
U3-3213	Original paper jam inside the scanner	P.4-209
U3-3214	Original paper jam inside the scanner	P.4-209
U3-3311	Original paper jam inside the scanner	P.4-209
U3-3313	Original paper jam inside the scanner	P.4-209
U3-3314	Original paper jam inside the scanner	P.4-209
U3-3511	Original paper jam inside the scanner	P.4-211
U3-3513	Original paper jam inside the scanner	P.4-211
U3-3514	Original paper jam inside the scanner	P.4-211
U3-3611	Original paper jam in the exit area of scanner	P.4-212
U3-3613	Original paper jam in the exit area of scanner	P.4-212
U3-3614	Original paper jam in the exit area of scanner	P.4-212
U3-4210	Top door of scanner is open	P.4-213

▶ **Error Code**

U3-3111 / U3-3113 / U3-3114 / U3-3211 / U3-3213 / U3-3214 / U3-3311 / U3-3313 / U3-3314

▶ **Error message**

Original paper jam in front of the scanner

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.
- 3) If the regi sensor is OK, check the scan 1 sensor and reflect film.
 - If the scan 1 sensor is defective, replace it.
 - If the reflect film is contaminated, clean it.

▶ 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.
- 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**

U3-3511 / 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.
- 3) If the regi sensor is OK, check the scan 2 sensor and exit sensor.
 - If the scan 2 sensor is defective, replace it.
 - If the exit sensor is defective, replace it.

▶ Error Code

U3-3611 / U3-3613 / U3-3614

▶ 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.
 - If the exit sensor is defective, replace it.

▶ **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) Check if the sensor connector is connected correctly.
If the sensor is defective, replace it.

4.6.23. U3–xxxx (Document Feeder error_DSDF for GX model)

Error Code	Error Message	Troubleshooting Page
U3-3111	Original paper jam in front of the scanner	P.4-215
U3-3113	Original paper jam in front of the scanner	P.4-215
U3-3114	Original paper jam in front of the scanner	P.4-215
U3-3122	Documents are inserted incorrectly. After open the scanner's door, put it again. Call for service if the problem persists	P.4-216
U3-3211	Original paper jam inside of scanner	P.4-215
U3-3213	Original paper jam inside the scanner	P.4-215
U3-3214	Original paper jam inside the scanner	P.4-215
U3-3311	Original paper jam inside the scanner	P.4-217
U3-3313	Original paper jam inside the scanner	P.4-217
U3-3314	Original paper jam inside the scanner	P.4-217
U3-3511	Original paper jam inside the scanner	P.4-218
U3-3513	Original paper jam inside the scanner	P.4-218
U3-3514	Original paper jam inside the scanner	P.4-218
U3-3611	Original paper jam in the exit area of scanner	P.4-218
U3-3613	Original paper jam in the exit area of scanner	P.4-218
U3-3614	Original paper jam in the exit area of scanner	P.4-218
U3-4210	Top door of scanner is open	P.4-219

▶ **Error Code**

U3-3111 / U3-3113 / U3-3114 / U3-3211 / U3-3213 / U3-3214

▶ **Error message**

Original paper jam inside of scanner

▶ **Symptom**

Jam has occurred inside the DSDF unit.

▶ **Troubleshooting method**

 **NOTE**

To see the troubleshooting video for this error, click through to the link below.

- U3-3211 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U3-3211.html
- U3-3213 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U3-3213.html
- U3-3214 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U3-3214.html

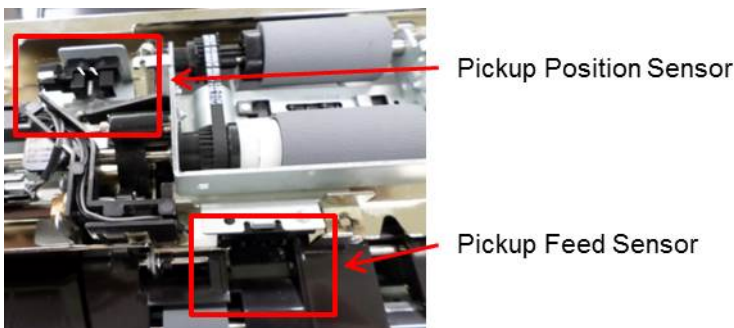
1) Find and remove the jammed paper.



2) If this error occurs continually, remove 4 screws and the upper cover.



3) Check the Pick-up Position Sensor(0604-001393) and Pick-up Feed Sensor(0604-001381) connection.



4) Check if the black sheet from the bottom of the pick up feed sensor is attached properly. If it is contaminated, clean it.

5) If the sensor is defective, replace it.

▶ 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**NOTE**

To see the troubleshooting video for this error, click through to the link below.

http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U3-3122.html

- 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.
- 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**

U3-3311 / U3-3313 / U3-3314

► **Error message**

Original paper jam inside of scanner

► **Symptom**

Jam has occurred inside the DSDF unit.

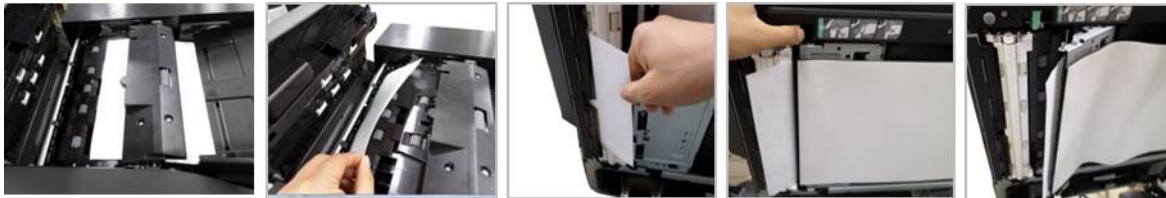
► **Troubleshooting method**

 **NOTE**

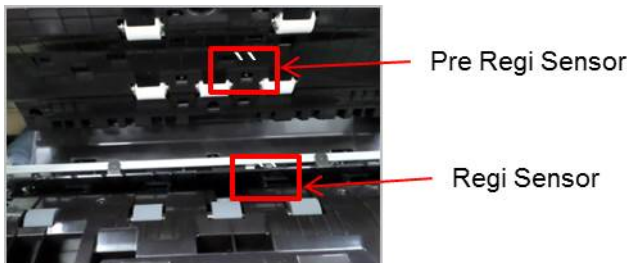
To see the troubleshooting video for this error, click through to the link below.

- U3-3311 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U3-3311.html
- U3-3313 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U3-3313.html
- U3-3314 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U3-3314.html

1) Find and remove the jammed paper.



2) If this error occurs continually, open the DSDF-open cover and check the Pre-Regi sensor and Regi sensor. If the sensor is defective, replace it(0604-001381).



3) Open the DSDF Unit and check the Scan In sensor operation. Check if the sensor harness is connected correctly. If the sensor is defective, replace it. If the black sheet in the middle of the platen ADF glass is contaminated, clean it.



► **Error Code**

U3-3511 / U3-3613 / U3-3614

U3-3611 / U3-3613 / U3-3614

► **Error message**

Original paper jam in the exit area of scanner

► **Symptom**

Jam has occurred in exit area of the DSDF unit.

► **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

- U3-3511 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U3-3511.html
- U3-3611 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U3-3611.html
- U3-3613 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U3-3613.html
- U3-3614 : http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U3-3614.html

- 1) Find and remove the jammed paper.



- 2) If this error occurs continually, push the locking lever and pull down the Scan Out.



- 3) Check the Scan Out sensor and Exit sensor. If the sensor is defective, replace it(0604-001381).



Scan Out Sensor



Exit Sensor

► **Error Code**

U3-4210

► **Error message**

Top door of scanner is open.

► **Symptom**

DSDF cover is open.

► **Troubleshooting method**



NOTE

To see the troubleshooting video for this error, click through to the link below.

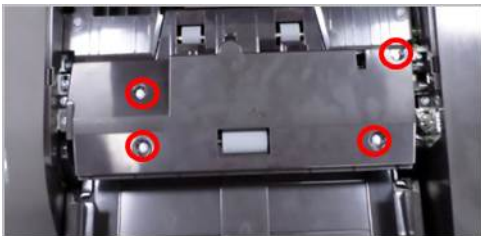
http://tsp.samsung.com/tsp_file/spds/samsungprinter/K7/Webview/EN_K7_U3-4210.html

- 1) Open and close the DSDF cover. Check if the error message is disappeared.



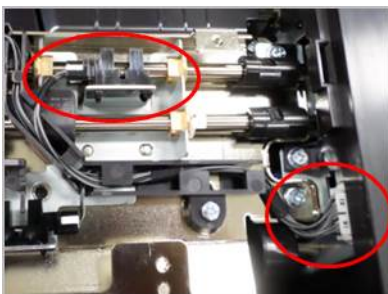
- 2) If the problem persists, check the cover open sensor.

- a) Open the DSDF cover. Remove 4 screws.



- b) Remove the cover and check if the sensor harness is connected correctly.

If the sensor is defective, replace it.



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.

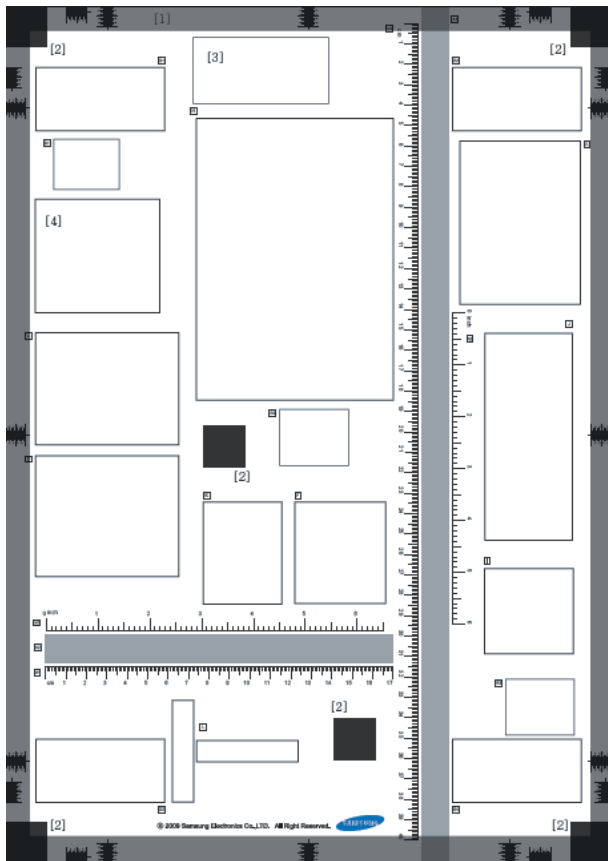
To successfully troubleshoot print-quality problems, as many variables as possible must be eliminated.

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)



4. Troubleshooting



[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)

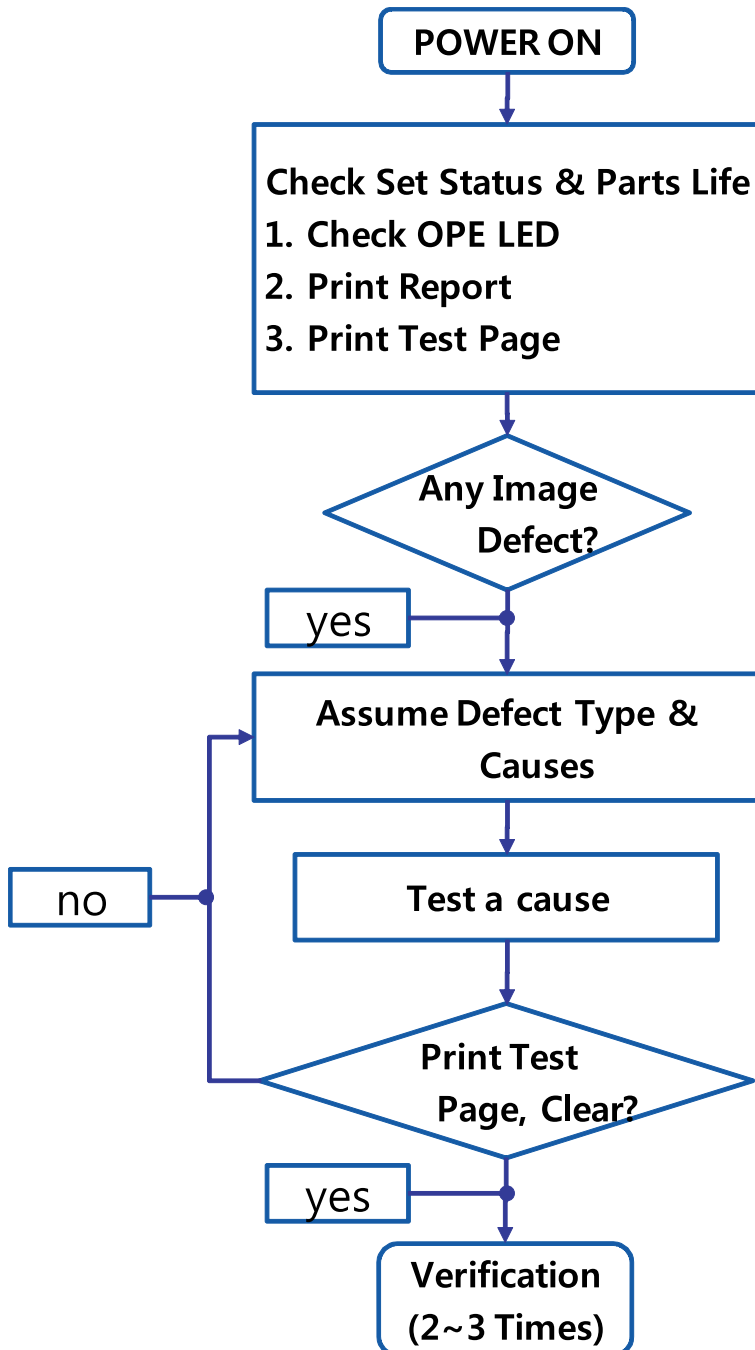
How to analysis the defect image

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.




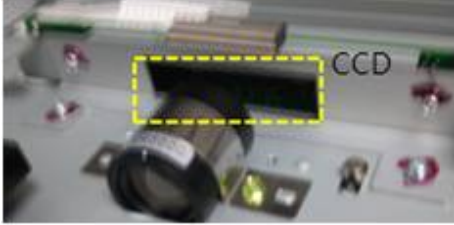



4.7.1. Vertical Black Band

A. Typical faulty images



B. Troubleshooting procedure


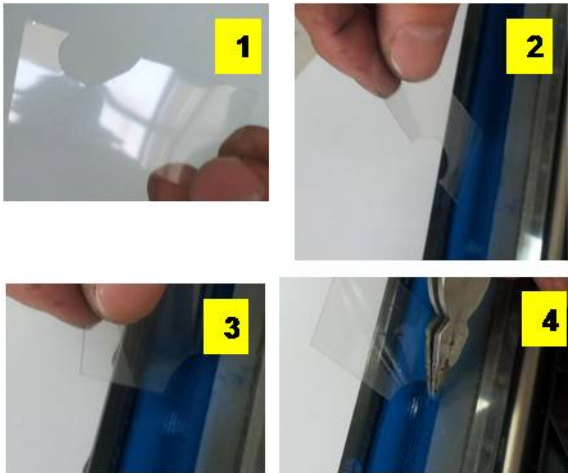
Step	Cause	Action
1	Charge Roller(CR) is contaminated. 	Check if CR is contaminated or not.  If there are some problems, replace Drum unit. (Refer to 3.2.2.1.)
2	ITB belt is contaminated. <ul style="list-style-type: none"> ITB cleaning is poor. ITB Cleaning-Blade is partially broken. 	Check if ITB belt is contaminated or not.  If there are some problems, replace the ITB Cleaner. (Refer to 3.2.2.3.)
3	Scanner unit is contaminated. <ul style="list-style-type: none"> Scan glass contamination. Mirror contamination. CCD sensor contamination. 	Wipe the contaminated part surface with a soft cloth. (Refer to 3.3.36.3.) <div style="background-color: #cccccc; padding: 5px; border: 1px solid #000;">  CAUTION Fragile parts! </div>

4.7.2. Vertical White Band, Light Band

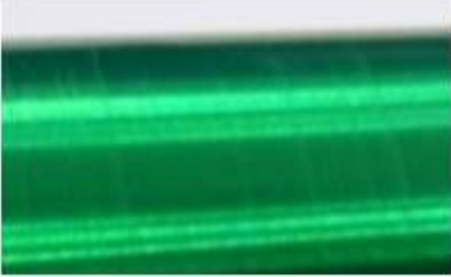
A. Typical faulty images



B. Troubleshooting procedure

Step	Cause	Action
1	<p>A foreign substance is stuck between Magnetic roller and Blade.</p> <ul style="list-style-type: none"> The toner on Magnetic-roller is empty partially. 	<p>Pull out a foreign substance.</p> <ul style="list-style-type: none"> Make the hook shape sheet. (Transparency sheet is recommended.) Put the hook into the gap between Magnetic roller and Blade. Pull out a foreign substance. 
2	<p>The developer in Deve unit is insufficient or the life of Deve unit has expired.</p>	<ol style="list-style-type: none"> Print the supplies information report. Check the remaining life of the Deve unit. If it is expired, replace the Deve unit. Check the developer layer on magnetic roller. If it is short seriously, replace the Deve unit.
3	<p>The path of laser beam is blocked. Foreign substance is on the LSU window.</p>	<p>Clean the LSU window. (Refer to 3.2.1.1.)</p>

