SAMSUNG

Service Manual

service Manual

DIGITAL COLOR LASER MFP

CLX-6220FX

CLX-6250FX

The keynote of Product

- Speed (printing and copy)
  - CLX-6220FX : Black/Color 20 ppm (A4) / 21ppm (Letter)
  - CLX-6250FX : Black/Color 24 ppm (A4) / 25ppm (Letter)
- Printing resolution : up to 9600x600 dpi effective output
- CPU
  - CLX-6220FX : 360MHz
  - CLX-6250FX : 700MHz
- Toner cartridge
  - Initial (black/color)
    : 2.5K/2K(6220FX) , 5K/4K(6250FX)
- Paper handling
  : Max. 850 sheets paper capacity
  : 250 sheets cassette, 500 sheets option cassette
  : MP tray : 100 sheets
- Memory : 256MB (Max.768MB(6250FX), 512MB(6220FX))
- Network, USB 2.0
- 4 Line LCD

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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 malfunctions and create an electric shocks or fire hazards.

(3) Laser Safety Statement
The product is certified in the U.S. to conform to the requirements of DHHS 21 CFR, chapter 1 Subchapter J for Class 1(1) laser products, and elsewhere, it is certified as a Class I laser product conforming to the requirements of IEC 825. Class I laser products are not considered to be hazardous. The laser system and product 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.

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 pre-cautions should always be followed to reduce risk of fire, electric shock, and personal injury.

CAUTION - INVISIBLE LASER RADIATION WHEN THIS COVER OPEN. DO NOT OPEN THIS COVER.

VORSICHT - UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GE...FFNET. NICHT DEM STRAHL AUSSETZEN.

ATTENTION - RAYONNEMENT LASER INVISIBLE EN CAS DÔOUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU.

ATTENZIONE - RADIAZIONE LASER INVISIBILE IN CASO DI APERTURA. EVITARE LÔESPOSIZIONE AL FASCIO.

PRECAUCION - RADIACION LASER IVISIBLE CUANDO SE ABRE. EVITAR EXPONERSE AL RAYO.

ADVARSEL. - USYNLIG LASERSTRLNING VED BNING, NR SIKKERHEDSBRYDERE ER UDE AF FUNKTION. UNDG UDSAETTELSE FOR STRLNING.

ADVARSEL. - USYNLIG LASERSTRLNING NR DEKSEL PNES. STIRR IKKE INN I STRLEN. UNNG EKSPONERING FOR STRLEN.

VARNING - OSYNLIG LASERSTRLNING NR DENNA DEL R ...PPNAD OCH SPRREN R URKOPPLAD. BETRAKTA EJ STRLEN. STRLEN R FARLIG.

VARO! - AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NKYMTT...MLLE LASER-STEILYLLE L KATSO STEESEEN.

注 意 - 严禁渴开此盖, 以免激光泄露灼伤

주 의 - 이 덮개를 열면 레이저광에 노출될 수 있으므로 주의하십시오.

1.2 Caution for safety

1.2.1 Toxic material

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

(1) If the LCD control panel is damaged, it is possible for the liquid inside to leak. This liquid is toxic. Contact with the skin should be avoided. Wash any splashes from eyes or skin immediately and contact your doctor. If the liquid gets into the mouth or is swallowed, see a doctor immediately.
(2) 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 connector. When removing the power connector, grip it firmly and pull. The power connector must be inserted completely, otherwise a poor contact could cause overheating possibly leading to a fire.
(7) Take care of the power cable. Do not allow it to become twisted, bent sharply around corners or wise 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.

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 on 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.

1.2.4 Assembly / Disassembly precautions

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.

(1) Check the contents of the machine memory and make a note of any user settings. These will be erased if the main board or network card is replaced.
(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 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 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 high temperature components.
The fuser unit works at a high temperature. Use caution when working on the product. Wait for the fuser to cool down before disassembly.

(2) Be careful when working around the rotating parts.
When operating a product, keep all bodily items and clothing away from moving parts [e.g. fingers, hair, tie, etc.] (Paper feeding entrance, motor, fan, etc.).

(3) When moving the product :
- When transporting/installing the equipment, employ four persons and be sure to hold the lifting handles.
- Be sure not to hold the movable parts or units (e.g. the control panel, DADF) when transporting the equipment.
- Be sure to use a dedicated outlet with 110V/220V power input.
- The equipment must be grounded for safety.
- Select a suitable place for installation. Avoid excessive heat, high humidity, dust, vibration and direct sunlight.
- Provide proper ventilation since the equipment emits a slight amount of ozone.
- The equipment must be installed near the socket outlet and must be accessible.
- Be sure to fix and plug in the power cable securely after the installation so that no one trips over it.

1.3 ESD precautions

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

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

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

2. Product Specification and feature

2.1 Product summary

CLX-6220FX
CLX-6250FX

- Speed (printing and copy)
  - CLX-6220FX : Black/Color 20 ppm (A4) / 21ppm (Letter)
  - CLX-6250FX : Black/Color 24 ppm (A4) / 25ppm (Letter)
- Printing resolution : up to 9600x600 dpi effective output
- CPU
  - CLX-6220FX : 360MHz
  - CLX-6250FX : 700MHz
- Toner cartridge
  - Initial (black/color)
    : 2.5K/2K(6220FX) , 5K/4K(6250FX)
- Machine Life : 200K or 5 years
- Paper handling
  : Max. 850 sheets paper capacity
  : 250 sheets cassette, 500 sheets option cassette
  : MP tray : 100 sheets
- Memory : 256MB (Max.768MB(6250FX), 512MB(6220FX))
- Network, USB 2.0
- 4 Line LCD

2.2 Specifications

Product Specifications are subject to change without notice. Provided below are the product specifications:

2.2.1 General Printer Engine

Item		CLX-6220FX	CLX-6250FX
Engine Speed	Simplex	B&W : Up to 20 ppm in A4 (21 ppm in Letter) Color : Up to 20 ppm in A4 (21 ppm in Letter)	B&W : Up to 24 ppm in A4 (25 ppm in Letter) Color : Up to 24 ppm in A4 (25 ppm in Letter)
	Duplex	B&W : Up to 10ipm in A4 (10 ipm in Letter) Color : Up to 10ipm in A4 (10 ipm in Letter)	B&W : Up to 12 ipm in A4 (12ipm in Letter) Color : Up to 12 ipm in A4 (12ipm in Letter)
Warmup time		Less than 27 sec	Less than 19.5 sec
FPOT (B&W)	From Ready	Less than 24 sec	Less than 24 sec
	From Sleep	Less than 24 sec	Less than 24 sec
FPOT (Color)	From Ready	Less than 24 sec	Less than 24 sec
	From Sleep	Less than 24 sec	Less than 24 sec
Resolution	Optical	600 x 600 dpi	600 x 600 dpi
	Support	Best : 9,600 x 600 dpi effetive output Normal : 1200 x 600 dpi Default : 600 x 600 dpi	Best : 9,600 x 600 dpi effetive output Normal : 1200 x 600 dpi Default : 600 x 600 dpi

2.2.2 Controller & S/W

Item		CLX-6220FX	CLX-6250FX
MPU		360 MHz	700 MHz
Memory	Std.	256 MB	256 MB
	Max.	512 MB	768 MB
Memory Expansion		1 Slot	1 Slot
Printer Languages		PCL6, SPL-C	PCL6, SPL-C, PS3
Fonts		45 scalable and 1 bitmap PCL and 136 PS	45 scalable and 1 bitmap PCL and 136 PS
Driver	Supporting OS	Windows 2000/XP/2003/Vista/7 (include 64bit)	Windows 2000/XP/2003/Vista/7 (include 64bit)
		Redhat Enterprise Linux WS4,5 Fedora2, 3, 4, 5, 6, 7, 8, 9 openSuSE9.1, 9.2, 9.3, 10.0, 10.1, 10.2, 10.3, 11.0 SuSE Enterprise Desktop 9,10 Ubuntu6.04, 6.10, 7.04, 7.10, 8.04 Mandriva10.0, 10.1, 2005, 2006, 2007, 2008 Debian3.1, 4.0	Redhat Enterprise Linux WS4,5 Fedora2, 3, 4, 5, 6, 7, 8, 9 openSuSE9.1, 9.2, 9.3, 10.0, 10.1, 10.2, 10.3, 11.0 SuSE Enterprise Desktop 9,10 Ubuntu6.04, 6.10, 7.04, 7.10, 8.04 Mandriva10.0, 10.1, 2005, 2006, 2007, 2008 Debian3.1, 4.0
		Mac OS X 10.3~10.5	Mac OS X 10.3~10.5
	Default Driver	SPL-C (Samsung Printer Language Color)	PCL6
	WHQL	Windows 2000/XP/2003/Vista (include 64bit)	Windows 2000/XP/2003/Vista (include 64bit)
Scan driver	TWAIN	Yes(Windows, Mac, Linux)	Yes(Windows, Mac, Linux)
	WIA	Yes(Windows only)	Yes(Windows only)
Application	Network Scan (Client)	Yes (multi-folder)	Yes (multi-folder)
	PC-FAX	Yes (Mono Send Only, included in SmarThru Office)	Yes (Mono Send Only, included in SmarThru Office)
	PSU/ScanToPC	USB only	USB only
	Smart Panel	Yes	Yes
	Network Management	Set IP, SAWS & SWS (Linux, Mac not support, SWAS 4.5 & SWS need Iexplorer 5.0 or higher)	Set IP, SAWS & SWS (Linux, Mac not support, SWAS 4.5 & SWS need Iexplorer 5.0 or higher)
	SmarThru	SmarThru Office 1.0	SmarThru Office 1.0
	PDF Direct Print Utility	N/A	Yes

Item		CLX-6220FX	CLX-6250FX
Network	Protocol	TCP/IP,SNMPv3,HTTP1.1, IPP	TCP/IP,SNMPv3,HTTP1.1, IPP
	Network OS	Windows 2000/XP(32/64bit)/2003 Server(32/64bit)/Vista Server(32/64bit) NetWare 5.x, 6.x Mac OS X 10.3~10.5 - TCP/IP Only Redhat Enterprise Linux WS4,5 Fedora2, 3, 4, 5, 6, 7, 8, 9 openSuSE9.1, 9.2, 9.3, 10.0, 10.1, 10.2, 10.3, 11.0 SuSE Enterprise Desktop 9,10 Ubuntu6.04, 6.10, 7.04, 7.10, 8.04 Mandriva10.0, 10.1, 2005, 2006, 2007, 2008 Debian3.1, 4.0	Windows 2000/XP(32/64bit)/2003 Server(32/64bit)/Vista Server(32/64bit) NetWare 5.x, 6.x Mac OS X 10.3~10.5 - TCP/IP Only Redhat Enterprise Linux WS4,5 Fedora2, 3, 4, 5, 6, 7, 8, 9 openSuSE9.1, 9.2, 9.3, 10.0, 10.1, 10.2, 10.3, 11.0 SuSE Enterprise Desktop 9,10 Ubuntu6.04, 6.10, 7.04, 7.10, 8.04 Mandriva10.0, 10.1, 2005, 2006, 2007, 2008 Debian3.1, 4.0

2.2.3 Interface

Item	CLX-6220FX	CLX-6250FX
Parallel	N/A	N/A
USB	USB 2.0, USB host 2.0(Scan to USB, USB print)	USB 2.0, USB host 2.0(Scan to USB, USB print)
Hard Disk	N/A	Opt. (160GB)
Network	Ethernet 10/100 Base TX	Ethernet 10/100 Base TX
Wireless	N/A	Optional Accessory
LCD & Button	16 x 4 line LCD	16 x 4 line LCD

2.2.4 Scan

Item		CLX-6220FX	CLX-6250FX
Scan method		Color CCD	Color CCD
Scan Speed	Linearity, Halftone	about 15 sec at 300dpi,USB2.0, P4 3.0GHz,512M /Ltr	about 10 sec at 300dpi,USB2.0, P4 3.0GHz,512M /Ltr
	Gray	about 20 sec at 300dpi,USB2.0, P4 3.0GHz,512M /Ltr	about 20 sec at 300dpi,USB2.0, P4 3.0GHz,512M /Ltr
	Color	about 30 sec at 300dpi,USB2.0, P4 3.0GHz,512M /Ltr	about 30 sec at 300dpi,USB2.0, P4 3.0GHz,512M /Ltr
Resolution	Optical	600*600 dpi	600*600 dpi
	Enhanced	4,800*4,800 dpi	4,800*4,800 dpi
Halftone		256levels	256levels
Scan Size	Max. Document Width	Max.216mm	Max.216mm
	Effiective Scan Width	Max 208mm(8.2)	Max 208mm(8.2)
	Max. Document Length	Max. 297mm(11.7) @platen, 356mm(14) @DADF	Max. 297mm(11.7) @platen, 356mm(14) @DADF
	Effiective Scan Length	Max. 289mm @platen, 348mm @DADF	Max. 289mm @platen, 348mm @ADF
Scan Depth	Color	Inernal : 36 bit, External : 24bit	Inernal : 36 bit, External : 24bit
	Mono	- 1bit for Linearity & Halftone - 8Bit for Gray scale	- 1bit for Linearity & Halftone - 8Bit for Gray scale
Scan Function		Scan to USB, SMB, FTP, Network, Email	Scan to USB, SMB, FTP, Network, Email
Compatibility		[Windows] - Windows 2000/2003/XP/Vista/7	[Windows] - Windows 2000/2003/XP/Vista/7
		Redhat Enterprise Linux WS4,5 Fedora2, 3, 4, 5, 6, 7, 8, 9 openSuSE9.1, 9.2, 9.3, 10.0, 10.1, 10.2, 10.3, 11.0 SuSE Enterprise Desktop 9,10 Ubuntu6.04, 6.10, 7.04, 7.10, 8.04 Mandriva10.0, 10.1, 2005, 2006, 2007, 2008 Debian3.1, 4.0	Redhat Enterprise Linux WS4,5 Fedora2, 3, 4, 5, 6, 7, 8, 9 openSuSE9.1, 9.2, 9.3, 10.0, 10.1, 10.2, 10.3, 11.0 SuSE Enterprise Desktop 9,10 Ubuntu6.04, 6.10, 7.04, 7.10, 8.04 Mandriva10.0, 10.1, 2005, 2006, 2007, 2008 Debian3.1, 4.0
		Mac OS X 10.3~10.5	Mac OS X 10.3~10.5

2.2.5 Copy

Item		CLX-6220FX	CLX-6250FX
Copy Speed	Simplex Copy Speed(A4)	20cpm (A4)	24cpm (A4)
	Duplex Copy Speed (A4)	8 images per minute	10 images per minute
FCOT (B&W)	From Ready	Less than 29 sec	Approx. 24 sec
	From Sleep	Less than 32 sec	Approx. 29 sec
FCOT (Color)	From Ready	Less than 29 sec	Approx. 24 sec
	From Sleep	Less than 32 sec	Approx. 29 sec
Zoom Range		25% to 400% for Platen 25% to 100% for ADF	25% to 400% for Platen 25% to 100% for ADF
Multi Copy		1~99	1~99
Original Type (Mono & Color)	Text	Scan : 600x600dpi(Optical 300x300dpi) @ ADF, Printing : 600x600dpi Scan : 600x600dpi(Optical 600x600dpi) @ Platen, Printing : 600x600dpi	Scan : 600x600dpi(Optical 300x300dpi) @ ADF, Printing : 600x600dpi Scan : 600x600dpi(Optical 600x600dpi) @ Platen, Printing : 600x600dpi
	Text/Photo [default]	Scan : 600x600dpi(Optical 300x300dpi) @ ADF, Printing : 600x600dpi Scan : 600x600dpi(Optical 600x600dpi) @ Platen, Printing : 600x600dpi	Scan : 600x600dpi(Optical 300x300dpi) @ ADF, Printing : 600x600dpi Scan : 600x600dpi(Optical 600x600dpi) @ Platen, Printing : 600x600dpi
	Magazine	Scan : 600x600dpi(Optical 300x300dpi) @ ADF, Printing : 600x600dpi Scan : 600x600dpi(Optical 600x600dpi) @ Platen, Printing : 600x600dpi	Scan : 600x600dpi(Optical 300x300dpi) @ ADF, Printing : 600x600dpi Scan : 600x600dpi(Optical 600x600dpi) @ Platen, Printing : 600x600dpi
	Photo	Scan : 600x600dpi(Optical 300x300dpi) @ ADF, Printing : 600x600dpi Scan : 1200x1200dpi(Optical 600x600dpi) @ Platen, Printing : 1200x1200dpi	Scan : 600x600dpi(Optical 300x300dpi) @ ADF, Printing : 600x600dpi Scan : 1200x1200dpi(Optical 600x600dpi) @ Platen, Printing : 1200x1200dpi
Automatic Background Suppression		Yes	Yes
Exposure Control		5 level	5 level
Collation Copy		Yes	Yes

Item		CLX-6220FX	CLX-6250FX
Special Copy	ID Card Copy	Yes(Platen Only)	Yes(Platen Only)
	Auto fit	Yes(Platen Only)	Yes(Platen Only)
	Margin Shift	Yes	Yes
	Book Copy	Yes	Yes
	Auto Suppression	Yes	Yes
	Covers	No	No
	Transparencies	No	No
	Create Booklet	No	No
	N-up copy	2-up, 4-up	2-up, 4-up
	Clone	Yes (Platen Only)	Yes (Platen Only)
	Poster	Yes(Platen Only)	Yes(Platen Only)

2.2.6 FAX

Item		CLX-6220FX	CLX-6250FX
Compatibility		ITU-T G3	ITU-T G3
Communication System		PSTN / PABX	PSTN / PABX
Modem Speed		33.6Kbps	33.6Kbps
TX Speed		Approx. 3 seconds/page (Mono/ Standard/ECM-MMR, ITU-T G3 No.1 standard)	Approx. 3 seconds/page (Mono/ Standard/ECM-MMR, ITU-T G3 No.1 standard)
Compression		MH/MR/MMR/JBIG/JPEG	MH/MR/MMR/JBIG/JPEG
Color Fax		Yes (But Memory Transmission & Any Reserved Transmission are not supported)	Yes (But Memory Transmission & Any Reserved Transmission are not supported)
ECM		Yes	Yes
Resolution (Mono)	Std	203 x 98 dpi	203 x 98 dpi
	Fine	203 x 196 dpi	203 x 196 dpi
	S.Fine	300 x 300 dpi	300 x 300 dpi
Resolution (Color)	Std	200 x 200 dpi	200 x 200 dpi
	Fine	200 x 200 dpi	200 x 200 dpi
	S.Fine	200 x 200 dpi	200 x 200 dpi
Scan speed		3.6 sec / Letter (Mono, scan time)	3sec / Letter (Mono, scan time)
Telephone Features	Handset	No	No
	On hook Dial	Yes	Yes
	Search	Yes (Phone Book)	Yes (Phone Book)
	1-Touch Dial	N/A	N/A
	Speed Dial	240 locations	240 locations
	TAD I/F	Yes	Yes
	Tone/Pulse	Selectable in Tech Mode	Selectable in Tech Mode
	Pause	Yes	Yes
	Auto Redial	Yes	Yes
	Last Number Redial	Yes	Yes
	Distinctive Ring	Yes	Yes
	Caller ID	No	No
	External Phone Interface	Yes	Yes

Item		CLX-6220FX	CLX-6250FX
Functions	Mail Box	No	No
	Voice Request	No	No
	TTI	Yes	Yes
	RTI	Yes	Yes
	Polling	No	No
	Earth/Recall	No	No
	Auto Reduction	Yes	Yes
	SMS	No	No
	RDS	N/A	N/A
Report & List Print out	Tx/Rx Journal	Yes	Yes
	Confirmation	2 types available (with Image TCR, w/ o image TCR, Mono Only)	2 types available (with Image TCR, w/ o image TCR, Mono Only)
	System Data List	List all user setting	List all user setting
Sound Control	Ring Volume	Yes (Off, LOW, MED, HIGH)	Yes (Off, LOW, MED, HIGH)
	Key Volume	Yes (On, Off)	Yes (On, Off)
	Speaker	Yes (On, Off,Comm)	Yes (On, Off,Comm)
	Alarm Volume	Yes (On, Off)	Yes (On, Off)
Junk Fax barrier		Yes	Yes
Security Receive		Yes	Yes
Fax Memory Backup		Yes (Serial flash)	Yes, Built-in HDD
Receive Mode		Fax, TEL, Ans/Fax	Fax, TEL, Ans/Fax
Capacity		less than 4 MB (200 Pages) (Mono)	less than 4 MB (200 Pages) (Mono)
Optional Memory		No	No
Max locations to store to 1 Group Dial		240 locations	240 locations
Fax Forward to FAX		Yes (On/Off), both Sent and Received, Mono Only	Yes (On/Off), both Sent and Received, Mono Only
Fax Forward to e-mail		Yes	Yes
Broadcasting		up to 249 locations, Mono Only	up to 249 locations, Mono Only
Delayed fax		Yes (Tx only, Mono Only)	Yes (Tx only, Mono Only)
Memory RX		Yes	Yes

2.2.7 Paper Handling

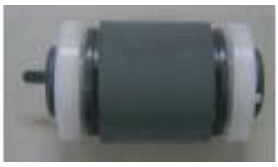
Item		CLX-6220FX	CLX-6250FX
Standard Capa.		250-sheet Cassette Tray, 100 MP	250-sheet Cassette Tray, 100 MP
Max. Capa.		850 sheets @ 80 g/㎡	850 sheets @ 80 g/㎡
Printing	Max. Size	216 X 356 mm (8.5" x 14")	216 X 356 mm (8.5" x 14")
	Min. Size	76 x127 mm (3" x 5")	76 x127 mm (3" x 5")
	Margin(T/B/L/R)	4 mm, 4 mm, 4 mm, 4 mm	4 mm, 4 mm, 4 mm, 4 mm
MP tray	Capacity	100 sheets @ 80g/㎡	100 sheets @ 80g/㎡
	Media sizes	76 x 127 mm (3" x 5") ~ 216 x 356 mm (8.5" x 14")	76 x 127 mm (3" x 5") ~ 216 x 356 mm (8.5" x 14")
	Media type	Plain Paper, Thick, Thin, Cotton, Archive Paper ,Bond, Card Stock, Labels, Preprinted, Color Paper, Envelope, Recycled	Plain Paper, Thick, Thin, Cotton, Archive Paper ,Bond, Card Stock, Labels, Preprinted, Color Paper, Envelope, Recycled
	Media weight	16~59 lb (60 to 220 g/㎡)	16~59 lb (60 to 220 g/㎡)
	Sensing	Empty sensing No size sensor	Empty sensing No size sensor
Standard Cassette Tray	Capacity	250 sheets @ 80g/㎡	250 sheets @ 80g/㎡
	Media sizes	76 x127mm (3" x 5") ~ 216 x 356mm (8.5" x 14")	76 x127mm (3" x 5") ~ 216 x 356mm (8.5" x 14")
	Media types	Plain paper	Plain paper
	Media weight	16~28lb (60 to 105g/㎡)	16~28lb (60 to 105g/㎡)
	Size sensor	N/A	N/A
	User Interface	Indicator	Indicator
	Sensing	Empty sensing	Empty sensing
Optional Cassette Tray	Capacity	500 sheets @ 80g/㎡	500 sheets @ 80g/㎡
	Media sizes	A5 148.5 x210mm ~ Legal 216 x 356mm (8.5" x 14")	A5 148.5 x210mm ~ Legal 216 x 356mm (8.5" x 14")
	Media types	Plain paper	Plain paper
	Media weight	16~28lb (60 to 105g/㎡)	16~28lb (60 to 105g/㎡)
	Size sensor	N/A	N/A
	User Interface	Indicator	Indicator
	Sensing	Empty sensing	Empty sensing
Output Stacking Capacity	FaceUp	N/A	N/A
	FaceDown	200 sheets @ 75g/㎡ in N/N	200 sheets @ 75g/㎡ in N/N
Output Full sensing		Yes	Yes

Item		CLX-6220FX	CLX-6250FX
Finishing		N/A	N/A
Duplex	Supporting	Std.	Std.
	Media sizes	A4, Letter, Legal, Oficio, Folio	A4, Letter, Legal, Oficio, Folio
	Media types	Plain paper only	Plain paper only
	Media weight	20~24lb (75 to 90g/㎡)	20~24lb (75 to 90g/㎡)
ADF	Paper Weight	12.5~28lb(Non Coating)	12.5~28lb(Non Coating)
	Capacity	50 sheets @ 75g/㎡ 40 sheets @ 80g/㎡	50 sheets @ 75g/㎡ 40 sheets @ 80g/㎡
	Document Size	Width : 142 ~ 216mm (5.6"~8.5"), Length : 148 ~ 356mm (5.8" ~ 14")	Width : 142 ~ 216mm (5.6"~8.5"), Length : 148 ~ 356mm (5.8" ~ 14")
	Dimension	460 x 343 x 101mm	460 x 343 x 101mm

2.2.8 Consumables

Item		CLX-6220FX	CLX-6250FX
Toner cartridge	Yield	Initial : 2.5K/2K (Black/Color) Sales - 5K/4K (Black/Color) - 2.5K/2K (Black/Color)	Initial : 5K/4K (Black/Color) Sales - 5K/4K (Black/Color) - 2.5K/2K (Black/Color)
	Model	- Standard yield CLT-C508S (Cyan) CLT-M508S (Magenta) CLT-Y508S (Yellow) CLT-K508S (Black) - High yield CLT-C508L (Cyan) CLT-M508L (Magenta) CLT-Y508L (Yellow) CLT-K508L (Black)	- Standard yield CLT-C508S (Cyan) CLT-M508S (Magenta) CLT-Y508S (Yellow) CLT-K508S (Black) - High yield CLT-C508L (Cyan) CLT-M508L (Magenta) CLT-Y508L (Yellow) CLT-K508L (Black)
	Key	Unique, Electronic key(s-Chip V2.0)	Unique, Electronic key(s-Chip V2.0)
	Life detect	90% exhausted : Low message 100% exhausted : Empty message	90% exhausted : Low message 100% exhausted : Empty message
PTB (Paper Transfer Belt)	Yield	50K	50K
	Model	CLT-T508	CLT-T508
	Key	Unique, Electronic key (s-Chip V1.1)	Unique, Electronic key (s-Chip V1.1)

2.2.9 Maintenance parts

Item	Image	Part Code	Life
Fuser unit		JC91-00970A (6220_110V) JC91-00971A (6220_220V) JC91-00968A (6250_110V) JC91-00969A (6250_220V)	100K
Pick up roller		JC90-00932A	70K
Cassette holder pad		JC90-00993A	70K
[ADF] Pick-up Roller		JC97-03070A	80K
[ADF] Friction Pad		JC97-03069A	20K

2.2.10 Reliability & Service

Item		CLX-6220FX	CLX-6250FX
Printing Volume(AMPV)		1,140 page (B&W : 400 page, Color : 740 pages)	1,850 page (B&W : 740 page, Color : 1,110 pages)
Max Monthly Duty		65,000 pages	80,000 pages
MPBF		58,000 pages	58,000 pages
MTTR		<30 min.	30 min.
Real-time Clock		Yes	Yes
Test Print		Configuration Sheet Demo Sheet	Configuration Sheet Demo Sheet
RDC	Comm. Mode	N/A	N/A
	Operation	N/A	N/A
Temperature	Operating	15~32.5 ℃ (59~90.5 ℉)	15~32.5 ℃ (59~90.5 ℉)
	Storage	-20~40 ℃ (-4~104 ℉)	20~40 ℃ (-4~104 ℉)
Humidity	Operating	10~80RH	10~80RH
	Storage	0~95RH	0~95RH

2.2.11 Environment

Item		CLX-6220FX	CLX-6250FX
Acoustic Noise Level (Sound Power/ Pressure)	Print & Copy	Less than 53 dBA print @ CST Less than 54 dBA copy @ CST Less than 56 dBA print & copy @ SCF &MP	Less than 54 dBA print @ CST Less than 55 dBA copy @ CST Less than 56 dBA print & copy @ SCF, MP
	Standby	Less than 35 dBA	Less than 35 dBA
	Sleep	Background noise level	Background noise level
Input Voltages		110-127 VAC, 50/60Hz	110-127 VAC, 50/60Hz
		220-240 VAC,50/60Hz	220-240 VAC,50/60Hz
		Power Switch	Power Switch
Power Consumption	Printing	Less than 550Wh	Less than 580Wh
	Ready	Less than 35Wh	Less than 40Wh
	Sleep	Less than 12Wh	Less than 13Wh
Dimension (W x D x H)	Set	468 x 498 x 651 mm (18.43 x 19.61 x 25.63 in)	468 x 498 x 651mm (18.43 x 19.61 x 25.63 in)
Weight	Set (with consumables)	36kg (79.4lb)	37kg (81.6lb)
	Set Packing	44kg (97lb)	45kg (99.2lb)
	Consumables	1.08kg (2.38 lb)	1.2kg (2.65 lb)
	Consumables Packing	1.6 Kg (3.53 lb)	1.7 Kg (3.75 lb)

2.2.12 Packing & Accessory

Item	CLX-6220FX	CLX-6250FX
In-Box	Set C/M/Y/K Initial Toner Power cord USB cable (China, Korea, HongKong, Malaysia, Thailand, Singapore, Russia) Driver CD (Driver, Application, manual) N/W CD (SyncThru, manual) Quick installation Guide sheet Warranty Card	Set C/M/Y/K Initial Toner Power cord USB cable (China, Korea, HongKong, Malaysia, Thailand, Singapore, Russia) Tell Line Cord Driver CD (Driver, Application, manual) N/W CD (SyncThru, manual) Quick installation Guide sheet Warranty Card

2.2.13 Option

Item	CLX-6220FX	CLX-6250FX
Memory	CLP-MEM201: 128 MB CLP-MEM202: 256 MB	CLP-MEM150: 128 MB CLP-MEM160: 256 MB CLP-MEM170: 512 MB
Second Cassette	CLX-S6250A (500-sheet cassette)	CLX-S6250A (500-sheet cassette)
Wireless Network	N/A	ML-NWA40L
Tall Stand	N/A	N/A
Hard Disk	N/A	ML-HDK300(160GB)

2.3 Model Comparison

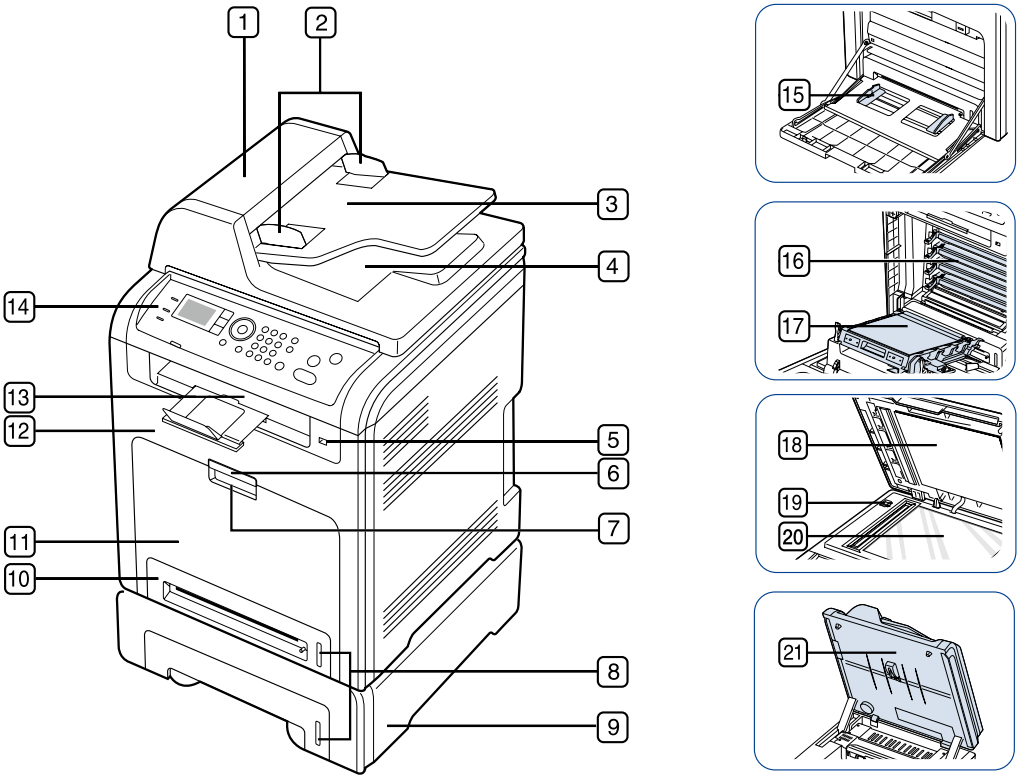
	CLX-6220FX	CLX-6250FX	HP 2320fxi
Model			
Printing / Copy Speed (A4)	20/20 ppm	24/24 ppm	20/20 ppm
Resolution (dpi)	1,200 x 600	1,200 x 600	1,200 x 600
CPU (MHz)	360	700	450
Memory	256 (Max.512)	256 (Max.784)	160 (Max.418)
FPOT	Less than 27 seconds	Less than 19.5 seconds	Less than 18 seconds
Network	Standard	Standard	Standard
Duplex printing	Standard	Standard	Standard
Scan System	CCD	CCD	CCD
HDD	N/A	160GB option	
Paper Capacity	250 CST 100 MP	250 CST 100 MP	250 CST 50 MP
Toner cartridge	Standard (Black/Color) : 2.5K / 2K High (Black/Color) : 5K /4K	Standard (Black/Color) : 2.5K / 2K High (Black/Color) : 5K /4K	Standard (Black/Color) : 1.2K /1.2K
Option cassette	500 sheet	500 sheet	550 sheet

2.4 Product configuration

This chapter explains main components of this printer.

2.4.1 Printer external

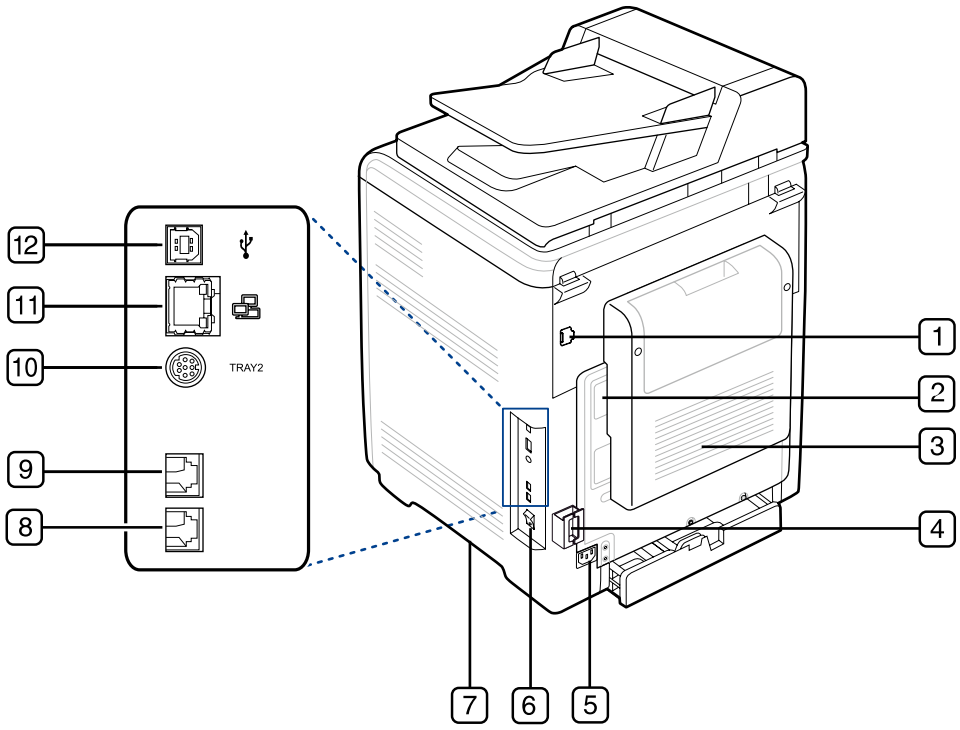
2.4.1.1 Front view



1	Document feeder cover	8	Paper level indicator	15	Multi-purpose tray paper width guides
2	Document feeder width guides	9	Optional tray 2[a]	16	Toner cartridges
3	Document feeder input tray	10	Tray 1	17	Paper transfer belt
4	Document feeder output tray	11	Multi-purpose tray	18	Scanner lid
5	USB memory port	12	Front door	19	Scanner lock switch
6	Front door handle	13	Document output tray	20	Scanner glass
7	Multi-purpose tray handle	14	Control panel	21	Scan unit

a. Optional device.

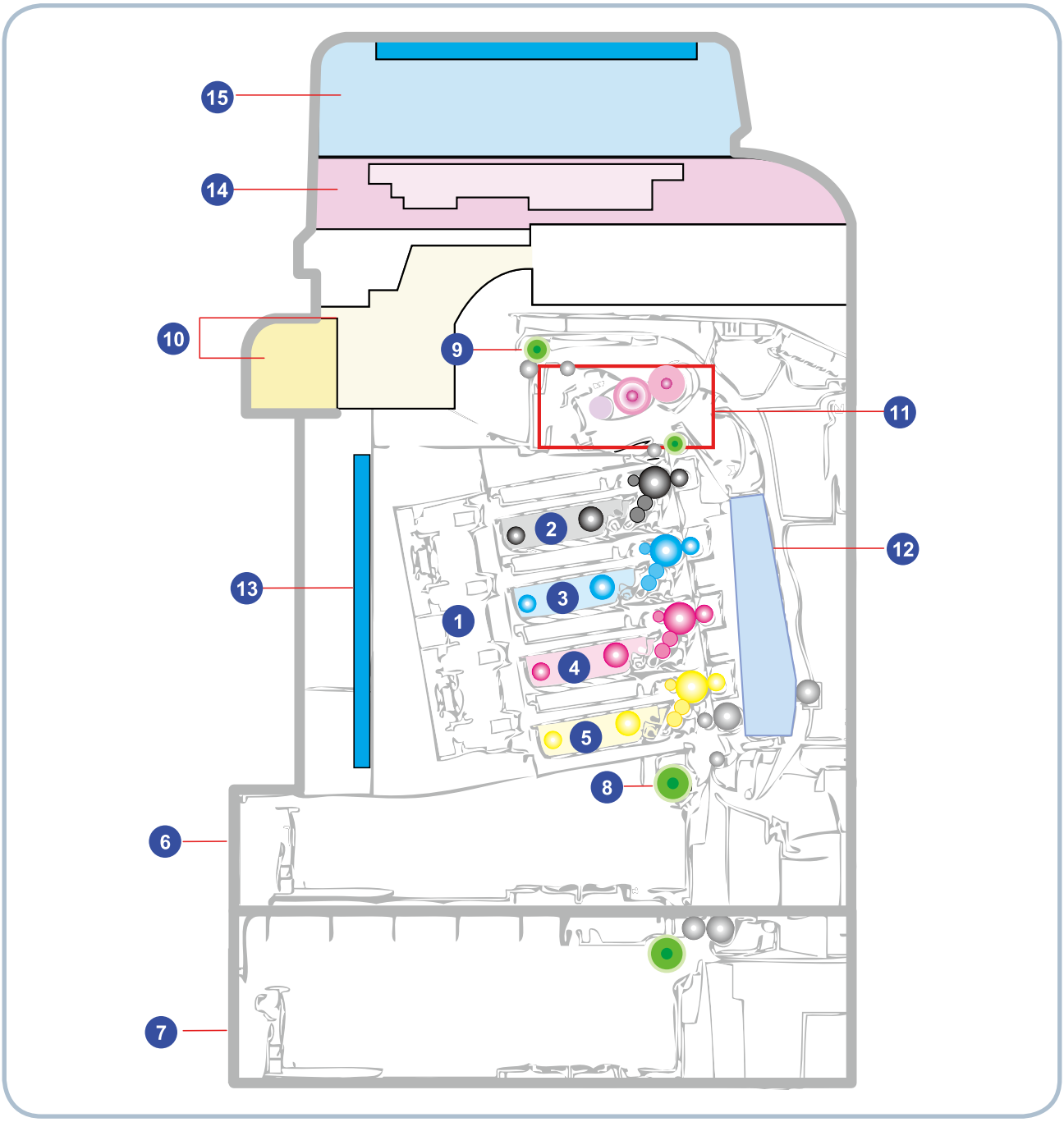
2.4.1.2 Rear view



1	External device interface (EDI)[a]	7	Handle
2	Control board cover	8	Extension telephone socket (EXT)
3	Rear door	9	Telephone line socket
4	Cable organizer	10	Optional tray 2 cable connector
5	Power receptacle	11	Network port
6	Power-switch	12	USB port

a. External device interface for Samsung and third party solutions. (CLX-6250 Series only).

