SAMSUNG

Color Laser Printer

CLP-600 Series

CLP-600/CLP-600N

Basic Model : CLP-600

SERVICE *Manual*

Samsung Color Laser Printer

CLP-600

The keynote of Product

- Speed: A4, 20/20ppm(Color/Mono) 1200dpi x 1200dpi
- Paper Path: FISO(Front-Inm Side-Out), Single Pass(Tandem)
- Emulation: SPL-C(GDI)
- System Controller: V320
- Processor: PMC RM5231A 250MHz
- Memory: Standard SDRAM capacity is 32MB
- Cassette: 250Sheet(Settable Type/A4, Ltr)
- SCF: 500Sheet Second Cassette Feeder (option)
- Toner Cartridge: 4K/4K(Color/Mono)
- Fuser Type: 1 E-coil Roller(heat roller)
- I/O: USB 2.0
- Machine Life: 150,000images/400, 000pages

ELECTRONICS

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1. Precautions

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

1.1 Safety Warning

(1) Only to be serviced by appropriately qualified service engineers.
High voltages and lasers inside this product are dangerous. This printer should only be serviced by a suitably trained and qualified service engineer.

(2) Use only Samsung replacement parts
There are no user serviceable parts inside the printer. 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.

(3) Laser Safety Statement
The Printer is certified in the U.S. to conform to the requirements of DHHS 21 CFR, chapter 1 Subchapter J for Class 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 printer are designed so there is never any human access to laser radiation above a Class I level during normal operation, user maintenance, or prescribed service condition.

Warning >> Never operate or service the printer 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 injury to persons.

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 D OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU.

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

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

ADVARSEL. - USYNLIG LASERSTR LNING VED BNING, N R SIKKERHEDSBRYDERE ER UDE AF FUNKTION. UNDG UDSAETTELSE FOR STR LNING.

ADVARSEL. - USYNLIG LASERSTR LNING N R DEKSEL PNES. STIRR IKKE INN I STR LEN. UNNG EKSPONERING FOR STR LEN.

VARNING - OSYNLIG LASERSTR LNING N R DENNA DEL R PPNAD OCH SP RREN R URKOPPLAD. BETRAKTA EJ STR LEN. STR LEN R FARLIG.

VARO! - AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA N KYM TT M LLE LASER-S TEILYLLE L KATSO S TEESEEN.

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 toner cartridges away from children. The toner powder contained in the 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 printer and potentially cause a fire or electric shock.

(2) Use only the power cable supplied with the printer. 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 printer, this can cause electric shock. Do not allow paper clips, pins or other foreign objects to fall into the printer 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 printer remove the power plug from the wall socket.

(6) Use caution when inserting or removing the power connector. The power connector must be inserted completely otherwise a poor contact could cause overheating possibly leading to a fire. When removing the power connector grip it firmly and pull.

(7) Take care of the power cable. Do not allow it to become twisted, bent sharply round corners or otherwise damaged. Do not place objects on top of the power cable. If the power cable is damaged it could overheat and cause a fire or exposed cables could cause an electric shock. Replace a 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 lightening storms. Samsung recommend 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 printer in a clean well ventilated location. Do not position the machine near a humidifier. Damp and dust build up inside the machine can lead to overheating and cause a fire.

(11) Do not position the printer in direct sunlight. This will cause the temperature inside the printer to rise possibly leading to the printer 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 printer

(1) Ensure the printer is installed on a level surface, capable of supporting its weight. Failure to do so could cause the printer to tip or fall.
(2) The printer 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 printer 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 printer in such areas.
(5) Do not place candles, burning cigarettes, etc. on the printer, these could cause a fire.

1.2.4 Assembly / Disassembly Precautions

Replace parts carefully, 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 printer or replacing any parts.

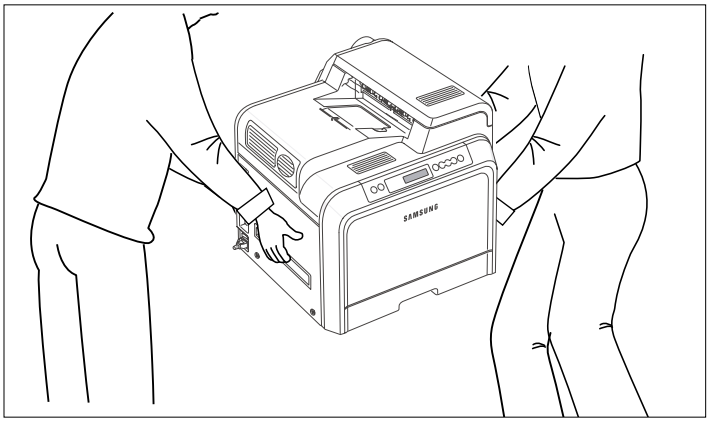
(1) Check the contents of the machine memory and make a note of any user settings. These will be erased if the mainboard is replaced.
(2) Ensure that power is disconnected before servicing or replacing any electrical parts.
(3) Disconnect printer interface cables and power cables.
(4) Only use approved 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 mins can damage the surface's photoconductive properties and will result in print quality degradation. Take extra care when servicing the printer. 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 the high temperature part.
The fuser unit works at a high temperature. Use caution when working on the printer. Wait for the fuser to cool down before disassembly.

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

(3) When you move the printer.
This printer weighs 29kg including toner cartridge and cassette. Use safe lifting and handling techniques. Back injury could be caused if you do not lift carefully.



(4) Ensure the printer is installed safely.
The printer weighs 29Kg, ensure the printer is installed on a level surface, capable of supporting its weight. Failure to do so could cause the printer to tip or fall possibly causing personal injury or damaging the printer.

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

1.3 ESD Precautions

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

1.4 Super Capacitor or Lithium Battery Precautions

1. Exercise caution when replacing a super capacitor or Lithium battery. There could be a danger of explosion and subsequent operator injury and/or equipment damage if incorrectly installed.

2. Be sure to replace the battery with the same or equivalent type recommended by the manufacturer.

3. Super capacitor or Lithium batteries contain toxic substances and should not be opened, crushed, or burned for disposal.

4. Dispose of used batteries according to the manufacture’s instructions.

2. Product Specifications

2.1 Product Overview

Item	Descriptions	Remark
Basic Model	CLP-600	
Series Model	CLP-600, CLP-600N, CLP-650, CLP-650N	
Maket of Sales	・Main Target : Office Small Workgroup(2~10) - Shared by Local PC or Network attaching(60:40) ・Sub Target : Office Personnel for Mktg/Fin/Engr/Exec. Enterpreneurial business(1~5)	
Main Specification	1. Paper Handling - Input : 250CST, 50MP, No Duplex - Output : 250(Face/Down) - Etc : MP(Postcard~Legal) CST(A5~Letter) 2. Engine - Speed : 20ppm/A4, 21ppm/Letter - Resol : 1200dpi Addr. - Duty : 35,000pages/mon - Life : 400,000pages 3. Consum ables - CRU : C/M/Y/K : 4K(5%) /Initial 2K Paper Transfer Unit : 35K - FRU : Fuser : 50K Other Roll : 50K 4. Controller - SPL model(CLP-600) : SPL-C, Std. 64MB - PDL model(CLP-650) : PCL6/PS3, Std. 128MB(Max. 640MB) 5. Control/UI - LCD : SPLC-LED(7), 3Keys PDL-LCD, 6Keys - CMM : ICC, sRGB Pamtone(PDL) 6. Other - Inferface : USB 2.0 USB 2.0 + P1284(PDL) - Util : MS Family, Mac/Linux, Smart Monitor, Local&NW RDS	

2.2 Specifications

Specifications are correct at the time of printing. Product specifications are subject to change without notice. See below for product specifications.

2.2.1 General Specifications

Items	Descriptions	
Print Method	Non-impact Electro-photography	
Developing system	Non-Magnetic, Mono-Component Developing System	
*Print Speed	Mono	Up to 20ppm in A4, Up to 20ppm in Letter size
	Color	Up to 20ppm in A4, Up to 20ppm in Letter size
Resolution	1200dpi X 1200dpi	
Source of Light	Laser diode (LSU : Laser Scanning Unit)	
Warm-Up Time	More than 60 sec	
First Print Time	Mono	20 seconds (Ready to 1st page out)
	Color	20 seconds (Ready to 1st page out)
Feed Method	Cassette , MPT(Multi Purpose Tray), SCT(Second Cassette Tray)	
Media Size	76 X 128mm (3 x 5”) to 216 X 356mm (8.5 X 14”)	
Media Thickness	Cassette : 16 ~24 lb , MPT : 16 ~ 43 lb	
Dimension (W X D X H)	465(W)mm X 465(D)mm X 445(H)mm	
Weight	Net	24 Kg
	Gross	21 Kg
**Acoustic Noise	Stand by	More than 44 dBA
	Printing	More than 52 dBA (Color)
Power save mode	Support : Yes(RCP Mode) Default : 30min Setting : 5min/10min/30min/45min/60min/120min	
Toner save mode	Disable	
Machine Life	Mono : More than 400,000 pages, Color : More than 100,000 pages	

* Print speed will be affected by Operating System used, computing performance, application software, connecting method, media type, media size and job complexity.

* Cardstock/Envelope : Half Speed

** Sound Pressure Level, ISO 7779

2.2.2 Controller Specification

Items	Descriptions
Processor (CPU)	RM5231A + V320USC(SPL-C)
Memory	FLASH ROM (PROGRAM) : 8MB flash
	Standard SDRAM Capacity is 32MB
	Option DIMM module : SDRAM 144PIN SODIMM TYPE 128~256MB for one slots
	NVRAM : 4K BIT Serial Inter face(12C)
Emulation	GDI(SPL-Color)
Operating System	Win 95/98/ME/NT4.0/2000/XP, Various Linux OS including Red Hat, Caldera, Debian, Mandrake, Slackware, SuSE and Turbo Linux
Interface	Parallel : IEEE 1284 Bidirectional (Korea, Russia, Asia only) - Modes supported : Compatible, Nibble, Byte, ECP
	USB (without HUB mode) - USB 2.0 compliant -12/480 Mbps 1 port
	Network Interface - 10/100 Base TX 10/100 Base TX + 802.11b Wireless LAN
Interface switching	Automatic
Interface time-out	5min (Max.)
Font	Windows font, PS english font, PCL english font
Color Management	ICC ICM V3.4

2.2.3 Electrical Specification

Items	Descriptions		Remarks
Input Voltage	Nominal input voltage	200-240 VAC / 100~127VAC	
	Input voltage range	180-264 VAC/ 90~132VAC	
	Input frequency	50/60 MHz	
	Frequency tolerance	+3Hz	
Power Consumption	Printing : 55Wh(AVG)		
	Power Save : Less than 35Wh		

2.2.4 Environmental Range

Items	Operating	Storage	
Temperature	15~32.5 ˚C(50-90 ˚F)	-20~40 ˚C (-4~104 ˚F)	
Humidity	20~80%RH	10~80%RH	

2.2.5 Consumable & Maintenance Items

Consumables		
No. of CRUs		5 (C/M/Y/K toner, Transfer)
Toner	Black	4,000 A4/Letter pages, at ISO-19752 5% Coverage(Set initial : 2K)
	Color	4,000 A4/Letter pages, at ISO-19752 5% Coverage C/M/Y each(Set initial : 2K)
	Key	Unique, Electronic key(CRUM)
	Life detect	None, toner remaining volume would be traced via software
	Replace method	3 steps for install/replacing
Tranfer (Paper Transfer Belt)	Yield	50,000 pages
	Key	CRUM
	Sensor	None
	Replace method	3 steps for install/replacing
No. of FRUs		5 (ITB+OPC, Dev Unit, Fuser, T2 roller, Pick-up roller)
Fuser	Yield	50,000 pages
	Key	Detect new fuser, cut fusible resistance
	Life detect	None
	Replace method	2 steps for install/replacing Dime screw
Pick-up Roller	Yield	50,000 pages
	Key	None
	Life detect	None
	Replace method	3 steps for install/replacing

Options		
	CLP-600	**CLP-600N**
Memory	N/A	
Second Cassette	Y	
Network	Option	Standard
Wireless Network	N/A	Dealer option
Hard Disk	N/A	
Duplex Unit	N/A	

2.2.6 Paper handling Specifications

2.2.6.1 input Paper Size

Paper	Paper size	1st Cassette	2nd Cassette	MP tray	Duplex
A4	210 X 297 mm	O	O	O	O
Letter	216 X 279 (8.5 X 11")	O	O	O	O
Folio (Legal13")	216 X 330 (8.5 X 13")			O	O
Legal (Legal14")	216 X 356 (8.5 X14")			O	O
Executive	184 X 267 (7.25 X10.5")			O	
Statement	140 X 216(5.5 x8.5")			O	
ISO B5	176 X 250			O	
JIS B5	182 X257			O	
A5	148.5 X 210			O	
A6	105 X148.5			O	
Com-10 Envelope	105 X 241 (4.15 X 9.5")			O	
Monarch Envelope	98 X191 (3.87 X 7.5")			O	
DL Envelope	110 X 220(4.33 X 8.66")			O	
C5 Envelope	162 X 229 (6.38 X 9.01")			O	
C6 Envelope	114 X 162 (4.49 X 6.38")			O	
Transparency (OHP)	A4 or Letter			O	
Label paper	A4 or Letter			O	

O : Supported

2.2.6.2 Input Capacity

Items	Descriptions		Remarks
Cassette(FCT)	250 sheets		
MPF	Paper	100 sheets	
	Transparencies	30 sheets	
	Envelopes	10 sheets	
	Labels	10 sheets	
Option Cassette(SCT)	500 sheets		

2.2.6.3 Output Capacity

Items	Descriptions	Remarks
Face Down	250 sheets	

2.3 Model Comparison Table

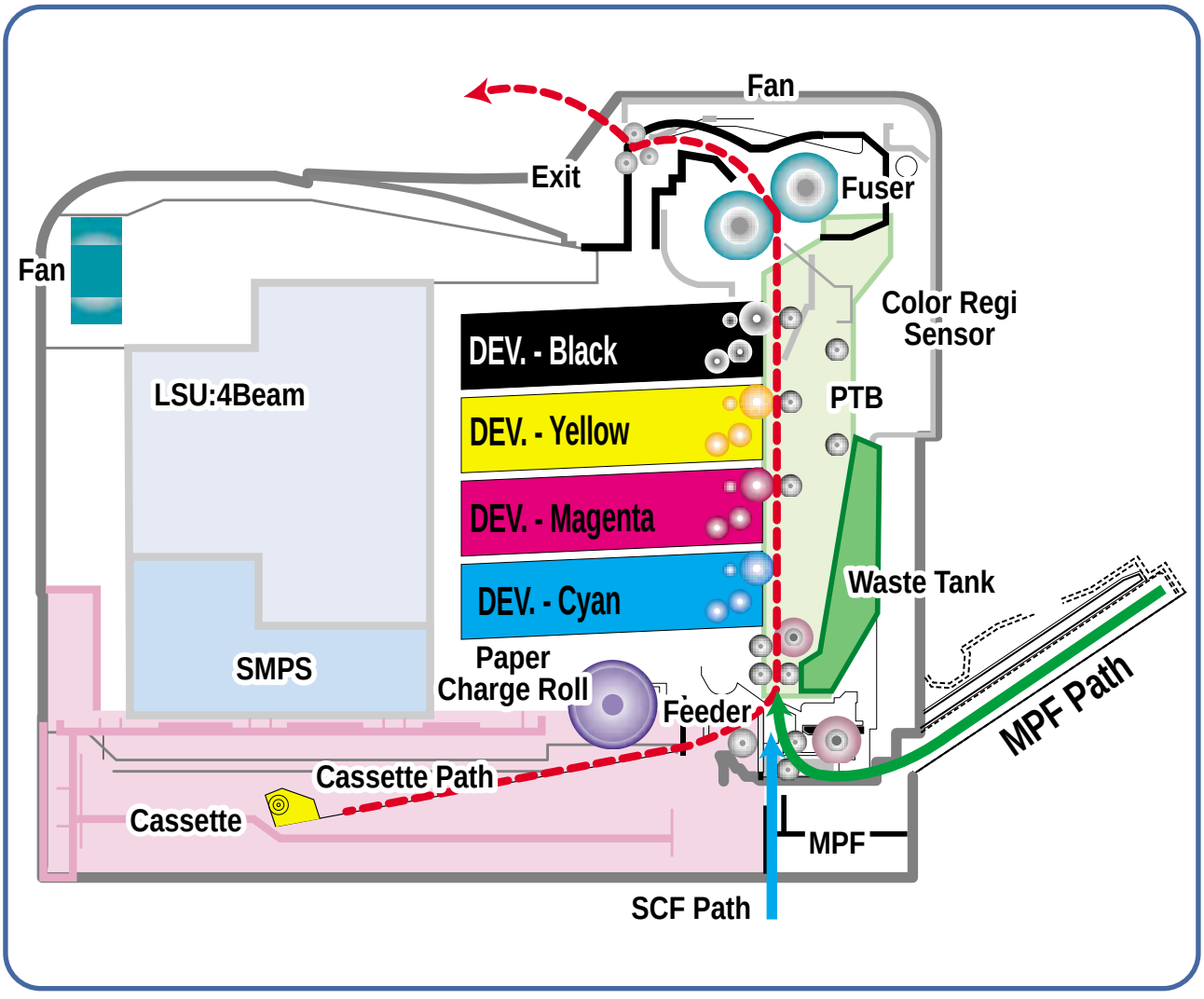
Model Name		CLP-600	CLP-600N	CLP-650	CLP-650N
Engine Speed	Simplex	B&W : Up to 20 ppm in A4 (21 ppm in Letter)			
	Duplex	N/A(Manual)		N/A(Manual)	
Warm-up time		< 40 sec			
FPOT (B&W)	From Ready	< 20 sec			
	From Sleeping	< 60 sec			
	From Coldboot	< 60 sec			
FPOT (Color)	From Ready	< 20 sec			
	From Idle	< 60 sec			
	From Coldboot	< 60 sec			
Resolution	Optical	600 x 600 dpi			
	Maximum	Draft: 600*600 dpi		Draft: 600*600 dpi	
MPU		MIPS 250 MHz		MIPS 7065-600MHz	
Memory	Std.	32 MB	<-	128MB	<-
	Max.	32 MB	<-	256MB	<-
Memory Expansion			N/A	N/A	128MB 128MB
Printer Languages	SPL-C (Samsung Printer Language Color)	SPL-C (Samsung Printer Language Color)	SPL-C (Samsung Printer	SPL-C, PS3, PCL6C	
Fonts		N/A	N/A	45 scalable and 1 bitmap PCL and 136 PS	
F/W Upgradability		Field upgradable via firmware downloading to FLASH memory			
Driver	Supporting OS	Windows 98/Me/NT4/2000/XP/2003		Windows 98/Me/NT4/2000/XP/2003	
		Various Linux(Red Hat 8.0~9.0, Mandrake 9.0~10.2, SuSE 8.2~9.2 and Fedora Core 1~3)		Various Linux(Red Hat 8.0~9.0, Mandrake 9.0~10.2, SuSE 8.2~9.2 and Fedora Core 1~3)	
		Mac OS X 10.3 and above		Mac OS X 8.6 and above	
	Default Driver	SPL-C (Samsung Printer Language Color)		SPL-C (Samsung Printer Language Color) for Win	
	WHQL	Windows 2000/XP/2003		Windows 2000/XP/2003	
	Language Localization	SPL-C: Win(English, German, French, Spanish, Italian, Dutch, Danish, Swedish, Norweigian, Finnish, E.Portuguese, Hungarian, Polish, Czech, Turkish, Russian, Korean, S.Chinese, T.Chinese)		SPL-C: Win(English, German, French, Spanish, Italian, Dutch, Danish, Swedish, Norweigian, Finnish, E.Portuguese, Greek, Hungarian, Polish, Czech, Turkish, Russian, Korean, S.Chinese, T.Chinese)PS3: PPDPCL6C : English & Korean	
Application	Smart Panel	Y		Y	
	Installer	Auto install by detecting OS		Auto install by detecting OS	
	Network Management	N/A	SyncThru Web service	N/A	SyncThru Web service
	Set IP	Y	Y	Y	Y
Parallel Interface		N/A	N/A	IEEE1284	IEEE1284
USB Interface		USB 2.0	USB 2.0	USB 2.0	USB 2.0
Network		N/A	RJ45, Standard 10/100BaseTX	Opt.	RJ45, Standard 10/100BaseTX
Wireless		N/A	802.11 a/b/gDealer option	Opt.	802.11 a/b/gDealer option
Network Interface(Protocol)		N/A	TCP/IP, SNMP, HTTP 1.1, SPX/IPX	Opt.	TCP/IP, Ethertalk, SNMP, HTTP 1.1, SPX/IPX
Network OS		N/A	Microsoft Windows 98/ME/2000/XP/2003Microsoft Windows NT 4.x, 5.x, 6.xMac 10.3 and aboveVarious Linux OS including Red Hat, Caldera, Debian, Mandrake, Slackware, SuSE and Turbo LinuxNovell 4.x,5.x,6.x	Opt.	Microsoft Windows 98/ME/2000/XP/2003Microsoft Windows NT 4.x, 5.x, 6.xMac8.6 and aboveVarious Linux OS including Red Hat, Caldera, Debian, Mandrake, Slackware, SuSE and Turbo LinuxNovell 4.x,5.x,6.x
LCD & Button		2 buttons	LCD and 7 buttons		
PostScript		N/A		Standard	
Network		N/A	Standard	Opt.	Standard
Wireless Network		N/A	Dealer option	N/A	Dealer option

3. System Overview

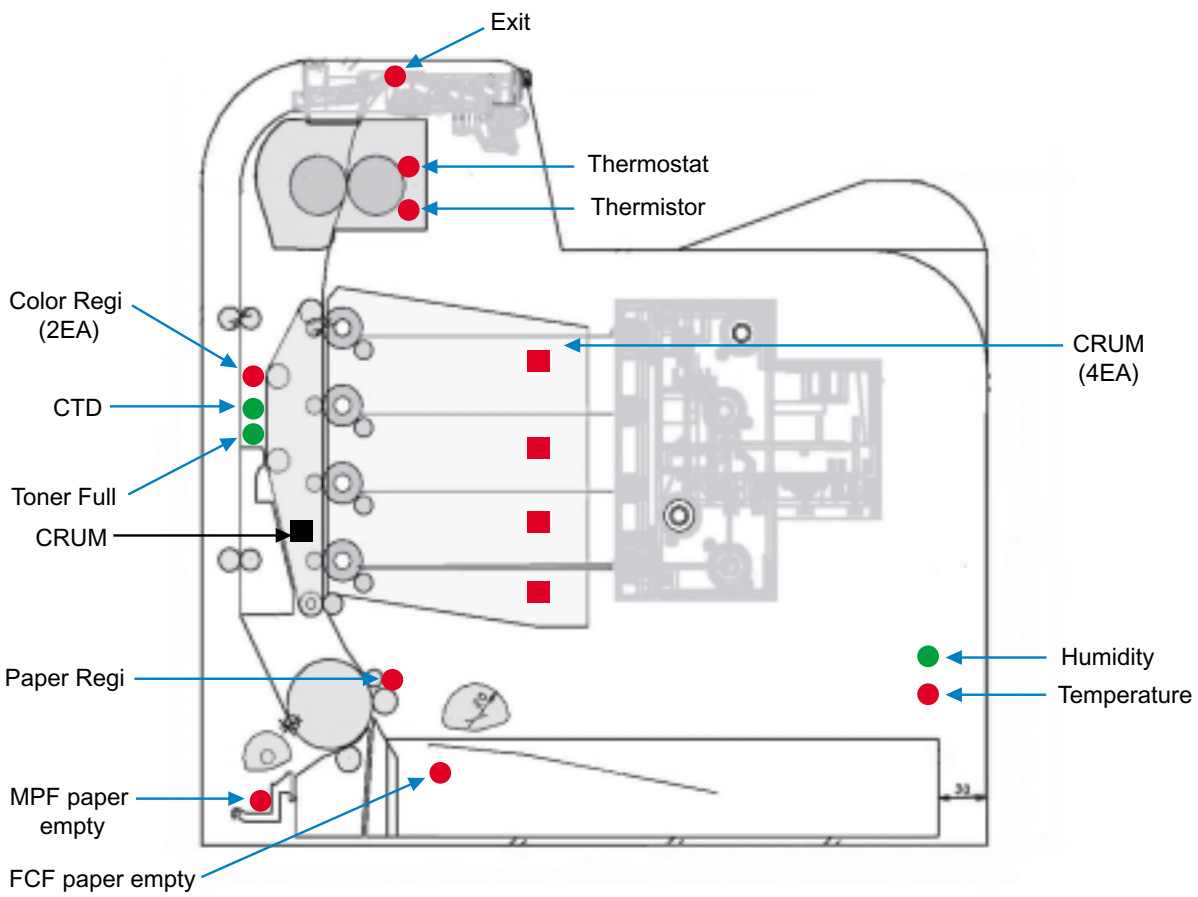
This chapter describes the functions and operating principles of the main components.

3.1 System Structure

3.1.1 Main Parts of System



3.1.2 Sensor


Exit
Thermostat
Thermistor
Color Regi
(2EA)
CTD
Toner Full
CRUM
CRUM
(4EA)
Paper Regi
Humidity
Temperature
MPF paper
empty
FCF paper empty

1) OPC Unit

Images are created on the OPC unit using an electro-photographic process. The unit consists of:-

* OPC Drum
  used to collect waste toner remaining on the OPC drum,
* Charge Roller Assy

2) PTB Unit (Paper Transfer Belf)

PTB stands for Image Transfer Belt. An image developed on the OPC Drum is transferred first to the PTB. This is called the T1 Transfer Paper Charge Roller.
Images are built up in layers on the PTB.
First the Yellow (Y) colour image is created on the OPC and transferred to the PTB
Next the Magenta (M) colour image is created on the OPC and transferred to the PTB
Followed by the Cyan (C) and Black (K) images.

3) Transfer Roller

Once the complete, full colour, image, has been built up on the ITB the Transfer Roller is used to transfer the image onto paper. This is called the T2 Transfer (Secondary Image Transfer)

4) FCT (First Cassette Tray)

It stores and automatically feeds print paper.

Pick-up Roller picks up paper, controls drive, feeds paper, removes static electricity, and so on.

> Spec.

* Paper arrange way : Side Registration
* Paper Direction : FISO (Front-in, Side-Out)
* Cassette Type : A4, Ltr
* Paper Discharge : Separation Claw
* Capacity : 250 Sheets (Standard paper 75mg/m? 20lb)
* Paper Size : A4, Letter
* Paper Weight (average) : 60~90g/m^2 (16~24lbs)
* Paper Type : General Printing Paper
* Additional Function : Paper Empty Sensor

5) SCF (Second Cassette Feeder)

This additionally stores and automatically feeds printing paper. Its function is the same as the FCT (First Cassette Tray)

> Spec.

* Paper arrangement : Side Registration
* Paper Direction : FISO (Front-in, Side-Out)
* Cassette Type : A4, Ltr
* Paper Discharge : Separation Claw
* Capacity : 500 Sheets (Standard paper 75mg/m^2 20lb)
* Paper Size : A4, Letter
* Paper Weight (average) : 60~90g/m^2 (16~24lbs)
* Paper Type : General Printing Paper
* Additional Function : Paper Empty Sensor

6) MPF (Multi Purpose Feeder)

The Multi-Purpose Feeder not only feeds general printing paper but is also used for many other kinds of paper such as those paper sizes not supported by the cassette, envelopes, OHP, etc.

> Spec.

* Capacity : Cut Sheet : 100 Sheets (Standard paper 75mg/m^2 20lb)
* OHP : 300 Sheets
* Envelope & Label & Card Stock : 10 Sheets
* Paper Arrangement : Side Registration
* Power : Main Motor (Stepper Motor)
* Driving Management : Solenoid
* Paper Discharge : Friction Pad Method
* Paper Size : Legal, Folio, A4, Letter, Executive, JIS B5, A5, A6
* Paper Weight (Average) : 75~163g/m^2
* Paper Type : General, Label, Post Card, Transparency, Envelope, Card Stock (Tracing Paper is not served)
* Additional Function : Paper Empty Sensor

7) Feeder

* Paper Arrangement : Side Registration.
* Power : Main Motor (Stepper Motor)
* Paper Management : Shutter Method

8) Duplex Unit

The Duplex Unit is not used.

9) Exit Unit

The Exit Unit guides paper that is just about to leave the print engine. Printed-paper is discharged by the Exit Roller and Kicker into the Output Tray.

> Spec.

* Capacity : 250 sheets (Standard A4, 75g/m2)
* Paper Direction : Face Down
* Exit Drive Roller : It is driven by Main Motor (BLDC), and it rotates clockwise for normal feed and antic-clockwise when reverse feeding for duplex printing.
* Sensor : There is photo interrupt sensing (GPIS73)
* Jam Detect : Exit Cover Open.

10) Toner Cartridge

There are four toner cartridges, each containing a different colour ink : C (Cyan), M (Magenta), Y (Yellow) , and K (Black).

Each one of these toner cartridge is independent and can be changed independently.

* Toner Empty : Dot Counting Method.
* Color Key : CRUM

11) Fuser Unit

This unit consists of 1 E-COIL ROLLER (HEAT ROLLER), 1 Thermostats and a Thermistor. It melts and fuses the toner, transferred by the transfer roller onto the paper, by applying pressure and high temperature to complete printing job.

* Ready Temp : 165℃
* Printing Temp : 180℃(over shoot : 200℃)

12) LSU

This is a core part of LBP. It forms a latent image on the surface of OPC drum using a static charge.

* Resolution: Real 600 dpi
* Motor : Brushless DC motor PWM control.

13) Main Drive Unit

This motor drives, by way of a gearbox, the OPC unit, ITB unit, feeder unit, fuser unit, exit unit and duplex unit.

> Spec.

* Power : 20W Max (24V)
* Drives : OPC unit, ITB unit, Fuser, Feeder, Duplex unit, Exit unit

14) DEVE Drive Unit

This motor drives, by way of a gearbox, the toner cartridges and ITB cleaning cam.

> Spec.

* Power : 20W Max (24V)
* Drives : DEV (4 Color)/ITB Cleaning)

15) SMPS (Switching Mode Power Supply)

This power supply uses the AC supply voltage to generate the DC voltages used by the system. The SMPS has 5 output channels (+3.3V, +5V, +24V, +24VF1, +24VF2).
The AC Heater Control Unit that supplies power to the fuser is also located on the SMPS.

16) HVPS (High Voltage Power Supply)

The HVPS creates the high voltages (Charger, Supply, T1, T2, Developer) used for the electro photographic process. The high voltage is created from the 24V line from the SMPS. High Voltage output is supplied to the toner cartridge, OPC drum unit, PTB unit, and T2 Transfer roller.

17) Main Controller PBA

The Main controller PBA is very important as it is the heart of printer. It has several major function blocks.

* CPU (SPL-C : RM523A + 32ousc) : This manages the printing order from the host, creates bitmap data for the engine to print and controls various devices that are needed to operate the printer.
*Engine Control Block: This manages images and controls various kinds of I/O
* Memory Block : The operating system uses this to store video data and printing orders given by host.
* ROM Block : The printer OS and PDL Interpreter are stored here.
* In addition there are USB 2.0 Block, IEEE 1284 Block, Option Block, OPE Panel, etc.

18) Drive PBA

Each toner cartridge requires the HV Supply only when that colour image is being processed. This unit takes its HV source from the HVPS and using 4 solenoids selects which cartridge is to receive the Supply voltage. This section also contains the DEVE motor, DEVE clutch, and DEVE solenoid drives. These are activated in sequence as required by the printing process.

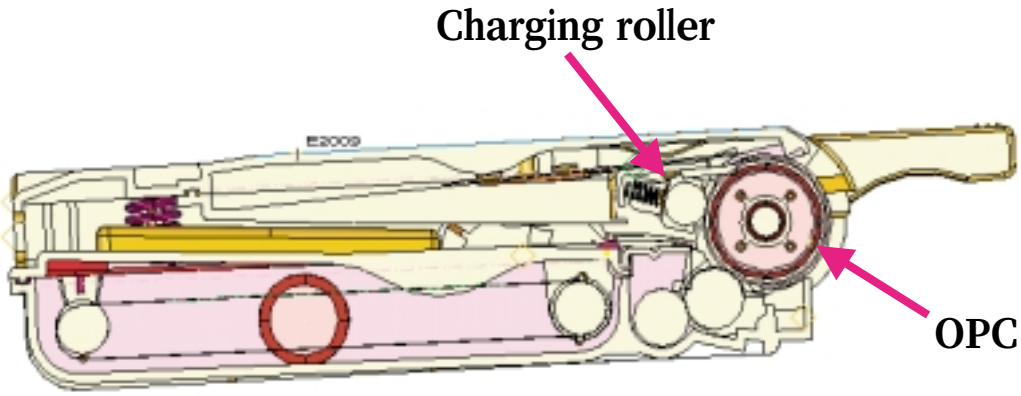
19) DEVE CRUM PBA

This detects new or used toner cartridges and also checks that cartridges are approved parts. If a toner cartridge is not suitable for the machine an error message is displayed.

3.1.3 EP process

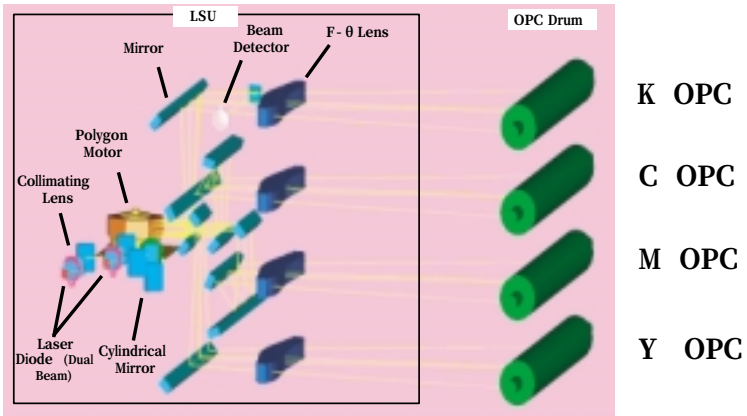
1)Charging

- Roller charging
- Roller resistivity : ~ 10^5 ohm-cm
- Applied voltage : -1.0 ~ -1.5kV
- Charge acceptance : ~ -550V
- OPC coating thickness : ~ 20um
- OPC diameter : •'24mm
- Non eraser system



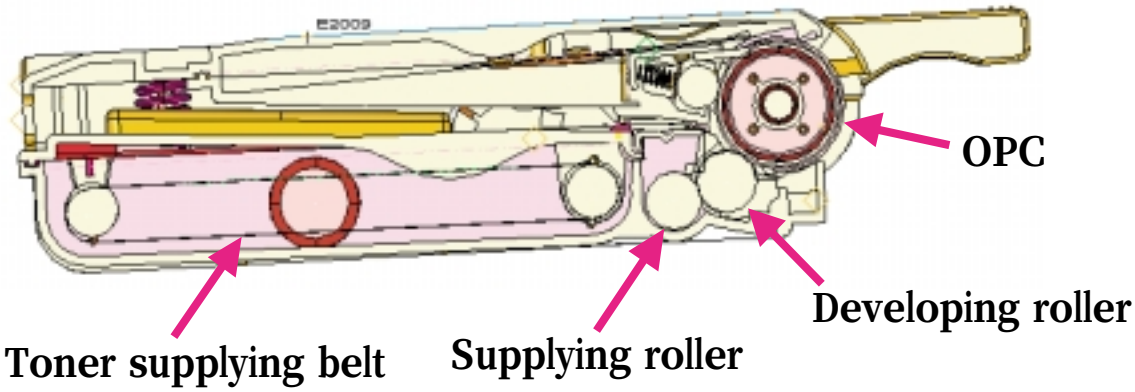
2)Exposing

- One polygon motor (8 facet)
- Dual beam LD (2ea)
- LD wavelength : 785nm
- Polygon motor rpm : ~ 21600
- LSU energy : ~ 0.5uJ/cm^2
- OPC exposed potential : ~ 50V



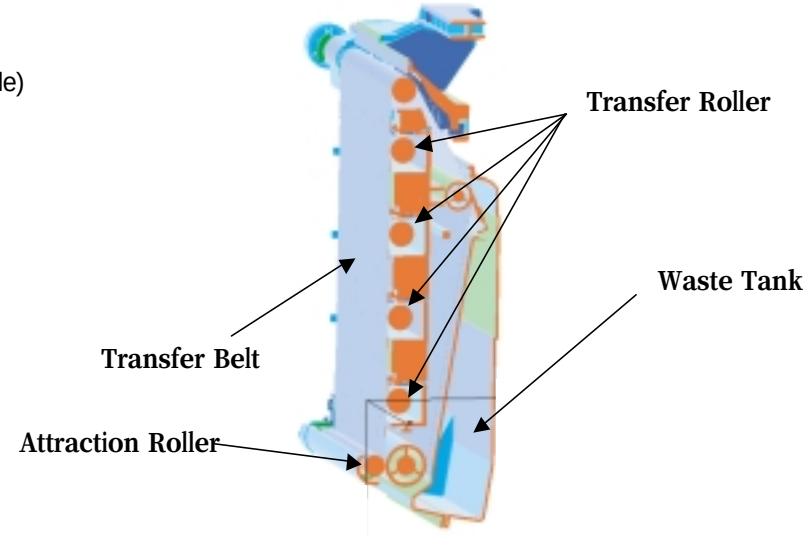
3)Developing

- Non-magnetic, mono component
- Non-contact development
- Developing bias : DC + AC
- AC peak to peak : 1.5 ~ 2.0kV
- Mass on developing roller : ~ 550ug/cm^2
- Toner coulomb : ~ 20uC/g
- Roller diameter : •'12mm
- Roller resistivity : 10^5 ~ 10^6 ohm-cm
- Process speed ratio : 1.3 (OPC=1.0)
- Color order : Y -> M -> C -> K



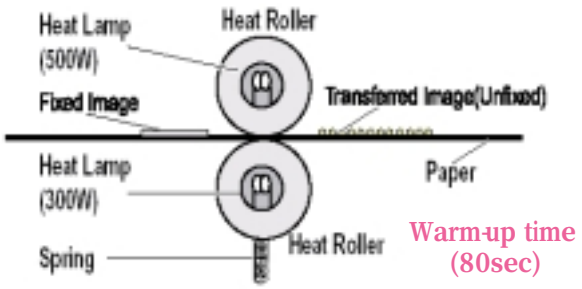
4)Transfer

- Single pass (Tandem) transfer
- Direct transfer (No T2 transfer)
- Transfer voltage : 0.5 ~ 2.0kV (controllable)
- Roller diameter : •'14mm
- Roller resistivity : ~ 10^7 ohm-cm
- Belt resistivity : 10^9 ~ 10^11 ohm-cm
- Paper sensing by attraction roller
- Environment sensing by Y-transfer roller
- Transfer unit life : 35K

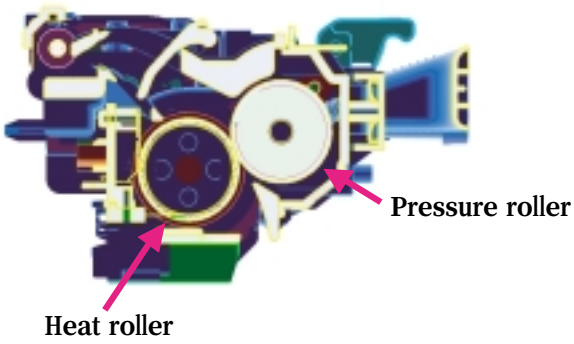


5)Fusing

· E-coil fusing system
-> short warm-up time (45sec)

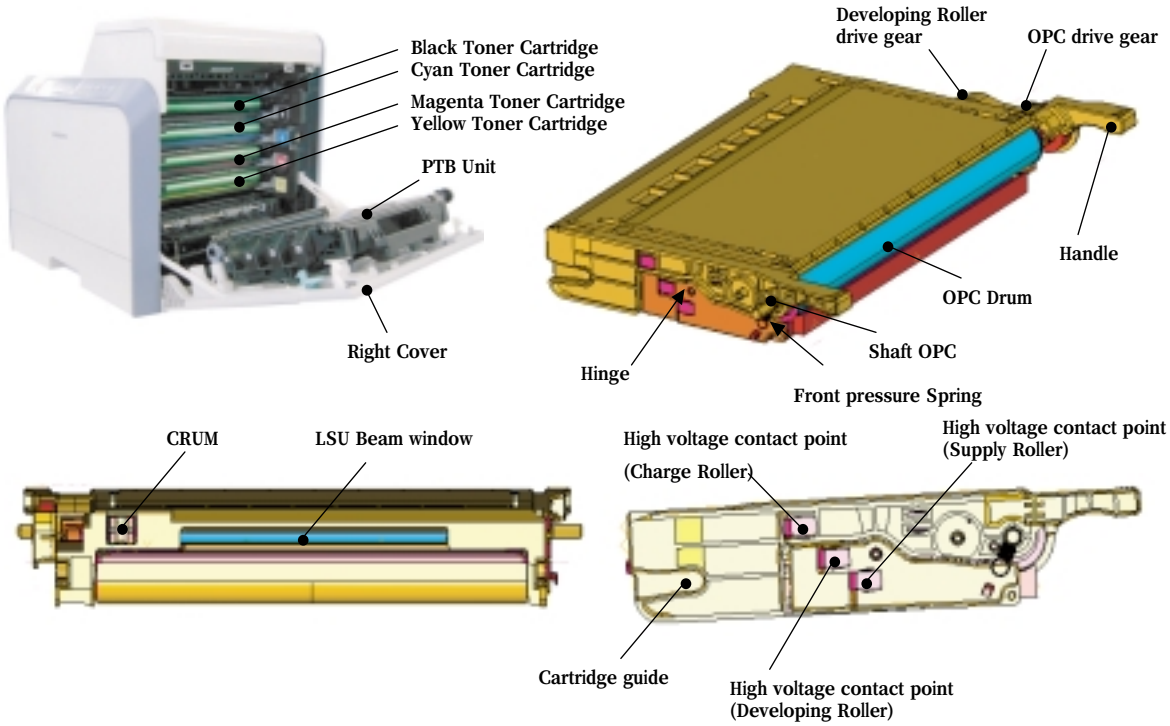


CLP-500

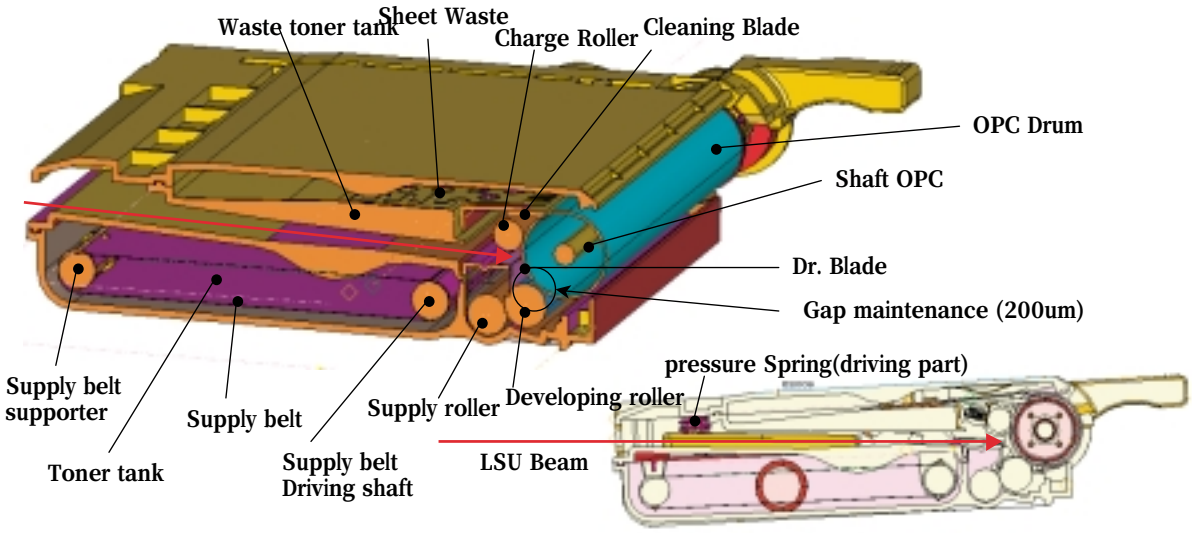


CLP-600

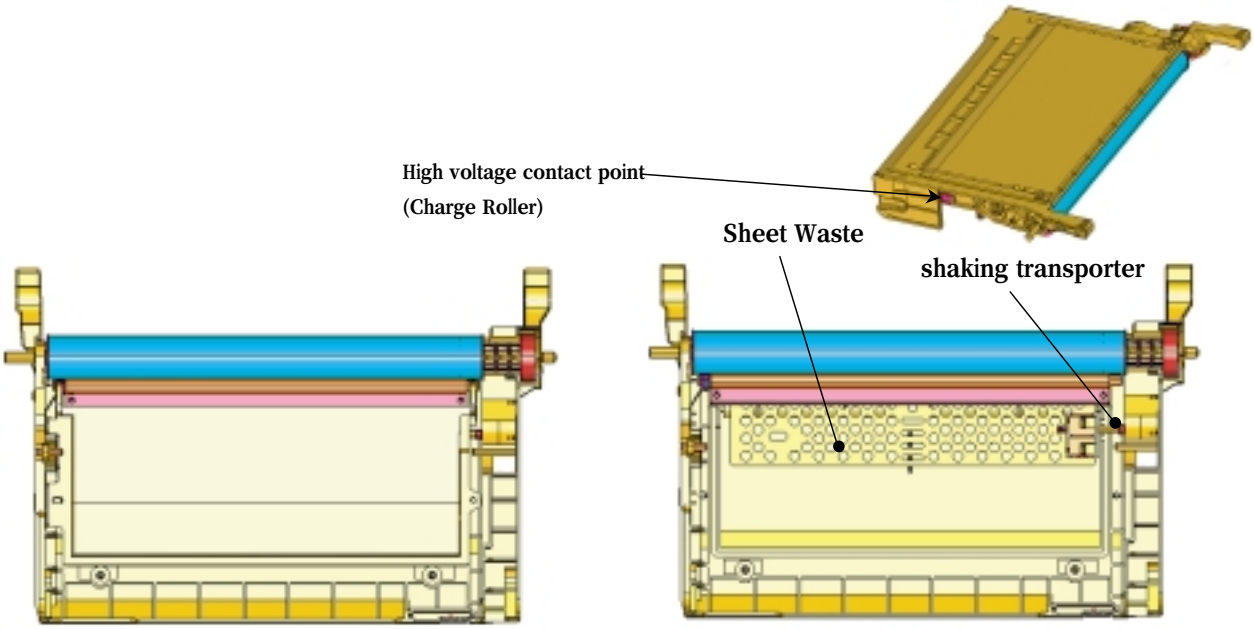
3.1.4 Toner Cartridge



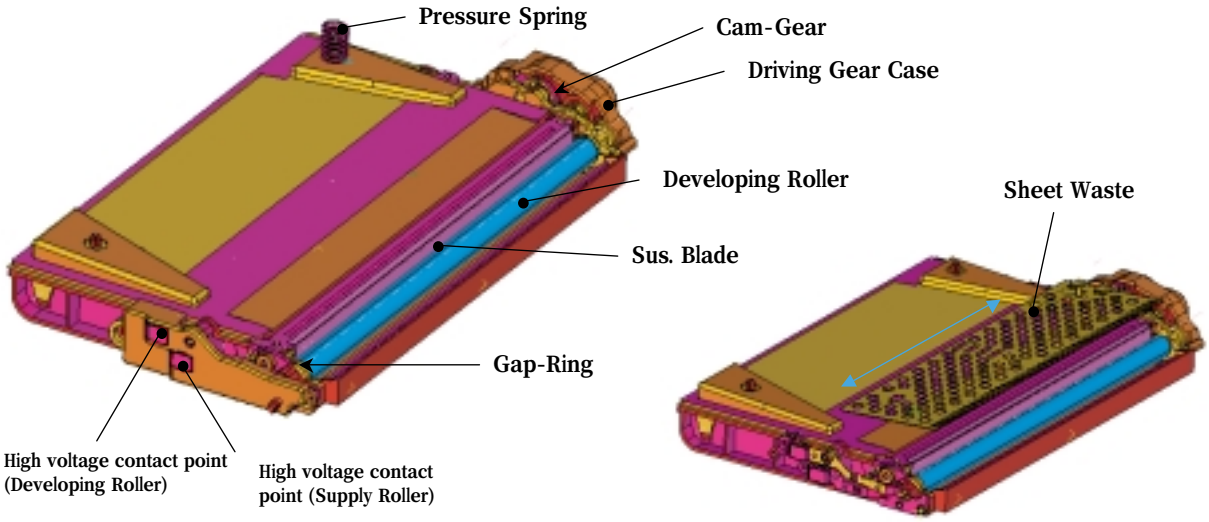
- Developing method: Non-magnetic 1 element non-contacting method
- Toner: Non magnetic 1 element shatter type toner (Averag Dia. 0.8ß≠)
- The life span of toner cartridge : 4,000 Sheets (N/N, Simplex,ISO 5% Coverage Pattern)



- OPC Cleaning: Collect the toner by using Cleaning Blade (urethane) transport to the waste toner tank by sheet waste
- OPC Drum protecting Shutter : No (Take care of impact)

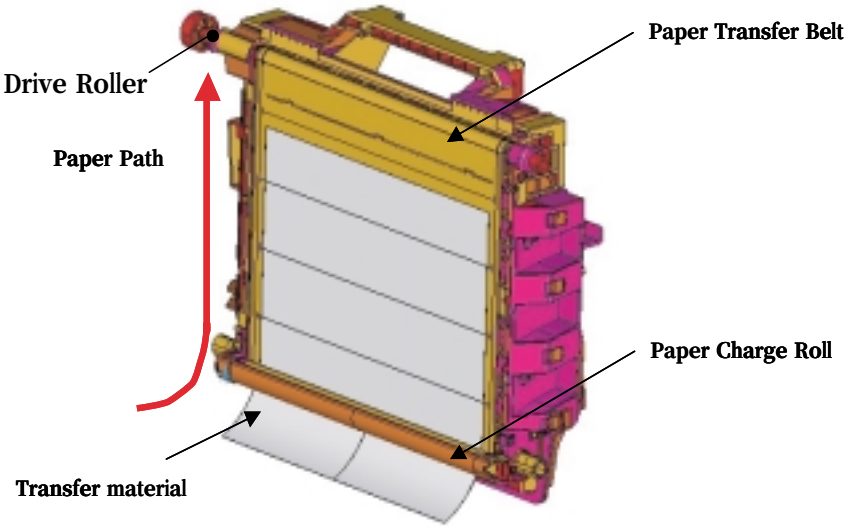


- Method of Toner supply : Toner is transported to the developing roller by supply belt
- Regulating Toner level : Regulating Toner level by Sus. Blade
- Maintenace of developing gap : Maintenace of developing gap by Gap-ring which is located at the ends of developing roller

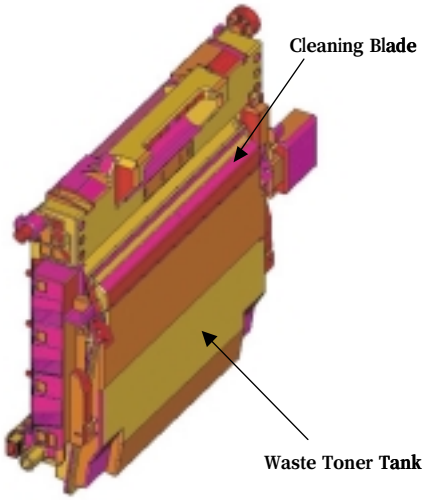


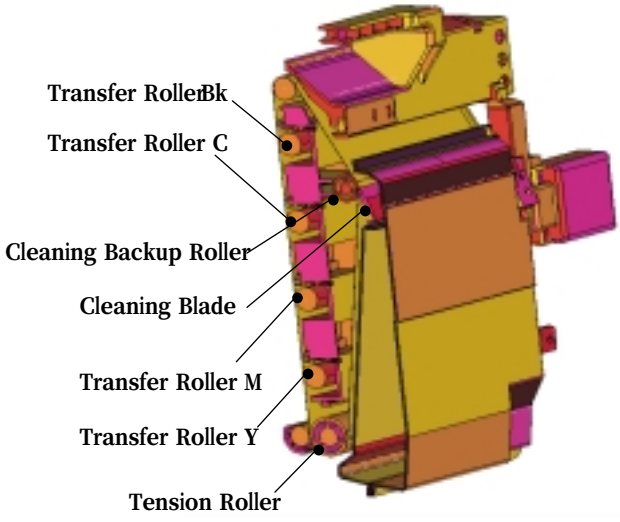
3.1.5 PTB Unit (Paper Transfer Belt Unit)

- TANDEM Method Paper Transporting Unit by using Paper Transfer Belt
- Belt Driving Method : Friction Driving by Drive Roller
- The Life Span : Print over 35,000 sheets (in 15~30 °…)

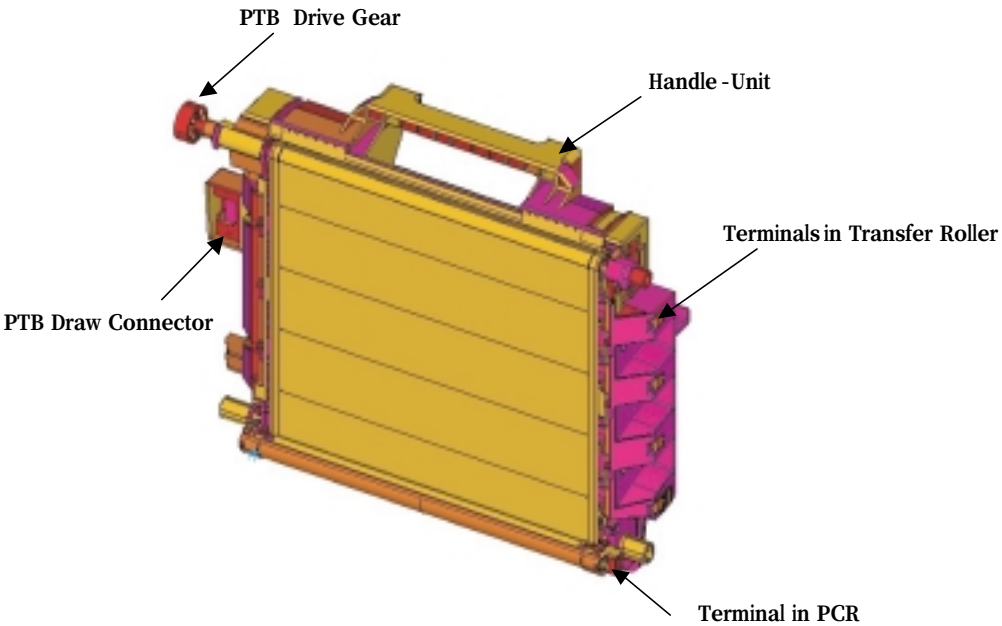


- Belt Cleaning : Collect the toner by using Rubber Blade
- Management of waste toner : The Waste Toner Tank Be equipped





- Transfer Voltage Control : ADC Control on Electric Sponge Roller
- Accomplishing Auto Color Registration By sensor in Handle-Unit



3.2 H/W Structure and Descriptions

3.2.1 VIDEO CONTROLLER (SPL-C MODEL)

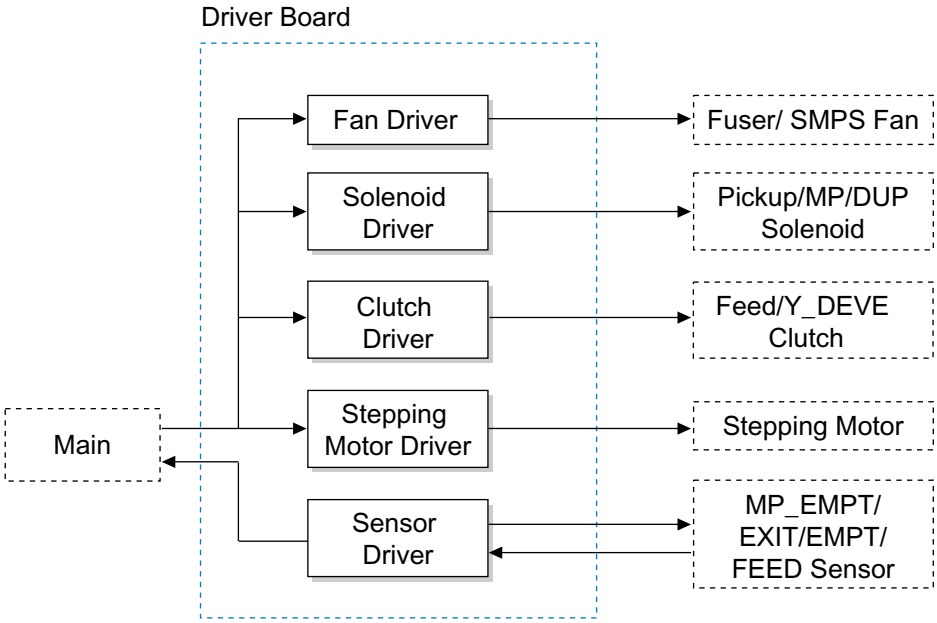
1. Printing Resolution	True 600dpi (1200dpi Addressable ; B/W only) Image (1,2,4bit grey)
2. Processor	RM5231A(MIPS 300MHz) 32-bit RISC core operation 75MHz bus operation V320USC: DMA Controller + PCI controller USB2.0: M5622 Printer Video controller for LBP engine LPEC2: Engine Controller (LSU/PWM/ADC) JTAG (IEEE 1149.1) standard Support 30MHz PCI BUS control
3. Printer Language Emulations	SPL-C only
4. Memory Slots	Standard SDRAM capacity is 32MB
5. Interface	USB 2.0
6. Option Interface	PCI ETHERNET 10/100BASE-TX by SAMSUNG PCI ETHERNET 10/100BASE-TX + W-LAN(IEEE 802.11b) by SAMSUNG
7. Control Panel	16 x 2 LCD Panel LED7+Key3
8. H/W STANDARD PROCESSOR	RM7065 - 466MHz, CPU BUS 64-BIT 100MHz
9. CO-PROCESSOR	Marvel GT-64242A . Operating Speed Max 133MHz . MIPSInterface . SDRAM Controller . DMA Controller . PCI Controller
10. RAM	128MB SDRAM TYPE MEMORY BUS 64-BIT 100MHz
11. ROM	1MB NOR FLASH TYPE for CODE 8MB NAND FLASH TYPE for PROGRAM None for FONT
12. NVRAM	4K BIT SERIAL INTERFACE(I2C)

13. OP PANEL	LED7+Key3
14. OPTION I/F	1 SLOT for EXPANSION MEMORY 1 SLOT for NETWORK
15. OPTION RAM MODULE	SDRAM 144PIN SODIMM TYPE 128~256MB for 1 slots
16. S/W STANDARD EMULATION	POSTSCRIPT LEVEL 3 PCL6 SAMSUNG QPDL
17. FONT	AGFA ENGLISH for POSTSCRIPTS BITSTREAM ENGLISH for PCL5C None for KOREAN
18. OPTION	None
19. HOST INTERFACE STANDARD PARALLEL	IEEE1284(including ECP) B-TYPE
20. SERIAL	USB2.O
21. OPTION NETWORK	PCI-Based Ethernet 10/100BASE-TX by SAMSUNG PCI-Based Ethernet 10/100BASE-TX + W-LAN(IEEE 802.11b)

3.3 Driver Board

3.3.1 General Description

The driver board, used in the photoelectric Dry Color Laser Printer Engine, drives two or three stepping motors and motivates various fans, solenoids and clutches. It also activates sensors and transmits their signals to the main board.



3.3.2 Description of Operation

3.3.2.1 Stepping Motor Drive

1) Using two TEA3718 ICs, the driver board drives one stepping motor.
2) When driving only four OPC, the driver board drives two stepping motors. When additionally driving the yellow developer, it drives three stepping motors.

3.3.2.2 Feed / Yellow Developer Clutch Drive

According to the printing sequence and B/W printing option, the driver board puts on/off the correspondent clutch, transmitting or intercepting the power.

3.3.2.3 Pickup / MP / DUP Solenoid Drive

According to the printing sequence and Duplex(reserved) option, the driver board drives correspondent solenoid.

3.3.2.4 FAN Drive

The driver board drives the fans for Fuser and SMPS.

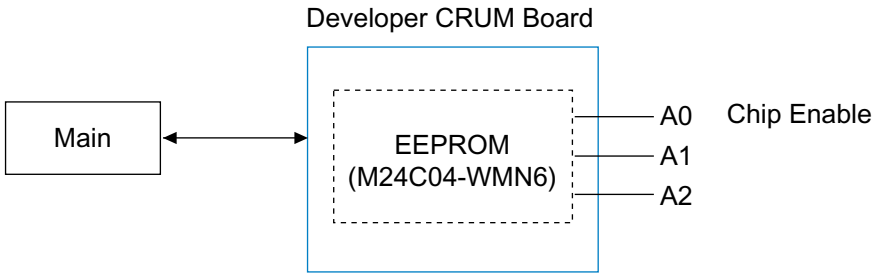
3.3.2.5 Sensor Activation

The driver board activates MP_EMPT / EXIT / EMPT / FEED Sensors and transmits their signals to the Main Board.

3.4 Deve CRUM

3.4.1 General Description

Deve CRUM, used in the photoelectric Dry Color Laser Printer developer, is mounted on the developer. It exchanges information of the developer with the main body, and at the same time identifies the qualification status and kind of the developer, and measures the amount used.



Crum Mapping Address

A2	A1	A0	CRUM
0	0	NC	Yellow Cartridge
0	1	NC	Magenta Cartridge
1	0	NC	Cyan Cartridge
1	1	NC	Black Cartridge

3.4.2 Description of Operation

3.4.2.1 Identification of the qualified developer

- The Deve CRUM makes out whether the part used is qualified or disqualified by reading the data of the EEPROM.
- When the data of the EEPROM is normal, the machine will operate normally, and when the data is abnormal or unrecognizable, it will output alarm message and stops printing.

3.4.2.2 Recognition of the color of the developer

- Through "device select code" and "chip enable input", it judges whether a correct developer with correct color is mounted or not.

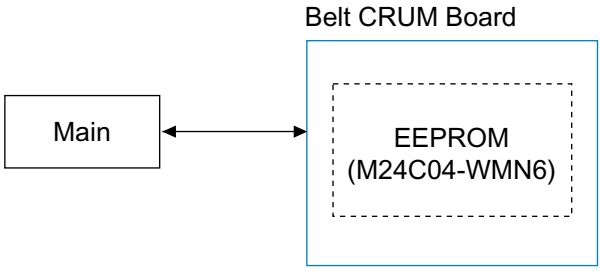
3.4.2.3 Measurement of the amount of toner used

- The Deve CRUM records the information of dot count into EEPROM, informing the amount of toner used and left over.

3.5 Belt CRUM

3.5.1 General Description

The Belt CRUM, used in the transmission belt of the photoelectric Dry Color Laser Printer, is mounted on the belt. It exchanges information of the belt with the body, identifies qualification status of the belt and measures its usage.



3.5.2 Description of Operation

3.5.2.1 Recognition of the qualified belt

- It judges whether the belt is qualified or not, by reading the data of EEPROM.
- When the data of the EEPROM is normal, the machine will operate normally, and when the data is abnormal or unrecognizable, it will output alarm message and stops printing

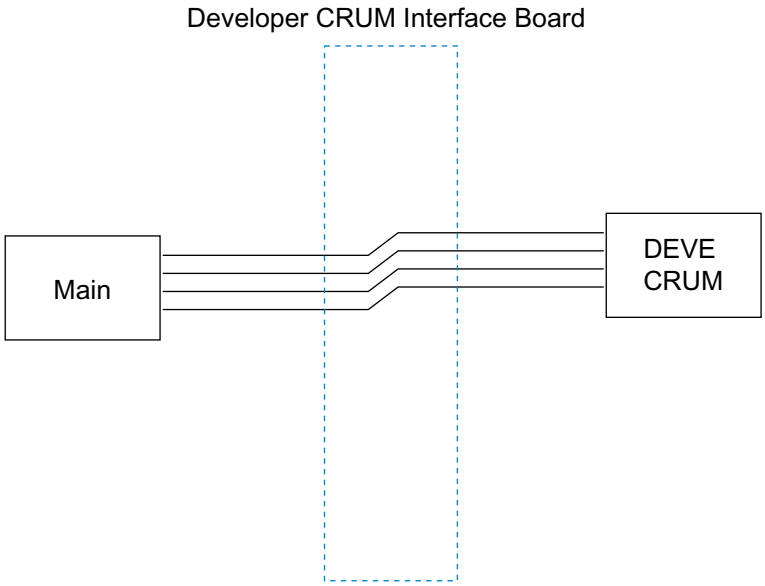
3.5.2.2 Measurement of belt usage

- By recording the rotation number of the belt into EEPROM, the belt CRUM lets you know the number used and the number that may be used.

3.6 Deve CRUM Interface board

3.6.1 General Description

The Deve CRUM interface board, used in the developer of the photoelectric Dry Color Laser Printer, is mounted on the printer body, making it possible to physically combine the body and the Deve CRUM board.



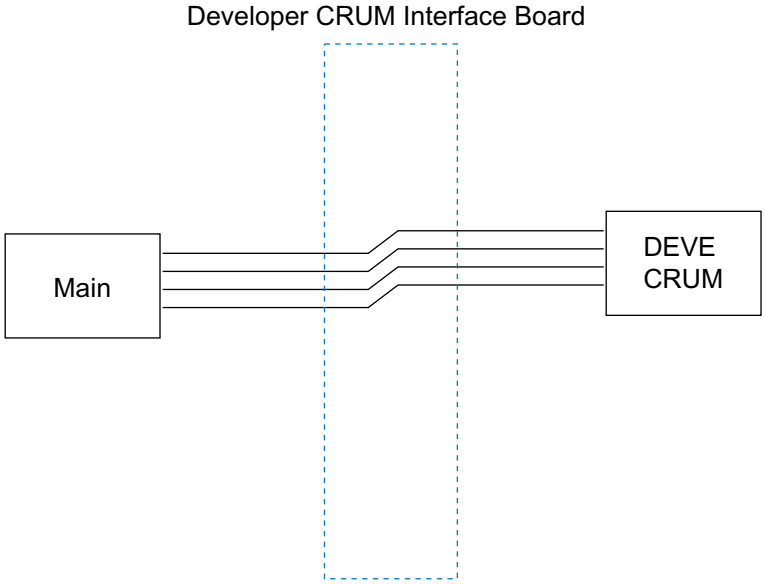
3.6.2 Description of Operation

The Deve CRUM interface board physically contacts with the DEVE CRUM Board of the developer, making connection with the Main Board.

3.7 Belt CRUM Interface board

3.7.1 General Description

The belt CRUM interface board is a transmission belt CRUM interface board of the photoelectric Dry Color Laser Printer, mounted on the printer body, making it possible to physically combine the body and the belt CRUM board.



3.7.2 Description of Operation

The belt CRUM interface board is physically connected with the belt CRUM board in the transmission belt, making connection with the Main Board.

3.8 Power Supply

3.8.1 General Description

This device is a switching power supply which operates in the fixed frequency mode with AC 220-240V of regular input. It outputs 3.3V, +5V, +24V in the range of AC input of 180V~270V and 47~63Hz, supplying 82.75W of power in the normal status, 135.55W of power in the MAX status. It prevents the machine from burning by activating protective circuit against the shortage of the load circuit and even the shortage of itself'

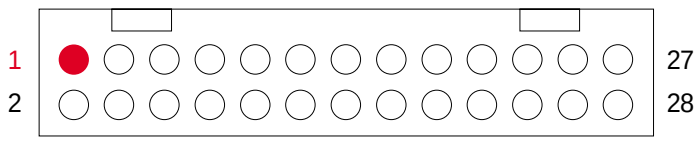
3.8.2 Description of Operation

- The AC drive part, receiving the trigger pulse of the fusing heater from the main board of the device as input signal, drives the load of the fusing heater.
- The point of contact is composed of TRIAC, the allowed voltage of the lamp is controlled by phase angle and on/off control. The timing of heater trigger pulse is decided by the feedback signal, and the lamp is stabilized by this time control.

SMPS → Engine					
Description	PIN NO	PIN ASSIGN		PIN NO	Description
Power	+24VF	1	2	+24VF	Power
Power	+24VF	3	4	+24VF	Power
Power	+24VF	5	6	AGND	+24V Ground
+24V Ground	AGND	7	8	AGND	+24V Ground
+24V Ground	AGND	9	10	AGND	+24V Ground
Power	+24V	11	12	+24V	Power
+24V Ground	AGND	13	14	AGND	+24V Ground
Power	+3.3V	15	16	+3.3V	Power
Power	+3.3V	17	18	+3.3V	Power
+3.3V Ground	+3.3V	19	20	GNDD	+3.3V Ground
+3.3V Ground	GNDD	21	22	GNDD	+3.3V Ground
+3.3V Ground	GNDD	23	24	+5V	Power
+5V Ground	GNDD	25	26	+5VL	+5V(after relay)
+5V Ground	GNDD	27	28	Fuseron	signal
출력 Connector Board In 2.0mm Pitch// Wire 24Awg Harness 길이 280mm					

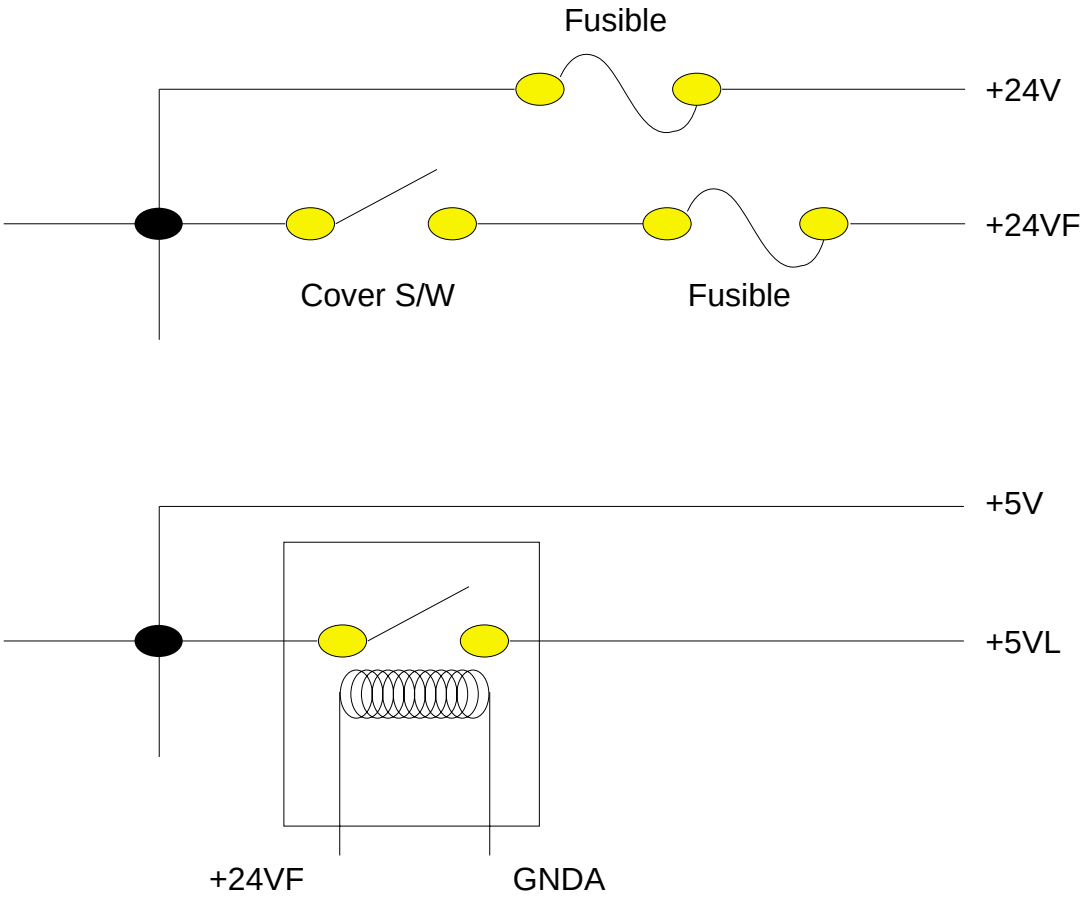
SMPS → Heater		
PIN ASSIGN	PIN NO	Description
1	Heater_T1	T1 Heater
2	AC	
Connector Type Humming type		

SMPS → COVER OPEN SWITCH		
PIN ASSIGN	PIN NO	Description
1	SMPS-> SWITCH	TOTAL 2
2	SWITCH-> SMPS	
Connector Type : AC 입력 CONNECTOR 와 동일한 TYPE 사용함.		



HRS, 2.0mm,2R, 22PIN, Straight

- 24V Out Put circuit



3.9 HVPS

3.9.1 General Description

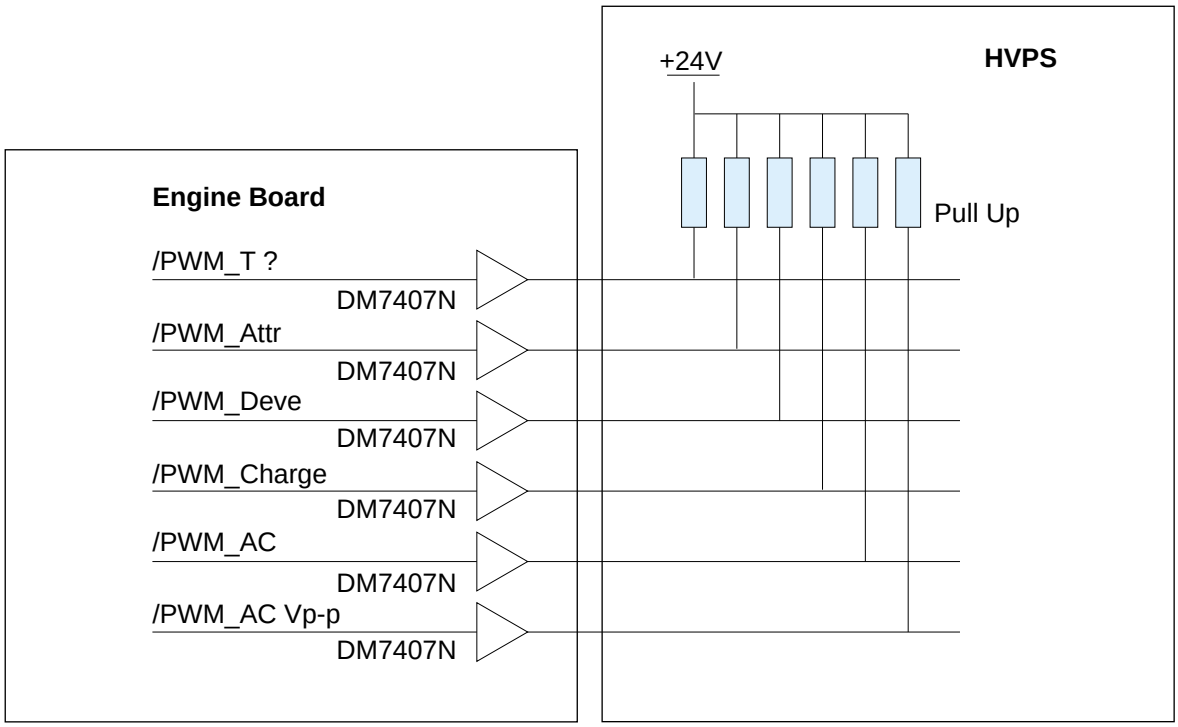
This device is a high voltage power supply system with DC +24V of normal input, which yields the high voltage output of six channels in the range of +/- 10%.

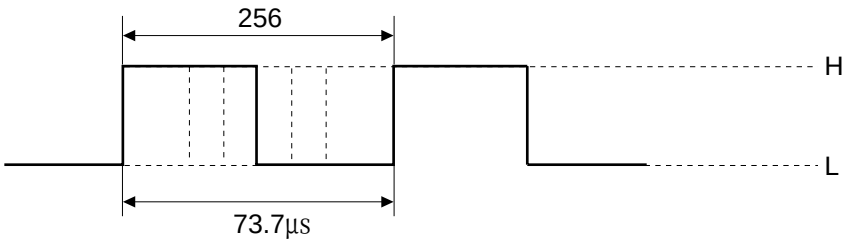
3.9.2 Input Connection (Signal_Table)

Description	I/O	Pin	Pin	I/O	Description
Power	+24V	1	2	+24V	
GND	Agnd	3	4	Agnd	
AC_Vpp PWM	PWM_AC_Vpp_Y	5	6	PWM_AC_Y	AC_Duty,f PWM
AC_Enable	ENB_Deve_AC_Y	7	8	PWM_Deve_DC_Y	AC_Enable
AC_Vpp PWM	PWM_AC_Vpp_M	9	10	PWM_AC_M	AC_Duty,f PWM
AC_Enable	ENB_Deve_AC_M	11	12	PWM_Deve_DC_M	AC_Enable
AC_Vpp PWM	PWM_AC_Vpp_C	13	14	PWM_AC_Y	AC_Duty,f PWM
AC_Enable	ENB_Deve_AC_C	15	16	PWM_Deve_DC_C	AC_Enable
AC_Vpp PWM	PWM_AC_Vpp_K	17	18	PWM_AC_Y	AC_Duty,f PWM
AC_Enable	ENB_Deve_AC_K	19	20	PWM_Deve_DC_K	AC_Enable
PWM_Charger	PWM_Charger	21	22	NC	
PWM_Trasfer	PWM_T_Y	23	24	PWM_T_M	PWM_Trasfer
PWM_Trasfer	PWM_T_C	25	26	PWM_T_K	PWM_Trasfer
PWM_Attraction	PWM_ATTR+	27	28	ENB_ATTR-	ENB_Attraction

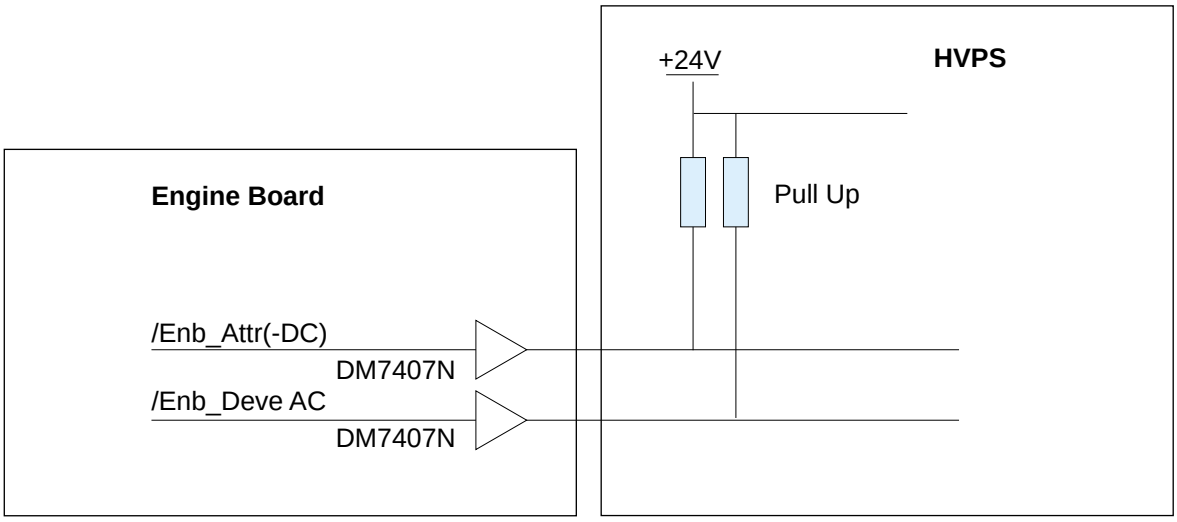
Description	I/O	Pin	Pin	I/O	Description
Trasfer_Read	A_READ_T_Y	1	2	A_READ_Charger	Charger_Read_BK
Charger_Read_Color	DGND	3	4	A_READ_ATTR	Attraction_Read
Ground	DGND	5	6	DGND	Ground
Power	+5V	7	8	+5V	Power

3.9.3 PWM Port


+24V
HVPS
Engine Board
Pull Up
/PWM_T ?
DM7407N
/PWM_Attr
DM7407N
/PWM_Deve
DM7407N
/PWM_Charge
DM7407N
/PWM_AC
DM7407N
/PWM_AC Vp-p
DM7407N


256
H
L
73.7µs

3.9.4 Attr(-DC), Enb_Deve AC Enable Part



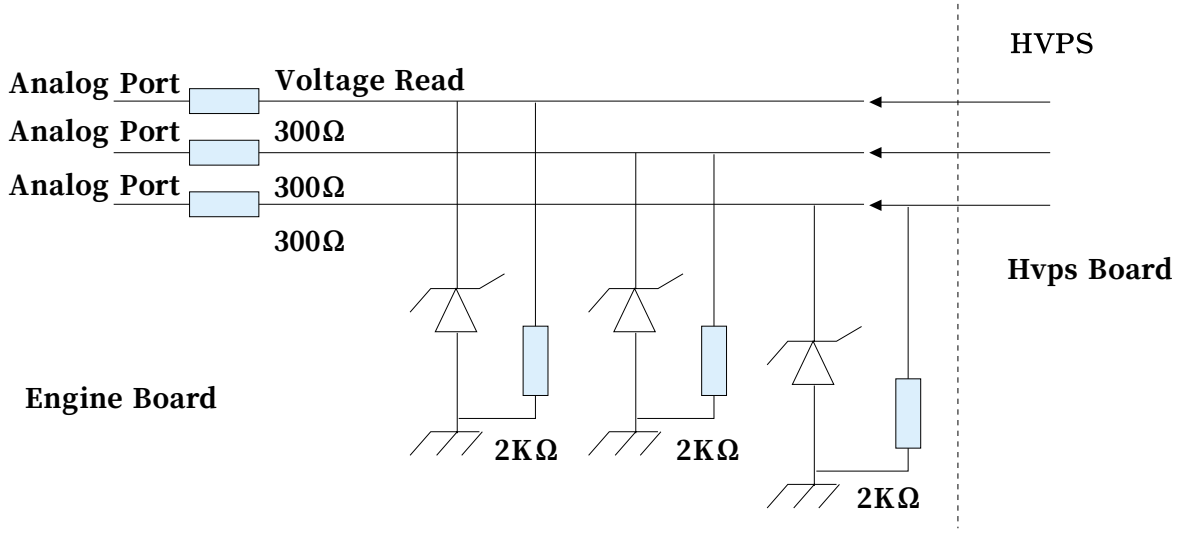
※ DM7407 → Open collector type

※ Input Signal : Active Low
- Enb_Deve AC: AC Output voltage control(High: AC Output voltage "OFF")

※ Output Signal

Output	Signal	Output	Output range	Load area	Input Tolerance	Temperature Tolerance
ATTR(-DC)	DC-	-900V	500V ~ 1300V	60MΩ~ 800MΩ	±3%	±3%

3.9.5 T_Y READ (1st tramsfer sensor), Ch_READ (Charger voltage sensor), Attr_Read (attraction+voltage sensor)

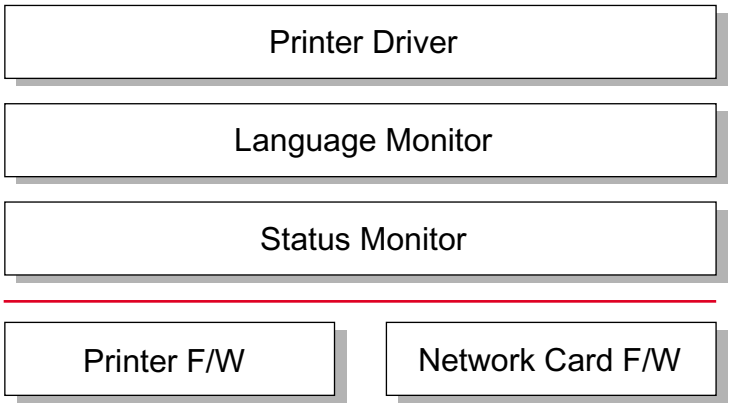


Item	Output Type	Output range(ADC value)	Output Load
T_Y Read	Analog Type	146	80M, 50%(1171V Supply)
Attr+_ Read	Analog Type	146	80M, 50%(1171V Supply)
Ch_ Read	Analog Type	135	40M, 50%(1260V Supply)

4. S/W Structure and Descriptions

4.1 Architecture

The belt CRUM interface board is a transmission belt CRUM interface board of the photoelectric Dry Color Laser Printer, mounted on the printer body, making it possible to physically combine the body and the belt CRUM board.



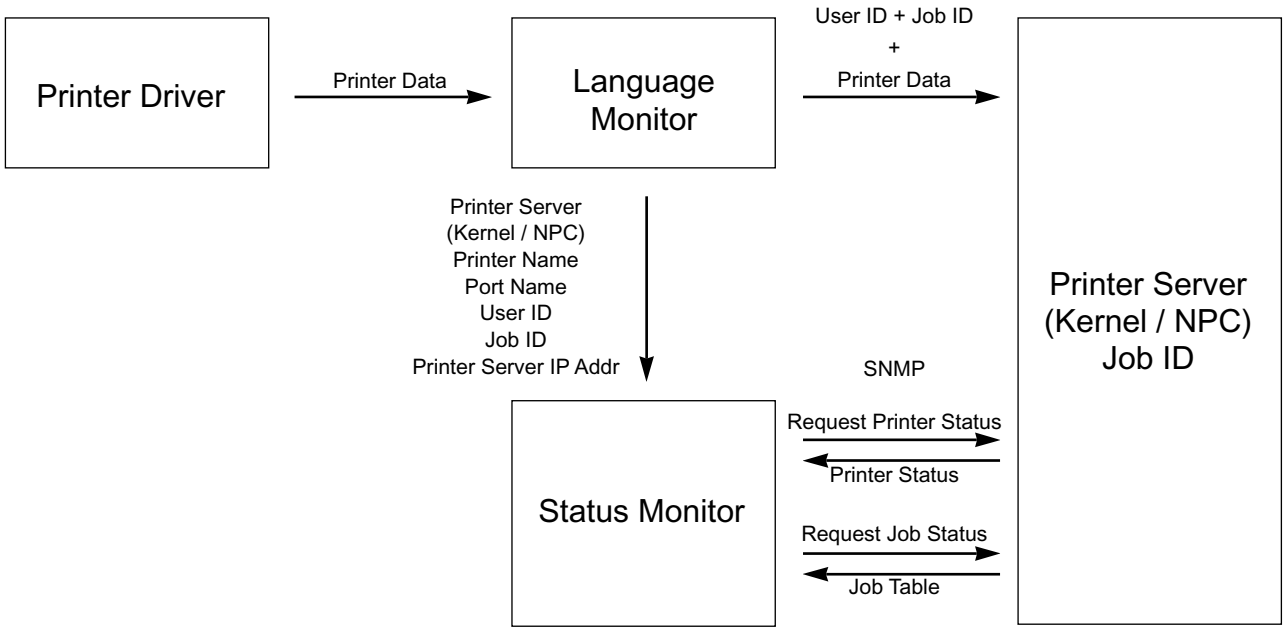
4.2 Language Monitor

Language Monitor is a part of the Printer Driver and the Windows Spool System. The main roll of the Language Monitor is that sends a job start message to the Status Monitor. Therefore the Status Monitor can start polling to get the printer status.
The second roll is that sends the job information such as User ID and Job ID to the Status Monitor and the Printer F/W. Hence the Status Monitor can stop polling because the Printer F/W informs the Status Monitor that printing job is complete.

4.3 Status Monitor

Status Monitor has no user interface. It shows only HTML help when any error occurs during printing jobs.

4.4 Network Interface

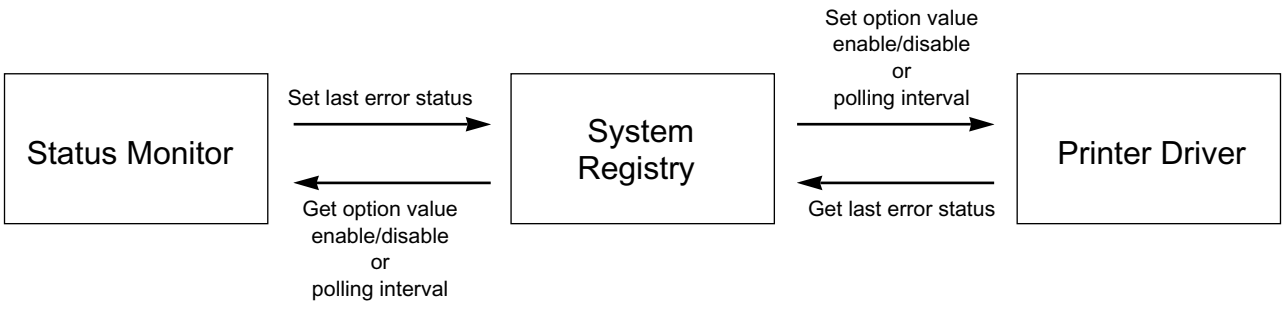


Status Monitor Data Flow

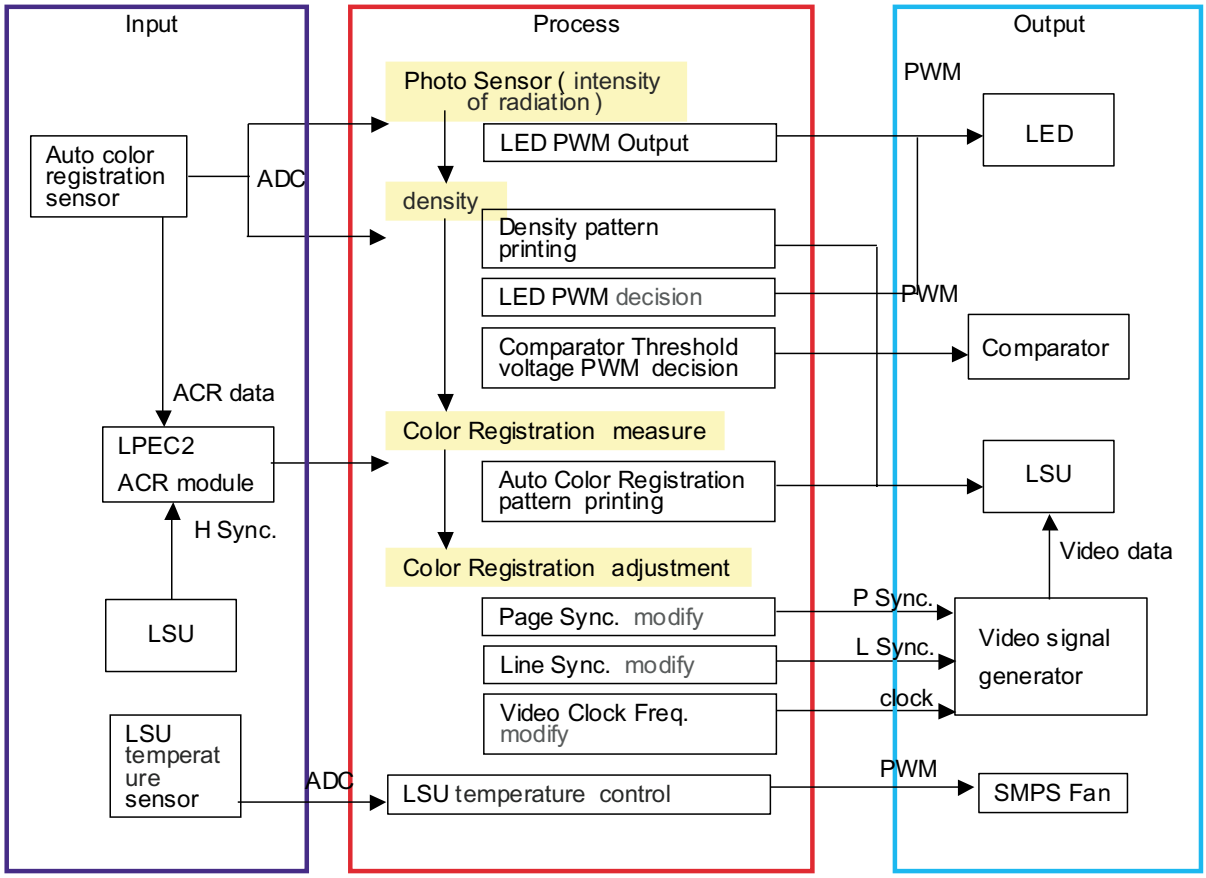
After polling is started, Status Monitor has to know when it stops the polling. For this reason, the Network
Printer Server should inform of completing job when the printing job is finished.
When Status Monitor requests a job status, the Printer Server returns the job table that contains user id, job
id, and job status (printing or complete or canceled).

4.5 Printer Driver <-> Status Monitor

The Printer Driver and the Status Monitor can set/get some data to the system registry to share the Status Monitor information such as the polling interval.
When the user wants to set the option of the Status Monitor manually, he or she can set it using the Printer Driver User Interface. So, if the user set option that the Status Monitor is disabled, the Status Monitor can's show HTML Help to the user although the error has occurred while printing.



4.6 System F/W Flow



4.7 Alarm Shortage

	90 ~ 100 %	100 ~ 110 %	110 %~
Toner (C,M,Y,K)	Ready Yellow Toner Low	Replace Yellow Toner	Yellow Toner Empty
Transfer Belt	Replace Transfer Belt Soon	Replace Transfer Belt	
Fuser	Replace Fuser Soon	Replace Fuser	
Pickup Rollers (MP/Tray1/Tray2)		Replace MP Pick-Roller	

4.8 Error status

1. Missing/Invalid Consumables
   - Install Cyan (Magenta, Yellow, Black) Toner
   - Install Transfer Belt
   - Invalid Cyan (Magenta, Yellow, Black) Toner
   - Invalid Transfer Belt

2. Paper Empty/Mismatch
   - Paper Empty In MP(Tray1, Tray2)
   - Load A4 In MP(Tray1, Tray2)

3. Paper JAM
   - Jam 0 In MP(Tray1, Tray2)
   - Jam Inside Printer
   - Jam In Exit Area

4. Cover
   - Cover Open : Message toggles between
     "Cover Open" and "Install Transfer Belt"
   - SCF Cove Open

5. Service Call : Unrecoverable Error
   - Engine LSU Error
   - Main Motor Error / Dev. Motor Error
   - Engine Fuser Over(Low) Heat Error
   - Rear Fan Error / Left Fan Error / SMPS Fan Error

6. Others
   - Memory Overflow Error
   - Ready IP Conflict

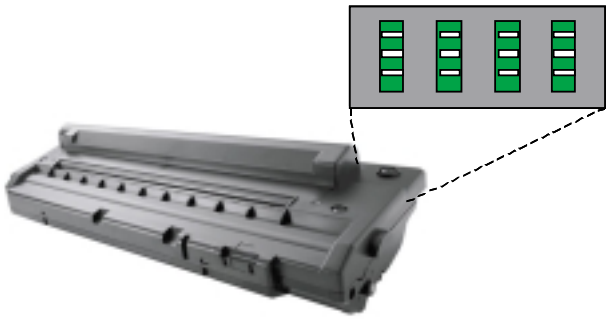
4.9 CRUM Overview

- Stands for "Customer Replaceable Unit Monitor"

- EEPROM is used for CRUM Memory.