4. Troubleshooting

Step	Cause	Action
4	OPC is scratched. 	Replace the Drum Unit. <u>(Refer to 3.2.2.1.)</u>

4.7.3. Horizontal periodic Black Band or Dot

A. Typical faulty images

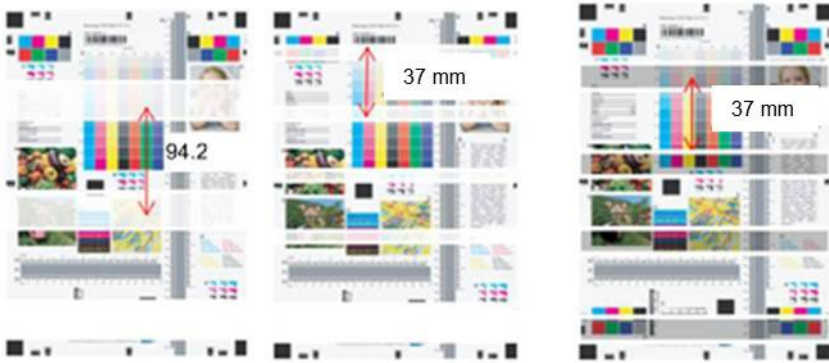


B. Troubleshooting procedure

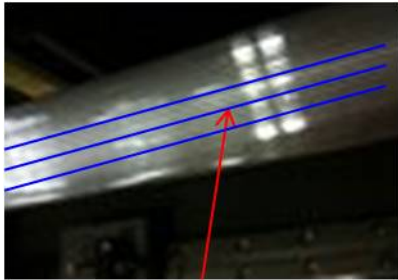
Step	Cause	Action
1	Check if the horizontal band or spot occurs at approx. 38 mm period. <ul style="list-style-type: none"> Check if the surface of the charge roller is contaminated or scratched. 	1) Clean the contaminated surface on the charge roller with a soft cloth. 2) If the surface is scratched, replace the drum unit.
2	Check if the horizontal band or spot occurs at approx. 94 mm period. <ul style="list-style-type: none"> Check if the surface of the OPC drum is contaminated or scratched. 	1) Clean the contaminated surface on the OPC drum with a soft cloth. 2) If the surface is scratched, replace the drum unit.
3	Check if the charge roller contact plate is contaminated or has the debris.	1) Clean the charge roller contact plate. 2) If the problem persists, replace the drum unit. 3) If the problem persists after replacing the drum unit, replace the HVPS board.

4.7.4. Horizontal periodic Light/Dark Band or Dot

A. Typical faulty images



B. Troubleshooting procedure

Step	Cause	Action
1	Horizontal periodic band (OPC, 94.2 mm) <ul style="list-style-type: none"> • OPC was exposed for a long time. • OPC is damaged by high voltage in a short time. 	As some time passes, most of this trouble will disappear. If not, replace the Drum Unit. (Refer to 3.2.2.1.)
2	Horizontal periodic light/dark band (Roller-magnetic, 37mm) <ul style="list-style-type: none"> • Roller-magnetic is inferior in quality. • V-groove of Roller-magnetic surface is not uniform.  <p>V-groove in Roller-Magnetic</p>	Replace the Deve Unit. (Refer to 3.2.2.2.)

4.7.5. Foggy Image

A. Typical faulty images

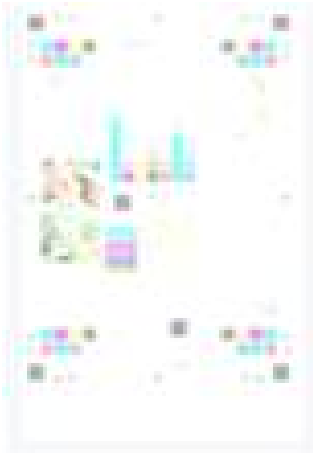


B. Troubleshooting procedure

Step	Cause	Action
1	Voltage of OPC is abnormally low.	Replace the Drum unit. (Refer to 3.2.2.1.)
2	HVPS operates abnormally. <ul style="list-style-type: none"> HVPS is damaged or broken. 	Replace the HVPS board. (Refer to 3.3.3.)
3	Toner is over supplied. <ul style="list-style-type: none"> TC-sensor operates abnormally. 	Replace the Deve Unit. (Refer to 3.2.2.2.)
4	Voltage of OPC is abnormally low. <ul style="list-style-type: none"> T1 Voltage is abnormally high. 	Check the T1 connection in HVPS. Check if T1-roller spring in ITB is connected correctly. Replace HVPS board. (Refer to 3.3.3.)

4.7.6. Light Image

A. Typical faulty images



B. Troubleshooting procedure

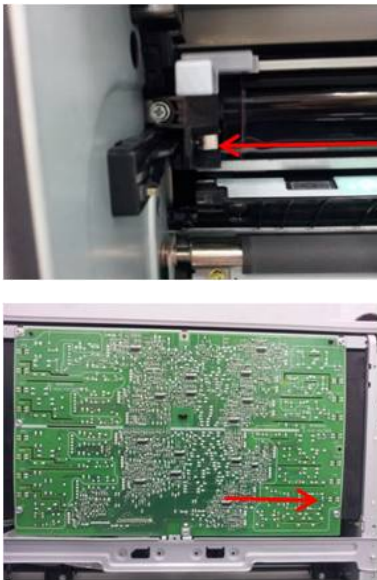
Step	Cause	Action
1	TRC operates abnormally.	Perform TRC 3~4 times. (Service Mode > Diagnostics > Image Management > Auto Tone Adjustment) (Refer to 4.5.5.6.)
2	Poor transfer has occurred.	Make the jam artificially during print job. Check the image on transfer belt. If the image on transfer belt is normal, refer to the Blurred image section.
4	Output voltage of HVPS is abnormally low. • Color density becomes low.	Replace HVPS board. (Refer to 3.3.3.)
5	TC down and Toner spills	Replace the Deve unit. (Refer to 3.2.2.2.)
6	Toner spills by Eraser.	Check if Eraser is contaminated. Replace the Drum unit. (Refer to 3.2.2.1.)

4.7.7. Blurred Image

A. Typical faulty images



B. Troubleshooting procedure

Step	Cause	Action
1	Humidity of the circumstances and paper.	Change the paper with new and better grade.
2	T2 transfer voltage is low.	Turn up the T2 transfer voltage. (Service Mode > Service Functions > TR Control Mode) (Refer to 4.5.6.9.)
3	Connection between HVPS and THV is incorrect.	<p>Check if the connection between T2 high voltage terminal and HVPS THV terminal is correct.</p> <p>Check if the connection of HVPS and ITB is correct.</p>  <p>If not, replace HVPS or ITB.</p>
4	HVPS operates abnormally.	Replace HVPS. (Refer to 3.3.3.)

4.7.8. Incorrect color registration

A. Typical faulty images



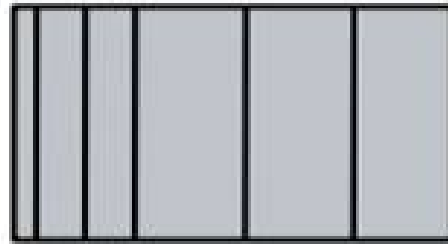
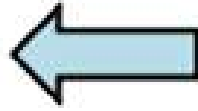
B. Troubleshooting procedure

Step	Cause	Action
1	ACR execution is needed.	Execute ACR manually. (Refer to 4.5.5.6.)
2	Circumstances is changed.	To recognize the eviroment chage, execute ACR after a certain amount of time. (Refer to 4.5.5.6.)
3	Belt surface is contaminated.	Remove the ITB. If the surface of the belt is contaminated, clean it with soft cloth.

4.7.9. Uneven pitch and jitter image

A. Typical faulty images

**Paper feeding
direction**

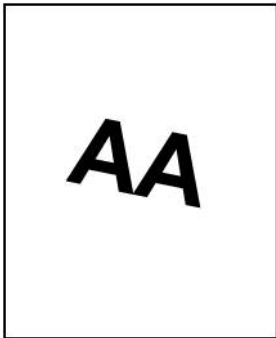


B. Troubleshooting procedure

Step	Cause	Action
1	Under 3 mm periodic jitters or horizontal bands has occurred.	Check if the foreign substance at the drive gears. Grease the gears. <ul style="list-style-type: none"> • Developer unit gears. • Drum unit gears. • Main drive unit gears. If the problem persists, replace the abnormal units. <ul style="list-style-type: none"> • Developer unit. • Drum unit. • Main drive unit.
2	Under 1 mm periodic jitter or horizontal bands has occurred.	Check if the LSU is assembled correctly. If not, remove and tighten the screws for fixing the LSU. If the problem persists, replace LSU

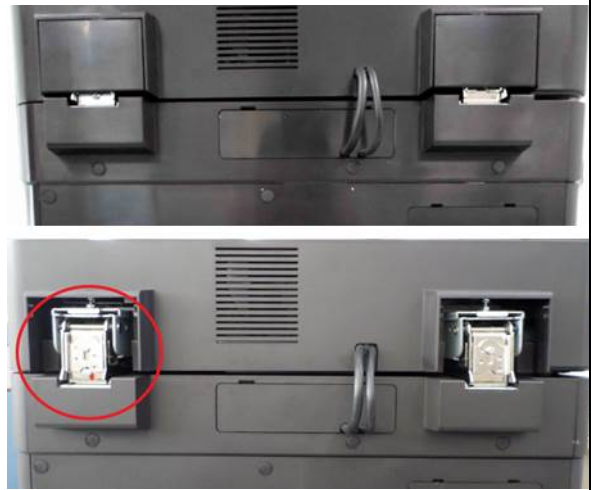
4.7.10. Skewed image

A. Typical faulty images



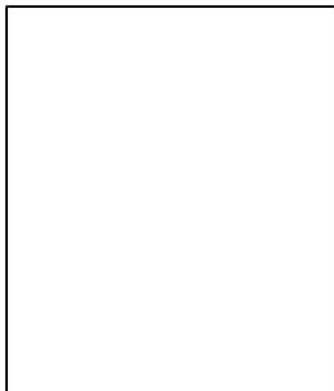
B. Troubleshooting procedure

Step	Cause	Action
1	<ul style="list-style-type: none"> • Cassette is not installed properly. • Too much paper is loaded in the cassette. • The cassette guide is not set properly. 	Reinstall the cassette properly.
2	The surface of pick up/ forward/ separation roller is contaminated or worn out.	Clean or replace the contaminated roller. (Refer to 3.2.2.6.)
3	If the skewed image occurs for copy job, check the ADF installation.	Reinstall the DSDF unit. Adjust DSDF skew. (Refer to 4.9.)



4.7.11. Blank copy

A. Typical faulty images

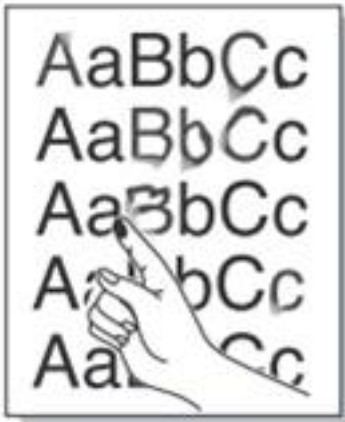


B. Troubleshooting procedure

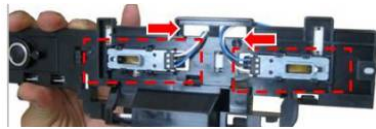
Step	Cause	Action
1	LSU operation error	Check LSU connector for proper connection.
2	All connectors on HVPS board are connected correctly.	Reconnect.
3	Check if the related parts are broken.	Replace the HVPS board or Main board or LSU.
4	Check if the connection between scan joint board and main board is OK.	Reconnect the harness. If the connection is OK, replace the main board.

4.7.12. Poor fusing performance

A. Typical faulty images

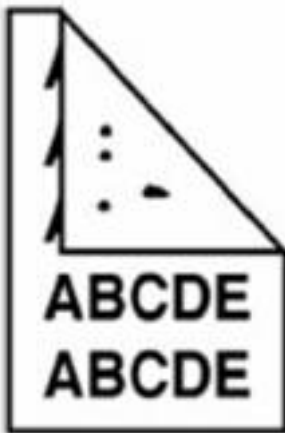


B. Troubleshooting procedure


Step	Cause	Action
1	<p>Check the paper type. Depending on what type of paper used, print speed varies. (ex)</p> <ul style="list-style-type: none"> • Plain (71~90g/), Thick (91~105g/) : Full Speed • Heavy weight (106~175g/) : Half Speed • Envelope (75~90 g/), Label (120~150 g/) : Half Speed 	<p>Check the paper type on control panel is same as paper user uses. (Refer to 2.2.6.)</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"> • Thermistor is broken or operates abnormally • Halogen lamp is broken or operates abnormally. 	<p>Check the Non-contact thermistor sensor.</p>  <p>Check the Halogen lamp. 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. 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. If there are some problems on the printout, replace Fuser unit.</p>

4.7.13. 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	Is there any stain caused by a poor cleaning, etc. on the transfer belt?	Clean the transfer belt. If the problem persists, replace ITB unit. (Refer to 3.2.2.3.)
3	Are the fuser belt and pressure roller dirty?	Clean the fuser belt and pressure roller.
4	Check the pressure roller surface is damaged or scratched.	Replace Fuser unit. (Refer to 3.2.2.5.)

4.7.14. Setting Standard Tone

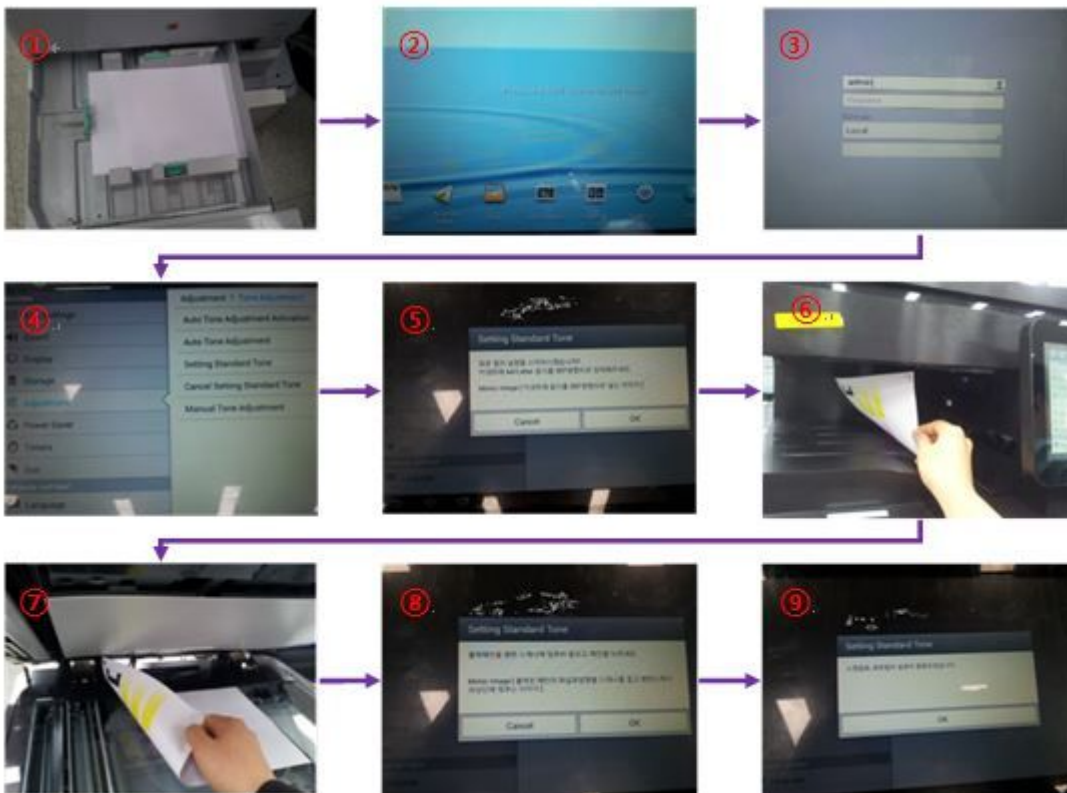
1. Setting Standard Tone

- <Purpose>
 - To adjust the color tone to the standard set by factory.

NOTE

- After first machine installation, this functions must be executed.
- After replacing the ITB unit or cleaning the CTD sensor, executing this function is recommended.

- <Procedure>
 - Load A4 or Letter with SEF (Short Edge Feeding) direction on tray.
 - Select [Setting] on main UI.
 - Log in as Admin.
 - Select [Adjustment] -> [Tone Adjustment] -> [Setting Standard Tone].
 - Select "OK" on confirmation window.
 - The scan ID chart will be printed out.
 - Load the chart on platen glass. (Horizontal direction)
 - Start scan.
 - When the scan complete window appears, select "OK".