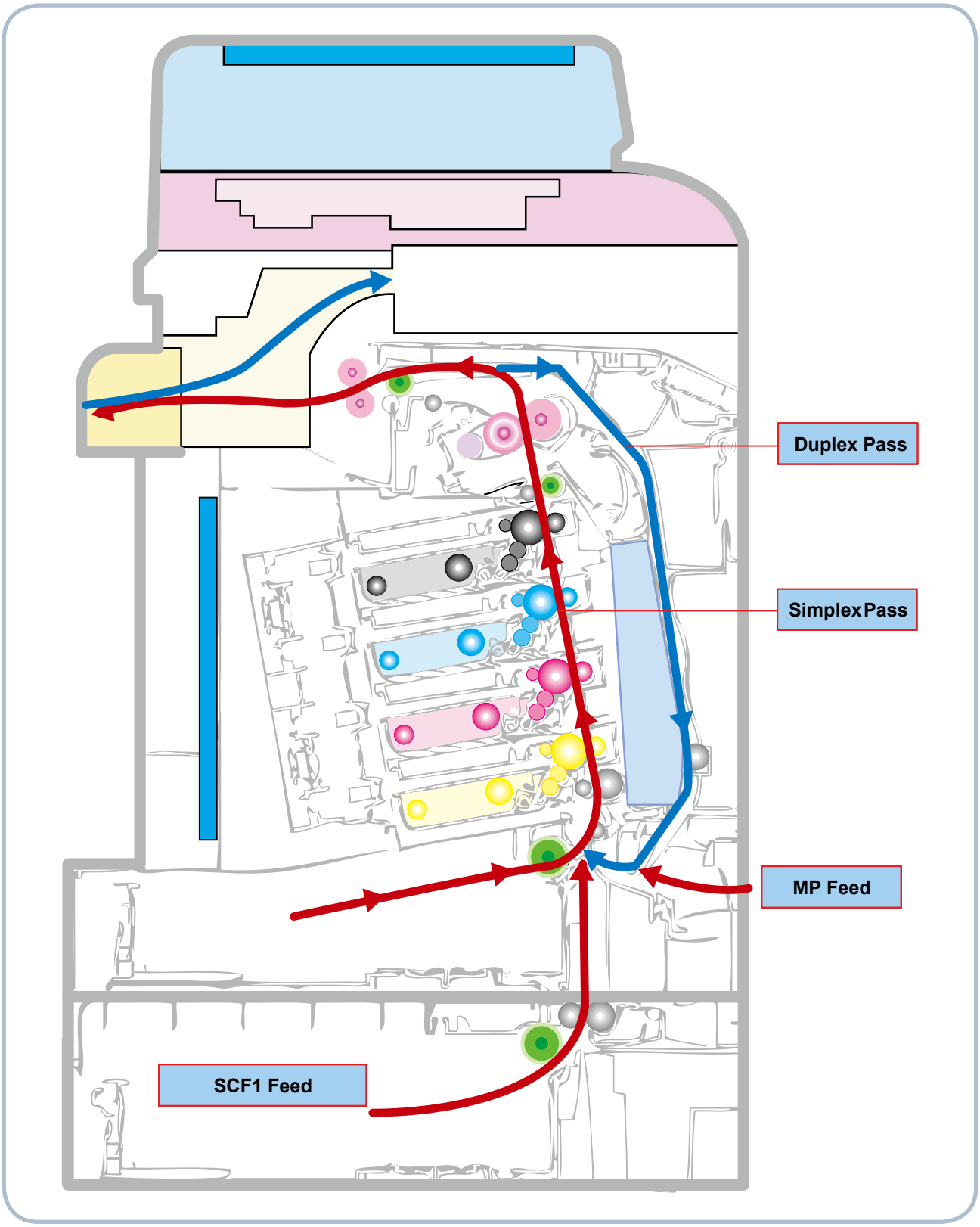
2.4.1.3 System layout



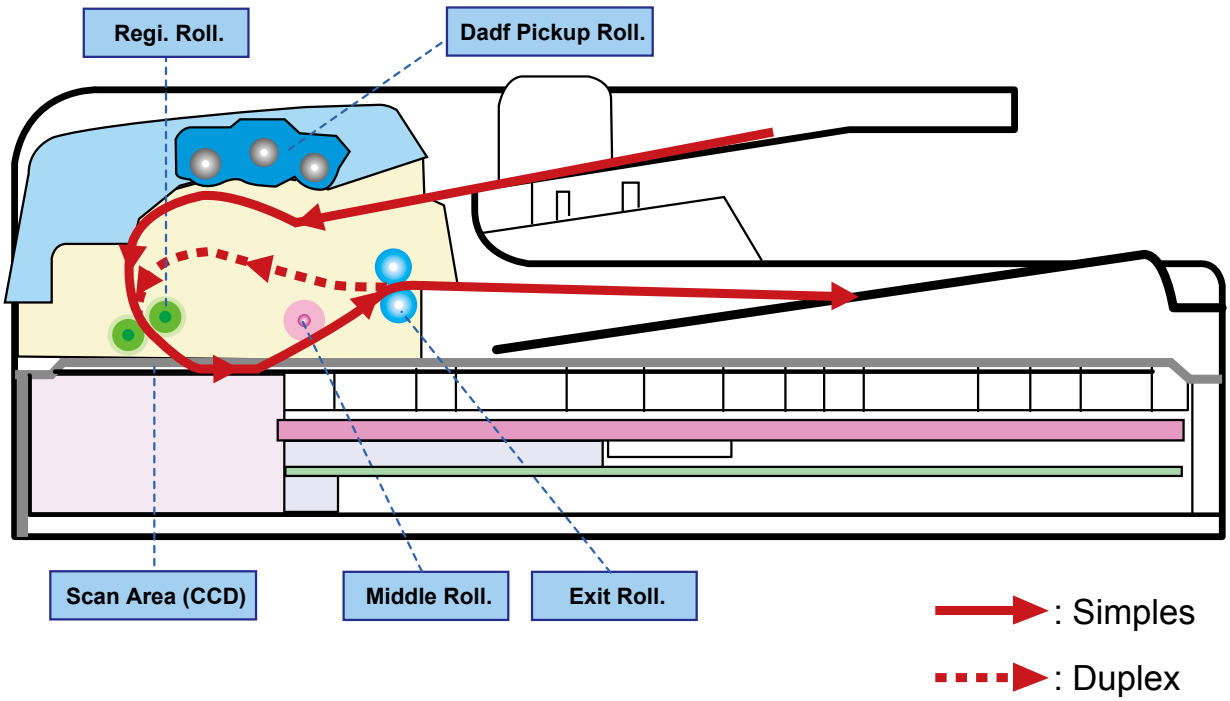
No.	Item	No.	Item	No.	Item
1	LSU	7	SCF Unit (Option cassette)	13	Main PBA
2	Toner cartridge (K)	8	Pick up Roller		SMPS PBA
3	Toner cartridge (C)	9	Exit Roller		FDB (Fuser Drive Board) PBA
4	Toner cartridge (M)	10	Reverse Unit	14	Scanner (Platen unit)
5	Toner cartridge (Y)	11	Fuser Unit	15	DADF unit
6	Cassette	12	PTB Unit (Paper transfer belt)		

2.4.1.4 Paper path

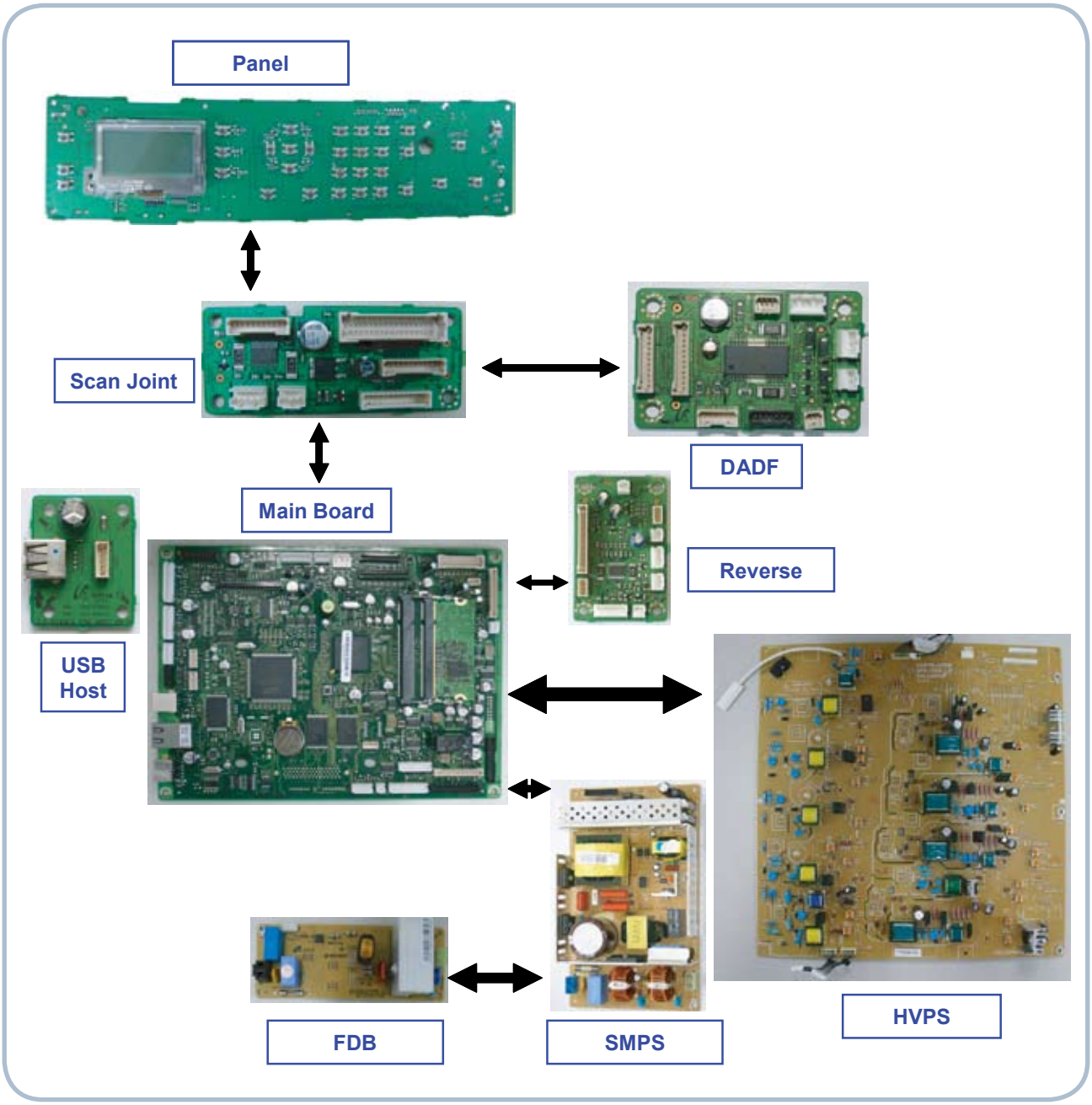
◆ Engine paper path



◆ DADF paper path



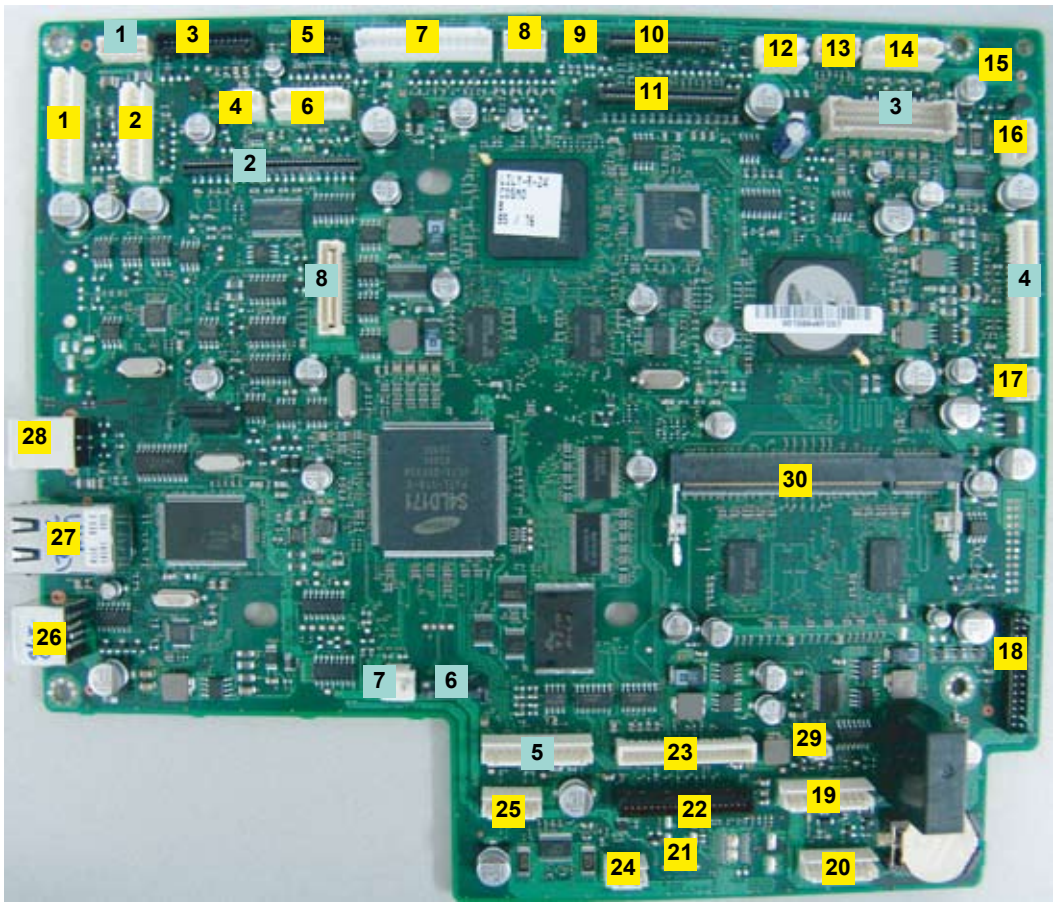
2.4.2 Hardware configuration



2.4.2.1 Main PBA

The CLX-6220/6250 series system controller consists of a main controller and a engine controller in one-board. The main controller uses a ARMS core chip as its main processor, which is dedicated to printing several internal operating blocks through system programs stored in Flash Memory. The engine controller has an engine control SoC, which includes motor drivers, PWM drivers, LSU drivers, sensors, high-voltage drivers, and other driving units for mechanical parts.

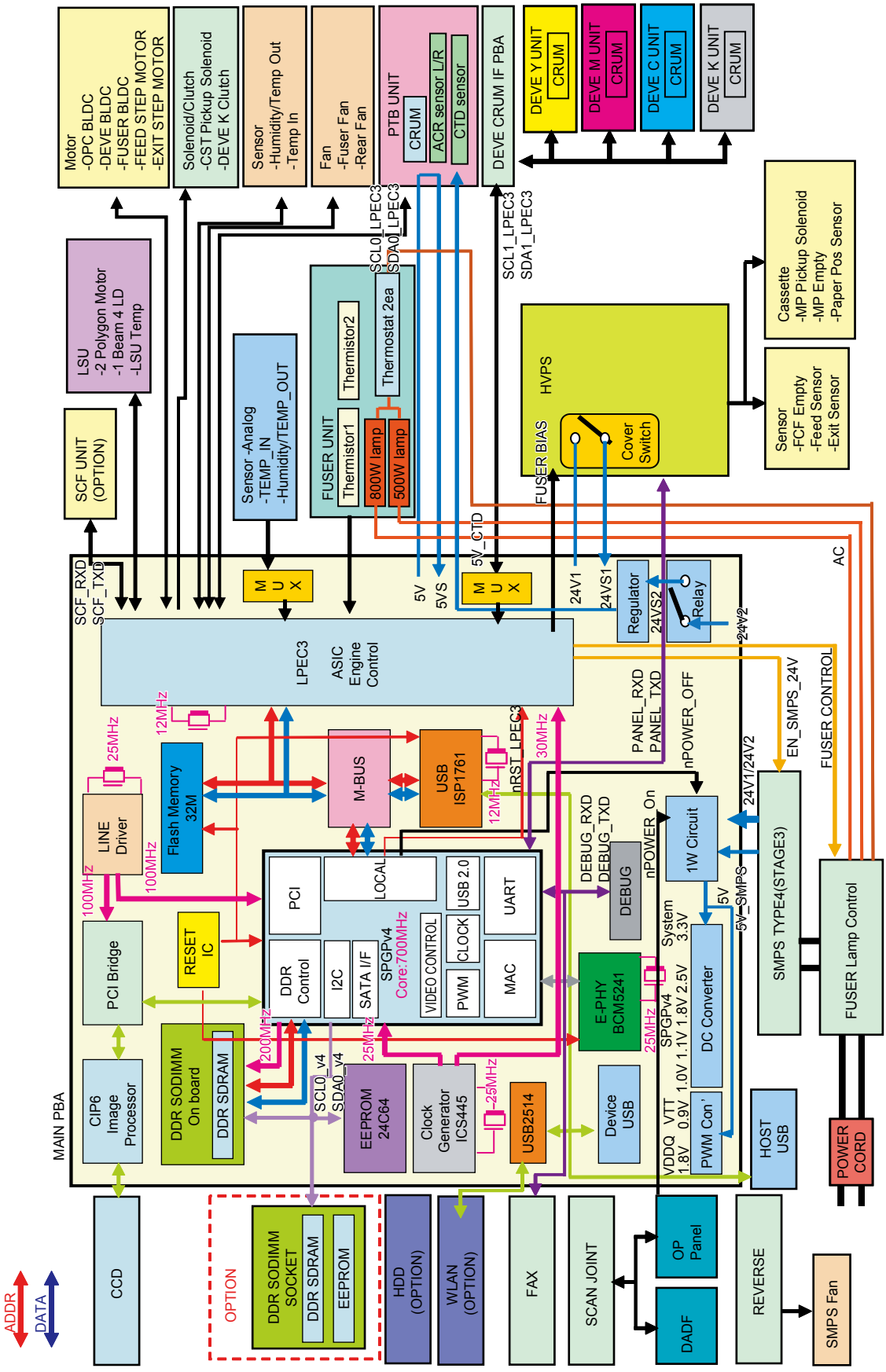
◆ SPGPV4 for CLX-6250FX



NO.	Connector	NO.	Connector	NO.	Connector
1	BLDC DEVE, 12pin	11	HVPS2	21	STEP MOTOR (reserved)
2	BLDC OPC, 10pin	12	24V SWITCH	22	C,K LSU , 20pin
3	PTB, 14pin	13	DEBUG, 4pin	23	Y,M LSU , 20pin
4	FAN (reserved) 3pin	14	PTL, 8pin	24	FEED STEP,4pin
5	DEVE CRUM, 7pin	15	FAN (reserved) , 3pin	25	FUSER HEAT CONTROL, 6pin
6	SENSER TEMP, 8pin	16	EXIT STEP, 4pin	26	SCF JACK
7	BLDC FUSER, 15pin	17	REAR FAN, 3pin	27	ETHERNET JACK
8	FUSER THERMISTOR,4pin	18	SMPS TYPE5, 28pin	28	USB DEVICE JACK,
9	CURL SENSOR (reserved), 3pin	19	LSU MOTOR 10pin	29	TEMP_LSU, 2pin
10	HVPS1	20	JTAG, 8pin	30	DIMM SLOT

NO.	Connector
1	USB HOST, 5pin
2	SCAN JOINT, 34pin
3	MODEM, 12pin
4	SATA POWER, 5pin
5	CCD, 40pin
6	REVERSE, 20pin
7	SATA, 7pin
8	WLAN, 40pin

1A) Main PBA (SPGPV4) Block Diagram



2A) Main PBA Specification (CLX-6250FX)

■ CPU

- ARM v5TE compliant core 700MHz (I-Cache : 32KB, D-Cache : 32KB)

■ Memory Interface

> ROM
- Nor Flash used (32MB)
- Interface With SPGPV4 ROM Controller

> SDRAM
- Size : CLX-6250FX(DDR2) : Default 256MB(on-board) (Option 128MB/256MB/512MB)

> EEPROM
- Size : 512kb
- Interface With SPGPV4 I2C Controller

> CRUM
- Size : 256Byte
- Interface With LPEC3I2C Controller via Deve Crum IF B'D

■ I/O Interface

USB DEVICE : High Speed USB 2.0 (High speed 480Mbps)

■ N/W Embedded

- SPGPV4 With MII Interface
- Active LED(Yellow) / Link LED(Green)

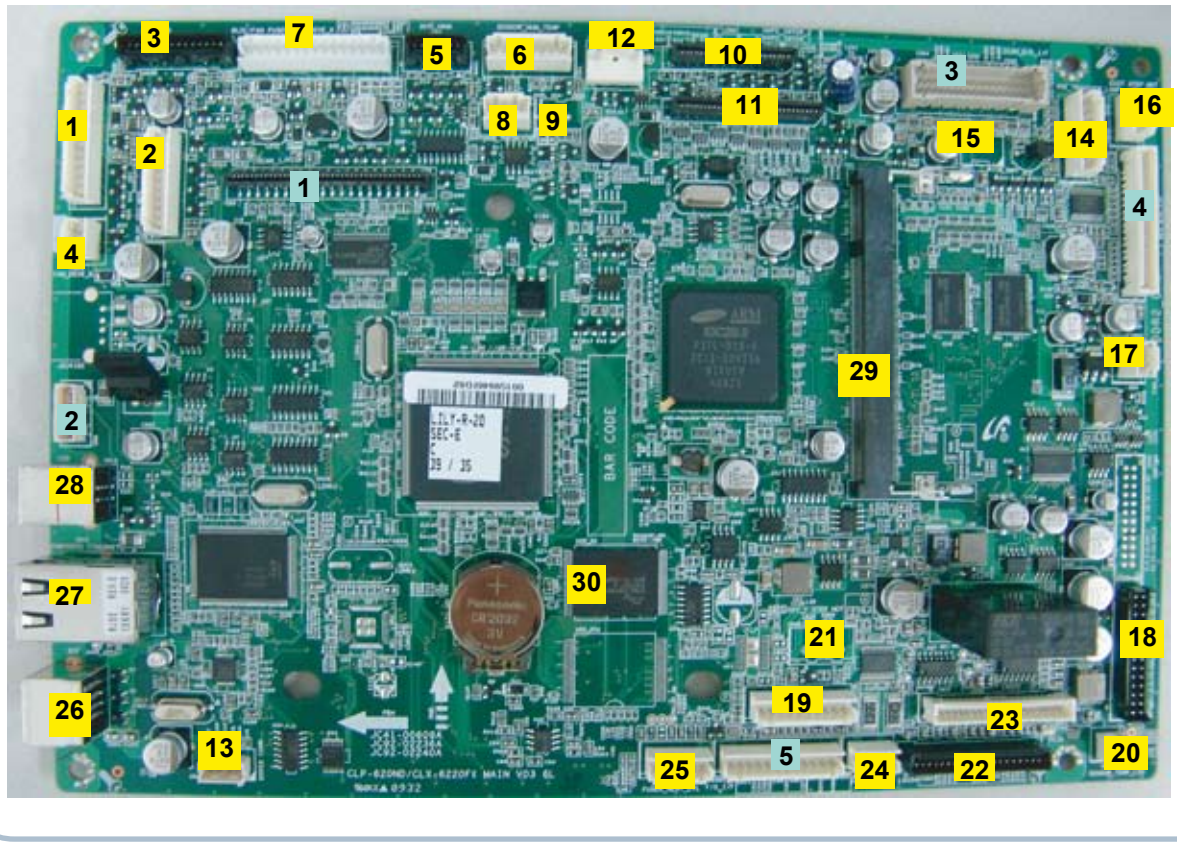
■ PWM

- High Voltage Control With Duty
- Main Motor Clock

■ I2C Interface

- NVRAM (system information + network information)
- CRUM

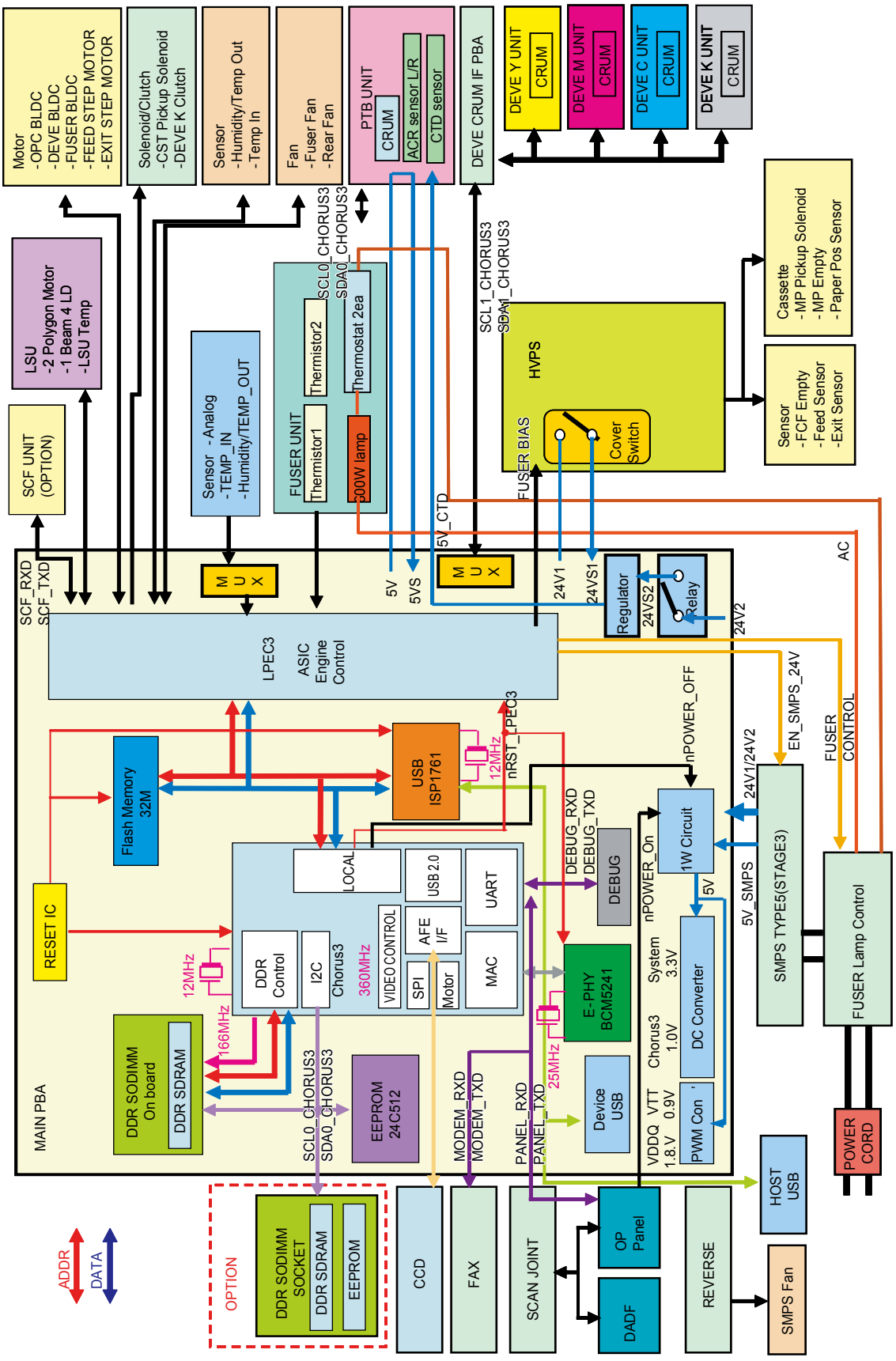
◆ CHROUS3 for CLX-6220FX



NO.	Connector	NO.	Connector
1	BLDC DEVE, 12pin	16	EXIT STEP, 4pin
2	BLDC OPC, 10pin	17	REAR FAN, 3pin
3	PTB, 14pin	18	SMPS TYPE5, 28pin
4	FAN (reserved) 3pin	19	LSU MOTOR 10pin
5	DEVE CRUM, 7pin	20	TEMP_LSU 2pin
6	SENSER TEMP, 8pin	21	STEP MOTOR (reserved)
7	BLDC FUSER, 15pin	22	C,K LSU , 20pin
8	FUSER THERMISTOR, 4pin	23	Y,M LSU , 20pin
9	CURL SENSOR (reserved), 3pin	24	FEED STEP,4pin
10	HVPS1	25	FUSER HEAT CONTROL, 6pin
11	HVPS2	26	SCF JACK
12	24V SWITCH	27	ETHERNET JACK
13	DEBUG, 4pin	28	USB DEVICE JACK,
14	PTL, 8pin	29	DIMM SLOT
15	FAN (reserved) , 3pin	30	FLASH

NO.	Connector
1	CCD, 40pin
2	USB HOST, 5pin
3	SCAN JOINT, 34pin
4	REVERSE
5	MODEM

1B) Main PBA (CHORUS3) Block Diagram



2B) Main PBA Specification (CLX-6220FX)

■ CPU

- ARM 926EJS core 400MHz (I-Cache : 16KB, D-Cache : 16KB)

■ Memory Interface

> ROM
- Nor Flash used (32MB)
- Interface With Chorus3 ROM Controller
- Serial Flash used (8MB)

> SDRAM
- Size : Default 256MB(on-board) (Option 128MB/256MB/512MB)

> EEPROM
- Size : 512kb
- Interface With Chorus3 I2C Controller

> CRUM
- Size : 256Byte
- Interface With LPEC3I2C Controller via Deve Crum IF B'D

■ I/O Interface

- USB DEVICE : High Speed USB 2.0 (High speed 480Mbps)

■ N/W Embedded

- SPGPV4 With MII Interface
- Active LED(Yellow) / Link LED(Green)

■ PWM

- High Voltage Control With Duty
- Main Motor Clock

■ I2C Interface

- NVRAM (system information + network information)
- CRUM

3) Power Flow

■ Main PBA

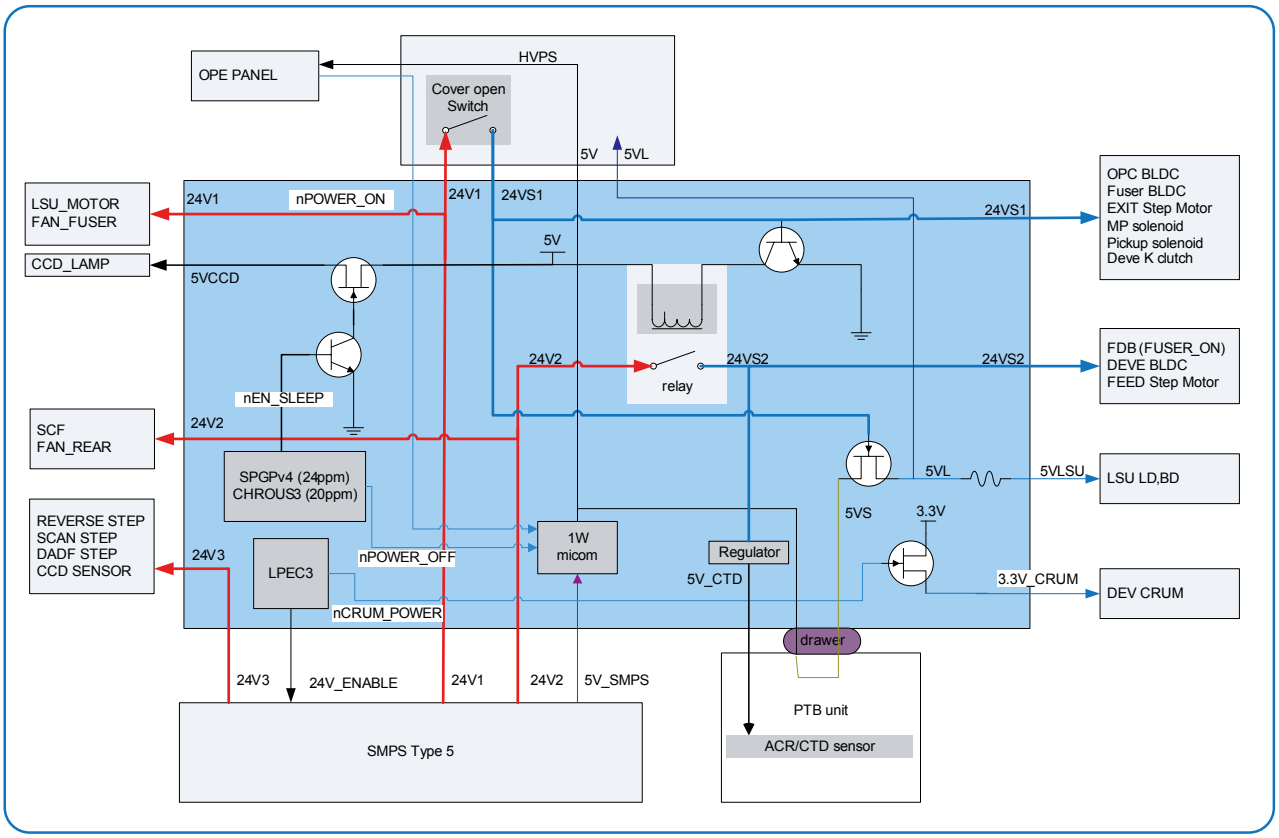
- Supply From SMPS +5V
- Power Supply with Regulator (3.3V & 2.5V & 1.8V & 1.1V & 1.0V: Switching Regulator)
- 3.3V : I/O Operating (Digital & Analog)
- 1.8V : DRAM & Video I/F Voltage
- 1.1V : SPGPV4 CPU Voltage
- 1.0V : SPGPV4/CHROUS3 Core Voltage

■ HVPS

- High Voltage Source for EP Condition
- Supply From SMPS +24V
- Controlled By PWM Pulse & I/O

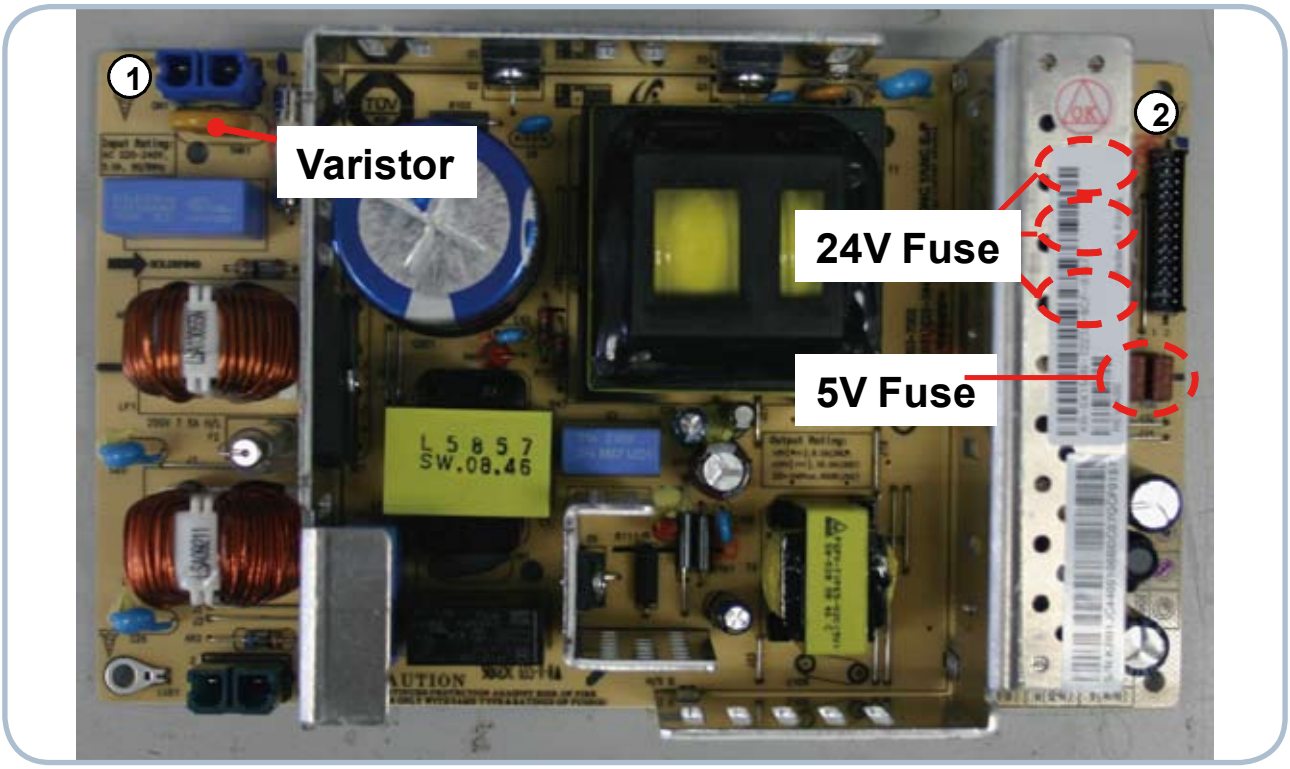
■ SMPS

- Type 4 (stage 3 type)
- +24V : For use Mechanical Part (Motor & Actuator (Solenoid, Clutch))
- +5V : Logic, Analog, Sensor



2.4.2.2 SMPS board

SMPS(Switching Mode Power Supply) Board supplies electric power to the Main Board and other boards through a Main Controller by +5V,+24V from 110V/220V power input. It has safety protection modes for over current and load.



■ Connection

1	INPUT_AC (from Fuser Drive Board)
2	OUTPUT_5V , 24V (to Main PBA) INPUT_24V_Control (from Main PBA)

SPECIFICATION

General Input/Output Voltage
1) AC 110V (90V ~ 135V)
2) AC 220V (180V ~ 270V)
3) Output Power: 192W / Max. 270W
DC 5V: 24W ~ 30W
DC 24V: 168W ~ 240W

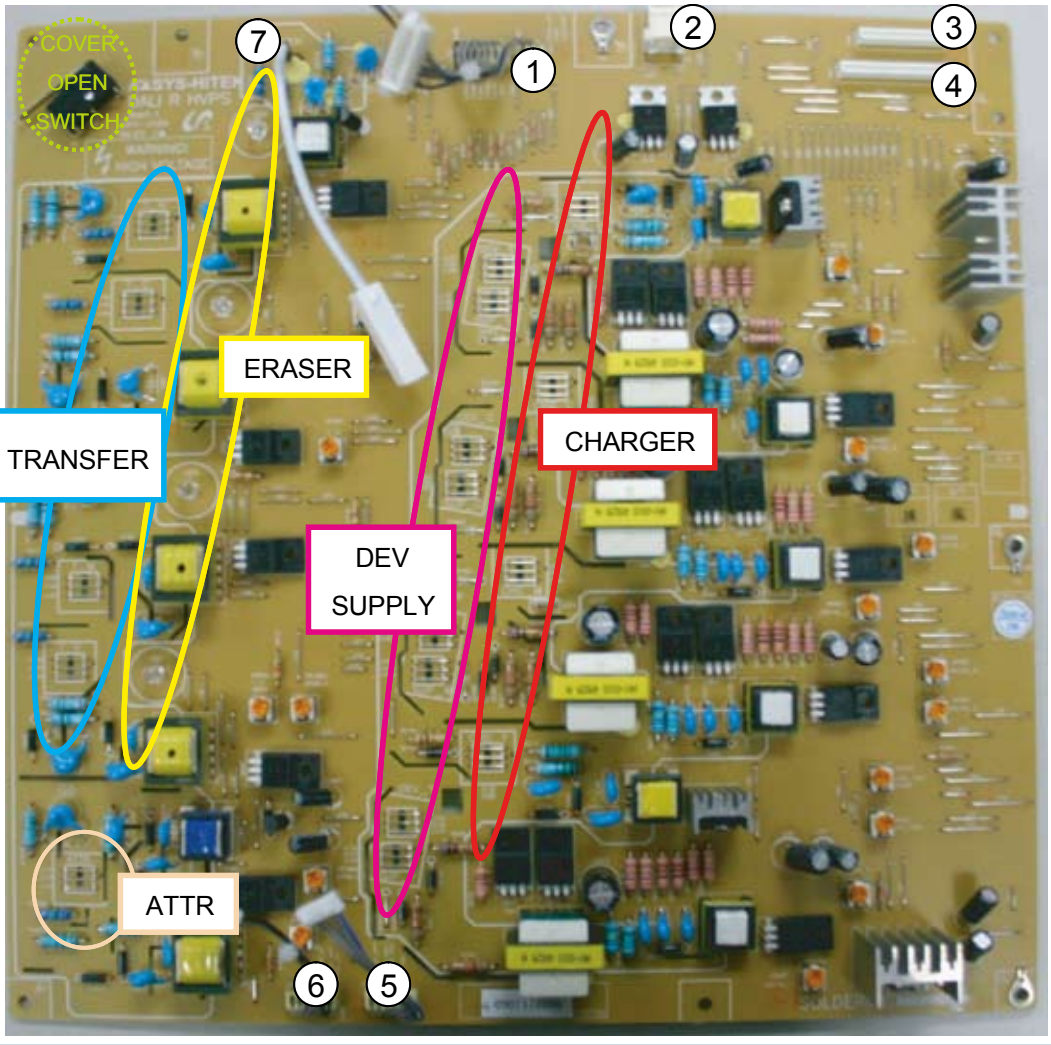
◆ Input / Output connector

AC Input Connector(CN1)		
PIN ASSIGN	PIN NO	Description
1	AC_L	AC Input
2	AC_N	

AC Input Connector(CN1)					
Description	PIN NO	PIN ASSIGN		PIN NO	Description
Power	+24V1	1	2	GND	24V Ground
Power	+24V1	3	4	+24V1	Power
24V Ground	GND	5	6	GND	24V Ground
Power	+24V2	7	8	GND	24V Ground
Power	+24V2	9	10	+24V2	Power
24V Ground	GND	11	12	GND	24V Ground
Power	+24V3	13	14	GND	24V Ground
Power	+24V3	15	16	GND	24V Ground
5V Ground	GND	17	18	GND	5V Ground
Power	+5V1	19	20	GND	5V Ground
Power	+5V1	21	22	+5V1	Power
5V Ground	GND	23	24	GND	5V Ground
Power	+5V2	25	26	+5V2	Power
Signal	Standby	27	28	reserved	Signal (reserved)

2.4.2.3 HVPS Board

HVPS (High Voltage Power Supply) Unit generates 17 high-voltage channels which includes T1(4), Charger(2), Deve AC(4), Supply DC(4), Fuser Bias(1), ATTR(2)
HVPS has a Cover Open switch and some connectors (from Ope PBA, feed, exit, cst_empty, cst_detect, MP_empty sensor, MP clutch) and Erase Lamp 4EA.



■ Connection

1	EXIT SENSOR
2	24V SWITCH
3	HVPS1(from Main Board)
4	HVPS2(from Main Board)

5	Feed, CST empty sensor
6	MP solenoid, MP empty, CST detect
7	Fuser bias

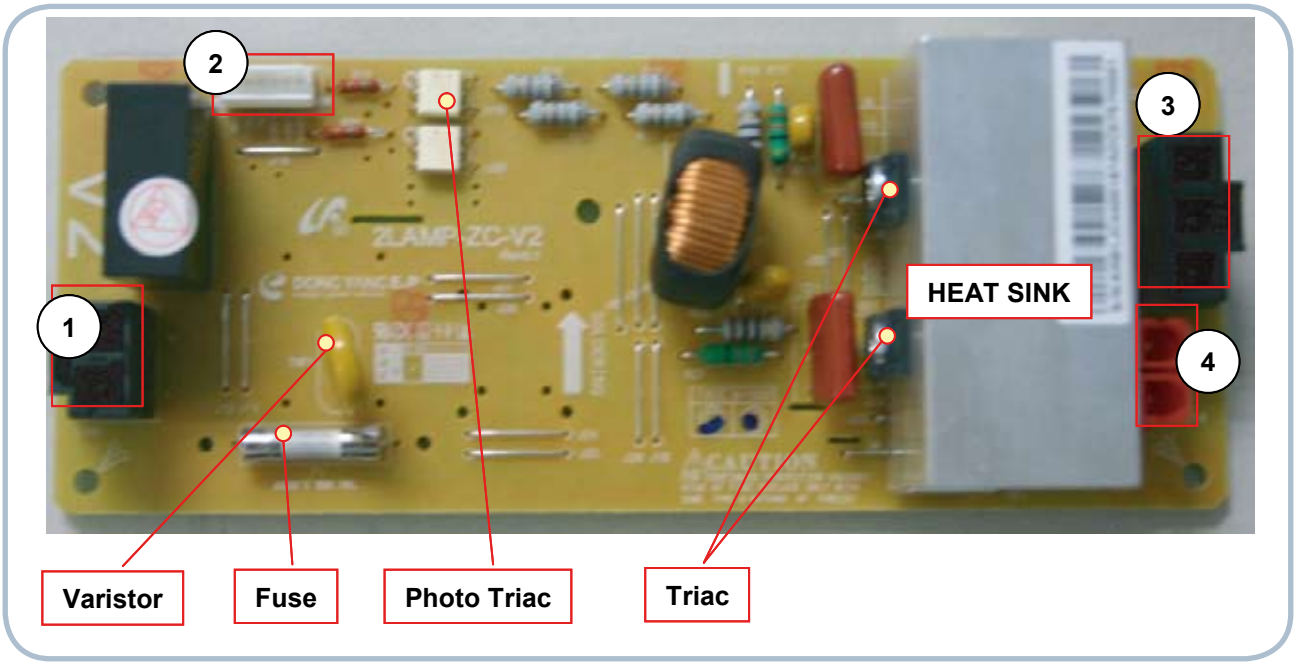
■ Specification

Channel	AC/DC	No.	Type	Control	Rated Load	Output	Output Range	Load Range
MHV	DC-	4	Constant-V	PWM duty	200M	-1170V	0 ~ -1700V	0 ~ 20uA
BIAS	DC-	4	Constant-V	PWM duty	68pF	-400V	0 ~ -800V	0 ~ 20uA
	AC	4	-	PWM duty		1.8kVpp	0 ~ -2.4kVpp	
T1	DC+	4	Constant-I	PWM duty	90M	14uA	0 ~ 35uA	0 ~ 3kV
ATTR	DC+	1	Constant-V	PWM duty	100M	1418V	0 ~ 3500V	0 ~ 30uA
	DC-		Constant-V	Enable	25M	-800V	-	0 ~ 30uA
Fuser Bias	DC+	1	Constant-V	PWM duty	100M	418V	0 ~ 900V	0 ~ 20uA
ATTR_P	108(42%)	1418V	100M	100M	100M	100M	100M	0.85V (66)
ATTR_N	on	-800	25M	25M	25M	25M	25M	-
Fuser Bias	128(50%)	418V	100M	100M	100M	100M	100M	-

◆ Constant current outputs in T1 channels.
◆ Individual T1 channels for each color.
◆ AC + DC deve high voltage.
◆ One Channel charger output to each 4 color port.
◆ All output channels can be adjusted by using volume control components.

2.4.2.4 Fuser Drive Board

The FDB (Fuser Drive Board) controls 2 halogen lamps in the fuser unit using control signals which are provided from the ENGINE PBA and supplies AC power to the SMPS. Both V1/V2 FDBs provide max. 1500W output power.



■ Connection

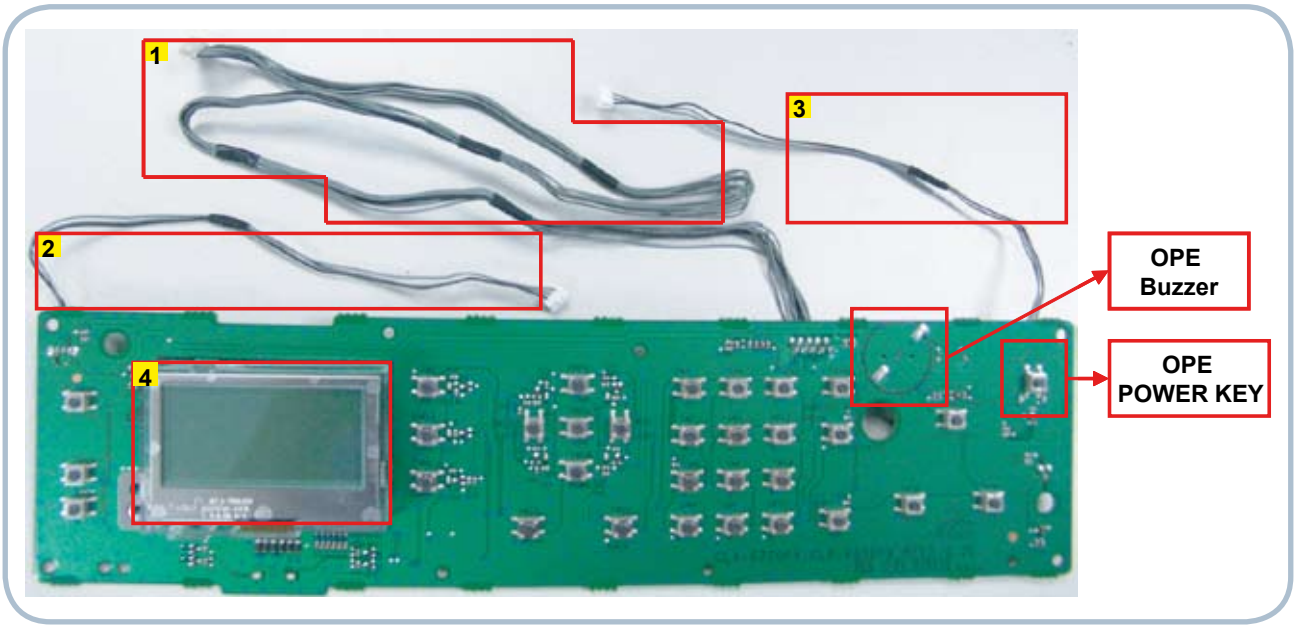
1	INLET AC
2	FUSER CONTROL (from Main board)
3	FUSER AC (to Fuser lamp)
4	SMPS AC (to SMPS)

■ Specification

	V1	V2
Input Voltage (Range)	AC 110V (90 ~ 135V)	AC 220V (180 ~ 270V)
Input Current	20A	10A
Output Power	Max. 1300W	Max. 1300W
Phase Detect	Not support	
Protection	Relay Control Signal	

2.4.2.5 OPE board

The OP PBA controls the 4 Line Character LCD unit, and communicates with Main PBA through UART. The OP PBA includes an 8-Bit Micom(HT48C50) and a Power Key.