- CRUM stores various information on consumables (including consumables' life).

- In CLP600, total five CRUM's are used (four on toner cartridges and one on transfer belt)



CRUM stores the following information

· Model Name
· Supplier ID
· Serial Number
· Company ID
· MFG Date
· Capacity
· Page Count
  - Toner Cartridge and Transfer Belt
  - Indicates how many pages are printed by using the consumable

· Dot Count
  - Toner Cartridge Only
  - Indicates how many dots are printed by using the toner cartridge

4.10 FW Upgrade

· Via USB or Network (SWS/SWAS)

· You can upgrade F/W via USB or Network whenever the printer is "Ready"

· Via Using F/W Download Mode :
  Step 1) Power on while pressing the Online Key
  Step 2) Press Online Key one more time if "Press Key Again" is displayed on LCD
  Step 3) Download F/W via USB

5. Disassembly and Reassembly

5.1 Precautions when replacing parts

5.1.1 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.

5.1.2 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

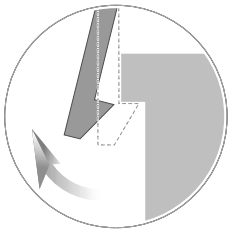
1. Disconnect power connectors first, before disconnecting other cables
2. Do not touch any soldered connections, connector terminals or other electronic parts when handling insulated parts.

>> 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.

5.1.3 Releasing Plastic Latches

Many of the parts are held in place with plastic latches. The latches break easily; release them carefully.
To remove such parts, press the hook end of the latch away from the part to which it is latched.



5.2 Parts for Maintenance and Repair

5.2.1 Replacement interval for parts with a limited life

Some of the parts in this printer have a limited life, shorter than that of the whole machine. These parts must be replaced periodically.
The table below shows the interval at which these parts should be replaced.
The table shows the life of each part, and is measured when using A4 paper. When servicing a machine always check the status of these parts using the control panel and ensure that parts are replaced at the appropriate times otherwise a general degradation in print quality will occur.

COMPONENT	REPLACEMENT CYCLE	REMARK
Toner Cartridge (C/M/Y/K)	intial (2,000 pages@5% coverage) replacement (4,000 pages@5% coverage)	User replace
PTB Unit(Paper transfer belt)	Black/Color : (35,000 pages@5% coverage)	User replace
Pick-Up Roller	50,000 pages - MP Pick-Up Roller, - Cassette Tray1 Pick-Up Roller - SCF Tray2 Pick-Up Roller	Engineer
Fuser Unit	50,000 pages	User replace

The life span of each of these parts is stored in memory. The amount of each 'life' used can be checked at any time using the control panel.
When a part is replaced it is necessary to reset the 'life used' that is stored in memory.

* How to initialize a the value of part's life span:
From the control panel, select the following items in order:
Menu-Setup - Maintenance - Check other - (Select a desired part) - Reset

5.2.2 Printer Cleaning

A printer should be regularly cleaned, especially if it is used in a dusty environment. This will ensure that print quality remains high and failure due to contamination of printing services is less likely to occur.

* Clean the printer with a soft, lint free, cloth dipped in a "Recommended cleaner" "Recommended cleaner" can be purchased from our service center. (where available)

* Do not touch the transfer roller when cleaning the inside of the printer. Grease and oils from the skin will contaminate the surface and reduce print quality.

* Do not touch transfer roller when cleaning inside of machine. If transfer roller gets dirty, printing quality could be low.

* Please refer to the User Manual for cleaning instructions.

5.3 Information Related to Disassembly and Assembly.

5.3.1 Special service parts

Never disassemble or adjust the items mentioned, a stock of these items should be maintained.

1) Disassembly of the LSU unit

There are no serviceable parts inside the LSU. Alignment of the mirrors is critical. Opening the LSU will allow dust into the laser and significantly reduce print quality. It is very dangerous to operate or service a machine with the LSU open or system interlocks disabled. Exposure to laser radiation can cause blindness.

2) Disassembly of the PTB unit

Do not disassemble the PTB. The alignment of the home sensor is critical and is set up in the factory on a special jig. Incorrect re-assembly will cause print quality degradation.

3) Care of the Toner cartridge

Toner cartridges contain an extremely fine powder. Please keep toner cartridges away from children. The toner powder contained in the toner cartridge may be harmful and if swallowed you should contact a doctor. Take care not to spill toner - spillages should be cleaned with a vacume cleaner and washed in could water (hot water sets the toner). Do not touch the developer roller surface as contamination will reduce print quality. Take care not to damage the roller's surface when installing or removing a toner cartridge.

4) Disassembly of DEVE drive ass'y and the main drive ass'y

The alignment of the drive mechanism is critical and it has been set up in factory using a jig and a driving gear. It is adjusted for the best gearing alignment. If the motor is disassembled alignment would not be maintained and this could cause operational noise and image problems: image alignment and toner distribution may be affected.

5) Disassembly of terminal parts

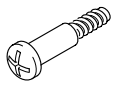
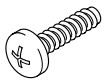
Do not adjust the variable resistors on the PBA. They have been already adjusted in the factory.

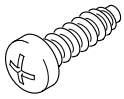
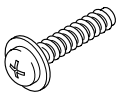
6) Disassembly of the fuser unit

- The fuser melts toner onto the paper at a high temperature: therefore, you need to take special care not to get burned by a hot fuser. When removing the fuser from a set that has recently been operating you need to take extra care.
- Do not touch an AC line (Copper contact) on a main frame even after removing the fuser.

5.3.2 Screws used in the printer

The screws listed in the table below are used in this printer. Please ensure that, when you disassemble the printer, you keep a note of which screw is used for which part and that, when reassembling the printer, the correct screws are used in the appropriate places.

NO	SEC CODE	DESCRIPTION & SPECIFICATION	LOCATION	QT'Y
S1 	6009-001396	SCREW-SPECIAL;PH,+,-,M3,L10.3, ZPC(BLK),SWRCH18A,B TITE,-	PTB Draw Connector	2
S2 	6003-000269	SCREW-TAPTITE;BH,+,-, S,M3,L6,ZPC(YEL),SWRCH18A,-	BRACKET-CONT LOWER + Assy Network Card	2
			BRACKET-CONT LOWER + BRACKET-CONT UPPER	4
			BRACKET-CONT LOWER + MAIN PBA	4
			BRACKET-CONT UPPER + BRACKET-POWER	2
			SUB MAIN FRAME + BRACKET-CONT LOWER	2
			SUB MAIN FRAME + UNIT SMPS	2
			BRACKET-CONT UPPER + IPR-SHIELD SIMM	1
			BRKT-SHIELD SMPS + SMPS type5 + Fuser BD	8
			FRAME-FRONT + FRAME-REAR + FRAME-BOTTOM	4
			SUB MAIN FRAME + PBA DRIVE	3
			MEA-FRAME BASE + CHANNEL FRAME BASE	3
S3 	6003-000275	SCREW-TAPTITE;BH,+,B,M3,L10,BLK, SWCH1018AK	MAIN FRAME + COVER-REAR	4
			DRAW CONNECTOR	2
S4 	6003-001086	SCREW-TAPTITE;BH,+,B,M3,L12, ZPC(BLK),SWRCH18A	SUB MAIN FRAME + BRACKET-MPF	1
			SUB MAIN FRAME + SUB PICK-UP	1
			UNIT MPF + BRACKET-MPF	1
			MEA-ASSY-MPF + GUIDE-PAPER-MP	2
			MEA-UNIT FRAME BASE + MEA-ASSY-MPF	3
S5 	6003-000261	SCREW-TAPTITE;BH,+,B,M3,L6, ZPC(YEL),SWRCH18A	HOUSING-OPC	8
S6 	6003-000282	SCREW-TAPTITE;BH,+,B,M3,L8, ZPC(BLK),SWCH10	F/M_Upper-Fuser + C/M_Carbon-Brush	2
			FRAME ASSY	28
			FRAME-PTB ASS'Y	28
			COVER-M-OP FRAME LED + Cover DECO	4
			COVER-M-OP FRAME LED + LED PBA	7

NO	SEC CODE	DESCRIPTION & SPECIFICATION	LOCATION	QT'Y
			COVER EXIT + Cover Actuator Sensor	1
			Cover Exit + COVER- AIR-DUCT	1
			FRAME MAIN + GUIDE RAIL REAR	6
			FRAME-MAIN + ELA UNIT-BRKT-DRAW	1
			FRAME-MAIN + ELECTRODE-HV D	1
			FRAME-MAIN + HOUSING-SENSOR EXIT	1
			FRAME-MAIN + MEA UNIT-DUCT-REAR	2
			FRAME-MAIN + PLATE-GROUND FUSER	1
			FRAME-MAIN + PLATE-GROUND OPC	2
			COVER FUSER AC + HOLDER-_M_MIDDLE PART	4
			GUIDE-TERMINAL CH + GUIDE-PTB TERMINAL	1
S7 	6003-001256	SCREW-TAPTITE;BH,+,B,M4,L10,NI PLT,SWRCH18A	SUB MAIN FRAME + COVER LEFT	2
			SUB MAIN FRAME + COVER TOP	2
			SUB MAIN FRAME + UNIT LSU	3
			FRAME FRONT/REAR + SUB FRAME BASE	4
			SUB FRAME + SUB FRAME BASE	4
			MEA-FRAME BASE + ELA-Guide-SCT-paper	2
			MEA-UNIT FRAME BASE + BRACKET-POWER	1
			MEA-UNIT FRAME BASE + MEA-ASSY-PICKUP	5
S8 	6003-000301	SCREW-TAPTITE;BH,+,S,M4,L6, ZPC(YEL),SWRCH18A	BRKT main front + BRKT main rear	6
			BRKT main rear + Motor	10
			BRACKET-P-POWER + Power Inlet GND wire	1
S9 	6002-000308	SCREW-TAPTITE;PH,+,B,M2.6L6, ZPC(YEL),SWRCH18A,-	COVER-OP-FRAME-LCD + LCD PBA	2
S10 	6003-000196	SCREW-TAPTITE;PWH,+,B,M3, L10,NI PLT,SWRCH18A	SUB MAIN FRAME + COVER DECO	4
			SUB MAIN FRAME + COVER-LEFT-HANDLE	2
			SUB MAIN FRAME + COVER-TOP	3
			SUB MAIN FRAME + DRIVE unit	6
			SUB MAIN FRAME + HOUSING MIDDLE PART	2
			SUB MAIN FRAME + HVPS PBA	6
			SUB MAIN FRAME + LINK FRONT(COVER RIGHT)	1
			UNIT DUCT LEFT + HOUSING MIDDLE PART	1
			COVER_FRAME-FUSER + BRACKET_GUIDE-FRAME	2
			COVER_M_EXIT-ROLLER + COVER_M_SIDE-L/R	2

NO	SEC CODE	DESCRIPTION & SPECIFICATION	LOCATION	QT'Y
			FRAME_LOWER-FUSER + FRAME_UPPER-FUSER	2
			FRAME_M_LOWER FUSER + HOLDER_M_SPRING PR	2
			FRAME_M_LOWER-FUSER + COVER_M_SIDE-L	1
			FRAME_M_LOWER-FUSER + COVER_M_SIDE-R	1
			FRAME_M_LOWER-FUSER + GUIDE_M_INPUT	2
			FRAME_M_UPPER-FUSER + SHEET-DUMMY	1
			FRAME_M_UPPER-FUSER + THERMISTOR-NTC	1
			FRAME_M_UPPER-FUSER + THERMOSTAT	2
			FRAME_UPPER-FUSER + Bracket_Idle-Gear	1
			FRAME_UPPER-FUSER + ELECTRODE_TERMINAL L	1
			FRAME_UPPER-FUSER + ELECTRODE_TERMINAL R	1
			FRAME_UPPER-FUSER + GROUND_P_FUSER-BALL	1
			FRAME_UPPER-FUSER + PBA-FUSIBILITY	1
			GUIDE_M_OUTPUT + GUIDE_M_DUPLEX	2
			Cover right + Holder Link	2
			Cover right + Holder Lower F	3
			Cover right + Holder Lower R	2
			Cover right + Holder Upper F	1
			Cover right + Holder Upper R	1
			FRAME-CASSETTE + GEAR-PINION	1
			FRAME-CASSETTE + GUIDE-FRONT CASSETTE	2
			SUB MAIN FRAME + FRAME-FRONT/FRAME-REAR	4
			FRAME MAIN + ELA UNIT-Deve-Terminal	4
			FRAME MAIN + ELA UNIT-PTB-Terminal	3
			FRAME MAIN + GUIDE RAIL FRONT	2
			FRAME MAIN + SUB-HOLDER-AC	2
			SUB MAIN FRAME + COVER EXIT GUIDE	2
			Sub Main Frame + Link Rear 1	1
			MEA FRAME BASE + MPF unit(right)	1
			MEA-UNIT FRAME BASE + CAM-CATCH	1
			MEA-UNIT FRAME BASE + IPR-BRKT BASE BAR	3
			BRKT-GEAR-TRAY + BRKT-HOLDER-PICKUP	1
			FRAME-BASE-MP + BRACKET-GEAR-TRAY	1
			FRAME-BASE-MP + PLATE-GROUND BRACKET	1

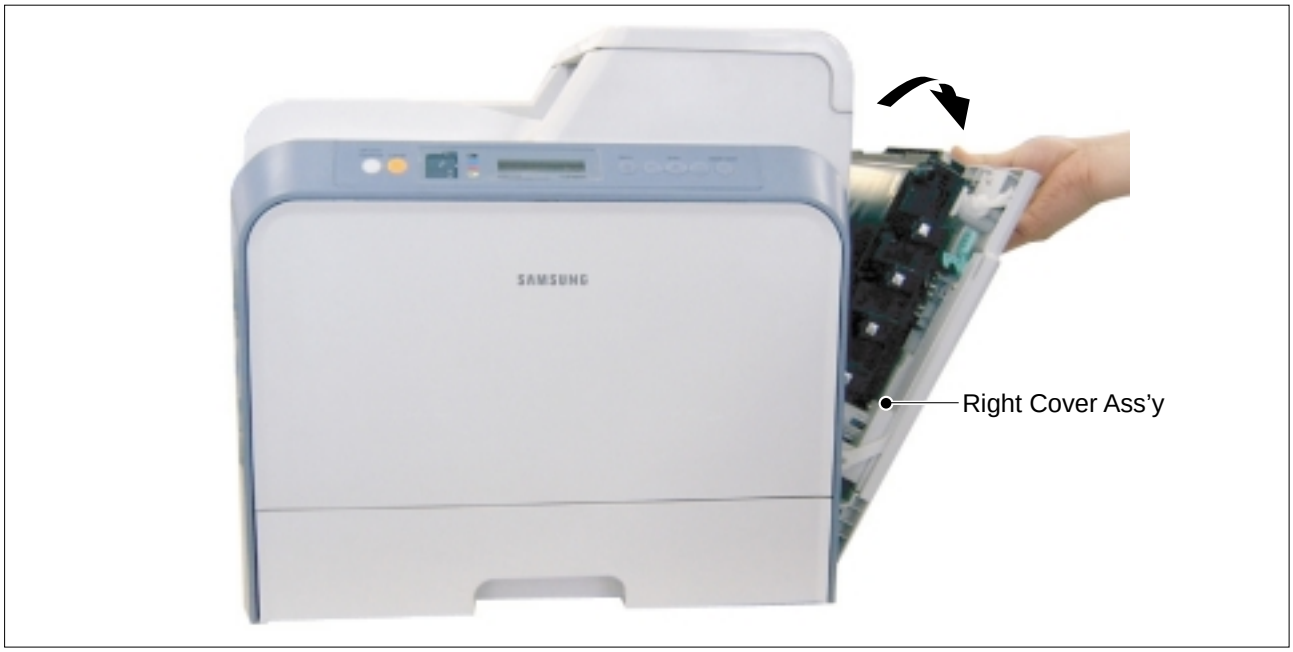
NO	SEC CODE	DESCRIPTION & SPECIFICATION	LOCATION	QT'Y
			MPF UNIT ASS'Y + SOLENOID	1
			FRAME-P-REGI + COVER-M-REGI-FRAME	2
			FRAME-P-REGI + FRAME-PICK-UP	4
			FRAME-PICK-UP + GUIDE-GEAR-BRACKET	3
			SOLENOID-MAIN + GUIDE-GEAR-BRACKET	1
			HOLDER SENSOR + FRAME-P-REGI	1
S11 	6003-000264	SCREW-TAPTITE;PWH,+,B,M3, L6,ZPC(YEL),SWRCH18	COVER-INNER-MP + GEAR-PINION	1

5.3.3 Opening Covers and replacing Consumable parts

This section shows you how to open the Right Cover Ass'y and how to remove and replace the consumable parts(Toner Cartridge, PTB unit).

>> Consumable parts removal

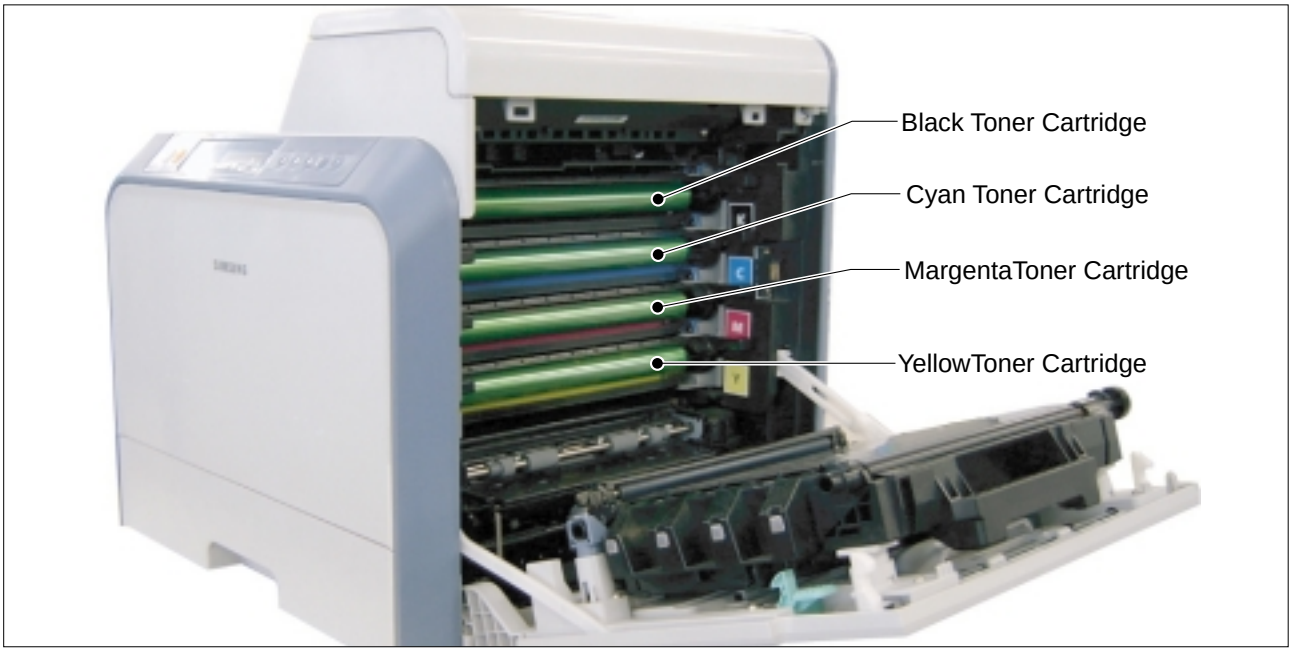
1. Pull the side handle to open the Right Cover Ass'y and then press down firmly unit the Toner Cartridges are ejected.



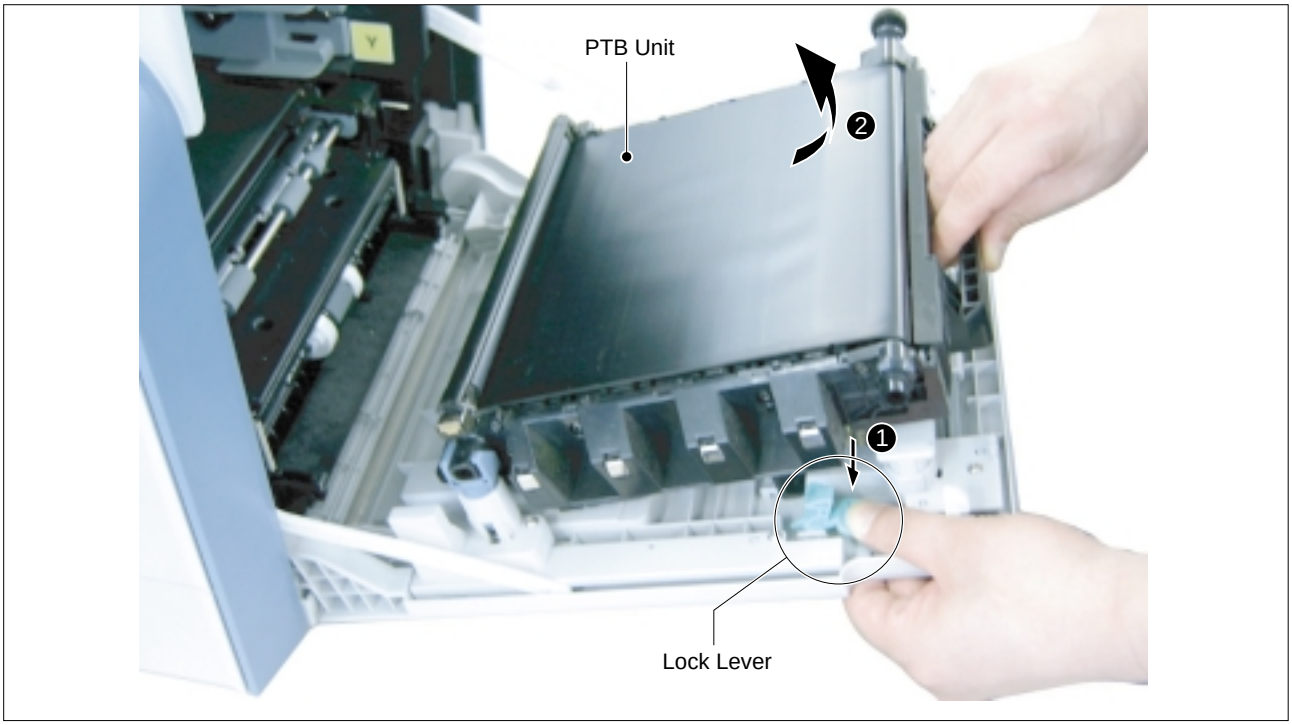
2. Removing a Toner Cartridge(K, C, M, Y)

NOTICE : Take care not to damage the rollers.
Keep the Toner Cartridge on the flat surface.

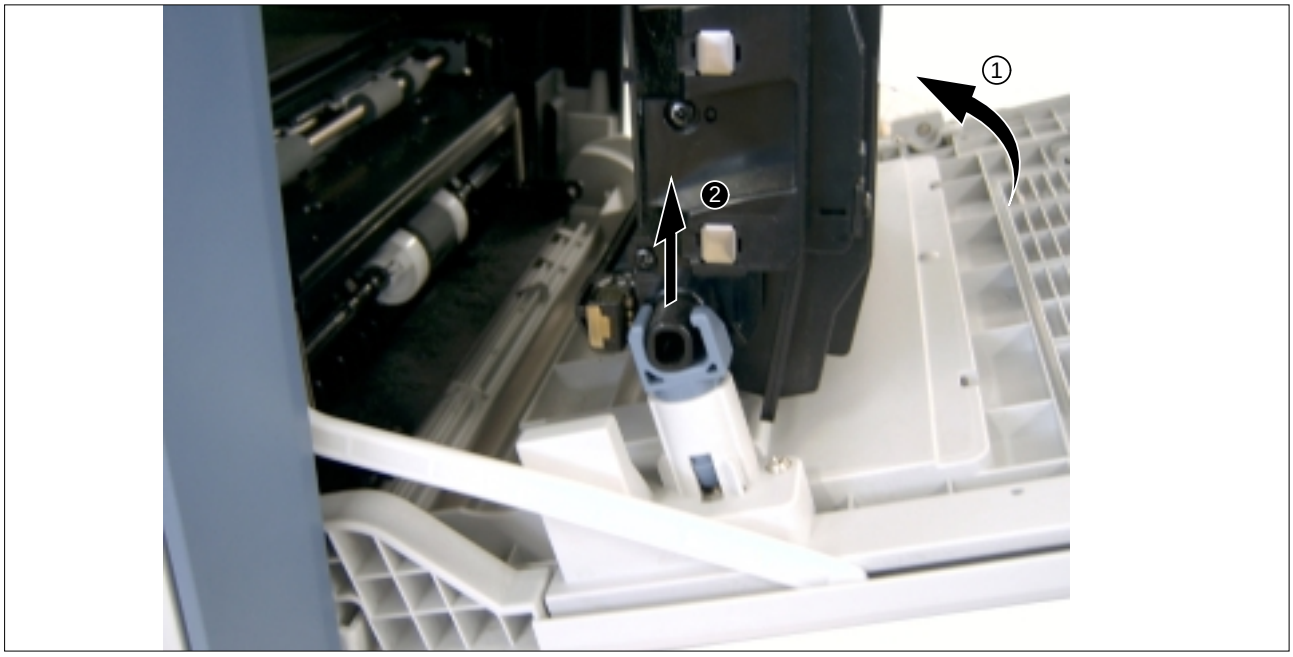
3. The Toner Cartridges are located, as shown below.



4. PTB Unit by releasing the PTB Lock Lever on left side of the Right Cover Ass'y.



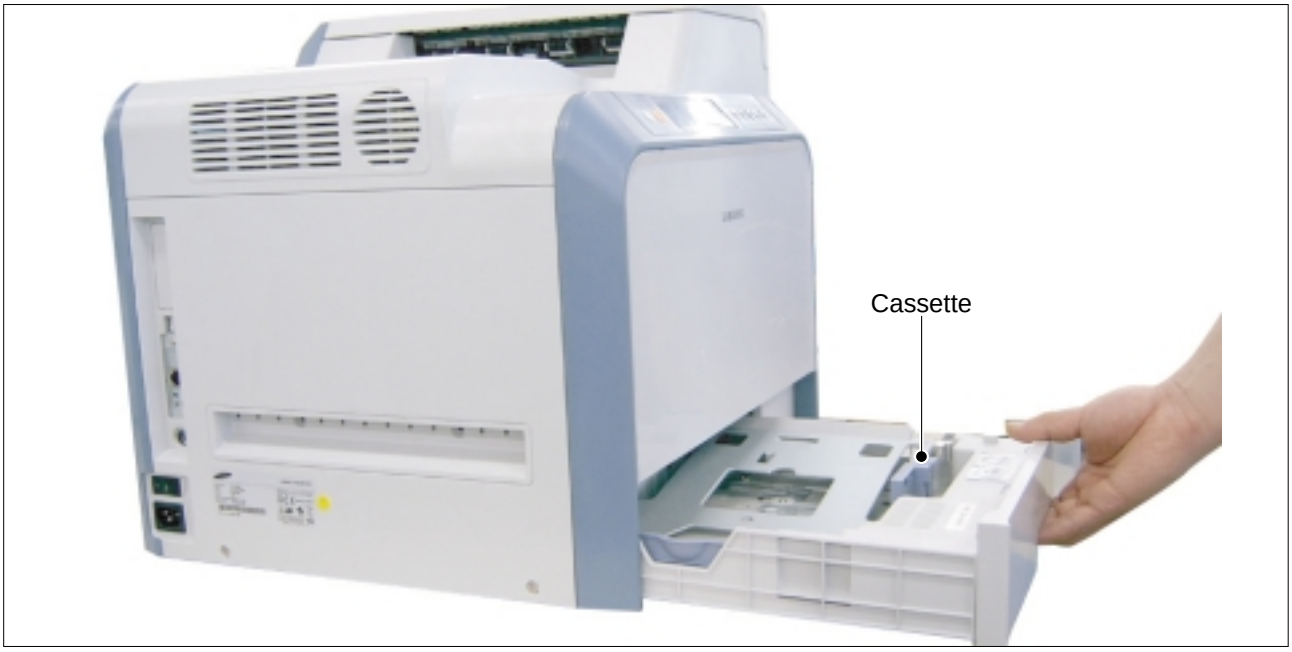
5. Take out the PTB Unit, as shown below.



5.4 Disassembly Procedure

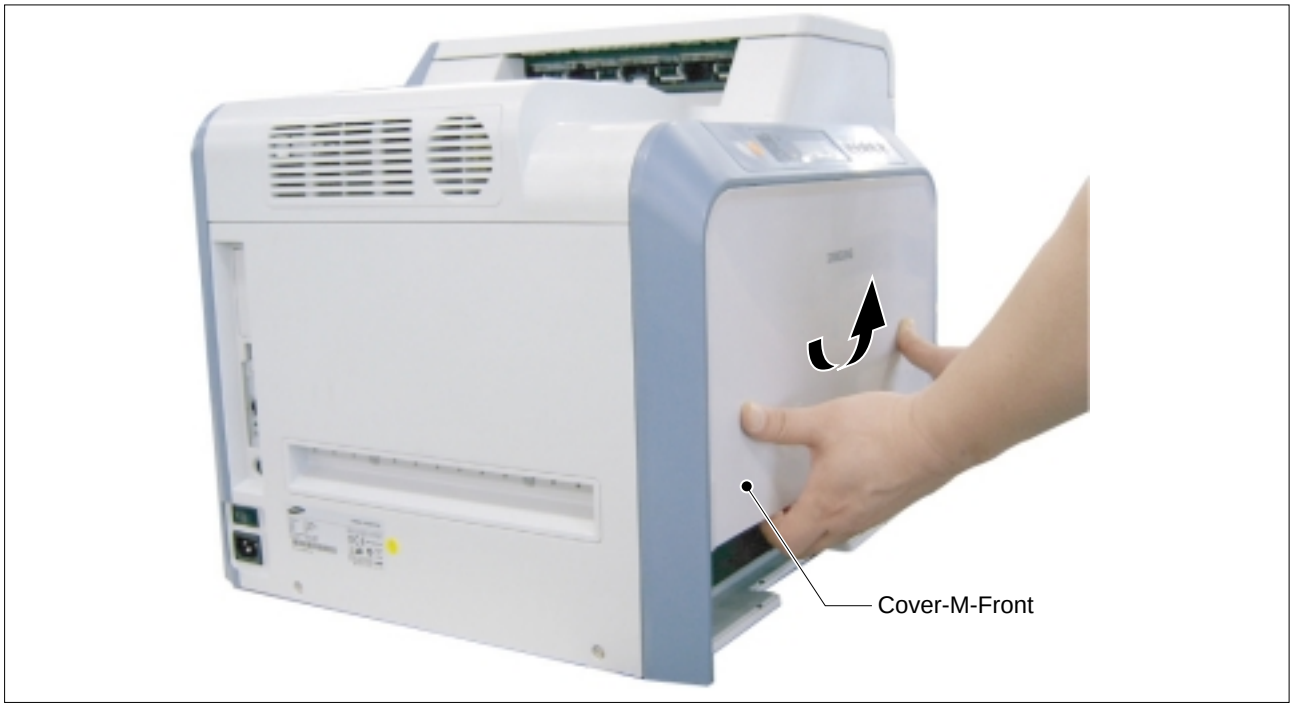
5.4.1 Front Cover Ass'y

1. Pull the Cassette out of the printer.

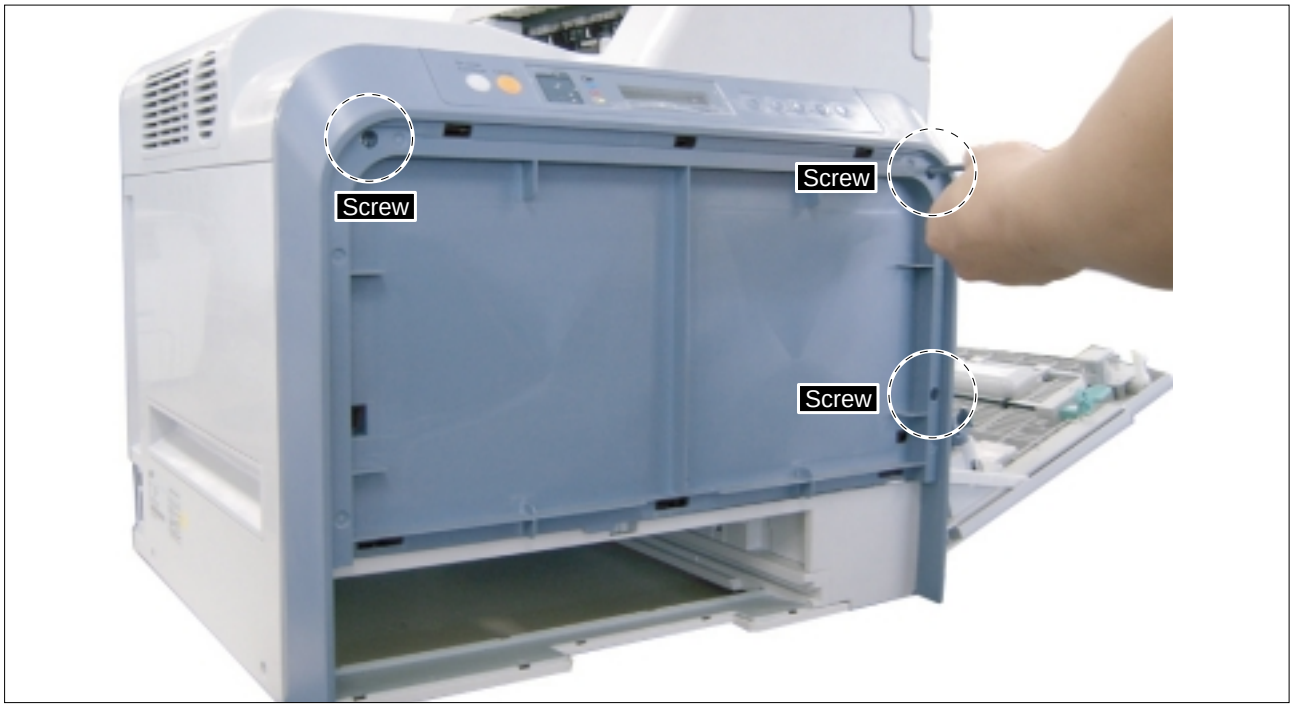


2. Carefully release the three Hooks using a flat bladed screwdriver, as shown below.

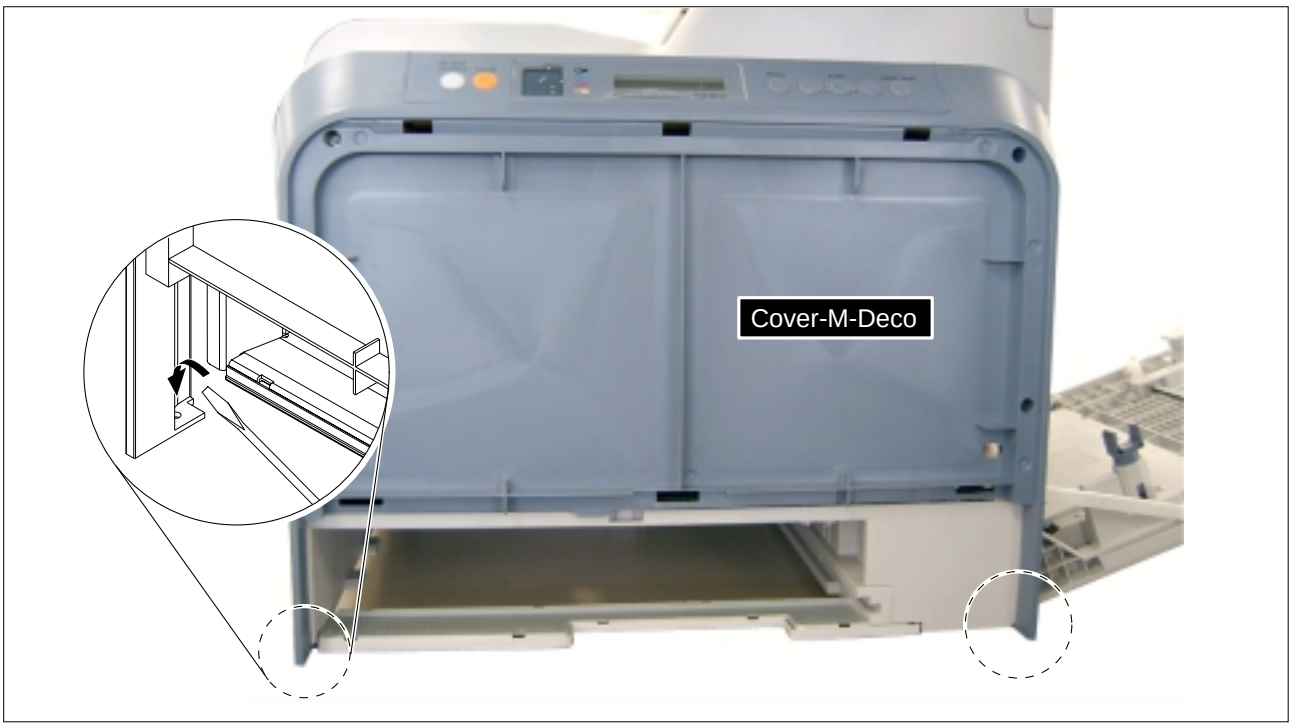
3. Remove the Cover-M-Front in the direction of arrow, as shown below.



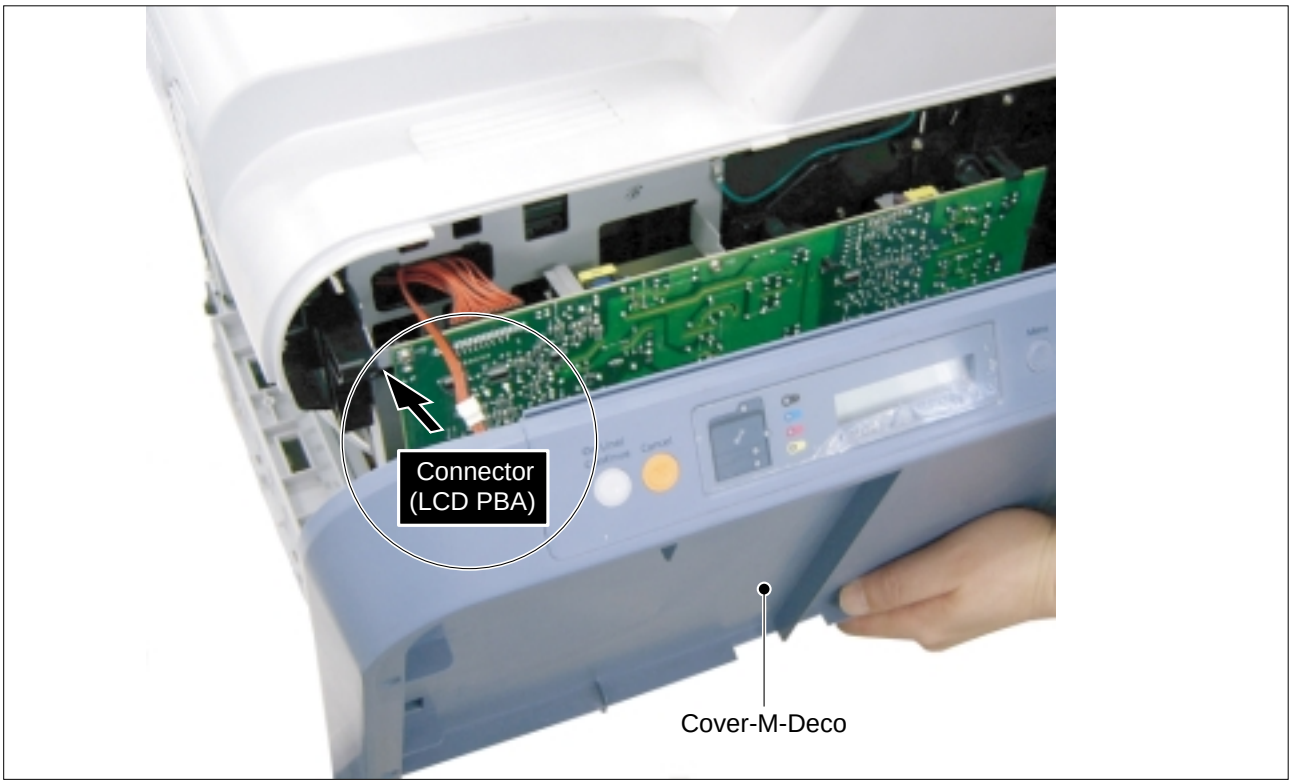
4. Remove the three screws located inside the Cover-M-Deco.



5. First lift the printer, carefully release the Hooks on the both side using a flat bladed screwdriver and then remove the Cover- M-Deco.



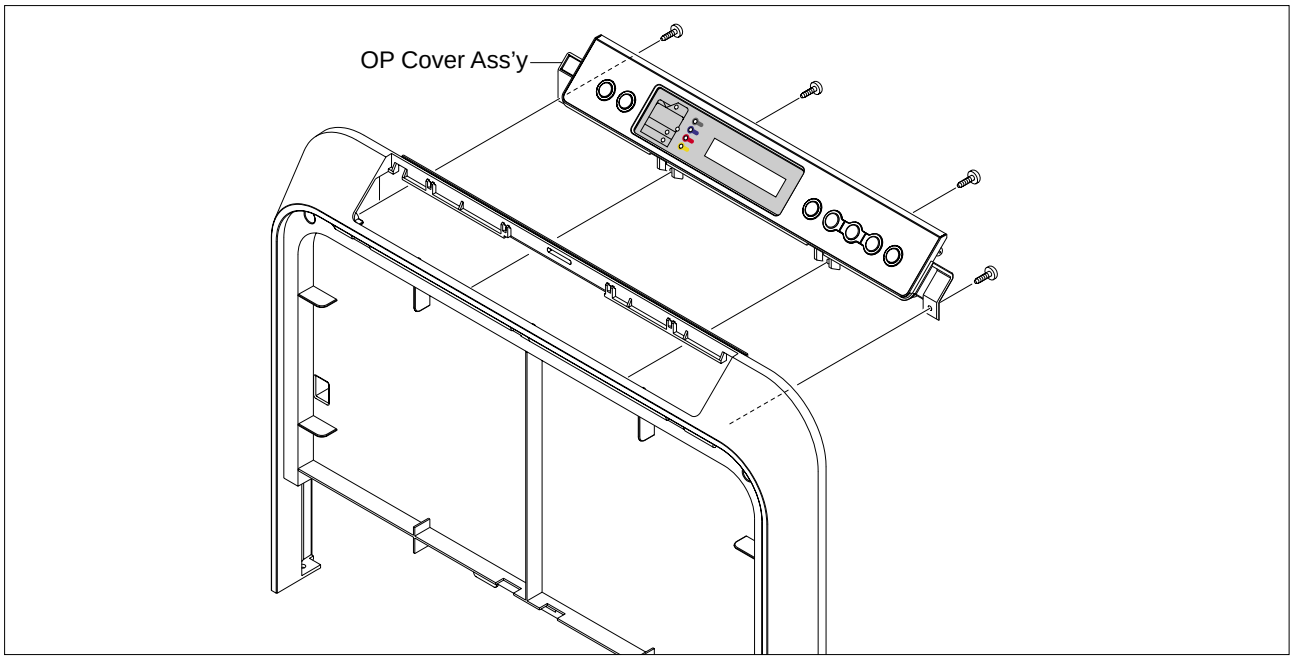
6. Take care to unplug the one connector from the LCD PBA.



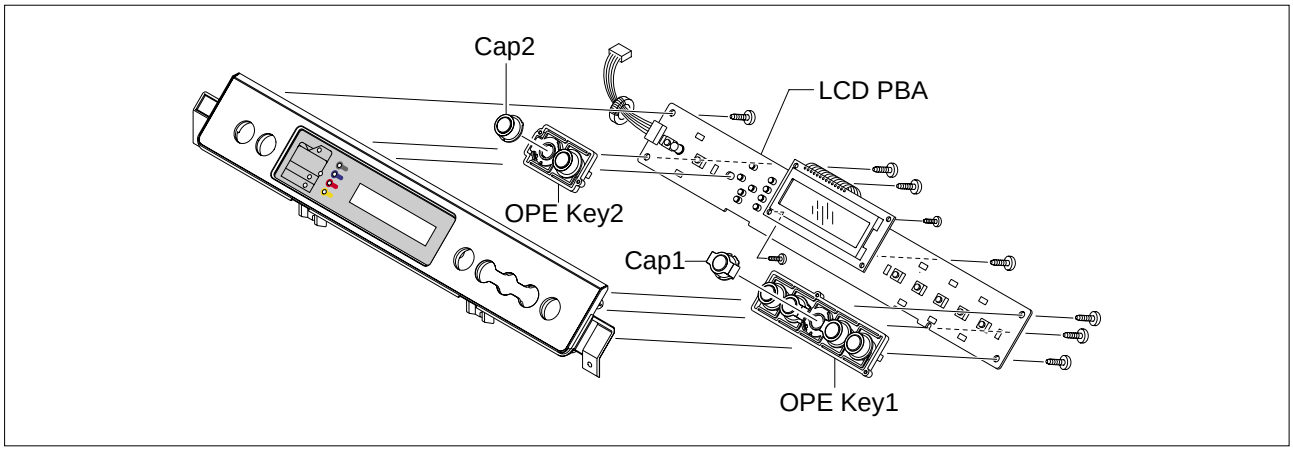
5.4.2 OP Cover Ass'y

>> Before disassembling it :
* Remove the Front Cover Ass'y (Refer to 5.4.1)

1. Remove the four screws from the OP Cover Ass'y and remove it.

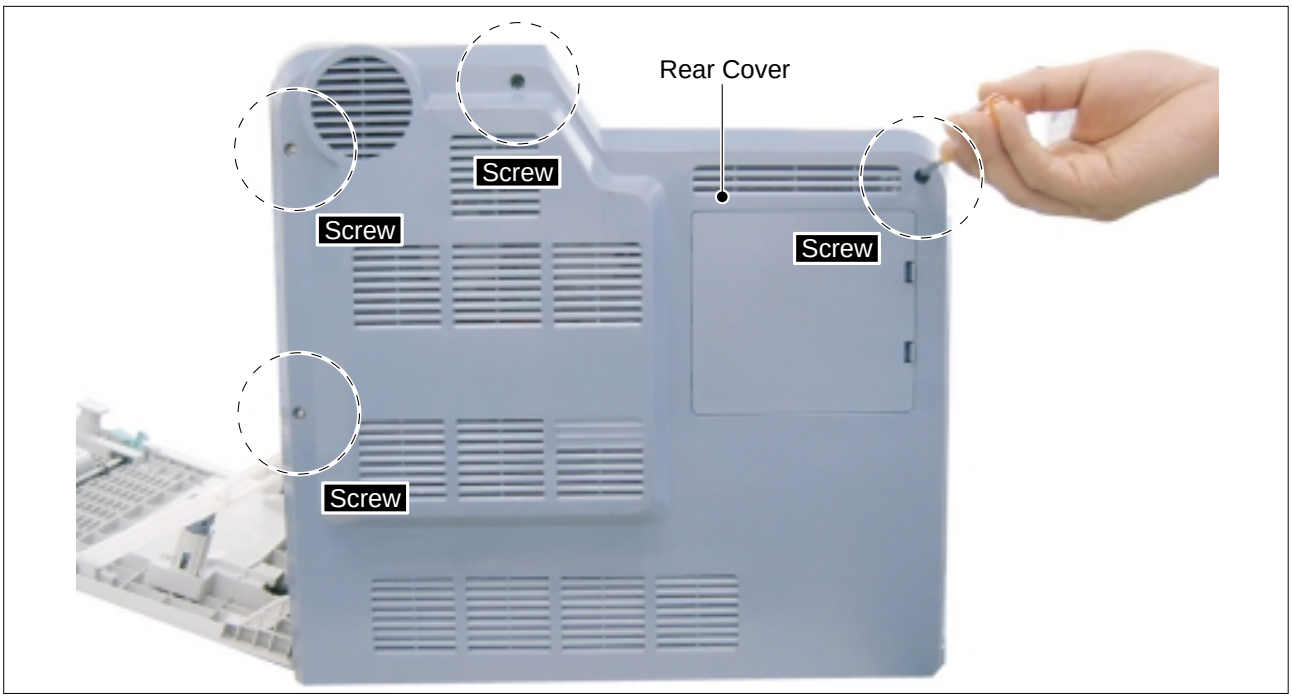


2. Remove the nine screws from the LCD PBA and then remove the Keys and LCD PBA, as shown below.

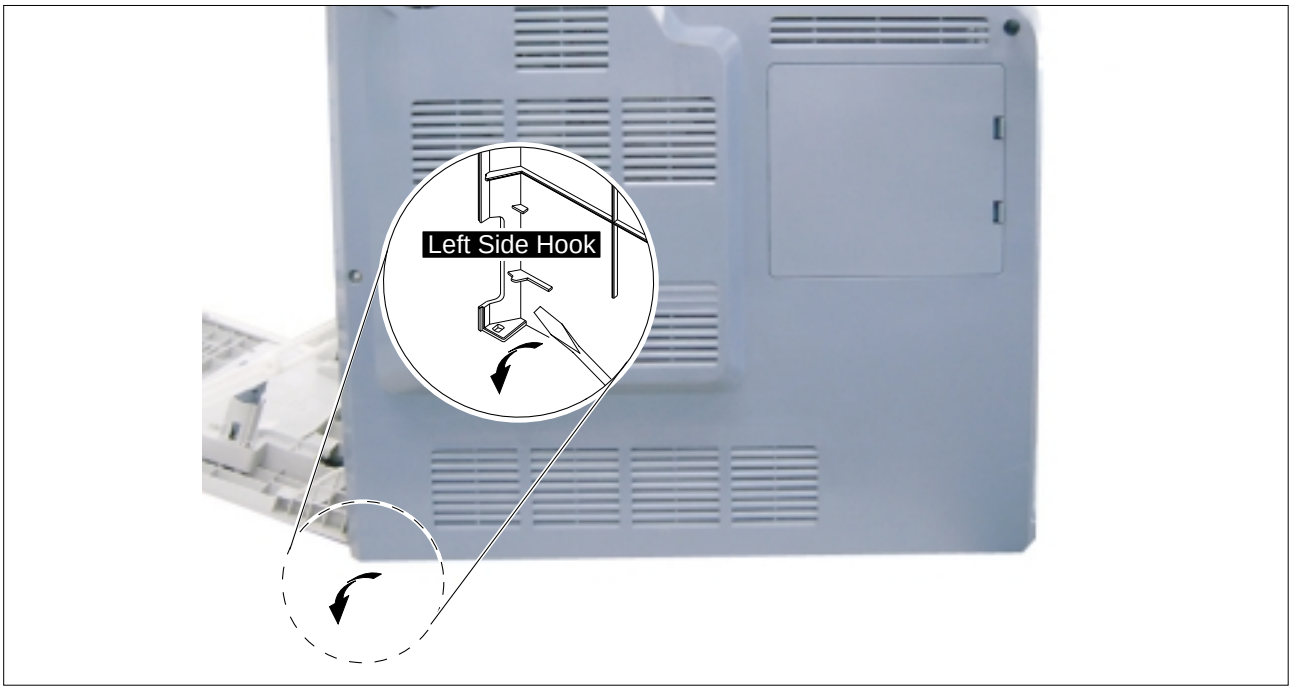


5.4.3 Rear Cover

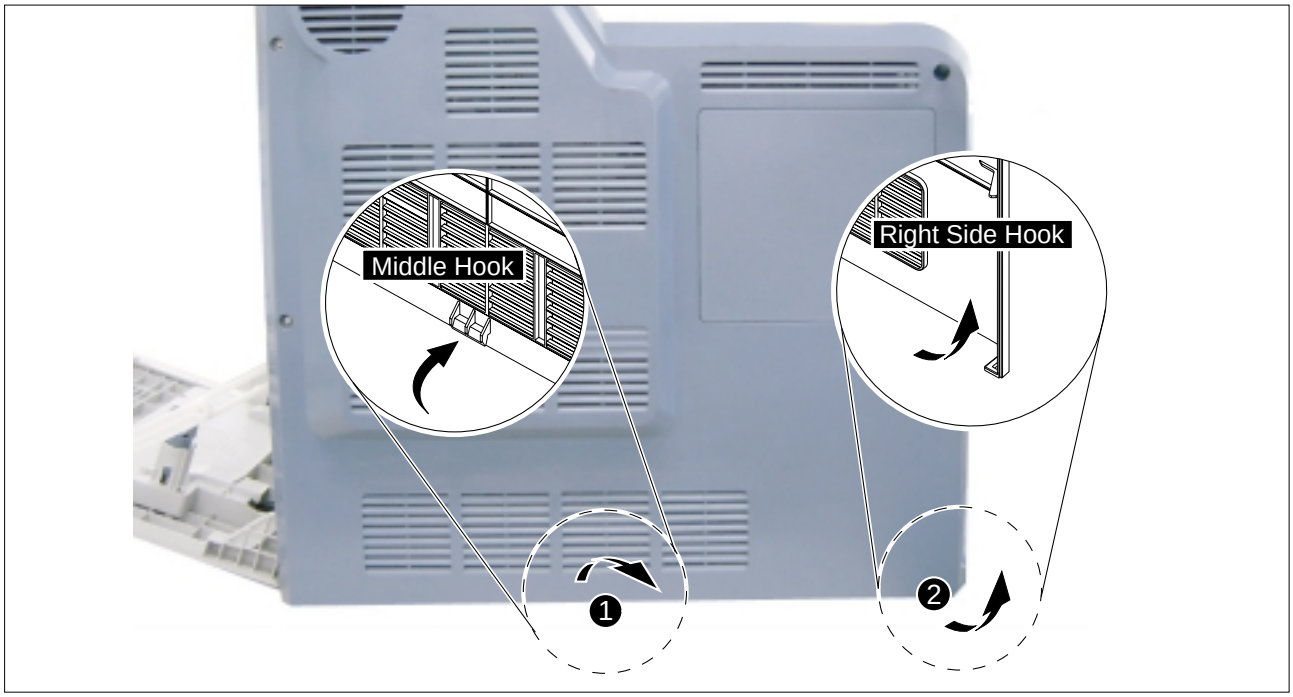
1. Remove the four screws, as shown below.



2. First lift the printer, carefully release the Left Side Hook using a flat bladed screwdriver, as shown below.



3. Release the Middle Hook and then carefully release the Right Side Hook in the direction of arrow, as shown below.

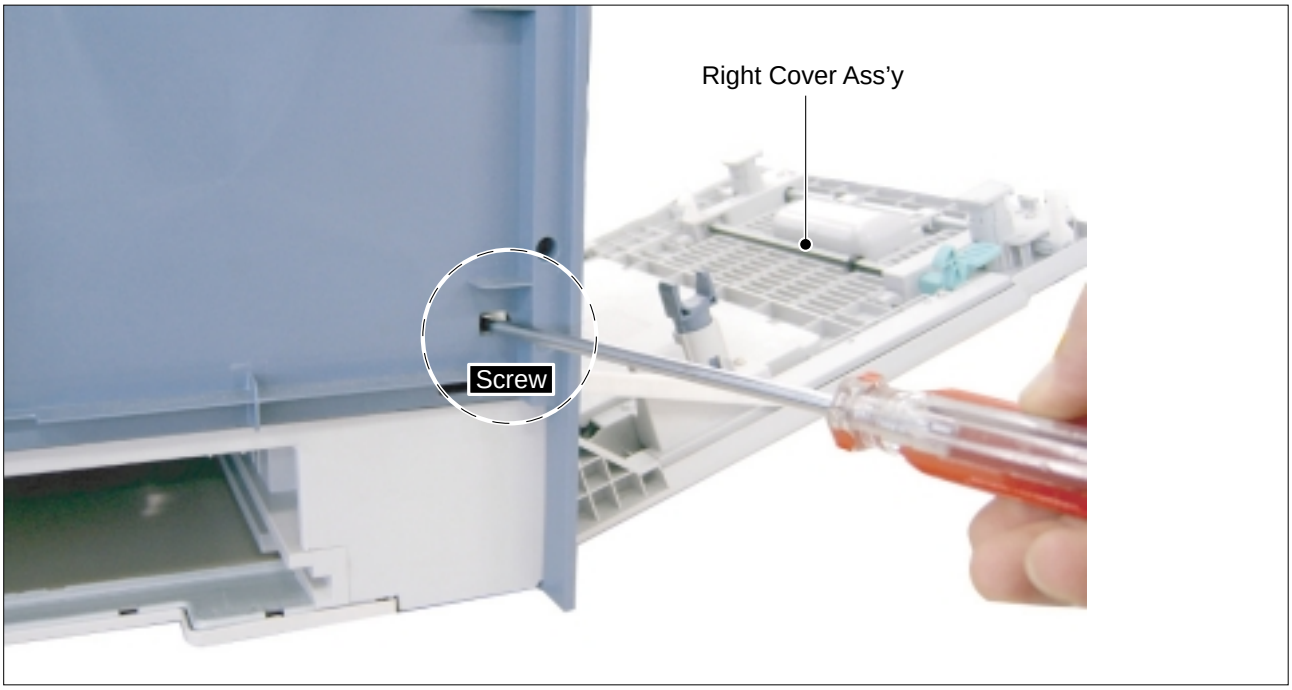


5.4.4 Right Cover

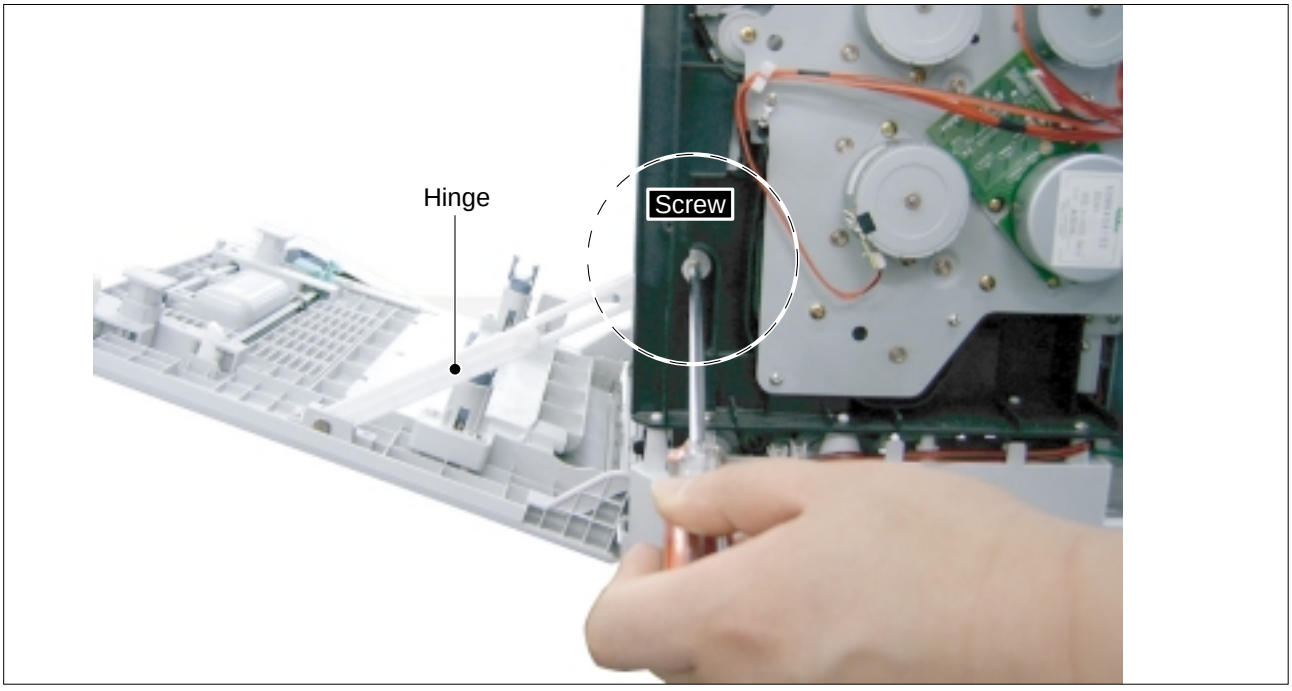
>> Before disassembling it :

* Open the Right Cover Ass'y (Refer to 5.3.3)
* Remove the Cover-M-Front (Refer to 5.4.1)
* Remove the Rear Cover (Refer to 5.4.3)

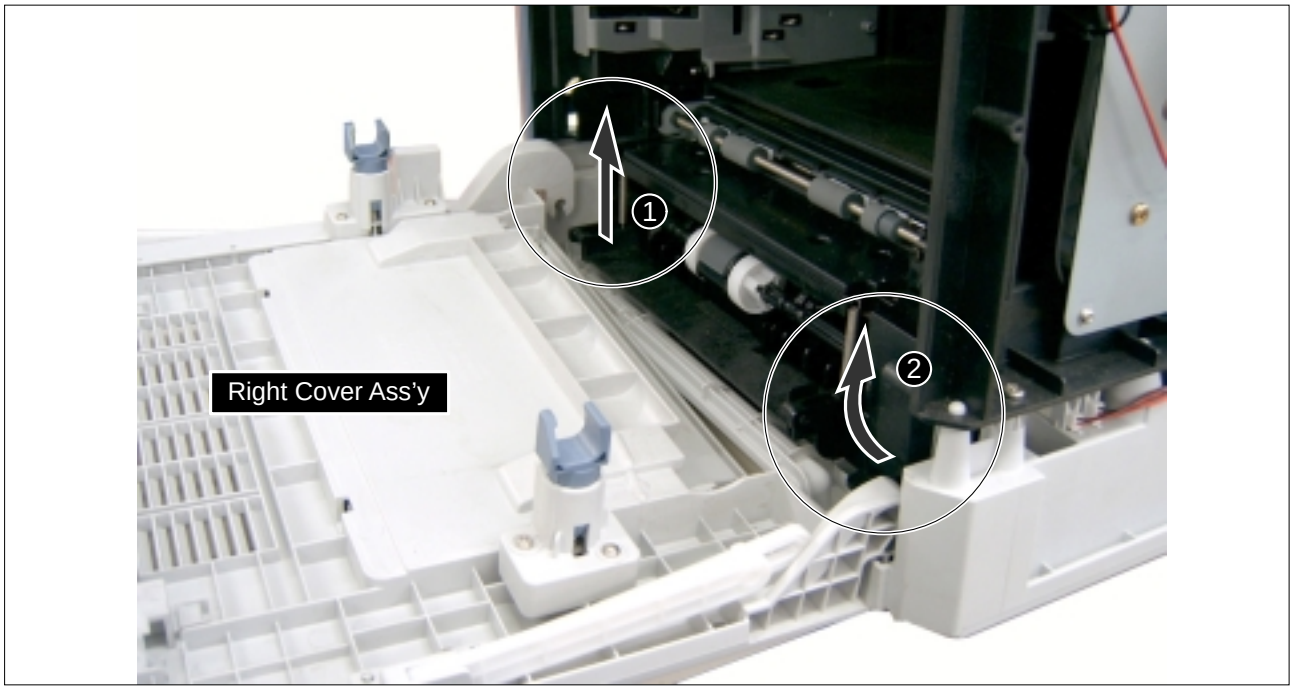
1. Remove the one screw from the left side hinge, as shown below.



2. Remove the one screw from the right side hinge, as shown below.



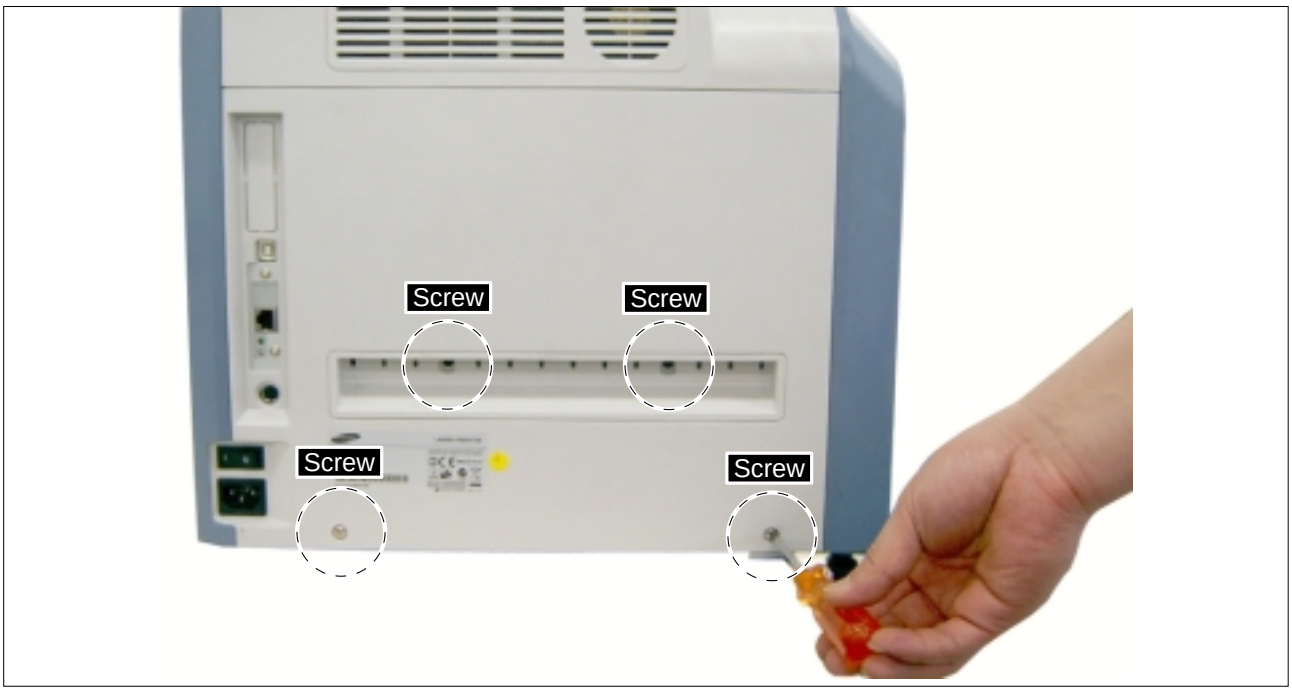
3. First lift the left side of the Right Cover Ass'y and then pull the right side of the Right Cover Ass'y in the direction of arrow, as shown below.



5.4.5 Left Cover

>> Before disassembling it :
* Remove the Rear Cover (Refer to 5.4.3)

1. Remove the four screws, as shown below.

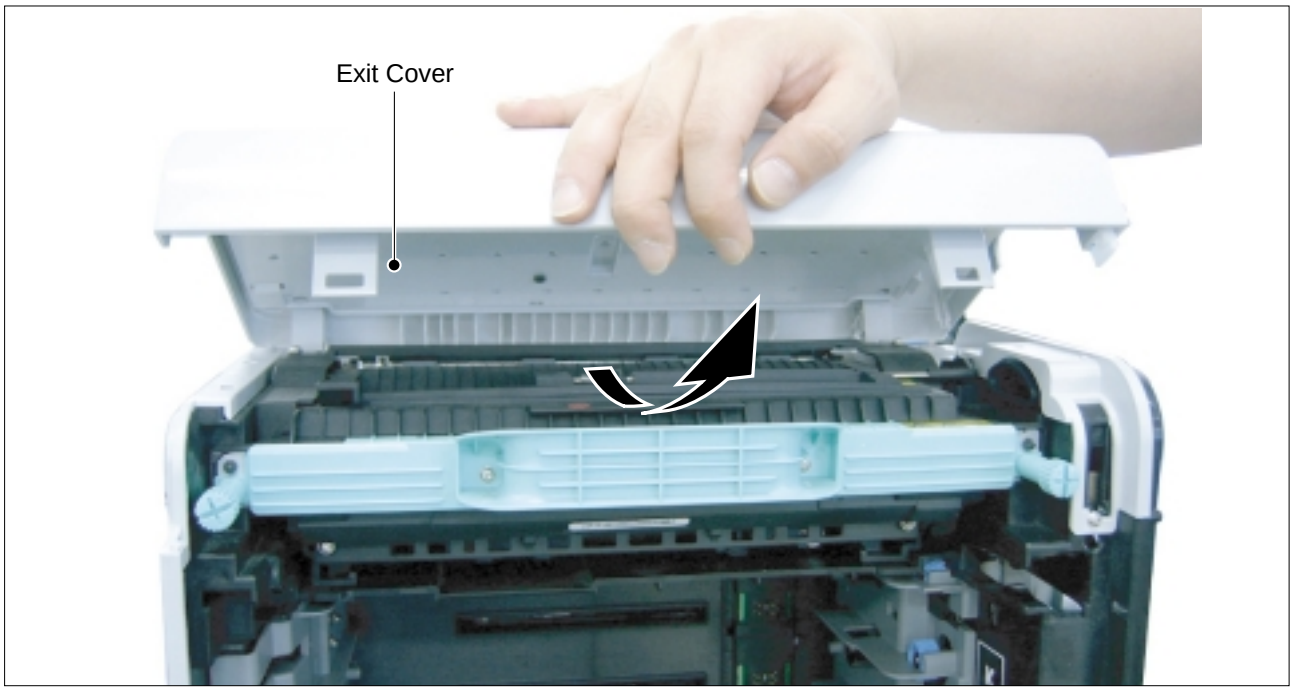


2. Release the Left Cover in the direction of arrow, as shown below.

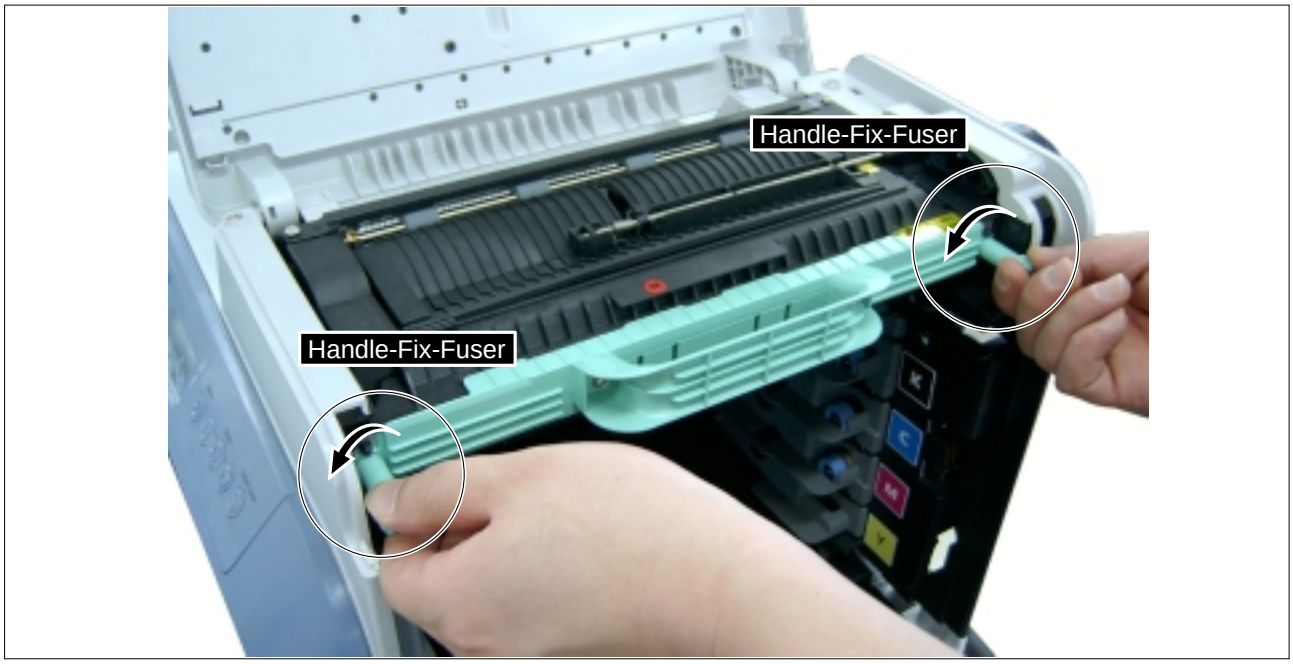
5.4.6 Fuser

>> Before disassembling it :
* open the Right Cover Ass'y (Refer to 5.3.3)

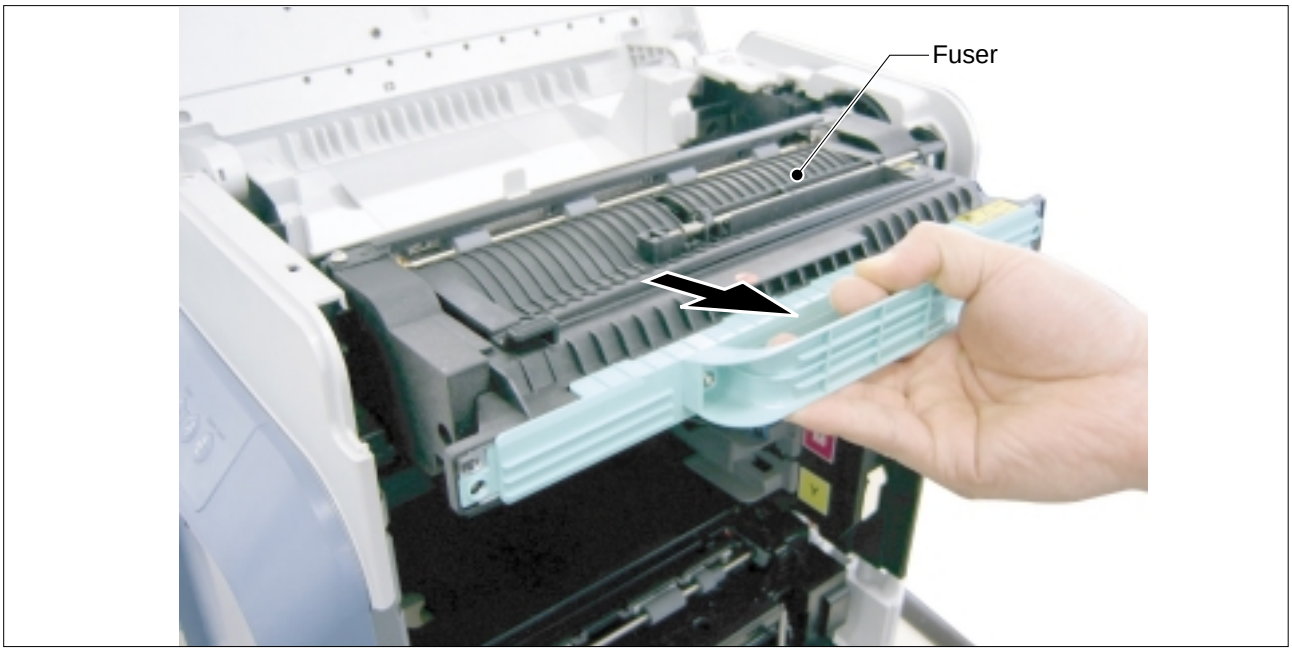
1. Open the Exit Cover.



2. Release the two Handle-Fix-Fuser on the both end, as shown below.



3. Pull the Fuser out of the Printer.

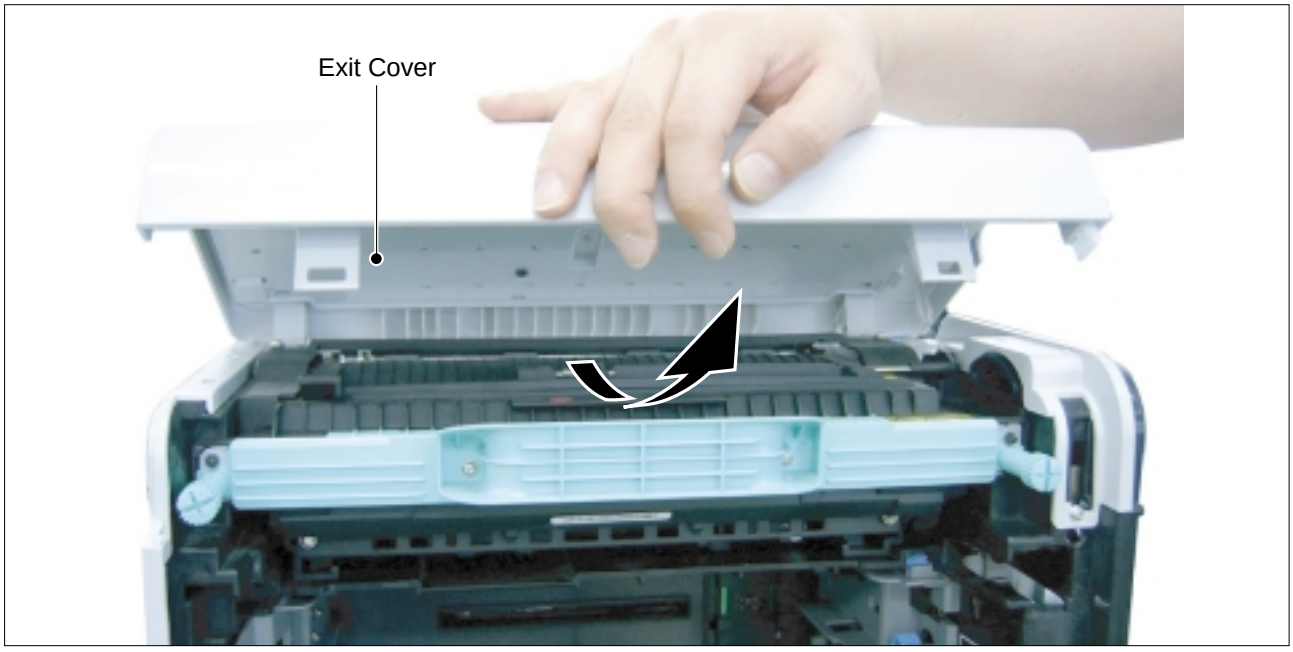


5.4.7 Top Cover

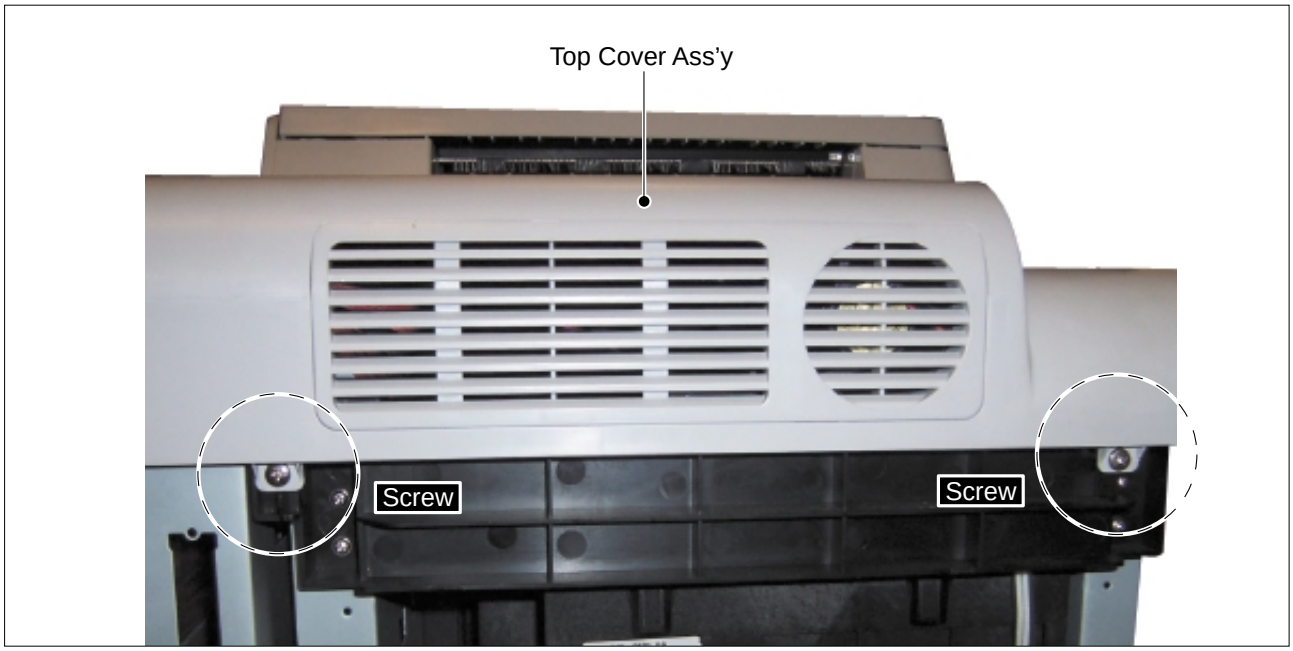
>> Before disassembling it :

* Remove the Front Cover Ass'y (Refer to 5.4.1)
* Remove the Rear Cover (Refer to 5.4.3)
* Remove the Right Cover Ass'y (Refer to 5.4.4)
* Remove the Left Cover (Refer to 5.4.5)

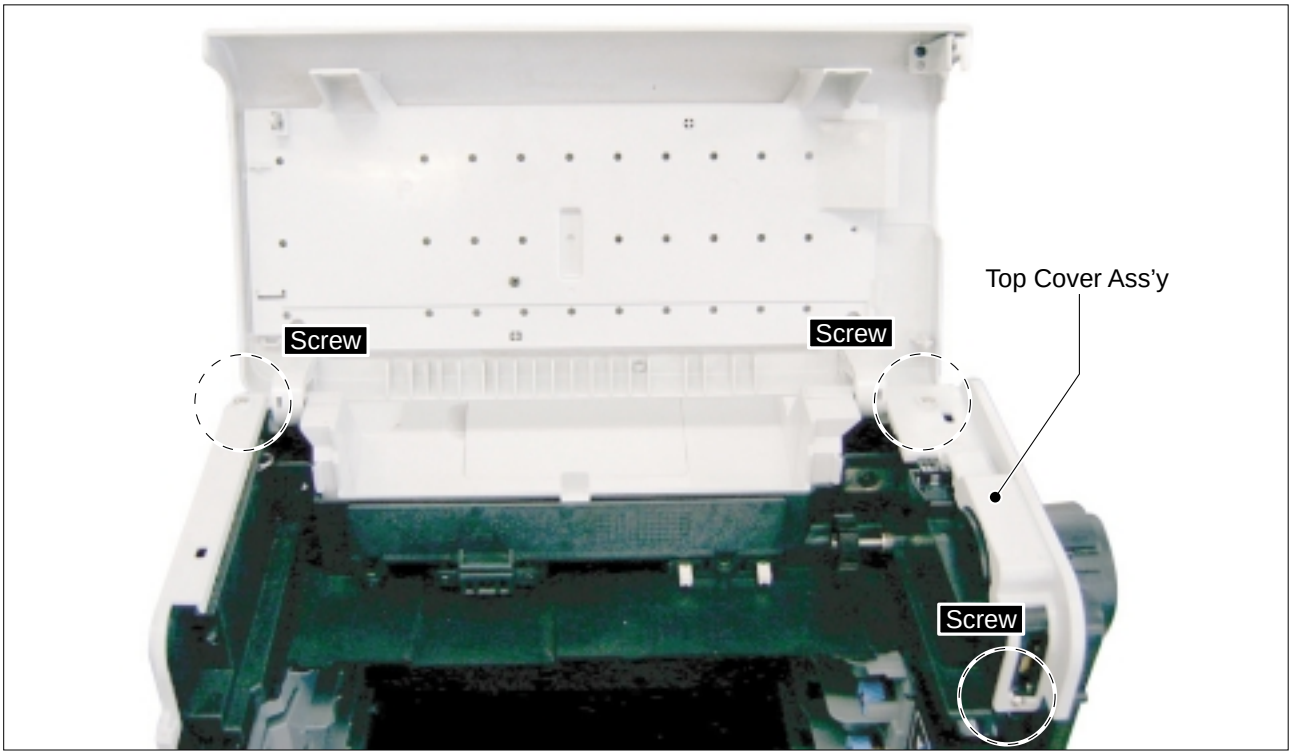
1. Open the Exit Cover.



2. Remove the two screws located left side the Top Cover Ass'y, as shown below.



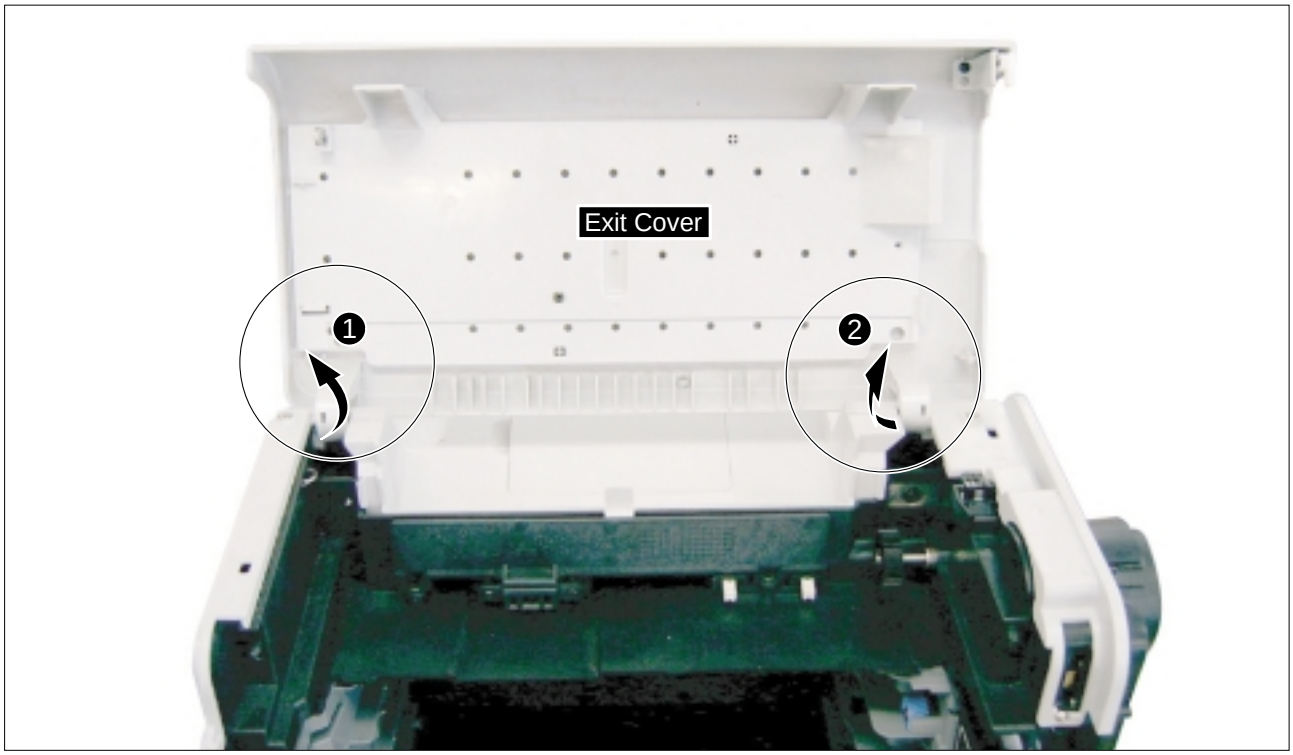
3. Remove the three screws located top and right side the Top Cover Ass'y, as shown below.
   Then remove the Top Cover Ass'y.



5.4.8 Exit Cover

>> Before disassembling it :
* Remove the Top Cover Ass'y (Refer to 5.4.7)

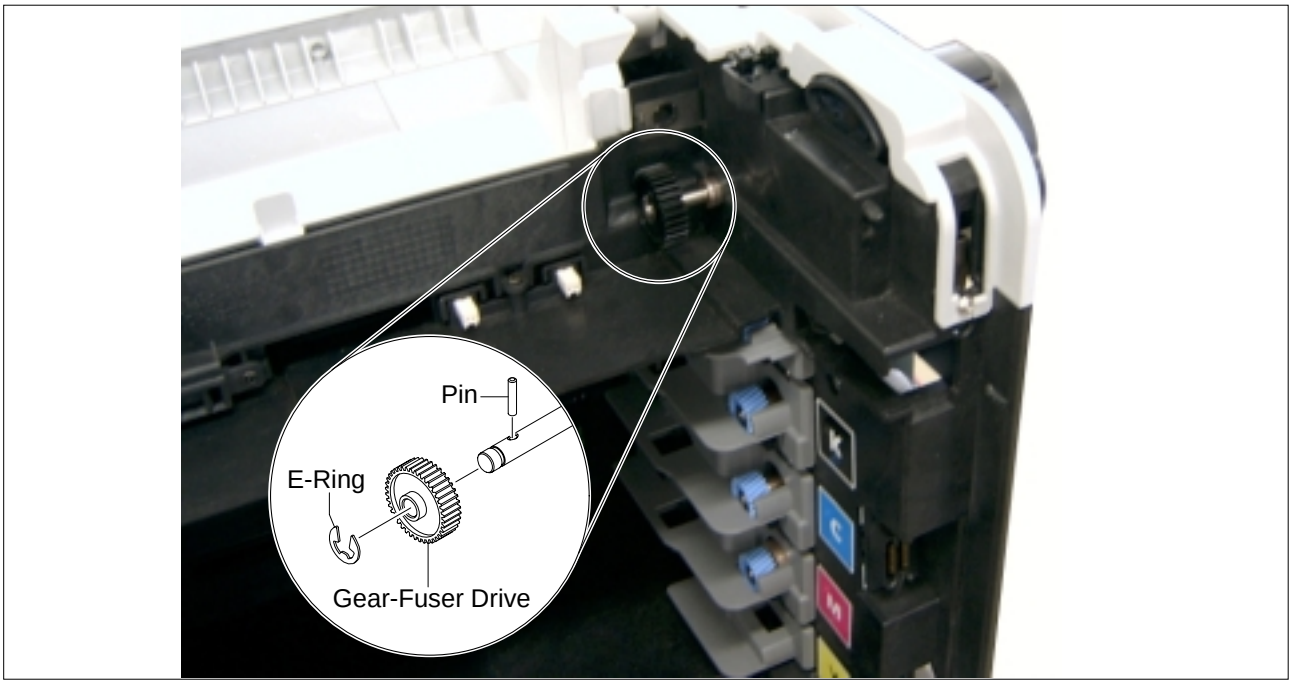
1. If necessary, remove the Exit Cover in the direction of arrow, as shown below.



5.4.9 Main Drive Ass'y

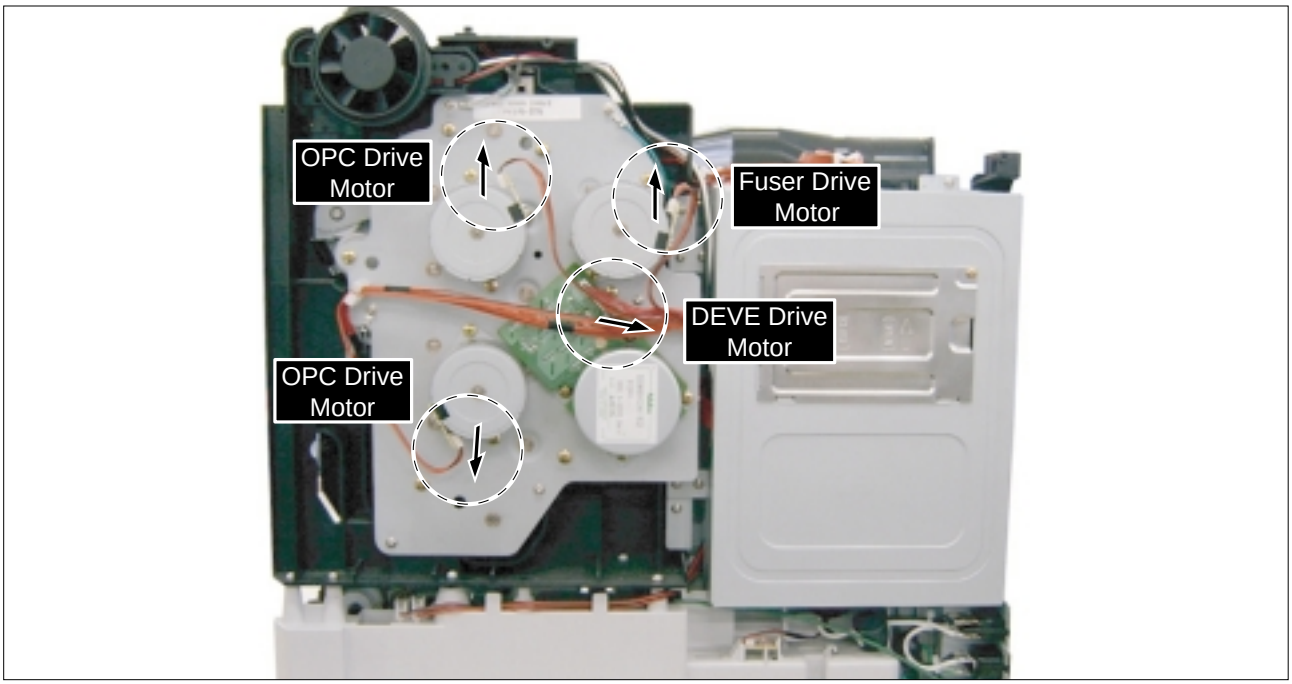
>> Before disassembling it :
* Remove the Fuser (Refer to 5.4.6)
* Remove the Top Cover (Refer to 5.4.7)

1. Remove the E-Ring and Fuser Drive Gear, as shown below.

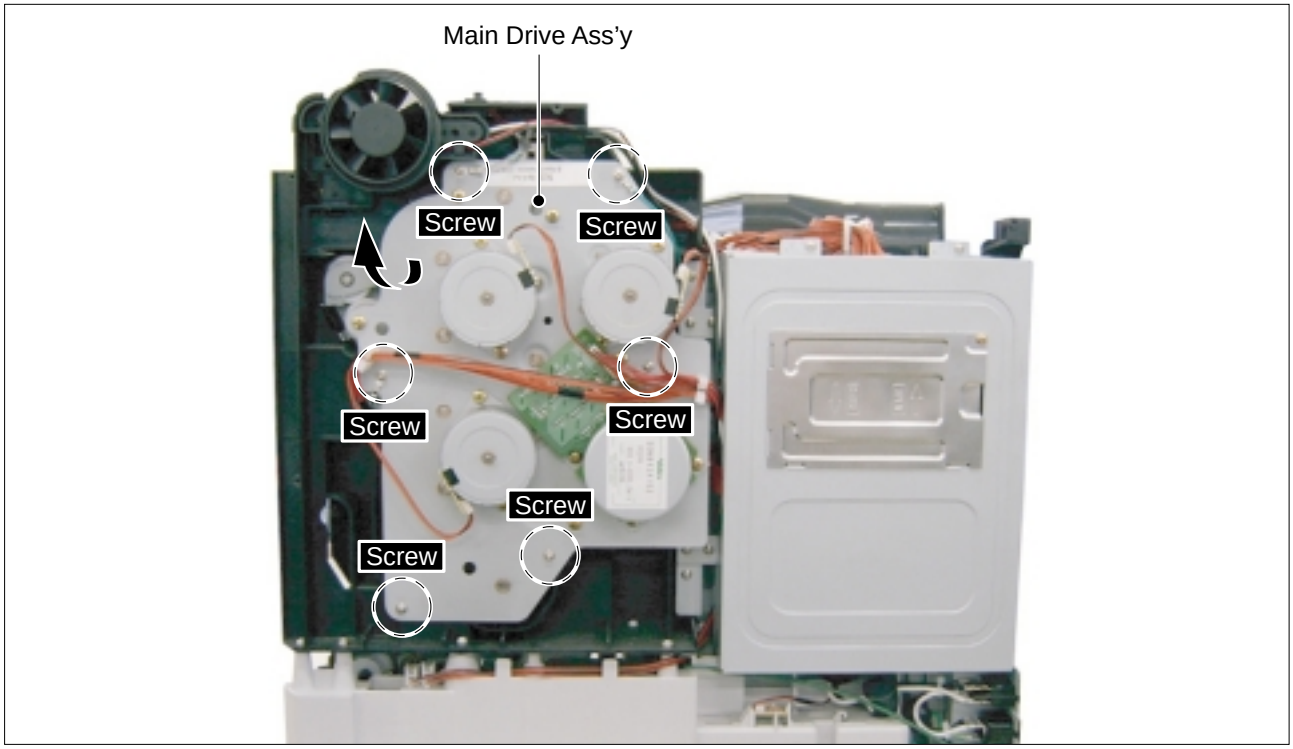


NOTICE : Be aware of the E-Ring and Pin to ensure they are not lost.