2. Cancel Setting Standard Tone

NOTE

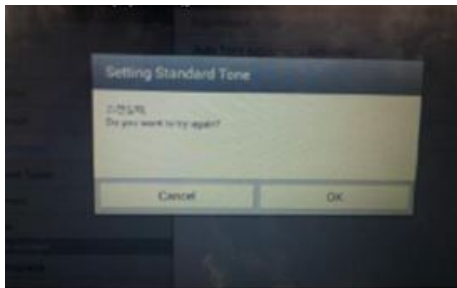
When the machine is installed for the first time, "Cancel Setting Standard Tone" does not need to be executed.

- <Purpose>
 - To cancel the setting standard tone.
 - To return the customized tone by user after setting the standard tone.
- <Procedure>
 - 1) Select [Adjustment] -> [Tone Adjustment] -> [Cancel Setting Standard Tone].
 - 2) When the cancel setting standard toner will be appeared, select "OK".
 - 3) Select "FullTRC" : [Adjustment] -> [Tone Adjustment] -> [Auto Tone Adjustment] -> *Full + Execute Now



3. Error message

- <Scan Image Fail>
 - When there is any problem on the scanned ID chart, error message will be appeared.



- <Check items>
 - Check if the scanned ID chart is placed.
 - Check if the chart direction is horizontal.
 - Re-try the setting standard tone procedure.

4. In case of need

- When installing the machine for the first time.
- When the brightness is changed in comparison to previous image.



Normal Image

Dark Image

Light Image

- When there is the difference of the color among the same models.



Set 1

Set 2



NOTE

If the problem persists after executing the setting standard tone, find another causes.

4.7.15. Duplex Blur_White Spot_Blur on color print-out

A. Typical faulty images



Duplex Blur



Duplex W/Spot

B. Troubleshooting procedure

- 1) Enter SVC Mode → Service Functions → TR Control Mode.
- 2) Select [T2 Control Mode].
- 3) Select the paper setting based on the site. (Paper Group, Paper Side, Paper Direction)
- 4) Raise value for T2 PWM and see if blur problem is resolved.
- 5) When the problem persists after changing the [T2 Control Mode] values , change the [T1 Control Mode] values.
- 6) Decrease the value for each color and see whether the symptom disappears.
In this case, [-4] was applied and solved the blur.
- 7) As there can be variation for each device, change T1, T2 and observe the results.

4.8. Other Errors

4.8.1. Image system problem

No	Problem Description	Troubleshooting Page
1	Toner cartridge detection error	P.4-242
2	Image registration problem occurs after ACR (Auto Color Registration)	P.4-243
3	How to handle TRC error & ACR	P.4-244
4	Light shadow (Halo) problem	P.4-245
5	Image contamination (Pressure roller contamination)	P.4-246

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) Image registration problem occurs after ACR (Auto Color Registration)

- **Symptom :**
Image registration problem occurs after ACR.
- **Cause :**
LSU (Laser Scanning Unit)
- **Troubleshooting**
 - 1) Perform ACR.
(Home > Machine Setup > General Settings > Image Management > Auto Color Registration)
 - 2) Print ACR Report.
(Service Mode > Information > Print Reports > Auto Color Registration)
Succeed or Failed for ACR: [1152] → Registration cannot be adjusted by ACR.
 - a) Check if Skew data of ACR Report is changed.
 - b) Check if OPC surface of Y/M/C is OK. → Check if it is scratched or torn.
 - c) Print and check separated Y/M/C color and see if it is OK.
 - d) Find “Succeeded or Failed for ACR” from ACR report.
 - If the value is 1152 like the above report, ACR cannot be done. LSU need to be replaced.
 - Succeeded or Failed for ACR: [0] → ACR was performed OK [OK]
 - Succeeded or Failed for ACR: [1] → ACR was not performed OK [Fail]

3) How to handle TRC error & ACR

- **Symptom :**

Abnormal color density (thick, thin) / Color registration is wrong.

- **Troubleshooting**

- 1) If color density of print is wrong, perform TRC and print out TRC report.
- 2) Check the TRC error from the TRC report.
 - Mode column format :
 - F = Full TRC
 - S = Normal TRC
 - Error column format : 1X0 where the last digit indicates the color that is out of range.
 - 1X0 : Sensed value from Y is abnormal.
 - 1X1 : Sensed value from M is abnormal.
 - 1X2 : Sensed value from C is abnormal.
 - 1X3 : Sensed value from K is abnormal.
- 3) Check the followings for the corresponding color.
 - Check if the toner motor is working normally.
 - Enter service mode
(Diagnostics > Engine > Diagnostics > Engine Test Routines > Toner Dispense Motor On/Off)
111-0000(Y), 111-0010(M), 111-0020(C), 111-0030(K)
 - Check if toner supply is blocked.
 - Check if toner seal is removed.
 - Check if the transfer roller is installed properly.
 - Print the ACR report. Check the ACR is succeeded.

Succeeded or Failed for ACR	ACR Result - 0 = Success - 256 = LED calibration failed which is performed before ACR for pattern sensing. → ACR sensor is contaminated or ACR sensor is defective.
PWM of sensor LED	LED Calibration Result (LED value, max- 255, min – 0) If ACR result is 256 and PWM value is 179 then it is a sensor fault or a control board fault.

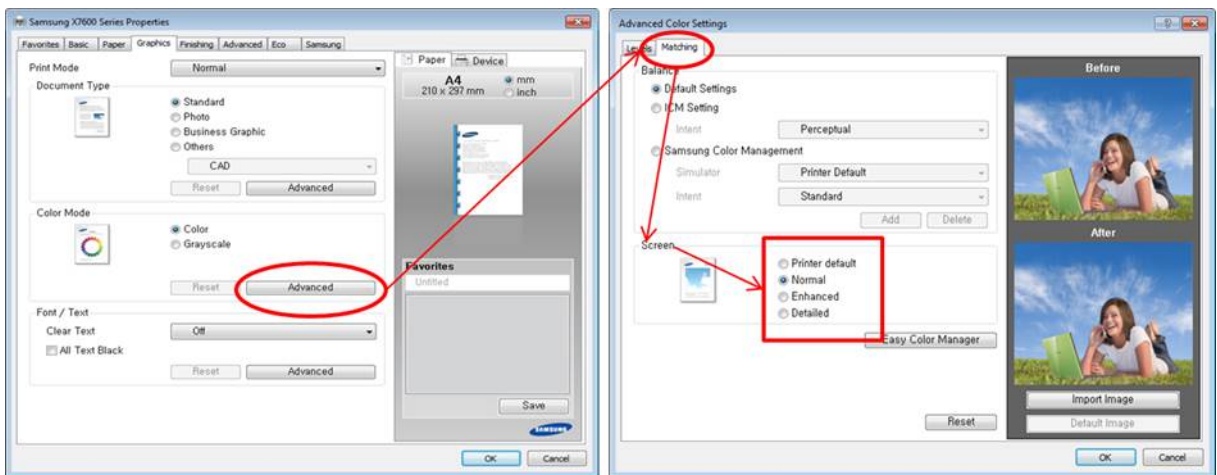
4) Light shadow (Halo) problem

- **Symptom :**
Halo is observed in the background color around dark color text.



- **Troubleshooting**

- 1) Change the screen option in Driver UI.
 - Select Graphic tap → Advanced in Color Mode → Matching → Screen
 - Change the screen option from “Enhanced” to “Normal”



- 2) If halo is not reduced enough after applying Step 1, it can be further reduced by using the patch ROM which include lower screen LPI set. (90% improvement observed)



(a) Enhanced



(b) Normal



(c) Normal (Patch ROM)

 **NOTE**

When the screen LPI is lowered, screen pattern can be visible on the graphic/images and jagging become more apparent in the edges.

5) Image contamination (Pressure roller contamination)

- **Symptom :**

Image (Front/Back side of paper) is contaminated with toner

- **Cause :**

Toner is contaminated on the surface of pressure-roller with low coverage, mainly simplex, and low duty jobs.

- **Troubleshooting**

1) Install Vx.D6.08 or latest version.

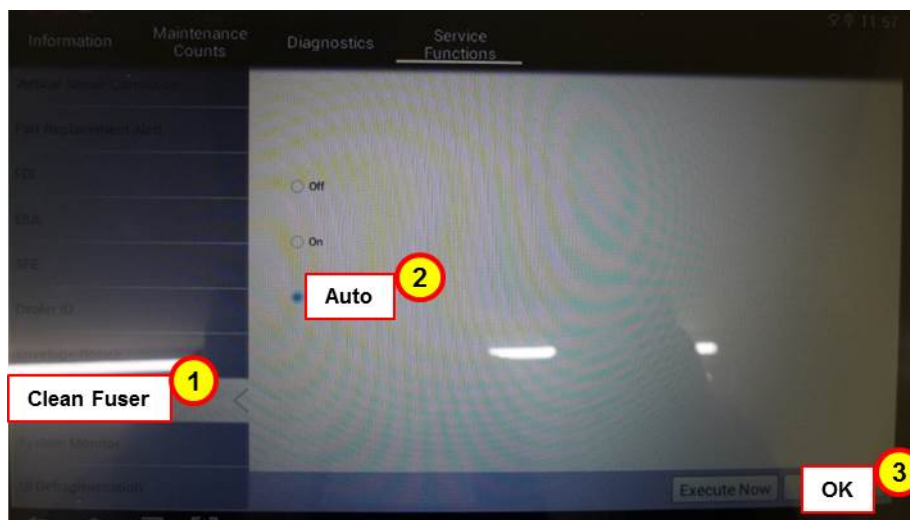
2) Make sure 'Clean Fuser' function is set to 'Auto'.

Vx.D6.08 or later version has Auto 'Clean Fuser' function as default.

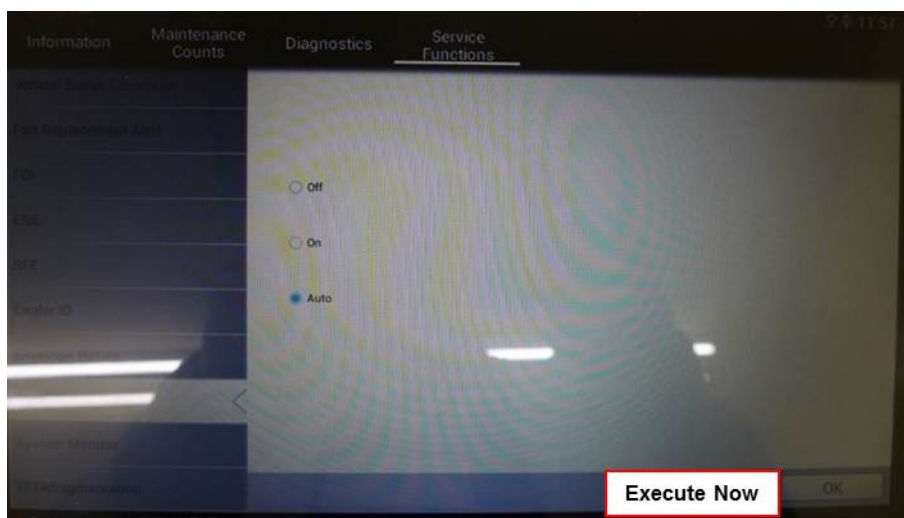
If you are using 'On' mode previously, that pre-existing setting value will be kept as before. Otherwise, it will be changed to 'Auto'.

You can use 'On' mode and set desired interval as you need.

(SVC mode → Service Functions → Clean Fuser → Auto)



3) To execute fuser cleaning function manually, press 'Execute Now'.



4) Repeat step '3)' up to 6 times until you cannot find any contamination on the fuser cleaning sheet.

If the contamination on the fuser cleaning sheet still exists, you may need to clean the pressure-roller with soft brush or scraper with care.

a) Open the fuser jam cover. Remove 3 screws. And, remove the brush.



- b) Check the surface of pressure roller and remove the toner contamination while rotating the pressure roller 1 cycle carefully.



4.8.2. Fuser problem

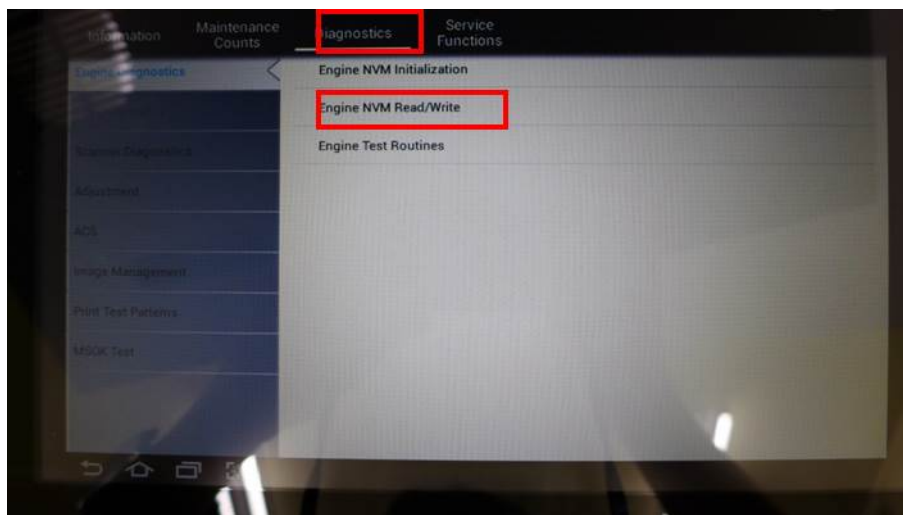
No	Problem Description	Troubleshooting Page
1	Acoustic noise in Fuser unit	P.4-248
2	Image 'Hot offset' problem	P.4-248
3	Error 'Fusing unit not compatible' problem	P.4-250

1) Acoustic noise in Fuser unit

- **Symptom** : Acoustic noise from fuser assembly in early stage of printing
- **Cause** : Fuser belt edges is damaged.
- **Troubleshooting**
 - 1) Replace the fuser unit with new one.

2) Image 'Hot offset' problem

- **Symptom** : Image at the leading edge of the paper is duplicated after 110mm.
- **Cause** : The fusing temperature was quite high.
- **Troubleshooting**
 - 1) Lower the fusing temperature in SVC mode until the problem disappears.
Default value is 10, and it is recommended to change the value up to 8.
 - How to change the plain temperature offset
 - a) Enter SVC mode. Select 'Engine NVM Rear/Write' tap.



- b) Select 'Plain Temperature offset' menu.

4. Troubleshooting



Code	NVM Name	Default	Value
103-0031	Regi Curl Length	10	10
103-0032	Duplex Regi Curl Length	10	10
103-0038	Regi Curl Fast Speed Length	10	10
109-0000	StandBy Temperature Offset	10	10
109-0005	Warmup Temperature offset	10	10
109-0055	Thin Temperature offset	10	10
109-0065	Plain Temperature offset	10	12
109-0070	Bond Temperature Offset	10	10
109-0071	Heavy Temperature offset	10	10
109-0072	Extra Heavy Temperature offset	10	10
109-0080	Transparency Temperature offset	10	10
109-0100	Envelopes Temperature Offset	10	10
109-0110	Labels Temperature Offset	10	10

- c) Press 'OK' button after adjusting the value. (1 = 2°C)
- d) Press 'Home' button to exit SVC mode.

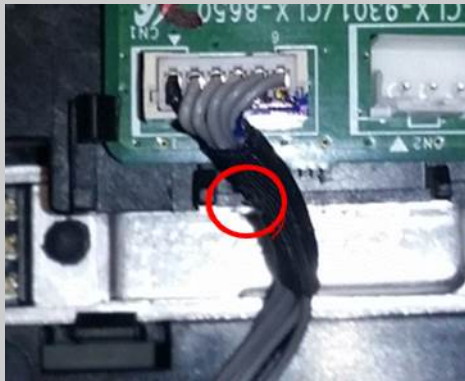
3) Error 'Fusing unit not compatible' problem

- **Symptom** : Error 'Fusing unit not compatible' happens.
- **Cause** : Harness for EEPROM signal is damaged by the sharp edge of the Fuser frame.
- **Troubleshooting**

- 1) Check if the EEPROM signal harness is damaged.

If so, replace the fuser unit (from 2015.08.11 the new part was applied) or insulate the damaged spot of harness by wrapping each harness up.

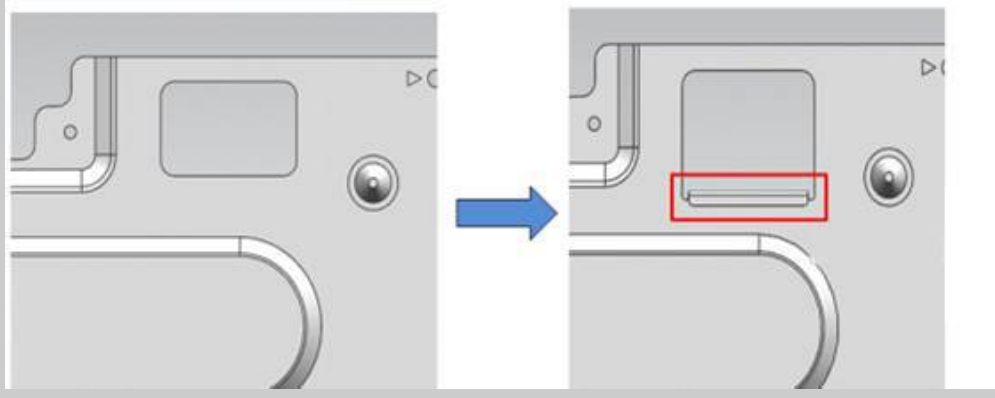
 **NOTE**



You may need to remove the pre-existing AT tape, and re-apply the insulation for damaged each harness.