■ Connection

NO.	Connector	NO.	Connector
1	OPE Harness, 10p	3	Bin_Full Sensor Harness,3p
2	CCD_HOME_Sensor Harness, 3p	4	LCD Module

2.4.3 Feeding Section

1) Cassette (1st tray)

It stores and automatically feeds xerographic paper.
Pick-up Roller picks up paper, controls drive, feeds paper, removes static electricity, and so on.
- Feeding Method : Cassette Type
- Feeding Standard : Center Loading
- Feeding Capacity : Cassette 250 Sheets (80g/㎡, 20lb Paper Standard)
- Paper Detecting Sensor : Photo Sensor (Empty, Registration, Exit)
- Media size : Letter, Legal, Oficio, Folio, A4, ISO B5, JIS B5, Executive, A5, A6

2) SCF (Second Cassette Feeder, 2nd / 3rd tray)

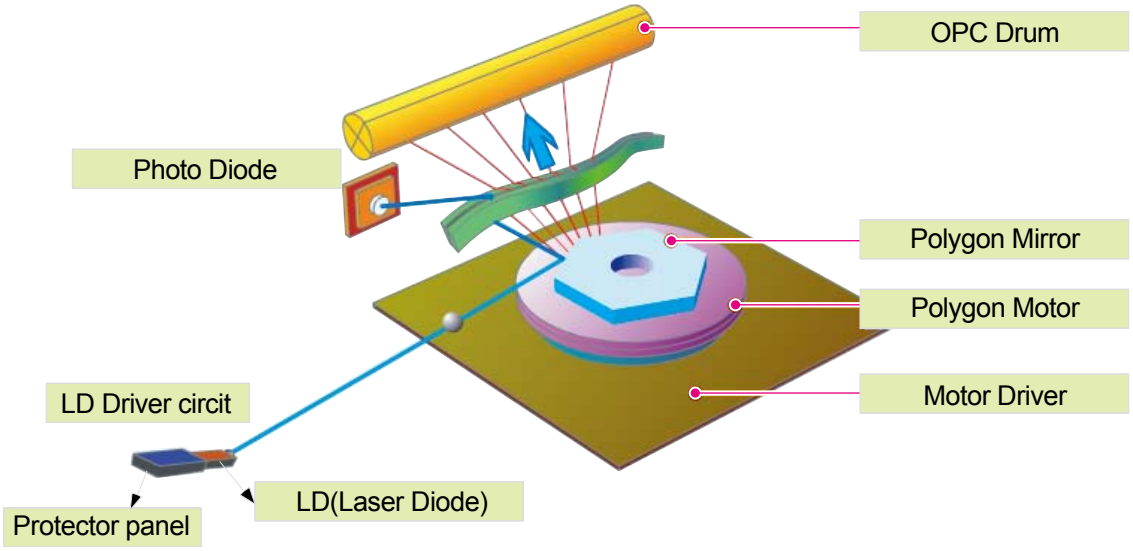
This is the option unit of CLX-6220/6250 series. This additionally stores and automatically feeds printing paper. Its function is the same as the Cassette (1st tray). Only one Second Cassette Feeder(SCF) can be installed per unit.
- Feeding Method : Cassette Type
- Feeding Capacity : Cassette 500 Sheets (80g/㎡, 20lb Paper Standard)
- Media size : Letter, Legal, Officio, Folio, A4, ISO B5, JIS B5, Executive, A5

3) MP tray (Multi-Purpose tray)

MP tray allows you to print a variety of media type.
- Feeding Capacity : 100 sheets (letter 80g/㎡)
- Media size : Letter, Legal, Oficio, Folio, A4, ISO B5, JIS B5, Statement, Executive, A5, A6, Envelope Monarch, Envelope COM-10, No-10, Envelope DL, Envelope C5, Envelope C6, Envelope No 9, Envelope 6 3/4

2.4.4 LSU

The LSU consists of LD(Laser Diode) and polygon motor control. The LSU is controlled by 4 LD's in order to better reproduce a full Color Image. When the controller generates the printing signal, LD will turn on and Polygon motor starts.If the receiving part in LSU detects the beam, Hsync is generated. When the rotation of polygon motor is properly synchronized, the LSU is ready for printing. If either of two condition are not satisfied, an LSU error is thrown by the copier engine.



Trouble	Failure Analysis
Hsync Error	If the rotation of polygon motor is not properly synchronized, the signal for the Hsync is not generated.
Polygon Motor Error	The rotation of polygon motor is not stable.

2.4.5 Fuser Unit

This unit consists of HEAT and PRESSURE ROLLER, Thermostats and a Thermistor, etc. The fuser unit uses a combination of heat and pressure to fuse the toner on to the copy paper.

- Fusing Type : [Dual Lamp Heating, 700W/500W]
- Heat Roller : Teflon Type (Lamp Inside)
- Pressure Roller
- Thermistor – Temperature Detecting Sensor
  contact thermistor 2EA
- Thermostat – Overheat Protection Device

1. Thermostat

When a heat roller is overheated, a Thermostat cuts off the main power to prevent over-heating.

- Non-Cotact type Thermostat

2. Heat roller

The heat roller transfers the heat generated from the lamp to fuse the toner on to the paper. The surface of a heat roller is coated with Teflon, to help prevent toner from sticking to the surface.

3. Pressure roller

A pressure roller mounted under a heat roller is made of a silicon resin, and the surface is coated with Teflon. When a paper passes between a heat roller and a pressure roller, a combination of heat and pressure fuses the toner to the print media.

Trouble	Temperature Control concept
Open Heat Error	90℃ below for 20 sec after power on
Over Heat Error (Fuser High Error)	- 240℃ over for 5sec - 230℃ over for 5sec - 10℃ over than Standby Ref.(170℃) Over for 3min.
Low Heat Error (Fuser Low Error)	10℃ below than target Temp. for 15 sec. At Warm up 20℃ below than target Temp. for 15 sec. At Printing

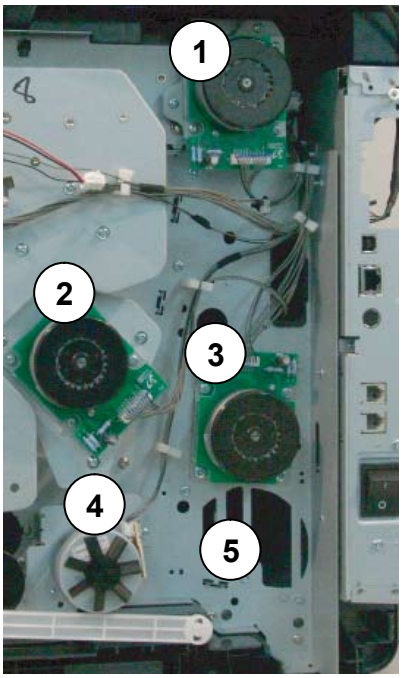
2.4.6 PTB(Paper Transfer Belt) Unit

This unit consists of a transfer belt, transfer roller, duplex unit. waste toner tank, etc. The transfer belt carries the print media (paper) past each of the 4 OPC drums of each color. As the paper and transfer belt pass between the transfer roller and the OPC drum, the negatively charged toner image is formed on OPC drum and then transferred to the print media (paper) by a positive bias applied to the transfer roller. The toner images transferred to the print media is fused by fusing unit.

- Life Span : 50,000 images (Estimated yield value in accordance with ISO/IEC 24712)

2.4.7 Motors

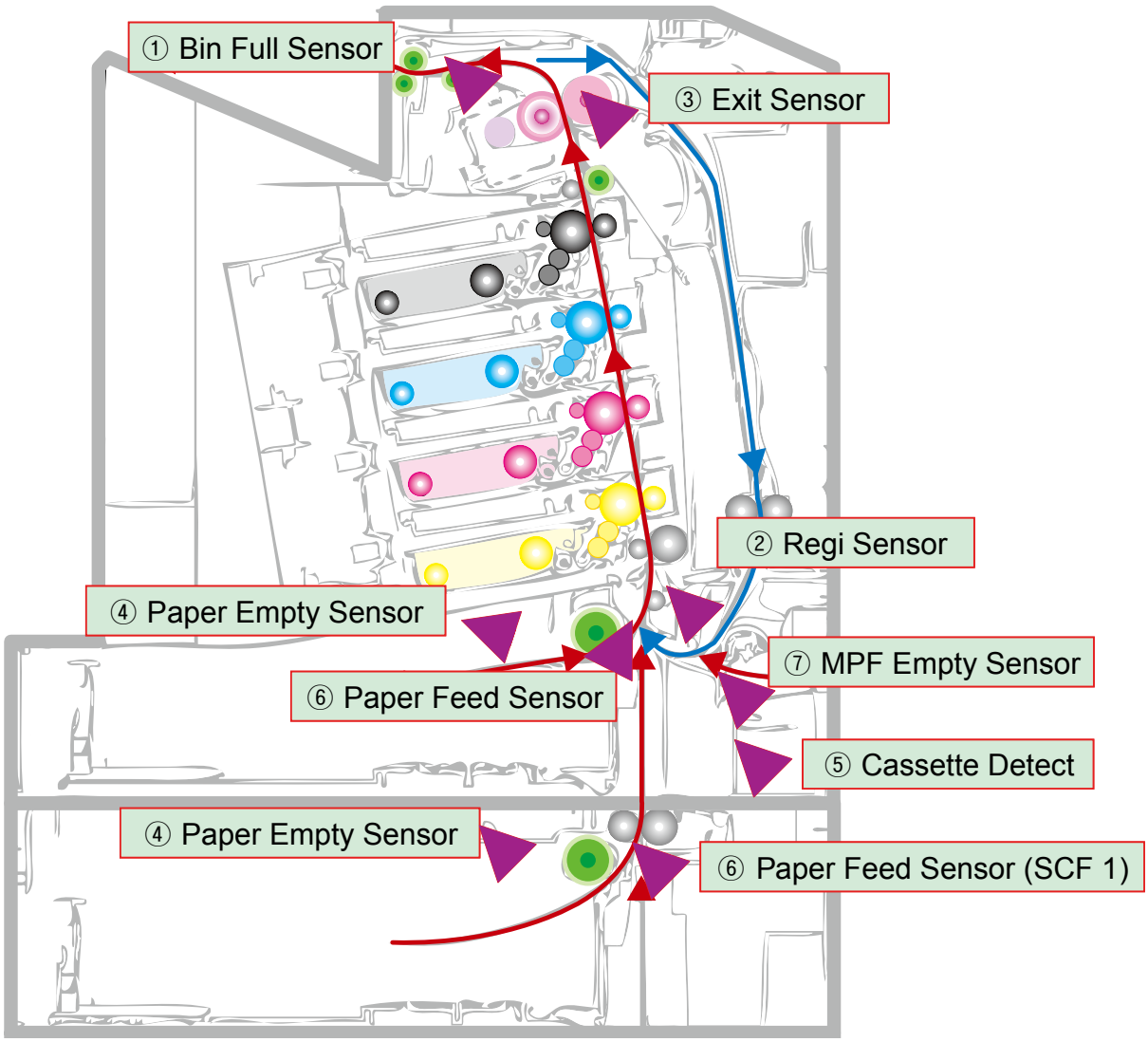
This product uses many motors. These motors drive the PTB unit, fuser unit, feeder unit, exit unit , etc.



1	BLDC Motor	For fuser unit
2	BLDC Motor	For OPC Drive unit
3	BLDC Motor	For feeding section driving
4	Step Motor	For feed drive unit
5	Step Motor	For Exit drive unit

2.4.8 Sensors

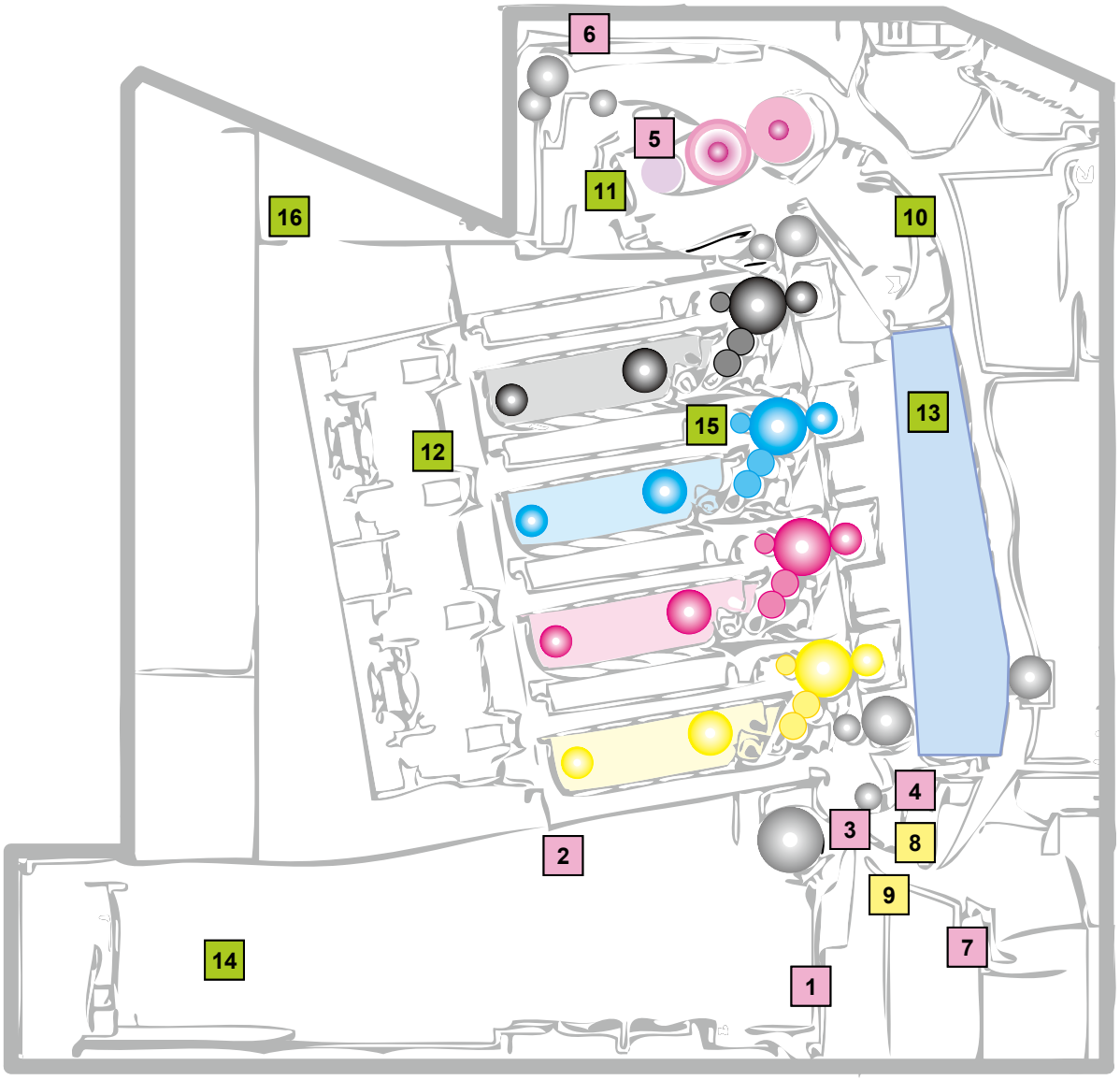
The picture below shows the location of the each sensor position in the machine.



■ DESCRIPTION

① Bin Full Sensor :Check overflowing of Paper on Stacker
② Regi Sensor :Two Regi Sensor for checking precise paper position
③ Exit Sensor :Check paper position on Fuser
④ Paper Empty Sensor :Check Paper empty on a cassette
⑤ Cassette Detect :Check cassette insertion
⑥ Paper Feed Sensor : Check paper position
⑦ MPF Empty Sensor :Check paper empty on MPF

Sensor (Expansion)



1	CASSETTE_DETECT
2	PAPER_EMPTY
3	SENS_FEED
4	SENS_REGI
5	SENS_PAPER_EXIT
6	OUTBIN_FULL
7	MP_EMPTY
8	CLUTCH_FEED
9	SOL__PICKUP

10	SENS_ACR
11	THERMOSTAT
12	CRUM_DEVE_Y(M/C/K)
13	CRUM_PTB
14	PAPER_SIZE1(2/3)
15	INNER_TEMP
16	SENS_HUMIDITY OUT_TEMP

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 firfe. Damaged cables could lead to electric shock or unit malfunction.

3.1.2 Preautions 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

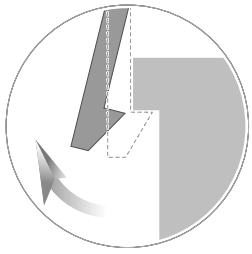
1. Disconnect power connectors first, before disconnecting other cables
2. Do not touch any soldered connections, connector terminals or other electronic parts when handling insulated parts.

>> 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 could easily break if forced; release them carefully.
To remove such parts, press the hook end of the latch away from the part to unlatch.

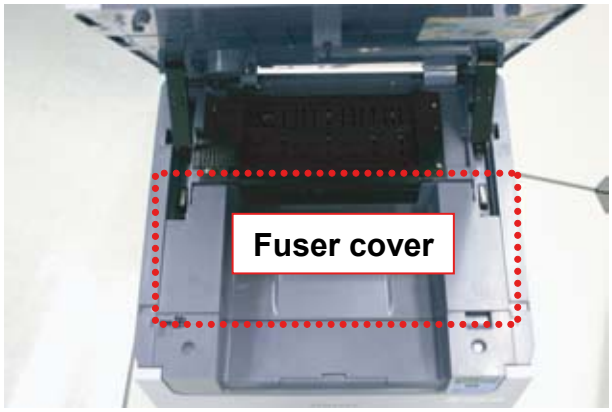


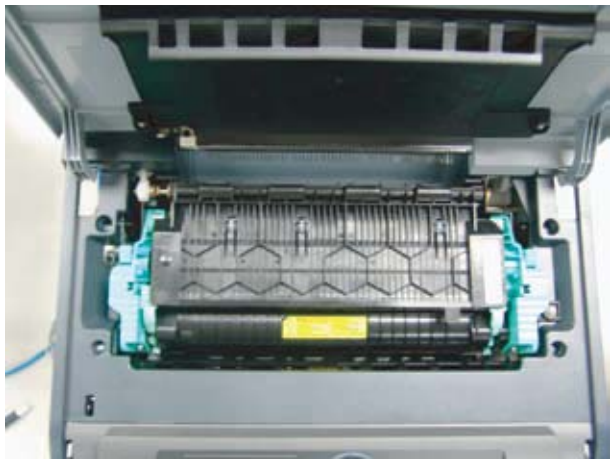
3.2 Replacing a Maintenance Parts

To avoid print quality and paper feed problems resulting from worn parts and to maintain your machine in top working condition, the following parts will need to be replaced after printing the specified number of pages or when the life span of each item has expired.

3.2.1 Fuser Unit

1. Open the scanner and the fuser cover.

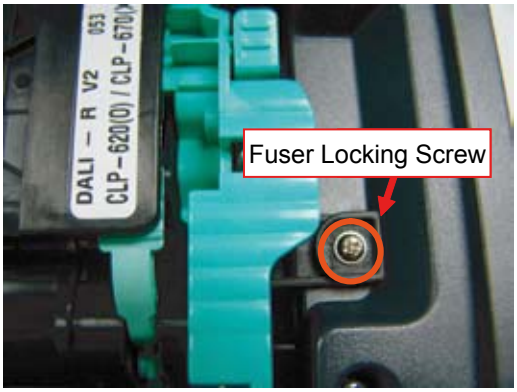




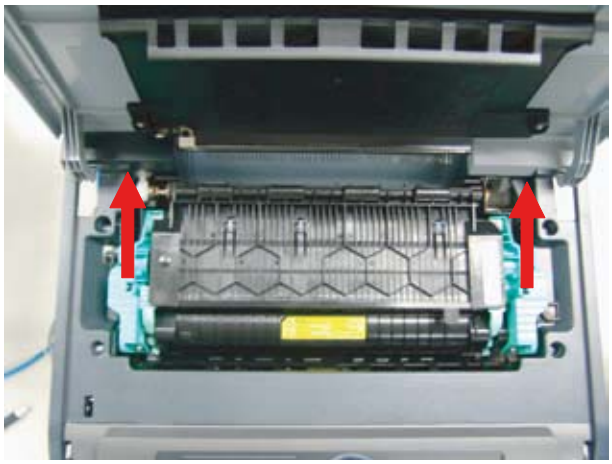
Caution

The fuser is very hot. So turn the printer off and wait until the printer to cool before replacing it.

2. To remove the fuser, unscrew the Locking Screw as illustrated below.



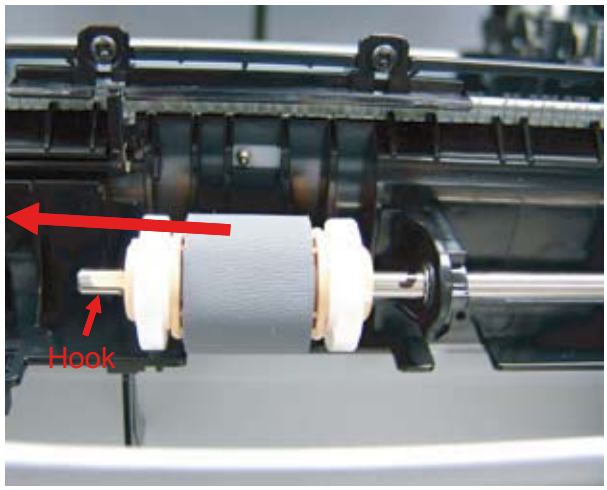
3. Push the green levers in the direction of the arrows and lift the Fuser Unit out.



3.2.2 Pick up roller

1. Remove the Cassette Unit.

2. Pull the pick up roller to the direction of arrow.



3.3 General Disassembly

3.3.1 Cover Unit

-Before disassembling the cover unit, remove all toner cartridges.

3.3.1.1 COVER Rev Exit & COVER L/R

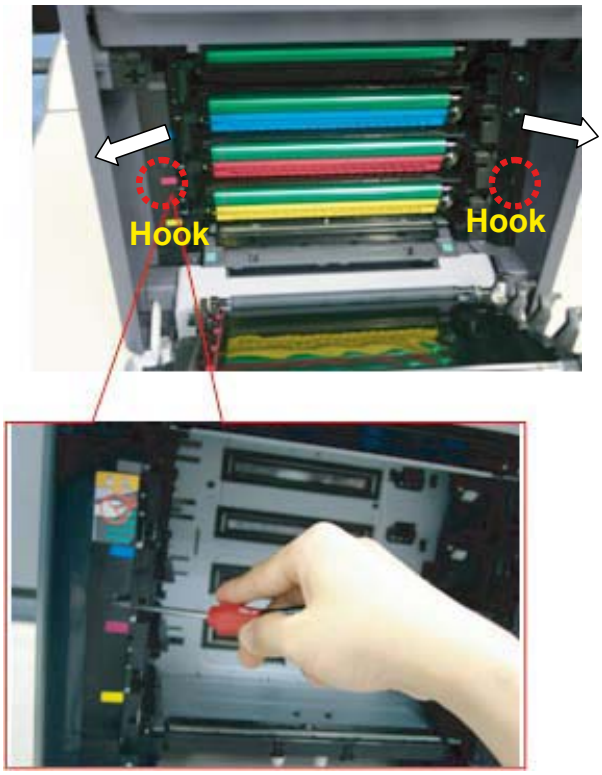
1. Remove 3 screws.Remove the Cover Rev Exit Ass'y.

2. To remove both side covers, remove 2 screws from the rear.

3. Remove 1 screw each from the bottom of both side covers.

4. Open the scanner. Remove 2 screws.

5. Push the hook with any tool. And then release the left/right cover from the SET in the direction of arrow.



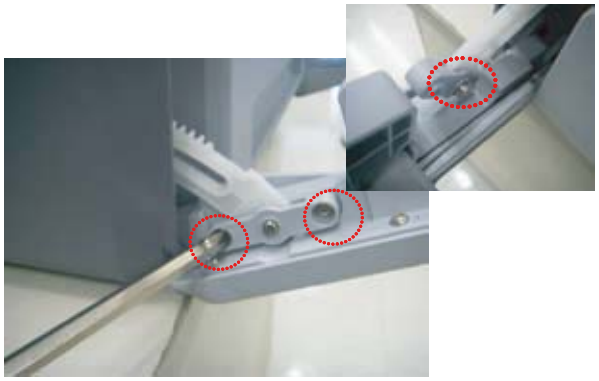
3.3.1.2 Front Cover Unit

The following method describes how to disassemble the front cover without removing both side covers.

1. Open the Front Cover. Remove 2 screws. And remove the shaft.

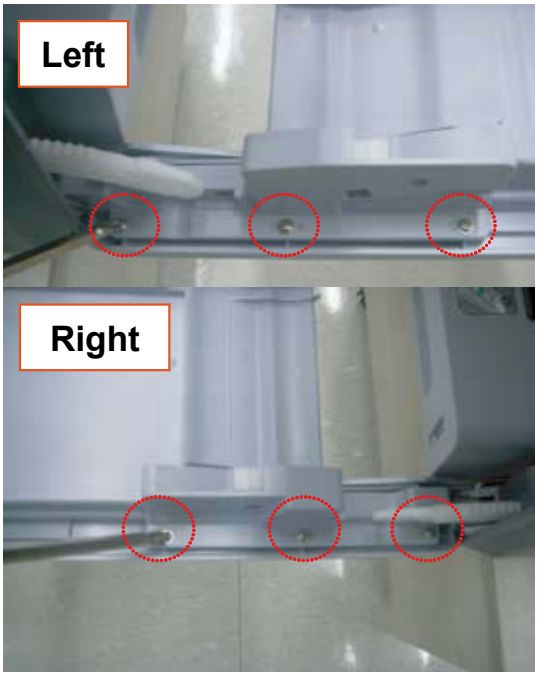
Caution : When reassembling, be careful the shaft head direction.

2. For the opposite side, remove 2 screws and the shaft.



Caution : When reassembling, be careful the shaft head direction.

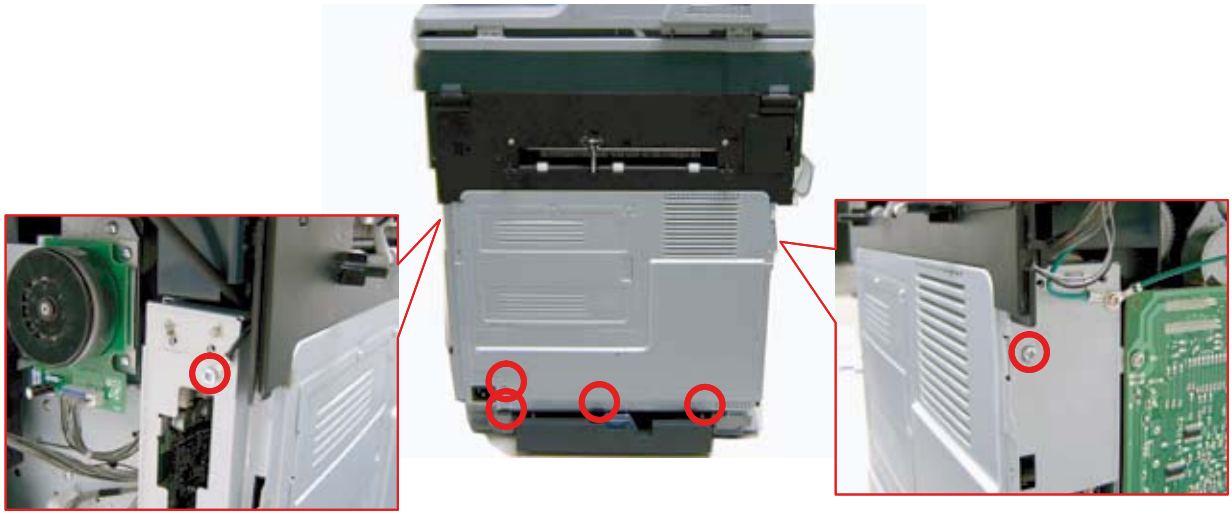
3. Remove 6 screws from both side.



4. Release the Front Cover Unit.

3.3.1.3 Cover rear & cover middle rear

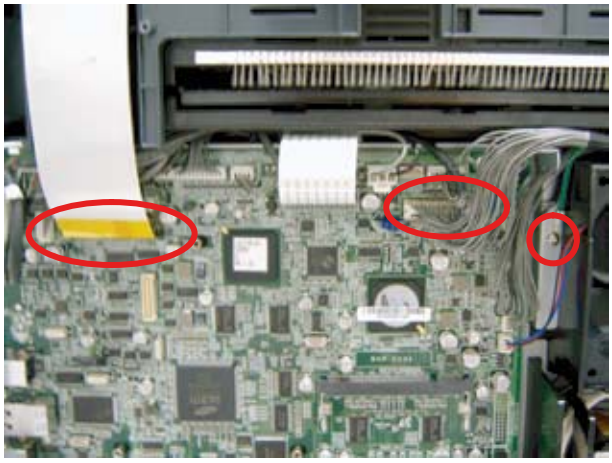
1. Remove 6 screws, then remove the Cover Rear.



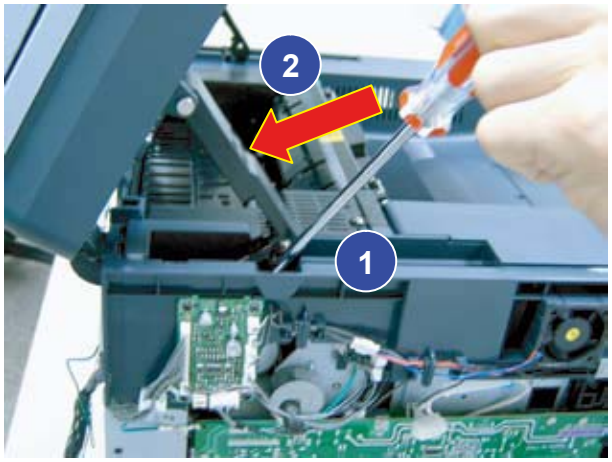
2. Remove the two screws and release hooks, then remove the Cover Middle Rear.

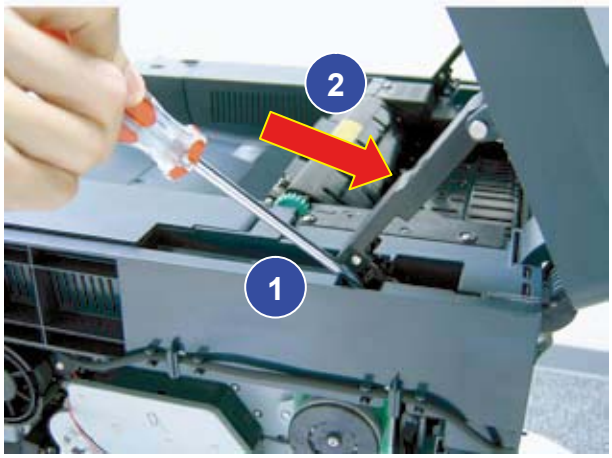
3.3.2 Scanner Ass'y

1. Unplug the two harness from the main board., Remove 1 screw and release the ground harness.

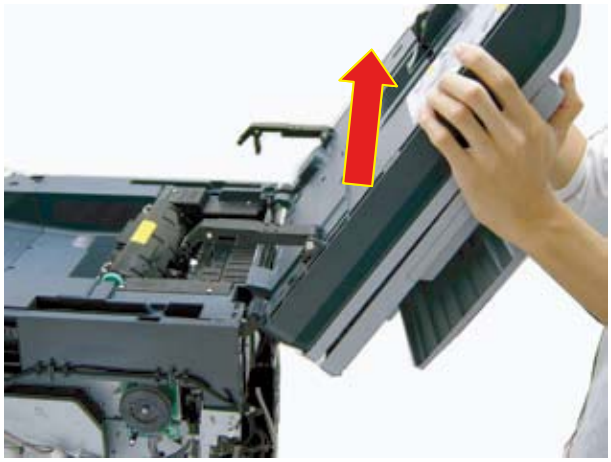


2. Push the hook ① with any tool. Push the support to the direction of arrow ②.





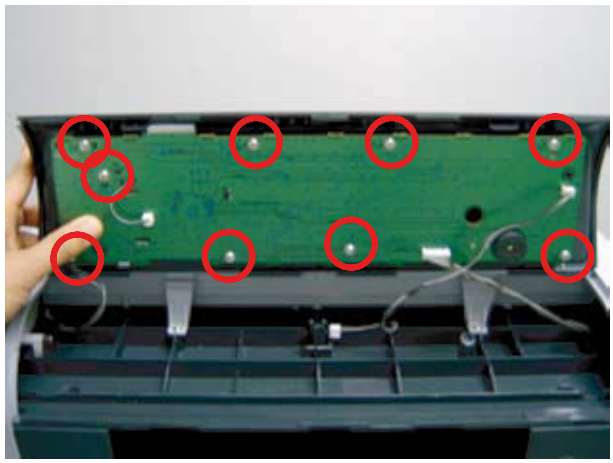
3. Pull the scanner up and release it from the SET.



3.3.2.1 OPE unit

1. There are 4 hooks in front of the OPE unit. Release the OPE unit with care.

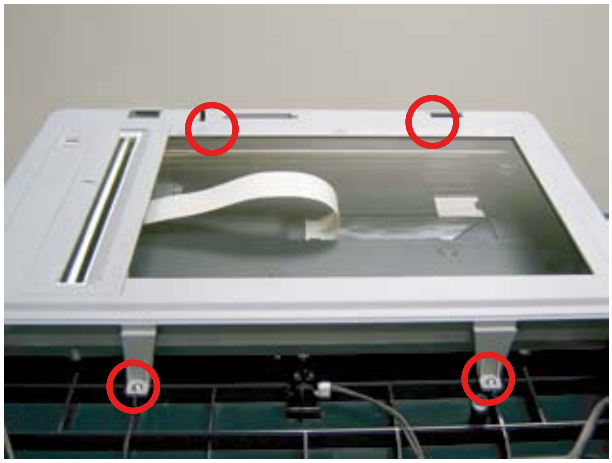
2. Remove 9 screws. Unplug all connectors, and release the OPE PBA.

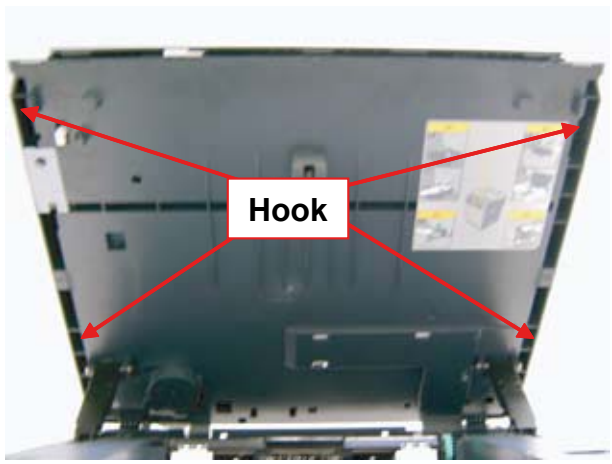


3.3.2.2 Scan glass

1. Remove 4 screws, and lift up the scan glass.

Note – If it is difficult to release the scan glass, open the scanner and push the hooks with any tool.



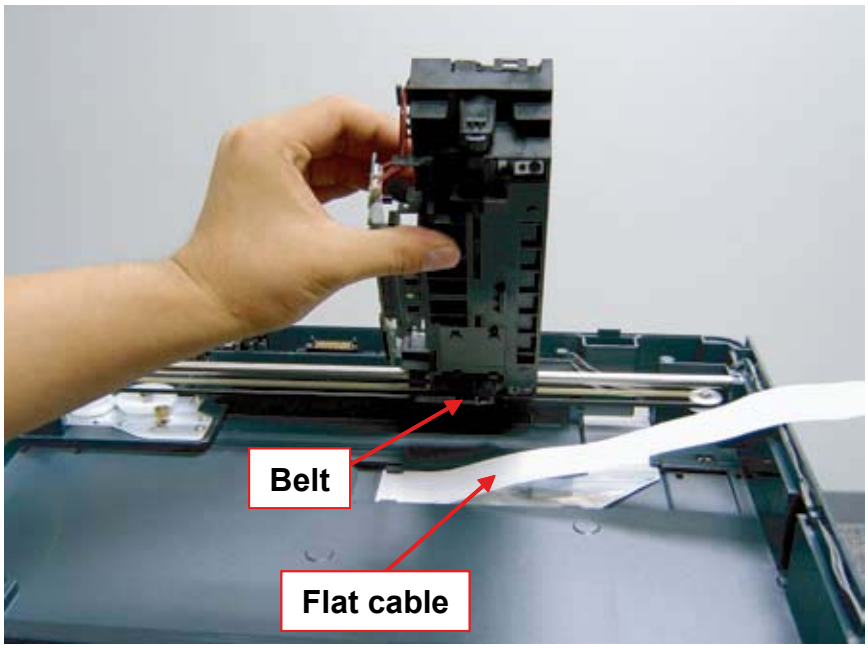


3.3.2.3 CCDM unit

1. Move the CCDM unit as shown below.

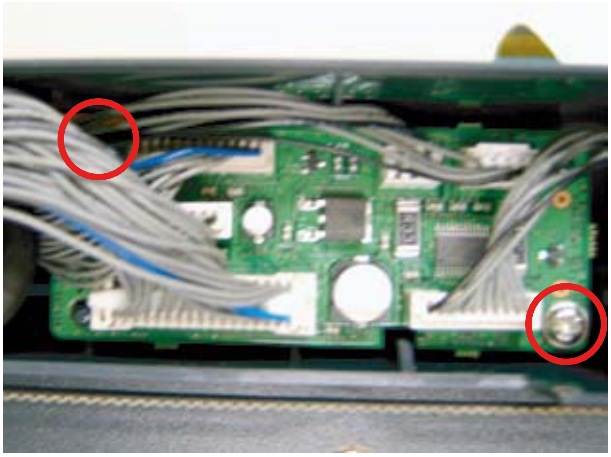
2. Remove the belt and flat cable.

3. Lift up the shaft and release the CCDM unit.



3.3.2.4 Scan PBA

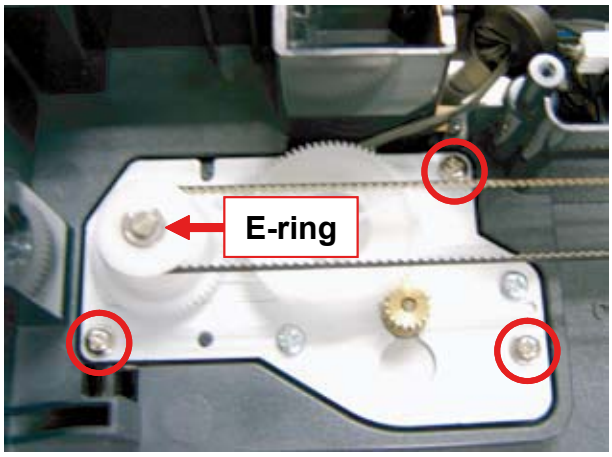
Unplug all connectors, remove 2 screws. Remove the Scan PBA.



3.3.2.5 Scan motor

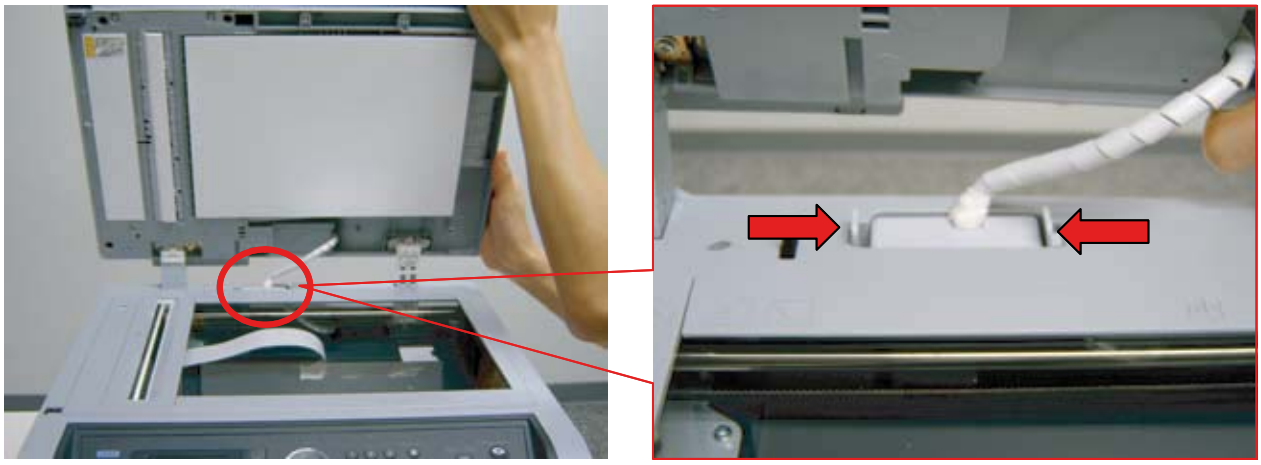
1. Remove the E-ring and release the belt.

2. Remove 3 screws, then remove the Scan motor Ass'y.

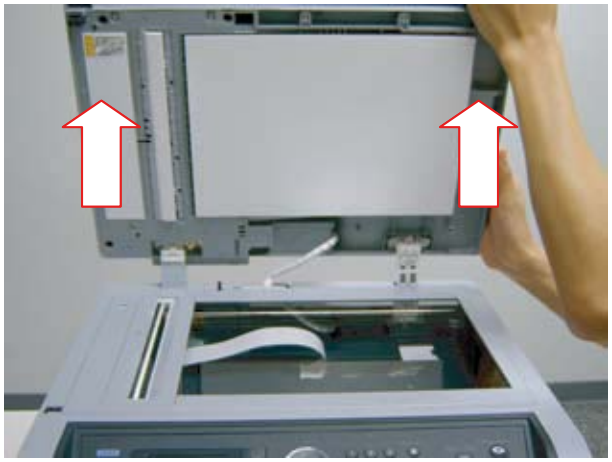


3.3.3 DADF

1. Push the connector cover latches in the direction of the arrows, and unplug it.

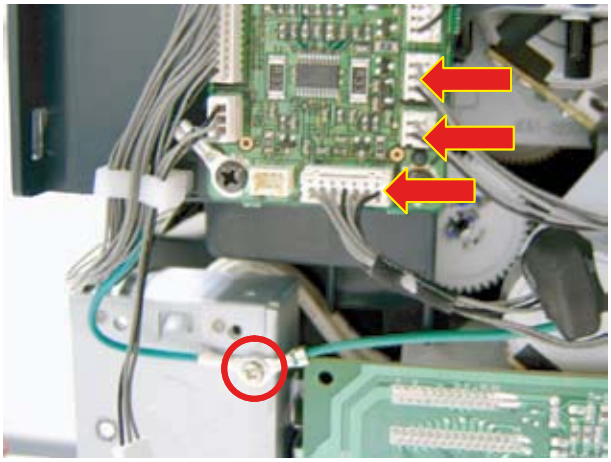


2. Pull the DADF from the unit in the direction of arrow.

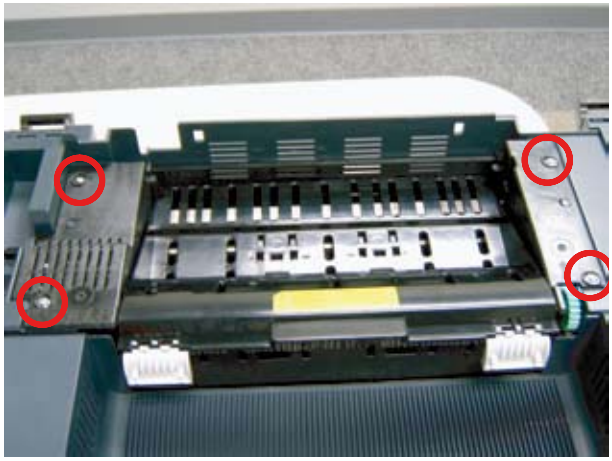


3.3.4 Reverse Ass'y

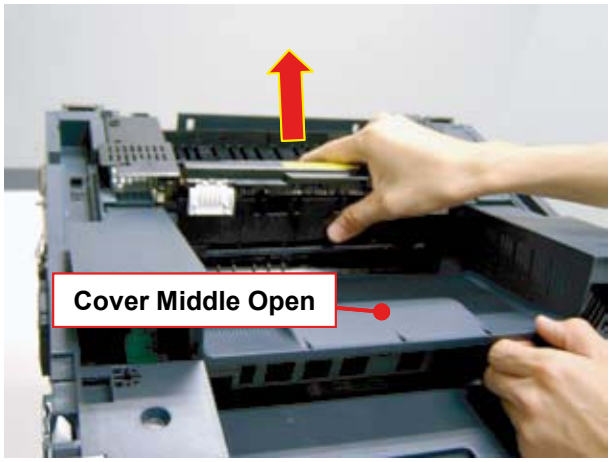
1. Unplug 3 connectors from the Reverse Joint board.
   Remove the 1 screw and release the ground harness.



