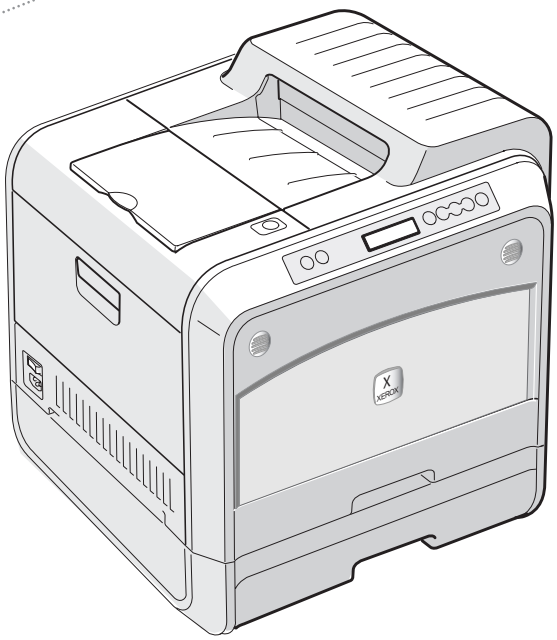
THE DOCUMENT COMPANY
XEROX®

Phaser® 6100
Color Laser Printer

Service Manual



Phaser 6100 Color Laser Printer

Service Manual

Warning

The following servicing instructions are for use by qualified service personnel only. To avoid personal injury, do not perform any servicing other than that contained in the operating instructions, unless you are qualified to do so.

First Printing: February 2003

071-0872-00

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1 Precautions

1. Precautions

In order to prevent accidents and damage to the printer, please read all the precautions listed in this section carefully before servicing the printer.

1.1 Service Terms

1.1.1 Manual Terms

Various terms are used throughout this manual to either provide additional information on a specific topic or to warn of possible danger present during a procedure or action. Be aware of all symbols and terms when they are used, and always read NOTE, CAUTION, and WARNING statements.

Note

A note indicates an operating or maintenance procedure, practice or condition that is neccessary to efficiently accomplish a task.
A note can provide additional information related to a specific subject or add a comment on the results achieved through a previous action.

Caution

A caution indicates an operating or maintenance procedure, practice or condition that, if not strictly observed, results in damage to, or destruction of, equipment.

Warning

A warning indicates an operating or maintenance procedure, practice or condition that, if not strictly observed, results in injury or loss of life.

1.1.2 Product Terms

Caution: A personal injury hazard exists that may not be apparent. For example, a panel may cover the hazardous area.

1.2 Symbols Marked on the Product

DANGER high voltage.

Protective ground (earth) symbol.

Hot surface on or in the printer. Use caution to avoid personal injury.

The surface is hot while the printer is running. After turning off the power, wait 30 minutes.

Avoid pinching fingers in the printer. Use caution to avoid personal injury.

Use caution (or draws attention to a particular component). Refer to the manual(s) for information.

1.3 Power Safety Precautions

1.3.1 Power Source

For 110 VAC printers, do not apply more than 140 volts RMS between the supply conductors or between either supply conductor and ground. Use only the specified power cord and connector. For 220 VAC printers, do not apply more than 260 volts RMS between the supply conductors or between either supply conductor and ground. Use only the specified power cord. This manual assumes that the reader is a qualified service technician.

Plug the power cord, with a grounding prong, into a grounded AC outlet only. If necessary, contact a licensed electrician to install a properly grounded outlet. If the product loses its ground connection, contact with conductive parts may cause an electrical shock.

1.3.2 Disconnecting Power

Turning the power off using the On/Off switch does not completely de-engergize the printer. You must also disconnect the printer power cord from the AC outlet. Position the power cord so that it is easily accessible during servicing so that you may power down the printer during an emergency. Disconnect the power plug by pulling the plug, not the cord.

Disconnect the power cord in the following cases:

- if the power cord or plug is frayed or otherwise damaged,
- if any liquid or foreign material is spilled into the case,
- if the printer is exposed to any excess moisture,
- if the printer is dropped or damaged,
- if you suspect that the product needs servicing or repair,
- whenever you clean the product.

1.4 Electrostatic Discharge (ESD) Precautions

Some semiconductor components , and the respective sub-assemblies that contain them, are vulnerable to damage by Electrostatic discharge (ESD). These components include Integrated Circuits (ICs), Large-Scale Integrated circuits (LSIs), field-effect transistors and other semiconductor chip components. The following techniques will reduce the occurrence of component damage caused by static electricity.

Be sure the power is off to the chassis or circuit board, and observe all other safety precautions.

- Immediately before handling any semiconductor components assemblies, drain the electrostatic charge from your body. This can be accomplished by touching an earth ground source or by wearing a wrist strap device connected to an earth ground source. Wearing a wrist strap will also prevent accumulation of additional bodily static charges. Be sure to remove the wrist strap before applying power to the unit under test to avoid potential shock.
- After removing a static sensitive assembly from its anti-static bag, place it on a grounded conductive surface. If the anti-static bag is conductive, you may ground the bag and use it as a conductive surface.
- Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage some devices.
- Do not remove a replacement component or electrical sub-assembly from its protective package until you are ready to install it.
- Immediately before removing the protective material from the leads of a replacement device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
- Minimize body motions when handling unpackaged replacement devices. Motion such as your clothes brushing together, or lifting a foot from a carpeted floor can generate enough static electricity to damage an electro-statically sensitive device
- Handle IC’s and EPROM’s carefully to avoid bending pins.
- Pay attention to the direction of parts when mounting or inserting them on Printed Circuit Boards (PCB’s).

1.5Service Safety Summary

1.5.1 General Guidelines

For qualified service personnel only:

Refer also to the preceding Power Safety Precautions.

Avoid servicing alone: Do not perform internal service or adjustment of this product unless another person capable of rendering first aid or resuscitation is present.

Use care when servicing with power: Dangerous voltages may exist at several points in this product. To avoid personal injury, do not touch exposed connections and components while power is on. Disconnect power before removing the power supply shield or replacing components.

Do not wear jewelry: Remove jewelry prior to servicing. Rings, necklaces and other metallic objects could come into contact with dangerous voltages and currents.

Power source: This product is intended to operate from a power source that will not apply more then 260 volts rms for a 220 volt AC outlet or 140 volts rms for a 110 volt AC outlet between the supply conductors or between either supply conductor and ground. A protective ground connection by way of the grounding conductor in the power cord is essential for safe operation.

1.5.2 Warning Labels

Read and obey all posted warning labels. Throughout the printer, warning labels are displayed on potentially dangerous components. As you service the printer, check to make certain that all warning labels remain in place.

1.5.3 Safety Interlocks

Make sure all covers and the printer's front panel are in place and all interlock switches are functioning correctly after you have completed a printer service call. If you bypass an interlock switch during a service call, use extreme caution when working on or around the printer.

CLASS 1 LASER PRODUCT

The Phaser® 6100 Color Laser Printer is certified to comply with Laser Product Performance Standards set by the U.S. Department of Health and Human Services as a Class 1 Laser Product. This means that this is a class of laser product that does not emit hazardous laser radiation; this is possible only because the laser beam is totally enclosed during all modes of customer operation. When servicing the printer or laser unit, follow the procedures specified in this manual and there will be no hazards from the laser.

1.5.4 Servicing Electrical Components

Before starting any service procedure, switch off the printer power and unplug the power cord from the wall outlet. If you must service the printer with power applied, be aware of the potential for electrical shock.

Warning

Turning the power off by using the On/Off switch does not completely de-energize the printer. You must also disconnect the printer power cord from the AC outlet. Position the power cord so that it is easily accessible during servicing.

Warning

Do not touch any electrical component unless you are instructed to do so by a service procedure.

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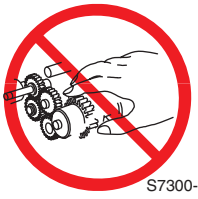
1.5.5 Servicing Mechanical Components

When servicing mechanical components within the printer, manually rotate drive assemblies, rollers, and gears.

Warning

Do not try to manually rotate or manually stop the drive assemblies while any printer motor is running.



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1.5.6 Servicing Fuser Components

Warning

This printer uses heat to fuse the toner image to media. The fuser is VERY HOT. Turn the printer power off, open Door B, and wait at least 5 minutes for the Fuser to cool before you attempt to service the Fuser Assembly or adjacent components.

1.6 Regulatory Specifications

1.6.1 Federal Communications Compliance

The equipment described in this manual generates and uses radio frequency energy. If it is not installed properly in strict accordance with Xerox instructions, it may cause interference with radio and television reception or may not function properly due to interference from another device. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiver (device being interfered with).
- Increase the separation between the printer and the receiver.
- Connect the printer into an outlet on a circuit different from that which the receiver is connected.
- Route the interface cables on the printer away from the receiver
- Consult the dealer, Xerox service, or an experienced radio/television technician for help.

Changes or modifications not expressly approved by Xerox can affect the emission and immunity compliance and could void the user's authority to operate this product. To ensure compliance, use shielded interface cables. A shielded parallel cable can be purchased directly from Xerox at www.xerox.com/office/6100supplies.

Xerox has tested this product to internationally accepted electromagnetic emission and immunity standards. These standards are designed to mitigate interference caused or received by this product in a normal office environment. This product is also suitable for use in a residential environment based on the levels tested.

In the United States this product complies with the requirements of an unintentional radiator in part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference; (2) this device must accept any interference received, including interference that may cause undesired operation.

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications, ICES-003.

Le présent appareil numérique n'émet pas de bruits radioélectrique dépassant les limits applicables aux appareils numériques de la classe B prescrites dans le Réglement sur le brouillage radioélectrique édicté par le ministere des Communications du Canada, NMB-003.

1.6.2 Declaration of Conformity

Xerox Corporation, declares, under our sole responsibility that the printer to which this declaration relates, is in conformity with the standards and other normative documents:

This product, if used properly in accordance with the user's instructions is neither dangerous for the consumer nor for the environment. A signed copy of the Declaration of Conformity for this product can be obtained from Xerox.

2 Reference Information

2. Reference Information

This section contains a tools list, list of abbreviations used in this manual, and a clearance required specification when installing the Phaser 6100 printer.

2.1 Tools for Troubleshooting the Printer

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

- DVM (Digital Voltage Meter) standard: indicating more than 3 digits
- Screwdrivers:
- Tweezers
- Cotton swabs
- Cleaning equipment: Standard: dry, lint-free cloth and/ or mild detergent
- Toner Type II Vacuum
- Soft bristle brush
- Printer Installer and Utilities CD-ROM

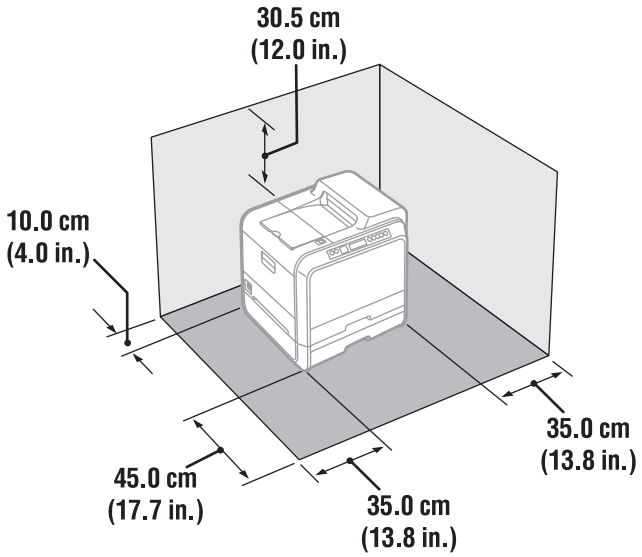
2.2 Acronyms and Abbreviations

	Definition		Definition
ADC	Analog-to-digital Conversion	F/W	Firmware
AP	Access Point	FCF/FCT	Tray 1 or First Cassette Feeder
AC	Alternating Current	FISO	Front In, Side Out
ASIC	Circuit Application Specific Integrated	FPOT	First Print Out Time
Ass'y	Assembly	GDI	Windows Graphic Device Interface
BIOS	Basic Input Output Sytem	GIF	Graphic Interchange Format
BLDC	Motor Brushless Dc Motor	GND	Ground
CMOS	Complementary Metal Oxide Semiconductor	HBP	Host Based Printing
CMYK	Cyan, Magenta, Yellow, Black	HDD	Hard Disk Drive
CN	Connector	HTML	Hyper-text Transfer Protocol
CON	Connector	HV	High Voltage
CPU	Central Processing Unit	HVPS	High Voltage Power Supply
CTD Sensor	Color Toner Density Sensor	I/F	Interface
dB	Decibal	I/O	Input/output
dBA	A Weighted Decibel	lb	Pound(S)
dBm	Decibel Milliwatt	IC	Integrated Circuit
DC	Direct Current	ICC	International Color Consortium
DCU	Diagnostic Control Unit	IDE	Intelligent/integrated Drive Electronics
DIMM	Dual In-line Memory Module	IEEE	Institute Of Electrical And Electronics Engineers, Inc.
DPI	Pots Per Inch	IOT	Image Output Terminal (Color Printer, Copier)
DRAM	Dynamic Random Access Memory	IPA	Isopropyl Alcohol
DVM	Digital Voltmeter	IPC	Inter Process Communication
ECP	Enhanced Capability Port	IPM	Images Per Minute
ECU	Engine Control Unit	ITB	Image Transfer Belt (Transfer Belt)
EEPROM	Electronically Erasable Programmable Read Only Memeory	LAN	Local Area Network
EMI	Electro Magnetic Interference	LBP	Laser Beam Printer
EP	Electro Photographic	LCD	Liquid Crystal Display
EPP	Enhanced Parallel Port	LED	Light Emitting Diode
		LSU	Laser Scanning Unit

	Definition		Definition
LVPS	Low Voltage Power Supply Or SMPS		
MB	Megabyte	Q'ty	Quantity
MHz	Megahertz	RAM	Random Access Memory
MPBF	Mean Prints Between Failure	ROM	Read Only Memory
MPF/MPT	Multi-purpose Tray	SCF/SCT	Tray 2 Or Second Cassette Feeder
NIC	Network Interface Card	SMPS	Switching Mode Power Supply or LVPS
NPC	Network Printer Card	SPGPm	Samsung Printer Graphic Processor
NVRAM	Non-volitale Random Access Memory	SPL	Samsung Printer Language
OPC	Organic Photo Conductor	Spool	Simultaneous Peripheral Operation Online
PBA	Print Board Assembly	SW	Switch
PCI	Peripheral Component Interconnect	SURF	Surface Rapid Fusing
PCL	Printer Command Language	Sync	Synchronous
PDF	Portable Document Format	T1	ITB or Transfer Belt Imaging
PDL	Page Description Language	T2	Transfer Roller Imaging
Ping	Packet Internet Or Inter-network Grouper	TRC	Toner Reproductive Curve
PPD	Postscript Printer Description	PnP	Universal Plug-n-play
PPM	Pages Per Minute	URL	Uniform Resource Locator
PS	Postscript	USB	Universal Serial Bus
PTL	Pre-transfer (Erase) Lamp		
PWM	Pulse Width Moduration		

2.3 Selecting a Location for the Printer

- Leave enough room to open the printer trays, covers, and allow for proper ventilation.
- Provide the proper environment
  - A sturdy, level surface
  - Away from the direct airflow of air conditioners, heaters, or ventilators.
  - Free from extreme fluctuations in temperature, sunlight, or humidity.
  - Clean, dry, and free from excessive dust.



2.4 Printer Serial Number Format

Changes to Xerox products are made to accommodate improved components as they become available. It is important when ordering parts to include the following information:

- Component's part number
- Product type or model number
- Serial number of the printer

Serial numbering. Particular fields in the serial number indicate the modification level of the printer, the date of its manufacture and the sequence number of the printer produced on that day.

The serial number is coded as follows:

- RENXXXXXX - 110V Printer
- REPXXXXXX - 220V Printer
- 1st three alpha = Product Code
- 1st numeric value = Revision of the Printer.
- Remaining 5 numeric values indicate the printers serial number.

BD serial number ranges - 30,000~ 59,999

DN serial number ranges - 60,000 and above

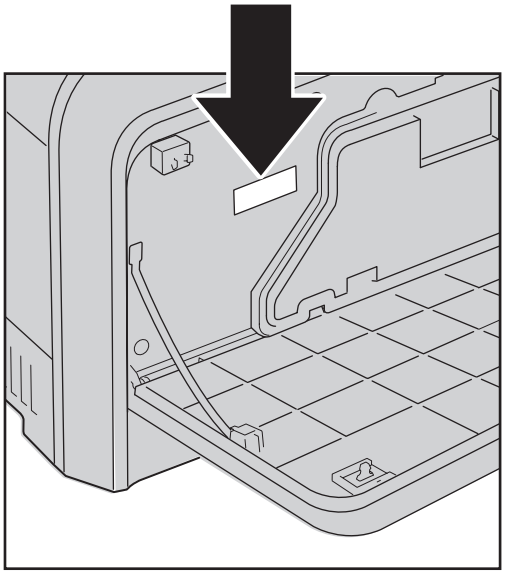
Serial Number Example:

REN130159...

REN: 110V printer

1: revision 1

30159: serial number, BD configuration



3 Specifications

The specifiations in this manual are correct at the time of printing. Product specifications are subject to change without notice.

3.1 General Specifications

Item	Description
Print Method	Non-impact electro-photography
Developing system	Non-magnetic, Mono-component, Non-contact method
Exposure System	Semiconductor laser diode beam scanning
Fuser (toner fixing)	Thermal rollers fusing with pressure (heat lamp: 800 watts)
Resolution	True: 600 x 600 dpi Addressable: 1200 x 1200 dpi
Warm-up time	110 and 220 volt units: 120 seconds (2 minutes from power on to ready)
FPOT	Mono: Less than 15 seconds (Ready to 1st page out) Color: Less than 24 seconds (Ready to 1st page out)
Feed Method	MPT (Multi-Purpose Tray), Tray 1 (FCT-First CassetteTray), Tray 2 (SCT-Second Cassette (Tray)
Dimensions	Width: 510 mm (20.07 in) Depth: 470 mm (18.5 in) Height: 405 mm (15.94 in)
Weight	Printer: 35 kg (77.2 lb) with consumables Optional Tray 2: 3 kg (6.6 lb) with packaging
Acoustic Noise	Standby: less than 41 dB Printing: less than 48 dB (color)
Power Saver Mode	Available, user settings enabled

3.2 Controller Specification

Item	Description
Processor	SPGPM (Samsung Printer Graphic Processor) Clock speed 120 MHz
Memory	The controller has 64 MB SDRAM and 4 MB flash ROM on Board. 1 DIMM expansion slot for SDRAM DIMM Package: DIMM; 100-pin Type: SDRAM DIMM Type: Unbuffered (SEC Custom, support other products within SEC) Error Checking: Non-parity Speed: 120/133 MHz Voltage: 3.3 V Samsung proprietary design 64/128MB (128 MB Not currently supported)
Emulation	SPL-Color
Operating Systems	Win 95/98/Me/NT/2000/XP, Mac OS 9 USB only, Linux
Interface	One parallel port IEEE 1284 -1994 compliant, (Bi-directional, ECP/Nibble/Byte Mode) One USB port USB v.2.0 compliant Color-coded to meet WHQL requirements, connector must be Pantone 426C One 10/100 BaseT NIC connector - The printer supports an internal Network Interface Card (NIC), which can be installed pre-configured at the factory. This NIC supports all of the major Network Operating Systems, such as the Novell NetWare, TCP/IP, etc.
Interface switching	Automatic
Interface time-out	5 min (max.)
Font	Windows Font
Color Management	ICC ICM V3.4

3.3 Electrical Specification

Item	Description	
Input Voltage	**Low voltage: 100-127 VAC**	**High voltage: 220-240 VAC**
Input Range	90-135 VAC	180-264 VAC
Nominal Frequency:	+/- 47/63 Hz	+/- 47/63 Hz
Frequency tolerance	+3 Hz	+3 Hz
Power Consumption	Print mode: 450 watts or less	
	Standby mode: 160 watts	
	Sleep mode: 35 watts	

3.4 Environmental Range

Items	Operating	Storage (packaged)	Optimum
Temperature	15 ~ 30°C (59 ~ 86°F)	5 ~ 35 °C (41 ~ 95°F)	20 - 25 °C
Humidity	20 - 80% RH	20 - 80 % RH	30 - 70% RH
Altitude	2,500 meters (8,200 feet)		

3.5 Periodically Replaced Parts

Item	Life Expectancy	
Imaging Unit	50,000 images	User replaceable
Transfer Belt	50,000 images	User replaceable
Fuser	100,000 pages mono / 50,000 pages color	User replaceable
Transfer Roller (T2)	50,000 pages (simplex prints)	User replaceable
Waste Toner Cartridge	3,000 to 5,000 pages (color 5%)	User replaceable
Printer	300,000 images or 5 years	

3.5.2 Consumables

Item	Life based on 5% coverage
Standard Toner Cartridge: Black High capacity	3,000 7,000
Standard Toner Cartridge: Cyan High capacity	2,000 5,000
Standard Toner Cartridge: Yellow High capacity	2,000 5,000
Standard Toner Cartridge: Magenta High capacity	2,000 5,000

3.5.3 Options

Item	Description
Tray 2 (SCT)	Paper capacity: 500 Sheets (20lb.) Paper weight: 60 ~ 90 g/m^2 (16 - 24 lb)

3.6 Media Specifications

3.6.1 Paper Size and Weights

The supported media types for this printer include, but are not limited to: labels, envelopes, cardstock, plain paper, transparency, letterhead and colored paper.

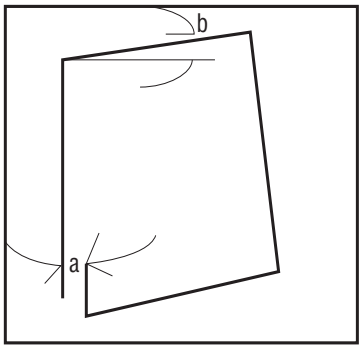
Paper Type	Size	Tray Support
A4	210 x 297mm	All Trays
Letter	8.5” x 11” (216 x 279 mm)	All Trays
Folio (Legal 13”)	8.5” x 13” (216 x 330 mm)	MPT
Legal (Legal 14”)	8.5” x 14” (216 x 356 mm)	MPT
Executive	7.25” x 10.5” (184 x 267 mm)	MPT
Statement	5.5” x 8.5” (140 x 216 mm)	MPT
ISO B5	176 x 250 mm	MPT
JIS B5	182 x 257 mm	MPT
A5	148 x 210 mm	MPT
A6	105 x 148 mm	MPT
Com-10 Envelope	4.15” x 9.5” (105 x 241 mm)	MPT
#9 Envelope	3.88” x 8.88”	MPT
Monarch Envelope	3.88” x 7.5” (98 x 191 mm)	MPT
DL Envelope	110 x 220 mm (4.33” x 8.66”)	MPT
C5 Envelope	162 x 229 (6.38” x 9”)	MPT
C6 Envelope	114 x 162 (4.5” x 6.38”)	MPT
B5 Emvelope		MPT
OHP Transparency*, Paper Label, Card stock		MPT
Custom size paper	90 x 140 mm (3” x 5”) 216 x 356 mm (8.5” x 14”)	MPT
*** Transparencies CANNOT be used for color prints in this printer. monochrome (black and white) ONLY.**		

3.6.1 Paper Size and Weights (cont'd)

Tray Support	Media Types / Capacity	Sizes	Weight
Tray 1 **Tray 2**	Paper; 250 sheets (20 lb) Paper; 500 sheets (20 lb)	A4, Letter	16 ~ 24 lb 60 ~ 90 gsm
MPT	Paper; 100 sheets Envelope; 10 Label; 10 sheets Transparency; 30 sheets Card stock; N/A	A4, Letter, Legal, Folio, Executive, A5, ISO and JISB5, A6, Statement, Monarch, COM10, #9, C5, B5 Env. and DL	16 ~ 43 lb 60 ~ 163 gsm
Auto Duplex	Paper	A4, Letter, Folio, Legal	20 ~ 24 lb 75 ~ 90 gsm
Output Tray	Paper; 250 sheets (20 lb)		

3.6.2 Print Margins and Skew

Print Margins		
Side print position accuracy	+/- 2.0 mm (+/- 0.08")	
Lead print position accuracy	+/- 3.0 mm (+/- 0.12")	
Skew A rectangular box of 189 mm x 256 mm will be used to measure skew.		
Simplex	**Tray 1, 2**	**MPT**
A: Vertical	< 2.0 mm (+/- 0.08")	< 2.0 mm (+/- 0.08")
B: Horizontal	< 1.5 mm (+/- 0.06")	< 1.5 mm (+/- 0.06")
Duplex		
1.5 times simplex printing		



3.6.3 PC (Host) Specifications

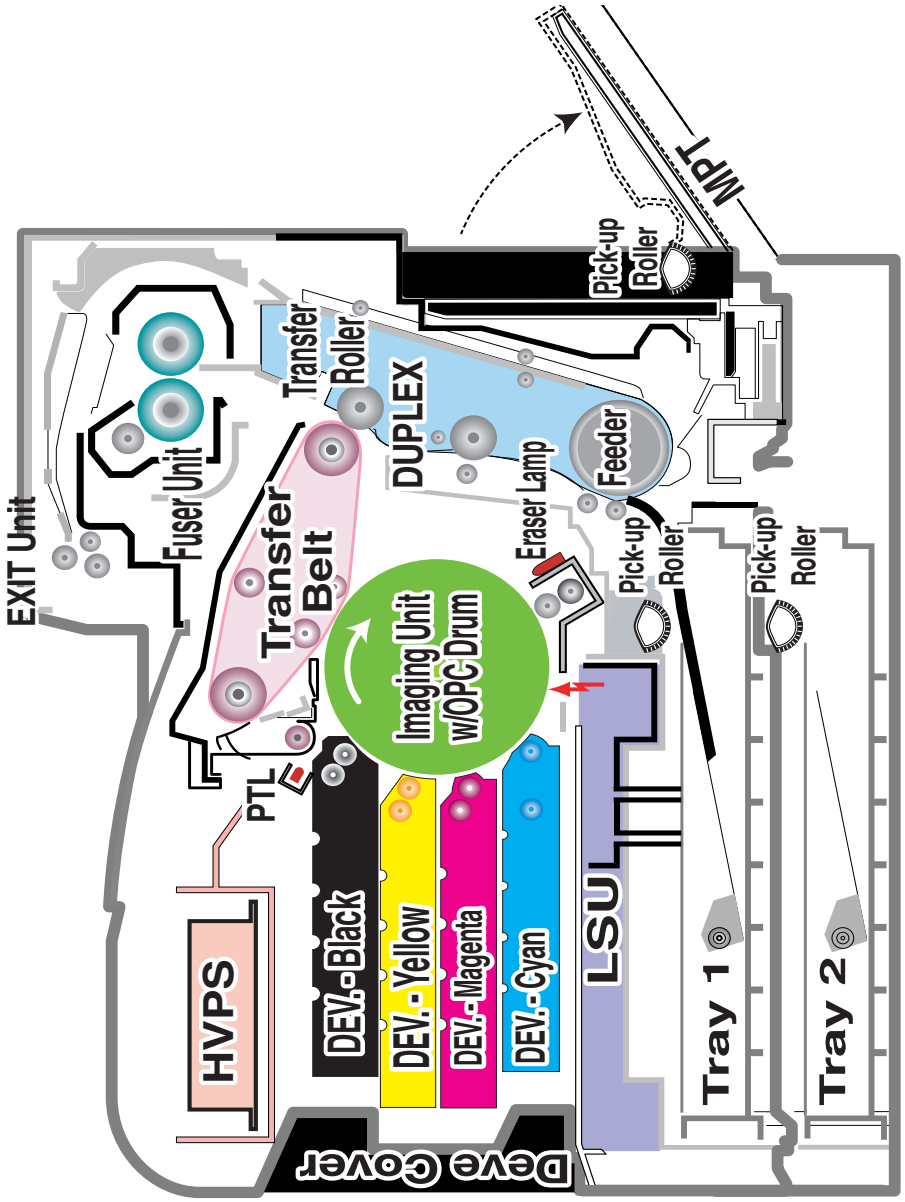
For reliable operation, the following PC configurations are recommended:

- Windows 98, Me; Pentioum 166 MHz; 64 MB RAM
- Windows NT 4.0, 2000, XP, Server 2003; Pentium 233 MHz; 128 MB RAM
- Mac OS9; USB only; Power Macintosh G3, G4, iMac, PowerBook, iBook
- All; 200 MB free hard drive space, CD-ROM Drive

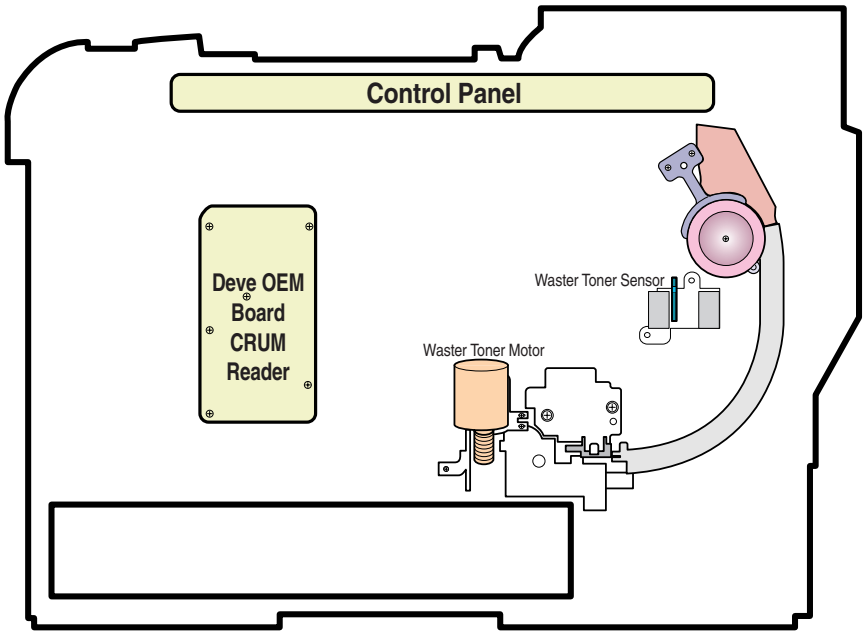
4 Product Summary

4.1 System Structure

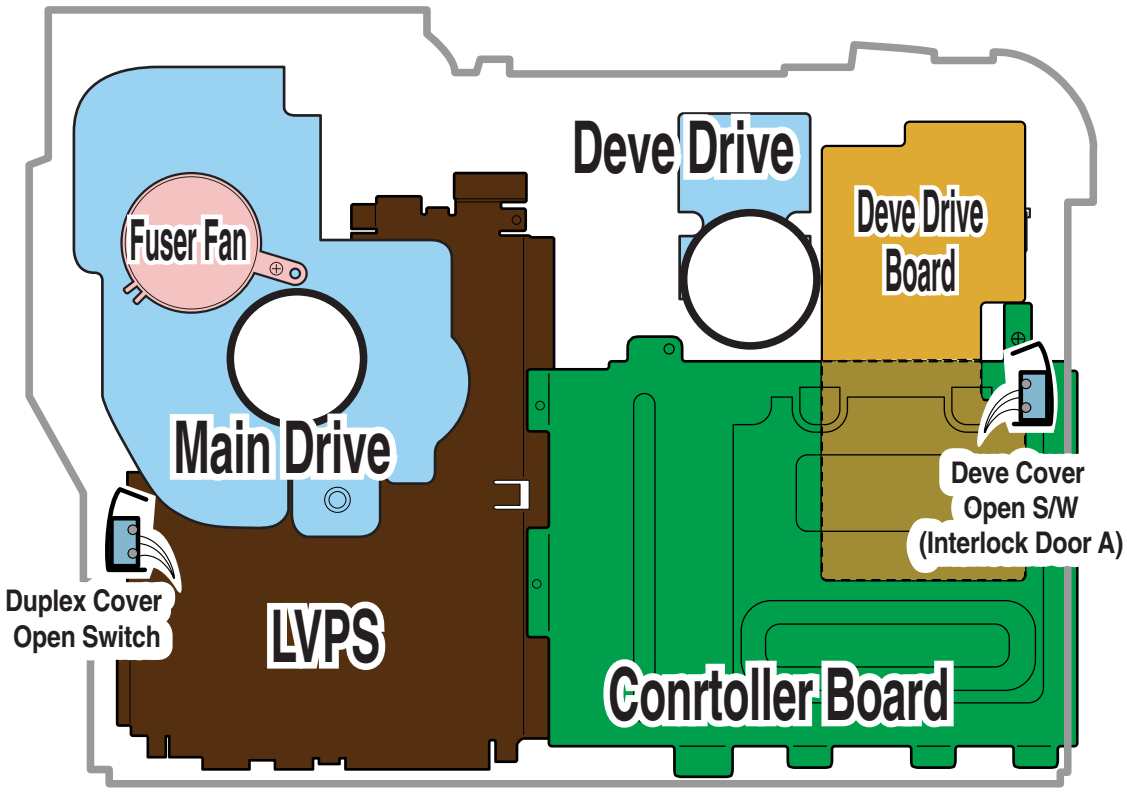
4.1.1 Major Assemblies of the Printer



Front View



Rear View



1) Imaging Unit

The imaging unit creates the image using an electro-photo process. The imaging unit consists of the following:

- An OPC Drum
- Waste Toner Assembly
- Charge Roller Assembly

2) Transfer Belt (ITB)

ITB stands for Image Transfer Belt. The image developed on the drum is transferred first to the transfer belt. This is called the T1 transfer (Primary Image Transfer).

- The printer uses a four pass process to place the image on the transfer belt.
- The image is created on the drum and transferred to the transfer belt in the following order: first yellow (Y), then magenta, then cyan, and finally black.

3) Transfer Roller

Once the transfer of the image from the drum to the belt is complete, the full image is transferred from the belt to the transfer roller. The transfer roller then transfers the image to paper. This is called the T2 transfer (Secondary Image Transfer).

4) Tray 1 or FCT (First Cassette Tray)

Tray 1 stores and feeds paper to the printer. A pick roller picks paper, controls drive, feeds paper, and removes static electricity from the paper.

Tray 1 Specifications:

- Paper Feed: side registration
- Paper Direction: Long edge
- Paper Discharge: Separation Claw
- Capacity: 250 Sheets
- Paper Size: A4, Letter
- Paper Weight (average): 60~90gsm (16~24lbs)
- Paper Type: *see the approved Xerox media specifications in Section 3.

5) Tray 2 SCT (Second Cassette Tray) (contained in the Optional 500-Sheet Feeder)

Same as Tray 1, but holds up to 500(20 lb) sheets of paper.

6) MPT (Multi Purpose Tray)

The Multi-Purpose Tray supports custom size media and manual feed.

MPT Specifications:

- Capacity: Cut Sheet: 100 Sheets (75 gsm / 20lb)
- OHP: 30 Sheets, Envelopes, Labels, and Card Stock: 10 Sheets
- Paper Arrangement: Side Registration
- Drive: Main Motor (Brushless DC (BLDC))
- Driving Management: Solenoid
- Paper Discharge: Friction Pad Method
- Paper Size: Legal, Folio, A4, Letter, Executive, JIS B5, A5, A6, Statement, Monarch (7 3/4), #9, C5, B5 Envelope, DL
- Paper Weight and Type: See the approved Xerox media specifications in Section 3.
- Paper Empty Sensor

7) Feeder

- Paper Arrangement: Side Registration.
- Drive: Main Motor DC
- Paper Management: Feed Clutch

8) Duplex Unit

The duplex unit is used to reverse paper feed to print the on backside of paper. The duplex unit is not an option. The transfer roller is part of the duplex unit.

Duplex Unit Specifications

- Drive: Main Motor DC
- Paper Reversal: After the front side of the original document is printed and begins reaches the exit path, the exit roller pulls the paper back through the duplex unit for printing on the reverse side.

9) Exit Unit

The exit unit guides the paper to the output tray.

Exit Unit Specification

- Capacity : 250 sheets standard (20 lb)A4/Letter (There is no output tray full sensor)
- Paper Direction: Face Down
- Exit Roller Drive: Driven by the main motor DC, rotating clockwise for normal feed and counter-clockwise to reverse feed for duplex printing.

10) Toner Cartridges

There are four toner cartridges, one each for C (Cyan), M (Magenta), Y (Yellow) , and K (Black).

11) Fuser Unit

The fuser unit consists of 2 heat lamps, 2 heat rollers, 2 thermostats and one thermister. After the image is transferred from the transfer roller onto the media, the fuser melts and fuses the toner to the paper by applying pressure and heat to complete the print job.

12) Laser Unit (LSU)

The laser unit forms the latent image on the surface of the drum using a static charge.

13) Main Motor (Brushless DC)

The main motor drives the following components: imaging unit, transfer belt, feeder, fuser, exit, and duplex unit.

Main Motor Specification:

- Power: 40W Max (24V)

14) DEVE Drive Motor

The DEVE motor drives the toner cartridges and transfer belt cleaning cam.

DEVE Motor Specification:

- Power : 40W Max (24V)

15) Low Voltage Power Supply (LVPS or SMPS (Switching Mode Power Supply))

The LVPS uses the AC supply voltage to generate the DC voltages used by the printer.

- The LVPS has 3 output channels (+3.3V, +5V, +24V).
- The LVPS sends AC power to the fuser and DC voltages to the cover interlock switches, and to the main board.
- The LVPS generates power to the, motors, clutches, waste toner motor and the CRUM reader board (DEVE_OEM board).
- AC heater control unit supplying power to the fuser is also located on the LVPS.

16) HVPS (High Voltage Power Supply)

The HVPS creates the high voltages used for the electro photographic process.

- The high voltage is created from the 24V line from the LVPS.
- High Voltage output is supplied to the charge roller, toner cartridge, imaging unit (T1), transfer belt (T2), and transfer roller.

17) Main Board

The main board receives DC voltages from the LVPS to control the sensors, fuser fan, imaging components, main motor and HVPS.

The main board has several major function blocks.

- CPU Block: Creates bitmap data for the engine to print and controls various devices that are needed to operate the printer.
- Engine Control Block: Manages images and controls motors, clutches, and solenoids.
- Memory Block : Stores video data and print orders from the computer.
- ROM Block : The printer operating system and PDL interpreter are stored here.
- USB 2.0 Block, IEEE 1284 Block, Option Block, and Control Panel.

18) DEVE Drive Board

Each toner cartridge requires high voltage when that color is being processed. The DEVE drive board, using four solenoids, selects which cartridge is to receive the supply voltage. The DEVE board also controls the DEVE motor, DEVE clutch, and DEVE solenoid drives. These are activated in sequence as required by the print process.

19) DEVE_OEM Board (CRUM Reader)

The DEVE_OEM board verifies the toner cartridges are new, used and whether they are Xerox parts. An error message will display on the front panel if the toner cartridge is a non-Xerox toner cartridge.

20) Waste Toner Assembly

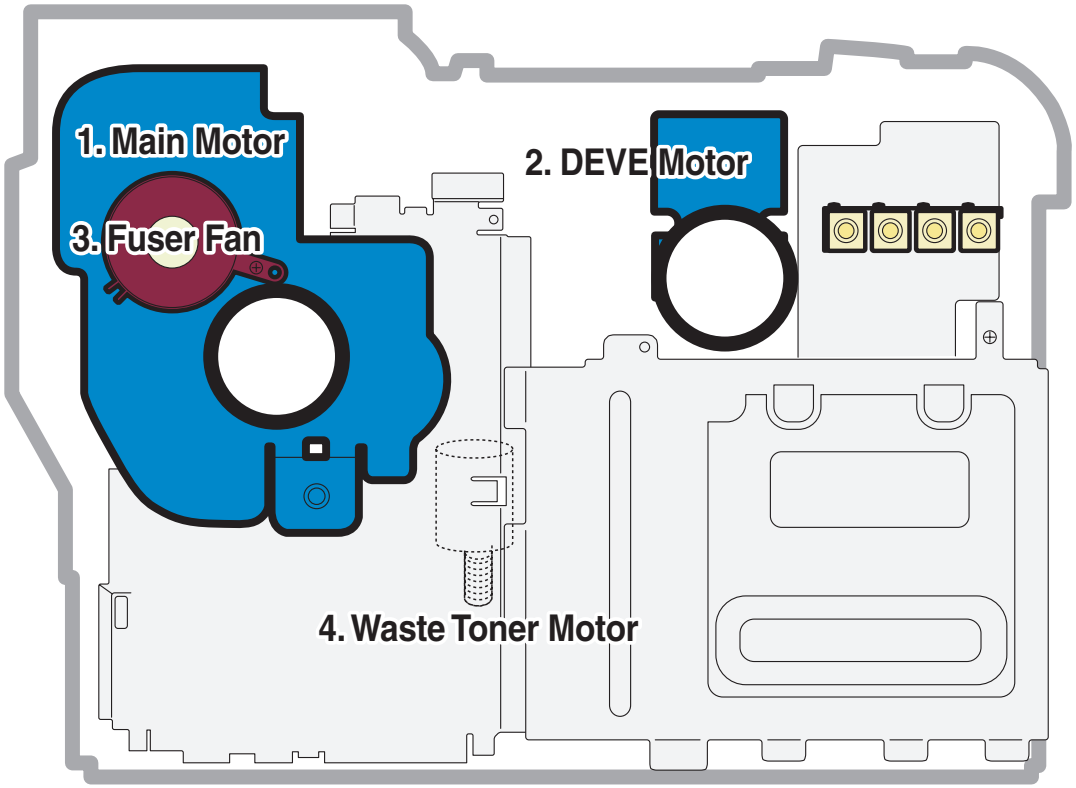
A cleaning blade removes waste toner from the drum after every image is transferred to the transfer belt. Once the complete image is transferred from the transfer belt to paper, the transfer belt cleaning solenoid activates and another cleaning blade removes waste toner from the transfer belt. All the waste toner is then transferred to the waste toner cartridge.

Replace the Waste Toner Cartridge immediately if the error message “Waste Toner Cartridge Full/ Not Installed” is displayed on the control panel.

Caution

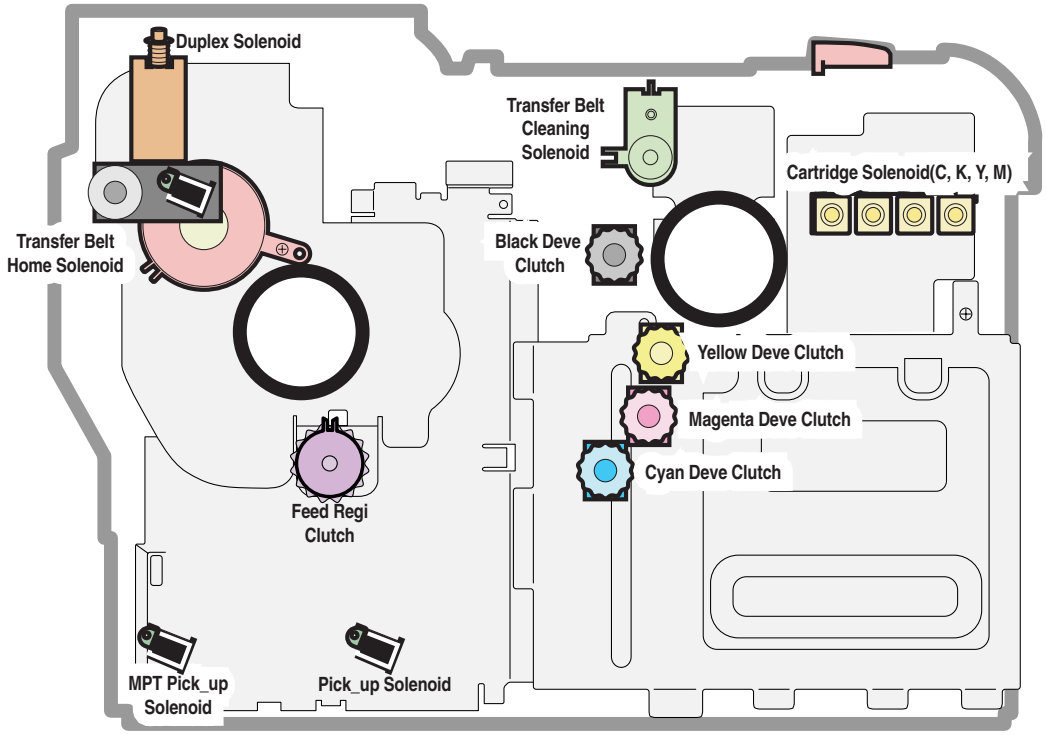
Failure to have a waste cartridge installed or replaced when full can damage the printer.

4.1.2 Motor and Fan Layout



No.	Name	Description
1.	Main Motor	Drives the imaging unit, transfer belt, feed, fuser, exit and duplex unit.
2.	DEVE Motor	Drives the toner cartridges and transfer belt cleaning cam.
3.	Fuser Fan	Cools the fuser.
4.	Waste Toner Motor	Transfer collected waste toner from the imaging unit and transfer belt to the waste toner cartridge.

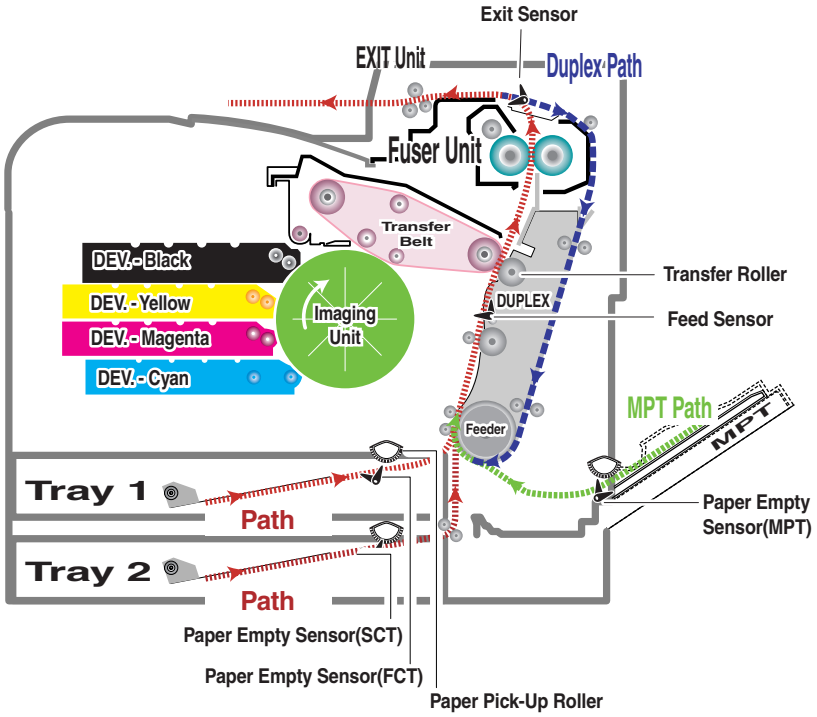
4.1.3 Clutch and Solenoid Layout



No.	Solenoid Name	Description
1.	Y DEVE solenoid	Controls high voltage to the yellow toner cartridge.
2.	M DEVE solenoid	Controls high voltage to the magenta toner cartridge.
3.	C DEVE solenoid	Controls high voltage to the cyan toner cartridge.
4.	K DEVE solenoid	Controls high voltage to the black toner cartridge.
5.	Pickup solenoid	Controls drive to the pickup roller.
6.	MPT pick solenoid	Controls drive to the MPT pick roller.
7.	Duplex solenoid	Reverses rotation of the main motor during duplexing
8.	Transfer belt home solenoid	Engages and disengages the transfer roller from the transfer belt.
9.	Transfer belt cleaning solenoid (cam)	Operates the transfer belt cleaning blade.

No.	Clutch Name	Description
1.	Y DEVE clutch	Controls the yellow toner cartridge drive.
2.	M DEVE clutch	Controls the magenta toner cartridge drive.
3.	C DEVE clutch	Controls the cyan toner cartridge drive.
4.	K DEVE clutch	Controls the black toner cartridge drive.
5.	Feed Clutch	Controls registration of the paper pick.

4.1.4 Sensor and Switch Layout

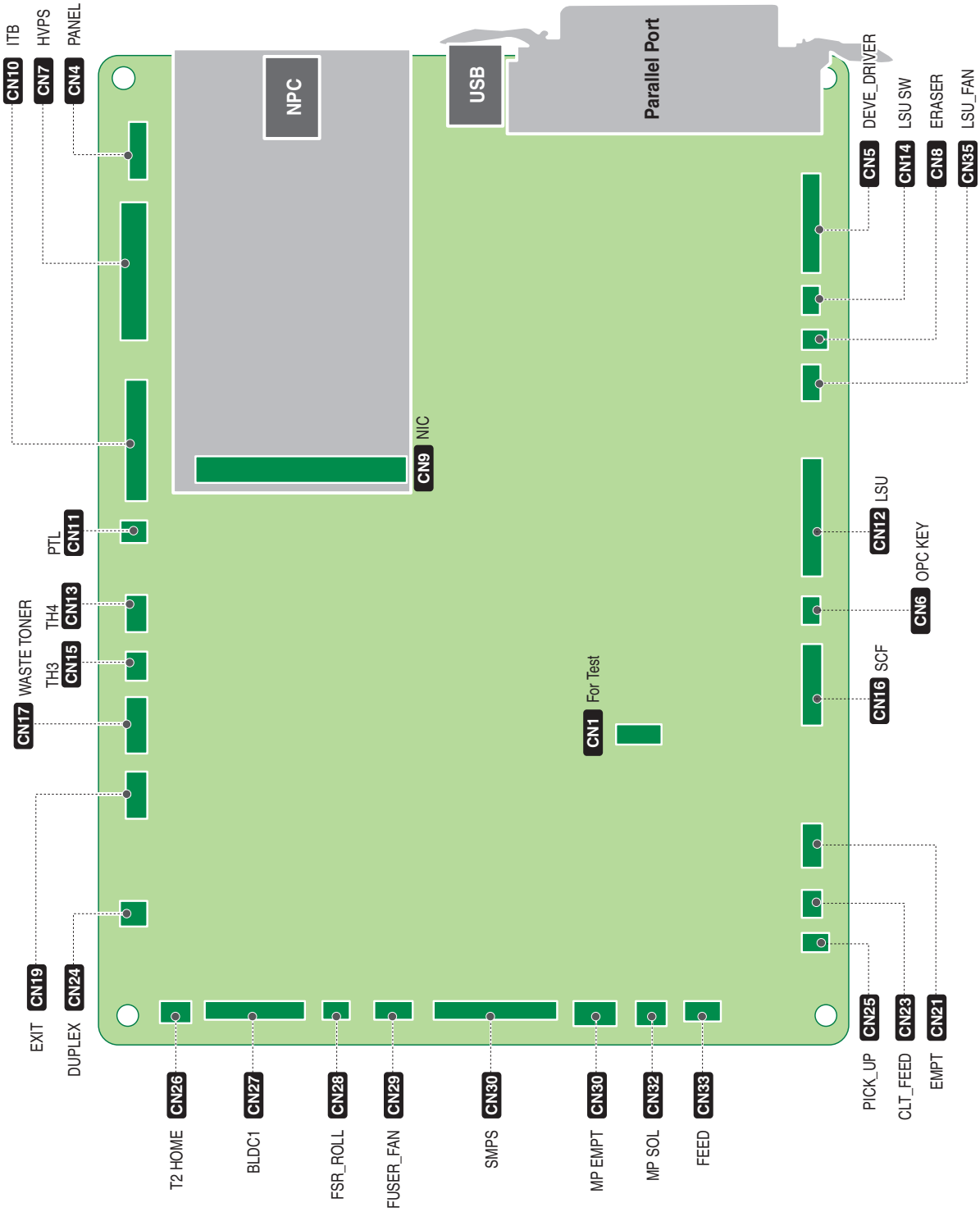


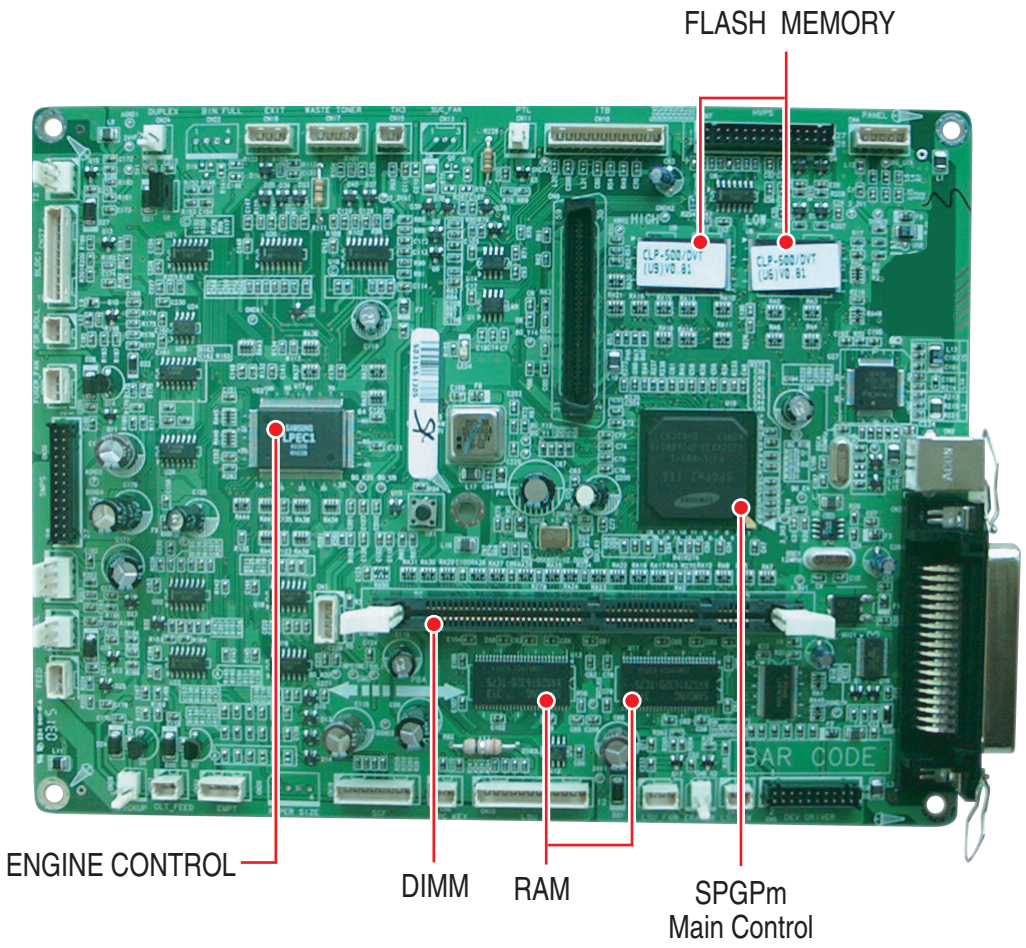
No.	Name	Description
1.	Tray 1 paper empty sensor	Detects absence of paper in Tray 1.
2.	Tray 2 paper empty sensor	Detects absence of paper in Tray 2.
3.	MPT paper empty sensor	Detects absence of media in the MPT.I
4.	Feed sensor	The feed sensor is used to detect a jam condition if paper does not pass the sensor within a specified amount of time after paper is picked.
5.	Transfer belt home sensor	The sensor detects the transfer belt start location for image transfer, ensuring that all four color images are registered correctly.
6.	CTD sensor	The color toner density sensor detects toner density for each color transferring to the drum.
7.	Waste toner sensor	Detects amount of toner in the waste cartridge, and if a waste cartridge is installed. See page 4-2 for location of sensor.
8.	Exit sensor	Detects whether or not media has exited the printer.
9.	DEVE cover open switch (Door A interlock)	Detects the open or closed condition of the DEVE cover (Door A). See page 4-2 for location of sensor.
10.	Duplex cover open switch (Door C)	Detects the open or closed condition of the Duplex cover (Door C). See page 4-2 for location of sensor.