 **NOTE**

New design was applied from 2015.08.11 which doesn't have the sharp edge on the harness path.



4.8.3. Scanner and Document Feeder problem

No	Problem Description	Troubleshooting Page
1	Noise of ADF Hinge / Crack of ADF Hinge / ADF can't be fixed as open	P.4-251
2	ADF is not recognized.	P.4-251
3	During copy or scan job, the original paper JAM and U3-3213 error occur.	P.4-252

1) 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) Replace the hinge unit with new one.
 - 5) Reassemble the ADF unit again.

2) ADF is not recognized

- **Symptom :**
 - ADF installation is not recognized.
- **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.

3) 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)

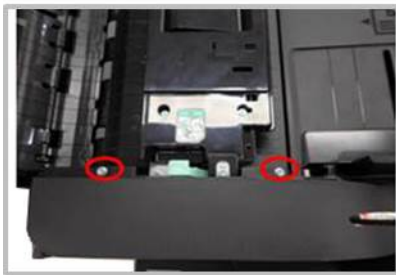
- **Troubleshooting**

- 1) Check if the “Sponge-Damper Separation” is moved to other position.



- 2) If yes, refer to following guide.

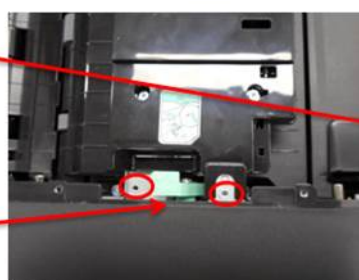
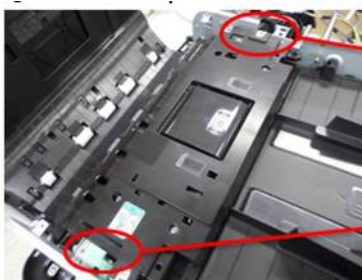
- a) Remove 3 screws.



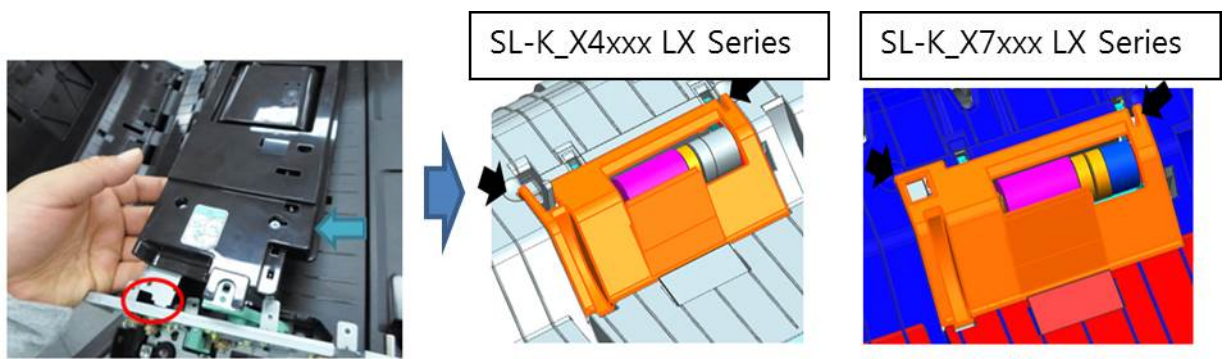
- b) Remove the linker pressing its upper side to the inner direction. And then, remove the front cover.



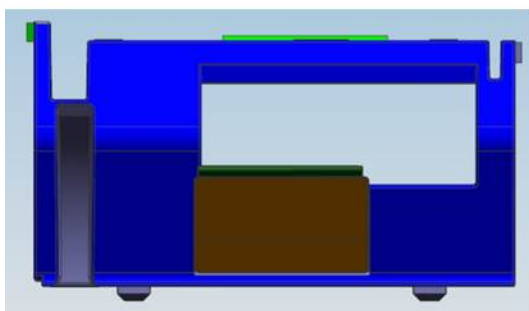
- c) Remove 4 screws.



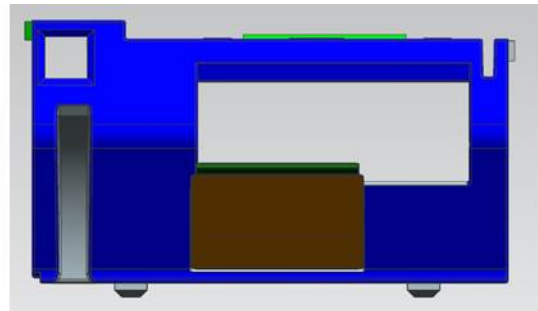
d) Remove the Pick up Assy.



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.4-254

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	Tray1, Tray2, MP Tray can not pick up the paper.	P.4-255
2	Machine can not feed the paper.	P.4-256
3	Envelope wrinkle	P.4-256

1) 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 and pick up drive unit connector on main board.
If the connector has some problem of soldering, replace the main board.

2) 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 and feed motor.
 - 3) If the problem persists, replace the main board.

3) Envelope wrinkle

- **Symptom** :
Envelope is wrinkled when printing from MP tray.
- **Troubleshooting**
 - 1) Enter SVC mode.
 - 2) Select "Envelope Rotate". (**Service Functions > Envelope Rotate**)
 - 3) Select one menu among 'off', '90 degree', '180 degree'.
(Refer to 4.5.6.18. Envelope Rotate)

4.8.6. LSU problem

No	Problem Description	Troubleshooting Page
1	ACR fail problem	P.4-257
2	Loud noise sound of LSU motor	P.4-257

1) ACR fail problem

- **Symptom** : Set UI indicates ACR fail message.
- **Cause** : The brokenness of reflection mirror
- **Troubleshooting**
 - 1) Check the assembly condition inside of LSU.
 - 2) If the reflection mirror is deviated, replace the LSU.

2) 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. Electrical circuit problem

No	Problem Description	Troubleshooting Page
1	SMPS output voltage drop error	P.4-258
2	HDD makes a loud noise.	P.4-259
3	Networking is not working.	P.4-259
4	UI touch malfunction	P.4-260
5	Home screen icon is disappeared or UI screen is broken.	P.4-262

1) 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.

2) 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.

3) 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.

4) UI touch malfunction

- **Symptom** : When touching a button, another button is entered.

※ For example,

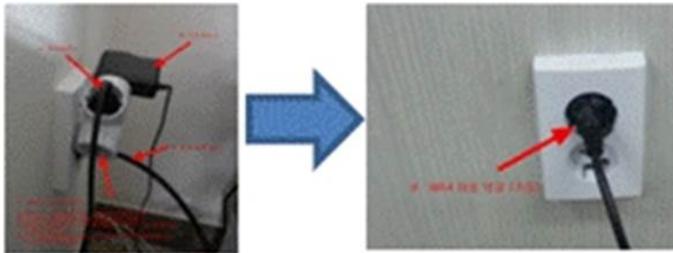


When touching home button,
another menu is executed.



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.



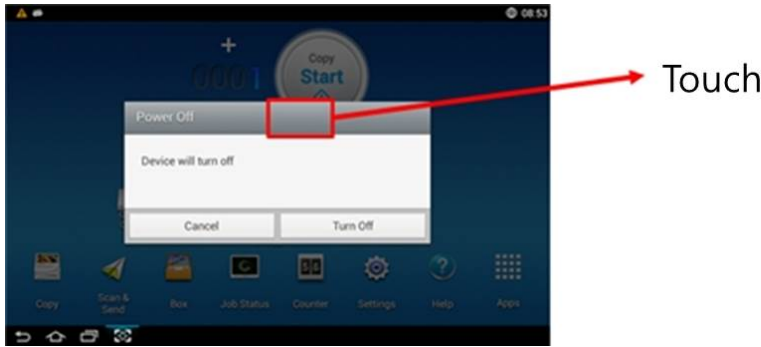
[X]

[O]

- 2) If the touch malfunction persists, check the followings.
 - a) Press "Power button" until the pop up will be displayed.



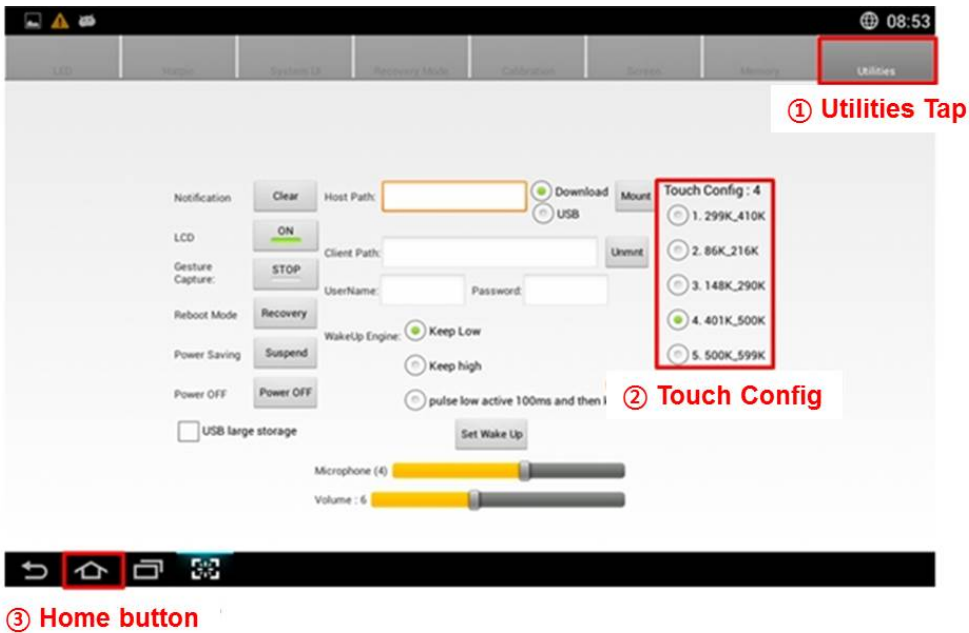
- b) Press pop-up area except "Cancel" and "Turn Off" button until the password window will be displayed.



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.

5) Home screen icon is disappeared or UI screen is broken.

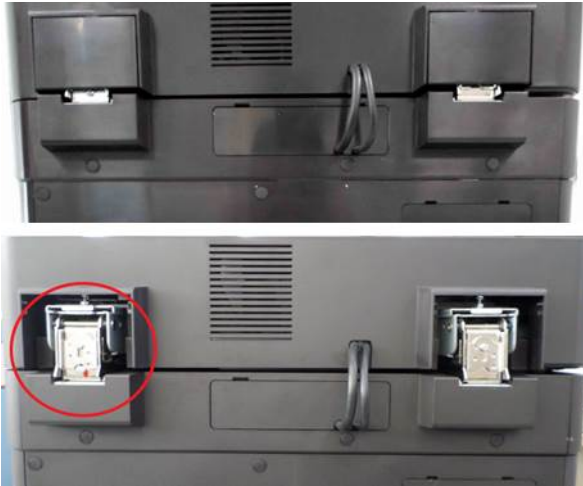
- **Symptom** : Home screen icon is disappeared or UI screen is broken.
- **Cause** :
 - UI software error
- **Troubleshooting**
 - 1) Enter SVC mode. (**Refer to 4.5.1**)
 - 2) Execute “Main Memory Clear” (**Service Functions > Main Memory Clear**)

4.9. Adjusting the DSDF skew

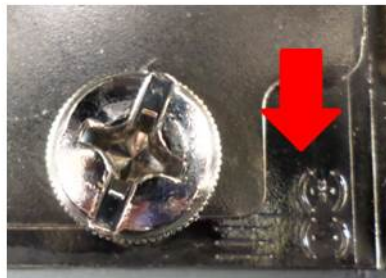
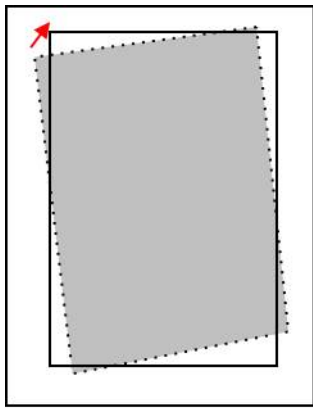
- 1) Stand the ADF unit. Loosen 2 screws securing both hinge units slightly.



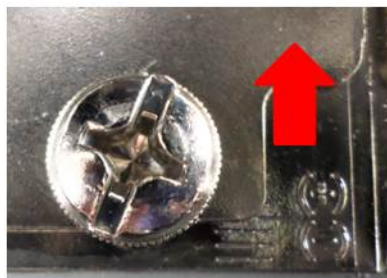
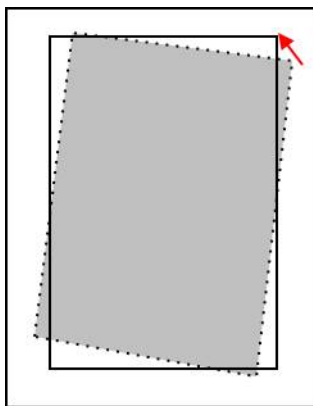
2) Adjust the position of the ADF hinge as the skew status.



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)



4. Troubleshooting

- 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

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**

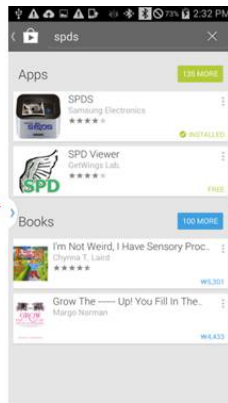
- SPDS App will be installed.

6) **Installation Complete**

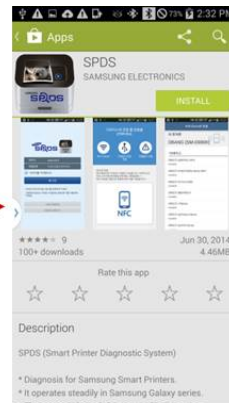
- After completing install App you can see installation result. If you want to run App press ‘OPEN’.



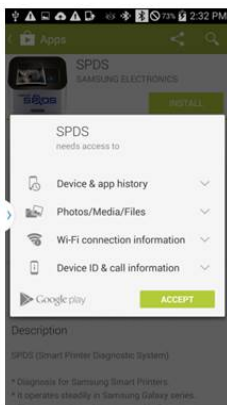
[Run Google Play Store]



[Search SPDS App]



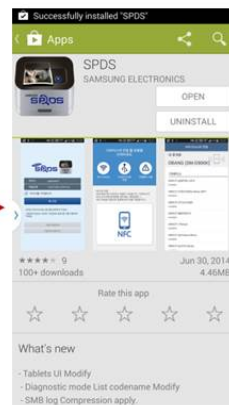
[Start Installation]



[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.

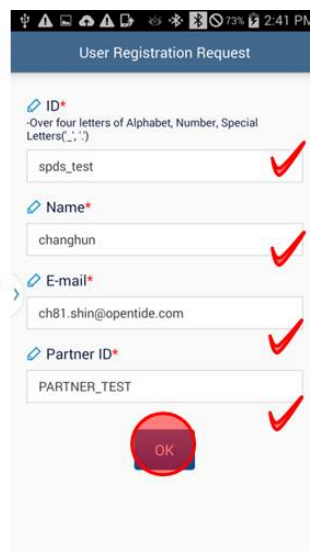
- If Partner ID is invalid you cannot receive approval of administrator.

3) Request User Registration

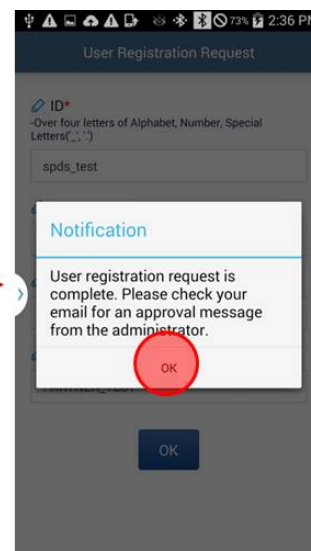
- After request of user registration wait for approval of administrator.
- If approved by the administrator email notification will be sent out.