2. Remove the 4 screws.

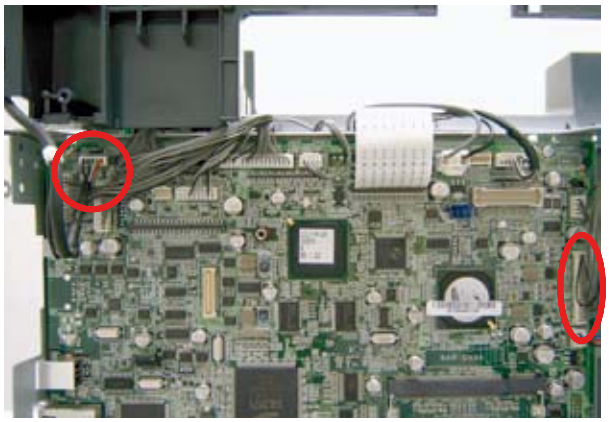


3. Lift up the Cover Middle Open slightly. Pull the Reverse Ass'y from the SET in direction of arrow.

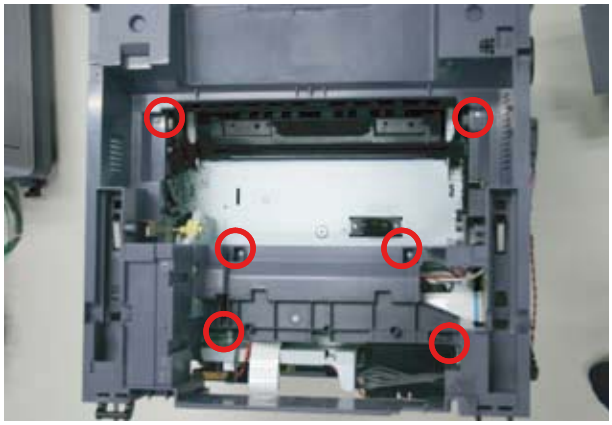


3.3.5 Cover Middle Ass'y

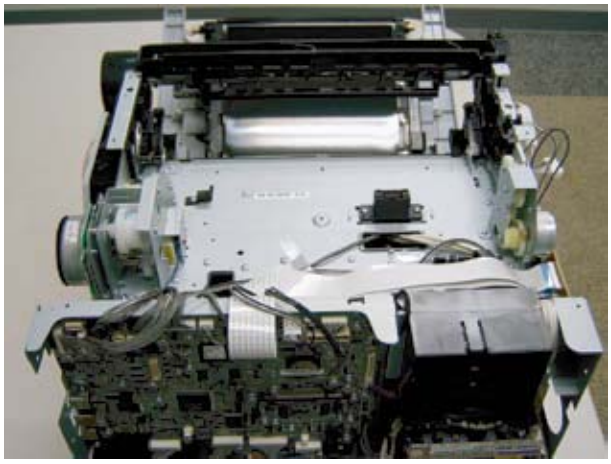
1. Unplug 2 connectors from the Main board.



2. Remove the six screws.Lift up and release the Cover Middle Ass'y from the unit.



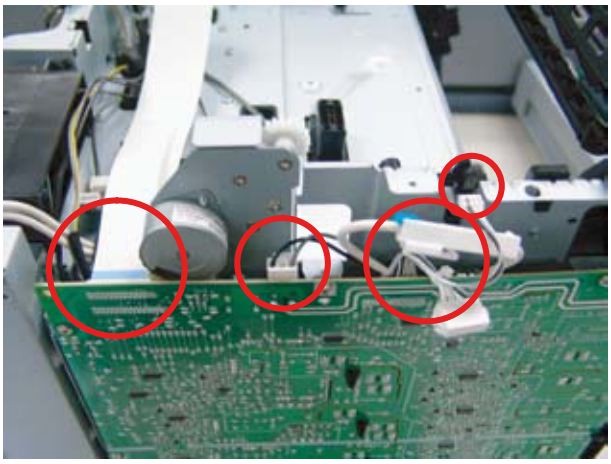
3. Done.



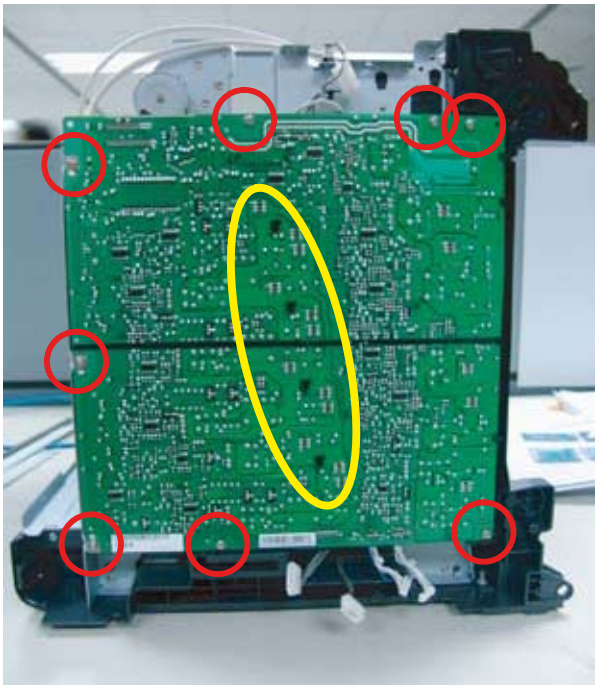
3.3.6 HVPS Board

- Before disassembling the HVPS board, remove all covers.

1. Unplug the harness from the top/bottom of the HVPS Board.



2. Remove 8 screws and unlatch 4 hooks.



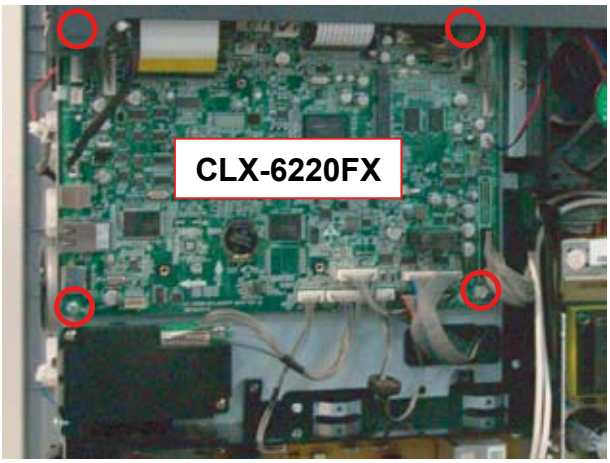
Caution : When replacing the HVSPS board, be careful 16 High voltage terminals on it.
Please take care not to damage the Door Interlock Switch located on the top right of the inside of the board.

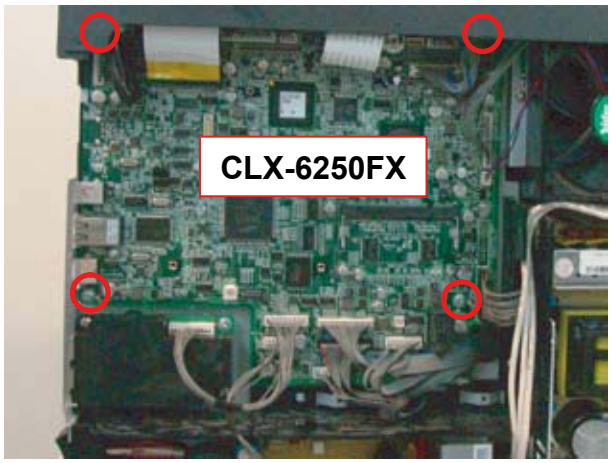
3.3.7 Main board

- Before disassembling the Main PBA, remove the rear cover and cover-middle rear (Refer to 3.3.1.3)

1. Unplug all harness from Main PBA.

2. Remove 4 screws and release the Main PBA.



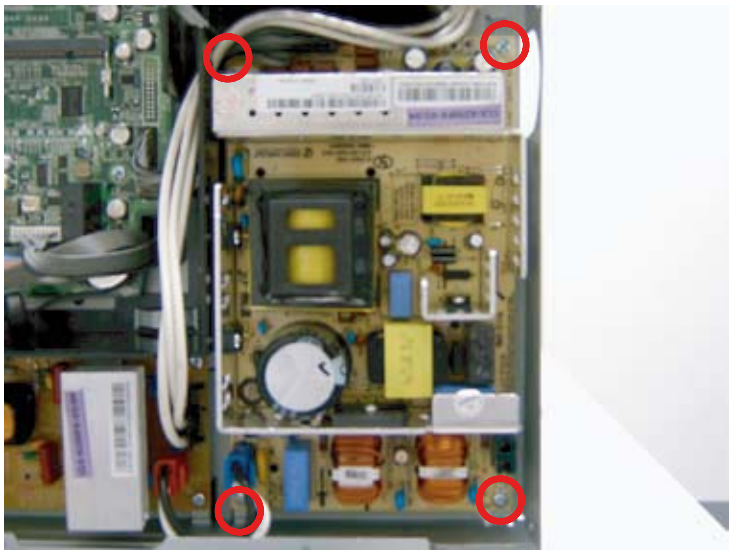


3.3.8 SMPS Board

- Before disassembling the SMPS board, remove the rear cover and cover-middle rear (Refer to 3.3.1.3)

1. Unplug the harness from the SMPS board.

2. Remove 4 screws and release the SMPS board.

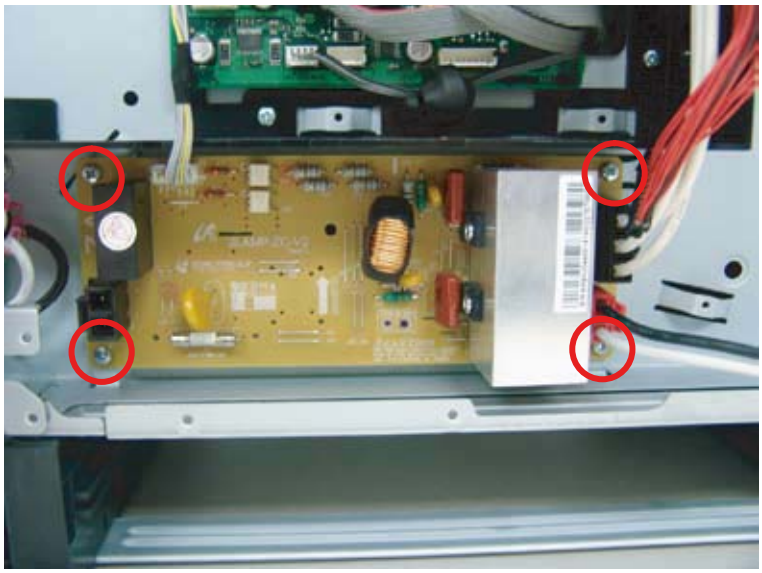


3.3.9 Fuser Control Board

- Before disassembling the Fuser control board, remove the rear cover and cover-middle rear (Refer to 3.3.1.3)

1. Unplug the harness from the Fuser control board.

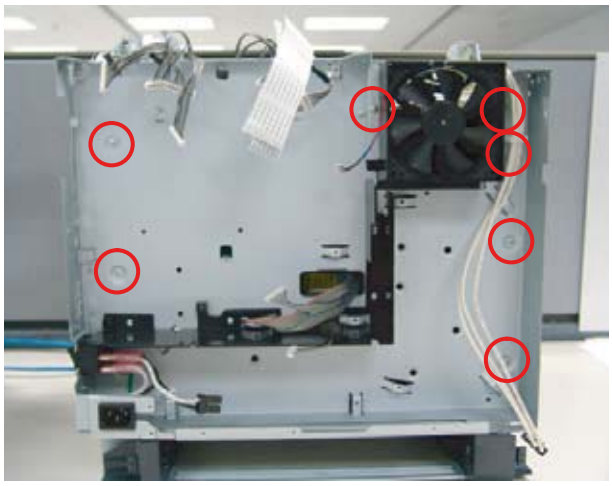
2. Remove 4 screws and release the Fuser control board.



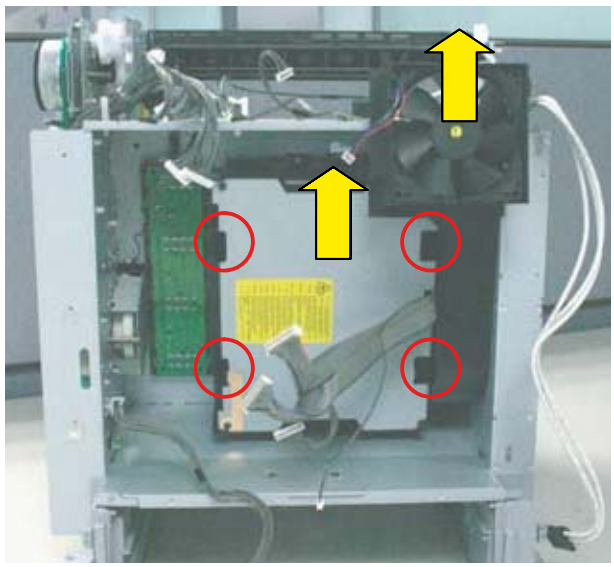
3.3.10 LSU

- Before disassembling the LSU, remove the Main board / SMPS board / Fuser control board.

1. To remove the Bracket main & Duct, remove the 9 screws and release it.

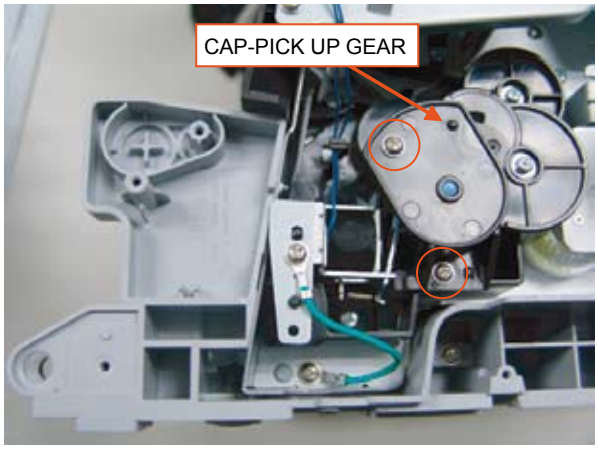


2. Remove the 4 screws and remove the LSU Unit.

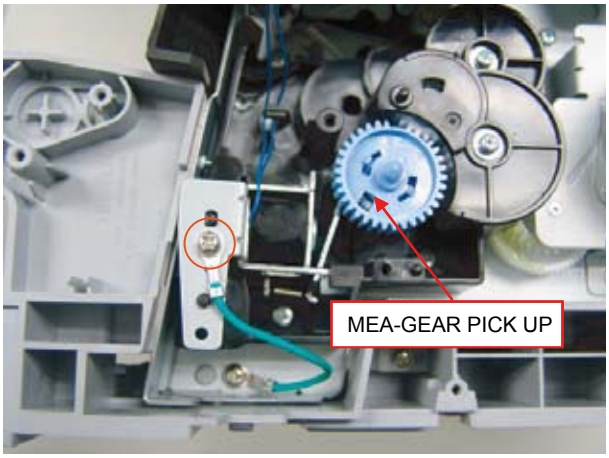


3.3.11 SOLENOID

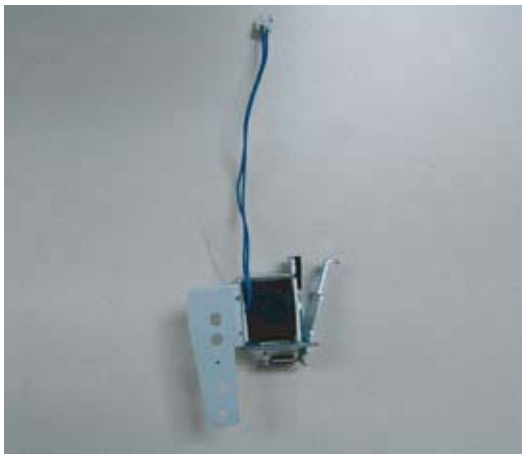
1. Remove 2 screws and release the CAP-PICK UP GEAR.



2. Remove the MEA-GEAR PICK UP. And remove 1 screw.



3. Release the SOLENOID-PICK_UP.



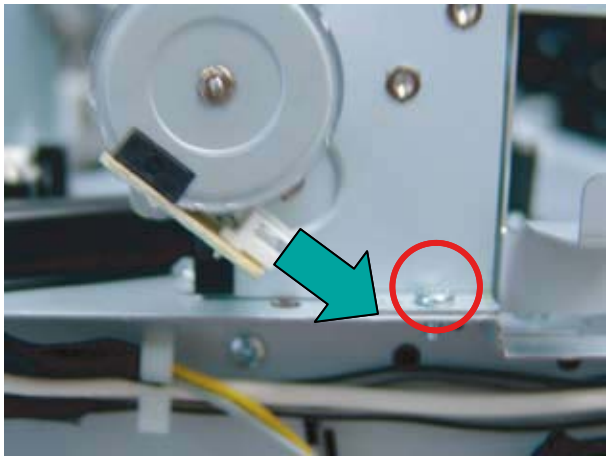
3.3.12 Drive-Exit Bracket

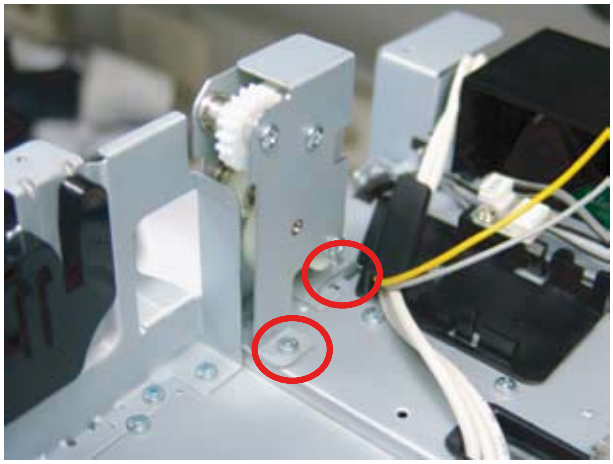
- Before disassembling the drive-exit bracket, remove the middle cover, HVPS board.

1. Unplug the harness connecting the motor.

2. Remove 3 screws.

3. Release the drive-exit bracket from the frame Ass'y.

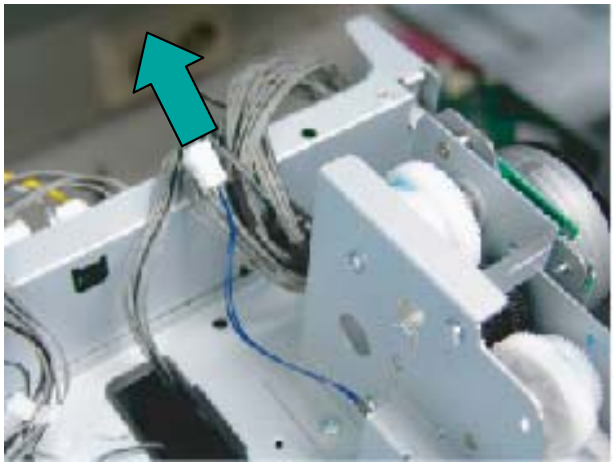


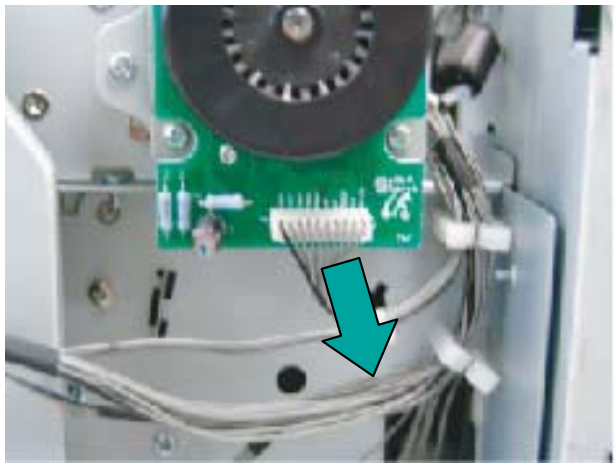


3.3.13 Drive-Fuser Bracket

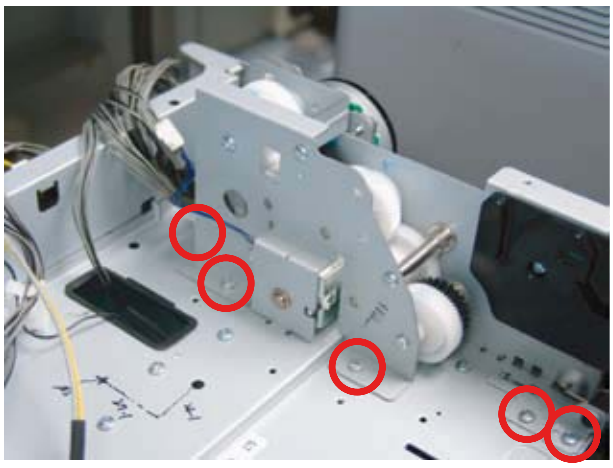
- Before disassembling the drive-exit bracket, remove the middle cover.

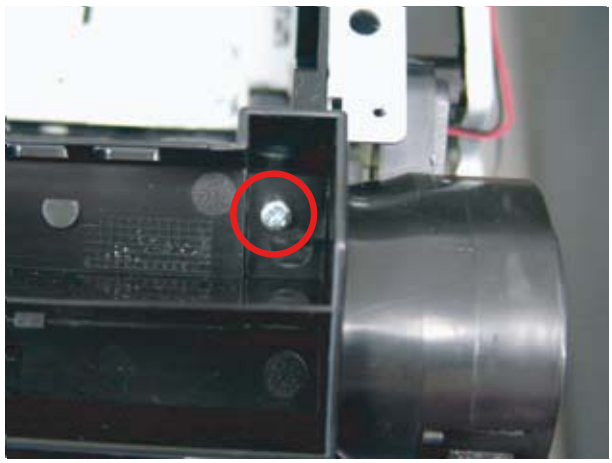
1. Unplug 2 connectors to the motor and clutch.





2. Remove 6 screws. Release the drive-fuser bracket from the frame Ass'y.



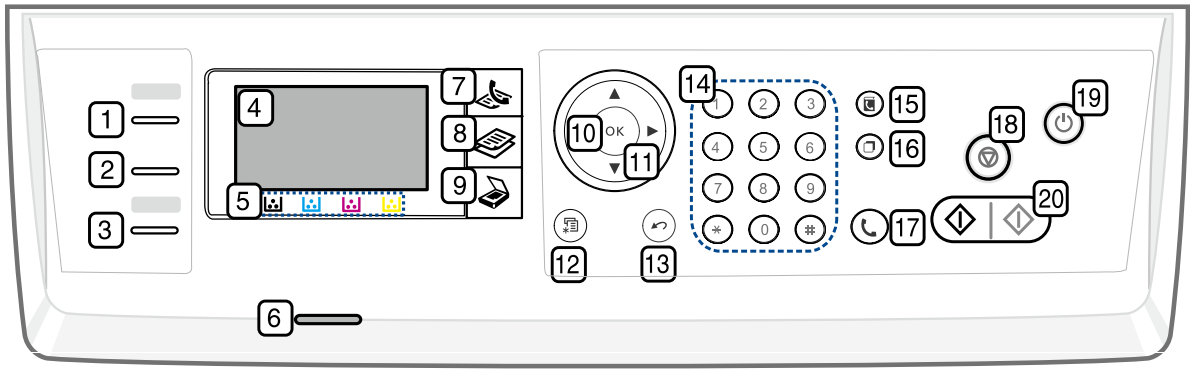


4. Alignment & Troubleshooting

4.1 Alignment and Adjustments

This chapter describes the alignment and service modes/adjustments available for proper product maintenance. Also covered are the jam removal procedures; and troubleshooting methodology for Image Quality, Printing, Fax, and Scanning problems.

4.1.1 Control Panel



1	ID Copy	You can copy both sides of the ID Card like a driver's license to one side of the paper.
2	Direct USB	Allows you to directly print files stores on a USB memory device when it is inserted into the USB memory port on your machine.
3	Duplex	Allows you to print copies in one pass on both sides of the paper.
4	Display screen	Shows the machines current status and error prompts such as jam, etc..
5	Toner colors	Show the status of each toner cartridge.
6	Status	Shows the readiness status of your machine.
7	Fax	Activates fax mode.
8	Copy	Activates copy mode.
9	Scan/Email	Activates scan mode.
10	OK	Confirms the selection on the screen.
11	Arrow	Scroll through the options available in the selected menu, and increase or decrease values.
12	Menu	Enters Menu mode and scrolls through the available menus.
13	Back	Sends you back to the upper menu level.
14	Numeric keypad	Dials fax number, and enters the number value for document copies or other options.
15	Address Book	Allows you to store frequently used fax numbers and email addresses or search for stored fax numbers or email addresses.

16	Redial/Pause	In standby mode, redials the last number. Also in edit mode, inserts a pause into a fax number.
17	On Hook Dial	Performs same as you hold a handset under the telephone line is engaged.
18	Stop/Clear	Stops an operation at any time. The pop-up window appears on the screen showing the current job that the user can stop or resume.
19	Power Saver Power ON	Sends the machine into power saver mode. This button also functions as a "soft" Power ON switch. You must press and hold this button to turn the power on and off.
20	Start	Starts a job in mono or color mode.

4.1.2 Understanding The Status LED

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

Status		Description
Off		• The machine is off-line. • The machine is in power saver mode. When data is received, it switches to on-line automatically.
Green	Blinking	• When the backlight slowly blinks, the machine is receiving data from the computer. • When the backlight blinks rapidly, the machine is printing
	On	The machine is on-line and can be used.
Red	Blinking	• 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. • Small amount of toner is left in the cartridge. The estimated cartridge life[a] of toner is close. Prepare a new cartridge for replacement. You may temporarily increase the printing quality by redistributing the toner.
	On	• A toner cartridge has almost reached its estimated cartridge life[a]. It is recommended to replace the toner cartridge. • A paper jam has occurred. • The cover is opened. Close the cover. • 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

[a] Estimated cartridge life means the expected or estimated toner cartridge life, which indicates the average capacity of print-outs and is designed pursuant to ISO/IEC 19798. The number of pages may be affected by the percent of image area of your originals, operating environment, printing interval, media type, and media size. Some amount of toner may remain in the cartridge even when red LED is turned on and the printer stops printing.

4.1.3 Menu Overview

This chapter explains the menu item. If you want to know more information about the menu item, refer to the User Guide.

■ ACCESSING OPERATOR PANEL MENU

1. Press Menu on the control panel.
2. Press Scroll (▲ to ▼) to highlight the desired setting and press OK.
3. If the setting item has sub menus, repeat step 2.
4. Press Scroll (▲ to ▼) to access the required value.
5. Press OK to save the selection.
6. If you want to move to the upper level menus, press Back .
7. Press Stop to return to ready mode.

■ Menu Map

Fax Feature	
Depth1	**Depth2**
Darkness	Lightest
	Light
	Normal *
	Dark
	Darkest
Resolution	Standard *
	Fine
	Super Fine
	Photo Fax
Scan Size	A4 *
	A5
	B5
	Letter
	Legal
	Executive
	Folio
	Oficio
Multi Send	Multi Send Fax1:| Fax2:
Delay Send	Delay Send Fax1:|
Priority Send	Priority Send Fax:|
Forward	Fax
	Email
	Server
	PC
	Print Rx Fax
Secure Receive	On
	Off *
	Print
Add Page	10:22Am Delay Fax
	ABC
Cancel Job	10:22Am Delay Fax
	ABC

Fax Feature	
Depth1	**Depth2**
Sending	Redial Times
	Redial Term
	Prefix Dial
	ECM Mode
	Send Report
	Image TCR
	Dial Mode
Receiving	Receive Mode
	Ring to Answer
	Stamp RCV Name
	Rcv Start Code
	Auto Reduction
	Discard Size
	Junk Fax Setup
	DRPD Mode
	Duplex Print
	Doc Box Saving
Change Default	Resolution
	Darkness
	Scan Size
Auto Report	On *
	Off

* = Default

Copy Feature	
Depth1	**Depth2**
Reduce/Enlarge	Original.(100%) *
	Custom
	Auto Fit
	LGL->LTR(78%)
	LGL->A4(83%)
	A4->A5(71%)
	A4->LTR(94%)
	A5->A4(141%)
	EXE->LTR(104%)
	25%
	50%
	150%
	200%
	400%
Darkness	Lightest
	Light
	Normal *
	Dark
	Darkest
Original Type	Text
	Text/Photo*
	Photo
	Magazine
Layout	Off *
	2 up
	4 up
	Poster Copy
	Clone Copy
	Book Copy
Adjust Bkgd	Off *
	Auto
	Enhance Lev.1
	Enhance Lev.2

Copy Feature	
Depth1	**Depth2**
Scan Size	A4 *
	A5
	A6
	JIS B5
	Letter
	Legal
	Folio
	Oficio
	Executive
	Statement
Change Default	# of Copies
	Collation
	Reduce/Enlarge
	Darkness
	Original Type

Adjust Bkgd	Erase Lev.1
	Erase Lev.2
	Erase Lev.3
	Erase Lev.4
Margin Shift	Off *
	Auto Center
	Custom Margin
Edge Erase	Off *
	Small Original
	Hole Punch
	Book Center
	Border Erase
Gray Enhance	On
	Off *
Water Mark	Message
	Pages

* = Default

Scan Feature	
Depth1	**Depth2**
USB Feature	Scan Size
	Original Type
	Resolution
	Scan Color
	Scan Format
Email Feature	Scan Size
	Original Type
	Resolution
	Scan Color
FTP Feature	Scan Size
	Original Type
	Resolution
	Scan Color
SMB Feature	Scan Size
	Original Type
	Resolution
	Scan Color

Scan Feature	
Depth1	**Depth2**
Change Default	USB Default
	Email Default
	FTP Default
	SMB Default
Send Report	On-Error *
	On
	Off

* = Default

System Setup	
Depth1	Depth2
Machine Setup	Machine ID
	Machine Fax No.
	Date & Time
	Clock Mode
	Form Menu
	Select Form
	Language
	Default Mode
	Power Save
	Timeout
	Job Timeout
	Altitude Adj.
	Auto Continue
	Paper Substitution
	Net Accounting
	Import Setting
	Export Setting
	Color Report
Paper Setup	Paper Size
	Paper Type
	Paper Source
	Wide A4
Sound/Volume	Key Sound
	Alarm Sound
	Speaker
	Ringer
Report	All Report
	Configuration
	Supplies Info.
	Address Book
	Send Report
	Sent Report
	Fax Rcv Report
	Schedule Jobs

System Setup	
Depth1	Depth2
Report	JunkFax Report
	Network Info.
	User Auth List
	PCL Font List
	PS Font List
	Stored Job
	Completed Job
	Net Auth Log
	Counter Info.
	Fax Options
Maintenance	CLR Empty Msg
	Supplies Life
	Color
	Serial Number
	Toner Low Alert
Clear Setting	All Settings
	Fax Setup
	Copy Setup
	Scan Setup
	System Setup
	Network
	Address Book
	Sent Report
	Fax Rcv Report
Job Manage	Active Job
	Store Job
	File Policy
ImageOverwrite	Immediate
	On Demand

Network	
Depth1	**Depth2**
TCP/IP (IPv4)	DHCP *
	BOOTP
	Static
TCP/IP (IPv6)	IPv6 Activate
	DHCPv6 Config
Ethernet Speed	Auto *
	10M Half
	10M Full
	100M Half
	100M Full
802.1x	Off *
	On
Wireless(for only wireless model)	WLAN Setting
	WLAN Default
	WLAN Signal
Network Info.	Print?

Network	
Depth1	**Depth2**
Doc Box Feature	Add From Scan
	Task From Box
Doc Box Setup	Add From Scan
	Task From Box
Doc Box Report	Box name list

* = Default

■ Useful Menu Item for service

Printing a machine report

You can print the machine's information and job report.

1. Press Menu on the control panel.
2. Press the up/down arrow to highlight System Setup and press OK.
3. Press the up/down arrow to highlight Reports and press OK.
4. Press the up/down arrow until the report or list you want to print appears and press OK.
   To print all reports and lists, select All Report.
5. Press the left/right arrow to highlight Yes at the Printing? prompt and press OK.

Monitoring the supplies life

To view the supply life indicators, follow the steps below:

1. Press Menu on the control panel.
2. Press up/down arrow to highlight System Setup and press OK.
3. Press up/down arrow to highlight Maintenance and press OK.
4. Press up/down arrow to highlight Supplies Life and press OK.
5. The display shows options as you press up/down arrow.
6. When you select the option, press OK to browse the life.

Adjusting the color contrast

Color menu allows you to adjust the color setting.

1. Press Menu on the control panel.
2. Press up/down arrow to highlight System Setup and press OK.
3. Press up/down arrow to highlight Maintenance and press OK.
4. Press up/down arrow to highlight Color and press OK.
5. The display shows options as you press up/down

Option	Description
Custom Color	This menu allows you to adjust contrast, color by color. • Default : Optimizes colors automatically. • Manual Adjust : Allows you to manually adjust the color contrast for each cartridge. It is recommended to use the Default setting for best color quality.
Auto Color Reg.	You can adjust the position of color texts or graphics to match the position of the printed colors to those on your screen.

Finding the serial number

When you call for service or register as a user on the Samsung website, the machine's serial number by taking the following steps:

1. Press Menu on the control panel.
2. Press the up/down arrow to highlight System Setup and press OK.
3. Press the up/down arrow to highlight Maintenance and press OK.
4. Press the up/down arrow to highlight Serial Number and press OK.
5. Check your machine's serial number.
6. Press Stop/Clear to return to ready mode.

Using Toner Low Alert

If toner in the cartridge has run out, a message informing user to change the toner cartridge appears. You can set the option for this message to appear or not.

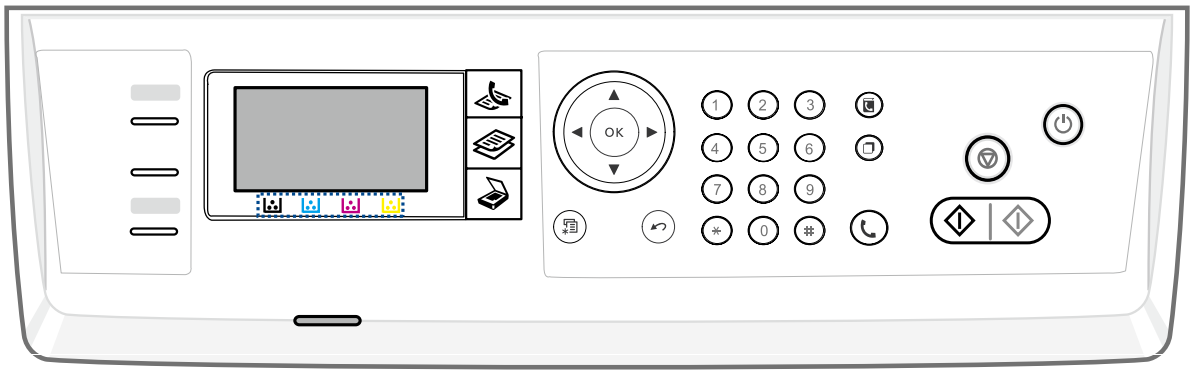
1. Press Menu on the control panel.
2. Press up/down arrow to highlight System Setup and press OK.
3. Press up/down arrow to highlight Maintenance and press OK.
4. Press up/down arrow to highlight Toner Low Alert and press OK.

4.1.4 Tech Mode

In service (tech) mode, the technician can check the machine and perform various tests to isolate the cause of a malfunction. While in Tech mode, the machine still performs all normal operations.

To enter the Tech Mode

To enter the Tech Mode, press **"Menu → # →1 → 9 → 3 → 4 → Menu"** in sequence, and the LCD briefly displays 'Tech Mode', the machine has entered service tech mode.



Tech Mode Structrue

Depth 1	Depth 2	Depth 3	Depth 4
Data Setup	Send Level	9~15	12
	DTMF Level	[Hi]=xx,[Lo]=xx	
	Pause Time	0~9	
	Dial Mode	Tone,Pulse	Tone
	Modem Speed	33.6, 28.8, 14.4, 12.0, 9.6, 4.8	33.6
	Error Rate	5%, 10%	10%
	Clear All Mem.		
	Clear Counts	Fuser	
		Tray1 Roller	
		Tray2 Roller	
		MP Tray Roller	
	Margin	Top Margin	[-10-10]:0
		Left Margin	[-10-10]:0
	Fine Edge	Minimum	
		Normal *	
		Maximum	
		Off	
	Darken Text	On *	
		Off	
	Toner Low Level	[1~30]% : 10 *	
	B2B Mode	0-99	
	HDD Format	Yes?	
		No?	

* = Default

Depth 1	Depth 2	Depth 3	Depth 4
Machine Test	Switch Test	REDUCE_PANEL	
		COMPLETE_PANEL	
	Modem Test		
	Continuous Dial		
	Dram Test		
	Rom Test		
	Shading Test	Shading&Print	
		Print Data	
	Fuser Temp.Offset	StandBy Temp.	[-20-0]:0*,-5,-10,-15,-20
		Run Temp.	[-20-0]:0*,-5,-10,-15,-20
		101-185mm Temp.	[-20-0]:0*,-5,-10,-15,-20
		186-216mm Temp.	[-20-0]:0*,-5,-10,-15,-20
		90 gms Temp.	[-20-0]:0*,-5,-10,-15,-20
		Bond Temp.	[-20-0]:0*,-5,-10,-15,-20
		OHP Temp.	[-20-0]:0*,-5,-10,-15,-20
		Cardstock Temp.	[-20-0]:0*,-5,-10,-15,-20
		Env. Temp.	[-20-0]:0*,-5,-10,-15,-20
		Label Temp.	[-20-0]:0*,-5,-10,-15,-20
	EDC Mode	NVM Read Write	
		NVM Initialize	
		Test Routines	
		Manual Settings	X Offset Left Y
			X Offset Left M
			X Offset Left C
			X Offset Center Y
			X Offset Center M
			X Offset Center C
			X Offset Right Y
			X Offset Right M
			X Offset Right C
		Regi Pattern	Print? Yes / No

Depth 1	Depth 2	Depth 3	Depth 4
Report	All Report		
	Protocol		
	Configuration		
	Supplies Info		
	Error Info		
	Usage Page		
	Component Check		
	Service Support (ex) Test Page, Usage Profile, Online Support		
	ACR Report		
	CTD Report		

Tech Mode Item description

Item	Description
HDD Setup	This menu can format the hard disk or set up the maximum number of files that you can store. You can see this menu when the HDD is installed in the machine.
Counter Reset	This menu can reset the counts for the Fuser or Pick up roller maintenance counter. When replacing the fuser or pick up roller, you must reset the counter for each back to zero.
Adjust Margin	This menu can adjust the paper margin.
Toner Low Level	When there is barely enough toner to cover the magnet roller in the imaging unit, the user will be notified of toner low condition.
B2B Mode	You can set B2B mode
Suppilies Info	You can print the supplies information page.
Event Log	You can print the Event Log that is occurred for a specific period.
ACR Report	You can print the ACR Report.
NVM Read/ Write Table	Engine parameter read/write
NVM Initialization	This menu can initialize all NVM values.
Test Routine	You can check status of the machine components.
Manual Settings	You can set up the offset manually.
Regi Pattern	This menu can print the regi pattern.

NVM Read/ Write Table

Code	LCD display	Meaning	Default	Min. / Max	Description
105-0030	0030-MHV DC K	Charger HV Black DC Duty	0	-15 ~ +15	+ : Image Density decrease - : Image Density increase
106-0000	0000-Deve DC Y	Deve DC Yellow	0	-25 ~ +25	+ : Image Density decrease - : Image Density increase
106-0010	0010-Deve DC M	Deve DC Magenta	0	-25 ~ +25	+ : Image Density decrease - : Image Density increase
106-0020	0020-Deve DC C	Deve DC Cyan	0	-25 ~ +25	+ : Image Density decrease - : Image Density increase
106-0030	0030-Deve DC K	Deve DC Black	0	-25 ~ +25	+ : Image Density decrease - : Image Density increase
106-0040	0040-Deve VPP Y	Deve VPP Yellow	0	-25 ~ +25	+ : Image Density decrease - : Image Density increase
106-0050	0050-Deve VPP M	Deve VPP Magenta	0	-25 ~ +25	+ : Image Density decrease - : Image Density increase
106-0060	0060-Deve VPP C	Deve VPP Cyan	0	-25 ~ +25	+ : Image Density decrease - : Image Density increase

Code	LCD display	Meaning	Default	Min. / Max	Description
106-0070	0070-Deve VPP K	Deve VPP Black	0	-25 ~ +25	+ : Image Density decrease - : Image Density increase
106-0080	0080-Deve AC Y	Deve AC Yellow	0	-25 ~ +25	+ : Image Density slightly increase - : Image Density slightly decrease
106-0090	0090-Deve AC M	Deve AC Magenta	0	-25 ~ +25	+ : Image Density slightly increase - : Image Density slightly decrease
106-0100	0100-Deve AC C	Deve AC Cyan	0	-25 ~ +25	+ : Image Density slightly increase - : Image Density slightly decrease
106-0110	0110-Deve AC K	Deve AC Black	0	-25 ~ +25	+ : Image Density slightly increase - : Optica Density slightly decrease
106-0120	0120-Deve AC Freq	Deve AC Frequency	0	0 ~ +500	+ : Image Density slightly increase - : Image Density slightly decrease
107-0000	0000-THV Y	Transfer1 HV Yellow Duty	0	-25 ~ +25	+ : Increase Transfer Ability - : Decrease Transfer Ability
107-0010	0010-THV M	Transfer1 HV Magenta Duty	0	-25 ~ +25	+ : Increase Transfer Ability - : Decrease Transfer Ability
107-0020	0020-THV C	Transfer1 HV Cyan Duty	0	-25 ~ +25	+ : Increase Transfer Ability - : Decrease Transfer Ability
107-0030	0030-THV K	Transfer1 HV Black Duty	0	-25 ~ +25	+ : Increase Transfer Ability - : Decrease Transfer Ability
107-0040	0040-THV Low Y	Transfer1 Low HV Yellow Duty In None Image Area	0	-10 ~ +10	+ : OPC Damage - : Voltage overshoot
107-0050	0050-THV Low M	Transfer1 Low HV Magenta Duty In None Image Area	0	-10 ~ +10	+ : OPC Damage - : Voltage overshoot
107-0060	0060-THV Low C	Transfer1 Low HV Cyan Duty In None Image Area	0	-10 ~ +10	+ : OPC Damage - : Voltage overshoot
107-0070	0070-THV Low K	Transfer1 Low HV Black Duty In None Image Area	0	-10 ~ +10	+ : OPC Damage - : Voltage overshoot
107-0130	0130-ATTR+ Bias	ATTR plus bias voltage on at normal drive level	0	-10 ~ +10	+ : Paper Charging ↑ - : Paper Charging ↓
107-0140	0140-THV Y_Dup	Transfer1 HV Yellow Duplex Duty	0	-25 ~ +25	+ : Increase Transfer Ability - : Decrease Transfer Ability
107-0150	0150-THV M_Dup	Transfer1 HV Magenta Duplex Duty	0	-25 ~ +25	+ : Increase Transfer Ability - : Image Delition
107-0160	0160-THV C_Dup	Transfer1 HV Cyan Duplex Duty	0	-25 ~ +25	+ : Increase Transfer Ability - : Decrease Transfer Ability
107-0170	0170-THV K_Dup	Transfer1 HV Black Duplex Duty	0	-25 ~ +25	+ : Increase Transfer Ability - : Decrease Transfer Ability

Code	LCD display	Meaning	Default	Min. / Max	Description
109-0010	0010-Print Temp	Target Temperature during run mode.	0	-10 ~ 0	1. Description : As (-) value increases, fusing temperature goes down in normal mode. 2. Symptom : Hot offset takes place, or printed paper is too hot. ※ Hot offset : When Fusing temperture is too high, printed image appears again in 95mm cycle 3. Solution : Drop Fusing temperature by increasing (-) value.
109-0020	0020-Low Power Temp	Target Temperature during Power save mode.	0	-10 ~ 0	Reserved
109-0070	0070-Bond Temp	Media type offset for fuser roller temperature.	0	-10 ~ 0	1. Description : As (-) value increases, fusing temperature goes down in bond paper mode. 2. Symptom : Hot offset takes place, or printed paper is too hot when bond paper is printed. ※ Hot offset : When Fusing temperture is too high, printed image appears again in 95mm cycle 3. Solution : Drop Fusing temperature by increasing (-) value.
109-0080	0080-Trans Temp	Media type offset for fuser roller temperature.	0	-10 ~ 0	1. Description : As (-) value increases, fusing temperature goes down in OHP mode. 2. Symptom : Hot offset takes place, or printed paper is too hot when OHP is printed. ※ Hot offset : When Fusing temperture is too high, printed image appears again in 95mm cycle 3. Solution : Drop Fusing temperature by increasing (-) value.