2. Unplug the four connectors from the two OPC Drive Motors, Fuser Drive Motor and DEVE Drive Motor, as shown below.



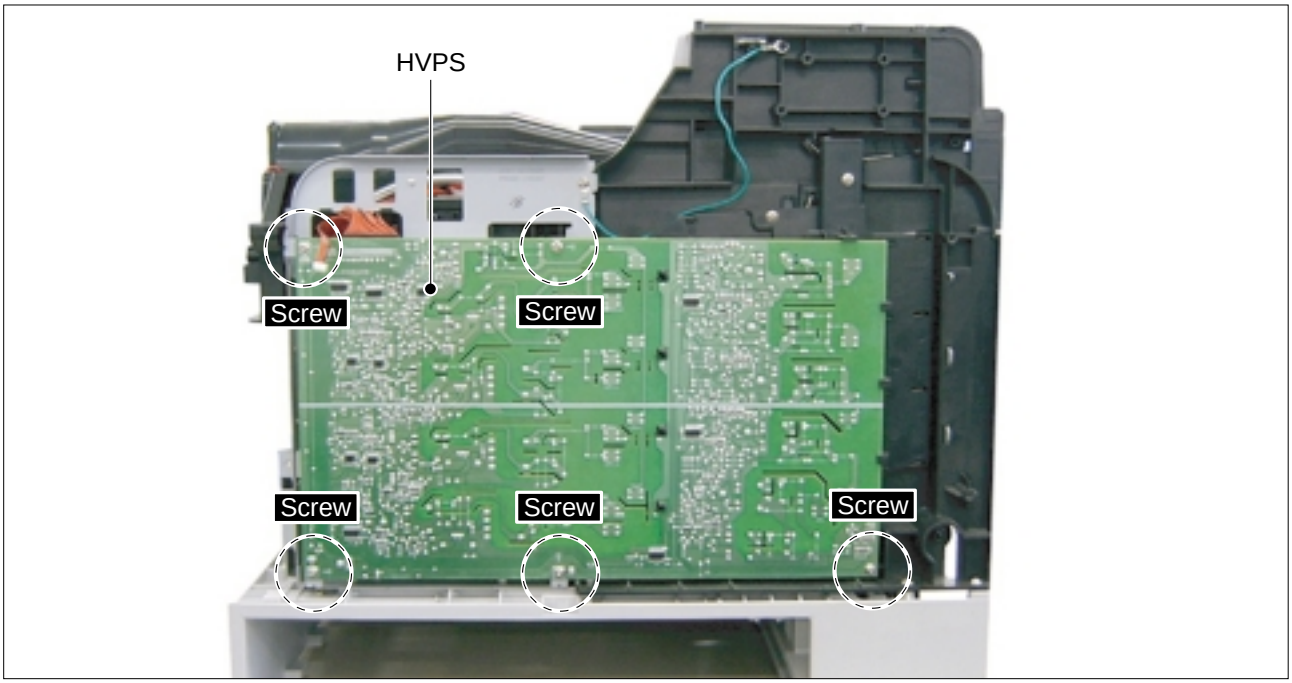
3. Remove the six screws from the Main Drive and then pull the Main Drive Ass'y, as shown below.



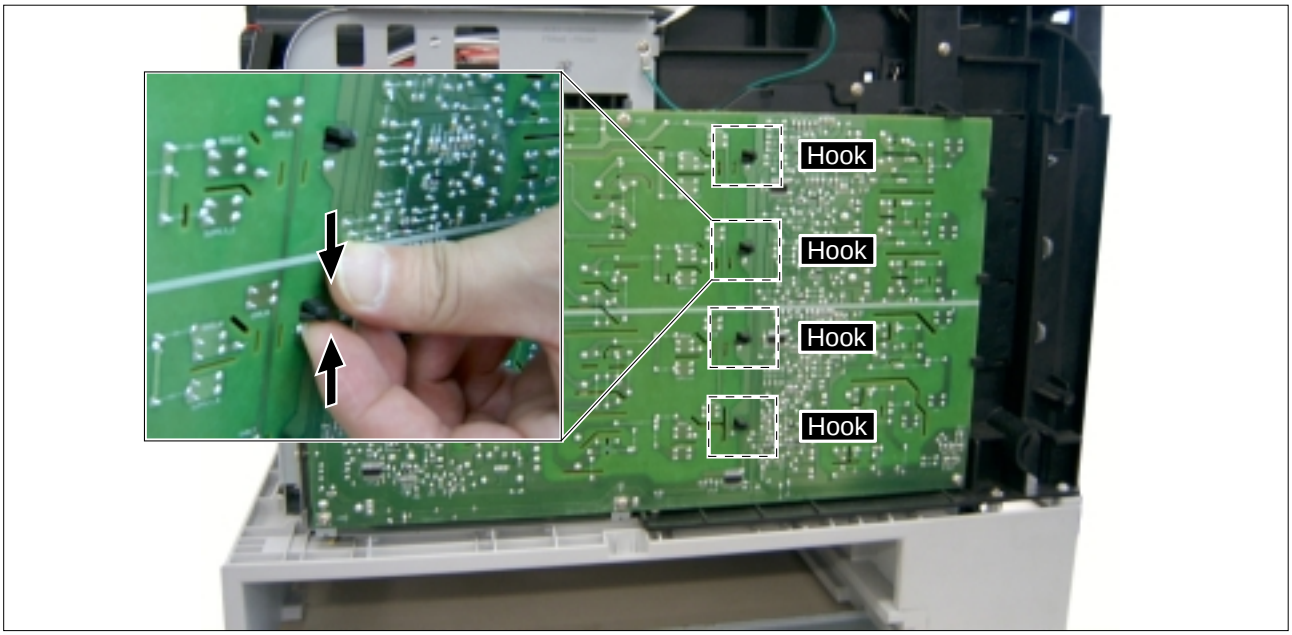
5.4.10 HVPS (High Voltage Power Supply)

>> Before disassembling it :
* Remove the Front Cover Ass'y (Refer to 5.4.1)

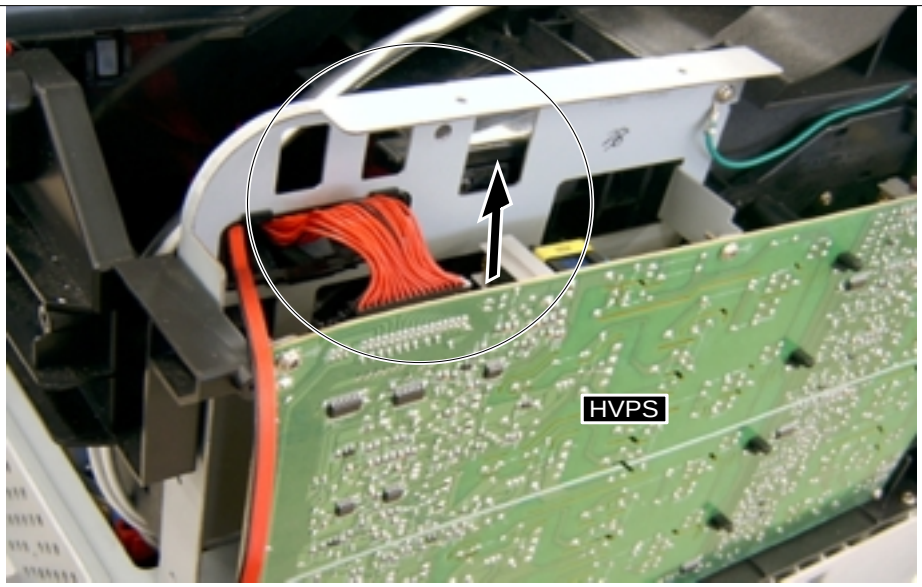
1. Remove the five screws from the HVPS.



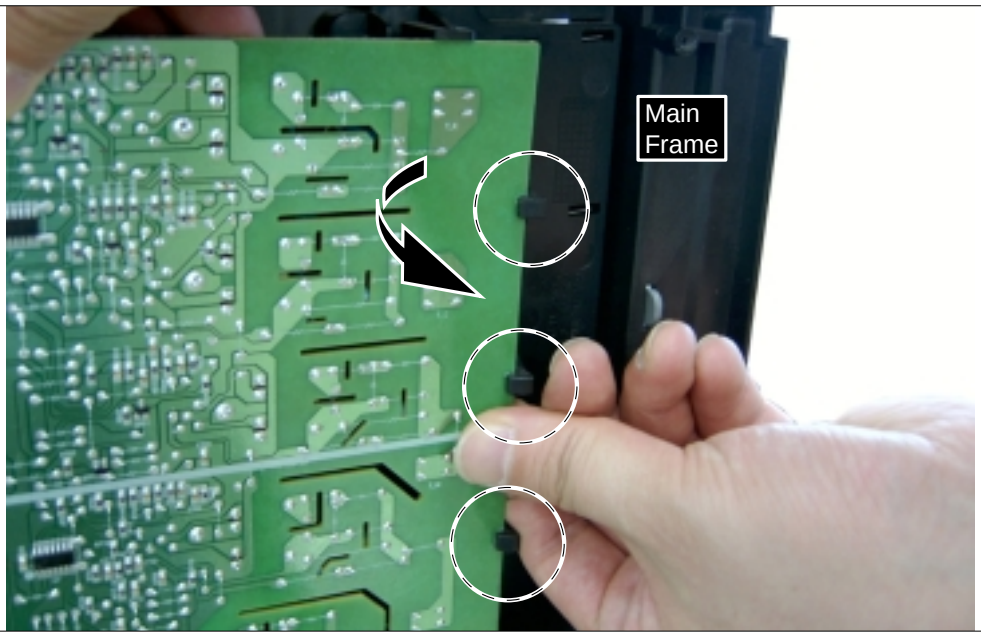
2. Unlatch the four Hooks in the direction of arrow, as shown below.



3. Unplug the one connector from the HVPS.



4. Carefully remove the HVPS from the Main Frame.



5. The connectors are located, as shown below.

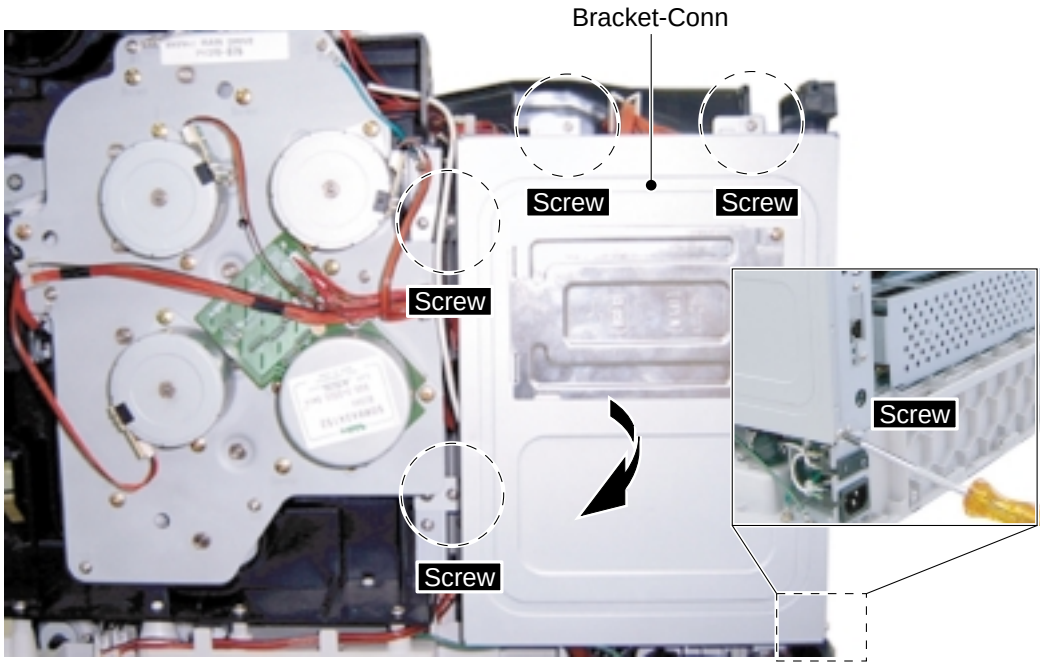
<HVPS>

5.4.11 Main PBA

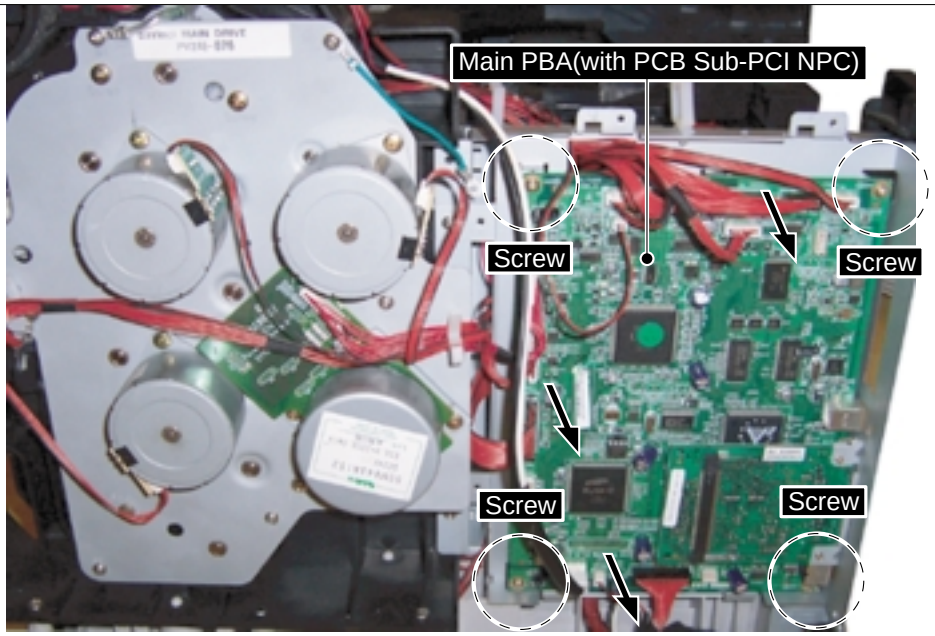
>> Before disassembling it :

* Remove the Rear Cover (Refer to 5.4.3)
* Remove the Left Cover (Refer to 5.4.5)

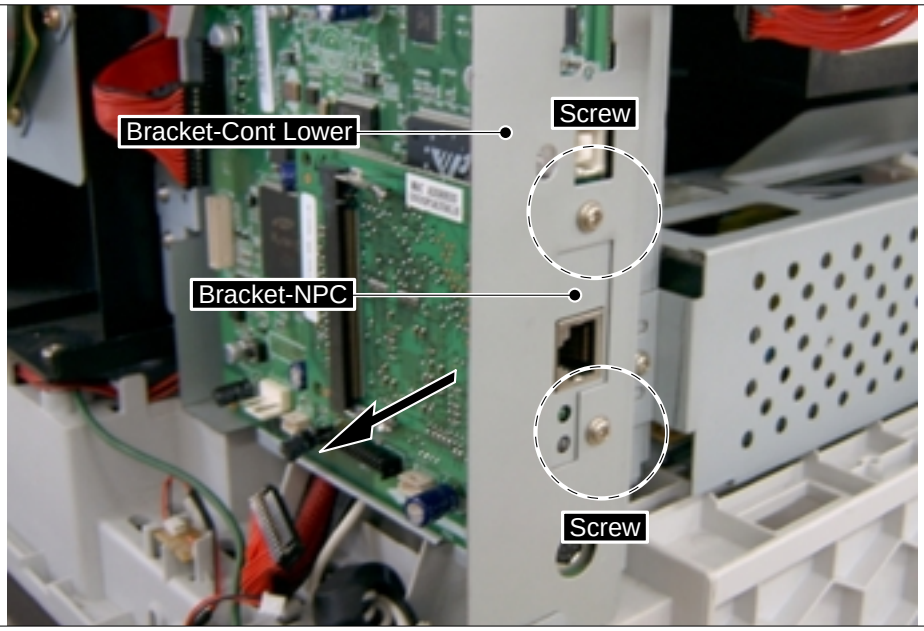
1. Remove the five screws from the Bracket Conn and remove it, as shown below.



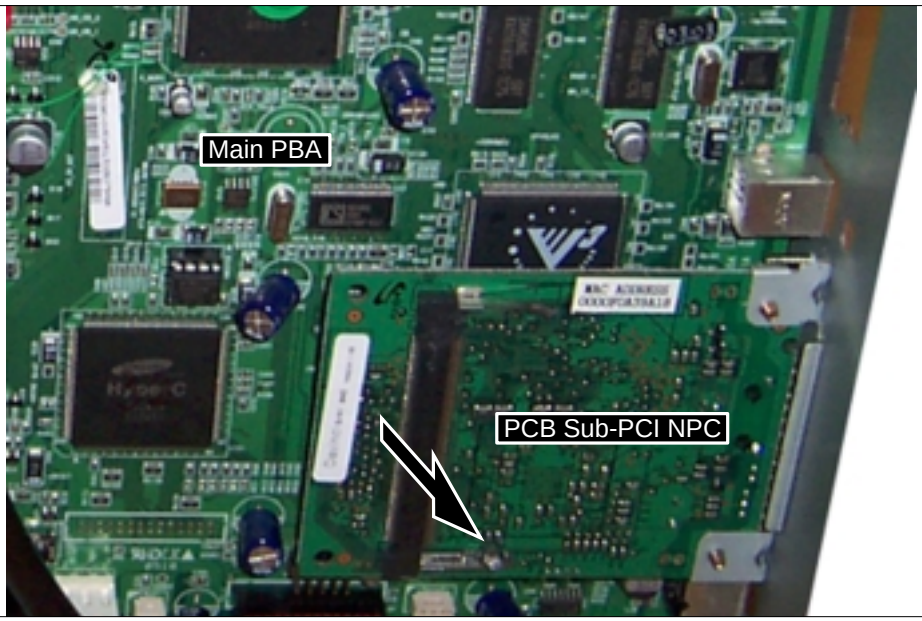
2. Unplug the all connectors and then remove the four screws from the Main PBA.



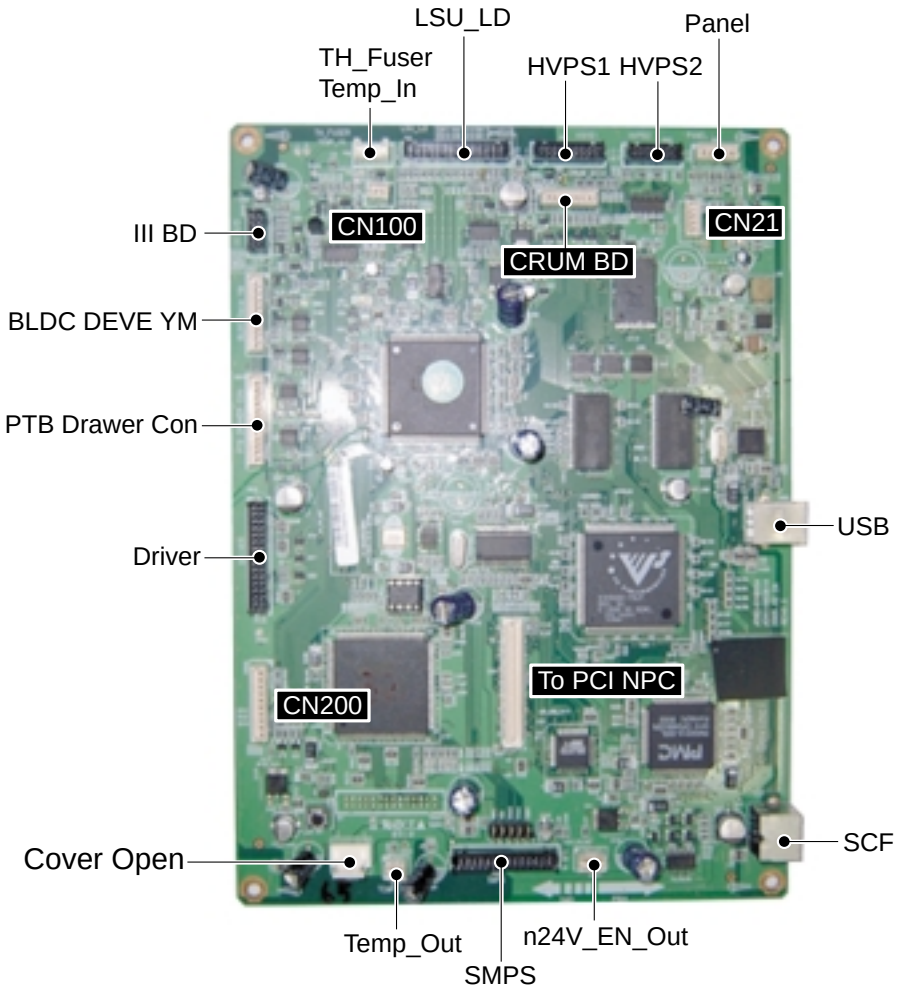
3. Remove the two screws securing the Bracket-NPC from the Bracket-Cont Lower and then remove the Main PBA(with PCB Sub-PCI NPC), as shown below.



4. Pull the PCB Sub-PCI NPC from the Main PBA, as shown below.

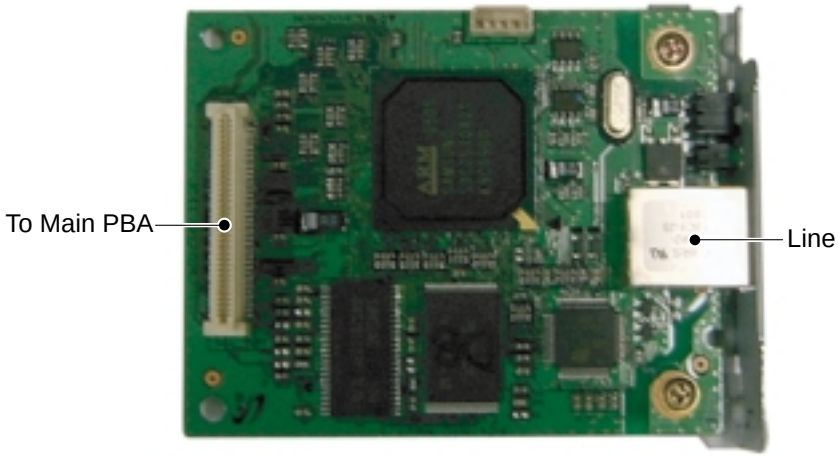


5. The connectors are located Main PBA.



<Main PBA>

6. The connectors are located PCB Sub-PCI NPC.



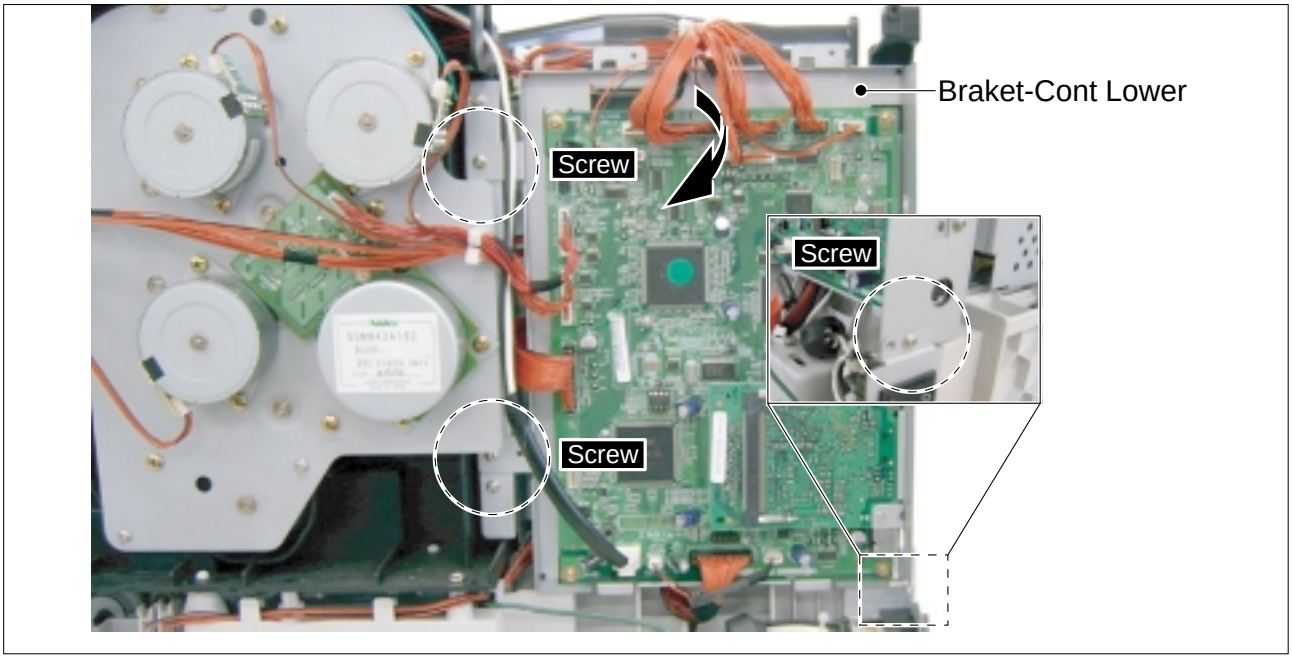
<PCB Sub-PCI NPC>

5.4.12 PBA Sub-Driver

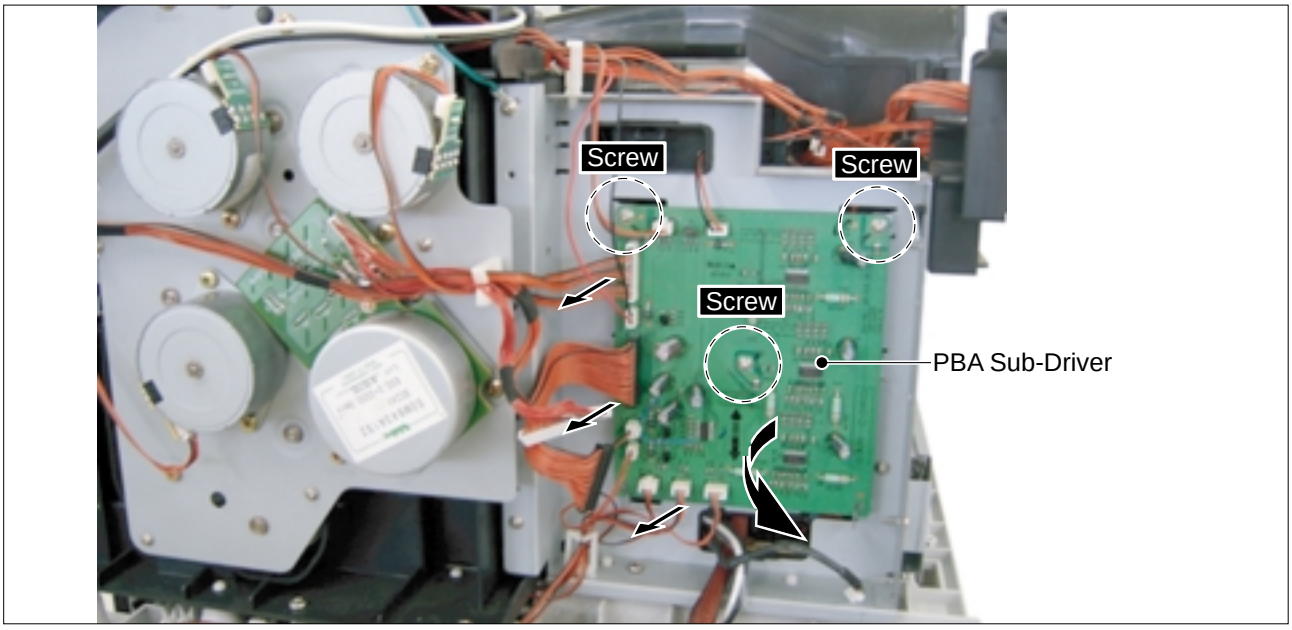
>> Before disassembling it :

* Remove the Rear Cover (Refer to 5.4.3)
* Remove the Left Cover (Refer to 5.4.5)
* Remove the Main PBA (Refer to 5.4.11)

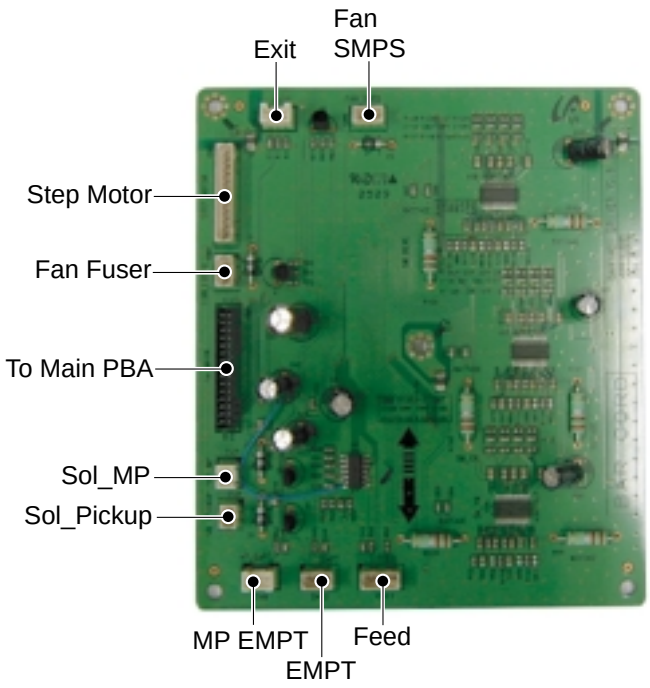
1. Remove the three screws from the Bracket-Cont Lower and then remove it.



2. Unplug the all connectors and remove the three screws from the PBA Sub-Driver and then remove it, as shown below.



3. The connectors are located, as shown below.



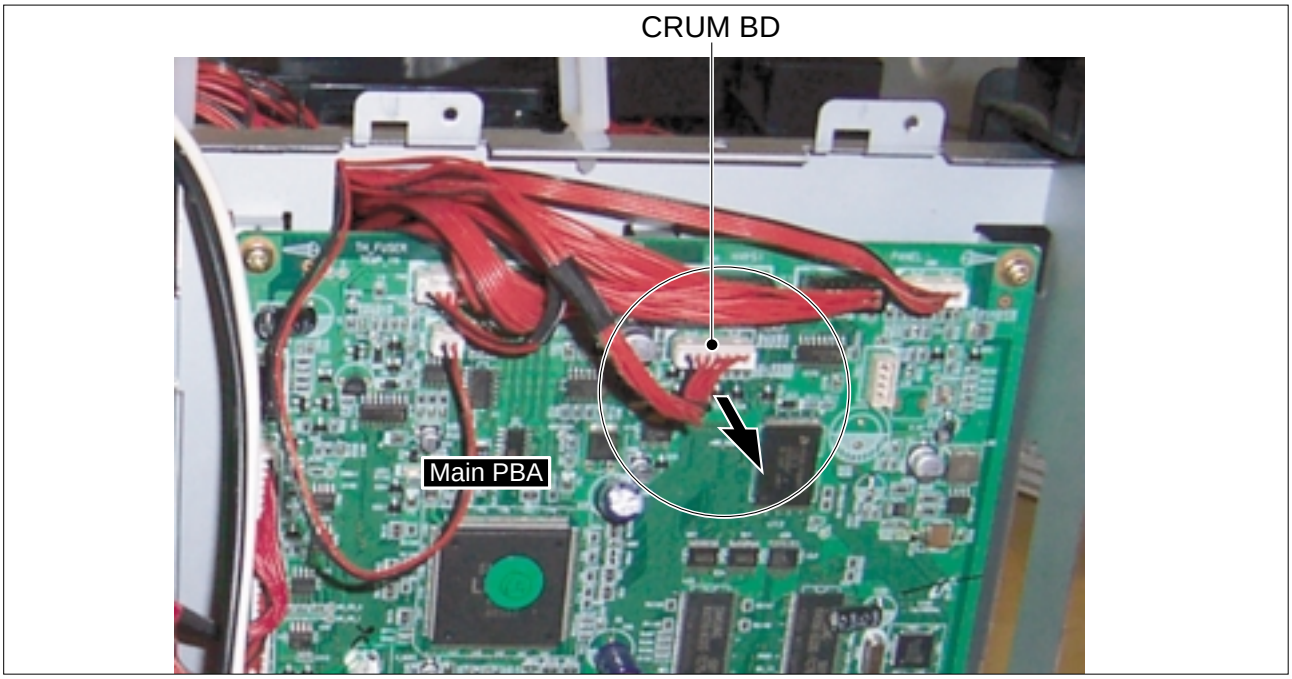
<PBA Sub-Driver>

5.4.13 CRUM Unit

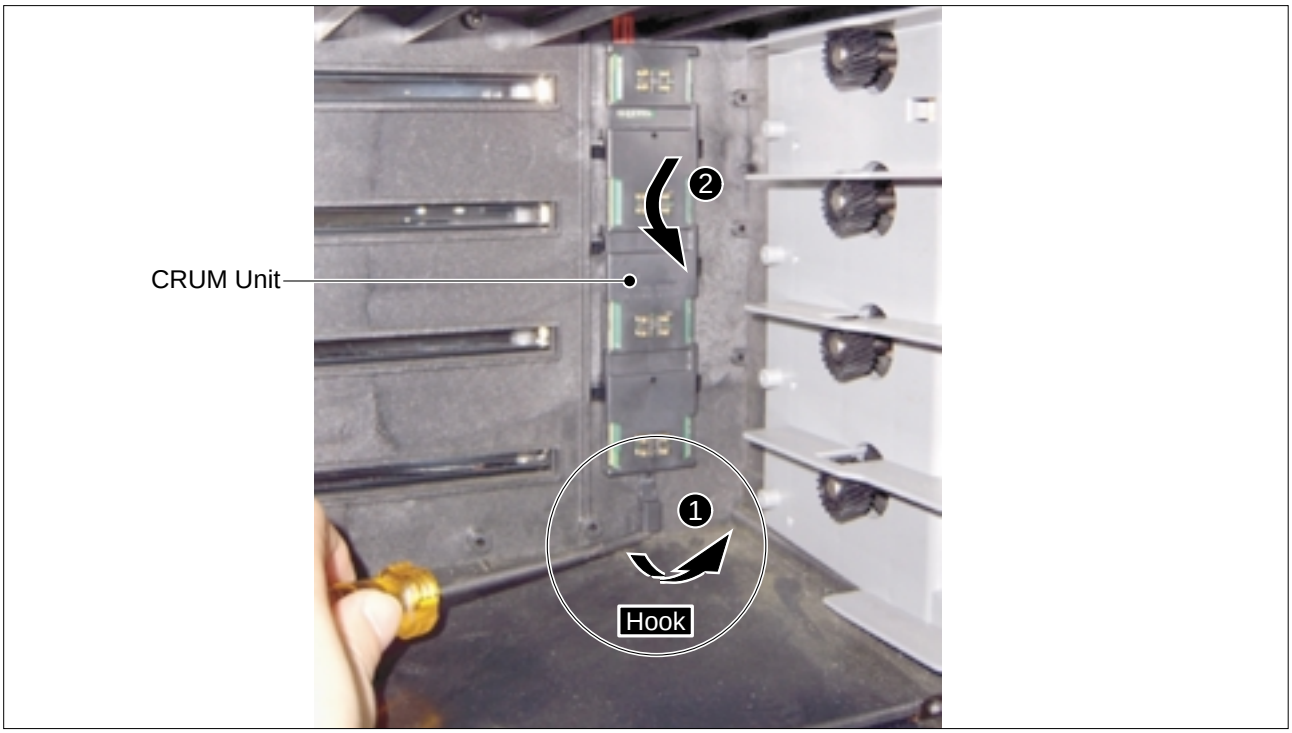
>> Before disassembling it :

* Remove the Toner Cartridge K, C, M, Y (Refer to 5.3.3)
* Remove the Top Cover Ass'y (Refer to 5.4.7)
* Remove the Bracket Conn (Refer to 5.4.11)

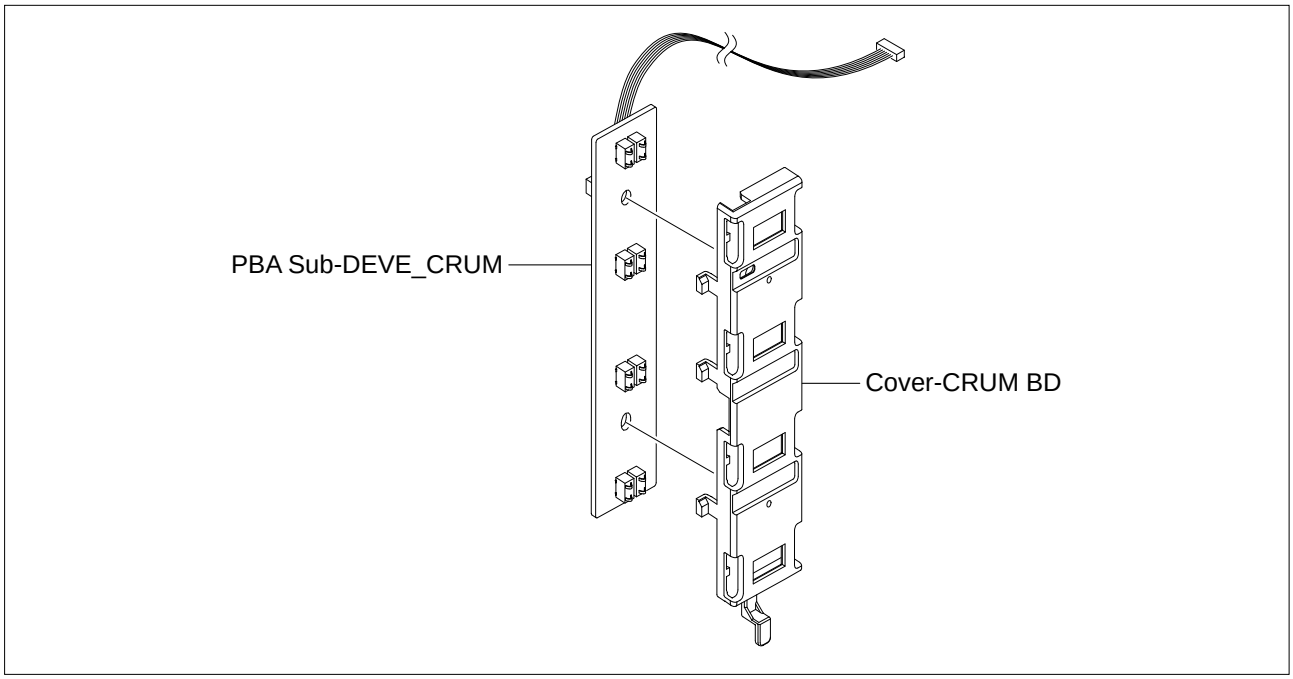
1. Unplug the connector from the Main PBA.



2. First release the Hook and then remove the CRUM Unit in the direction of arrow.



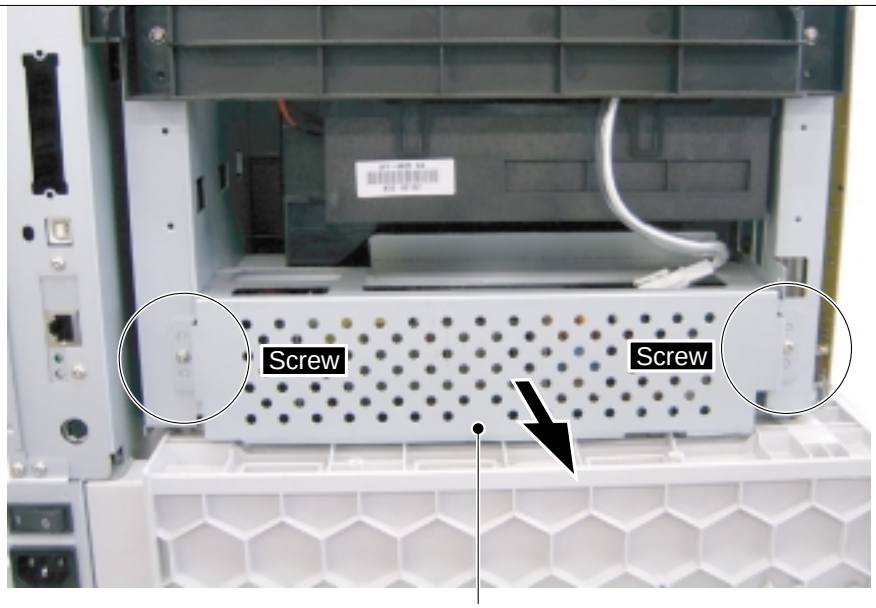
3. Remove the PBA Sub-DEVE_CRUM from the Cover-CRUM BD, as shown below.



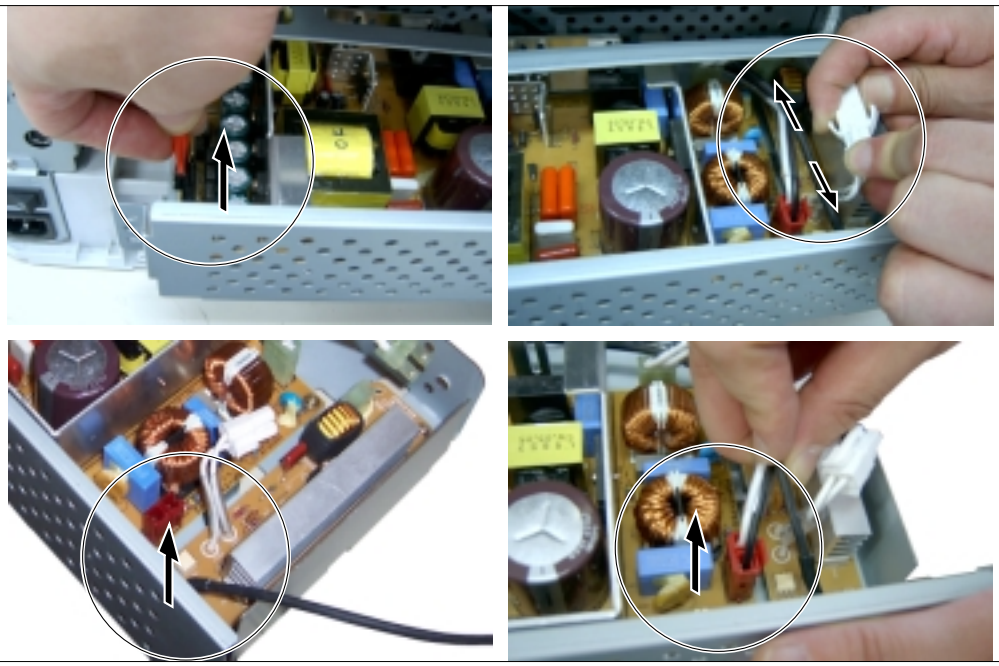
5.4.14 SMPS

>> Before disassembling it :
* Remove the Top Cover Ass'y (Refer to 5.4.7)

1. Remove the two screws from the SMPS and then pull the SMPS.



2. Unplug the all connectors from the SMPS and then remove the SMPS, as shown below.

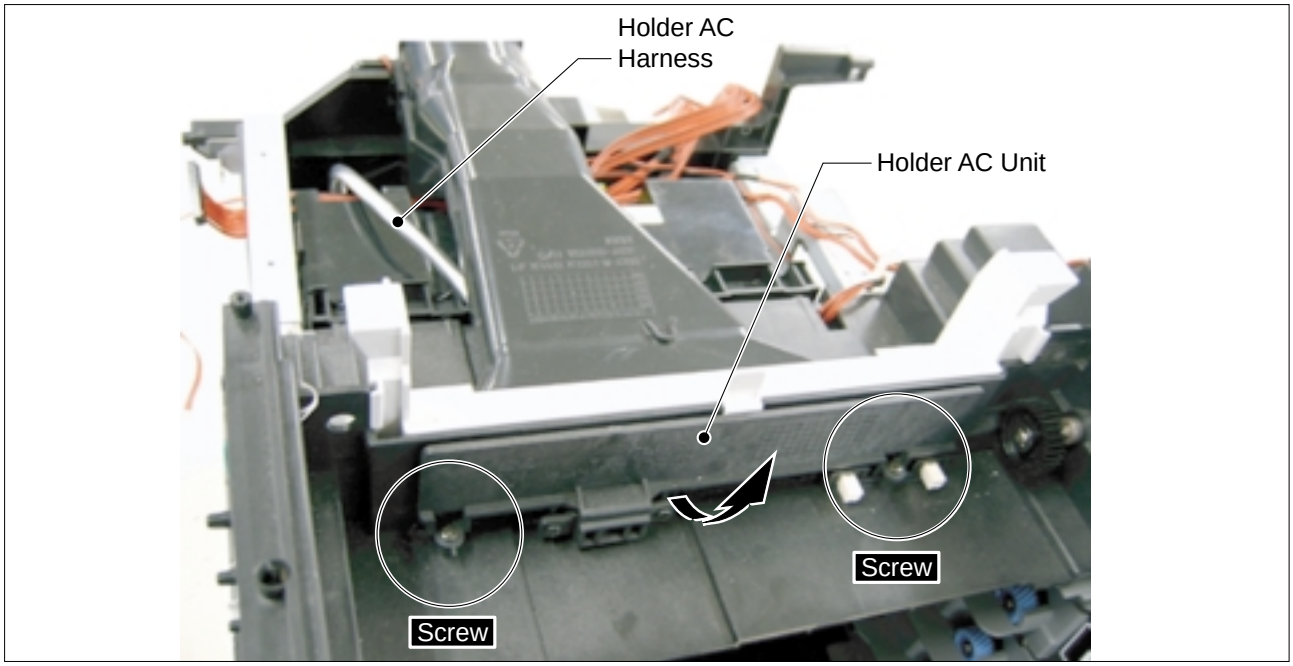


5.4.15 Holder AC Unit

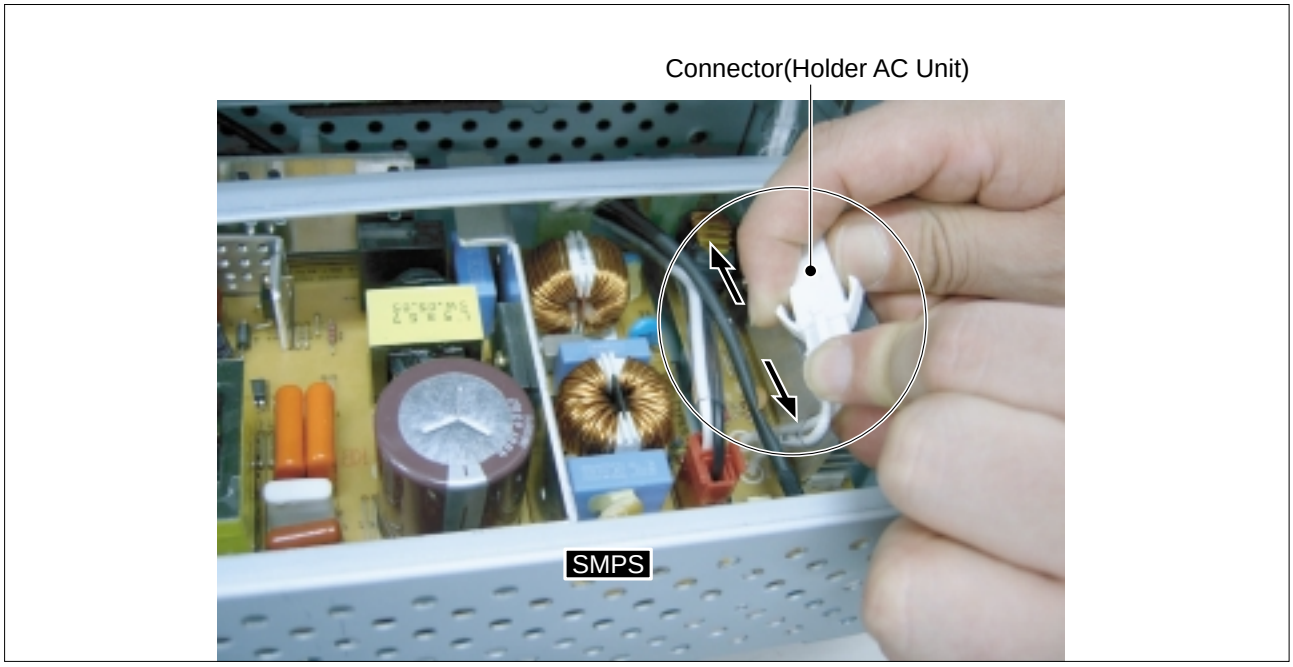
>> Before disassembling it :

* Remove the Fuser (Refer to 5.4.6)
* Remove the Top Cover Ass'y (Refer to 5.4.7)
* Pull the SMPS (Refer to 5.4.14)

1. Remove the two screws securing the Holder AC Unit and then remove the Holder AC Unit in the direction of arrow.



2. Unplug the Holder AC Unit connector from the SMPS, as shown below.

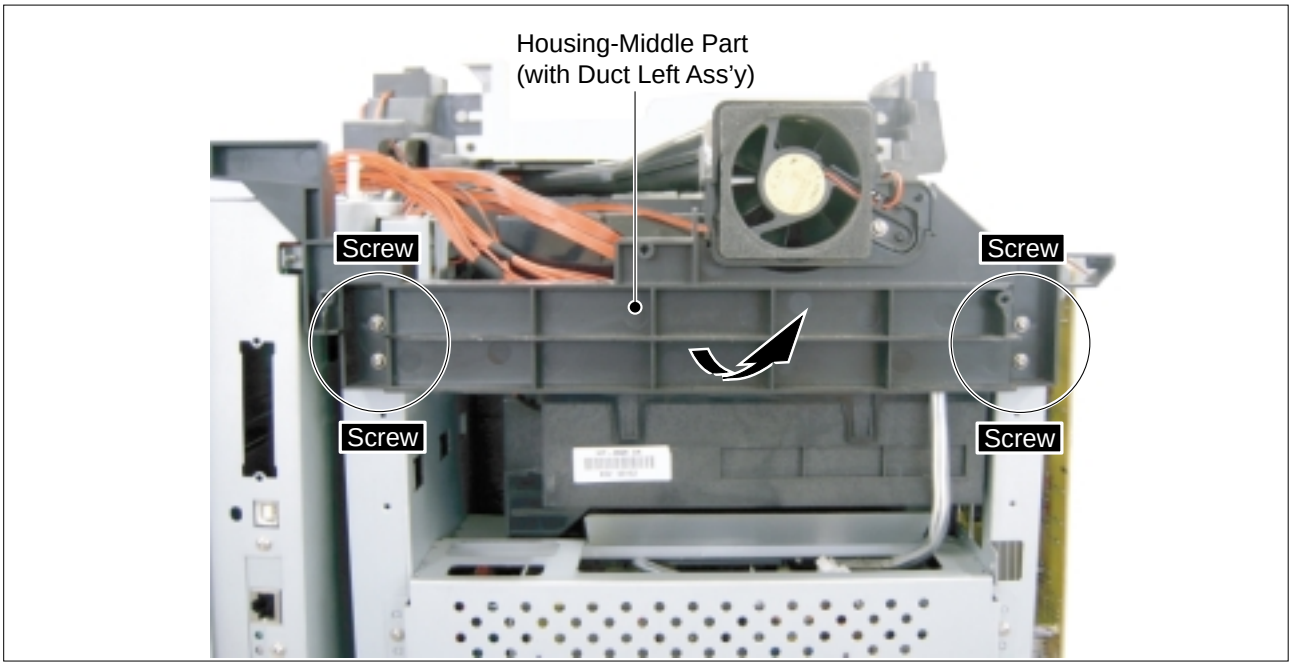


5.4.16 LSU

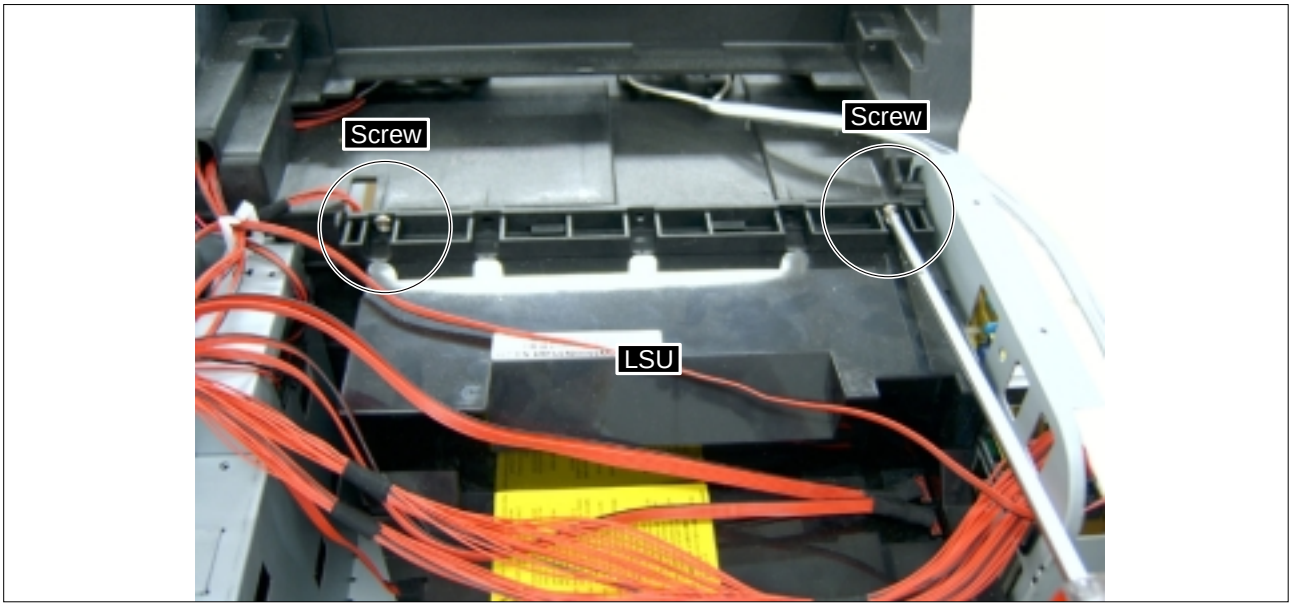
>> Before disassembling it :

* Remove the Top Cover Ass'y (Refer to 5.4.7)
* Remove the Bracket Conn (Refer to 5.4.11)
* Remove the SMPS (Refer to 5.4.14)

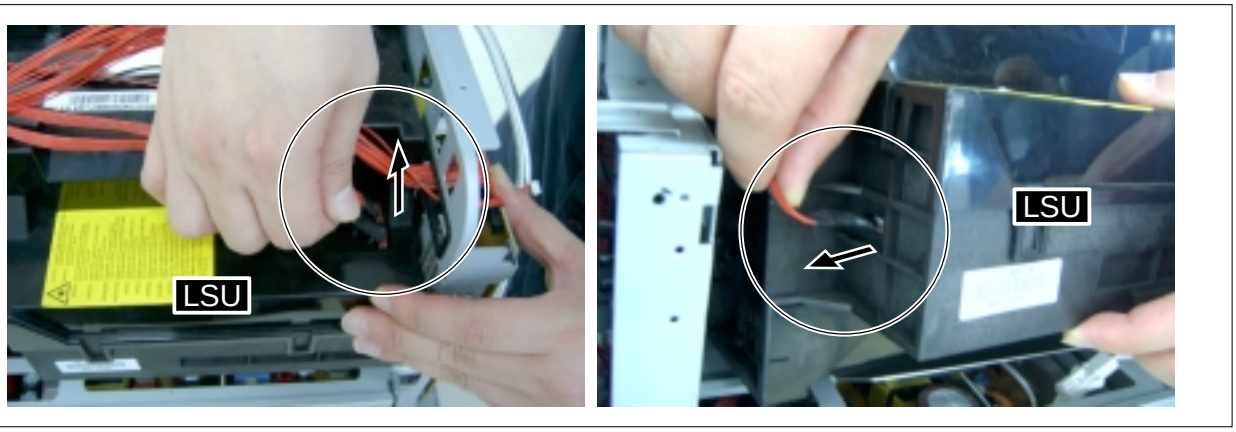
1. Remove the four screws from the Housing-Middle Part and then remove it(with Duct Left Ass'y).



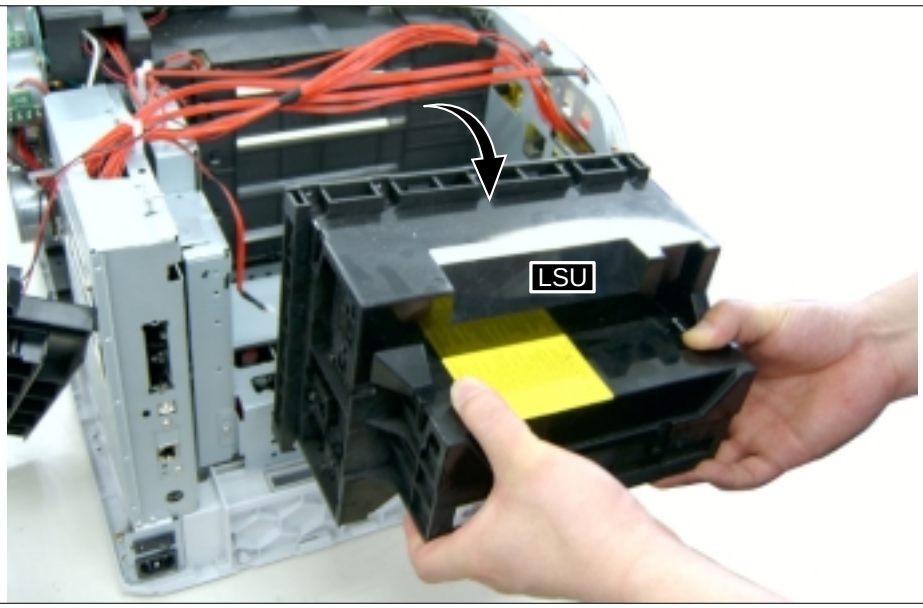
2. Remove the two screws from the LSU.



3. Unplug the three connectors from the LSU, as shown below.



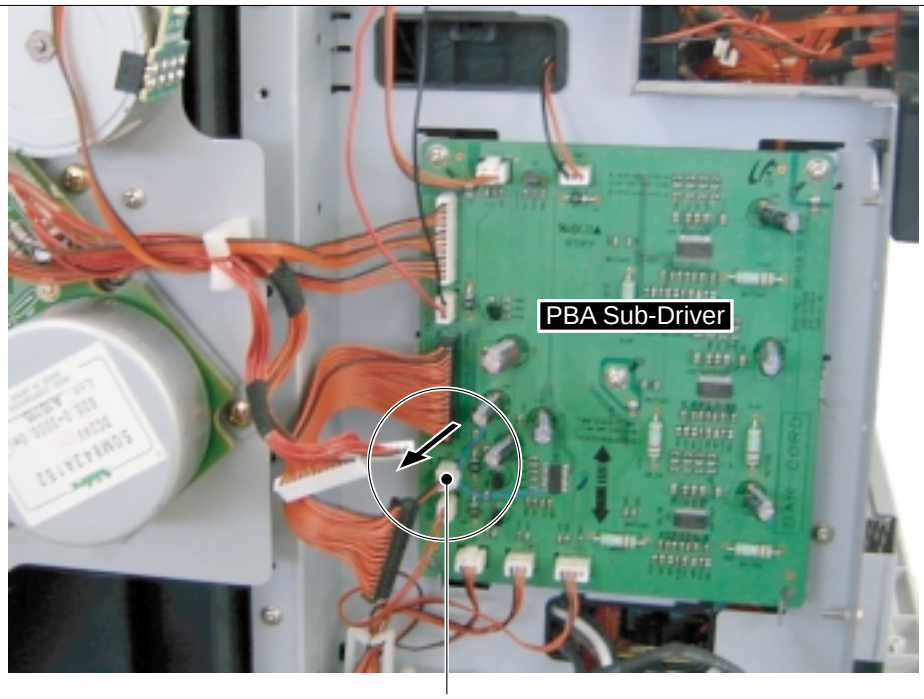
4. Remove the LSU in the direction of arrow.



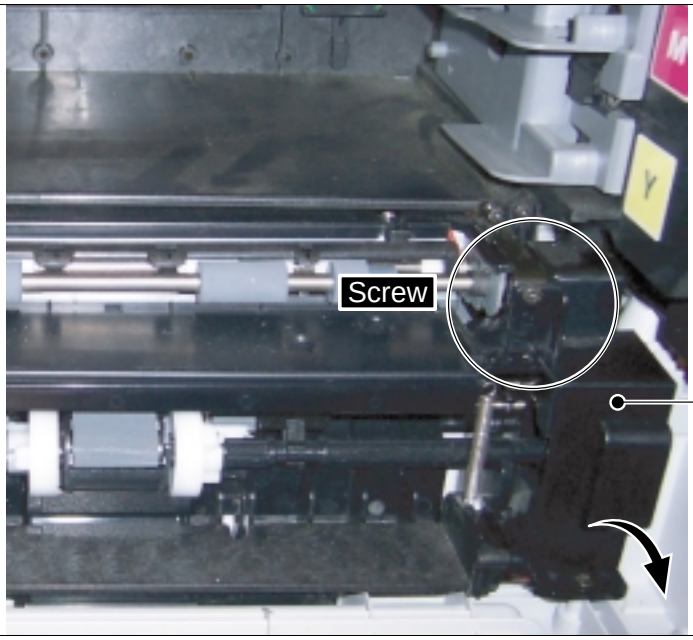
5.4.17 MPF Unit

>> Before disassembling it :
* Open the Right Cover Ass'y (Refer to 5.3.3)

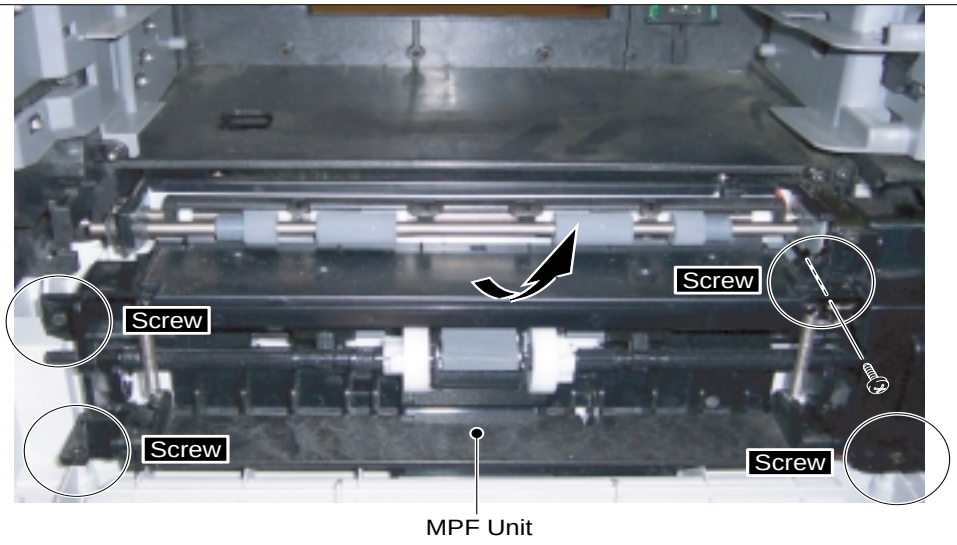
1. Unplug the Solenoid connector from the PBA Sub-Driver.



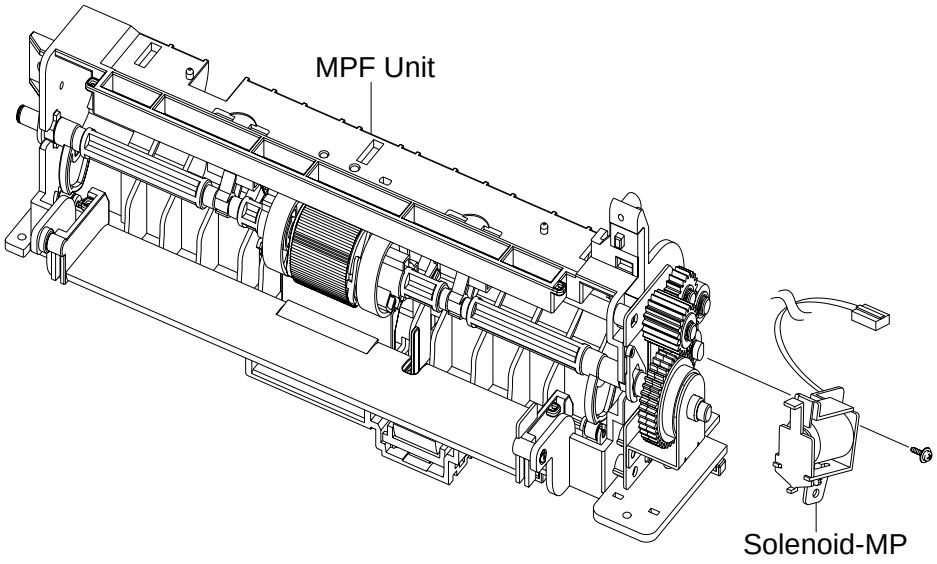
2. Remove the one screw from the Gear Cover and then remove it, as shown below.



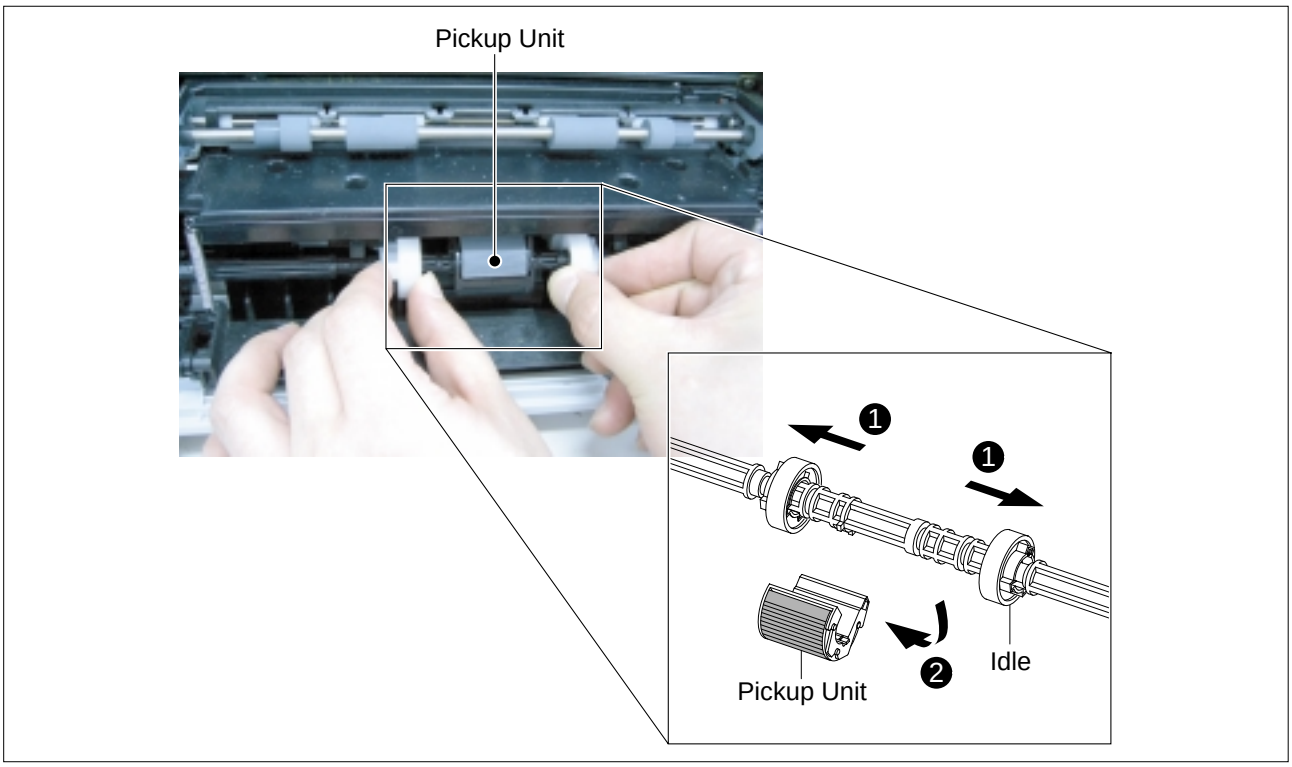
3. Remove the four screws from the MPF Unit and then remove it.



4. Remove the one screw securing the Solenoid-MP and then remove it.

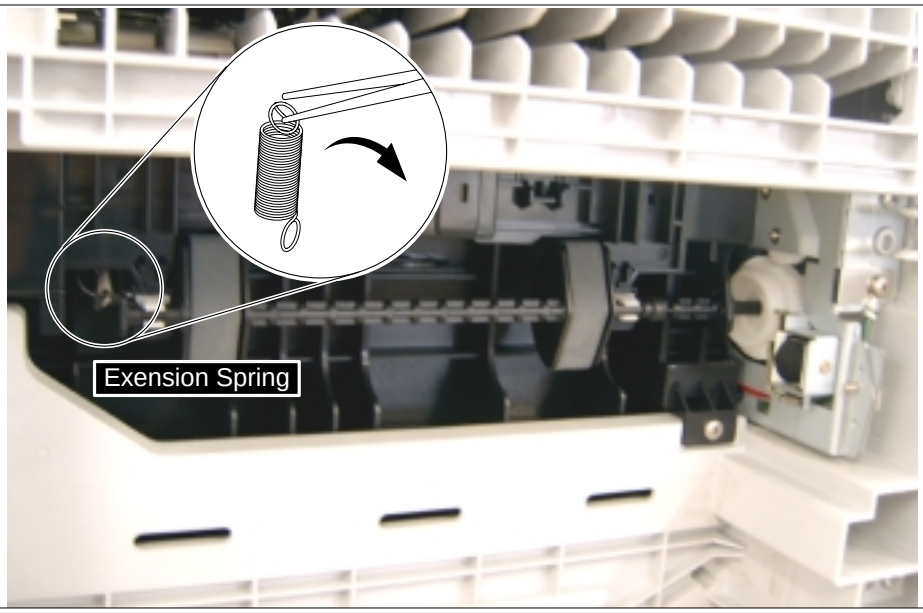


5. When if only remove the Pick up Unit, first push the Idle toward the ends of shaft and take out the Pick up Unit in the direction of arrow, as shown below.

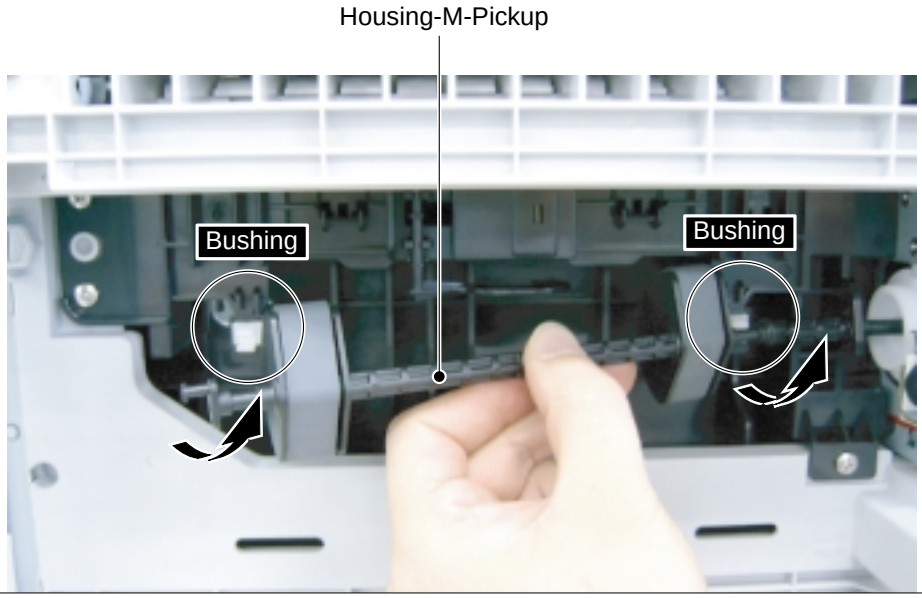


5.4.18 Housing-M-Pick up

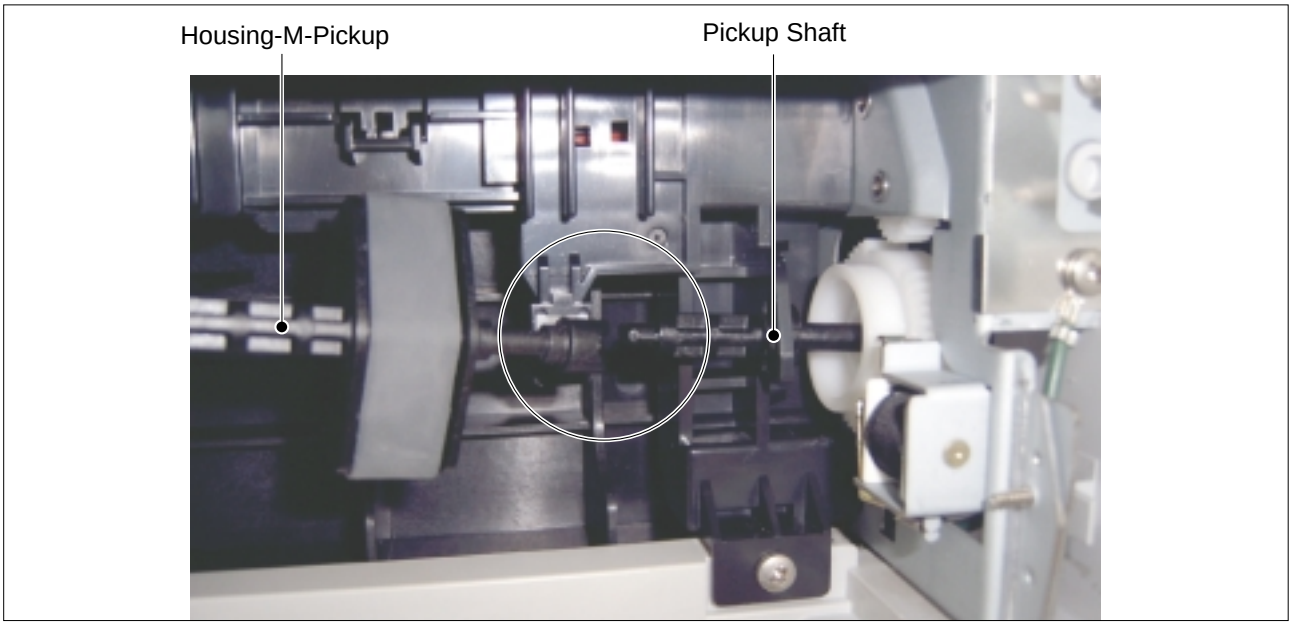
1. First turning over, remove the Extension Spring using a Pincette, as shown below.



2. Pull the Housing-M-Pick up from the Bushing Feed and then remove it in the direction of arrow.



NOTICE : When you reassemble the Housing-M-Pick up make sure that the let and of the Housing-M-Pick up fits into the Pick up Shaft, as shown below.

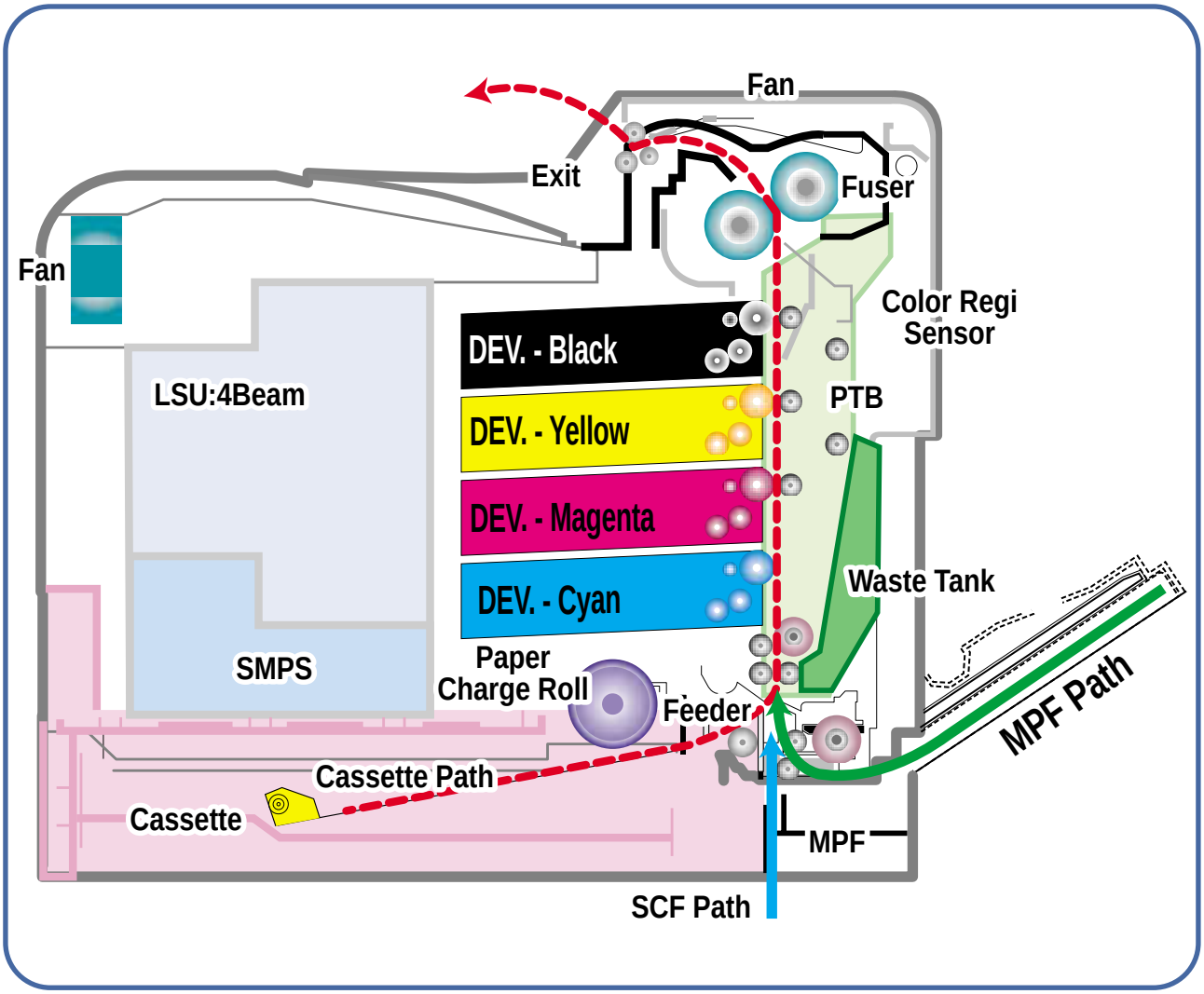


6. Alignment and Adjustments

This chapter describes some of the main service procedures including:
Using the EDC mode; Clearing paper jam and test patterns.
Much of this chapter is also included in the user's guide.

6.1. Paper path and Paper jam

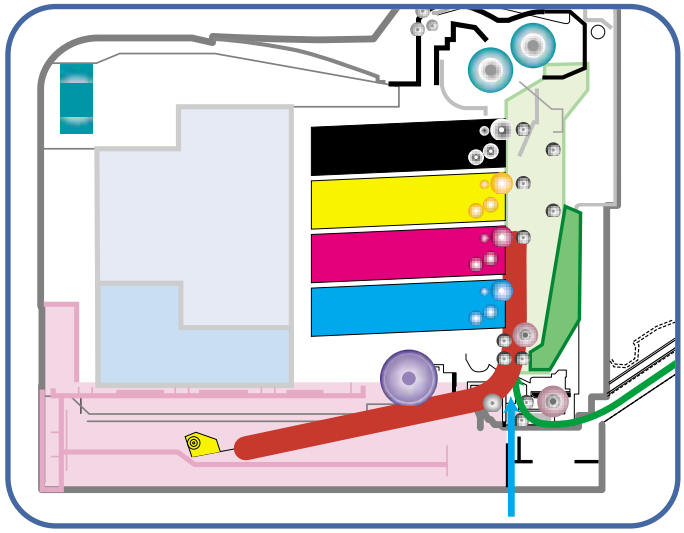
6.1.1 Paper path



6.1.2 Jams

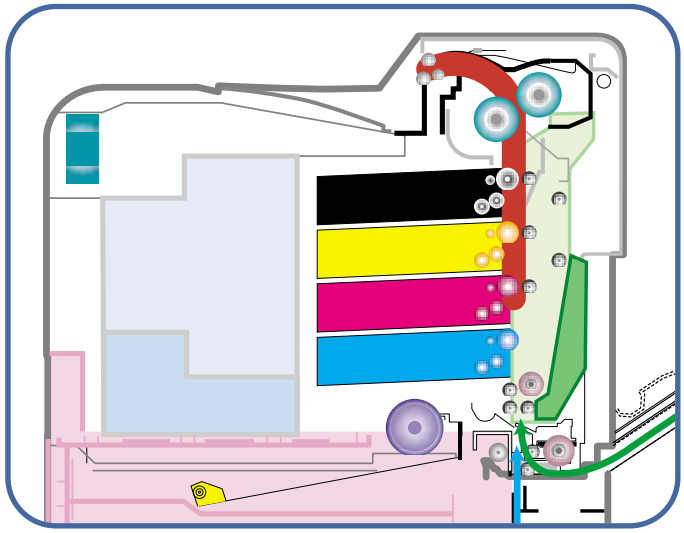
1) Jam0 (Jam in feed area)

* After a page was picked up, it was not fed.
* Paper does not reach the feed sensor in a certain time.
* Feed sensor is faulty and does not detect paper.
  - FCF pickup error: When a paper is not picked up in the 1st cassette.
  - SCF pickup error: When a paper is not picked up in the 2nd cassette.



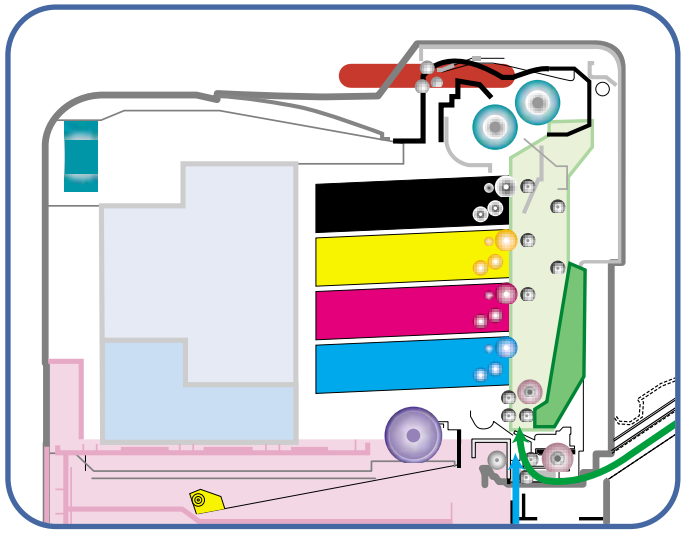
2) Jam1 (Jam inside printer)

* After the leading edge of the paper has reached the feed sensor, the feed sensor doesn't turn off (fails to detect the trailing edge of the paper) in a certain time
* After the leading edge of the paper has passed the feed sensor, it doesn't reach the exit sensor in a certain time.
* Exit senor is faulty and does not detect paper.



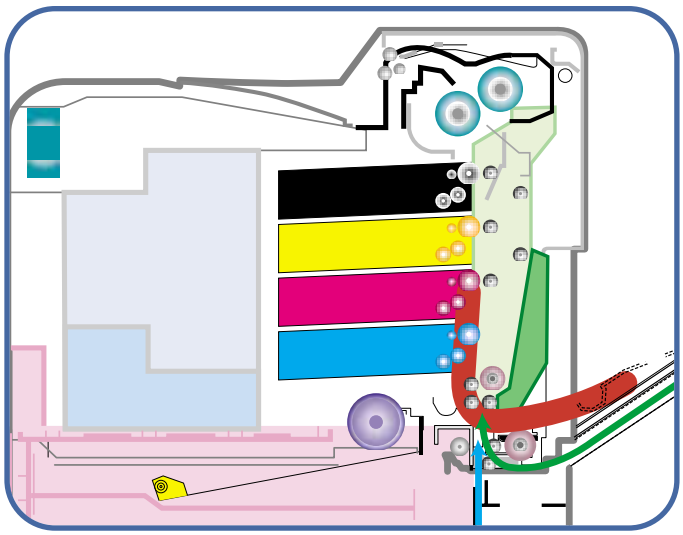
3) Jam2 (Jam in exit area)

* After the leading edge of the paper has passed, the trailing edge of the paper has not passed the exit sensor within a certain time
* The paper drive motor has been driving for longer than the time needed for the longest paper size and the exit sensor is not off.



5) Jam MPF

* Paper could not be picked up from the MPF tray.
* After pickup, a paper has been fed, but it doesn't reach the feed sensor in a certain time.
* Feed sensor is faulty and does not detect paper.



6.2 Jam Removal

When a jam occurs while printing a jam message is displayed on the control panel.

*** Jam0 In Tray 1:**
Paper jam in the main cassette.
*** Jam0 In MP Tray:**
Paper jam in the MP tray
*** Jam0 Tray2:**
Paper jam in the SCT (Second cassette tray)
*** Jam Inside Printer:**
Jam 1, Paper is jammed inside the printer.
*** Jam In Exit Area:**
Jam2, Paper is jammed in the exit area when ejecting paper.

CAUTION: When removing jammed paper, always pull it firmly and evenly without any sudden jerks. If at all possible, remove the paper as a single sheet. If the paper tears ensures ALL paper fragments are removed. Any fragments left inside the machine will cause it to jam again.

6.2.1 Factors that cause paper to jam

- Too much paper is loaded in the cassette.
- Paper in not loaded correctly in the cassette.
- Duplex cover opened while printing.
- Cassette removed while printing.
- Incorrect thickness of paper used.
- Incorrect size of paper used.
- Cassette paper guides not correctly set (loose or too tight).
- Foreign object or other contamination of internal paper path and paper guide ribs.
- Badly damaged or folded leading or trailing edges of the paper.

6.2.2 Tips for Avoiding Paper Jams

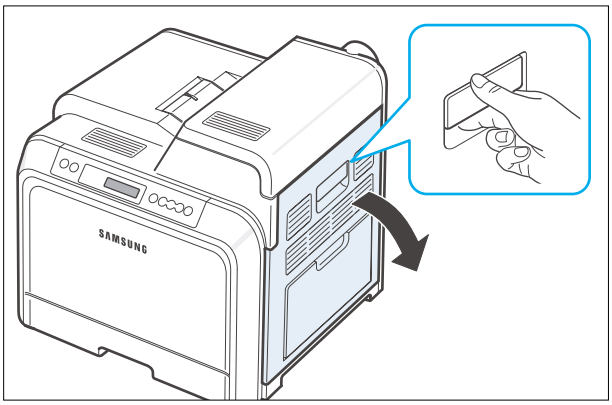
By selecting the correct paper types, most paper jams can be avoided. If a paper jam occurs, follow the steps outlined below:

- Ensure that the adjustable guides are positioned correctly.
- Do not overload the tray. Ensure that the paper is below the paper capacity mark on the right inside the tray.

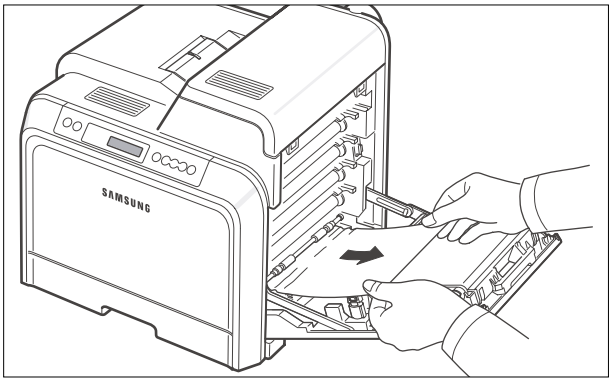
6.2.3 Jam 0 In Tray

If paper is jammed in the paper feed area, a lamp turns on at the corresponding location on the Status map. If you use the CLP-600N, “Jam0 In Tray1” also appears on the display.

1. Using the handle, completely open the access door.



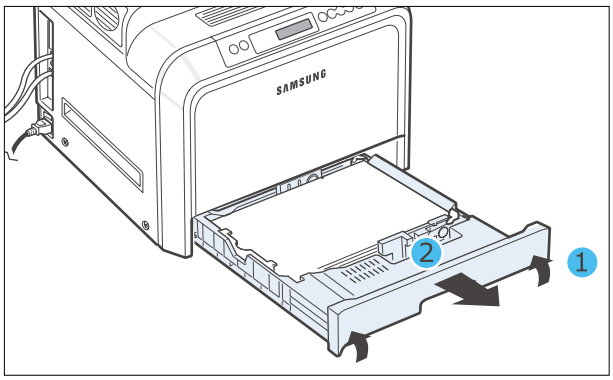
2. Carefully remove the paper by pulling in the direction as shown below. If you cannot find the jammed paper, or if there is any resistance removing the paper, stop pulling.



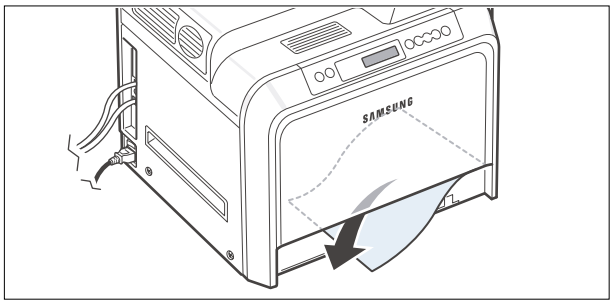
CAUTION:

- *Do not touch the green surface, the OPC drum, on the front of each toner cartridge with your hands or any other material. Use the handle on each cartridge in order to avoid touching this area.*
- *Be careful not to scratch the surface of the paper transfer belt.*
- *If you leave the access door open for more than a few minutes, the OPC drum can be exposed to light. This will cause damage to the OPC drum. Close the access door should the installation need to be halted for any reason.*

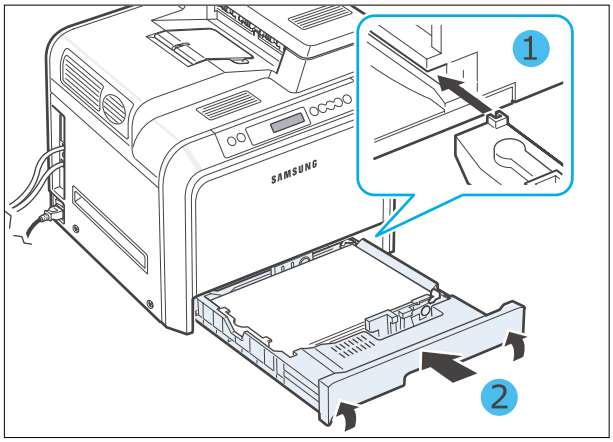
3. Pull the tray open. After you pull it all the way out, lift up the front part of the tray slightly to release the tray from the printer.



4. Remove the jammed paper by gently pulling it straight out as shown below.



5. To replace the tray, lower the rear edge, align it with the slot, and slide it into the printer.



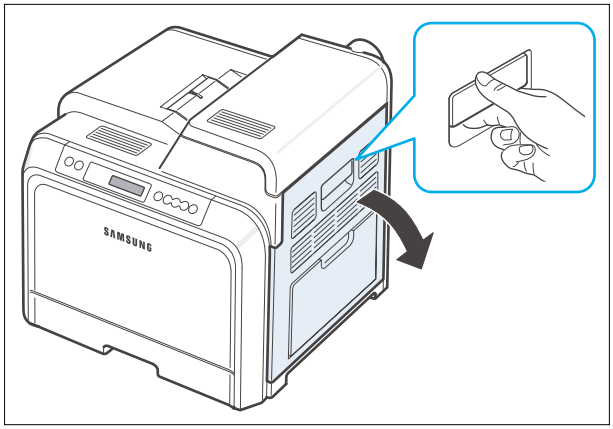
6. After removing the jammed paper, check for paper which may be jammed in other parts of the printer.

7. Close the access door firmly. The printer will resume printing.

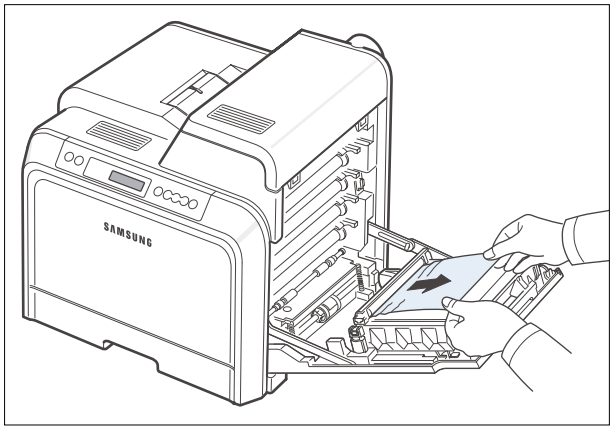
6.2.4 Jam 0 In MP Tray

When you print using the Multi-purpose Tray and the printer detects that there is either no paper or the paper has been improperly loaded, a lamp turns on at the corresponding location on the Status map. If you use the CLP-600N, “Jam0 In MP Tray” also appears on the display.