[Screen running]



[Input User Information]



[Request User Registration]

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**

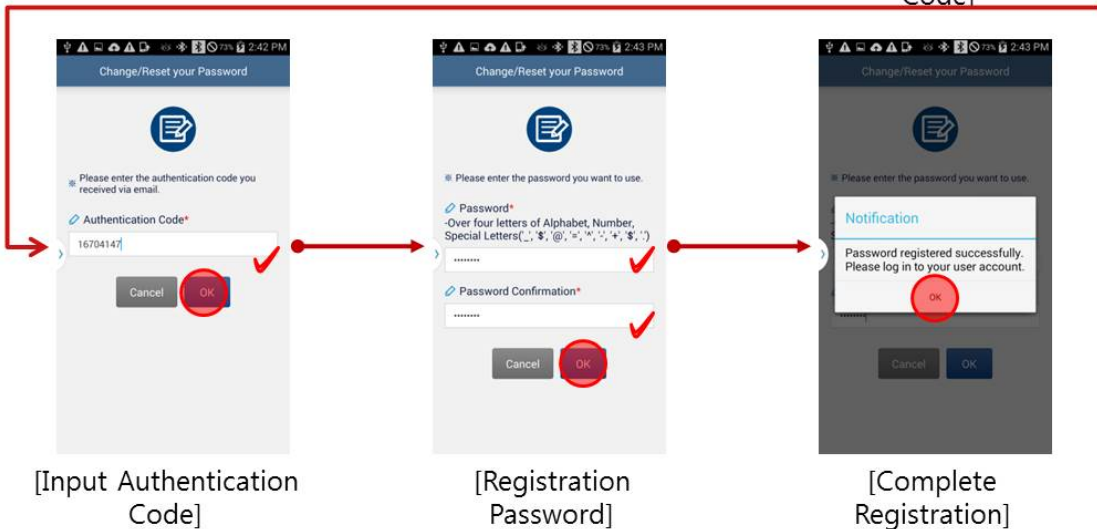
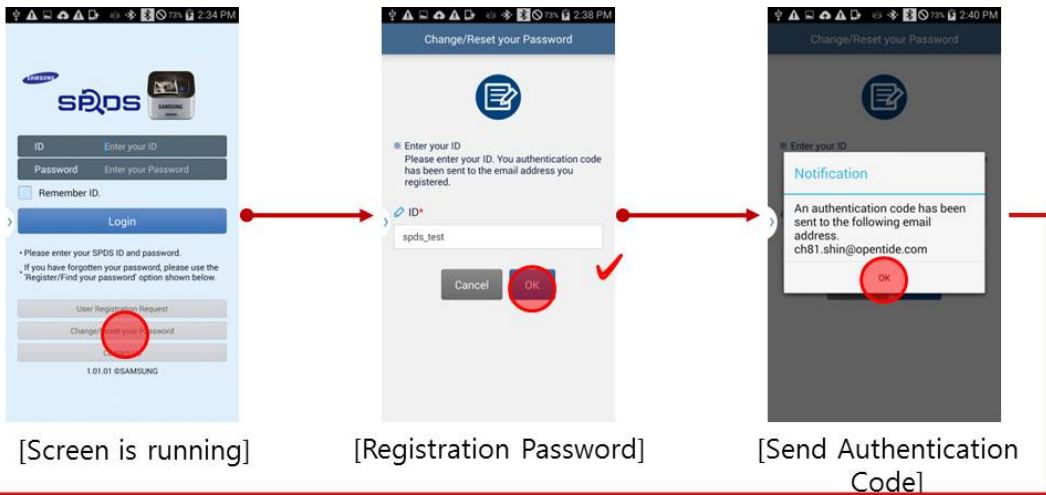
- Press 'OK' after input authentication code.

5) **Registration Password**

- Input your password.

6) **Complete Registration**

- Press 'OK' and then login at login screen.



4.10.1.4. Login

1) Screen is running

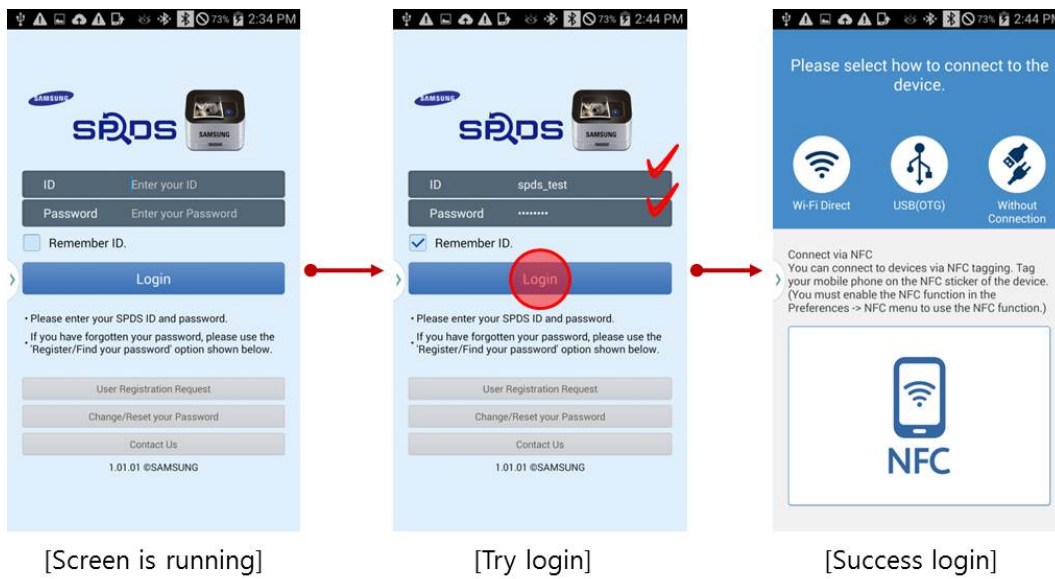
- Input ID and password that registered at 'User Request Registration', 'Change/Reset your Password'.

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

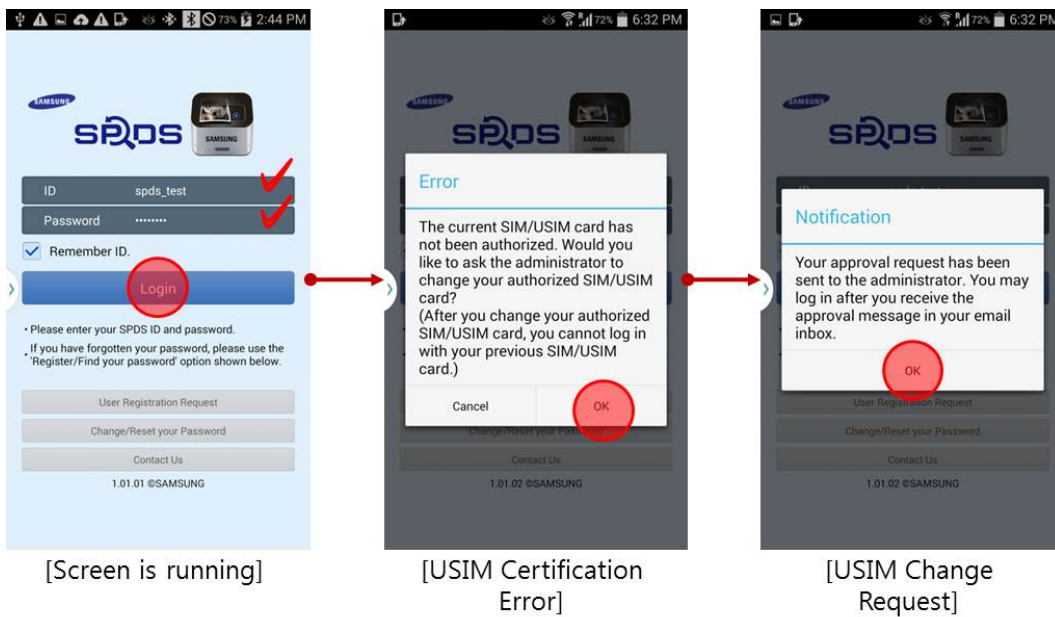
- Utilize your ID and password to login.

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

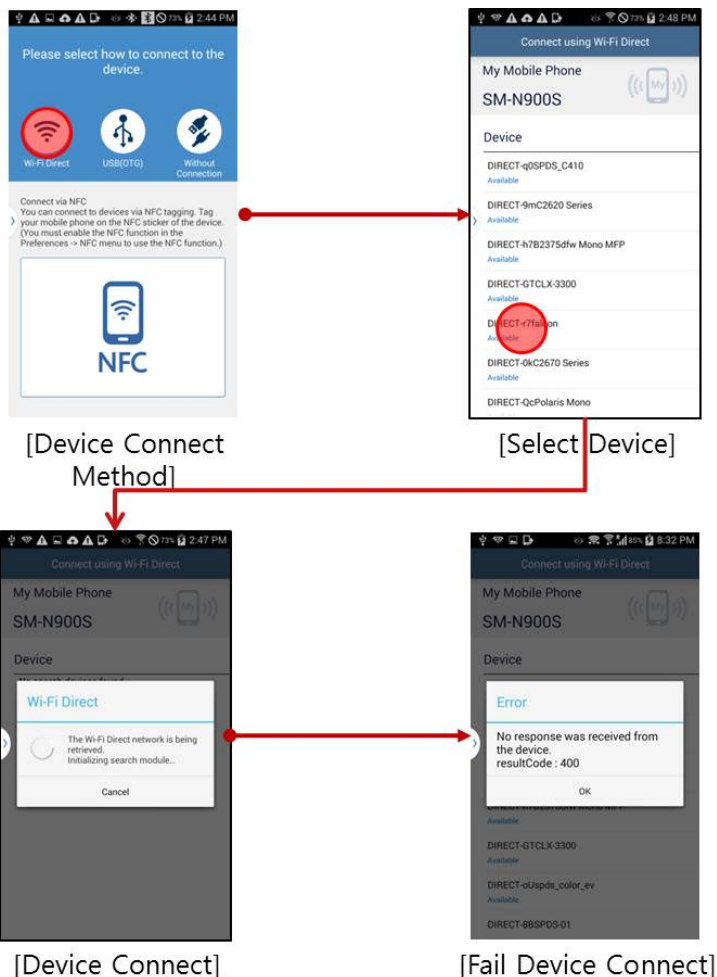
- After searching Peer you can see printer list that is available.
- Select printer for connectivity.

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]

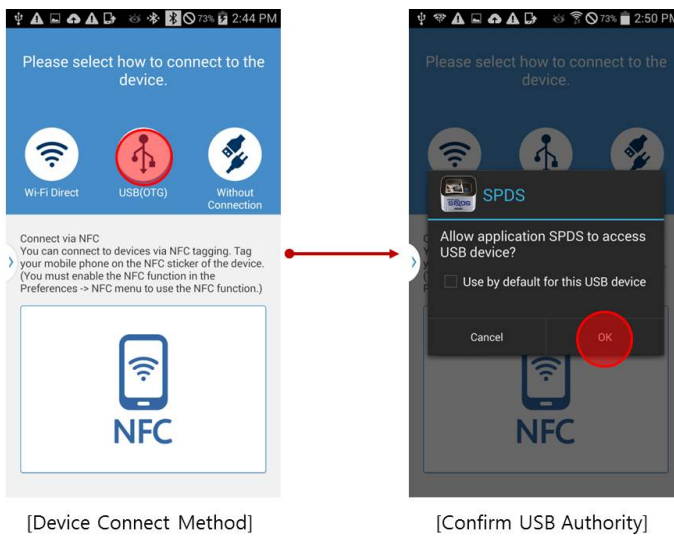
USB-OTG

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.



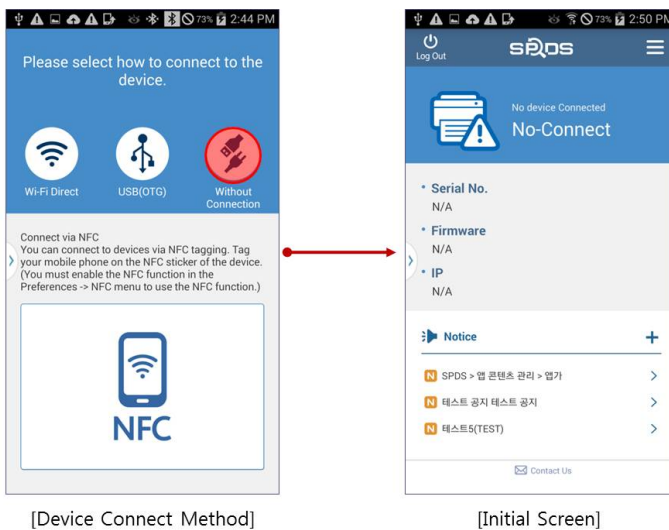
Without Connection

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.



4.10.2. 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

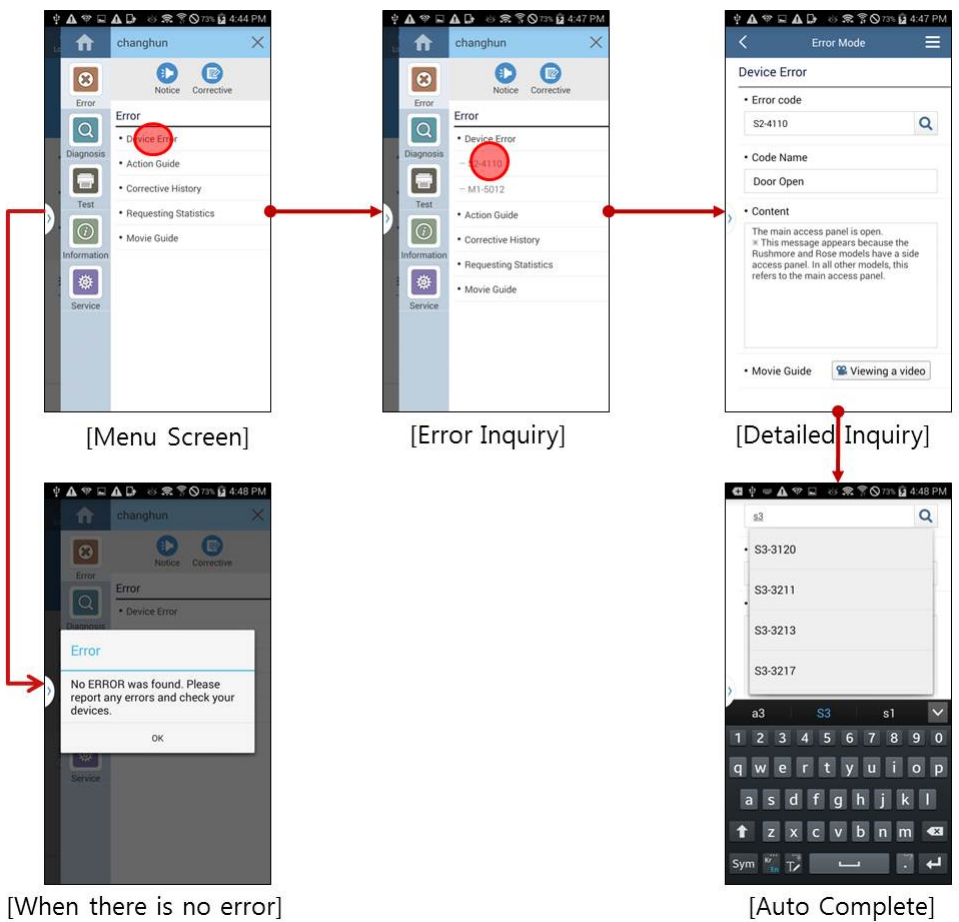
- You can see detailed information of connected device by selecting Error code.

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**

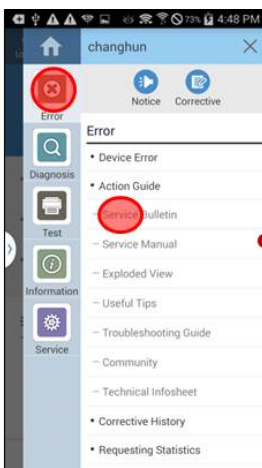
- After input search condition conduct search.

5) **Result list**

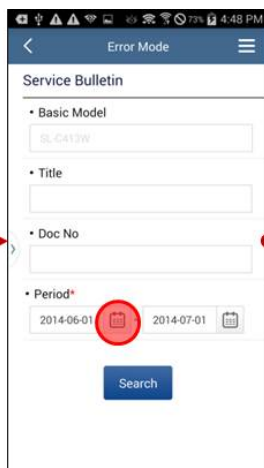
- The results of search condition comes out as a list.

6) **See the detail**

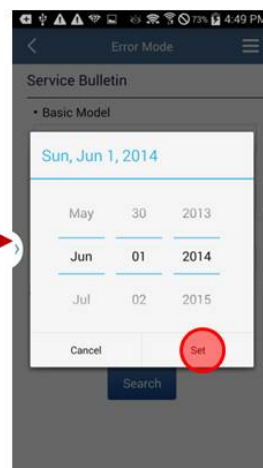
- By selecting items from list you can see detail.



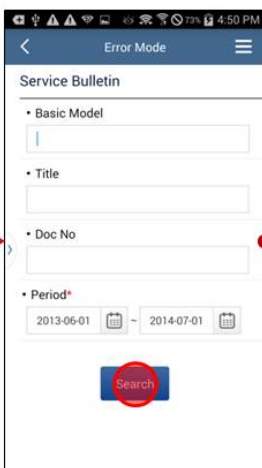
[Menu Screen]



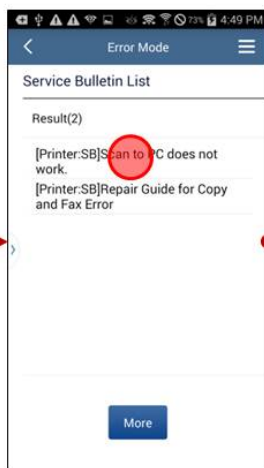
[Search Condition]



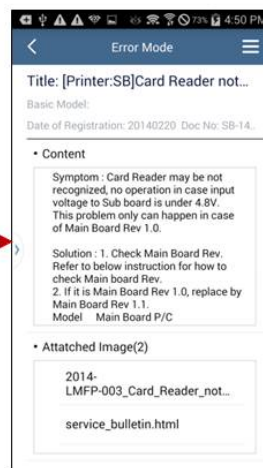
[Select Date]



[Conduct Search]



[Result list]



[See the detail]

Connected Device History

1) **Menu Screen**

- Press Error → Corrective History → Connected Device History.