Code	LCD display	Meaning	Default	Min. / Max	Description
109-0100	0100-Envelopes Temp	Media type offset for fuser roller temperature.	0	-10 ~ 0	1. Description : As (-) value increases, fusing temperature goes down in Envelope mode. 2. Symptom : Hot offset takes place, or printed paper is too hot when Envelope is printed. ※ Hot offset : When Fusing temperture is too high, printed image appears again in 95mm cycle 3. Solution : Drop Fusing temperature by increasing (-) value.
109-0110	0110-Labels Temp	Media type offset for fuser roller temperature.	0	-10 ~ 0	1. Description : As (-) value increases, fusing temperature goes down in label mode. 2. Symptom : Hot offset takes place, or printed paper is too hot when label is printed. ※ Hot offset : When Fusing temperture is too high, printed image appears again in 95mm cycle 3. Solution : Drop Fusing temperature by increasing (-) value.
109-0120	0120-Fuser Bias Duty	Fuser Bias Duty	0	-10 ~ +10	1. Description : As the digit value increases, fuser bias increases. 2. Symptom : When it is cold and dry, printed image of pastel tone appeas again in 95mm cycle. 3. Solution : Increase fuser bias by increasing the digit.

Code	LCD display	Meaning	Default	Min. / Max	Description
109-0130	0130-Thick Temp	Media type offset for fuser roller temperature.	0	-10 ~ 0	1. Description : As (-) value increases, fusing temperature goes down in thick mode. 2. Symptom : Hot offset takes place, or printed paper is too hot when thick paper is printed. ※ Hot offset : When Fusing temperture is too high, printed image appears again in 95mm cycle 3. Solution : Drop Fusing temperature by increasing (-) value.
110-0040	0040-LD Power Y	Yellow LD Power at Normal Speed	0	-10 ~ +10	+ : Image Density increase - : Opticla Density decrease
110-0050	0050-LD Power M	Magenta LD Power at Normal Speed	0	-10 ~ +10	+ : Image Density increase - : Image Density decrease
110-0060	0060-LD Power C	Cyan LD Power at Normal Speed	0	-10 ~ +10	+ : Image Density increase - : ImageDensity decrease
110-0070	0070-LD Power K	Black LD Power at Normal Speed	0	-10 ~ +10	+ : Image Density increase - : Image Density decrease
112-0000	0000-ACR condition	All Condition of ACR On/Off	On	On/Off	On : ACR will be executed when environment changes. Off : ACR will be not executed in spite of environmental changes. ※ ACR means Auto Color Registration.
112-0115	0115-Fuser Motor Speed	Fuser Motor Speed For Regi.	0	-10 ~ +10 (step : 2)	+ : Fuser motor speed increase - : Fuser motor speed decrease
112-0116	0116-Feed Motor Speed	Feed Motor Speed For Regi.	0	-10 ~ +10 (step : 1)	+ : Fuser motor speed increase - : Fuser motor speed decrease

Test routines menu item

Code	LCD Display	Meaning	State Displayed
100-0040	0040-Color OPC	Color OPC BLDC Motor is On/Off	On[Off]
100-0050	0050-Color OPC Rdy	Detect if Color DEV BLDC Motor runs at normal speed	High[Low]
100-0060	0060-Color Dev	Color DEV BLDC Motor is On/Off	On[Off]
100-0070	0070-Color Dev Rdy	Detect if Color DEV BLDC Motor runs at normal speed	High[Low]
100-0120	0120-Exit Mot Fwd	Exit Motor Forward Fast On/Off	On[Off]
100-0130	0130-Exit Mot Slow	Exit Motor Forward Slow On/Off	On[Off]
100-0131	0131-Exit Mot Bwd	Exit Motor Forward Backward On/Off	On[Off]
100-0191	0191-System Fan Run	Start/Stop System Fan run	On[Off]
100-0192	0192-System Fan Rdy	Detects if System Fan runs at normal speed.	High[Low]
101-0000	0000-MP Feed Clutch	Engages drive to pick up a paper from Manual Tray(MP Tray).	On[Off]
101-0010	0010-Tray1 Pickup	Engages drive to pick up a paper from tray1.	On[Off]
101-0020	0020-Tray2 Pickup	Engages drive to pick up a paper from tray2. (Optional)	On[Off]
101-0120	0120-Tray1 Feed Mot	T1 Feed Motor On/Off	On[Off]
101-0130	0130-Tray2 Feed Mot	T2 Feed Motor On/Off	On[Off]
101-0200	0200-K Deve Clutch	Engages drive to Color, Motor dev	On[Off]
102-0000	0000-Tray1 Home Pos	Detect when tray1 is closed.	Closed[Opened]
102-0010	0010-Tray1 Empty	Detect when paper is in Tray1.	High[low]
102-0070	0070-Tray2 Home Pos	Detect when tray2 is closed.	Closed[Opened]
102-0080	0080-Tray2 Empty	Detect when paper is in tray2.	High[low]
102-0090	0090-Tray2 Size1	Detects whether auto size1 sensor of tray2 is high or low.	High[low]
102-0100	0100-Tray2 Size2	Detects whether auto size2 sensor of tray2 is high or low.	High[low]
102-0110	0110-Tray2 Size3	Detects whether auto size3 sensor of tray2 is high or low.	High[low]
102-0280	0280-MP Empty	Detects when paper is in Bypass Tray(MP Tray).	High[low]
102-0290	0290-Feed Sensor	Detect when a paper is at Feed sensor.	High[low]
102-0370	0370-Exit Sens	Detect when a paper is at Exit. sensor.	High[low]
105-0030	0030-K MHV Bias	Black MHV bias voltage on at normal drive level	On[Off]
105-0031	0031-Color MHV Bias	Color MHV bias voltage on at normal drive level	On[Off]
106-0000	0000-Y Deve Bias	Yellow Deve bias voltage on at normal drive level	On[Off]
106-0010	0010-M Deve Bias	Magenta Deve bias voltage on at normal drive level	On[Off]
106-0020	0020-C Deve Bias	Cyan Deve bias voltage on at normal drive level	On[Off]
106-0030	0030-K Deve Bias	Black Deve bias voltage on at normal drive level	On[Off]
106-0031	0031-K Deve AC	Black Deve bias AC voltage on at normal drive level	On[Off]

Code	LCD Display	Meaning	State Displayed
106-0032	0032-C Deve AC	Cyan Deve bias AC voltage on at normal drive level	On[Off]
106-0033	0033-M Deve AC	Magenta Deve bias AC voltage on at normal drive level	On[Off]
106-0034	0034-Y Deve AC	Yelllow Deve bias AC voltage on at normal drive level	On[Off]
107-0000	0000-Y THV Bias	Yellow THV bias voltage on at normal drive level	On[Off]
107-0010	0010-M THV Bias	Magenta THV bias voltage on at normal drive level	On[Off]
107-0020	0020-C THV Bias	Cyan THV bias voltage on at normal drive level	On[Off]
107-0030	0030-K THV Bias	Black THV bias voltage on at normal drive level	On[Off]
107-0040	0040-Y THV Bias R	Detect what the THV value is on the THV Roller	Numeric 3 digits
107-0120	0120-ATTR+ Bias	ATTR plus bias voltage on at normal drive level	On[Off]
107-0140	0140-ATTR- Bias	ATTR Minus bias voltage on at normal drive level	On[Off]
107-0150	0150-PTL	Pre Transfer Lamp 1	On[Off]
107-0160	0160-Erase Lamp	Erase Lamp 1	On[Off]
109-0000	0000-Temp A	Detects what the temperature A is on fuser.	Numeric 3 digits
109-0010	0000-Temp B	Detects what the temperature B is on fuser.	Numeric 3 digits
109-0030	0030-Fuser Mot Fwd	Fuser Motor Forward On/Off	On[Off]
109-0040	0040-Fuser Fan Run	Fuser Fan Motor On/Off	On[Off]
109-0050	0050-Fuser Bias	Fuser bias voltage on at normal drive level	On[Off]
109-0090	0090-Fuser Power On	It controls temperature of fuser as 180 degrees.	On[Off]
110-0000	0000-LSU Motor1 Rdy	Detects if LSU motor1 runs at normal speed.	High[Low]
110-0010	0010-LSU Motor2 Rdy	Detects if LSU motor2 runs at normal speed.	High[Low]
110-0060	0060-LSU Motor1 Run	LSU Motor1 On/Off	On[Off]
110-0070	0070-LSU Motor2 Run	LSU Motor2 On/Off	On[Off]
110-0080	0080-LD Power1	LSU LD1 Power On/Off (yellow)	On[Off]
110-0090	0090-LD Power2	LSU LD2 Power On/Off (magenta)	On[Off]
110-0100	0100-LD Power3	LSU LD3 Power On/Off (cyan)	On[Off]
110-0110	0110-LD Power4	LSU LD4 Power On/Off (black)	On[Off]
112-0000	0000-ACR Exec Now	Start Auto Color Registration	On[Off]
112-0010	0010-Manu Regi Clear	Clear Manual Offset Value of Color Regi.	On[Off]

4.1.5 Firmware Upgrade

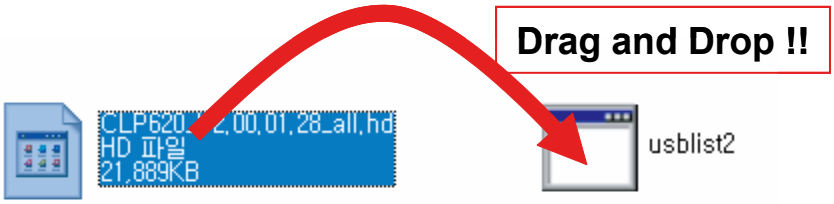
• USB and Network port are used to F/W upgrade.
• Network applications (SWAS, SWS) can be used for network port upgrade.

4.1.5.1 Using the common method

- Via USB connection (when Ready state)

CLX-6250 Rom has file name like 'CLX-6250_VA.BB.CC.DD.hd'.

1) Delete all processing job.
2) Confirm USB connection
3) Download ROM file form PC to MACHINE via usblist2.exe
   -> Drag the F/W file and Drop down on the usblist2.exe file.



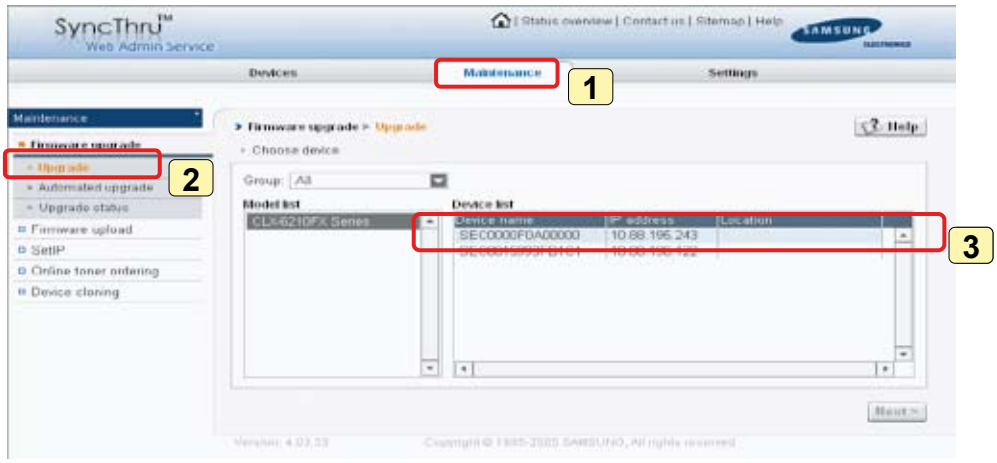
- Via USB connection (when Power OFF)

1) Confirm USB connection
2) Power button press
3) Within 1sec of Step2, press STOP key , make "Wait Image" status.
4) Download ROM file from PC to MACHINE via usblist2.exe

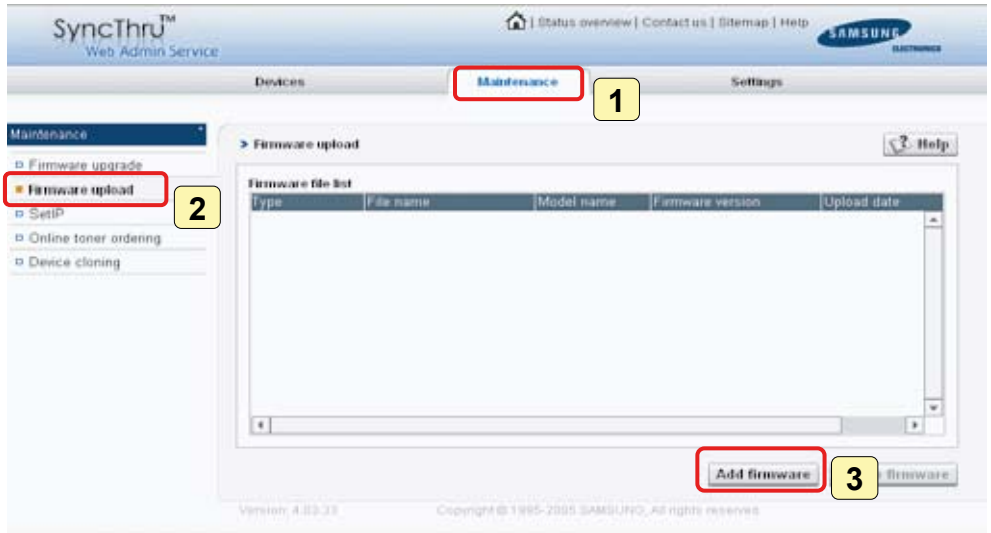
4.1.5.2 F/W upgrade using SWAS (SyncThru Web Admin Service)

To use below method, SWAS program is installed in PC.
Start the SWAS program.
(Windows Start menu > Programs > Samsung Netowork Printer Utilities > SyncThru Web Admin Service)

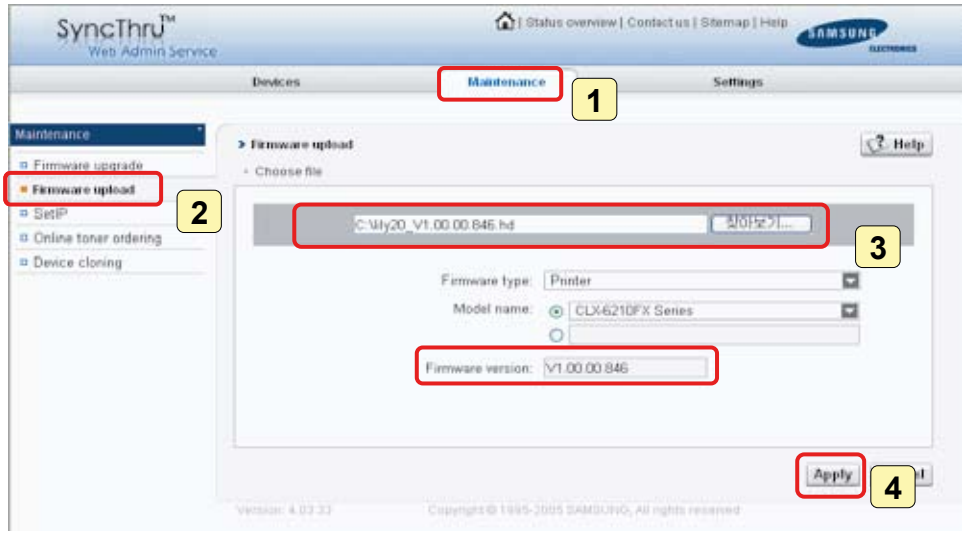
1. Firmware Upgrade → Upgrade (check device using IP address)



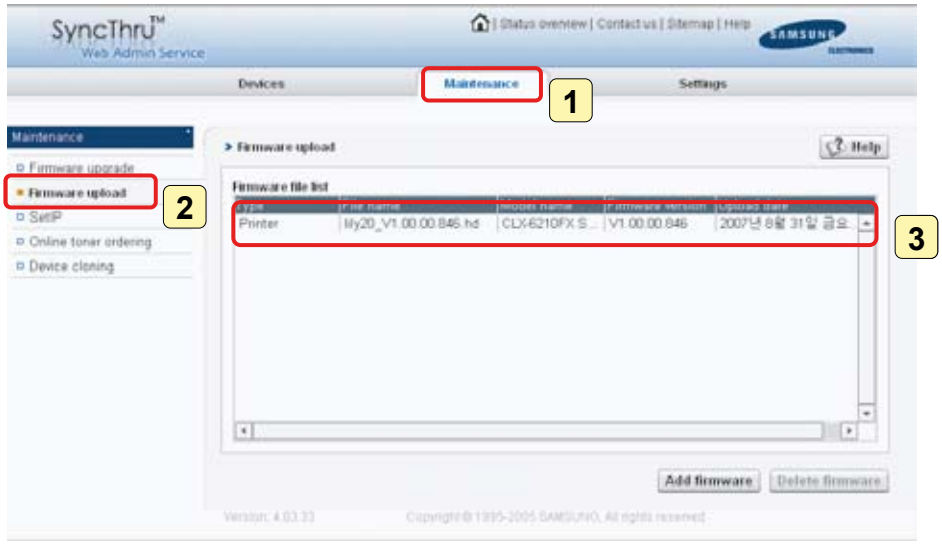
2. Maintenance → Firmware upload (register firmware)



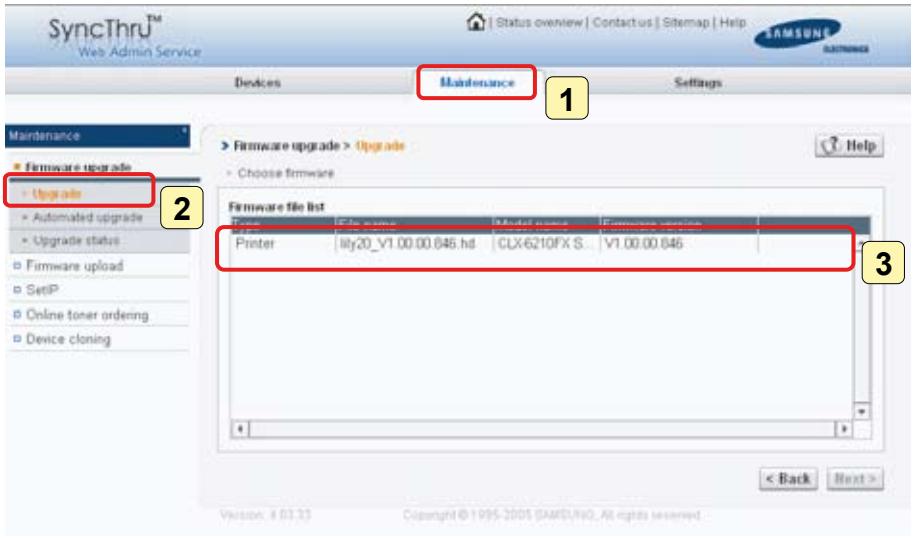
3. Maintenance → Firmware Upload (upload firmware)



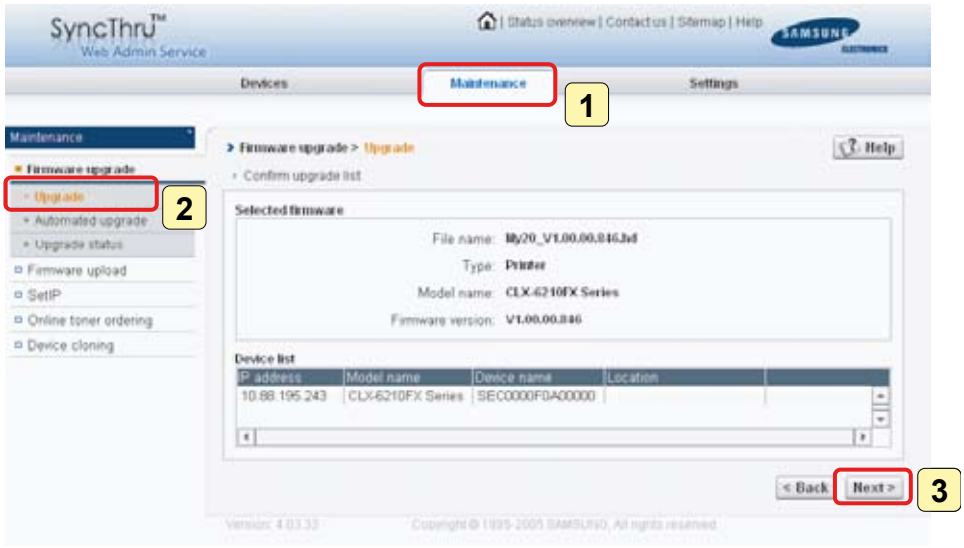
4. Maintenance → Firmware Upload (confirm uploaded firmware)



5. Maintenance → Firmware Upgrade → Upgrade (choose firmware)

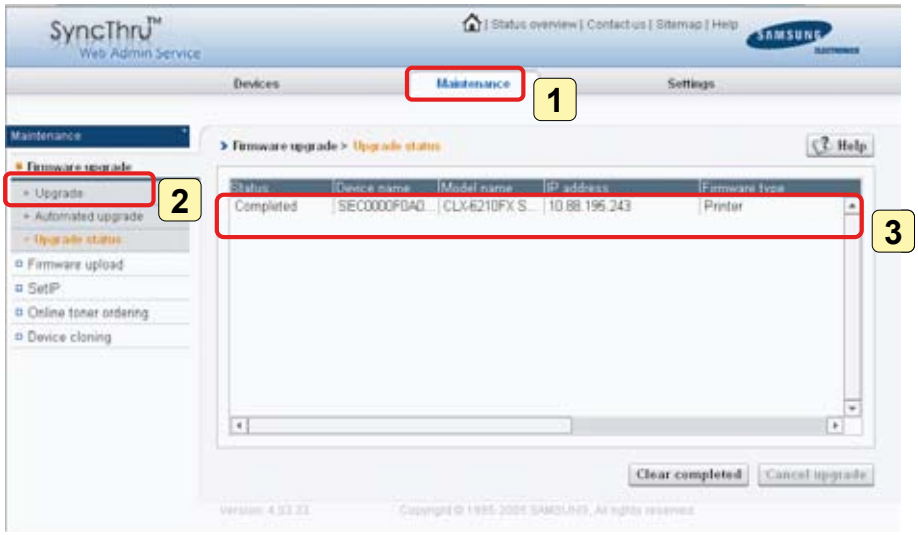


6. Maintenance → Firmware Upgrade → Upgrade (choose firmware)



7. Maintenance → Firmware Upgrade → Upgrade

8. Maintenance → Firmware Upgrade → Upgrade (Done)



4.1.5.3 Using SyncThru Web Service (SWS)

SWS is an embedded web server in the machine. This web server informs you of machine configuration, version, status and allows you to customize the machine's settings. You can connect this server via wired and wireless network using your web browser in the remote place.

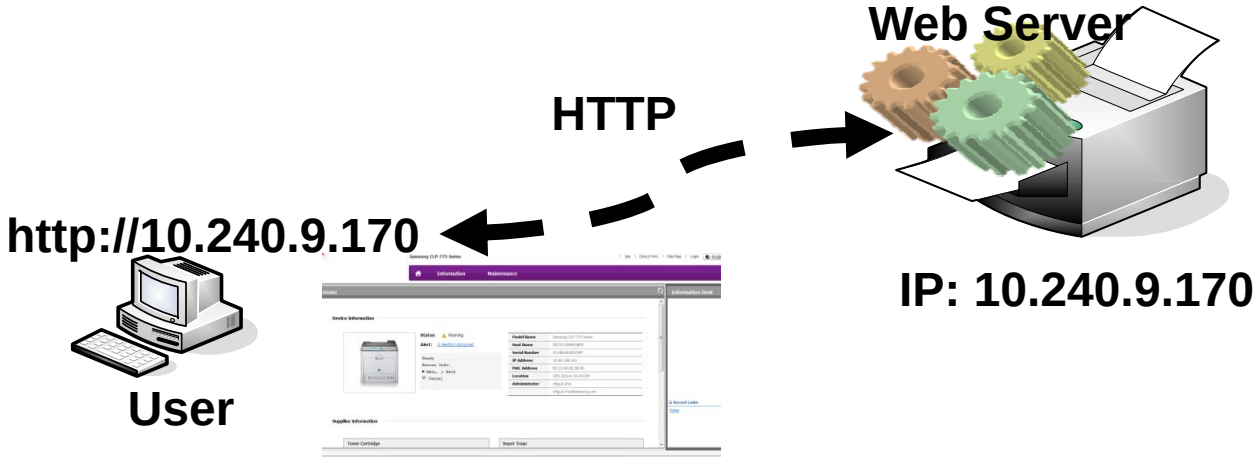
Connecting preparations

- Wired or Wireless Network connection is established.
- Web Browser (Ex> Internet Explorer) Program on your PC network connected

SWS overview

SyncThru Web Service (SWS)

- accepts HTTP request via port 80 as normal web servers.
- provides interface to users information of networked printers and allow to configure the setting of printers
- is able to provide more complicated options than Local UI for printer configuration



Connection Procedure

1) Open the Web-browser and input IP address of machine. Click "Login".
2) Log-in Admin Mode. (ID: admin, PW: sec00000)
3) Select pages to check the configuration and customize the settings

.

Caution

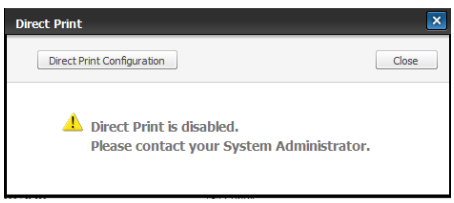
Please, change SWS Default ID and Password for system security in case of your first connection.

Note:

If the machine supports 'Direct Print', you can enable this function using the SWS menu. The default configuration is 'Disabled' for your security.

Firstly, you have to login to SWS.

1) Click 'Direct Print Configuration' in the pop up windows when clicking 'Direct Print'
2) In the 'Services' Menu, check 'Direct Print'.



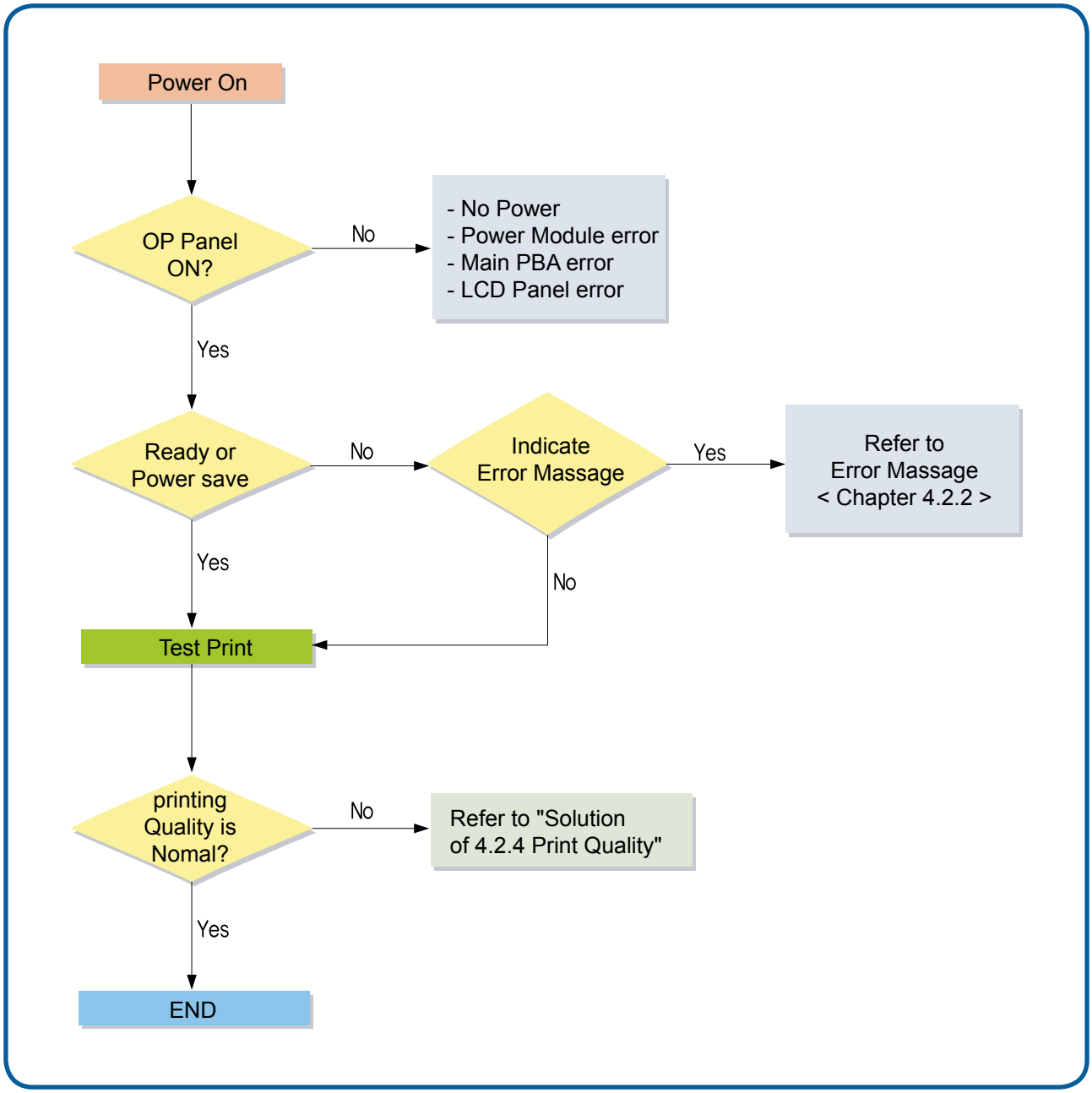
Or,

1) Click ‘System Security’ in the ‘Security’ menu.
2) Select ‘Feature Management’ in the left frame.
3)In the ‘Services’ Menu, check ‘Direct Print’.

4.2 Troubleshooting

4.2.1 Procedure of Checking the Symptoms

Before attempting to repair the printer first obtain a detailed description of the problem from the customer.



4.2.2 Error code and message

Messages appear on the Smart Panel program window or on the control panel display to indicate machine status or errors. Refer to the tables below to better understand the meanings of each message, then follow the suggested solution provided on the page that you are referred to.

Error Code	Error Message	Troubleshooting
01-000	Door is open or Check Transfer belt	4-31 page
01-004	Paper jam in MP tray	4-32 page
01-005	Paper jam in tray 1	4-33 page
01-006 01-018	Paper jam in tray 2	4-34 page
01-009	Paper jam inside of machine	4-35 page
01-010	Paper jam in exit area	4-36 page
01-015	Paper jam at the top of duplex path	4-37 page
01-016	Paper jam inside of duplex path	-
01-017	Output bin full. Remove printed paper.	4-38 page
02-000	System error: #02-000. Please turn off then on	4-39 page
02-001 02-006	Fuser error: #02-001/006. Please turn off then on	4-40 page
02-002	System error: #02-002. Please turn off then on	4-41 page
02-005	System error: #02-005. Please turn off then on	4-41 page
03-000	Motor error. Error: #03-000. Turn off then on	4-42 page
03-007 03-008 03-009	Motor error. Error: #03-007/008/009. Turn off then on	4-43 page
03-015	Motor error. Error: #03-015. Turn off then on	4-44 page
04-001 04-002 04-008	LSU error: #04-001/002/008. Please turn off then on.	4-45 page
08-000 08-001	Original paper Jam Original paper jam inside of scanner. Remove Jam	4-46 page
08-002 08-006	Original paper jam inside of scanner	4-47 page
08-003 08-010	Original paper Jam Original paper jam inside of scanner. Remove Jam	4-48 page
08-004 08-006	Original paper Jam Original paper jam inside of scanner. Remove Jam	4-49 page
08-008	Scanner door Open Door of scanner is open. Close it	4-50 page
11-003	Scanner locked Scanner locking switch is locked. Release it	4-51 page

Error Code	Error Message	Troubleshooting
12-000 12-001	Paper mismatch Tray1/2 Load [A4] [Plain] Continue ⊙ Cancel X	4-52 page
12-004	Paper mismatch MP. Load [A4] [Plain] Continue ⊙ Cancel X	4-53 page
18-000	Fax memory is almost full.	4-54 page
18-001	Fax memory is full. Print or remove received fax job	4-54 page
18-002	Too many faxes are in the print queue waiting to be printed. Wait, reprioritize, and/or remove unwanted jobs from the print queue.	4-54 page
18-003	Too many faxes are received. Reprioritize, and/or remove unwanted jobs from the print queue.	4-54 page
21-002	Paper Empty in tray1 Paper is empty in tray1. Load paper	4-55 page
21-003	Tray 1 cassette is pulled out. Insert it properly	4-56 page
21-010	Paper is empty in MP tray. Load paper	4-57 page
21-018	Paper Empty in tray2 Paper is empty in tray2. Load paper	4-58 page
21-019	Tray2 cassette is pulled out. Insert it properly	4-59 page
28-001 28-002 28-003	Transfer belt is not installed. Install it. Transfer belt is not compatible for this machine. Check user's guide.	4-60 page

• Code	• Error message
01-000	Door is open or Check Transfer belt

• Symptom

Front cover or top cover is opened.

• Possible Cause

1. Harness is defective, Connector is not connected properly.
2. Sensor is defective.

• Troubleshooting method :

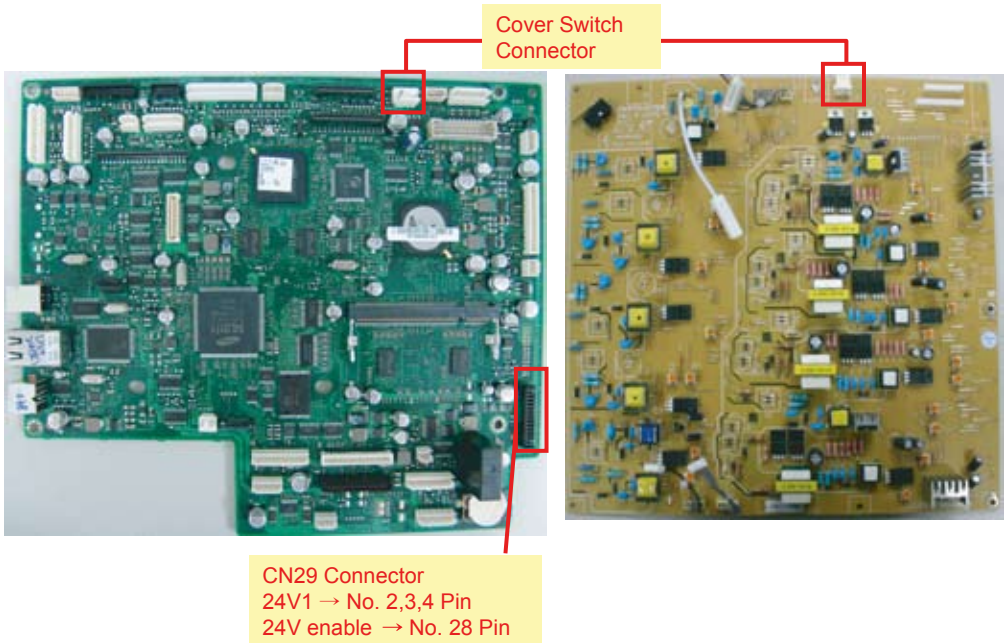
1. Ensure the Front and Top Covers are closed properly.

2. If the PTB [paper transfer belt] is not installed, install it.

3. Check the cover switch harness between Main PBA and HVPS.

4. Check the 24V enable signal on Main PBA. If the voltage is high(5V), replace the Main PBA.

5. Check the 24V1 on SMPS. If there is no output, replace the SMPS board.



● Code	● Error message
01-004	Paper Jam in MP tray

● Symptom

The paper from the MP tray has not reached to the feed sensor within a predetermined period of time after pick up.

● Possible Cause

1. Pickup roller rubber is worn out.
2. Pickup Clutch does not work.
3. Feed Sensor is defective.

● Troubleshooting method

1. Ensure the Front and Top Covers are closed properly.

2. If the PTB [paper transfer belt] is not installed, install it.

3. Check the cover switch harness between Main PBA and HVPS.

4. Check the 24V enable signal on Main PBA. If the voltage is high(5V), replace the Main PBA.

5. Check the 24V1 on SMPS. If there is no output, replace the SMPS board.

● Code	● Error message
01-005	Paper jam in tray 1

● Symptom

The paper from the tray1 has not reached to a feed sensor within a predetermined period of time after pick up.

● Possible Cause

1. Pickup roller rubber is worn out.
2. Pickup Clutch does not work.
3. Feed Sensor is defective.

● Troubleshooting method

1. Take out the cassette and remove the jammed paper.

2. Check the separator pad of the cassette. If it become loose or has reached its PM interval, replace it.
 * MEA Holder Pad (JC97-02892A)

3. If the pick up roller does not rotate, check the Gear Pick up(JC97-02895A) and solenoid.
 If it is defective, replace it.

4. If the pick up roller rotates but the paper is not feeding, replace the Feed motor (JC31-00112A).

5. Check the connectors are plugged in properly on CN4,5,9 on HVPS.

6. Check the connectors are plugged in properly on CN1,2 on HVPS and check the flat cable.

7. Check that the PM interval for Pick-up Roller has expired. If so, replace it.

8. Check the actuator on the Feed Sn. If it does not work correctly, replace the feed-sensor.

9. Check for proper positioning of the Knockup-Plate(JC97-02888A)

10. Check if the Guide-adjust is adjusted for paper entry properly.

● Code	● Error message
01-006 01-018	Paper jam in tray 2

● Symptom

The paper from the tray2 has not reached to a feed sensor within a predetermined period of time after pick up.

● Possible Cause

1. Pickup roller rubber is worn out.
2. Pickup Clutch does not work.
3. Feed Sensor is defective.

● Troubleshooting method :

1. Take out the 2nd cassette and remove the jammed paper.

2. If the pick up roller does not rotate, check the Gear Pick up(JC97-03228A). If it is defective, replace it.

3. If the pick up roller rotates but the paper is not feeding, replace the Clutch-Feed(JC97-03270A).

4. Check the connector is plugged in properly on CN9 connector on Main PBA

5. Check the sensor and connector in SCF.

● Code	● Error message
01-009	Paper jam inside of machine

● Symptom

Paper jam inside of machine

1. At Power On, the paper is jamming at Regi sensor or Feed sensor.
2. At printing, the paper is detecting at Regi sensor or Feed sensor continuously.
3. At printing, the paper is not detected at exit sensor within a predetermined time.

● Possible Cause

1. Feed sensor or Regi Sensor is defective.
2. Exit sensor is defective.
3. Feed Clutch is defective.
4. Regi Clutch is defective.

● Troubleshooting method

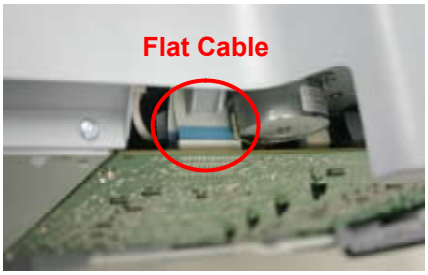
1. Check the Spring tension of the Regi. roller and Regi shaft. If the spring is defective, replace it.

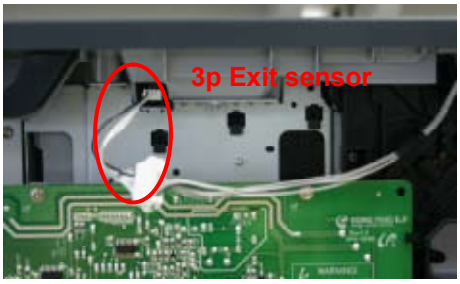
2. Check and replace the exit sensor.

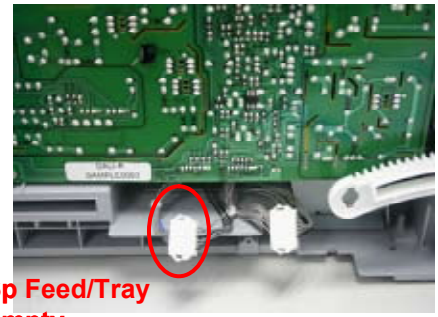
3. Check the connectors are plugged in properly on the flat cable / exit sensor harness / Feed sensor harness.

4. Check the OPC motor is working. / OPC lock.

5. Check PTB [paper transfer belt] working condition, if PTB-Belt is torn replace it.







● Code 01-010	● Error message Paper jam in exit area

● Symptom

Paper jam in exit area

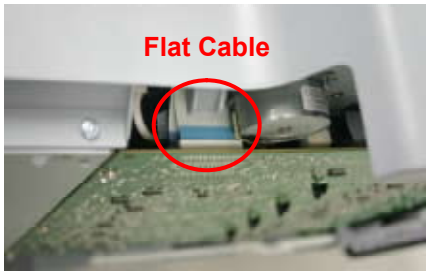
● Possible Cause

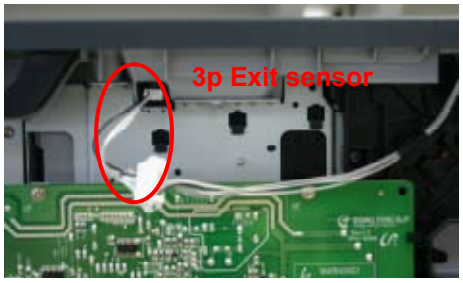
There is paper jammed under the Exit Sensor at Power ON, or the Fuser Actuator Arm, or Exit Sensor is defective.

● Troubleshooting method

1. If the actuator fuser sensing part is binding or broken, replace the Fuser Actuator [JC66-01404A] and exit sensor if required.

2. Check the connectors are plugged in properly on the flat cable / Exit sensor harness.





● Code	● Error message
01-015	Paper jam at the top of duplex path

● Symptom

1. At Power On, if the Fuser Exit Sensor and/or Reverse Sensor detects paper.
2. At Printing, Fuser Exit sensor and Reverse Sensor is not on within a predetermined time after paper moves into the Reverse path.

● Possible Cause

1. Check the Fuser Exit Sensor, Reverse Sensor Harness and Connector.
2. Check if the UI message is changed in the Fuser Exit Sensor and the Reverse Sensor operation (EDC Mode).
3. Check the Reverse Motor and Fuser Exit Motor. (EDC Mode).

● Troubleshooting method

1. Lift the Scan Unit and Open the Reverse Top Cover and the Middle Open Cover. Check for Paper in the Fuser and Reverse Unit.


2. If the paper is jammed, remove the paper in the Fuser.

3. If the paper is not present, check if the Fuser Exit and Reverse actuator's return action as the EDC Mode just checks on/off. If so, check the actuator springs of the Fuser Exit and Reverse return spring tension is sufficient,. and sensor arm works smoothly. (EDC Mode -> Test Routines -> Engine Diagnostic Test -> 102-370 / 102-xxx)


4. If the Actuator Arm in the Fuser and Reverse is Operating properly. Check if Reverse motor and Fuser Exit Motor is turning properly in EDC Mode. (EDC Mode -> Test Routines -> Engine Diagnostic Test -> 100-xxx / 100-xxx)

● Code	● Error message
01-017	Output bin Full Output bin Full. Remove printed paper

● Symptom

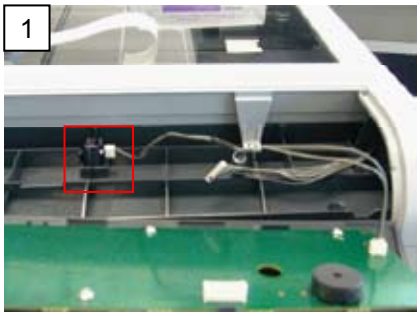
When the tray limit is reached, the out-bin full sensor is on for 600ms.

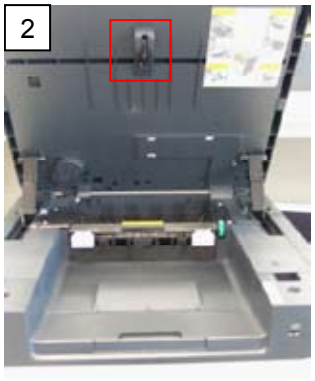
● Possible Cause

1. Check the Out-Bin Full Sensor.
2. Check if the UI message is changed by the Out-Bin Full Sensor operation.
3. Check the Out-Bin Full Sensor Harness and Connector.

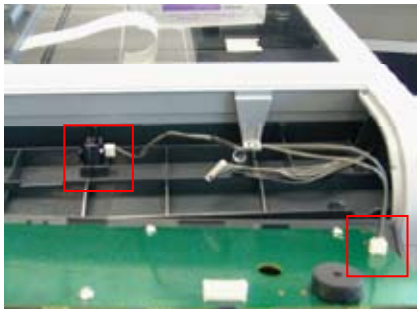
● Troubleshooting method

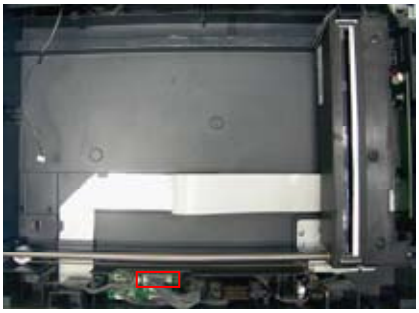
1. Check the BIN_FULL_SENSOR (picture'1' below) by pushing the trigger (picture'2' below) beneath the SCAN_ ASSY.
   Check if the UI message is changed by the Out-Bin Full Sensor operation





2. Check if the Harness is defective.
   Check if the connector is connected properly.





3. Replace the Main PBA or the Scan_Joint PBA or the Panel PBA.

4. Enter the EDC mode and follow the below sequence after the repair is done.
   (EDC Mode → Test Routines → 101-Clutch → 0190-OutBin Full → Start → Status check → Stop)

● Code	● Error message
02-000	Fuser Error :#02-000 Please turn off then on.