1. If the paper is not feeding properly, using the handle, completely open the access door.



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



CAUTION:

- *Do not touch the green surface, the OPC drum, on the front of each toner cartridge with your hands or any other material. Use the handle on each cartridge in order to avoid touching this area.*
- *Be careful not to scratch the surface of the paper transfer belt.*
- *f you leave the access door open for more than a few minutes, the OPC drum can be exposed to light. This will cause damage to the OPC drum. Close the access door should the installation need to be halted for any reason.*

3. Close the access door firmly. The printer will resume printing.

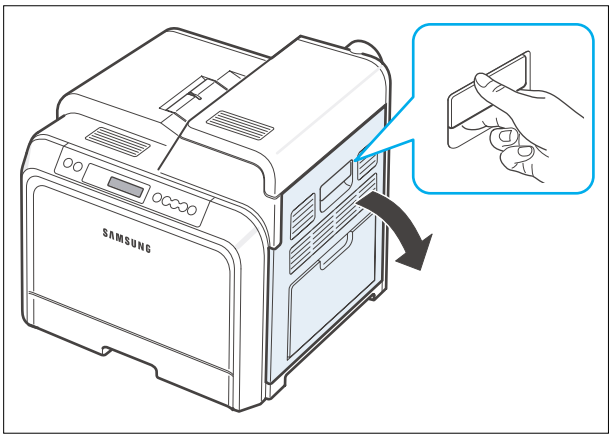
CAUTION:

If the access door is not completely closed, the printer will not operate.

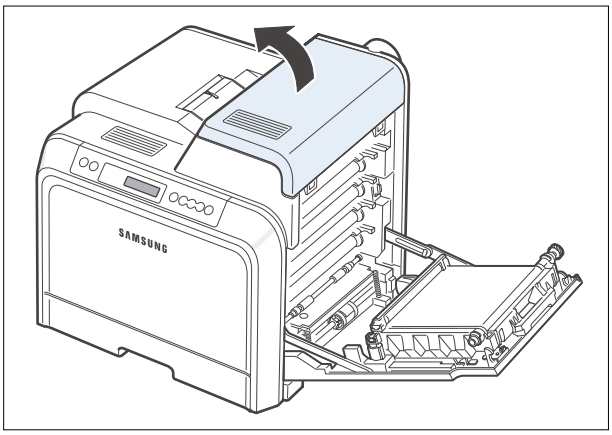
6.2.5 Jam Inside Printer

If paper is jammed inside the printer, a lamp turns on at the corresponding location on the Status map. If you use the CLP-600N, “Jam Inside Printer” also appears on the display.

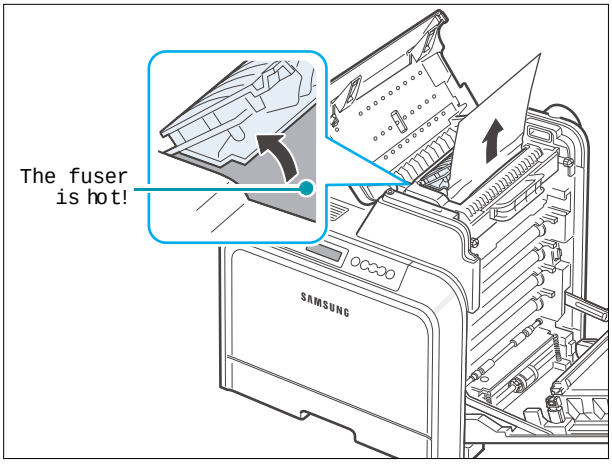
1. Using the handle, completely open the access door.



2. Open the top cover.



3. Holding the inner cover open, carefully take the jammed paper out of the printer. The inner cover will then close automatically.

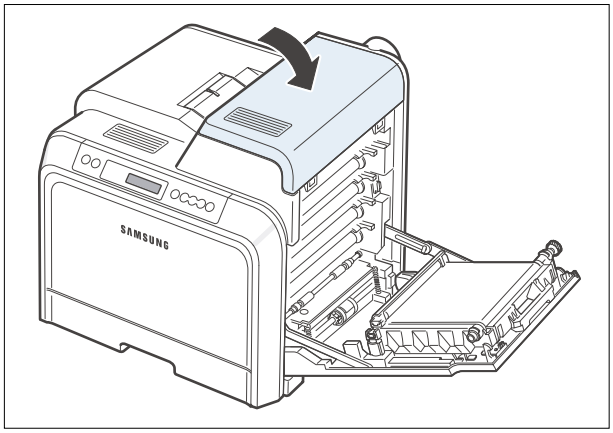


CAUTION:

- *Do not touch the fuser inside the inner cover. It is hot and could cause burns! The fuser’s operating temperature is 180°C (356°F). Take care when removing paper from the printer.*
- *Do not touch the green surface, the OPC drum, on the front of each toner cartridge with your hands or any other material. Use the handle on each cartridge in order to avoid touching this area.*
- *Be careful not to scratch the surface of the paper transfer belt.*
- *If you leave the access door open for more than a few minutes, the OPC drum can be exposed to light. This will cause damage to the OPC drum. Close the access door should the installation need to be halted for any reason.*

4. After removing the jammed paper, check for paper which may be jammed in other parts of the printer.

5. After making sure that the access door is open, close the top cover. Make sure that it is securely latched.



6. Close the access door firmly. The printer will resume printing.

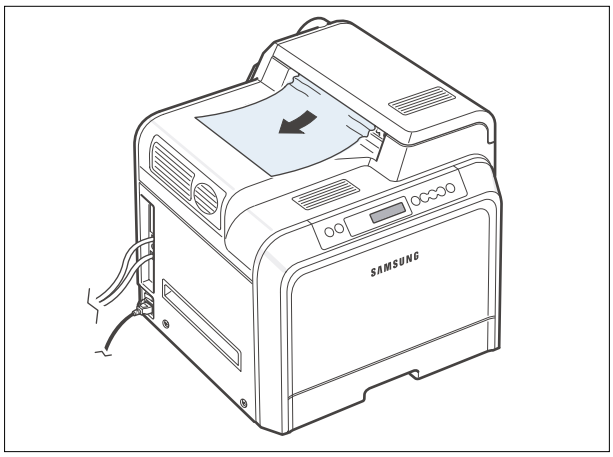
CAUTION:

- *If the top cover and access door are not completely closed, the printer will not operate.*

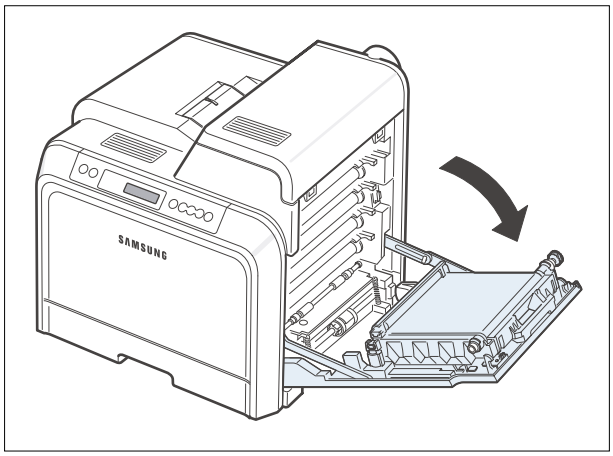
6.2.6 Jam In Exit Area

If paper is jammed in the paper exit area, a lamp turns on at the corresponding location on the Status map. If you use the CLP-600N, “Jam In Exit Area” also appears on the display.

1. If a long portion of the paper is visible, pull it straight out. Open and close the access door firmly. The printer will resume printing.
   If you cannot find the jammed paper, or if there is any resistance removing the paper, stop pulling.



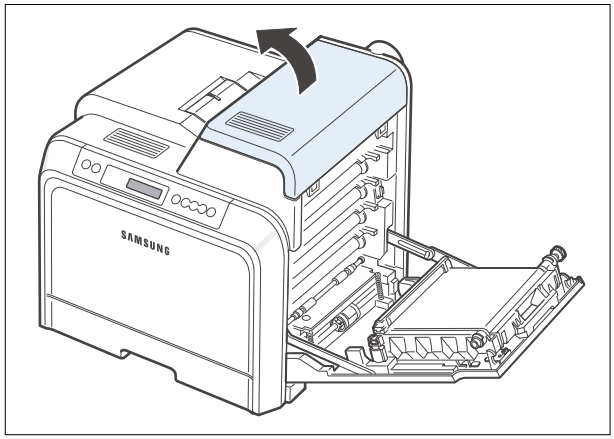
2. Using the handle, completely open the access door.



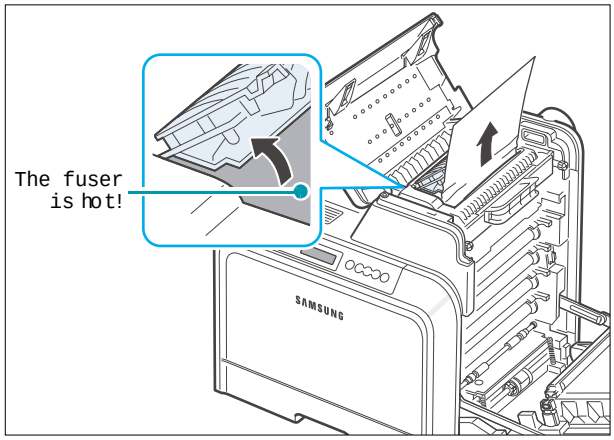
CAUTION:

- *Do not touch the green surface, the OPC drum, on the front of each toner cartridge with your hands or any other material. Use the handle on each cartridge in order to avoid touching this area.*
- *Be careful not to scratch the surface of the paper transfer belt.*
- *If you leave the access door open for more than a few minutes, the OPC drum can be exposed to light. This will cause damage to the OPC drum. Close the access door should the installation need to be halted for any reason.*

3. Open the top cover.



4. Holding the inner cover open, carefully take the jammed paper out of the printer. The inner cover will then close automatically.

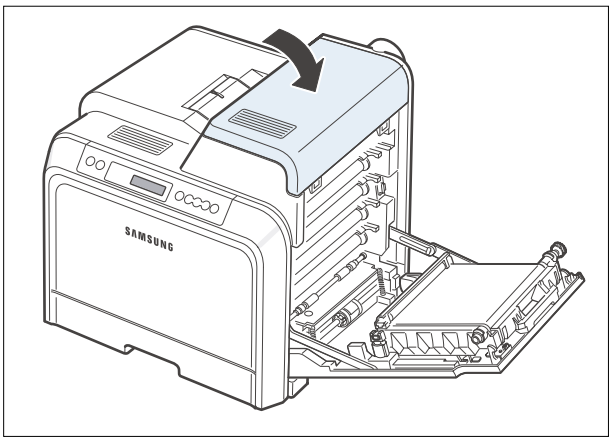


CAUTION:

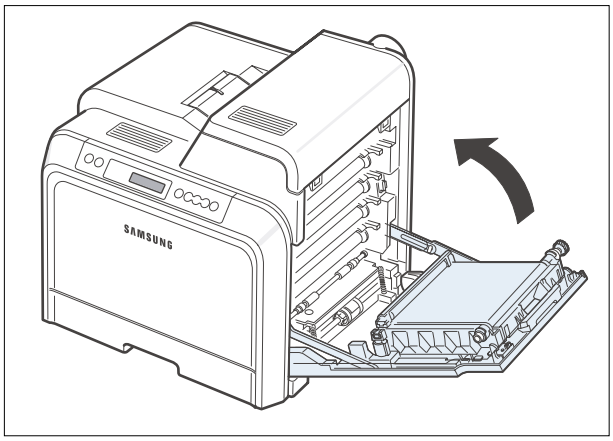
Do not touch the fuser inside the inner cover. It is hot and could cause burns! The fuser’s operating temperature is 180°C (356°F). Take care when removing paper from the printer.

5. After removing the jammed paper, check for paper which may be jammed in other parts of the printer.

6. After making sure that the access door is open, close the top cover. Make sure that it is securely latched.



7. Close the access door firmly. The printer will resume printing.



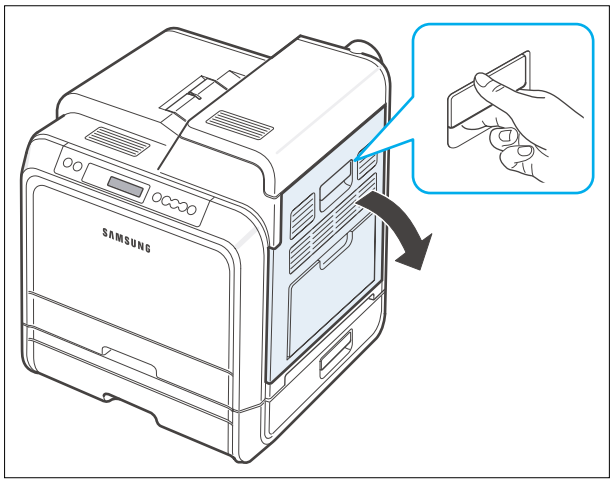
CAUTION:

• Do not touch the green surface, the OPC drum,

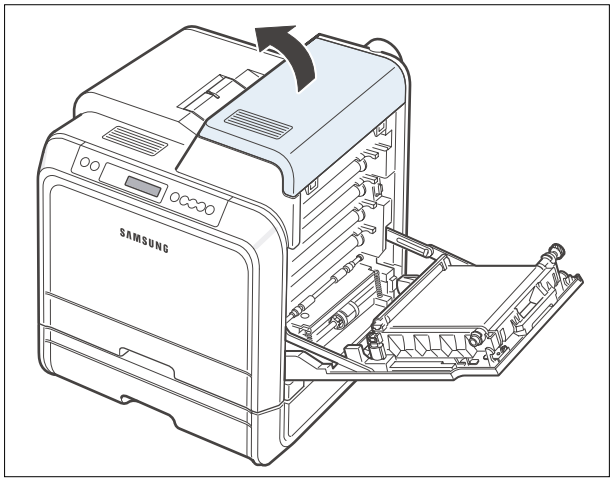
6.2.7 Jam In Tray2

If paper i s j ammed i n the opti onal Tray2, a l amp turns on at the corresponding location on the Status map. If you use the CLP-600N, “Jam0 In Tray2” also appears on the display.

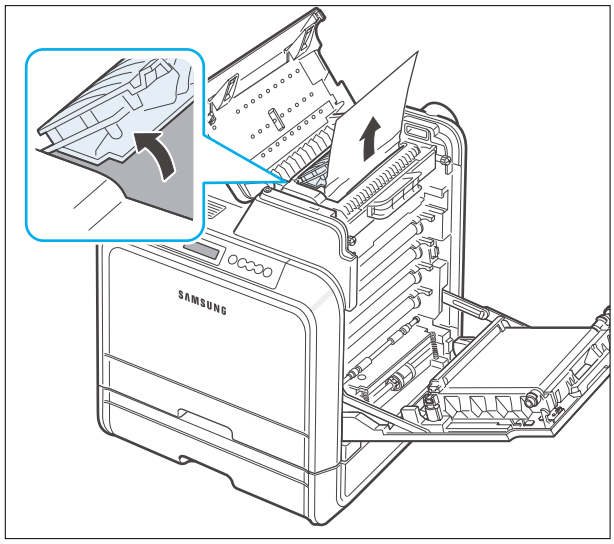
1. Using the handle, completely open the access door.



2. Open the top cover.



3. Holding the inner cover open, carefully take the jammed paper out of the printer. The inner cover will then close automatically.

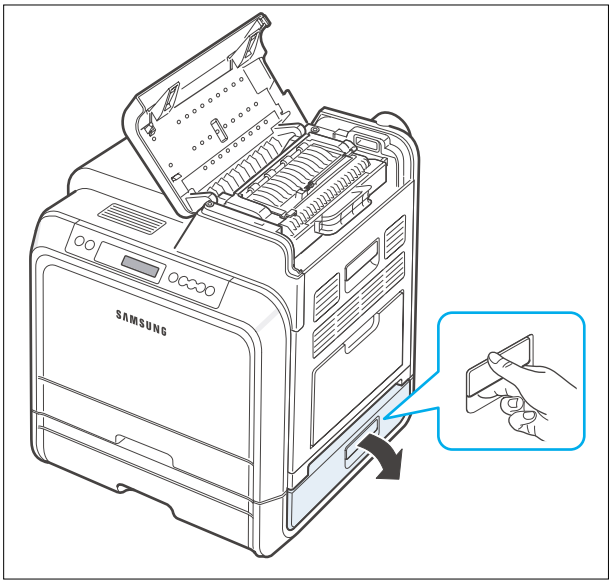


If you cannot find the jammed paper, or if there is any resistance removing the paper, stop pulling and close the access door.

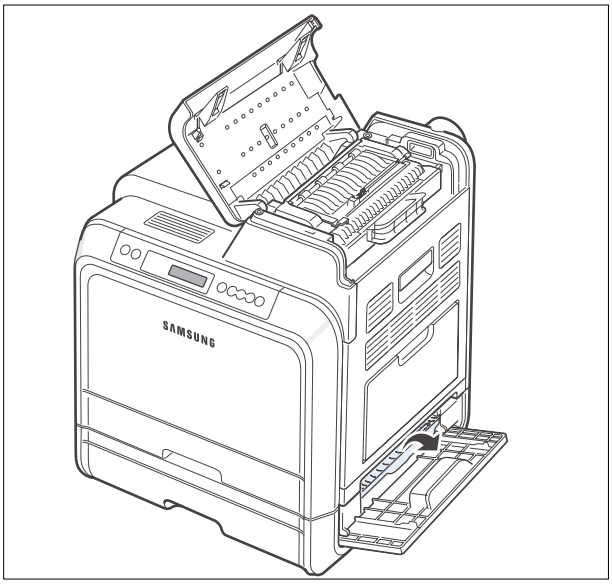
CAUTION:

- *Do not touch the fuser inside the inner cover. It is hot and could cause burns! The fuser’s operating temperature is 180°C (356°F). Take care when removing paper from the printer.*
- *Do not touch the green surface, the OPC drum, on the front of each toner cartridge with your hands or any other material. Use the handle on each cartridge in order to avoid touching this area.*
- *Be careful not to scratch the surface of the paper transfer belt.*
- *If you leave the access door open for more than a few minutes, the OPC drum can be exposed to light. This will cause damage to the OPC drum. Close the access door should the installation need to be halted for any reason.*

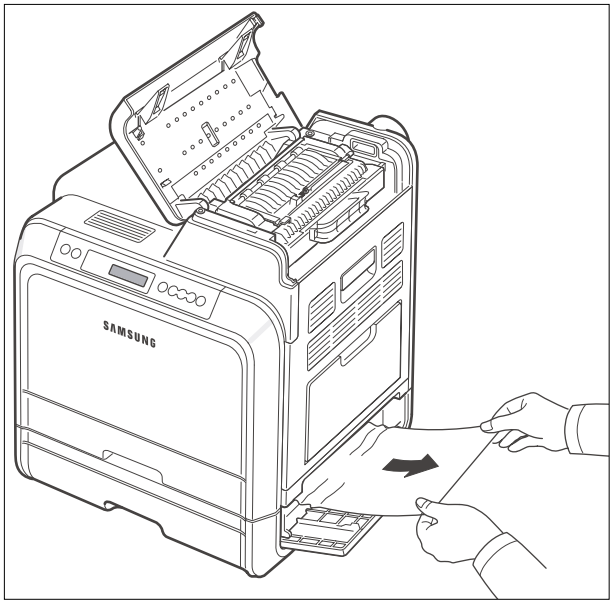
4. Open the outer jam cover in Tray2.



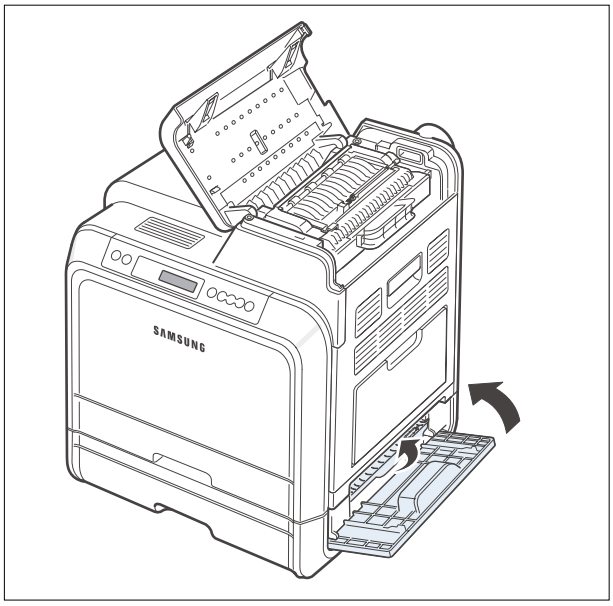
5. Open the inner cover of Tray2.



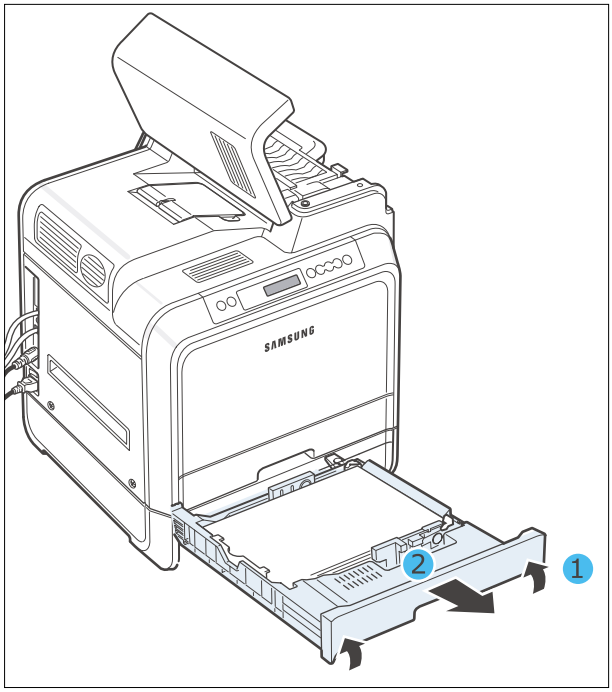
6. Pull the jammed paper out in the direction shown. To avoid tearing the paper, pull it out gently and slowly.



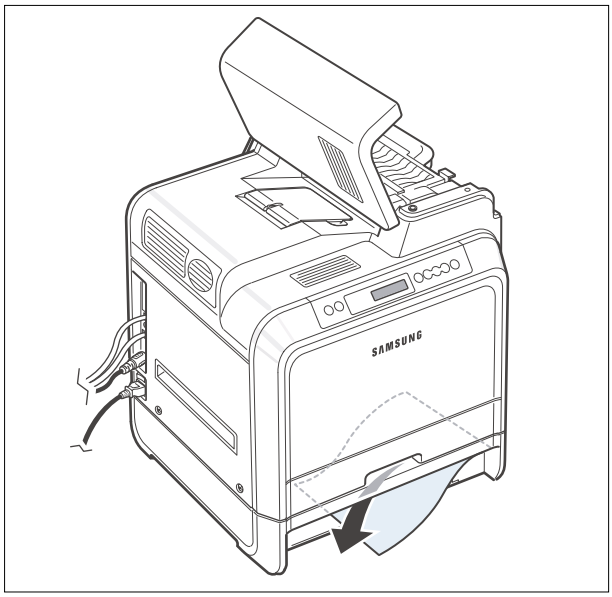
7. Close the two jam covers.
   If you cannot find the jammed paper, or if there is any resistance removing the paper, stop pulling and continue.



8. Pull the optional Tray2 open. After you pull it all the way out, lift up the front part of the tray slightly to release the tray from the printer.

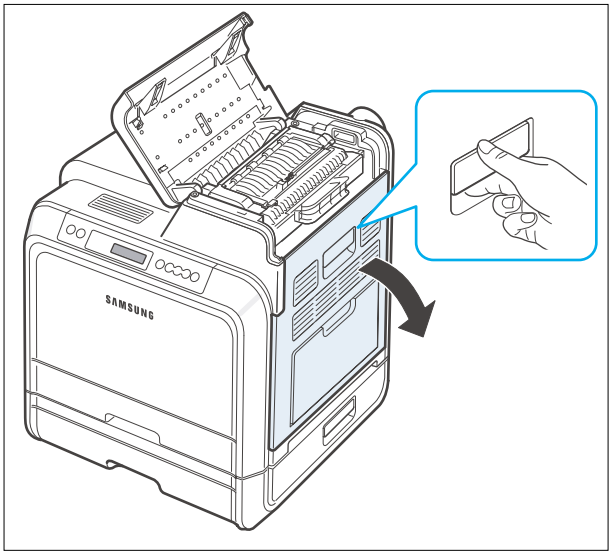


9. If you see the jammed paper, remove the paper from the printer by gently pulling it straight out as shown below.

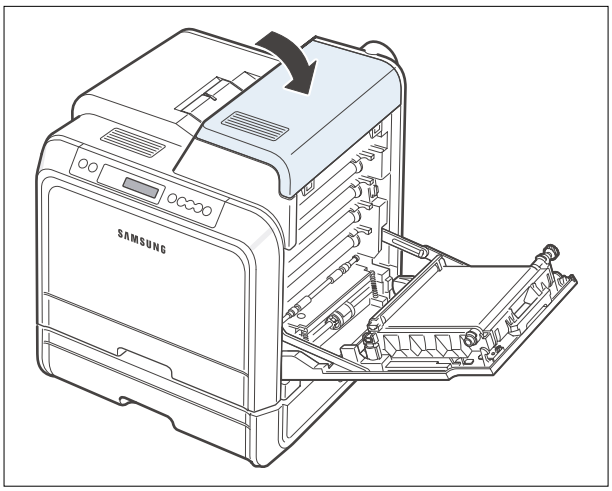


10. Slide the tray back into the printer and close the two jam covers.

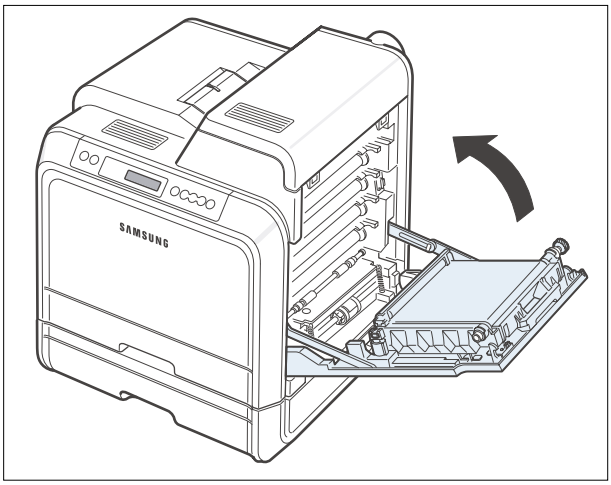
11. Open the access door.



12. After making sure that the access door is open. Close the top cover.



13. Close the access door firmly. The printer will resume printing.



CAUTION:
If the top cover and access door are not completely closed, the printer will not operate.

6.3 Sample Pattern

This product provides several printable test patterns for maintenance purposes. These patterns can be used to aid the diagnosis of print quality problems.

6.3.1 Printing a Demo Page

Print a demo page to make sure that the printer is operating correctly.

1. Press the **Menu** button ( ) on the control panel until you see “Information ” on the bottom line of the display..
2. Press the **Enter** button ( ) to access the Menu.
3. Press the scroll button (or) until you see “Demo Page ” on the bottom line.
4. Press the **Enter** button ( ) .

A demo page showing the printer ’s features and capabilities prints out.

6.3.2 Printing a Configuration Page

Print a demo page to make sure that the printer is operating correctly.

1. Press the **Menu** button ( ) on the control panel until you see “Information ” on the bottom line of the display..
2. Press the **Enter** button ( ) to access the Menu.
3. Press the scroll button (or) until you see “Configuration ” on the bottom line.
4. Press the **Enter** button ( ) .

A demo page showing the printer ’s features and capabilities prints out.

6.4 Checking the Remaining Toner and Others

6.4.1 Checking the Remaining Toner

You can check the level of toner left in each cartridge.

1. In ready mode press the Menu button (Menu) on the control panel several times until you see 'Setup ' on the bottom line of the display.
2 Press the Enter button (Enter) to access the menu.
3 Press the scroll button (◀ or ▶) until 'Maintenance ' displays on the bottom line.
4 Press the Enter button (Enter)
5 When 'Check Toner ' displays on the bottom line,,press the Enter button (Enter) .
6 Press the scroll button (◀ or ▶) until the color of the toner cartridge you want to check displays on the bottom line.
7 Press the Enter button (Enter) The display shows the percentage of the remaining toner.
8. Press the Upper Level button to return to step 6 and select a different cartridge.
9. To return to the Ready condition press the Upper Level button several times until 'Ready' appears in the display

6.4.2 Checking the Remaining Others

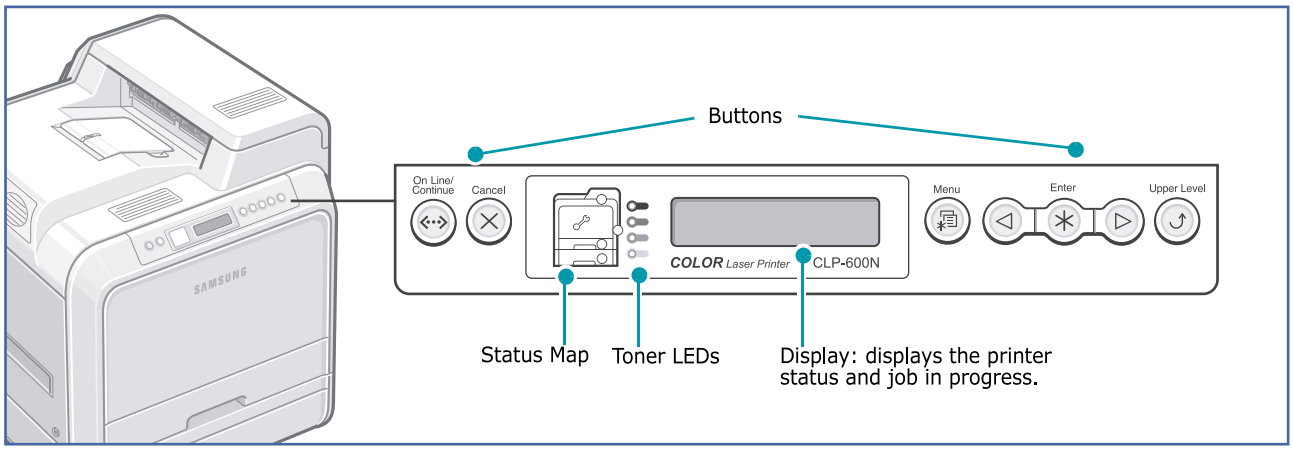
You can check the level of each item.

1. In ready mode press the Menu button (Menu) on the control panel everal times until you see 'Setup ' on the bottom line of the display.
2 Press the Enter button (Enter) to access the menu.
3 Press the scroll button (◀ or ▶) until 'Maintenance ' displays on the bottom line.
4 Press the Enter button (Enter)
5 When 'Check Others ' displays on the bottom line,,press the Enter button (Enter) .
6 Press the scroll button (◀ or ▶) until the item you want to check displays on the bottom line.
7 Press the Enter button (Enter) The display shows the percentage of item.
8. Press the scroll button display either 'Image Count' or 'Reset'
9a. Choose 'Reset' and press enter to reset the counter after replacing a consumable item
or
9b Choose Image count to display the counter.
10. Press the Upper Level button to return to step 7 and select a different choice or press it a second time to return to step 6 and choose a different item.
11. To return to the Ready condition press the Upper Level button several times until 'Ready' appears in the display.

6.5 Understanding the Control Panel

The control panel on the top right side of your printer has a display and seven buttons.

6.5.1 Display



Message	Description
Ready	•The printer is on-line and ready to print. • If you press the On Line/Continue button, the printer goes off-line.
Offline	•The printer is off-line and cannot print. •If you press On Line/Continue ,the printer switches to on-line.
Processing...	•The printer is printing. •If you want to cancel printing,press Cancel .
Sleeping...	•The printer is in Power Save mode, using less power.When a print job is received from the computer or if any button is pressed,the printer switches to on-line. •To deactivate the Power Save mode or change the power-saving time.

6.5.2 Buttons

Message	Description	
 (status map)	When a paper jam occurs, a lamp turns on at the corresponding location on the Status map so that you can locate the paper jam. If you use the CLP-600N, the display on the control panel also shows the corresponding error message, indicating the location of the jam. For details on the meaning of the LEDs and error messages.	
 (toner LEDs)	On	When a toner cartridge is empty, a corresponding lamp, indicating the color of the toner cartridge, turns on. Replace the corresponding toner cartridge with a new one. Or, if you have installed an invalid toner cartridge, a corresponding lamp turns on. Install only Samsung toner cartridges, designed for your printer. Otherwise, if you have installed the toner cartridge into improper cartirdge slot, a corresponding lamp turns on. Install the toner cartridge into each proper cartridge slot.
	Blanking	When a toner cartridge is low, a corresponding lamp, indicating the color of the toner cartridge, blinking. Order a new toner cartridge. You can Temporarily improve print quality by redistributing the toner.
 Menu	This button is available only with the CLP-600N. • Press to enter menu mode. • In menu mode, press to scroll through the menus.	
 Enter	This button is available only with the CLP-600N. In menu mode, press to select the displayed sub menu item or to confirm the changed setting. The selected item is marked with an *.	
	This button is available only with the CLP-600N. In menu mode, press to scroll through sub menu items or setting options. Pressing moves you to the next option and pressing sends you back to the previous option.	
 Cancel	• Press to cancel the current print job. • In menu mode, press to return to ready mode.	
 Upper Level	This button is available only with the CLP-600N. In menu mode, press to go back to the upper menu level.	

<table>
<tr><th>Message</th><th colspan="3">Description</th></tr>
<tr><td>On Line/
Continue
  </td><td colspan="3">• Press to switch between on-line and off-line.
• In menu mode, press to return to ready mode.
The color of the On Line/Continue button indicates the status of the printer.</td></tr>
<tr><td></td><td>Green</td><td>On</td><td>The printer is on-line and can receive data from the computer.</td></tr>
<tr><td></td><td></td><td>Blanking</td><td>• When the light blinks slowly, the printer is receiving data from the computer.
• When the light blinks quickly, the printer is receiving and printing data.</td></tr>
<tr><td></td><td>Red</td><td>On</td><td>Check the display message or SmartPanel. for details on the meaning of the error message.</td></tr>
<tr><td></td><td></td><td>Blanking</td><td>A minor error has occurred and the printer is waiting for the error to be cleared. Check the display message or SmartPanel. When the problem is cleared, the printer resumes printing. If you want to ignore this warning, press this button.</td></tr>
<tr><td></td><td>Off</td><td colspan="2">• The printer is off-line and cannot print.
• The printer is in Power Save mode. When data is received, it switches to on-line automatically.</td></tr>
</table>

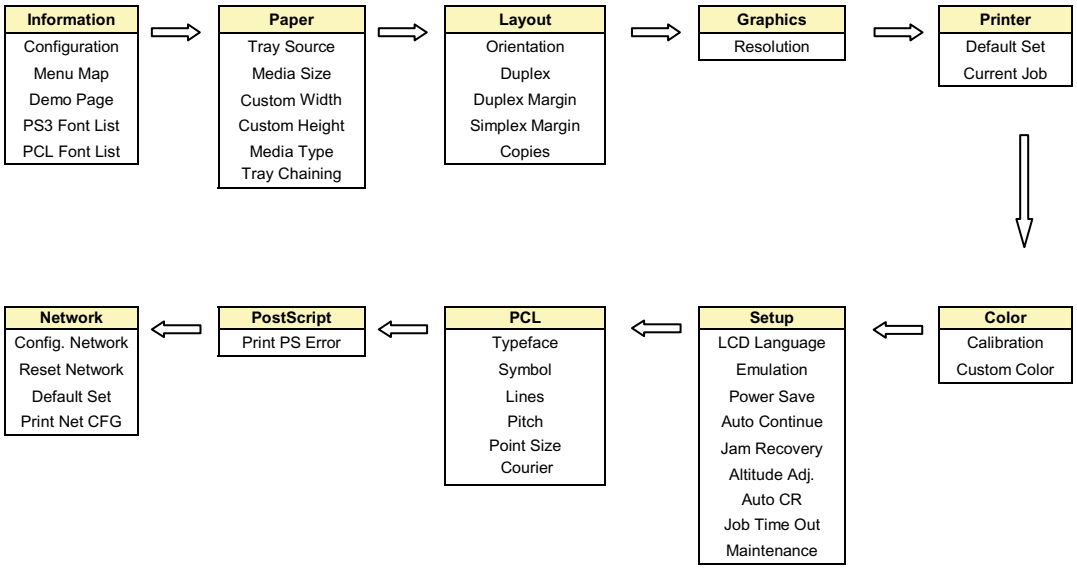
6.5.3 Using Control Panel Menus

A number of menus are available to make it easy for you to change the printer settings.

You can configure your printer from the printer's control panel.You can also use the control panel menus while the printer is in use.

1. In ready mode press the Menu button ( ) until you see the menu you want on the bottom line of the display.
2. Press the Enter button ( ) to access the menu.
3. Press the scroll button (or) until the menu item you want displays on the bottom line.
4. Press the Enter button ( ) to confirm the selected item.
5. If the menu item has submenus, repeat steps 3 and 4.
6. Press the scroll button (or) until the setting option you want displays on the bottom line or enter the required value.
6. Press the Enter button ( ) to save your input or selection.
   - An asterisk (*) appears next to the selection on the display, indicating that it is now the default.
8. To exit the menu, press the Upper Level button ( ) repeatedly, or the Cancel button ( ).
   - After 60 seconds of inactivity (no key has been pressed), the printer automatically returns to ready mode.

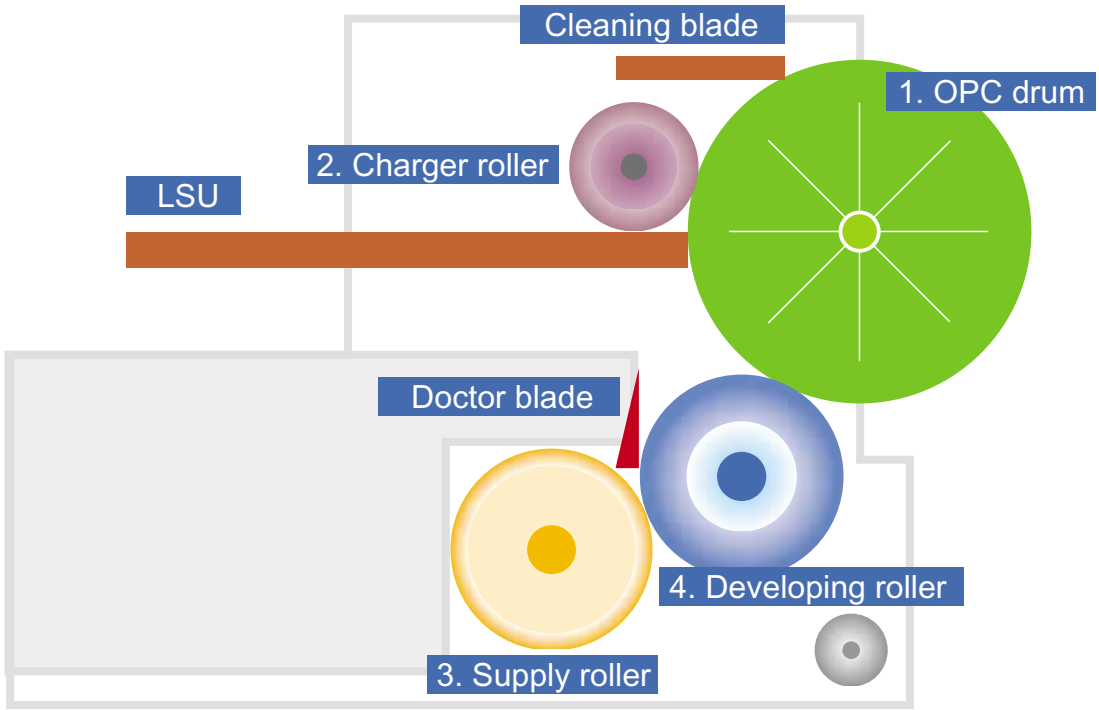
NOTE: *Print settings made from the printer driver override the settings on the control panel.*



6.6 Periodic Defective Image

If an image defects appears at regular intervals on the printed-paper, it is due to a faulty or damaged roller. Refer to the table below and check the condition of the appropriate roller.

No	Roller	Defective image	Typical defect
1	OPC Drum	75.40 mm	white and black spot
2	Charge Roller	26.70 mm	white/black spot and periodic band
3	Supply Roller	42.40 mm	periodic band
4	Developing Roller	27.00 mm	white spot, horizontal black band
5	Transfer Roller	43.90 mm	periodic band
6	Gap-ring	39.00 mm	periodic band
7	Pressure Roller	114.6 mm	white/black spot



6.7 How to use EDC (Engine Diagnostic Control) Mode

6.6.1 EDC Establishment

EDC Mode is feature that allows the engineer to check the condition of the print engine. It can check the operating condition of the motors, sensors, solenoids and clutches, measure the High Voltage from the HVPS and check the operation of the fuser and LSU.

6.6.1.1 How to enter the EDC Mode

a) Turn on the printer while pressing the “Enter” key. Hold the key until ‘Select Test mode’ appears in the display.

b) Press the direction key until “<Ready..200x xx xx>” is displayed.

c) Press the “Enter” key.

d) <Enter Access Key> appears in the display. Press the cancel key twice.

Note. *There are a number of other test modes. Only EDC Test and Panel Tests should be used by service engineers, all other functions are for factory use only.*

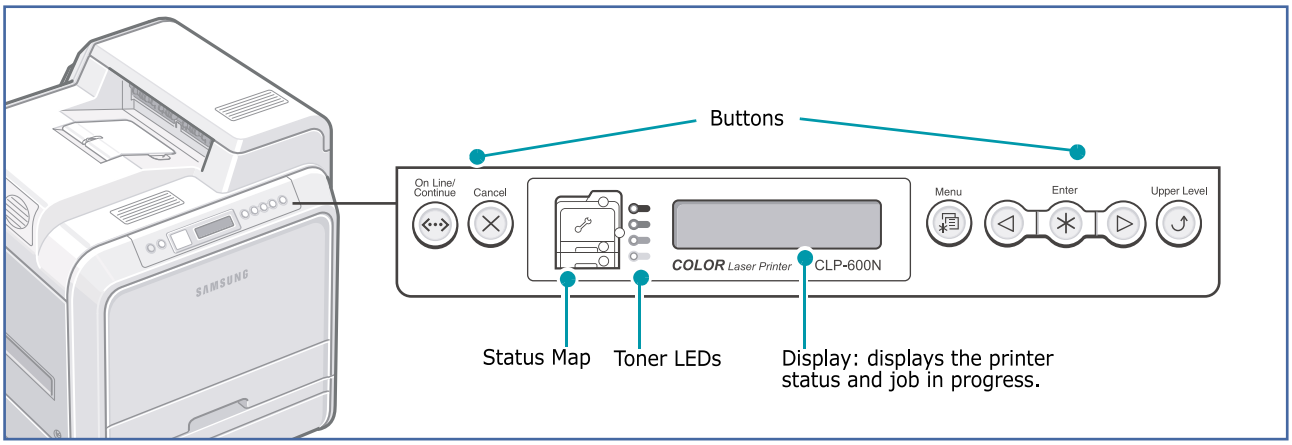
6.6.1.1 Functions of the keys on the Panel and how to use them.

Key	Function	Description
On Line		Not used
Cancel		Not used
Menu	Menu	Display Top Menu of EDC Mode
Left/Right Arrow	Find Menu	Move Menu
Confirm	Run/Select Run	run the Function / Select Menu
Upper Menu	Stop/Move Stop	Stop the selected Function or go to Upper Menu.

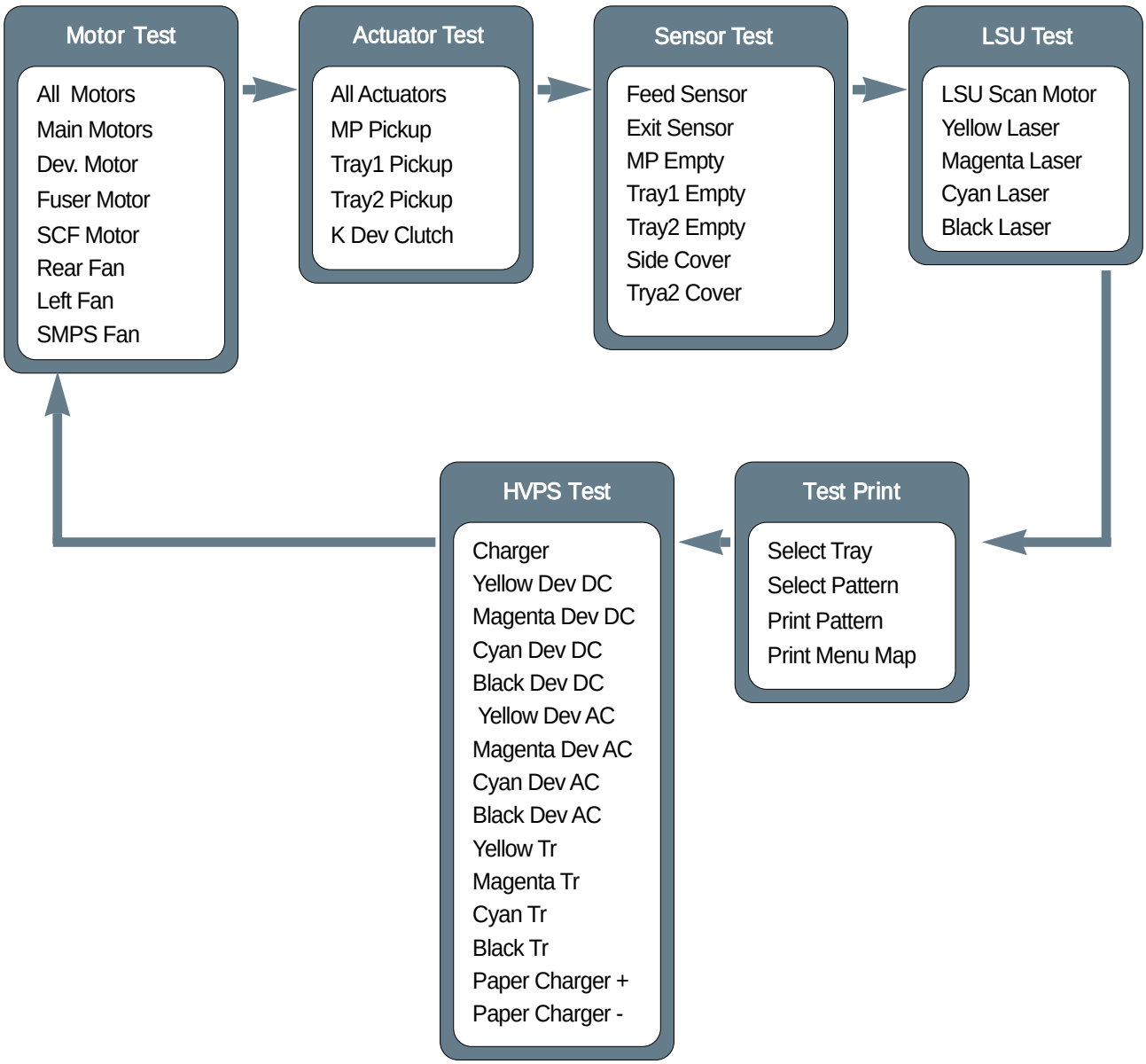
6.6.1.2 LCD Function and Directions

Upper Line : Upper Line messages mainly show the current test menu or sub-menu.
[Main Menu] or [Function] is displayed.

Lower Line : Lower Line messages mainly the current test and status.



6.6.2 EDC Whole Menu



6.6.2.1 Motor Test

This function allows the operation of the various motors to be checked.

<How to operate>

a) Press the "<" or ">" key until "Motor Test" is displayed.
b) Press the "Enter" key to select this function.
c) Press the "<" or ">" key until you see the name of the motor you wish to test.
d) Press the "Enter" key to run the test. The test is stopped by pressing the "Upper Level" key.
e) Pressing the "Upper Level" key when the test is already stopped will return to step 'c' above.
f) Pressing the "Upper Level" key again will return to the EDC main menu.

Item	Description
All Motors	When “select” key is pushed, ”All Motor ON” message will be displayed on LCD.
Main Motor	If motor lock signal is normal, "Successed" message will be displayed on LCD. If not, "Failed" will be displayed instead.
Dev. Motor	If motor lock signal is normal, "Successed" message will be displayed on LCD. If not, "Failed" will be displayed instead.
Fuser Motor	When “select” key is pushed, “Fuser Motor Test ON” message will be displayed on LCD.
SCF Motor	When “select” key is pushed, “Tray2 Motor Test ON” message will be displayed on LCD.(when SCF is not installed, “not installed” message will be displayed)
Rear Fan	When “select” key is pushed, “Rear Fan ON” message will be displayed on LCD.
Left Fan	When “select” key is pushed, “Left Fan ON” message will be displayed on LCD.
SMPS Fan	When “select” key is pushed, “SMPS Fan ON” message will be displayed on LCD.

6.6.2.2 Actuator Test

This function allows the operation of various solenoids and clutches to be checked.

<How to operate>

a) Press the "<" or ">" key until "Solenoid Test" is displayed.
b) Press the "Enter" key to select this function.
c) Press the "<" or ">" key until you see the name of the clutch or solenoid you wish to test.
d) Press the "Enter" key to run the test. The test is stopped by pressing the "Upper Level" key.
e) Pressing the "Upper Level" key when the test is already stopped will return to step 'c' above.
f) Pressing the "Upper Level" key again will return to the EDC main menu.

Item	Description
All Actuators	When “select” key is pushed, ”All Actuators ON” message will be displayed on LCD.
MP Pickup	When “select” key is pushed, ”MP Pickup Test ON” message will be displayed on LCD.
Tray1 Pickup	When “select” key is pushed, ”Tray1 Pickup Test ON” message will be displayed on LCD.
Tray2 Pickup	When “select” key is pushed, ”Tray2 Pickup Test ON” message will be displayed on LCD. (when SCF is not installed, “not installed” message will be displayed)
K Dev Clutch	When “select” key is pushed, ”K Dev Clutch ON” message will be displayed on LCD.

6.6.2.3 Sensor Test

This function allows the operation of various sensors to be checked

<How to operate>

a) Press the "<" or ">" key until "Sensor Test" is displayed.

b) Press the "Enter" key to select this function.

c) Press the "<" or ">" key until you see the name of the sensor you wish to test.

d) Press the "Enter" key to display the sensor status. If the sensor actuator is moved the displayed status will change to reflect the new sensor position..

e) Pressing the "Upper Level" key will return to step 'c' above.

f) Pressing the "Upper Level" key again will return to the EDC main menu.

Item	Description
Feed Sensor	If actuator is checked by sensor, "Without Paper" message will be displayed. if not, "With Paper" will be.
Exit Sensor	If actuator is checked by sensor, "Without Paper" message will be displayed. if not, "With Paper" will be.
MP Empty	If paper exists in the tray, "With Paper" will be displayed. If not, "Without Paper" will be.
Tray1 Empty	If paper exists in the tray, "With Paper" will be displayed. If not, "Without Paper" will be.
Tray2 Empty	If paper exists in the tray, "With Paper" will be displayed. If not, "Without Paper" will be.
Side Cover	If Side cover is opened, "Cover Opened" will be displayed. If not, "Cover Closed" will be.
Tray2 Cover	If Tray2 jam cover is opened, "Cover Opened" will be displayed. If not, "Cover Closed" will be.

6.6.2.4 LSU Test

This function allows the Fuser, LSU Motor and Laser Diode to be tested.

<How to operate>

a) Press the "<" or ">" key until "LSU Test" is displayed.

b) Press the "Enter" key to select this function.

c) Press the "<" or ">" key until you see the name of part you wish to test.

d) Press the "Enter" key to run the test. The test is stopped by pressing the "Upper Level" key.

e) Pressing the "Upper Level" key when the test is already stopped will return to step 'c' above.

f) Pressing the "Upper Level" key again will return to the EDC main menu.

Item	Description
LSU Scan Motor	If motor lock signal is normal, "Successed" message will be displayed on LCD. If not, "Failed" will be.
Yellow Laser	When “select” key is pushed, “Yellow Laser On” message will be displayed on LCD.
Magenta Laser	When “select” key is pushed, “Magenta Laser On” message will be displayed on LCD.
Cyan Laser	When “select” key is pushed, “Cyan Laser On” message will be displayed on LCD.
Black Laser	When “select” key is pushed, “Black Laser On” message will be displayed on LCD.

- The LSU Motor Lock Time is a maximum 15 seconds depending on the environment. It may take over 15 seconds until the <Succeed> or <Failed> message is displayed.
- For safety - after printing a test pattern if you need to return to EDC mode turn the printer off and then re-enter EDC.

6.6.2.5 Test Print

This function allows you to test the overall function of the print engine. You can select either a 4 * 4 color bar pattern or a solid color pattern. If the solid pattern is selected 4 pages are printed - one for each color. You can also print the EDC Mode Menu Map.

<How to operate>

- Explore the menu until "Test Print" message is displayed on LCD.
- Press "Enter" key to select sub items.
- In the "Select Tray" menu, select paper tray from which paper is fed.
- In the "Select Pattern" menu, choose test pattern.
- If "Print Pattern" is selected, printing starts.

For safety - after printing a test pattern if you need to return to EDC mode turn the printer off and then re-enter EDC Mode by turning power on whilst holding in the "Enter" key.

6.6.2.6 HVPS Test

This function allows the HVPS to be tested

<How to operate>

a) Press the "<" or ">" key until "HVPS Test" is displayed.
b) Press the "Enter" key to select this function.
c) Press the "<" or ">" key until you see the name of the voltage you wish to test.
d) Press the "Enter" key to select the test.
e) Press the "<" or ">" key to select the appropriate Duty Cycle and press "Enter" to start the test
The test is stopped by pressing the "Upper Level" key.
The display shows the acceptable range for this setting (column 4 in the table below)
The mid range (nominal) voltage is shown in column 3 in the table below.
e) Pressing the "Upper Level" key when the test is already stopped will return to step 'c' above.
f) Pressing the "Upper Level" key again will return to the EDC main menu.

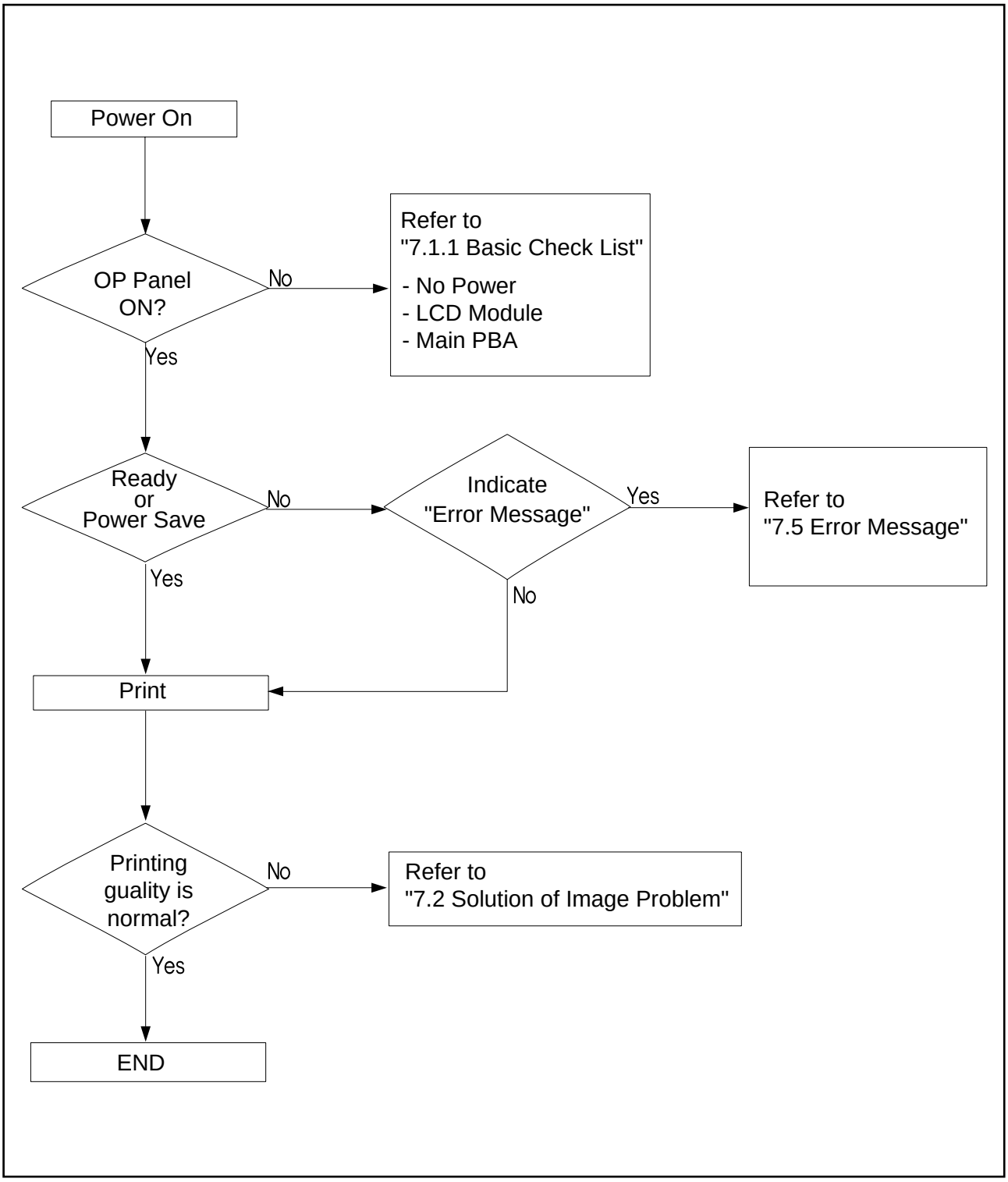
Item	Description
Charger	Duty : 54% , "-1156V ~ -1088V"
Yellow Dev DC	Duty : 34%, "-206V ~ -194V"
Magenta Dev DC	Duty : 34%, "-206V ~ -194V"
Cyan Dev DC	Duty : 34%, "-206V ~ -194V"
Black Dev DC	Duty : 34%, "-103V ~ -97V"
Yellow Dev AC	Duty : 25%, "-195V ~ -192V"
Magenta Dev AC	Duty : 25%, "-195V ~ -192V"
Cyan Dev AC	Duty : 25%, "-195V ~ -192V"
Black Dev AC	Duty : 25%, "-195V ~ -192V"
Yellow Tr	Duty : 40%, "1455V ~ 1545V"
Magenta Tr	Duty : 40%, "1455V ~ 1545V"
Cyan Dev Tr	Duty : 40%, "1455V ~ 1545V"
Black Dev Tr	Duty : 40%, "1455V ~ 1545V"
Paper Charger +	Duty : 25%, "921V ~ 979V"
Paper Charger -	"-403V ~ -297V"

* The allowed tolerance is commonly +/- 3%, this is the value Displayed, in case of "Dev AC", it is the value of Vpp.

7. Troubleshooting

7.1 Procedure of Checking the Symptoms

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



7.1.1 Basic Check List

1. Check the Power.

• Does "Warming Up" appear on the display?
--> If not check power cable, switch or SMPS. (see section 7.1.2 below)
--> Does the wall socket work?
• Do the Motors or other components initialize (listen for main motor, fan and LSU sounds)?
--> If not or there are none of the normal startup sounds check cable, switch or SMPS.
--> Does the wall socket work?

2. Check the LCD Panel.

• Is there any display at all?
--> If not check power cable, switch or SMPS. (see section 7.1.2 below)
--> Does the wall socket work?
• Is the display a meaningful message (are there any broken or badly formed characters)?
--> Check the main PBA and cable harness.
• Is the message on the LCD Panel a standard error message?
--> Refer to section 7.5

3. Check the Paper Path

• Is there a Paper Jam?
--> Remove any paper fragments caught in the paper path.
--> Refer to section 7.3
• Paper Jam occurs repeatedly at a specific point in the Paper Path
--> Dismantle the machine and carefully inspect the region where the jam occurs.
(Especially, check if paper fragments are caught in the Fuser

4. Print the Information Page (Configuration).

• Is there a problem?
--> If there is an error see section 2) or 3) above.
• Try printing a test page from a computer.
--> If there is an error check cables and driver installation.

5. Check the Print Quality.

•Is there are a Print Quality Problem?
--> Refer to section 7.2

6. Check consumables (toner etc.).

•Using the keys print the Information Page.
--> Refer to 7.1.4 below for expected life of various consumable parts, compare this with the figures printed and replace as required

7.1.2 Initial Inspection

1. Check Power part

1. The printer does not work no matter how long you wait.
   A. Is the Power Switch (printer and wall socket) turned on ?
   B. Is the Power Cord connected to the printer correctly ?
   C. Is the Power cord connected to the wall socket correctly ?
   D. Is wall socket working ?
   E. Is the unit rated at the same voltage as the supply ?
2. Does the Fan work when power is turned on?
   A. Check the connectors on the SMPS.
   B. Check the fuses in the SMPS.
   C. Check any error message display on the LCD panel and refer to the troubleshooting section 7.5

2. Check the Installation Environment.

1. Ensure the installation surface is flat, level and free from vibration.
   If necessary move the printer.
2. Ensure that the temperature and humidity of the surroundings are within specification
   If necessary move the printer.
3. Ensure that the printer is position away from any air conditioning or other heating or cooling equipment. Also ensure that is not positioned in a direct draft from any air conditioning, fan or open window.
   If necessary move the printer.
4. Ensure the printer is not positioned in direct sunlight.
   If it is unavoidable use a curtain to shade the printer.
5. Ensure the printer is installed in a clean dust free environment.
   Move the printer to clean area if necessary.
6. Some industrial or cleaning processes give of fumes which can affect the printer.
   Move the printer away from this type of air pollution

3. Check paper type.

1. Use only paper which is of a suitable quality, weight and size?
   See the user guide.

4. Check the overall condition of the printer

1. Is the printer properly maintained ?
   Clean the Paper Transport Passages.
   Any rollers with dirt surfaces should be cleaned or replaced.

7.1.3 Check the length of life of components

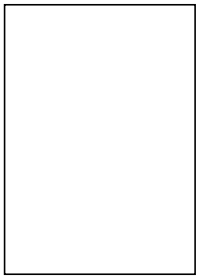
The length of life of consumable components is displayed either by operating time (% of life) or quantity of output. The printer will not work if any of these parts have exceeded there expected life. When a user replaces any of these consumable parts they must reset the appropriate counter using the maintenance menus (see section 7.4).

The printer calculates the working time and quantity of output for each component and saves this information.

1. The Working time for each component (OPC Drum, Toner Cartridge, Image Transfer Belt, Fuser Unit) is measured every 30 seconds when the Transport Motor and Fusing Contact Motor are active.
2. In order to calculate the number of images printed 1 is added to the appropriate counter every 30 seconds. The amount of waste toner is calculated based on the number of pixels in the image.
3. When the user replaces any of the consumable parts and resets the appropriate counter it starts again from 0.

7.2 Solution of Image Problem

- No Image

	Cause	Sequence of Treatment
	Driver Installation Problem.	Try printing a Demo Page. Check that the operating system driver was installed correctly.
	Toner cartridge contacts dirty or not making good contact or empty Toner Cartridge (when printing a single color image)	Check and clean the toner contacts. Re-seat the Toner Cartridge. Replace the Toner cartridge
	PTB cartridge contacts dirty or not making good contact or Faulty PTB unit	Check and clean the PTB contacts. Re-seat the PTB Unit. Replace PTB Unit
	LSU cable harness plugs not fitted properly or faulty LSU.	Check the connectors on the LSU Unit and main PWA are properly inserted. Replace the LSU Unit, cables or MAIN PWA as required
	Toner transfer problem	Check all HV contacts and cables. Replace the HVPS.

- Completely Black Image

	Cause	Sequence of Treatment
	OPC Drum BIAS contacts dirty or not making good contact.	Clean Drum contacts.. Replace the Toner Cartridge.
	Charge Voltage of the OPC Drum is unstable.	Replace the HVPS Board.

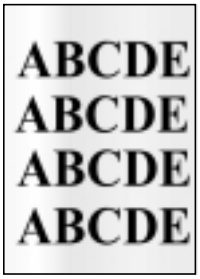
- White Spots / Black Spots / Colored Spots

	Cause	Sequence of Treatment
	Contamination of the internal mechanism of the toner cartridge	Replace the Toner Cartridge.
	OPC Drum surface contaminated or damaged.	Replace the Toner Cartridge.
	PTB Unit belt is contaminated or damaged.	Replace the PTB Unit Belt.
	Fuser Unit is contaminated.	Clean or replace the Fuser Unit.

- Toner Smudges on the reverse side.

	Cause	Sequence of Treatment
	Paper Path is contaminated.	Open covers fully and clean the Paper Path.
	PTB Unit Belt is contaminated.	Clean or replace the PTB Unit.
	Pressure Roller of Fuser Unit is contaminated.	Clean or replace the Fuser Unit.

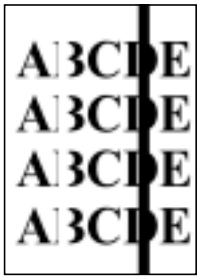
- Foggy back ground

	Cause	Sequence of Treatment
	If the background is contaminated with only one color.	Replace the appropriate Toner Cartridge
	If the background is generally contaminated with all color.	Ensure TDC process is enabled. If problem persists replace the Toner Cartridge.
	If Printing Density is dark(one color only).	Replace the appropriate Toner Cartridge
	If Printing Density is dark(all colors).	Ensure TDC process is enabled. If problem persists replace the Toner Cartridge.

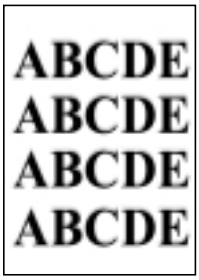
- Low image density

	Cause	Sequence of Treatment
	Poor toner transfer to OPC-one color only	Check and clean Toner contacts Replace the appropriate Toner Cartridge
	Poor toner transfer to OPC- al colors	Check and clean Toner, PTB and OPC unit contacts Ensure TDC process is enabled. If problem persists replace the OPC Drum
	Poor toner transfer to PTB Unit	Check and clean PTB Unit contacts. Re-install or replace the PTB Unit.
	PTB Bias voltage incorrect.	Check and clean PTB Unit contact. Replace the HVPS.

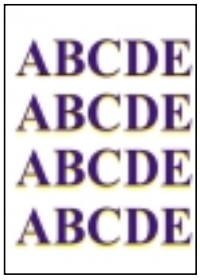
- Black / White / Colored Lines and Bands

	Cause	Sequence of Treatment
	Developing process is contaminated.	Replace the Toner Cartridge.
	PTB Unit is damaged or dirty	Replace the PTB Unit.
	Fuser Unit is damaged or dirty	Clean or Replace the Fuser Unit.
	Lens Cover of LSU is damaged or dirty.	Clean the Lens Cover of LSU. Replace the LSU if the glass is damaged

- Offset Image

	Cause	Sequence of Treatment
	Afterimage on the OPC	Replace the Toner Cartridge.
	Afterimage on the PTB Unit.	Re-install or replace the PTB Unit.
	Toner Cartridge is installed incorrectly.	Re-set the Toner Cartridge.
	Individual color layers offset.	Replace PTB Unit.

- Deterioration of Print Quality for all Colors.

	Cause	Sequence of Treatment
	Problem transferring intermediate images to the PTB .	Check and clean PTB contacts Re-install or replace the PTB Unit.
	Contamination of the Paper Path.	Open the covers, check and clean the Paper Path.
	Problem transferring intermediate image onto paper	Check and clean T2 roller contacts Check T2 Solenoid and cam operation - ensure T2 comes properly into contact when solenoid operates.

- Deterioration of Printing Quality for Specific Color.

	Cause	Sequence of Treatment
	If the of Toner Cartridge is bad	Check or replace the Toner Cartridge.
	If the alignment betweem the OPC and PTB Units is not carrect.	Re-install the Toner Cartridge and PTB Units.
	Uneven contact between OPC and PTB or between PTB and T2 roller.	Re-install or replace the PTB Unit. Check T2 roller, solenoid and cam operation.

- Uneven Color Density

	Cause	Sequence of Treatment
	Uneven contact between OPC and PTB or between PTB and T2 roller.	Re-install or replace the PTB Unit. Check T2 roller, solenoid and cam operation.
	Uneven color may occur when a toner cartridge has just been installed.	Make test printing a couple of times.

- Whited out area

	Cause	Sequence of Treatment
	Moisture or wet paper.	Ensure paper is stored properly and is not damp. Check paper storage conditions.
	Creases in paper.	1) Creases : Replace the Guide Input. 2) Replace the Fuser Unit. 3) Check OPC, Drum, Toner Cartridge and PTB Unit for contamination and replace as required.
	Fault occurs in the MPF Tray Printing only.	Replace the MPF Tray Unit.

- Lateral Lines

	Cause	Sequence of Treatment
	Contamination or damage to rollers. Measure distance between lines.	Refer to Table of Circumferences of Rollers. - Mark in same position on every page. Replace PTB Unit Replace Toner Cartridge - Mark every 75.40 mm Replace T2 roller - Mark every 27.00 mm Replace Toner cartridge
	Laser Unit damaged	Line repeats every 1~2 mm- Replace the LSU Unit.
	Damage or contemination of OPC drum	Random line spacing- Replace the OPC Drum.

- Regularly repeating image defect

	Cause	Sequence of Treatment
	Contamination or damage to rollers. Measure distance between lines.	Refer to Table of Circumferences of Rollers. - Mark in same position on every page. Replace PTB Unit Replace Toner Cartridge - Mark every 75.40 mm Replace T2 roller - Mark every 27.00 mm Replace Toner cartridge
	Laser Unit damaged	Line repeats every 1~2 mm- Replace the LSU Unit.
	Damage or contemination of OPC drum	Random line spacing- Replace the OPC Drum.

7.3 Paper Feeding Problems and Troubleshooting

7.3.1 Top Margin Error.

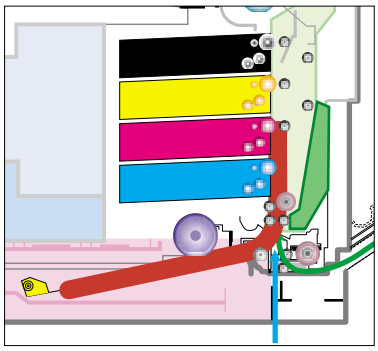
Symptoms : Printing begins at wrong position on the paper.

Check and Cause	Solution
Wrong sensor timing caused by defective feed sensor actuator.	Replace the defective actuator

7.3.2 JAM 0

Symptoms

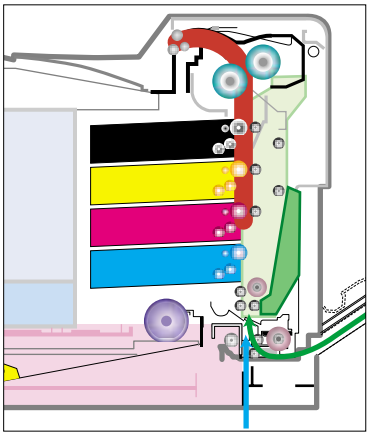
1. Paper has not exited from the cassette.
2. "Jam-0" occurs even though the paper feeds into the printer.



Check and Cause	Solution
1. Check the Feed Solenoid or Pick-Up using EDS Mode.	1. Replace the Solenoid.
2. Check that the Separator Pad has not become loose.	2. Replace the Separator - Pad (inside the Cassette).
3. Check if the surface of the Pick-Up Roller is clean.	3. Clean the surface of the Pick-Up Roller with IPA or water.
4. Check the Feed Sensor is not sticking by using the EDC Mode (When “JAM-0” occurs even though the paper feeds into the printer.)	4. Replace the main PBA or Sensor.

7.3.3 JAM1(JAM inside pinter)

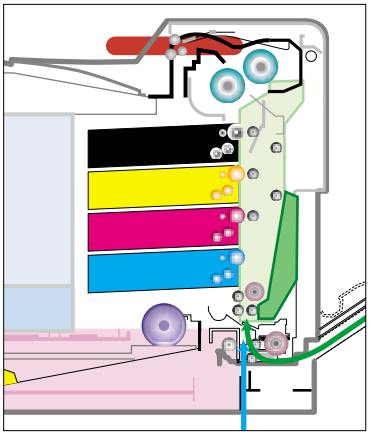
Symptoms Paper is jammed in front of the Fuser or under the T2 Roller.



Check and Cause	Solution
1. If the paper is jammed in front of or inside the Fuser	1. Replace the SMPS.
2. If the paper is caught in the Exit Roller and the Fuser check the Feed Sensor actuator opens and closes freely.	2. - Re-assembly the Feed Actuator and Spring, or clean the Hinge with a lint free cloth. - Replace the Main PBA.

7.3.4 JAM 2 (Jam in Exit Area)

Symptoms
1. Paper is jammed inside the Fuser.
2. Paper is caught in the Exit Sensor Actuator.
3. Paper is caught in the Exit Roller and Fuser, after passing through the Feed Sensor actuator



Check and Cause	Solution
1. The Exit Sensor is defective if Jam 2 occurs after the paper is completely fed out of the printer. This can happen if the actuator sticks open or is slow to close.	1. Check if the Exit Sensor Actuator is broken or damaged. • Check if the Exit Sensor Actuator is deformed (Check that the senor arms are not deformed). • Check for Burrs or rough edges in the Exit Actuator assembly, and check that the sensor arms are free to move. • Check for foreign objects obstructing the Exit actuator.
2. Paper is rolled into the Fuser. • "Accordion" folding occurs repeatedly. • Fuser temperature is too high due to failure or other abnormal conditions. • If the Heat Roller or Pressure Roller is conteminated hard because of Toner.	2. Replace the Fuser.
3. If there are "Accordion" paper folds inside the Fuser.	3. • Replace the Exit Guide. • Check that the Exit unit is assembled properly and full functioning and replace if necessary.
4. If the Exit Sensor is defective. a Jam In Exit Area will occur and printing will stop.	4. Replace the Exit Sensor.

7.3.5 Multi-Feeding

Symptoms Multiple sheets of paper are picked up and fed simultaneously.

Check and Cause	Solution
1. Check the On/Off operation of the pick-up Solenoid using the EDC Mode.	1. Replace the Solenoid, harness or Main PBA.
2. Check the Friction Pad surface for dirt or other contamination.	2. Clean the Pad-Friction using a lint free cloth and water or IPA.
3. Check that the paper is not creased, folded or curved.	3. Use fresh paper.
4. Check that the Paper Guide in the cassette is properly adjusted and that paper is poperly loaded.	4. Adjust the Paper Guide and load paper under the Finger.
5. Influence of Static Electricity.	5. Fan paper before loading to reduce the effects of static electricity.

7.3.6 Paper rolling in the Fuser.

Symptoms Paper is rolled in the Fuser.

Check and Cause	Solution
1. If the Heat Roller is conteminated. (Background, Hot off set)	1. Replace the Fuser.
2. If “Accordion” folding occurs between the Fuser and the Exit Unit repeatedly.	2. Check if the Paper Guide Ribs on the Exit Unit are damaged or contaminated, and check the condition and operation of the Exit Roller.
3. If the Bearing - Fuser or Gear - Fuser is damaged or melted by excessive heat.	3. Check the SMPS and Main PBA if the Bearing Gear is melted.

7.4 Symptoms of Bad Operation and Troubleshooting.

7.4.1 Fuser Error

Symptoms Open Fuser / Over Heat / Low Heat displayed on the LCD Panel.

Check and Cause	Solution
1. Check the continuity of the Thermostat, AC Wire and Heat Lamp.	1. Replace the whole Fuser assembly if the Thermostat is open circuit, otherwise replace heat lamps as required..
2. Check the continuity of the Thermistor and thermistor harness / contacts.	2. Replace broken thermistor or cables as necessary.
3. Test the Heat Lamps and the overheat circuitry.	3. Replace the main PBA id the overheat circuit is faulty..
4. Check the fuser for any evidence of damage due to overheating or melting.	4. Replace the Fuser.

7.4.2 LSU Error

Symptoms Engine LSU Error displayed on the LCD Panel.

Check and Cause	Solution
1. Check the LSU Connector.	1. Replace the LSU.
2. Check the LSU Motor.	2. If the same error recurs replace the main PBA.
3. Check the HSYNC signal.	
4. Check the Deve Cover Micro switch.	

7.4.3 Fuser does not work due to the drive gear melting.

Symptoms The fuser gears melt and the roller drive fails.

Check and Cause	Solution
1. The Fuser makes a noise and fails to operate, rollers may not rotate.	- Replace the Fuser. - Replace the Main PBA. - Replace the SMPS.

7.4.4 Paper Empty

Symptoms LCD shows "Paper Empty" even though paper is ready.

Check and Cause	Solution
1. Check for a broken or distorted paper empty sensor actuator. Check that the actuator is not jammed	1. Replace the Paper Empty Sensor actuator.
2. Check the sensor connectors and cable harness. Ensure that a signal reaches the main PBA	2. Replace the harness.
3. Use the EDC mode to test the actuator.	3. Replace the Sensor Board.

7.4.5 Paper Empty without indication.

Symptoms The machine remains 'Ready; even when the paper cassette is empty.

Check and Cause	Solution
1. Check for a broken or distorted paper empty sensor actuator. Check that the actuator is not jammed.	1. Replace the Paper Empty Sensor actuator.
2. Check the sensor connectors and cable harness. Ensure that a signal reaches the main PBA	2. Replace the harness.
3. Use the EDC mode to test the actuator.	3. Replace the Sensor Board.

7.4.6 Cover Open

Symptoms LCD displays "Cover Open" error even though the cover is closed.

Check and Cause	Solution
1. Check if the Hook Lever inside the Duplex Cover is broken or distorted.	1. Replace the Duplex Cover.
2. Check the Cover Open sensor, connectors and cable harness. Ensure that a signal reaches the main PBA	2. Replace the harness or microswitch as necessary.
3. Use the EDC mode to test the actuator.	3. Replace the Sensor Board.

7.4.7. Can not sense when the Cover is Opened.

Symptoms LCD Indicates "Ready" even when cover is opened.

Check and Cause	Solution
1. Check if the Hook Lever inside the Duplex Cover is broken or distorted.	1. Replace the Duplex Cover.
2. Check the Cover Open sensor, connectors and cable harness. Ensure that a signal reaches the main PBA	2. Replace the harness or microswitch as necessary.
3. Use the EDC mode to test the actuator.	3. Replace the Sensor Board.

7.4.8 Defective Motor

Symptoms Main Motor does not work and paper does not feed when printing. Jam 0 is displayed.

Check and Cause	Solution
1. Check if the Motor Harness or Motor PCB is broken or not.	1. Replace the Motor or Motor Harness.
2. Test the Motor using EDC Mode.	2. Replace the Main PBA.

7.4.9 No Power

Symptoms Power is not supplied to the set, or the LCD display is not on.

Check and Cause	Solution
1. Check the power supply input and DC voltage output from the SMPS. Check the fuses in the SMPS. Check the wall socket.	1. Replace the Power Cable. Replace SMPS fuses. If the fault recurs replace the SMPS.
2. If the SMPS supply is OK, and the LCD still does not work check the display connectors and cable harness	2. Replace cables or LCD Panel Ass'y. Replace the Main PBA.
3. Check if +24VDC or other Power Supplies are shorted out.	3. Replace the components used for +24VDC.

7.4.10 Curved or Distorted Vertical Lines

Symptoms Curved, wavy or distorted vertical lines.

Check and Cause	Solution
1. Use EDC Mode to test the LSU. Check that the +24VCD signal between the main PBA and the LSU is stable	1. Replace the LSU or Main PBA.
2. Check that the LSU clock is stable.	2. Replace the Main PBA.

7.4.11 Low Toner

Symptoms "Ready Replace [Color]" is displayed on the LCD Panel.

Check and Cause	Solution
1. "Low Toner" is displayed when under 500page or less toner remains (in any of the cartridges).	1. Using the keypad check which toner is empty and replace the Toner Cartridge.
2. Check the condition of the contacts on the DEVE PBA.	- Replace the Toner Joint PBA. - Replace the Main PBA.

7.4.12 Replace Toner[CART].

Symptoms LCD displays "Ready Replace [CART]".

Check and Cause	Solution
1. “Ready Replace CART” is displayed when the OPC Image Count value is over 50,000. Image Density may be reduced. It is possible to continue to print one Page at a time by pressing the “On-Line” button when it flashes.	1. Replace the OPC Drum.

7.5 Treatment of Error Message.

Messages appear on the SmartPanel program window or the control panel display (CLP-600N only) to indicate the printer's status or errors. Refer to the tables below to understand the messages' meanings and correct the problem if necessary.
Messages and their meanings are listed in alphabetical order.

Message	Status	Check or Actions
ACR Calibration	During auto color registration, a system error occurs so that the registration fails or does not run.	Turn the printer off, wait 30 secs and then turn it auto cleaning mode on.
ADC Not Confirm Error	A problem has occurred in the ADC in the printer.	Replace the Main PBA if the same symptoms recur.
Adjust Photo LED	During auto color registration, the printer does not recognize the photo LED in the paper transfer belt assembly.	Check the PTB Unit contact status or replace the PTB Unit.
Cover Open	The top cover or access door is open.	Close the top cover or access door firmly.
[Color] Toner Empty	The corresponding toner cartridge in your printer is empty and the printer does not operate.	Replace the corresponding toner cartridge with a new one.
Engine Fuser Low Heat Error	The temperature in the fuser is abnormally low.	Unplug the power cord and plug it in again.
Engine Fuser Over Heat Error	The temperature in the fuser is abnormally high.	Unplug the power cord and plug it in again.
Engine LSU Error	A problem has occurred in the LSU (Laser Scanning Unit) in the printer.	Unplug the power cord and plug it in again.
Install [Color] Toner	The indicated color toner cartridge is not installed in the printer.	Install the corresponding color toner cartridge.
Install Transfer Belt	The paper transfer belt is not installed in the printer.	Install the paper transfer belt.
Invalid Toner [Color]	An invalid toner cartridge has been installed.	Only install Samsung toner cartridges, designed for your printer. Or install the toner cartridge into each proper cartridge slot.
Invalid Transfer Belt	An invalid paper transfer belt has been installed.	Only install Samsung paper transfer belts, designed for your printer.

Message	Status	Check or Actions
Jam0 In Tray1 Jam0 In Tray2 Jam0 In MP Tray	A paper jam has occurred in or near the indicated tray.	Remove the jammed paper from the corresponding tray.
Jam In Exit Area	A paper jam has occurred in the paper exit area.	Remove the jammed paper from the printer.
Jam Inside Printer	A paper jam has occurred inside the printer.	Open the access door and remove the jammed paper from the printer.
Load [Size] In Tray1 Load [Size] In Tray2 Load [Size] In MP	The paper size specified in the printer properties does not match the paper you are loading.	Load the correct paper in the tray.
Low Density	The amount of the toner which is spread on the paper transfer belt for adjusting auto color registration is very small, so that the printer does not recognize the toner during auto color registration.	Replace the toner cartridge(s) with a new one.
Main Motor Error	A problem has occurred in the development motor of the printer.	Unplug the power cord and plug it in again.
Memory Overflow	The printer does not have enough memory to print the current job. An error has occurred in the firmware program of the printer.	The job automatically clears and the printer returns to Standby Mode. Lower the print resolution and try again.
Paper Empty [Size] In Tray1 Paper Empty [Size] In Tray2 Paper Empty [Size] In Mp Paper Empty [Size] In Manual	The paper tray has run out of paper.	Load paper in the paper tray.
Press Continue Button	The printer is waiting for the user's action before printing from the Multi-purpose Tray using the manual feed mode.	Load a sheet of print material and press the On Line/Continue button. You need to press the button for each page.

Message	Status	Check or Actions
Ready [Color] Low Toner	The corresponding toner cartridge in your printer is low on toner.	Redistribute the toner in the corresponding toner cartridge.
Ready IP Conflict	The IP address of the printer conflicts with other devices on the network.	Contact your network administrator and choose an address within your subnet which will not conflict with any other devices.
Replace [Color] Toner	The corresponding toner cartridge in your printer is nearly empty. However, the printer continues printing, even though print quality is not optimal.	If necessary, replace the corresponding toner cartridge with a new one.
Replace Fuser	The life span of the fuser unit has expired.	Replace the fuser unit with a new one.
Replace Fuser Soon	The life span of the fuser unit will expire soon.	When “Replace Fuser” appears on the display, replace the fuser unit.
Replace MP Pick-roller	The life span of the MP pickup roller has expired.	Check the MP pickup roller life period or replace pickup roller.
Replace Transfer Belt	The life span of the paper transfer belt has expired.	Replace the paper transfer belt with a new one.
Replace Transfer Belt Soon	The life span of the paper transfer belt will expire soon.	When “Replace Transfer Belt” appears on the display, replace the paper transfer belt.
Replace Tray1 Pick-roller	The life span of the Tray1 pickup roller has expired.	Check the Tray1 pickup roller life period or replace Tray1 pickup roller.
Replace Tray2 Pick-roller	The life span of the Tray2 pickup roller has expired.	Check the Tray2 pickup roller life period or replace Tray2 pickup roller.
Tray2 Error	The optional Tray2 is not properly installed or connected to the printer.	After turn the printer off and then back on, reinstall the optional Tray2.
Tray2 Jam Cover Open	The optional Tray2 jam cover is open.	Close the Tray2 cover firmly.

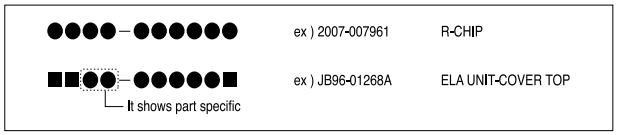
8. Exploded Views and Parts List

Contents

Part Number & Description format.

Part numbers and descriptions are defined according to a company standard. The information below will help you to understand the part number format and assist when ordering spare parts.

- **There are two types of Part number format.**



(● : number ■ : letter)

Type 1 : This format is used throughout Samsung on all product ranges. Typically it is used for small components and electronic parts.

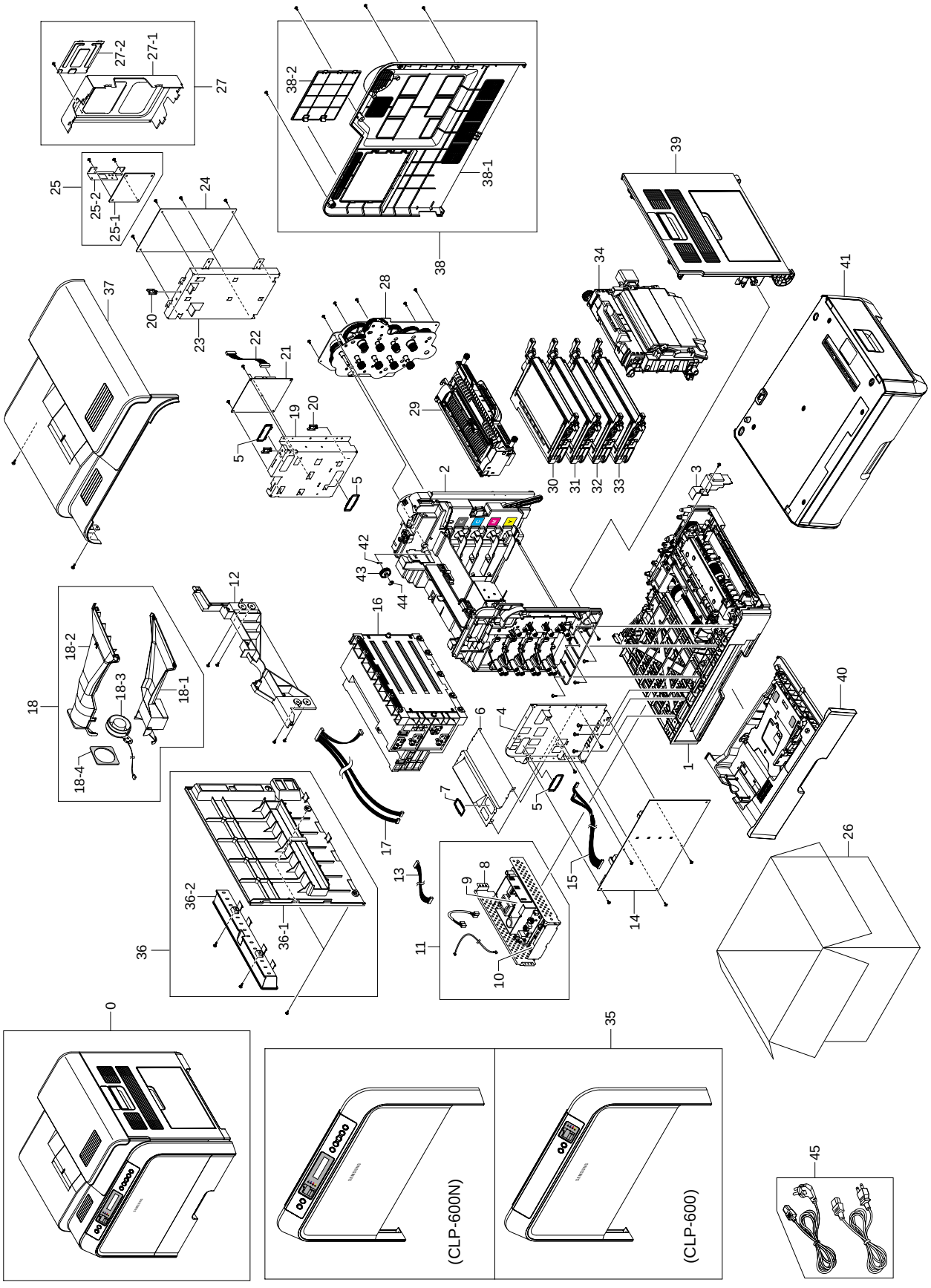
Type 2 : This format is controlled by individual Samsung Divisions and is used on specific products, typically for mechanical parts. Type 2 format part numbers fall into 2 categories:

- **A/S privately used part :** It is only used for A/S .
- **Ass'y part :** Assemblies consisting of 2 or more parts. Also used for Service manuals, user guides and diagrams.

- Ass'y parts and A/S privately used Parts can be distinguished by the part Code and Description. They are always Type 2 format. The 2 leading characters indicate private or assembly parts.