2) **Initial Screen**

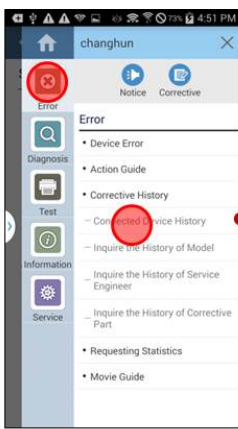
- As a subordinate menu of Connected Device History there are History of Each Error Code, History of Each Corrective Part and History of Each Service Engineer.

3) **Subordinate Menu Selection**

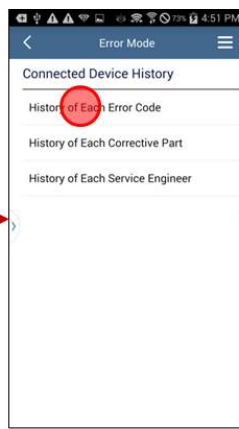
- Corrective Histories are listed by selecting menu.

4) **See the detail**

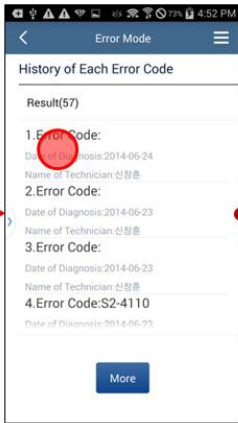
- Detailed Action comes out by selecting Corrective history list.



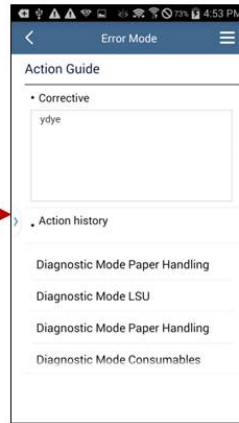
[Menu Screen]



[Initial Screen]



[Subordinate Menu Selection]



[See the detail]

Requesting Statistics

1) Menu Screen

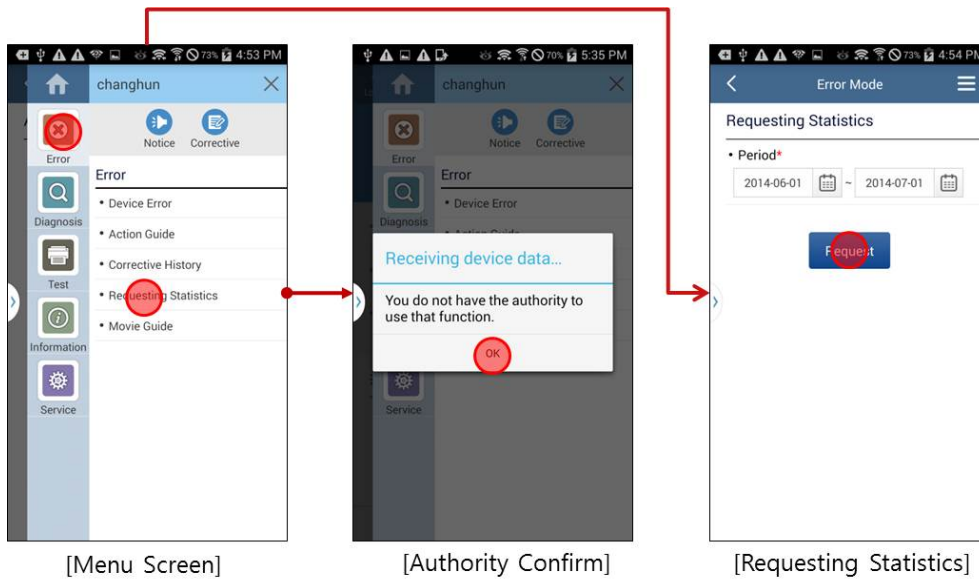
- Press 'Requesting Statistics' of Error mode.

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.

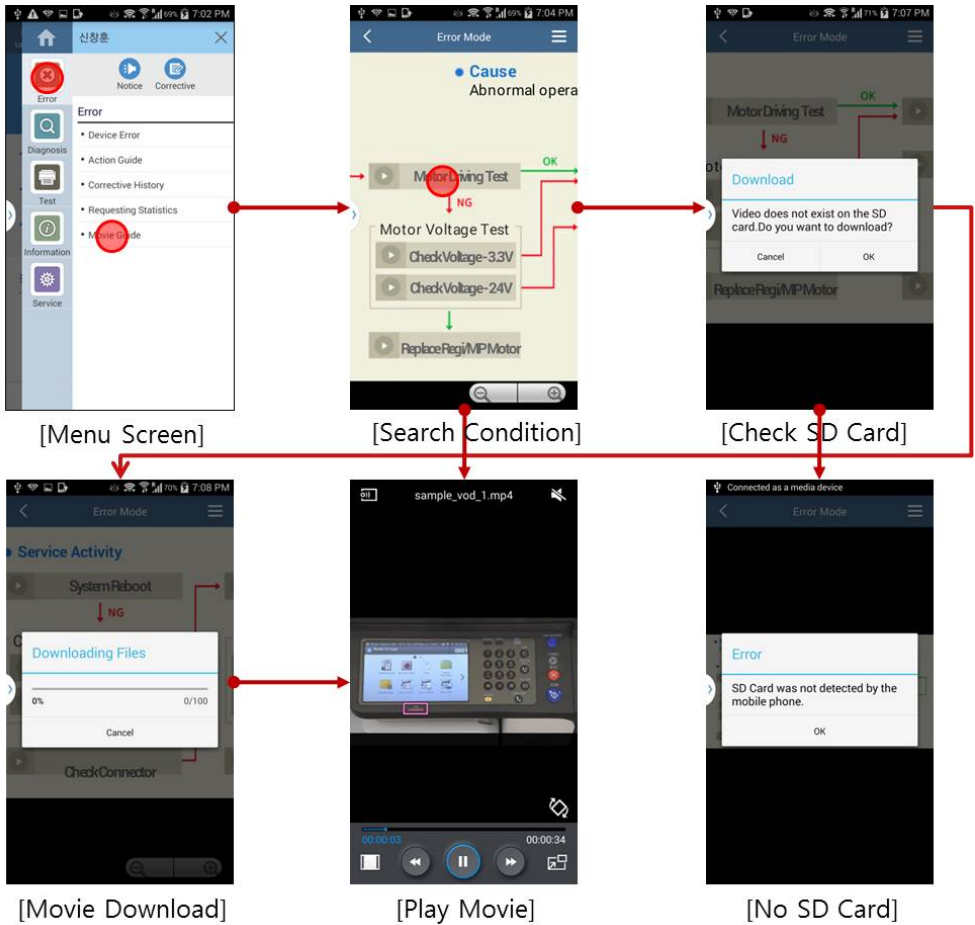
NOTE
If SD Card of the mobile phone does not exist it is not downloaded.

- 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

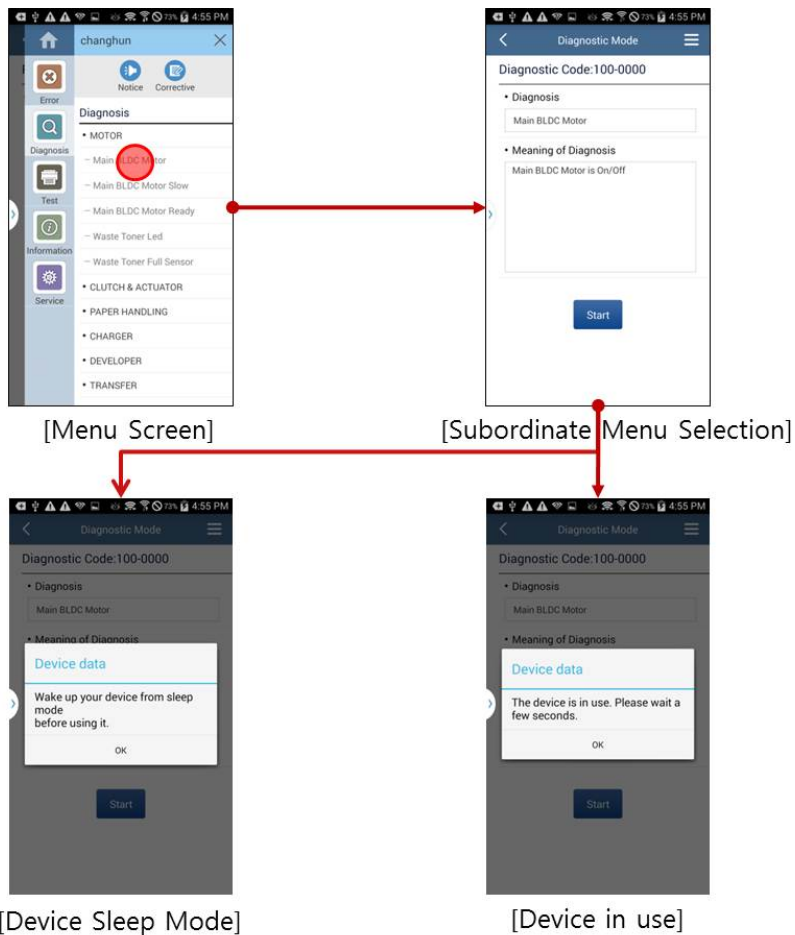
- Diagnosis mode consist of ON/OFF, HIGH/LOW, OPEN/CLOSE, INSTALL/UNINSTALL, 3DIGI.
- Only ON/OFF run diagnosis by Start Button.
- Other function except ON/OFF Diagnosis Mode indicate status value of connected device.

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

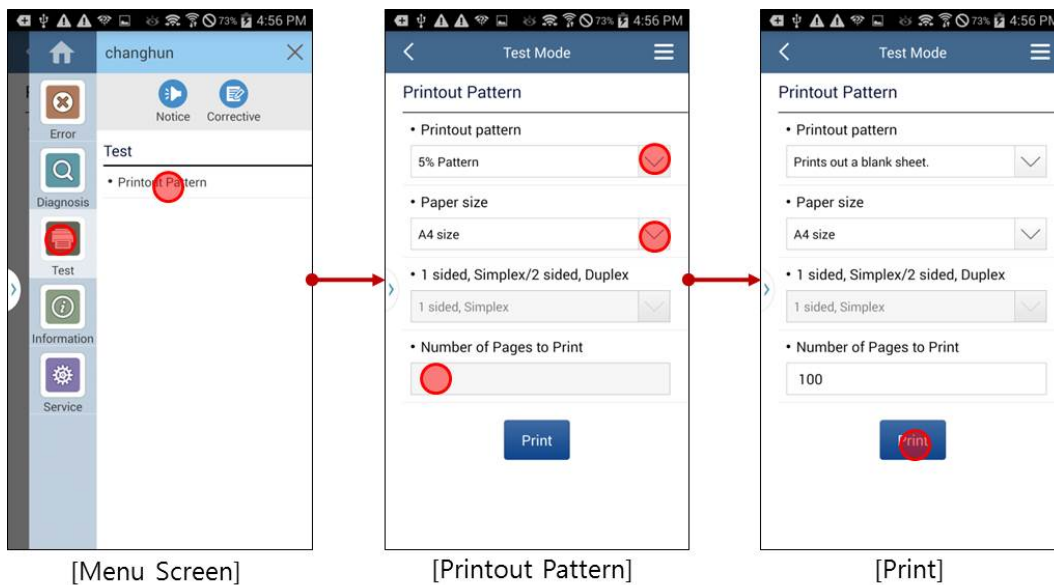
- Press Test → Printout Pattern.

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

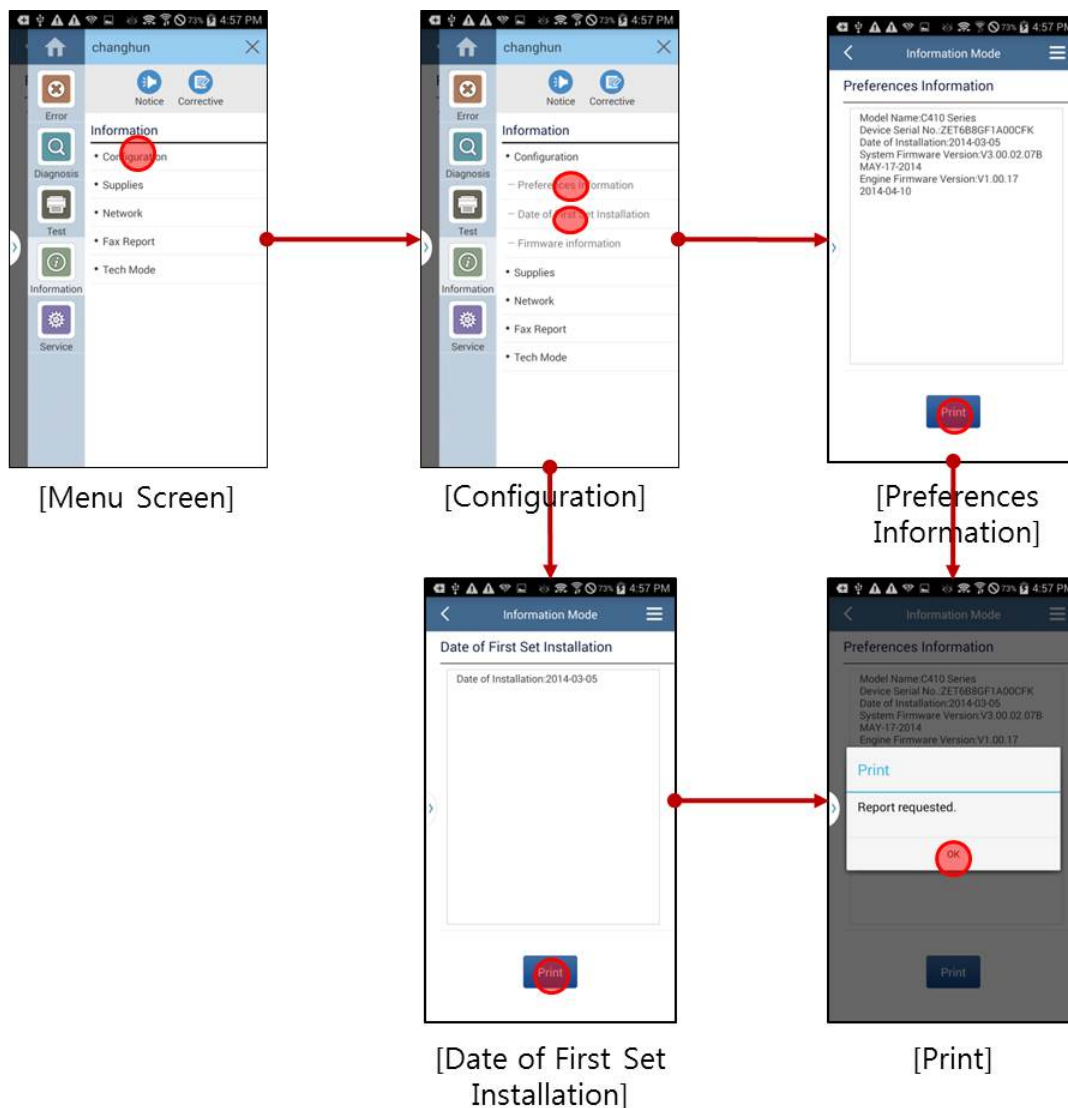
- Preferences Information indicates Model Name, Device Serial Number, Date of Installation, Firmware Version.