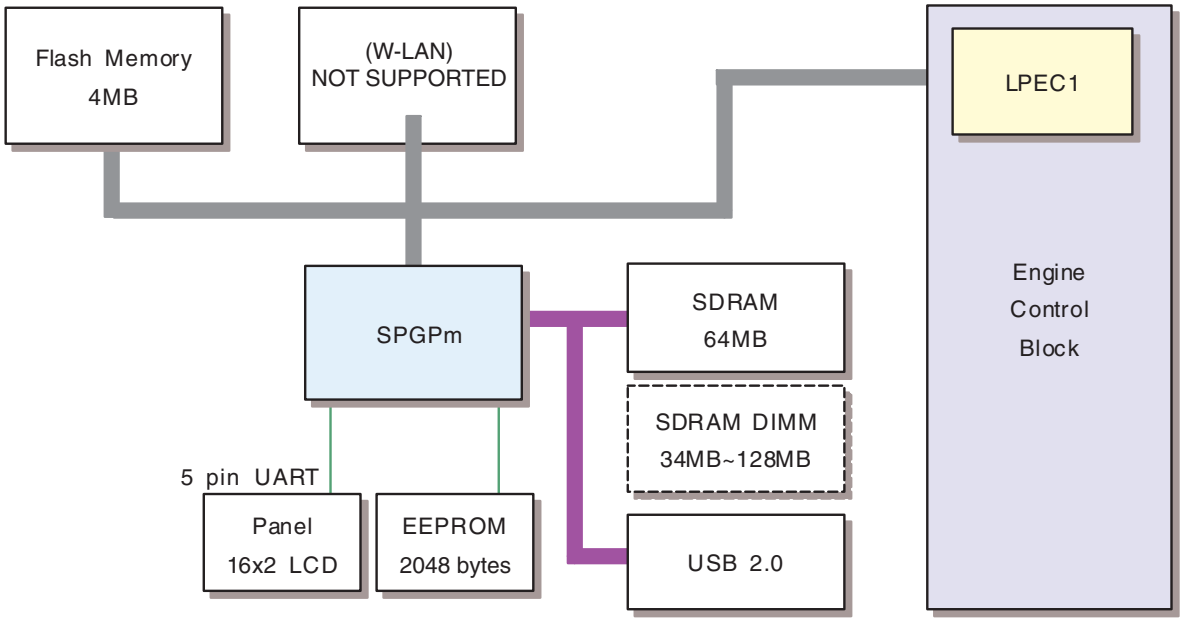
Note

The transfer belt home sensor and CTD sensor are located in the transfer belt. If these sensors become damaged or faulty, replace the transfer belt assembly. The sensors are not spared separately.

4.1.5 Main Board




FLASH MEMORY
ENGINE CONTROL
DIMM
RAM
SPGPm
Main Control



1) CPU BLOCK

A 120MHz - 32bit RISC processor is used to manage commands and data supplied by the host. This is converted into a bitmap image which is passed to the engine block for printing.

2) SPGPm (Samsung Printer Graphics Processor) overview

- **Package:** 272 pins PBGA
- **Power:** 1.8V(Core), 3.3V(IO) power operation, P1284 inputs : 5V tolerant
- **Speed:** 120MHz core (ARM946ES) operation, 60MHz bus operation,
  supportable engine speed: under 30ppm
- **Dual bus architecture for bus traffic distribution**:
  AMBA High performance Bus (AHB)
  System Bus with SDRAM
- **Integrated ARM946ES**: 32-bit RISC embedded processor core
- **Direct connection up to 5 SDRAM arrays**:
  SDRAM controller supports PC-66, PC-100 and PC-133 SDRAMs running at 60MHz
  Up to 128MB per array, up to 512MB totally
  Wide supports for various SDRAM configurations, including programmable band and column address
  Programmable SDRAM refresh time interval
- **IEEE1284 compliant parallel port interface**
  Compatible ECP communications are supported
  Direct support for IEEE1284 compliant data transceivers
- **High performance DMA based Interface to Printer Engine**
- **Engine Controller**
  Motor Control Unit: Motor Speed Lookup Table Memory (128 x 16 x 2)
  Pulse Width Modulation Unit
  ADC Interface Unit
  LSU Interface Unit
- **Ethernet Controller (MAC)**
  Full compliance with IEEE standard 802.3, 802.3u specification
  Support 10/100 Mbps data transfer rates

- **USB 2.0 interface**
  USB 1.1 backward compatible UDC (USB Device Controller) block and USB Physical block are integrated
  Both of High Speed (480 Mbps) and Full Speed (12 Mbps) are supported
  2 DMA channels support: one RX Channel and one TX Channel

3) Memory Block

The operating program runs from memory (see below). It is used to store video data and print jobs from the host. Standard factory fitted memory is 64MB, and can be expanded using a DIMM module mounted in the SODIMM connector. DIMMs from 64Mb - 128MB can be used giving a total of up to 192MB of memory. **Note: DIMM modules are non-standard and not currently supported**. The memory controller is located in the SPGPm controls the SDRAM memory connected using a 32 bit 60 MHz bus.

4) ROM Block

An 2MB flash ROM is used to store the OS. After power on, the contents of ROM are downloaded into memory and the OS is run from within memory.

5) USB 2.0 Block

Is used to provide support for USB 2.0 and is capable of interface speeds up to 480 Mbps.

6) IEEE 1284 Block

An IEEE 1284 controller is controlled directly by the SPGPm processor. ECP mode is supported.

7) Option Block

An Ethernet card can be attached using the 100 pin connector. It is connected directly to the SPGPm processor and communicates using a 16 bit bus.

8) Control Panel

The control panel is controlled by a UART Block located in the SPGPm.

9) Memory

There are two types of memory, program memory; that uses flash and a working memory that uses SDRAM.

10) Sensors

Various sensors are used to detect various conditions during the print process.

11) Actuator Control

Drives the various motors and clutches that are required for the paper feed and print process.

12) ADC (Analog to Digital Conversion)

Detects the current of: imaging unit, transfer belt, transfer roller, and fusing temperature, waste agitator, DC motor CRUM reader board, set temperature, and CTD sensing.

13) DAC

Controls the output of the LED on the CTD Sensor.

4.1.6 LVPS (SMPS) Board

The LVPS board supplies DC power for driving the whole system, it also contains an AC heater control unit that supplies power to the fuser.

1) DC output

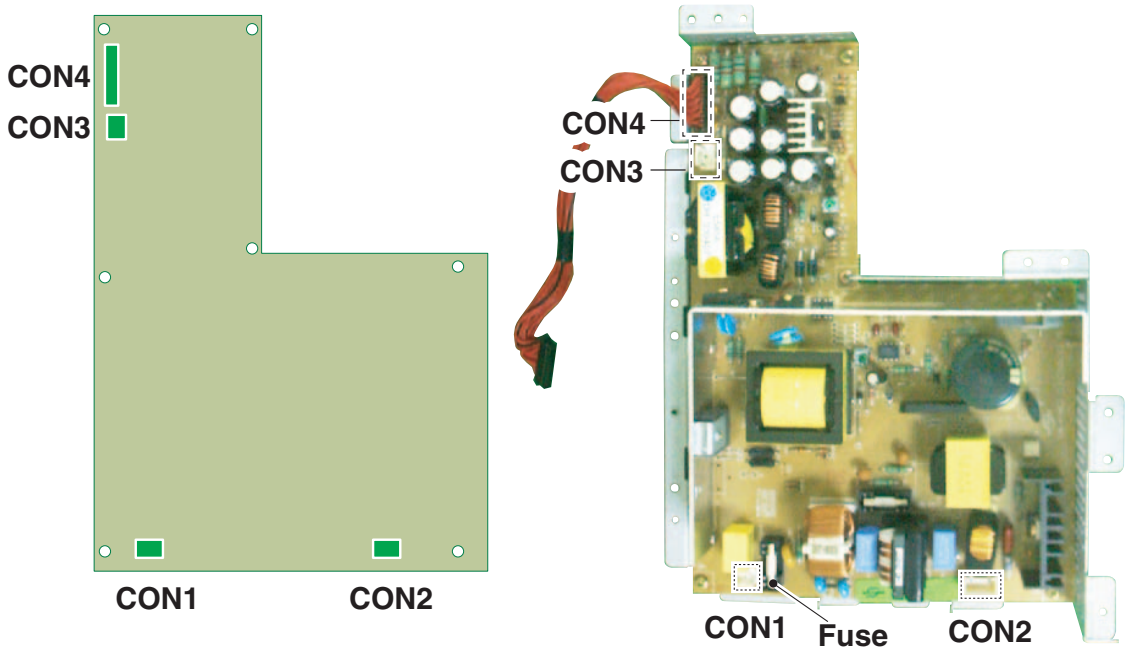
Main board, control panel, Tray 1, developer drive board, interlocks, sensors imaging components, motors, clutches, solenoides and HVPS.

2) AC output

Fuser

3) Output voltage

No.	Item	CH1	CH2	CH3	CH4
1.	Channel Name	+3.3 V	+5 V	+24 V	+24 V
2.	Rated output voltage	3.3 V +/-4%	+5 V +/-4%	+24 +15%/-10%	+24 V +15%/-10%
3.	Uses	MICOM, CMOS LOGIC	MICOM, CMOS LOGIC	MOTOR, FAN	MOTOR, FAN

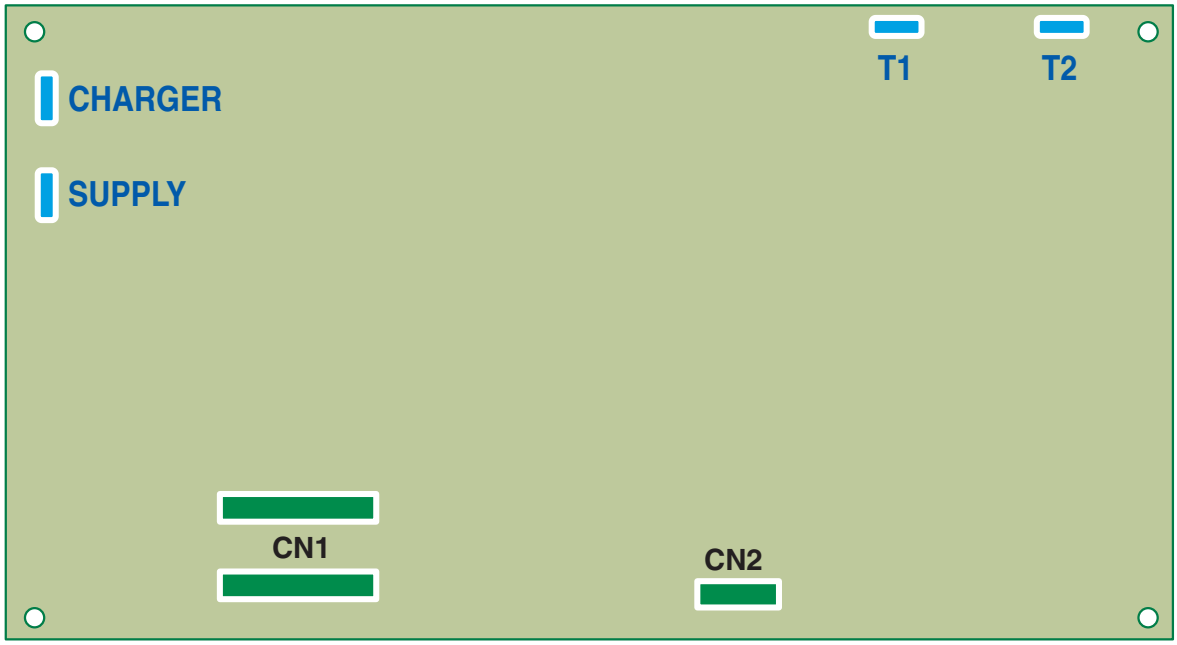


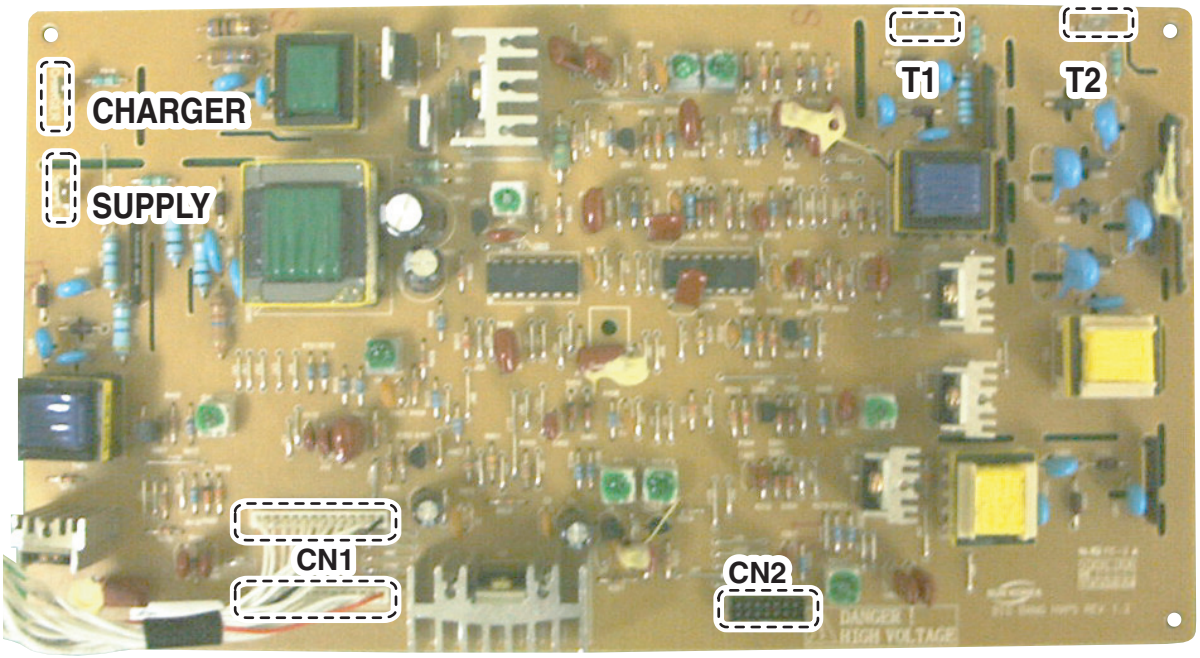
4.1.7 HVPS (High Voltage Supply) Board

The HVPS uses the +24 volts supplied by the LVPS to generate the high voltages used by the charge roller, toner cartridge, imaging unit (T1), transfer belt (T2), and transfer roller. For the best print-quality images, these hifh voltages must be controlled and maintained accurately.

Warning

High Voltage! Be sure to follow the steps outlined in Section 1.5.4 when servicing this assembly.





1) Charging Voltage: Charger

- Function: Charges the surface of the drum to about -500 volt ~ 800 volt.
- Output voltage: -200 V~-2.0K V DC +/- 3% (Duty is changeable, no loading)
- **Error type**: If the correct voltage was not present, the surface of the drum is not charged. As a result, toner on the developer roller transferred to the drum could produce entirely black prints.

2) Transfer high voltage: T1(+)

- Function: Used to transfer toner from the drum to the transfer belt.
- Output voltage: +400 V~ +3.5K V DC +/- 3% (Duty is changeable, no loading)
- **Error type**: If the primary transfer voltage was not present, it is not possible to transfer toner from the drum to the transfer belt. As a result, print output could be faint or blank.

3) Transfer High Voltage: T2 (+)

- Function: Used to transfer toner from the transfer roller to the paper.
- Output voltage: +400 V~ +5K VDC +/- 3% (Duty is changeable, no loading)
- **Error type**: If the secondary transfer voltage was not present, it is not possible to transfer toner from the transfer roller to the paper. As a result, print output could be fain or blank.

4) Cleaning voltage: T2 (-)

- Used in the cleaning process to transfer/clean off the (-) negative toner reamaining on the transfer roller to the waste toner cartridge.
- Output voltage: There is no feedback control, and it outputs a fixed voltage (-900V).
- **Error type**: Toner contamination occurs on the reverse side of the printed-paper.

5) Supplying voltage: Supply

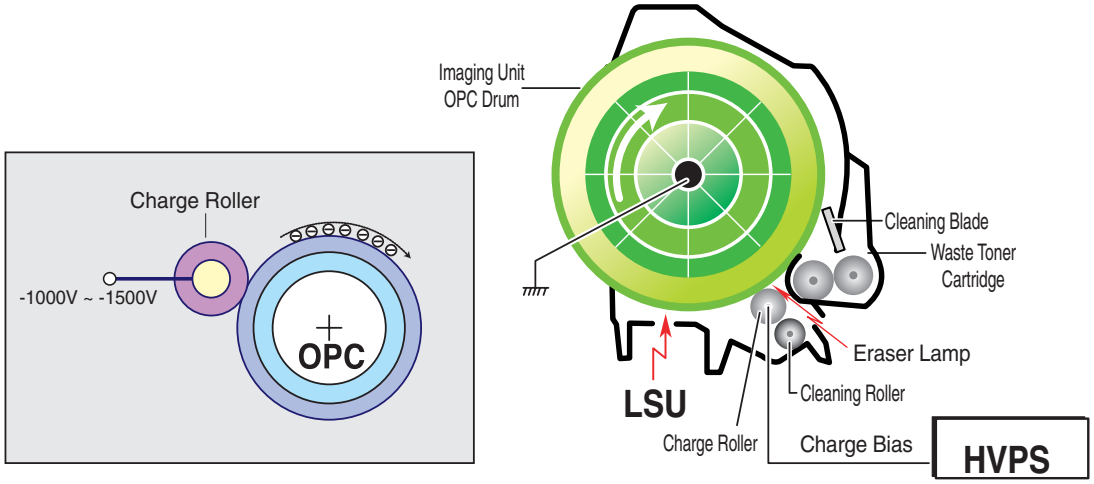
- Function: Supply the duplicated (AC+DC) voltage from the HVPS to the DEVE drive board.
- Output voltage
- AC Voltage F:1 KHz ~ 3 KHz (Duty is changeable)
- AC Voltage Vp-p: 1 KV ~ 3 KV
- DC : -100 V ~ -1000 V
- **Error type**: 1. If this voltage is ground, print density is extremely low.
  2. If this voltage is floating due to unstable contact points at the HV terminal, density becomes so low as that printing results appear non-existent.

5 System Outline

5.1 Color Laser Printing Process

5.1.1 Imaging Unit (Drum Charge Section)

The imaging unit contains the drum, waste toner cleaning assembly and charge roller.



1) Structure

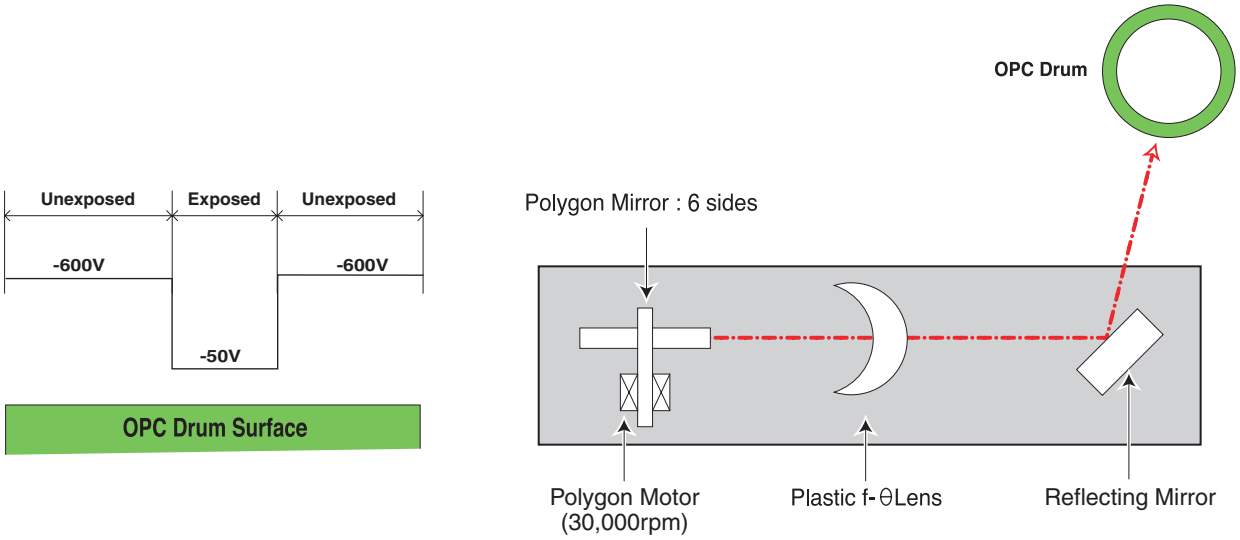
- OPC drum: The laser light forms a latent electric image on the surface of the drum.
- Cleaning blade: Removes remaining unwanted toner from the drum.
- Waste toner cartridge: Collects and stores the waste toner.
- Charge roller: Charges with a negative high voltage (-1 KV~1.5 KV), while in contact with the drum and produces a uniform (-) voltage on its surface of approximately -500~-800 V.

2) Type

- Life span: 50,000 Images (Color 12,500 pages)
- Waste toner removal: Transferred to a user replaceable tank
- Waste cartridge sensors: LED type, detects cartridge presence and full
- OPC drum diameter: 120 mm
- Power: Main motor (BLDC)
- Charge method: Charge roller
- Eraser method: LED lamp (+5 V)
- PTL (Pre-transfer lamp: LED lamp (+ V)

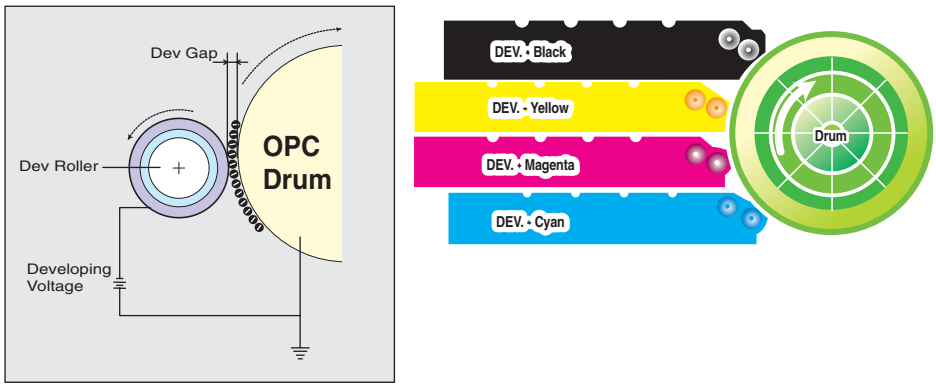
5.1.2 LSU (Exposure)

The latent image is formed on the drum using an image data stream to switch the laser beam On or Off. Where no image is required the beam is off, where toner is required the beam is turned on. When the laser is on and the beam strikes the drum surface, the charge is reduced to -50 V, where the beam is switched off the charge on the drum surface remains at -600 V.



5.1.3 Toner Cartridge (Development Section)

In the development stage, toner particles are transferred from the toner cartridge onto the surface of the drum. The drum and the developer roller rotate in opposite directions. Toner on the developer roller is charged to the developing voltage. (see, page 5-7). Toner is attracted to the drum in those areas where the surface charge is -50V. Toner is not attracted to those areas of the surface carrying a -600 V charge.

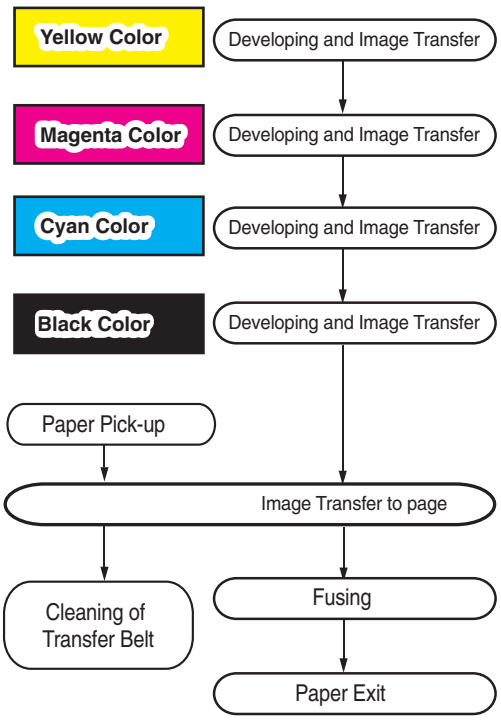


1) Type

- Developing method: Non-magnetic, Mono-component developing system.
- Toner cartridge order: K, Y, M, C from top.
- Developing sequence: Y, M, C, K
- Life span: High Capacity Toner: 7,000 (K) / 5,000 (C, M, Y); Standard: 3000 (K) / 2000 (C,M,Y)
- Power: DEVE motor (BLDC)
- Power transmission: Electric clutch
- Toner remaining: TRC (Toner Reproductive Curve) sensor, +Dot counting method

2) Developing

The latent image is formed as described below.



Developing Sequence: Y, M, C, and K

T1 Process

The image is created using a four color pass process. Each of the four colors is applied to the drum one at a time in the following order: Y, M, C, and then K.

The image formed on the drum is then transferred to the transfer belt.

T2 Process

The full four color image formed on the transfer roller, from the transfer belt, is then transferred to the media.

Fuser and Exit

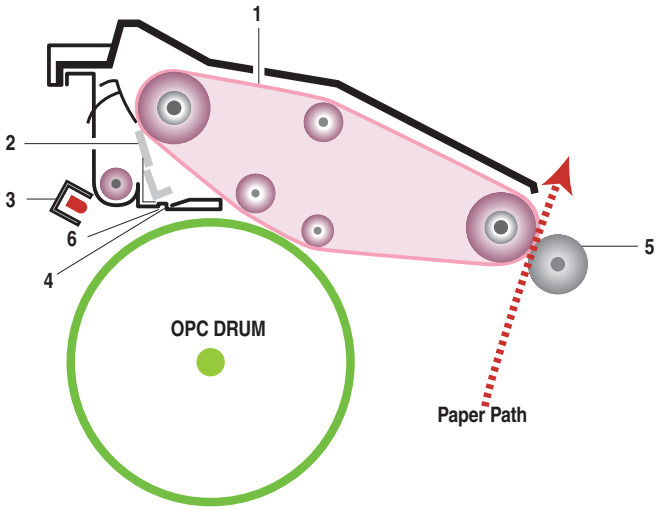
The image on the page is then fused and the paper is ejected into the output tray.

3) Toner Cartridge Empty Detection

The toner cartridge empty state is detected by the CRUM (NVRAM) contained in each cartridge.

5.1.4 Image Transfer

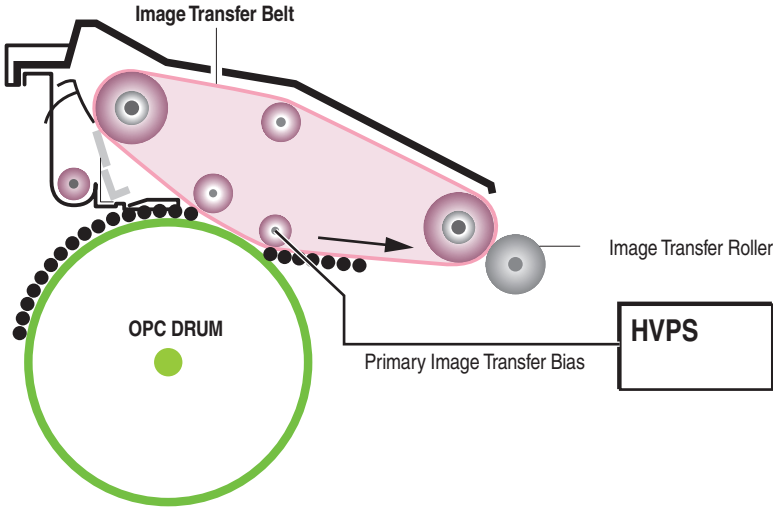
The toner image formed on the drum and transferred to the transfer belt is called the primary image transfer or T1. When the final color image has been placed on the transfer belt it is then transferred onto the paper by the transfer roller, this is called the secondary image transfer or T2.



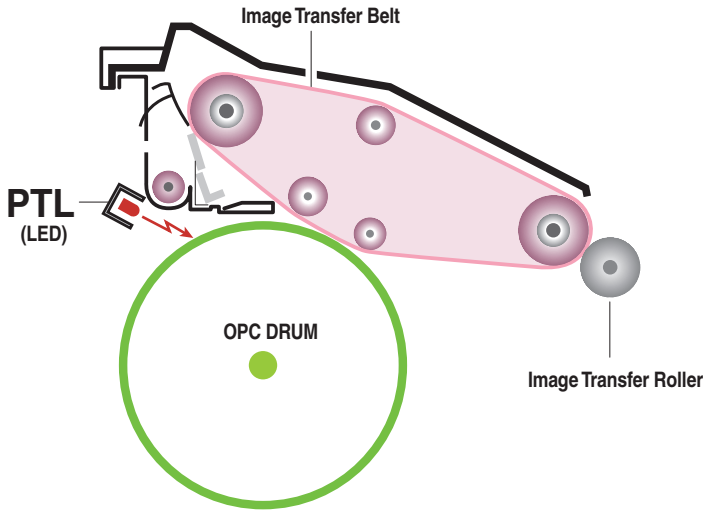
No.	Name	Description
1.	**Transfer Belt (T1)**	Receives the four color image from the drum in Y, M, C, K order.
2.	**Image Transfer Cleaner**	After the final image is transferred onto paper by the transfer roller, any toner left on the belt is removed using this cleaning blade.
3.	**PTL Pre-Transfer Lamp**	The pre-transfer lamp removes the charge holding the toner on the drum allowing the toner to be transferred to the belt.
4.	**CTD Sensor**	This sensor monitors the density of each color toner being placed on the drum. It is also used to detect a toner cartridge empty state. The drum surface and toner have different light reflecting characteristics, the CTD sensor uses this to detect the difference in the amount of toner present on the drum. **Caution** Be careful not to contaminate the surface of the CTD sensor, this will cause problems with color reproduction and quality. **Process:** The **TRC (Tone Reproduction Curve)** control process is used at power on, after waking from sleep mode, after every 100 pages of printing, and after installing a new toner cartridge or OPC drum to check the toner density transferred onto the OPC. Small patches of 6.25%, 25%, 37.5%, 50%, 62.5%, 75%, 87.5%, and 100% density for each of the 4 colors are deposited on the OPC drum surface and the CTD is used to detect how much toner is transferred. Based on an internal calibration curve the TCR control process adjusts the developer bias voltage to ensure that optimal toner transfer takes place.

No.	Name	Description
5.	**Transfer Roller (T2)**	The transfer roller transfer the final toner image from the transfer belt to the paper. ■ The HVPS applies the image transfer bias voltage to the transfer roller allowing transfer of the image from the belt onto the paper. ■ When the image is to be transferred from the transfer belt to the paper, the transfer roller pressure contact solenoid is activated and this activates a cam which moves the transfer roller into contact with the belt. ■ After the transfer has taken place, any remaining charge on the paper is removed by applying a charge removal bias (generated in the HVPS) to a detack saw. Transfer method: Semi-conductive roller contact method Effective transferring range: 218 mm (i.e. maximum image length)
6.	**Transfer Belt Home Sensor**	This sensor is used to ensure each color of toner is placed on the transfer belt at the exactly the same location.

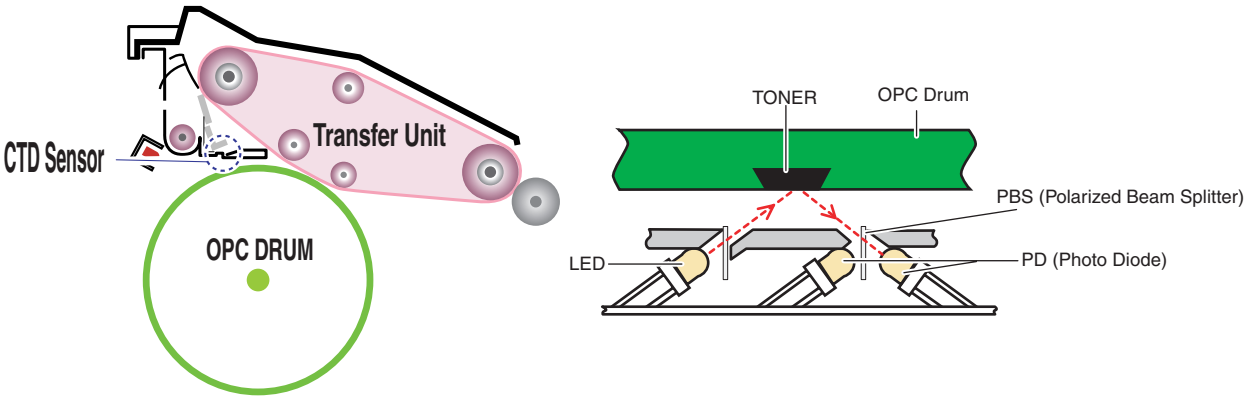
1. Primary Transfer (T1)



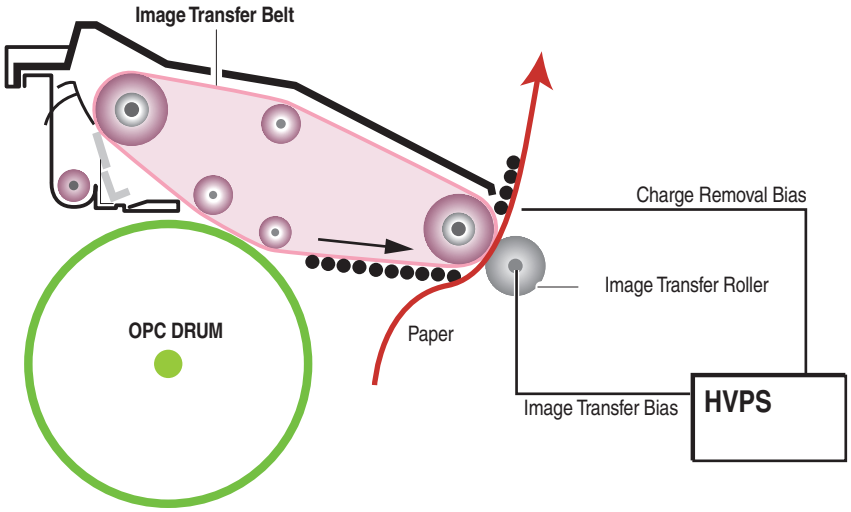
3. PTL (Pre-Transfer Lamp)



4. CTD Sensor



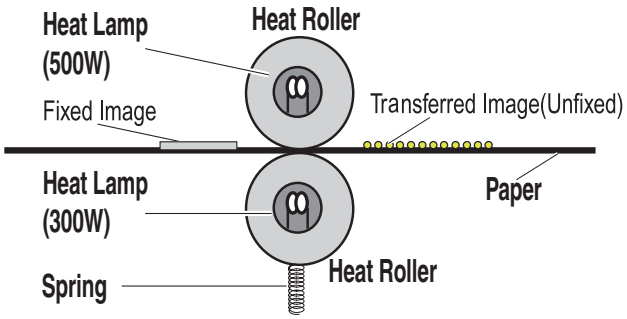
5) Secondary Image Transfer, Transfer Roller (T2)



5.1.5 Fuser (Fusing Process)

Toner that has been through the primary and secondary image transfer processes is fused or fixed to the paper..

The fuser consists of two heat lamps, two heat rollers, one thermistor, and two thermostats. The fuser melts the toner onto the paper using pressure and heat to complete the printing process.



1) Thermostat (2)

The thermostats are temperature cut-off devices.If the heat lamps or heat rollers overheat, the thermostat turns off power to the lamps to prevent fire.

2) Thermistor (1)

The thermistor detects the temperature of the heat roller's surface, and feeds this information to the main processor. The processor uses this information to control power to the fuser lamps in order to maintain a steady temperature to the heat rollers.

3) Heat Roller (2)

Halogen lamps are used to heat the heat rollers. The heat rollers have a special Teflon surface which ensures that any melted toner coming into contact with the heat roller surface does not stick. Paper passes between the two rollers which evenly heat the paper from both sides to melt the toner and fusing it onto the media.

4) Safety Information - Warning

Overheat protection

1st level protection: Print engine is stopped if overheat is condition is detected.

2nd level protection: Software turns off lamp power if overheat condition is detected.

3rd level protection: Thermostat turns off lamp power if overheat condition is detected.

Protection device

Fuser power is turned off when the duplex cover or the toner cartridge door is open.

The printer keeps the surface temperature of the fuser cover under 80° C, and has a caution label attached inside the exit cover where it can be easily seen by the user.

5.1.6 Exit

After passing through the fuser, media is ejected into the output tray. Any static electrical charge is removed by static discharge brushes.

When operating in duplex print mode, after printing the front side of the page, the paper exit roller reverses to feed the paper back into the printer in order to print on the back side of the paper.

5.1.7 Waste Toner Collection Process

Waste toner left on the drum and on the transfer belt is collected into the waste toner cartridge.

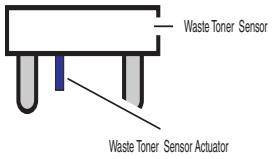
- After transferring the toner image from the drum to the transfer belt, a cleaning blade removes waste toner off the drum depositing it into the waste toner cartridge.
- A second transfer belt cleaning blade removes waste toner from the transfer belt and deposits waste toner into the waste toner cartridge.

1) Waste toner cartridge sensor

The waste toner cartridge sensor is used to detect the presence of the waste toner cartridge and its full condition.

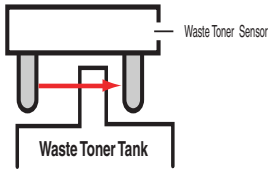
> No waste toner cartridge

If a waste toner cartridge is not installed in the printer, the waste toner sensor actuator blocks light from the sensor LED and displays a cartridge not installed message on the control panel.



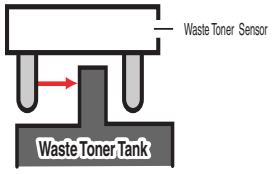
> Low waste toner

If the sensors LED light reaches the photo sensor, by passing through the waste cartridge, this indicates the waste toner cartridge has not reached its full state.



> Waste toner tank full

If the sensors LED light is blocked or not received by the photo sensor, it will indicate a waste toner cartridge full state on the control panel.



5.2 System Start-Up Sequence

The printer uses 4 different colored toners (Yellow, Magenta, Cyan, Black) and is a color laser printer. Engine firmware controls the print processes, drives the print engine, paper feed, developer, fuser, and paper exit systems. It has both color and mono printing modes. During normal power up, the printer goes through four main stages:

Normal Power-ON

1. Initialize the system: This is silent as the main board is initializing.
2. Motors engage: All the motors engage and the printer checks the developer solenoids one at a time.
3. Laser engages / ADC Check: The laser unit engages and the printer applies patches of toner to the transfer belt for the ADC toner density check.
4. Motors stop / Fuser Fan on: The printer quiets as all motors stop and the fuser fan starts.

5.2.1 System Initialization

1. Initialize ASIC
2. Initialize system variables
3. Initialize a virtual timer
4. Initialize fuser control
5. Initialize ADC
6. Establish ITB HOME interrupt

5.2.2 Warm-Up

During the warm-up stage, the following tasks are performed:

1. Self Test
   - System check
   - Cover open check
   - Device (Transfer Belt, Imaging Unit, Toner cartridge) check
   - Fuser check
   - Motion of motors, jams and paper empty check
   - Check feed and exit sensors. If paper is detected it is ejected. If the paper detection does not clear a jam, recovery is carried out by the printer and the paper exit is instructed to drive for the maximum permitted paper length.

2) Heat Control

The heater control unit separately manages the temperature of the heat lamps.

- Target temperature 165° C
- Temperature below 130° C - heat unit fully on,
- Temperature above 135° C temperature is controlled by reading the temperature value every 10 msec.

3) TRC (Tone Reproduction Curve)

- The TRC process (see page 5-4) is carried out and the developer bias voltage is determined.

4) Cleaning

- Transfer rollers, imaging unit, and transfer belt are electrically and mechanically cleaned.

5.2.3 Ready

1) Host interface is monitored for print commands

2) Heat control

- Target temperature (165° C).
- Every 40 seconds, temperature value for the previous 250ms is read and a proportional control process is carried out.

3) Printer is in “Ready” mode entered after warm-up or after completing a print job.

4) System Error check

5) Power save state is entered after timeout

Wakeup condition

- When a “wakeup” order is received.
- When a cover is opened or closed.
- When the level of the paper empty sensor changes.

Heat lamp is off

5.2.4 Processing

There is a preparation stage before processing a print job and after receiving a print command.

1) Start Laser

- Run scanning motor.
- Check motor ready.
- Turn LD on.

2) Start Main Motor, Eraser/PTL ON

- Run main motor.
- Check lock signal.
- Run developer roll motor.
- Check lock signal.

3) Turn High Voltage On

- Charger ON.
- Developer high voltage OFF.

4) Cleaning

- Imaging unit and transfer belt cleaning.

5) Jam Check

6) Motor Torque Check

7) Check and Set a High Voltage Condition (T1, T2, Charger)

8) Initialize Printing Parameters

- Paper size, copies, trays
- Image pixels, image times, y-offset, x-offset
- Sensors
- Color print mode:
  - Except legal & OHP/Legal/OHP
  - Simplex/Duplex
- Mono print mode: Simplex/Duplex/OHP

5.2.5 Print

After sensing the transfer belt home position the following tasks are performed:

- Send Psync signal to controller
- Operates virtual timer for each color(Vdata)
- Forms latent image on drum
- Supplies toner on OPC drum
- Transfers image to transfer belt (T1)
- Picks paper
- Transfers image to paper (T2)

1) Check Transfer Belt Home (Treated by Home interrupt every 3 seconds):

a. Transfer belt home sensing
b. If test mode is selected, a test pattern is printed.
c. A counter value is set up that addresses the timing to turn on page sync.
d. The virtual timer for each color (Y, M, C, and K) is set up.
e. If home is not detected every 3 seconds, an error is reported on the control panel.

2) Paper Path Printing

a. Paper is picked from Tray 1, Tray 2, or MPT
b. Control paper path
  - Paper pick stops when the leading edge of the paper reaches the feed sensor.
  - If the leading edge doesn't reach the feed sensor, an error is reported.
  - While transferring the last color to the transfer belt, transports the paper.
  - Checks if the paper reaches the exit sensor in the specified amount of time, otherwise an error is reported.
  - Checks paper passing the exit sensor.

c. Jam check
  - Check paper reaching and passing the feed and exit sensors, otherwise an error is reported.

d. Duplex control
  - After passing the exit sensor, the duplex clutch is engaged to mechanically change the direction of the paper in order to print the other side.

e. Printing sequence for each color
  - Uses a virtual timer for printing the colors in the correct sequence. (Yellow, Magenta, Cyan, Black)

A virtual timer is an algorithm for creating regular action at fixed time intervals. The standard setting is for a 5 msc timer interrupt.

5.2.6 Post-Print

This is the last stage of the printing process. Its functions are described below.

- **a.** Clean transfer rollers.
- **b.** Stops all virtual timers.
- **c.** Re-initialize parameters used in the print process.
- **d.** Stops motors.

6 Disassembly

6.1.1 Precautions for Disassembly/Reassembly

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

6.1.2 Precautions When Removing Circuit Boards

Static electricity can damage a board, follow the ESD precautions in Section 1 of this manual when handling or storing a board.

Precautions when moving and storing boards

- Place boards in an approved anti-static discharge bag.
- Do not store a board where it is exposed to direct sunlight.

Precautions when replacing boards

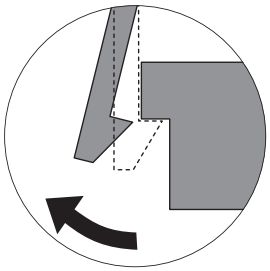
- Disconnect power connectors first, before disconnecting other cables.
- Do not touch any soldered connections, connector terminals, or other electronic parts when handling insulated parts.

Precautions when checking boards

- Before touching a board, touch a grounded area on the printer chassis to discharge any static electrical charge on the body or wear an anti-static wrist strap.
- Do not touch the board with your bare hands or metal objects, this can create a short circuit or cause an electrical shock. Take extra care when handling boards containing sensors, motors or lamps as they may get hot.
- Take care when fitting, or removing, screws. Check for hidden screws. Always ensure that the correct screw is used. When toothed washers are removed, ensure they are refitted in their original positions.

Caution

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



6.2 Maintenance and Supplies

There are parts in this printer that have a limited life compared to the life of the printer, these parts must be periodically replaced.

The table shows the life of each part and is measured using A4/Letter paper. When servicing a printer, 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 can occur.

Item	Life based on 5% coverage	Auto Reset*	Replaceable By
Black Standard Toner Cartridge Black High capacity	3,000 7,000	Yes	User replaceable
Cyan Standard Toner Cartridge Cyan High capacity	2,000 5,000	Yes	User replaceable
Yellow Standard Toner Cartridge Yellow High capacity	2,000 5,000	Yes	User replaceable
Magenta Standard Toner Cartridge Magenta High capacity	2,000 5,000	Yes	User replaceable
Imaging Unit	50,000 images	Yes	User replaceable
Transfer Belt	50,000 images	No	User replaceable
*Fuser	100,000 pages mono / 50,000 pages color	No	User replaceable
*Transfer Roller (T2)	50,000 pages (simplex prints)	Yes	User replaceable
Waste Toner Cartridge	3,000 to 5,000 pages (color 5%)	Yes	User replaceable

- Page count values based on individual sides of paper printed (Duplex = 2 pages).
- Image count value based on monochrome printed images.
- When printing a color section 1 page = 4 images. (i.e. each side is made up of 4 color images)

The life span of each part is stored in memory. The amount of 'life' used can be checked at any time using the control panel.

***When this part is replaced, it is necessary to reset the "life" used stored in memory.**

To reset the fuser and transfer roller life usage from the printers control panel:

a. From the main menu select, **Menu-Setup** --> **Maintenance** --> **Check other**.
b. Select the appropriate part name from the list by using the **Up Scroll** and **Down Scroll** buttons
c. Select **Reset.**

6.2.2 Printer Cleaning

The printer should be cleaned regularly, especially if it is used in a dusty environment. This ensures that print-quality remains high and failures due to contamination are less likely to occur.

- Clean the printer with a soft, lint free, cloth dipped in a mild detergent.
- 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.
- To clean the laser, open and close Door A a few times.
- Please refer to the User Guide for more cleaning instructions.

6.3 Information Related to Disassembly and Reassembly

Before diassembling the printer:

Caution

Do not use a power screwdriver for reassembling the printer. The plastic screw holes in the chassis can become damaged or stripped. If holes are already damaged, use spare untapped holes. This printer uses 19 different screw types, please refer page 6-5 for a list of all the screws used.

Note

Before disassembling the printer, always remove the toner cartridges, imaging unit and transfer unit. Protect the assemblies from light, fingerprints and scratching. To prevent toner spills when removing the front cover, first remove the waste toner cartridge and cover the openings with the caps provided.

6.3.1 Service Part Assemblies Warnings and Cautions

Do not disassemble or adjust the components listed below, these are spared as complete assemblies.

Warning

High Voltage! Be sure to follow the steps outlined in Section 1.5.4 when servicing this assembly

1) Laser Unit (LSU)

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. ***Warning: It is very dangerous to operate or service a printer with the LSU open or system interlocks disabled. Exposure to laser radiation can cause blindness***.

2) Transfer Belt (ITB)

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

3) Imaging Unit (OPC drum)

If the imaging unit is exposed to direct sunlight for a long time the parameters and response of the electrostatic surface are changed, causing image transfer and print quality issues. ***Caution: There is no protective shutter on the drum to prevent scratching Please use extra care to ensure the drum is protected from light and physical contact when servicing the printer.***

4) Toner Cartridges

Toner cartridges contain an extremely fine powder. Please keep toner cartridges away from children. The toner powder contained in the toner cartridge can be harmful and if swallowed you should contact a doctor. Take care not to spill toner - spillages should be cleaned with a Type II toner vacuum and cleaned up with cold 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 rollers surface when installing or removing a toner cartridge.

5) Developer (DEVE) Drive and Main Drive Assemblies

The alignment of the drive mechanism is critical and has been set by the factory. They are adjusted for the best gearing alignment. If these motors are disassembled, misalignment will occur causing operational noise and image problems: image alignment and toner distribution may be affected.

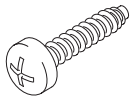
6) Boards

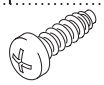
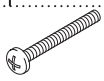
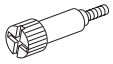
Do not adjust the variable resistors on the boards. They have been already adjusted in the factory.

7) Fuser Unit

Warning: The fuser melts toner onto the paper at a very high temperature, use care when handling the Fuser or severe burns can result. When removing the fuser from a printer that has recently been operating, let the fuser cool before handling. Do not touch the AC line (copper contact) on a main frame even after removing the fuser.

Screws Used in the Printer (Hardware Kit)

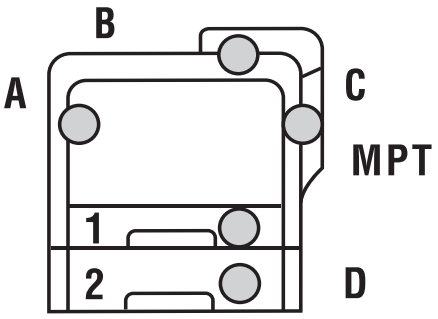
NO	DESCRIPTION		SPEC
S1	SCREW-MACHINE		2.6*4, GOLD
S2	SCREW-TAPPING		4*15, GOLD
S3	SCREW-TAPPING		3*8, GOLD
S4	SCREW-TAPTITE		2.6*6, GOLD
S5	SCREW-TAPTITE		3*8, BLACK
S6	SCREW-TAPTITE		2*10, GOLD
S7	SCREW-TAPTITE		3*6, GOLD
S8	SCREW-TAPTITE		3*10 SILVER
S9	SCREW-TAPTITE		3*6, GOLD
S10	SCREW-ASS'Y MACH		3*6, GOLD

NO	DESCRIPTION		SPEC
S11	SCREW-TAPTITE		3*6, GOLD
S12	SCREW-TAPTITE		3*8, BLACK
S13	SCREW-MACHINE		3*8, SILVER
S14	SCREW-TAPTITE		4*10 SILVER
S15	SCREW-TAPTITE		3*6, GOLD
S16	SCREW-MACHINE		2*16, BLACK
S17	SCREW-TAPTITE		4*6, YELLOW
S18	SCREW-SPICIAL		3*10, BLACK
S19	SCREW-TAPTITE		4*6, SILVER
S20	SCREW-TAPTITE		3*12, YELLOW
S21	COVER DIME SCREW		EMBERGOLD

6.3.2 Removing Consumables

This section shows you how to open the covers (front cover, DEVE cover, exit cover, and duplex cover) and how to remove and replace the consumable parts (toner cartridge, transfer belt, and imaging unit).

Orientation of the Printer Doors



1. Pull the side handle to open the DEVE cover (Door A) and then press down firmly until the toner cartridges are ejected.

Note

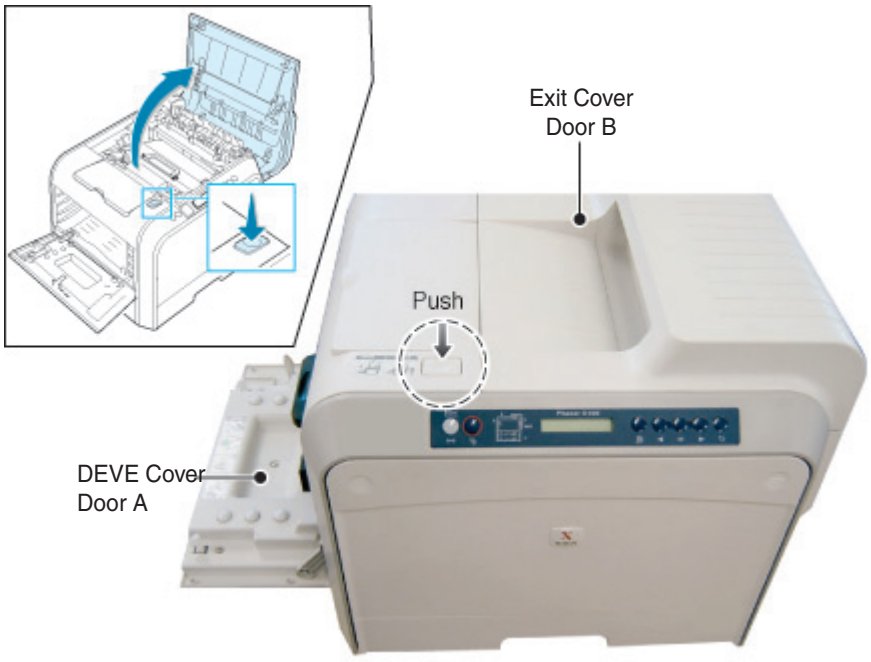
Before opening the exit cover, completely open the DEVE cover, 90^{o} to the main frame, ejecting the toner cartridges.

2. Removing a toner cartridge (K, Y, M, and C)

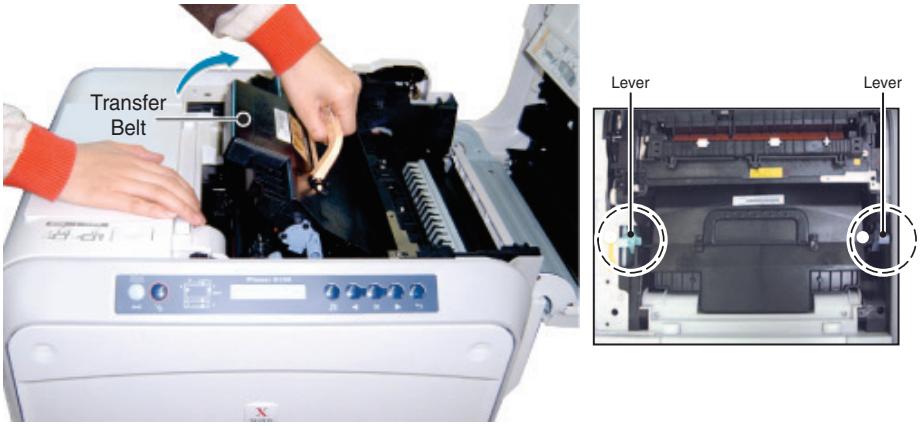
Caution

Do not damage the rollers. Keep the toner cartridges on a flat surface.