● Symptom

At Warm-up, this error has occurred. The machine does not work until power off/on. If the error code reoccurs, follow the “Troubleshooting method” below.

● Possible Cause

Fuser Unit is not installed and AC is not supplied to the Heat Lamp.

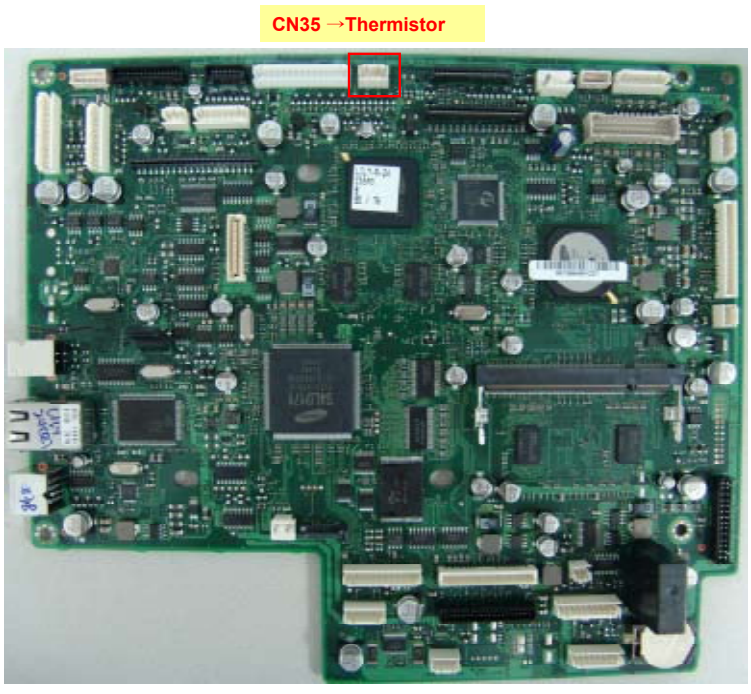
● Troubleshooting method

1. Turn off the power. And turn on the power.

2. If the problem persists, replace the fuser unit.

3. If the problem persists after replacing the fuser unit, reconnect the CN35 connector on Main-PBA.

4. If the problem persists, replace the Main-PBA.



● Code	● Error message
02-001 02-006	Fuser Error :#02-001 Please turn off then on. Fuser Error :#02-006 Please turn off then on.

● Symptom

At Warm-up, this error has occurred. The machine does not work until power off/on. If the error code reoccurs, follow the “Troubleshooting method” below.

● Possible Cause

Fuser Unit is not installed and AC is not supplied to the Heat Lamp.

● Troubleshooting method

1. Turn off the power. And turn on the power.

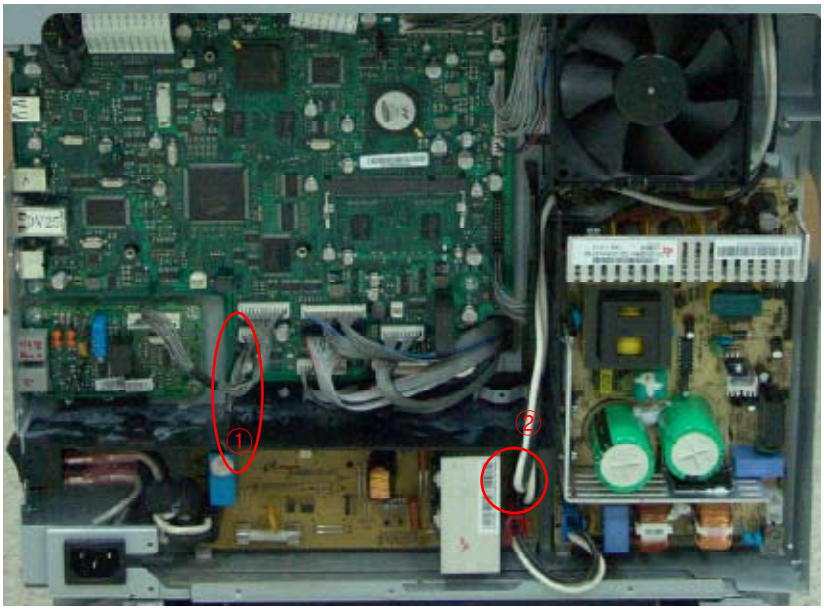
2. Check the connection of the Fuser AC on FDB ②.

3. Check the Fuser control harness ①.

4. Check the resistance value of the thermostat. If the value is infinite, replace the thermostat.

5. If the problem persists, replace the Fuser unit.

6. Replace the SMPS board or FDB (Fuser drive board).



● Code 02-002	● Error message System Error :#02-002 Please turn off then on.
● Symptom The fuser unit is overheated. The machine does not work until power off/on. If the error code reoccurs, follow the “Troubleshooting method” below.	
● Possible Cause The machine can not control fuser temperature.	
● Troubleshooting method 1. Turn off the power. And turn on the power. 2. Replace the Fuser unit. 3. Replace the FDB. 4. Replace the Main-PBA.	

● Code 02-005	● Error message System Error :#02-005 Please turn off then on.
● Symptom The ADC port is short.	
● Possible Cause The machine can not control fuser temperature.	
● Troubleshooting method 1. Turn the power off then on again. 2. If the problem persists, replace the Main PBA.	

● Code 03-000	● Error message Motor error Error: #03-000 Turn off then on
● Symptom Motor Signal is abnormal.	
● Possible Cause 1. Harness is defective, Connector is not connected properly. 2. Main BLDC Motor is defective. 3. Main Board is defective.	
● Troubleshooting method 1. Replace Harness if defective. 2. Replace the Main BLDC Motor if defective. 3. Replace the Main Board if defective.	

● Code	● Error message
03-007 03-008 03-009	Motor error Error: #03-007/008/009 Turn off then on

● Symptom

Motor Signal is abnormal.

● Possible Cause

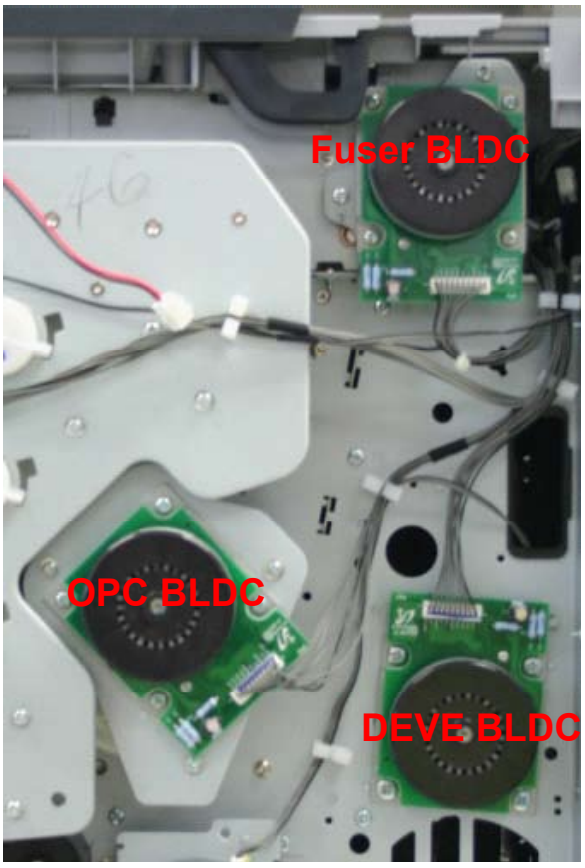
1. Harness is defective, Connector is not connected properly.
2. Color OPC BLDC Motor is defective.
3. Main Board is defective.

● Troubleshooting method

1. Check the motor connector. Reconnect the harness.

2. If the problem persists, replace the BLDC motor.

3. If the problem persists after replacing BLDC motor, replace the Main PBA.



● Code	● Error message
03-015	Motor error Error: #03-015 Turn off then on

● Symptom

Fan does not operate.

● Possible Cause

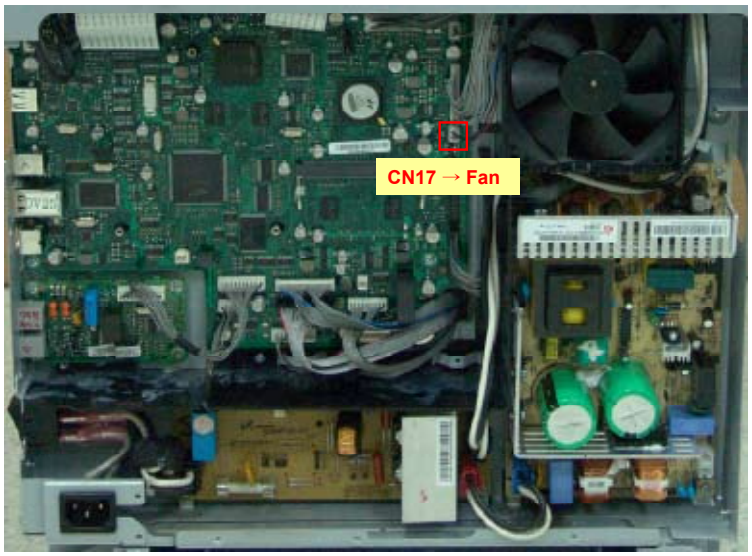
Fan is defective.

● Troubleshooting method

1. Check the CN17 connector (FAN) on Main PBA.

2. If the FAN is defective, replace it.

3. If the problem persists, replace the Main PBA.



• Code	• Error message
04-001	LSU error: #04-001. Please turn off then on.
04-002	LSU error: #04-002. Please turn off then on.
04-008	LSU error: #04-008. Please turn off then on.

• Symptom

Laser beam detect signal has not occurred or is irregular.
LSU motor does not operate.

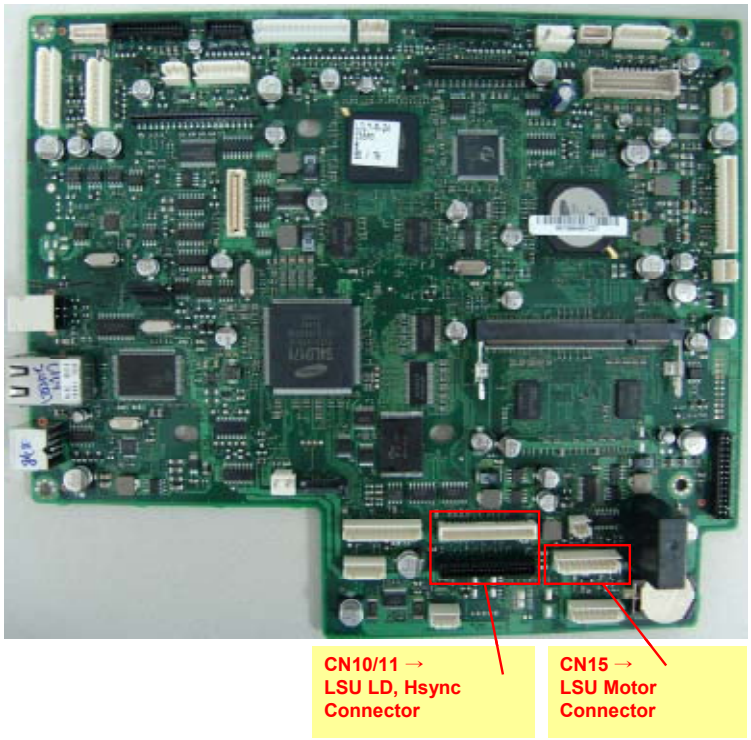
• Possible Cause

1. Harness is defective, Connector is not connected properly.
2. LSU is defective.
3. Main Board is defective.

• Troubleshooting method

1. Check the LSU connector on Main PBA. Reconnect it. If necessary, replace it.

2. If the problem persists, replace the LSU or Main PBA.



● Code	● Error message
08-000 08-001	Original paper Jam Original paper jam inside of scanner. Remove Jam

● Symptom and Possible Cause

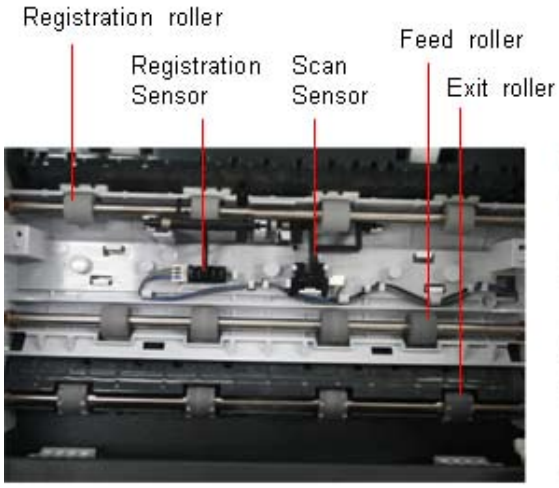
The lead edge of the document failed to actuate the Registration sensor within the predetermined time after initialization of Paper Pick up.

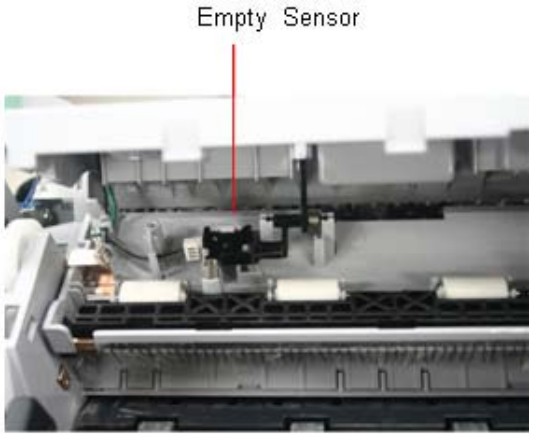
● Possible Cause

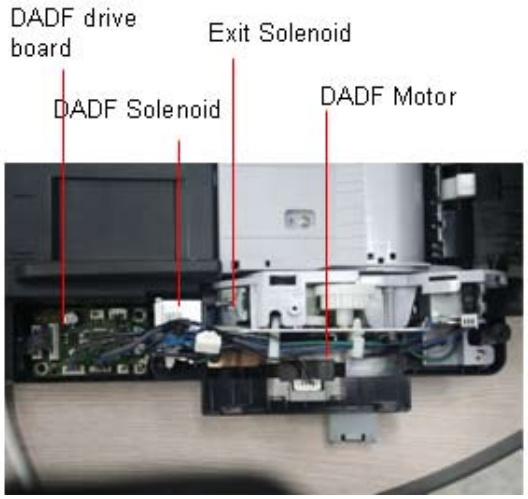
1. Pick up roller is defective.
2. Scan sensor or actuator is defective.
3. Document paper path is contaminated.

● Troubleshooting method

1. Check the paper path for a small piece of paper that may have been torn from an original; or foreign materials such as paper clips, extracted staples, etc.
2. Check the condition of the Pick-up, Paper Feed Roller and DADF Rubber, it may have reached its PM interval.
3. Registration Sensor change
4. Registration Sensor drive Board change
5. Pick-up Solenoid change







• Code	• Error message
08-002 08-006	Original paper jam inside of scanner

• Symptom and Possible Cause

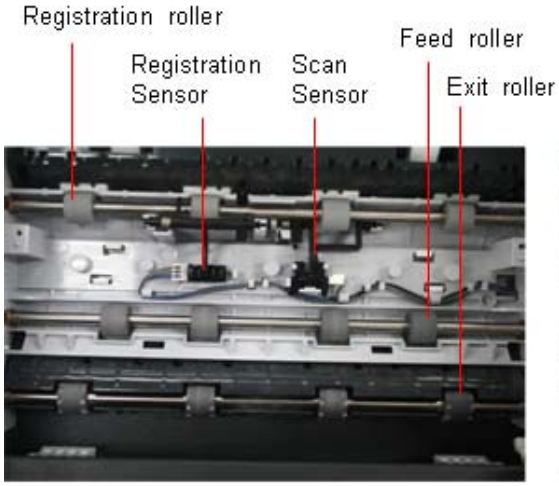
The leadedge of the document has not reached to scan sensor after being sensed by the regi sensor.

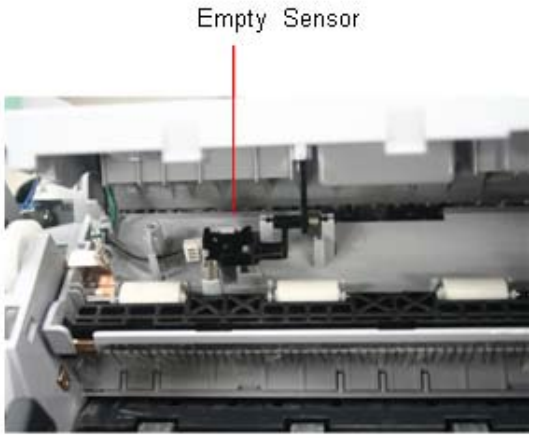
• Possible Cause

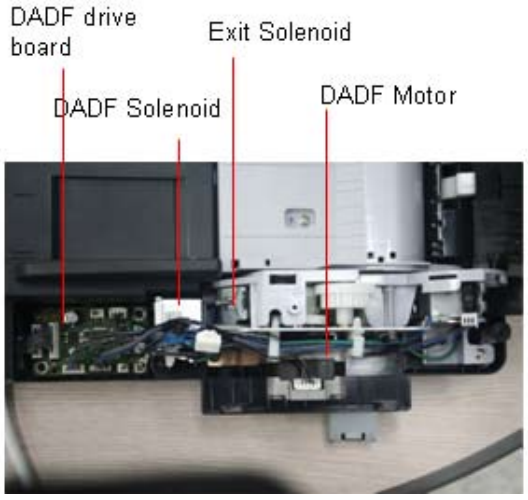
1. Gate sensor or actuator is defective.
2. Document paper path is contaminated.
3. WHITE BAR SHEET is not attached properly.
4. WHITE BAR is defective.

• Troubleshooting method

1. Check the paper path for a small piece of paper that may have been torn from an original; or foreign materials such as paper clips, extracted staples, etc.
2. Check that the White bar sheet is properly set to the guide.
3. Check and clean the Registration Roller, replace as is necessary.
4. Check and clean the Exit Roller, replace as is necessary.
5. Check and clean the Scan Senor for paper dust, replace as is necessary.
6. Check the signals from the Scan Sensor Drive Board, replace as is necessary.
7. Check and clean the Exit Solenoid, replace as is necessary.







• Code	• Error message
08-003 08-010	Original paper Jam Original paper jam inside of scanner. Remove Jam

• Symptom and Possible Cause

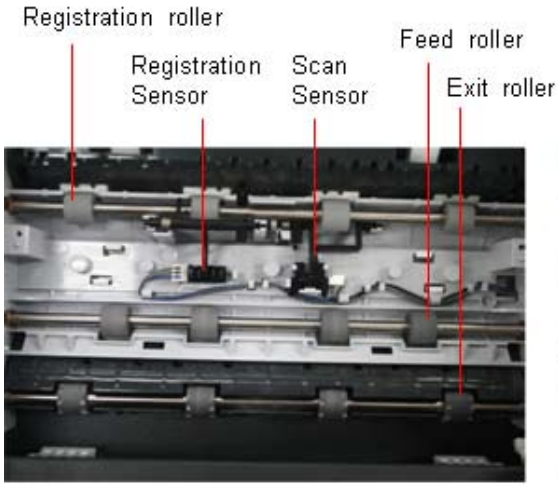
At duplex scan, the leadedge of the document has not reached to the duplex sensor after scanning the front side.

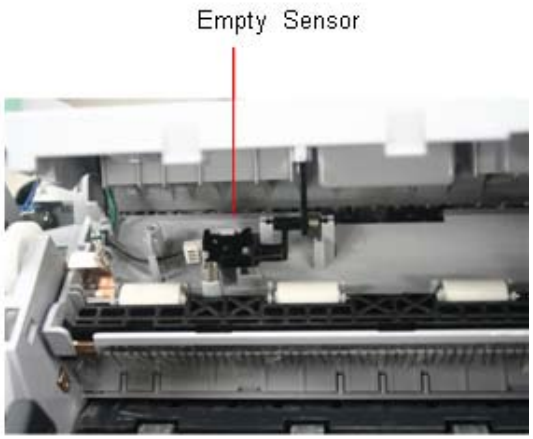
• Possible Cause

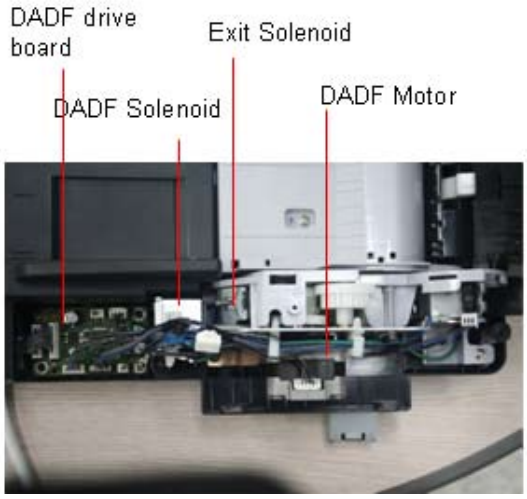
1. Duplex sensor or actuator is defective.
2. There is the contamination on paper path or a defective assembly.
3. The Duplex Gate does not work properly.
4. Duplex motor is defective.

• Troubleshooting method

1. Check and clean the Duplex Solenoid, replace as is necessary.
2. Check and clean the Exit Roller, replace as is necessary.
3. Check the signals from the DADF Drive Board, replace as is necessary.







● Code	● Error message
08-004	Original paper Jam
08-006	Original paper jam inside of scanner. Remove Jam

● Symptom and Possible Cause

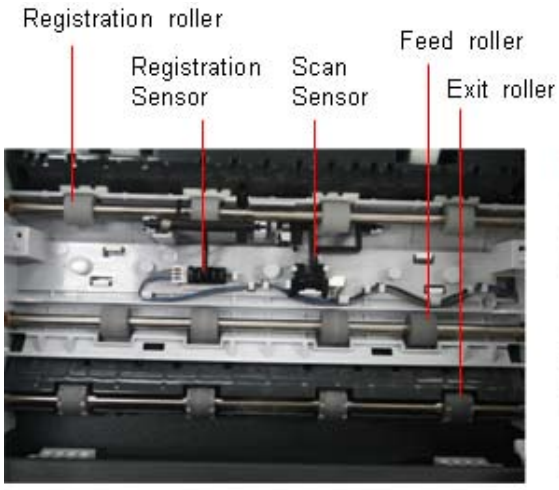
The bottom edge of the document failed to pass the scan sensor after the leadedge of the document has reached to the duplex sensor and scan sensor.

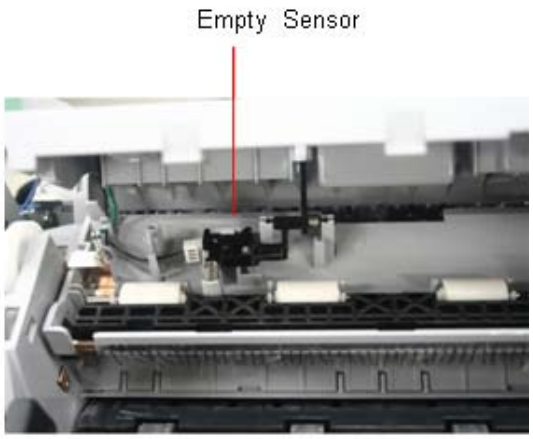
● Possible Cause

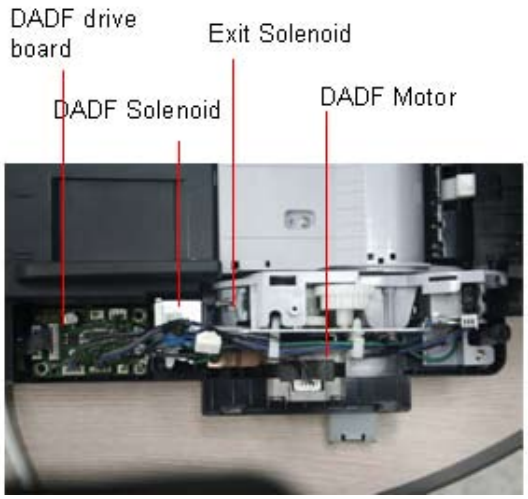
1. Scan sensor or actuator is defective.
2. There is the contamination on paper path or a defective assembly.

● Troubleshooting method

1. Check the paper path for a small piece of paper that may have been torn from an original; or foreign materials such as paper clips, extracted staples, etc.
2. Check and clean the Registration Roller, replace as is necessary.
3. Check and clean the Exit Roller, replace as is necessary.
4. Check and clean the Scan Sensor for paper dust, replace as is necessary.
5. Check the signals from the Scan Sensor Drive Board, replace as is necessary.
6. Check and clean the Exit Solenoid, replace as is necessary.







● Code	● Error message
08-008	Scanner door Open Door of scanner is open. Close it

● Symptom

DADF door is opened.

● Possible Cause

The cover open sensor is defective.

● Troubleshooting method

Check if the DADF cover is closed.

<door is opened>

<door is closed>

If opened, close the DADF cover until it blocks the PHOTO-INTERRUPTER.

PHOTO-INTERRUPTER

If UI message is not changed, open the COVER-DADF REAR and replace the PHOTO-INTTERRUPTER.

● Code 11-003	● Error message Scanner locked Scanner locking switch is locked. Release it

● Symptom

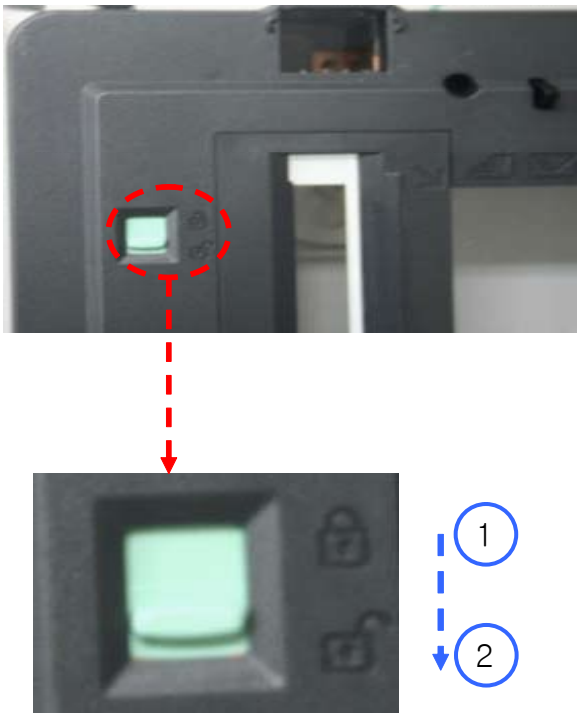
Scanner locking switch is locked or Home checking is abnormal.

● Possible Cause

Scanner locking switch is locked.

● Troubleshooting method

Check if the scanner locking switch is locked.
If the scanner locking switch is locked, move the switch from ① to ②.



● Code	● Error message
12-000 12-001	Paper mismatch Tray1/2 Load [A4] [Plain] Continue ⊙ Cancel X

● Symptom

The paper in tray1 and/or tray 2 does not match the size selected.

● Possible Cause

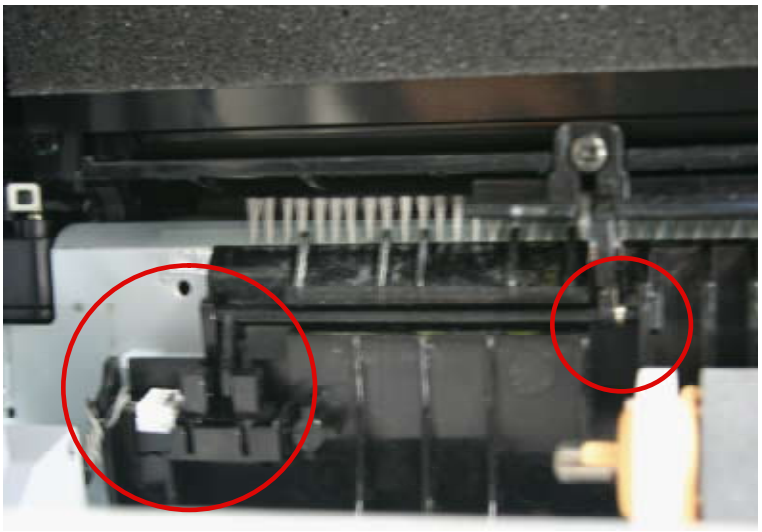
1. Check that the size selected matches the copy paper in the tray selected.
2. Check the harness and connector of the Trya1/2 Size Sensor.
3. Tray1/2 Size Sensors and it operation.

● Troubleshooting method

1. Pull out Tray1/2 Cassette.
2. Load [Letter] paper in Tray1/2 Cassette.
3. Install Tray1/2 Cassette.

Check if Feed-Actuator works correctly.

1. Check the tension spring is properly loaded on the Actuator_Feed.
2. Check that the connector for the photo sensor is plugged in securely.



● Code	● Error message
12-004	Paper mismatch MP. Load [A4] [Plain] Continue ⊙ Cancel X

● Symptom

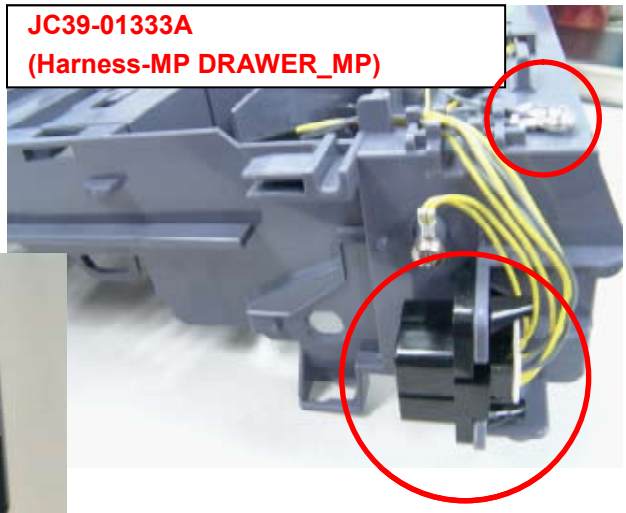
The paper in Manual Tray does not match the size selected.

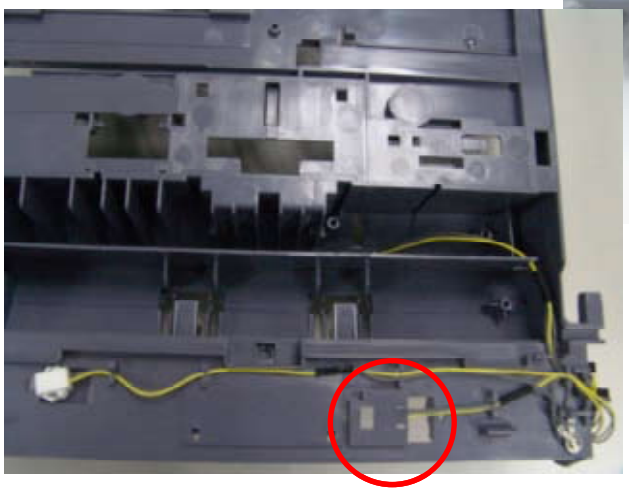
● Possible Cause

1. Check that the size selected matches the copy paper in the Manual Tray.
2. Check the harness and connector of the MP Size Sensor.
3. MP Size Sensor is defective.

● Troubleshooting method

1. Open MP Tray.
2. Load [Letter] paper in MP Tray.
3. If the problem persists, check if the MP_Paper_Detect_Actuator works correctly.
   a. Check the spring is put in the right place of the actuator
   b. Check the harness and the connector fit on the photo sensor.
   c. Check the connection of the Drawer_MP and screw points.





● Code	● Error message
18-000	Fax memory is almost full.
18-001	Fax memory is full. Print or remove received fax Job
18-002	Too many faxes are queued to be sent. Wait or remove queued job.
18-003	Too many faxes are received. Print or remove job

● Symptom

Cannot execute the Fax function.

● Possible Cause

There is not enough fax memory.

● Troubleshooting method

1. "Fax memory is almost full." message case :

1) Check the printing condition of machine. (Toner or Paper of tray)
2) Even though the printing condition of machine is normal, if this message is displaying, check the Secure Receive option.
   (Fax mode > Menu > Fax Feature > Secure Receive > Off)
3) Even though the option of Secure Receive is off, if this message is displaying, remove the job using the STOP button.

2. "Fax memory is full. Print or remove receive fax job." message case :

1) Check the printing condition of machine. (Toner or Paper of tray)
2) Even though the printing condition of machine is normal, if this message is displaying, check the Secure Receive option.
   (Fax mode > Menu > Fax Feature > Secure Receive > Off)
3) Even though the option of Secure Receive is off, if this message is displaying, remove the job using the STOP button.

3. "Too many faxes are queued to be sent. Wait or remove queued job." message case :

1) Check the delayed Fax job. (Reserved delay send job)
2) If the number of reserved send jobs is reached Max Job Count, reservation of send job is denied.
3) So, remove the delayed job .
   (Fax mode > Menu > Fax Feature > Cancel job)

4. "Too many faxes are received. Print or remove job." message case :

1) Check the printing condition of machine. (Toner or Paper of tray)
2) Even though the printing condition of machine is normal, if this message is displaying, check the Secure Receive option.
   (Fax mode > Menu > Fax Feature > Secure Receive > Off)
3) Even though the option of Secure Receive is off, if this message is displaying, remove the job using the STOP button.

● Code	● Error message
21-002	Paper Empty in tray1 Paper is empty in tray1. Load paper

● Symptom

There is the paper in tray1 but error message is displayed.

● Possible Cause

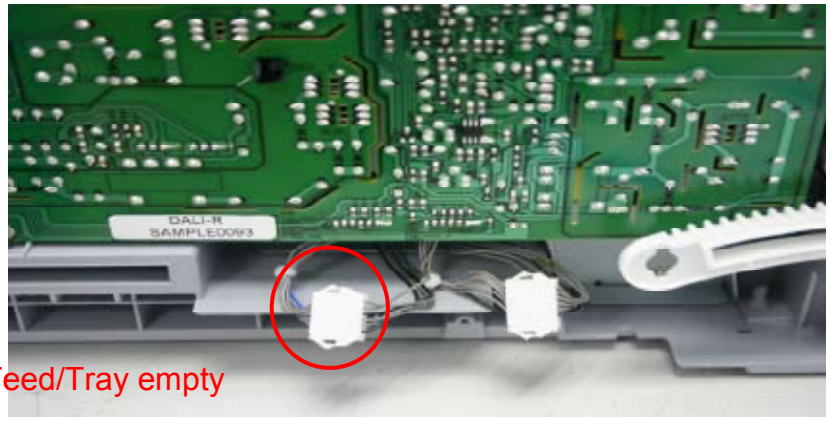
1. Tray1 empty sensor harness is not connected properly. .
2. Empty Sensor is defective.

● Troubleshooting method

1. Check the paper empty sensor connector. Reconnect it.

2. Check the paper empty sensor. If it is defective, replace it.

3. Check if the actuator is broken.



● Code	● Error message
21-003	Tray 1 cassette is pulled out. Insert it properly

● Symptom

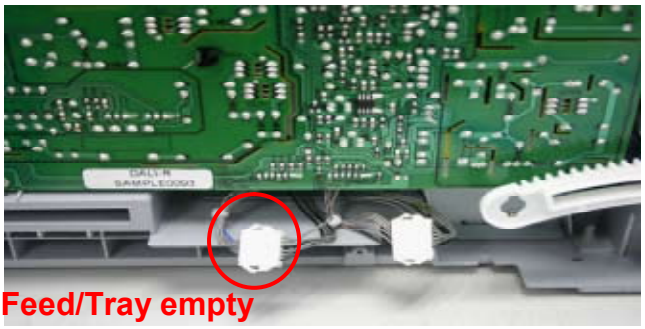
Tray1 cassette is inserted in machine but error message is displayed.

● Possible Cause

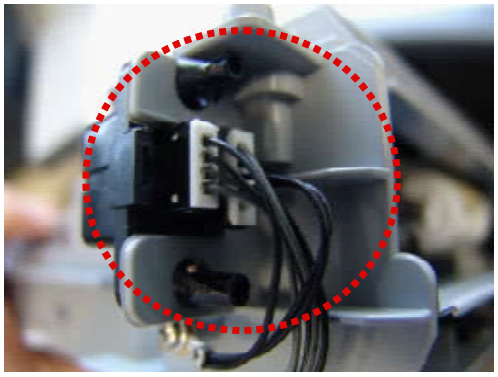
1. The connector of the Tray1 Home Position Sensor is not connected properly.
2. Tray1 Home Position Sensor is defective.

● Troubleshooting method

1. Reinstall the tray1 cassette.
2. Reconnect the / Feed sensor harness.



3.Check the CST Draw connector. Reconnect it.



● Code	● Error message
21-010	Paper is empty in MP tray. Load paper

● Symptom

There is the paper in MP tray but error message is displayed.

● Possible Cause

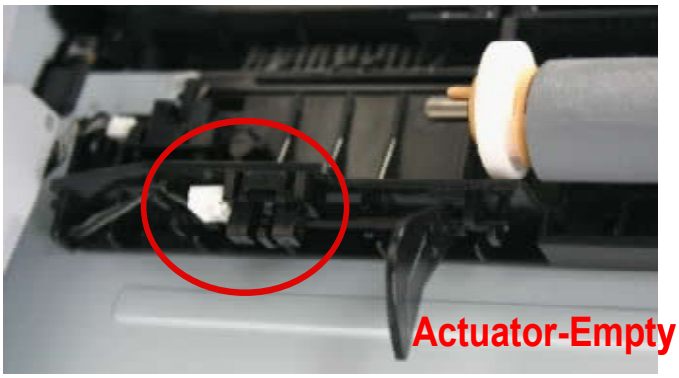
1. MP Paper Empty Sensor harness is not connected properly.
2. MP Paper Empty Sensor is defective.

● Troubleshooting method

1. Check the MP paper empty sensor connector. Reconnect it.

2. Check the MP paper empty sensor. If it is defective, replace it.

3. Check if the MP Empty actuator is broken.



● Code	● Error message
21-018	Paper Empty in tray2 Paper is empty in tray2. Load paper

● Symptom

There is the paper in tray2 but error message is displayed.

● Possible Cause

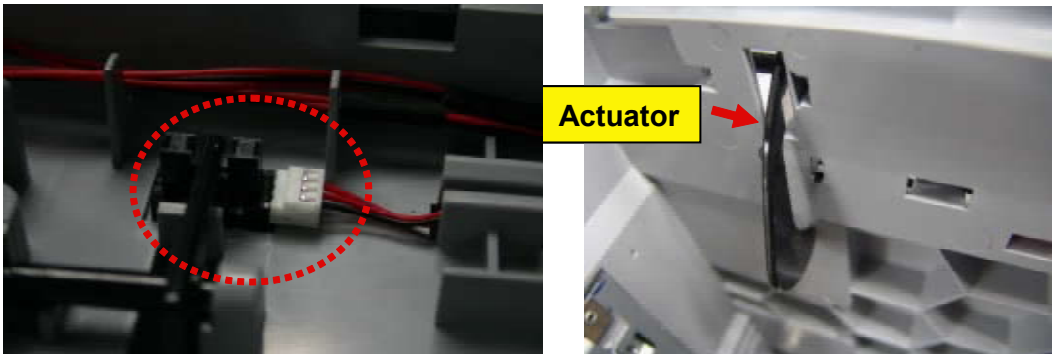
1. Tray2 empty sensor harness is not connected properly. .
2. Empty Sensor is defective.

● Troubleshooting method

1. Check the paper Tray2 empty sensor connector. Reconnect it.

2. Check the paper Tray2 empty sensor. If it is defective, replace it.

3. Check if the Tray2 actuator is broken.



● Code	● Error message
21-019	Tray2 cassette is pulled out. Insert it properly

● Symptom

Tray2 cassette is inserted in machine but error message is displayed.

● Possible Cause

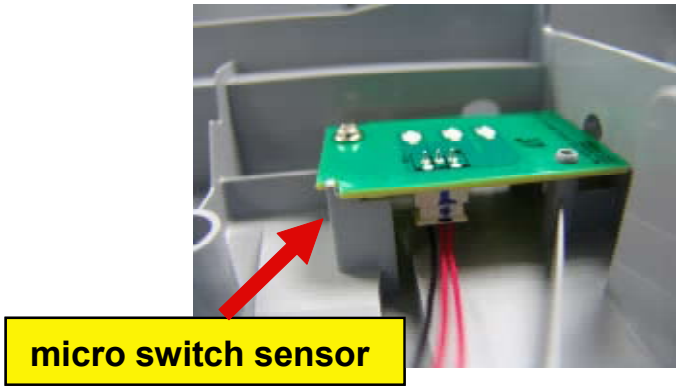
1. The connector of the Tray2 Home Position Sensor is not connected properly.
2. Tray2 Home Position Sensor is defective.

● Troubleshooting method

1. Reinstall the tray2 cassette.

2. Check the Tray2 Open micro sensor connector. Reconnect it.

3. Check the Tray2 Open micro sensor. If it is defective, replace it.



● Code	● Error message
28-001 28-002 28-003	Transfer belt is not installed. Install it. Transfer belt is not compatible for this machine. Check user's guide.

● Symptom

The red LED is turning on and the machine does not operate.

● Possible Cause

The transfer belt unit is installed in the machine but the machine could not read the information from the CRUM.
CRUM information is different from machine.

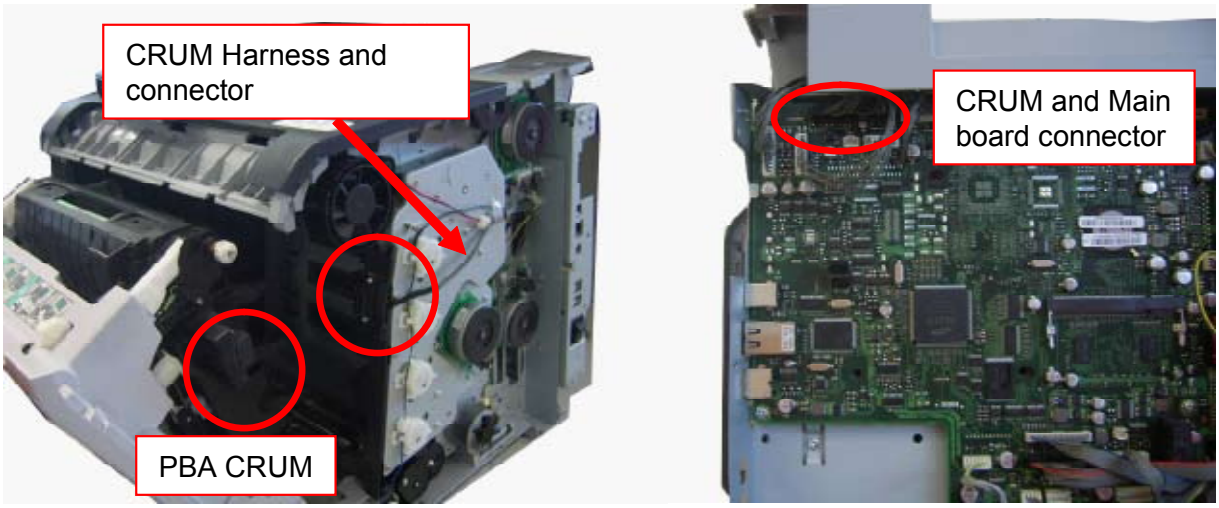
● Troubleshooting method

1.Check if transfer belt unit is properly installed.

2. Check CRUM PBA connector pins.
   Replace the CRUM PBA with normal thing and test it. If the CRUM PBA is defective, replace the transfer belt unit or CRUM PBA.

3. Check if the Transfer Belt CRUM Harness is defective and check that the connector is properly plugged into the Engine Board.