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

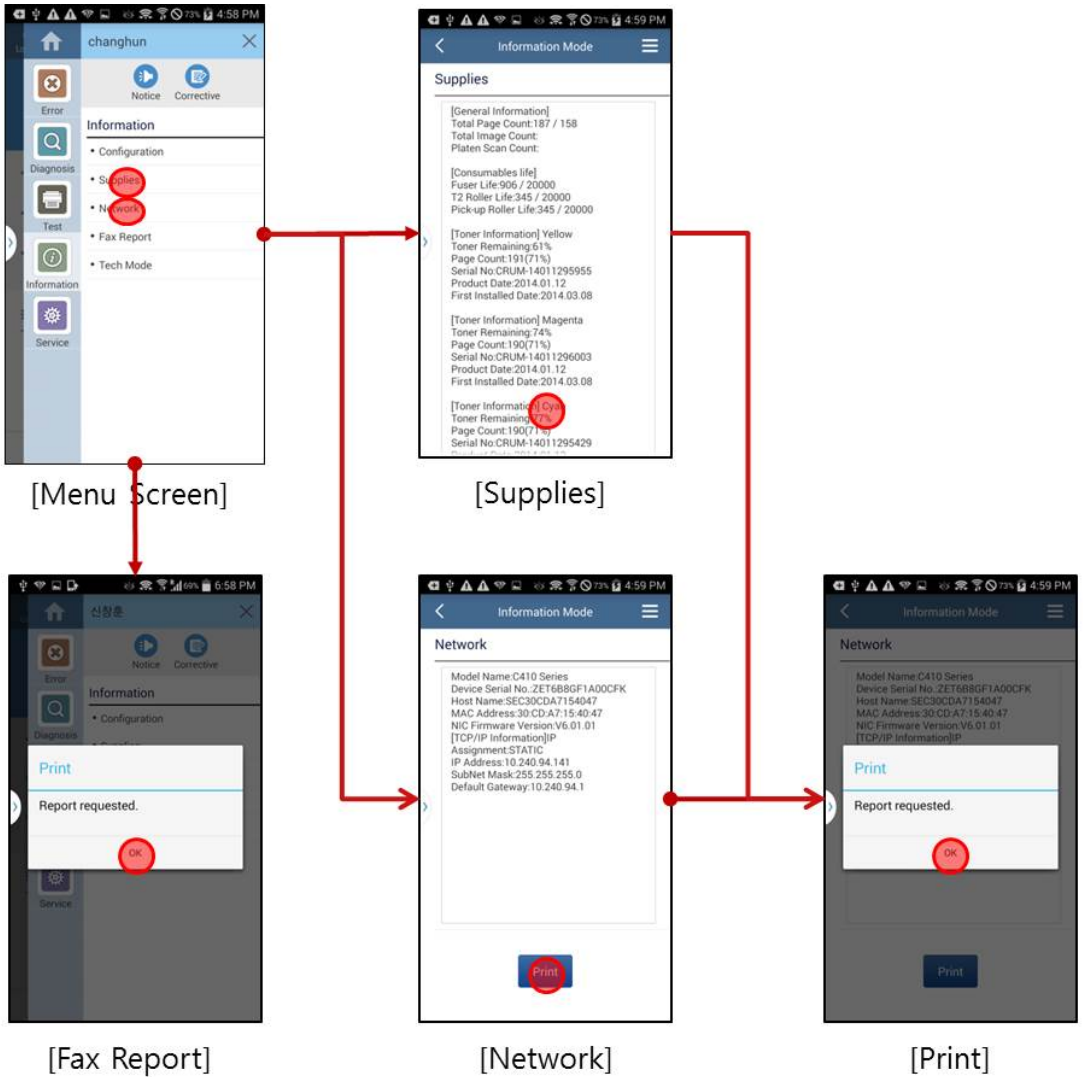
- Supplies indicate Supplies information of connected device.

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

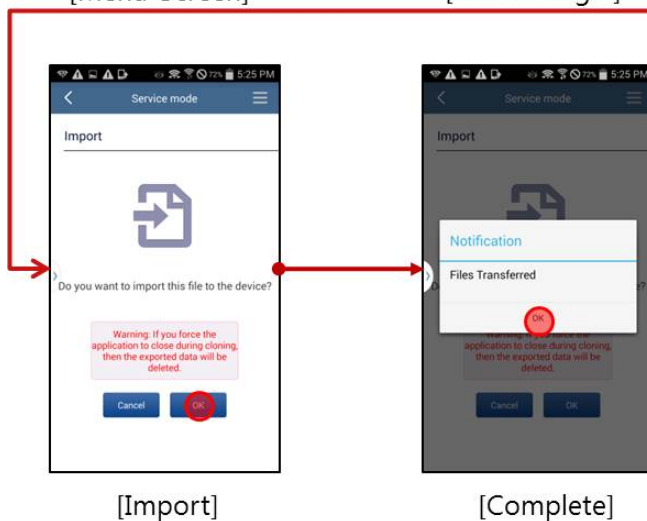
- Export data of printer press 'OK'.

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

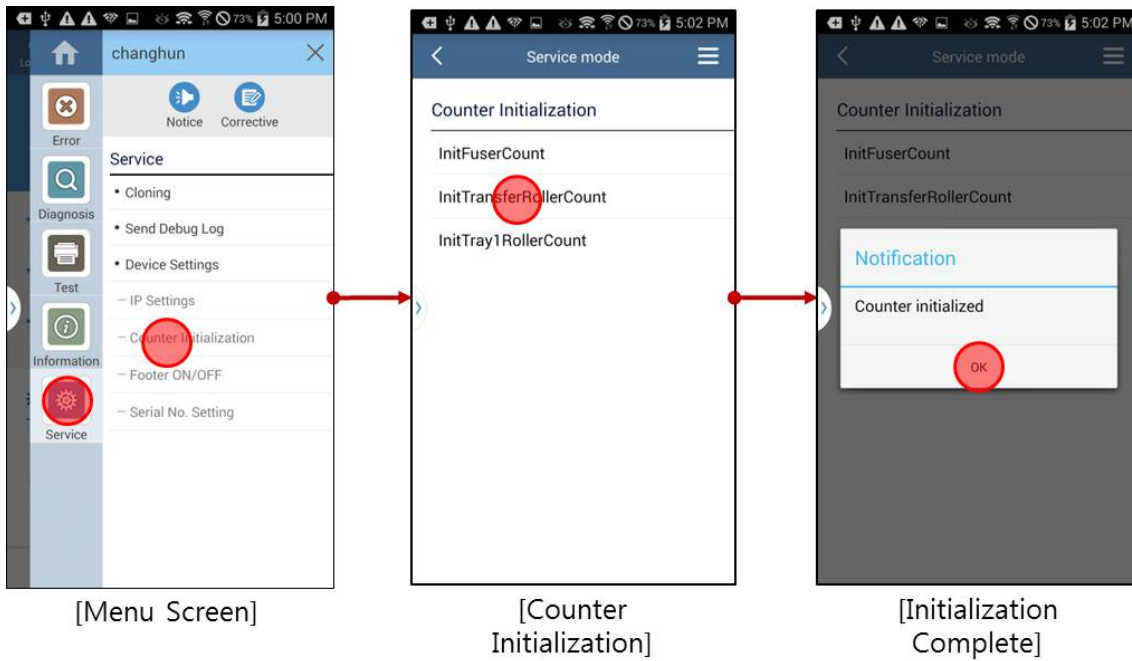
- Press Service → Device Settings. Press Counter Initialization

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

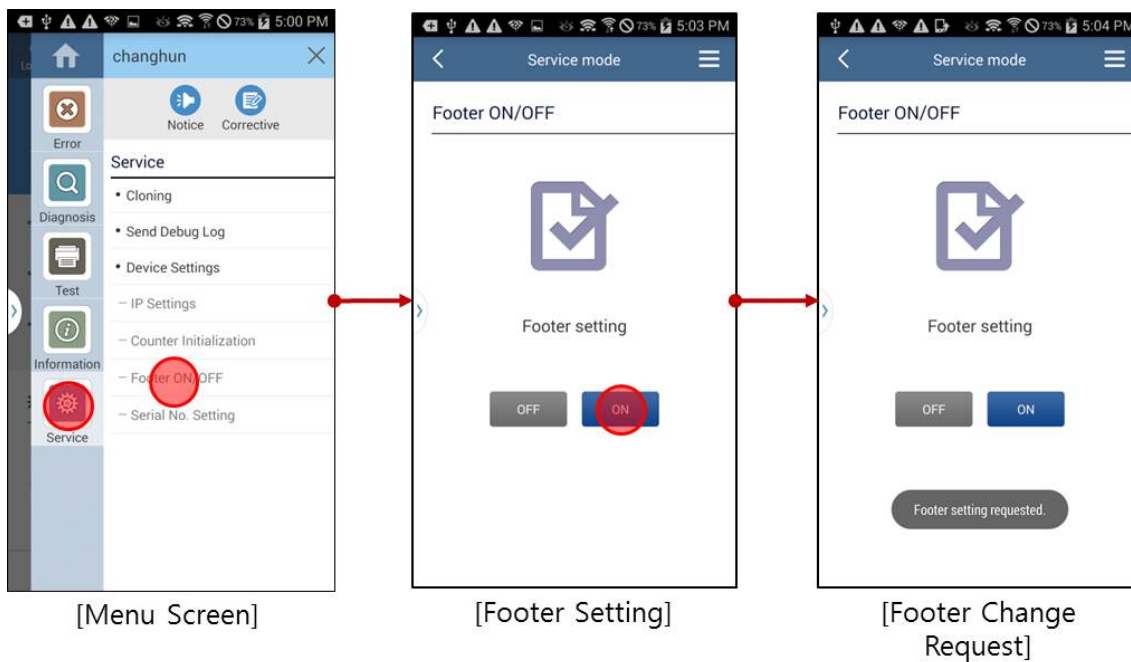
- Press Service → Device Settings. Press Footer ON/OFF.

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**

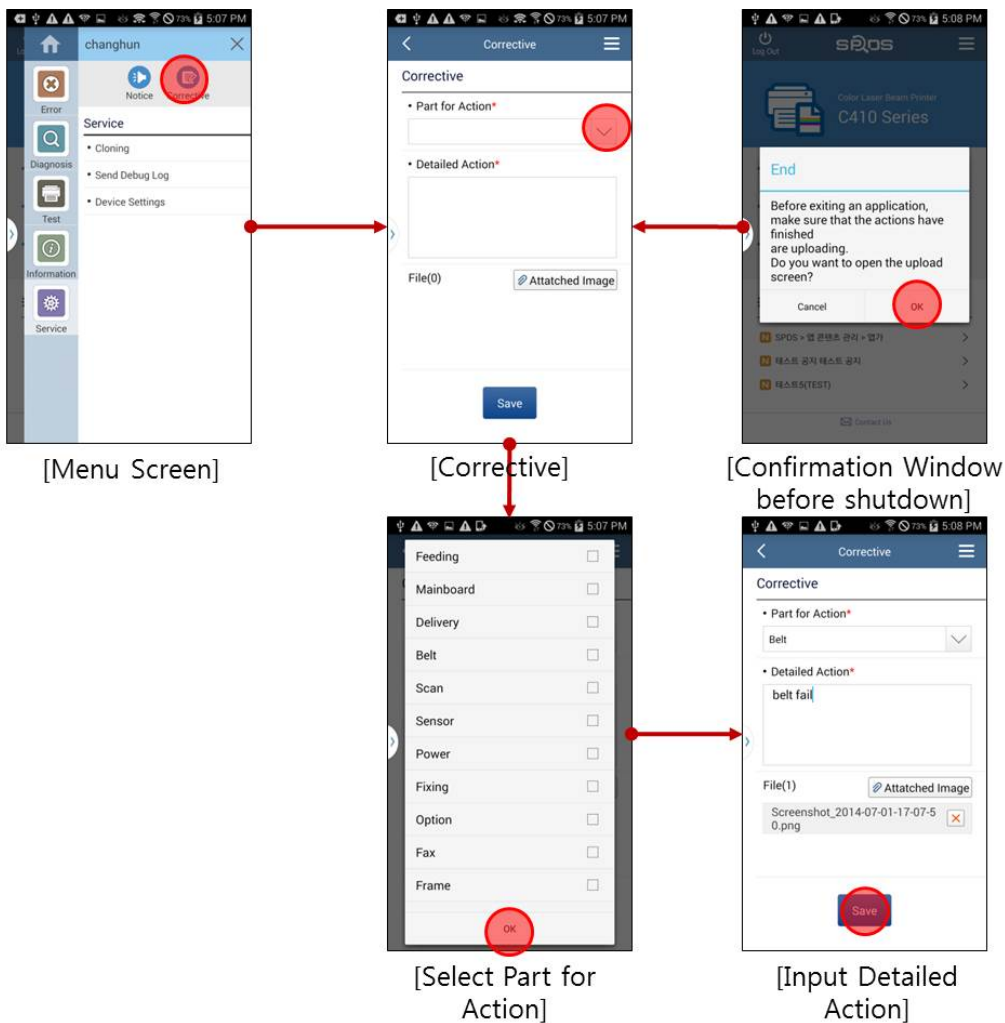
- In the Corrective you can input Part of Action, Detailed Action, Attached Image.

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

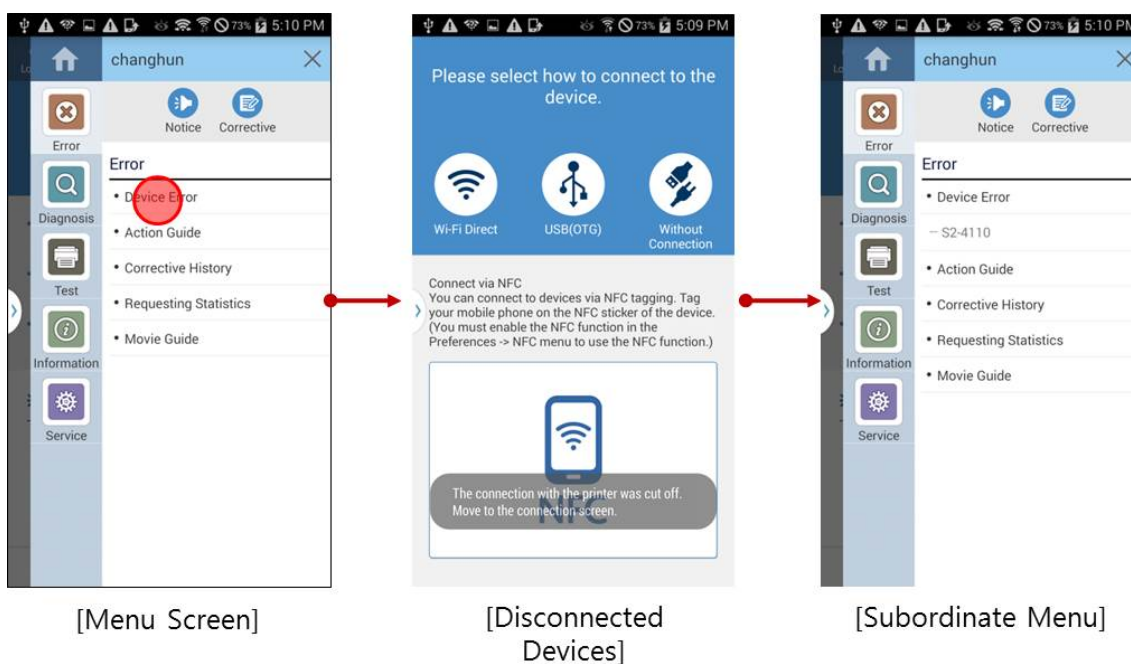
- Need to I/F the device menu first check the connection status of the device.
- If connection between App and device (e.g. device reboot, Timeout), go to device connection menu.

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**

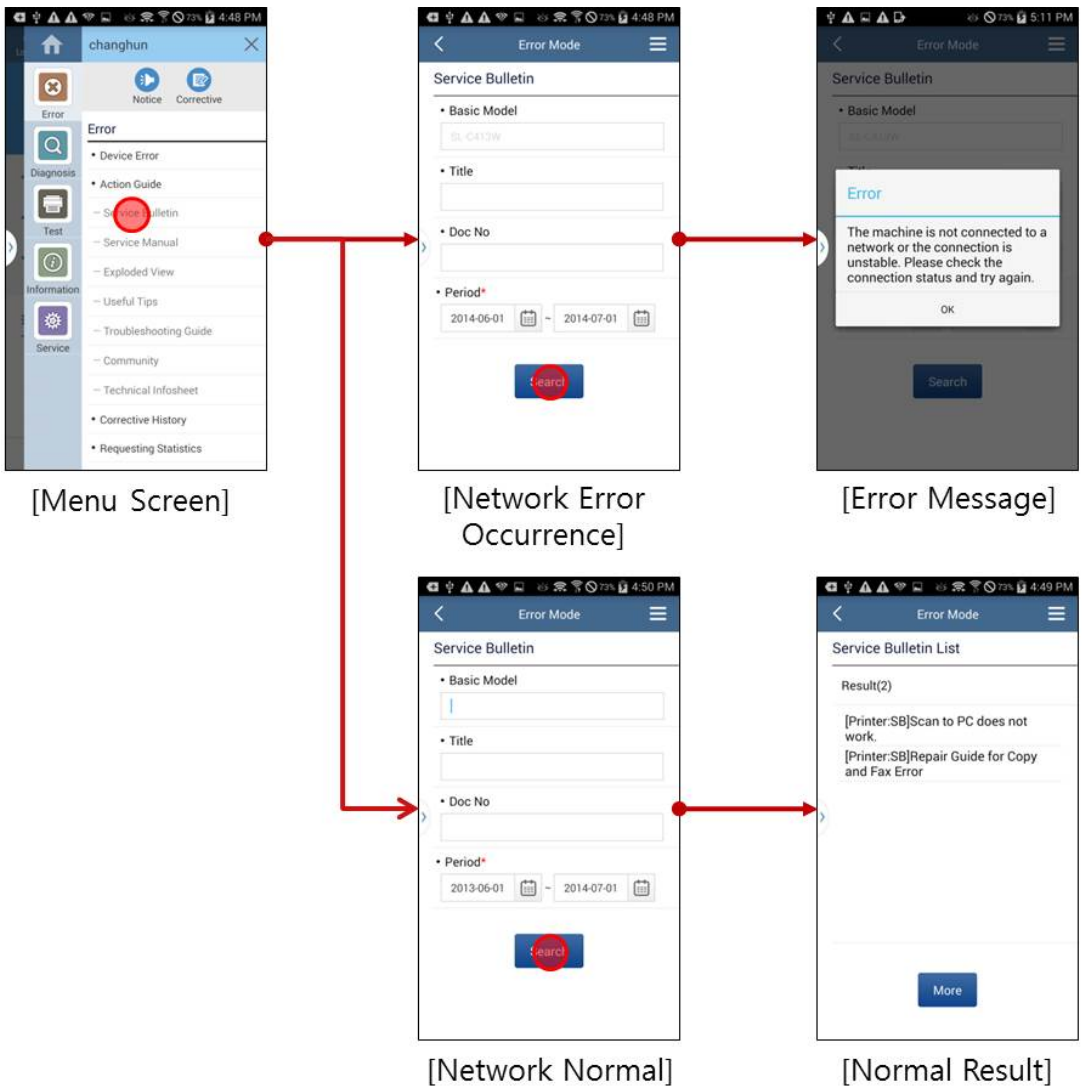
- If network error (3G, LTE, WIFI) occur, error message pop-up print out and cannot proceed.
- In this case it is necessary to check the network.