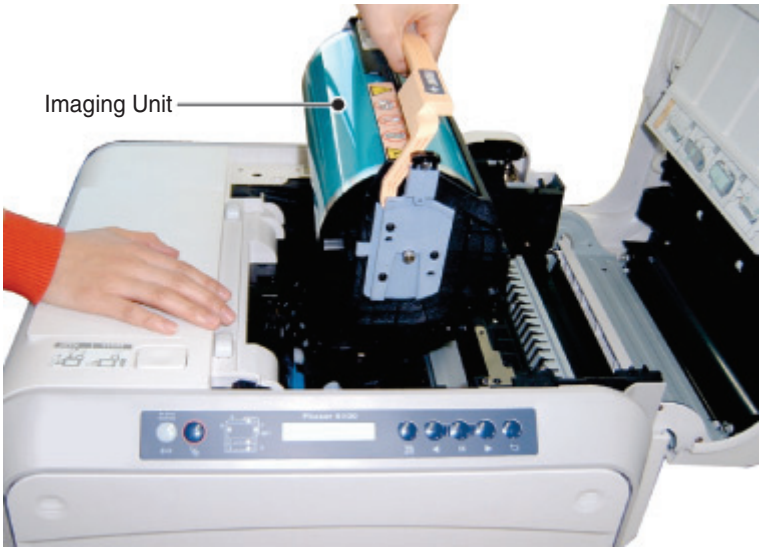
3. Open the exit cover by pressing the cover open button.



4. Remove the transfer belt by releasing the lock levers on both sides.

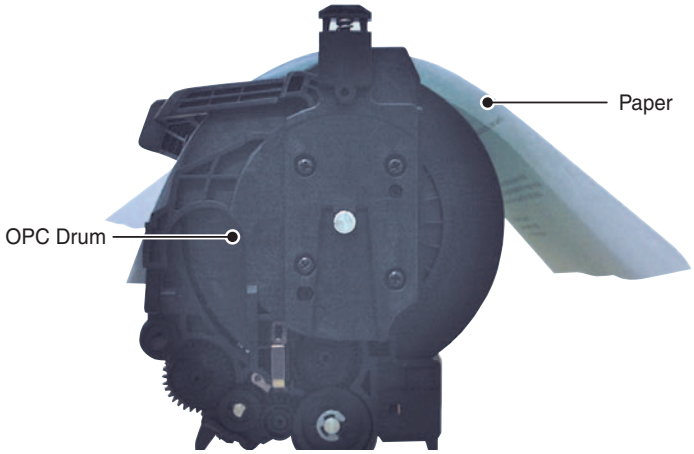


5. To remove the imaging unit, carefully lift the unit using the handle provided.



Caution

Ensure the drum surface is not scratched or damaged, while removing from the printer or after placing it on a flat surface. Do not touch the surface of the drum. Exposing the drum surface to direct light for more than 5 minutes will damage the drum, cover it with paper as shown below.



6.3.4 Replacing the Waste Toner Cartridge (PL 9.1.57)

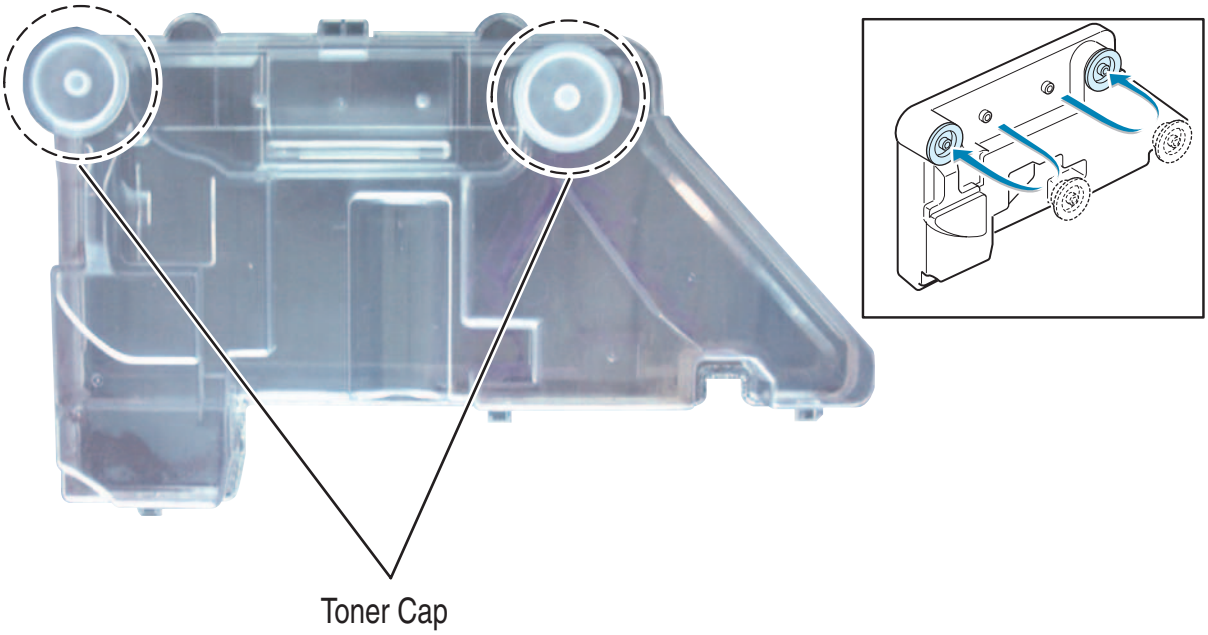
1. Push in the top corners of the front cover.

2. Lift the latch at the top of the waste toner cartridge and pull the top edge forward, then lift the cartridge out.

Note

Do not spill toner from the waste toner cartridge.

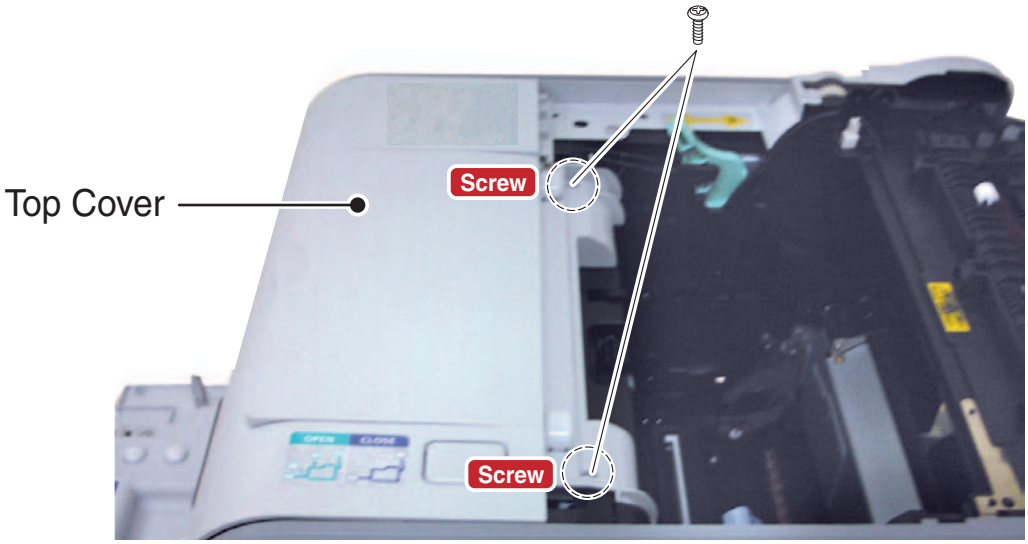
3. Remove the toner caps and fit them to the inlets as shown below.



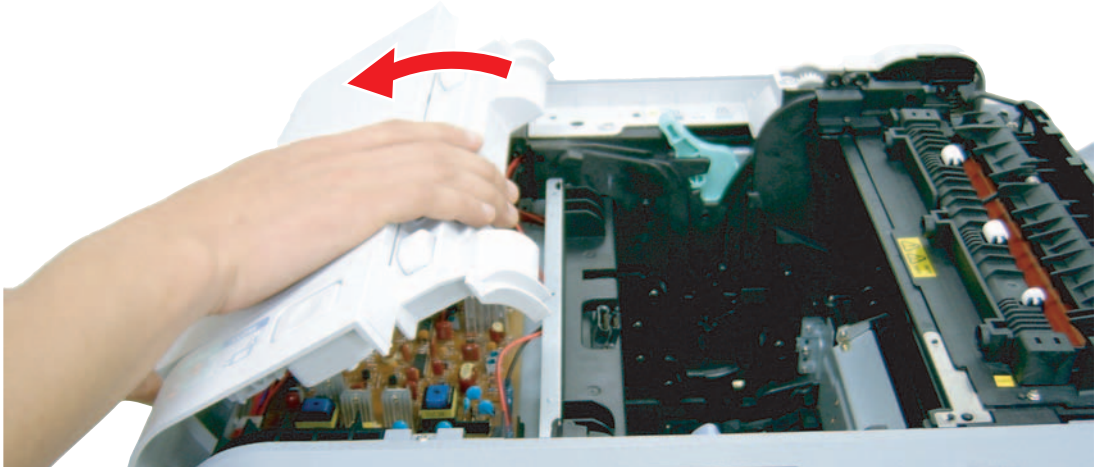
6.4.1 Top Cover (PL 9.1.17) and Front Cover (PL 9.1.15)

1. Remove Tray 1.
2. Open DEVE Cover (Door A), Exit Cover (Door B), and Duplex (Door C).

3. Remove 2 screws (3-10 silver) from the top cover.



4. Rotate the top cover, towards Door A, to release it from the two tabs at the base of the cover and remove as shown.

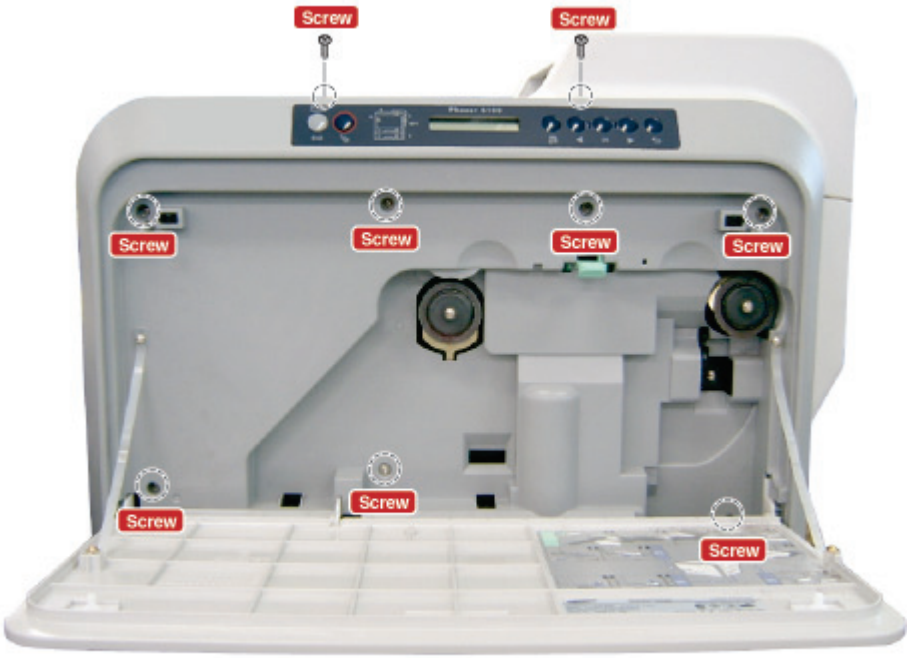


5. Open the front cover.
6. Remove 7 screws (3-10 silver) located inside the front cover.

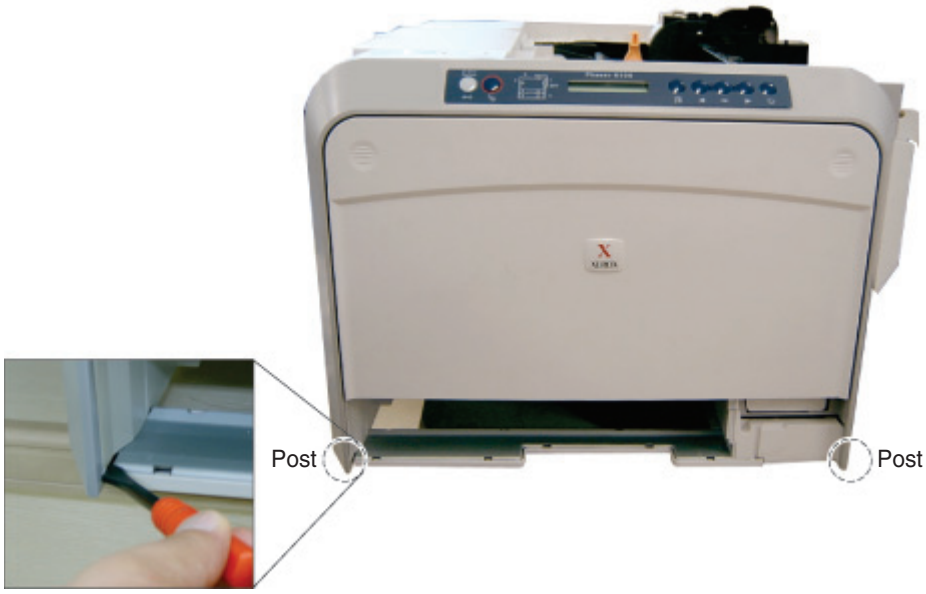
Note

To access the bottom, right front screw, tray 1 needs to be removed from the printer.

7. Remove 2 screws (3-10 silver) located on the top of the front cover.



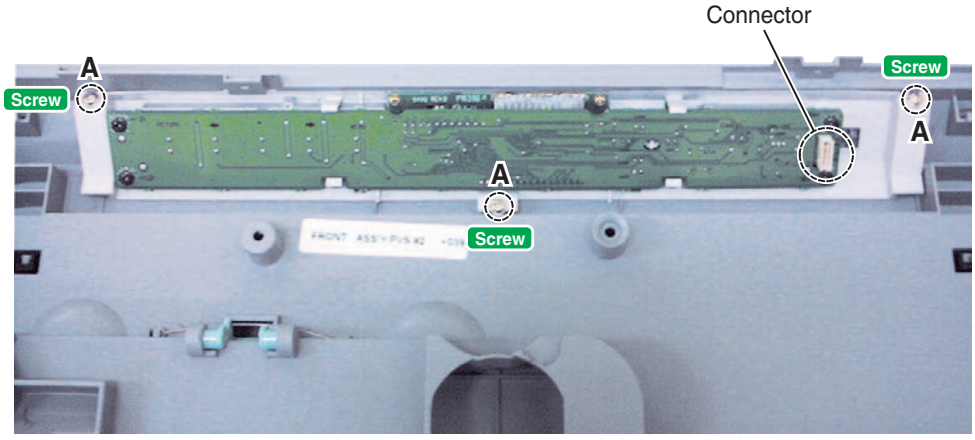
8. Close the front cover door.
9. Push the cover down, and using a flathead screwdriver remove the cover from the posts on the bottom to release it from the printer.



10. Remove the front cover.

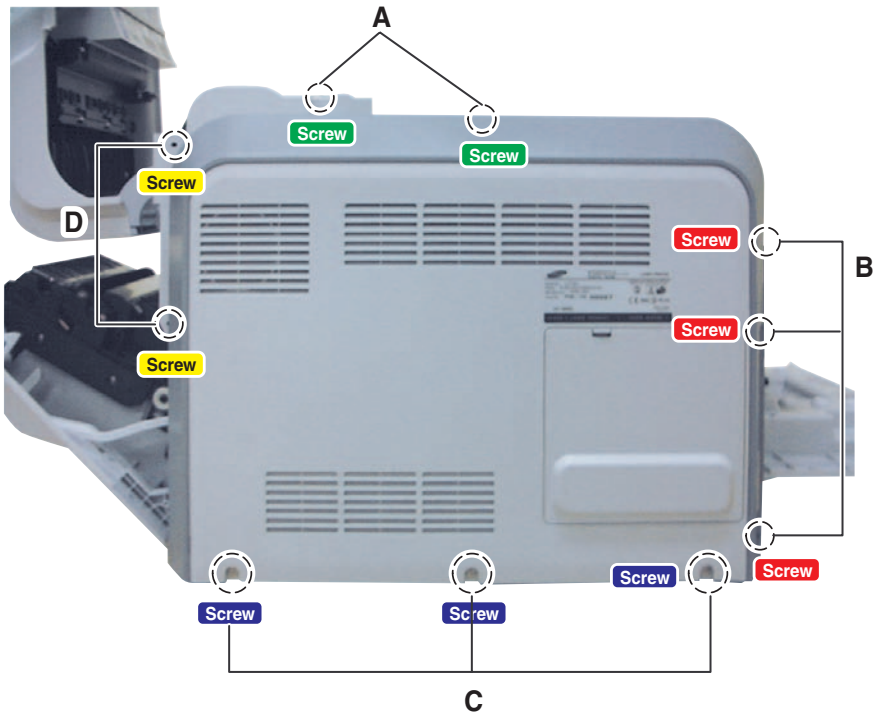
6.4.2 Control Panel (PL 9.2.19)

1. Remove the front cover (6.4.1).
2. Remove 3 ((A) 3-8 gold).
3. Disconnect the wiring harness connector.
4. Rotate the control panel to release it from the tabs and remove the control panel from the printer.



6.4.3 Rear Cover (PL 9.1.16)

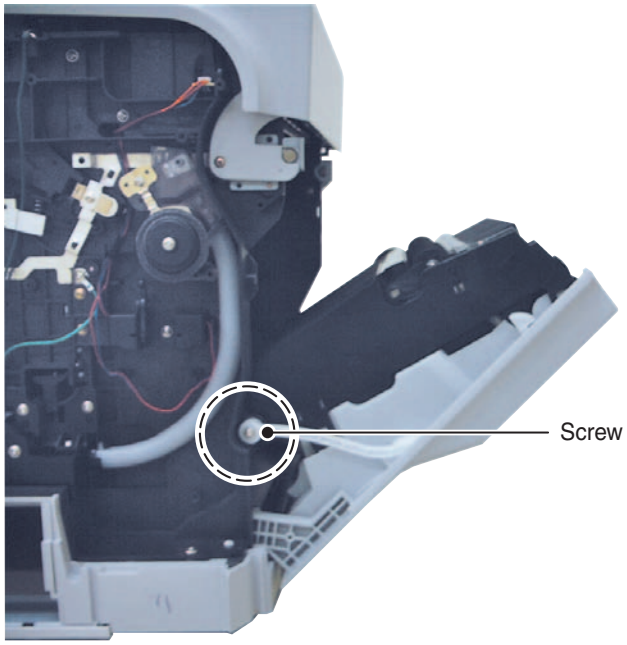
1. Open the duplex cover, the DEVE cover and the exit cover. (Refer to 6.3.3)
2. Remove the top cover. (Refer to 6.4.1)
3. Remove 10 screws.
   - **A: Top 2 EA (3 * 10 Silver)**
   - **B: Side 3 EA (3 * 10 Silver)**
   - **C: Bottom 3 EA (4 * 10 Silver)**
   - **D: Rear 2 EA (3 * 10 Silver)**
   - E: Side 2 EA (3 * 6 Gold) - Only for the DN Model.

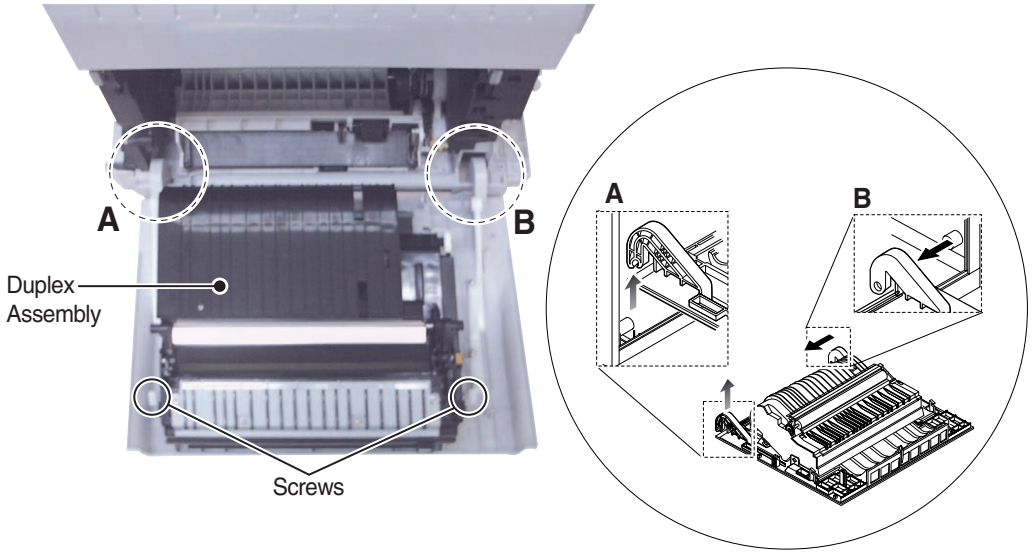


4. Remove the rear cover.

6.4.4a Duplex Cover - Door C (PL 9.6.0)

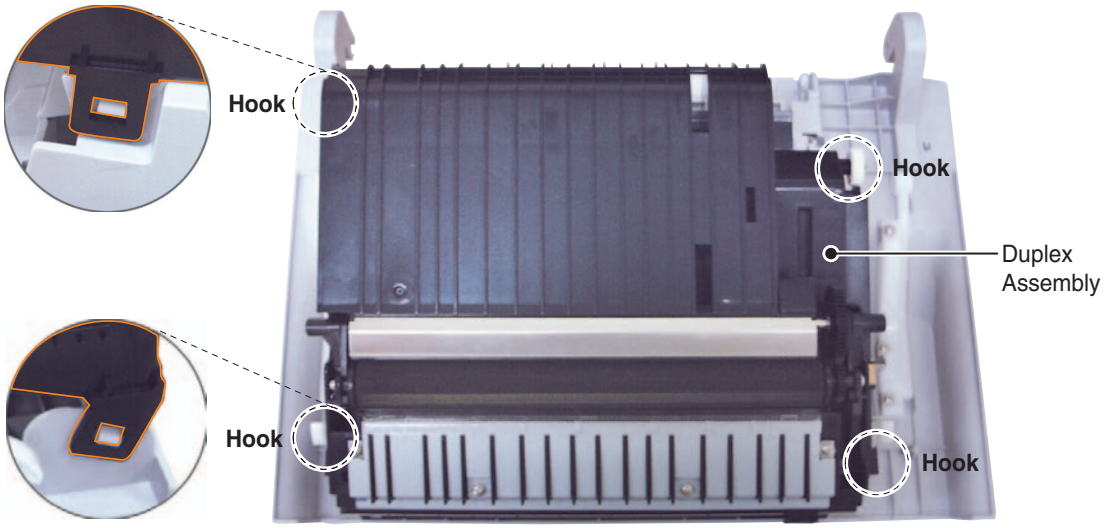
1. Remove the Front and Rear Covers (6.4.3)
2. Open Door C.
3. Remove the top 2 hinge screws (3*10 silver) on either side of each hinge rail.
4. Disconnect the links from the door.
5. Holding the door at a 90^{o} angle, snap the front hinge out. Slide the door towards the front of the printer and remove it.



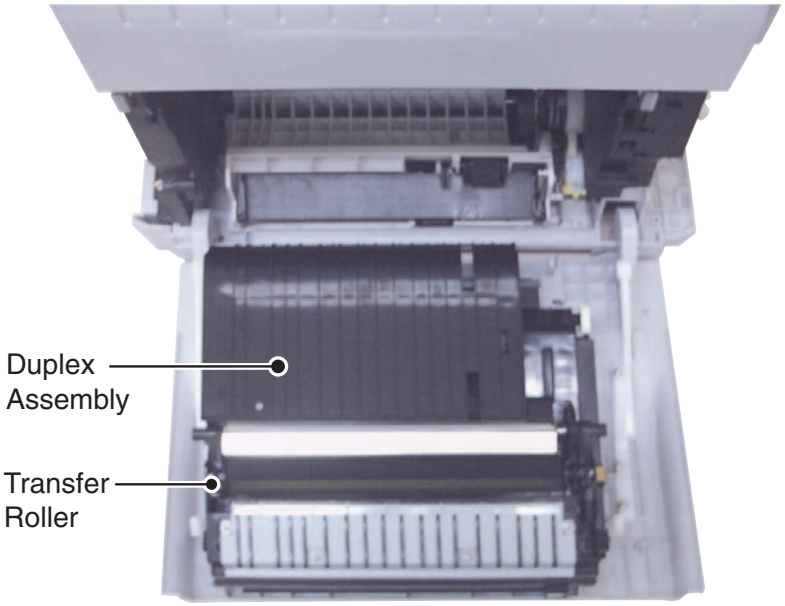


6.4.4b Duplex Unit (PL 9.6.2) and Transfer Roller (PL 9.1.54)

1. Remove the Duplex Cover Assembly (Door C) (6.4.4a)
2. Release the 4 hooks on the right and left side of the duplex unit with a flat-blade screwdriver.
3. Remove the duplex assembly from the door.



4. Remove the transfer roller by turning the bushing on each end of the roller.



6.3.5a Fuser (PL 9.1.9)

Warning

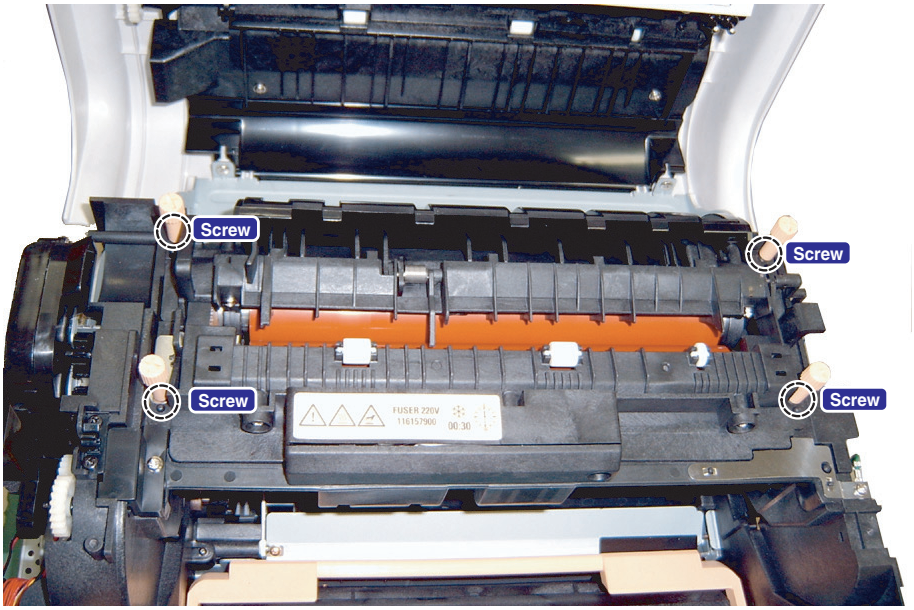
If the printer has been printing recently, the fuser will be hot. Open the exit cover and let the fuser cool before removing it.

1. Open the DEVE cover (Door A).

Note

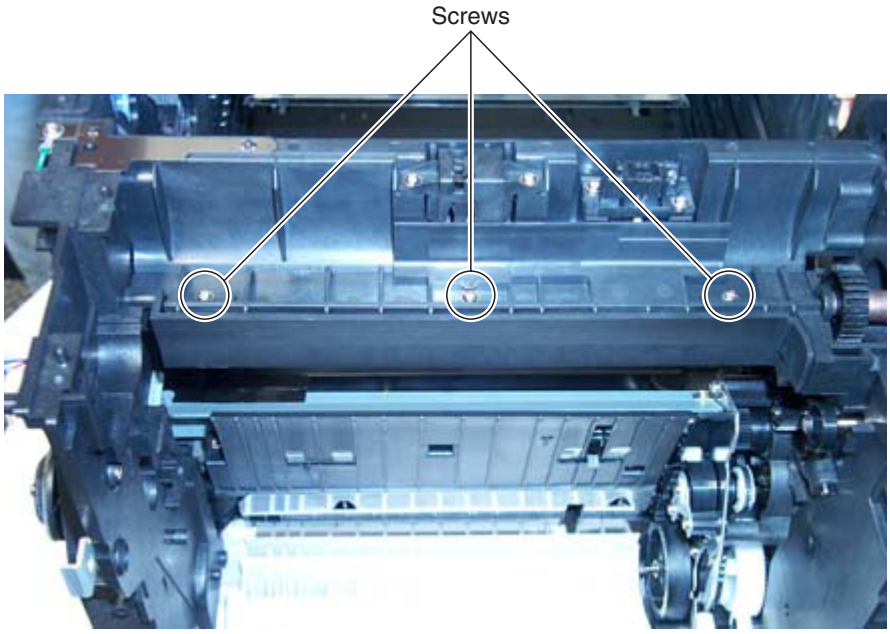
Before opening the exit cover, completely open the DEVE cover until it is at a 90^{o} angle to the main frame and the toner cartridges are ejected.

2. Open the exit cover (Door B).
3. Remove the 4 thumbscrews.
4. Remove the fuser by holding both sides and pulling straight up and out of the priner.



6.4.5b Fuser Base Cover (PL 9.13.29)

1. Remove the fuser (6.4.5a).
2. Remove 3 screws (3-10 silver).
3. Lift the base cover off.



6.4.6 Exit Cover - Door B (PL 9.5.0)

1. Open the duplex cover (Door C).
2. With the exit cover closed, remove the E-ring and the hinge pin.

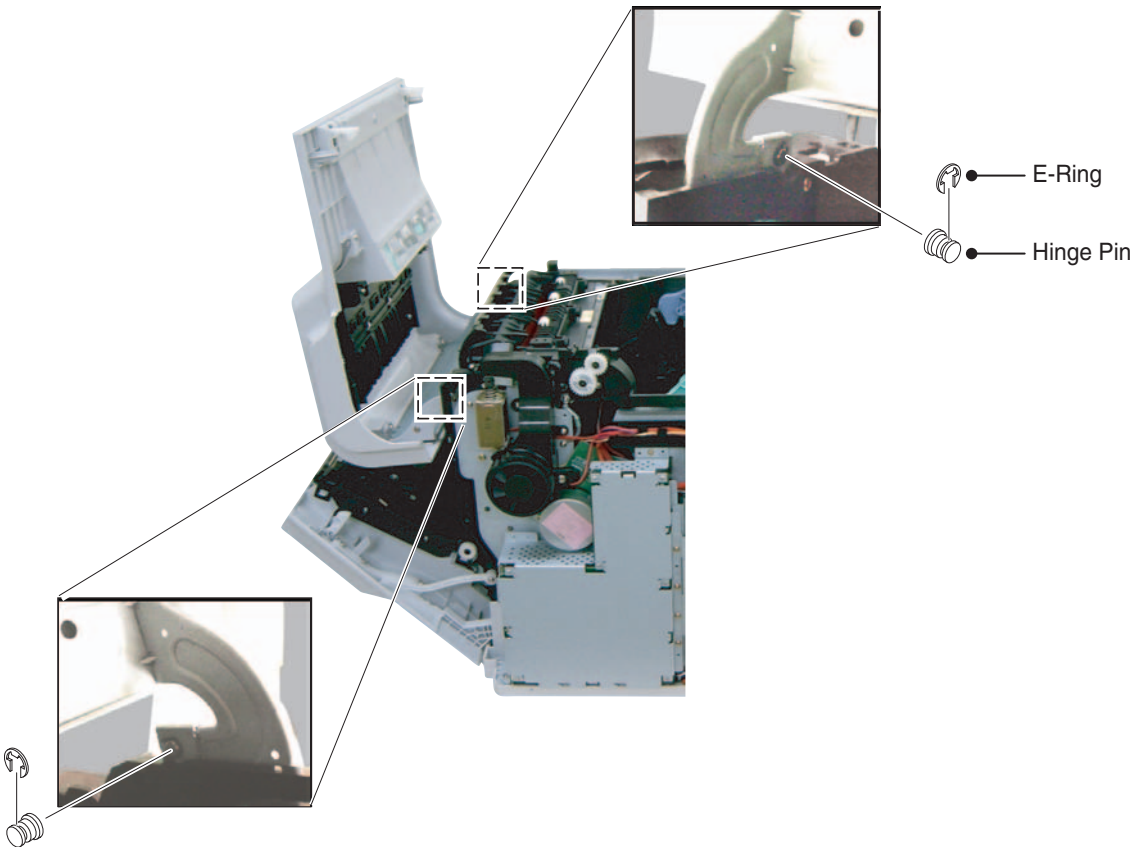
Caution

Do not lose the hinge pins.

Note

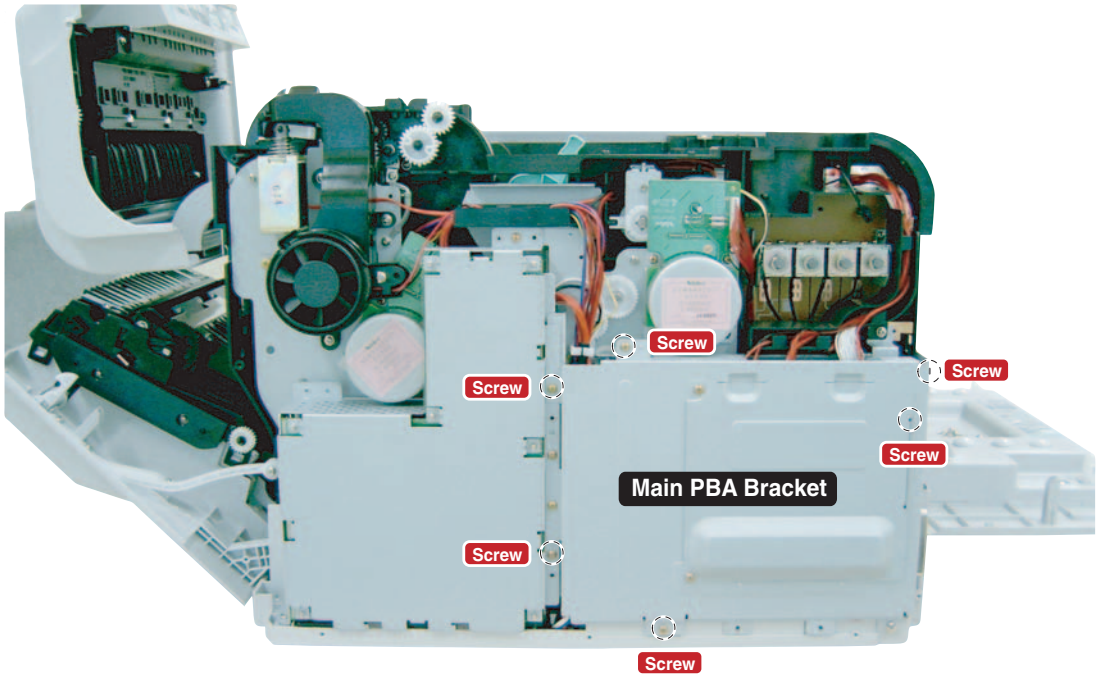
The diagram shows the door open and covers off for reference only.

3. Remove the exit cover.

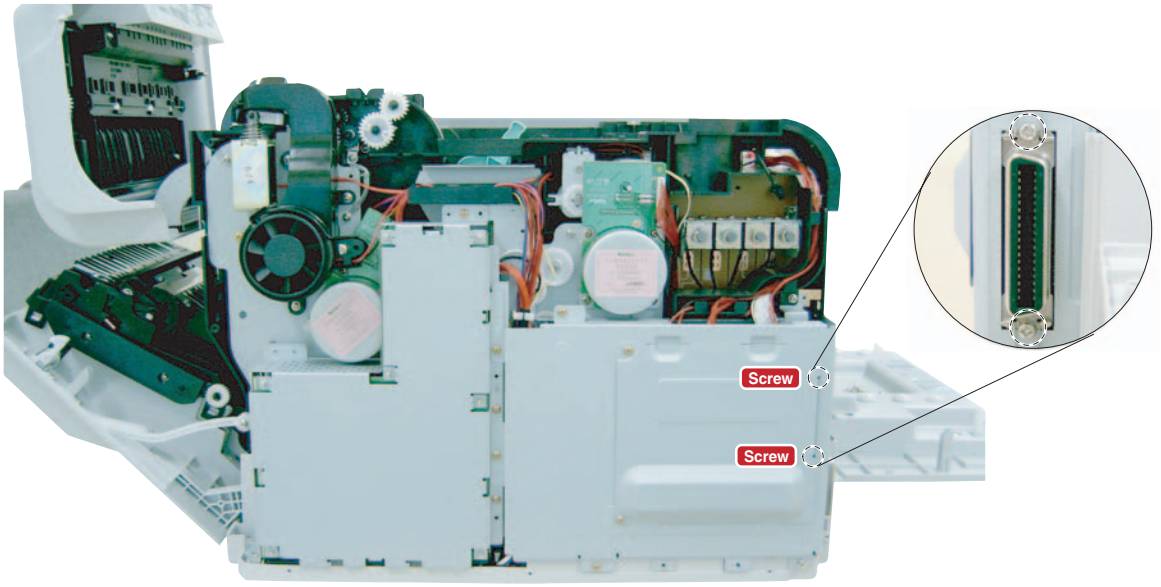


6.4.7a Low-Voltage Power Supply - LVPS/SMPS (PL 9.1.19)

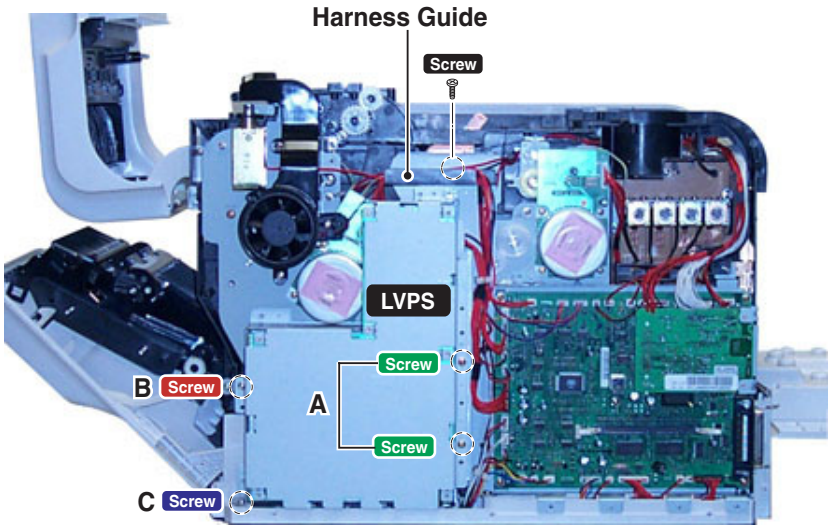
1. Remove the rear cover (6.4.3)
2. Remove 5 screws (3-6 machine, gold) from the main board shield.



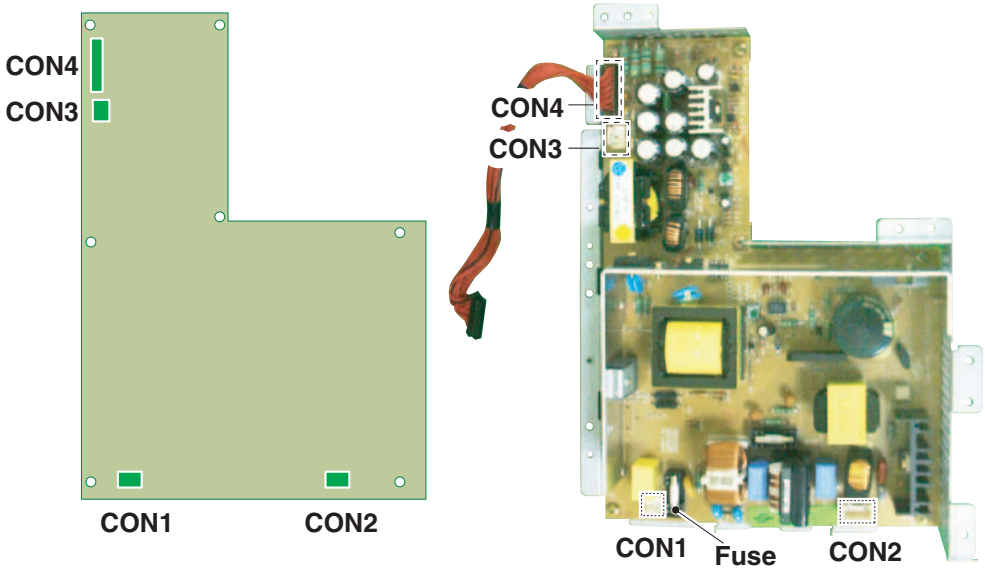
3. Remove 2 screws (3-10 machine, silver) connected to the parallel port and then remove the main board shield.



4. Remove 5 screws from the LVPS.
   - **A: Right side 2EA (3 * 6 Gold)**
   - **B: Left side 1EA (3 * 10 Silver)**
   - **C: Bottom 1EA (4 * 10 Silver)**
5. Remove 2 screws (3*10 silver) from the harness guide and free the harness, then remove the guide.



6. Press the top of the LVPS cage towards door C and tilt it out to access and disconnect the 4 harnesses from the LVPS.
7. Remove the LVPS.



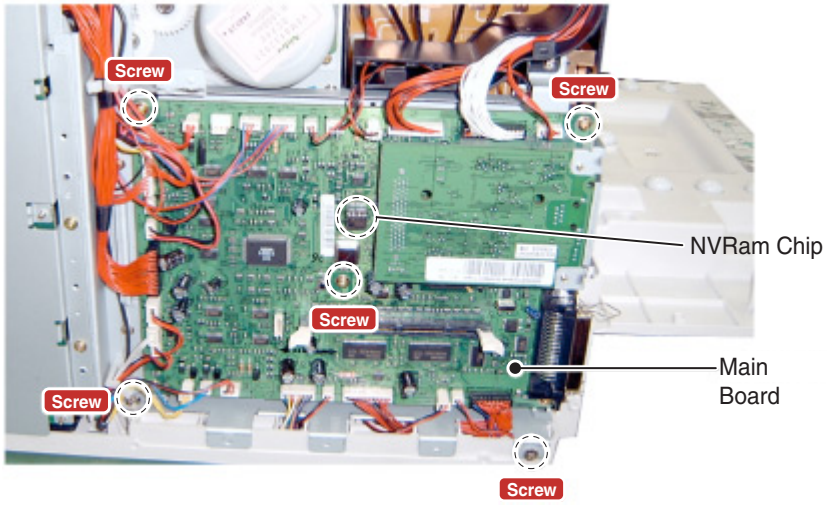
6.4.7b Main Controller Board (PL 9.1.10)

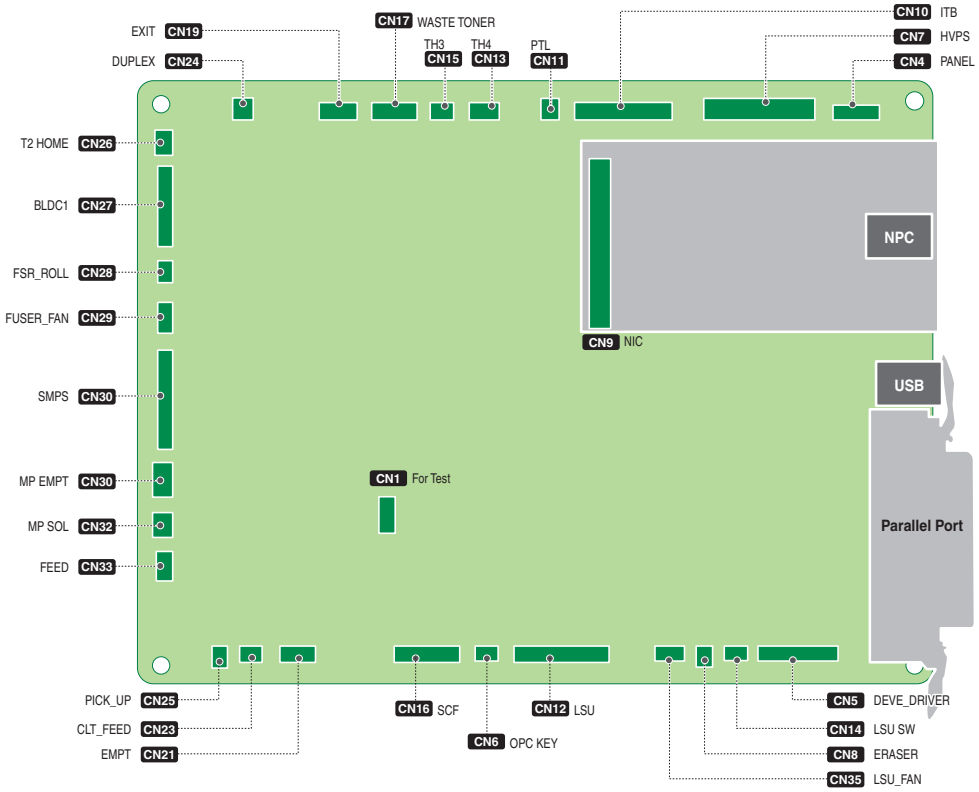
1. Perform steps 1 and 2 from procedure 6.4.7a.

Warning

Move the NVRAM Chip from the old board TO the new board. Failure to perform this step will result in the loss of important customer information, like page count and consumable life usage information.

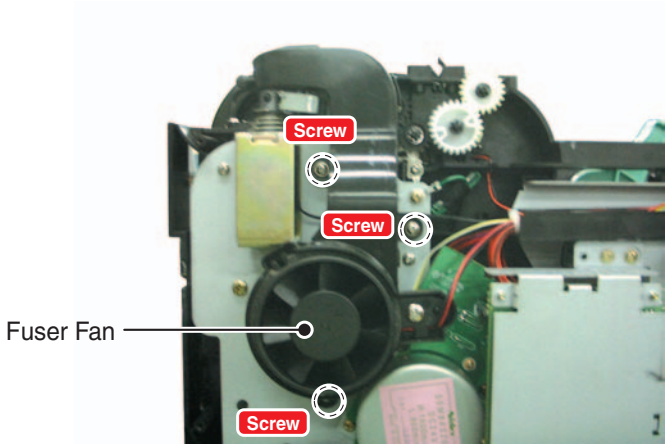
2. Disconnect all harness connected to the main board.
3. Remove 5 screws (3*6 machine screw, gold) and then remove the main board.





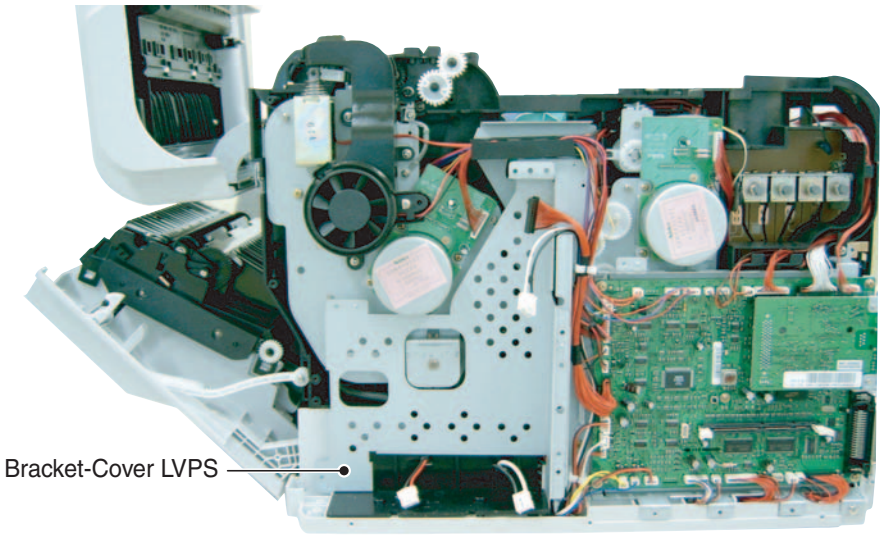
6.4.8 Fuser Fan Assembly (PL 9.1.27)

1. Remove the top cover. (6.4.1)
2. Remove the rear cover. (6.4.3)
3. Remove the main board shield. (6.4.7)
4. Remove 3 screws (3*10 silver).
5. Disconnect and free the harness from the main board and then remove the fuser fan.



6.4.9 Main Drive Assembly (PL 9.1.7)

1. Remove the rear cover. (6.4.3)
2. Remove the fuser. (6.4.5)
3. Remove the LVPS. (6.4.7a)
4. Remove the fuser fan. (6.4.8)
5. Remove all harnesses from the harness guides. Two harnesses need to be freed from the bottom of the bracket.
6. Remove the LVPS cover bracket.

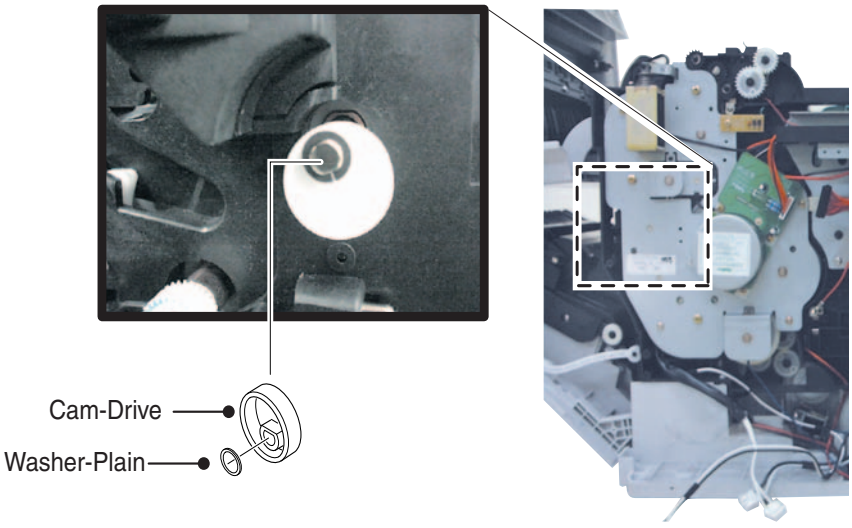


7. Look inside the imaging unit cavity and locate the transfer roller (T2) cam.

Note

Place a piece of paper below the transfer roller (T2) cam to avoid dropping the split ring washer into the drive gears.

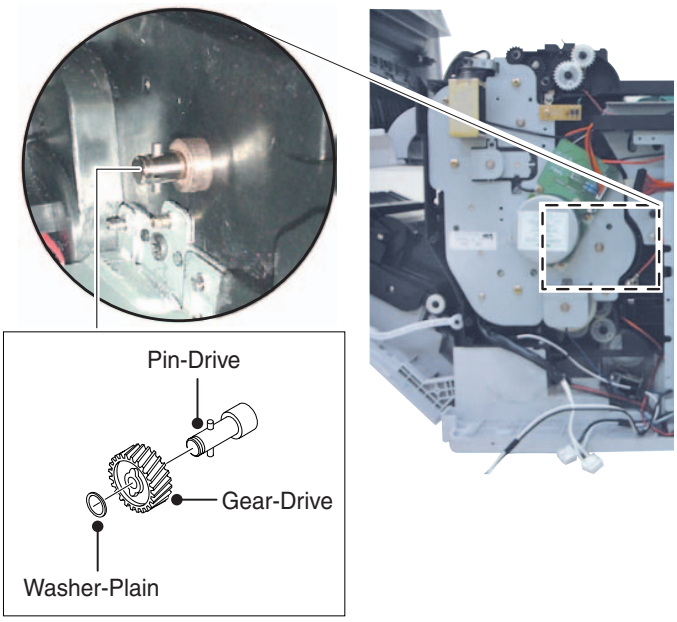
8. Remove the split washer and then remove the transfer roller cam.



9. Remove the washer and then remove the drum gear and pin. (The drum gear can be found inside the printer after removing the imaging unit.)

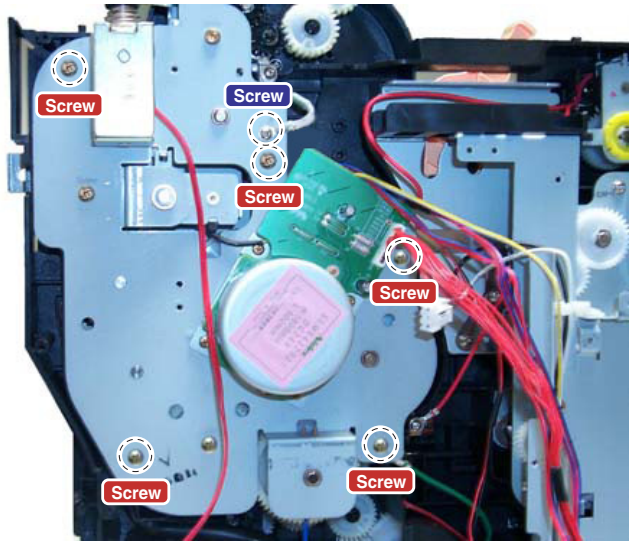
Note

Take care that the pin is not lost as you remove the gear.



10. Disconnect CN 23, 24, 27, and 32.

11. Remove 5 screws (3*10 silver) and then take out the main drive assembly.



>> On Re-assembly:

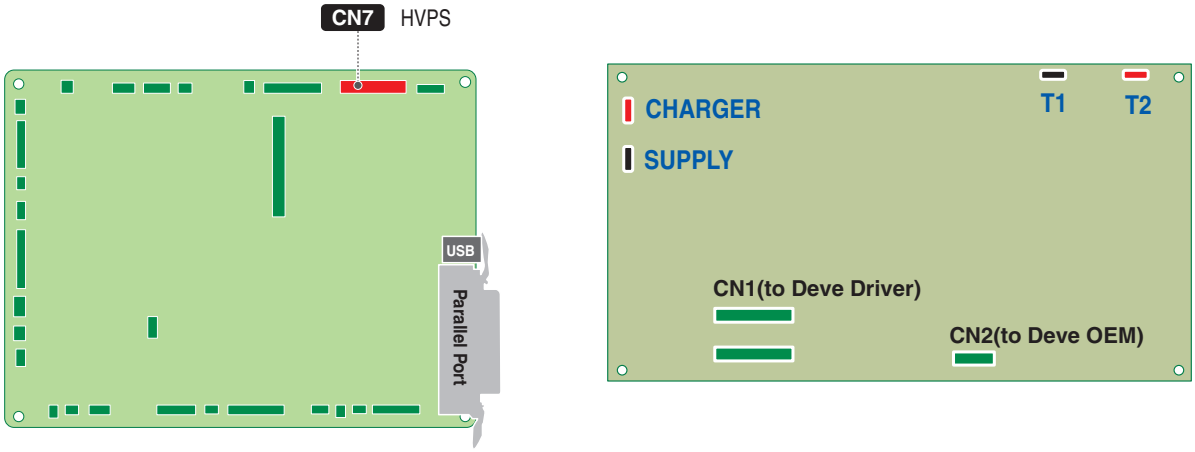
1. Be sure to reconnect the grounding wire.

6.4.10 HVPS (High Voltage Power Supply) (PL 9.1.20)

Warning

High Voltage! Be sure to follow the steps outlined in Section 1.5.4 when servicing this assembly

1. Remove the front cover and top cover. (6.4.1)
2. Remove the rear cover. (6.4.3)
3. Remove the main board shield. (6.4.7b)
4. Remove and free the CN7 harness from the main board.