DIVISION	PART CODE	DESCRIPTION
A/S Private	**81-****** (JB81-00039A)	AS-********** (AS-USE)
ASS'Y Part	**75-****** (JB75-00068A)	MEC-******** (MEC-CHUTE)
ASS'Y Part	**92-****** (JB92-01131A)	PBA ********* (PBA MAIN-CONTROLLER)
ASS'Y Part	**97-****** (JB97-01089A)	MEA ********* (MEA UNIT-PULLEY IDLE)

8.1 Main



Main Parts List

SA : Service Available
O : Service available **X** : Service not available

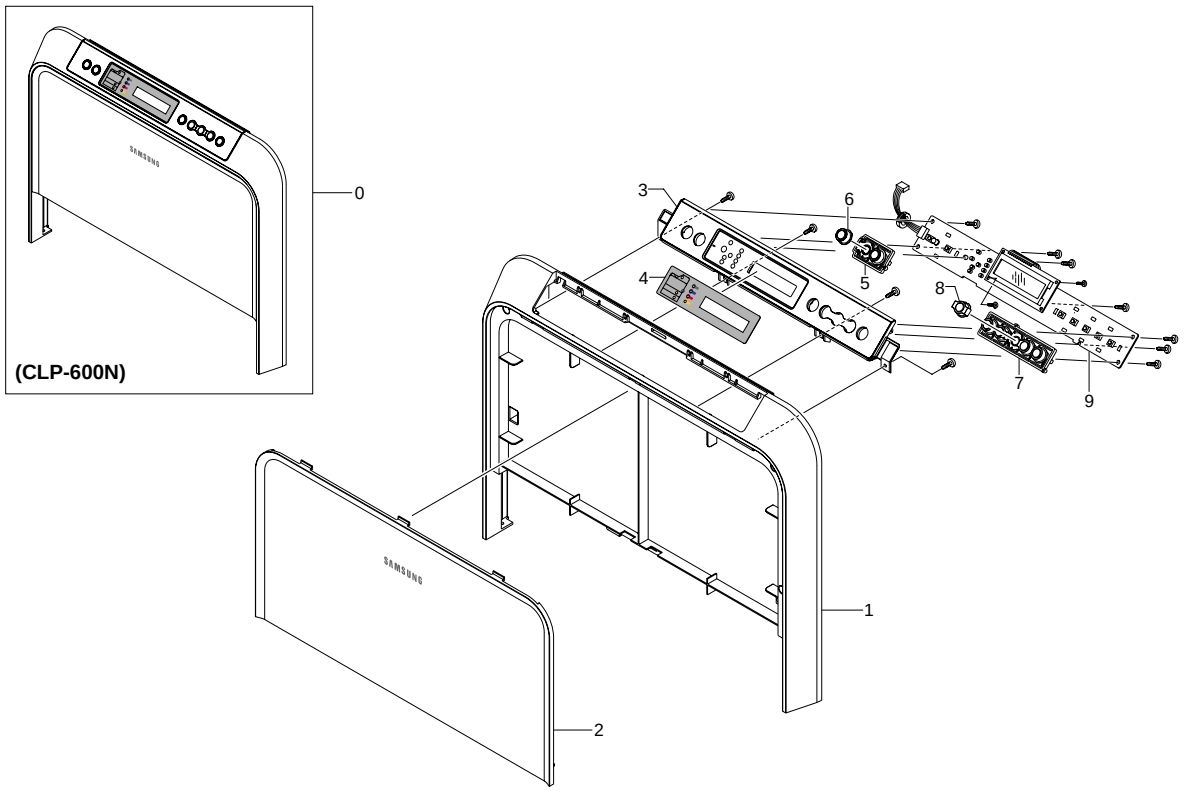
No.	SEC.Code	Description	SA	Remark
7.1-1	JC97-02187A	MEA UNIT-FRAME BASE;CLP-600,SEC,EXPORT,-	M0013	SNA
7.1-2	JC97-02151A	MEA UNIT-FRAME MAIN;CLP-600,SEC,EXPORT,-	M0015	SNA
7.1-3	JC63-00585A	COVER-_M_GEAR;CLP-600,HIPS,T2.0,W37.1,L9	C0031	SA
7.1-4	JC61-01002A	FRAME-P-FRONT;CLP-600,SECC,-,-,-,T1.0,W2	F0012	SNA
7.1-5	JC61-01012A	GUIDE-_M_BUSH HARNESS S;CLP-600,ABS,2.0,	G0039	SNA
7.1-6	JC61-01004A	FRAME-P-BOTTOM;CLP-600,SECC,-,-,-,T1.0,W	F0011	SNA
7.1-7	JC61-01046A	BRACKET-P-MPF;CLP-600,SECC,T1.2,W46.5,L2	B0015	SNA
7.1-8	JC61-00998A	BRACKET-P-SHIELD SMPS;CLP-600,SECC,T1.0,	B0018	SNA
7.1-9	JC44-00100A	SMPS-PSP_TYPE5_V2C(AC 220V)	S0014	SNA
7.1-9	JC44-00093A	SMPS-PSP_TYPE5_V1(AC 110V)	S0014	SNA
7.1-10	JC44-00105A	SMPS-FUSER SUB B'D-V2(AC 220V)	S0013	SA
7.1-10	JC44-00104A	SMPS-FUSER SUB B'D-V1(AC 110V)	S0013	SA
7.1-11	JC96-03493A	ELA UNIT-SMPS 220V;CLP-600,SEC,EXPORT,-	E0020	SA
7.1-11	JC96-03371A	ELA UNIT-FRAME SMPS(AC 110V)	E0020	SA
7.1-12	JC61-01018A	HOUSING-_M_MIDDLE PART;CLP-600,HIPS,HB,2	H0023	SA
7.1-13	JC39-00418A	CBF HARNESS-MAIN_SMPS;CLP-600,CBF HARNES	C0017	SA
7.1-14	JC44-00098A	HVPS-DAVINCI;-,24V,21.6V~27.6V,-,MAX 5KV	H0027	SA
7.1-16	JC59-00022A	UNIT-LSU DAVINCI;CLP-600,-,-,COLOR 16PPM	U0001	SA
7.1-18	JC96-03437A	ELA UNIT-DUCT LEFT;CLP-600,SEC,EXPORT,-	E0012	SA
7.1-18-1	JC67-00072A	DUCT-_M_FUSER LOWER;CLP-600,ABS,V0,T2.0,	D0002	SNA
7.1-18-2	JC67-00073A	DUCT-_M_FUSER UPPER;CLP-600,ABS,V0,T2.0,	D0003	SNA
7.1-18-3	JC31-00012C	FAN-DC INVERTER;AD0624HS-A76GL(,SCX-6345		SA
7.1-18-4	JC72-01368A	SPONGE-DUCT;CLP-600,POLYESTERE FOAM,-,T2	S0017	SNA
7.1-19	JC61-01003A	FRAME-P-REAR;CLP-600,SECC,-,-,-,T1.0,W22	F0013	SNA
7.1-20	6502-001093	CABLE CLAMP;DAWS-3NE,ID11*L34.8,-,NYLON6	C0002	SA
7.1-21	JC92-01659A	PBA SUB-DRIVER;CLP-600,SEC,KOREA,DRIVER,	P0003	SA
7.1-22	JC39-00426A	CBF HARNESS-DRIVER;CLP-600,CBF HARNESS,U	C0010	SA
7.1-23	JC61-00991A	BRACKET-P-CONT LOWER;CLP-600,SECC,T0.8,W	B0006	SA
7.1-24	JC92-01655B	PBA MAIN-DOMESTIC;CLP-600,SEC,KOREA,COLO		SA
7.1-25	JC96-03588A	ELA HOU-NPC3_HIGH;CLP-600,SAMSUNG,NPC3,1	E0003	SA
7.1-25-1	JC92-01672A	PBA SUB-NPC3_HIGH;ML-3560	P0008	SA
7.1-25-2	JC61-00809A	BRACKET-_M_NPC;MLC-500,SECC,T0.8,-,-,-,-	B0005	SNA
7.1-26	*	BOX(P)-MAIN(CLP-600N/SEE:JC69-00737F)		SA
7.1-27	JC97-02400A	MEA UNIT-BRKT CONN;CLP-600,SEC,EXPORT,-	M0007	SA
7.1-27-1	JC70-10234A	IPR-SHIELD SIMM;ML-80,SECC,-,T0.5,-,-,-	I0004	SA
7.1-27-2	JC61-00992A	BRACKET-P-CONT UPPER;CLP-600,SECC,T0.5,W	B0007	SNA
7.1-28	JC96-03369A	ELA UNIT-DRIVE MAIN;CLP-600,SEC,EXPORT,-	E0011	SA
7.1-29	JC96-03438A	ELA UNIT-FUSER 220V;CLP-600,SEC,EXPORT,-	E0015	SA
7.1-29	JC96-03370A	ELA UNIT-FUSER 110V;CLP-600,SEC,EXPORT,-	E0015	SA
7.1-30	*	ELA UNIT-DEVE BK_SET		SNA
7.1-31	*	ELA UNIT-DEVE C_SET		SNA
7.1-32	*	ELA UNIT-DEVE M_SET		SNA

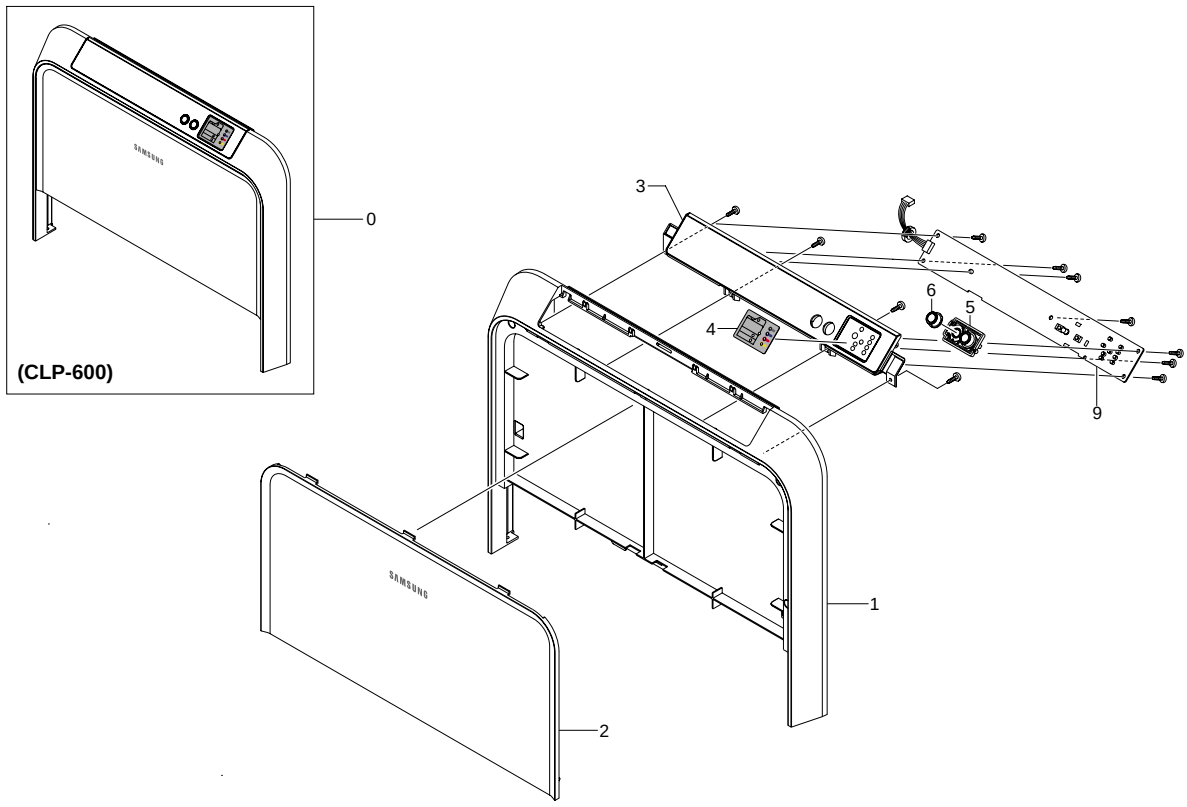
Main Parts List

SA : Service Available
O : Service available **X** : Service not available

No.	SEC.Code	Description	SA	Remark
7.1-33	*	ELA UNIT-DEVE Y_SET		SNA
7.1-34	*	ELA UNIT-PTB SET		SNA
7.1-35	JC96-03490A	ELA HOU-COVER F LCD		SA
7.1-36	JC97-02190B	MEA HOU-COVER LEFT;CLP-600N,SEC,EXPORT,-	M0001	SA
7.1-36-1	JC63-00576B	COVER-M-LEFT;CLP-600N,HIPS,2.5,372.0,288	C0048	SNA
7.1-36-2	JC64-00176A	HANDLE-_M_COVER LEFT;CLP-600,HIPS,2.5,28	H0001	SA
7.1-37	JC97-02194A	MEA HOU-COVER TOP;CLP-600,SEC,EXPORT,-,-	M0006	SA
7.1-38	JC97-02242A	MEA HOU-COVER REAR;CLP-600,SEC,EXPORT,-,	M0002	SA
7.1-38-1	JC63-00575A	COVER-_M_REAR;CLP-600,HIPS,2.5,464.9,437	C0036	SNA
7.1-38-2	JC63-00192B	COVER-M MAIN REAR DUMMY;CLP-600,HIPS,-,W	C0043	SA
7.1-39	JC97-02191A	MEA HOU-COVER RIGHT		SA
7.1-40	JC97-02192A	MEA UNIT-CASSETTE;CLP-600,SEC,EXPORT,-,-	M0009	SA
7.1-41	CLP-600S5	SCF UNIT		SNA
7.1-42	6043-001097	PIN-SPRING;W,D2,L14,-,SUS304 CSP 1/2H,T0	P0015	SNA
7.1-43	JC66-00472A	GEAR-FUSER DRIVE 2_Z30;CLP-500,POM,DEL 5	G0026	SA
7.1-44	6044-000231	RING-E;ID5.0,OD11.0,T0.6,PASS,STS304	R0006	SA
7.1-45	*	CBF-POWER CORD(same not country)	K2903	SA

8.2. Front Cover





Front Cover Parts List(CLP-600)

SA : Service Available
O : Service available X : Service not available

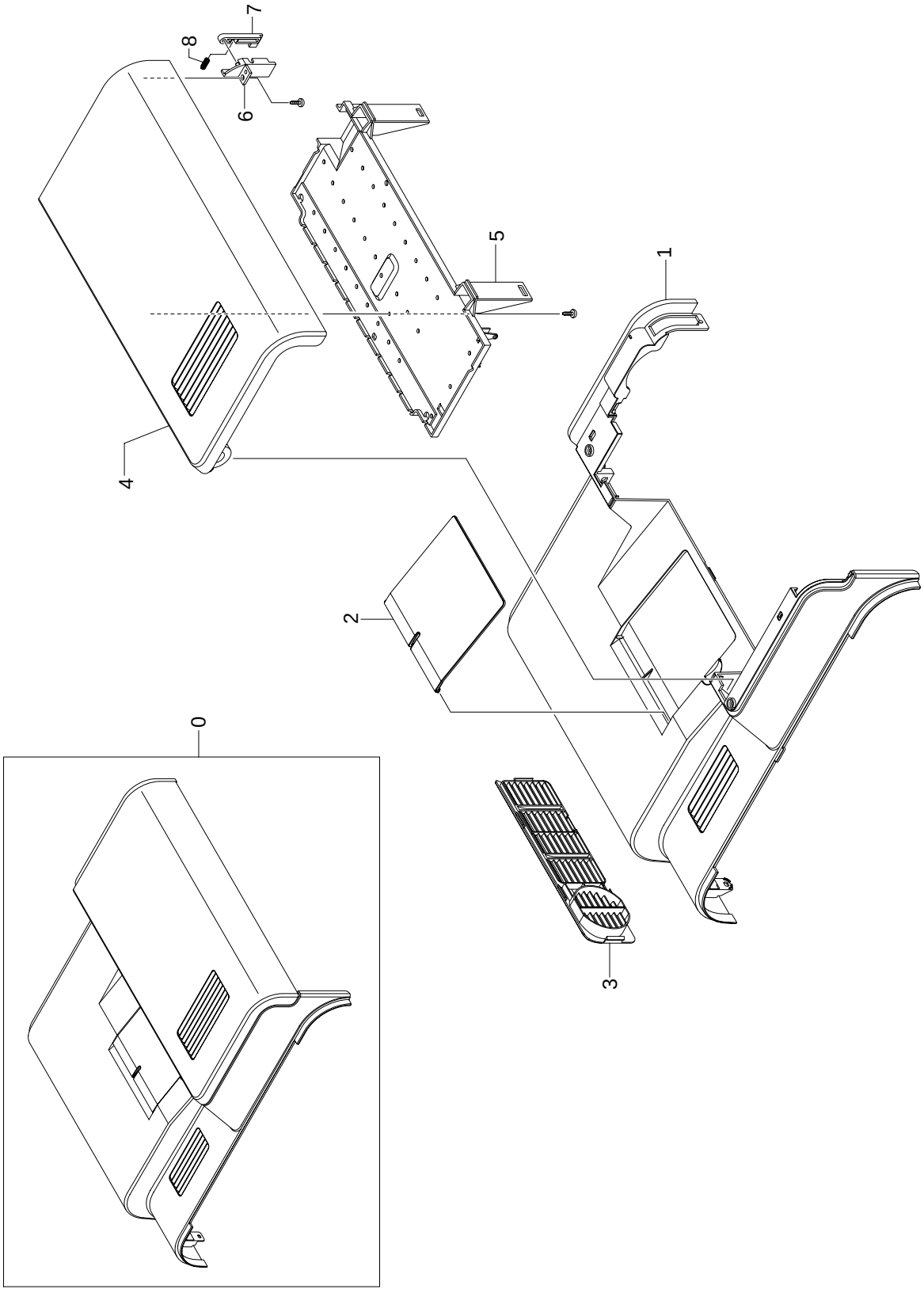
No.	SEC.Code	Description	SA	Remark
7.2-0	JC96-03368A	ELA HOU-COVER FRON		SA
7.2-1	JC63-00581A	COVER-_M_DECO;CLP-600,HIPS,2.5,462.0,350	C0025	SA
7.2-2	JC63-00582A	COVER-_M_FRONT;CLP-600,ABS,3.0,429.0,221	C0030	SA
7.2-5	JC72-01199B	PMO-OPE KEY 2;CLP-510,ABS,36024,-,-,HB,-	P0047	SA
7.2-6	JC72-01200A	PMO-OPE KEY 2 CAP;CLP-500,PMMA,MILKY WHI	P0046	SA
7.2-7	JC96-03368A	ELA HOU-COVER FRONT;CLP-600,SEC,KOREA,-,		SA

Front Cover Parts List(CLP-600N)

SA : Service Available
O : Service available X : Service not available

No.	SEC.Code	Description	SA	Remark
7.2-0	JC96-03490A	ELA HOU-COVER F LCD		SA
7.2-1	JC63-00581A	COVER-_M_DECO;CLP-600,HIPS,2.5,462.0,350	C0025	SA
7.2-2	JC63-00582A	COVER-_M_FRONT;CLP-600,ABS,3.0,429.0,221	C0030	SA
7.2-3	JC63-00613A	COVER-M_OP FRAME LCD;CLP-600N,HIPS,T2.5,		SA
7.2-4	JC63-00642A	SHEET-COVER OP LCD;CLP-600,PC SHEET,T0.5	S0011	SA
7.2-5	JC72-01199B	PMO-OPE KEY 2;CLP-510,ABS,36024,-,-,HB,-	P0047	SA
7.2-6	JC72-01200A	PMO-OPE KEY 2 CAP;CLP-500,PMMA,MILKY WHI	P0046	SA
7.2-7	JC72-01197C	PMO-M OPE KEY 1;CLP-600,ABS,SOLITARY BLU	P0045	SA
7.2-8	JC72-01198C	PMO-M OPE KEY 1 CAP;CLP-600,ABS,SOLITARY	P0044	SA
7.2-9	JC92-01675A	PBA SUB-LCD_PANEL		SA

8.3. Top Cover

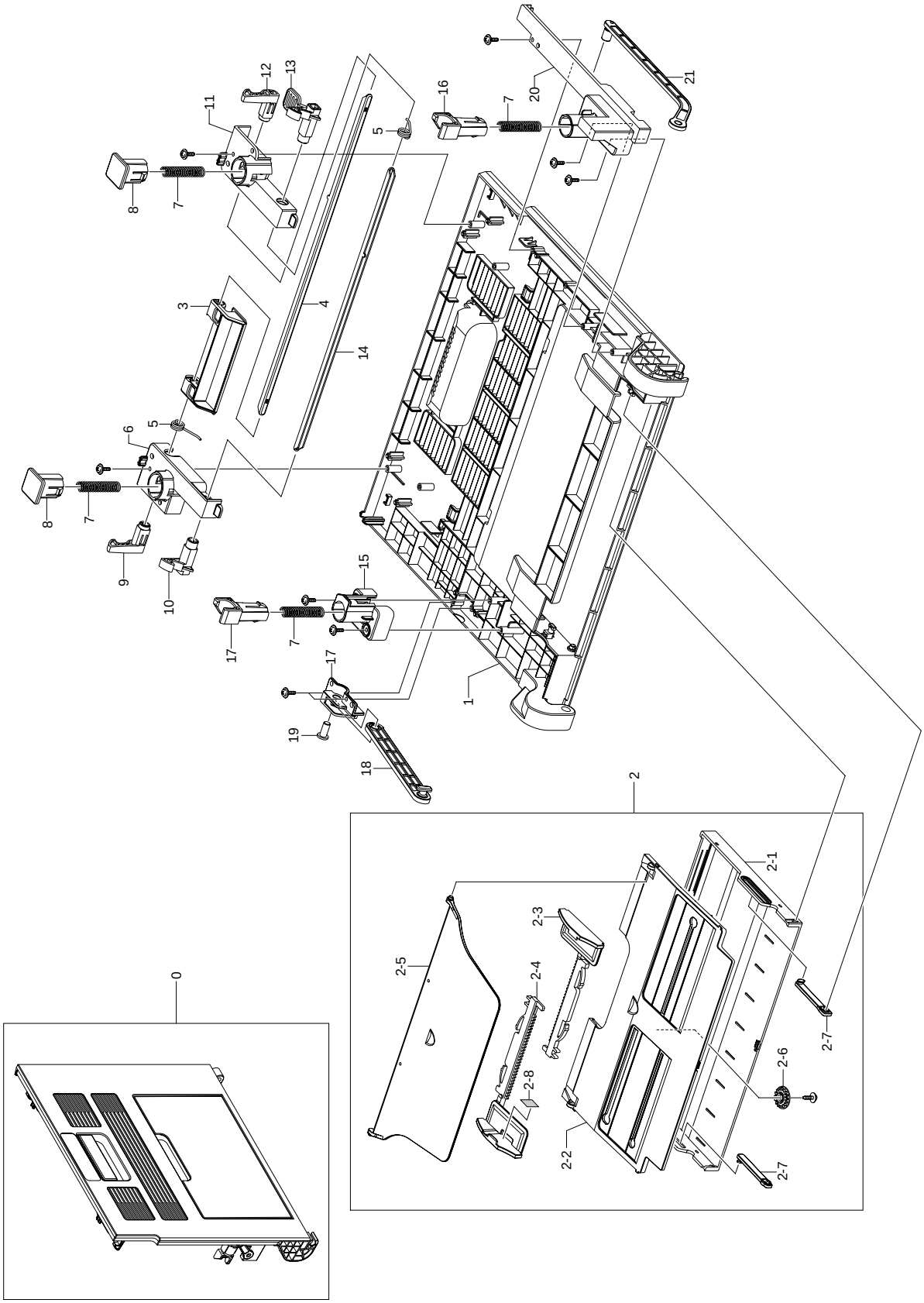


Top Cover Parts List

SA : Service Available
O : Service available **X** : Service not available

No.	SEC.Code	Description	SA	Remark
7.3-0	JC97-02194A	MEA HOU-COVER TOP;CLP-600,SEC,EXPORT,-,-	M0006	SA
7.3-1	JC63-00574A	COVER-_M_TOP;CLP-600,HIPS,2.5,386.7,465.	C0041	SNA
7.3-2	JC63-00588A	COVER-_M_STACKER;CLP-600,ABS,T2.5,W119.5	C0040	SA
7.3-3	JC63-00590A	COVER-_M_VENT;CLP-600,HIPS,T2.5,W215.0,L	C0042	SNA
7.3-4	JC63-00578A	COVER-_M_EXIT;CLP-600,HIPS,2.5,370.0,198	C0029	SNA
7.3-5	JC63-00579A	COVER-_M_AIR DUCT;CLP-600,PC+GF20%,2.5,3	C0024	SA
7.3-6	JC63-00580A	COVER-_M_ACTUATOR SENSOR;CLP-600,HIPS,2.	C0023	SNA
7.3-7	JC66-00798A	LEVER-_M_ACTUATOR SENSOR;CLP-600,POM,T2.	L0011	SA
7.3-8	JC61-00047A	SPRING ETC-TR L HAWK;ML-6060A,SWP-B,-,-	S0033	SA

8.4. Right Cover

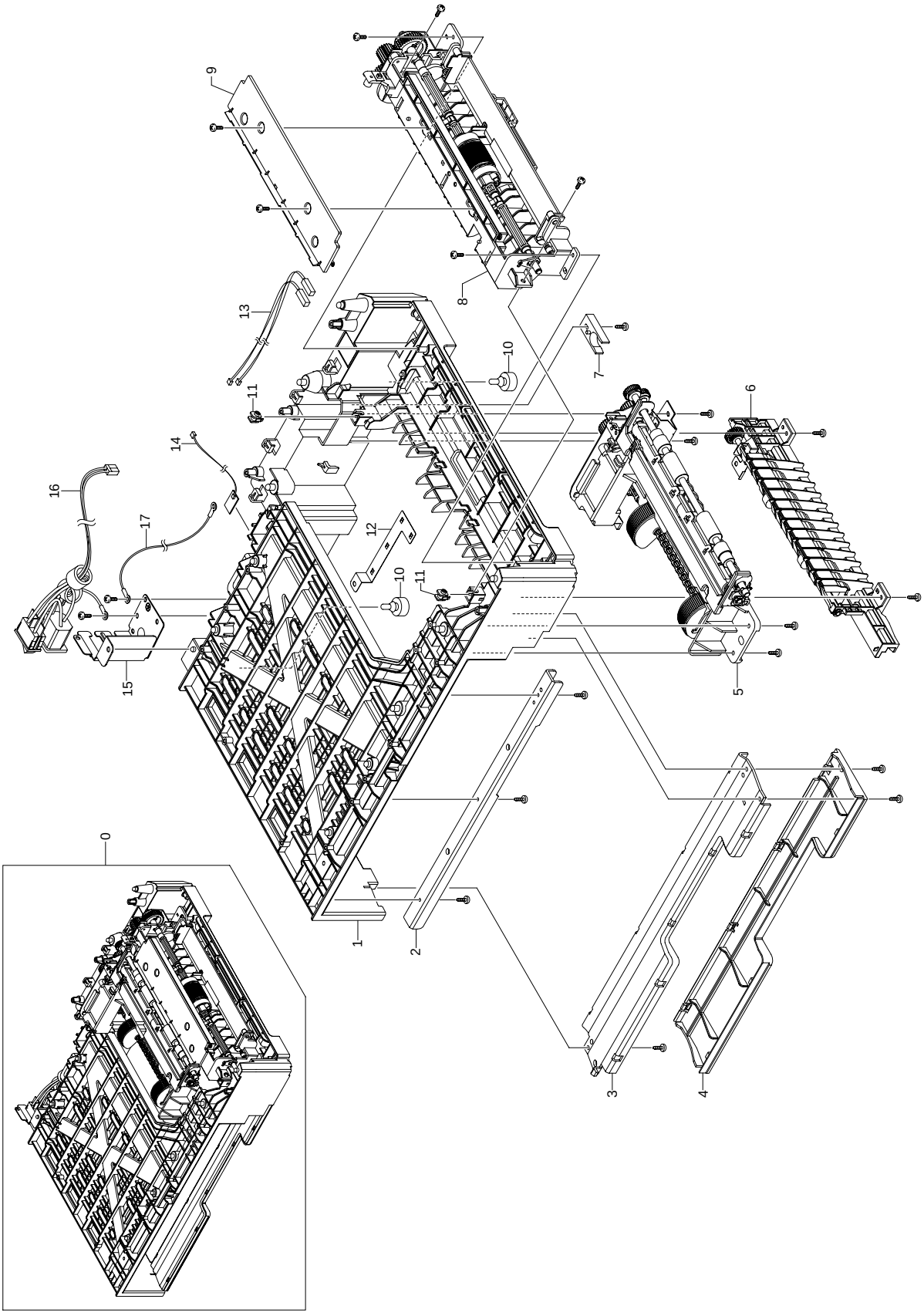


Right Cover Parts List

SA : Service Available
O : Service available **X** : Service not available

No.	SEC.Code	Description	SA	Remark
7.4-0	JC97-02191A	MEA HOU-COVER RIGHT		SA
7.4-1	JC63-00589A	COVER-_M_RIGHT;CLP-600,HIPS,T2.5,W370.0,	C0037	SA
7.4-2	JC97-02405A	MEA UNIT-COVER MPF;CLP-600,SEC,EXPORT,-,	M0010	SA
7.4-2-1	JC63-00584A	COVER-_M_MP;CLP-600,HIPS,T2.5,257.4,L160	C0034	SNA
7.4-2-2	JC63-00586A	COVER-_M_INNER MP;CLP-600,HIPS,T2.0,W252	C0033	SNA
7.4-2-3	JC61-01043A	GUIDE-_M_SIDE MP L;CLP-600,HIPS,-,W131.9	G0049	SNA
7.4-2-4	JC61-01042A	GUIDE-_M_SIDE MP R;CLP-600,HIPS,T1.5,W13	G0050	SNA
7.4-2-5	JC72-00778B	PMO-TRAY EXIT MP;CLP-500,HIPS,LIGHT GRAY	P0050	SA
7.4-2-6	JG66-40003A	GEAR-PINION;SF4000,POM,WHT,M1,Z16	G0035	SA
7.4-2-7	JC63-00587A	TRAY-_M_LINK MP L;CLP-600,HIPS,T3.0,W55.	T0003	SA
7.4-2-8	JC68-01528A	LABEL(R)-HEIGHT MP;COMMON	L0005	SNA
7.4-3	JC64-00179A	HANDLE-_M_COVER R;CLP-600,HIPS,T2.5,W98.	H0002	SNA
7.4-4	JC61-01050A	BRACKET-P-COVER LOCK;CLP-600,SECC,T1.2,W	B0008	SNA
7.4-5	6107-001206	SPRING-TS;SUS304-WPB,BLACK,PI1.5,D10,L5,	S0043	SNA
7.4-6	JC61-01057A	HOLDER-_M_UPPER R;CLP-600,HIPS,HB,T2.5,W	H0018	SNA
7.4-7	6107-001247	SPRING-CS;STS304-WPB,-,PI1,D8,L43,-,-,ID	S0034	SNA
7.4-8	JC61-01053A	GUIDE-_M_SUPPORTER UPPER;CLP-600,HIPS,HB	G0052	SNA
7.4-9	JC72-01082A	PMO-COVER DUP LOCKER R;CLP-500,POM,WHITE	P0037	SA
7.4-10	JC64-00178A	LOCKER-_M_PTB REAR;CLP-600,POM,WHT,HB,-,	L0017	SA
7.4-11	JC61-01058A	HOLDER-_M_UPPER F;CLP-600,HIPS,HB,T2.5,W	H0017	SNA
7.4-12	JC72-01081A	PMO-COVER DUP LOCKER F;CLP-500,POM,WHITE	P0036	SA
7.4-13	JC64-00177A	LOCKER-_M_PTB FRONT;CLP-600,PC+ABS,87182	L0016	SA
7.4-14	JC61-01051A	BRACKET-P-PTB LOCK;CLP-600,SECC,T1.2,W29	B0017	SNA
7.4-15	JC61-01055A	HOLDER-_M_LOWER R;CLP-600,HIPS,HB,T2.5,W	H0013	SNA
7.4-16	JC61-01052A	GUIDE-_M_SUPPORTER LOWER;CLP-600,HIPS,HB	G0051	SNA
7.4-17	JC61-01125A	HOLDER-_M_LINK;CLP-600,HIPS,HB,T2.5,W19.	H0011	SNA
7.4-18	JC66-00777A	LINK-_M_REAR 2;CLP-600,POM,L135.0,T4.5,-	L0014	SA
7.4-19	JC66-00835A	SHAFT-HINGE LINK;CLP-600,SUM24L,L14.5,°ÕOS	S0005	SNA
7.4-20	JC61-01056A	HOLDER-_M_LOWER F;CLP-600,HIPS,HB,T2.5,2	H0012	SNA
7.4-21	JC66-00778A	LINK-_M_FRONT;CLP-600,POM,L185.3,T3.7,-,	L0012	SA

8.5. Base Frame

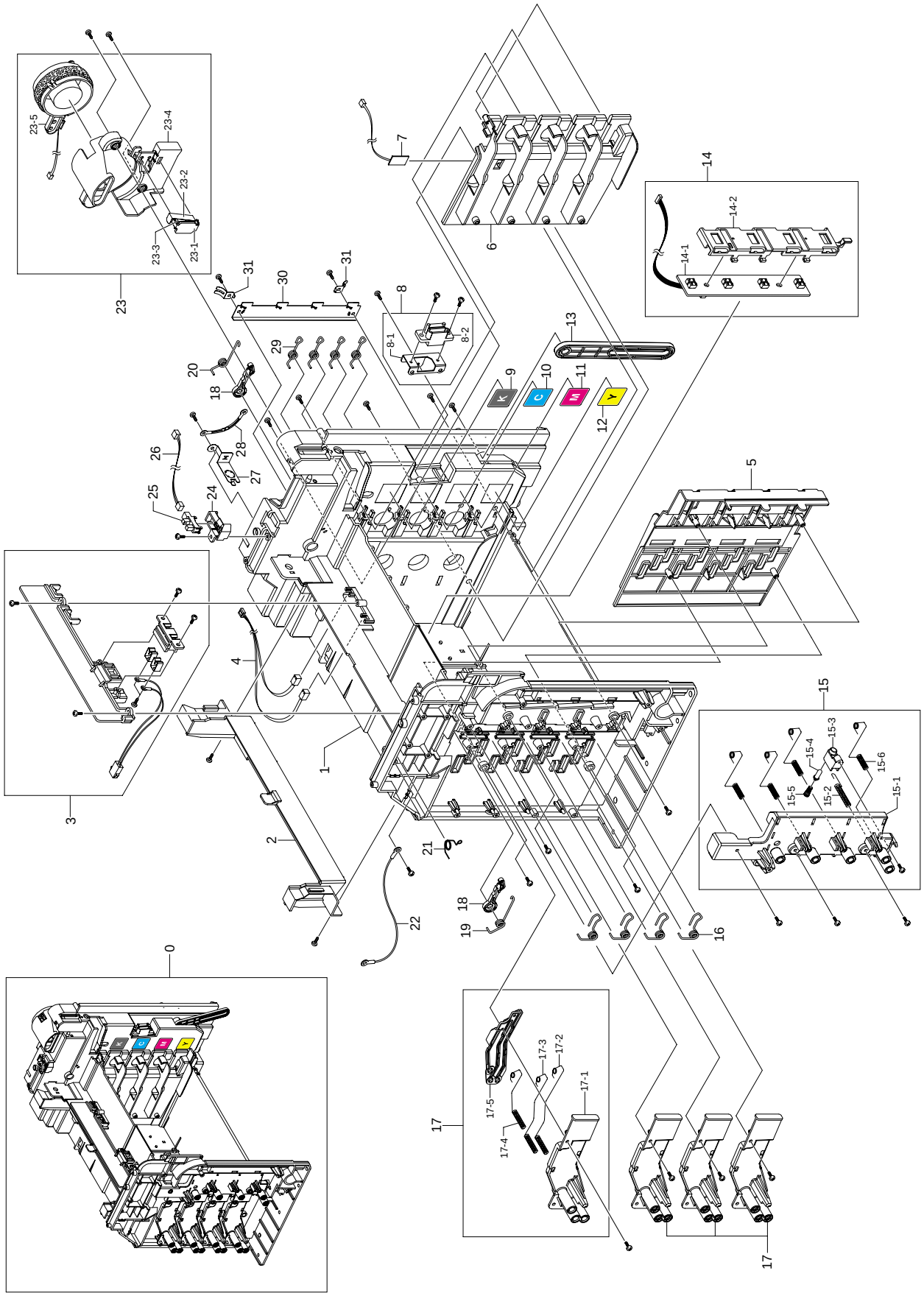


Base Frame Parts List

SA : Service Available
O : Service available **X** : Service not available

No.	SEC.Code	Description	SA	Remark
7.5-0	JC97-02187A	MEA UNIT-FRAME BASE;CLP-600,SEC,EXPORT,-	M0013	SNA
7.5-1	JC61-01005A	FRAME-_M_BASE BOTTOM;CLP-600,HIPS,HR-136	F0004	SA
7.5-2	JC70-00390A	IPR-CHANNEL FRAME BASE;CLP-500,SECC,-,T1	I0003	SA
7.5-3	JC63-00207A	COVER-M-BASE BAR;CLP-500,HIPS,-,-,-,HB,-	C0044	SA
7.5-4	JC70-00379A	IPR-BRKT BASE BAR;CLP-500,SECC,-,T1.6,-,	I0002	SA
7.5-5	JC97-02149A	MEA UNIT-PICK UP;CLP-600,SEC,EXPORT,-,-,	M0019	SA
7.5-6	JC61-00685A	HOUSING-M-PICK UP MP;ML-2150,PC+ABS,-,-,	H0025	SA
7.5-7	JC66-00050A	CAM-CATCH;ML-9400W,POM,-,34¢Æ¢Ø18¢Æ¢Ø7,WHITE S	C0004	SA
7.5-8	JC96-03332A	ELA UNIT-MPF;CLP-600,SEC,EXPORT,-,-,-,-	E0018	SA
7.5-9	JC61-01147A	GUIDE-_M_PAPER MP;CLP-600,HIPS,T3.0,W234	G0043	SNA
7.5-10	JC61-40001A	FOOT-ML80;ML-80,NBR,-,GRAY,-,-,-	F0003	SA
7.5-11	JC63-00175A	COVER-SCREW LOCKING MP;CLP-500,POM,-,-,-	C0050	SA
7.5-12	JC61-01016A	PLATE-P-GROUND SCF MAIN;CLP-600,SUS304,T	P0026	SNA
7.5-13	JC39-00433A	CBF HARNESS-THER;CLP-600,CBF HARNESS,UL1	C0021	SA
7.5-14	JC92-01660A	PBA SUB-TEMP_SENSOR;CLP-600,SEC,KOREA,TE	P0010	SA
7.5-15	JC61-00999A	BRACKET-P-POWER;CLP-600,SECC,T1.2,W41.5,	B0016	SNA
7.5-16	JC39-00452A	CBF HARNESS-AC_INLET;CLP-600,CBF HARNESS	C0008	SA

8.6. Main Frame



Main Frame Parts List

SA : Service Available
O : Service available **X** : Service not available

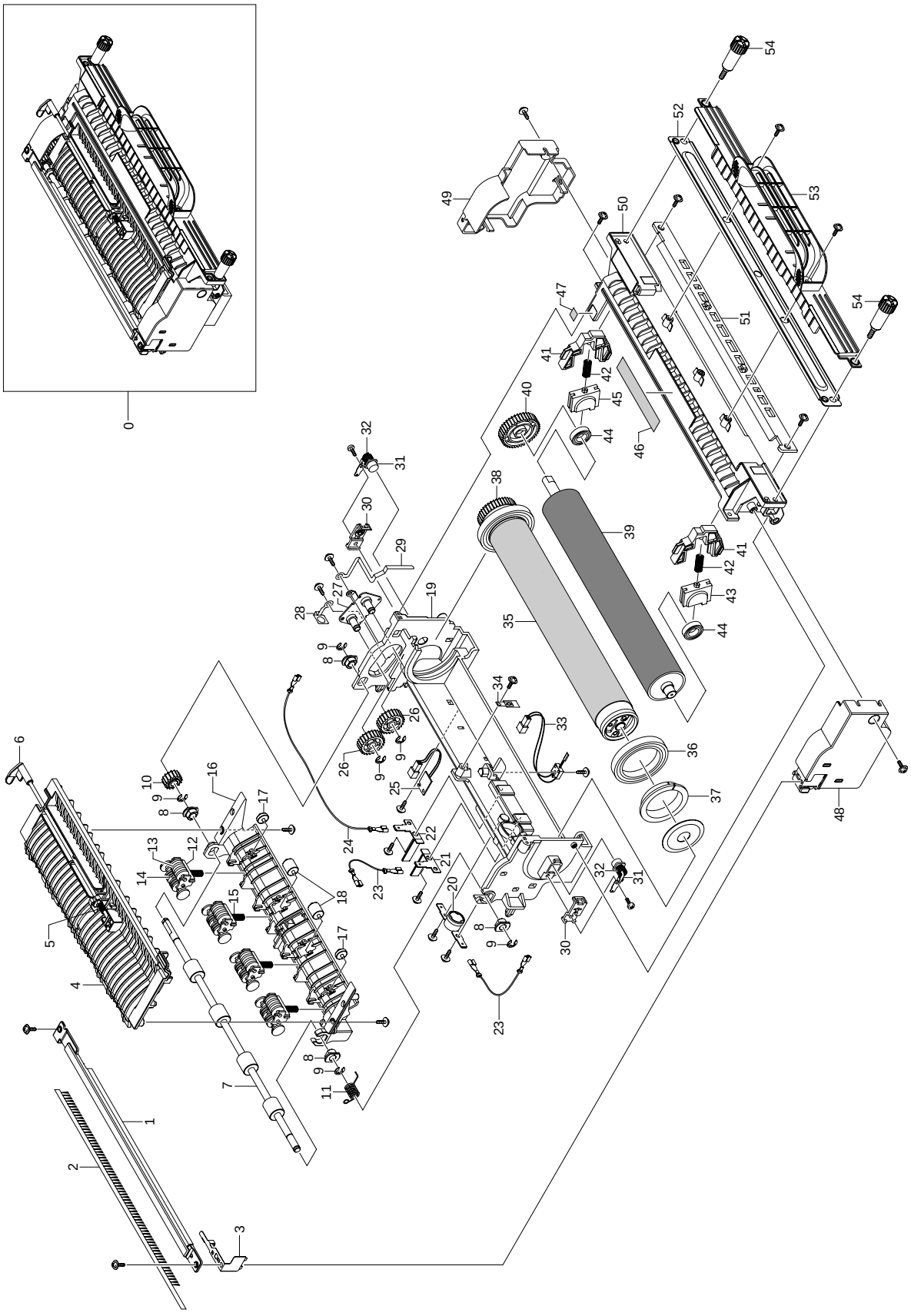
No.	SEC.Code	Description	SA	Remark
7.6-0	JC97-02151A	MEA UNIT-FRAME MAIN;CLP-600,SEC,EXPORT,-	M0015	SNA
7.6-1	JC61-01001A	FRAME-_M_MAIN;CLP-600,ABS+GF20%,VB-4921,	F0007	SNA
7.6-2	JC63-00577A	COVER-_M_EXIT GUIDE;CLP-600,ABS,HB,2.5,2	C0027	SA
7.6-3	JC96-03772A	ELA UNIT-HOLDER AC;CLP-600,SEC,EXPORT,-,	E0016	SA
7.6-4	JC39-00424A	CBF HARNESS-EXIT;CLP-600,CBF HARNESS,UL1	C0011	SA
7.6-5	JC61-01007A	GUIDE-_M_RAIL FRONT;CLP-600,PC+ABS,V0,-,	G0045	SA
7.6-6	JC61-01006A	GUIDE-_M_RAIL REAR;CLP-600,PC+ABS, V0,-,	G0046	SA
7.6-7	JC92-01789A	PBA SUB-TEMP;CLP-600,SED,KOREA,-,-,-,-,-		SNA
7.6-8	JC96-03771A	ELA UNIT-BRKT DRAW;CLP-600,SEC,EXPORT,-,	E0004	SA
7.6-9	JC68-01503A	LABEL(R)-BK;COMMON,-,PVC,T0.12,W15.0,L7.	L0002	SNA
7.6-10	JC68-01504A	LABEL(R)-C;COMMON,-,PVC,T0.12,W15.0,L7.0	L0003	SNA
7.6-11	JC68-01505A	LABEL(R)-M;COMMON,-,PVC,T0.12,W15.0,L7.0	L0007	SNA
7.6-12	JC68-01506A	LABEL(R)-Y;COMMON,-,PVC,T0.12,W15.0,L7.0	L0008	SNA
7.6-13	JC66-00776A	LINK-_M_REAR 1;CLP-600,POM,L112.4,T4.5,-	L0013	SA
7.6-14	JC96-03366A	ELA UNIT-DEVE CRUM;CLP-600,SEC,EXPORT,-,	E0007	SNA
7.6-14-1	JC92-01671A	PBA SUB-DEVE_CRUM_IF;CLP-600,SEC,KOREA,D	P0002	SA
7.6-14-2	JC63-00571A	COVER-_M_DEVE CRUM BD;CLP-600,HIPS,2.0,1	C0026	SA
7.6-15	JC97-02402A	MEA UNIT-PTB TERMINAL;CLP-600,SEC,EXPORT	M0020	SA
7.6-15-1	JC61-01011A	GUIDE-_M_PTB TERMINAL;CLP-600,ABS,2.0,23	G0044	SA
7.6-15-2	JC70-00508A	ELECTRODE-HV F;CLP-600,SUS304WPB,°ÕO5,L32	E0026	SA
7.6-15-3	JC61-01010A	GUIDE-_M_TERMINAL CH;CLP-600,ABS,2.0,15.	G0053	SA
7.6-15-4	JC97-01401A	MEA UNIT-TERMINAL:TR;ML-5000A,SAMSUNG,KO		SA
7.6-15-6	JC70-00513A	ELECTRODE-HV E;CLP-600,SUS304WPB,°ÕO5,L32	E0025	SA
7.6-16	JC61-01264A	SPRING ETC-OPC F;CLP-600,SUS304 ,1.5,6.5	S0026	SA
7.6-17	JC97-02403A	MEA UNIT-DEV TERMINAL;CLP-600,SEC,EXPORT	M0011	SA
7.6-17-1	JC61-01008A	GUIDE-_M_TERMINAL UPPER;CLP-600,ABS,2.0,	G0055	SA
7.6-17-2	JC70-00505A	ELECTRODE-HV C;CLP-600,SUS304 WPB DU NI-	E0023	SA
7.6-17-3	JC70-00504A	ELECTRODE-HV B;CLP-600,SUS304 WPB DU NI-	E0022	SA
7.6-17-4	JC70-00503A	ELECTRODE-HV A;CLP-600,SUS304 WPB DU NI-	E0021	SA
7.6-17-5	JC61-01009A	GUIDE-_M_TERMINAL LOWER;CLP-600,ABS,2.0,	G0054	SA
7.6-18	JC61-01019A	HOLDER-_M_PTB LOCKER;CLP-600,POM,3.0,-,3	H0015	SNA
7.6-19	JC61-01265A	SPRING ETC-PTB F;CLP-600,SUS304 ,1.5,6.5	S0029	SA
7.6-20	JC61-01266A	SPRING ETC-PTB R;CLP-600,SUS304 ,1.5,6.5	S0030	SA
7.6-21	JC70-00506A	ELECTRODE-HV D;CLP-600,SUS304WPB,°ÕO10.0,	E0024	SA
7.6-22	JC39-00509A	CBF HARNESS-GND ZENER;SCX-4521F,-,UL1007		SA
7.6-23	JC96-03770A	ELA UNIT-DUCT REAR;CLP-600,SEC,EXPORT,-,	E0013	SNA
7.6-23-1	JC61-01061A	HOLDER-_M_SWITCH;CLP-600,HIPS,HB,T2.0,W3	H0016	SA
7.6-23-2	JC61-00707A	PLATE-S/W DUPLEX;CLP-500,SUS304 1/2H,T0.	P0028	SA
7.6-23-3	JC39-00454A	CBF HARNESS-SWITCH;CLP-600,CBF HARNESS,U	C0020	SA
7.6-23-4	JC67-00074A	DUCT-_M_FUSER FAN;CLP-600,HIPS,HB,T2.0,W	D0001	SA
7.6-23-5	JC31-00012C	FAN-DC INVERTER;AD0624HS-A76GL(,SCX-6345		SA
7.6-24	JC61-01077A	HOUSING-_M_SENSOR EXIT;CLP-600,HIPS,HB,T	H0024	SNA

Main Frame Parts List

SA : Service Available
O : Service available **X** : Service not available

No.	SEC.Code	Description	SA	Remark
7.6-25	0604-001154	PHOTO-INTERRUPTER;TR,0.2-1.0MA,80MW,DIP,	P0012	SA
7.6-26	JC39-00428A	CBF HARNESS-MP_1;CLP-600,CBF HARNESS,UL1	C0018	SA
7.6-27	JC61-01020A	PLATE-P-GROUND FUSER;CLP-600,SUS304,T0.2	P0023	SNA
7.6-28	JC39-00302A	CBF HARNESS-100M_GND;CLP-500,-,-,1 PIN,5	C0007	SA
7.6-29	JC61-01267A	SPRING ETC-OPC R;CLP-600,SUS304 ,1.5,6.5	S0027	SA
7.6-30	JC61-01014A	PLATE-P-GROUND OPC;CLP-600,SECC,T0.5,W15	P0024	SNA
7.6-31	JC61-01015A	PLATE-P-GROUND DRIVE;CLP-600,SUS304,T0.2	P0022	SNA

8.7. Fuser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Fuser Parts List

SA : Service Available
O : Service available **X** : Service not available

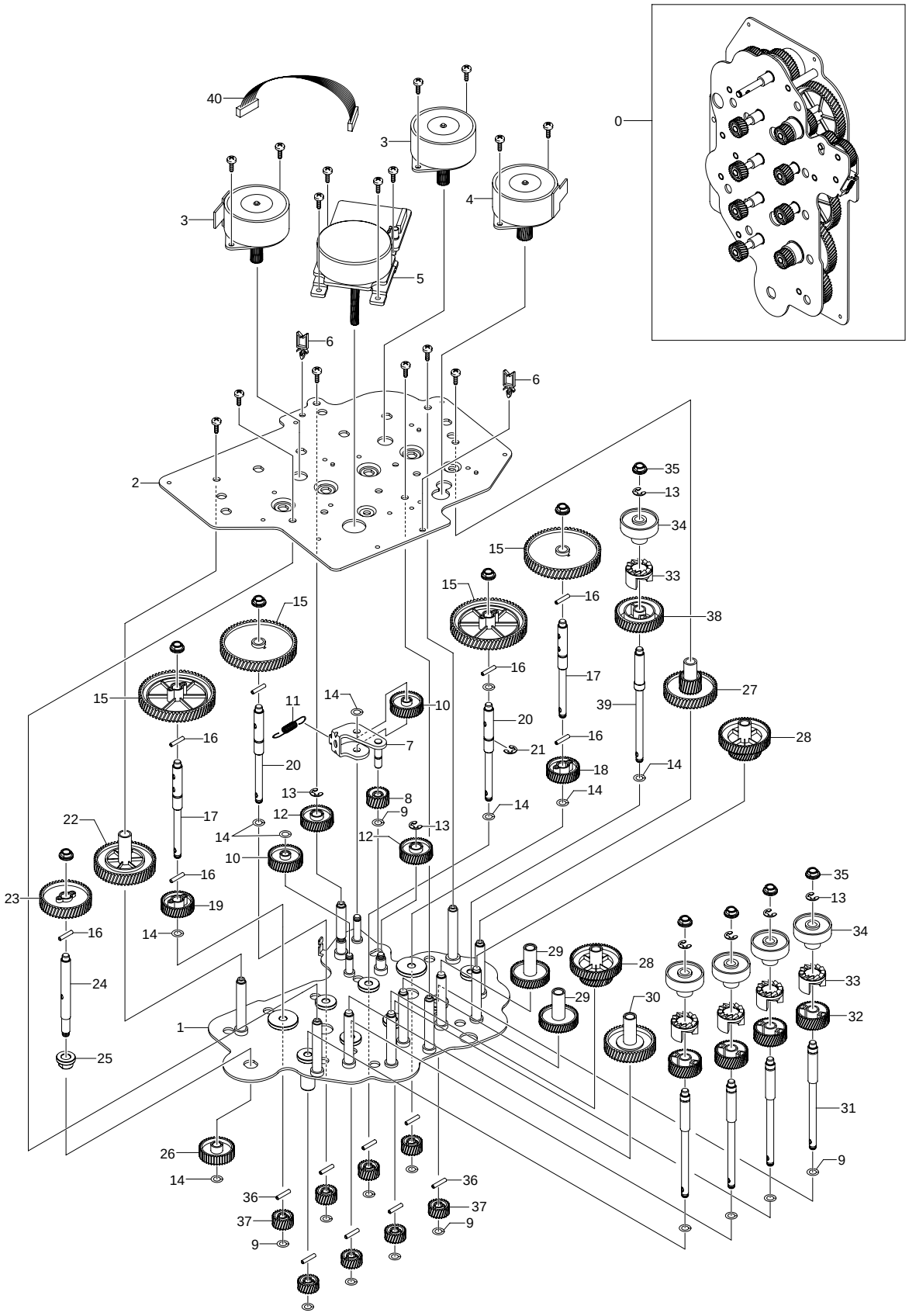
No.	SEC.Code	Description	SA	Remark
7.7-0	JC96-03438A	ELA UNIT-FUSER 220V;CLP-600,SEC,EXPORT,-	E0015	SA
7.7-0	JC96-03370A	ELA UNIT-FUSER 110V;CLP-600,SEC,EXPORT,-	E0015	SA
7.7-1	JC63-00594A	COVER-_M_EXIT ROLLER;CLP-600,PET GF30%,T	C0028	SNA
7.7-2	JC75-00095A	MEC-BRUSH ANTISTATIC;ML-6060A,SEC,NTR	M0022	SA
7.7-3	JC63-00837A	GROUND-P-COVER EXIT;CLP-600,SUS304,T0.2,	G0036	SA
7.7-4	JC61-01064A	GUIDE-_M_DUPLEX;CLP-600,PET+GF30%,5V,T2.	G0040	SNA
7.7-5	JC61-01271A	SPRING ETC-ACTUATOR;CLP-600,SUS304 ,0.35	S0018	SA
7.7-6	JC66-00784A	LEVER-_M_ACTUATOR EXIT;CLP-600,PET GF30%	L0010	SA
7.7-7	JC66-00783A	ROLLER-EXIT;CLP-600,SUM24L+EPDM,°ÕO8.0+°ÕOSN	R0009	SNA
7.7-8	JC61-00423A	BUSH-6_D;ML-9400W,BEARING OIL,-,-,-,NTR,	B0025	SA
7.7-9	6044-000125	RING-E;ID4,OD9,T0.6,PASS,STSC	R0004	SA
7.7-10	JC66-00782A	GEAR-_M_EXIT;CLP-600,POM,M1.0,Z14,-,WHT,	G0005	SA
7.7-12	JC61-00547A	HOLDER-EXIT(MC);SCX-5312F,PC,-,-,-,WHITE	H0019	SNA
7.7-13	JC72-41007A	PMO-ROLLER FD F;ML-165,POM,BLACK,-,-,-,-	P0048	SA
7.7-15	JC61-70911A	SPRING ETC-EXIT ROLL FD;ML-165,SUS304 WP	S0021	SA
7.7-16	JC61-01065A	GUIDE-_M_OUTPUT;CLP-600,PET+GF30%,5V,T2.	G0042	SNA
7.7-17	JC66-00608A	ROLLER-EXIT IDLE;CLP-500,TEFLON,PI10.5,L	R0008	SNA
7.7-18	JC72-20901A	PEX-ROLLER EXIT F_UP;ML-5000A,TEFLON,WHI	P0011	SA
7.7-19	JC61-01062A	FRAME-_M_UPPER FUSER;CLP-600,PET+GF30%,B	F0008	SNA
7.7-20	4712-001027	THERMOSTAT;125/250VAC,15/7.5A,170+-5C,0C	T0002	SA
7.7-21	JC70-00488A	ELECTRODE-P-TERMINAL L;CLP-600,C5210P,T0	E0027	SA
7.7-22	JC70-00489A	ELECTRODE-P-TERMINAL R;CLP-600,C5210P,T0	E0028	SA
7.7-23	JC39-00506A	CBF HARNESS-FUSER1;CLP-600,CBF HARNESS,U	C0012	SA
7.7-24	JC39-00444A	CBF HARNESS-FUSER2;CLP-600,CBF HARNESS,U	C0013	SA
7.7-25	JC92-01752A	PBA SUB-NEW_FUSER;CLP-600,SEC,KOREA,13*1	P0007	SA
7.7-26	JC66-00781A	GEAR-_M_EXIT IDLE;CLP-600,PBT,M1.0,Z22,-	G0004	SA
7.7-27	JC61-01070A	BRACKET-P-IDLE GEAR;CLP-600,SECC,T1.0,W3	B0012	SNA
7.7-28	JC63-00647A	GROUND-P-FUSER B;CLP-600,SUS304,T0.3,W17	G0037	SNA
7.7-29	JC63-00648A	GROUND-P-FUSER BALL;CLP-600,SUS304,T0.3,	G0038	SNA
7.7-30	JC63-00643A	COVER-M-CARBON BRUSH;CLP-600,PET GF 30%,	C0045	SNA
7.7-31	JC67-00104A	BRUSH-CARBON;ML-3560,SM190,-,D9,9.5,-,-	B0020	SNA
7.7-32	6107-001172	SPRING-CS;SUS304,-,PI0.5,D6.7,L17.5,-,-	S0035	SA
7.7-33	1404-001359	THERMISTOR-NTC ASSY;1KOHM,-,4537K,0.25MW	T0001	SA
7.7-35	JC66-00799A	ROLLER-HEAT;CLP-600,AL5052+RUBBER,D36.4,	R0011	SNA
7.7-36	6601-001340	BEARING-BALL;6808ZZ,ID40,OD52,L7,SUJ2,-	B0001	SNA
7.7-37	JC61-01144A	BUSH-_M_BALL BEARING;CLP-600,PPS,ID34.6,	B0021	SNA
7.7-38	JC66-00780A	GEAR-_M_CAP;CLP-600,PPS+PTEE+GF,M1.0,Z36	G0001	SA
7.7-39	JC66-00800A	ROLLER-PRESSURE;CLP-600,STKM+RUBBER,D36.	R0016	SA
7.7-40	JC67-00071A	CAP-_M_END;CLP-600,PPS+PTEE+GF,T14.5,OD3	C0005	SNA
7.7-41	JC61-01176A	HOLDER-M-SPRING PR;CLP-600,PET+GF30%,-,W	H0022	SNA
7.7-42	6107-001248	SPRING-CS;SWP-B,-,PI1.3,D6.8,L19.5,-,-,I	S0040	SNA
7.7-44	6601-001341	BEARING-BALL;688ZZ,ID8,OD16,L5,SUJ2,-	B0002	SNA

Fuser Parts List

SA : Service Available
O : Service available **X** : Service not available

No.	SEC.Code	Description	SA	Remark
7.7-45	JC61-01126A	HOLDER-_M_FUSER GEAR;CLP-600,PPS+PTEE+GF	H0007	SNA
7.7-46	JC68-01581A	LABEL(P)-CAUTION HOT;COMMON,SAMSUNG,PET,	L0001	SNA
7.7-47	JC68-00407A	LABEL(R)-HV FUSER;ML-6060,PVC,-,220V,-,,	L0006	SNA
7.7-47	JC68-00408A	LABEL(R)-LV FUSER;COMMON,PVC,-,110V,-,,,	L0006	SNA
7.7-48	JC63-00592A	COVER-_M_SIDE L;CLP-600,PET GF30%,T2.5,W	C0038	SNA
7.7-49	JC63-00593A	COVER-_M_SIDE R;CLP-600,PET GF30%,T2.5,W	C0039	SNA
7.7-50	JC61-01063A	FRAME-_M_LOWER FUSER;CLP-600,PET+GF30%,B	F0006	SNA
7.7-51	JC61-01066A	GUIDE-_M_INPUT;CLP-600,PET+GF30%,5V,T3.0	G0041	SNA
7.7-52	JC61-01069A	BRACKET-P-GUIDE FRAME;CLP-600,SECC,T0.8,	B0010	SNA
7.7-53	JC63-00644A	COVER-M-FRAME FUSER;CLP-600,PC,T3,W309.0	C0047	SNA
7.7-54	JC64-00186A	HANDLE-M-FIX FUSER;CLP-600,PC+SUM,-,-,L4	H0003	SA

8.8. Main Drive

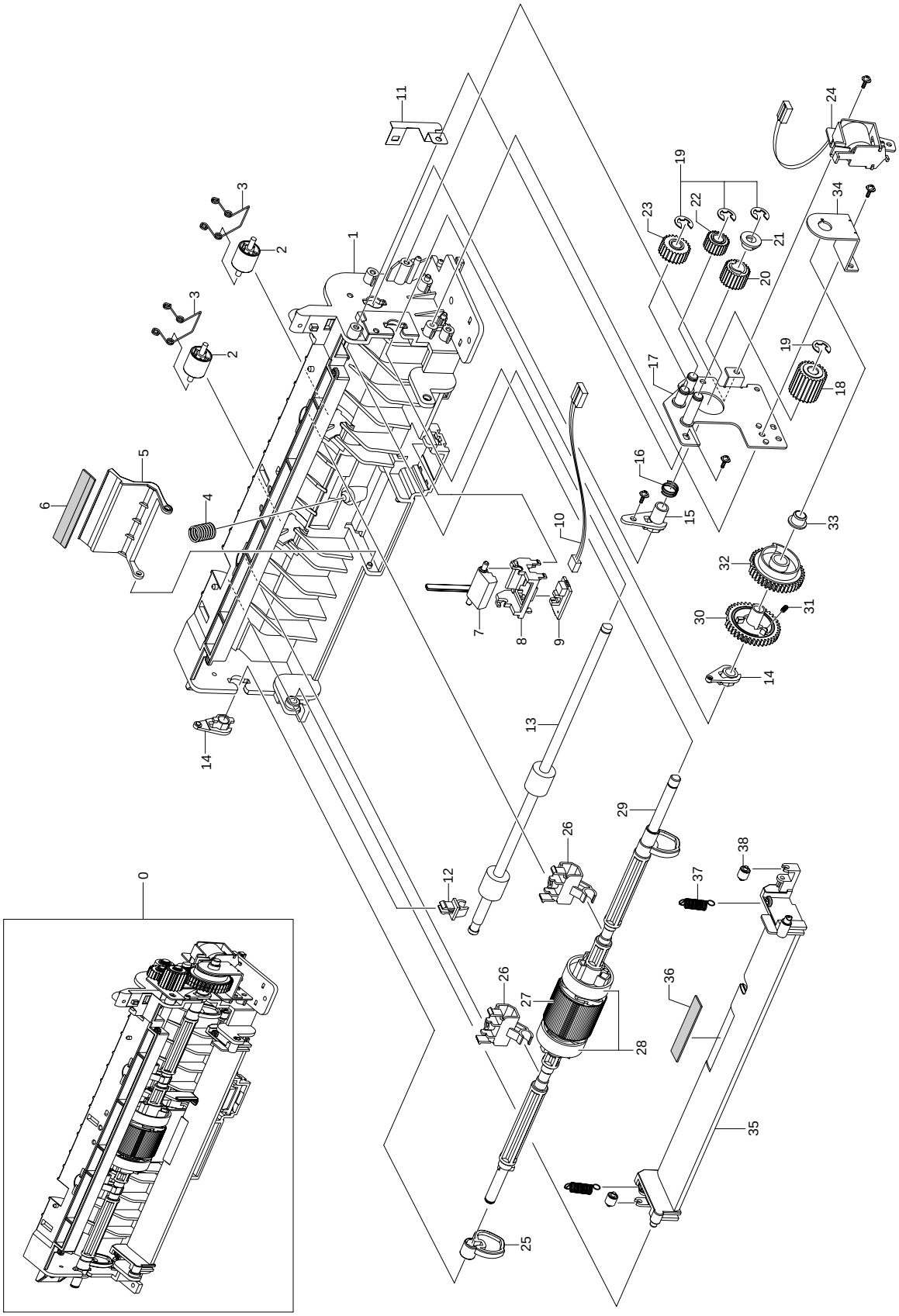


Main Drive Parts List

SA : Service Available
O : Service available **X** : Service not available

No.	SEC.Code	Description	SA	Remark
7.8-0	JC96-03369A	ELA UNIT-DRIVE MAIN;CLP-600,SEC,EXPORT,-	E0011	SA
7.8-1	JC61-00996A	BRACKET-P-MAIN FRONT;CLP-600,SECC,T1.2,W	B0013	SNA
7.8-2	JC61-00997A	BRACKET-P-MAIN REAR;CLP-600,SECC,T1.2,W1	B0014	SNA
7.8-3	JC31-00041A	MOTOR DC-DEVE DRIVE;50M843A152,CLP-600,2	M0024	SA
7.8-4	JC31-00037C	MOTOR STEP-FU, DRIVE;M55SP-2NK,CLP-600,1	M0025	SA
7.8-7	JC66-00755A	LINK-P-ITB;CLP-600,SECC,L36.22,T1.6,°ÕO6.S	L0015	SNA
7.8-8	JC66-00748A	GEAR-_M_PTB DRIVE2_Z30;CLP-600,POM,M0.6,	G0019	SA
7.8-9	6031-001255	WASHER-PLAIN;NYLON,CUTTING,ID5,OD9,T0.5,	W0004	SA
7.8-10	JC66-00750A	GEAR-_M_IDLE_Z43;CLP-600,POM,M0.6,Z43,-,	G0012	SA
7.8-11	6107-001214	SPRING-ES;SWP(PW-2),BLACK,PI0.45,D5.35,L	S0041	SA
7.8-12	JC66-00749A	GEAR-_M_IDLE_Z41;CLP-600,POM,M0.6,Z41,-,	G0011	SA
7.8-13	6044-000231	RING-E;ID5.0,OD11.0,T0.6,PASS,STS304	R0006	SA
7.8-14	6031-000023	WASHER-PLAIN;-,ID5.9,OD10.0,T0.5,BLK,POL	W0001	SNA
7.8-15	JC66-00745A	GEAR-_M_OPC DRV1_Z117;CLP-600,POM,M0.5,Z	G0016	SA
7.8-16	6043-001115	PIN-PARALLEL(KEY);A,OD2.0,L14.0,ZPC(YEL)	P0014	SNA
7.8-17	JC66-00837A	SHAFT-OPC DRIVE K,Y;CLP-600,SUM24L,L58.7	S0008	SNA
7.8-18	JC66-00747A	GEAR-_M_PTB DRIVE1_Z41;CLP-600,POM,M0.6,	G0018	SA
7.8-19	JC66-00752A	GEAR-_M_FEED DRV_Z42;CLP-600,POM,M0.6,Z4	G0006	SA
7.8-20	JC66-00832A	SHAFT-OPC DRIVE C,M;CLP-600,SUM24L,L58.7	S0007	SNA
7.8-22	JC66-00753A	GEAR-_M_IDLE_Z79;CLP-600,POM,M0.6,Z79,-,	G0013	SA
7.8-23	JC66-00754A	GEAR-_M_RDCN FEED1_Z69;CLP-600,POM,M0.6,	G0020	SA
7.8-24	JC66-00833A	SHAFT-FEED DRIVE;CLP-600,SUM24L,L50.5,-,	S0003	SNA
7.8-25	JC61-00426A	BUSH-8/5;ML-9400W,NTN B-F8-12,-,-,-,NTR,	B0026	SA
7.8-26	JC66-00470A	GEAR-FEED DRIVE_Z37;CLP-500,POM,DE8903,M	G0024	SA
7.8-27	JC66-00751A	GEAR-_M_RDCN FU_Z52/Z22;CLP-600,POM,M0.8	G0021	SA
7.8-28	JC66-00468A	GEAR-DEVE RDCN;CLP-500,POM,M90-44,M0.5/M	G0023	SA
7.8-29	JC66-00466A	GEAR-DEVE IDLE_Z41;CLP-500,POM,DE8903,M0	G0022	SA
7.8-30	JC66-00473A	GEAR-IDLE Z51;CLP-500,POM,DE8903,M0.8,Z5	G0027	SA
7.8-31	JC66-00834A	SHAFT-DEVE DRV KMCY;CLP-600,SUM24L,L72.1	S0002	SNA
7.8-32	JC66-00744A	GEAR-_M_DEVE CLUTCH_Z33;CLP-600,POM,M0.8	G0002	SA
7.8-33	JC72-01064A	PMO-HUB CLUTCH;CLP-500,POM,BLACK,-,DE890	P0040	SA
7.8-34	JC72-01232A	PMO-DUMMY CLUTCH;CLP-500,POM,WHITE,-,DEL	P0038	SA
7.8-35	JC61-00699A	BUSH-D6/L4;CLP-500,BRONZE+ST,ID6.0,OD9.0	B0027	SA
7.8-36	JB70-00168A	ICT-PIN ADF;SCX-1110F,STS303,D2.0,-,-,-,	I0001	SA
7.8-37	JC66-00746A	GEAR-_M_OPC DRV2_Z21;CLP-600,POM,M0.8,Z2	G0017	SA
7.8-38	JC66-00471A	GEAR-FUSER DRIVE 1_Z47;CLP-500,POM,M90-4	G0025	SA
7.8-39	JC66-00831A	SHAFT-FUSER DRIVE;CLP-600,SUM24L,L77.5,-	S0004	SNA
7.8-40	JC39-00510A	CBF HARNESS-BLDC_2;CLP-600,CBF HARNESS,U	C0009	SA

8.9. MPF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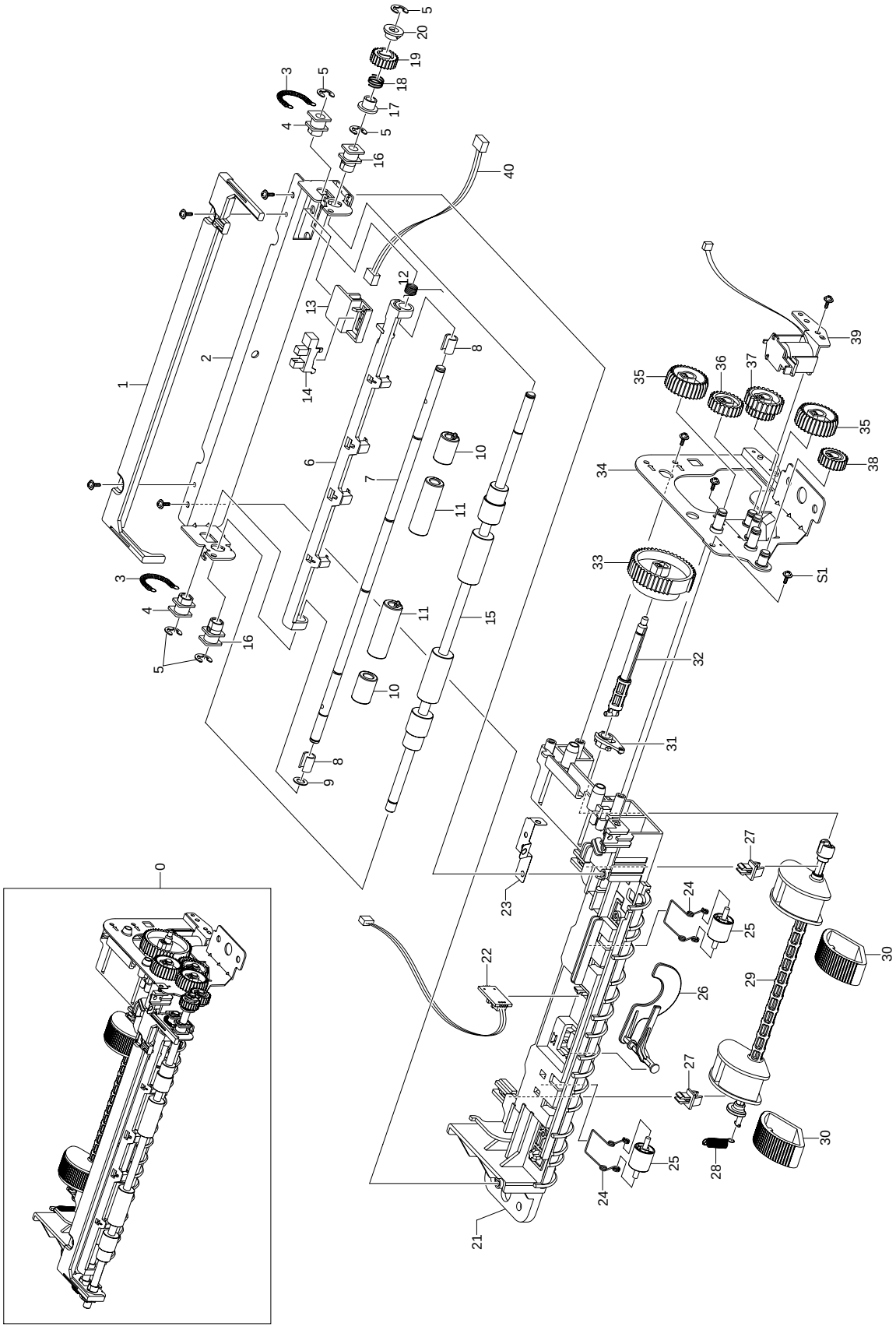
MPF Parts List

SA : Service Available
O : Service available **X** : Service not available

No.	SEC.Code	Description	SA	Remark
7.9-0	JC96-03332A	ELA UNIT-MPF;CLP-600,SEC,EXPORT,-,-,-,-	E0018	SA
7.9-1	JC61-01041A	FRAME-_M_BASE MP;CLP-600,HIPS,HR1360T,HB	F0005	SNA
7.9-2	JC66-00764A	ROLLER-IDLE FEED;CLP-600,POM,OD13.0,ID3.	R0013	SA
7.9-3	JC61-01274A	SPRING ETC-ROLLER;CLP-600,SUS304-WPB,0.7	S0032	SA
7.9-4	JC61-00387A	SPRING ETC-PAD;ML-9400W,SUS304WPB,PI0.5,	S0028	SA
7.9-5	JC61-01044A	HOLDER-_M_PAD;CLP-600,PC+ABS,T3.0,W54.0,	H0014	SNA
7.9-6	JC73-00132A	RPR-FRICTION PAD MP;ML-2150,NBB,53*9.8*T	R0019	SA
7.9-7	JC66-00775A	LEVER-_M_ACTUATOR EMPTY;CLP-600,ABS,T3.0	L0009	SNA
7.9-8	JC72-00772A	PMO-HOLDER SENSOR,MP;SCX-5100,ABS,BLACK,	P0039	SA
7.9-9	JC92-01662A	PBA SUB-MP_EMP_SENSOR;CLP-600,SEC,KOREA,	P0006	SA
7.9-10	JC39-00431A	CBF HARNESS-MP_EMP2;CLP-600,CBF HARNESS,	C0019	SA
7.9-11	JC61-01060A	PLATE-P-GROUND BRACKET;CLP-600,SUS304,T0	P0021	SNA
7.9-12	JC72-00382B	PMO-BUSHING FEED;ML-1710,POM(DERLIN 8903	P0034	SA
7.9-13	JC66-00836A	ROLLER-FEED MPF;CLP-600,SUM24L+EPDM,°ÕO6/S	R0010	SNA
7.9-14	JC72-41191B	PMO-BEARING SHAFT;ML-2150,POM,BLK,-,DE89	P0032	SA
7.9-15	JC61-01145A	BUSH-_M_ROLLER FEED;CLP-600,AT-15CF,ID6.	B0022	SA
7.9-16	6107-001249	SPRING-CS;SUS304-WPB,-,PI0.5,D8.8,L6,-,-	S0038	SNA
7.9-17	JC61-01047A	BRACKET-P-GEAR TRAY;CLP-600,SECC,T1.2,W5	B0009	SNA
7.9-18	JC66-00771A	GEAR-_M_IDLE PICKUP;CLP-600,POM,M0.8,SPU	G0010	SA
7.9-19	6044-000125	RING-E;ID4,OD9,T0.6,PASS,STSC	R0004	SA
7.9-20	JC66-00769A	GEAR-_M_MP FEED;CLP-600,POM,M0.8,SPUR,Z1	G0014	SA
7.9-21	JC61-01127A	HOLDER-_M_CLUTCH GEAR;CLP-600,POM,ID6.0,	H0005	SA
7.9-22	JC66-00770A	GEAR-_M_IDLE FEED;CLP-600,POM,M0.8,SPUR,	G0009	SA
7.9-23	JC66-00767A	GEAR-_M_DRIVE IDLE;CLP-600,POM,M0.8,SPUR	G0003	SA
7.9-24	JC33-00017A	SOLENOID-MP;DLH-34L080-08,CLP-600,24V,8O	S0016	SA
7.9-25	JC66-00772A	CAM-_M_PICK UP MP;CLP-600,PC,-,ID6.1,BLK	C0003	SNA
7.9-26	JC61-00671A	HOLDER-M-BUSHING TX;ML-2150,POM,-,-,-,BL	H0020	SA
7.9-27	JC97-02149A	MEA UNIT-PICK UP;CLP-600,SEC,EXPORT,-,-,	M0019	SA
7.9-28	JC72-01003A	PMO-IDLE PICK UP MP;ML-2150,POM,WHITE,-,	P0042	SA
7.9-29	JC66-00453A	SHAFT-M-PICK UP MP;ML-2150,PC NH-1023,-,	S0006	SA
7.9-30	JC66-00768A	GEAR-_M_MP PICK UP;CLP-600,POM,M0.8,SPUR	G0015	SA
7.9-31	JC61-00003A	SPRING ETC--CAM MP;ML-6100,SUS304-WPB,0.	S0020	SA
7.9-32	JC66-00766A	GEAR-_M_HOLDER CAM;CLP-600,POM,M0.8,SPUR	G0008	SA
7.9-33	JC66-10202A	BEARING-PICK UP;ML-80,POM,-,-,-	B0003	SA
7.9-34	JC61-01045A	BRACKET-P-HODLER PICKUP;CLP-600,SECC,T1.	B0011	SNA
7.9-35	JC61-01048A	PLATE-_M_KNOCK UP;CLP-600,ABS+GF 20%,T2.	P0016	SNA
7.9-36	JC73-00141A	RPR-PAD CASSETTE;ML-1510,URETHANE SPONGE	R0020	SA
7.9-37	JC61-70913A	SPRING ETC-KNOCK UP MP;ML-2150,SUS304 WP	S0024	SA
7.9-38	JC72-01004A	PMO-IDLE KNOCK UP MP;ML-2150,POM,BLK,-,M	P0041	SA

8.10. Pick Up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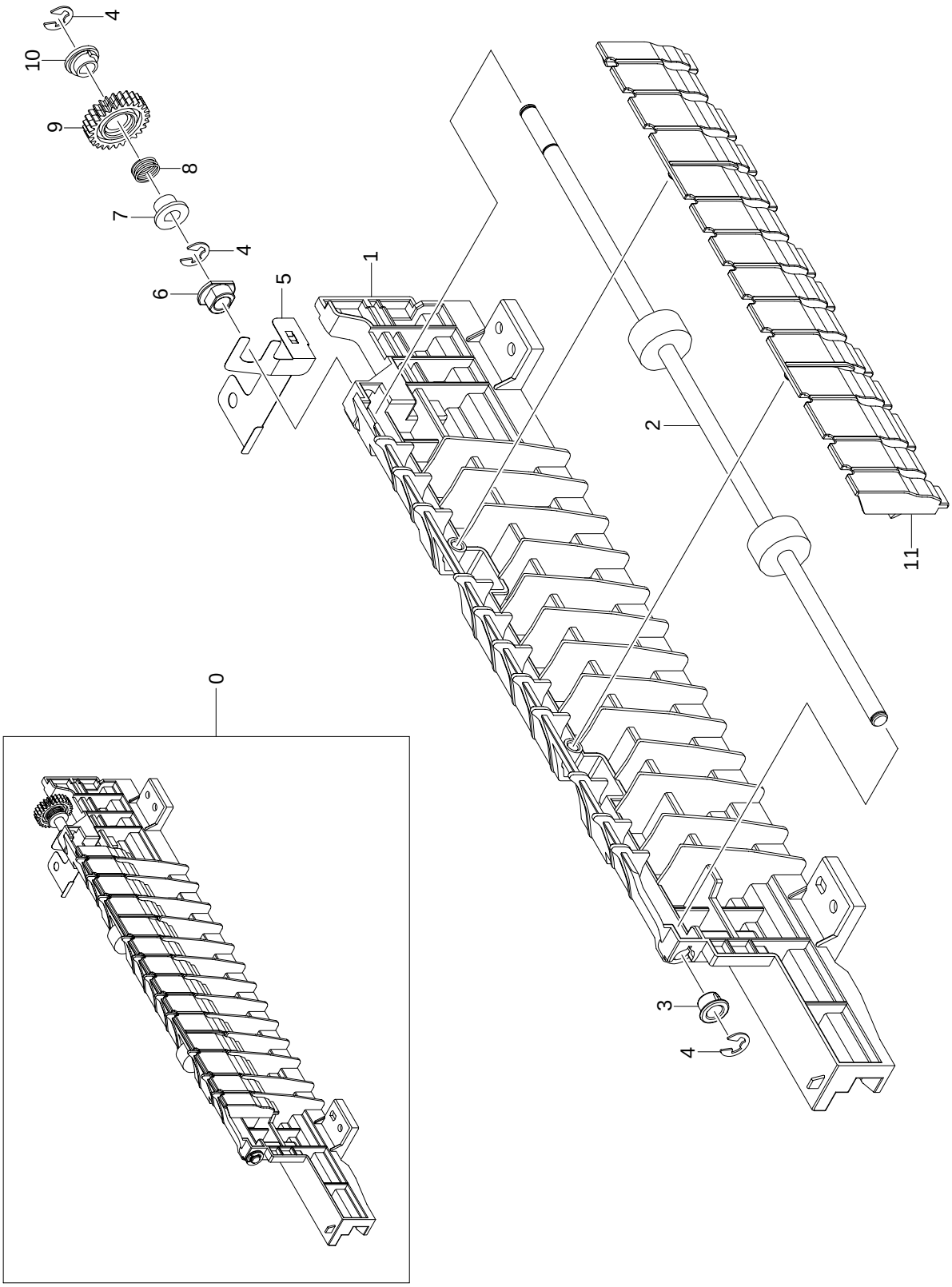
Pick Up Parts List

SA : Service Available
O : Service available **X** : Service not available

No.	SEC.Code	Description	SA	Remark
7.10-0	JC97-02149A	MEA UNIT-PICK UP;CLP-600,SEC,EXPORT,-,-	M0019	SA
7.10-1	JC63-00573A	COVER-M-REGI FRAME;CLP-600,HIPS,1.5,253.	C0049	SNA
7.10-2	JC61-01023A	FRAME-P-REGI;CLP-600,SECC,-,-,-,T1.2,250	F0014	SNA
7.10-3	JC61-01272A	SPRING ETC-BUSH REGI;CLP-600,SWP-B,0.4,-	S0019	SA
7.10-4	JC61-00669A	BUSH-M-ROLLER REGI U;ML-2150,POM(CE20),6	B0029	SA
7.10-5	6044-000125	RING-E;ID4,OD9,T0.6,PASS,STSC	R0004	SA
7.10-6	JC72-00998A	PMO-ACTUATOR REGISHUTTER;ML-2150,ABS G/F	P0030	SA
7.10-7	JC66-00446A	SHAFT-REGI UPPER;ML-2150,SUM22,-,6,-,-,-	S0010	SA
7.10-8	JC67-00047A	CAP-M_BUSHING ACTUATOR;ML-2150,POM,-,-,-	C0006	SA
7.10-9	6031-001255	WASHER-PLAIN;NYLON,CUTTING,ID5,OD9,T0.5,	W0004	SA
7.10-10	JC66-00648A	ROLLER-M_REGI IDLE S25;ML-2150,POM,11.9,	R0015	SA
7.10-11	JC66-00647A	ROLLER-M_REGI IDLE L25;ML-2150,POM,12.4,	R0014	SA
7.10-12	6107-001158	SPRING-TS;SUS304-WPB,-,PI0.4,D6.7,-,-,-	S0042	SA
7.10-13	JC61-01040A	HOLDER-M-SENSOR;CLP-600,HIPS,2.0,23.0,32	H0021	SA
7.10-14	0604-001095	PHOTO-INTERRUPTER;TR,90%,150mW,DIP-4,BK	P0013	SA
7.10-15	JC66-00765A	ROLLER-REGI LOWER;CLP-600,SUM24L,OD13.75	R0017	SA
7.10-16	JC61-01146A	BUSH-_M_ROLLER REGI L;CLP-600,POM,ID6.0,	B0023	SA
7.10-17	JC61-01128A	HOLDER-_M_GEAR REGI;CLP-600,POM,T1.3,ID6	H0010	SA
7.10-18	6107-001249	SPRING-CS;SUS304-WPB,-,PI0.5,D8.8,L6,-,-	S0038	SNA
7.10-19	JC66-00774A	GEAR-M-REGI;CLP-600,POM,M0.8,Z19,-,NTR,	G0033	SA
7.10-20	JC61-01128A	HOLDER-_M_GEAR REGI;CLP-600,POM,T1.3,ID6	H0010	SA
7.10-21	JC61-01039A	FRAME-M-PICK UP;CLP-600,PC+ABS,YGP 5001A	F0010	SNA
7.10-22	JC92-01661A	PBA SUB-FCF_EMP_SENSOR;CLP-600,SEC,KOREA	P0004	SA
7.10-23	JC61-01049A	PLATE-P-GROUND REGI;CLP-600,C5210P,T0.2,	P0025	SNA
7.10-24	JC61-01274A	SPRING ETC-ROLLER;CLP-600,SUS304-WPB,0.7	S0032	SA
7.10-25	JC66-00764A	ROLLER-IDLE FEED;CLP-600,POM,OD13.0,ID3.	R0013	SA
7.10-26	JC72-00719A	PMO-ACTUATOR EMPTY;SCX-5100,-,ABS,BLK,HB	P0029	SA
7.10-28	JC61-70950A	SPRING ETC-EXTENSION;ML-5000A,-,-,-,-,-,	S0022	SA
7.10-29	JC61-01038A	HOUSING-M-PICK UP;CLP-600,PC+GF20%,OD5,-	H0026	SNA
7.10-30	JC73-00224A	RUBBER-PICK UP MP;ML-3560,IR,D29.8,35,27	C4024	SA
7.10-31	JC72-41191B	PMO-BEARING SHAFT;ML-2150,POM,BLK,-,DE89	P0032	SA
7.10-32	JC66-00758A	SHAFT-PICK UP;CLP-600,PC+GF20%,72.5,4.0,	S0009	SA
7.10-33	JC66-00761A	GEAR-M-PICK UP;CLP-600,POM,M0.8,SPUR,Z50	G0032	SA
7.10-34	JC61-01029A	GUIDE-P-GEAR BRACKET;CLP-600,SECC,T1.2,1	G0059	SA
7.10-35	JC66-00759A	GEAR-M-MAIN;CLP-600,POM,M0.8,SPUR,Z31,-,	G0028	SA
7.10-36	JC66-00763A	GEAR-M-PICK UP IDLE;CLP-600,POM,M0.8,SPU	G0031	SA
7.10-37	JC66-00762A	GEAR-M-PICK UP IDLE 2;CLP-600,POM,M0.8,S	G0030	SA
7.10-38	JC66-00760A	GEAR-M-MP IDLE;CLP-600,POM,M0.8,SPUR,Z20	G0029	SA
7.10-39	JC33-00012B	SOLENOID-MAIN;DLH-34L080-10,CLP-600,24V,	S0015	SNA

8.11. Guide Paper

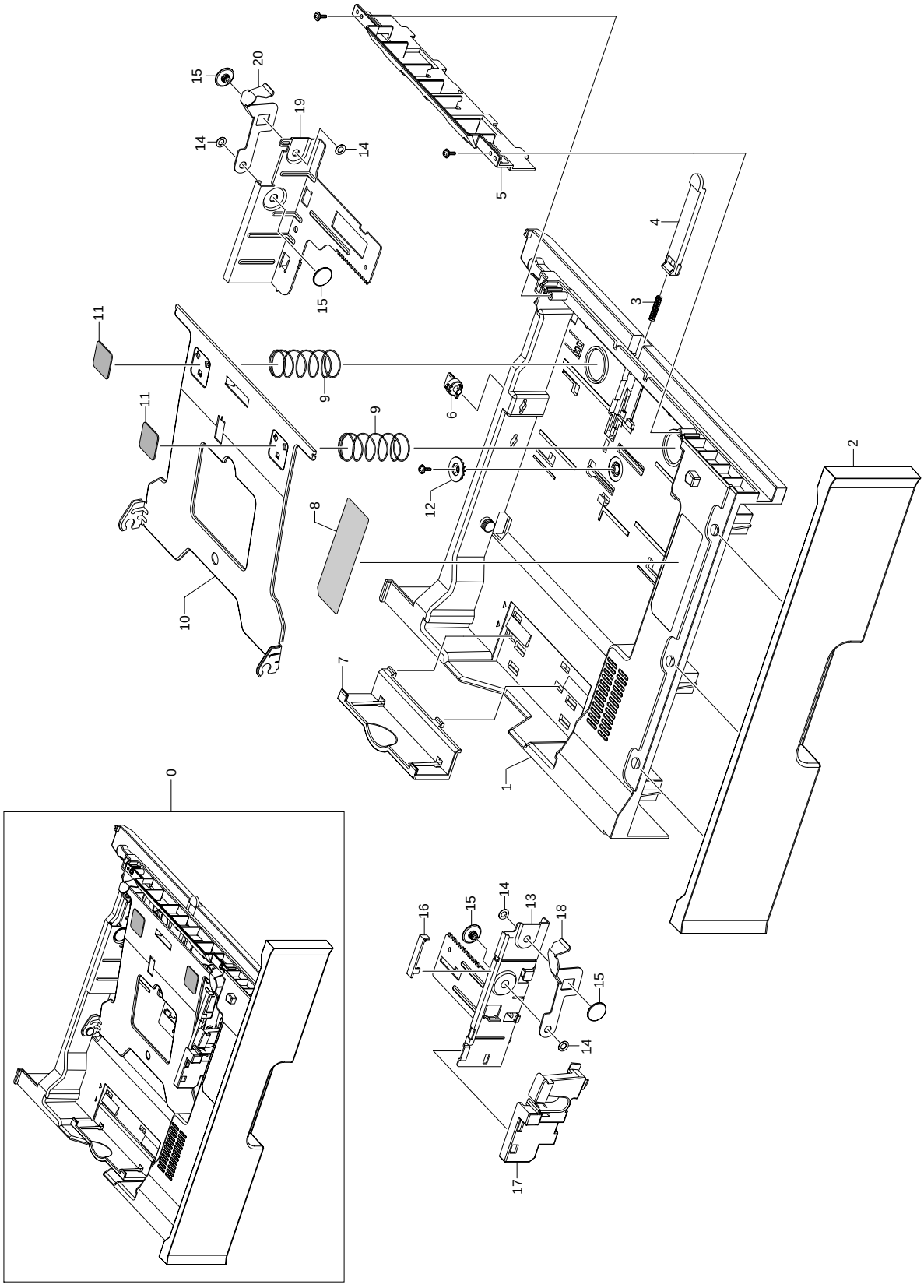


Guide Paper Parts List

SA : Service Available
O : Service available **X** : Service not available

No.	SEC.Code	Description	SA	Remark
7.11-0	JC97-02404A	MEA UNIT-GUIDE PAPER;CLP-600,SEC,EXPORT,	M0016	SA
7.11-1	JC61-01013A	GUIDE-_M_SCT PAPER UPPER;CLP-600,HIPS,2.	G0048	SNA
7.11-2	JC66-00903A	ROLLER-SHAFT FEED;CLP-600,SUM24L+EPDM,°ÕOS	R0018	SNA
7.11-3	JC72-41364A	PMO-BUSHING_P/U,MP;ML-6100,POM,BLACK,-,C	P0035	SA
7.11-4	6044-000125	RING-E;ID4,OD9,T0.6,PASS,STSC	R0004	SA
7.11-5	JC61-01021A	PLATE-P-GND FEED ROLLER;CLP-600,SUS304,T	P0020	SNA
7.11-6	JC61-00423A	BUSH-6_D;ML-9400W,BEARING OIL,-,-,-,NTR,	B0025	SA
7.11-7	JC61-01128A	HOLDER-_M_GEAR REGI;CLP-600,POM,T1.3,ID6	H0010	SA
7.11-8	6107-001249	SPRING-CS;SUS304-WPB,-,PI0.5,D8.8,L6,-,-	S0038	SNA
7.11-9	JC66-00773A	GEAR-_M_FEED;CLP-600,POM,M0.8,Z27,-,NTL,	G0007	SA
7.11-10	JC61-01127A	HOLDER-_M_CLUTCH GEAR;CLP-600,POM,ID6.0,	H0005	SA
7.11-11	JC61-01149A	GUIDE-_M_SCT PAPER LOWER;CLP-600,HIPS,HB	G0047	SNA

8.12. Cassette Unit

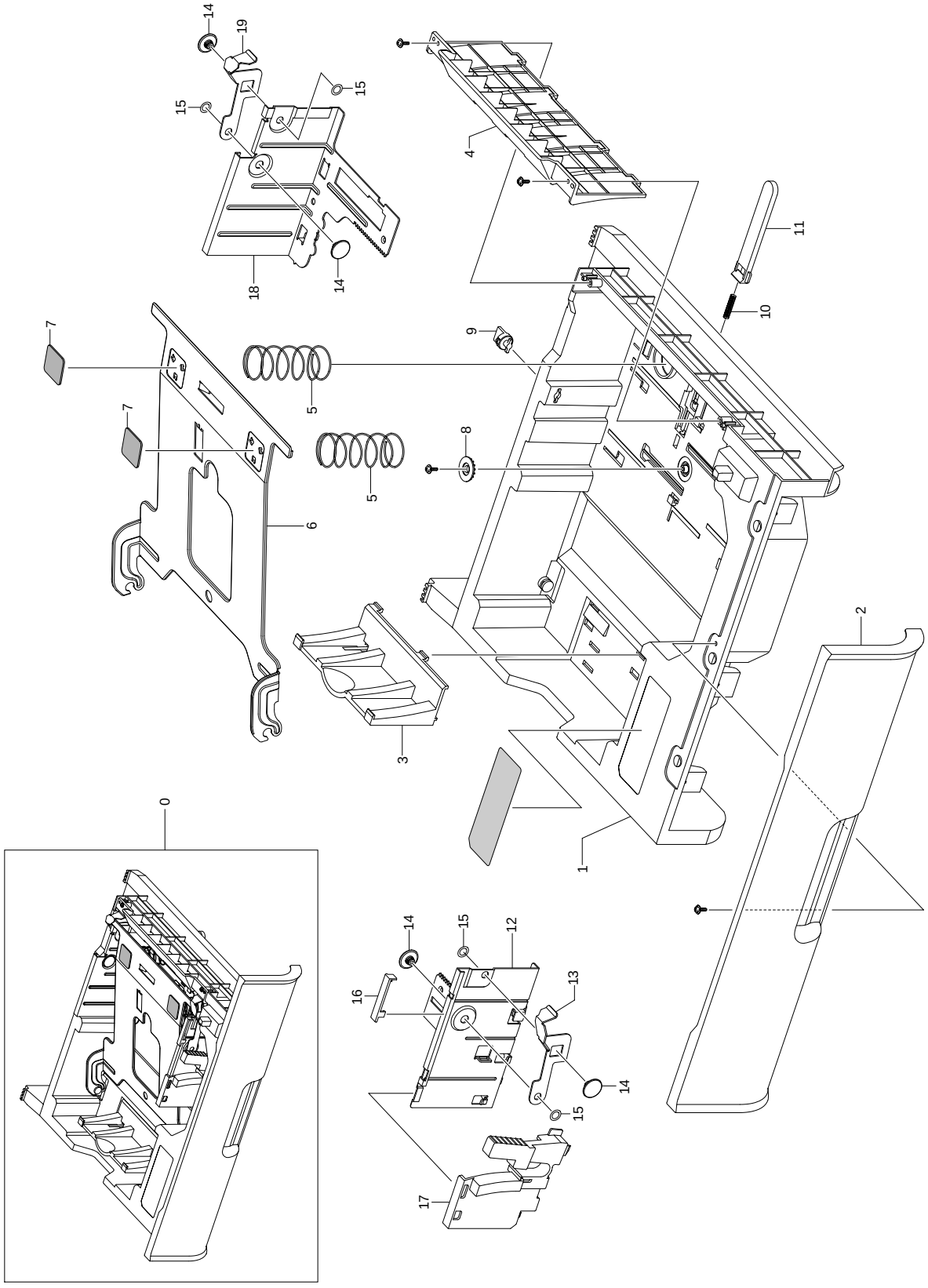


Cassette Unit Parts List

SA : Service Available
O : Service available **X** : Service not available

No.	SEC.Code	Description	SA	Remark
7.12-0	JC97-02192A	MEA UNIT-CASSETTE;CLP-600,SEC,EXPORT,-,-	M0009	SA
7.12-1	JC61-01022A	FRAME-M-CASSETTE;CLP-600,HIPS,HR-1360T,H	F0009	SNA
7.12-2	JC63-00572A	COVER-M-CASSETTE;CLP-600,ABS,3.0,429.6,1	C0046	SNA
7.12-3	JG61-70531A	SPRING ETC-LOCKER,PLATE;SF6000,STS304WPB	S0025	SA
7.12-4	JC72-01073A	PMO-LOCKER PLATE;CLP-500,POM,WHITE,-,M90	P0043	SA
7.12-5	JC61-01024A	GUIDE-M-FRONT CASSETTE;CLP-600,HIPS,HB,-	G0056	SNA
7.12-6	JC61-01037A	STOPPER-M-GUIDE SIDE;CLP-600,POM,OD12.0,	S0044	SA
7.12-7	JC61-01026A	GUIDE-M-REAR;CLP-600,HIPS,HB,3.0,128.0,4	G0057	SA
7.12-8	JC68-01527A	LABEL(R)-CASSETTE;COMMON,KOREA,YUPO,T0.2	L0004	SNA
7.12-9	6107-001200	SPRING-CS;SUS304-WPB,-,PI0.85,D21.85,L55	S0039	SNA
7.12-10	JC61-01030A	PLATE-P-KNOCK UP;CLP-600,SECC,T1.0,206.2	P0027	SNA
7.12-11	JC61-01129A	PLATE-KNOCK UP PAD;CLP-600,URETHANE SPON	P0017	SNA
7.12-12	JG66-40003A	GEAR-PINION;SF4000,POM,WHT,M1,Z16	G0035	SA
7.12-13	JC61-01027A	GUIDE-P-SIDE LEFT;CLP-600,SECC,T1.2,52.5	G0060	SNA
7.12-14	6031-001255	WASHER-PLAIN;NYLON,CUTTING,ID5,OD9,T0.5,	W0004	SA
7.12-15	JC61-00653A	BUSH-M-FINGER,F;ML-2150,POM,-,-,-,BLK,-	B0028	SA
7.12-16	JC63-00609A	COVER-_M_GUIDE SIDE L;CLP-600,POM,T1.2,W	C0032	SNA
7.12-17	JC61-01025A	GUIDE-M-SIDE LOCK;CLP-600,ABS,HB,2.0,52.	G0058	SNA
7.12-18	JC61-01031A	PLATE-P-FINGER LEFT;CLP-600,SUS,T1.2,71.	P0018	SNA
7.12-19	JC61-01028A	GUIDE-P-SIDE RIGHT;CLP-600,SECC,T1.2,91.	G0061	SNA
7.12-20	JC61-01032A	PLATE-P-FINGER RIGHT;CLP-600,SUS,T1.2,71	P0019	SNA