4) **Network Normal**

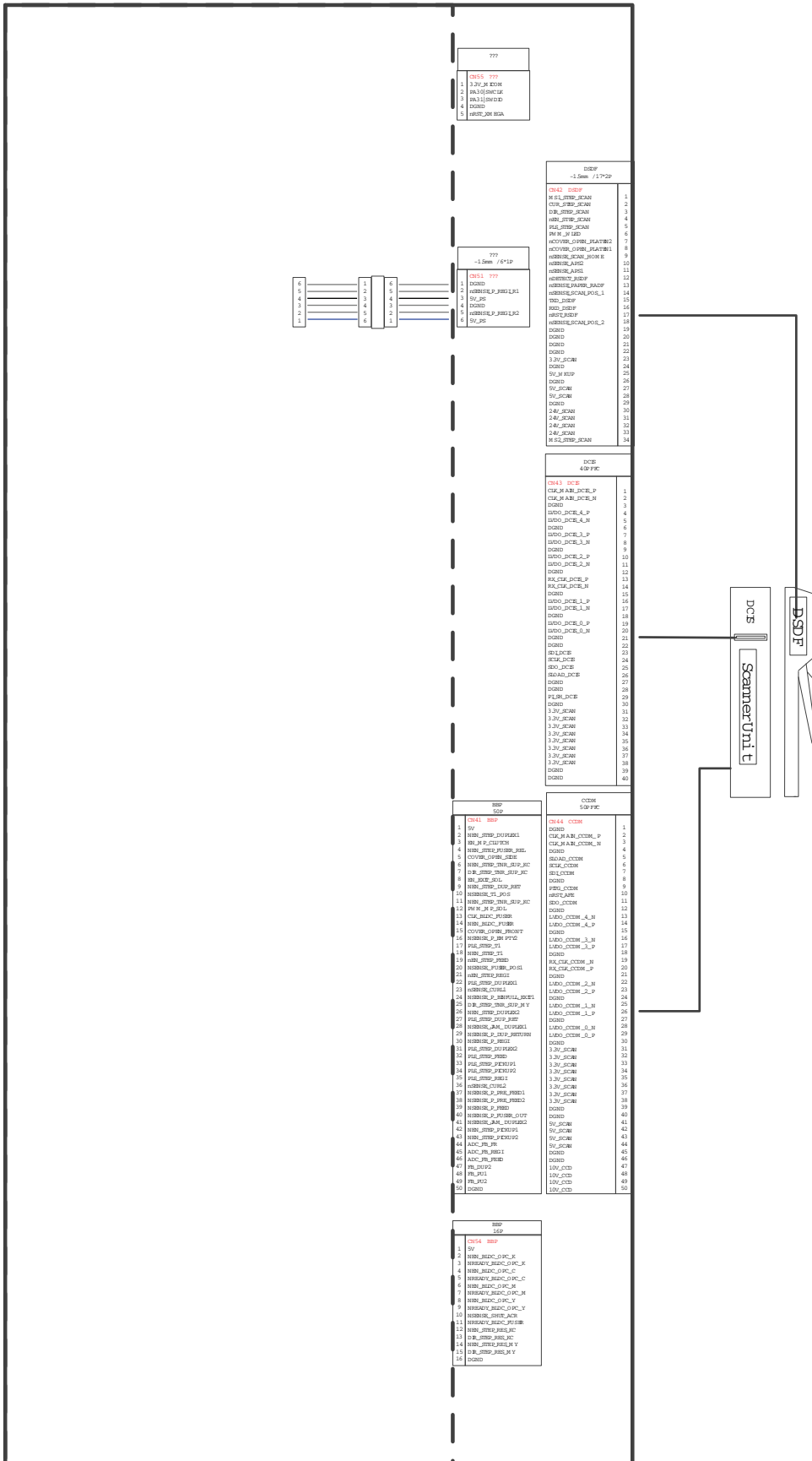
- When network (3G, LTE, WIFI) is connected normally, try search.

5) **Normal Result**

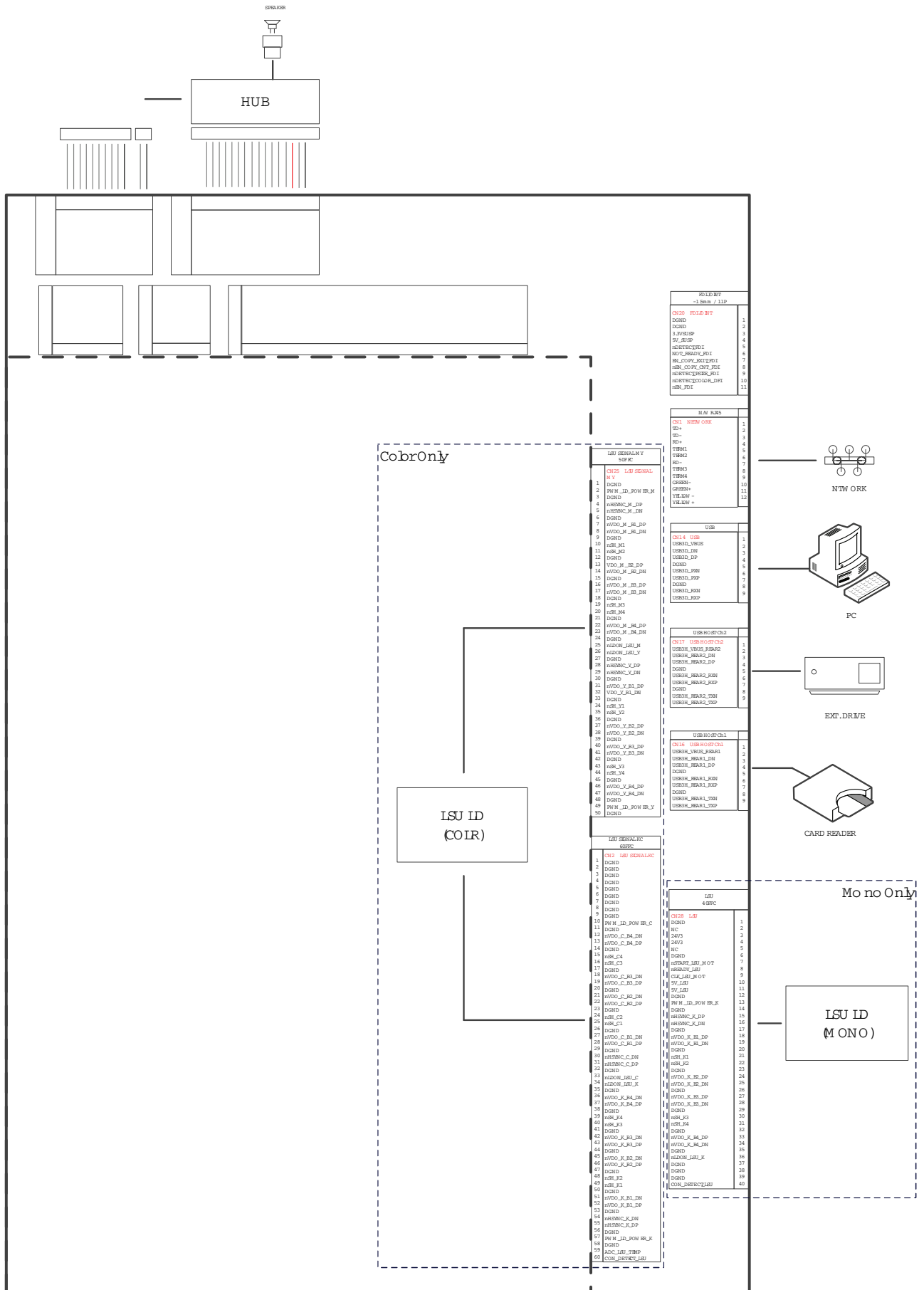
- Because there is no problem with the network App will show normal results.



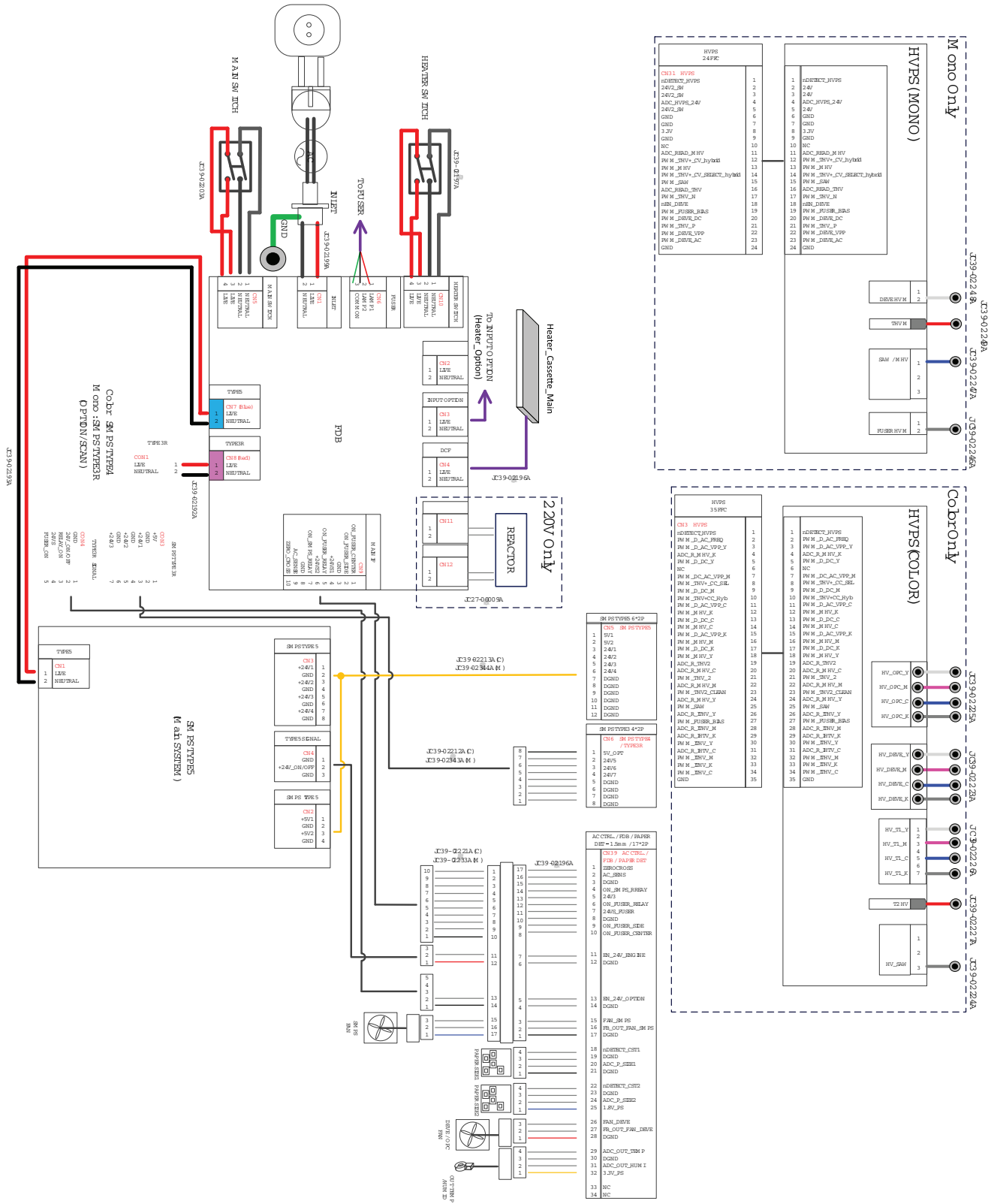
5.2. Connection Diagram (Scanner)



5.3. Connection Diagram (LSU_OPE_USB)



5.6. Connection Diagram (HVPS_SMPS_FDB)

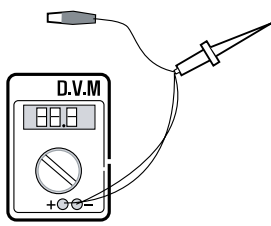

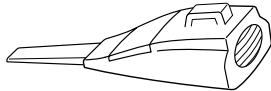
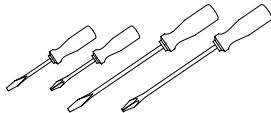



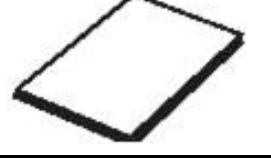
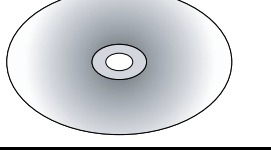


6. Reference Information

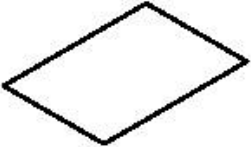

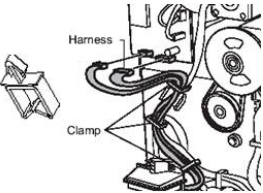
This chapter contains the tools list, list of abbreviations used in this manual, and a guide to the location space required when installing the printer. A definition of test pages and Wireless Network information definition is also included.

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

6. Reference Information

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 fuser belt 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.

6. Reference Information

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

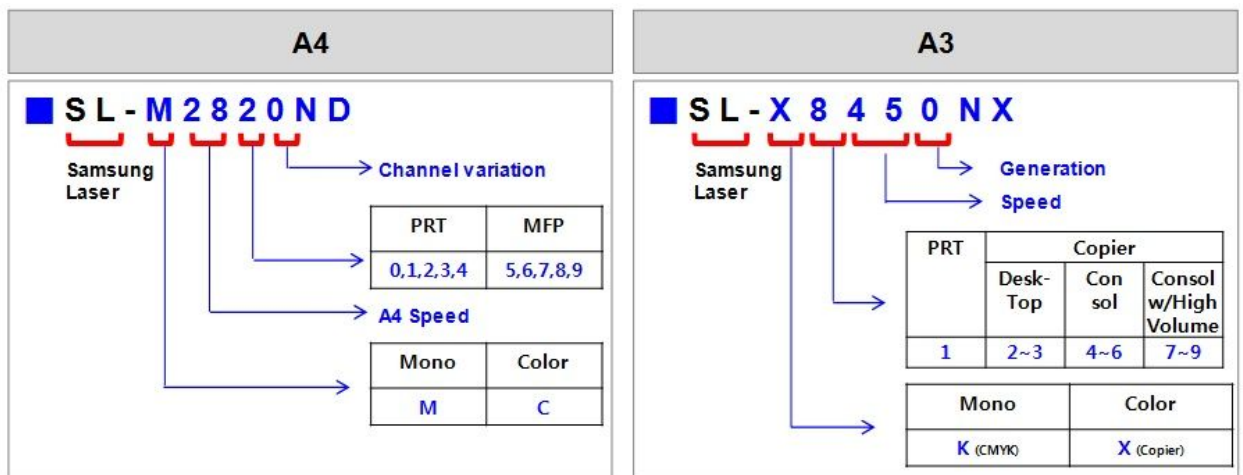
1) Sub brand name Information

- 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	16/Apr/2015	-	Release
1.01	28/May/2015	P.2-18	Change cleaning period of the paper dust stick. (45K → EM)
1.02	09/Jun/2015	P.2-99 P.3-29	Add SMPS information for GX model.
1.03	01/Jul/2015	P.3-13	Add ACR sensor cleaning.
1.04	17/Jul/2015	P.3-11	Add note for deve unit replacement.
1.05	29/Jul/2015	P.4-58	Add explanation for Auto Skew Correction during job box in ADF manual adjustment.
1.06	10/Aug/2015	P.2-20	Modify option table.
1.07	20/Aug/2015	P.4-73~	Add URL information for error code troubleshooting video.
1.08	02/Sep/2015	P.3-11	Update the deve unit replacement.
1.09	23/Oct/2015	P.2-118	Modify OPE Unit description.
1.10	19/Jan/2016	P.4-241~	Add tech tips in other error sections.
1.11	18/Feb/2016	P.4-231	Update the troubleshooting for incorrect color registration problem.
1.12	29/Feb/2016	P.2-124	Add new OPE information
1.13	04/May/2016	P.4-60	Modify the default for ACR condition.
1.14	25/May/2016	-	Delete unused error code and modify troubleshooting for some errors.
1.15	04/Aug/2016	P.4-64 P.4-91 P.4-127~130	Delete Network Port menu in SVC mode. Add Exit / LSU / OPC fan error. Add C8-x31G error.



GSPN (GLOBAL SERVICE PARTNER NETWORK)

Area	Web Site
Europe, MENA, CIS, Africa	https://gspn1.samsungsportal.com
E.Asia, W.Asia, China, Japan	https://gspn2.samsungsportal.com
N.America, S.America	https://gspn3.samsungsportal.com

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