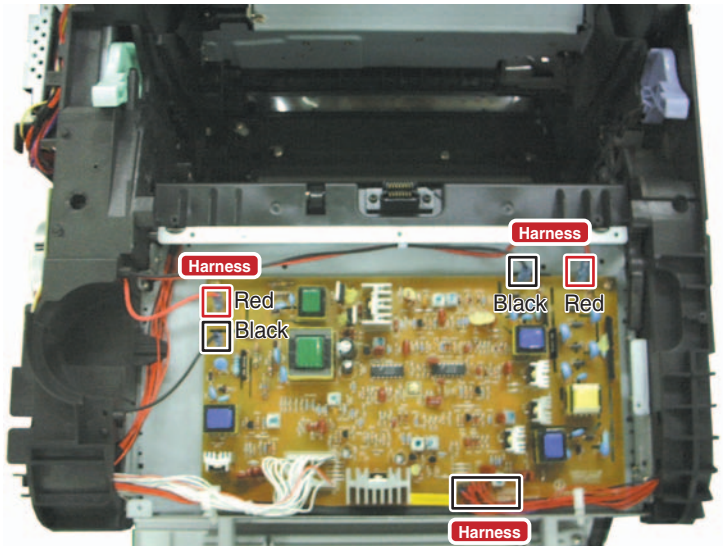


5. Remove 1 harness and 4 high-voltage harnesses from the HVPS.

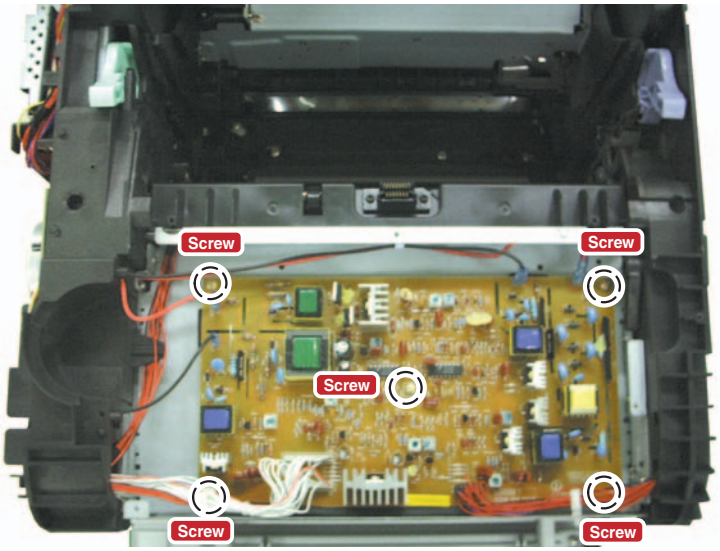
Caution

Do not swap the HVPS wires, they are the same color, size, and shape. Note the wire connectors and connection points for T1 and T2.

6. Free the white wiring harness through the channel in the chassis.

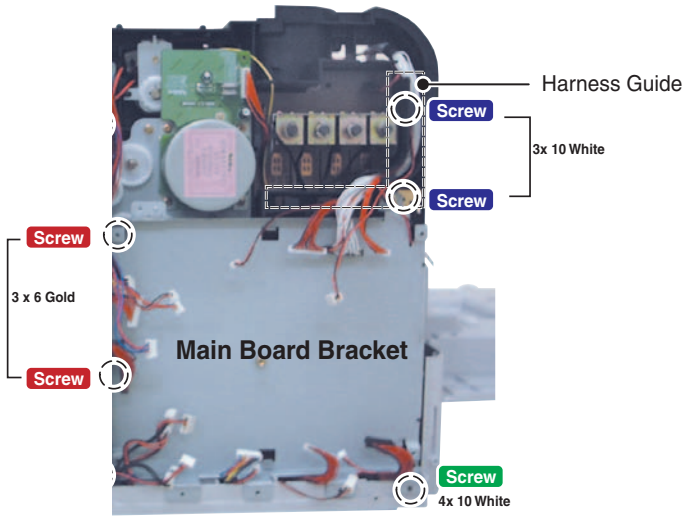


7. Remove 5 screws (3-6 machine gold) and then remove the HVPS.



6.4.11 Developer Drive Assembly (PL 9.1.8)

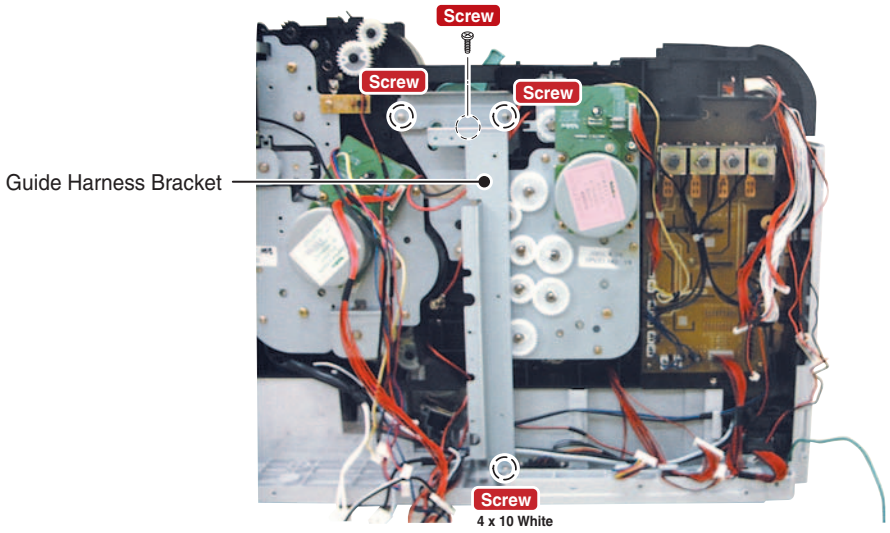
1. Remove the rear cover. (6.4.3)
2. Remove the main board. (6.4.7b)
3. Remove 5 screws securing the main board bracket.
   - **Left, 2 EA 3*6 machine screw, gold**
   - **Top Right, 2 EA 3*10 silver**
   - **Bottom, 1 EA 4*10 silver**



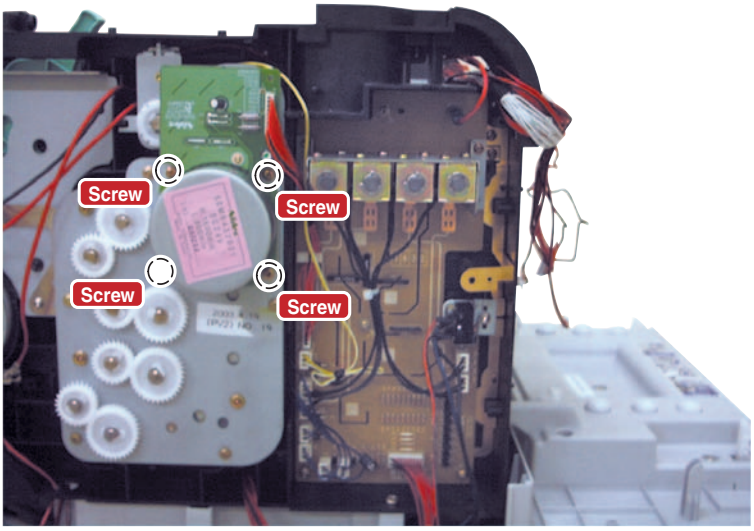
Note

The black harness guide will fall off.

4. Remove the ground harness and the harness guide bracket by removing 3 screws.
   - Top, 2 EA 3*6 machine screw, gold
   - Bottom, 1 EA 4*10 silver



5. Disconnect the harness from the DEVE Motor.



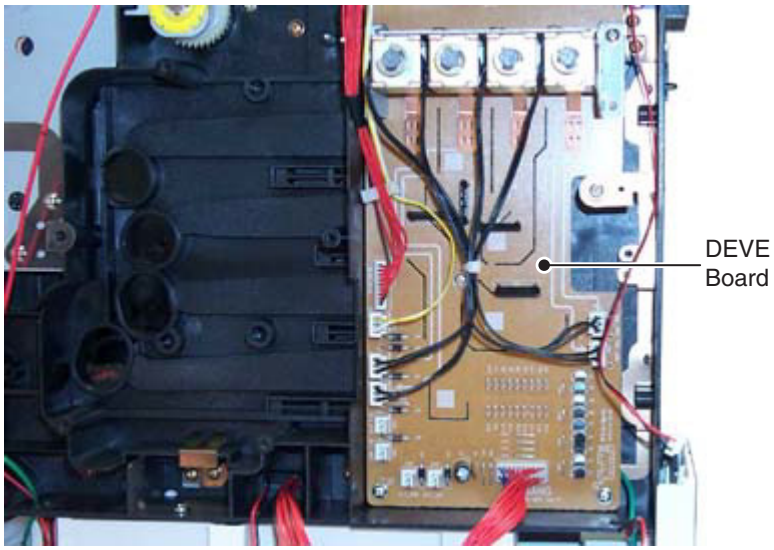
6. Remove 4 harnesses connected to the DEVE drive board, then remove the DEVE drive assembly.
7. Remove 5 screws (3*10 silver) from the DEVE drive assembly.

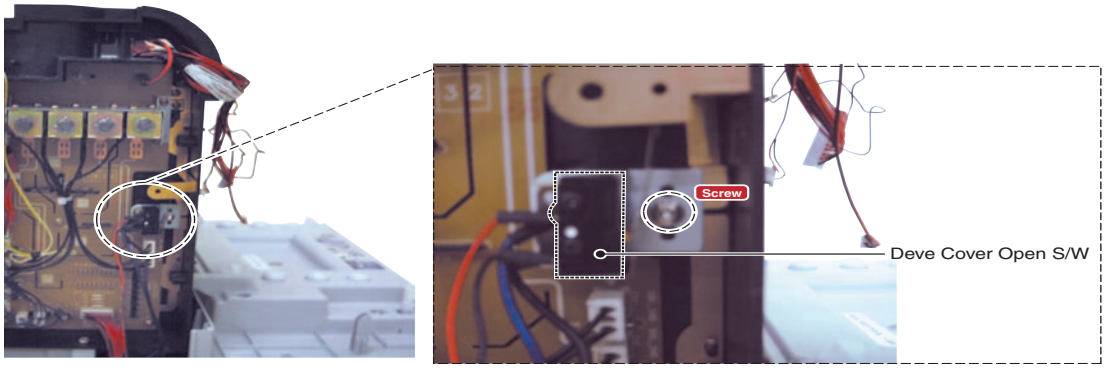
6.4.12 DEVE Drive Board (PL 9.13.20) and DEVE Cover Open Switch (PL 9.15.36) (Door A Interlock)

Warning

High Voltage! Be sure to follow the steps outlined in Section 1.5.4 when servicing this assembly

1. Remove the rear cover. (6.4.3)
2. Remove the main board. (6.4.7b)
3. Remove the main board shield. (6.4.7b)
4. Remove the main board bracket, steps 1 and 2 from 6.4.11.
5. Free the wiring from the black harness guide.
6. Remove the screw (3-10 silver) from the guide and remove it.
7. Remove the screw (3-10 silver) and then take out the DEVE cover open S/W.

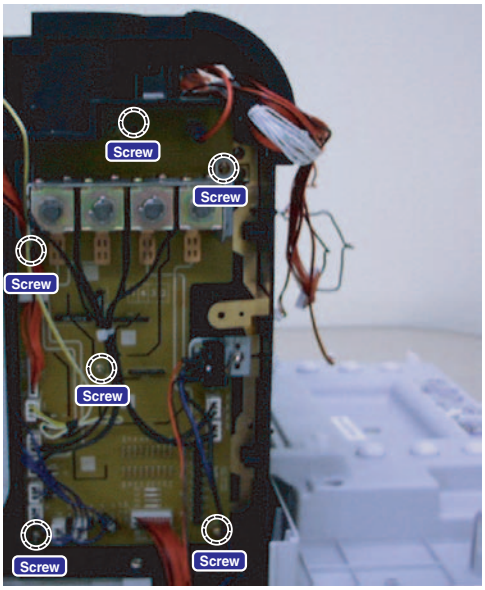


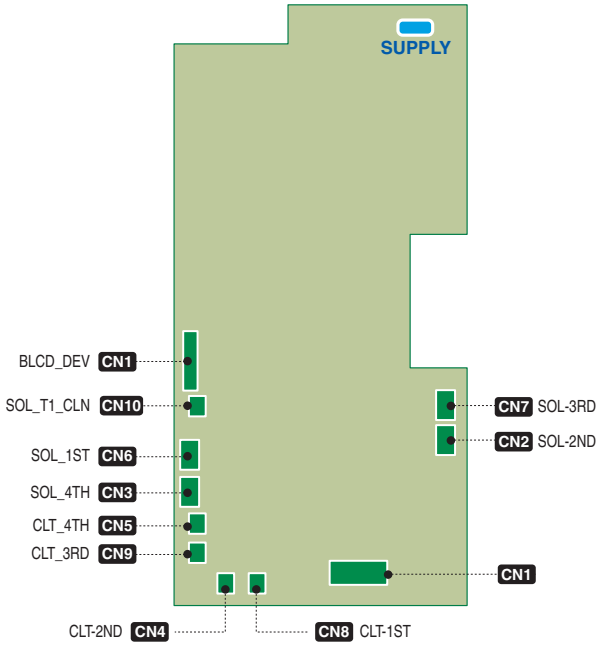


8. Disconnect 8 harnesses from the DEVE drive board: CN1, CN10, CN5, CN9, CN4, CN8, and supply.
9. Remove 6 screws (3*10 silver) and then take out the DEVE drive Board

Caution

CN5, CN9, CN4, and CN8 are keyed the same and can be plugged in incorrectly. Start with CN8 which corresponds to the bottom clutch assembly, then work up to CN4, CN9, and CN5..



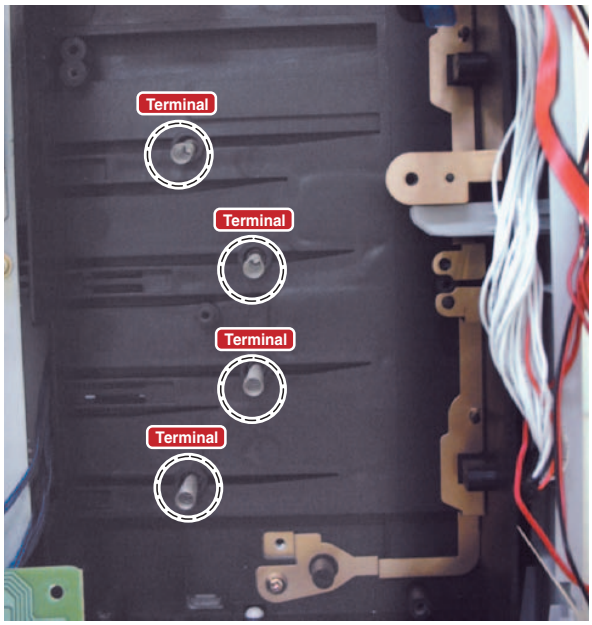


10. Remove the 4 high-voltage terminals to ensure they don't become damaged or lost.

Caution

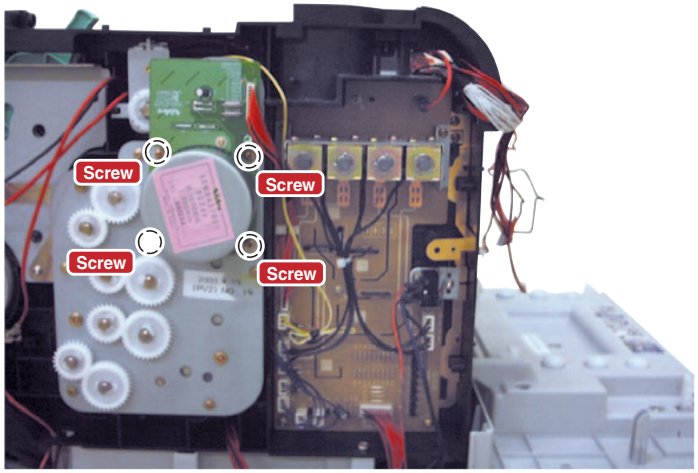
Do not lose or damage the terminal springs.

.

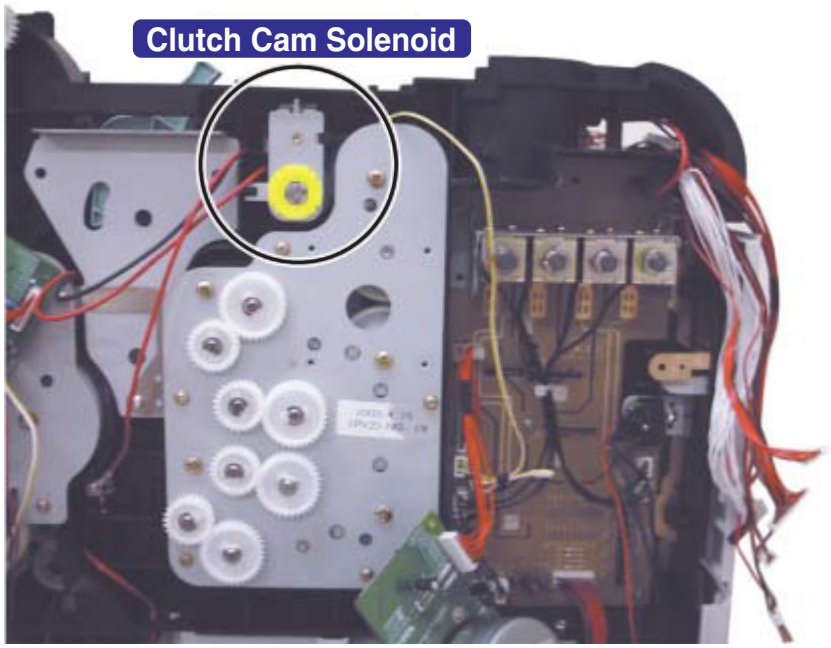


6.4.13 DEVE Drive Motor (PL 9.7.16) and Clutch Cam Solenoid (PL9.1.33) (T1 Clean)

1. Remove the rear cover. (6.4.3)
2. Remove the main board shield. (6.4.7b)
3. Remove 4 screws (3*6 gold) and then remove the DEVE drive motor.
4. Unplug 1 harness from the DEVE drive board.

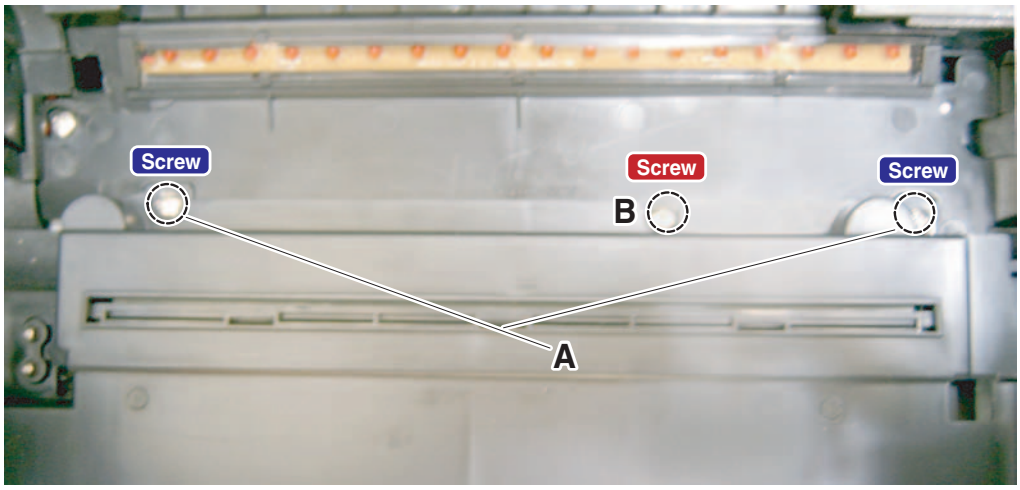


5. Release the locking tab from the shaft.
6. Remove the solenoid.

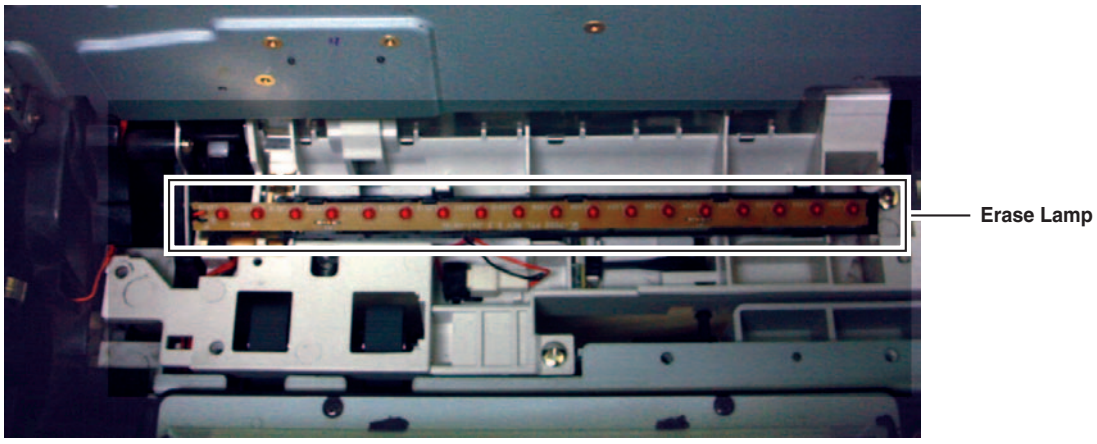


6.4.14 Erase Lamp (PL 9.13.12)

1. Remove all the consumables (6.3.3)
2. Remove the front cover and top cover (6.4.1)
3. Remove the waster toner cartridge (o 6.4.18)
4. Open the DEVE cover (Door A) and the exit cover (Door B).
5. Remove 2 screws (4*10 silver) from the laser unit cover and 2 clips located next to the DEVE cover hinge. **(A)**
6. Remove the laser unit cover.

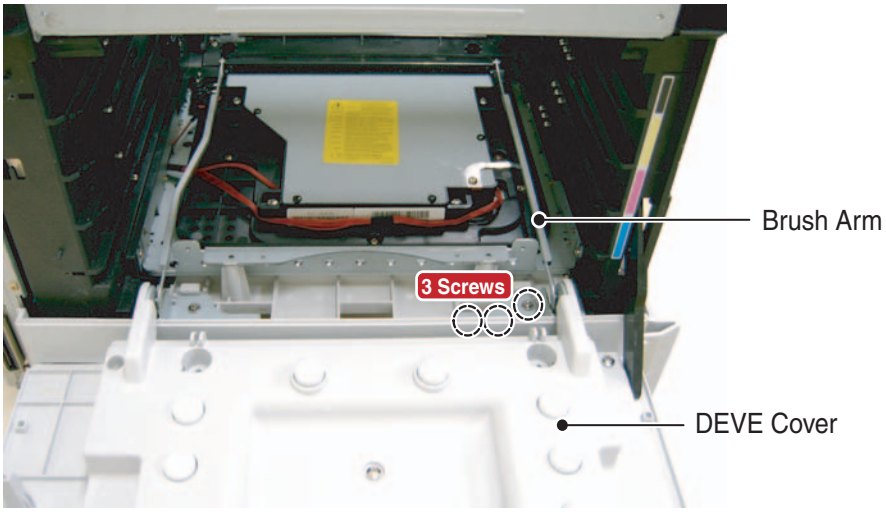


7. Remove the waste auger tube.
8. Remove 1 screw (4*10 silver) and then remove the lamp cover. **(B)**
9. Remove the 2 clips and lift the eraser lamp assembly, and disconnect the harness and then remove the erase lamp.



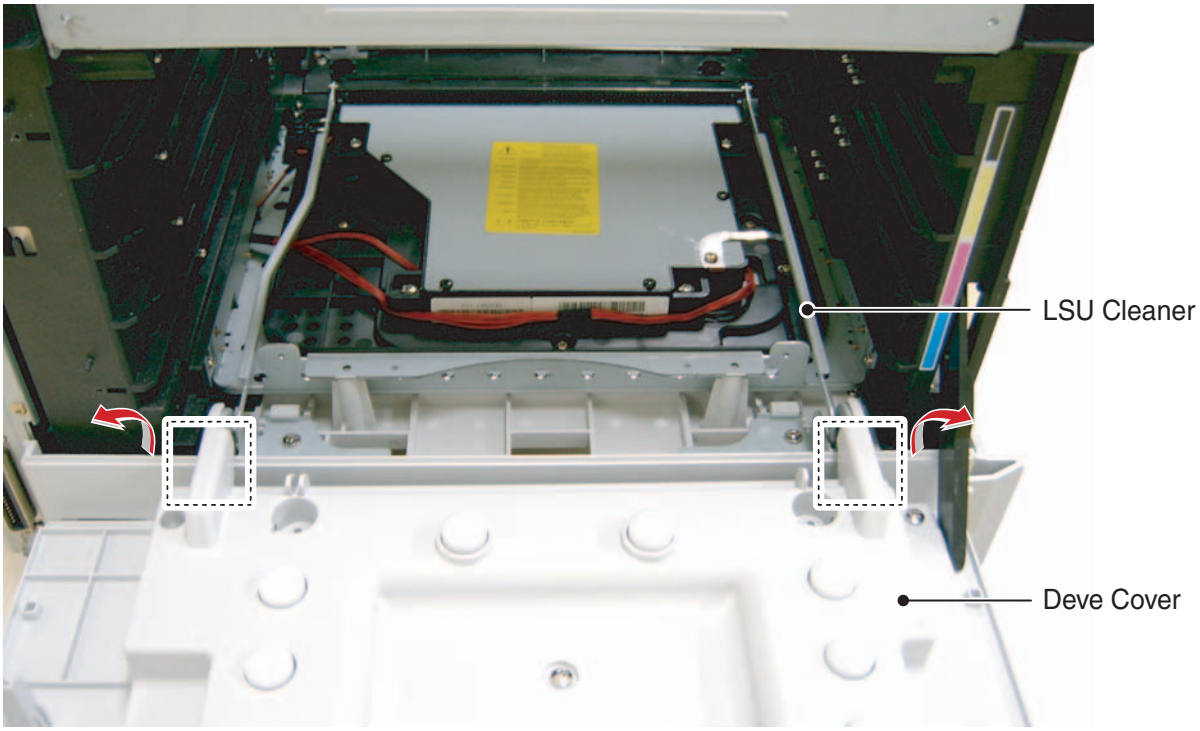
6.4.15a Laser Brush (PL 9.1.49)

1. Remove all consumables (toner cartridges, transfer unit, and imaging unit (protect from light)) (6.3.3)
2. Remove the front cover and top cover. (6.4.1)
3. Remove the laser unit cover. (Steps 1-3 of 6.4.14)
4. Remove 3 screws (4-15 silver) from the hinge bracket on the right of the DEVE cover
5. Release the brush arms from the laser housing and pull the brush out of the printer..



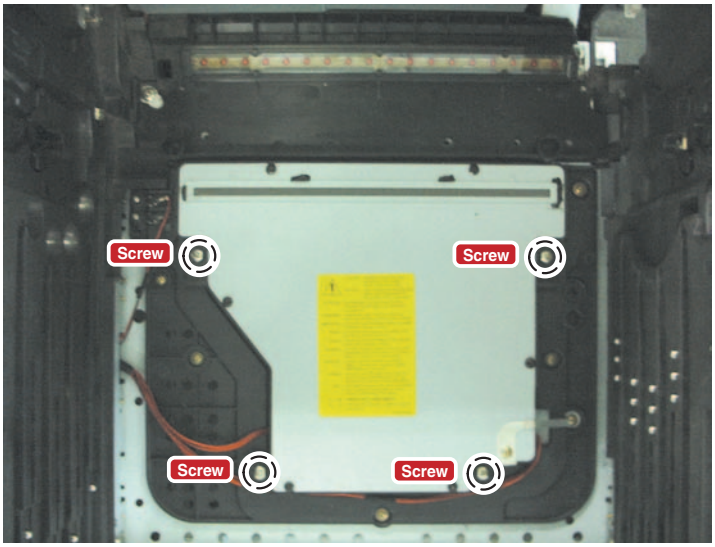
6.4.15 DEVE Cover - Door A (PL 9.1.18)

1. Remove the Laser Brush (6.4.15a).
2. Remove the DEVE cover by pulling it in the direction of the arrows.

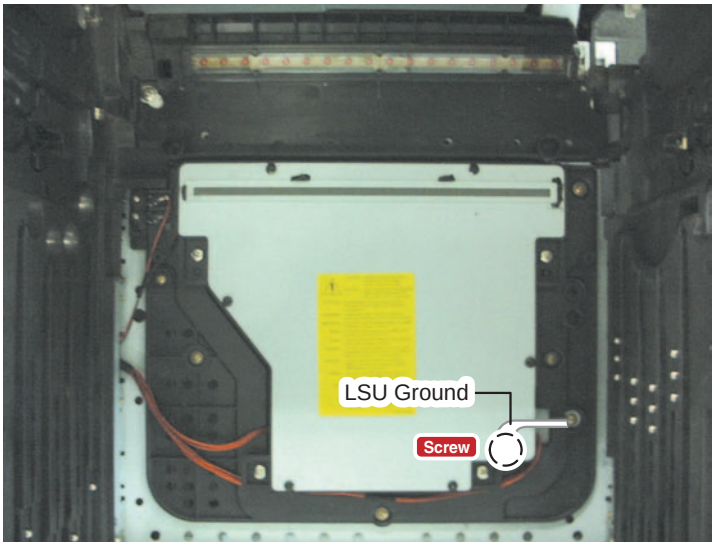


6.4.16 Laser Unit (PL 9.1.21)

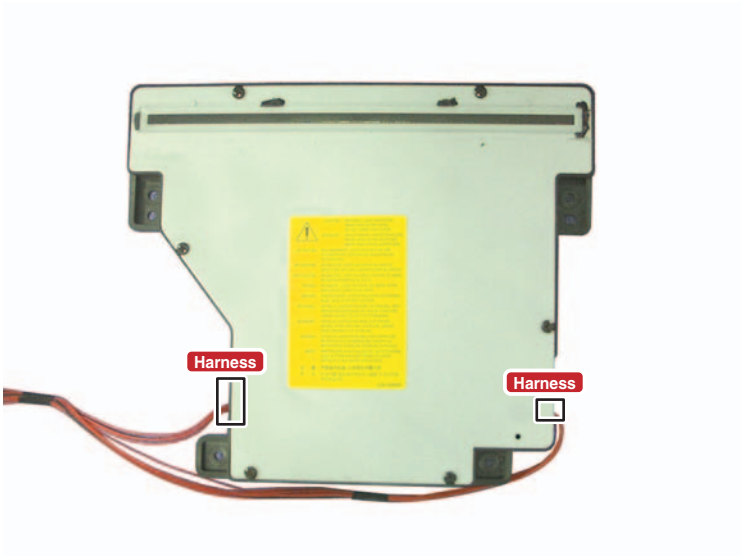
1. Remove the transfer unit and imaging unit (protect from light and damage). (6.3.3)
2. Remove the DEVE cover (Door A). (6.4.15)
3. Remove the Laser Unit Brush. (6.4.15.1)
4. Remove 4 screws (4*10 silver).



5. Remove 1 screw (3*8 yellow).



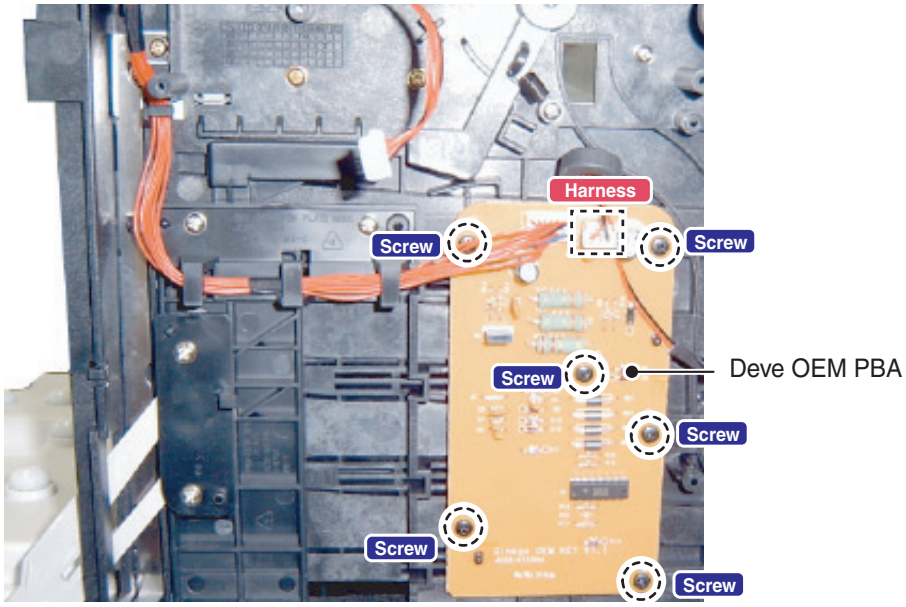
6. Disconnect 2 harnesses and remove the laser unit.



6.4.17 DEVE OEM Key Board - CRUM Reader Board (PL 9.14.36)

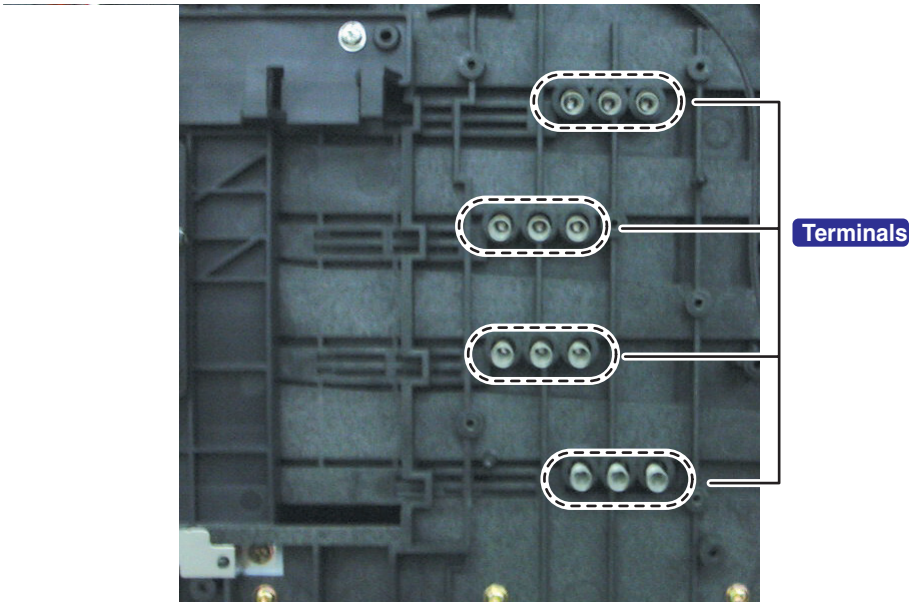
1. Remove the Front Cover and the Top Cover. (6.4.1)
2. Disconnect the harness (CN1) from the HVPS and free it from the channel.
3. Disconnect the harness (CN2) from the DEVE OEM board.
4. 2) Remove the 6 screws (3*8 black) and remove the Board

.



5. Remove the 12 terminals so they dont get lost

.



>> On Reassembly:

Caution

On reassembly ensure the springs are seated correctly and not damaged or bent.

6.4.18 Waste Toner Auger Assembly (PL 9.13.1)

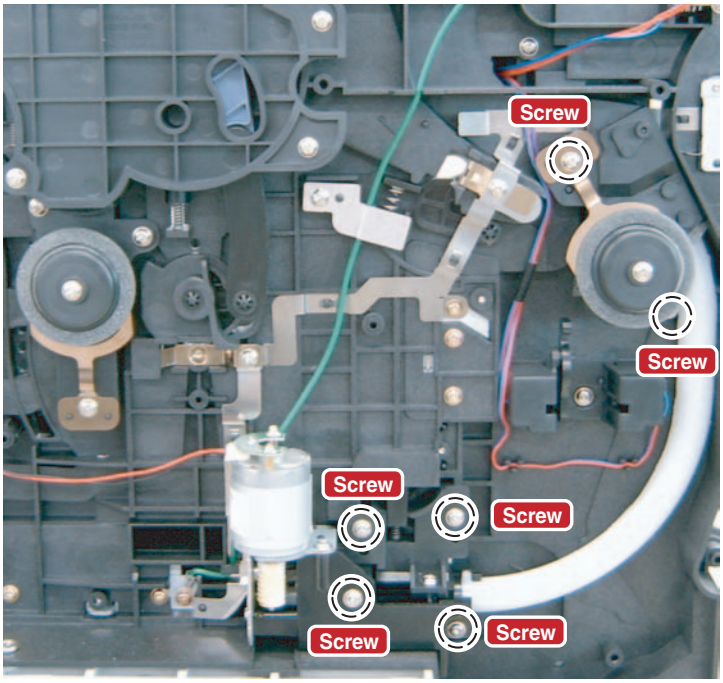
1. Remove the Front Cover and the Top Cover. (6.4.1)

Caution

It is very likely that waste toner will be spilled when removing the waste toner assemby. Have a toner vacuum when servicing this part. NEVER use a standard vacuum cleaner to clean up spilled toner.

2. Disconnect harness CN2 from the DEVE OEM Board.
3. Remove 6 screws (3*10 silver; Upper part - 4 screws, Lower part - 2 screws)

.



Caution

Do not damage the foam gaskets located behind the auger tube and dust cover.

4. Reach into the drum cavity and lightly depress the waste toner receiver. Holding the toner receiver down, gently pull the waste toner assembly away from the printer. Once the assembly is released, refer to the photograph and slowly remove the assembly.

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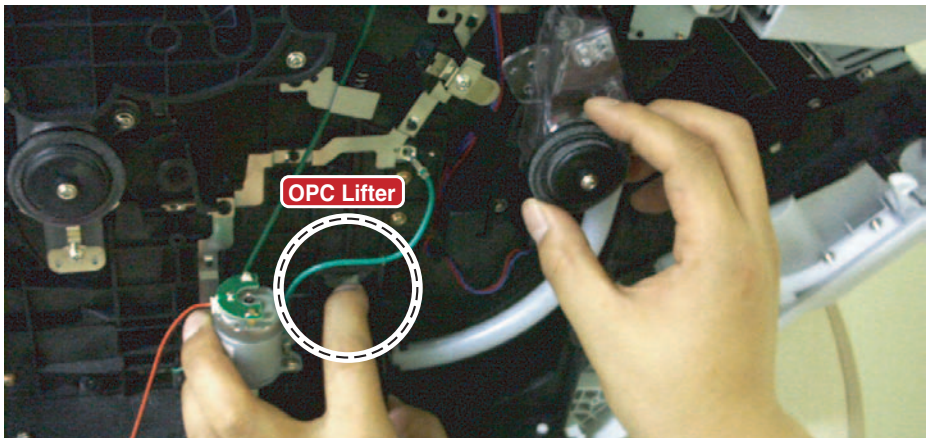


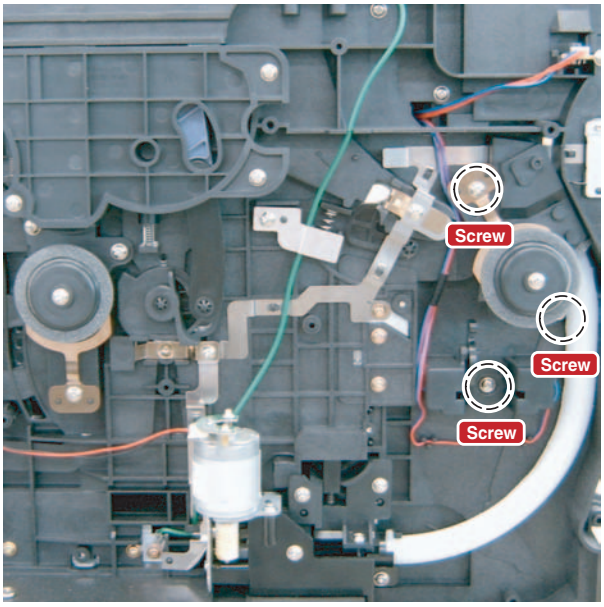
6.4.18a Waste Toner Cartridge Full Sensor (PL 9.14.1)

1. Remove the Front Cover and the Top Cover. (6.4.1)
2. Remove the Rear Cover. (6.4.3)
3. Remove the Fuser and Fuser Cover Base. (6.4.5 and 6.4.5.1)
4. Remove the LVPS. (6.4.7)
5. Remove the Main Drive Assembly. (6.4.9)
6. Disconnect the harness CN17 from the main board.
7. Remove 2 screws (3*10 silver) from the waste toner assembly and rotate the waste auger tube away from the printer (towards you), but do not disconnect it.

Caution

Be careful not to spill waste toner. Pay attention to the position of the foam gasket, as it can be easily damaged.

8. Route the wiring harness through the channel to free it from the chassis.
9. Remove 1 screw (3*10 Silver) from the toner waste cartridge full sensor.



Note

Note the orientation of the sensor for reassembly.

10. Release the sensor assembly from the tabs to remove the sensor.

>> On re-assembly:

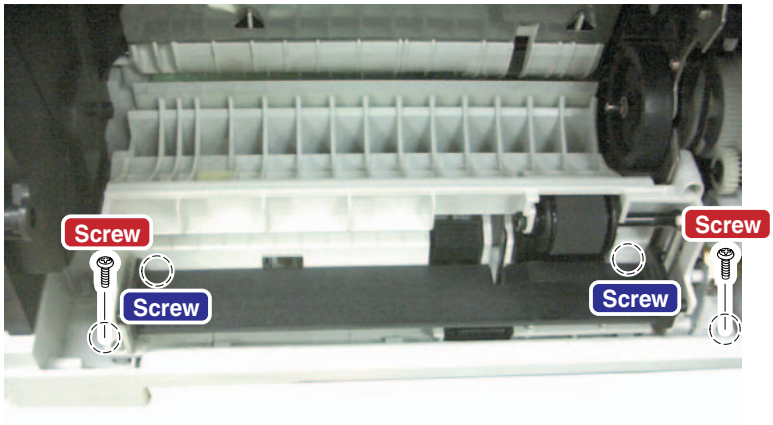
1. When re-securing the waste auger, ensure proper alignment of the foam gasket.

Caution

Be careful no to pinch or damage the wiring when reinstalling the main drive assembly.

6.4.19 MPT (Multi-Purpose Tray) Feed Assembly and Roller (PL 9.17.0)

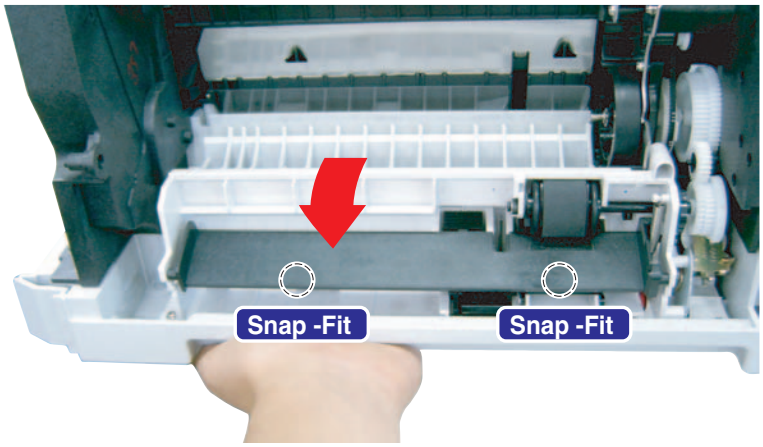
1. Remove all consumables (Toner cartridges, Transfer unit, and Imaging Unit (protect from light)) (6.3.3)
2. Remove the Front Cover and Top Cover. (6.4.1)
3. Remove the Rear Cover. (6.4.3)
4. Remove the Duplex Cover. (6.4.4)
5. Remove the LVPS and LVPS Cover. (6.4.7a)
6. Remove the LVPS inner cover by lifting it out of the printer, there are no screws. (See PL 9.1-55)
7. Disconnect 2 harnesses (CN31 and CN32) from the main board.
8. Free the wiring harness. Cut the tie wrap to loosen the sensor and solenoid harness on the rear of the printer.
9. Remove the 4 screws (3*10 Silver) securing the asembly to the base.



10. Slide the right side of the printer 3 to 4 inches over the edge of the table to give access to the underside.

Caution

Do not tilt the printer excessively or waste toner will spill.



11. Reach up underneath to locate the locking tabs which secure the MPT to the base. Pull the tabs forward and up to release the assembly. Rotate the whole assembly towards you to remove it.

>> On re-assembly:

1. Insert the assembly in at a 45° angle, aligning with the 3 tabs on the base of the printer.

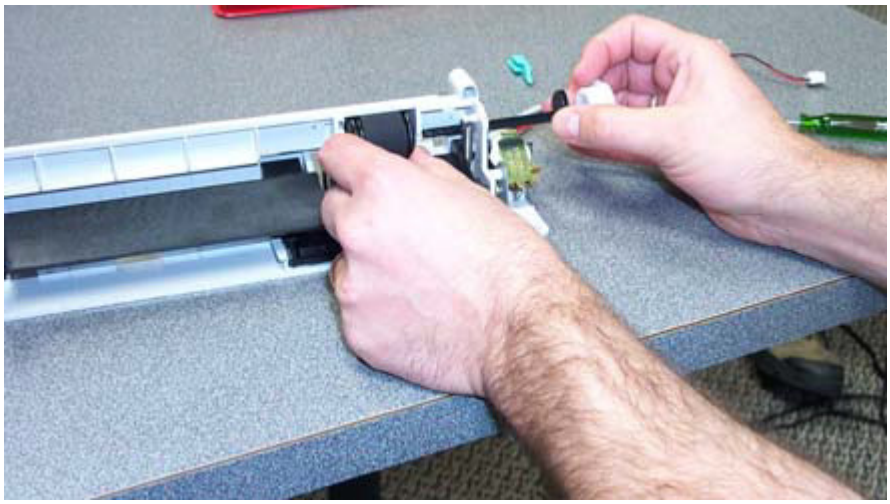
Caution

Be careful not to damage the solenoid on reassembly.

6.4.19 cont'd

>> MPT Feed Roller

1. Place the MPT assembly on a flat surface and remove the e-ring and washer securing the pick roller shaft to the assembly.
2. Slide the shaft to the right to free the roller and remove it.



>> On re-assembly:

Note

The roller has 3 pieces; 2 collars and the roller. When re-assembling the roller, the collars fit with the long ends facing out.
The hole through the roller is round on one end and D shaped on the other. The D shaped end needs to face the left.
The black plastic bearing that the roller shaft fits into is not attached to the printer and is easily lost. It has a small key that fits into a slot in the MPT assembly.

Caution

Do not pinch the black washer in the e-ring slot.

6.4.20 Main Frame (PL 9.13) and Base Frame (PL 9.16)

1. Remove the Front Cover and Top Cover. (6.4.1)
2. Remove the Rear Cover. (6.4.3)
3. Remove the Duplex Cover. (6.4.4)
4. Remove the LVPS and LVPS Cover. (6.4.7a)
5. Remove the Main Board Shield. (Steps 1 and 2 of 6.4.11)
6. Remove the DEVE Cover (Door A). (6.4.15)
7. Remove the Laser Cover. (6.4.15.1)
8. Remove the DEVE Drive Assembly. (6.4.11)
9. Remove the Erase Lamp. (6.4.14)
10. Remove the Waste Toner Auger Assembly. (6.4.18)
11. Remove the Main Drive.
12. At the end of the erase lamp, remove the 1 black screw (3-8) from the grounding strap.
13. Disconnect all wiring harnesses from the lower portion of the chassis.
14. Cut the two tie wraps securing the harnesses together.

Caution

Be sure the harnesses are all routed out of the way so that on reassembly the harnesses do not get damaged. Use care to protect the harnesses and erase lamp from damage.

15. Lift the main frame of the chassis off the base frame.

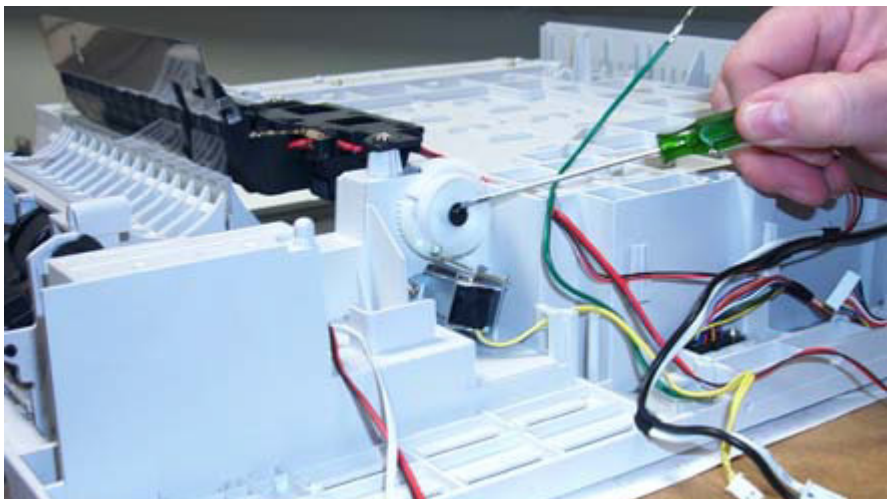
>> On re-assembly:

Note

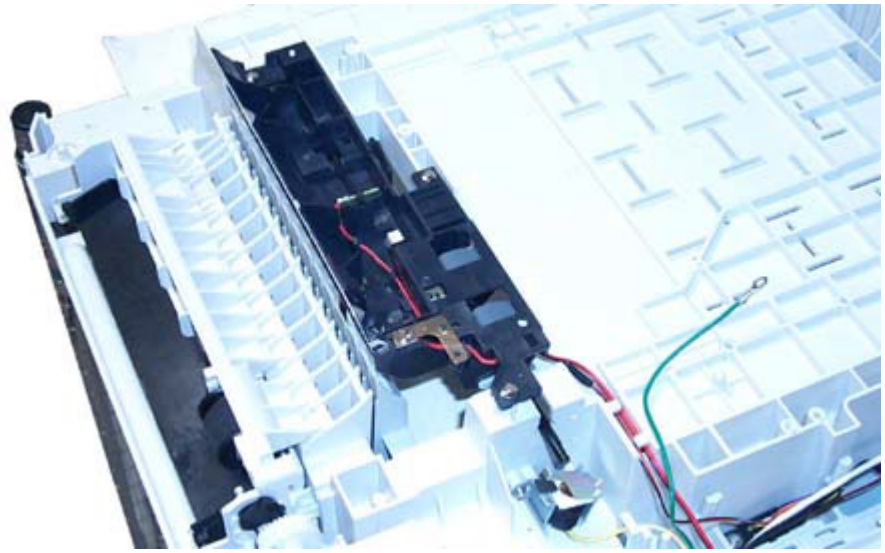
There are 2 extra untapped holes on the front and back of the base that can be used if the others become damaged.

6.4.21 Pick Roller Assembly, Tray1 (PL 9.18.0)

1. Remove the Main Frame and Base Frame. (6.4.20)
2. Remove the split ring from the white gear.



3. Remove the gear by rotating it to the no tooth portion.
4. Gently pull out on the outer bushing's locking tab, where the gear was, to free it from the chassis. Align the tab in the bushing with the slot in the base and slide it toward the back of the printer to free it.
5. Remove 3 screws (type).



6. Free the wiring harnesses from the channel.
7. Remove the assembly from the base frame.

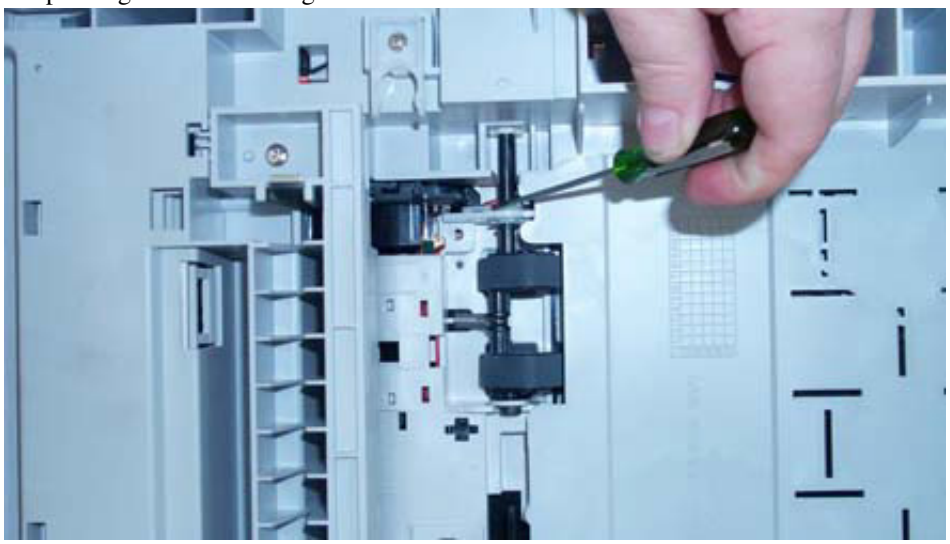
>> On re-assembly:

Note

Ensure the mylar shield is in front of the pick assembly before reinstalling.

6.4.22 Pick Roller (PL 9.18.12)

1. Remove all consumables (Toner cartridges, Transfer unit, and Imaging Unit (protect from light)) (6.3.3)
2. Remove the Rear Cover. (6.4.3)
3. Remove the Duplex Cover. (6.4.4)
4. Remove the LVPS Cover. (6.4.7a)
5. Gently and slowly, rotate the printer onto its front. Do not spill waste toner into the printer.
6. Remove the split ring from the white gear.



7. Rotate the gear until the toothless portion is against the solenoid actuator. Hold the flapper down for clearance.
8. Using a pair of pliers, remove the gear from the shaft.

Note

There are 2 white plastic bushings that must be unlocked to remove the shaft from the printer; the inner and the outer.

9. Gently pull out on the outer bushing's locking tab to free it from the chassis. Rotate the bushing 90^{o} counter clockwise and remove it.
10. Gently free the locking tab on the inner white plastic bushing from the vlack housing and rotate it 90^{o} clockwise, towards the bottom of the printer, until the tabs can slide through the slot in the housing.
11. Flex the shaft and slide the white bushing towards the rear of the printer and remove it.
12. Slide the shaft and the black bushing towards the rear of the printer and remove it.
13. Remove and replace the D-shaped rubber bands one at a time to keep them oriented in the correct alignment.

Caution

Use care and ensure the bands are not installed backwards.