8.13. Cassette(SCF) => Option Cassette

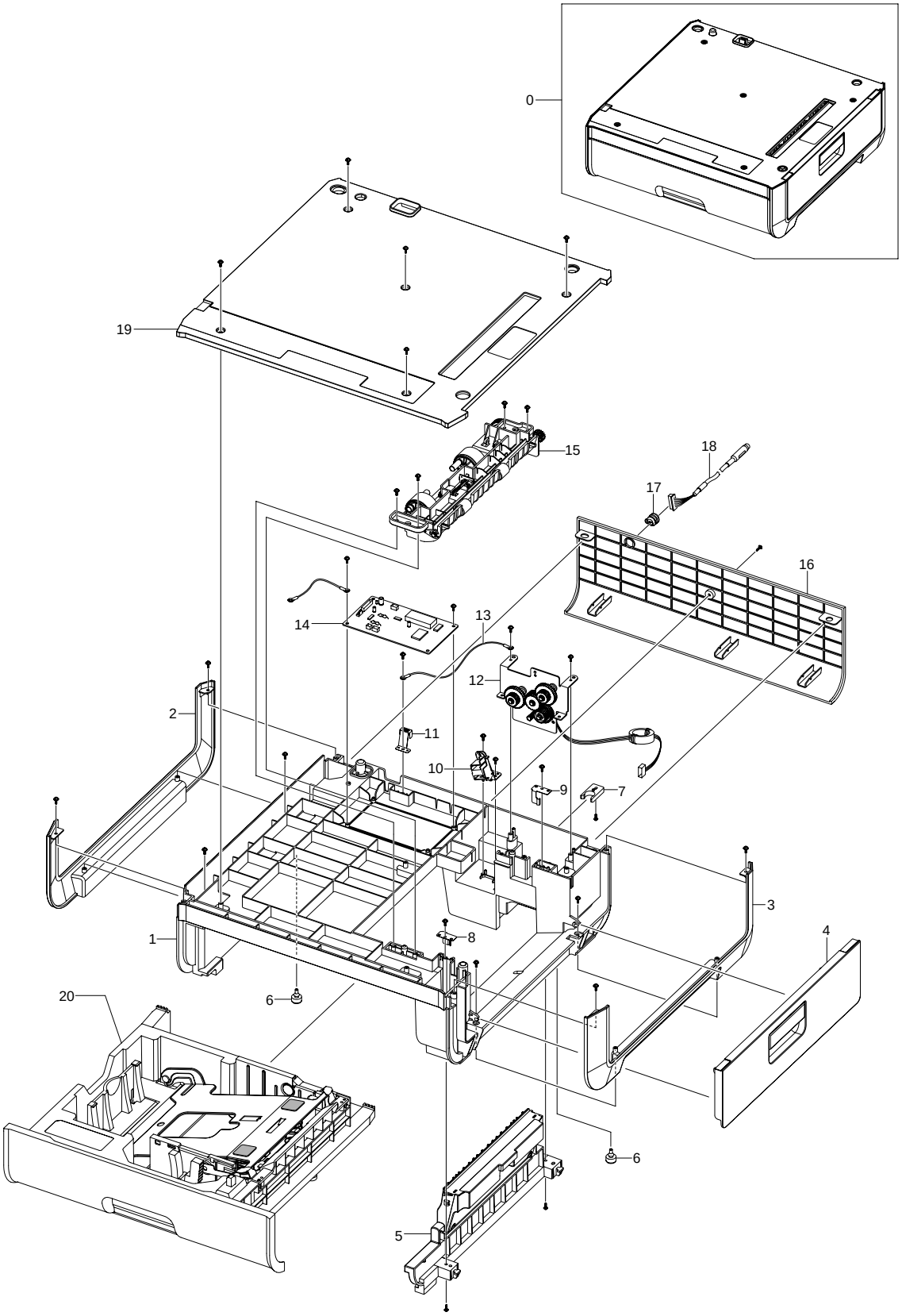


Cassette(SCF) Parts List => Option Cassette

SA : Service Available
O : Service available **X** : Service not available

No.	SEC.Code	Description	SA	Remark
7.13-0	CLP-600S5	COLOR LASER PRINTER SECOND CASSETTE;		SNA
7.13-1	JC61-01080A	FRAME-M-SCF;CLP-600,HIPS,VE1870U,V0,G71312,T3.0,W429.0,L301.9,-		SNA
7.13-2	JC64-00180A	DECORATION-M-LEFT SCF;CLP-600,HIPS,T3.0,W444.7,L133.8,HB,G71312,HR-1360T		SNA
7.13-3	JC64-00181A	DECORATION-M-RIGHT SCF;CLP-600,HIPS,T3.0,W444.7,L141.8,HB,G71312,HR-1360T		SNA
7.13-4	JC64-00183A	DOOR-_M_SIDE SCF;CLP-600,HIPS,HB,T3.0,-,W373.0,L99.7,G71312,HR-1360T		SNA
7.13-5	JC97-02250A	MEA HOU-LOWER SCF;CLP-600S5,SEC,EXPORT,SCF,-,-,-		SA
7.13-6	JC61-40001A	FOOT-ML80;ML-80,NBR,-,GRAY,-,-,-		SA
7.13-7	JC66-00050A	CAM-CATCH;ML-9400W,POM,-,34°ø18°ø7,WHITE,-,-,-,-		SA
7.13-8	JC70-00377A	IPR-PLATE LOCKER(L);MLC-500,SUS301 CSP,-,T0.5,-,-,-,-,-		SNA
7.13-9	JC70-00378A	IPR-PLATE LOCKER(R);MLC-500,SUS301 CSP,-,T0.5,-,-,-,-,-		SNA
7.13-10	JC33-00007A	SOLENOID-PICK UP;-,SCX-5100,DC 24V,80,36.5*17.7*1.2,-,300MA,-,-,-		SA
7.13-11	JC70-11028A	IPR-GROUND TOP;ML-6000,SUS304CSP3/4H,-,T0.2,-,-,-,-,-		SA
7.13-12	JC61-01087A	GUIDE-P-SIDE LEFT SCF;CLP-600,SECC,T1.2,W121.2,L112.4,-,-		SNA
7.13-13	JC61-01031A	PLATE-P-FINGER LEFT;CLP-600,SUS,T1.2,71.1,21.0,-,-		SNA
7.13-14	JC72-41364A	PMO-BUSHING_P/U,MP;ML-6100,POM,BLACK,-,CF-620,-,-,-,-		SA
7.13-15	6031-001255	WASHER-PLAIN;NYLON,CUTTING,ID5,OD9,T0.5,NTR		SA
7.13-16	JC63-00609A	COVER-_M_GUIDE SIDE L;CLP-600,POM,T1.2,W42.2,L7.5,HB,-,M90-44,NTL		SNA
7.13-17	JC61-01081A	GUIDE-M-SIDE LOCK SCF;CLP-600,ABS,HB,T2.0,W89.4,L79.9,G71312,HF-0660I		SNA
7.13-18	JC61-01088A	GUIDE-P-SIDE RIGHT SCF;CLP-600,SECC,T1.2,W120.7,L127.0,-,-		SNA
7.13-19	JC61-01032A	PLATE-P-FINGER RIGHT;CLP-600,SUS,T1.2,71.1,31.7,-,-		SNA
7.13-20	JC96-03491B	ELA UNIT-CASSETTE SCF;CLP-600,SEC,EXPORT,SCF,-,-,-		SA

8.14. SCF => Option Cassette

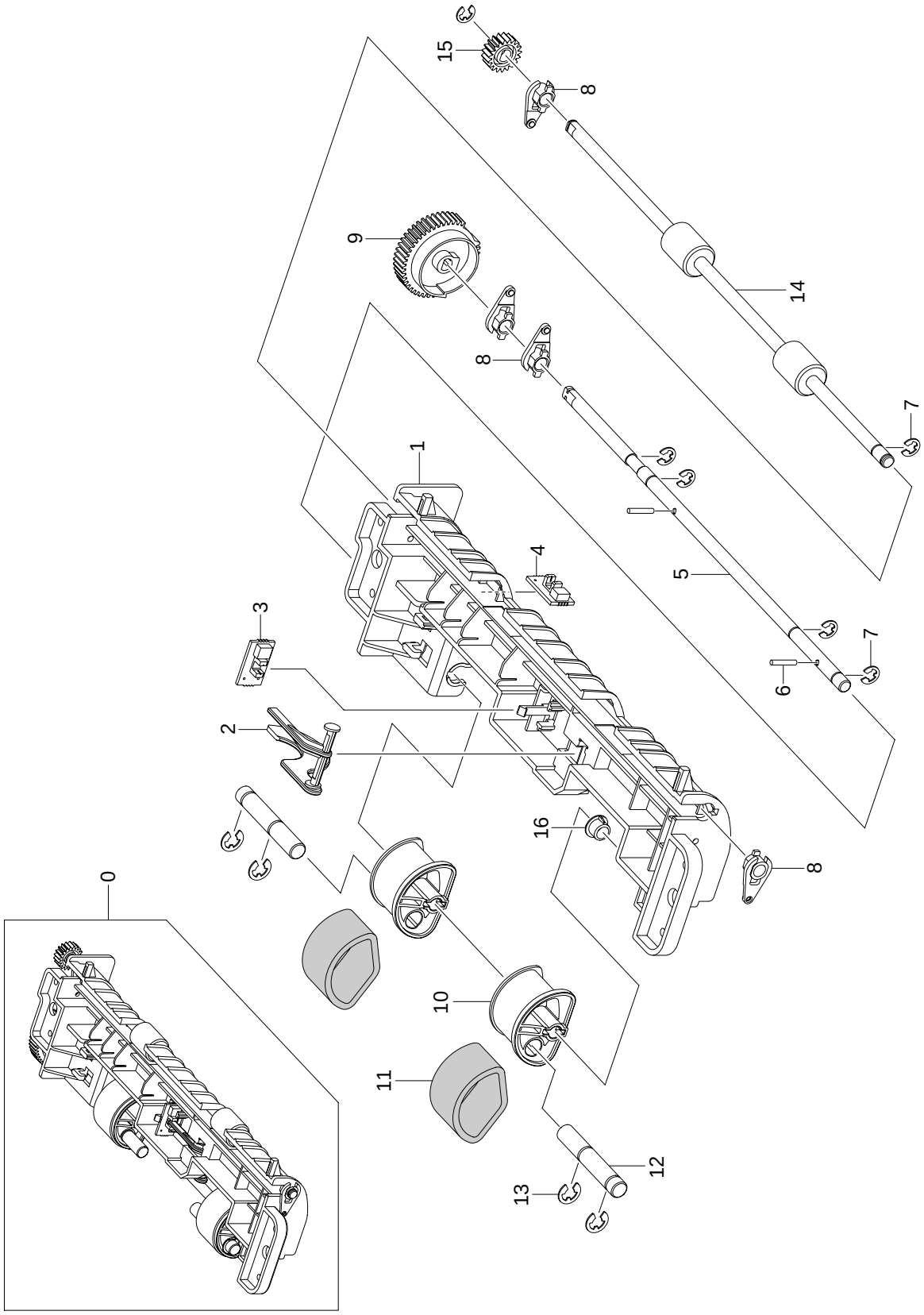


SCF Parts List => Option Cassette

SA : Service Available
O : Service available **X** : Service not available

No.	SEC.Code	Description	SA	Remark
7.14-0	JC96-03491B	ELA UNIT-CASSETTE SCF;CLP-600,SEC,EXPORT,SCF,-,-,-		SA
7.14-1	JC61-01079A	FRAME-M-CASSETTE SCF;CLP-600,HIPS,HR1360T,HB,G71312,T3.0,W350.6,L352.7,-		SNA
7.14-2	JC63-00596A	COVER-M-CST SCF;CLP-600,ABS,T2.5,W433.0,L111.0,V0,-,G71312,VH-0810		SNA
7.14-3	JC61-01085A	GUIDE-M-REAR SCF;CLP-600,HIPS,HB,T3.0,W127.0,L71.8,C75064,HR-1360T		SNA
7.14-4	JC61-01082A	GUIDE-M-FRONT SCF;CLP-600,HIPS,HB,T3.0,W204.0,L71.1,G71312,HR1360T		SNA
7.14-5	6107-001213	SPRING-CS;SWP-B,-,PI1.1,D23.7,L93.2,-,-,ID22.6,OD24.8		SNA
7.14-6	JC61-01089A	PLATE-P-KNOCK UP SCF;CLP-600,SECC,T1.0,W227.4,L283.0,-,-		SNA
7.14-7	JC61-01129A	PLATE-KNOCK UP PAD;CLP-600,URETHANE SPONGE,T0.9,W24.0,L24.0,BLK,-		SNA
7.14-8	JG66-40003A	GEAR-PINION;SF4000,POM,WHT,M1,Z16		SA
7.14-9	JC61-01037A	STOPPER-M-GUIDE SIDE;CLP-600,POM,OD12.0,-,20.0,NTR,M90-44		SA
7.14-10	JG61-70531A	SPRING ETC-LOCKER,PLATE;SF6000,STS304WPB,D4.0,-,33.3,33.3,-,-,-,-,-		SA
7.14-11	JC72-41210A	PMO-LOCKER PLATE;ML-6000,POM,WHT,HB,-		SA
7.14-12-1	JC61-01087A	GUIDE-P-SIDE LEFT SCF;CLP-600,SECC,T1.2,W121.2,L112.4,-,-		SNA
7.14-12-2	JC61-01031A	PLATE-P-FINGER LEFT;CLP-600,SUS,T1.2,71.1,21.0,-,-		SNA
7.14-12-3	JC72-41364A	PMO-BUSHING_P/U,MP;ML-6100,POM,BLACK,-,CF-620,-,-,-,-		SA
7.14-12-4	6031-001255	WASHER-PLAIN;NYLON,CUTTING,ID5,OD9,T0.5,NTR		SA
7.14-12-5	JC63-00609A	COVER-_M_GUIDE SIDE L;CLP-600,POM,T1.2,W42.2,L7.5,HB,-,M90-44,NTL		SNA
7.14-12-6	JC61-01081A	GUIDE-M-SIDE LOCK SCF;CLP-600,ABS,HB,T2.0,W89.4,L79.9,G71312,HF-0660I		SNA
7.14-13-1	JC61-01088A	GUIDE-P-SIDE RIGHT SCF;CLP-600,SECC,T1.2,W120.7,L127.0,-,-		SNA
7.14-13-2	JC61-01032A	PLATE-P-FINGER RIGHT;CLP-600,SUS,T1.2,71.1,31.7,-,-		SNA
7.14-14	JC92-01732A	PBA SUB-SCF ;CLP-600,SEC,KOREA,140*80MM,SCF PBA,-,-,-,-		SA

8.15. Guide Upper(SCF) => Option Cassette

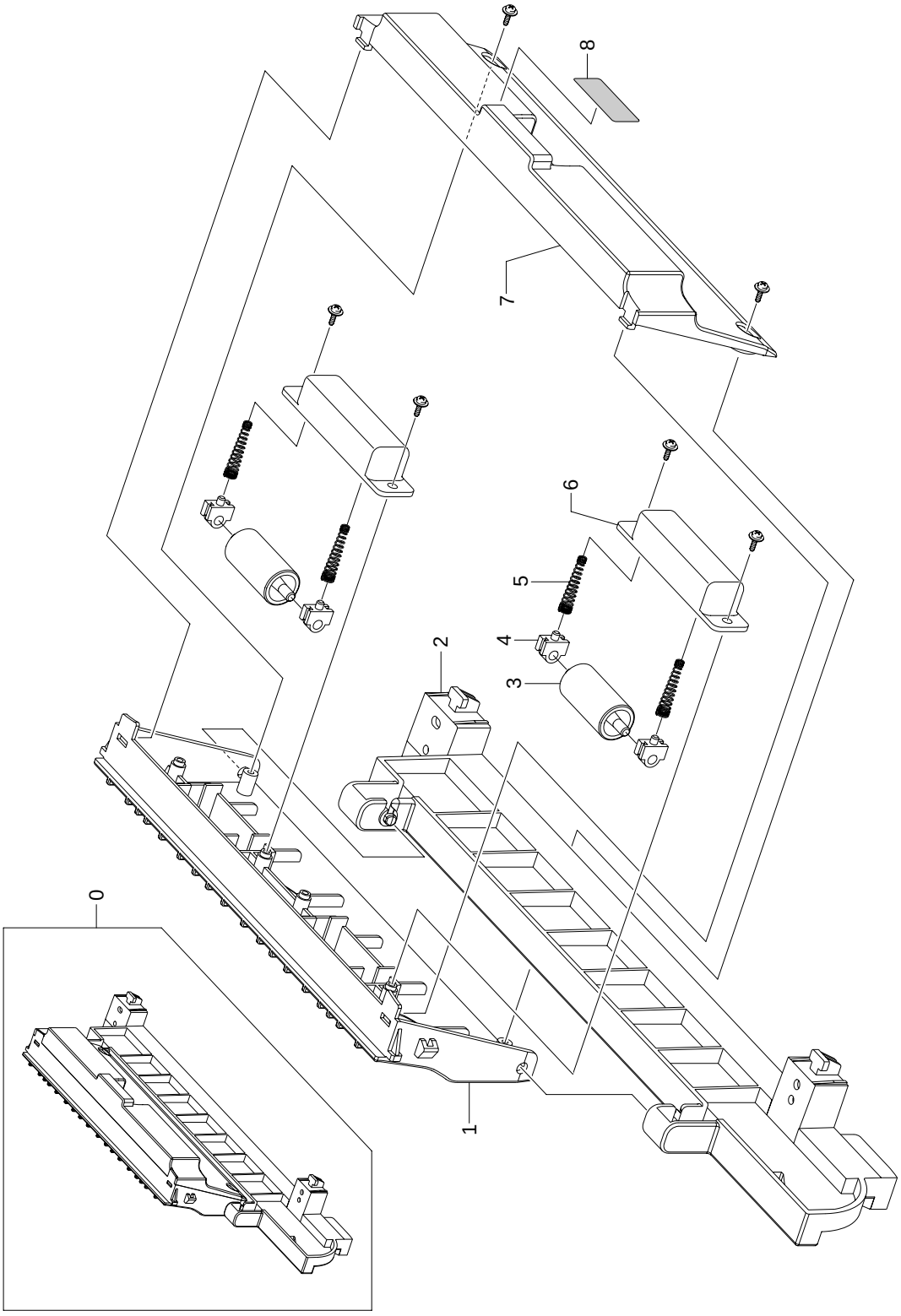


Guide Upper(SCF) Parts List => Option Cassette

SA : Service Available
O : Service available **X** : Service not available

No.	SEC.Code	Description	SA	Remark
7.15-0	JC97-02250A	MEA HOU-LOWER SCF;CLP-600S5,SEC,EXPORT,SCF,-,-,-		SA
7.15-1	JC61-01083A	GUIDE-M-LOWER SCF;CLP-600,PC+ABS,HB,T3.0,W227.5,L71.4,BK701,C6600		SNA
7.15-2	JC61-01084A	GUIDE-M-LOWER RAIL SCF;CLP-600,HIPS,HB,T2.5,W350.8,L74.0,G71312,HR1360T		SNA
7.15-3	JC72-00659A	PMO-IDLE ROLLER SCF16;ML-7250,DIA15,POM,WHITE,HB,-,-		SA
7.15-4	JC72-00658A	PMO-BUSH IDLE ROLL-SCF16;ML-7250,DIA9,POM,WHITE,HB,-,-		SA
7.15-5	6107-001222	SPRING-CS;SUS304WPB,ZN PLATE,PI0.4,D3.8,D4.8,L25,-,-,-,-		SA
7.15-6	JC72-00660A	PMO-HOLDER IDLE ROLL16;ML-7250,ABS,BLACK,81*17,-,V0,-,-,-		SA
7.15-7	JC63-00597A	COVER-M-GUIDE LOWER SCF;CLP-600,HIPS,T2.5,W227.5,L73.9,HB,-,G71312,HR-1360T		SNA
7.15-8	JC68-01303A	LABEL(P)-SCF JAM D;COMMON,XEROX,YUPO PAPER,80G,W40,L13,-,WHITE,-,-,,,COMMON		SNA

8.16. Guide Lower(SCF) => Option Cassette



Guide Lower(SCF) Parts List => Option Cassette

SA : Service Available
O : Service available **X** : Service not available

No.	SEC.Code	Description	SA	Remark
7.16-0	JC97-02251A	MEA HOU-UPPER SCF;CLP-600S5,SEC,EXPORT,SCF,-,-,-		SA
7.16-1	JC61-01086A	GUIDE-M-UPPER SCF;CLP-600,PC+ABS,HB,T3.0,W275.0,L83.3,BK701,C6600		SNA
7.16-2	JC72-01313A	PMO-M-ACTUATOR_NO PAPER;SCX-5315F,ABS HF06601,G6972(GRAY),-,HB,-,-,-		SA
7.16-3	JC92-01501A	PBA SUB-SCF P_EMPTY SENSOR;MLC-500,SEC,KOREA, SCF P.EMPTY SENSOR,RPI-441CN ,22MM X 12.5MM X 1.6T,-,-,-		SA
7.16-4	JC92-01364A	PBA SUB-EXIT SEN;SCX-5100,XEROX,USA,EXIT SENSOR, RPI-441CN,375MM,-,22MM X 12.5MM X 1.6T,MCK_SENSOR		SA
7.16-5	JC66-00785A	SHAFT-P-FEED ROLLER SCF;CLP-600,SUM24L,L287.2,•'6,-,-,NI		SNA
7.16-6	JB70-00168A	ICT-PIN ADF;SCX-1110F,STS303,D2.0,-,-,-,L10.0,-,-		SA
7.16-7	6044-000125	RING-E;ID4,OD9,T0.6,PASS,STSC		SA
7.16-8	JC72-41191A	PMO-BEARING SHAFT;ML-6000,POM,WHT,-,M90-44,-,-,-,-		SA
7.16-9	JC66-00786A	GEAR-M-PICK UP SCF;CLP-600,POM,M0.8,SPUR,Z47,-,NTR,-,M90-44,-		SA
7.16-10	JC61-00822A	HOUSING-M-PICKUP LARGE;SCX-5315F,PC ABS,-,20.4,-,IVORY,-		SNA
7.16-11	JC73-00145A	RUBBER-ROLLER PICKUP;SCX-5315F,EPDM+IR,PI 32.5,30,W20.7,-,-,-,-,-		SA
7.16-12	JC66-00596A	SHAFT-PICK_UP SUB;SCX-5315F,SUM 22,50,D7.0,-,-,NI		SA
7.16-13	6044-000231	RING-E;ID5.0,OD11.0,T0.6,PASS,STS304		SA
7.16-14	JC66-00787A	SHAFT-P-PICK UP SCF;CLP-600,SUM24L,267.4,•'6,-,-,NI		SNA
7.16-15	JC66-40955A	GEAR-FEED (SCF);ML-6000,POM,WHT,HB,-		SA
7.16-16	JC72-41364A	PMO-BUSHING_P/U,MP;ML-6100,POM,BLACK,-,CF-620,-,-,-,-		SA
	JC97-02211A	MEA UNIT-MAIN FRAME;CLP-600,SEC,EXPORT,-		SA
	1103-001211	IC-EEPROM;24C16,2Kx8Bit,DIP,8P,10.16x7.1		SA
	2401-001946	C-AL;330uF,20%,50V,GP,TP,10x16,5mm		SA
	2801-004451	CRYSTAL-UNIT;31.00504519MHZ,50PPM,49/S-4		SA
	3501-001263	RELAY-POWER;5V,530mW,10000mA,1FormA,7mS,		SA
	3711-000198	HEADER-BOARD TO CABLE;1WALL,3P,1R,2.5MM,		SA
	3711-000203	HEADER-BOARD TO CABLE;1WALL,2P/3P,1R,7.9		SA
	3711-002813	HEADER-BOARD TO CABLE;BOX,12P,1R,2mm,STR		SA
	3711-003035	HEADER-BOARD TO CABLE;BOX,14P,2R,2mm,STR		SA
	3711-003981	HEADER-BOARD TO CABLE;BOX,28P,2R,2mm,STR		SA
	3711-004379	HEADER-BOARD TO CABLE;BOX,4P,1R,2MM,STRA		SA
	3722-002303	JACK-USB;4P/1C,AU30U,BLK,ANGLE,B TYPE		SA
	6002-000308	SCREW-TAPTITE;PH,+,B,M2.6,L6,ZPC(YEL),SW		SA
	6902-000390	BAG PE;LDPE,T0.05,W500,L450,TRP,8,2-		SA
	JC39-00001A	CBF INTERFACE-USB;ML-6100,4,UL2725,1800	K2897	SA
	JC39-00366A	CBF HARNESS-SCF GND;SCX-4920N,CBF,UL1007	H1231	SA
	JC39-00398A	CBF HARNESS-PANEL;CLP-600,WIRE HARNESS,U	H2133	SA
	JC39-00423A	CBF HARNESS-STEPMOTOR;CLP-600,CBF HARNES		SA
	JC39-00432A	CBF HARNESS-BLDC;CLP-600,CBF HARNESS,UL1		SA
	JC39-00503A	CBF HARNESS-M_FUSER;CLP-600,CBF-HARNESS,		SA
	JC39-00561A	CBF HARNESS-FUSER3;CLP-600,CBF HARNESS,U		SA
	JC61-01639A	BUSH-M-RELEASE LEVER;CLP-600,PET GF 30%,		SA
	JC61-01678A	SPRING ETC-DEV_FRONT;CLP-600,SWP-B,0.65,		SA
	JC61-01685A	SPRING ETC-DUMMY;CLP-600,SUS,0.5,-,-,20.		SA

Guide Lower(SCF) Parts List => Option Cassette

SA : Service Available
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No.	SEC.Code	Description	SA	Remark
	JC61-70932A	SPRING ETC-GUIDE DEVE;ML-5000A,-,D4.3,-,		SA
	JC61-70935A	SPRING ETC-SEPERATE P/UP;ML-5000A,-,-,-,		SA
	JC61-70967A	SPRING ETC-TR R;ML-5000A,SUS304 WPB,D4.5		SA
	JC63-00613B	COVER-M_OP FRAME LCD;CLP-600N,HIPS,T2.5,		SA
	JC63-01029A	SHEET-PTB CLEANING;CLP-600,PET,T0.188,W1		SA
	JC66-00746B	GEAR-M_DEVE DRV2_Z21;CLP-600,POM,M0.8,Z2		SA
	JC66-01200A	LEVER-M-RELEASE;CLP-600,PC,-,W36.0,L20.0		SA
	JC68-01584A	LABEL(P)-BLANK 90*25;CLP-510,SEE,ART 100		SA
	JC96-03655A	ELA UNIT-CARBON&SP;ML-3560,SEC,USA,BRUSH	K3054	SA
	JC96-03839A	ELA UNIT-HR 220V;CLP-600,SEC,EXPORT,-,-,		SA
	JC96-03933A	ELA UNIT-DUCT SMPS;CLP-600,SEC,EXPORT,-,		SA
	JC97-02617A	MEA UNIT-PR;CLP-600,SEC,EXPORT,-,-,-,-		SA
	0501-000294	TR-SMALL SIGNAL;KSA708-Y,PNP,800mW,TO-92		SA
	0601-000003	LED;ROUND,RED/GRN,3.1MM,650/563NM,3.8X5.		SA
	0601-001619	LED;CBI,RED/GRN,3MM,635/568NM,6.35X7X6MM		SA
	0601-001830	LED;SMD,GRN,1.6x0.8x0.4mm,570nm,1.6x0.8x		SA
	0803-003263	IC-CMOS LOGIC;74LCX07,HEX BUFFER,SOIC,14		SA
	0904-001989	IC-USC;ISP1582BS,-,HVQFN56,56P,8X8X0.85M		SA
	1001-000170	IC-ANALOG SWITCH;MC14051BD,SPDT CMOS,SOP		SA
	1105-001384	IC-DRAM;K4S561632,-,256MBIT,4X4MX16BIT,T		SA
	1202-000164	IC-VOLTAGE COMP.;393,SOP,8P,150MIL,DUAL,		SA
	1203-002454	IC-POSI.FIXED REG.;FAN1117A,TO-252,3P,25		SA
	2007-000067	R-CHIP;15Kohm,1%,1/10W,TP,1608		SA
	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608		SA
	2007-000079	R-CHIP;1.8Kohm,5%,1/10W,TP,1608		SA
	2007-000080	R-CHIP;2Kohm,5%,1/10W,TP,1608		SA
	2007-000083	R-CHIP;3Kohm,5%,1/10W,TP,1608		SA
	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608		SA
	2007-000093	R-CHIP;20Kohm,5%,1/10W,TP,1608		SA
	2007-000102	R-CHIP;100Kohm,5%,1/10W,TP,1608		SA
	2007-000105	R-CHIP;200Kohm,5%,1/10W,TP,1608		SA
	2007-000109	R-CHIP;1Mohm,5%,1/10W,TP,1608		SA
	2007-000122	R-CHIP;1.2Kohm,5%,1/10W,TP,1608		SA
	2007-000123	R-CHIP;1.5Kohm,5%,1/10W,TP,1608		SA
	2007-000309	R-CHIP;10ohm,5%,1/10W,TP,1608		SA
	2007-000669	R-CHIP;2Kohm,1%,1/10W,TP,1608		SA
	2007-001014	R-CHIP;51OHM,5%,1/10W,TP,1608		SA
	2007-001134	R-CHIP;68ohm,5%,1/10W,TP,1608		SA
	2007-001179	R-CHIP;8.2Kohm,5%,1/10W,TP,1608		SA
	2007-002425	R-CHIP;1ohm,5%,1/10W,TP,1608		SA
	2007-002901	R-CHIP;12.1Kohm,1%,1/10W,TP,1608		SA
	2007-002910	R-CHIP;30.1Kohm,1%,1/10W,TP,1608		SA
	2011-001193	R-NET;68ohm,5%,1/16W,L,CHIP,8P,TP		SA

Guide Lower(SCF) Parts List => Option Cassette

SA : Service Available
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No.	SEC.Code	Description	SA	Remark
	2011-001261	R-NET;33ohm,5%,1/16W,L,CHIP,8P,TP,2.0x1.		SA
	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608		SA
	2203-000815	C-CER,CHIP;0.033nF,5%,50V,C0G,1608		SA
	2203-001071	C-CER,CHIP;0.056nF,5%,50V,C0G,1608		SA
	2203-001086	C-CER,CHIP;0.005nF,0.25pF,50V,NP0,TP,160		SA
	2203-001598	C-CER,CHIP;2200nF,+80-20%,16V,Y5V,TP,201		SA
	2203-001607	C-CER,CHIP;0.22nF,5%,50V,NP0,1608		SA
	2203-005105	C-CER,CHIP;0.68nF,5%,50V,C0G,1608		SA
	2203-006818	C-CER,CHIP;47000nF,20%,6.3V,X5R,3216		SA
	2401-000042	C-AL;100uF,20%,16V,GP,TP,6.3x7,5		SA
	2401-004099	C-AL;330UF,20%,6.3V,NXB,TP,6.3X11MM,5		SA
	2402-000008	C-AL,SMD;47uF,20%,16V,GP,TP,6.6x6.6x5.4		SA
	2402-001042	C-AL,SMD;100uF,20%,16V,GP,TP,6.6x6.6x5.4		SA
	2402-001049	C-AL,SMD;10uF,20%,16V,GP,TP,3.3x3.3x5.4		SA
	2402-001106	C-AL,SMD;33UF,20%,50V,WT,TP,8.3X8.3X6.3M		SA
	2402-001178	C-AL,SMD;10uF,20%,16V,WT,TP,4.3x4.3x5.8m		SA
	2901-001178	FILTER-EMI SMD;25V,2A,-,100000pF,2x1.25x		SA
	3301-001655	BEAD-SMD;33ohm,3216,3000mA,TP,16ohm/39MH		SA
	3404-000165	SWITCH-TACT;12V,50mA,160gf,6x6mm,SPST		SA
	3711-000840	HEADER-BOARD TO CABLE;BOX,30P,2R,2MM,STR		SA
	3711-003942	HEADER-BOARD TO CABLE;BOX,2P,1R,2mm,STRA		SA
	3711-004349	HEADER-BOARD TO CABLE;BOX,3P,1R,2MM,STRA		SA
	3711-004487	HEADER-BOARD TO BOARD;BOX,80P,2R,0.8MM,S		SA
	3722-001319	JACK-MODULAR;8P/8C,STANDARD,Y,ANGLE,INVE		SA
	6003-000269	SCREW-TAPTITE;BH,+,-,S,M3,L6,ZPC(YEL),SW		SA
	6003-001086	SCREW-TAPTITE;BH,+,B,M3,L12,ZPC(BLK),SWR	-	SA
	JC07-00008A	LCD-DISPLAY(XIL);VHX12323ASR,SCX-4521F,1		SA
	JC13-00029A	IC ASIC-DAVINCI;LPEC2,CLP-600,208,3.3V,-		SA
	JC13-00030A	IC ASIC-HYPER_C;HYPER-C,CLP-600,256,3.3V		SA
	JC39-00306A	CBF HARNESS-LCD;CLP-500,WIRE,UL2877,14-1		SA
	JC39-00425A	CBF HARNESS-SET_CR2;CLP-600,CBF HARNESS,		SA
	JC39-00429A	CBF HARNESS-TH_NEW;CLP-600,CBF HARNESS,U		SA
	JC39-00442A	CBF HARNESS-NEW_FUSER;CLP-600,CBF HARNES		SA
	JC39-00508A	CBF HARNESS-GND2;CLP-600,CBF HARNESS,UL1		SA
	JC63-00896A	FILTER-TONER;CLP-600,POLYESTERE,10.0T,W2		SA
	JC63-00904A	SHEET-FILTER TONER;CLP-600,PET,T0.125,W2		SA
	0402-000129	DIODE-RECTIFIER;1N4003,200V,1A,DO-41,TP		SA
	0407-000101	DIODE-ARRAY;DA204K,20V,100mA,C2-3,SOT-23		SA
	0501-000010	TR-SMALL SIGNAL;KSC1008,NPN,800mW,TO-92,		SA
	0501-000279	TR-SMALL SIGNAL;KSA1182-Y,PNP,150mW,SOT-		SA
	0501-000457	TR-SMALL SIGNAL;MMBT2222A,NPN,350MW,SOT-		SA
	0505-001350	FET-SILICON;NDT2955,P,-60V,-2.5V,0.3OHM,		SA
	0604-001264	PHOTO-INTERRUPTER;TR,-,-,REFLECTIVE,-		SA

Guide Lower(SCF) Parts List => Option Cassette

SA : Service Available
O : Service available **X** : Service not available

No.	SEC.Code	Description	SA	Remark
	0903-001355	IC-MICROCONTROLLER;S3C2510A,32BIT,BGA,41		SA
	1003-001535	IC-MOTOR DRIVER;A3977SLP,TSSOP,28P,9.6X4		SA
	1105-001357	IC-DRAM;K4S281632,4X2MX16BIT,TSOP(II),54		SA
	1203-002220	IC-POSI.ADJUST REG.;LD1117,DPAK,3P,240MI		SA
	1205-002339	IC-CLOCK GENERATOR;CY25811SC,SOIC,8P,150		SA
	2005-000168	R-WIRE WOUND,NON;0.22ohm,5%,2W,AA,BK,4x1		SA
	2007-000033	R-CHIP;0ohm,5%,1/4W,TP,3216		SA
	2007-000043	R-CHIP;1Kohm,1%,1/10W,TP,1608		SA
	2007-000052	R-CHIP;10Kohm,1%,1/10W,TP,1608		SA
	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608		SA
	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608		SA
	2007-000076	R-CHIP;330ohm,5%,1/10W,TP,1608		SA
	2007-000077	R-CHIP;470ohm,5%,1/10W,TP,1608		SA
	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608		SA
	2007-000086	R-CHIP;5.6Kohm,5%,1/10W,TP,1608		SA
	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608		SA
	2007-000094	R-CHIP;22Kohm,5%,1/10W,TP,1608		SA
	2007-000096	R-CHIP;30Kohm,5%,1/10W,TP,1608		SA
	2007-000098	R-CHIP;56Kohm,5%,1/10W,TP,1608		SA
	2007-000113	R-CHIP;33ohm,5%,1/10W,TP,1608		SA
	2007-000134	R-CHIP;33Kohm,5%,1/10W,TP,1608		SA
	2007-000287	R-CHIP;100OHM,1%,1/10W,TP,1608		SA
	2007-000475	R-CHIP;1Mohm,1%,1/10W,TP,1608		SA
	2007-000539	R-CHIP;200ohm,5%,1/10W,TP,1608		SA
	2007-000608	R-CHIP;240ohm,5%,1/10W,TP,1608		SA
	2007-000839	R-CHIP;39ohm,5%,1/10W,TP,1608		SA
	2007-000965	R-CHIP;5.1Kohm,5%,1/10W,TP,1608		SA
	2007-001002	R-CHIP;510ohm,5%,1/10W,TP,1608		SA
	2008-000166	R-FUSIBLE;56ohm,5%,1/4W,AA,TP,2.6x6.7mm		SA
	2011-001094	R-NET;39OHM,5%,1/16W,L,CHIP,8P,TP		SA
	2203-000041	C-CER,CHIP;0.01nF,0.25pF,50V,C0G,1608		SA
	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608		SA
	2203-000192	C-CER,CHIP;100nF,+80-20%,50V,Y5V,TP,2012		SA
	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608		SA
	2203-000426	C-CER,CHIP;0.018nF,5%,50V,C0G,1608		SA
	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,1608		SA
	2203-000626	C-CER,CHIP;0.022nF,5%,50V,C0G,1608		SA
	2203-000783	C-CER,CHIP;0.33nF,5%,50V,C0G,1608		SA
	2203-000998	C-CER,CHIP;0.047nF,5%,50V,C0G,1608		SA
	2203-002392	C-CER,CHIP;220nF,+80-20%,50V,Y5V,2012		SA
	2401-002300	C-AL;47uF,20%,50V,GP,TP,6.3x11,5		SA
	2404-000284	C-TA,CHIP;10uF,20%,16V,-,TP,3528		SA
	6003-000282	SCREW-TAPTITE;BH,+,-,B,M3,L8,ZPC(BLK),SW		SA

Guide Lower(SCF) Parts List => Option Cassette

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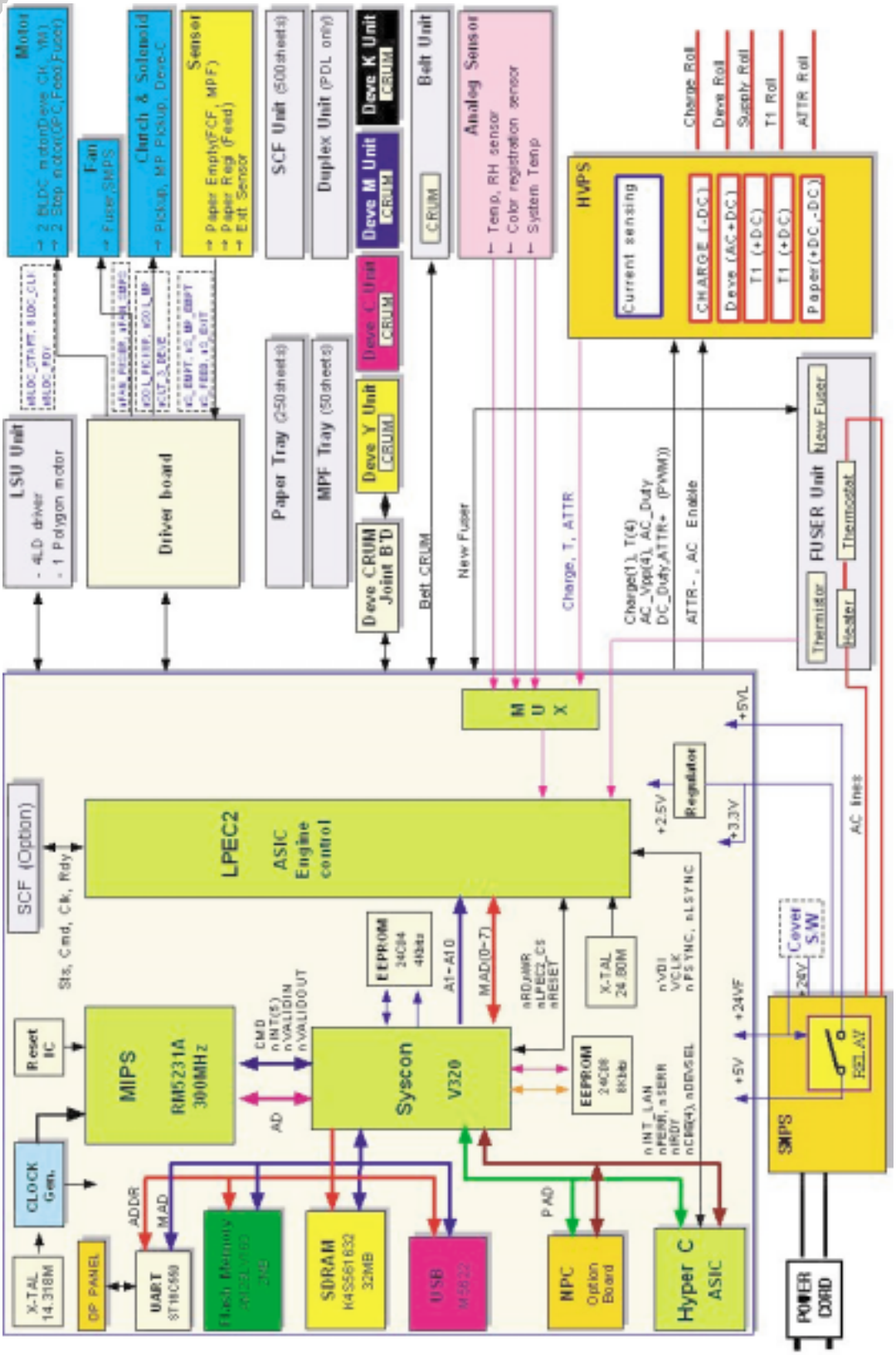
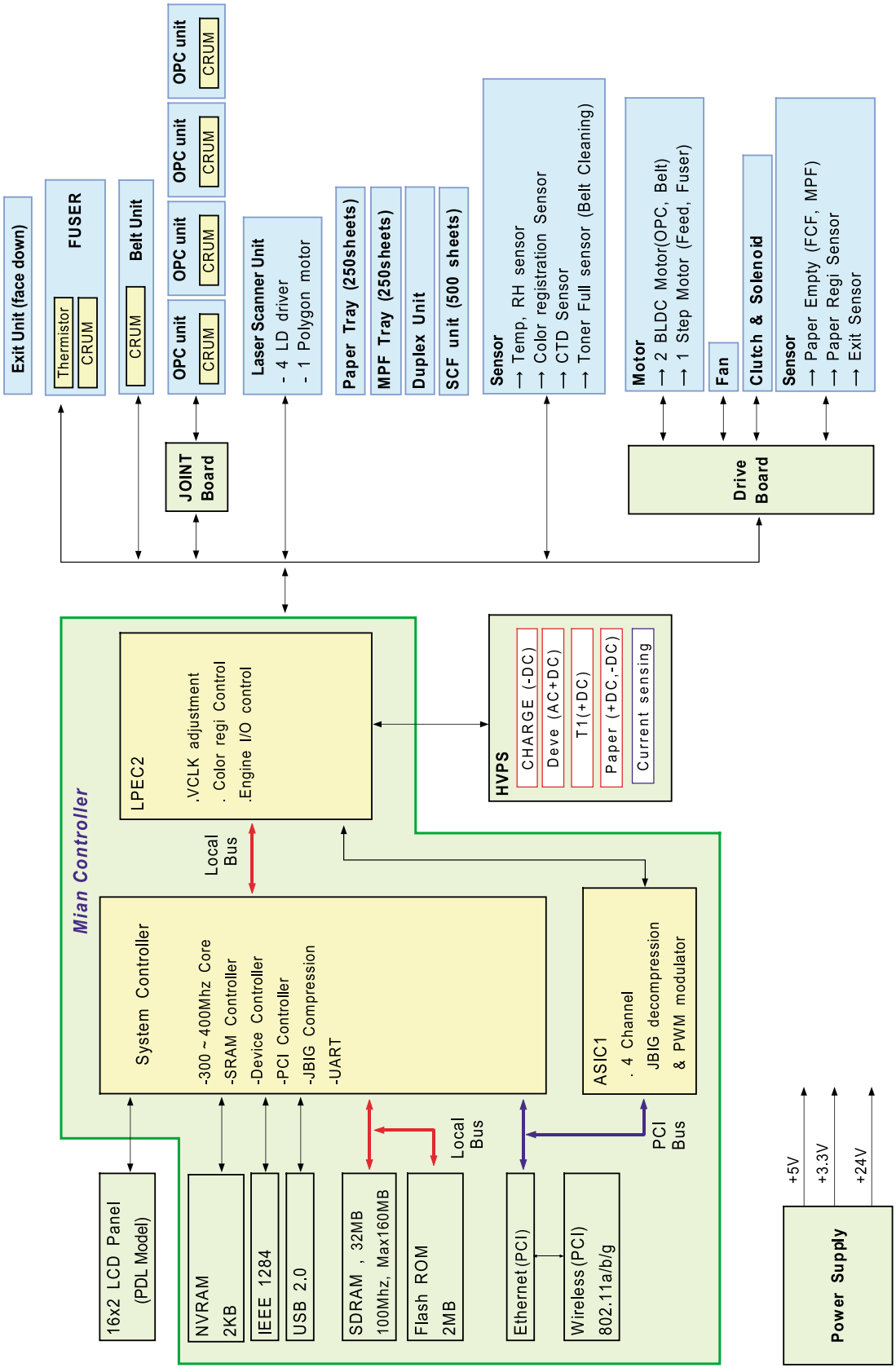
No.	SEC.Code	Description	SA	Remark
	JC39-00421A	CBF HARNESS-SOLENOID;CLP-600,CBF HARNESS		SA
	JC39-00422A	CBF HARNESS-SET_CR;CLP-600,CBF HARNESS,U		SA
	JC39-00505A	CBF HARNESS-FUSER_AC;CLP-600,CBF HARNESS		SA
	JC39-00575A	CBF HARNESS-FAN;CLP-600,CBF-HARNESS,UL10		SA
	JC39-00588A	HARNESS-TEMP;CLP-600,WIRE HARNESS,UL1061		SA
	JC61-01017A	HOLDER-_M_MIDDLE PART;CLP-600,PET+GF30%,		SA
	JC70-10961A	IPR-TERMINAL FU;ML-165,C5210P,-,T0.3,-,-	K3422	SA
	JC72-01140A	PMO-COVER FUSER AC;CLP-500,PBT+GF30%,BLA	Z2607	SA
	JC73-00226A	RUBBER-PICK UP;CLP-600,EPDM+IR,-,30,-,GR		SA
	JC96-02686B	ELA UNIT-ROLLER P/UP MP;ML-3560,XEROX/SE	K3144	SA
	JC97-02150A	MEA UNIT-REGI;CLP-600,SEC,EXPORT,-,-,-,-		SA
	1103-001183	IC-EEPROM;24C04,512x8,SOP,8P,5x4mm,2.5/5		SA
	6003-000196	SCREW-TAPTITE;PWH,+,B,M3,L10,NI PLT,SWRC		SA
	JC39-00420A	CBF HARNESS-FEED;CLP-600,CBF HARNESS,UL1		SA
	JC39-00427A	CBF HARNESS-DEVE_IF;CLP-600,CBF HARNESS,		SA
	JC39-00430A	CBF HARNESS-FCF_EMPT;CLP-600,CBF HARNESS		SA
	JC61-00705A	HOLDER-M-PICKUP MP;ML-2150,POM,-,-,-,BLK	P2062	SA
	JC61-70929A	SPRING ETC-HV LARGE;ML-5000A,SUS304-WPB,		SA
	JC70-40912A	ICT-SHAFT HV LARGE;ML-5000A,SWCH18A,-, ¥ ÷	S4027	SA
	JC73-00224A	RUBBER-PICK UP MP;ML-3560,IR,D29.8,35,27	C4024	SA
	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM		SA
	3711-005851	HEADER-BATTERY;NOWALL,2P,1R,4.25MM,BATTE		SA

9. Block Diagram

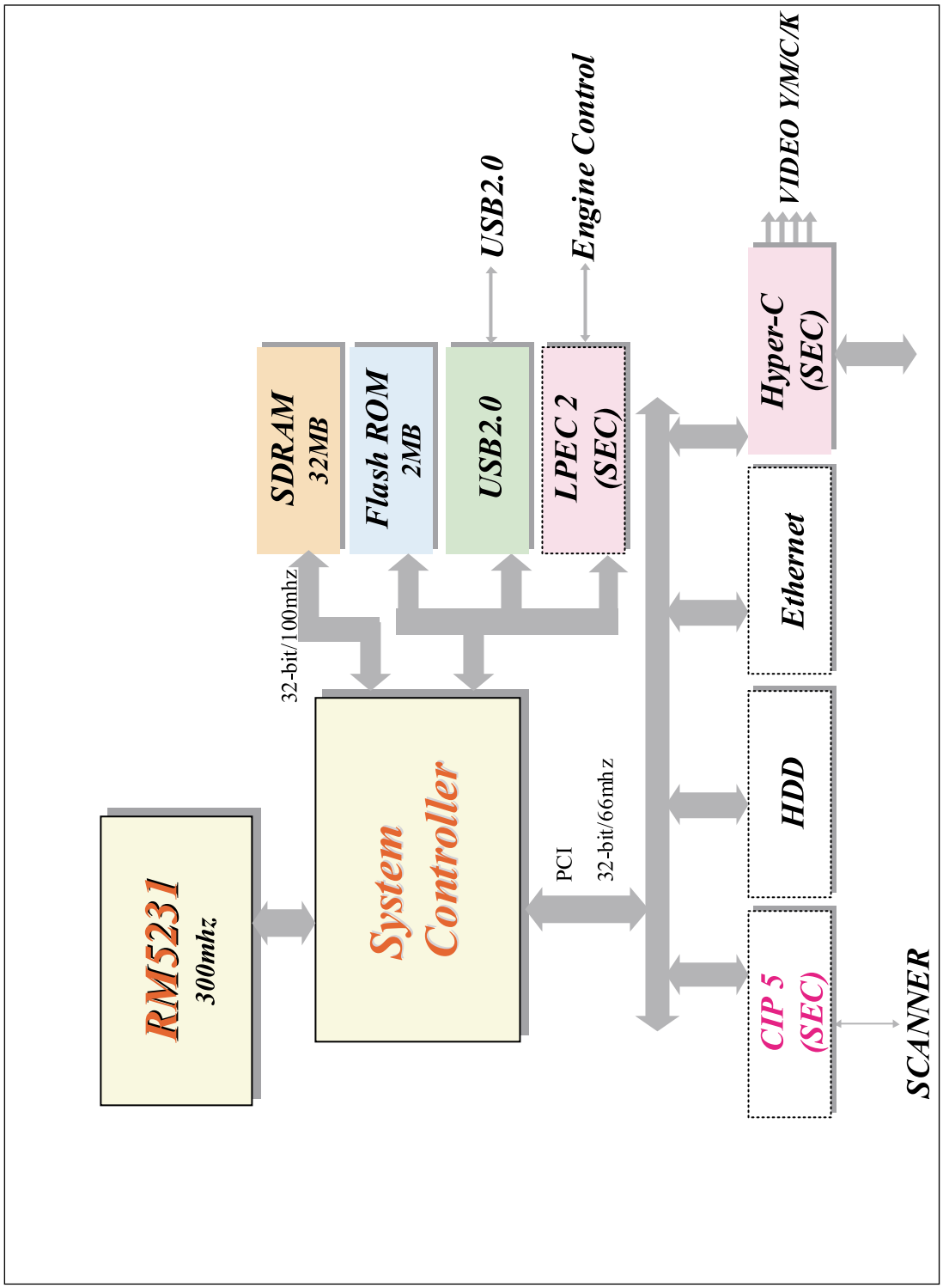
9.1 System Block Diagram



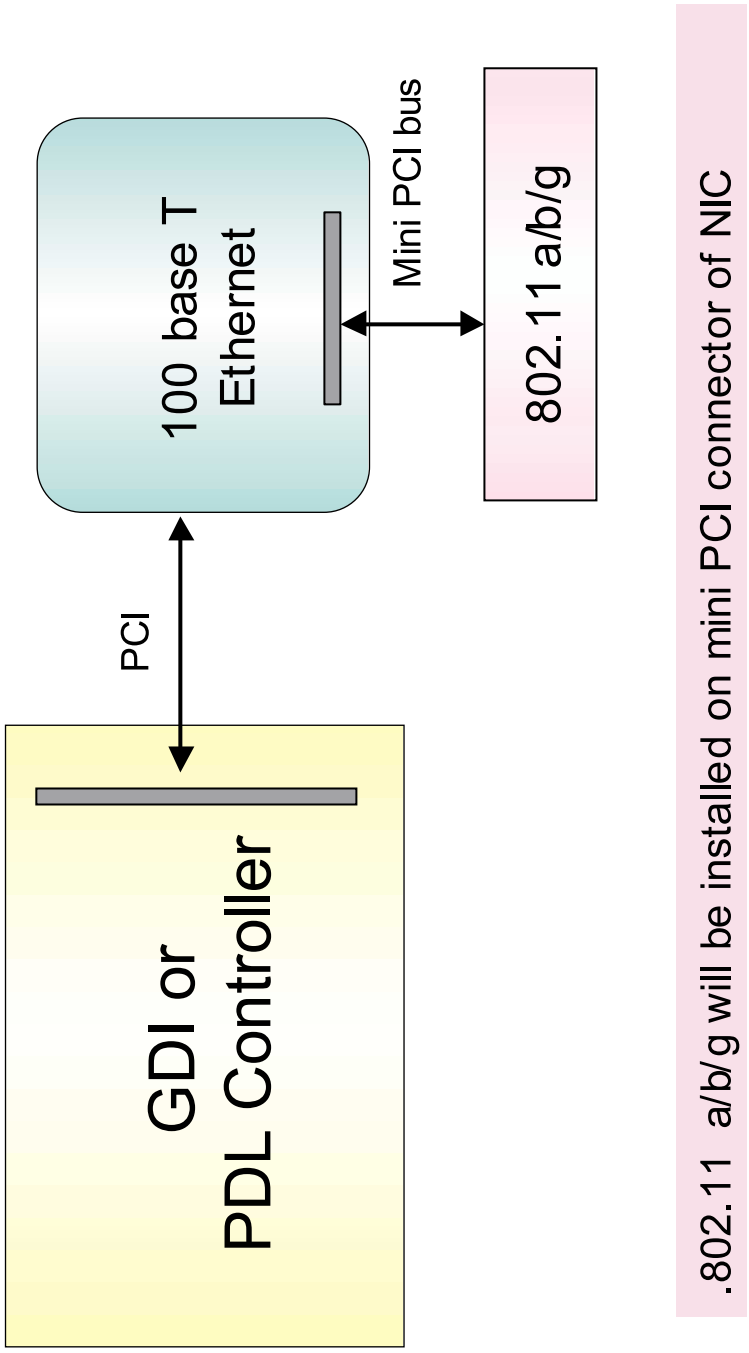
9.2 16ppm Block Diagram



9.3 GID H/W Block Diagram

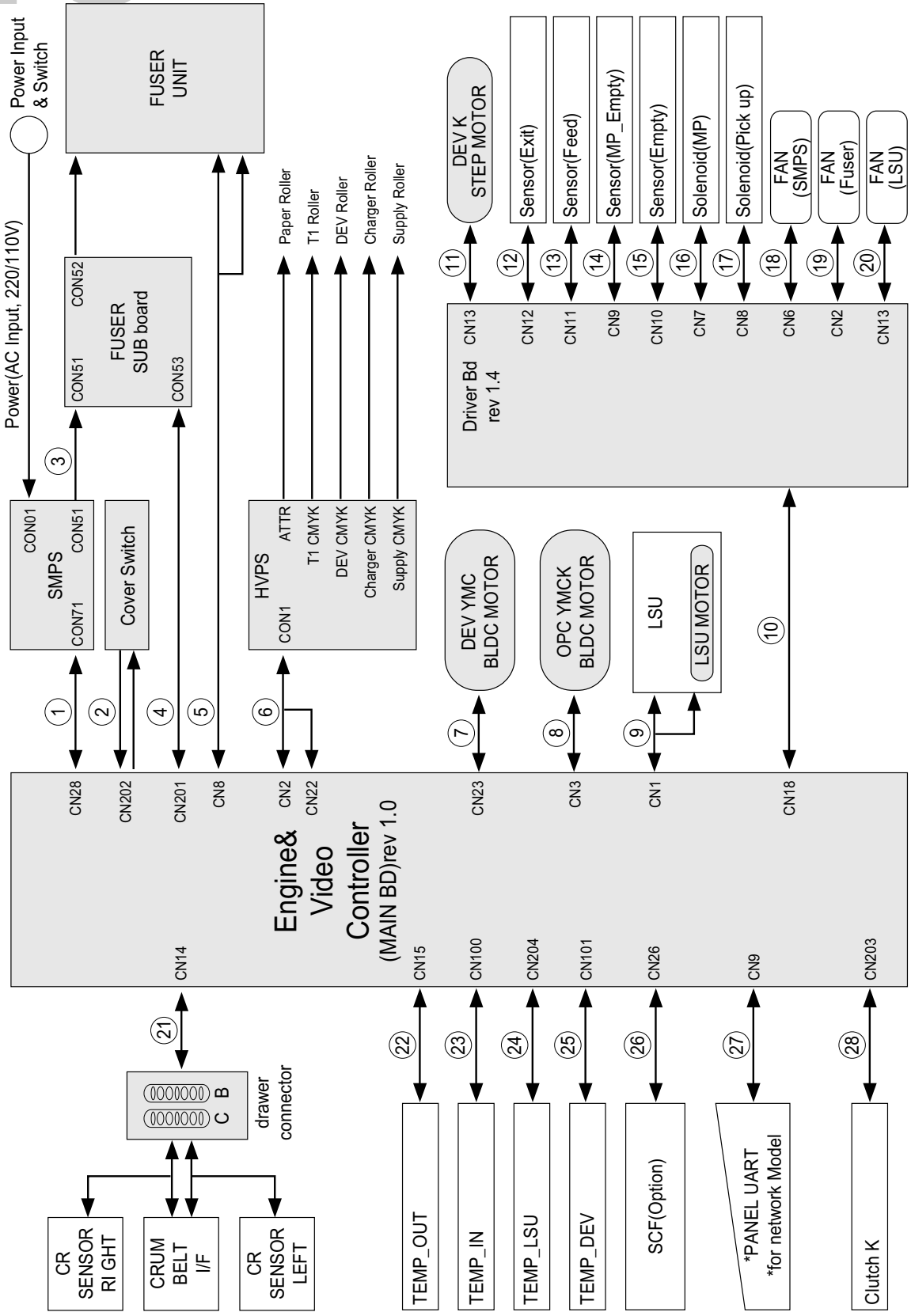


9.4 N/C & Wireless Block Diagram

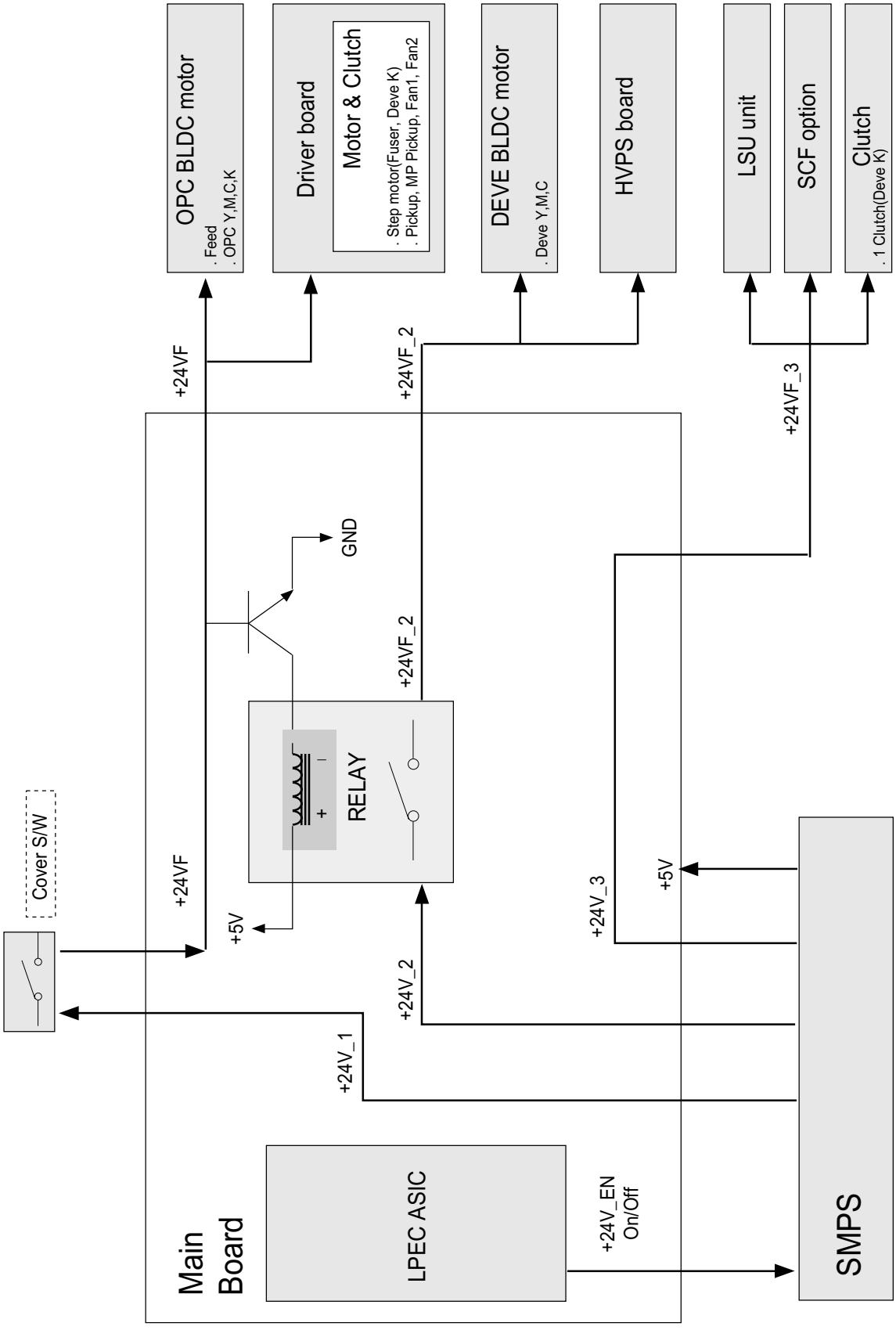


10. Connection Diagram

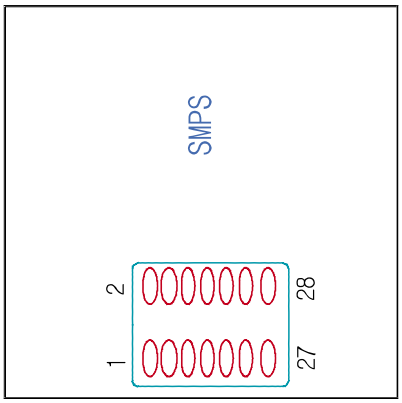
10.1 CLP-600/600N connection diagram



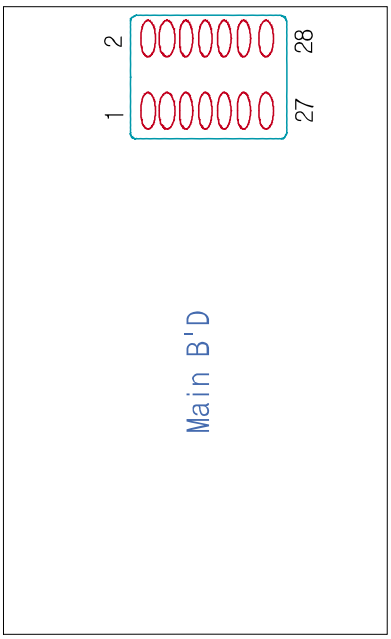
10.2 Power distribution diagram



10.3 Main ↔ SMPS

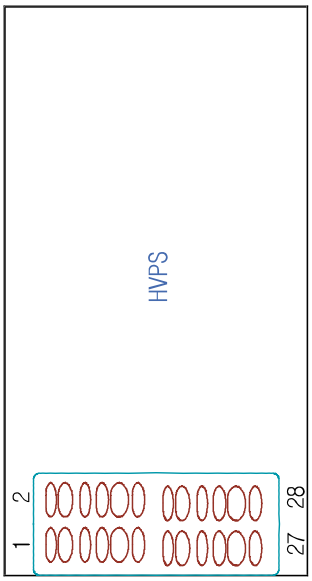


+24VF	1	2	+24VF
+24VF	3	4	+24VF
+24VF	5	6	AGND
AGND	7	8	AGND
AGND	9	10	AGND
+24V	11	12	+24V
AGND	13	14	AGND
+3.3V	15	16	+3.3V
+3.3V	17	18	+3.3V
+3.3V	19	20	GNDD
GNDD	21	22	GNDD
GNDD	23	24	DGND
GNDD	25	26	+5VL
+5V	27	28	/Heater_On

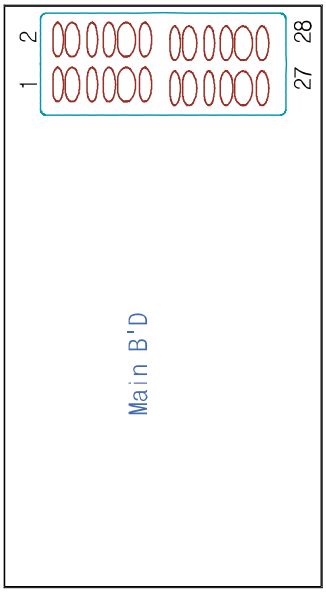


+24VF	1	2	+24VF
+24VF	3	4	+24VF
AGND	5	6	+24VF
AGND	7	8	AGND
AGND	9	10	AGND
+24V	11	12	+24V
AGND	13	14	AGND
+3.3V	15	16	+3.3V
+3.3V	17	18	+3.3V
GNDD	19	20	+3.3V
GNDD	21	22	GNDD
DGND	23	24	GNDD
+5VL	25	26	GNDD
/Heater_On	27	28	+5V

10.4 Main(Driver) ↔ HVPS 28 pin

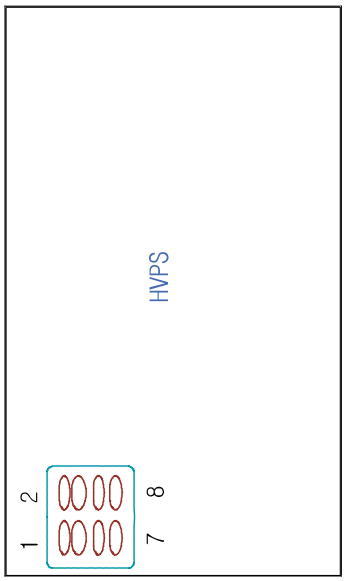


I/O	Pin	Pin	I/O
+24V	1	2	+24V
Agnd	3	4	Agnd
PWM_AC_Vpp_Y	5	6	PWM_AC_Y
ENB_Deve_AC_Y	7	8	PWM_Deve_DC_Y
PWM_AC_Vpp_M	9	10	PWM_AC_M
ENB_Deve_AC_M	11	12	PWM_Deve_DC_M
PWM_AC_Vpp_C	13	14	PWM_AC_Y
ENB_Deve_AC_C	15	16	PWM_Deve_DC_C
PWM_AC_Vpp_K	17	18	PWM_AC_Y
ENB_Deve_AC_K	19	20	PWM_Deve_DC_K
PWM_Charger_BK	21	22	n.c
PWM_T_Y	23	24	PWM_T_M
PWM_T_C	25	26	PWM_T_K
PWM_ATTR+	27	28	ENB_ATTR-

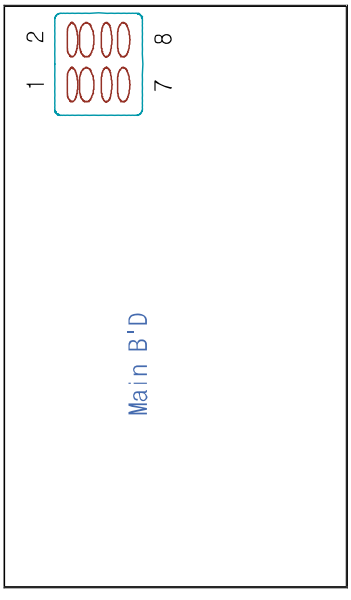


I/O	Pin	Pin	I/O
+24V	1	2	+24V
Agnd	3	4	Agnd
PWM_AC_Y	5	6	PWM_AC_Vpp_Y
PWM_Deve_DC_Y	7	8	ENB_Deve_AC_Y
PWM_AC_M	9	10	PWM_AC_Vpp_M
PWM_Deve_DC_M	11	12	ENB_Deve_AC_M
PWM_AC_Y	13	14	PWM_AC_Vpp_C
PWM_Deve_DC_C	15	16	ENB_Deve_AC_C
PWM_AC_Y	17	18	PWM_AC_Vpp_K
PWM_Deve_DC_K	19	20	ENB_Deve_AC_K
n.c	21	22	PWM_Charger_BK
PWM_T_M	23	24	PWM_T_Y
PWM_T_K	25	26	PWM_T_C
ENB_ATTR-	27	28	PWM_ATTR+

10.5 Main(Driver) ↔ HVPS 8 pin

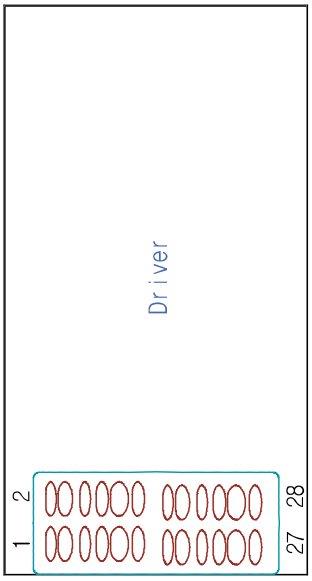


I/O	Pin	Pin	I/O
A_READ_T_Y	1	2	A_READ_Charger_BK
DGND	3	4	A_READ_ATTR
DGND	5	6	DGND
+5V	7	8	+5V

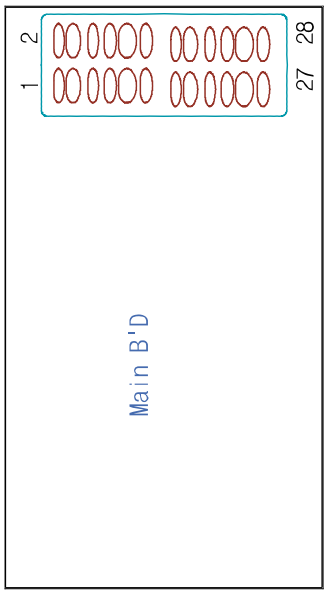


I/O	Pin	Pin	I/O
A_READ_Charger_BK	1	2	A_READ_T_Y
A_READ_ATTR	3	4	DGND
DGND	5	6	DGND
+5V	7	8	+5V

10.6 Main ↔ Driver DF11 28 pin

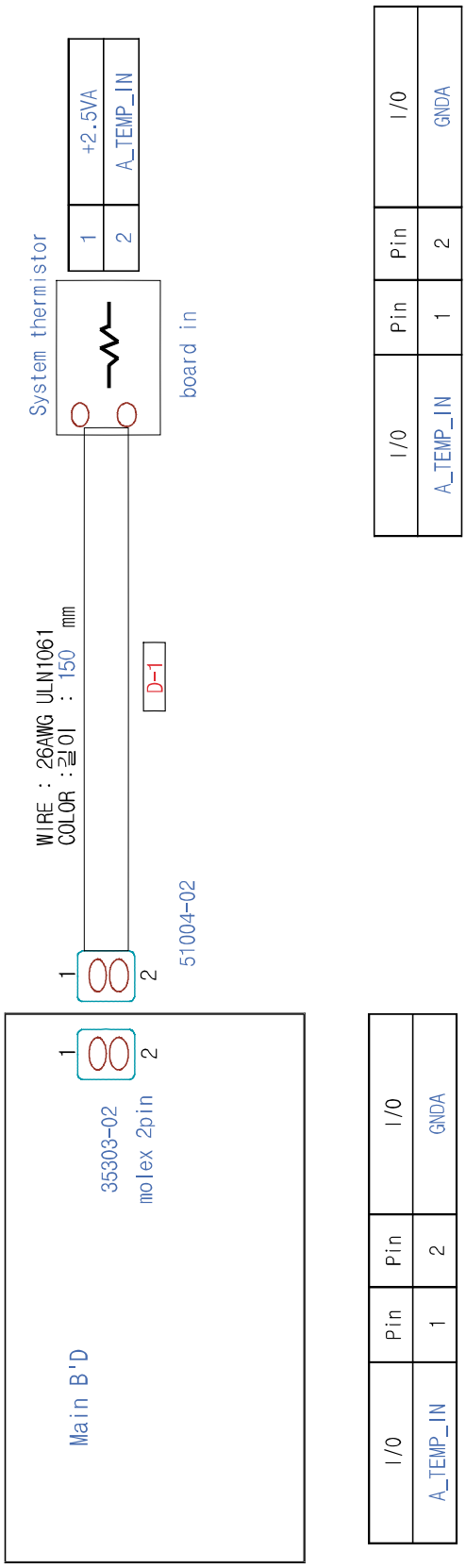


I/O	Pin	Pin	I/O
+24VF	1	2	+24VF
AGND	3	4	AGND
SM_YM_ENO	5	6	SM_YM_A
SM_YM_EN1	7	8	SM_YM_B
SM_CK_ENO	9	10	SM_CK_A
SM_CK_EN1	11	12	SM_CK_B
nFAN_SMPS	13	14	nFAN_FUSER
nSOL_MP	15	16	nSOL_PICKUP
nCLT_C_DEVE	17	18	nCLT_FEED
nS_EMPT	19	20	nS_FEED
nS_MP_EMPT	21	22	nSOL_DUP
nS_EXIT	23	24	GNDD
+5V	25	26	GNDD
+3.3V	27	28	GNDD

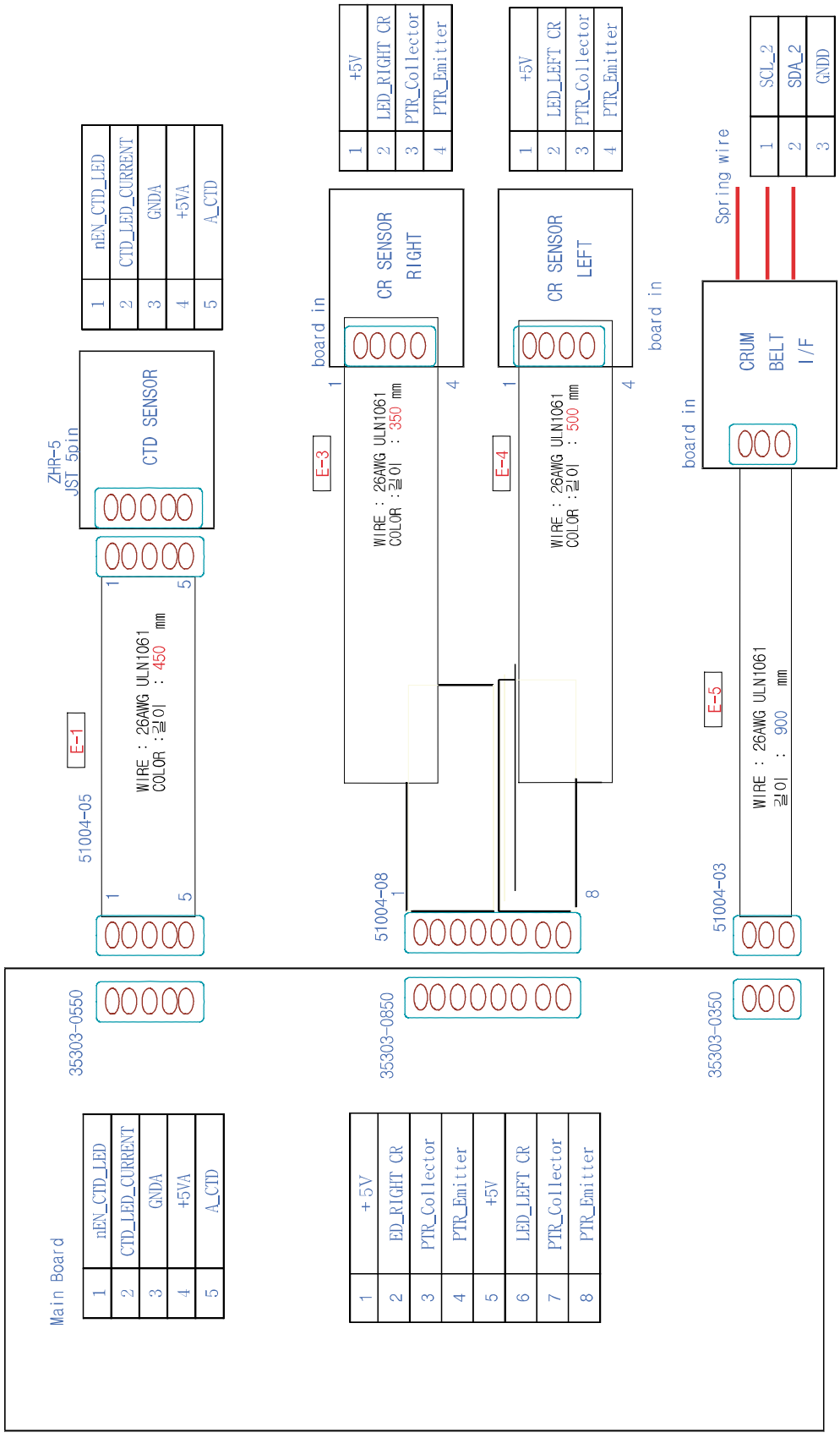


I/O	Pin	Pin	I/O
+24VF	1	2	+24VF
AGND	3	4	AGND
SM_YM_A	5	6	SM_YM_ENO
SM_YM_B	7	8	SM_YM_EN1
SM_CK_A	9	10	SM_CK_ENO
SM_CK_B	11	12	SM_CK_EN1
nFAN_FUSER	13	14	nFAN_SMPS
nSOL_PICKUP	15	16	nSOL_MP
nCLT_FEED	17	18	nCLT_C_DEVE
nS_FEED	19	20	nS_EMPT
nSOL_DUP	21	22	nS_MP_EMPT
GNDD	23	24	nS_EXIT
GNDD	25	26	+5V
GNDD	27	28	+3.3V

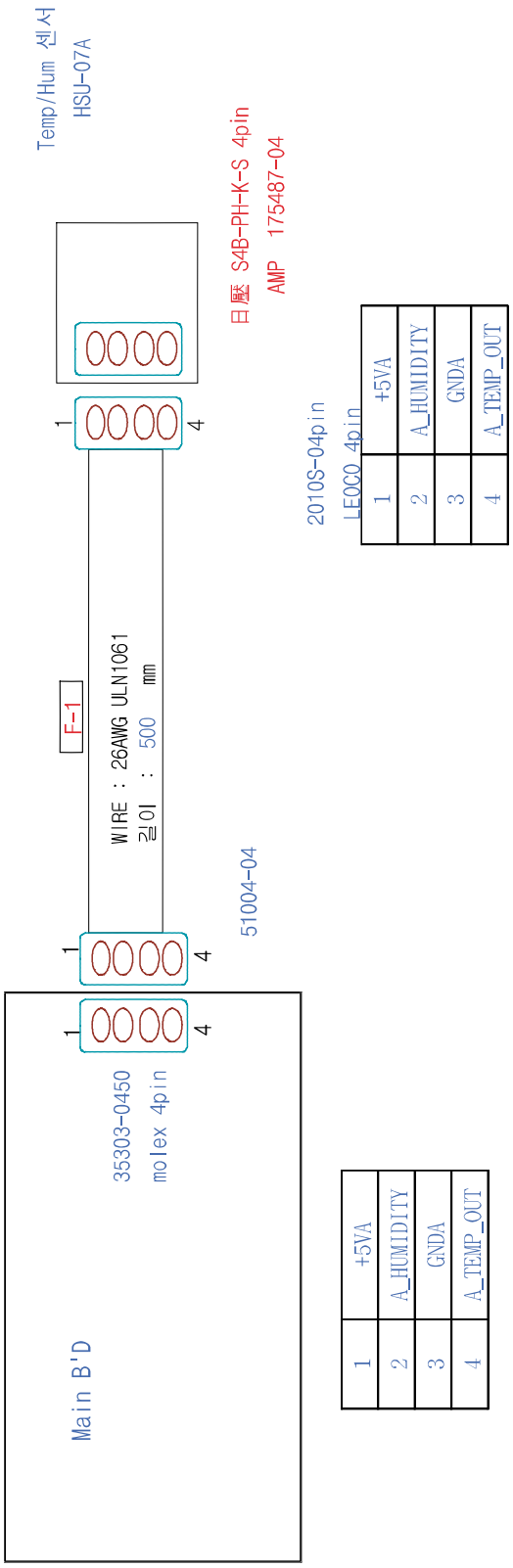
10.7 Main ↔ System thermistor 2 pin



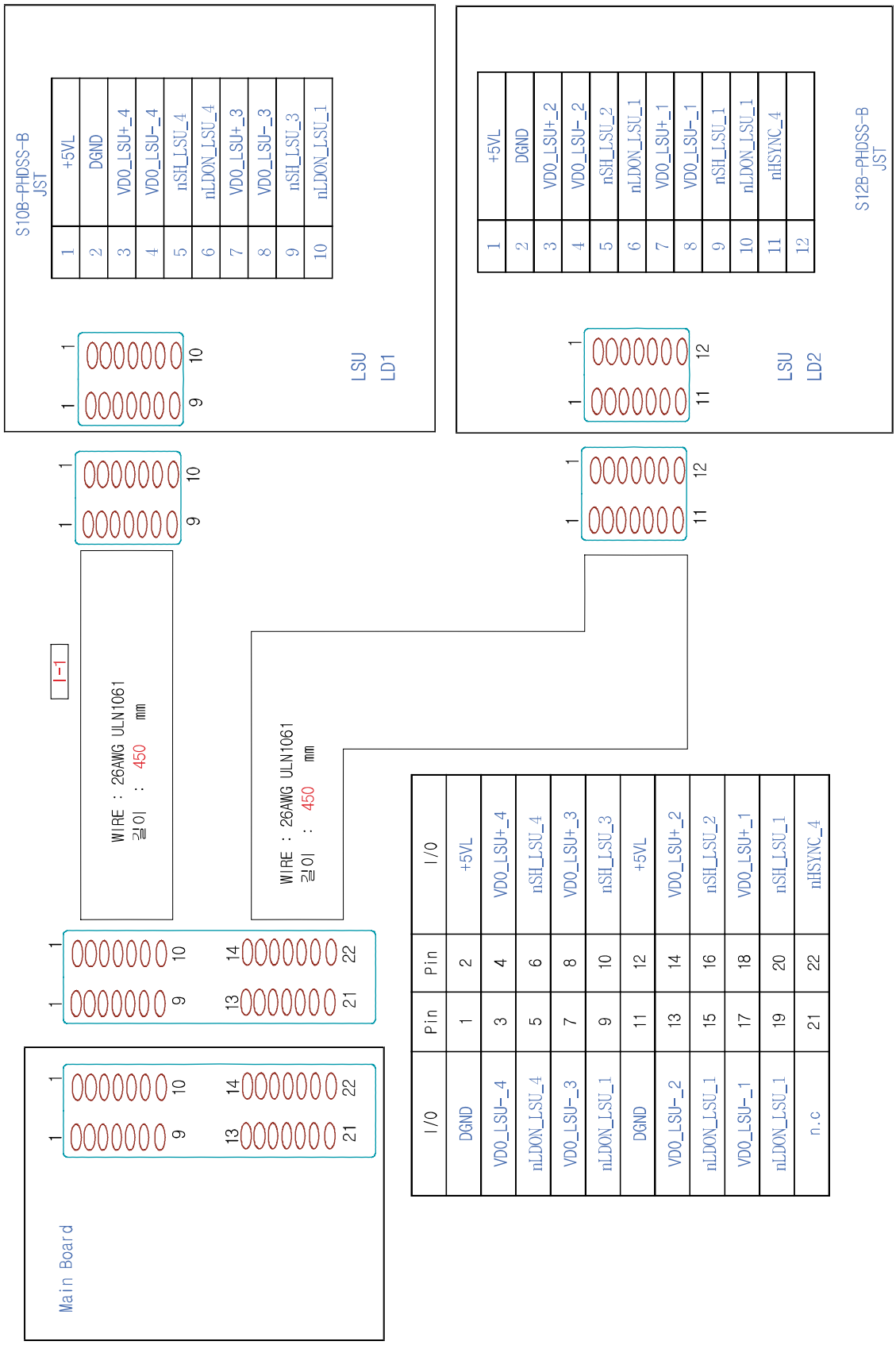
10.8 Main ↔ SET CTD, CR, CRUM sensor



10.9 Main ↔ Temp/Hum sensor 4 pin

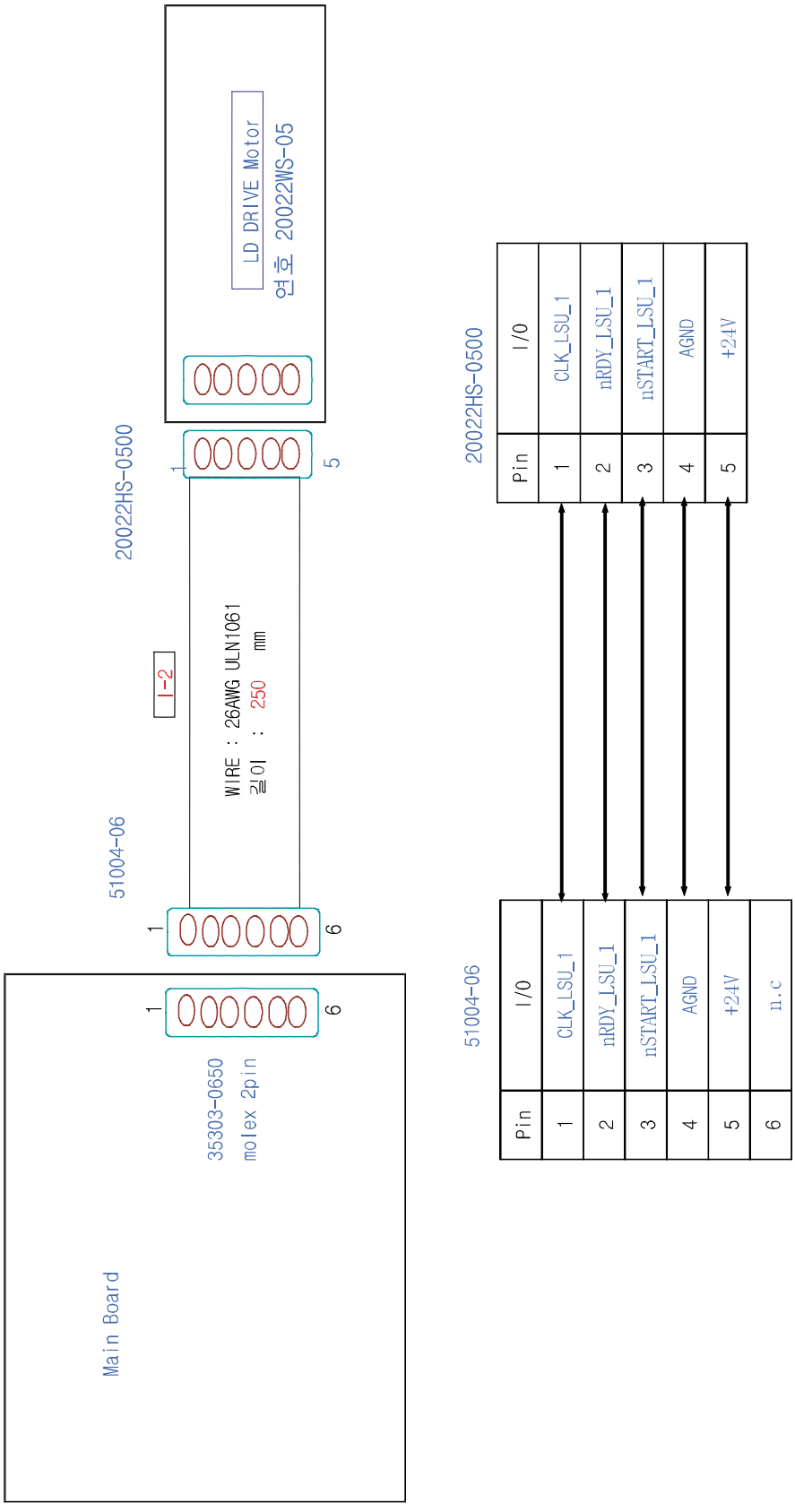


10.10 Main ↔ LSU 24 pin

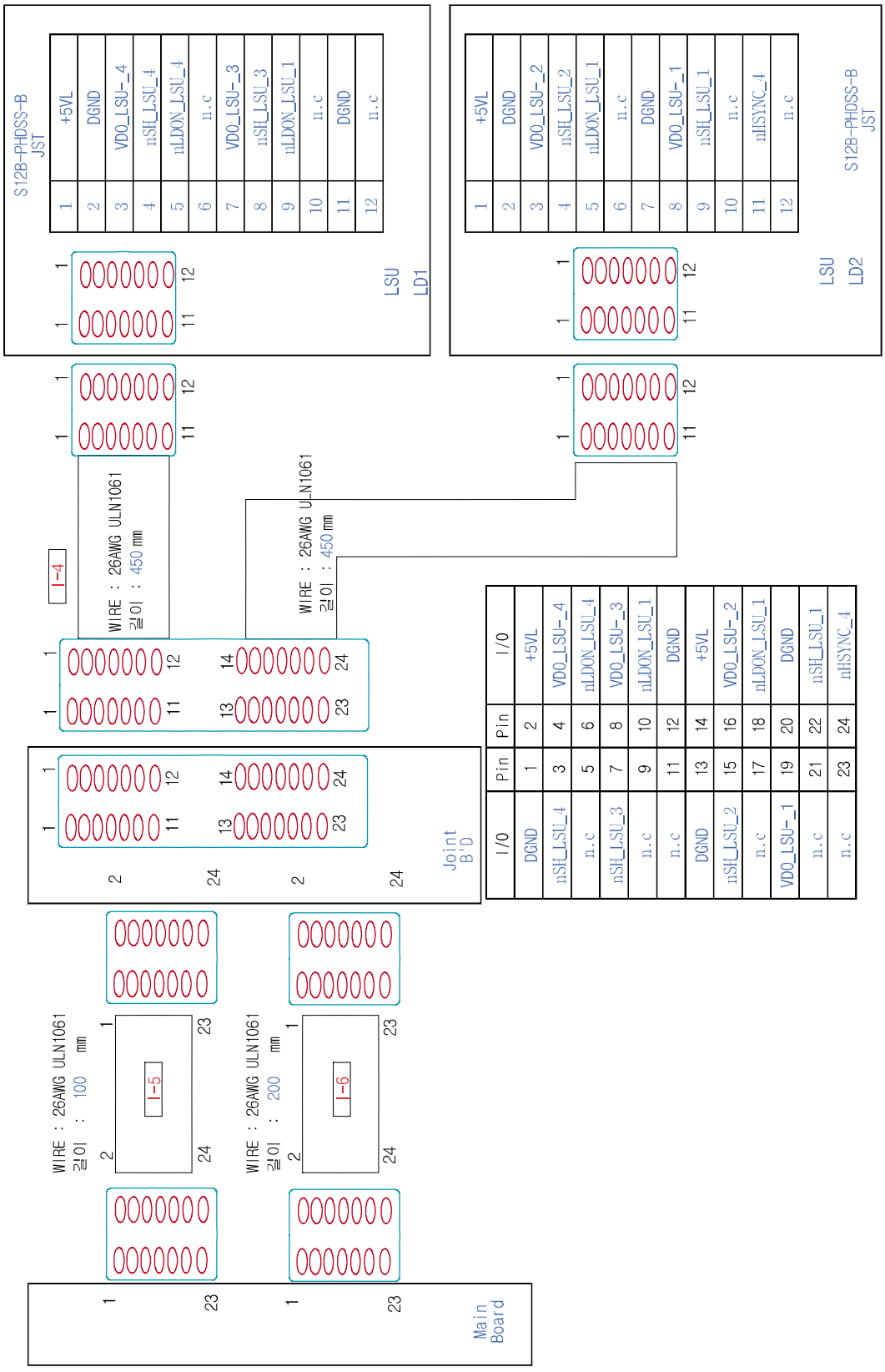


I/O	Pin	Pin	I/O
DGND	1	2	+5VL
VDO_LSU-_4	3	4	VDO_LSU+_4
nLDON_LSU_4	5	6	nSH_LSU_4
VDO_LSU-_3	7	8	VDO_LSU+_3
nLDON_LSU_1	9	10	nSH_LSU_3
DGND	11	12	+5VL
VDO_LSU-_2	13	14	VDO_LSU+_2
nLDON_LSU_1	15	16	nSH_LSU_2
VDO_LSU-_1	17	18	VDO_LSU+_1
nLDON_LSU_1	19	20	nSH_LSU_1
n.c	21	22	nHSYNC_4