4. Replace the Main Board with a known good one and test it. If it works replace Main Board.

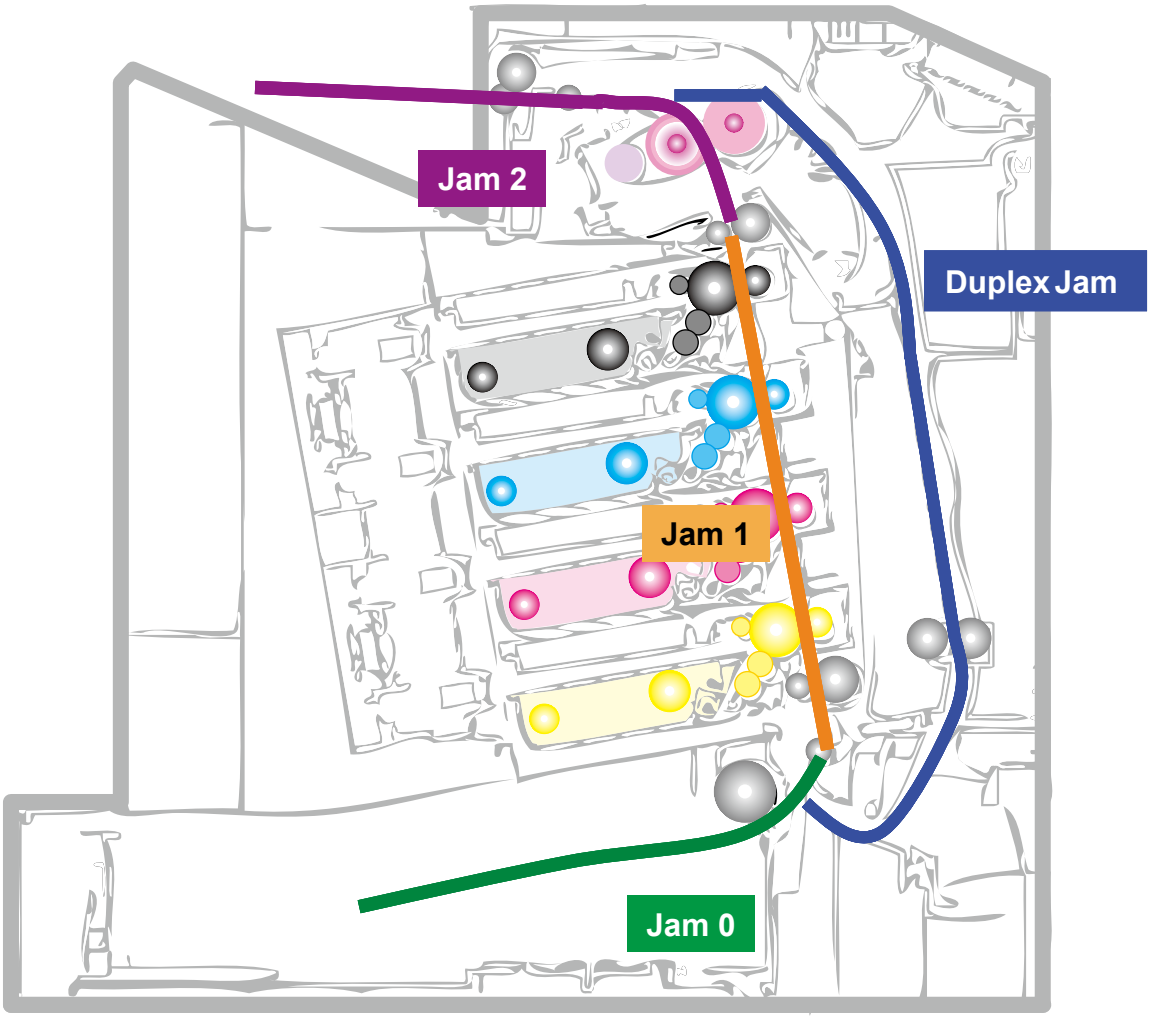


4.2.3 Feeding Problems and solutions

4.2.3.1 Clearing paper JAMS

If a paper jam occurs an error message appears in the LCD display. Find and remove the jammed paper. If you don't see the paper, open the covers. Do not use a tweezers, pliers, or other metal tools when clearing a paper jam. This could damage the internal mechanism causing print quality problems or possibly electrical shock.

JAM type

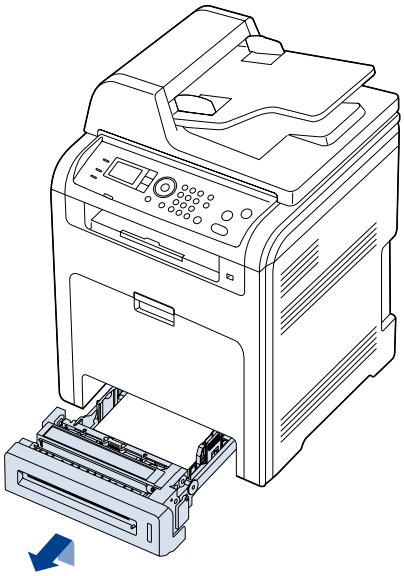


Jam type	Displayed error message
JAM0	Paper Jam in tray1
JAM1	Jam inside machine
JAM2	Jam in exit area
Duplex JAM	Jam bottom of duplex Jam top of duplex

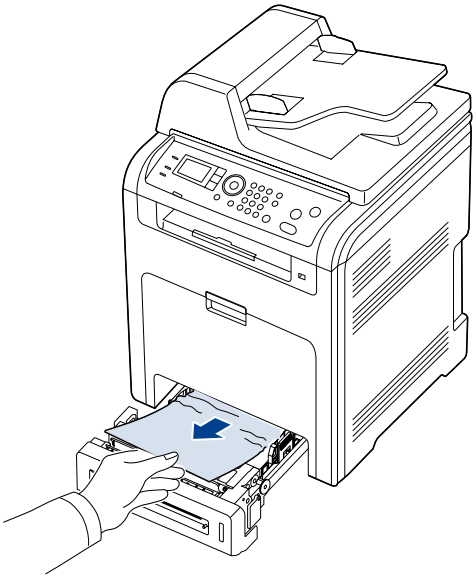
In tray 1

1. Open and close the front door. The jammed paper is automatically ejected from the machine. If the paper does not exit, go to the next step.

2.Pull out tray 1 .



3. Remove the jammed paper by pulling in the direction shown. To avoid tearing the paper, pull it out gently and slowly.



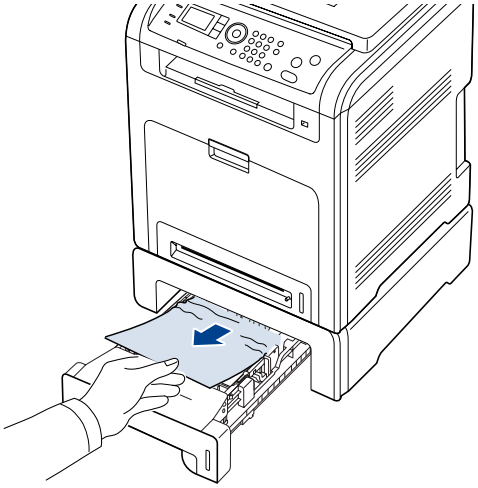
If the paper does not move when you pull, or if you do not see the paper in this area, check the fuser area and around the toner cartridge.

4. Insert tray 1 back into the machine until it snaps into place. Printing automatically resumes.

In optional tray 2

1. Pull out optional tray 2.

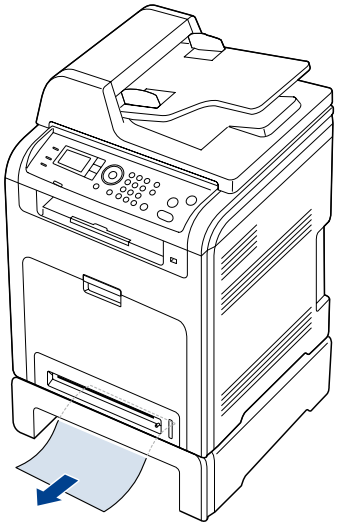
2. Remove the jammed paper by pulling in the direction shown. To avoid tearing the paper, pull it out gently and slowly.



If the paper does not move when you pull or if you do not see the paper in this area, stop and go to the next step.

3. Pull tray 1 half-way out.

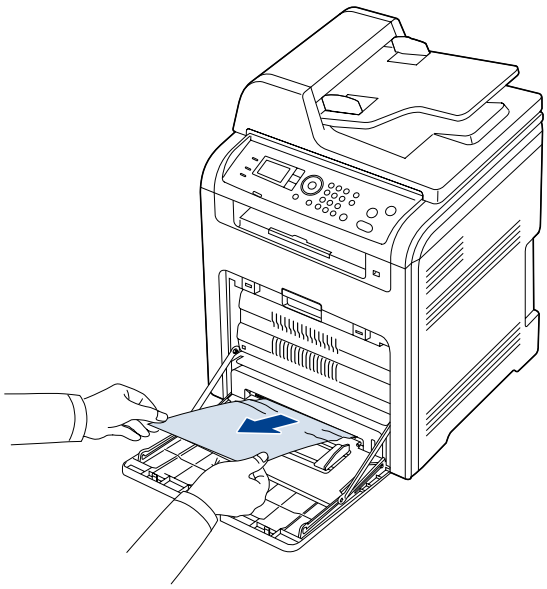
4. If you see the jammed paper, remove the paper from the machine by gently pulling it straight out as shown below.



5. Insert the trays back into the machine. Printing automatically resumes.

In the multi-purpose tray

1. If the paper is not feeding properly, pull the paper out of the machine.

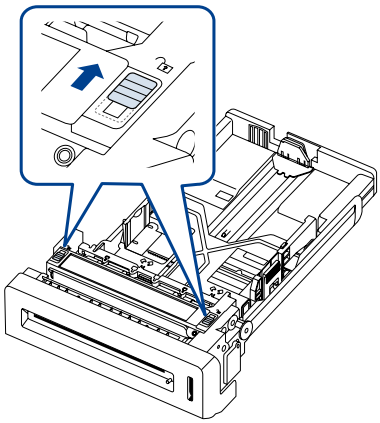


If you cannot find the jammed paper, or if there is any resistance removing the paper, stop pulling and go to step 2.

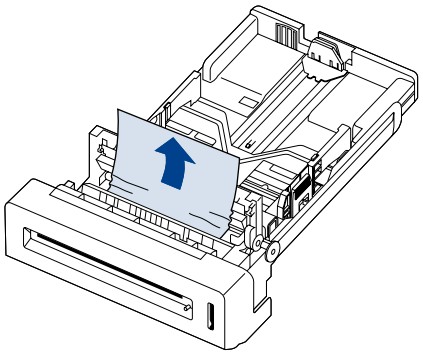
2. Close the multi-purpose tray.

3. Pull the tray out.

4. Open the inner cover while you are pushing the lever with two hands.

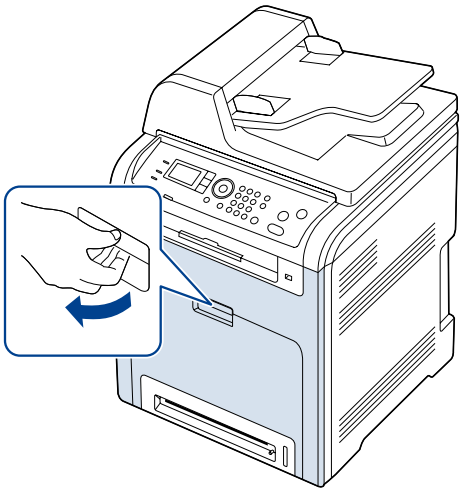


5. Remove your hand from one side and gently pull out the jammed paper.

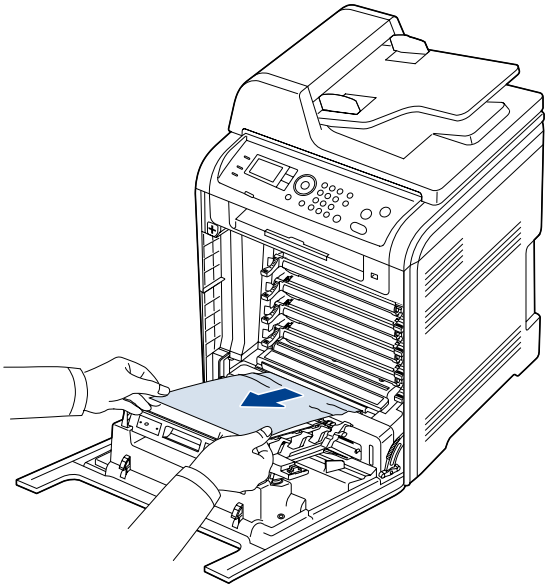


6. Replace the tray.
   If you cannot find the jammed paper, or if there is any resistance removing the paper, stop pulling and go to step 8.

7. Using the handle, completely open the front door.



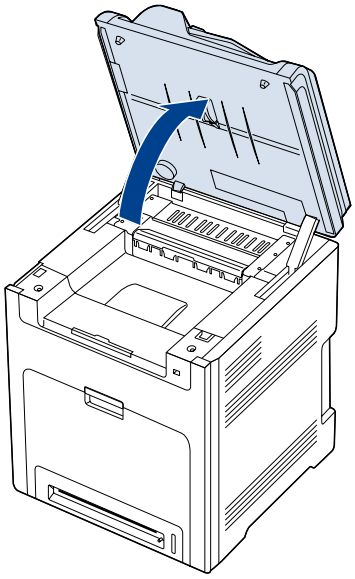
8. Remove the jammed paper by pulling in the direction shown. To avoid tearing the paper, pull it out gently and slowly.



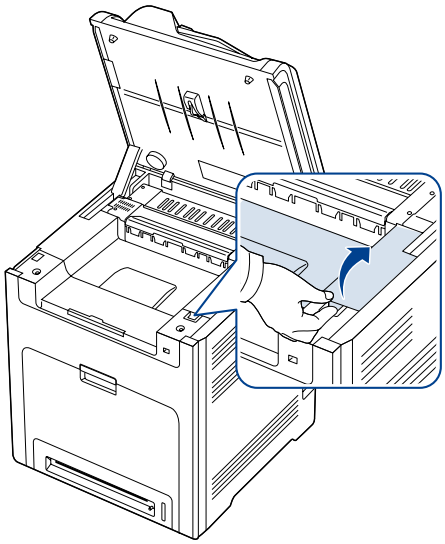
9. Open and close the front door to resume copying.

Inside the machine

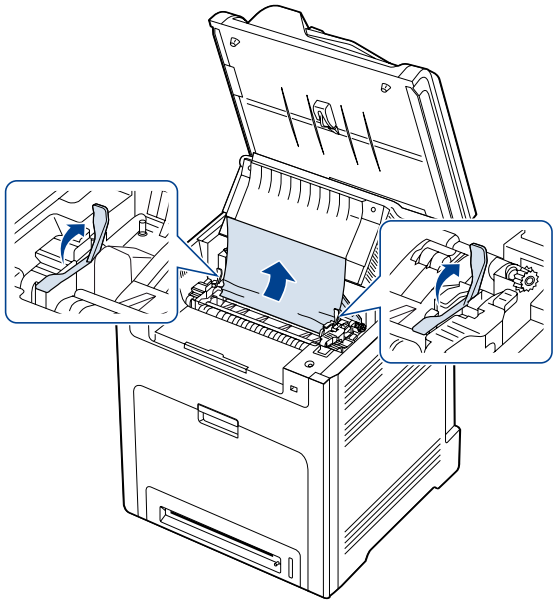
1. Open the scan unit.



2. Open the inner cover using the handle.



3. Open the inner cover using the handle and carefully remove the paper.



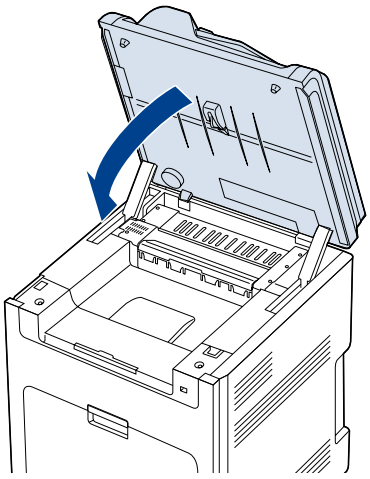
4. Pull up the paper jam levers to loosen the tension on the rollers in the fuser unit, then carefully remove the jammed paper out of the area.

Note: Please be careful when working in this area as the Fuser is hot.

5. Press down the paper jam lever to reapply tension back to the fuser rollers in the fuser unit.

6. Close the inner cover.

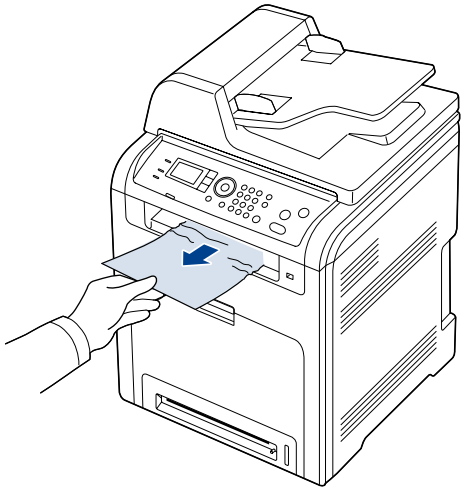
7. Lower the scan unit gently and slowly until it is completely closed. Make sure that it is securely latched.
   Be careful not to pinch your fingers!



In exit area

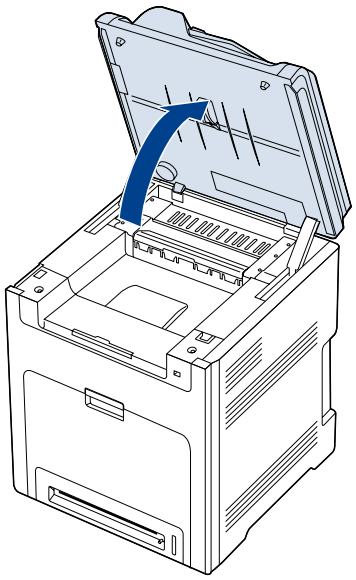
1. Open and close the front door. The jammed paper is automatically ejected from the machine. If you do not see the jammed paper, go to next step.

2. Gently pull the paper out of the output tray.

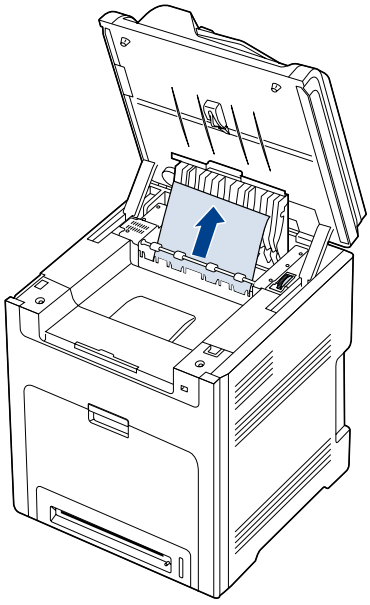


If you do not see the jammed paper or if there is any resistance when you pull, stop and go to the next step.

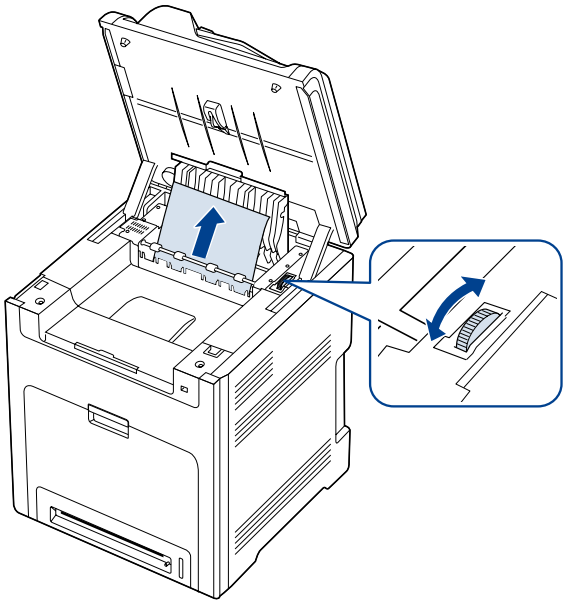
3. Open the scan unit.



4. Open the cover of reverse unit and carefully remove the jammed paper out of the area.

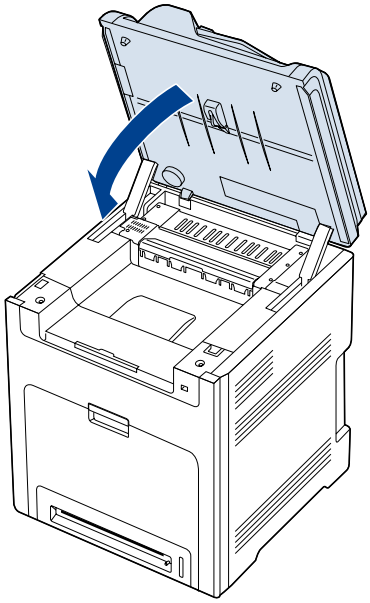


If there is any resistance removing the paper or difficulty picking up jammed paper, stop pulling and turn the release knob in the direction as shown to remove the misfed paper.



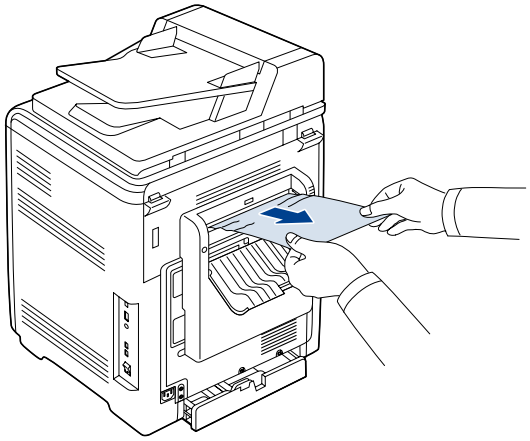
5. Close the cover of reverse unit.

6. Lower the scan unit gently and slowly until it is completely closed. Make sure that it is securely latched.
   Be careful not to pinch your fingers!



   If you cannot find the jammed paper, or if there is any resistance removing the paper, stop pulling and go to step 7.

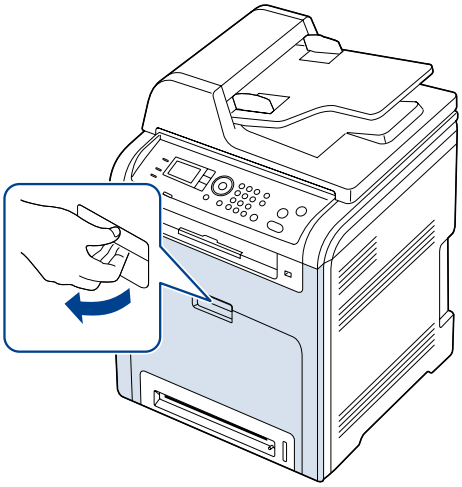
7. Open the rear cover and carefully take the jammed paper out of the machine.



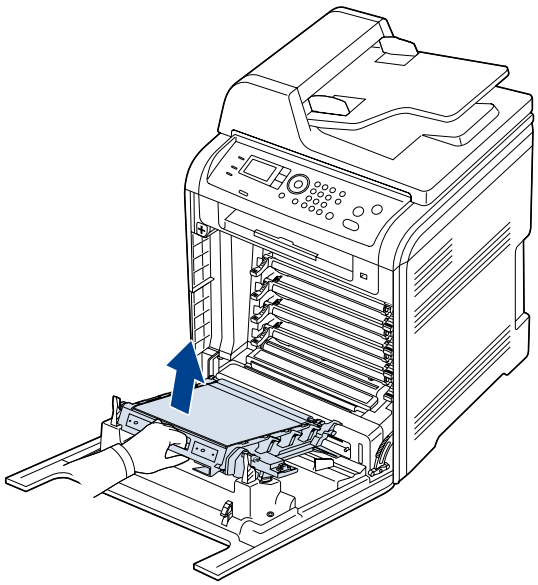
8. Close the rear cover.

In the duplex unit area

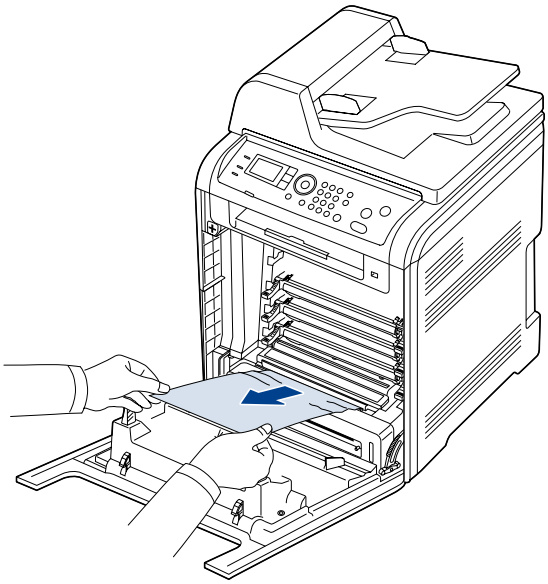
1. Open the front door.



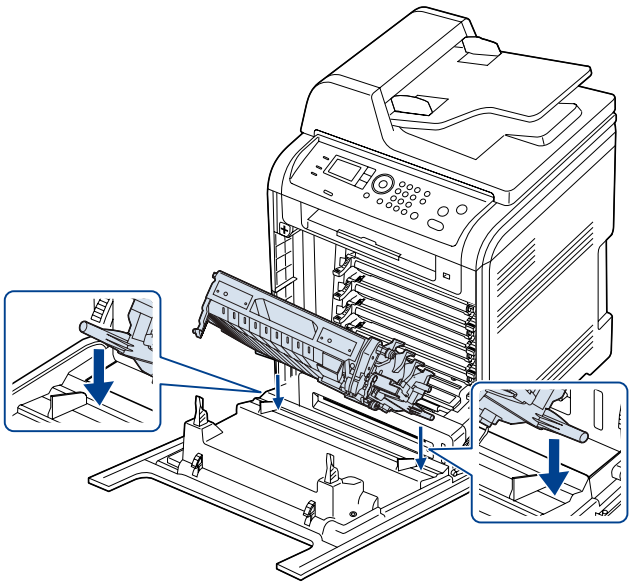
2. Press the green release handle to release the paper transfer belt. Holding the handle on the paper transfer belt, lift it out of the machine.



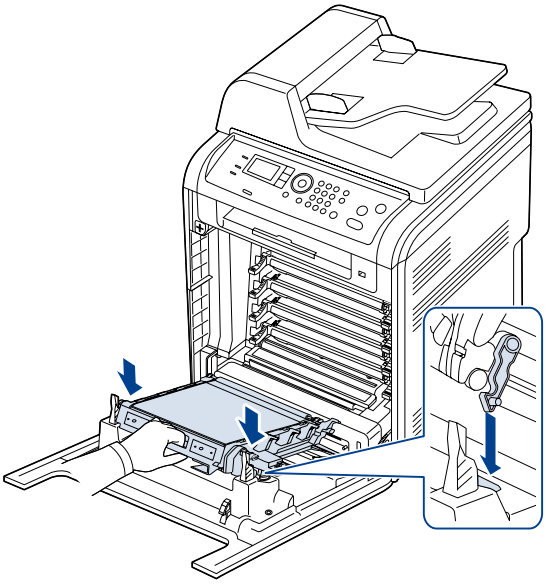
3. Remove the jammed paper by pulling in the direction shown. To avoid tearing the paper, pull it out gently and slowly.



4. Holding the handle on the paper transfer belt, align it with the slots on the inside of the front door.



5. Lower the paper transfer belt until it is parallel with the front door and firmly seated.



6. Close the front door to resume printing.

Multi-Feeding

Description When the paper is feeding, multiple pages are fed.

Step	Cause and Check Point	Yes	No
1	Check that the separation pad in the cassette is damaged. Is it worn?	Replace the holder pad in the cassette.	Go to step2
2	Check that the separation pad in the cassette has a defective spring. Is it defective?	Replace the spring.	Go to step3
3	Check the condition of the Pick-up Roller, it may have reached its PM interval.	Replace the pick up roller.	

Skew paper

Description Paper is skewed.

Step	Cause and Check Point	Yes	No
1	Check the paper is loaded properly.	Go to step 2.	Adjust the paper guide in paper size.
2	Check if the rollers in paper feed/path are dirty. Is it dirty?	Clean the rollers.	Go to step 3.
3	Check the condition of the Pick-up, Paper Feed Roller and DFP, it may have reached its PM interval.	Replace the Pick-up, Paper Feed Roller and DFP, it may have reached its PM interval.	Replace the SMPS.

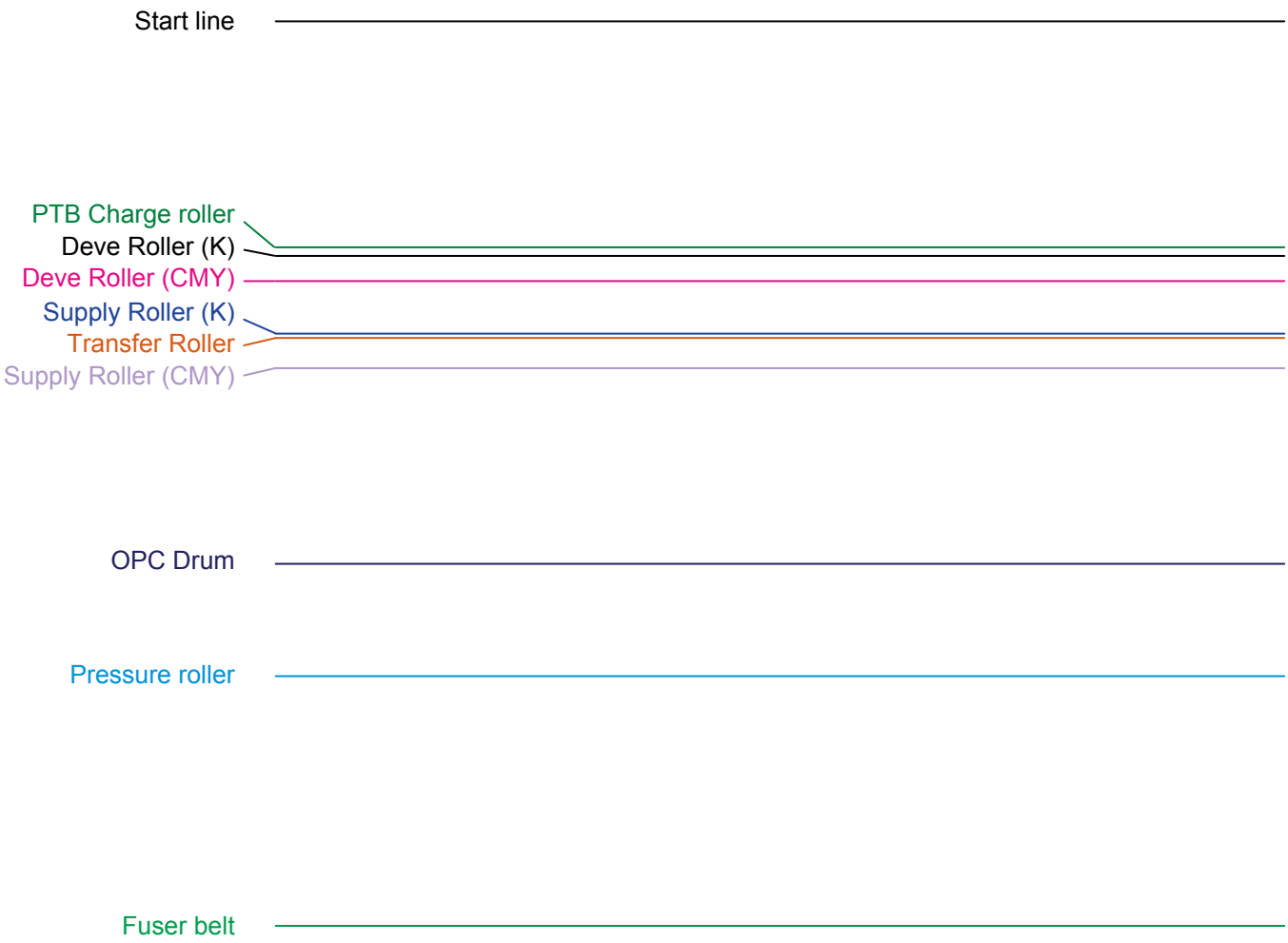
4.2.4 Image Quality Problems and solutions

If a mark or other printing defects occur at regular intervals down on the page, they may be caused by damaged or contaminated rollers. Use the table below to find which roller causes the defect based on the circumference of the roller.
If the roller is dirty, try to clean it. If the problem still remains after cleaning, replace the roller as any other associated part.

NO	Roller	Period (mm)	Yes	No
1	Fuser Belt	125.7	Waving, Offset, Spot, Line Burst	Fuser Unit
2	Pressure roller	91	Offset, Spot, Line Burst	Fuser Unit
3	OPC Drum	75.39	White and Black Spot, Periodic Banding, Ghost, Color Registration	CMYK toner cartridge
4	Deve Roller	36.1 (CMY)	White Spot, Horizontal Band	CMY toner cartridge
		32.6 (K)	Offset, Spot, Line Burst	K toner cartridge
5	Supply Roller	48.2 (CMY)	Periodic Band (by little difference of density)	CMY toner cartridge
		43.4 (K)		K toner cartridge
6	Transfer Roller	44	White and Black Spot, Periodic Banding	PTB Unit
7	PTB Charge roller	31.4		PTB Unit

Repetitive defect Image check page

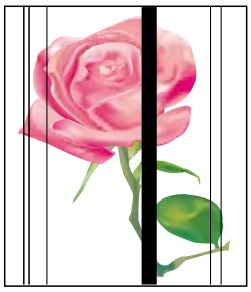
Print this page. Align the start line on this page with the printed defect image, and align the occurrence of the defect to determine which roller, drum, or belt to determine the cause of the defect.



Vertical Black Line and Band

Description
1. Straight thin vertical black lines occur in the printed image
2. Dark black vertical bands occurs in the printed image

Cause and Check Point	Solution
Check if the surface of the charge roller is scratched or contaminated.	Replace the toner cartridge and test again
Check if there are grooves or damage to the OPC drum.	Replace the toner cartridge and test again
Check if the cleaning blade is damaged	Replace the toner cartridge and test again
Is the charge roller of PTB unit damaged?	Clean the charge roller of PTB unit, or replace the PTB unit.
Check if paper transfer belt is damaged or contaminated.	Replace the PTB unit and test again.
Is the Slit Glass for document processing by the DADF contaminated.	Clean the Slit Glass area with Glass Cleaner, remove/ scratch off any contaminant that maybe on the glass.



Vertical White Line

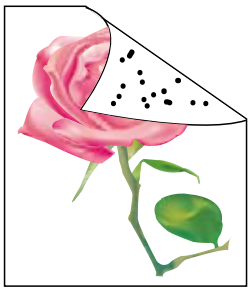
Description White vertical voids in the image.

Cause and Check Point	Solution
Check if the LSU window or internal lenses of LSU are contaminated.	Clean the LSU window with recommended cleaner(IPA). Clean the window with a clean cotton swab. If dirt is inside the LSU, replace the LSU.
Check if there are scratches or damage to the OPC drum.	Replace the toner cartridge.
Check if there are scratches on the surface of the developing roller.	Replace the toner cartridge.
Check if there are foreign objects inside the toner cartridge.	Replace the toner cartridge.
Check if there are vertical scratches on the transfer unit.	Replace the PTB unit.

Contamination on back of page

Description The back of the page is contaminated.

Cause and Check Point	Solution
Dirty registration roller, pressure roller, feed roller, etc. Any dirty rollers through the path of the paper.	Identify the roller which may cause the problem by comparing the period of the contamination on images with the size of rollers. Clean any dirt from the roller or replace the dirty roller.
Dirty PTB belt or damaged PTB belt.	Clean PTB or replace the PTB unit.
Dirty feed guide, or any paper delivery guide.	Clean the part which cause the contamination.



Dark or Black image

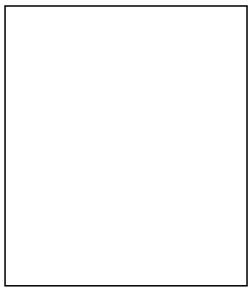
Description The back of the page is contaminated.

Cause and Check Point	Solution
No charging voltage in the HVPS	Check the connecting state between the Main PBA and HVPS. Reconnect the harness.
Poor contact between toner cartridge and set contacts.	Clean the contacts as necessary. Replace any deformed or damaged contacts.
HVPS is defective.	Replace the HVPS.

Blank Page

Description Blank page is printed.

Cause and Check Point	Solution
Bad contacts from OPC drum and/or toner cartridge to ground.	Check the terminal for the Ground-OPC.
The LSU is not working	Check the connecter for the LSU
The developing bias voltage on HVPS is not working.	Check the HVPS B'd and replace it. *Note: Ensure your meter is capable of reading the voltages you are trying to check.*



Uneven Density

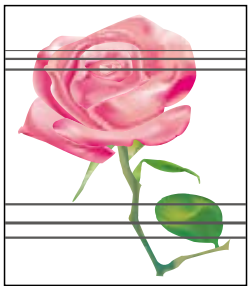
Description Print Density is uneven between front to rear.

Cause and Check Point	Solution
The pressure force on the front to rear springs of the transfer roller is not even, the springs are damaged, the transfer roller is improperly installed	Replace the PTB Unit
The toner layer is not even across the developing roller due to the damaged doctor blade or low toner level.	Replace the toner cartridge
The toner cartridge.tension springs are weakened.	Replace the toner cartridge
The life of the Toner Cartridge has expired.	Replace the toner cartridge

Horizontal Bands

Description	Dark or white horizontal stripes appear in the page. (These may occur at regular intervals down the page.)

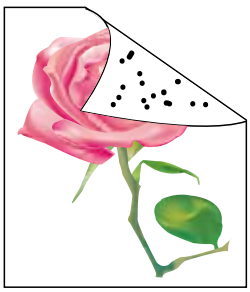
Cause and Check Point	Solution
The developing roller, OPC drum or other rollers in the toner cartridge may be contaminated or deformed.	Replace the toner cartridge.
Contamination of the Gap-Ring - regular intervals 38.9mm	Clean the gap ring, or replace it. Or replace the toner cartridge
Poor contact of HV terminals of the toner cartridge with high voltage terminals on the engine side.	Clean all HV terminals in the cartridge and on the engine side. Ensure all toner or paper dust, particles are removed.



Contamination on the front of the page

Description	The front page of the printed page is stained.

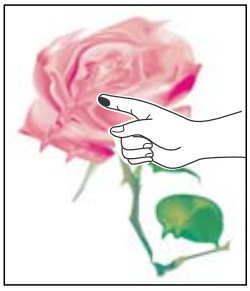
Cause and Check Point	Solution
Toner leakage due to improperly sealed toner cartridge.	Replace the toner cartridge.
Poor OPC cleaning.	Replace the toner cartridge.
Rollers and drum are dirty or defective.	Identify the roller which may cause the problem by comparing the period of the contamination on images with the circumference of the roller. Clean any dirt from the roller or replace the dirty roller and related parts.



Poor fusing

Description	Toner is not properly fixed on paper.

Cause and Check Point	Solution
The media doesn't meet specification	Ensure the media in specifications, and selected as such in the display.
Fuser is defective	Replace the fuser unit.
FDB (Fuser drive board) is defective.	Replace the FDB.



4.2.5 Common Problems and solutions

No Power

Description	When system power is turned on, the printer does not warm up or LCD panel is blank.

Step	Cause and Check Point	Yes	No
1	Check that the power cord is plugged into electrical outlet. Is it plugged in?	Go to step2	Plug the power cord in.
2	Is the on/off switch in the ON position?	Go to step3	Turn the switch on.
3	Press the Energy Saver/Power Button on the OPE	Power Turns ON? Issue resolved.	Does machine goes into Energy Saver after pressing for 2 seconds? Check OPE Panel.
4	Check if the power input and SMPS output are normal. Is it normal?	Go to step4	Replace the SMPS.
5	Check the LCD panel. Is it normal?	Replace the OPE PBA or the Main PBA.	Replace the LCD panel.

4.2.6 Network problems and solutions

For Troubleshooting, use below check points.

Check Point	Action
LAN cable check	A. Connected or Not connected B. Wrong cable (defected cable, crossover cable) C. Connection connector (Link partner check)
Network LED check	A. Link LED check (Link LED On when connected) B. Activity LED check (No packet Regularly blinking, packet random blinking depend on Printer Model)
Print Network test page	A. Printed correctly. If not, NIC is in lock up state or NIC cannot communicate with the printer B. Network address value check : IP address, Subnet Mask, Gateway, MAC address C. NIC F/W version (Correct or not) 1) V1.0x.xx : NPC3 2)V2.0x.xx : NPC3H 3)V3.0x.xx : PHY Board 4)V4.0x.xx : On Board D. Protocol Enable / Disable E. WLAN module / Status check if WLAN available.
Printer SET status check	A. Toner Empty, Paper Empty and so on : Hard Stop cases (Job cannot be finished add paper or correct the abnormality to resume printing.)

Network Printer Configuration check

1. Address Conflict check
   A. IP address Conflict : Same IP address in a network
      • Unplug network cable and perform PING test
   B. MAC address Conflict : Same MAC address in a physical network
      • Default MAC address or same MAC address (PING and ARP –a)

2. IP get method check (Panel or SWS)
   A.DHCP/BOOTP : IP can be changed after rebooting
   B. Auto IP address : Xerox Model default on

3. Protocol Enable / Disable, Port Number (In SWS)

4. IP filtering On/Off

5. SNMP community name check (When SNMP no response)

Host PC Configuration check

1. Address Conflict check
    A. IP address Conflict : Same IP address in a network
        • Unplug network cable and perform PING test at other PC
2. Protocol Enable / Disable, Port Number in printer driver

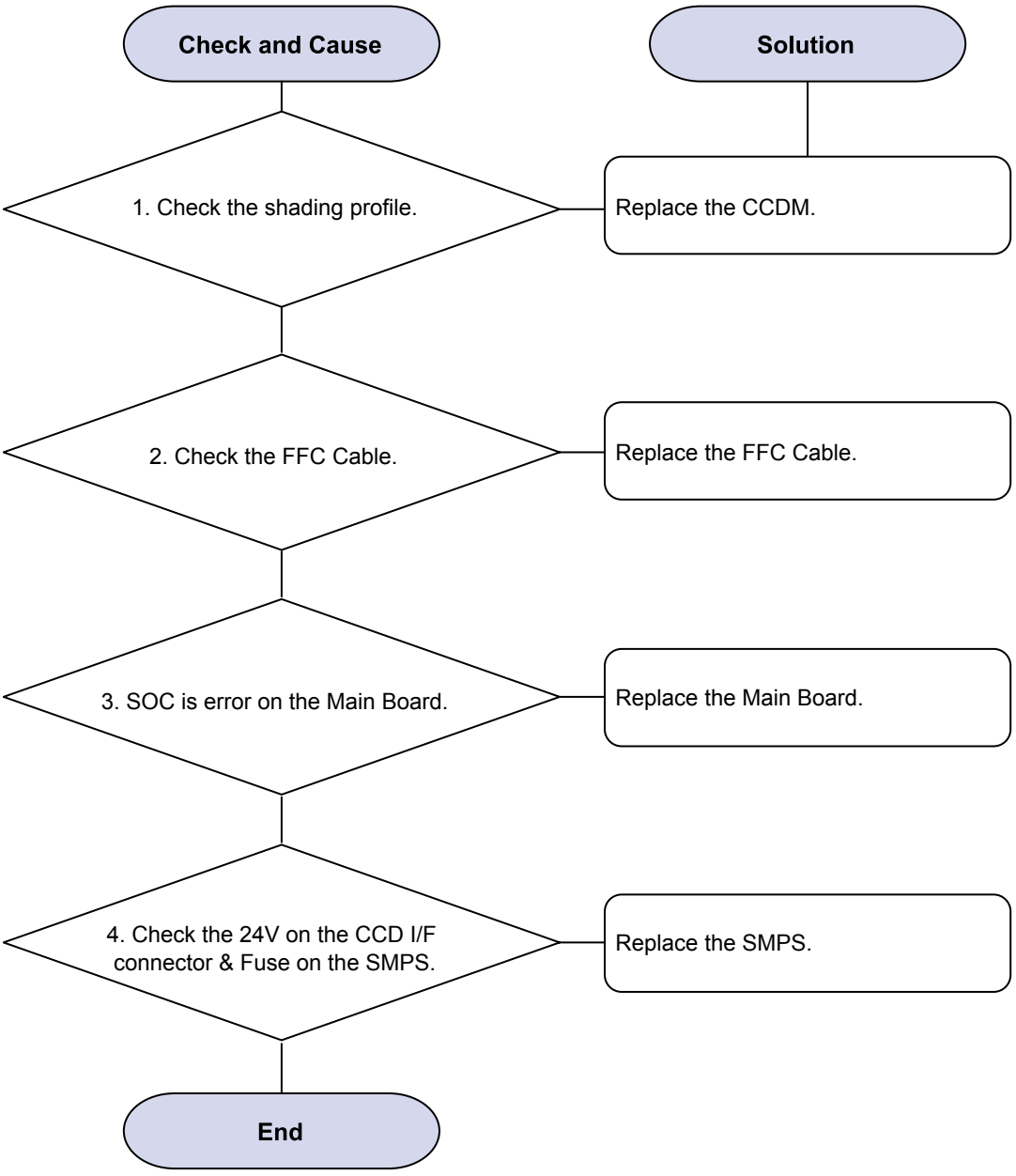
Factory Default

1. Network Value changed to default value
    A. Some of Network value will not be changed immediately.
    B. Factory default operation will be done after Power Off / Power On

4.2.7 Copy Problems

1) Defective Image Quality

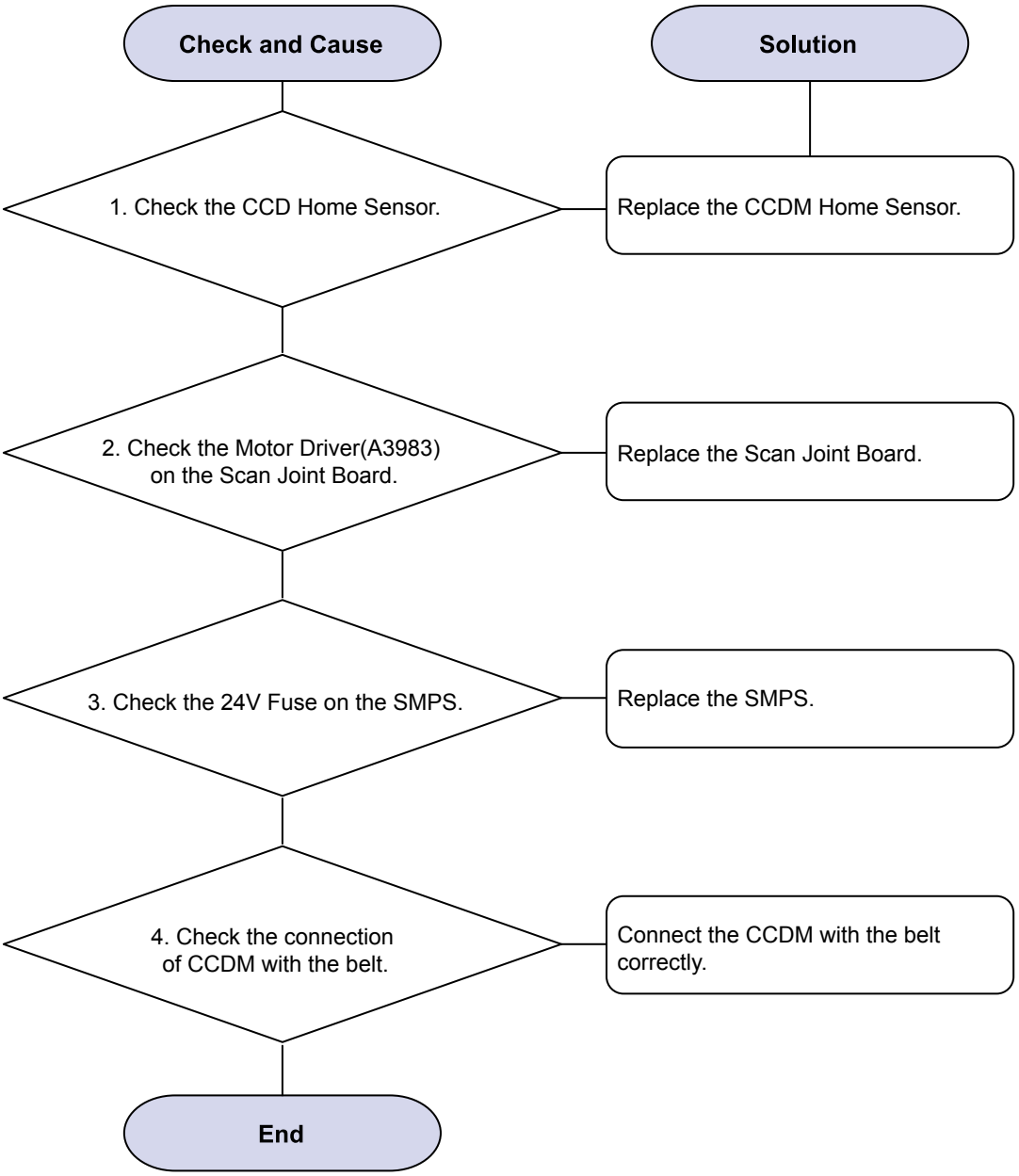
Description : 1. Background occured or Copy quality is not good.
2. CCDM Lamp does not turn on.