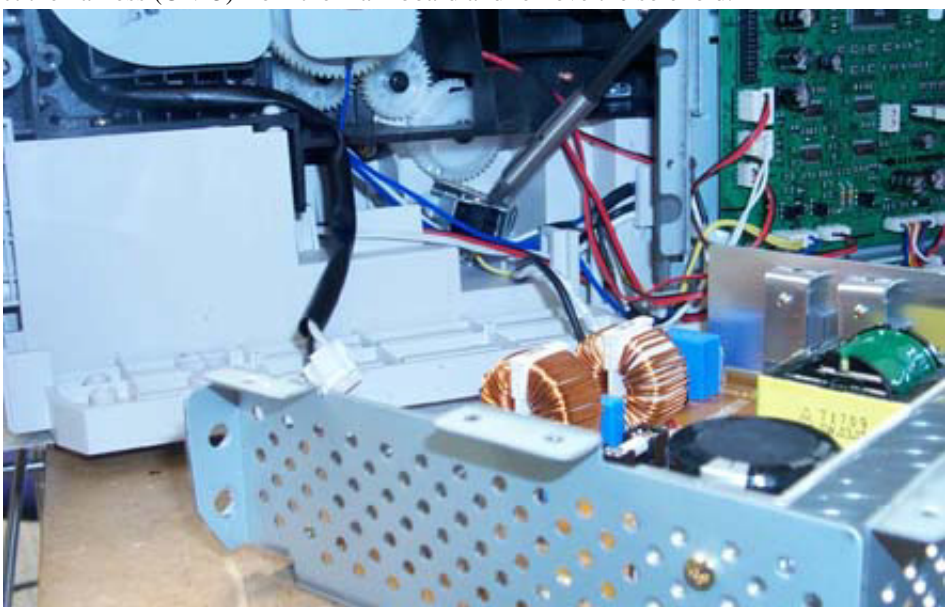
>> On re-assembly:

Note

The black bushing is keyed. The shaft is D shaped. Manually rotate the shaft to aligning the flat portion of the shaft with the gear.

6.4.23 Paper Pickup Solenoid (PL 9.16.22)

1. Remove all consumables (Toner cartridges, Transfer unit, and Imaging Unit (protect from light)) (6.3.3)
2. Remove the Top Cover. (6.4.1)
3. Remove the Rear Cover. (6.4.3)
4. Remove the LVPS and LVPS Cover. (6.4.7a)
5. Remove the LVPS inner cover by lifting it out of the printer, it is not held by screws.
6. Remove the 1 screw securing the solenoid to the base.
7. Disconnect the harness (CN25) from the main board and remove the solenoid.

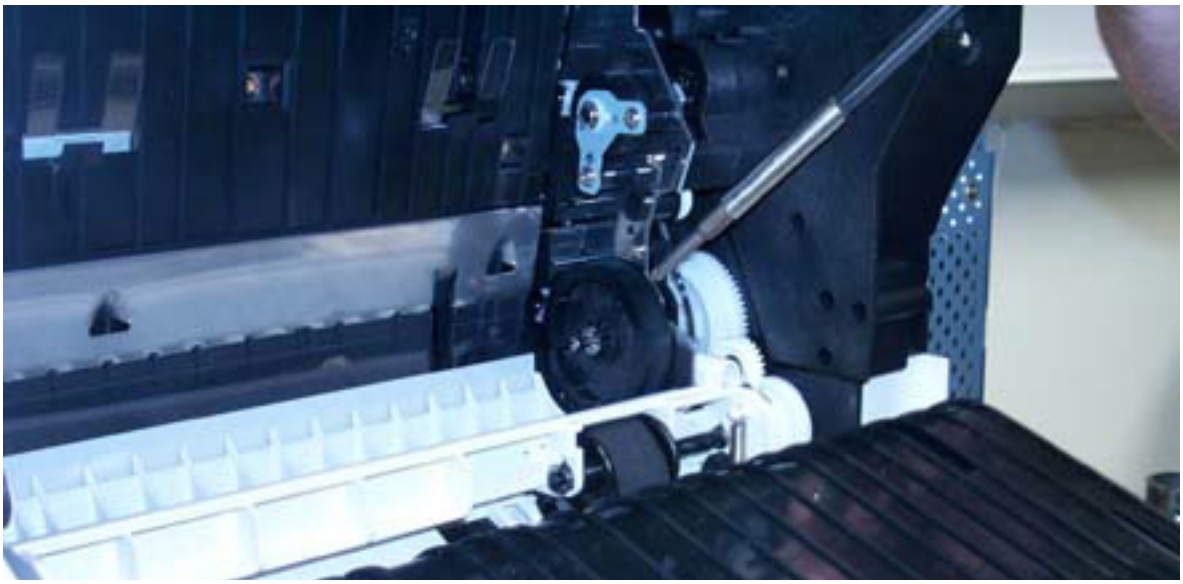


6.4.24 Temperature Sensor (PL 9.16.23)

1. Remove the Front Cover and Top Cover. (6.4.1)
2. Remove the Rear Cover. (6.4.3)
3. Remove the Duplex Cover. (6.4.4)
4. Remove the LVPS and LVPS Cover. (6.4.7a)
5. Remove the Main Board Shield. (Steps 1 and 2 of 6.4.11)
6. Remove the DEVE Cover (Door A). (6.4.15)
7. Remove the Laser Cover. (6.4.15.1)
8. Remove the DEVE Drive Assembly. (6.4.11)
9. Remove the Erase Lamp. (6.4.14)
10. Remove the Waste Toner Auger Assembly. (6.4.18)
11. Remove the Main Drive.
12. Remove all 7 base screws, 1 (3-8 black) and 6 (4-10 silver) and gently lift the rear, right of the frame enough to feed the harness between the base and the frame.
13. Remove 3 screws securing the DEVE covers rear hinge bracket to the base.
14. Remove the sensor.

6.4.25 Paper Feed Roller (PL 9.19.13)

1. Open Door C and protect the transfer roller.
2. Remove the e-ring and slide the large black feed roller off the shaft.
3. This roller is a press-fit roller, so gently work the roller off the shaft using a small flat-blade screwdriver.



>> On re-assembly:

1. When replacing the roller onto the shaft, depress the 2 white rollers (one behind, and one below) to allow clearance for the black roller.
2. Wedge a small screwdriver behind the large white gear to prevent the shaft from moving when reinstalling the roller.
3. Be careful not to damage the clear plastic paper guide. It should fit behind the paper path fins.

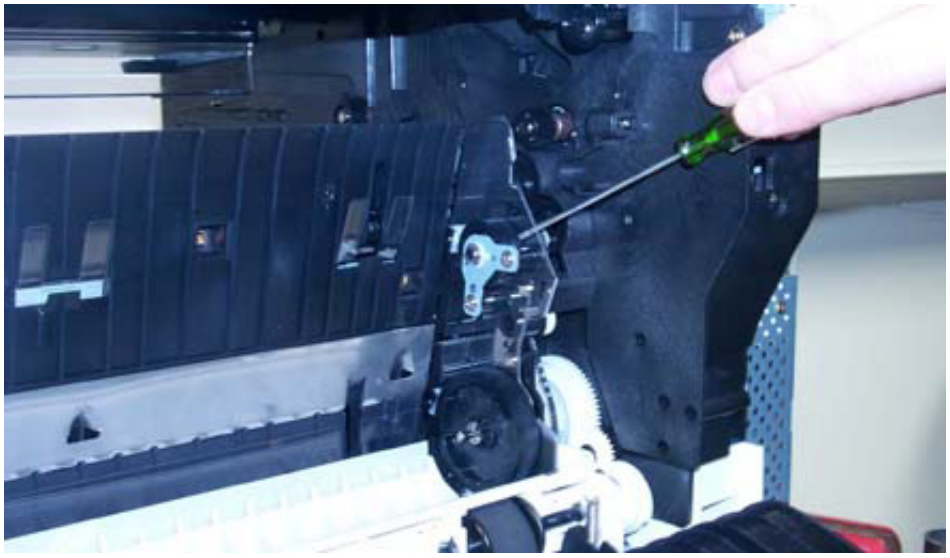
6.4.26 Paper Feed Roller Mid (PL 9.19.9)

1. Open Door C and protect the transfer roller.
2. Remove the e-ring from the shaft.
3. Remove the 2 screws from the bracket.

Caution

Being careful not to lose the white bushing and black plastic washer, when removing the bracket.

4. This roller is a press-fit roller, so gently work the roller off the shaft using a small flat-blade screwdriver. Be careful not to lose the black plastic washer behind the roller.



>> On re-assembly:

Note

When replacing the roller onto the shaft, depress the white roller behind the mid roller to allow clearance for the black roller.

6.4.27 Feed Sensor (PL 9.20.2)

1. Remove the Waste Toner Assembly. (6.4.18)
2. Open Door C and protect the transfer roller.
3. Unscrew the links from the door and lay the door down flat for more clearance.
4. Remove 3 screws (type) from the inner paper path cover and remove it.
5. Remove the 2 screws (type) securing the sensor housing to the printer and remoe the housing.
6. Remove the 2 screws (type) securing the laser cover and slide it out of the way.
7. Remove the single screw and the erase lamp cover.
8. Disconnect CN33 wiring harness from the main board and free the harness.
9. Remove the tape securing the wiring to the metal chassis frame.
10. Free the wiring through the middle of the printer.
11. Remove the sensor.

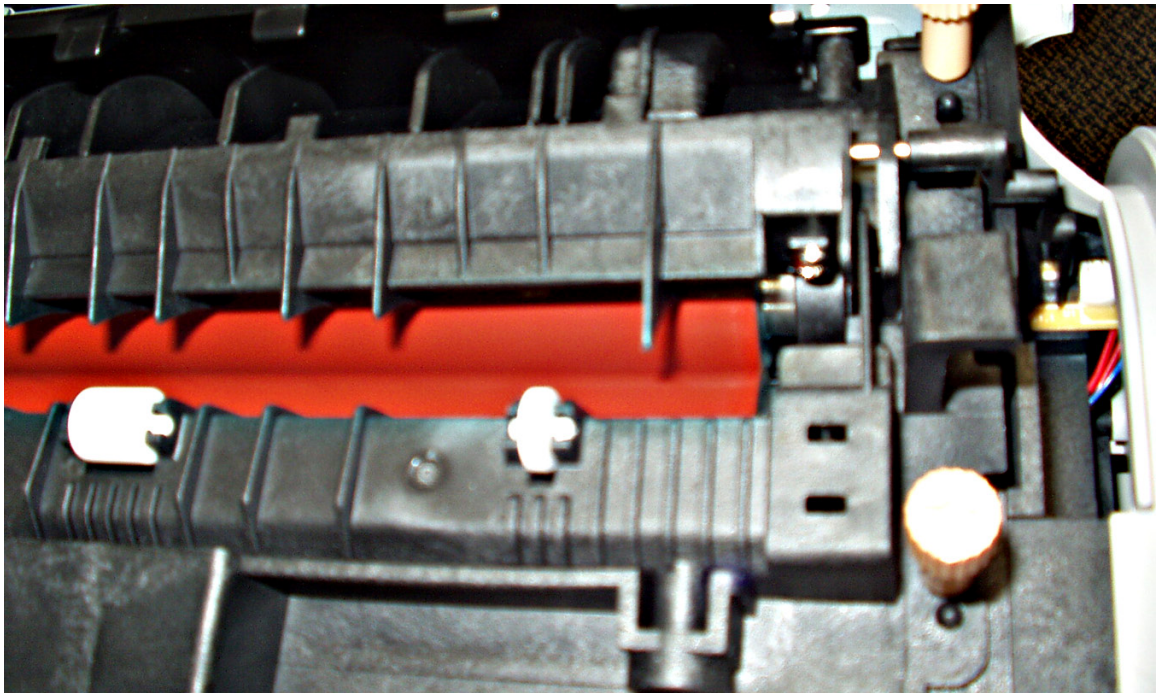
>> On re-assembly:

Caution

Pay attention to the wire routing. Be careful not to damage the wire, and be sure to tape the wiring back in place so that it cannot get damaged by the feed rollers. Make sure the plastic paper guide is behind the metal plate during reassembly.

6.4.28 Fuser Exit Sensor (PL 9.14.5)

1. Remove the Front Cover and Top Cover. (6.4.1)
2. Remove the Rear Cover. (6.4.3)
3. Remove the Duplex Cover (Door C). (6.4.4)
4. Remove the Fuser and Fuser Cover Base. (6.4.5 and 6.4.5.1)
5. Remove the LVPS and LVPS Cover. (6.4.7)
6. Remove the Main Drive Assembly. (6.4.9)
7. Disconnect CN19 wiring harness from the main board.
8. Remove the 1 screw securing the sensor to the front frame.
9. Feed the harness through the channel and remove the sensor from the front frame.



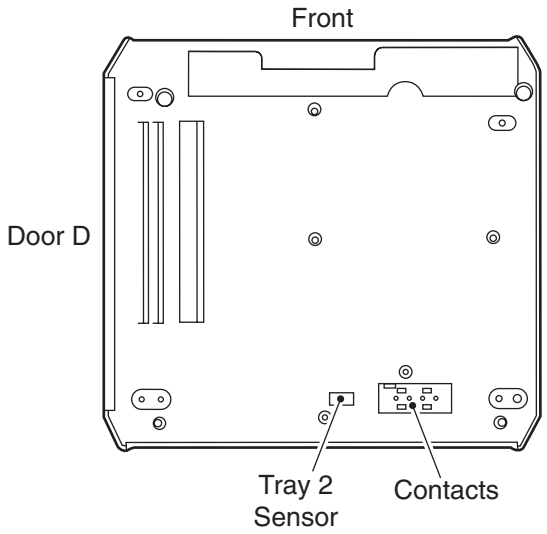
>> On re-assembly:

Caution

Be careful not to pinch or damage the wiring when reinstalling the main drive assembly.

6.4.29 500-Sheet Feeder (PL 9.1.44)

1. Turn the printer off and remove all cables.
2. Using 2 people, lift the printer off the 500 Sheet Feeder.



7 Maintenance and Diagnostics

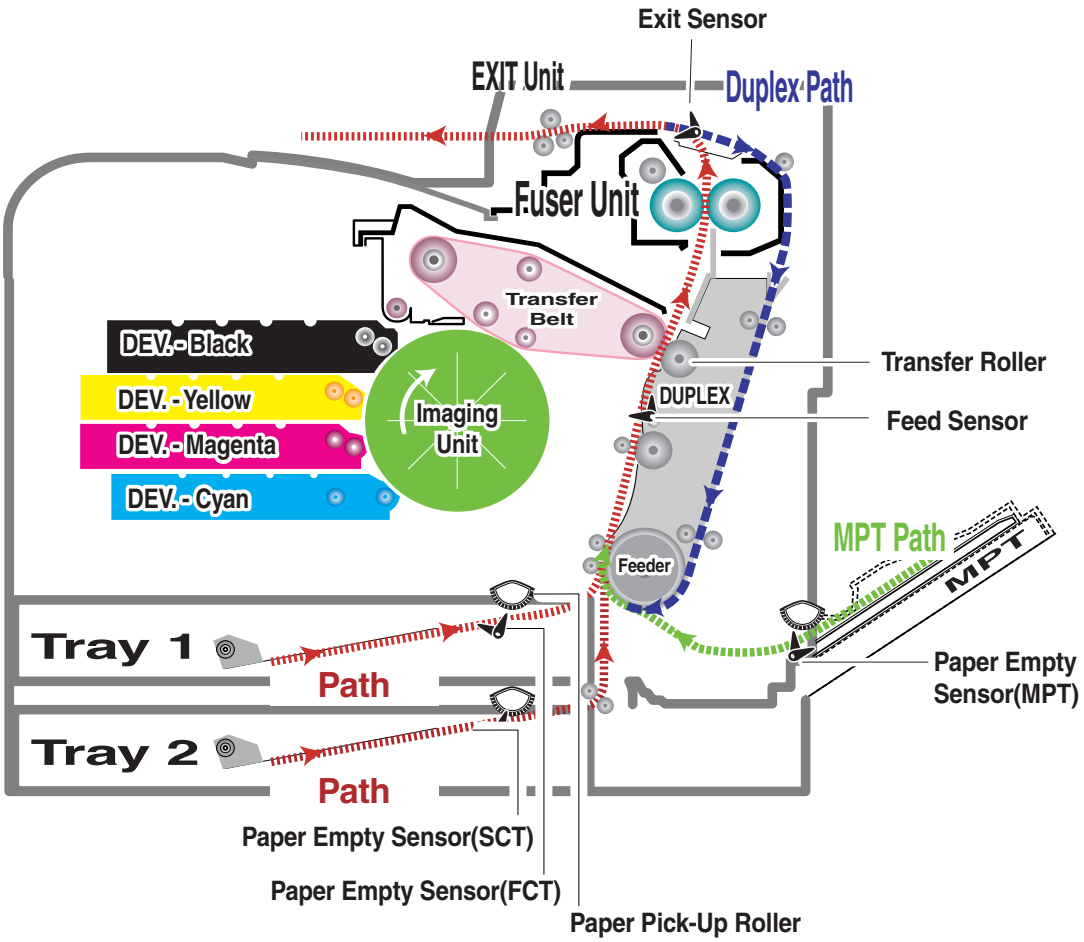
This chapter describes some of the main service procedures including:

- Using the Engine Diagnostic Contol mode (EDC)
- Clearing paper jams
- Test patterns.

Much of this chapter is also included in the user's guide.

7.1 Paper path and Paper jam

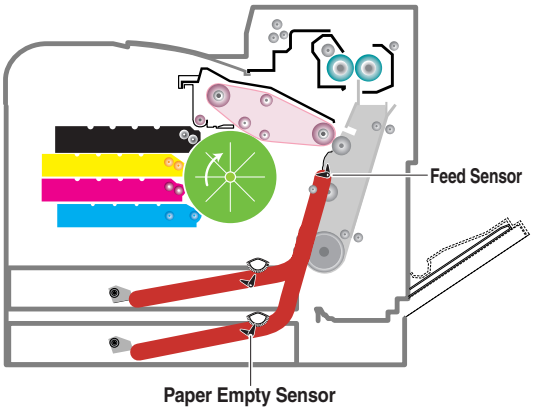
7.1.1 Paper path



7.1.2 Jams

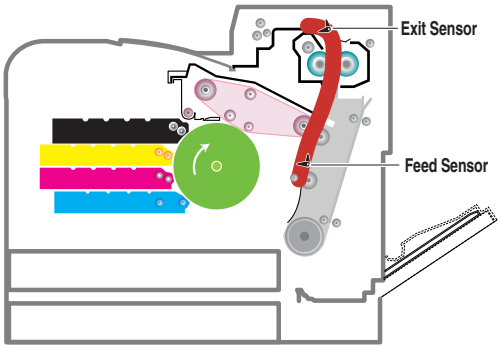
1) Jam at Tray 1/Tray 2 (Jam in feed area)

- After paper pick, paper was not fed any further.
- Paper did not reach the feed sensor in time.
- Feed sensor is faulty and does not detect paper.
- Tray 1 paper pick error: When paper is not picked from Tray 1.
- Tray 2 paper pick error: When paper is not picked from Tray 2.



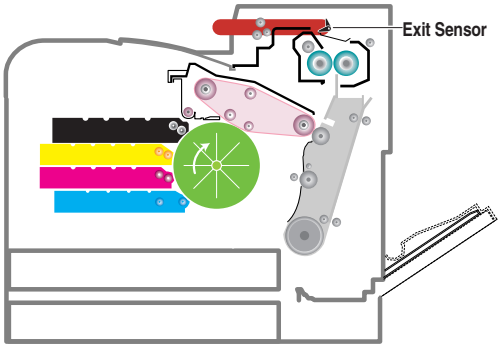
2) Jam at C (Jam inside printer)

- 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 time.
- After the leading edge of the paper has passed the feed sensor, it doesn't reach the exit sensor in time.
- Exit sensor is faulty and does not detect paper.



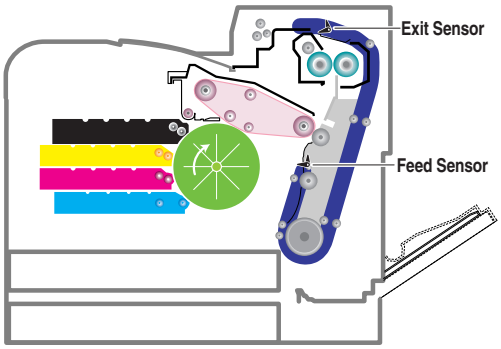
3) Jam at B, C (Jam in exit area)

- After the leading edge of the paper has passed the exit sensor, the trailing edge of the paper has not passed the exit sensor in time.
- The paper drive motor has been driving for longer than the time needed for the longest paper size and the exit sensor has not turned off.



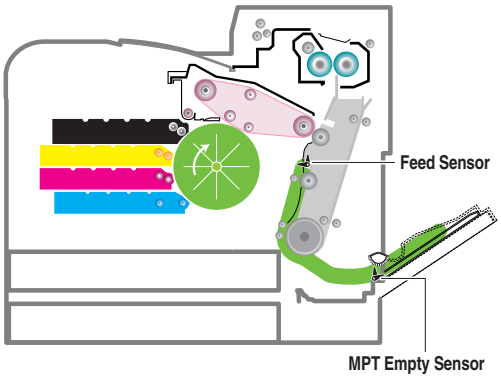
4) Jam at C (Jam in duplex area)

- Jams in the duplex area occur while printing the reverse side of the paper. After printing the front side, the duplex solenoid must operate in order to feed the paper back into the duplex path. If the solenoid fails, paper may be stuck in the exit roller and is not fully ejected to the exit tray.
- If the duplex solenoid is operating properly paper is fed back into the printer. If the leading edge of the paper does not reach the feed sensor in time, then a Jam at C is displayed on the control panel.
- This can be cause by paper being jammed in the duplex path area.



5) Jam at MPT

- Paper could not be picked from the MPT.
- After picking the paper, paper feeds but doesn't reach the feed sensor in time.
- Feed sensor is faulty and does not detect paper.



7.2 Jam Removal

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

*** Jam at Tray 1:**

Paper jam in Tray 1.

*** Jam at MPT:**

Paper jam in the MPT.

*** Jam at Tray 2:**

Paper jam in Tray 2.

*** Jam at C (Inside Printer):**

Paper is jammed in the paper path inside the printer.

*** Jam at B, C:**

Paper is jammed in the exit area while attempting to eject paper.

*** Jam at C:**

While duplex printing, paper is jammed in the duplex unit.

Caution

When removing jammed paper, always pull it firmly and evenly, in the direction of paper travel, without any sudden jerks. Pulling the paper backwards can damage clutches in the printer. If at all possible, remove the paper as a single sheet. If the paper tears, ensure ALL paper fragments are removed. Any fragments left inside the machine can cause it to jam again.

7.2.1 Factors that Cause Paper to Jam

- Unsupported media is used.
- Too much paper is loaded in the tray.
- Paper is not loaded correctly in the tray.
- Duplex cover opened while printing.
- Tray is removed while printing.
- Incorrect thickness of paper is used.
- Incorrect size of paper is used.
- Tray paper guides are not correctly set (too loose or too tight).
- Foreign objects or other contamination is present in the internal paper path and paper guide ribs.
- Badly damaged or folded leading or trailing edges of the paper.
- Paper is curled or damaged at the corners.

7.3 Sample Prints

This product has the several sample patterns for maintenance. With the sample patterns, check the existence of the abnormality. The patterns help to regularly maintain the product.

7.3.1 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 display.
2. Press the **OK** button.
3. Press the **Scroll** button until you see **Demo Page**.
4. Press the **OK** button.

A demo page prints out.

7.3.2 Printing a Configuration Page

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

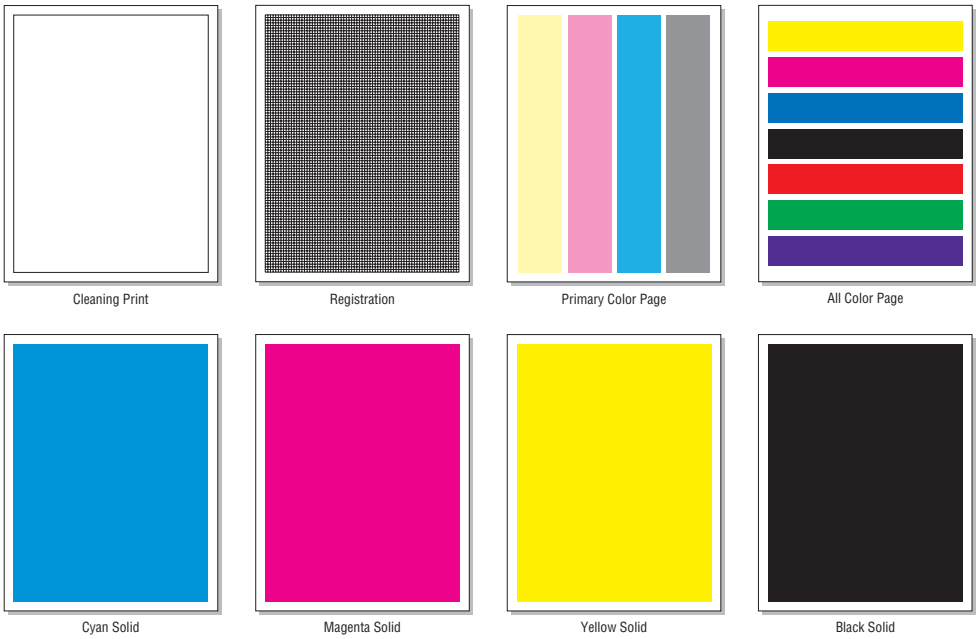
1. Press the **Menu** button on the control panel until you see **Information** on the display.
2. Press the **OK** button.
3. Press the **Scroll** button until you see **Configuration Page.**
4. Press the **OK** button.

A configuration page prints out.

7.3.3 Customer Mode Test Prints

Note: There are additional prints available in EDC Mode.

1. From the main menu press the **Scroll** button unil you see **Maintenance,** then press **OK**.



7.3.4 Checking Consumable Life

Checking the Remaining Toner

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

1. In Ready mode, press the **Menu** button on the control panel until you see **Maintenance,** then press **OK**.
2. Press the **Scroll** button to access the **Check Toner** menu, then press **OK**.
3. Press the **Scroll** button to highlight the color of the toner cartridge you want.
4. Press the **OK** button.
5. The display shows the percentage of remaining toner.
6. Press the **Back** button to return to Step 3 and select a different cartridge.

7.3.5 Checking Other Routine Maintenance Items

1. In Ready mode, press the **Menu** button on the control panel until you see **Maintenance**, then press **OK**.
2. Press the **Scroll** button to access the **Check Others** menu, then press **OK**.
3. Press the **Scroll** button until the item you want to check displays.
4. Press the **OK** button, the display will give you the results for the item you selected.
5. Pressing the **Scroll** button displays either **Image Count** or **Reset.**
6. Choose **Reset** (Fuser and Transfer Roller only) and press **OK** to reset the counter after replacing a maintenance item.

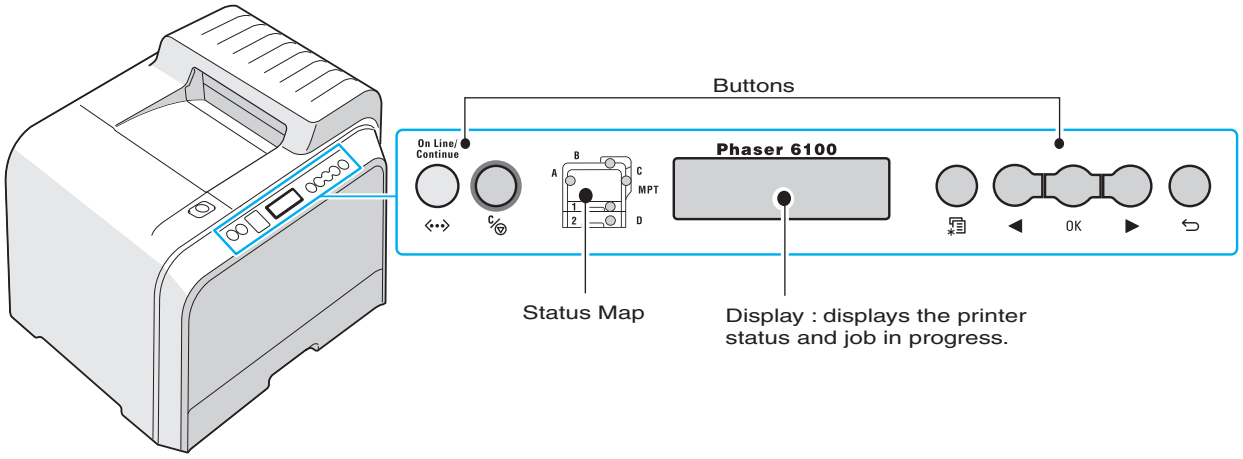
   or

7. Choose **Image Count** to display the counter.
8. Press the **Back** 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.
9. To return to the Ready condition, press the **Cancel** button several times until **Ready** appears in the display.

7.4 Control Panel Functions

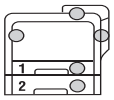
The control panel on the front of your printer has a display and seven buttons.

7.4.1 The Display



Message	Description
Ready	The printer is on-line and ready to print. If you press **On Line/Continue**, the printer switches to off-line.
Offline	The printer is off-line. 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.**
Power Saver	The printer is in power saver mode, using less power. When a print job is received, or any button is pressed, the printer will switch on-line and return to Ready. Use the control panel to change the power saver mode settings.

7.4.2 Control Panel Buttons

Item	Description		
	When an error occurs, a lamp turns on at the corresponding location on the Status Map. The status map is located on the control panel.		
On Line/ Continue 	The color of the **On-line/continue** button indicates the status of the printer. Press to switch between on-line and off-line. Press to return to Ready mode.		
	Green	On	The printer is on-line and can receive data.
		Blinking	A slow blink indicates the printer is receiving data. A fast blink indicates the printer is receiving and printing data.
	Off	The printer is off-line and cannot print. The printer is in power saver mode. When data is received, it switches to on-line	
 Menu	Orange	On	The printer stops printing due to an error. Check the display message.
		Blinking	A minor error has occured and the printer is waiting for the error to be cleared. Check the display message. When the problem is cleared the printer resumes printing. To ignore errors of this type, press this button.
 ok			
 Scroll	Press **Menu** to display the control panel menu. Press **Scroll** to scroll through tthe menus.		
	Press **Scroll** to select the displayed submenu item or confirm a changed setting. The selected item is marked with an * (asterick).		
 Cancel	Press **Scroll** to scroll through submenu items or setting options. Pressing the right facing arrow, moves you to the next options. Pressing the left facing arrow, sends you back to the previous option.		
	Press **Cancel** to canel the current print job. While in the menus, press to return to ready.		
 Back	Press **Back** to go back to the upper level menu item.		

After 60 seconds of inactivity, no button has been pressed, the printer automatically returns to ready mode.

Note

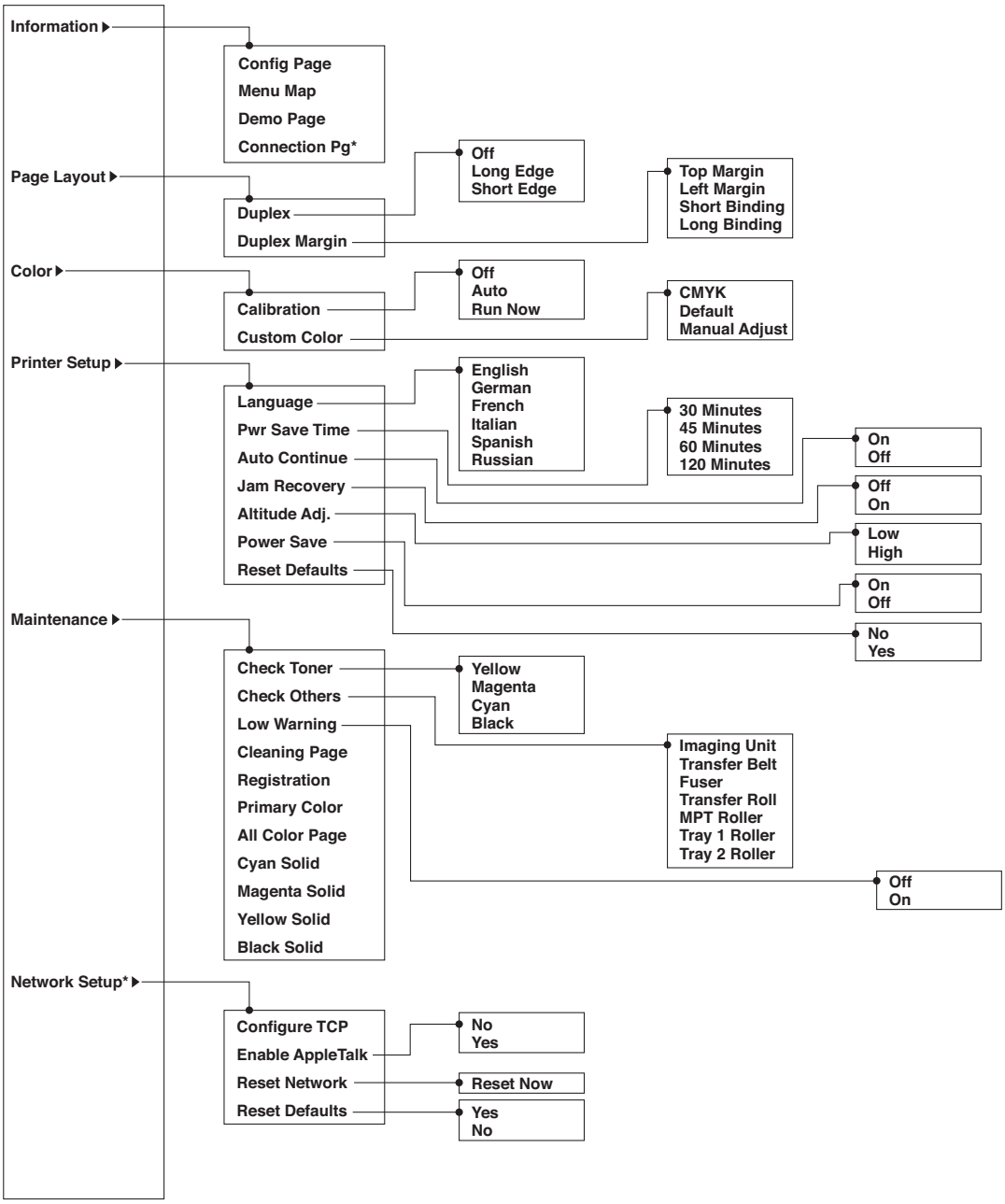
Print settings made from the printer driver, override settings on the control panel.

7.4.3 Control Panel Menu Map

THE DOCUMENT COMPANY
XEROX

Phaser® 6100
Color Laser Printer

Menu Map



*Requires a Network Card.

Page 1 of 1

7.5 Repeating Defects

If an image defects appears at regular intervals on the printed-paper, it may be due to a faulty or damaged maintenance item or part. To identify which maintenance item is responsible for the defect, refer to the table below and check the condition of the appropriate roller.

Part	Defective Image	Typical Defect
Imaging Unit Drum	same position on each page	White spot on black image or black spots.
Imaging Unit Charge Roller	44 mm	Black spots
Toner Supply Roller	17 mm	Light or dark horizontal banding.
Toner Developer Roller	29 mm	Horizontal image band.
Transfer Belt T1 Roller	39 mm	Black spot
Transfer Belt T2 Roller	75 mm	Ghosting
Fuser Heat Roller	112 mm	Black spot and ghosting. Backside contamination.
Transfer Belt Tension or Idler	51 mm	Horizontal banding
Transfer Belt Idle Rollers	94 mm	Horizontal banding

Note

Printing 10 blank pages will clear many repeating defects. Try this prior to replacing any parts. A damaged imaging unit drum, caused by over exposure to light, may recover after 24 hours.

7.6 How to use Engine Diagnostic Control Mode (EDC)

7.6.1 What is EDC Mode

EDC Mode is a feature that allows the service technician 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 laser units.

7.6.1.1 Entering EDC Mode

a. Turn on the printer while pressing the "**OK**" button. Hold the button until **"Select Test mode"** appears on the control panel.
b. Press the **Scroll** button until **"<EDC Test>"** is displayed.
c. Press the **OK** button to select the desired test.
d. When **"Press access key"** is displayed, press the **Cancel** key twice.
e. You are now in EDC mode.

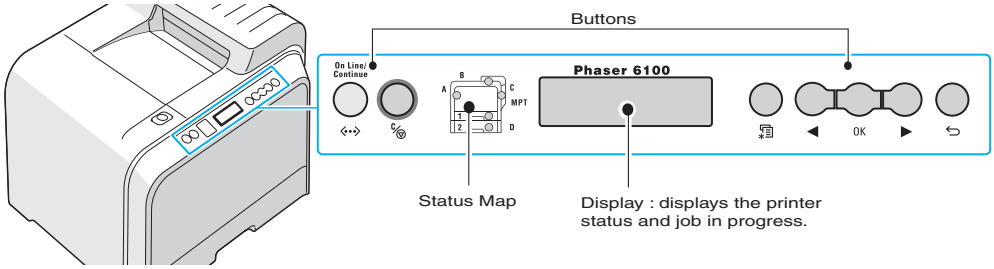
NOTE: There are a number of other test modes. Only EDC Test and Panel Tests should be used by service technicians, all other functions are for factory use only.

7.6.1.2 Functions of the Buttons While in EDC Mode

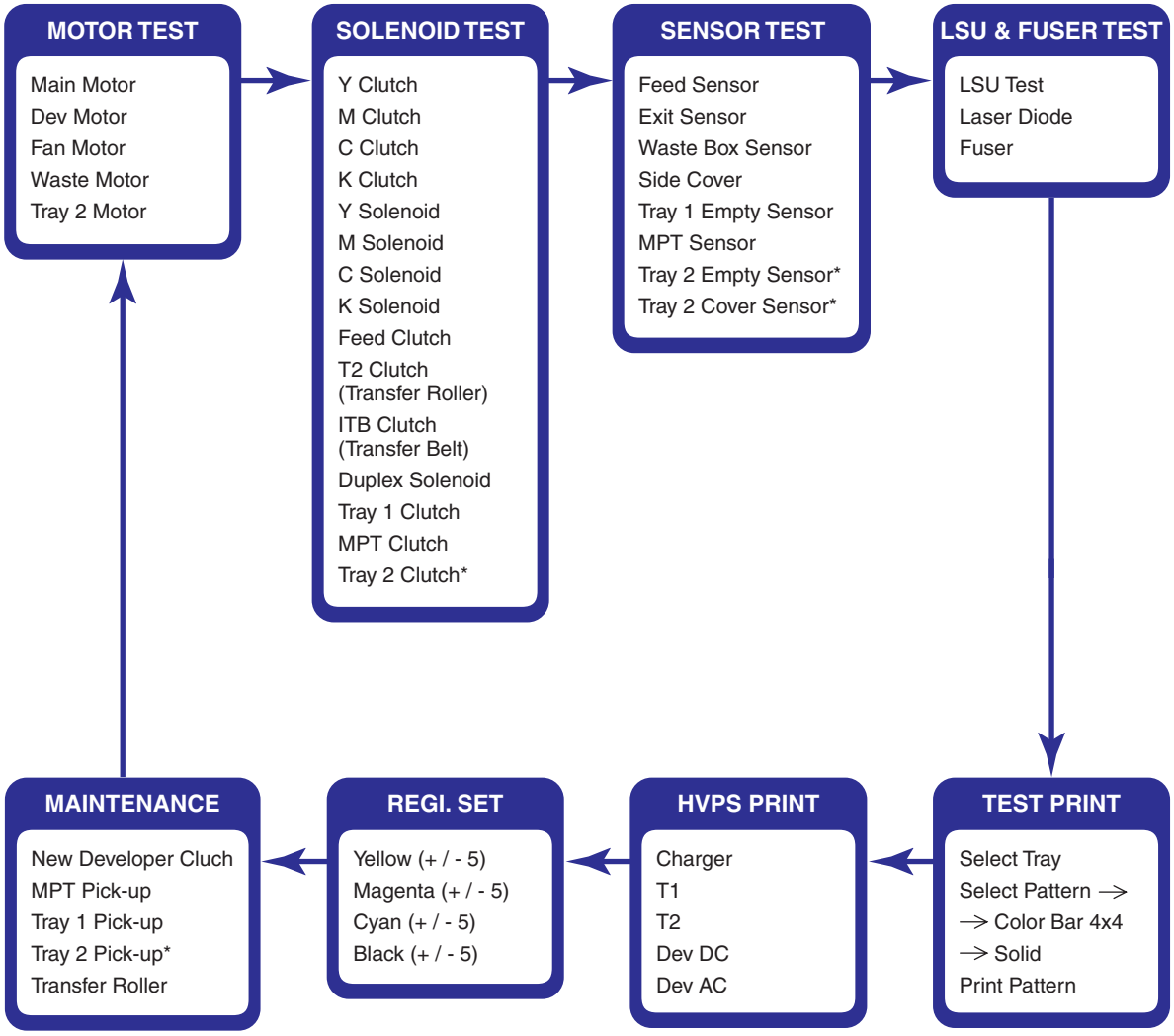
Button	Function	Description
On-line/Continue		Not used
Cancel		Not used
Menu	Menu	Displays top level menu items
Left/Right Arrow Scroll	Find Menu	Scrolls through menus
OK	Run / Select Run	Starts/Runs the function or selects menu item
Back	Stop / Move Stop	Stops the selected function or goes to the upper menu item.

7.6.1.3 LCD Functions and Directions

Upper line messages mainly show the current test menu or sub-menu item. Lower line messages mainly show the currrent test and status.



7.6.2 EDC Menu Map



* If optional Tray 2-500 Sheet Feeder (SCF Cassette) is installed

7.6.2.1 Motor Tests

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

<How to operate>

a. Press the **Scroll** button until **"Motor Test"** is displayed.
b. Press the **OK** button to select this function.
c. Press the **Scroll** button until you see the name of the motor you wish to test.
d. Press the **OK** button to run the test. The test is stopped by pressing the **Back** button.
e. Pressing the **Back** button when the test is already stopped will return to Step *'C'* above.
f. Pressing the **Back** button again will return to the EDC main menu.

Menu Item	Description	Test Results
Main Motor	Operates main motor.	Success or Failed
Dev Motor	Operates the developer motor.	Success or Failed
Fan Motor	Operates the fan motor.	On or Off
Waste Motor	Operates waste motor	On or Off
Tray 2 Motor	Operates the Tray 2 motor (if installed)	On or off

7.6.2.2 Solenoid Tests

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

<How to operate>

a. Press the **Scroll** button until **"Solenoid"** is displayed.
b. Press the **OK** button to select this function.
c. Press the **Scroll** button until you see the name of the solenoid or clutch you wish to test.
d. Press the **OK** button to run the test. The test is stopped by pressing the **Back** button.
e. Pressing the **Back** button when the test is already stopped will return to Step *'C'* above.
f. Pressing the **Back** button again will return to the EDC main menu.

Menu Item	Description	Test Results
Y Clutch	Operates the yellow developer clutch.	On or Off
M Clutch	Operates the magenta developer clutch.	On or Off
C Clutch	Operates the cyan developer clutch.	On or Off
K Clutch	Operates the black developer clutch.	On or Off
Y Solenoid	Operates the yellow developer solenoid.	On or off
M Solenoid	Operates the magenta developer solenoid.	On or Off
C Solenoid	Operates the cyan developer solenoid.	On or Off
K Solenoid	Operates the black developer solenoid.	On or Off
Feed Clutch	Operates the feed clutch.	On or Off
T2 Clutch (Transfer Roller)	Operates the transfer roller T2 solenoid.	On or Off
ITB Clutch (Transfer Belt)	Operates the transfer belt cleaning solenoid.	On or Off
Duplex Solenoid	Operates the duplex solenoid.	On or Off
Tray 1 Clutch	Operates the Tray 1 clutch.	On or Off
MPT Clutch	Operates the MPT clutch.	On or Off
Tray 2 Clutch (if installed)	Operates the Tray 2 clutch, if the optional 500-sheet feeder is installed.	On or Off

7.6.2.3 Sensor Tests

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

<How to operate>

a. Press the **Scroll** button until *"***Sensor Test***"* is displayed.
b. Press the **OK** button to select this function.
c. Press the **Scroll** button until you see the name of the sensor you wish to test.
d. Press the **OK** button to run the test. The test is stopped by pressing the **Back** button.
e. Pressing the **Back** button when the test is already stopped will return to Step *'C'* above.
f. Pressing the **Back** button again will return to the EDC main menu.

Menu Item	Description	Test Results
Feed Sensor	Displays feed sensor status	With Paper or Without Paper
Exit Sensor	Displays exit sensor status	With Paper or Without Paper
Waste Box Sensor	Displays waste toner cartridge sensor	Not installed when full or not installed Installed, when empty or installed
Side Cover	Left or right cover sensor status	Cover opened or Cover closed is dispayed.
Tray 1 Empty Sensor	Tray 1 paper empty sensor status	With Paper or Without Paper
MPT Sensor	MPT sensor status	With Paper or Without Paper
Tray 2 Empty Sensor	Tray 2 paper empty status, when optional 500-sheet feeder is installed.	With Paper or Without Paper
Tray 2 Cover Sensor	Tray 2 cover status, when optional 500-sheet feeder is installed.	Cover opened or Cover closed is dispayed

7.6.2.5 Test Prints

This function allows the printer to be checked by printing various test prints.

<How to operate>

a. Press the **Scroll** button until **"Test Print"** is displayed.
b. Press the **OK** button to select this function.
c. Press the **Scroll** button until you see **"Select Tray"** is displayed.
d. Press the **OK** button.
e. Press the **Scroll** button select a tray.
f. Press the **OK** button.
g. Press the **Scroll** button until you see **"Select Pattern"** is displayed.
h. Press the **OK** button.
i. Press the **Scroll** button to select the pattern (either or .
j. Press the **OK** button.
k. Press the **Scroll** button until you see **"Print Pattern"** is displayed.
l. Press the **OK** button to print.
m. Pressing the **Back** button twice will return to the EDC main menu
n. In testing the Laser (LSU) motor the laser lock time is variable between 6 and 15 seconds, depending on the environment.

7.6.2.6 HVPS Tests

This function provides an "acceptable range" specification for the HVPS outputs.

Note

These are not actual readings.

<How to operate>

a. Press the **Scroll** button until *"HVPS"* is displayed.
b. Press the **OK** button to select this function.
c. Press the **Scroll** button until you see the name of the voltage you wish to test.
d. Press the **OK** button to select the test.
e. Press the **Scroll** button to select the appropriate **Duty Cycle** and press **OK** to start the test.
- The test is stopped by pressing the **Back** button.
- The display shows the acceptable range, shown in column 4 below.
- The mid range (nominal) voltage is shown in column 3 below.

f. Pressing the **Back** button when the test is already stopped will return to Step *'C'* above.
g. Pressing the **Back** button again will return to the EDC main menu.

Menu Item	Description	Lower menu Nominal Voltage	LCD indication Acceptable Range
Charger	Supply voltage to the charger	Duty 50%: -1262V Duty 80%: -2037V	Duty 50%: -1224V ~ -1300V Duty 80%: -1976V ~ -2098V
T1	Supply voltage to the T1	Duty 50%: 1174V Duty 90%: 2080V	Duty 50%: 1139V ~ 1209V Duty 90%: 2018V ~ 2142V
T2	Supply voltage to T2	Duty 50%: 1800V Duty 80%: 4540V Reverse Bias: -900V	Duty 50%: 1746V ~ 1854V Duty 80%: 4404V ~ 4676V Reverse Bias: -800V ~ 1200V
Dev DC	Supply DC voltage to the developer	Duty 45%: -370V	Duty 45%: -359V ~ -381V
Dev AC	Supply AC voltage to the developer	Duty 35%: -2200V	Duty 35%: -2134V ~ -2266V

The allowed tolerance is commonly +/- 3%, this is the value displayed. For "Dev AC" it is the value of Vpp.

T2 reverse biase tolerance of +/- 20%.

Warning

HIGH VOLTAGE!!! Do not probe these voltages to confirm output. Follow the troubleshooting procedures in Section 8 to isolate problems to the HVPS board.

The DPT test is not for service use, factory use only.

7.6.2.7 Regi.Set Test

This function adjusts the vertical color registration for the printer.

<How to operate>

a. From the main menu, in customer mode go to **"Maintenance"**, then **"Registration"**.
b. Press the **OK** button to select this function, a page will automatically print.
c. Identify and mark the Lead Edge of the page.
d. Enter EDC Mode.
e. Press the **Scroll** button until ***"Regi.Set Test"*** is displayed.
f. Press the **OK** button.
g. Select the color you wish to adjust and press **OK**.
h. Use the **Scroll** buttons to adjust the selected color.

Notes on Regi.Set:

- Always identify the lead edge of the paper. This will be your reference point.
- Always check the same area on the page as your reference point. From the lead edge of the printed page, the left lower corner is the best place to monitor your adjustment.
- This process will only adjust the colors across the long edge, there is no adjustment for short edge.
- A negative (-) adjustment will move away from the lead edge of the paper, and a positive (+) adjustment will move towards the lead edge of the paper .

Note

The corners of the paper are the best places to monitor your adjustments

- The adjustment is -5 to +5 for all colors.
- After making the adjustment, the new setting will be 0.

Maintenance

The maintenance tests are not for service user, factory use only.

7.6.2.8 Color Calibration

This feature controls the setting of the TRC (Tone Reproduction Curve).

Note

Color Calibration can be found on the control panel's main menu, in normal customer mode, and is not part of the EDC diagnostic tests.

<How to operate>

a. From the main menu, in customer mode, go to **"Color"**, then **"Calibration"**.
b. Press the **OK** button to select this function.
c. Use the **Scroll** button to move through the menu items.
   - **Off** turns TRC off
   - **Auto** is the default setting
   - **Run Now** will perform (on the next print) a color measurement and adjust according to the TRC.
d. Press the **OK** button to select this function.
e. From the main menu, in customer mode, go to **"Color"**, then **"Custom Color"**.
f. Press the **OK** button to select this function.
g. Press **OK** again to select **CMYK**.
h. Use the Scroll button to select **"Default"** or **"Manual Adjust"**.
   - **Manual Adjust** allows for a manual adjustment of each color.

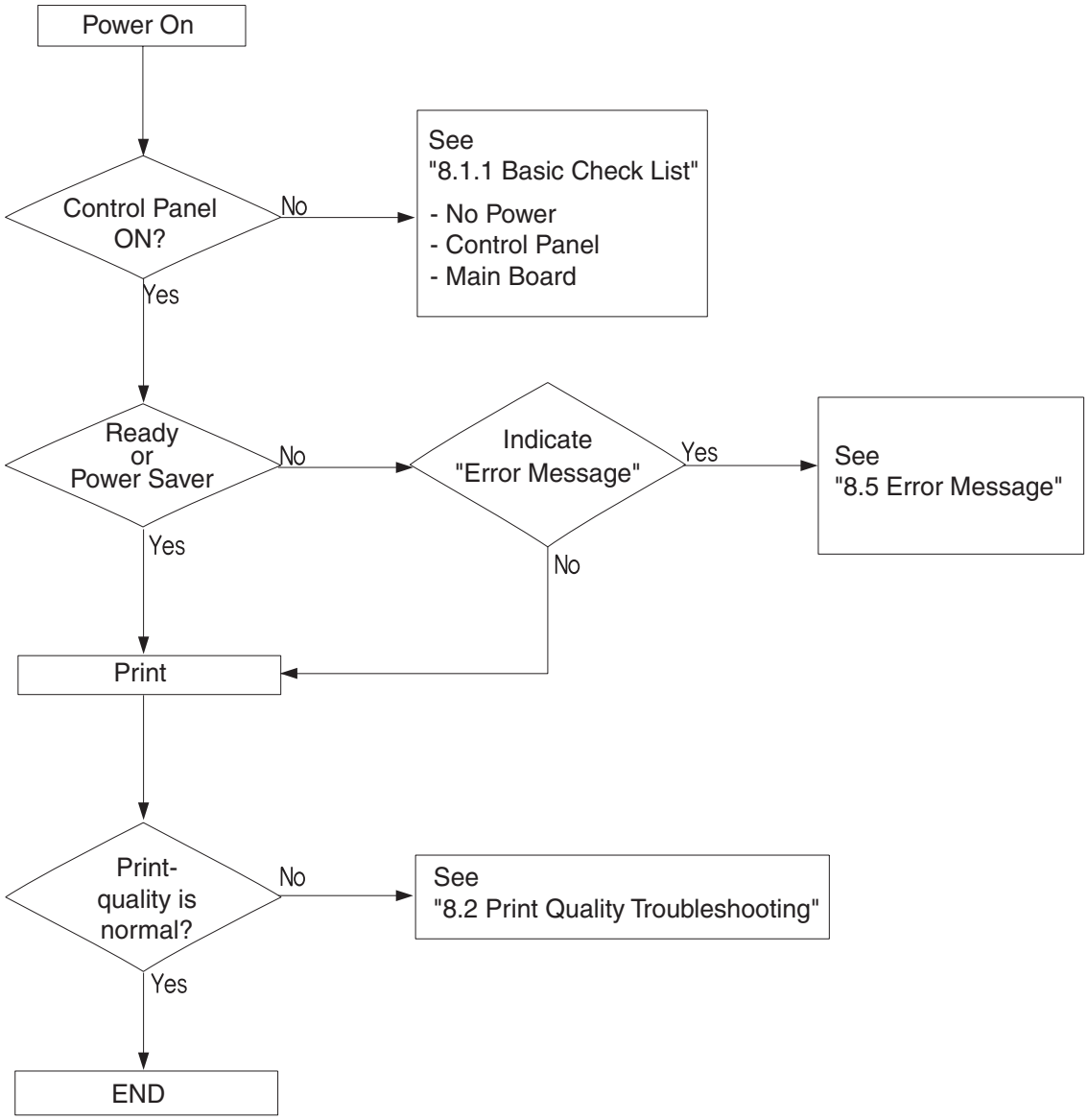
Note

For more details on the TRC process refer to section 5.1.4.4 in section 5 of this manual.

8 Troubleshooting

8.1 Verifying Symptoms

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



8.1.1 Basic Check List

1. Check power.

a. Does "Warming Up" appear on the display ?

If not, check the power cable, switch or LVPS. (see section 8.1.2 below)

Verify the wall socket outputs the correct voltage.

b. Do the Motors or other components initialize (listen for the main motor and fan)?

If not, or there is no sounds, check the power cord, switch or LVPS.

Verify the wall socket outputs the correct voltage.

2. Check the control panel.

a. Is there anything showing on the control panel display at all?

If not, check the power cord, switch, or LVPS. (see section 8.1.2)

Verify the wall socket outputs the correct voltage.

b. Is the display clear or cryptic, are there any broken or badly formed characters?

Check the main board and control panel wiring harness.

c. Is there an error message on the control panel?

Refer to section 8.4 or 8.5.

3. Check the paper path.

a. Is there a Paper Jam?

Remove any paper fragments caught in the paper path.

Refer to section 8.3.

b. Paper Jam occurs repeatedly at a specific point in the paper path.

Check the printers internal paper path and inspect the region where the jam occurs.

Check for paper fragments caught in or around the fuser.

4. Print a configuration page.

a. Does the page print?

If there is an error see number 2 or 3 above.

b. Try printing a test page from a computer.

If there is an error, check cables and driver installation.

5. Check the print-quality.

a. Is there a print quality Problem?

Refer to section 8.2.

6. Check consumables.

a. Print a configuration page from the control panel.

Refer to 8.1.4 and to section 3.5 for expected life of various consumable parts, compare this with the figures printed and replace as required.

8.1.2 Initial Inspection

1. Check printer power.

a. The printer does not work at power on.