10.11 Main ↔ LSU 5 pin motor

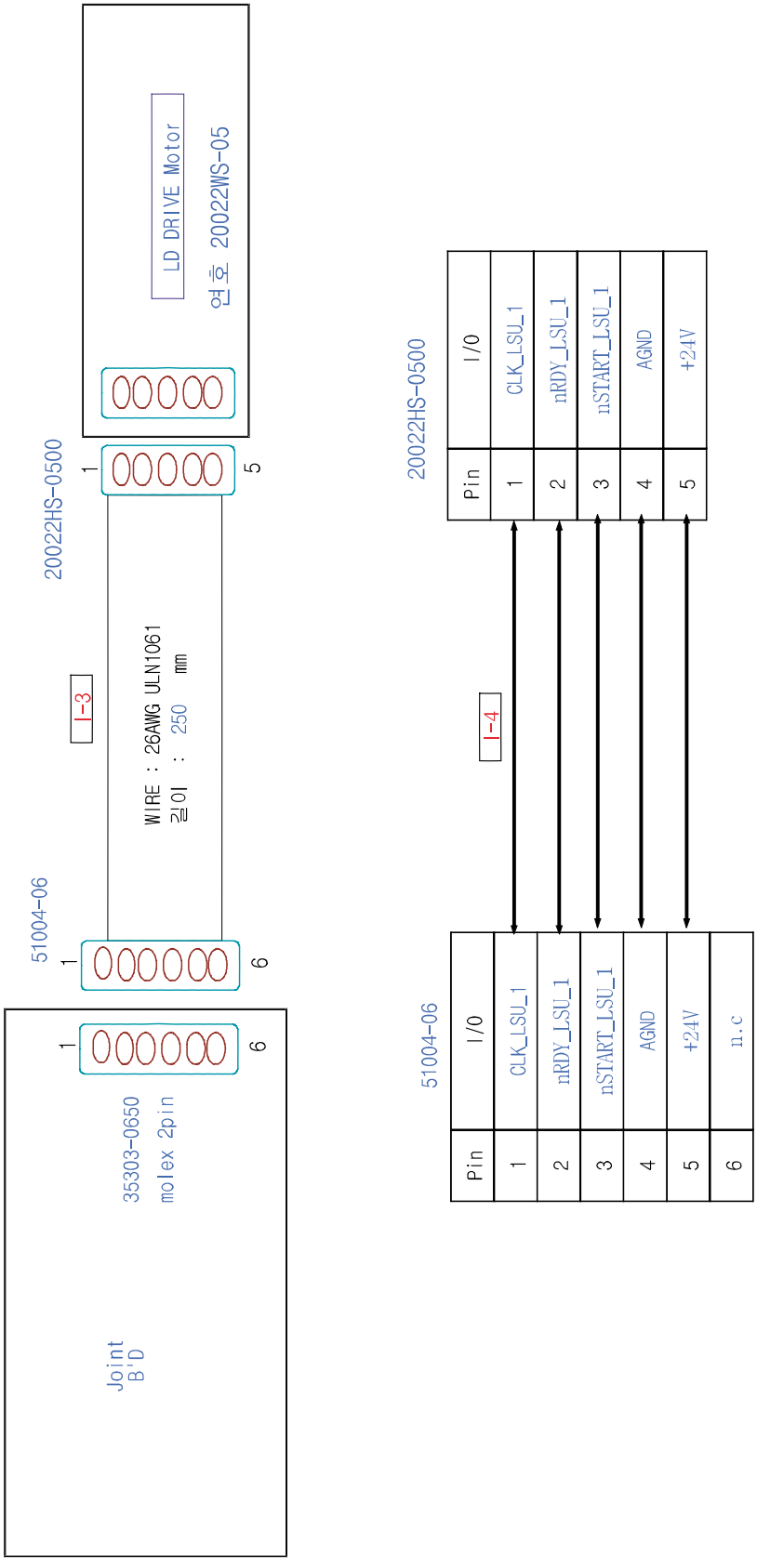


10.12 Main ↔ LSU 24 pin-idea mock up SET

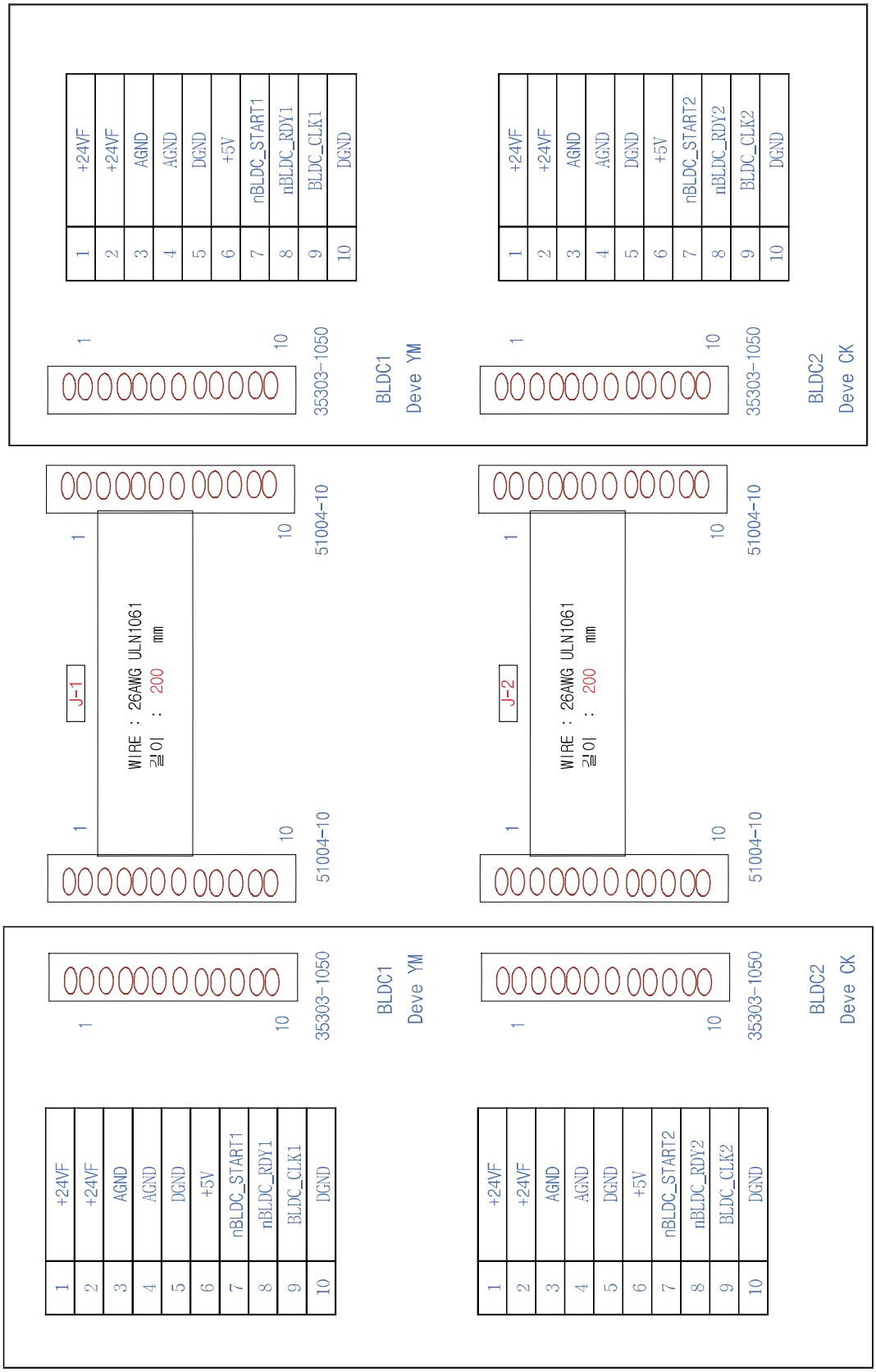


I/O	Pin	Pin	I/O
DGND	1	2	+5VL
nSH_LSU_4	3	4	VDO_LSU-_4
n.c	5	6	nLDON_LSU_4
nSH_LSU_3	7	8	VDO_LSU-_3
n.c	9	10	nLDON_LSU_1
n.c	11	12	DGND
DGND	13	14	+5VL
nSH_LSU_2	15	16	VDO_LSU-_2
n.c	17	18	nLDON_LSU_1
VDO_LSU-_1	19	20	DGND
n.c	21	22	nSH_LSU_1
n.c	23	24	nHSYNC_4

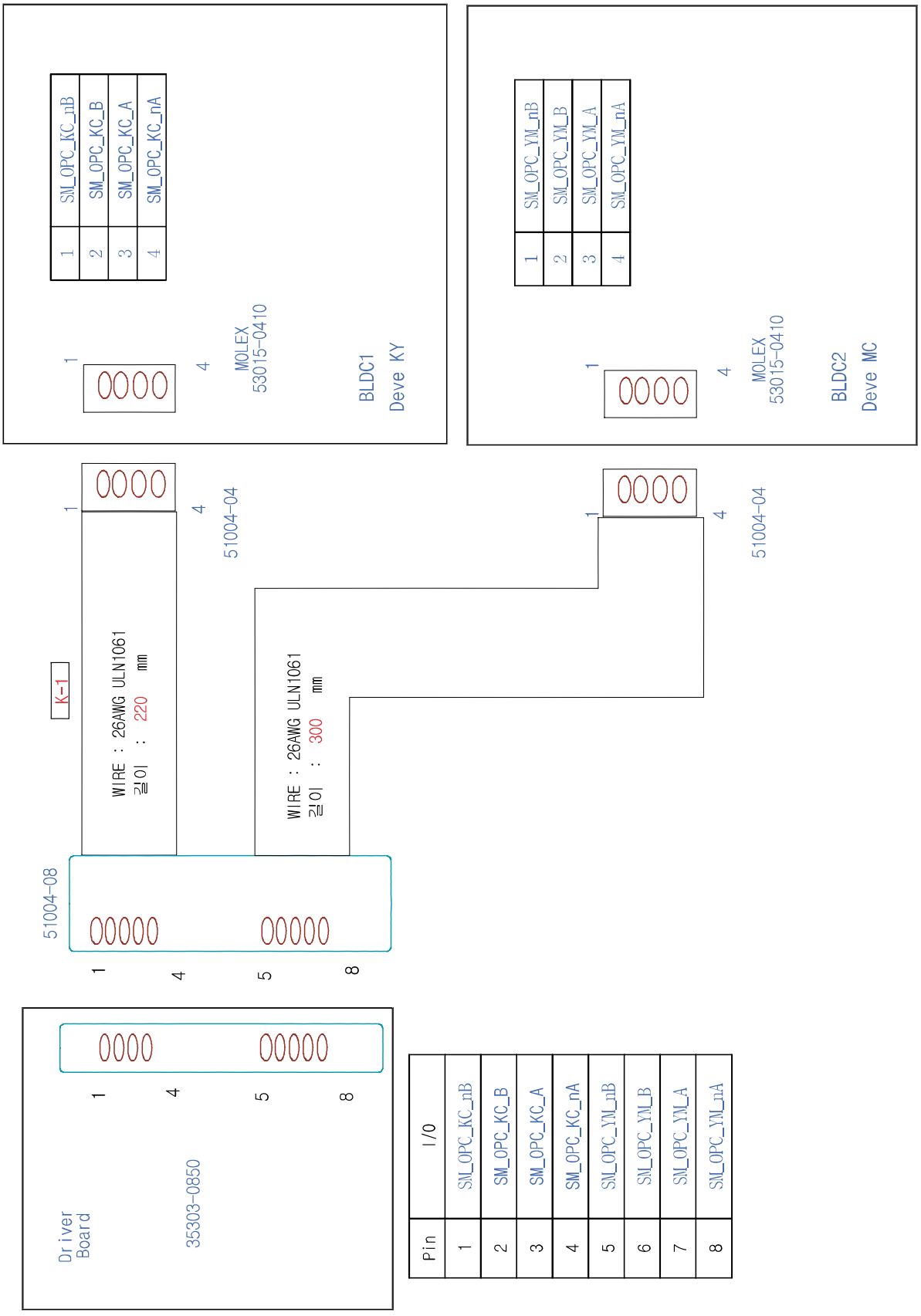
10.13 Joint ↔ LSU 6 pin-idea mock up SET



10.14 Main ↔ BLDC 10 pin

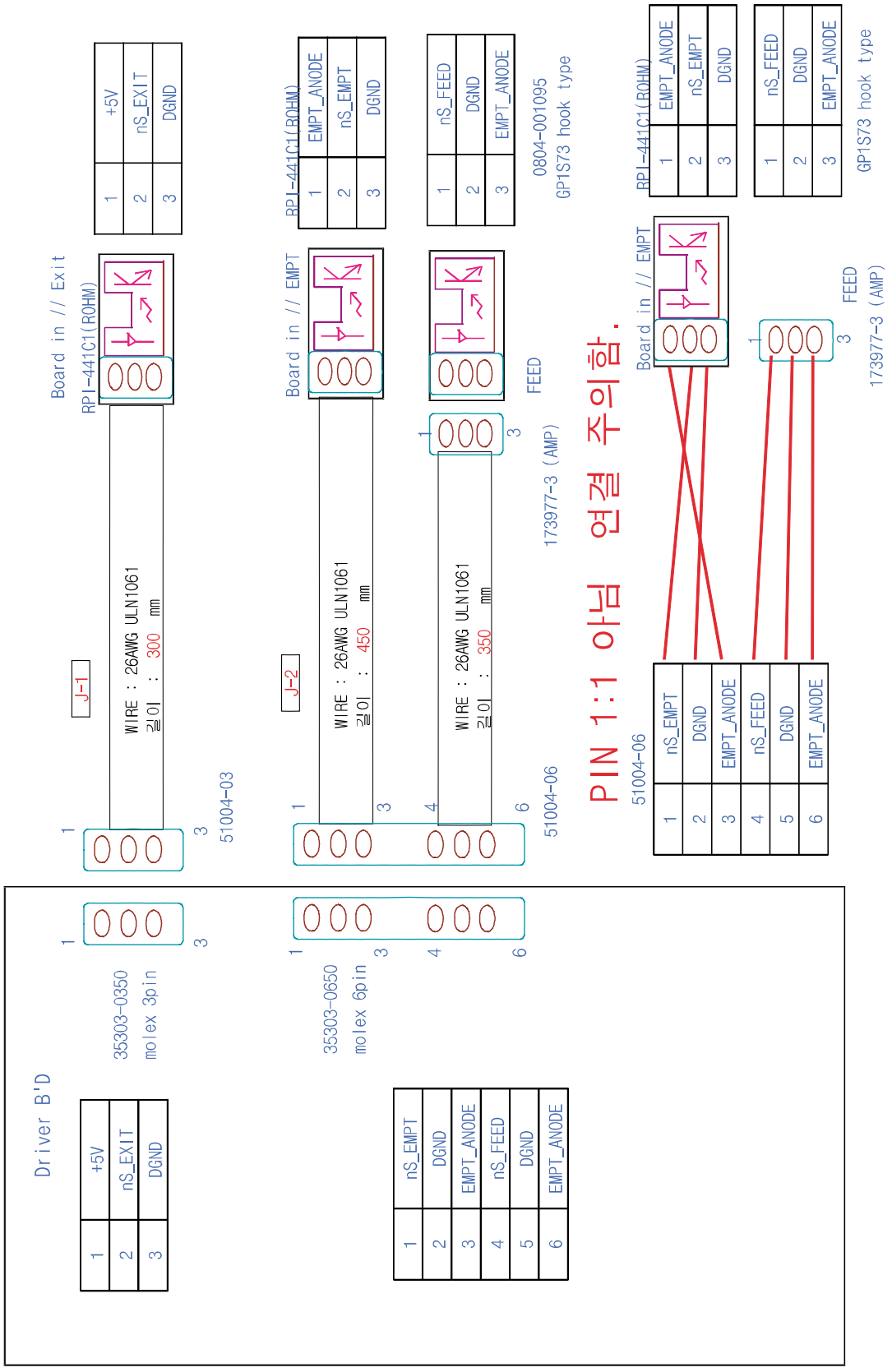


10.15 Driver ↔ OPC Step motor 8 pin

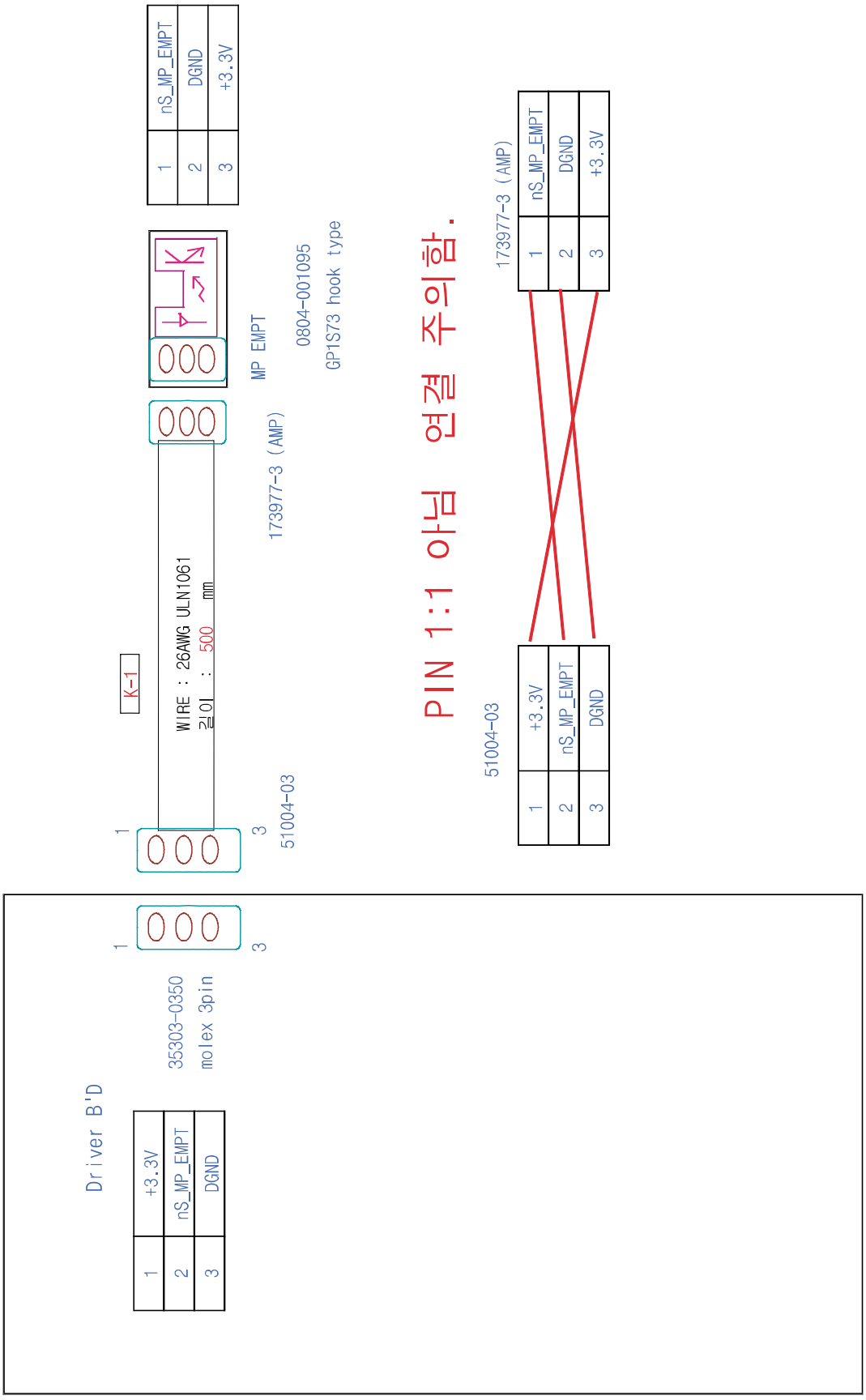


Pin	I/O
1	SM_OPC_KC_nB
2	SM_OPC_KC_B
3	SM_OPC_KC_A
4	SM_OPC_KC_nA
5	SM_OPC_YM_nB
6	SM_OPC_YM_B
7	SM_OPC_YM_A
8	SM_OPC_YM_nA

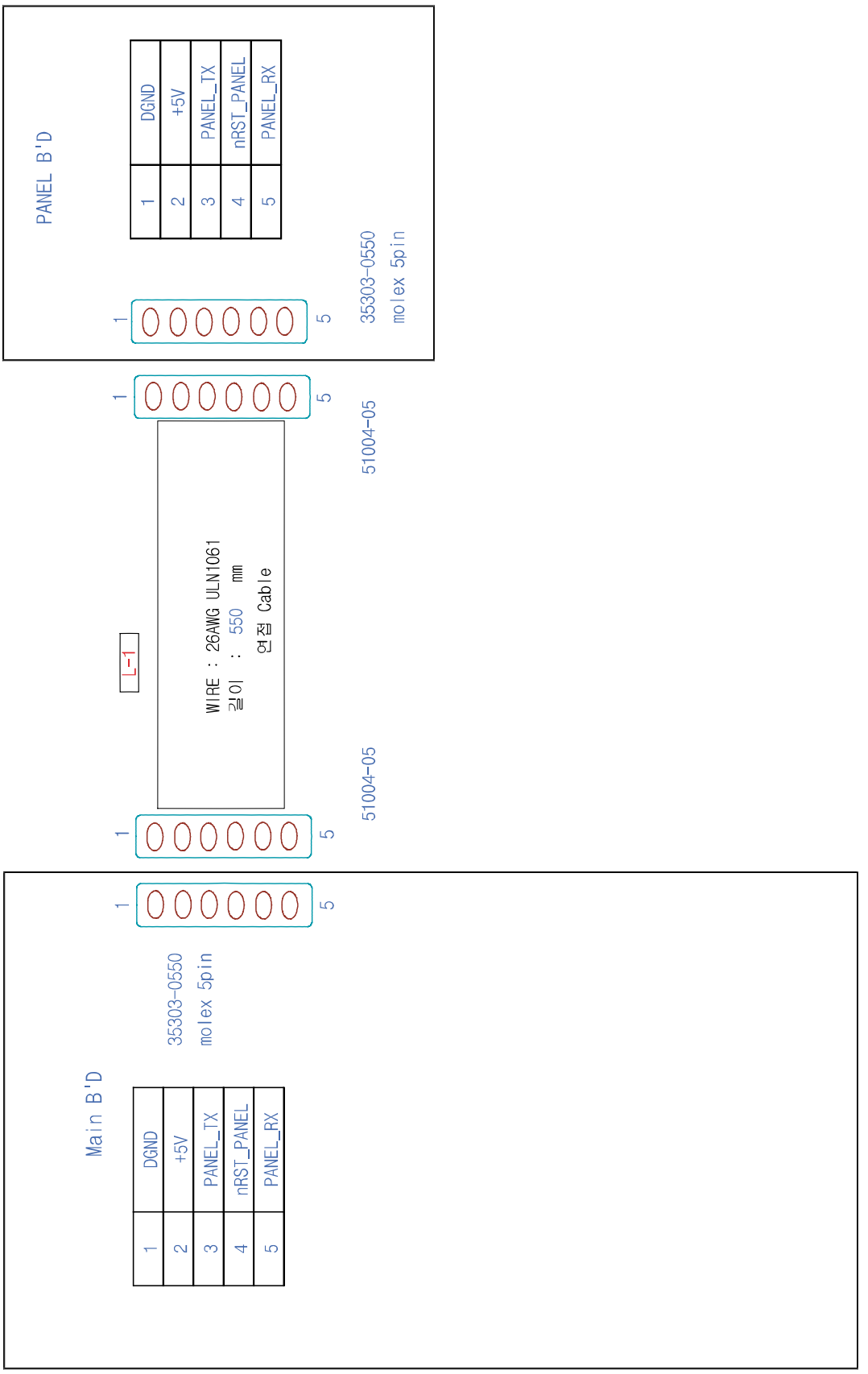
10.16 Driver ↔ Exit, FCF Empt, Feed sensor



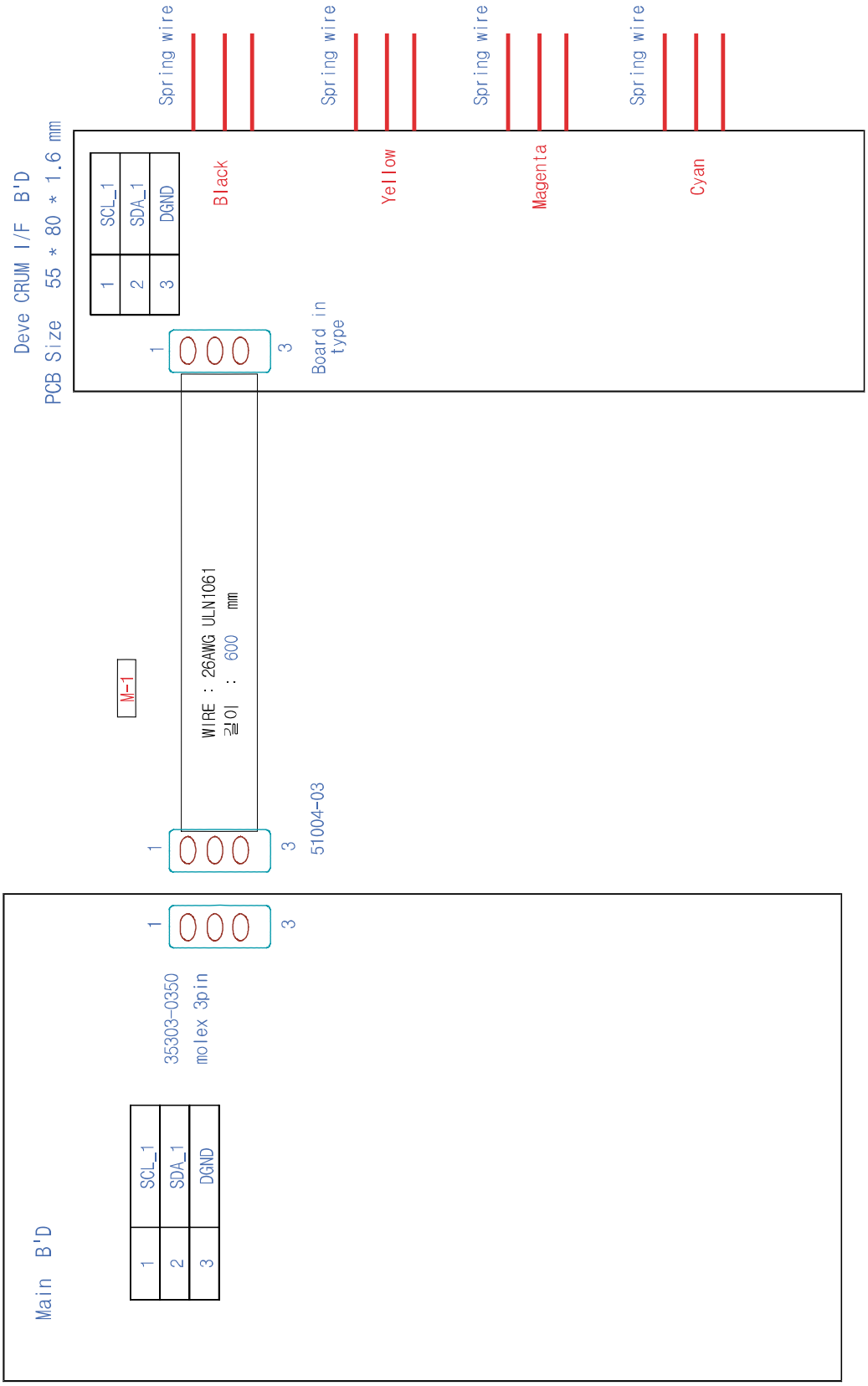
10.17 Driver ↔ MP Empt sensor



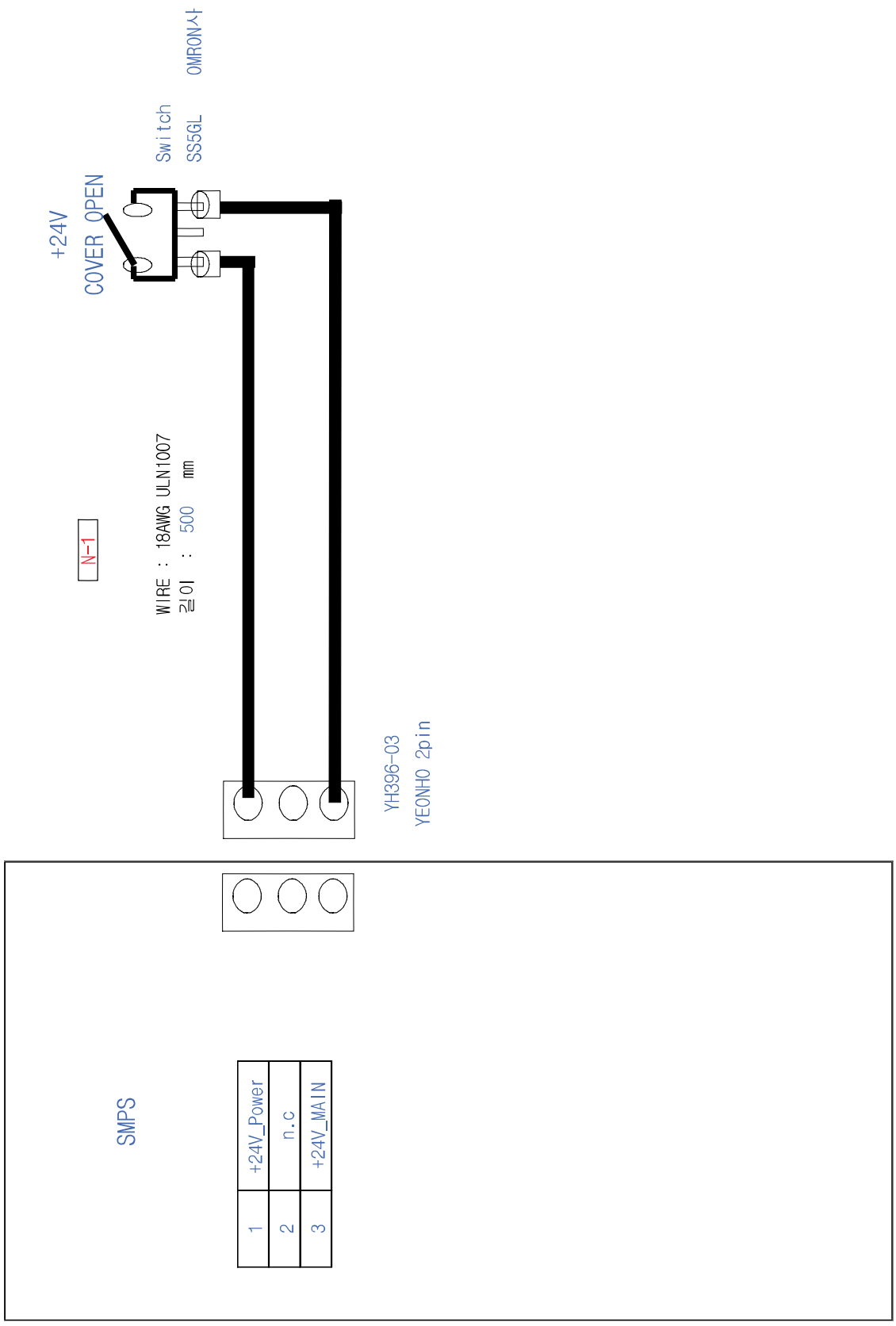
10.18 Main ↔ OP Panel 5 pin



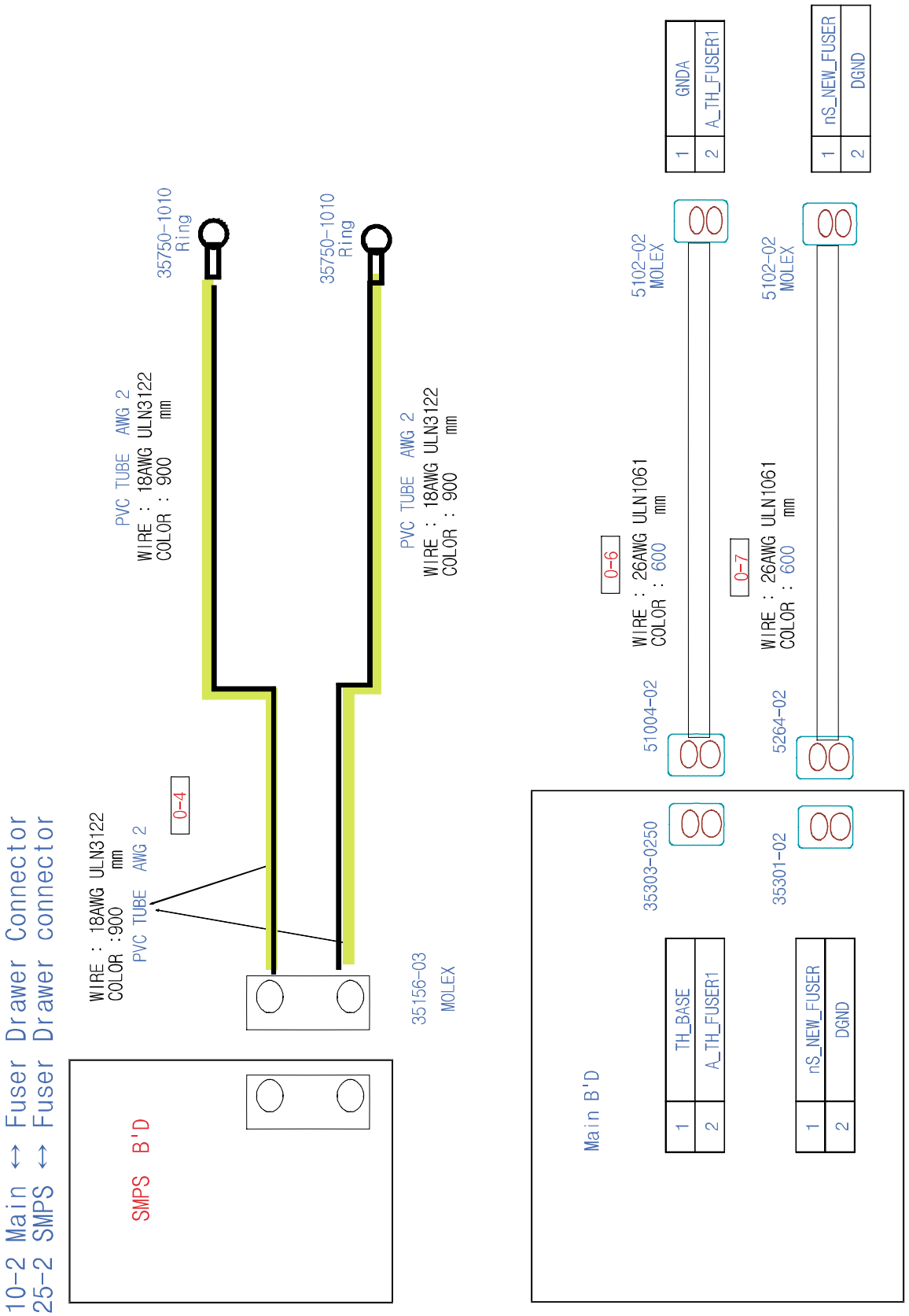
10.19 Main ↔ Deve CRUM I/F 3 pin



10.20 SMPS ↔ +24V micro switch 2 pin



10.21 Main/SMPS ↔ Fuser Drawer Connector



11. Schematic Diagrams

11.1 Main Board(1/21)

ED NO.	REVISION RECORD	CHANGE PART

Page	Function
1	Index
2	Clock(ICS9248) & Power On Reset
3	CPU (RM5231A)
4	System Controller (V320USC)
5	Aribiter PLD, Latch, 245
6	Memory (Flash & SDRAM), EEPROM
7	Panel UART
8	USB Controller (ISP1582)
9	Network CONN (PCI)
10	HYPER-C
11	LPEC2
12	SCF, CRUM_DEVE
13	PULL-UP RESISTERS, LED
14	LSU CONN, LVDS
15	SMPS, HVPS1,2,3
16	BLDC DEVE YMC, BLDC OPC, IH BOARD
17	DRIVER CONN
18	TEMP, ANALOG-MUX
19	TH-FUSER
20	PTB
21	DC-DC converter

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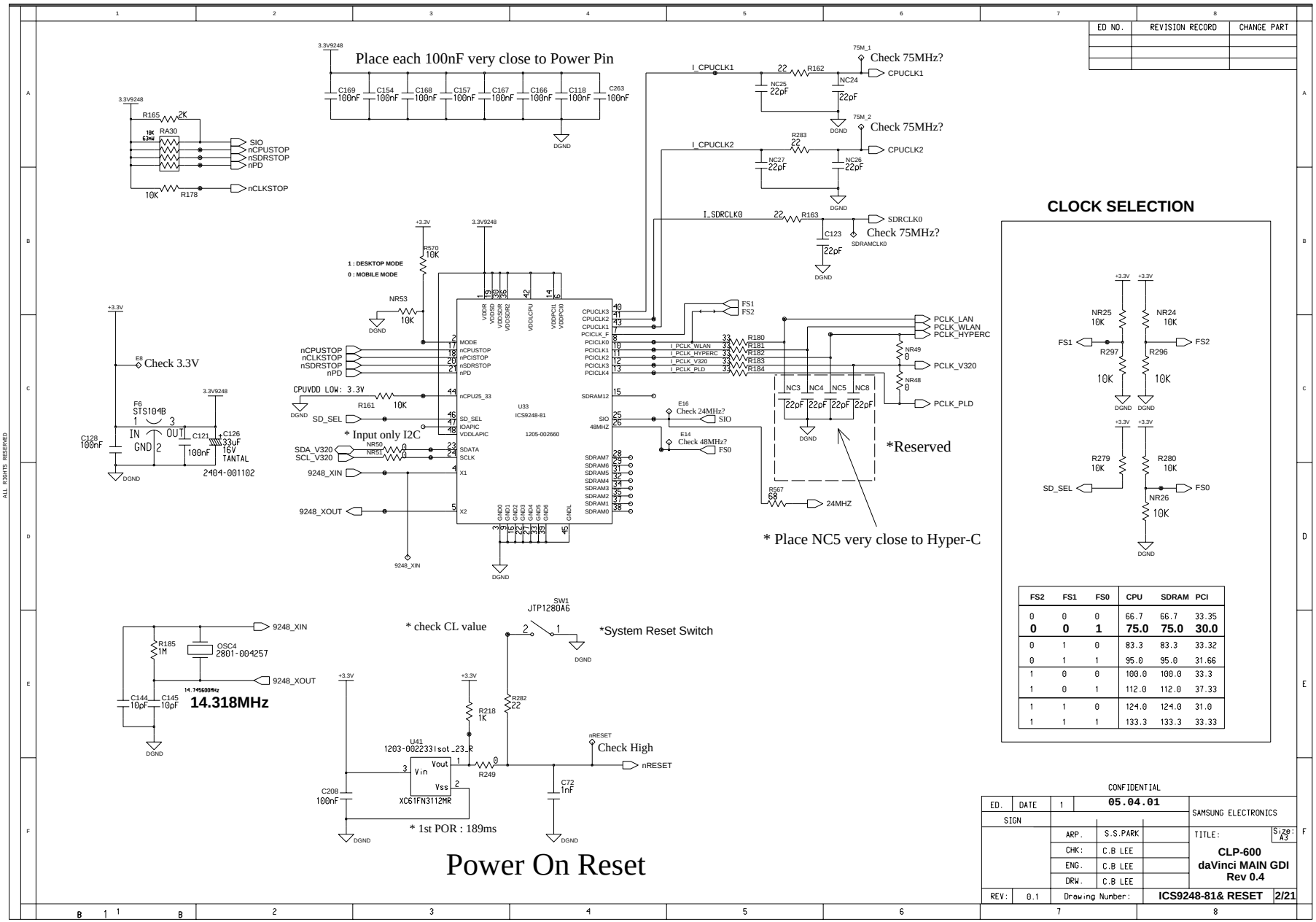
ED.	DATE	1	05.04.01
SIGN			
		ARP.	S.S.PARK
		CHK.	C.B LEE
		ENG.	C.B LEE
		DRW.	C.B LEE
REV:	0.1	Drawing Number:	INDEX 1/21

SAMSUNG ELECTRONICS

TITLE: CLP-600 daVinci Main GDI Rev 0.4 (Size: A3)



FS2	FS1	FS0	CPU	SDRAM	PCI
0	0	0	66.7	66.7	33.35
0	**0**	**1**	**75.0**	**75.0**	**30.0**
0	1	0	83.3	83.3	33.32
0	1	1	95.0	95.0	31.66
1	0	0	100.0	100.0	33.3
1	0	1	112.0	112.0	37.33
1	1	0	124.0	124.0	31.0
1	1	1	133.3	133.3	33.33

ED NO.	REVISION RECORD	CHANGE PART

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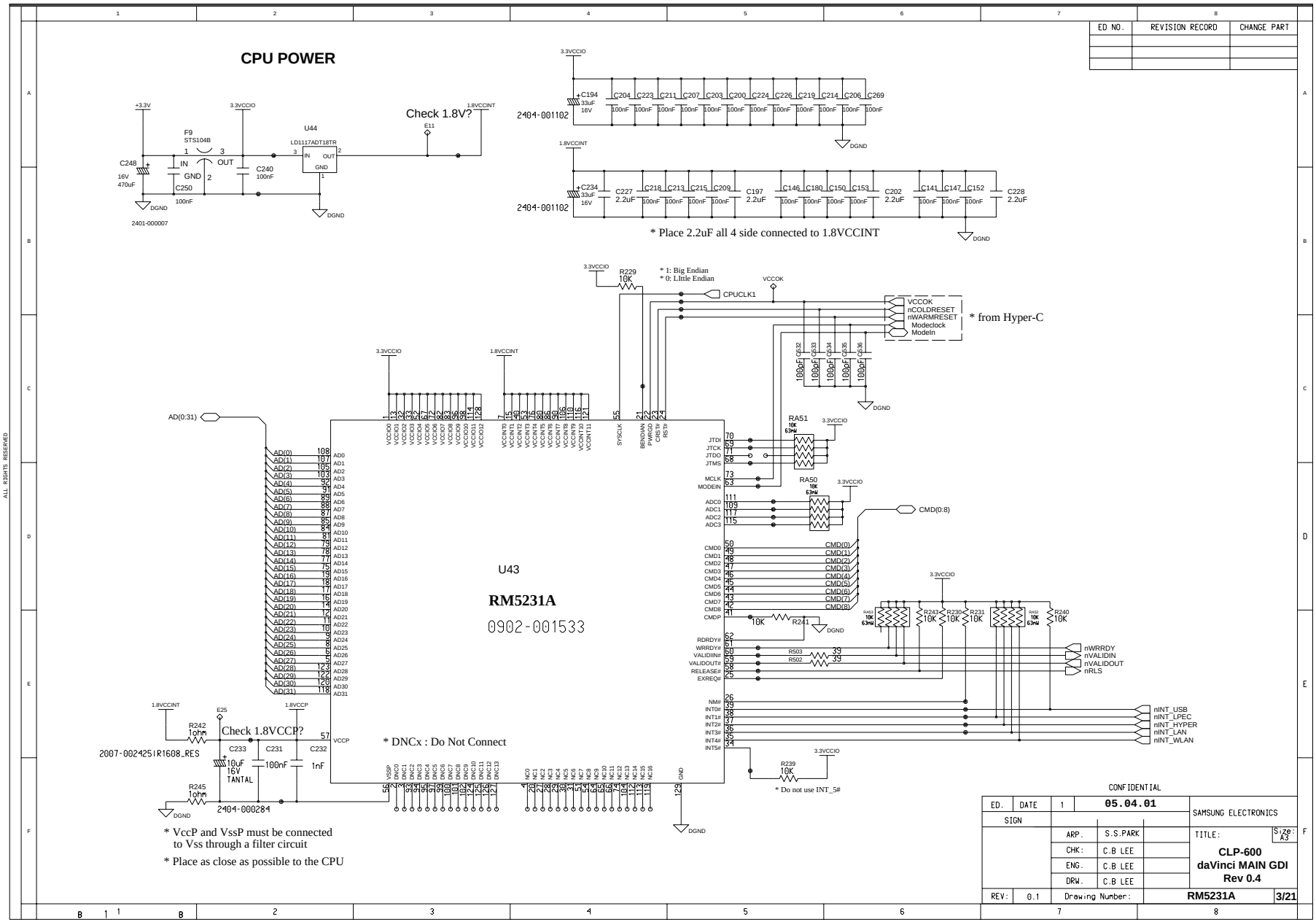
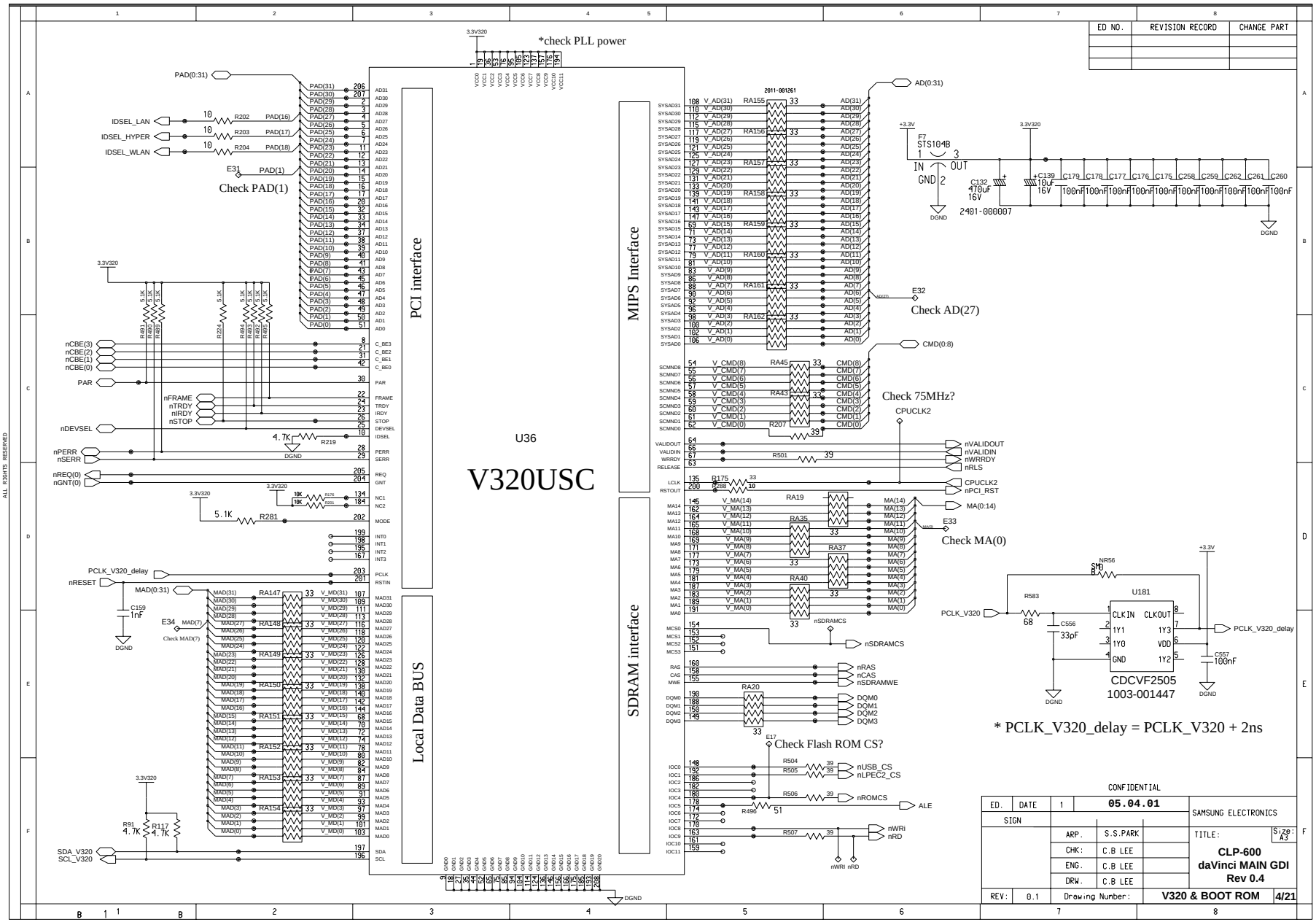
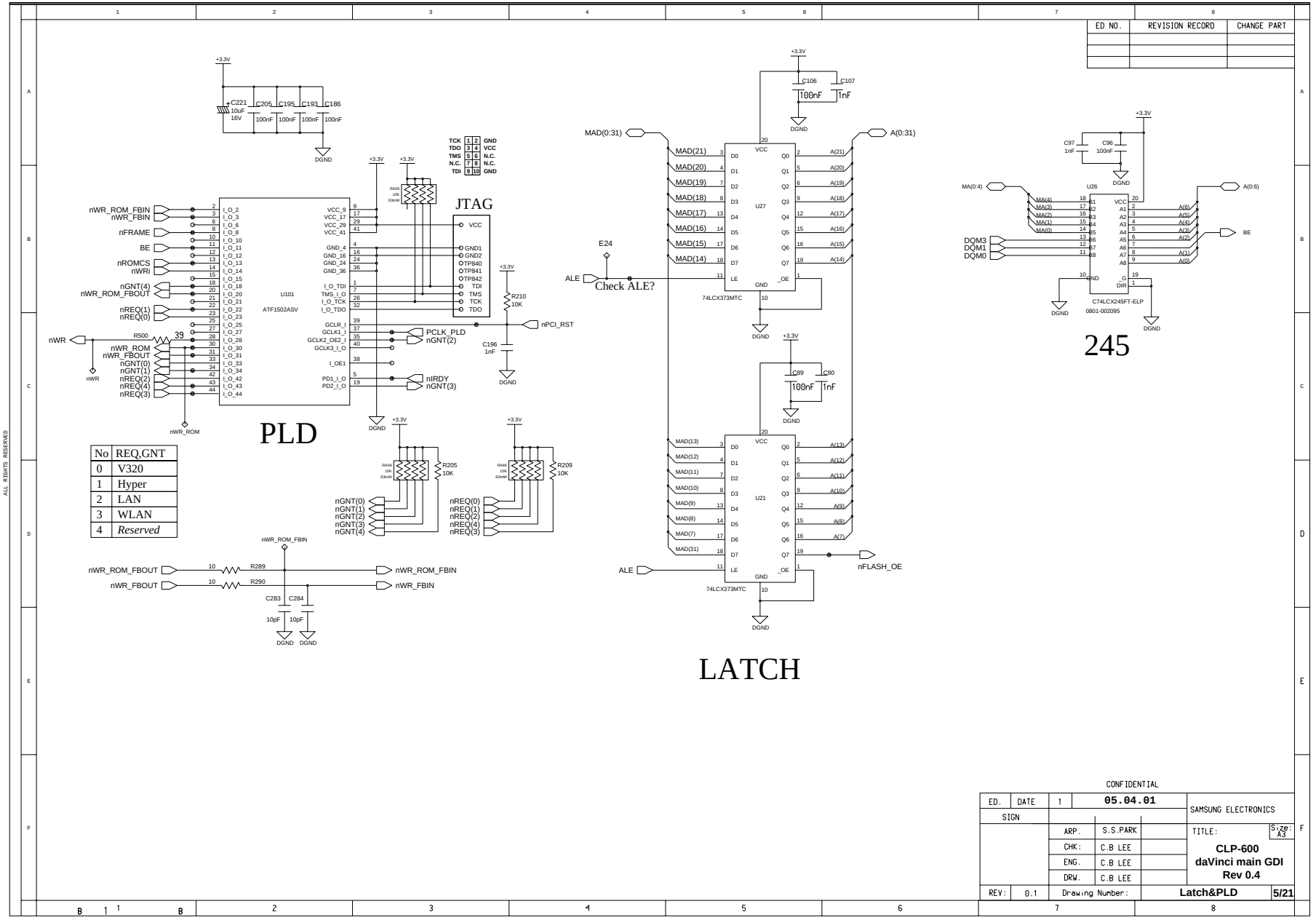
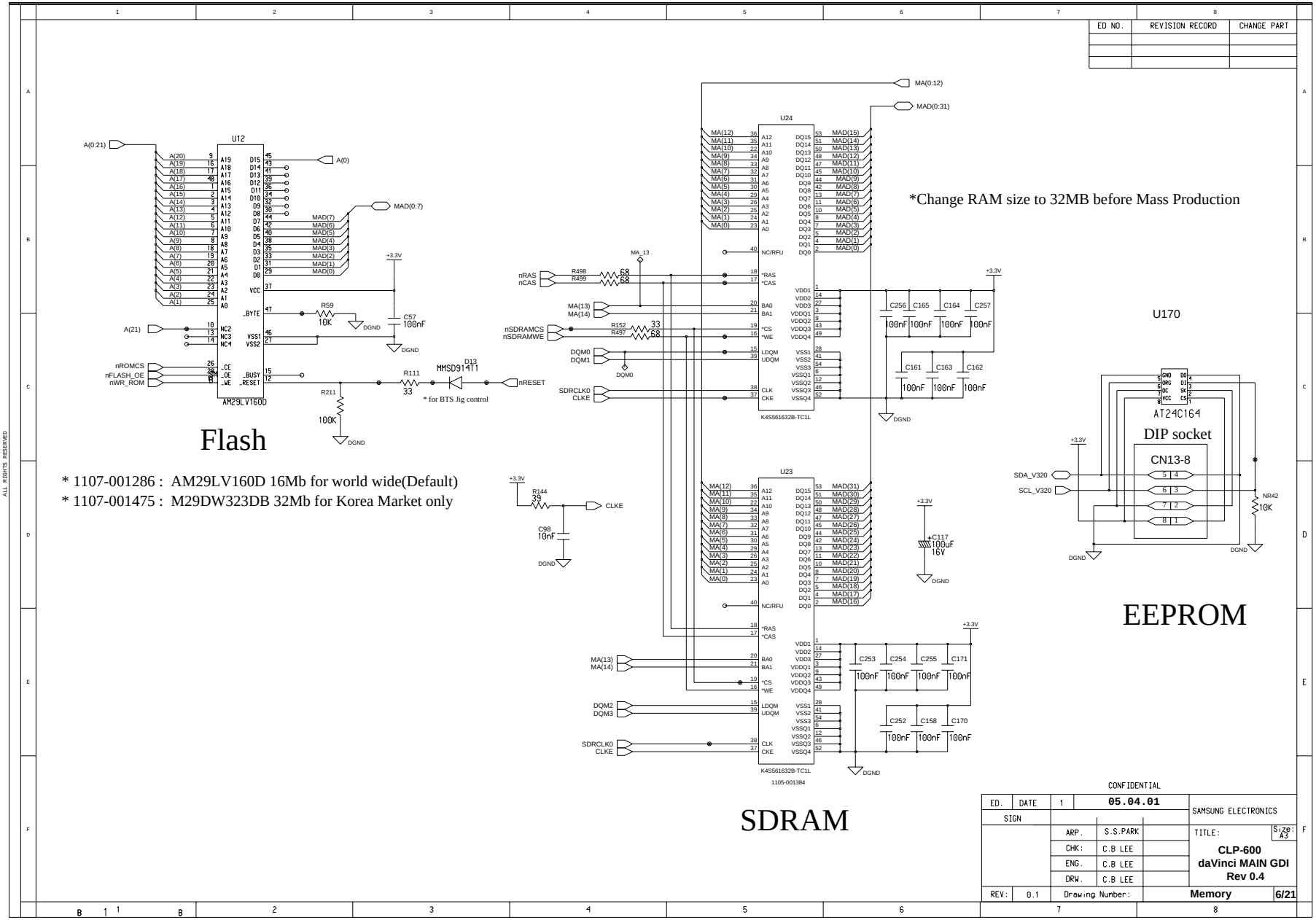
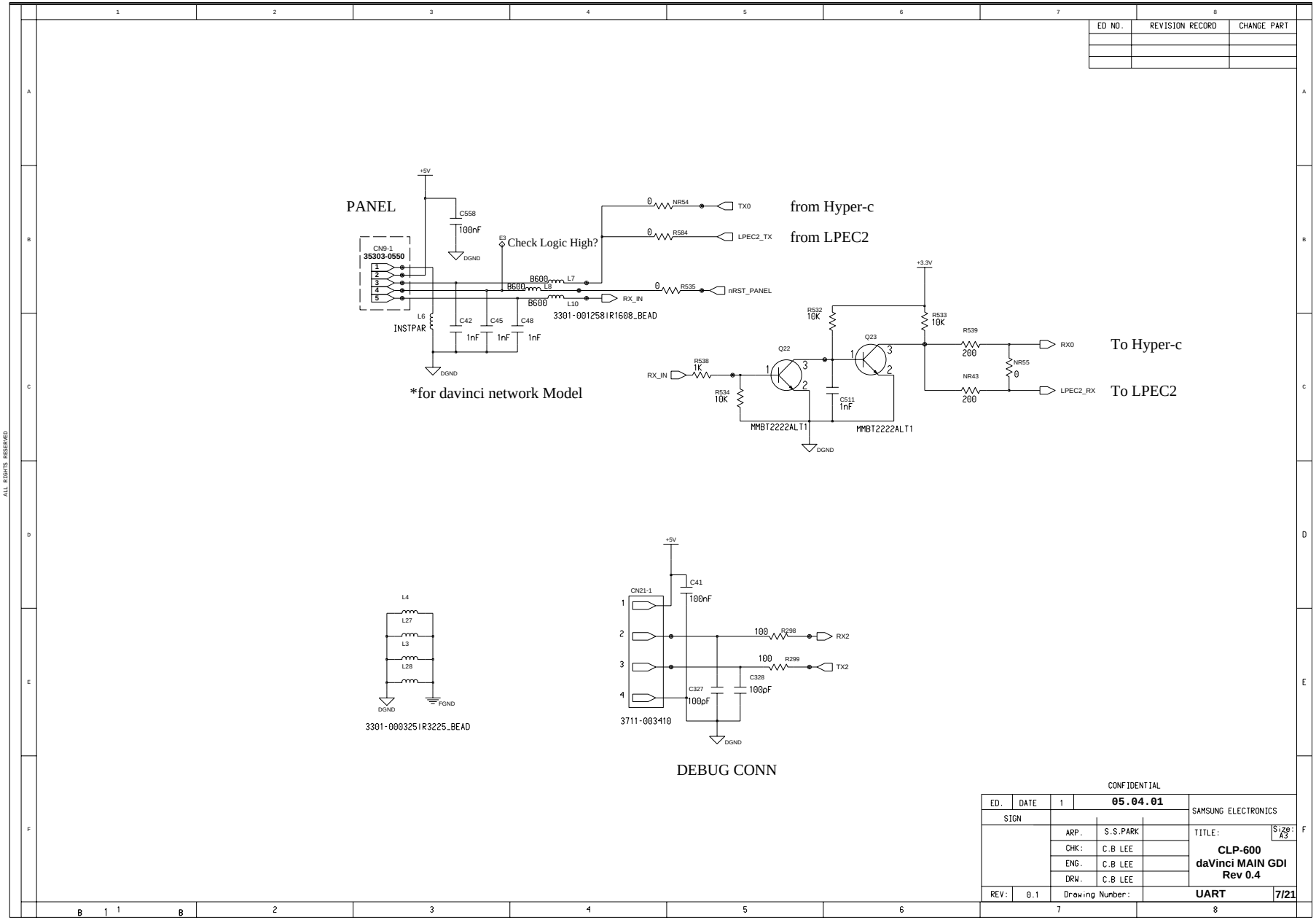
ED.	DATE	05.04.01	SAMSUNG ELECTRONICS
SIGN			
	ARP.	S.S.PARK	TITLE: CLP-600 daVinci MAIN GDI Rev 0.4 (Size: A3)
	CHK:	C.B LEE	
	ENG.	C.B LEE	
	DRW.	C.B LEE	
REV: 0.1		Drawing Number:	ICS9248-81& RESET 2/21

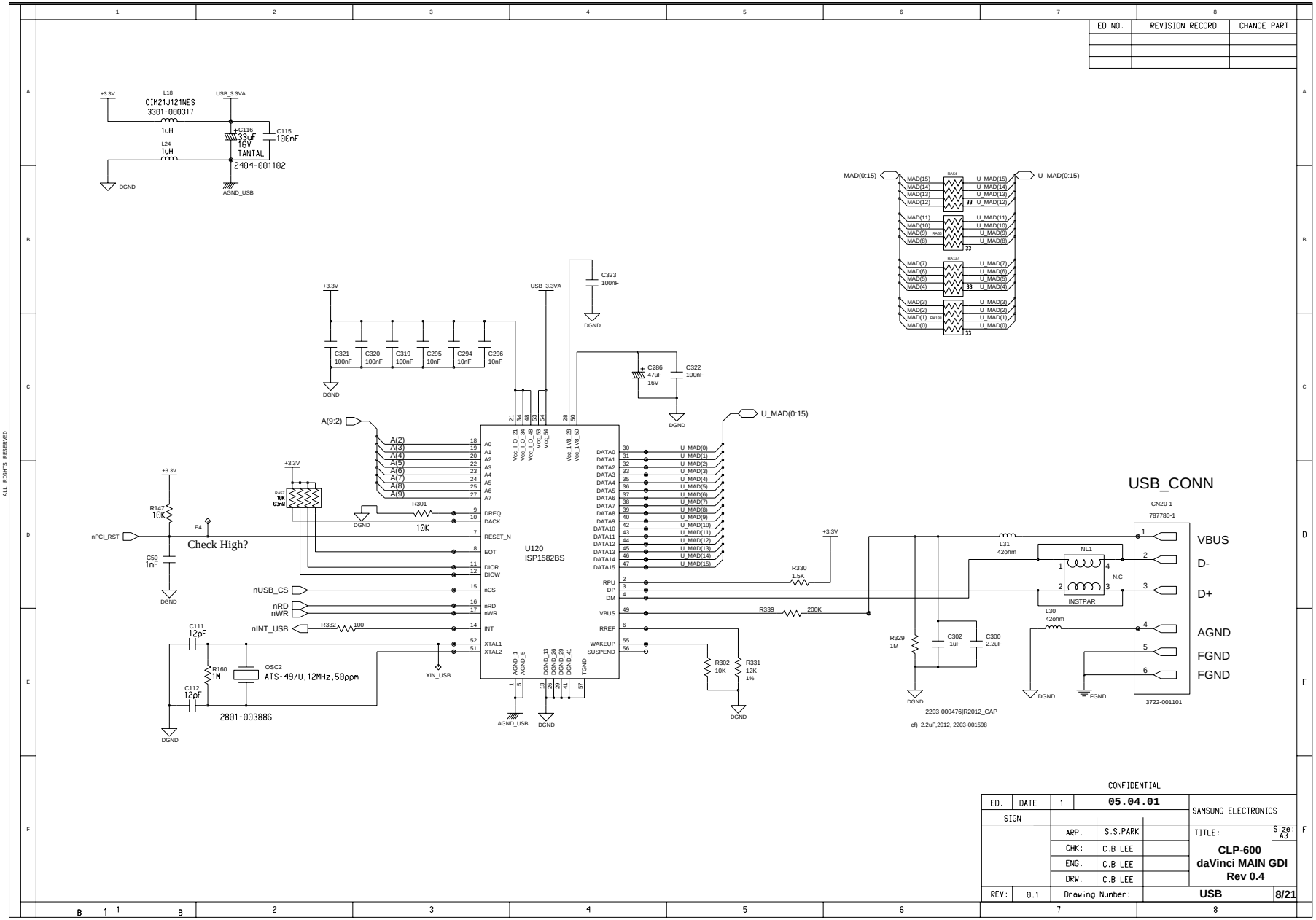


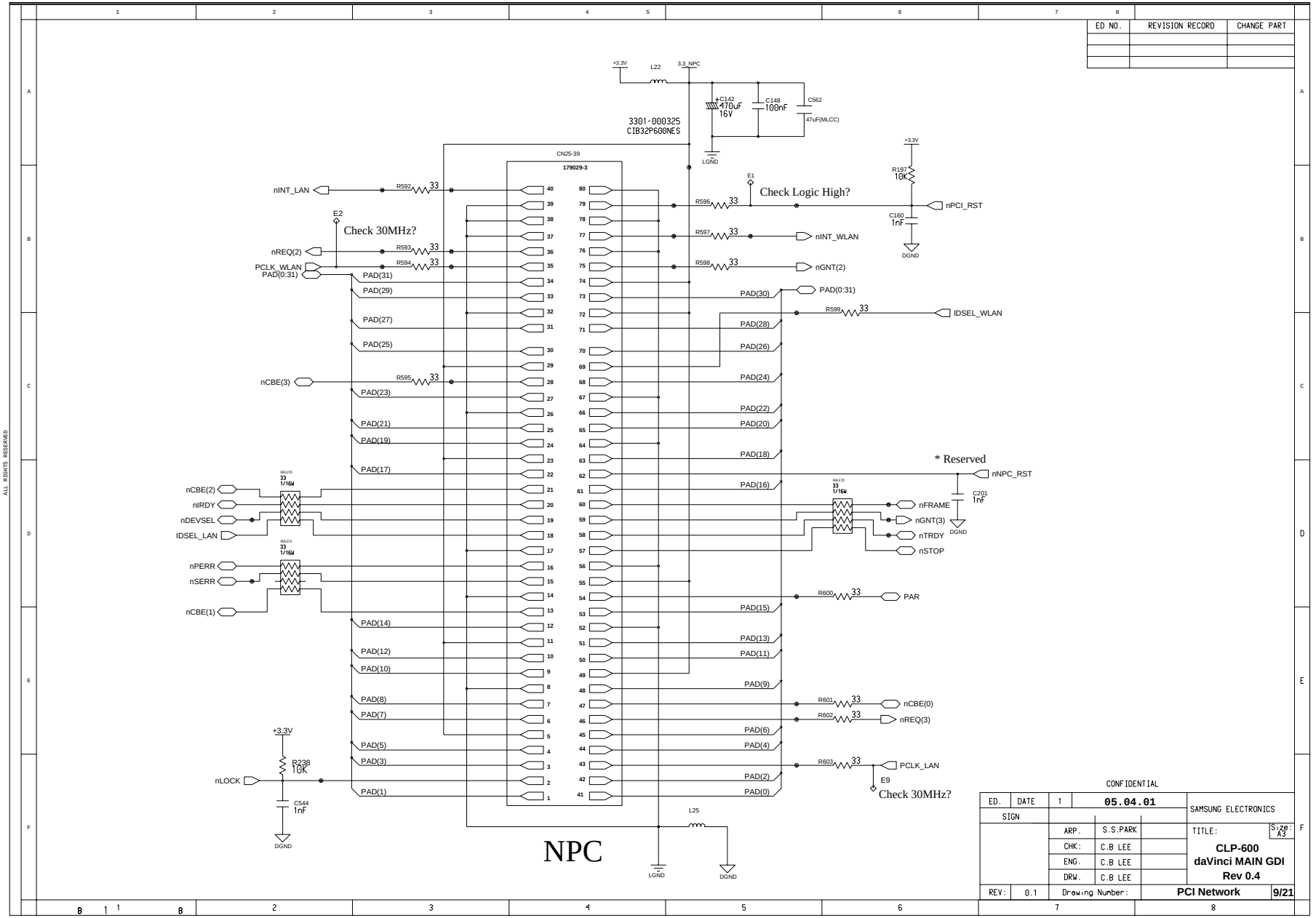


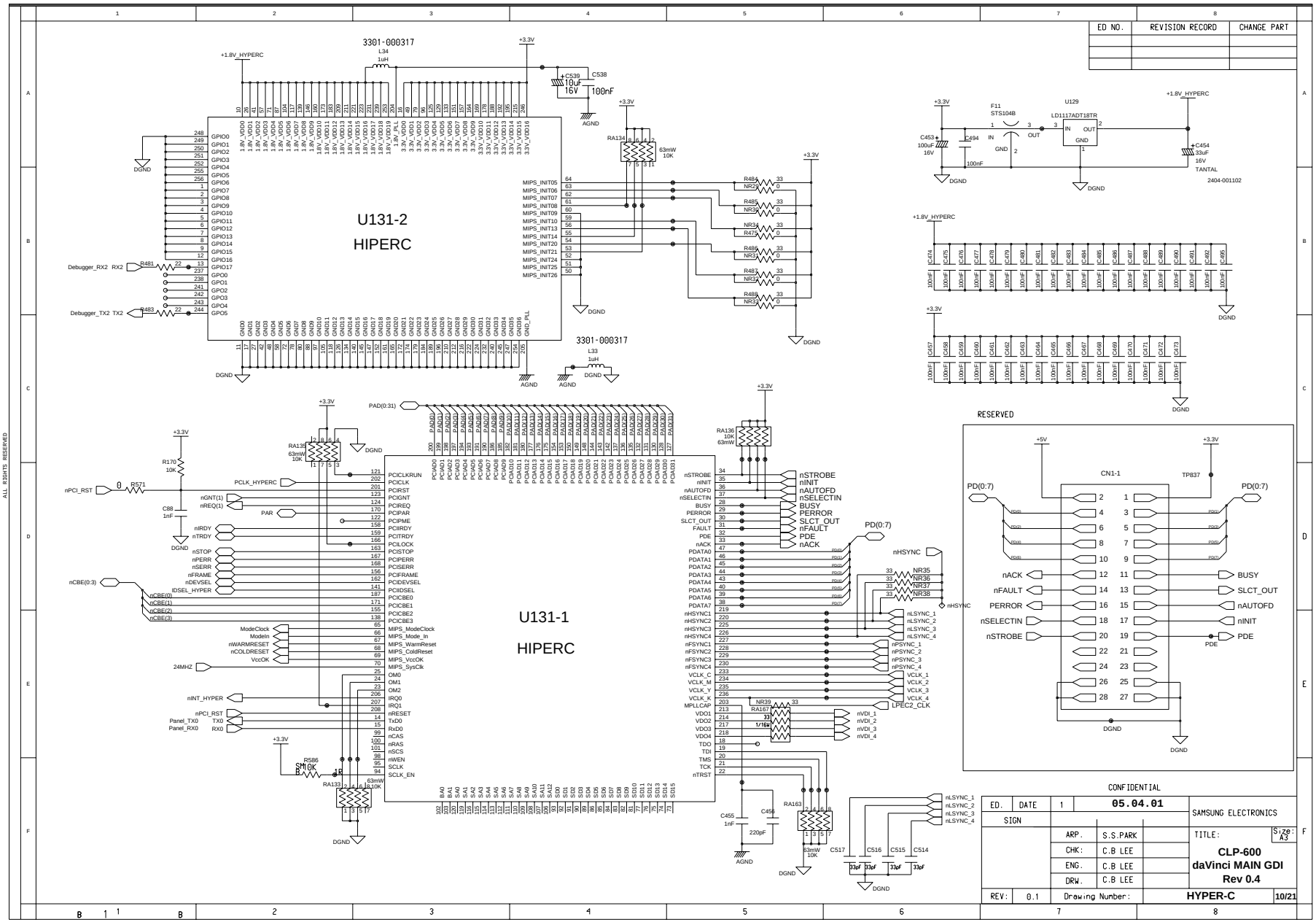


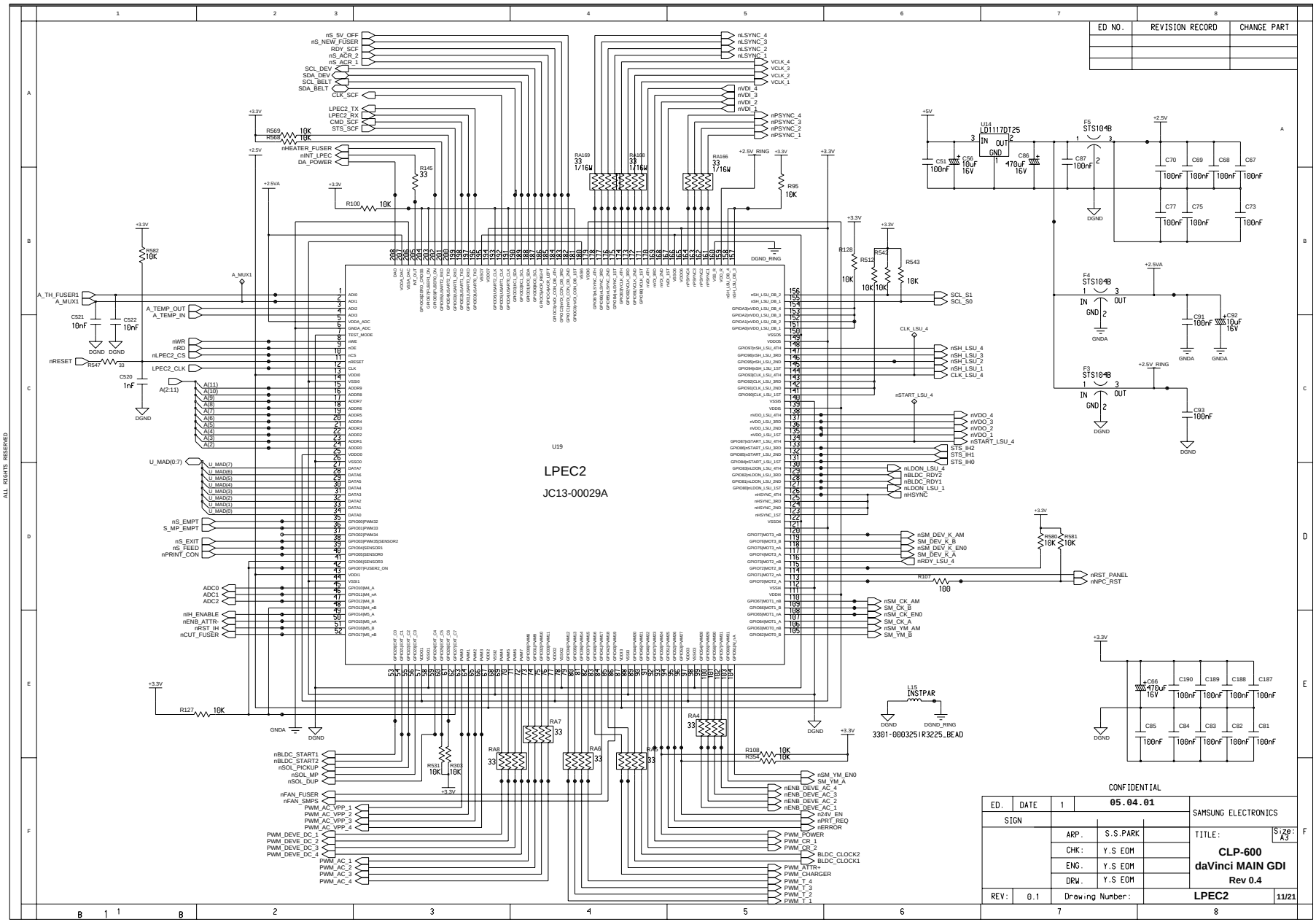


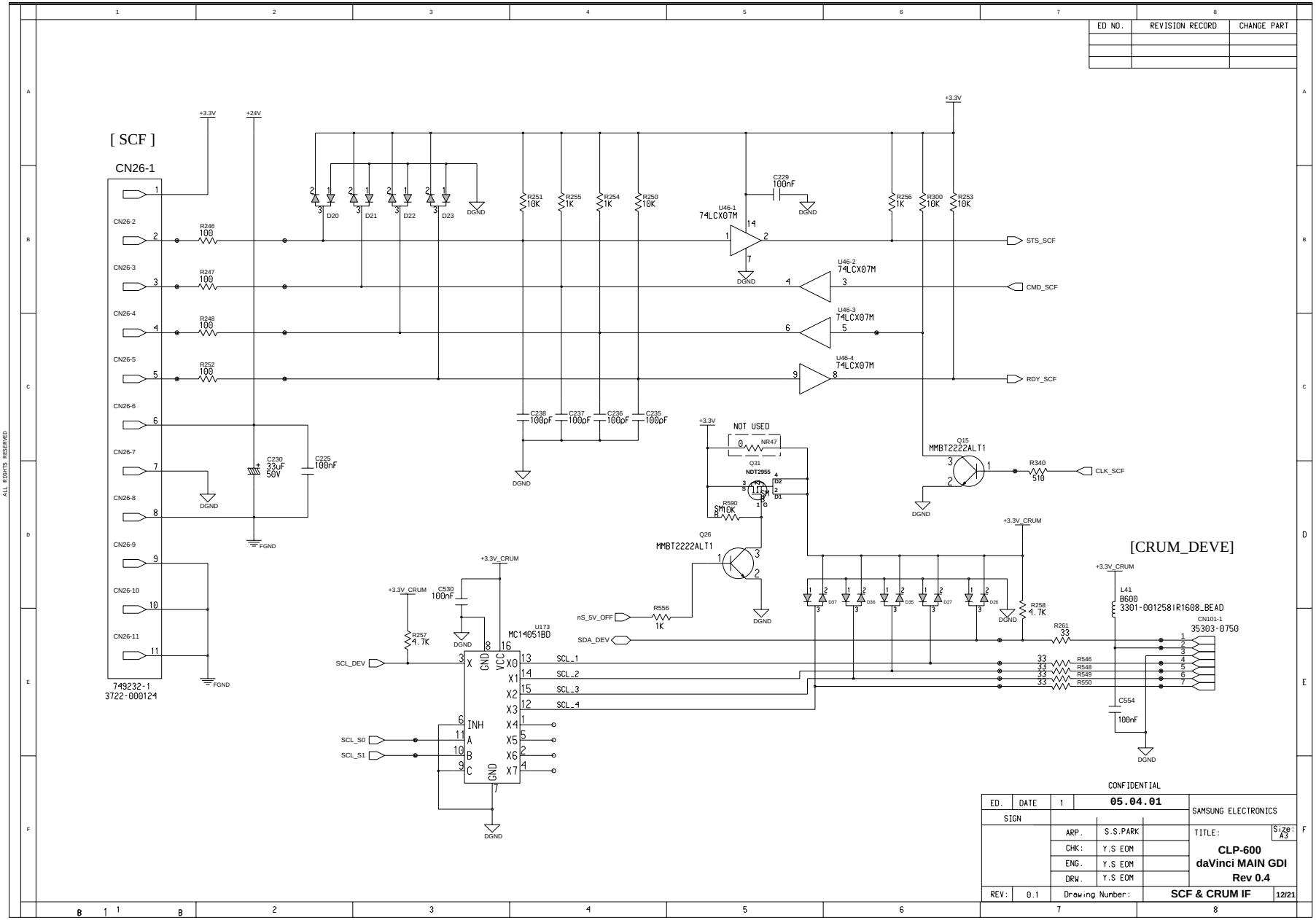


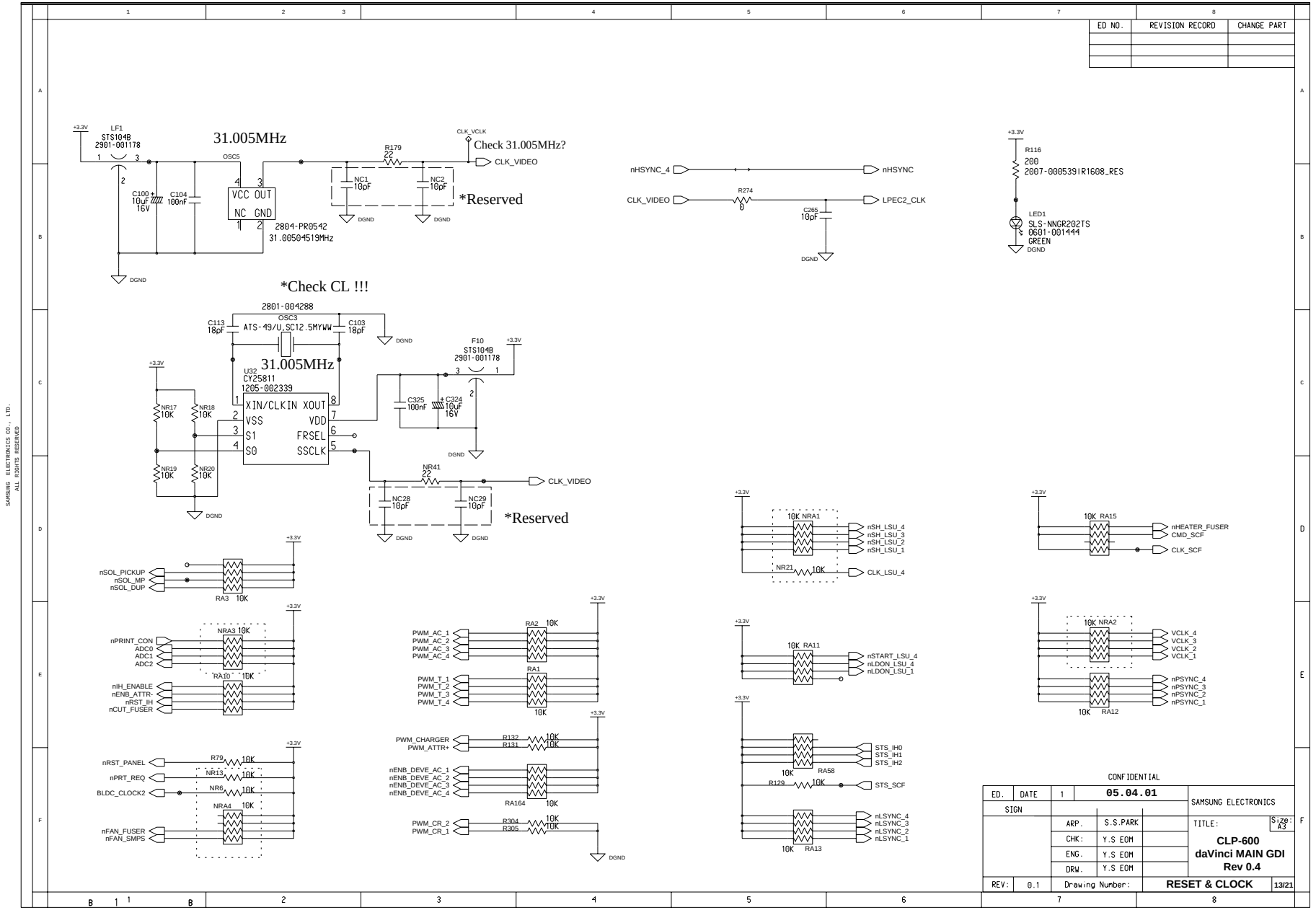


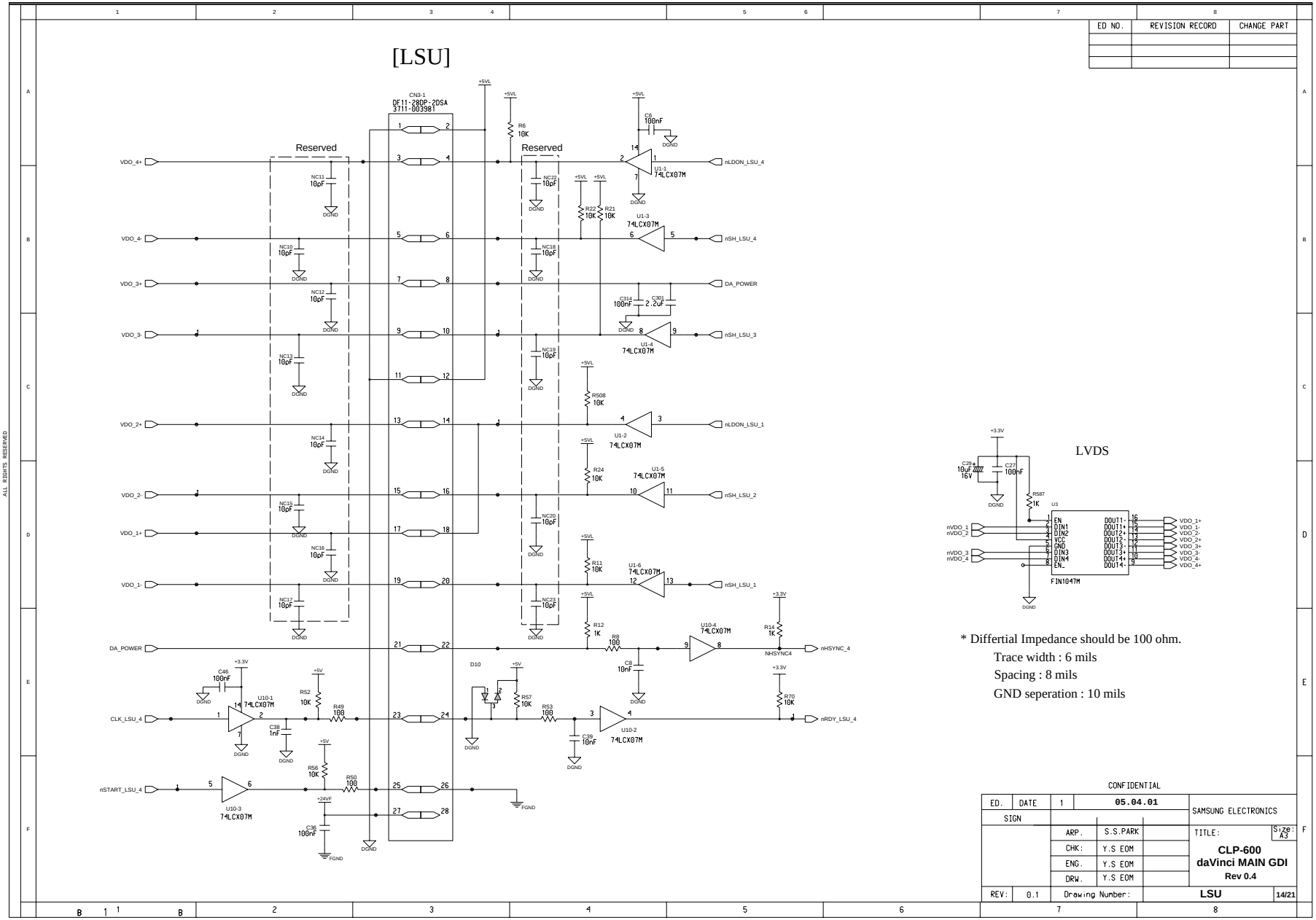


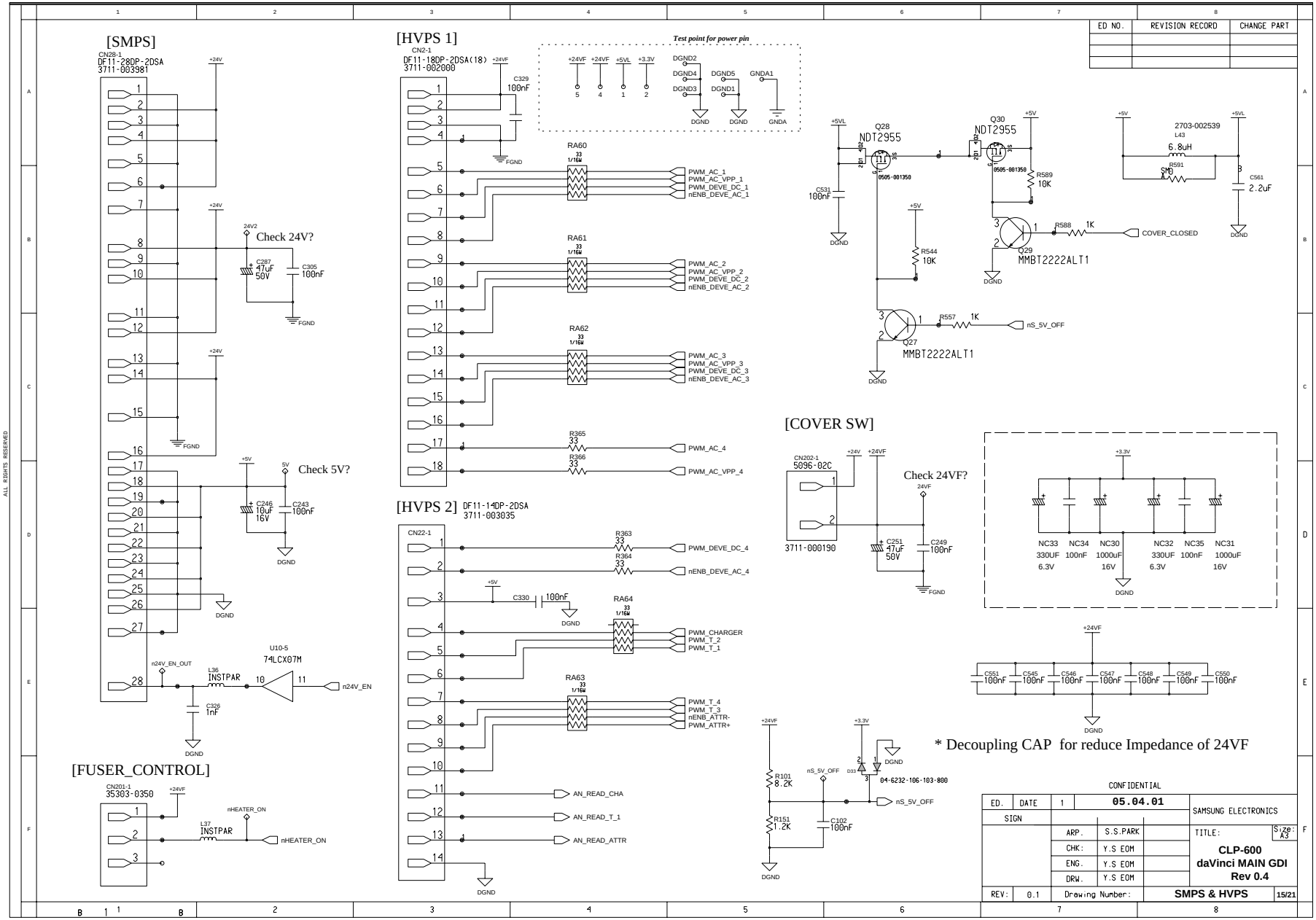


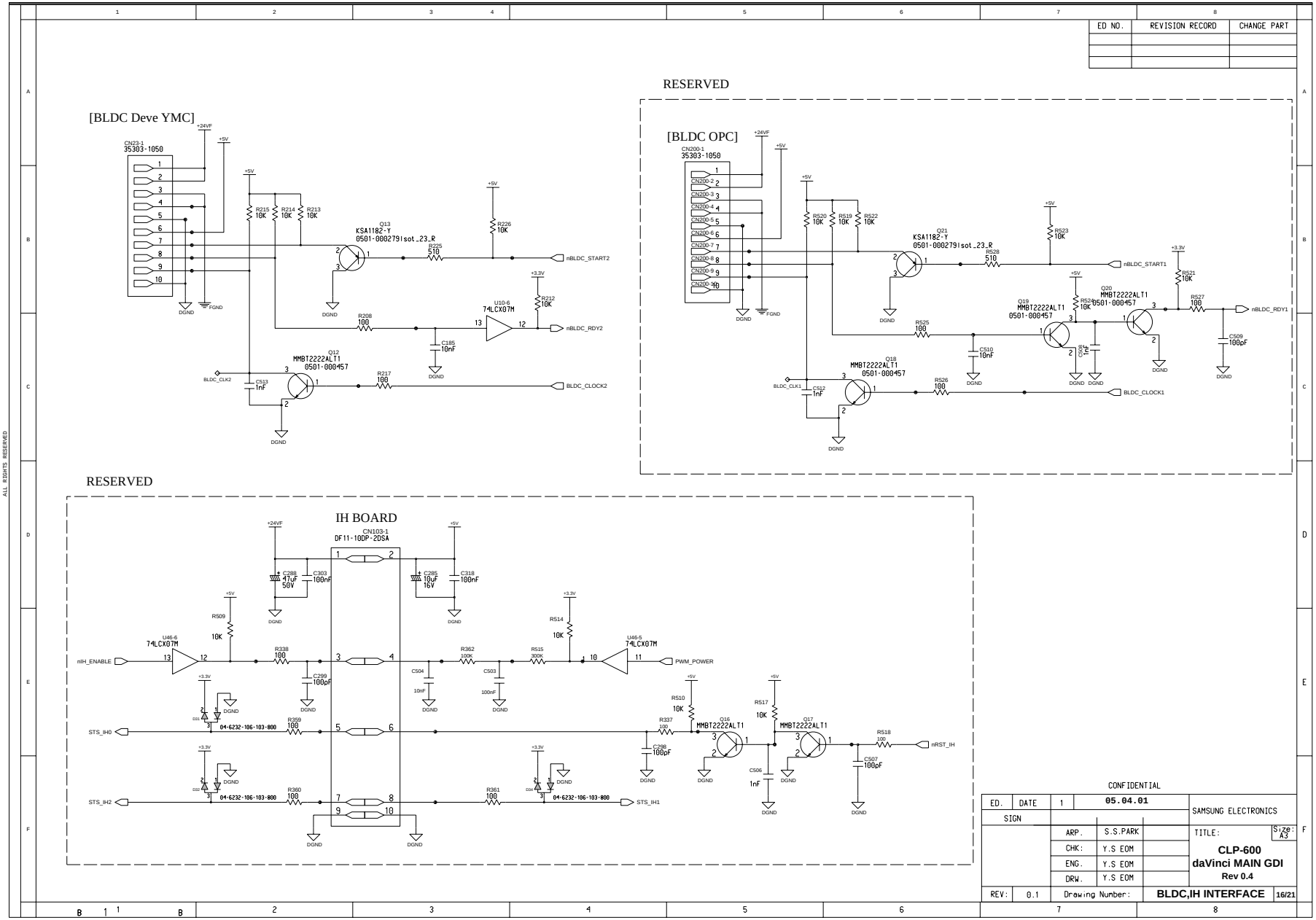


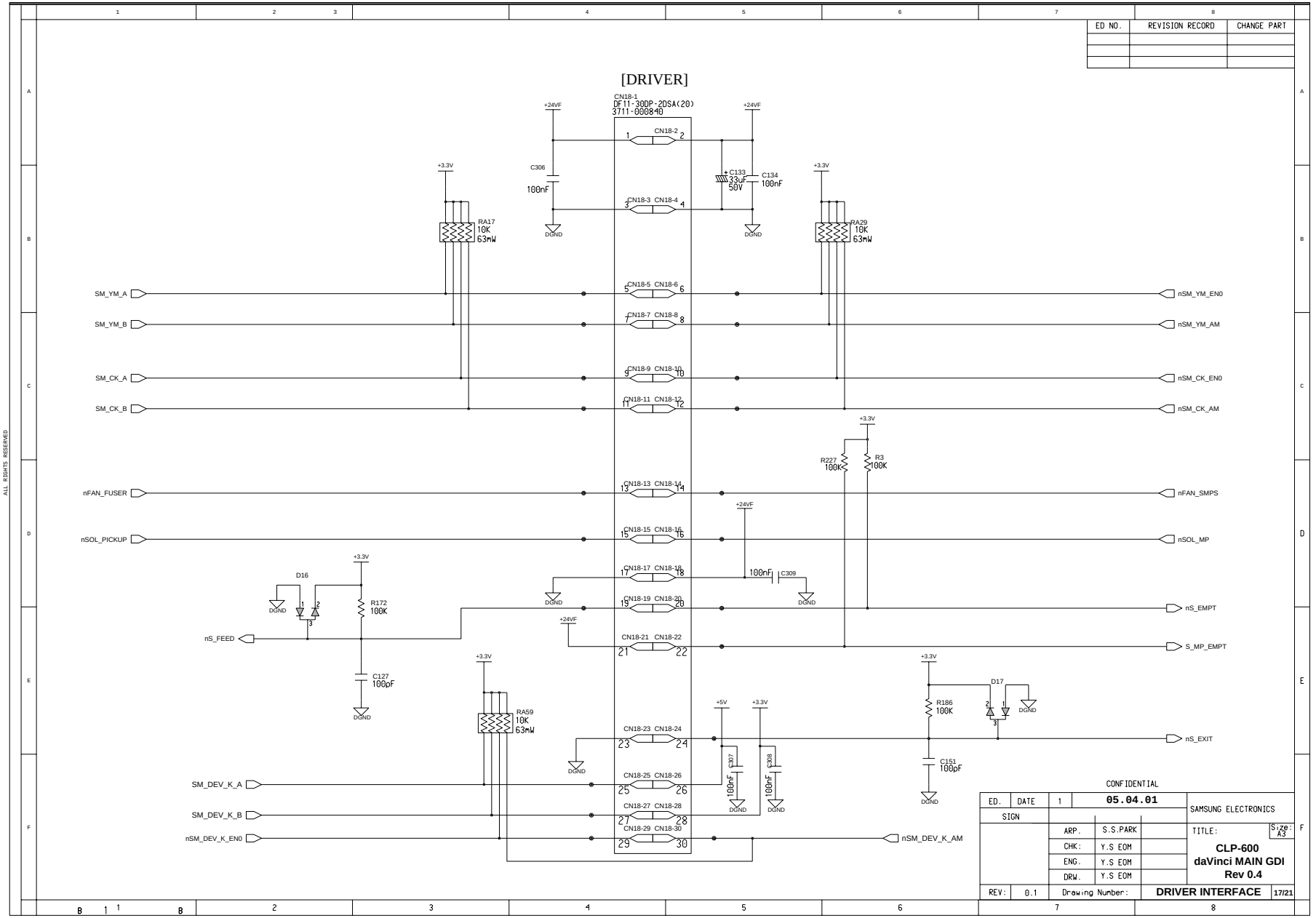












ED NO.	REVISION RECORD	CHANGE PART

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18	TEMP, ANALOG-MUX
19	TH-FUSER
20	PTB
21	DC-DC converter