2) Scan Lock Error

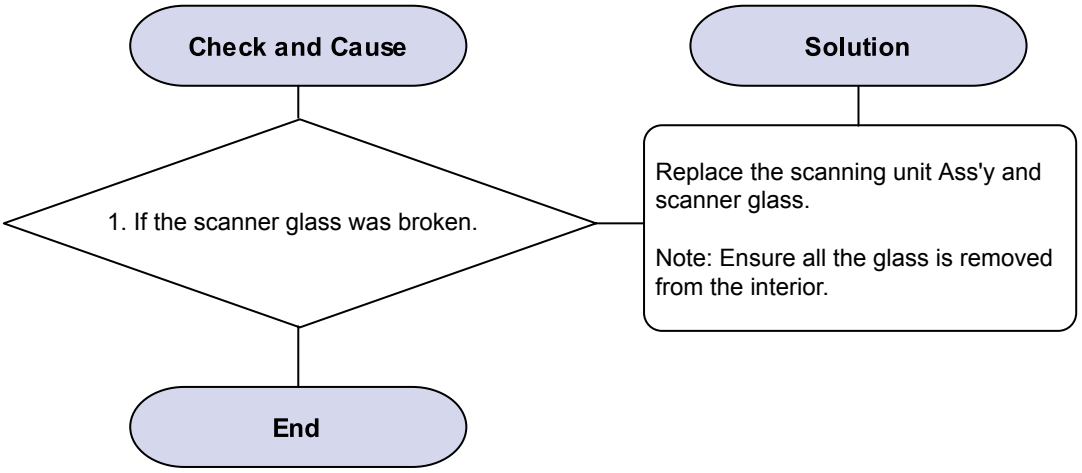
Description : CCDM does not move and displayed 'Scanner Lock' on the LCD Panel.

Note: Before troubleshooting, ensure the customer has released the scan lock, see page 4-51.



3) Glass Broken

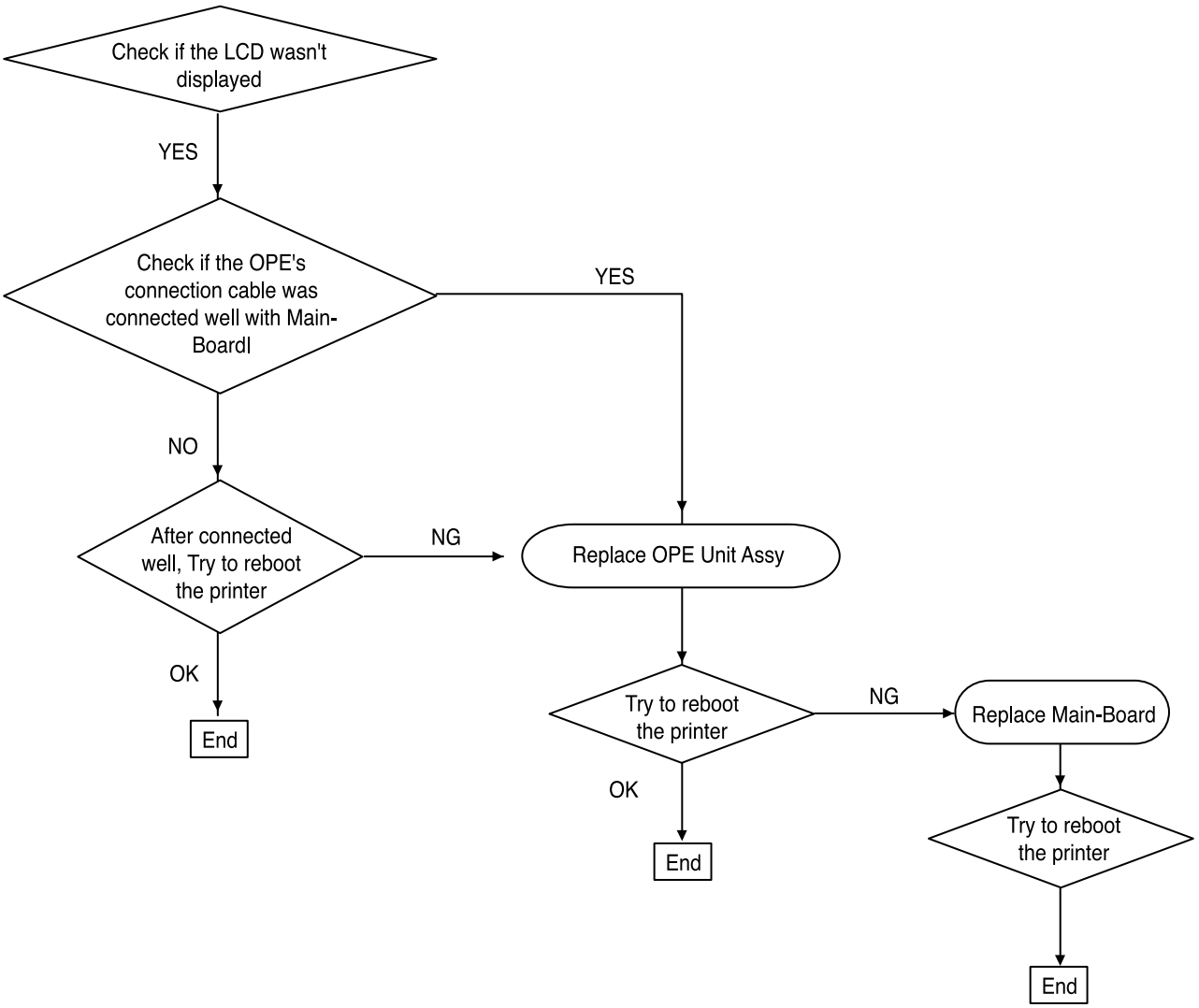
Description : Scanner glass was broken



4.2.8 OPE Problems

Nothing Displayed on LCD

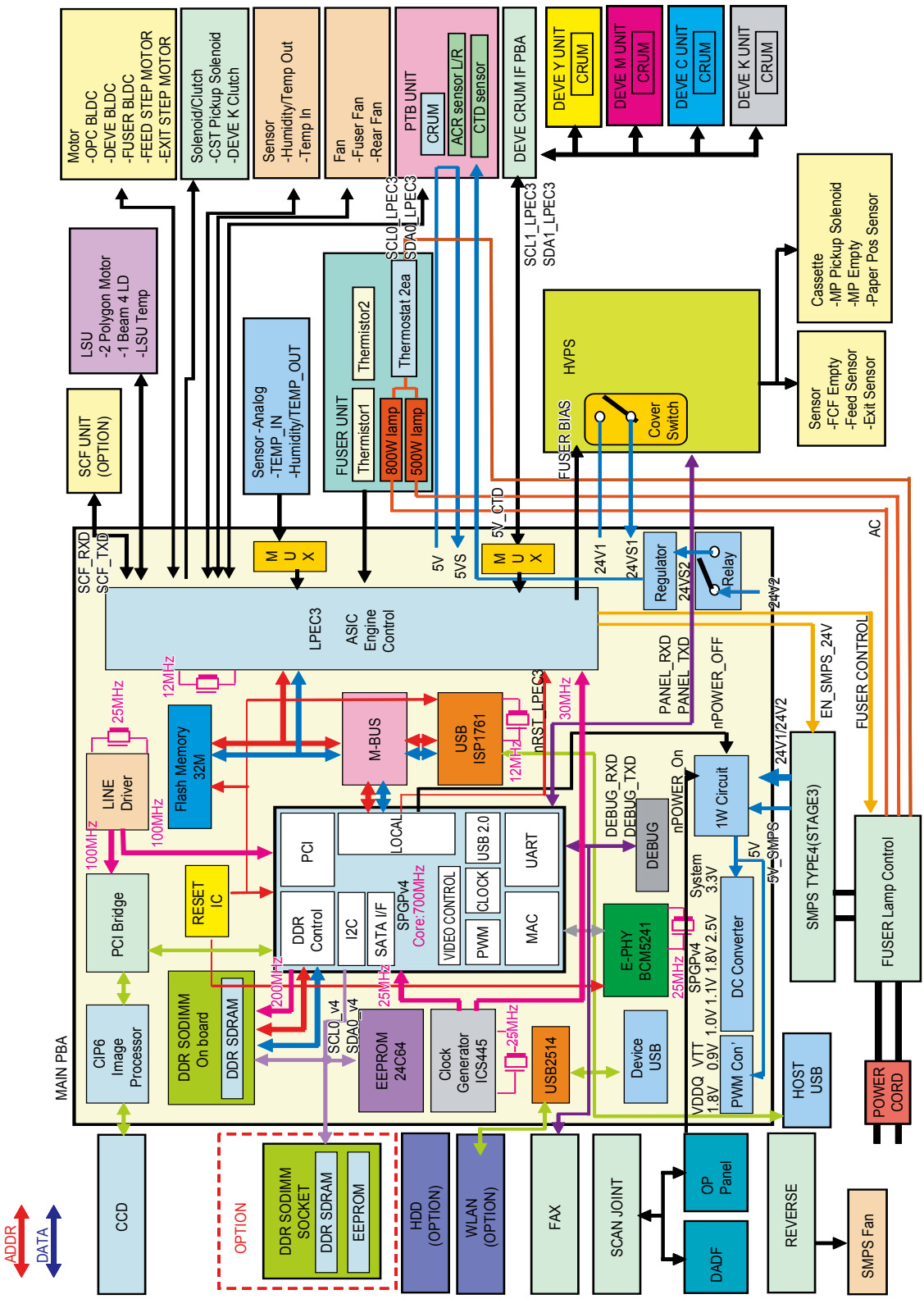
Description : LCD does not display anything



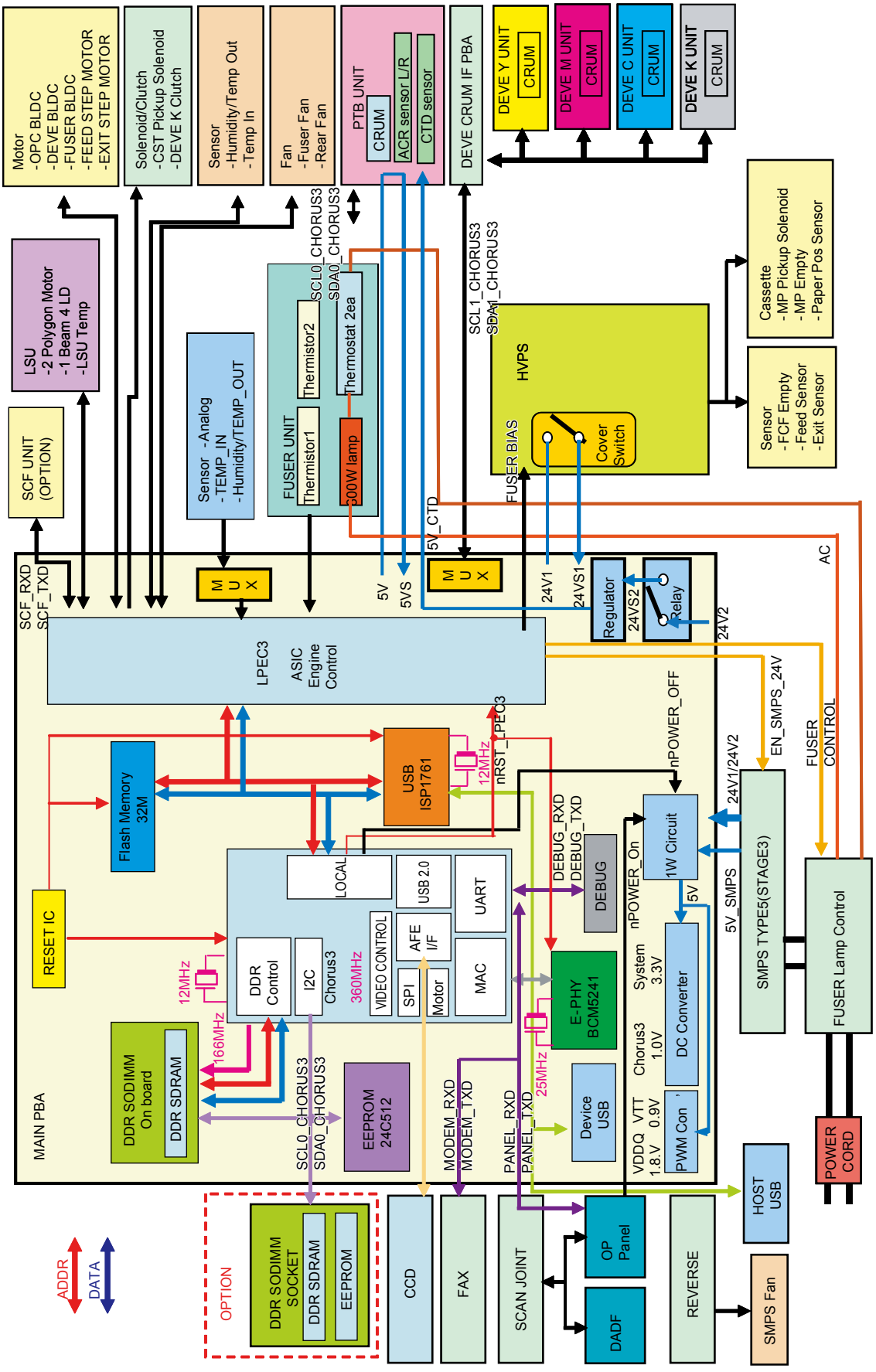
5. System diagram

5.1 Block Diagram

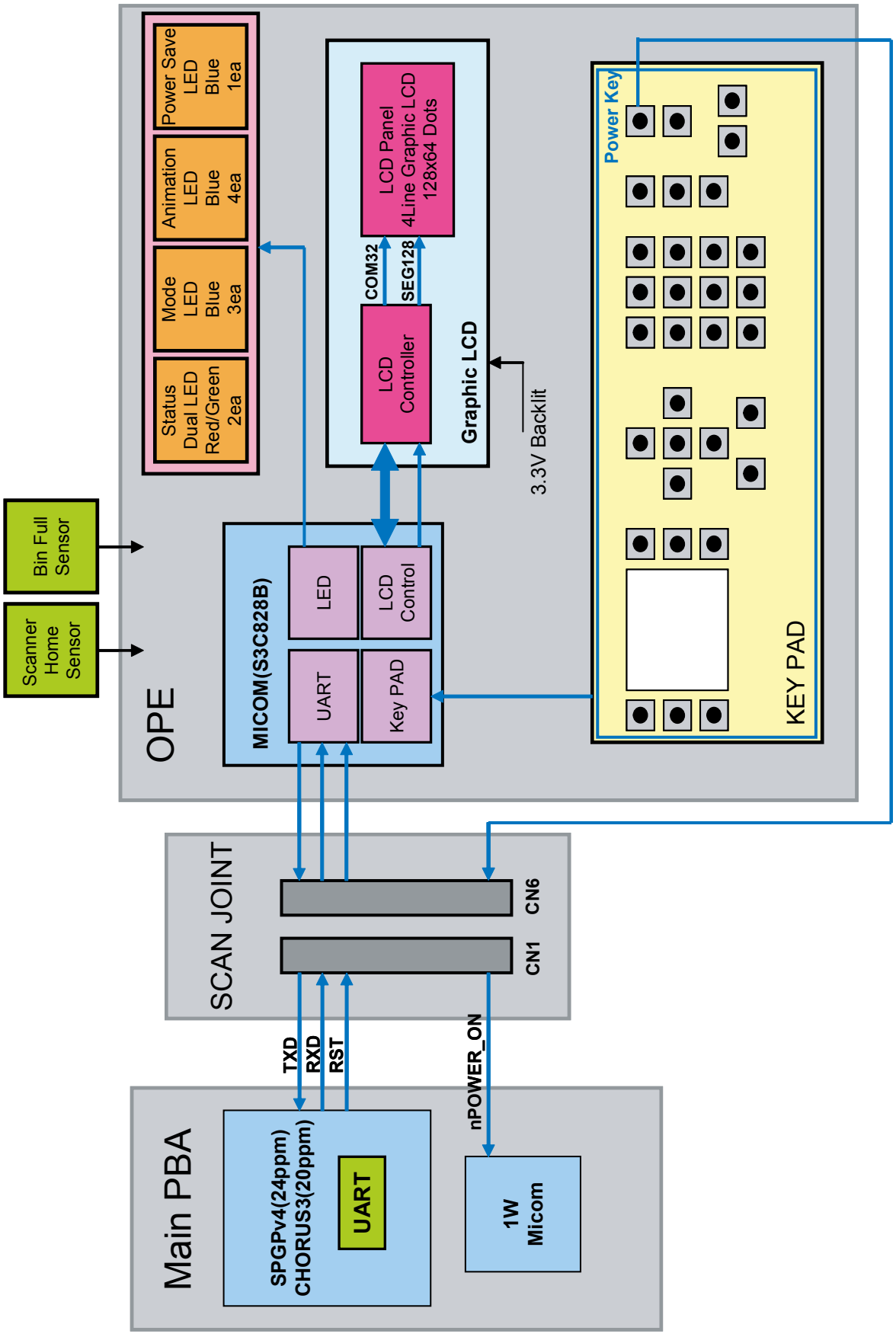
5.1.1 6250FX



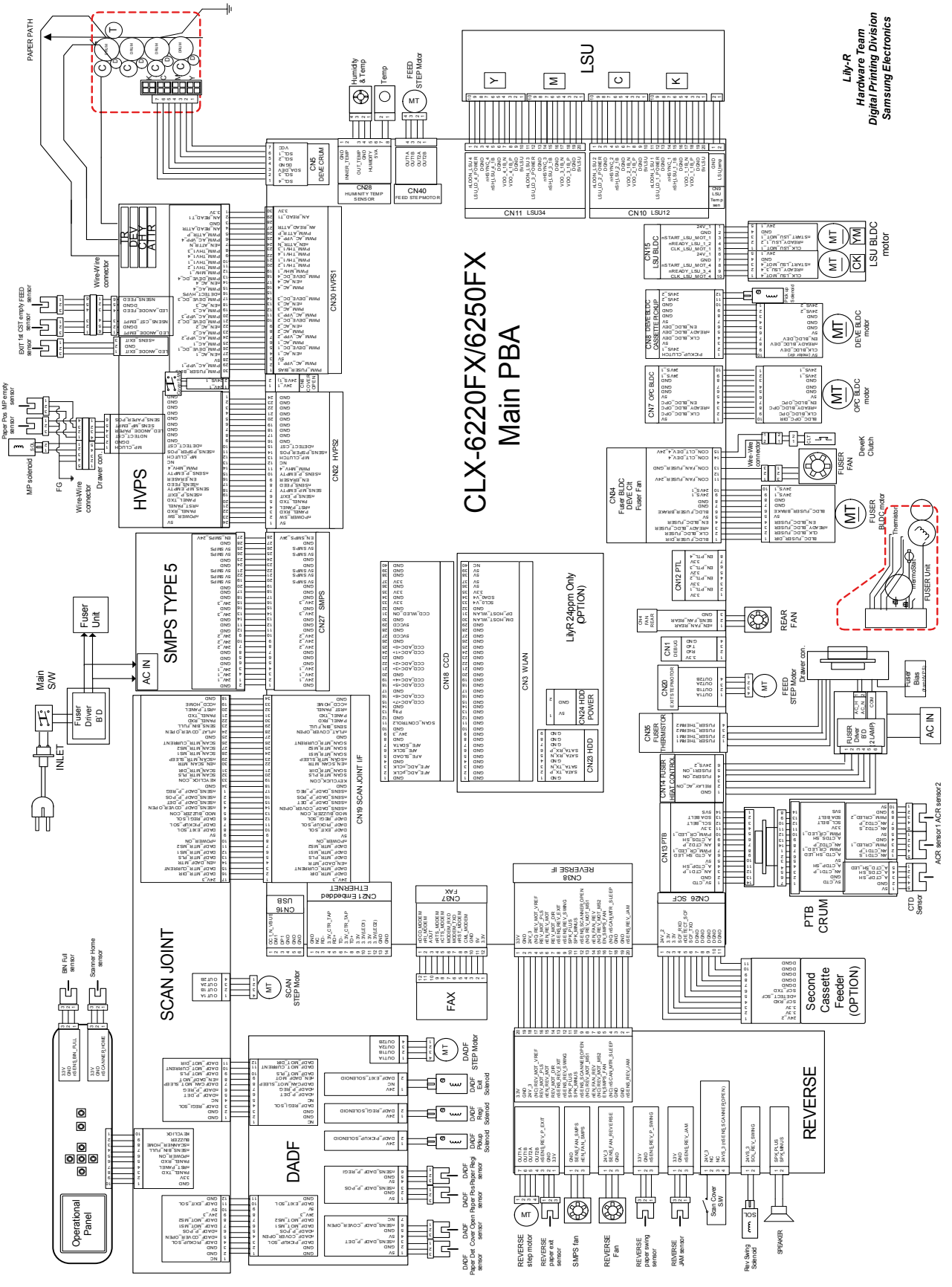
5.1.2 6220FX


Motor
-OPC BLDC
-DEVE BLDC
-FUSER BLDC
-FEED STEP MOTOR
-EXIT STEP MOTOR
Solenoid/Clutch
-CST Pickup Solenoid
-DEVE K Clutch
Sensor
-Humidity/Temp Out
-Temp In
Fan
-Fuser Fan
-Rear Fan
PTB UNIT
CRUM
ACR sensor L/R
CTD sensor
DEVE CRUM IF PBA
DEVE Y UNIT
CRUM
DEVE M UNIT
CRUM
DEVE C UNIT
CRUM
DEVE K UNIT
CRUM
LSU
-2 Polygon Motor
-1 Beam 4 LD
-LSU Temp
SCF UNIT
(OPTION)
Sensor -Analog
-TEMP_IN
-Humidity/TEMP_OUT
FUSER UNIT
Thermistor1
Thermistor2
Thermostat 2ea
500W lamp
SCL0_CHORUS3
SDA0_CHORUS3
SCL1_CHORUS3
SDA1_CHORUS3
HVPS
FUSER BIAS
Cover Switch
Cassette
-MP Pickup Solenoid
-MP Empty
-Paper Pos Sensor
Sensor
-FCF Empty
-Feed Sensor
-Exit Sensor
SCF_RXD
SCF_TXD
M U X
5V
5VS
5V_CTD
24V1
24VS1
Regulator
24VS2
Relay
24V2
AC
LPEC3
ASIC
Engine
Control
USB
ISP1761
12MHz
nRST_LPEC3
nPOWER_OFF
EN_SMPS_24V
FUSER CONTROL
Flash Memory
32M
RESET IC
LOCAL
USB 2.0
UART
DEBUG_RXD
DEBUG_TXD
DEBUG
1W Circuit
24V1/24V2
5V_SMPS
SMPS TYPE5(STAGE3)
FUSER Lamp Control
DDR
Control
I2C
Chorus3
360MHz
VIDEO CONTROL
SPI
AFE
I/F
Motor
MAC
E-PHY
BCM5241
nPOWER_On
System
3.3V
5V
DC Converter
12MHz
166MHz
DDR SODIMM
On board
DDR SDRAM
MAIN PBA
EEPROM
24C512
SCL0_CHORUS3
SDA0_CHORUS3
MODEM_RXD
MODEM_TXD
PANEL_RXD
PANEL_TXD
25MHz
Device
USB
Chorus3
1.0V
VDDQ
1.8V
VTT
0.9V
PWM Con '
5V_SMPS
POWER
CORD
HOST
USB
ADDR
DATA
OPTION
DDR SODIMM
SOCKET
DDR SDRAM
EEPROM
CCD
FAX
SCAN JOINT
OP
Panel
DADF
REVERSE
SMPS Fan

5.1.3 OPE


Power Save LED Blue 1ea
Animation LED Blue 4ea
Mode LED Blue 3ea
Status Dual LED Red/Green 2ea
LCD Panel 4Line Graphic LCD 128x64 Dots
COM32
SEG128
LCD Controller
Graphic LCD
3.3V Backlit
Power Key
KEY PAD
Bin Full Sensor
Scanner Home Sensor
OPE
MICOM(S3C828B)
LED
LCD Control
UART
Key PAD
SCAN JOINT
CN6
CN1
TXD
RXD
RST
nPOWER_ON
Main PBA
SPGPv4(24ppm)
CHORUS3(20ppm)
UART
1W Micom

5.2 Connection diagram



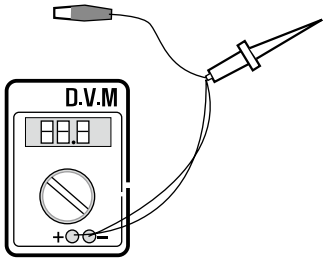
6. Reference Information

This chapter contains the tools list, list of abbreviations used in this manual, and a guide to the location space required when installing this printer. A definition of tests pages and Wireless Network information definition is also included.

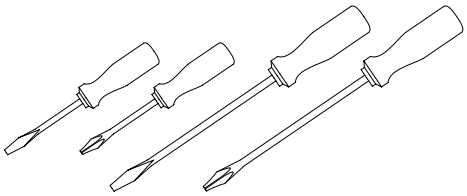
6.1 Tools for Troubleshooting

The following tools are recommended for the safe and ease of troubleshooting.

- **DVM(Digital Volt Meter)**
  Standard : Indicates more than 3 digits.



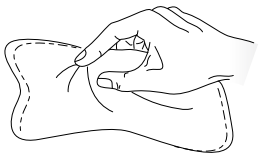
- **Driver**
  Standard : "-" type, "+" type (M3 long, M3 short, M2 long, M2 short).



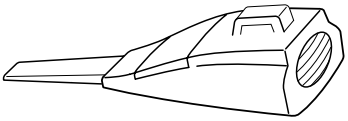
- **Tweezers**
  Standard : For general home use, small type.

- **Cotton Swab**
  Standard : For general home use, for medical service.

- **Cleaning Equipments**
  Standard : An IPA(Isopropyl Alcohol)[1x space] dry wipe tissue or a gentle neutral detergent and lint-free cloth.

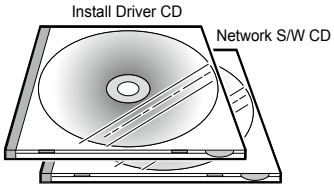


- **Vacuum Cleaner**



- **Brush**

- **Software (Driver) installation CD ROM**



6.2 Acronyms and Abbreviations

The table below explains the meaning of the abbreviations and acronyms used in this service manual.

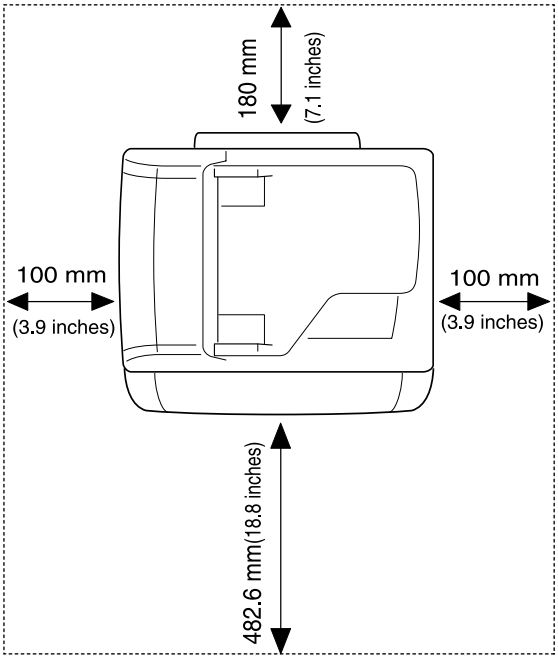
ADC	Analog-to-Digital-Conversion
AP	Access Point
AC	Alternating Current
ASIC	Application Specific Integrated Circuit
ASSY	Assembly
BIOS	Basic Input Output System
BLDC Motor	Brushless DC Motor
CLBP	Color Laser Beam Printer
CMOS	Complementary Metal Oxide Semiconductor
CMYK	Cyan, Magenta, Yellow, Black
CN	Connector
CON	Connector
CPU	Central Processing Unit
CTD Sensor	Color Toner Density Sensor
dB	Decibel
dBA	A-Weighted decibel
dBm	Decibel milliwatt
DC	Direct Current
DCU	Diagnostic Control Unit
DIMM	Dual In-line Memory Module
DPI	Dot Per Inch
DRAM	Dynamic Random Access Memory
DVM	Digital Voltmeter
ECP	Enhanced Capability Port
ECU	Engine Control Unit
EEPROM	Electronically Erasable Programmable Read Only Memory
EMI	Electro Magnetic Interference
EP	Electro photographic
EPP	Enhanced Parallel Port
F/W	Firmware
FCF/FCT	First Cassette Feeder/First Cassette Tray
FISO	Front-In, Side-Out
FPOT	First Print out Time
GDI	Windows Graphic Device Interface
GIF	Graphic Interchange Format
GND	Ground
HBP	Host Based Printing
HDD	Hard Disk Drive
HTML	Hyper Text Transfer Protocol
HV	High Voltage
HVPS	High Voltage Power Supply
I/F	Interface
I/O	Input and Output
lb	Pound(s)
IC	Integrated Circuit
ICC	International Color Consortium
IDE	Intelligent Drive Electronics or Integrated Drive Electronics
IEEE	Institute of Electrical and Electronics Engineers. Inc
IOT	Image Output Terminal (Color printer, Copier)
IPA	Isopropy Alcohol
IPC	Inter Process CommunicationEPP Enhanced parallel Port
IPM	Images Per Minute
ITB	Image Transfer Belt
LAN	local area network
LBP	Laser Beam Printer
LCD	Liquid Crystal Display
LED	Light Emitting Diode
LSU	Laser Scanning Unit
MB	Megabyte
MHz	Megahertz
MPBF	Mean Prints Between Failure
MPF/MPT	Multi Purpose Feeder/Multi Purpose Tray
NIC	Network Interface Card
NPC	Network Printer Card
NVRAM	Nonvolatile Random Access Memory
OPC	Organic Photo Conductor
PBA	Printed Board Assembly
PCL	Printer Command Language, Printer Control Language

PCI	Peripheral Component Interconnect by Intel 1992/6/22, is a local bus standard developed by Intel and introduced in April, 1993 : A60, B60 Pins
PCL5Ce	Printer Command Language 5Ce-Color
PCL6	Printer Command Language 6
PDF	Portable Document Format
PDL	Page Description Language
Ping	Packet internet or Inter-Network Groper
PPD	Postscript Printer Discription
PPM	Page Per Minute
PS	Post Script
PS3	Post Script Level3
PTL	Pre-Transfer Lamp
PTB	Paper-Transfer Belt
PWM	Pulse Width Moduration
Q?y	Quantity
RAM	Random Access Memory
RCP	Remote Control Panel
ROM	Read Only Memory
SCF/SCT	Second Cassette Feeder/Second Cassette Tray
SMPS	Switching Mode Power Supply
SPGP	Samsung Printer Graphic Processor
SPL	Samsung Printer Language
SPL-C	Samsung Printer Language-Color
Spool	Simultaneous Peripheral Operation Online
SRS	Software Requirment Specification
SURF	Surface Rapid Fusing
SW	Switch
SYNC	Synchronous or Synchronization
T1	ITB
T2	Transfer Roller
TRC	Toner Reproduction Curve
PnP	Universal Plug and Play
U.I.	User Interface
URL	Uniform Resource Locator
USB	Universal Serial Bus
VCCI	Voluntary Control Council for Interference Information Technology Equipment
WECA	Wireless Ethernet Compatibility Alliance
Wi-Fi	Wireless Fidelity

6.3 Select a location for the printer

• Leave enough room to safely operate the machine. Please allow for enough room to open the printer trays, covers, and allow for proper ventilation. (see diagram below)

• Provide the proper environment :
- A firm, level surface
- Away from the direct airflow of air conditioners, heaters, or ventilators
- Free of extreme fluctuations of temperature, sunlight, or humidity
- Clean, dry, and free of dust



6.4 A4 ISO 19752 Standard Pattern

These test patterns are reproduced at 70% of the normal A4 size

Stephen J. Singel
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30 November 2005

Johnathan Q. Maderia

Inpert Mampem Abaress
2343 Stantin Dawer Lank
Benhibe, SDF

Mr. Maderia:

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Stephen J. Singel
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SJS:dwg

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Phasellus dapibus, arcu nec suscipit nonummy lorem scelerisque tellus.

	FY05	FY06	FY07	FY08	FY09
Nuc Facilisis:					
Tembo Facilisis	$ 14,609	$ 11,592	$ 9,462	$ 7,569	$ 6,484
Intemboint Facilisis	17,901	13,650	11,310	9,192	8,192
Troper Facilisis	32,510	25,350	20,772	16,761	14,494
Bet Repanides:					
Elamber	27,125	27,380	17,122	13,256	11,880
Sempter	4,394	3,611	3,195	3,154	2,614
Troper Yet Recanides	**31,515**	**24,991**	**20,317**	**16,410**	**14,494**
Repanides ent Facilisis:					
Facilisis zu Pontone Eber	17,069	13,021	10,021	8,018	7,834
Facilisis be Reptor	2,946	2,478	2,102	1,910	1,760
Renters ent Dictiument	2,302	2,027	1,761	1,436	1,289
Solig. Getenre ent Atmed	5,365	4,925	4,554	3,642	2,401
Troper Repanides ent Facilisis					
Eberer zonte Ontemer:					
Impress Oteber ent Obenr, Num	270	29	25	23	20
Impress Repanides	206	155	121	93	87
Repanids Betome Tanxer	3,632	2,423	1,783	1,334	1,143
Popilemse fur Taxer	1,199	824	606	863	496
Net Epanteis	**2,433**	**1,599**	**1,177**	**471**	**647**
Ipen epanteis doctem:					
Pen Epanteis	4.63	3.07	2.33	0.94	1.30
Gelpe Divedenum	0.70	0.55	0.45	0.36	0.32
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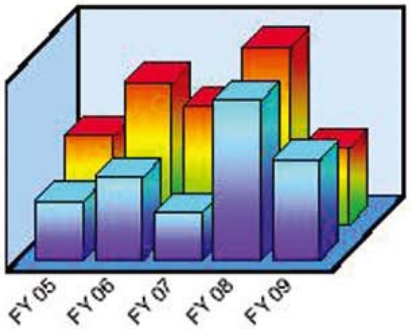
Toper Grendum	$ 24,427	$ 19,567	$ 16,736	$ 13,700	$ 11,973
Delpereeds	102,300	98,400	69,200	92,600	89,000
Repanides pen Delpereeds	$ 308,104	$253,974	$211,195	$177,214	$162,854

LSA
Funtres Solber Nolonor



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14 December 2004 MCLLXVII

Lorem

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In cursus. Quisque ac dui. Maecenas vehicula. Nam imperdiet risus eget elit. Fusce dictum. Vivamus eu eros. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Pellentesque rhoncus, est in rutrum faucibus, velit leo volutpat purus, a blandit wisi velit quis est. Donec faucibus elementum mi. In pulvinar elit sit amet nisl. Donec dolor augue, suscipit nec, nonummy eget, scelerisque in, est. Integer nisl. Aliquam et lacus eget magna scelerisque blandit. Nullam sapien neque, vulputate non, porttitor nec, faucibus et, est. Ut fringilla turpis ut magna porttitor tempor. Praesent erat. Donec sed erat consequat ligula pulvinar dapibus. Etiam sapien. Donec a risus ut augue tincidunt euismod. Fusce laoreet, risus nec euismod suscipit, orci ligula tempor massa, et ultricies nulla quam ut enim. Quisque in nunc.

Carbitur

Fusce feugiat metus sed augue. Nunc ligula. Aenean lectus elit, pellentesque sit amet, gravida eget, fringilla non, massa. Vestibulum metus neque, feugiat a, imperdiet id, elementum ac, nunc. Suspendisse tempor. Aliquam vitae arcu. Nunc mauris nunc, cursus at, sollicitudin eget, pellentesque et, massa. Nulla vulputate, wisi at consequat gravida, wisi tellus lacinia ante, aliquam consequat lectus eros at nibh. Donec porttitor, libero at iaculis sodales, dui tellus rutrum elit, eu pulvinar neque lorem condimentum dui. Nam vel quam quis lacus egestas lobortis. Pellentesque purus magna, rutrum sed, tincidunt blandit, accumsan ac, orci. In fringilla. Pellentesque rhoncus euismod risus. Nunc nec nisl. Etiam rhoncus, felis et pellentesque consequat, diam ante congue leo, ac vulputate felis purus id ipsum. Proin vestibulum diam quis mauris. Nullam ornare metus in odio. Duis nisl. Curabitur ullam-corper. Cras elit velit, dictum eget, pharetra ac, cursus id, arcu. Mauris mauris justo, vol utpat non, varius. Aliquam vitae arcu. Nunc mauris nunc, cursus at, solli citudin dictum eget.

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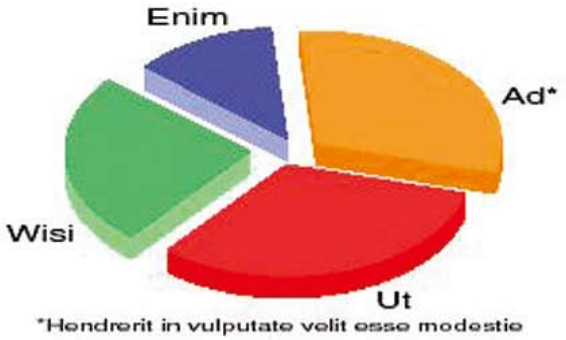
Ve Emerirre Et Tum Ober	
Stephan Gore	Ediops
Alcinia Solyom	Co-Ediops
Sangrui Mehor	Acondant
Dongle Truta	Poperter
Tinkel Tempals	Pamperator
Segtish Traumer	Leagolo
Banken	Wool

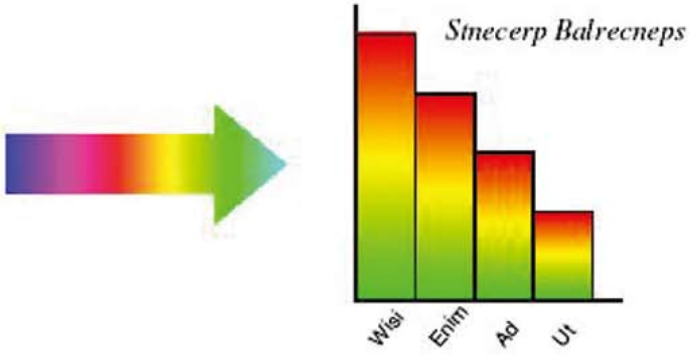
Suscipt Lobortis

LSA
Funtres Solber Natoner

Adipiscing



*Hendrerit in vulputate velit esse modestie



- Donec citae diam pellenteque sem vitus et ala em luctus semper
- Praesent nulla lacus ultrices quis um toper bine
- Maecenas felis leo posuere quis sagittis pradem
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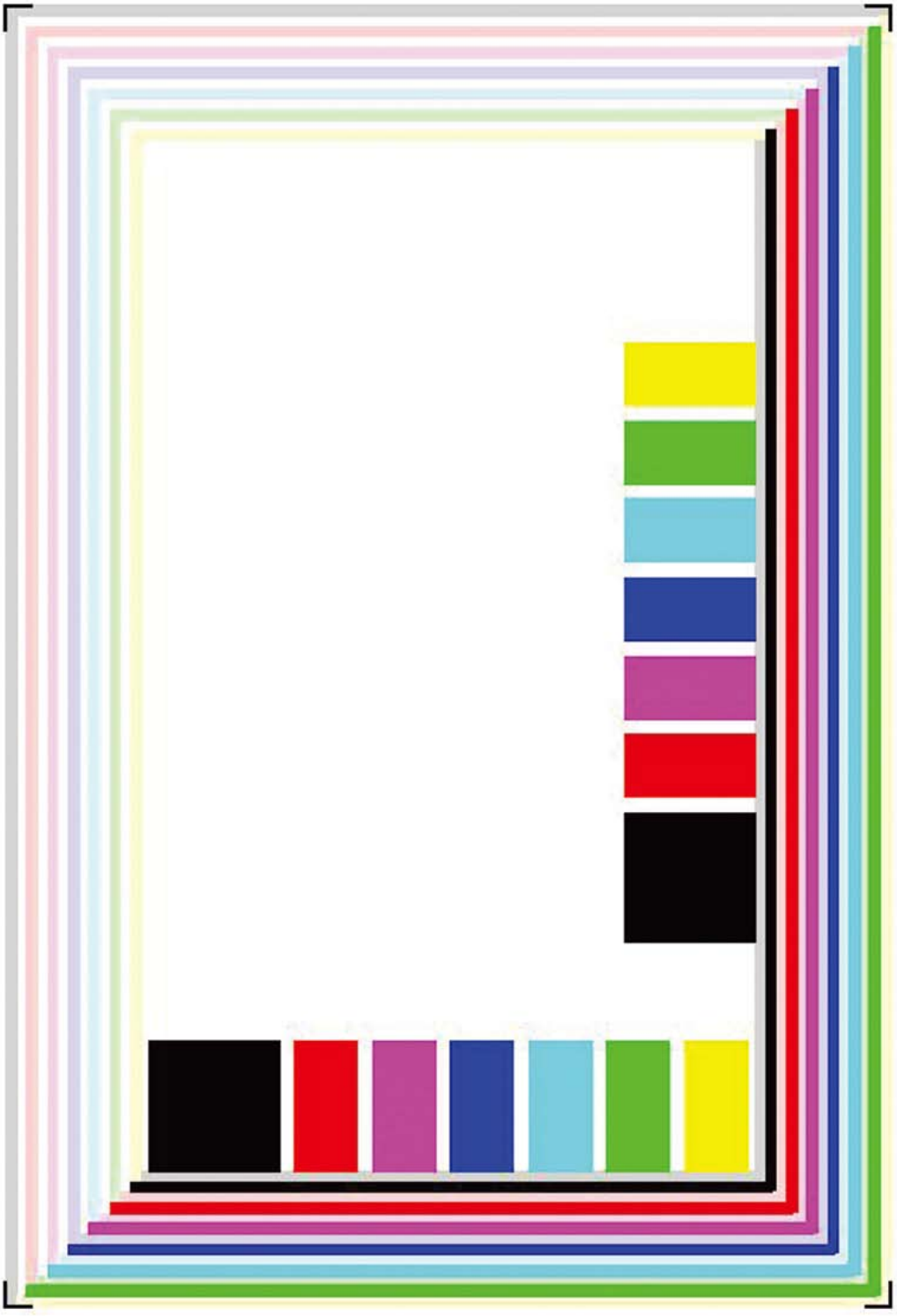

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