Is the power switch (printer and wall socket) turned on?

Is the power cord connected to the printer correctly?

Is the power cord connected to the wall socket correctly?

Is the wall socket outputting the correct voltage?

Is the printer rated as the same voltage as the supply?

b. The fan doesn't work when power is turned on?

Check the connectors on the LVPS.

Check the fuses in the LVPS.

Check any error message displayed on the control panel and refer to the troubleshooting Section 8.4 or 8.5.

2. Check the printer environment.

a. Ensure the surface the printer is on is flat, level and free from vibration.

If necessary, move the printer.

b. Ensure that the temperature and humidity of the surrounding area are within specification.

If necessary, move the printer.

c. Ensure that the printer is positioned away from any air conditioning or other heating or cooling equipment. Also ensure that it is not positioned in a direct draft from any air conditioning, fan or open window.

If necessary, move the printer.

d. Ensure the printer is not positioned in direct sunlight.

If it is unavoidable, use a curtain to shade the printer.

e. Ensure the printer is installed in a clean, dust free environment.

Move the printer to a clean area if necessary.

f. Some industrial or cleaning processes give off fumes which can affect the printer.

Move the printer away from this type of air pollution

3. Check the paper type.

a. Use only media that is of an approved quality, type, weight and size?

See Section 3 of this manual.

4. Check the overall condition of the printer.

a. Is the printer properly maintained?

Ensure the paper path is clean and free from debris.

Rollers with excessive wear or dirty surfaces should be cleaned or replaced.

8.1.3 Check the Consumable Life

The length of life for consumables is indicated by the quantity of printed images and percent of life used, some consumables will continue to operate even at their end of life, but should be replaced as soon as possible to avoid print-quality issues.

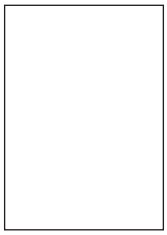
Note

All consumable life counts are reset to zero automatically after being replaced with the exception of the fuser and transfer roller. These must be reset through the control panel.

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

8.2 Print-Quality Problems

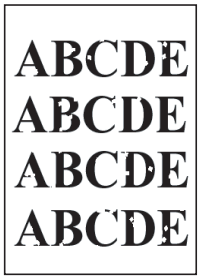
Blank Page

Example	Possible Cause	Sequence of Repair Actions
	Driver installation problem.	Try printing a Demo Page. Check that the printer driver is installed correctly.
	Toner cartridge contacts are dirty or not making good contact. Toner cartridge is empty or low (when printing a single color image).	Check and clean the toner cartridge contacts. Re-seat the toner cartridge. Replace the toner cartridge.
	Transfer belt contacts are dirty or not making good contact or there is a faulty transfer belt.	Check and clean the transfer belt contacts. Re-seat the transfer belt. Replace the transfer belt
	Laser cable harness plugs not seated properly or faulty laser unit.	Verify the connectors on the laser unit and main board are properly seated (CN12). Replace the laser unit or harness as required.
	Toner transfer problem.	Check all HV contacts and harnesses. Replace the HVPS.

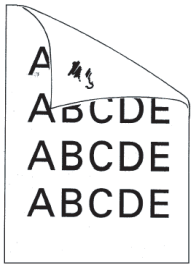
Completely Black Image

Example	Possible Cause	Sequence of Repair Actions
	Imaging Unit BIAS contacts are dirty or not making good contact.	Clean the contacts. Replace the imaging unit.
	Charge Voltage of the imaging unit is unstable.	Replace the HVPS Board.

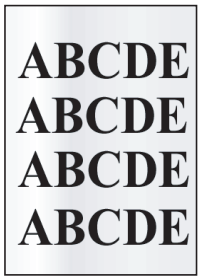
White Spots / Black Spots / Colored Spots

Example	Possible Cause	Sequence of Repair Actions
	Contamination of the internal mechanism of the toner cartridge.	Replace the toner cartridge.
	Imaging unit surface contaminated or damaged.	Replace the imaging unit.
	Transfer belt is contaminated or damaged.	Replace the transfer belt.
	Fuser unit is contaminated.	Run the fuser cleaning page up to 5 times. Replace the fuser.
	Are the spots a repeating defect?	See the topic “Evenly repeating defect” .

Toner Smudges on the Reverse Side of the Page

Example	Possible Cause	Sequence of Repair Actions
	Paper path is contaminated.	Open covers fully and clean the paper path.
	Transfer belt is contaminated.	Clean or replace the transfer belt.
	Pressure roller in the fuser is contaminated.	Run the fuser cleaning page up to 5 times. Replace the fuser if needed.

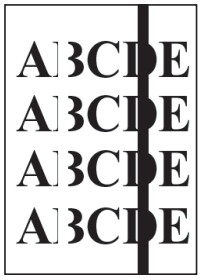
Foggy Background

Example	Possible Cause	Sequence of Repair Actions
	The developer roller is contaminated.	Replace the toner cartridge.
	Printing density is to dark.	Replace the imaging unit.

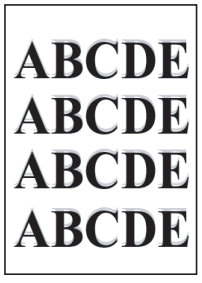
Low Image Density, Light in ALL Colors

Example	Possible Cause	Sequence of Repair Actions
	The image on the drum is light.	Replace the toner cartridge.
	Poor toner transfer to the transfer belt.	Check and clean the transfer belt contacts. Re-install or replace the transfer belt.
	Incorrect transfer belt bias voltage.	Check and clean the transfer belt contacts. Replace the HVPS.

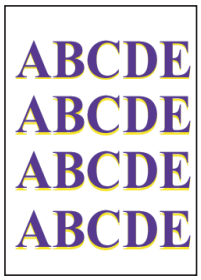
Black / White / Colored Lines and Bands

Example	Possible Cause	Sequence of Repair Actions
	Developing process is contaminated.	Replace the toner cartridge. Replace the imaging unit.
	Transfer belt is damaged or dirty.	Clean or replace the transfer belt.
	Fuser is damaged or dirty.	Run the fuser cleaning page up to 5 times. Replace the fuser if necessary.
	Cover glass on the laser unit is damaged or dirty.	Clean the cover glass on the laser unit. Replace the laser if the cover glass is damaged.

Offset Image

Example	Possible Cause	Sequence of Repair Actions
	Ghosting on the imaging unit.	Replace the imaging unit.
	Ghosting on the transfer belt.	Re-install or replace the transfer belt.
	Toner cartridge is installed incorrectly.	Reseat the toner cartridge.

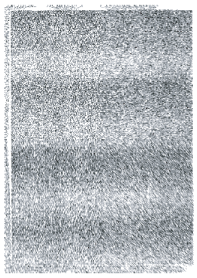
Deterioration of Print Quality In ALL Colors

Example	Possible Cause	Sequence of Repair Actions
	Problem transferring the intermediate images to the transfer belt.	Check and clean the transfer belt contacts. Re-install or replace the transfer belt.
	Contamination of the paper path.	Check and clean the printers internal paper path.
	Problem transferring intermediate image onto paper.	Check and clean the transfer roller contacts. Check and test the transfer T2 solenoid and cam operation. Ensure the roller comes properly into contact when the solenoid operates.

Deterioration of Print Quality in ONE Color

Example	Possible Cause	Sequence of Repair Actions
	The toner cartridge for the problem color is low or at it's end of life.	Check the life of the toner cartridge. Replace if necessary.
	The toner cartridge sensor is bad.	Check or replace the toner cartridge.
	The paper path is blocked or damaged.	Check for the correct positioning of the paper.
	The image transfer is incorrect.	Re-install the transfer belt. Replace the transfer belt if necessary.

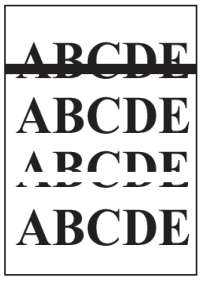
Uneven Color Density

Example	Possible Cause	Sequence of Repair Actions
	The alignment of the transfer roller or transfer belt is bad.	Re-install or replace the transfer belt or transfer roller.
	The image appears just one time after a new toner cartridge is installed.	Run several test prints to clear.

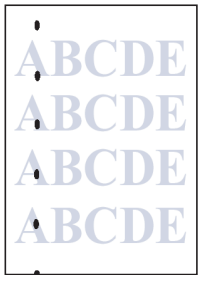
Voids or White Areas

Example	Possible Cause	Sequence of Repair Actions
	The paper is wet or moist.	Use a fresh ream of dry paper and inspect the storage area for the media.
	Some parts of the image are blank and/or wrinkled in appearance.	Replace the fuser. Replace in the following order; imaging unit, toner cartridge, transfer belt where contamination has been found.
	The defect appears only while duplex printing.	Replace the duplex unit.

Lateral Lines - Possible Repeating Defect

Example	Possible Cause	Sequence of Repair Actions
	Check the distance of the repeating defect to the corresponding unit.	Refer to the table in section 7.5 of this manual and replace the corresponding unit if necessary.
	Is the defect is within 1 ~ 2 mm?	Replace the laser.
	Is the defect in an irregular pattern?	Replace the imaging unit.

Evenly Repeating Defect

Example	Possible Cause	Sequence of Repair Actions
	Check the distance of the repeating defect to the corresponding unit.	Refer to the table in section 7.5 of this manual and replace the corresponding unit if necessary.
	Is the defect is within 1 ~ 2 mm?	Replace the laser.
	Is the defect in an irregular pattern?	Replace the imaging unit.

8.3 Paper Feed Problems and Troubleshooting

8.3.1 Trouble with the Top Margin

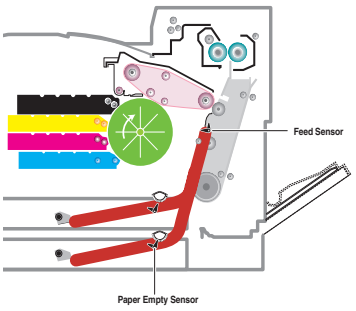
Symptom: Printing begins at the wrong position on the paper (mis-registration?)

	Possible Cause	Repair Actions
	Wrong sensor timing caused by a defective feed sensor actuator.	Replace the defective actuator.

8.3.2 Jam at Tray 1 / Tray 2

Symptoms: Paper has not exited from the tray.

This jam occurs even though the paper feeds into the printer.

	Possible Cause	Repair Actions
	Check the feed clutch and tray clutch (pick solenoid) in EDC mode.	Replace any defective parts.
	Check if the friction pad is loose or missing in the tray.	Replace the tray.
	Check the surface of the pick roller. Is it dirty or damaged?	Clean or replace the pick roller.
	Check the feed sensor in EDC mode when the paper feeds into the printer.	Replace the actuator, sensor, or main board.

8.3.3 Jam at C

Symptoms: Paper is jammed in front of the fuser or under the transfer roller.

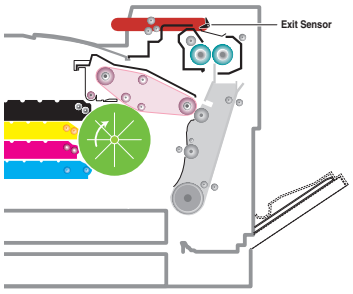
	Possible Cause	Repair Actions
	The paper is jammed in front of or inside the fuser.	Replace the LVPS.
	The paper is jammed in the exit roller, the fuser and the feed sensor area.	Clean the feed sensor. Check the feed actuator and spring. Check the feed and exit sensors in EDC mode. Replace if defective. Replace the main board.

8.3.4 Jam at B, C

Symptoms: Paper is jammed inside the fuser.

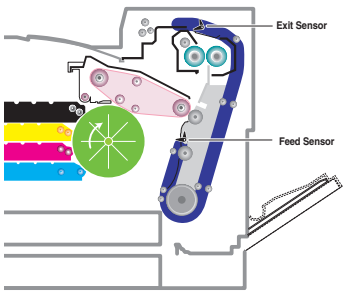
Paper is caught in the exit actuator.

Paper is caught in the exit roller and fuser, but has not passed through the feed actuator.

	Possible Cause	Repair Actions
	The exit sensor is defective if a Jam at B, C occurs after the paper is completely fed out of the fuser.	Check the exit sensor actuator for damage. ■ Check to see if the exit flag is bent or damaged. ■ Check for burrs in the exit area and the exit flag. Verify the actuator is working properly. ■ Check for debris or caught wiring.
	The paper is wrapped in the fuser. ■ Accordion jams occur. ■ Fuser temperature may increase. ■ If the heat roller or pressure roller may get contaminated by toner.	Replace the fuser.
	There are accordion type ripples inside the fuser.	Replace the fuser. Check the condition and operation of the exit assembly, and replace as necessary.
	Check the exit sensor in EDC mode.	Replace the exit sensor if defective.

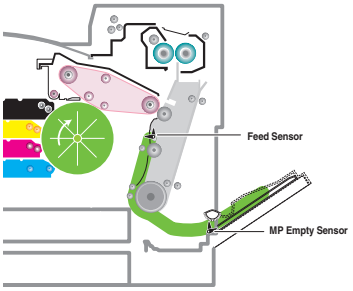
8.3.5 Jam at C (in the duplex area)

Symptoms: Indicated a “Jam at C” on the control panel.

	Possible Cause	Repair Actions
	Check the media. Some “stiffer” medias may have problems moving through the duplex path.	Try a different type of media.
	Check the feed and exit sensor in EDC mode.	Replace the feed sensor, exit sensor, or main board.
	If the paper does not reach the feed sensor because of constant jamming in the duplex area.	Replace the duplex unit.

8.3.6 Jam at MPT

Symptoms: Indicated Jam at MPT on the control panel.

	Possible Cause	Repair Actions
	Check the surface of the pick roller. Is it dirty or damaged?	Clean or replace the pick roller.
	Check the MPT clutch (pick solenoid) in EDC mode.	Replace the solenoid if defective.

8.3.7 Multi-Feeding

Symptoms: Multiple sheets are fed.

Checks and Causes	Repair Actions
The solenoid does not work correctly, check the On/Off operation of the feed clutch and tray clutch (pick solenoid) in EDC mode.	Replace the solenoid or the main board.
The friction pad is contaminated.	Clean the friction pad or replace the tray.
The paper is curled.	Use approved, fresh, clean paper.
The paper guides are not adjusted or the paper is loaded on top of the tabs.	Adjust the paper guide and load paper under the tabs.
The paper is charged with static-electricity.	Remove the static-electricity before loading the paper.

8.3.8 Paper Wrapped in the Fuser

Symptoms: Paper is wrapped in the fuser.

Checks and Causes	Repair Actions
The heat roller is contaminated. (Background toner, Hot offset).	Replace the fuser.
Accordion jams occur between the fuser and the exit assembly continuously.	Check for damage or contamination on the paper guide rib of the exit assembly, and check the condition and operation of the exit roller. Replace the exit assembly if necessary.
The fuser bearings or drive gears are warped caused by a momentary rise in temperature.	Replace the fuser, LVPS, then the main board.

8.4 Printer Symptoms and General Troubleshooting

8.4.1 Fuser Error

Warning

THE FUSER IS HOT! Use caution and allow the fuser cool down before handling.

Symptoms: "Fuser Error Low/High Temperature" is displayed on the control panel.

Checks and Causes	Repair Actions
Check the continuity of the thermostat, AC wire and heat lamp. Check the continuity of the thermistor and thermistor harness contacts.	Replace the fuser if any of these circuits are open.
Check the fuser for any evidence of damage due to overheating or melting.	Replace the fuser.

8.4.2 Laser Error

Symptoms: "Laser Unit Error" is displayed on the control panel.

Checks and Causes	Repair Actions
Check the laser connetor CN12 to the main board.	Reseat the connector or replace the laser unit if necessary.
Check the laser motor.	If the same error recurs, replace the main board.

8.4.3 Fuser Does Not Work Due to the Drive Gear Having Heat Damage

Symptoms: The fuser gears warp and the roller drive fails.

Checks and Causes	Repair Actions
The fuser makes a noise and fails to operate, rollers may not rotate.	Replace the fuser. Replace the main board. Replace the LVPS.

8.4.4 Paper Empty

Symptoms: “Tray1/MPT/Tray2 [Size] Empty” is displayed on the control panel, even though paper is loaded.

Checks and Causes	Repair Actions
Check for a broken or distorted paper empty sensor actuator. Check that the actuator is not stuck.	Replace the paper empty sensor actuator.
Test the tray empty sensor and actuator in EDC mode.	Replace any defective part as necessary.
Check the sensor connectors and cable harness. Ensure that a signal reaches the main board.	Replace the harness.

8.4.5 Paper Empty not Detected

Symptoms: The printer remains “Ready”, even when the tray is empty.

Checks and Causes	Repair Actions
Check for a broken or distorted paper empty sensor actuator. Check that the actuator is not stuck.	Replace the paper empty sensor actuator.
Test the tray empty sensor and actuator in EDC mode.	Replace any defective part as necessary.
Check the sensor connectors and cable harness. Ensure that a signal reaches the main board.	Replace the harness.

8.4.6 Cover Open

Symptoms: “Cover Open” is displayed on the control panel when all covers and doors are closed.

Checks and Causes	Repair Actions
Check the switch actuators on the inside of the duplex (Door C) and developer (Door A) covers to see if they are broken or damaged.	Replace the duplex cover (Door C) or developer cover (Door A).
Check the cover open switch, connectors, and cable harness. ■ CN30 (main board) to CN4 (LVPS) ■ CN14 (main board to Switch 3 (left cover) ■ CN 3 (LVPS) to Switch 1 (right cover) to Switch 2 (left cover)	Replace the harness or switch as necessary.
Test the actuator and switch in EDC mode.	Replace any defective parts. If the error recurs, replace the main board.

8.4.7 Cover Open Not Detected

Symptoms: "Ready" is displayed on the control panel when a cover is open.

Checks and Causes	Repair Actions
Check the switch actuators on the inside of the duplex (Door C) and developer (Door A) covers to see if they are broken or damaged.	Replace the duplex cover (Door C) or developer cover (Door A).
Check the cover open switch, connectors and cable harness. ■ CN30 (main board) to CN4 (LVPS) ■ CN14 (main board to Switch 3 (left cover) ■ CN 3 (LVPS) to Switch 1 (right cover) to Switch 2 (left cover)	Replace the harness or switch as necessary.
Test the cover open actuator and switch in EDC mode.	Replace any defective parts. If the error recurs, replace the main board.

8.4.8 Defective Motor

Symptoms: "Jam at Tray1/MPT/Tray2" is displayed on the control panel, the main motor does not work and paper does not feed when printing.

Checks and Causes	Repair Actions
Check if the motor harness, CN27 or motor board is damaged.	Replace the motor or motor harness.
Test the motor using EDC mode.	Replace the main motor if defective. If the error recurs, replace the main board.

8.4.9 No Power

Symptoms: Power is not supplied to the printer or the control panel LED display is not on.

Checks and Causes	Repair Actions
Check the AC power input and DC voltage output from the LVPS. CN30 (main board) to the following Pins: 9~10 = 24VDC, 13~16 = 3.3VDC, 21~22 = 5VDC Check the fuses in the LVPS Check the wall socket output.	Replace the power cord. Replace any damaged or open fuses on the LVPS (F1~F3). If the fault recurs, replace the LVPS.
If the LVPS supply is working properly, and the display still does not work, check the display connectors and cable harness.	Replace the cables or control panel assembly. Replace the main board.
Check if +24VDC or DC outputs are shorted to ground.	Isolate and replace the component that is shorting out the power supply.

8.4.10 Curved or Distorted Vertical Lines

Symptoms: Curved, wavy or distorted vertical lines on prints.

Checks and Causes	Repair Actions
Use EDC mode to test the laser. Check the +24V signal between the main board (CN12) and the laser.	Replace the laser Replace the main board.

8.4.11 Low Toner

Symptoms: “Replace [Color] Toner Soon” is displayed on the control panel.

Checks and Causes	Repair Actions
If 10% or less toner remains in any of the cartridges, this message will be displayed.	Check the toners percent remaining using the control panel. If the toner is low or empty, replace toner cartridge.
Check the condition of the contacts on the DEVE_OEM Board.	Replace the DEVE-OEM board. Replace the main board.

8.4.12 Replace Toner [Color]

Symptoms: “Replace [Color] Toner Soon” is displayed on the control panel.

Checks and Causes	Repair Actions
“Replace [Color] Toner Soon” is displayed when the cartridge life is over 100%. Image Density may be reduced. Engine would not print if cartridge life is over 110%.	Replace the toner cartridge.

8.5 Error Message Handling

ADC Not Confirm Error:	
The ADC is defective.	1. Turn the printer OFF, wait 30 seconds then turn the printer back ON. 2. Replace the main board if the error recurs.

Cover Open	
Door A or Door C is not properly closed.	1. DEVE Cover (Door A) or the duplex cover (Door C) is open. Open and close correctly. 2. Check the condition of the cover open microswitch assembly. Replace if defective. 3. Check the condition of the cover. Replace the cover if defective.

DEVE Motor Error	
The developer motor may stop working because of a harness or connector fault, increased torque in any one of the toner cartridges due to rollers sticking, a power supply fault or a fault on the main board.	1. Open the DEVE Cover and check each toner cartridge to ensure the rollers rotate. ■ Turn the rollers by hand and check how difficult it is to rotate the rollers. ■ Replace the toner cartridge if it seems excessively tight. 2. Open the rear cover and check if the DEVE motor harness is fully seated and not damaged. 3. Open the main board cover and check the harness connected to the DEVE drive board (CN5 main board to CN1 DEVE drive) is fully seated and not damaged. ■ Replace the harness if defective. 4. Check the power supply to the main board. ■ Replace the LVPS if any DC outputs are missing. ■ Replace the main board if the power supply from the LVPS is working properly.

Fuser Error Low Temperature	
The temperature of the fuser is lower than the Printing temperature. The Fuser harness is not connected properly.	1. Verify the fuser is installed correctly. ■ If not, re-install. 2. Check the AC power to the fuser (copper contact.) ■ If bad, go to step 3, otherwise, go to step 4. 3. Replace the fuser. 4. Check the harness connected to the LVPS (CN2) and fuser. ■ Reseat the harness or replace if defective. 5. Replace the main board. 6. Replace the LVPS.

Fuser Error High Temperature	
The temperature of the fuser is higher than the printing temperature.	1. Replace the fuser. Caution: You must replace the complete fuser assembly if a Fuser Error High Temp has occurred. Do not replace the thermistor. 2. Check the harness connected to the LVPS (CN2) and fuser. ■ Reseat the harness or replace if defective. 3. Replace the main board. 4. Replace the LVPS.

Laser Unit Error	
There is a fault in the laser unit.	1. Use EDC mode to test the HSYNC signal and laser motor. 2. Check the harness (CN12) main board to the engine controller and laser. ■ Reseat the harness or replace if defective. 3. Replace the Laser.

Main Motor Error	
The main motor that drives the imaging unit, the transfer belt and the pickup assembly is faulty.	1. Open the DEVE cover and top cover, then check the imaging unit and transfer unit. ■ Reseat or replace if defective. 2. Open the rear cover and check (CN1) main motor harness to (CN27) main board harness. ■ Reseat or replace if damaged. 3. Verify power is supplied from the LVPS to the main board. ■ Replace the LVPS if the voltages are outside specification. 4. Replace the main board.

Waste Motor Error	
This error is caused by a defective motor, open circuit on the waste motor harness, or the motor is stalling due to an increased waste motor torque during operation.	1. Open the front cover see if the waste toner cartridge is full or the inlets are blocked with the toner. ■ Replace the waste toner cartridge and unblock waste inlet feeds. 2. Open the top cover and remove the transfer unit and imaging unit to see if the imaging unit waste toner outlet is blocked. 3. Remove the front cover and check the waste motor harness (CN2) DEVE_OEM to waste motor. ■ Reseat or replace if defective. 4. Remove the HVPS cover and check the HVPS OEM harness (CN2) to DEVE_OEM (CN1). ■ Reseat or replace if defective. 5. Measure the voltage to CN2 Pin1 and Pin3 on DEVE_OEM. (Normal : Over +10VDC) ■ Replace the DEVE_OEM.

Transfer Belt Error	
This is caused by an unseated or unlocked transfer belt.	1. Open the top cover and check that the transfer belt is properly seated and locked in position. ■ Reseat and re-lock the transfer belt. ■ If the fault recurs replace the transfer beltt. 2. Check the condition of the transfer belt harness (especially if replacing the belt does not resolve the problem). ■ Reseat or replace the harness if defective. 3. Check the signal on Pin 1 (CN10) on the main board. ■ Replace the main board if the signal is low.

Invalid Imaging Unit Error	
Cannot communicate with the imaging unit. This is caused by an incorrect value of the OEM resistor in the imaging unit. Can be caused by mis-reading the value of the OEM resistor because of contamination of the contact points.	1. Verify a Xerox imaging unit is installed. ■ If not replace the imaging unit. 2. Clean the imaging unit contact points. 3. Check the harness connector between the main board and imaging unit. ■ Reseat or replace the harness if defective. 4. Replace the main board.

Invalid Transfer Belt	
Cannot communicate with the transfer belt. This is caused by an incorrect value of the OEM resistor in the transfer belt.	1. Open the top cover and then check that it is correctly locked in position. ■ Remove, re-install and re-lock the transfer belt. 2. Replace the transfer belt. 3. If the fault continues after re-seating the transfer belt, check the voltage on Pin4 of CN10 on the main board. ■ Replace the harness if the voltage is not correct. 4. Replace the main board.

Invalid [Color] Toner	
This is caused by the wrong CRUM value in the toner cartridge.	1. Clean the 3 contact points on the toner cartridge and then re-install. 2. Replace the toner cartridge if the same error recurs. 3. Remove the front cover and then check the condition of the contacts between the DEVE_OEM board and terminals if the same error occurs. ■ Clean the terminals or replace if defective. 4. Replace the DEVE_OEM board, HVPS or main board if the same error recurs.

CTD Calibration Error	
	1. Turn the printer off, wait 30 seconds, then turn it back on. 2. Clean the CTD sensor, located on the underside of the transfer belt. 3. Power cycle the printer to clear the error. 4. If the error recurs, reseat the imaging unit and transfer belt and power cycle the printer again. 5. Replace the transfer belt. 6. Replace the main board.

Jam at MPT/Tray1/Tray2	
Paper is caught in the tray.	1. Open the duplex cover and then remove the paper jammed in the printer. 2. Open the tray and after removing any trapped paper ensure that the tray is properly loaded, not overfilled and that the guides are properly adjusted. 3. Check the feed sensor actuator for proper operation or defects. 4. Check the tray clutch (pickup solenoid) using EDC mode. Replace if defective. 5. If the error recurs, check the condition of the cable harness to the main board. 6. Replace the main board if the voltage on Pin 2 of CN32, CN25 on the main board is +24VDC. (normal output : Pin 1 = +24VDC, Pin 2 = 0V)

Jam at C	
Paper is caught while printing a duplex job.	1. Open the duplex cover and then remove the paper. 2. Remove any foreign objects in the duplex path. 3. If the fault continues, refer to section 8.3.5 for additional troubleshooting.

Jam at B, C	
Paper is caught in the exit area	1. Check the exit sensor actuator. ■ Replace the fuser if the exit sensor actuator is damaged or bent. 2. Check the paper guide rib of the output guide is clean and not damaged. ■ Replace the fuser or exit assembly if damaged. 3. Check the condition and operation of the fuser rollers. 4. If the fault continues, refer to section 8.3.4 for additional troubleshooting.

Jam at C	
Paper is caught inside the printer.	1. Open the duplex cover and then remove the paper. 2. Check the feed sensor actuator and sensor in EDC mode. 3. Replace the feed sensor or actuator if damaged or defective. 4. If the fault continues, refer to section 8.3.3 for additional troubleshooting.

Load Manual **Press Cont. Key**	
This is only displayed when printing in manual feed mode and the MPT tray is empty.	1. Load a sheet of media into the MPT and press the On-line/continue button. The button needs to be pressed for each page that needs to be printed.

Load [Size] in [Tray]	
The size of the paper in the tray and the size of paper required by the document being printed are different.	1. Load the correct size of paper.

Memory Overflow	
Not enough memory capacity.	1. The printer has insufficient memory to build the page image. The print process will be cancelled automatically and the printer will return to ready. Add more memory. **Note** Xerox does not currently support adding memory

Page to complex	
The layout of the document is too complex	1. Try printing again after after simplifying and/or erasing any unnecessary images. If the message recurs repeatedly, you will need to add more memory. **Note** Xerox does not currently support adding memory

Replace Transfer Roller Soon	
The transfer roller is nearing it's end of life.	1. Replace the transfer roller when the image quality becomes unacceptable. 2. You can select whether this message displays on the control panel or not. 3. Remember to reset the transfer roller life at the control panel after replacing with a new roller.

Ready IP Conflict	
IP address confilict with the address of another device on the network.	1. This only occurs when the optional network interface card is connected and an IP address conflict is detected. Change the IP address.

Install Imaging Unit	
This occurs when the imaging unit is not correctly installed or seated properly.	1. Verify the imaging unit is properly installed. 2. Replace the imaging unit. 3. Check the imaging unit harness to the main board. ■ Reseat or replace if defective. 4. Replace the main board.

Install Transfer Belt	
There is a problem with the transfer belt. Occurs when the transfer belt is not correctly installed or locked. Occurs when the value of the resistor cnnot be detected due to contamination of the contacts.	1. Verify the transfer belt is properly installed and locked. 2. Clean the contacts on the transfer belt. 3. Replace the transfer belt.

Install [Color] Toner	
Occurs when the toner cartridge of the indicated color is not installed. If the toner cartridge is not installed. The resistor cannot be read due to the contamination of the contact points.	1. Verify the toner cartridge is installed. 2. Check the contact point for contamination. 3. Replace the toner cartridge. 4. Replace the DEVE_OEM board, the HVPS or the main board.

Tray 2 Error	
Tray 2 is not installed properly.	1. Turn off the printer and re-insert Tray 2.

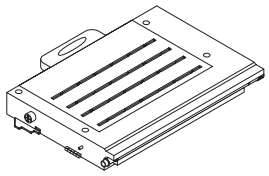
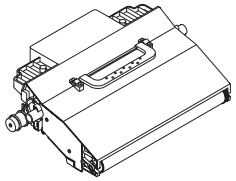
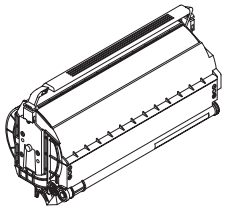
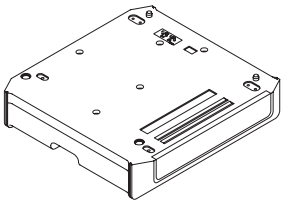
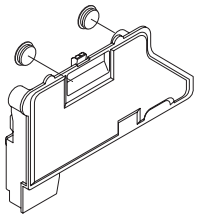
Cover D Open	
Tray 2 cover is open.	1. Open and close the Tray 2 cover properly. 2. If the fault continues, refer to section 8.3.6 for additional troubleshooting.

Waste Cartridge Full/Not Installed	
Waste toner cartridge is full or not installed.	1. Check the waste toner cartridge for proper installation. 2. If it is full, replace the waste toner cartridge. 3. Check the waste toner sensor and actuator for damage or defects. Replace if defective. 4. Check the waste toner sensor, cable harness. Re-seat or replace if defective. 5. Replace the main board.

9 Parts List

Contents

9.0 Consumables, Routine Maintenance Items and Options

Toner Cartridge (C,M,Y,K)	Transfer Belt
	
Imaging Unit	Tray 2 (SCF)
	
Waste Toner Cartridge	
	

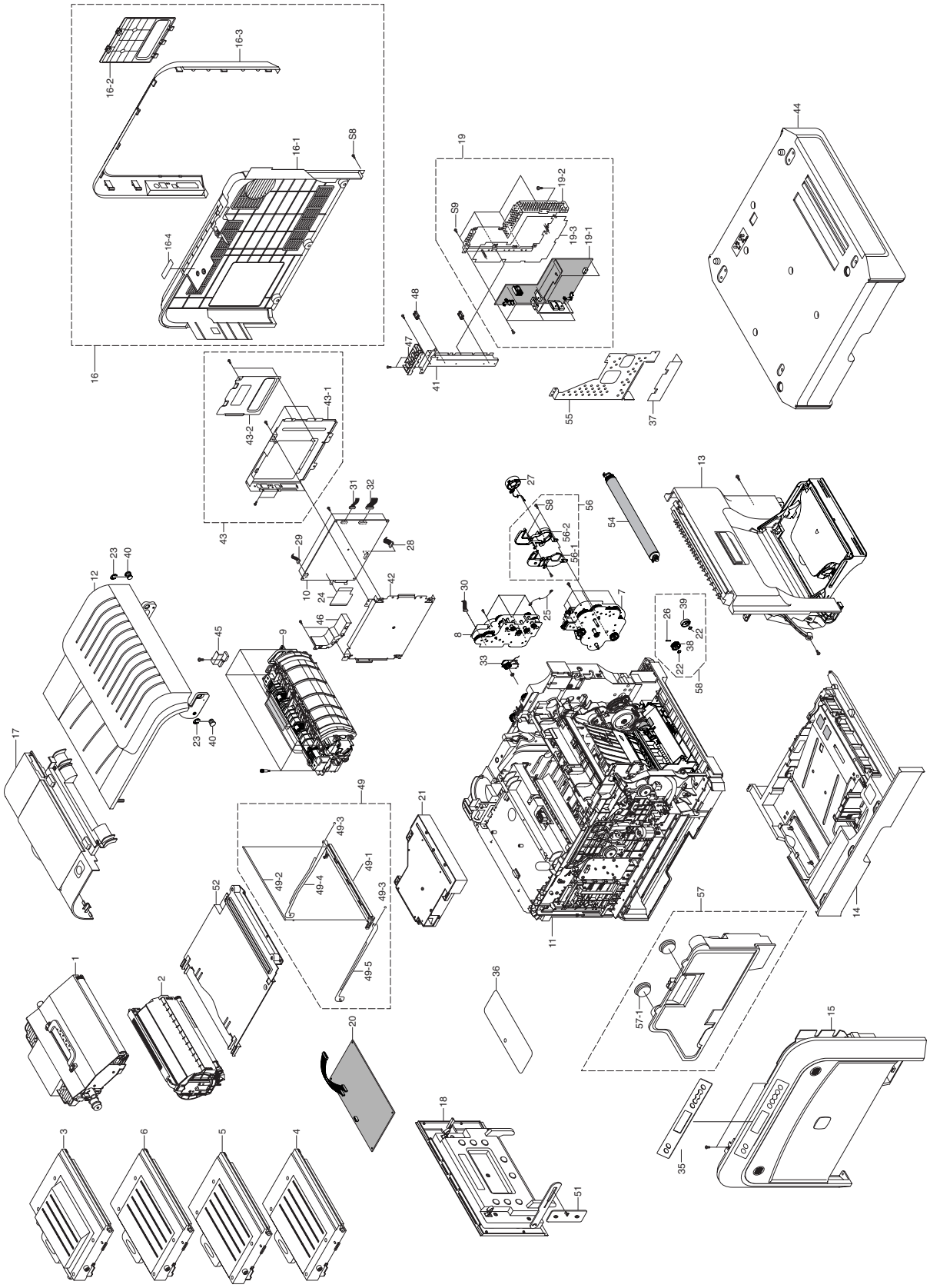
Item	Life based on 5% coverage	Part No.	Replaceable by
Black Standard Toner Cartridge	3,000	106R00679	User replaceable
Black High capacity	7,000	106R00684	
Cyan Standard Toner Cartridge	2,000	106R00676	User replaceable
Cyan High capacity	5,000	106R00680	
Yellow Standard Toner Cartridge	2,000	106R00678	User replaceable
Yellow High capacity	5,000	106R00682	
Magenta Standard Toner Cartridge	2,000	106R00677	User replaceable
Magenta High capacity	5,000	106R00681	
Imaging Unit	50,000 images	108R00593	User replaceable
Transfer Belt	50,000 images	108R00594	User replaceable
500-Sheet Feeder	N/A	119650600	
Waste Toner Cartridge	3,000 to 5,000 pages (color 5%)	106R00683	User replaceable
***The Fuser and Transfer Roller are Customer Replaceable Spare Parts, See 9.1 Main Exploded View**			

Screws Used in the Printer (Hardware Kit)

NO	DESCRIPTION		SPEC
S1	SCREW-MACHINE		2.6*4, GOLD
S2	SCREW-TAPPING		4*15, GOLD
S3	SCREW-TAPPING		3*8, GOLD
S4	SCREW-TAPTITE		2.6*6, GOLD
S5	SCREW-TAPTITE		3*8, BLACK
S6	SCREW-TAPTITE		2*10, GOLD
S7	SCREW-TAPTITE		3*6, GOLD
S8	SCREW-TAPTITE		3*10 SILVER
S9	SCREW-TAPTITE		3*6, GOLD
S10	SCREW-ASS'Y MACH		3*6, GOLD

NO	DESCRIPTION		SPEC
S11	SCREW-TAPTITE		3*6, GOLD
S12	SCREW-TAPTITE		3*8, BLACK
S13	SCREW-MACHINE		3*8, SILVER
S14	SCREW-TAPTITE		4*10 SILVER
S15	SCREW-TAPTITE		3*6, GOLD
S16	SCREW-MACHINE		2*16, BLACK
S17	SCREW-TAPTITE		4*6, YELLOW
S18	SCREW-SPICIAL		3*10, BLACK
S19	SCREW-TAPTITE		4*6, SILVER
S20	SCREW-TAPTITE		3*12, YELLOW
S21	COVER DIME SCREW		EMBERGOLD

9.1 Main Exploded View

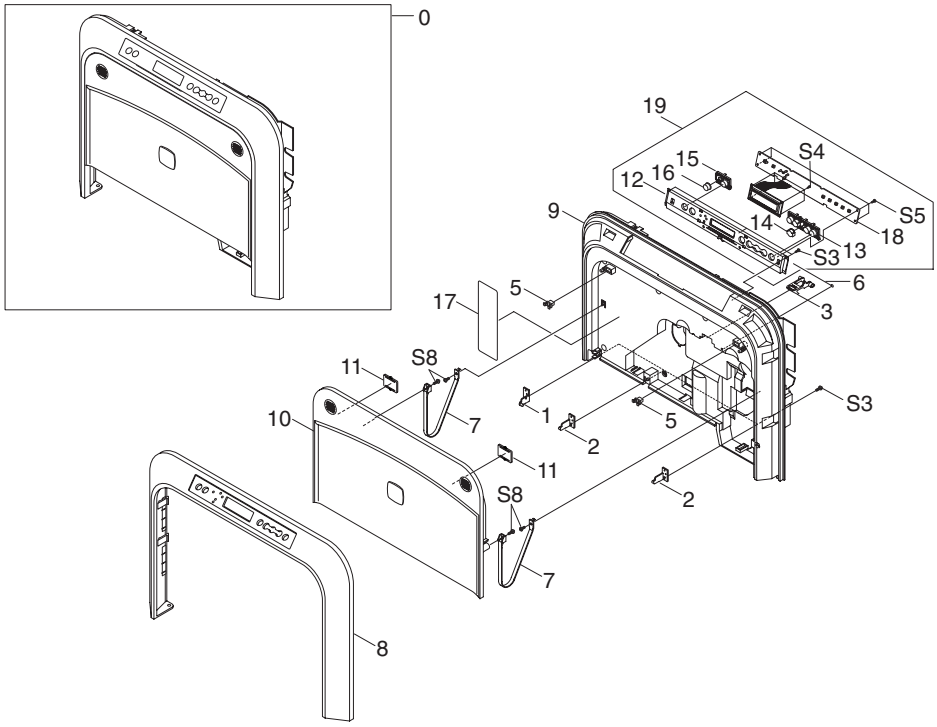


Main Assembly Parts List 9.1

No.	Part number	Qty	Part Name and (part description)
0	N/S		Set_Xerox
1	108R00594	1	Transfer Belt
2	108R00593	1	Imaging Unit
3	106R00679 106R00684	1 1	Standard Capacity Black Toner Cartridge High Capacity Black Toner Cartridge
4	106R00676 106R00680	1 1	Standard Capacity Cyan Toner Cartridge High Capacity Cyan Toner Cartridge
5	106R00677 106R00681	1 1	Standard Capacity MagentaToner Cartridge High Capacity Black Magenta Cartridge
6	106R00678 106R00682	1 1	Standard Capacity Yellow Toner Cartridge High Capacity Yellow Toner Cartridge
7	116-1850-00	1	Main Drive ASM
8	116-1851-00	1	DEVE Drive ASM
9	116-1579-00 116-1567-00	1 1	Fuser 230V (Customer Replaceable Spare) Fuser 110V (Customer Replaceable Spare)
10	116-1852-00	1	Main Controller Board
11		1	Main Frame
12	116-1853-00	1	Exit ASM
13	116-1928-00	1	Duplex ASM
14	116-1854-00	1	Paper Tray, Tray 1 (FCT)
15		1	Front Cover
16	116-1855-00	1	Rear Cover ASM
16-1		1	Cover Rear
16-2		1	Cover Rear Deco
16-3		1	Cover Open Board
16-4		1	Label (P)-Rear
16-S8		1	Screw
17	116-1856-00	1	Top Cover ASM
18	116-1857-00	1	DEVE Cover ASM
19	116-1859-00 116-1858-00	1 1	LVPS (SMPS) ASM, 230 V LVPS (SMPS) ASM, 110 V
19-1		1 1	LVPS (SMPS) V2-220V LVPS (SMPS) V1-110V
19-2		1	Bracket LVPS (SMPS)
19-3		1	Shield - LVPS (SMPS)
19-S9		1	Screw-Taptite
20	116-1860-00	1	HVPS
21	116-1861-00	1	Laser Unit (LSU)
22		2	Plain Washer
23	P/O hardware kit	2	E-ring
24	116-1915-00	1	Sheet ECU Board (Main Board Shield)
25		1	Ground Harness LIU
26		1	ICT-PIN ADF
27	116-1863-00	1	Fuser Fan
28	116-1929-00	1	CBF Harness-Main Laser (LSU)
29	116-1930-00	1	CBF Harness-Main Panel (Control Panel)
30	116-1931-00	1	CBF Harness-DEVE Motor
31	116-1932-00	1	CBF Harness-Main Motor

No.	Part number	Qty	Part Name and (part description)
32	116-1933-00	1	Harness-Main LVPS (SMPS)
33	116-1934-00	1	Clutch Cam Solenoid
34		1	Bushing 8/5
35	116-1864-00	1	Sheet Cover Front OPE (Control Panel Cover)
36		1	HVPS Shield
37		1	LVPS (SMPS) Cover
38		1	OPC Drive Gear 2_Z40
39		1	Cam-T2 Engage
40		2	Shaft Cover Exit Hinge
41		1	Bracket Guide
42		1	Bracket Upper
43		1	Bracket Lower
43-1		1	Bracket Bracket Upper
43-2		1	Bracket Option
43-S9		2	Screw
44	119-6506-00	1	500-Sheet Feeder (SCF)
45		1	Cover Sensor Base
46		1	Harness C
47	116-1936-00	1	Harness D
48		1	Cable Clamp
49	116-1868-00	1	Laser (LSU) Cleaner ASM
49-1		1	Shutter Laser Cleaner
49-2		1	Shaft Laser Cleaner
49-3		1	E-Ring Laser Cleaner
49-4		1	Plate-Link Rear
49-5		1	Plate-Link Front
50		1	DEVE Open Link
51		1	DEVE Open Link Guide
52	116-1865-00	1	Cover-LSU (Laser Cover)
53	116-1885-00	1	Terminals
54	116-1566-00	1	Transfer Roller (T2) (Customer Replaceable Spare)
55		1	Bracket LVPS (SMPS) Cover
56		1	Fuser Unit Duct
56-1		1	Fuser Duct Lower
56-2		1	Fuser Duct Upper
56-S8		1	Screw-Taptite
57		1	Waste Toner Cartridge
57-1		1	Waste Toner Cover Upper
57-2		1	Waste Toner Cover Lower
57-3		2	Toner Cap OPC
58	116-1910-00	1	Main Drive Hardware Kit
S2	P/O Screw Kit	2	Screw-Tapping
S5	P/O Screw Kit	6	Screw-Taptite
S8	P/O Screw Kit	50	Screw-Taptite
S9	P/O Screw Kit	21	Screw-Taptite
S14	P/O Screw Kit	11	Screw-Taptite
S15	P/O Screw Kit	2	Screw-Machine

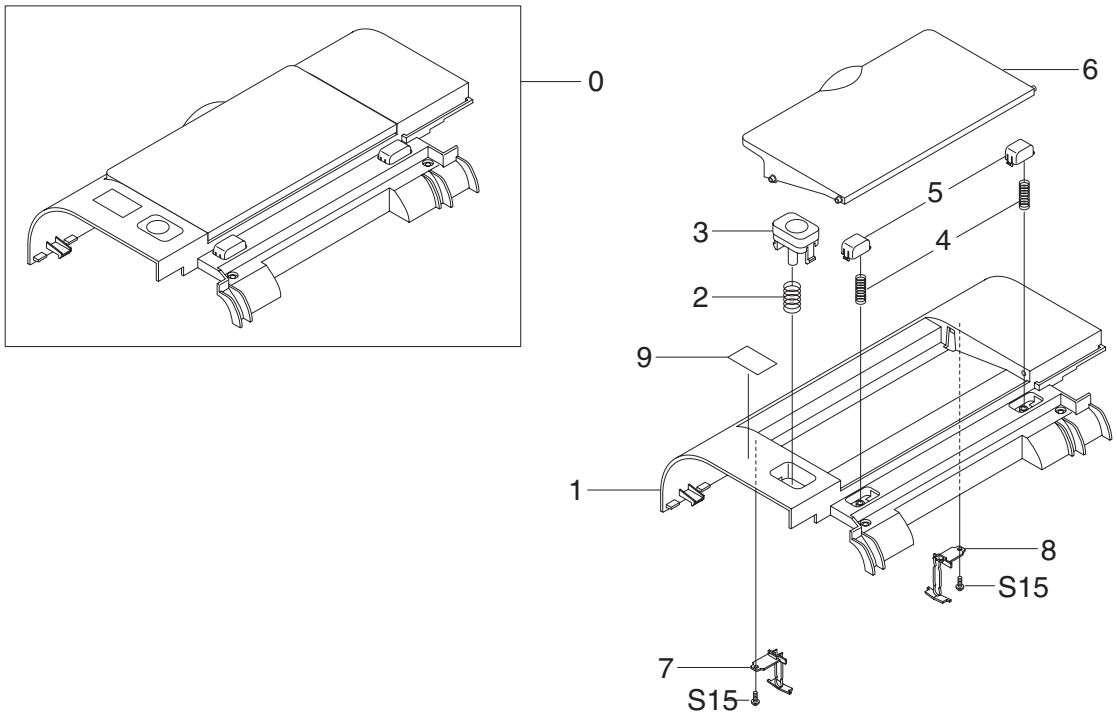
9.2 Front Cover



Front Cover 9.2

No.	Part number	Qty	Part Name and (part description)
0		1	Xerox Front Cover
1		1	Cover-Front Hinge F
2		2	Cover Front Hinge R
3	116-1917-00	1	Waste Cartridge Lock
5	116-1937-00	2	Front Cover Lock
6	116-1918-00	1	Waste Cartridge Lock Spring
7		2	Strap
8	116-1938-00	1	Front Cover Deco
9	116-1869-00	1	Front Cover Inner
10	116-1870-00	1	Front Cover
11	116-1871-00	2	Front Cover Latch
12		1	Cover OPE Frame
13		1	OPE Key 1
14		1	OPE Key 1 Cap
15		1	OPE Key 2
16		1	OPE Key 2 Cap
17		1	Label(P) Front Inner
18		1	Sub-Panel Board
19	333-4414-00	1	Front Panel Assembly (Control Panel)
S4	P/O Screw Kit	2	Screw-Taptite
S5	P/O Screw Kit	6	Screw-Taptite
S8	P/O Screw Kit	4	Screw-Taptite
S3	P/O Screw Kit	4	Screw-Tapping

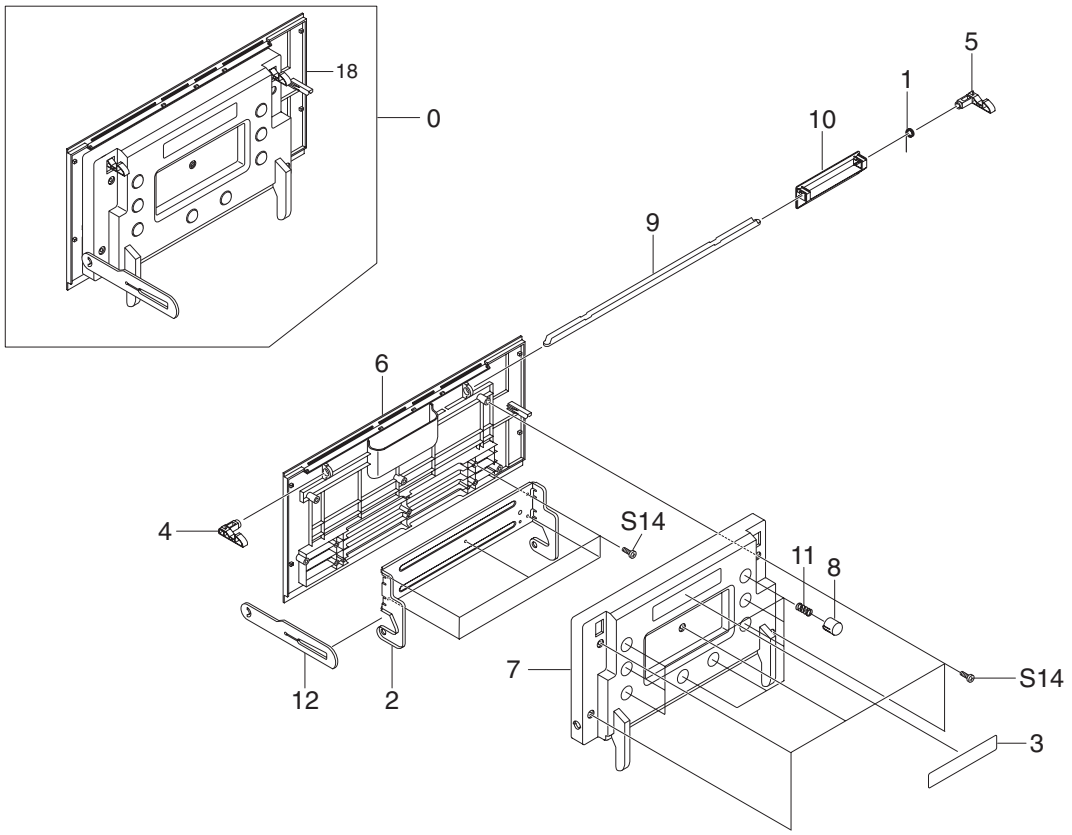
9.3 Top Cover



Top Cover 9.3

No.	Part number	Qty	Part Name and (part description)
0	116-1856-00	1	Top Cover ASM
1		1	Cover Top
2		1	Spring-CS
3		1	Cover Top Button
5		2	Cover Top Opener
6		2	Cover Top Stacker
7		1	Stopper-Stacker F
8		1	Stopper-Stacker R
9		1	Lavel(P)-Top
S15	P/O Screw Kit	2	Screw-Taptite

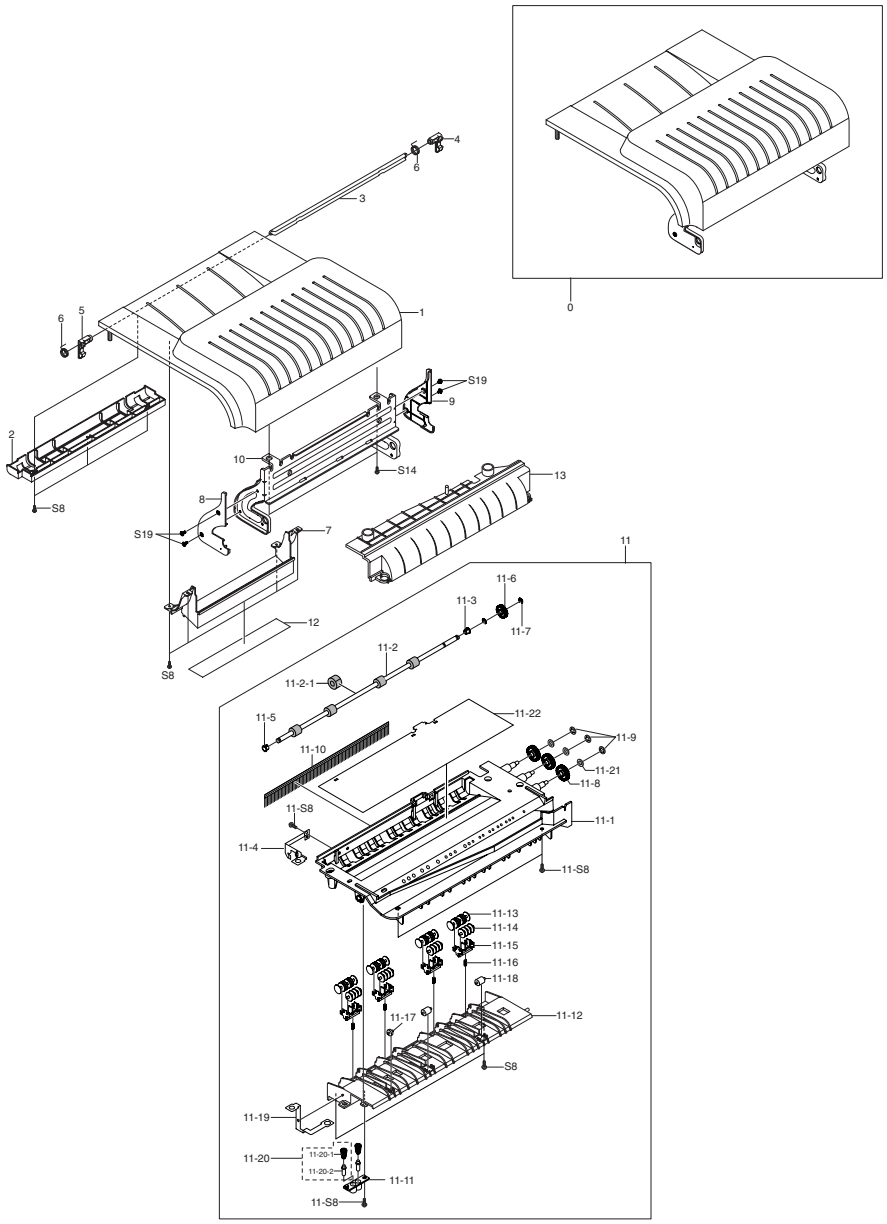
9.4 DEVE Cover (Door A)



DEVE Cover (Door A) 9.4

No.	Part number	Qty	Part Name and (part description)
0	116-1857-00	1	DEVE Cover ASM (Door A)
1		1	Spring TS
2		1	Cover DEV Lock Bar
3		1	Label(P) DEVE Cover
4		1	Cover Dup Locker F
5		1	Cover Dup Locker R
6		1	Cover DEVE
7		1	Cover DEVE Inner
8		8	Cover DEV Spring CAp
9		1	Cover DEVE Hinge
10		1	Cover Duplex Handle
11		8	Spring CS
12		1	DEVE Open Link
S14	P/O Screw Kit	10	Screw-taptite