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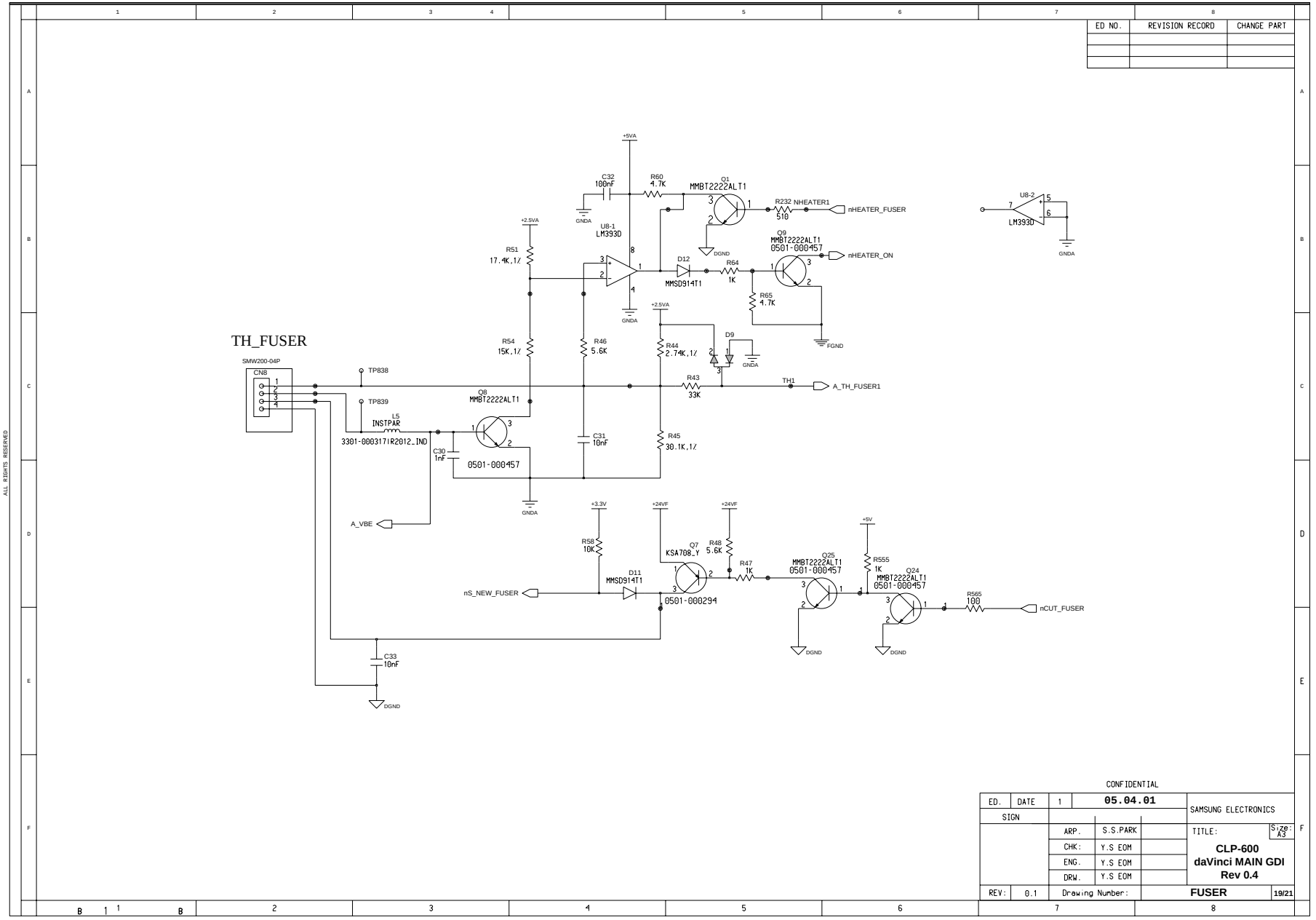
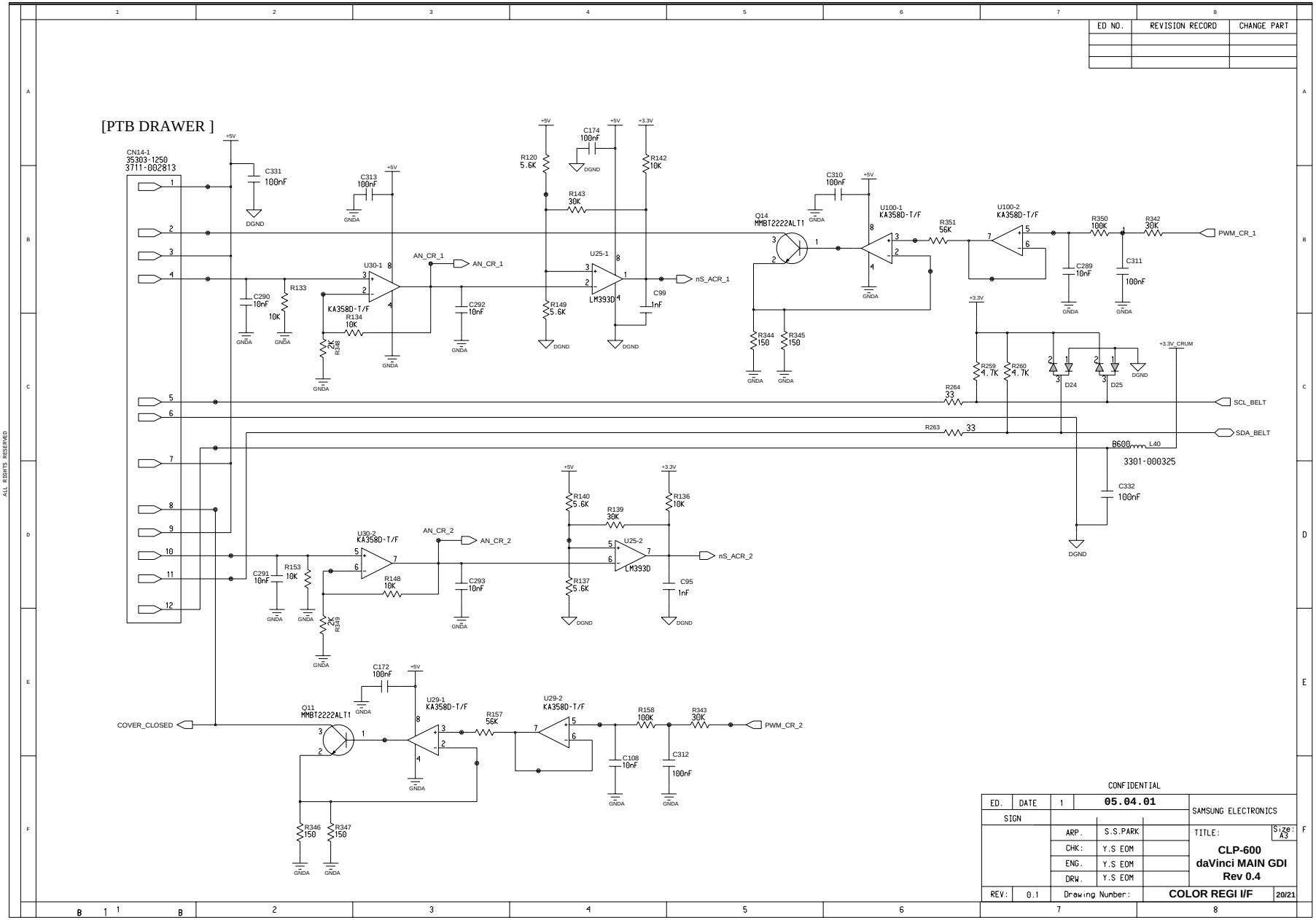
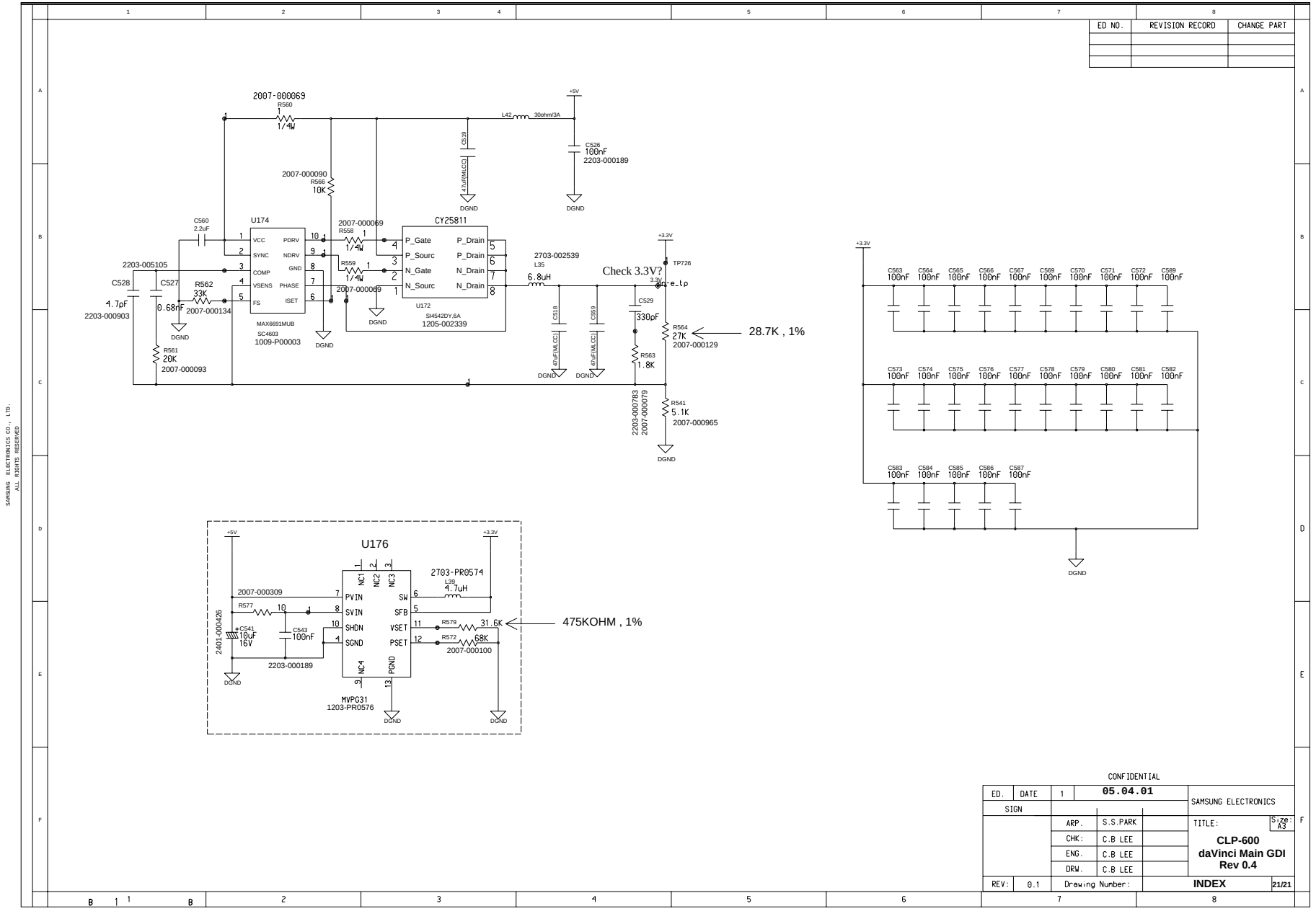
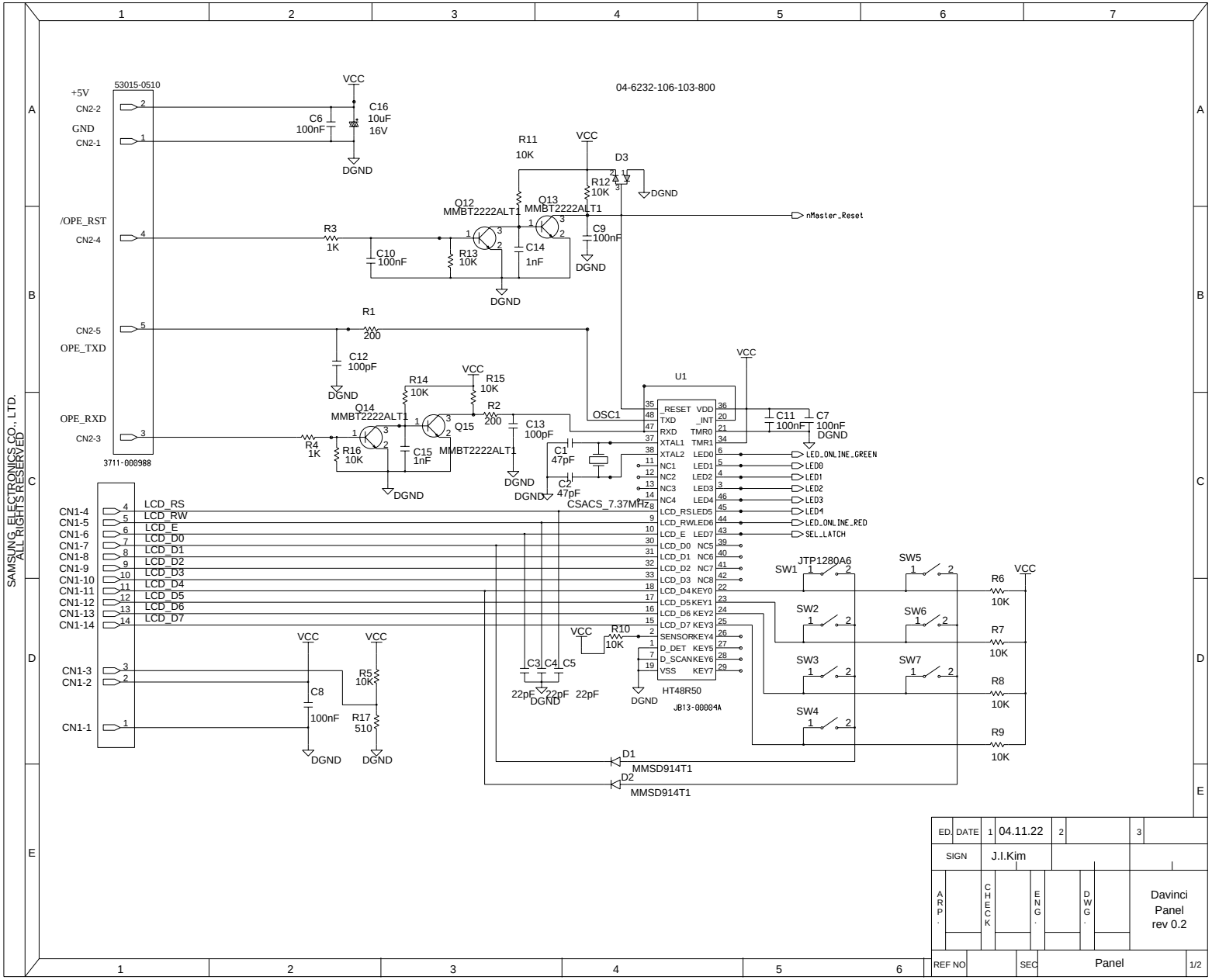
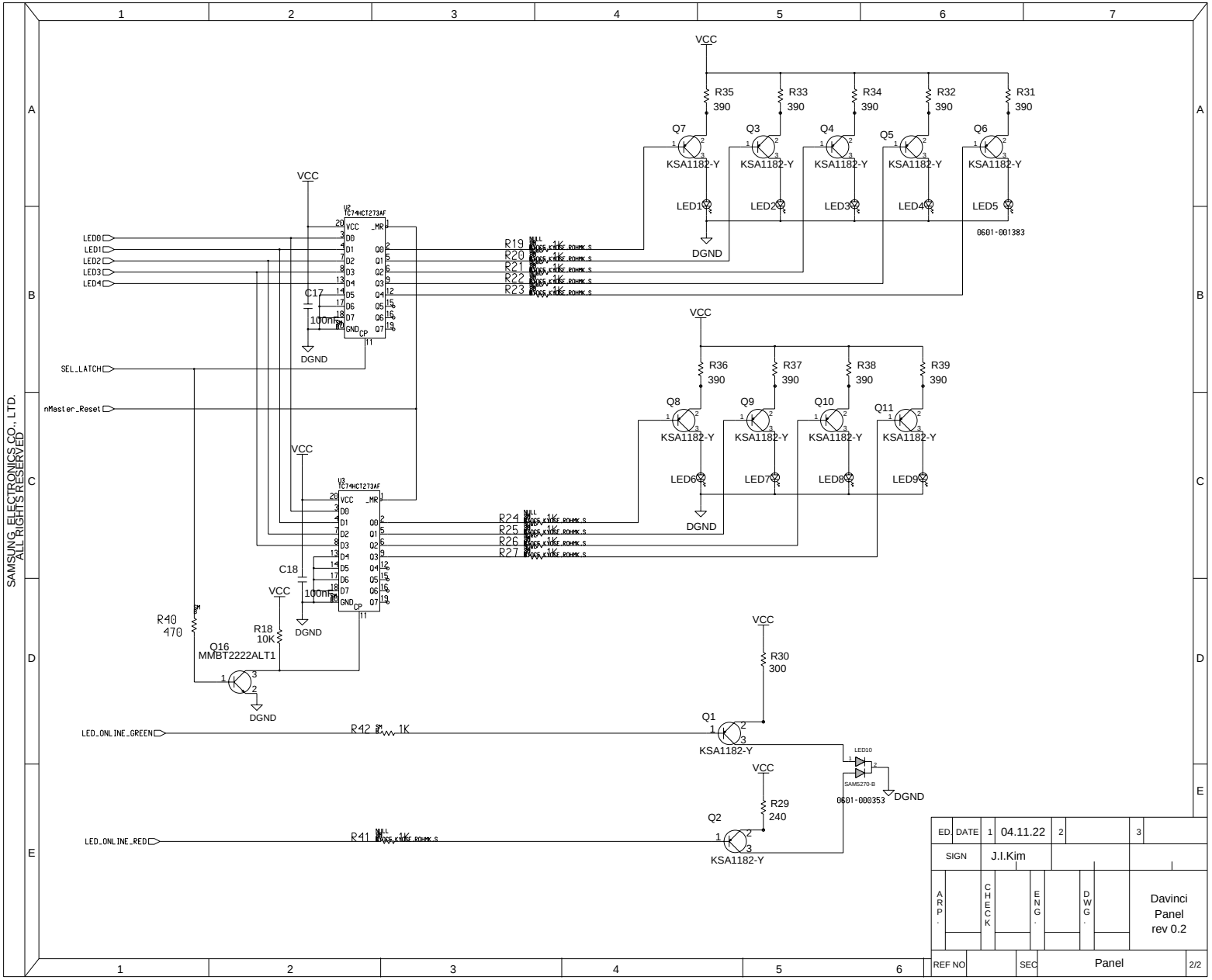
ED.	DATE	1	05.04.01	SAMSUNG ELECTRONICS
SIGN				
		ARP.	S.S.PARK	TITLE: CLP-600 daVinci Main GDI Rev 0.4
		CHK:	C.B LEE	Size: A3
		ENG.	C.B LEE	
		DRW.	C.B LEE	
REV:	0.1	Drawing Number:		INDEX 1/21

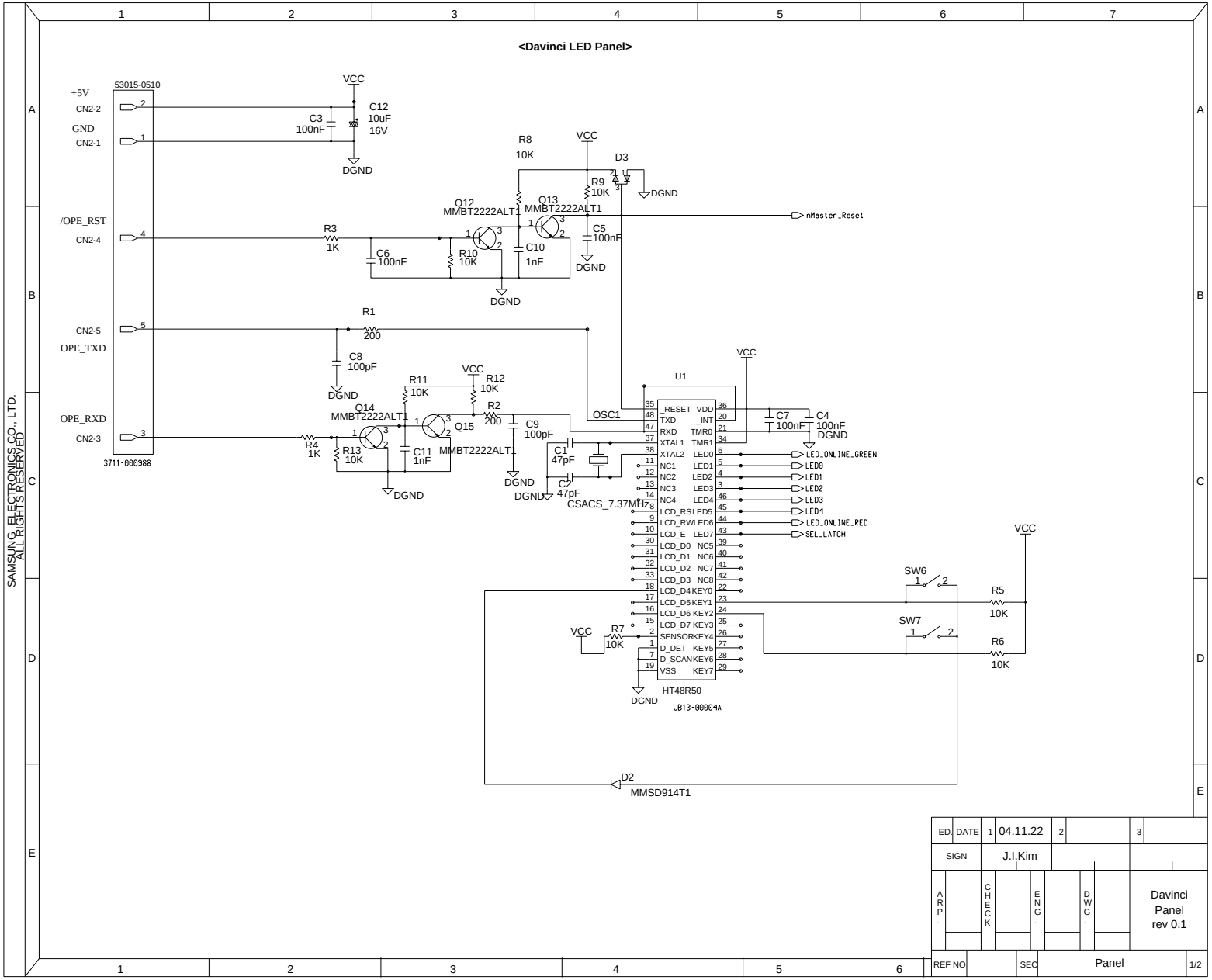




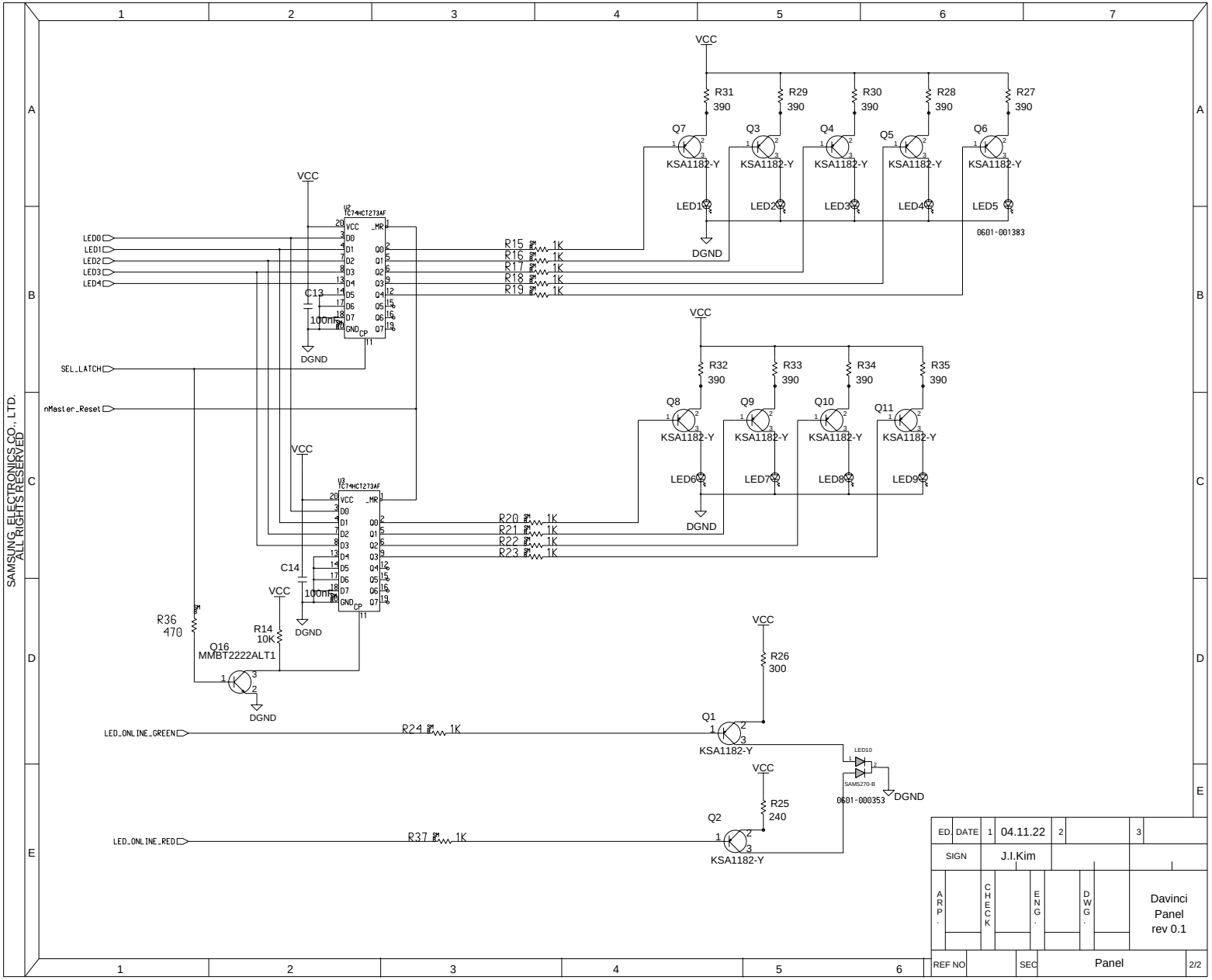


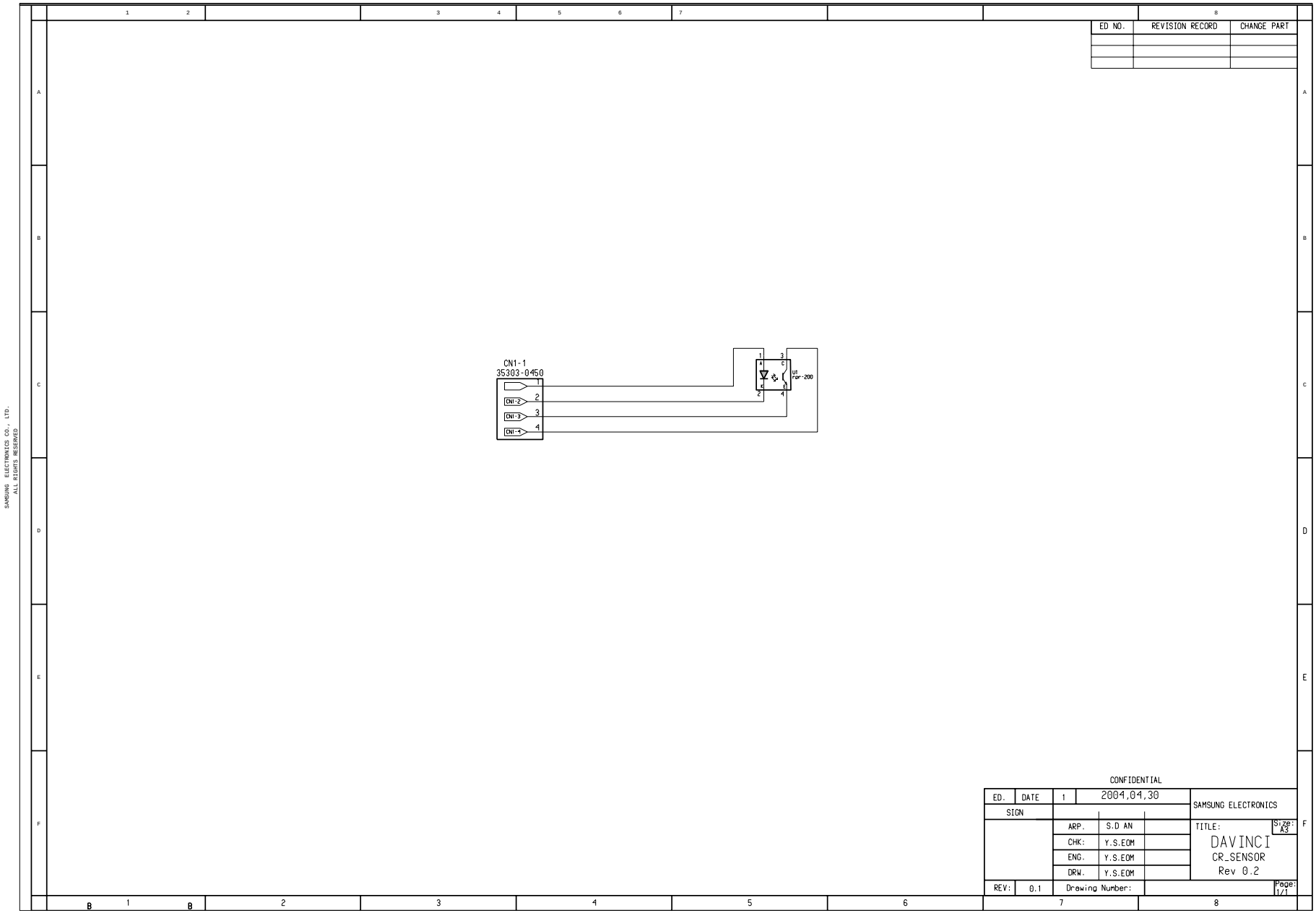


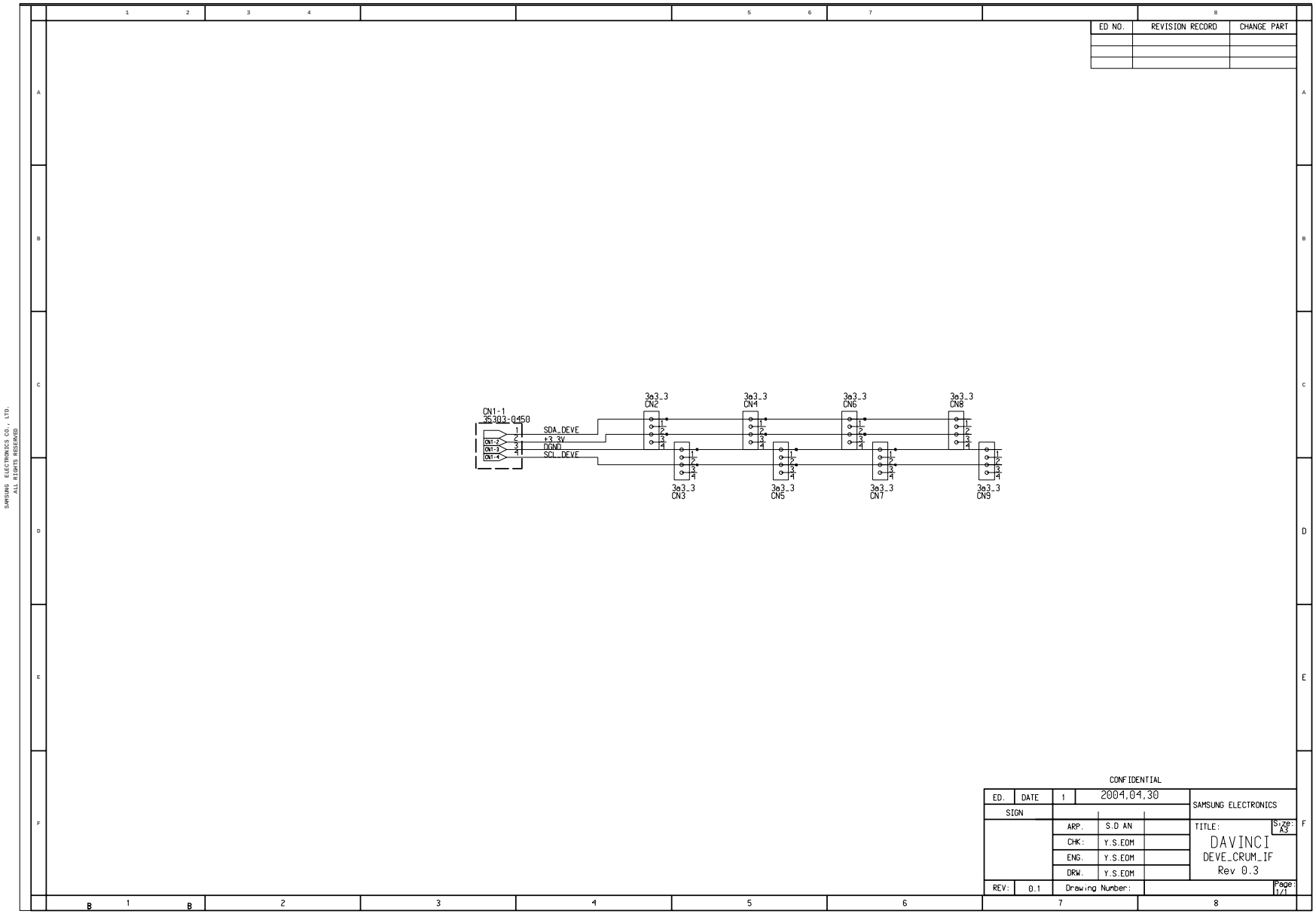




LED Panel(2/2)



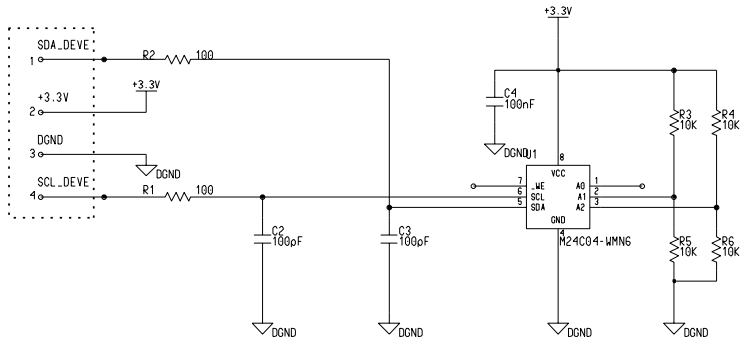




ED NO.	REVISION RECORD	CHANGE PART

*Crum Mapping Address

A2	A1	A0	CRUM	R3	R4	R5	R6
0	0	NC	Yellow Cartridge			○	○
0	1	NC	Magenta Cartridge	○			○
1	0	NC	Cyan Cartridge		○	○	
1	1	NC	Black Cartridge	○	○		



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ED.	DATE	1	2004.04.30	SAMSUNG ELECTRONICS
SIGN				
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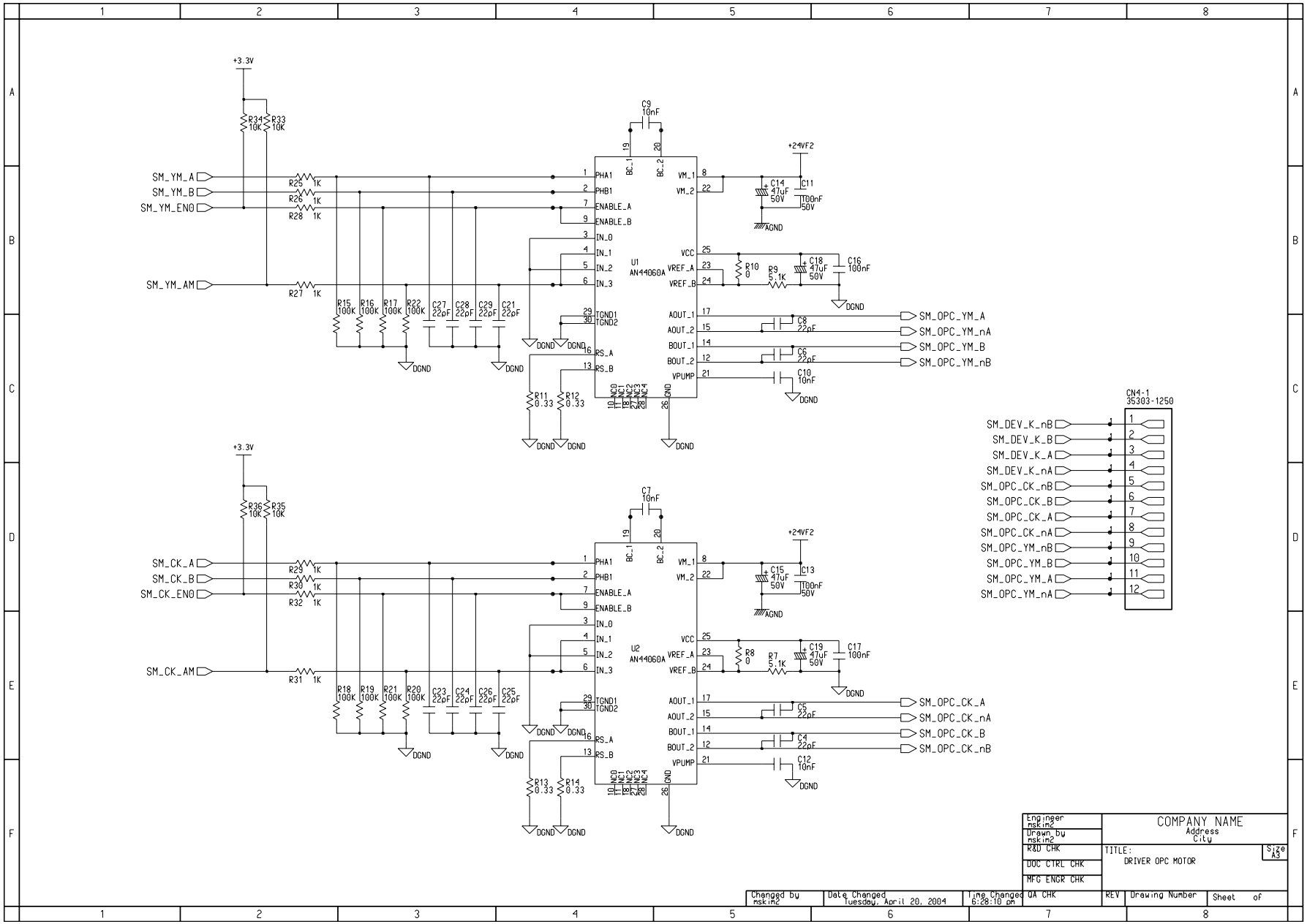
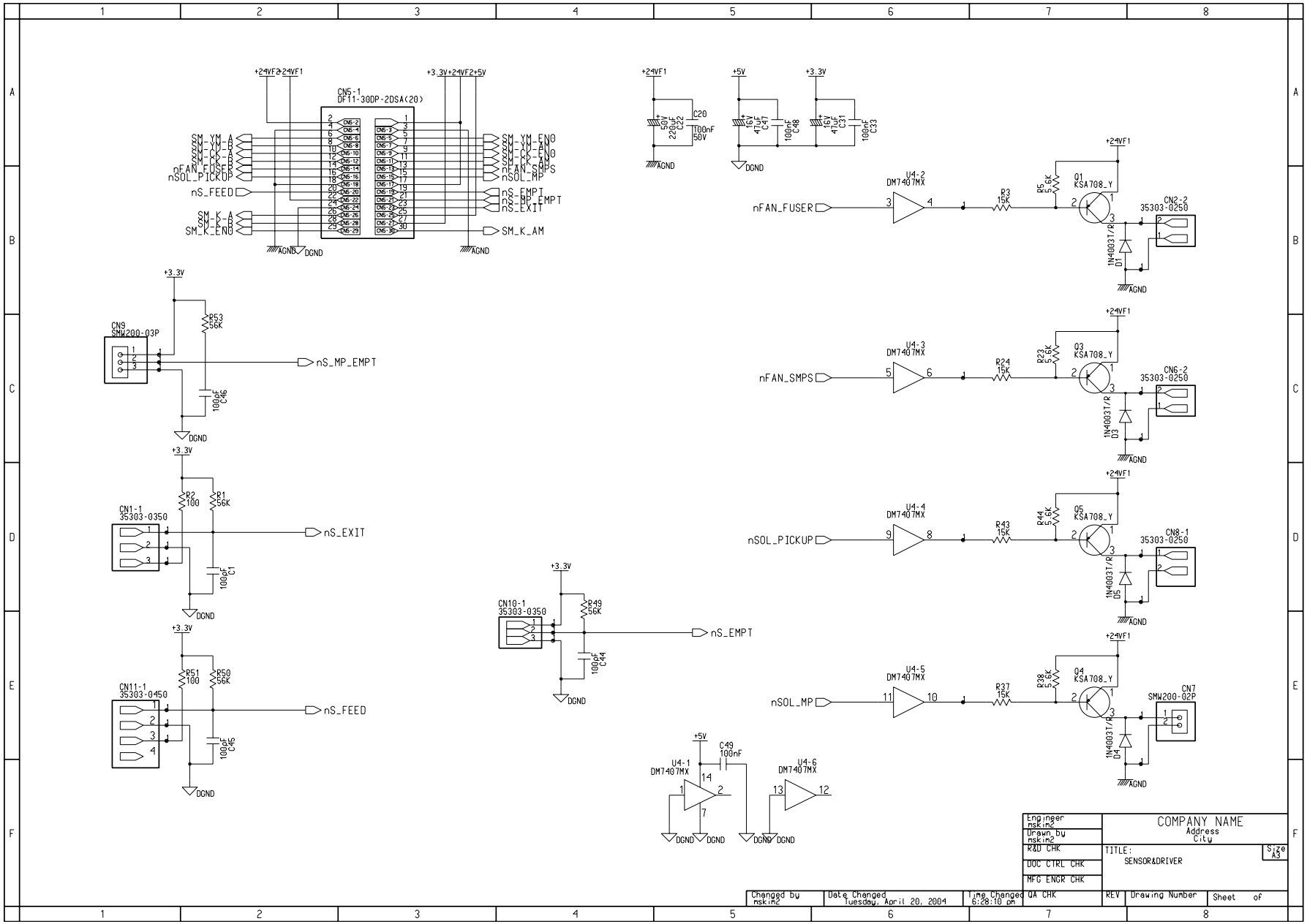
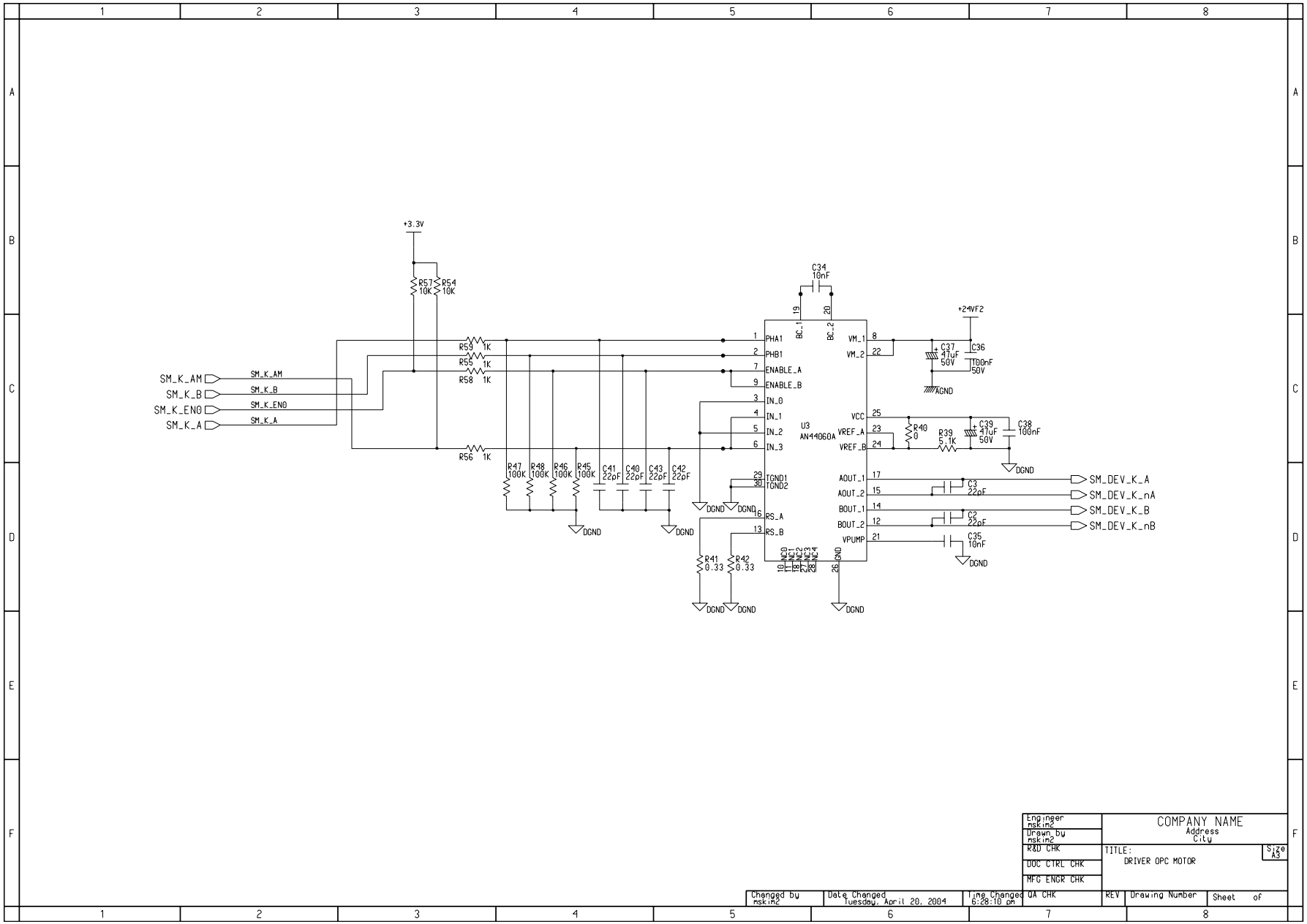
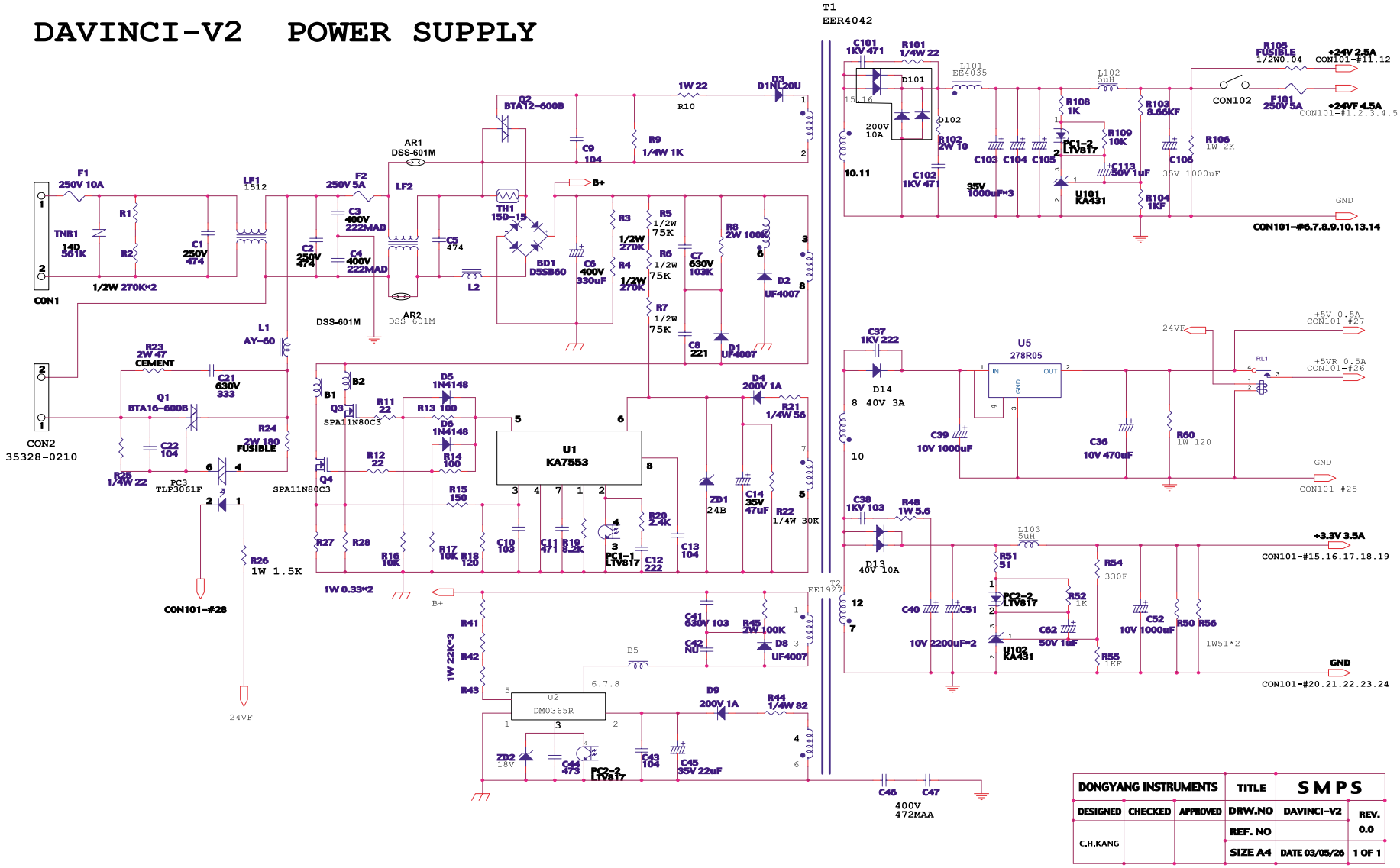
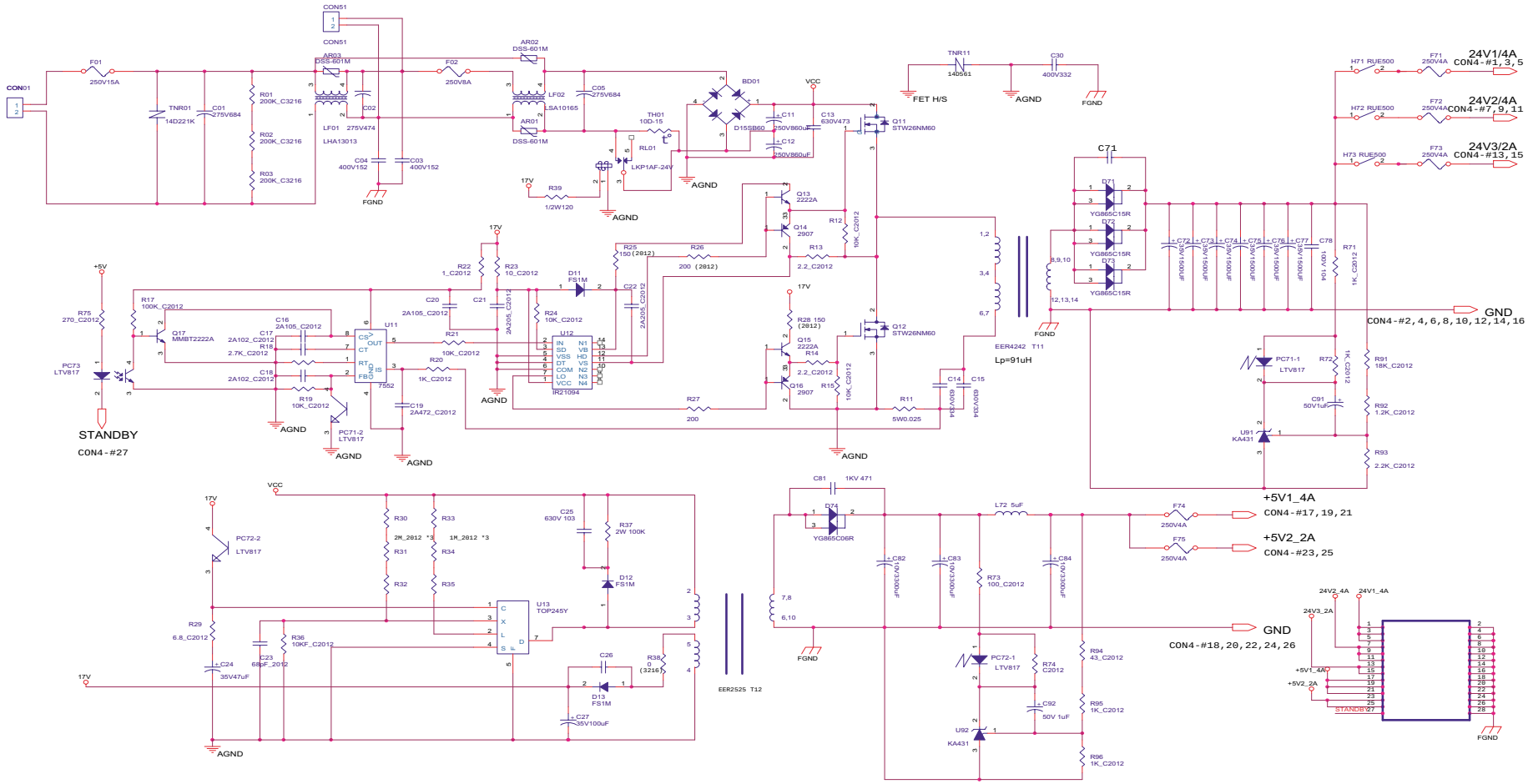
		CHK:	Y.S.EOM	Size: A3
		ENG.	Y.S.EOM	
		DRW.	Y.S.EOM	
REV:	0.1	Drawing Number:		Page: 1/1

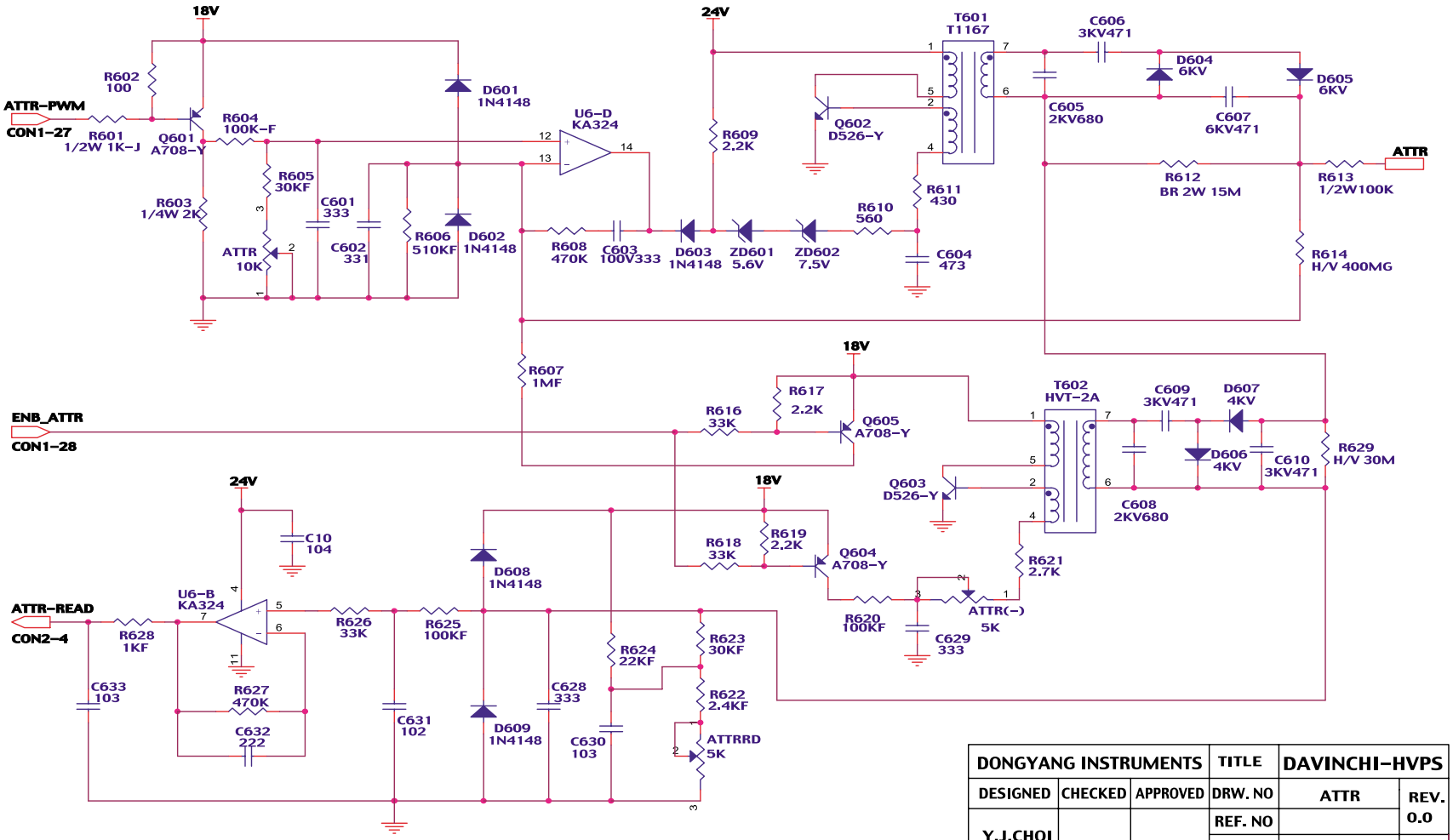




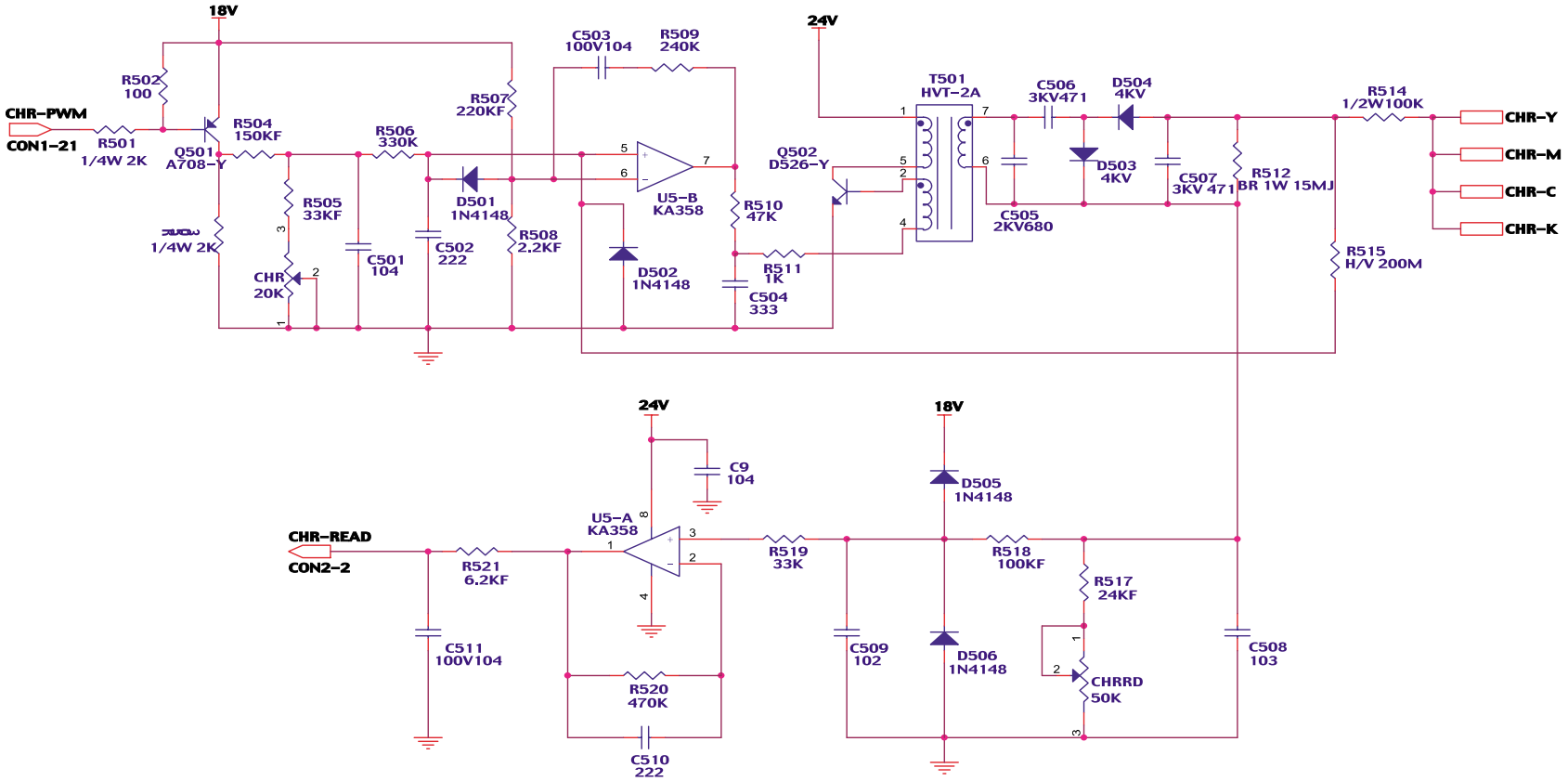








DONGYANG INSTRUMENTS			TITLE	DAVINCHI-HVPS	
DESIGNED	CHECKED	APPROVED	DRW. NO	ATTR	REV. 0.0
Y,J,CHOI			REF. NO		
			SIZE A4	DATE 04/05/14	1 OF 1



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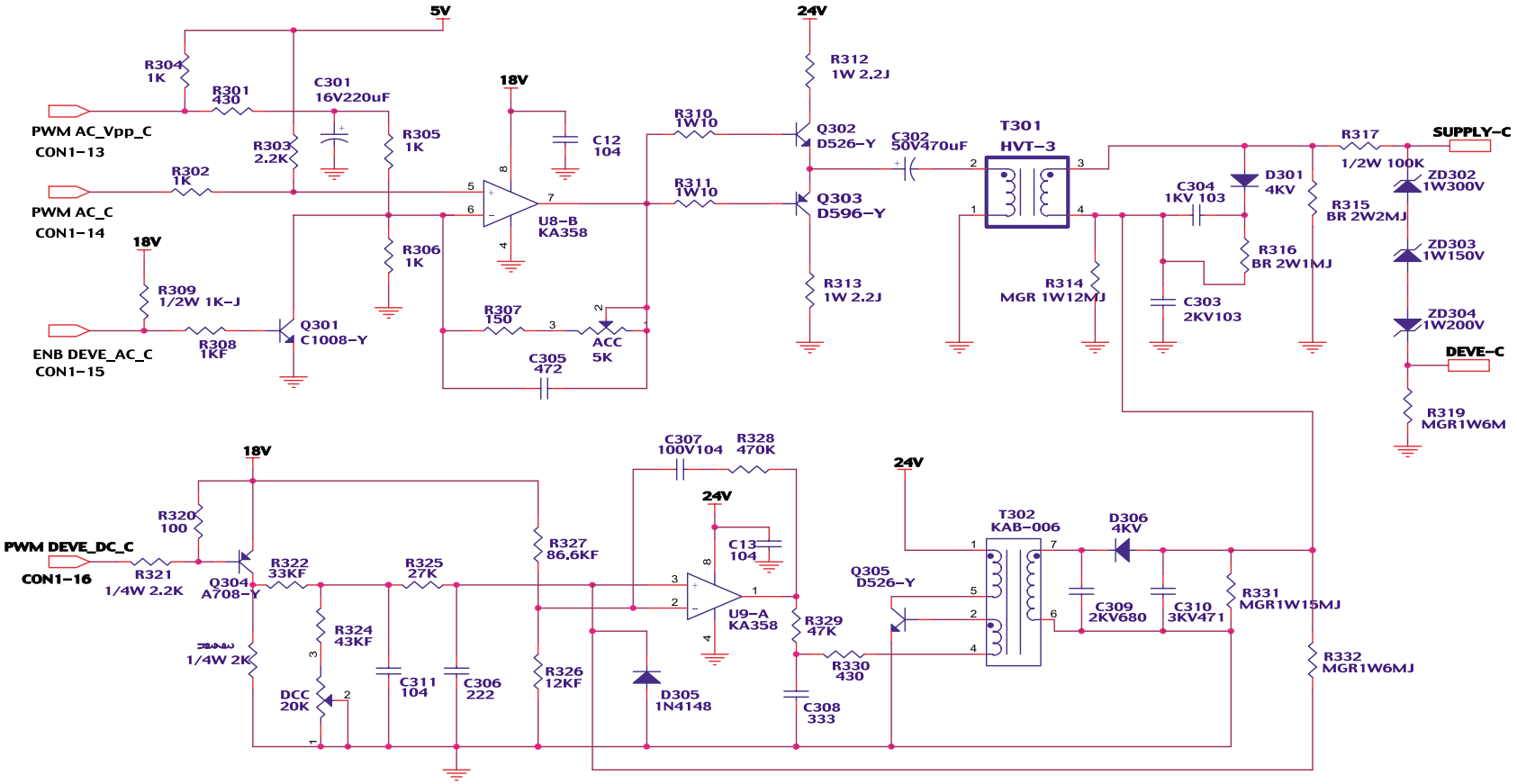
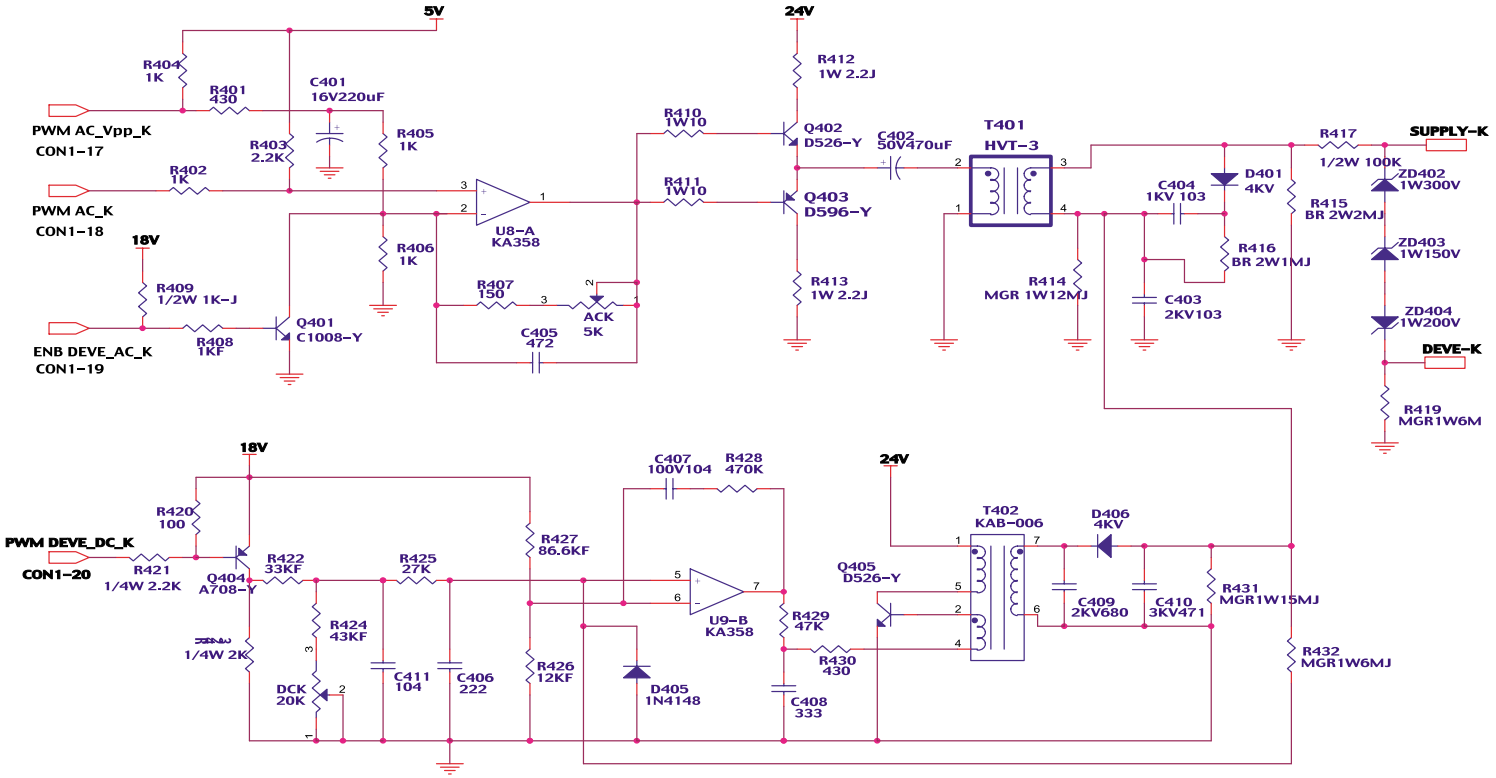
Y,J,CHOI			REF. NO		
			SIZE A4	DATE 04/05/14	1 OF 1



DONGYANG INSTRUMENTS			TITLE	DAVINCHI-HVPS	
DESIGNED	CHECKED	APPROVED	DRW. NO	SUPPLY-C	REV. 0.0
Y,J,CHOI			REF. NO		
			SIZE A4	DATE 04/05/14	3 OF 4



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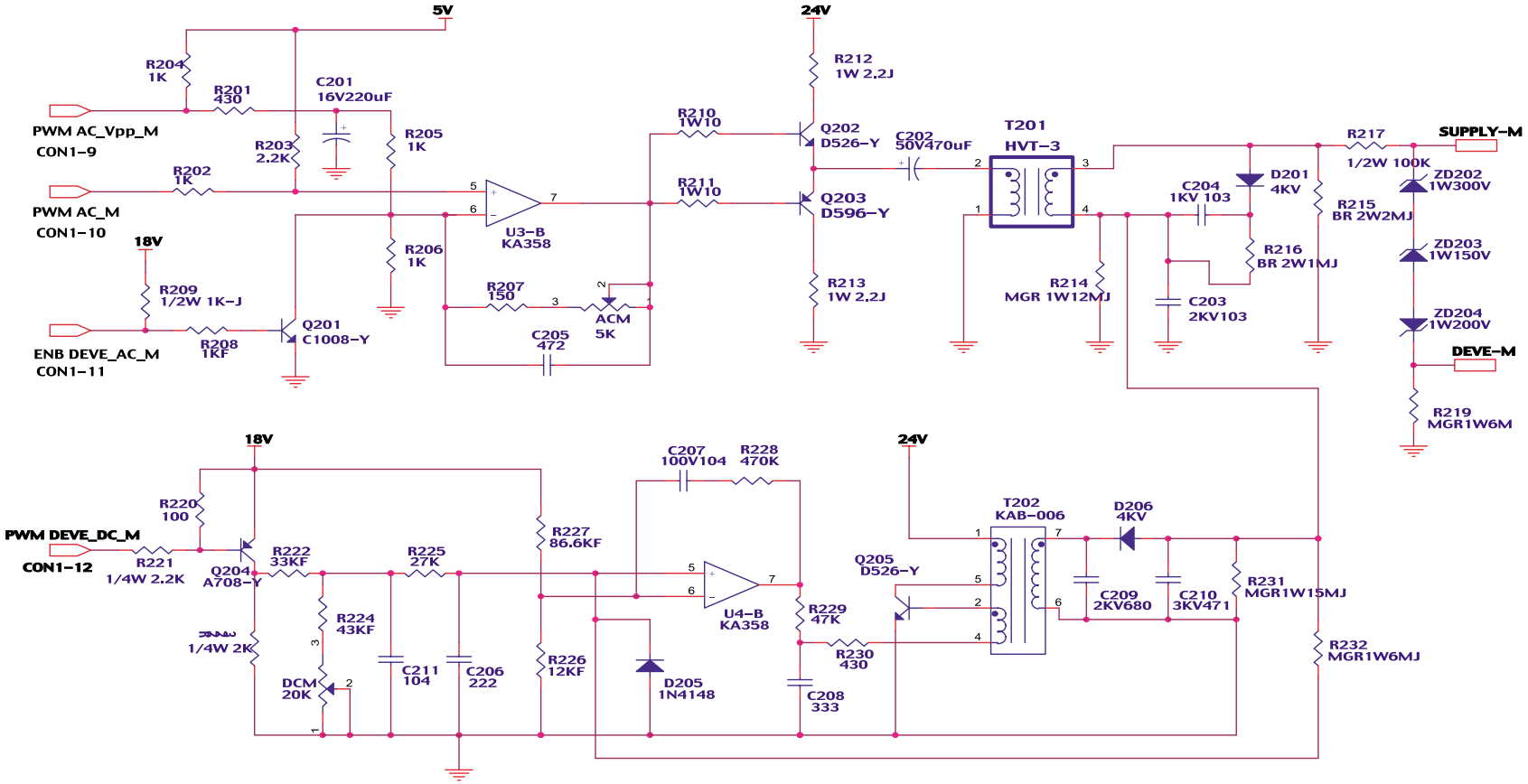

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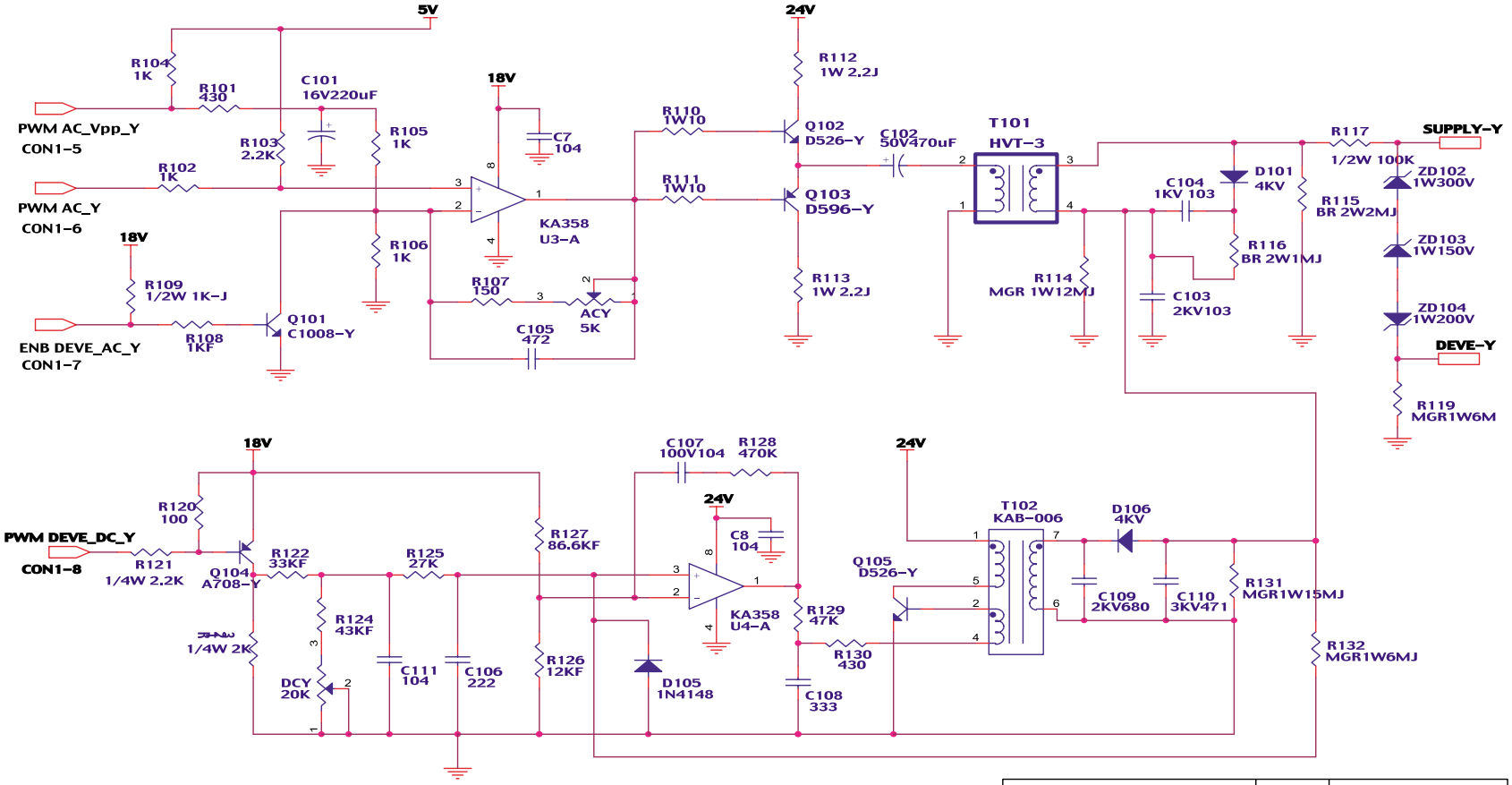
Y,J,CHOI			REF. NO		
			SIZE A4	DATE 04/05/14	2 OF 4



DONGYANG INSTRUMENTS			TITLE	DAVINCHI-HVPS	
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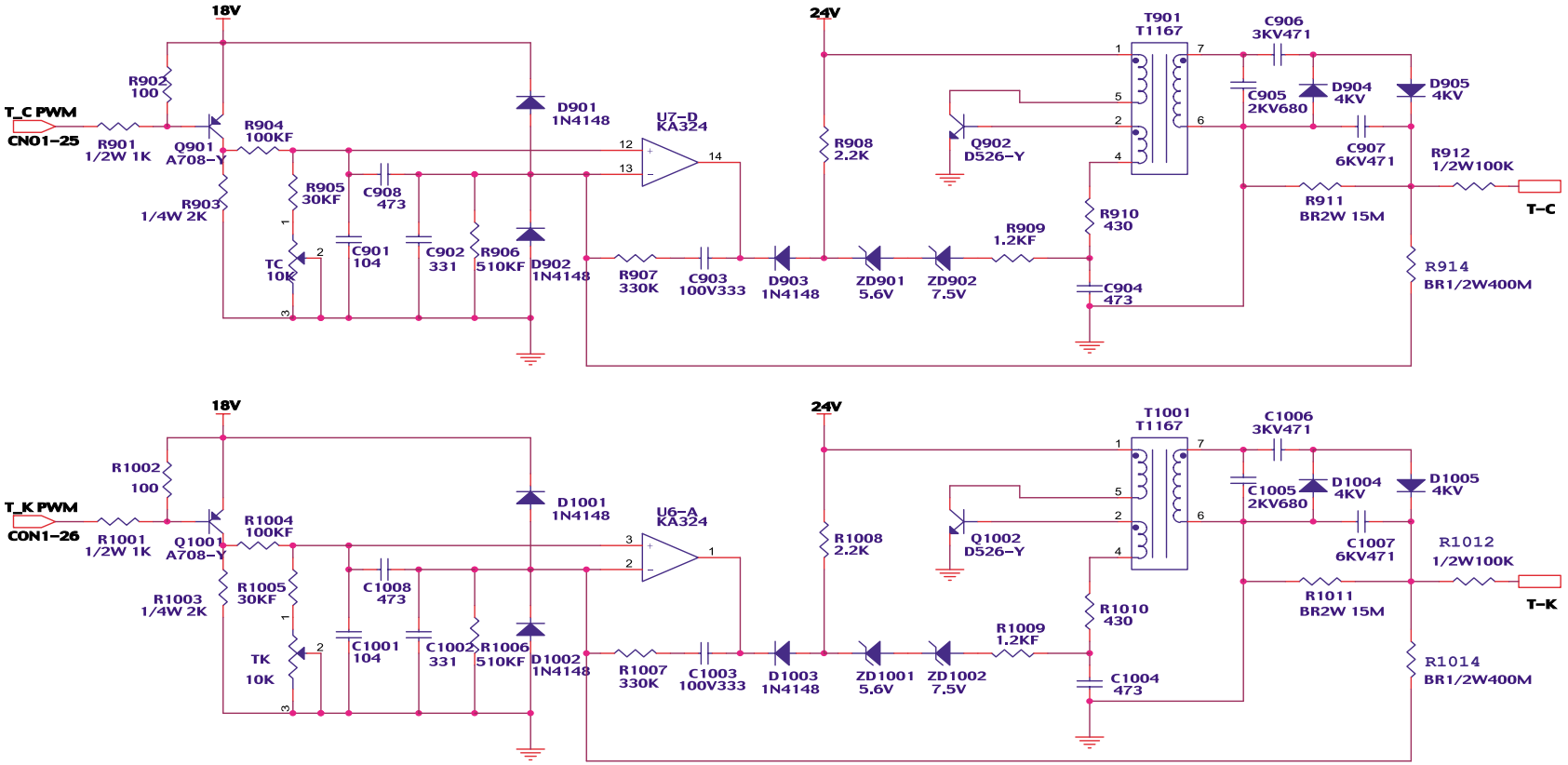
Y,J,CHOI			REF. NO		
			SIZE A4	DATE 04/05/14	1 OF 4



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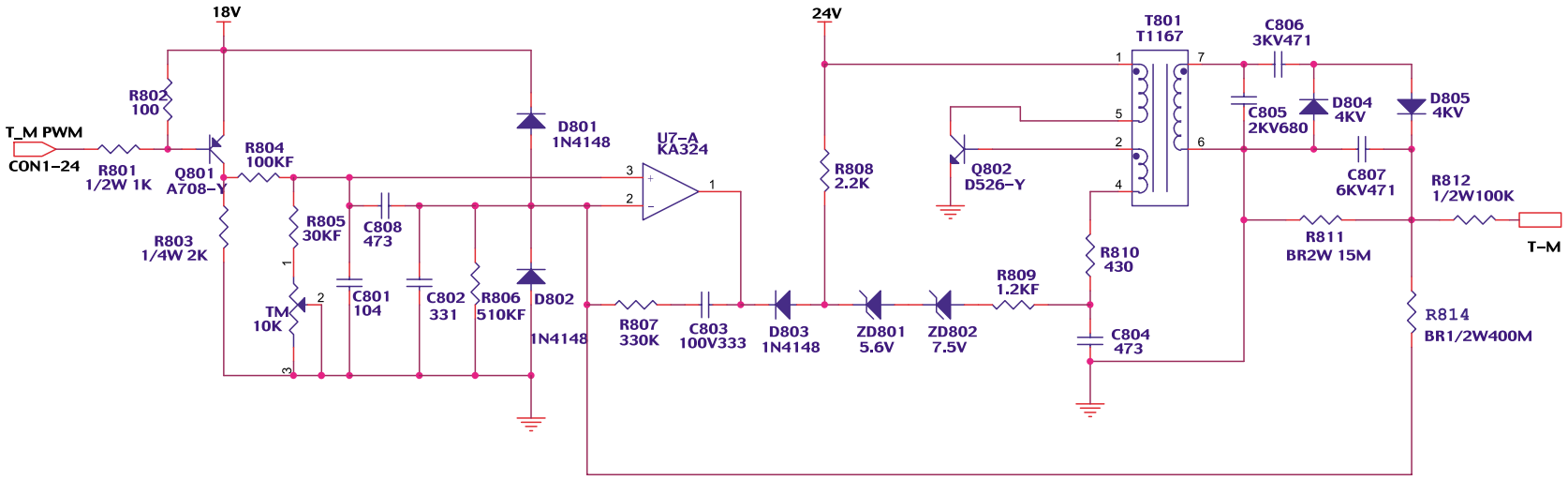
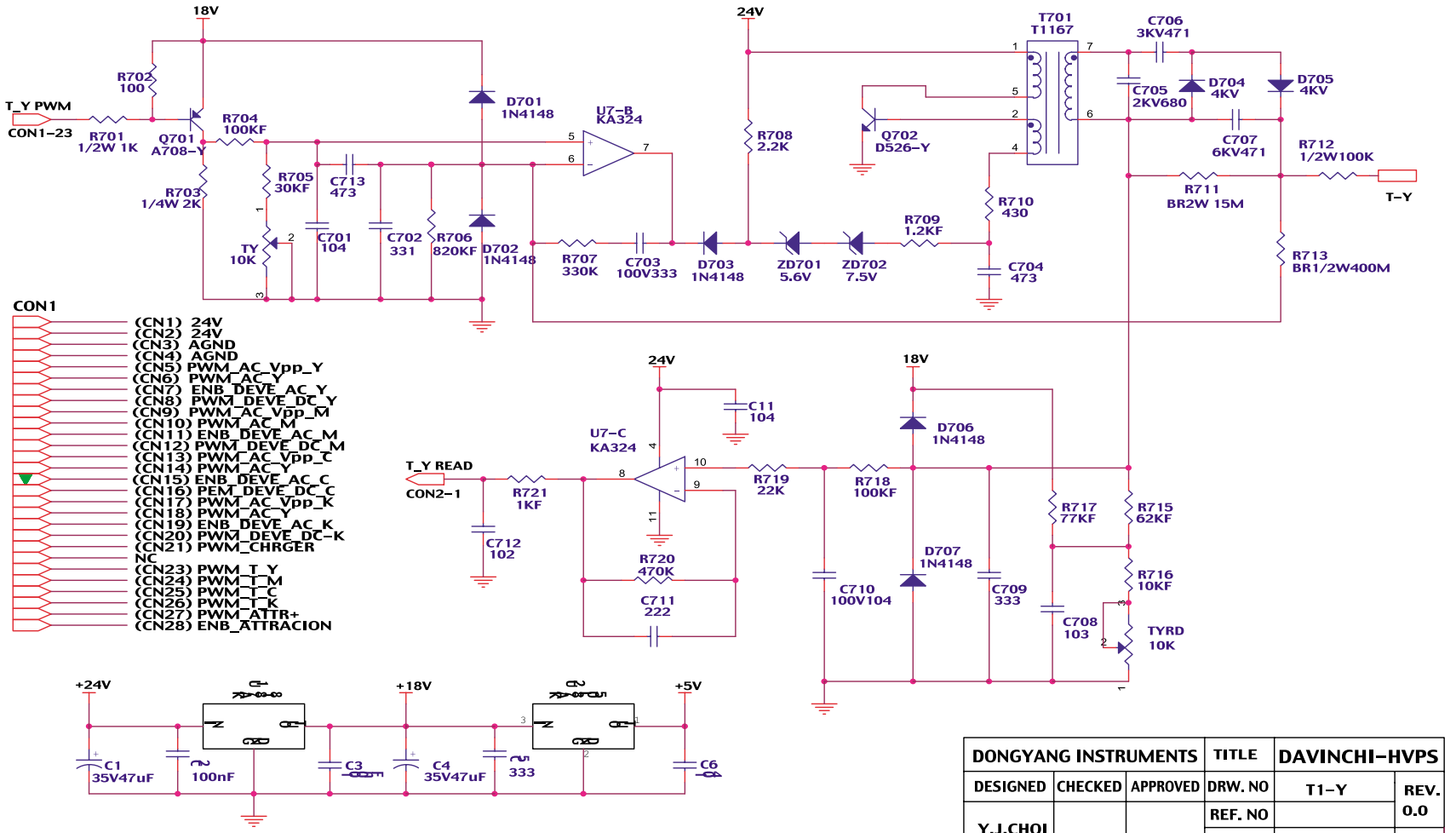
DESIGNED	CHECKED	APPROVED	DRW. NO	T1-C , K	REV. 0.0
Y,J,CHOI			REF. NO		
			SIZE A4	DATE 04/05/14	3,4 OF 4



CON2

(CN1) A_READ_T_Y
(CN2) A_READ_CHARGER
(CN3) DGND
(CN4) A_READ_ATTR
(CN5) DGND
(CN6) DGND
(CN7) +5V
(CN8) +5V

DONGYANG INSTRUMENTS			TITLE	DAVINCHI-HVPS	
DESIGNED	CHECKED	APPROVED	DRW. NO	T1-M	REV. 0.0
Y,J,CHOI			REF. NO		
			SIZE A4	DATE 04/05/14	2 OF 4



DONGYANG INSTRUMENTS			TITLE	DAVINCHI-HVPS	
DESIGNED	CHECKED	APPROVED	DRW. NO	T1-Y	REV. 0.0
Y,J,CHOI			REF. NO		
			SIZE A4	DATE 04/05/14	1 OF 4

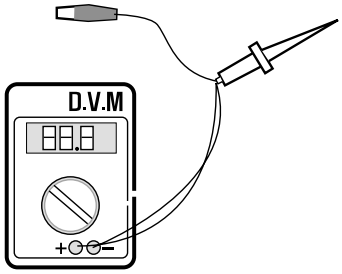
12. Reference Information

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

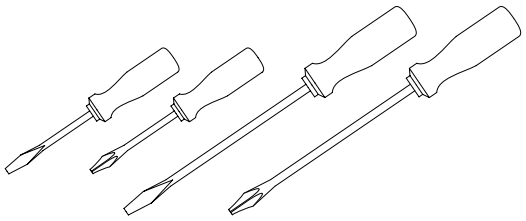
12.1 Tools for Troubleshooting

The following tools are recommended safe and easy troubleshooting as described in this service manual.

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



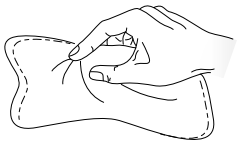
- **Driver**
  Standard : "-" type, "+" type (M3 long, M3 short, M2 long, M2 short).



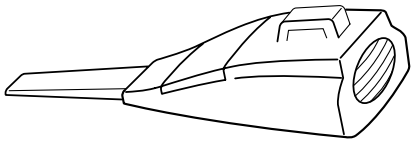
- **Tweezers**
  Standard : For general home use, small type.

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

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

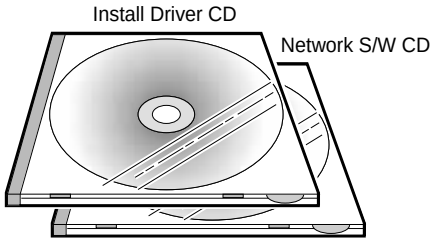


- **Vacuum Cleaner**



- **Brush**

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



12.2 Acronyms and Abbreviations

The table below explains the abbreviations and acronyms used in this service manual. Where abbreviations or acronyms are used in the text please refer to this table.

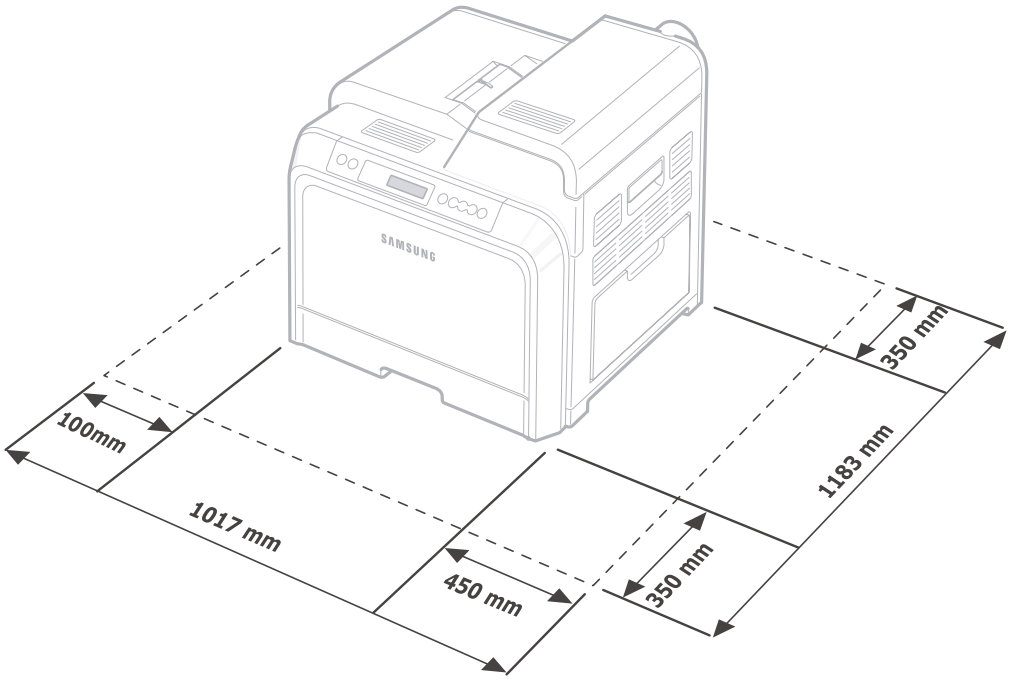
ADC	Analog-to-Digital-Conversion
AP	Access Point
AC	Alternating Current
ASIC Circuit	Application Specific Integrated
ASSY	Assembly
BIOS	Basic Input Output System
BLDC Motor	Brushless DC Motor
CLBP	Color Laser Beam Printer
CMOS	Complementary Metal Oxide Semiconductor
CMYK	Cyan, Magenta, Yellow, Black
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'ty	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 Alliance	Wireless Ethernet Compatibility
Wi-Fi	Wireless Fidelity

12.3 Select a location for the printer

- Leave 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



12.4 A4 ISO 19752 Standard Pattern

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23 January 2004

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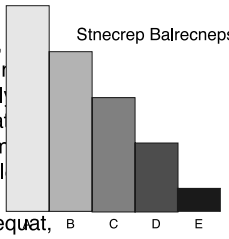

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12.5 Wireless LAN

• This product can be used with a wireless LAN, (this is an option.)
  - The wireless LAN function uses radio technology, instead of using LAN cable, to connect to an access point for printing.
  - For a wireless LAN connection in Infrastructure mode an AP is needed, (purchased separately)
  - For a wireless LAN connection in Ad-Hoc mode an appropriate Wireless I/F card is required fitted to a computer, (purchased separately)
  - It is possible to use a wireless LAN connection with wired LAN.
  - If an AP is installed in an office or at home, the wireless LAN function can be simply configured and used.

• Types of desk top PC (or Lap top) that uses the wireless LAN.

Division	Basic type	Recommend type
CPU	Over PENTIUM 233M	PENTIUM 300MHz
MEMORY	Over 64MB	Over 128MB
VIDEO CARD	Over 800X600	Over 1024X768
OS	Over WINDOWS 98	Over WINDOWS ME
INTERFACE CARD	A product has a certificated mark of Wi-Fi™	

• About the certificated mark of Wi-Fi™

- Wi-Fi™ is a registered trademark of the WECA (Wireless Ethernet Compatibility Alliance). Over 50 wireless LAN companies are member of this organisation. Most of the main wireless networking companies are attending including such companies as Lucent Technologies, Cisco, Intel/Symbol, 3Com, Enterasys (Cabletron), Compaq, IBM, Nokia, Dell, Philips, Samsung Electronics, Sony, Intersil, etc.. This mark certifies mutual compatibility amongst the product of these companies. Wi-Fi™ (IEEE 802.1) is certified as a standard of the wireless LAN market.