9.5 Exit Assembly

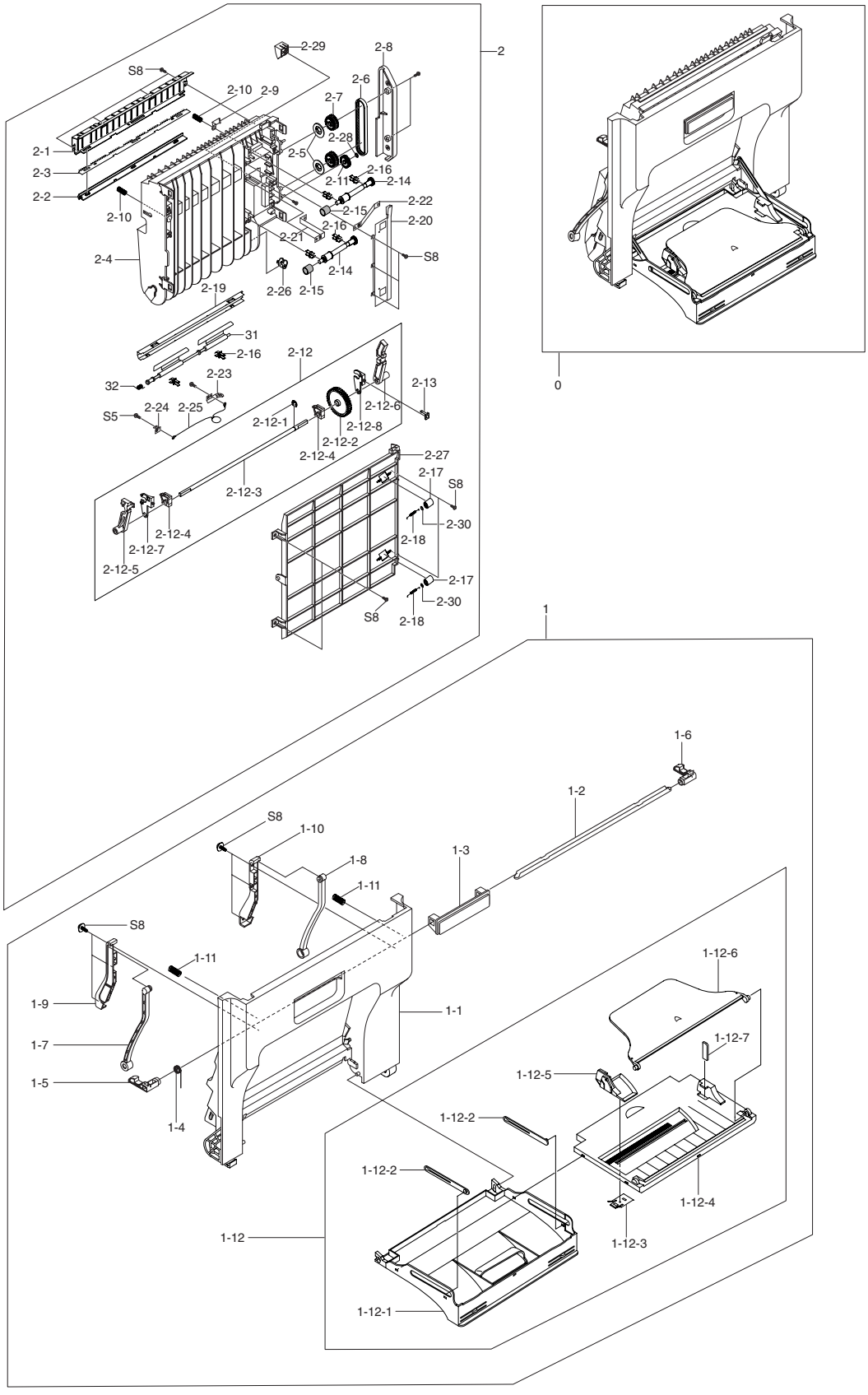


Exit Assembly 9.5

No.	Part number	Qty	Part Name and (part description)
0	116-1853-00	1	Exit ASM
1		1	Cover Exit
2		1	C/Exit Lock Cover
3		1	Cover Exit Bar
4		1	Cover Dup Locker F
5		1	Cover Dup Locker R
6		2	Spring TS
7		1	Cover Exit Guide
8		1	Cover Exit F Cap

No.	Part number	Qty	Part Name and (part description)
9		1	Cover Exit R Cap
10		1	Cover Exit Hinge
11	116-1939-00	1	Exit Frame ASM
11-1		1	Guide Exit Upper
11-2		1	Roller Exit Drive
11-2-1		1	Roller Exit Drive Idle
11-3		1	Bearing Large DP
11-4		1	Ground Exit
11-5		1	Bearing Large DP
11-6		1	Gear Duplex
11-7	P/O Hardware Kit	1	C-Ring
11-8		3	Gear-Dup Idle
11-9	P/O Hardware Kit	3	CS Ring
11-10		1	Brush Antistatic
11-11		1	Holder Ground Ball
11-12		1	Guide Exit Lower
11-13		4	Roller FD F
11-14		4	Roller FD R
11-15		4	Holder Exit
11-16		4	Spring ETC Exit Lower Idle
11-17		1	Roller Exit Idle
11-18		2	Roller Exit F_up
11-19		1	Ground Exit Plate
11-20		2	Unit-Terminal:L
11-20-1		1	Spring ETC-HV Small
11-20-2		1	Shaft HV Large
11-21		3	Spring-ETC Clutch
11-22		1	Sheet-Exit Upper
11-S8		4	Screw-Taptite
12		1	Label(P)-Exit
13		1	Guide-Exit Rear
S8	P/O Screw Kit	12	Screw-Taptite
S14	P/O Screw Kit	2	Screw-Taptite
S19	P/O Screw Kit	4	Screw-Taptite

9.6 Duplex Assembly

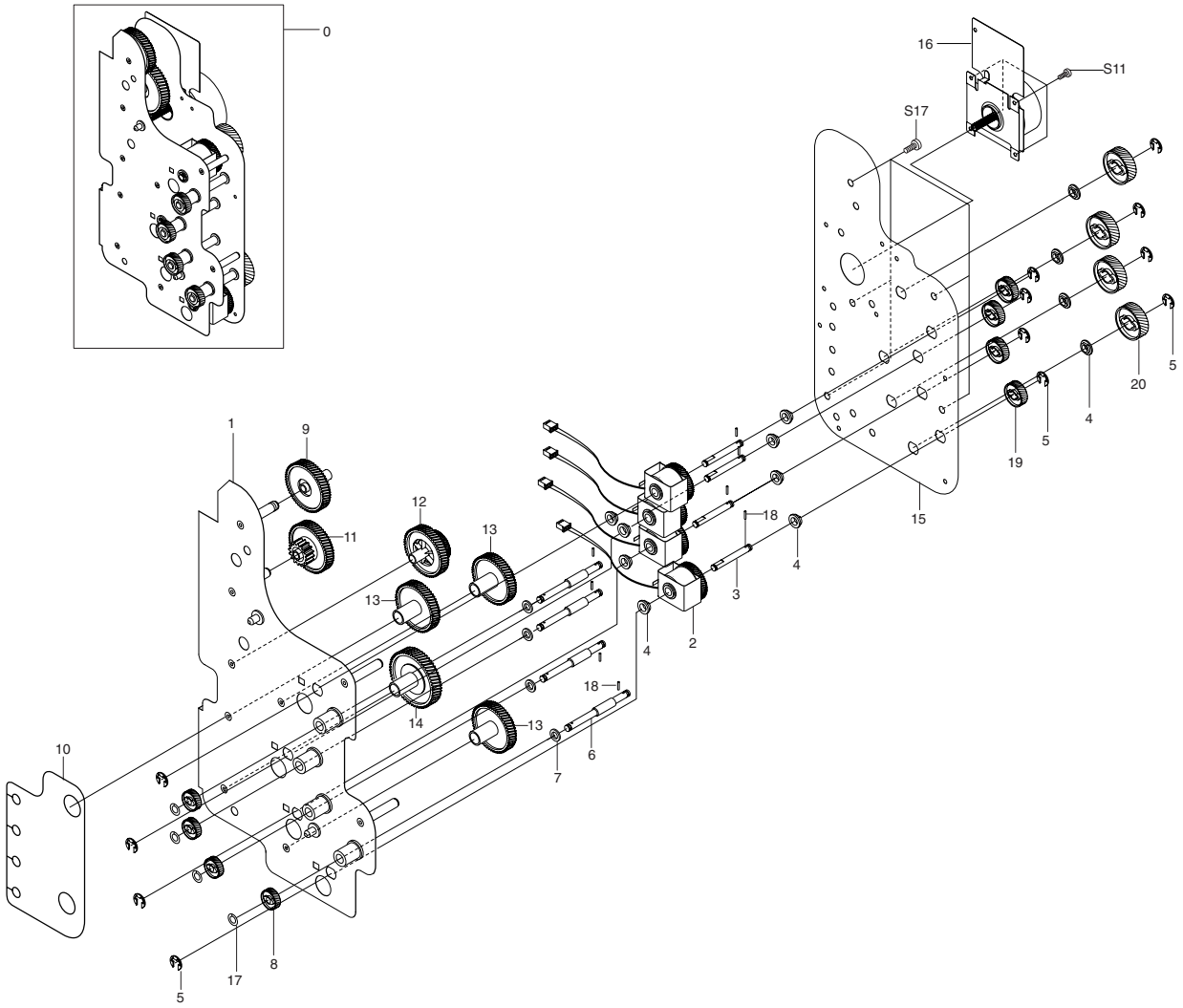


Duplex Assembly 9.6

No.	Part number	Qty	Part Name and (part description)
0	116-1928-00	1	Duplex ASM
1		1	Cover Right
1-1		1	Cover Duplex
1-2		1	Cover Dup Lock Shaft
1-3		1	Cover Duplex Handle
1-4		1	Spring TS
1-5		1	Cover Dup Locker F
1-6		1	Cover Dup Locker R
1-7		1	Cover Duplex Link
1-8		1	Cover Duplex Link R
1-9		1	Cover Duplex Rail
1-10		1	Cover Duplex Rail R
1-11		2	Spring EX
1-12	116-1877-00	1	MPT Tray ASM (Multi-Purpose Tray)
1-12-1		1	Tray Case MPT
1-12-2		2	Tray Link MPT
1-12-3		1	Guide Latch
1-12-4		1	Tray Cover MPT
1-12-5		1	Side Guide MPT
1-12-6		1	Tray Exit MPT
1-12-7		1	Label(R)Height MPT
2	116-1878-00	1	Duplex Unit
2-1		1	Bracket Guide A
2-2		1	Holder Saw
2-3		1	Plate Saw
2-4		1	Frame Duplex
2-5		2	Pulley Belt
2-6		1	Belt Timing
2-7		2	Gear-Duplex Idler_Z25
2-8		1	Cover Belt
2-9		1	Bracket Ground TR
2-10		2	Spring ES
2-11		1	Gear-MPT/Dup Drive
2-12		1	Unit-T2_Assy
2-12-1		1	E-Ring
2-12-2		1	Gear Transfer Idler Z47
2-12-3		1	Shaft Guide TR
2-12-4		2	Holder Transfer
2-12-5		1	Lever TR Front
2-12-6		1	Lever TR Rear
2-12-7		1	Link TR Front
2-12-8		1	Link TR Rear
2-13		1	Bracket Ground TR1
2-14		2	Shaft Dup Driver
2-15		2	Rubber Exit RPR
2-16		2	Bushing TX(B4)
2-17		2	Roller Exit

No.	Part number	Qty	Part Name and (part description)
2-18		2	Fuser Exit Spring
2-19		1	Bracket Guide B
2-20		1	Bracket Guide Duplex
2-21		1	Bracket Ground B
2-22		1	Bracket Ground A
2-23		1	Bracket Ground D
2-24		1	Bracket Ground C
2-25		1	CBF-Harness Control Panel Ground (OPE)
2-26		1	Bushing Feed
2-27		1	Guide Lower Duplex
2-28	P/O Hardware Kit	1	Ring CS
2-29		1	Guide Feed
2-30		1	Poly Washer
S5	P/O Screw Kit	19	Screw-Taptite
S8	P/O Screw Kit	19	Screw-Taptite

9.7 DEVE Drive Assembly

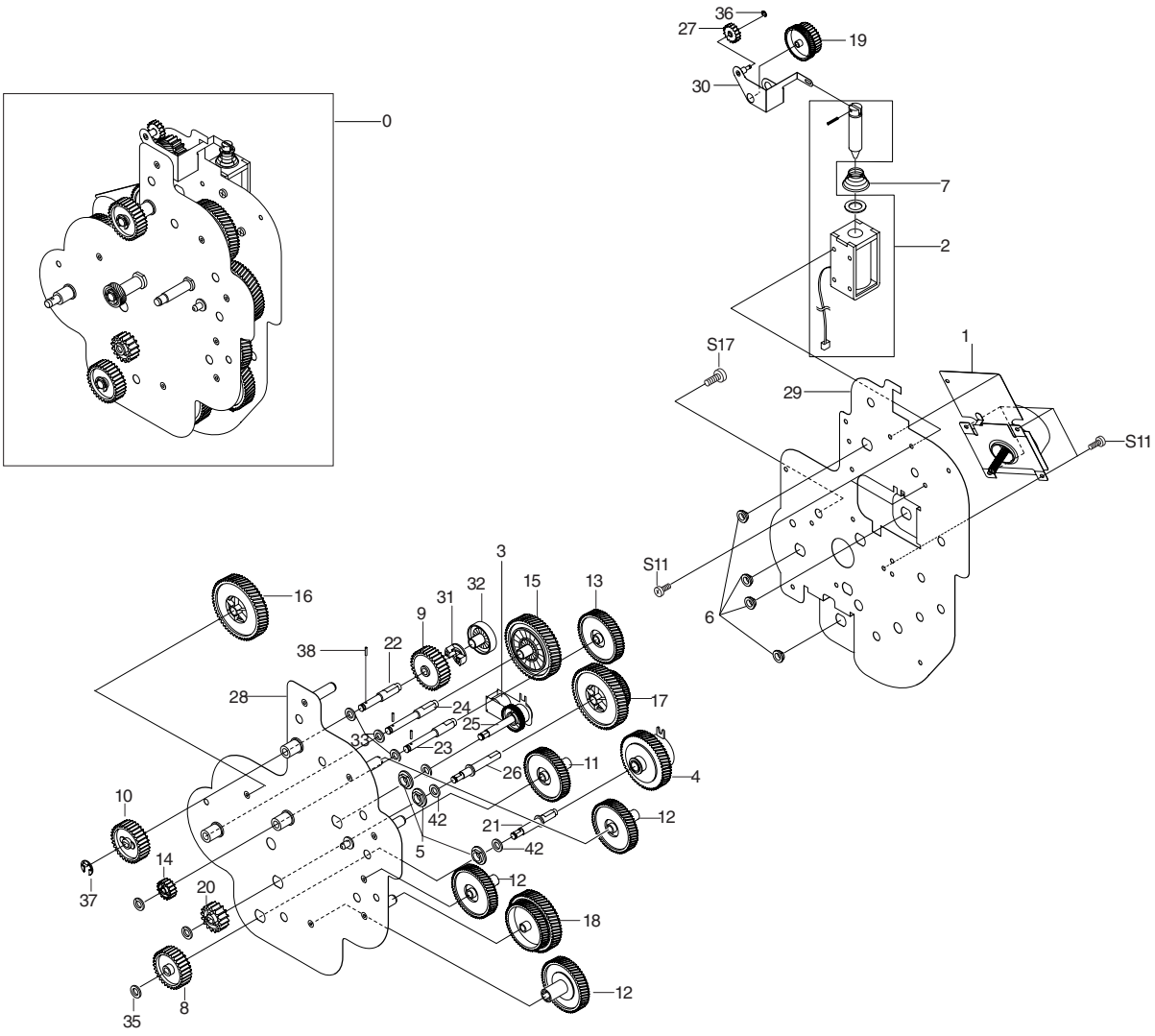


DEVE Drive Assembly 9.7

No.	Part number	Qty	Part Name and (part description)
0	116-1851-00	1	DEVE Drive ASM
1		1	Bracket DEVE Front
2		4	Clutch Spring DEVE
3		4	Shaft DEVE Clutch
4		12	Bushing D6/L4
5	P/O Hardware Kit	12	E-ring
6		4	Shaft DEVE Drive
7		4	Washer plain
8		4	Gear DEVE DRive 2_Z20
9		1	Gear Idle Z51
10		1	Harness Guide
11		1	Gear ITB Clean RDCN
12		1	Gear DEVE RDCN

No.	Part number	Qty	Part Name and (part description)
13		3	Gear DEVE Idle_Z41
14		1	Gear DEVE Idle_Z53
15		1	Bracket DEVE Rear
16	116-1880-00	1	Motor BLDC-DEVE (DEVE Motor)
17		4	Washer Plain
18		12	PIN ADF
19		4	Gear DEVE Drive 1_Z25
20		4	Gear DEVE Clutch 2_Z33
S11		4	Screw-Taptite
S17		5	Screw-Taptite

9.8 Main Drive Assembly

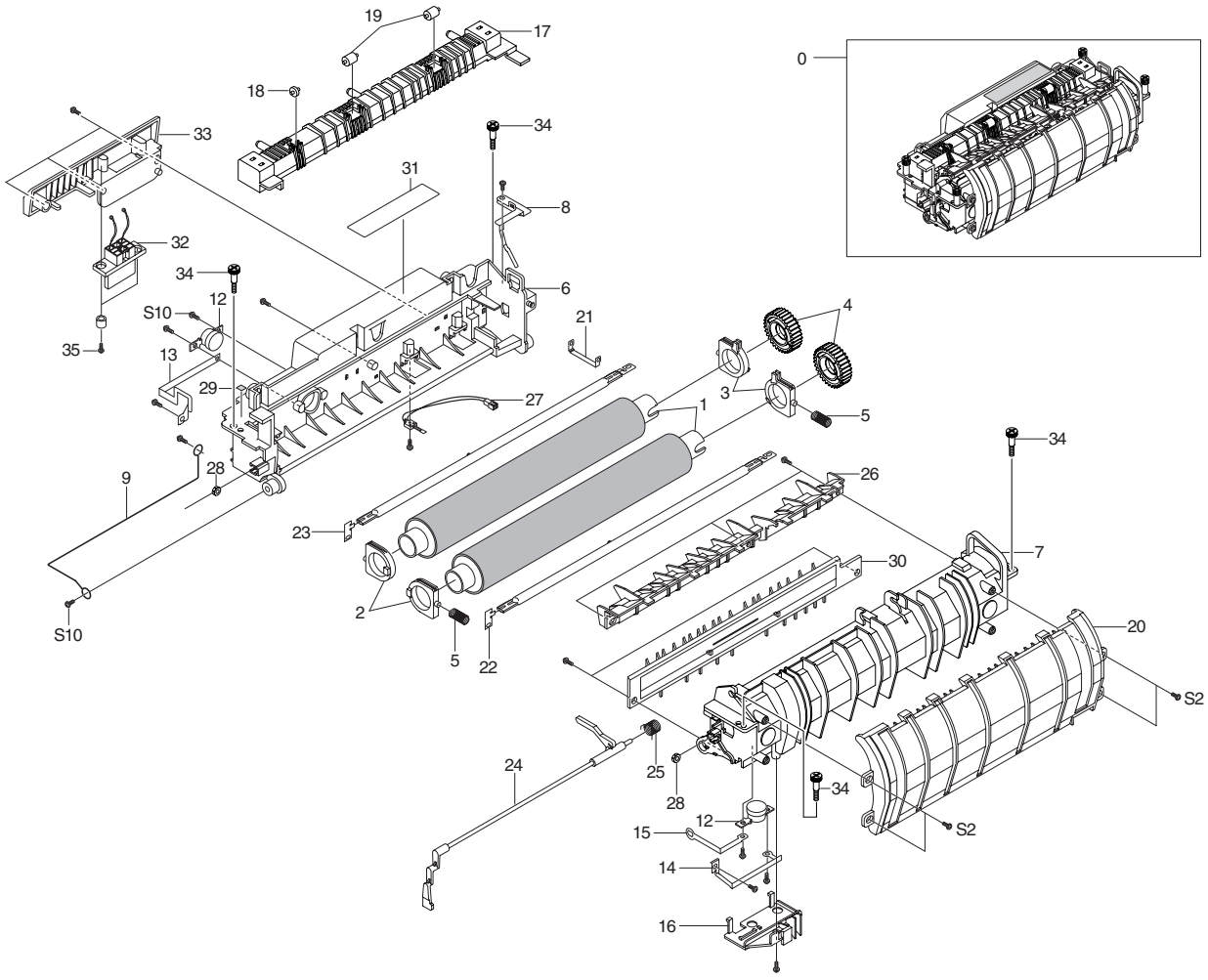


Main Drive Assembly 9.8

No.	Part number	Qty	Part Name and (part description)
0	116-1850-00	1	Main Drive ASM
1	116-1880-00	1	Motor BLDC-Main Drive (Main Motor)
2		1	Duplex Solenoid
3	116-1934-00	1	Clutch Cam Solenoid
4		1	Clutch Electric Feed
5		3	Busing 8/5
6		6	Bushing D6/L4
7	P/O Hardware Kit	1	Spring ETC Solenoid DP
8		1	Gear Feed Drive_Z37
9		1	Gear Fuser Drive 1_Z47
10		1	Gear Fuser Drive 2_Z30

No.	Part number	Qty	Part Name and (part description)
11		1	Gear Idle Z51
12		3	Gear Idle Z53
13		1	Gear ITB (Transfer Belt) Drive 1_Z90
14		1	Gear ITB Drive 2_Z30
15		1	Gear OPC Drive 1_Z120
16		1	Gear OPC RDCN_Z120/Z60
17		1	Gear RDCN Z110/Z37
18		1	Gear RDCN Z120/Z60
19		1	Gear Swing Drive
20		1	Gear T2 Drive Z_25
21		1	Shaft Feed Drive
22		1	Shaft Fuser Drive
23		1	Shaft ITB (Transfer Belt) Drive
24		1	Shaft OPC (Imaging Unit) Drive
25		1	Shaft T2 Cam
26		1	Shaft T2 Drive
27		1	Gear Exit/ U,ID
28		1	Bracket Main Front
29		1	Bracket Main Rear
30		1	Link Solenoid
31		1	Hub Clutch
32		1	Clutch
33		3	Washer Plain
34		3	Washer Plain
35		3	Washer Plain
36	P/O Hardware Kit	1	C-Ring
37		1	E-Ring
38		2	ICT-PIN ADF
S11	P/O Screw Kit	6	Screw-Taptite
S17	P/O Hardware Kit	4	Screw-Taptite

9.9 Fuser Assembly



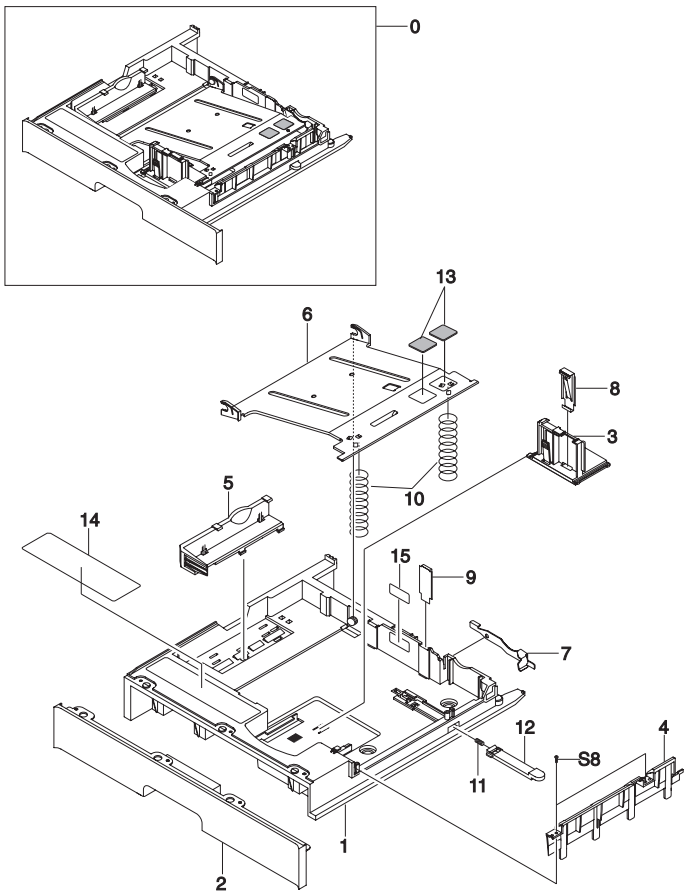
Fuser Assembly 9.9

No.	Part number	Qty	Part Name and (part description)
0	119-1579-00	1	230V Fuser Assembly
	116-1567-00	1	110V Fuser Assembly
1		2	Roller-Heat
2		2	Bearing Fuser F
3		2	Bearing Fuser Gear
4		2	Gear Fuser Z35
5		2	Spring-ETC-PR
6		1	Fuser Upper
7		1	Fuser Lower
8		1	Ground Fuser
9		1	NPR Electrode AC Wire
12		2	Thermostat
13		1	NPR Electrode F
14		1	NPR Electrode PR
15		1	NPR Electrode AC Plate

No.	Part number	Qty	Part Name and (part description)
16		1	Cover Thermostat
17		1	Cover Cleaning
18		1	Roller Exit Idle
19		2	Roller Exit F_Up
20		1	Guide DP Side
21		1	NPR Electrode Connector
22		1	Halogen Lamp 300w (110V/220V)
23		1	Halogen Lamp 500W (110V/220V)
24		1	Actuator Exit
25		1	Spring ETC Actuator
26		1	Guide Output
27		1	Thermistor NTC
28		4	Nut Hexagon
30		1	Guide Input
31		1	Label(P) Fuser 110V/220V
32		1	CBF Harness Fuser
33		1	Frame Drawer Connector
34		4	*Cover Dime Screw
35		2	Screw-Taptite
S10	P/O Screw Kit	10	Screw-Assembly Machine
S8	P/O Screw Kit	13	Screw-Taptite

* 4 Cover Dime Screws are included with a replacement Fuser.

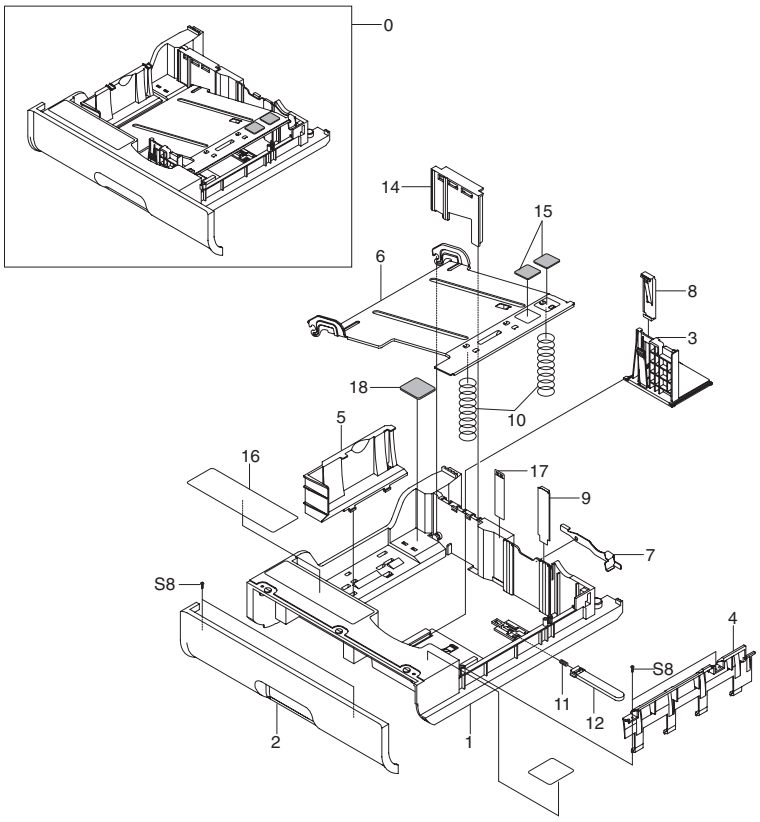
9.10 Paper Tray, Tray 1 (FCT)



Paper Tray, Tray 1 (FCT) Assembly 9.10

No.	Part number	Qty	Part Name and (part description)
0	116-1854-00	1	Paper Tray, Tray 1 (FCT)
1		1	Frame Cassette
2		1	Cover Cassette
3		1	Guide Side CST
4		1	Guide Front CST
5		1	Guide Rear
6		1	Plate K/UP
7		1	Finger
8		1	Spring Plate Guide
9		1	Guide Plate Paper
10		2	Spring
11		1	Spring Locker
12		1	Locker Plate
13		2	RPR Pad CST
14		1	Label(R)-Height Xerox
15		1	Label(P)-Instruction
S8	P/O Screw Kit	2	Screw_Taptite

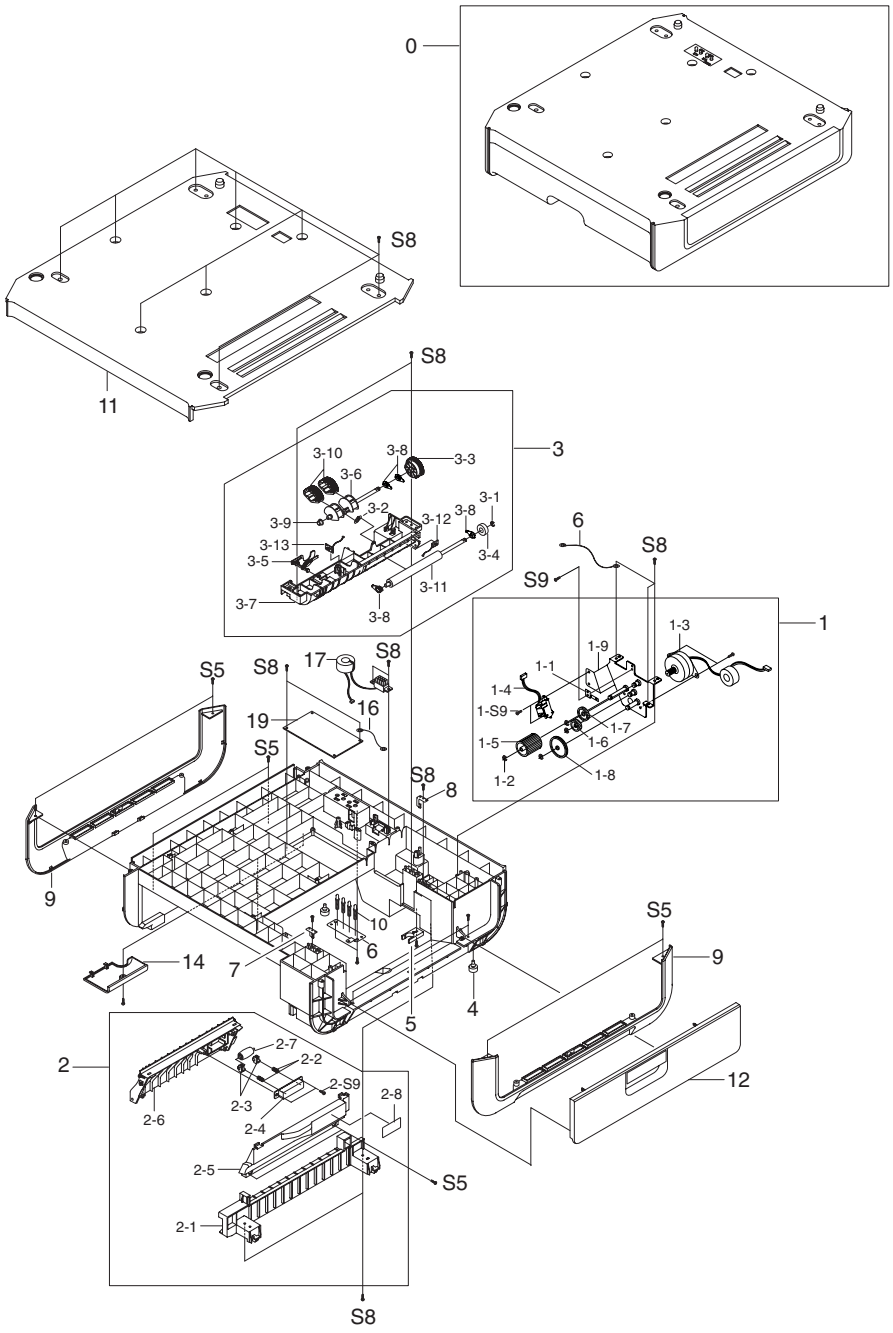
9.11 Paper Tray, Tray 2 (SCT)



Paper Tray, Tray 2 (SCF) Assembly 9.11

No.	Part number	Qty	Part Name and (part description)
0	116-1940-00	1	Paper Tray, Tray 2 (SCT)
1		1	Frame Cassette
2		1	Cover Cassette
3		1	Guide Side CST
4		1	Guide Front CST
5		1	Guide Rear
6		1	Plate K/UP
7		1	Finger
8		1	Spring Plate Guide
9		1	Guide Plate Paper
10		4	Spring CS
11		1	Spring Locker Plate
12		1	Locker Plate
14		1	Side Guide
15		2	RPR Pad CST
16		1	Label(P) Instruction
17		1	Label(R)-Height CST
18		1	Label(P)-LTR/A4
19		1	Label(P)-Load CST
S8		4	Screw_Taptite

9.12 Optional 500-Sheet Feeder (SCF)



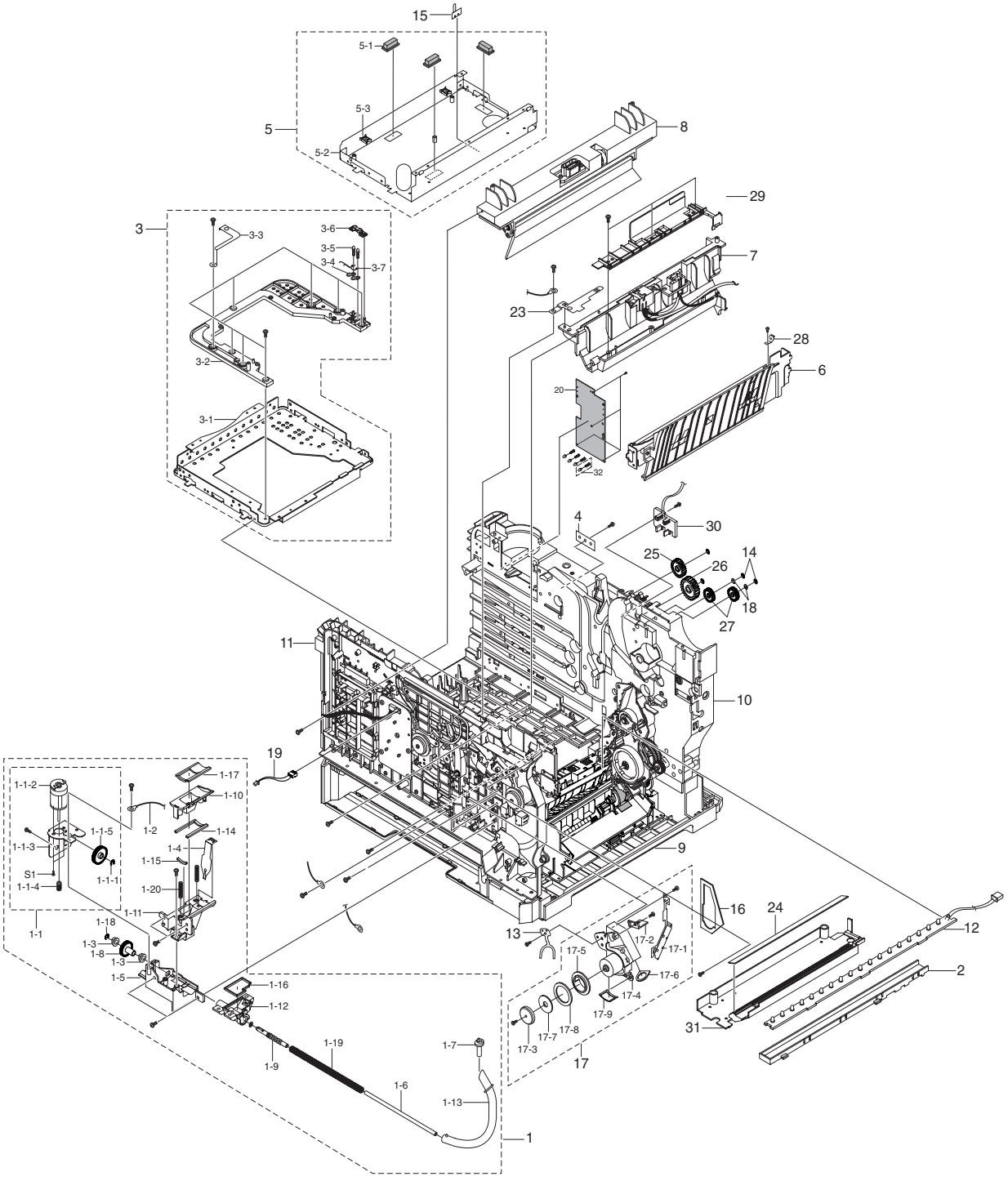
(SCF) Optional 500-Sheet Feeder Assembly 9.12

No.	Part number	Qty	Part Name and (part description)
0	119-6506-00	1	500-Sheet Feeder
1		1	HOU-Motor
1-1		1	Ground_Roller
1-2	P/O Hardware Kit	4	E-ring

No.	Part number	Qty	Part Name and (part description)
1-3		1	Motor Step
1-4		1	Pick-up Solenoid
1-5		1	Gear P/UP DRV SCF
1-6		1	Gear idler Option
1-7		1	Gear idle Z30
1-8		1	Gear Idle SCF
1-9		1	Bracket Gear
S9		5	Screw_Taptite
2		1	Hou-Guide Lower SCF
2-1		1	Guide Lower Rail
2-2		2	Spring CS
2-3		2	Bushing Idle Roll-SCF-16
2-4		1	Holder Idle Roll-16
2-5		1	Cover Guide Lower
2-6		1	Guide Lower
2-7		1	Roller Idle
2-8		1	Label(P) Jam
S5		4	Screw-Taptite
3		1	HOU-Guide Upper SCF
3-1		1	E-ring
3-2		1	Spring Pickup
3-3		1	Gear-Pickup
3-4		1	Gear Feed
3-5		1	Actuator Empty
3-6		1	Shaft Pickup
3-7		1	Guide Upper
3-8		4	Bearing Shaft
3-9		1	Bushing P/U MPT
3-10		2	Rubber Pickup
3-11		1	Roller Feed
3-12		1	Board Sub SCF Cover Sensor
3-13		1	Board Sub SCF P_Empty Sensor
4		2	Foot ML80
5		1	Cam Catch
6		1	Plate Ground (A)
7		1	Plate Locker (L)
8		1	Plate Locker (R)
9		9	Base Deco
10		4	Unit Terminal TR L
11		1	Cover Top
12		1	Door Side
13		1	Frame Base
14		1	Cover Sensor

No.	Part number	Qty	Part Name and (part description)
16		1	Harness Driver Ground
17		1	Harness SCF_8P
18		1	Board SUB-SCF
S5	P/O Screw Kit	8	Screw-Taptite
S8	P/O Screw Kit	26	Screw-Taptite

9.13 Main Frame

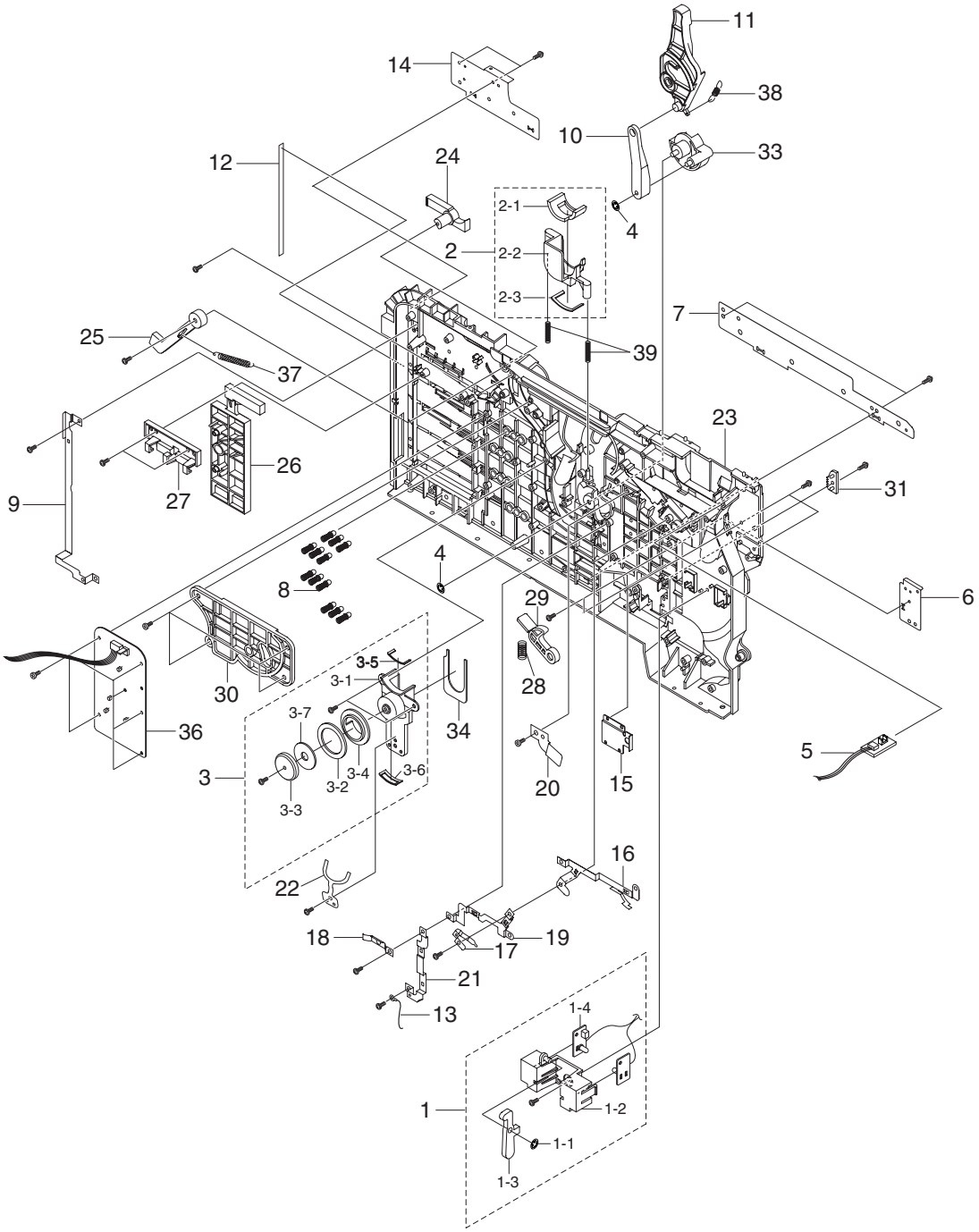


Main Frame 9.13

No.	Part number	Qty	Part Name and (part description)
1	116-1872-00	1	OPC Waste Toner Duct
1-1	116-1956-00	1	Waste Toner Motor ASM
1-1-S1		2	Screw-Machine
1-1-1	116-1957-00	1	E-ring (also in hardware kit)
1-1-2	116-1958-00	1	Waste Toner Motor-DC
1-1-3		1	Bracket Waste Toner Motor
1-1-4		1	Gear Worm Wheel Idle
1-1-5		1	Gear Worm Waste Toner
1-2		1	Harness Toner Ground
1-3		2	Bushing D6/L4
1-4		1	Vibrator Inlet Plate
1-5		1	Base M Waster Toner
1-6		1	Pipe Waste Bar
1-7		1	Cam M Waste Duct Outlet
1-8		1	Gear Worm Wheel Z35
1-9		1	Shaft M Waste Duct Inlet
1-10		1	Duct M Waste Lifter
1-11		1	Duct M Waste Toner Inlet 1
1-12		1	Duct M Waste Toner Inlet 2
1-13		1	Pipe Waste Transfer
1-14		1	Sponge Waste Lifter 1
1-15		1	Sponge Waste Lifter 2
1-16		1	Sponge Waste Duct OPC
1-17		1	Sponge Waste Cover
1-18	116-1957-00	1	E-Ring (also in hardware kit)
1-19		1	Spring CS
1-20		2	Spring CS
1-S8		6	Screw Taptite
2		1	Holder Eraser
3		1	LSU Guide Bracket
3-1		1	Bracket LSU
3-2		1	LSU Base
3-3		1	Ground LSU
3-4		2	IPR Plate OPC OEM
3-5	116-1885-00	2	Unit Terminals
3-6		1	Cover OEM Upper
3-7	116-1950-00	1	Harness Main OPC_OEM
3-S5	P/O Screw Kit	2	Screw-Taptite
3-S9	P/O Screw Kit	5	Screw-Taptite
4		1	Sheet HV Harness
5		1	Bracket HVPS
5-1		3	Guide HVPS Board
5-2		1	Bracket HVPS Lower
5-3		2	Cable Clamp
6		1	Guide paper T2
7		1	Fuser Base
8	116-1873-00	1	ITB Cam ASM (Transfer Belt Cam)

No.	Part number	Qty	Part Name and (part description)
9		1	Frame Base
10		1	Frame Rear
11		1	Frame Front
12	116-1874-00	1	Erase Lamp
13		1	ShutterTension
14	P/O Hardware Kit	4	Ring CS
15		1	Cable Clamp
16	116-1919-00	1	Dust Cover OPC
17	116-1920-00	1	OPC Toner Housing
17-1		1	Vibration Plate Outlet
17-2		1	Bushing Waste Cam M
17-3		1	Cap Shutter Transfer Belt
17-4		1	Housing Transfer
17-5		1	Shutter Transfer OPC
17-6		1	Sponge Toner Cartridge
17-7		1	Sponge Cap Shutter
17-8		1	Sponge Duct Toner OPC
17-9		1	Sponge Tank Toner OPC
17-S5	P/O Screw Kit	2	Screw-Taptite
17-S8	P/O Screw Kit	1	Screw-Taptite
18		2	Spring Clutch
19	116-1949-00	1	CBF Harness Waste Motor
20	116-1866-00	1	SUB DEVE Drive Board
21		1	Harness Main FSR Roll
22	116-1941-00	1	CBF Harness Main Eraser
23		1	Ground Fuser Frame
24		1	Sheet Eraser Lamp
25		1	Gear Fuser DRV Outer
26		1	Gear-DP Idle
27		2	Gear Exit Idle Z17
28		1	Ground Paper Guide
29		1	Cover Fuser Base
30		1	Cover Harness Fuser
31		1	Laser Shutter Cover
32	116-1885-00	4	Terminals
33		1	Washer Plain
S5	P/O Screw Kit	8	Screw-Taptite
S6	P/O Screw Kit	1	Screw-Taptite
S7	P/O Screw Kit	2	Screw-Taptite
S8	P/O Screw Kit	29	Screw-Taptite
S9	P/O Screw Kit	2	Screw-Taptite
S14	P/O Screw Kit	7	Screw-Taptite

9.14 Front Frame Assembly



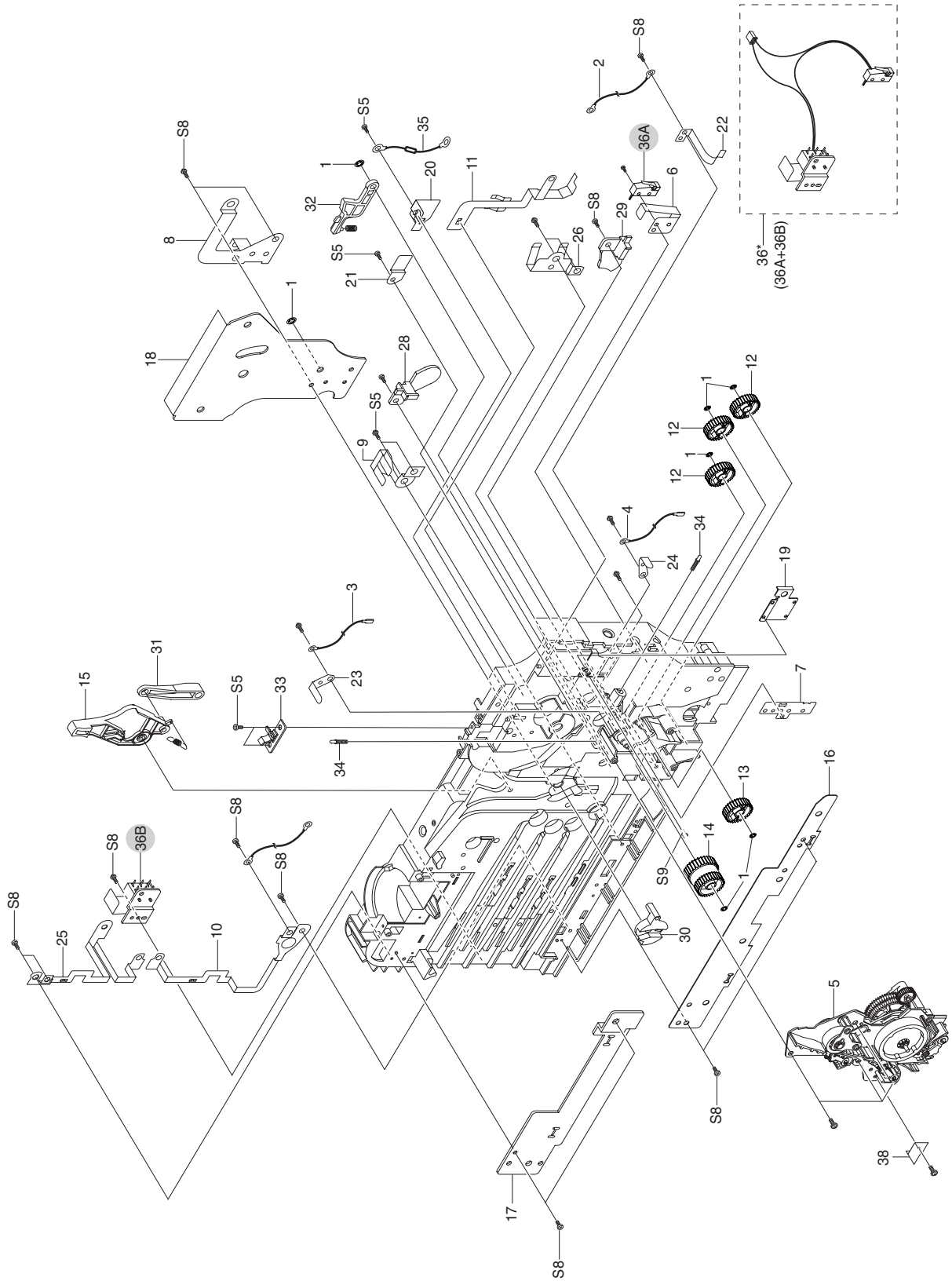
Front Frame Assembly 9.14

No.	Part number	Qty	Part Name and (part description)
0		1	Frame Front
1	116-1879-00	1	Waste Toner Sensor
1-1	P/O Hardware Kit	1	Ring CS
1-2		1	Holder M Waste Toner Sensor

No.	Part number	Qty	Part Name and (part description)
1-3	116-1881-00	1	Waste Toner Sensor Actuator
1-4		1	Sub Waste Sensor
2		1	Transfer Belt Lifter
2-1		1	Sponge Duct Toner Transfer Belt Lift
2-2		1	Duct Toner Transfer Belt Lifter
2-3		1	Sponge Transfer Belt Duct
3	116-1883-00	1	Transfer Belt Waste Toner Housing
3-1		1	Housing M Waste Toner Transfer Belt
3-2		1	Sponge Duct Toner OPC
3-3		1	Cap Shutter Transfer Belt
3-4		1	Shutter Transfer Belt
3-5		1	Sponge Transfer Belt Tank Dust
3-6		1	Sponge Transfer Belt Tank Toner
3-7		1	Sponge Cap Shutter
3-S8		1	Screw-Taptite
4	P/O Hardware Kit	3	Ring CS
5	116-1875-00	1	Exit Sensor
6		1	Plate Guide T2 Front
7		1	Bracket Laser F
8	116-1885-00	12	Terminals
9		1	Ground HVPS Laser
10		1	Link Lock OPC F
11		1	Lever Transfer Belt Lock Front
12		1	Label(R) Color Bar
13		1	Harness Bushing Ground
14		1	Bracket Guide HVPS R
15		1	Bracket Exit Hinge F
16		1	Transfer Belt Hinge Ground
17		1	Transfer Belt Guide Tortion
18		1	OPC Guide Tortion
19		1	OPC/Transfer Belt Bround
20		1	OPC Lock Front
21		1	OPC/Laser Ground
22		1	Shutter Tortion
23		1	Frame Front
24		1	Cover Top Lever In
25		1	Cover Top Lever Out
26		1	DEVE Open Plate
27		1	DEVE Open Plate Guide
28	116-1921-00	1	Spring CS (Belt)
29		1	Lock Transfer Belt Front
30		1	Lock Cover Front
31		1	Rack OPC
32		2	Spring CS
33		1	Guide Lock OPE F
34		1	Sponge Dust Transfer Belt Cover
35		1	Sponge Dust Imaging Unit Cover
36	116-1922-00	1	DEVE OEM Board
37	116-1923-00	2	Spring CS (Frame)

No.	Part number	Qty	Part Name and (part description)
38		1	Spring Transfer Belt Lock (ITB)
39		1	Spring Toner Duct Housing
S5	P/O Screw Kit	6	Screw-Taptite
S7	P/O Screw Kit	6	Screw-Taptite
S8	P/O Screw Kit	26	Screw-Taptite

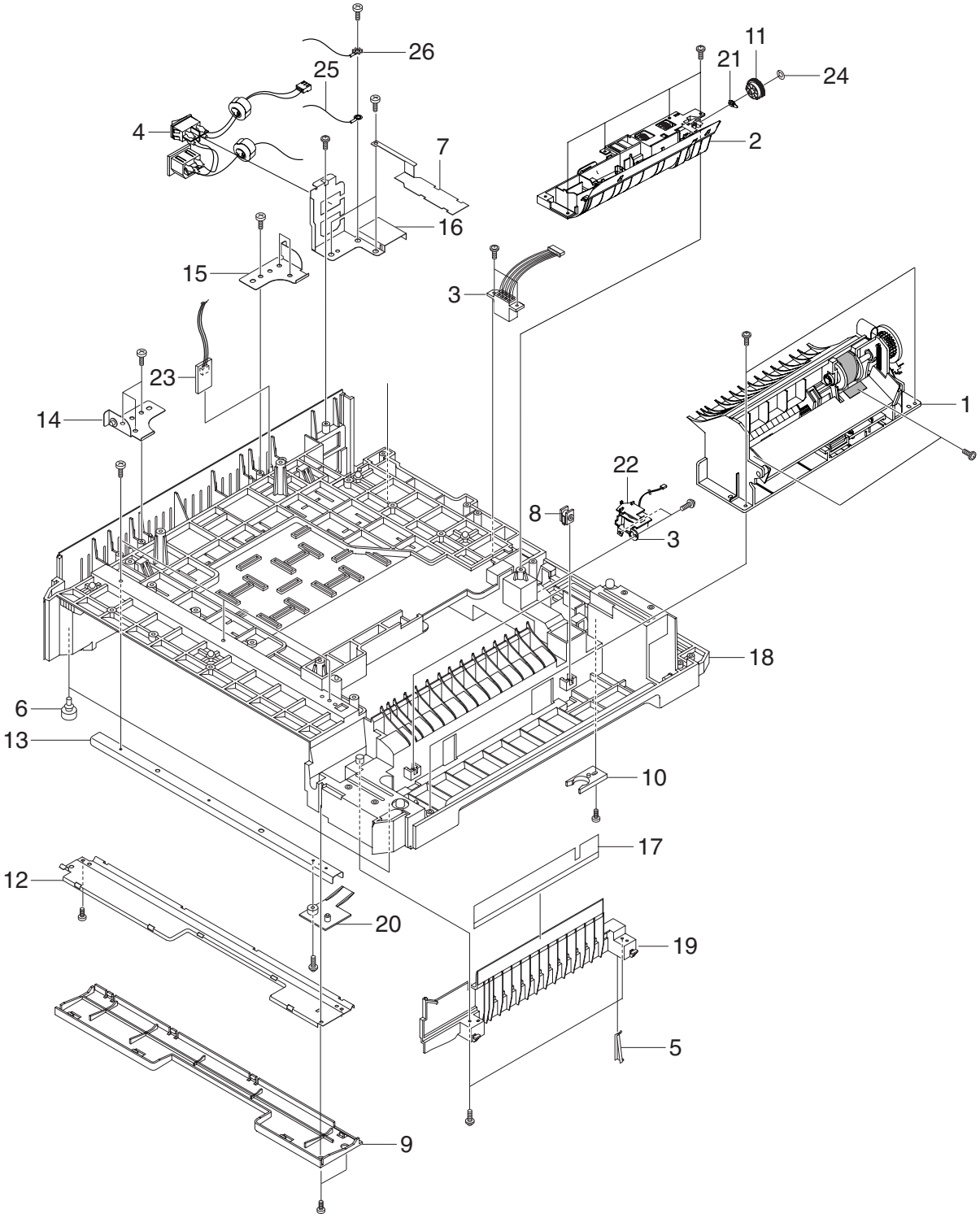
9.15 Rear Frame Assembly



Rear Frame Assembly 9.15

No.	Part number	Qty	Part Name and (part description)
0		1	Frame Rear
1	P/O Hardware Kit	7	Ring CS
2	116-1942-00	1	CBF Harness HVPS Charge
3	116-1943-00	1	CBF Harness HVPS T1
4	116-1944-00	1	CBF Harness HVPS T2
5		1	Feed Unit
6		1	Plate Switch Duplex
7		1	Plate Guide T2 Rear
8		1	Ground Main Transfer Belt Drive
9		1	Ground Laser DEVE Drive
10		1	Ground HVPS Laser Lower
11		1	Ground Exit Drive
12		1	Gear RDCN Feed Outer
13		1	Gear T2 Idle Z27
14		1	Gear T2 RDCN Z32/Z23
15		1	Lever Transfer Unit Lock Rear
16		1	Bracket Laser R
17		1	Bracket Guide HVPS F
18		1	Bracket Lock Transfer Belt
19		1	Bracket Exit Hinge R
20		1	Plate Fuser
21		1	Plate Lock Transfer Belt
22		1	Plate OPC HV
23		1	Plate T1
24		1	Plate T2
25		1	Ground HVPS
26		1	Ground Main
27		1	Frame Rear
28		1	Cover T1 HV
29		1	Cover T2 HV
30		1	Guide Lock Imaging Unit
31		1	Link Lock Imaging Unit
32		1	Lock Transfer Belt
33	116-1884-00	1	Holder Guide Exit
34	116-1885-00	2	Terminals
35	116-1886-00	1	Harness 100M Ground
36	116-1887-00	1	Cover Open Sensor ASM
S5	P/O Screw Kit	1	Screw-Taptite
S6	P/O Screw Kit	1	Screw-Taptite
S8	P/O Screw Kit	1	Screw-Taptite
S9	P/O Screw Kit	1	Screw-Taptite

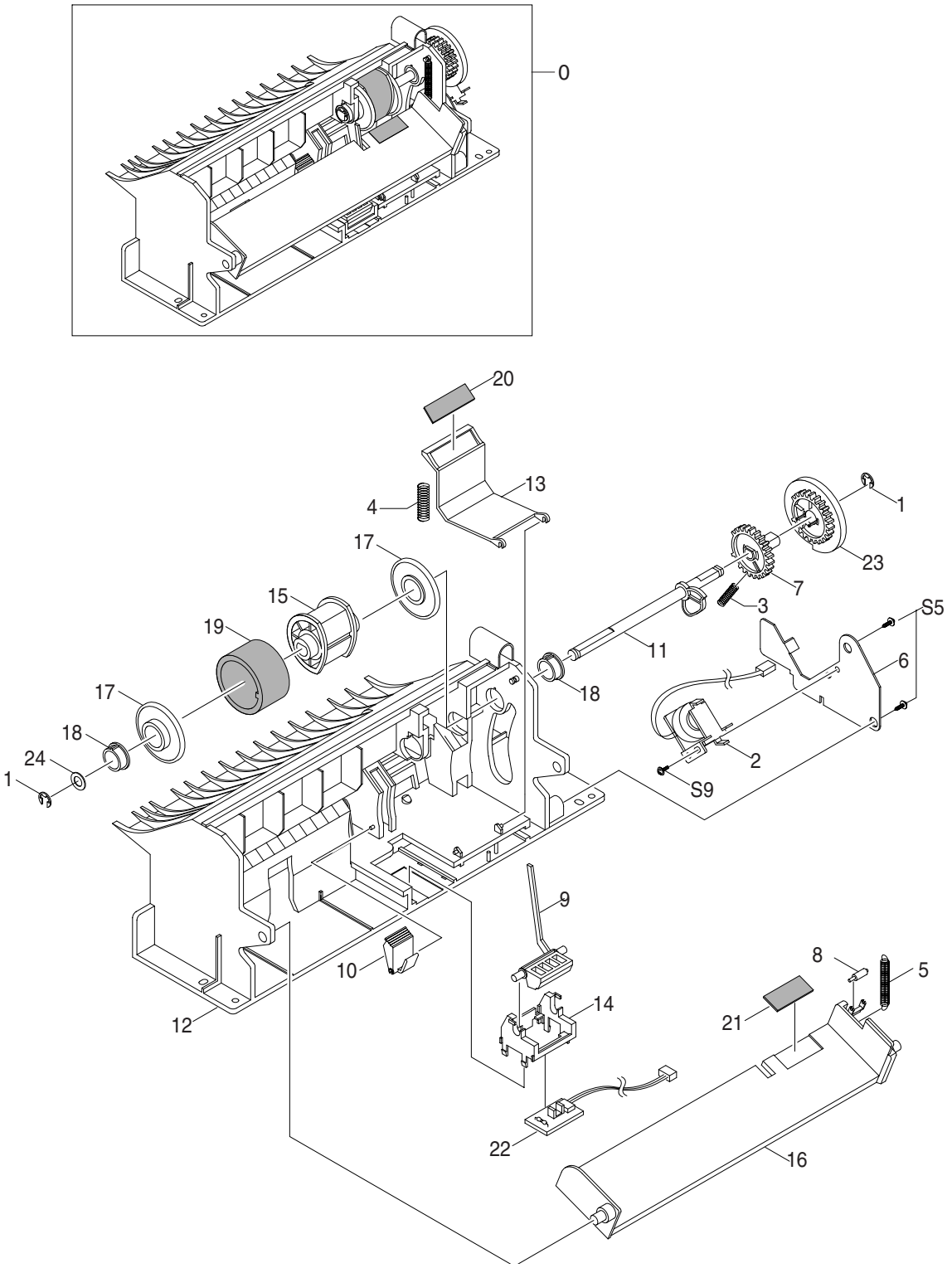
9.16 Base Frame Assembly



Base Frame Assembly 9.16

No.	Part number	Qty	Part Name and (part description)
0	116-1925-00	1	Base Frame
1	116-1889-00	1	MPT Pickup ASM
2	116-1890-00	1	Tray 1 Pickup ASM
3	116-1891-00	1	Harness SCF
4	116-1926-00	1	Assembly, AC Switch
5		1	Guide Rail
6		2	Foot ML80
7		1	Ground Tray 2 (SCF)
8		2	Screw Cover Locking Cap
9		1	Cover M Base Bar
10		1	Cam Catch
11		1	Gear-Pickup
12		1	Bracket Base Bar
13		1	Channel Frame Base
14		1	Bracket DEVE Hinge F
15		1	Bracket DEVE Hinge R
16		1	Bracket Power
17		1	Sheet Guide Paper
18		1	Frame Base
19		1	Guide Tray 2 (SCF) Paper
20		1	Paper Guide
21	116-1959-00	1	Bearing
22	116-1892-00	1	Solenoid Pickup
23	116-1893-00	1	Temp Sensor
24		1	Washer Plain
25		1	Laser Harness Ground
26		1	Washer
S7	P/O Screw Kit	4	Screw-Taptite
S8	P/O Screw Kit	15	Screw-Taptite
S14	P/O Screw Kit	12	Screw-Taptite

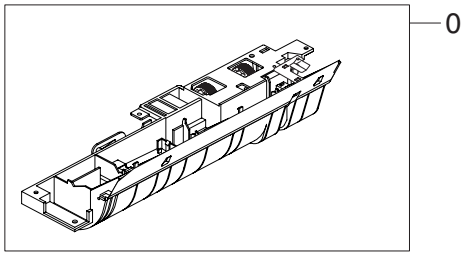
9.17 MPT Assembly

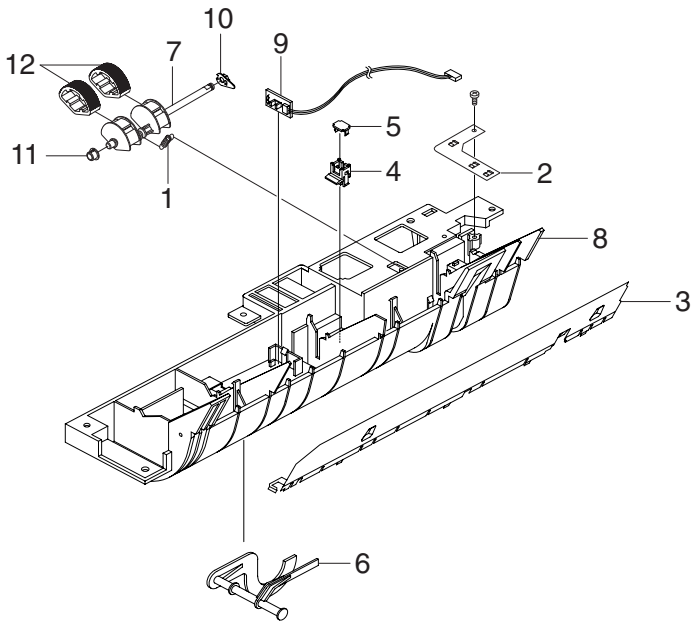


MPT Assembly 9.17

No.	Part number	Qty	Part Name and (part description)
0	116-1889-00	1	MPT Pickup ASM
1	P/O Hardware Kit	2	E Ring
2	116-1894-00	1	MPT Solenoid
3		1	Spring Cam MPT
4		1	Spring Pickup MPT
5		1	Spring MPT
6		1	Bracket Solenoid
7		1	Holer Cam MPT
8		1	Roller Cam MPT
9	116-1895-00	1	Actuator, MPT Empty
10		1	MPT Adjuster
11		1	MPT Cam Pickup
12		1	MPT Frame
13		1	MPT Holder Pad
14		1	MPT Holder Sensor
15	116-1945-00	1	PMO-Housing Pickup MPT
16	116-1946-00	1	PMO-Lift Plate, MPT
17		2	MPT Idle Pickup
18	116-1947-00	2	Bushing
19	116-1948-00	1	Pick Roller, MPT
20		1	Pad MPT (PLUS)
21		1	Pad Lift Up MPT
22	116-1896-00	1	MPT Empty Sensor
23		1	Gear P/U MPT
24		1	Washer Plain
S5	P/O Screw Kit	2	Screw-Taptite
S9	P/O Screw Kit	1	Screw-Taptite

9.18 Pickup Assembly

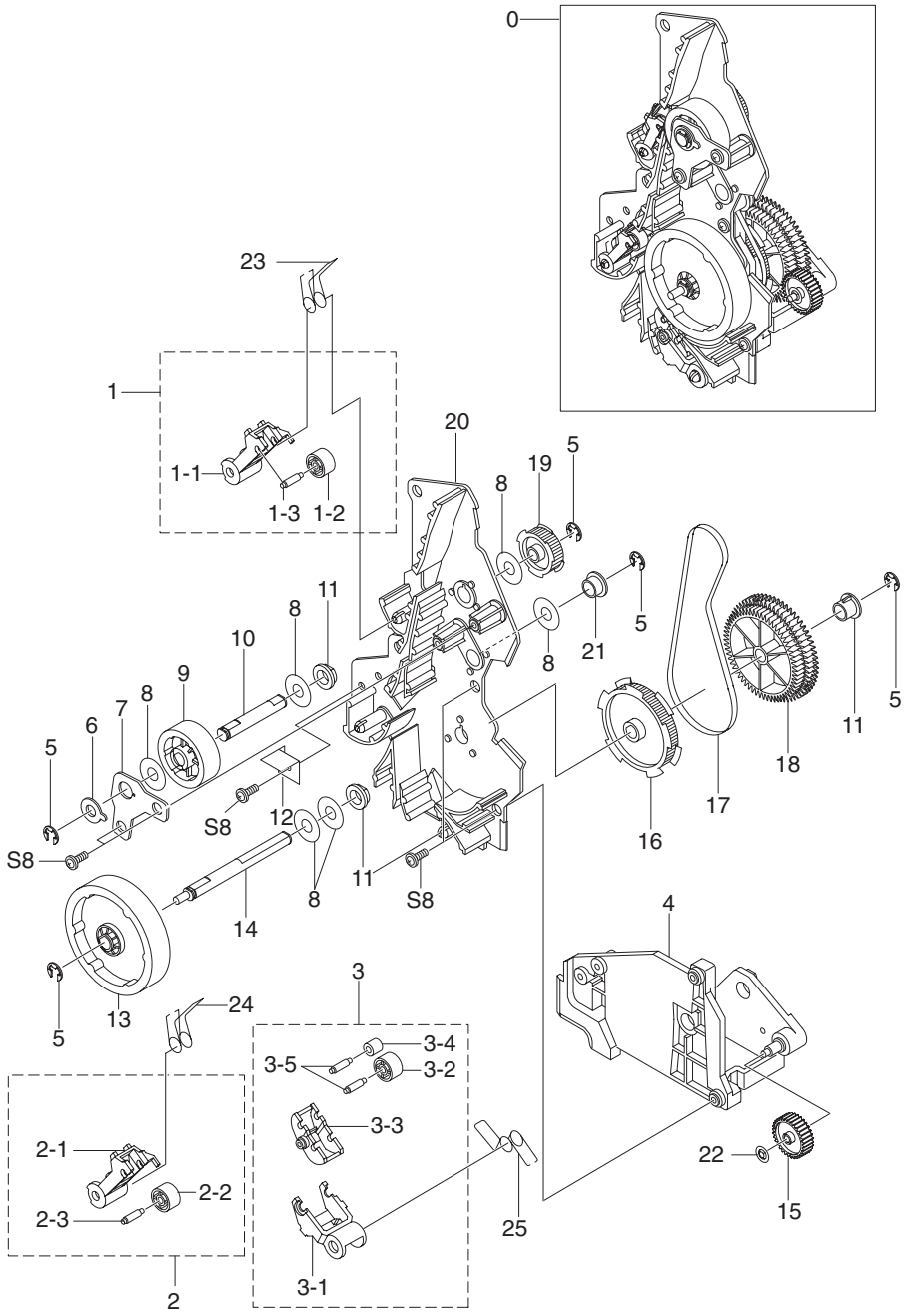




Pickup Assembly 9.18

No.	Part number	Qty	Part Name and (part description)
0	116-1890-00	1	Tray 1 Pickup ASM
1		1	Pickup Spring
2		1	Ground Feed
3		1	Guide Input
4		1	Cap Connector L
5		1	Cap Connector U
6	116-1897-00	1	Actuator Tray 1 Empty
7		1	Pickup Shaft
8		1	Guide Paper
9	116-1898-00	1	Tray 1 Empty Sensor
10		1	Bearing Shaft
11	116-1947-00	1	Bushing
12	116-1951-00	2	Pick Rollers Tray 1

9.19 Feeder Assembly

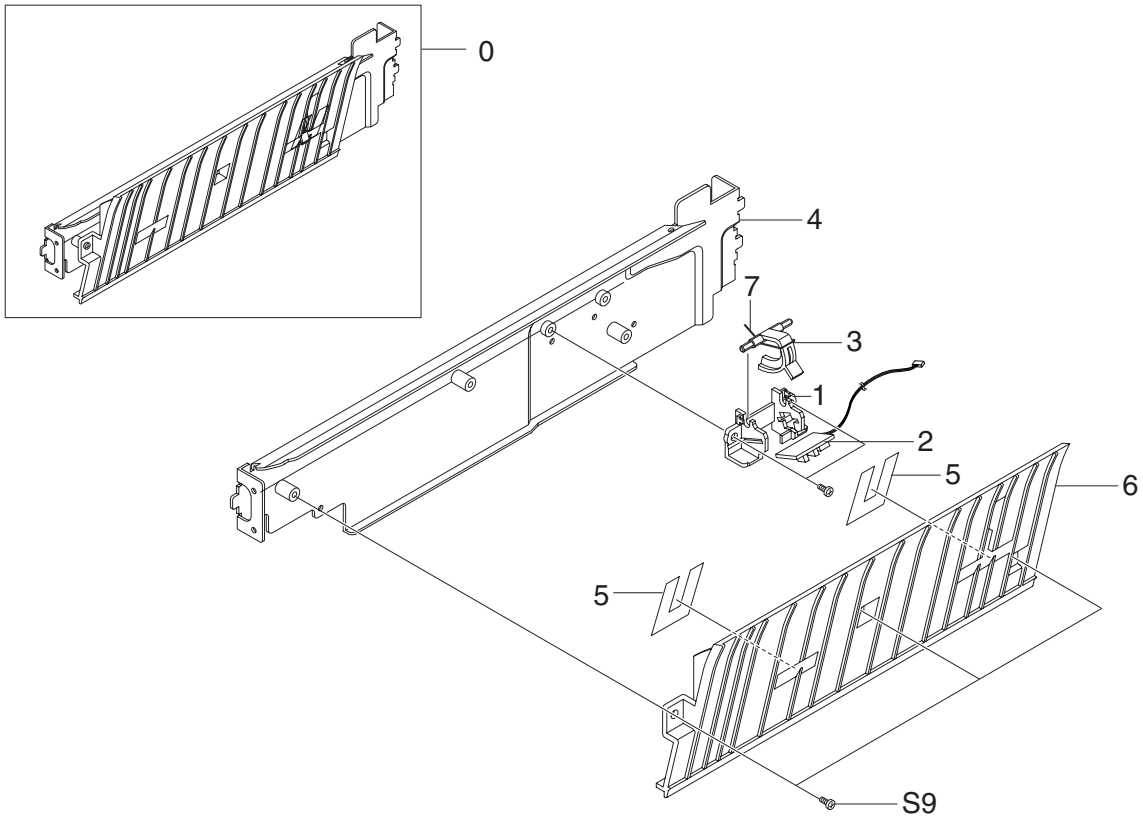


Feeder Assembly 9.19

No.	Part number	Qty	Part Name and (part description)
0		1	Feed Unit
1		1	Holder Pinch C3
1-1		1	Holder Pinch C3
1-2		1	Roller Feed L
1-3		1	Feed Idler Shaft

No.	Part number	Qty	Part Name and (part description)
2		1	Holder Pinch C5
2-1		1	Holder Pinch C5
2-2		1	Roller Feed L
2-3		1	Feed Idler Shaft
3		1	Holder Pinch M
3-1		1	Holder Pinch M
3-2		1	Roller Feed L
3-3		1	Holder Feed
3-4		1	Roller Feed S
3-5		2	Feed Idler Shaft
4		1	Frame Feed
5	P/O Hardware Kit	4	E Ring
6		1	Bushing Feed Mid
7		1	Bracket Feed Mid
8		6	Washer Plain
9	116-1890-00	1	Roller Feed Mid
10		1	Shaft Feed Mid
11		3	Bushing Pickup MPT
12		1	Ground Pickup Plate
13	116-1900-00	1	Roller Feed
14		1	Shaft Feed
15		1	Gear MPT/DUP Drive
16		1	Pulley Feed L
17		1	Gelt Timing Gear
18		1	Gear Feed
19		1	Pulley Feed S
20		1	Bracket Feed
21		1	Pulley Idle
22	P/O Hardware Kit	1	Ring CS
23		1	Spring Feed MID
24		1	Spring Feed MID A
25		1	Spring Feed MPT
S8	P/O Screw Kit	5	Screw-Taptite

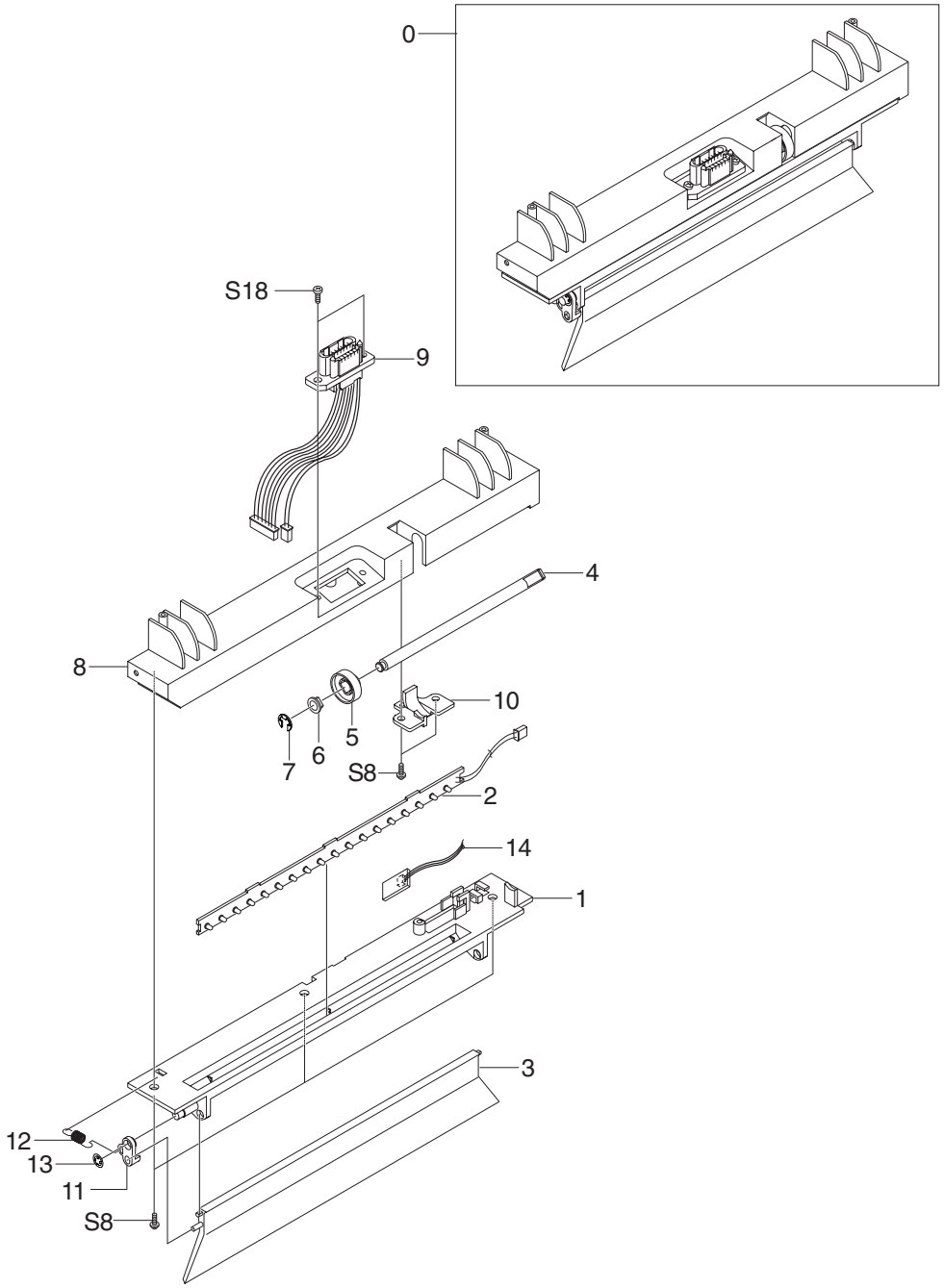
9.20 Paper Guide Assembly



Paper Guide Assembly 9.20

No.	Part number	Qty	Part Name and (part description)
0		1	Paper Guide
1	116-1901-00	1	Feed Sensor Cover
2	116-1902-00	1	Feed Sensor
3	116-1903-00	1	Feed Sensor Actuator
4		1	Paper Guide Bracket
5	116-1952-00	2	Sheet - Paper Guide
6	116-1953-00	1	Guide Paper Path
7		1	Actuator Spring
S9	P/O Screw Kit	5	Screw-Taptite

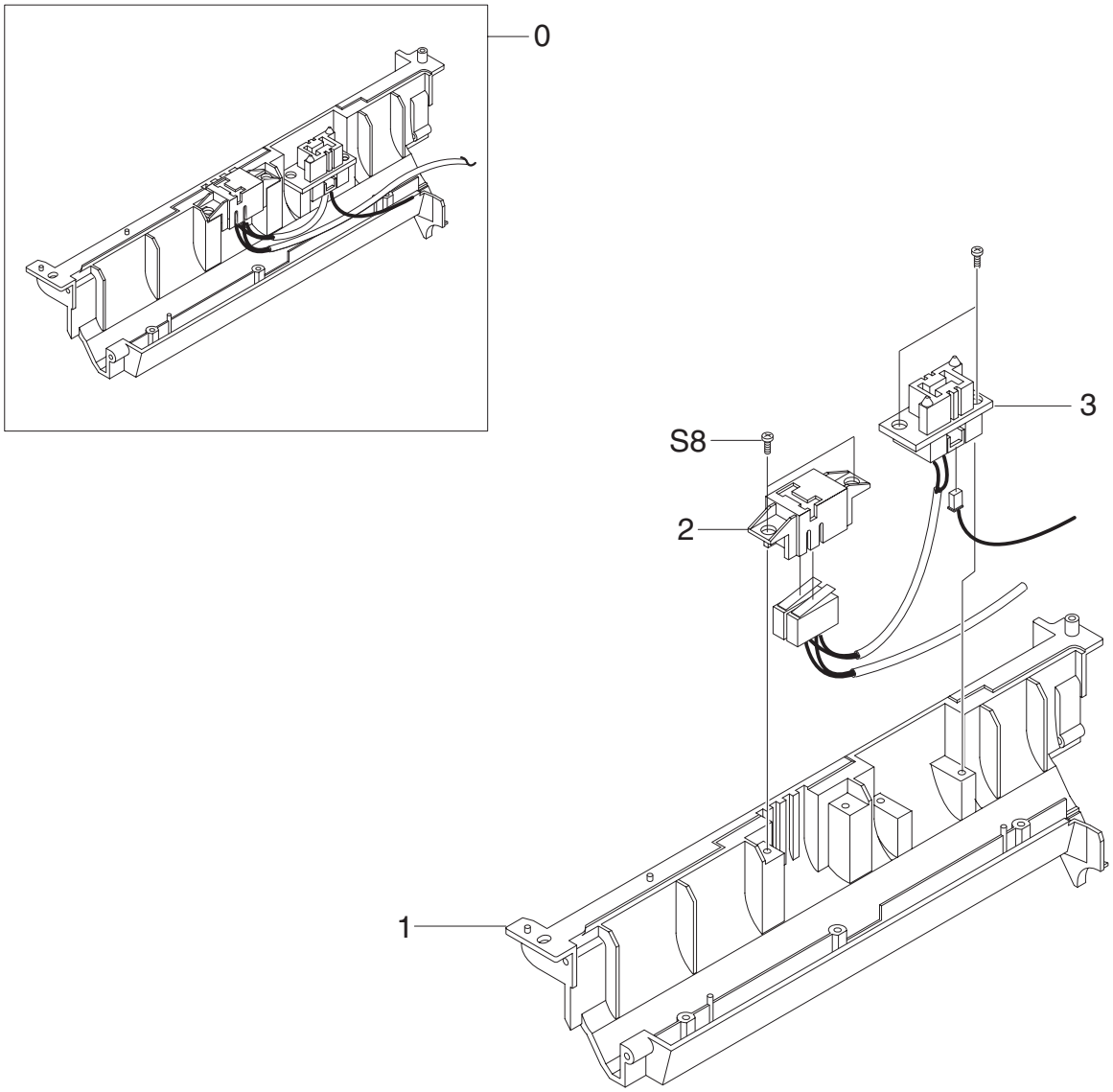
9.21 Transfer Belt Cam Assembly



Transfer Belt Cam Assembly 9.21

No.	Part number	Qty	Part Name and (part description)
0	116-1873-00	1	ITB Cam ASM (Transfer Belt Cam)
1		1	Transfer Belt Cam Lower
2	116-1904-00	1	PTL SensorUpper Erase Lamp (PTL)
3	116-1905-00	1	PTL Path
4		1	Shaft Transfer Belt Cleaning Cam
5		1	Transfer Belt Cleaning Cam
6		1	Bushing D6/L4
7	P/O Hardware Kit	1	E Ring
8		1	Transfer Belt Cam Upper
9		1	Harness Set Drawer
10		1	Cover Cam Shaft
11		1	Guide Erase Lamp Spring
12	P/O Hardware Kit	1	Erase Lamp Spring
13	P/O Hardware Kit	1	Ring CS
14	116-1955-00	1	Temp Sensor
S9	P/O Screw Kit	5	Screw-Taptite
S18	P/O Screw Kit	2	Screw-Special

9.22 Fuser Base Assembly



Fuser Base Assembly 9.22

No.	Part number	Qty	Part Name and (part description)
0		1	Fuser Base
1		1	Fuser Base
2	116-1907-00	1	Housing Switch AC
3	116-1906-00	1	Switch AC
S8	P/O Screw Kit	2	Screw

9.23 Xerox Kits and Accessories

Kits

Description	Part Number
Screw/Washer Kit (See page 9-3)	116-1908-00
Hardware Kit	116-1909-00
Main Drive Hardware Kit	116-1910-00
LVPS Fuse Kit	116-1960-00

Miscellaneous Items

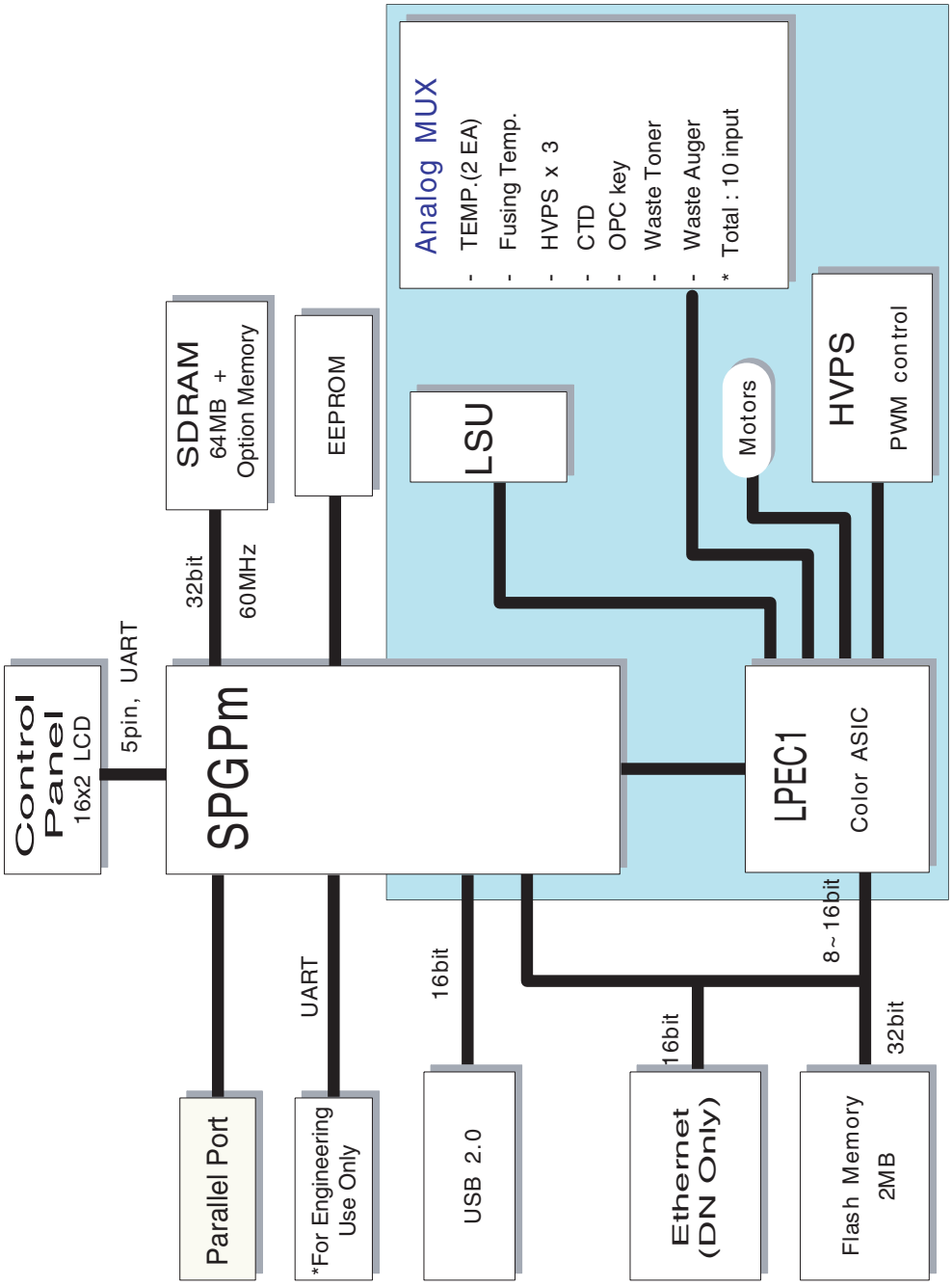
Description	Part Number
Network Interface Board (DN Model Only)	116-1916-00
128 Mbytes, 16M x 64, PC133; Memory DIMM (Phaser 3540 Laser Printer)	097S03136
World Kit	061450400
Printer Repackaging Kit	065062600

Power Cords

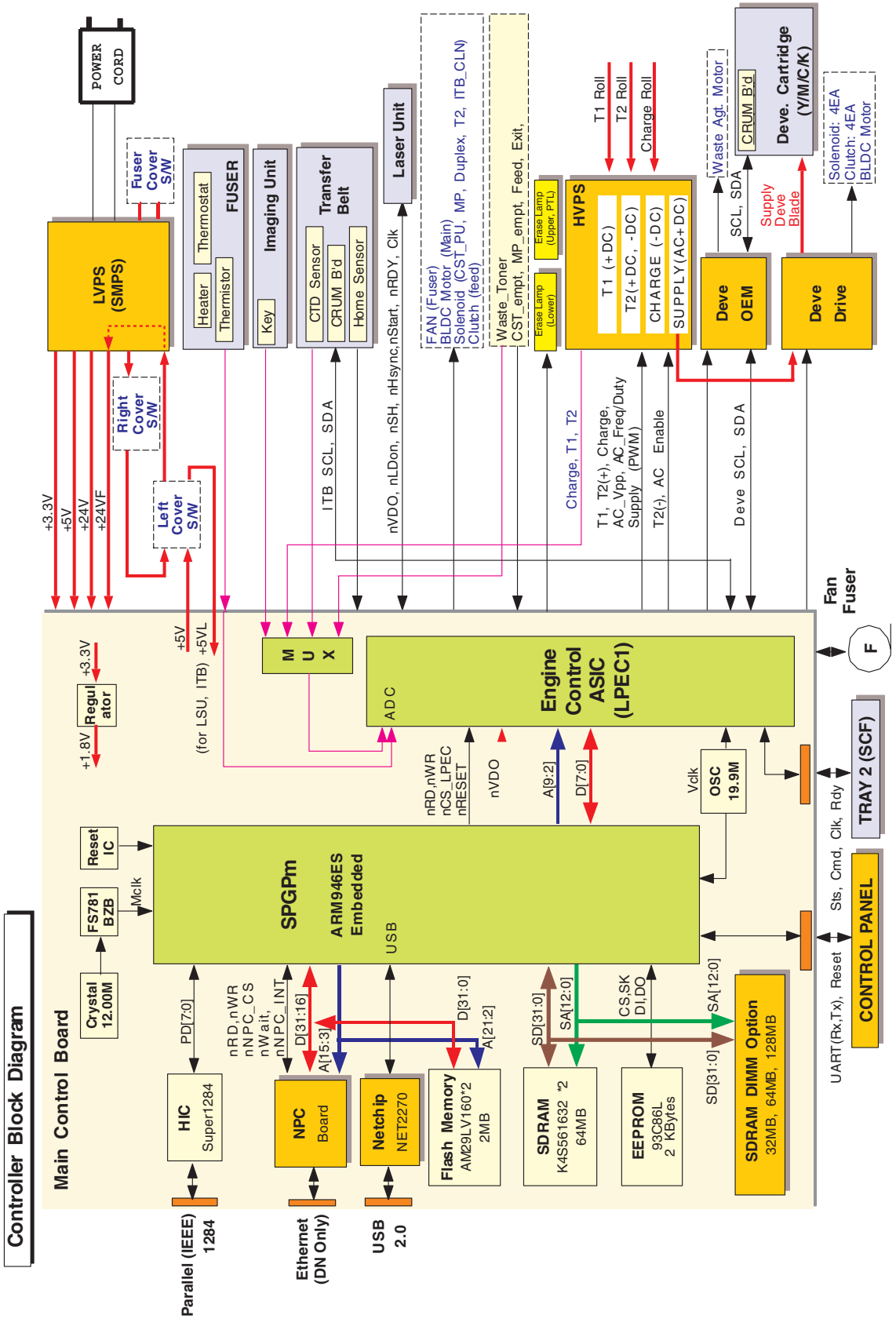
Description	Part Number
Cord, Power, Standard, 115V	161-0066-00
Cord, Power, Euro, 220V	161-0066-09
Cord, Power, UK, 240V	161-0066-10
Cord, Power, Aust, 240V	161-0066-11
Cord, Power, Swiss, 220V	161-0154-00
Cord, Power, Danish, 250V	161-0240-00
Cord, Power, Chinese, 250V	161-0304-00
Cord, Power, Argentina, 240V	161-0307-00

10 Block Diagram

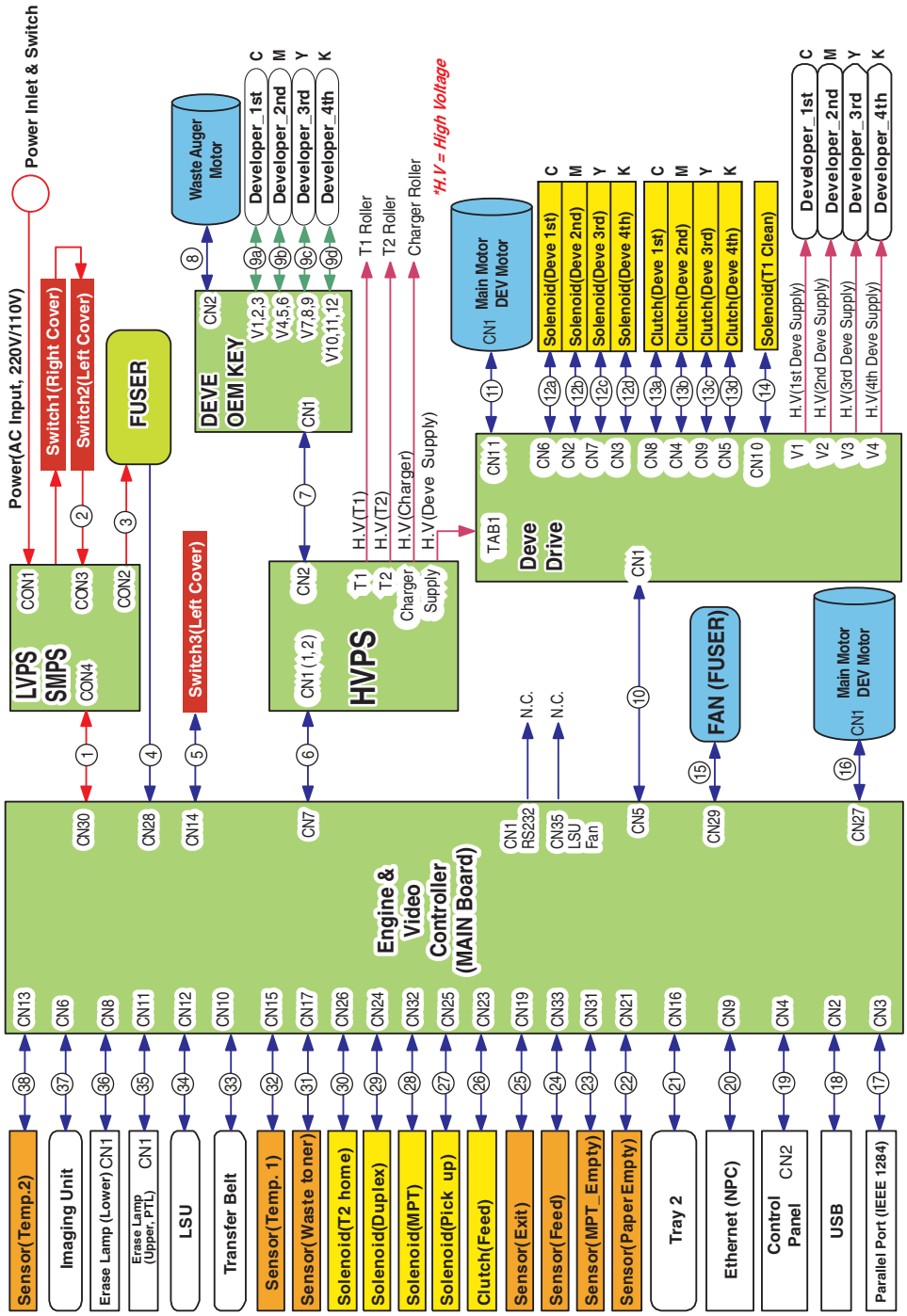
10. Block Diagram



10.1 Controller Block Diagram



11 Connection Diagram



① Main BD(CN30)↔LVPS(CON4)

Pin	Signal Name	Dir	Pin	Signal Name
1	+24VF	←	2	+24VF
2	+24VF	←	1	+24VF
3	+24VF	←	4	+24VF
4	+24VF	←	3	+24VF
5	AGND		6	GND
6	AGND		5	GND
7	AGND		8	GND
8	AGND		7	GND
9	+24V	←	10	+24V
10	+24V	←	9	+24V
11	AGND		12	GND
12	AGND		11	GND
13	+3.3V	←	14	+3.3V
14	+3.3V	←	13	+3.3V
15	+3.3V	←	16	+3.3V
16	+3.3V	←	15	+3.3V
17	DGND		18	GND
18	DGND		17	GND
19	DGND		20	GND
20	DGND		19	GND
21	+5V	←	22	+5V
22	+5V	←	21	+5V
23	DGND		24	GND
24	DGND		23	GND
25	nFUSERON	→	26	<-
26	NC		25	NC

② LVPS(CON3)↔Switch

Pin	Signal Name	Dir	Pin	Signal Name
1	+24V	→		<-
2	NC			<-
3	+24VF	←		<-

③ LVPS(CON2)↔Fuser Unit

Pin	Signal Name	Dir	Pin	Signal Name
1	CON2	→		<-
2	NC			<-
3	5096-02C	→		<-

④ Main BD(CN28)↔Fuser Unit

Pin	Signal Name	Dir	Pin	Signal Name
1	AN_FUSER1_OUT	←		<-
2	AN_FUSER1_OUT2	←		<-

⑤ Main BD(CN14)↔Switch(Left cover)

Pin	Signal Name	Dir	Pin	Signal Name
1	+5V	→		<-
2	+5VL	←		<-

⑥ Main BD(CN7)↔HVPS(CN1-1)

Pin	Signal Name	Dir	Pin	Signal Name
2	+24VF	→	1	24V
4	AGND		3	GND
6	PWM_AC_VPP	→	5	AC_Vpp_PWM
8	PWM_T2	→	7	T2_PWM
10	PWM_CHARGE	→	9	CHARGE_PWM
12	ENB_DEVE_AC	→	11	DEV_REM_PWM
14	A_READ_T1	←	13	T1_READ
16	nWST_AGT	→	15	nWST_AGT
18	+5VL	→	17	+5VL
20	DEVE_CRUM_SDA	↔	19	DEVE_CRUM_SDA
22	RESERVED	→	21	RESERVED
24	CRUM_SELf	→	23	CRUM_SELf
26	A_WST_AGT	←	25	A_WST_AGT
28	DGND		27	NC

>> Main BD(CN7)↔HVPS(CN1-2)

1	+24VF	→	2	24V
3	AGND		4	GND
5	ENB_T2	→	6	T2_EN
7	PWM_AC	→	8	AC_PWM
9	PWM_T1	→	10	T1_PWM
11	PWM_DEVE	→	12	DEVE_PWM
13	A_READ_CHA	←	14	CHARGE_READ
15	A_READ_T2	←	16	T2_READ
17	RESERVED	→	18	RESERVED
19	DEVE_CRUM_SCL	→	20	DEVE_CRUM_SCL
21	DGNA	→	22	DGNA
23	RESERVED	→	24	RESERVED
25	CRUM_SEL1	→	26	CRUM_SEL1
27	+5V		28	NC

(7) HVPS(CN2) ↔ Deve OEM Key(CN1)

Pin	Signal Name	Dir	Pin	Signal Name
1	24V	→	2	24V
2	AGND		1	AGND
3	REBERVED	→	4	REBERVED
4	nWST_AGT	→	3	nWST_AGT
5	DEVE_CRUM_SCL	→	6	DEVE_CRUM_SCL
6	+5VL	→	5	+5VL
7	DGND	→	8	DGND
8	DEVE_CRUM_SDA	↔	7	DEVE_CRUM_SDA
9	RESERVED	→	10	RESERVED
10	RESERVED	→	9	RESERVED
11	CRUM_SEL1	→	12	RESERVED
12	CRUM_SELf	→	11	RESERVED
13	A_WST_AGT	←	14	SENSE_AGT
14	NC		13	NC

(8) DEVE OEM Key(CN2) ↔ DC Motor(Waste Auger)

Pin	Signal Name	Dir	Pin	Signal Name
1	nWST_AGT	→		<-
2	NC			<-
3	SENSE_AGT	←		<-

(9a) Deve OEM Key ↔ Deve Cartridge(1st) C

Pin	Signal Name	Dir	Pin	Signal Name
V1	SDA_CRUM	↔		<-
V2	DGND			<-
V3	SCL1_CRUM	→		<-

(9b) Deve OEM Key ↔ Deve Cartridge(2nd) M

Pin	Signal Name	Dir	Pin	Signal Name
V4	SDA_CRUM	↔		<-
V5	DGND			<-
V6	SCL2_CRUM	→		<-

(9c) Deve OEM Key ↔ Deve Cartridge(3rd) Y

Pin	Signal Name	Dir	Pin	Signal Name
V7	SDA_CRUM	↔		<-
V8	DGND			<-
V9	SCL3_CRUM	→		<-

(9d) Deve OEM Key ↔ Deve Cartridge(4tH) K

Pin	Signal Name	Dir	Pin	Signal Name
V10	SDA_CRUM	↔		<-
V11	DGND			<-
V12	SCL4_CRUM	→		<-

(10) Main BD(CN5) ↔ Deve Drive(CN1)

Pin	Signal Name	Dir	Pin	Signal Name
1	AGND		2	AGND
2	+24VF	→	1	24V
3	AGND		4	AGND
4	+24VF	→	3	24V
5	AGND		6	AGND
6	+24VF	→	5	24V
7	DGND		8	DGND
8	+5V	→	7	5V
9	nSOL_DEVE_1ST	→	10	nSOL_DEVE_1ST
10	nSOL_DEVE_2ND	→	9	nSOL_DEVE_2ND
11	nSOL_DEVE_3RD	→	12	nSOL_DEVE_3RD
12	nSOL_DEVE_4TH	→	11	nSOL_DEVE_4TH
13	nCLT_DEVE_1ST	→	14	nCLT_DEVE_1ST
14	nCLT_DEVE_2ND	→	13	nCLT_DEVE_2ND
15	nCLT_DEVE_3RD	→	16	nCLT_DEVE_3RD
16	nCLT_DEVE_4TH	→	15	nCLT_DEVE_4TH
17	nBLDC_START2	→	18	START
18	nBLDC_RDY2	←	17	READY
19	BLDC_CLK2	→	20	CLOCK
20	nSOL_ITB_CLN	→	19	nSOL_T1_CLN

(11) Deve Drive ↔ Deve Motor

Pin	Signal Name	Dir	Pin	Signal Name
1	24V	→	1	+24V
2	24V	→	2	+24V
3	AGND		3	PGND
4	AGND		4	PGND
5	DGND		5	SGND
6	5V	→	6	+5V
7	START	→	7	START
8	READY	←	8	READY
9	CLOCK	→	9	CLOCK
			10	CW/CCW

(12a) Deve Drive(CN6) ↔ Solenoid(Deve 1st)

Pin	Signal Name	Dir	Pin	Signal Name
1	nSOL_DEV_1ST			<-
2	NC			<-
3	AGND			<-

C

(13a) Deve Drive(CN8) ↔ Clutch(Deve 1st)

Pin	Signal Name	Dir	Pin	Signal Name
1	nCLT_DEV_1ST			<-
2	NC			<-
3	AGND			<-

(14) Deve Drive(CN10) ↔ Solenoid(T1 clean)

Pin	Signal Name	Dir	Pin	Signal Name
1	nSOL_T1_CLN			<-
2	NC			<-
3	AGND			<-

(12b) Deve Drive(CN2) ↔ Solenoid(Deve 2nd)

Pin	Signal Name	Dir	Pin	Signal Name
1	nSOL_DEV_2ND			<-
2	NC			<-
3	AGND			<-

M

(13b) Deve Drive(CN4) ↔ Clutch(Deve 2nd)

Pin	Signal Name	Dir	Pin	Signal Name
1	nCLT_DEV_2ND			<-
2	NC			<-
3	AGND			<-

(15) Main BD(CN29) ↔ Fan Motor(Fuser)

Pin	Signal Name	Dir	Pin	Signal Name
1	nFAN_FUSER			<-
2	NC			<-
3	+24VF			<-

(12c) Deve Drive(CN7) ↔ Solenoid(Deve 3rd)

Pin	Signal Name	Dir	Pin	Signal Name
1	nSOL_DEV_3RD			<-
2	NC			<-
3	AGND			<-

Y

(13c) Deve Drive(CN9) ↔ Clutch(Deve 3rd)

Pin	Signal Name	Dir	Pin	Signal Name
1	nCLT_DEV_3RD			<-
2	NC			<-
3	AGND			<-

(16) Main BD(CN27) ↔ Main Motor

Pin	Signal Name	Dir	Pin	Signal Name
1	+24VF		1	+24V
2	+24VF		2	+24V
3	AGND		3	PGND
4	AGND		4	PGND
5	DGND		5	SGND
6	+5V		6	+5V
7	nBLDC_START1		7	START
8	nBLDC_RDY1		8	READY
9	BLDC_CLK1		9	CLOCK
10	DGND		10	CW/CCW

(12d) Deve Drive(CN3) ↔ Solenoid(Deve 4th)

Pin	Signal Name	Dir	Pin	Signal Name
1	nSOL_DEV_4TH			<-
2	NC			<-
3	AGND			<-

K

(13d) Deve Drive(CN5) ↔ Clutch(Deve 4th)

Pin	Signal Name	Dir	Pin	Signal Name
1	nCLT_DEV_4TH			<-
2	NC			<-
3	AGND			<-

⑰ Main BD(CN3) ↔ Parallel Port

Pin	Signal Name	Dir	Pin	Signal Name
1	nSTB	←		<-
2	DATA0	↔		<-
3	DATA1	↔		<-
4	DATA2	↔		<-
5	DATA3	↔		<-
6	DATA4	↔		<-
7	DATA5	↔		<-
8	DATA6	↔		<-
9	DATA7	↔		<-
10	nACK	→		<-
11	BUSY	→		<-
12	PERROR	→		<-
13	SELECT	→		<-
14	nAUTOFD	←		<-
15	NC			<-
16	DGND			<-
17	AGND			<-
18	5V1			<-
19	DGND			<-
20	DGND			<-
21	DGND			<-
22	DGND			<-
23	DGND			<-
24	DGND			<-
25	DGND			<-
26	DGND			<-
27	DGND			<-
28	DGND			<-
29	DGND			<-
30	DGND			<-
31	nINIT	←		<-
32	nFAULT	→		<-
33	NC			<-
34	NC			<-
35	NC			<-
36	nSELECTIN	←		<-

⑱ Main BD(CN2) ↔ USB Port

Pin	Signal Name	Dir	Pin	Signal Name
1	VBUS_2270	←		VBUS
2	DN	↔		D-
3	DP	↔		D+
4	DGND			AGND
5	AGND			FGND
6	AGND			FGND

⑲ Main BD(CN4) ↔ Control Panel(CN2)

Pin	Signal Name	Dir	Pin	Signal Name
1	DGND		1	DGND
2	+5V	→	2	VCC
3	PANEL_TX	→	3	OPE_RXD
4	nRST_PANEL	→	4	/OPE_RST
5	PANEL_RX	←	5	OPE_TXD

(20) Main BD(CN9) ↔ Ethernet (J1)

(Network Print Card)

Pin	Signal Name	Dir	Pin	Signal Name
1	+3.3V	→	1	VDD3
2	+3.3V	→	2	VDD3
3	DGND		3	GND
4	nNPC_CS	→	4	nXPCS
5	DATA(31)	↔	5	XPData(31)
6	DATA(30)	↔	6	XPData(30)
7	DATA(29)	↔	7	XPData(29)
8	DGND		8	GND
9	DATA(28)	↔	9	XPData(28)
10	DATA(27)	↔	10	XPData(27)
11	DATA(26)	↔	11	XPData(26)
12	DGND		12	GND
13	DATA(25)	↔	13	XPData(25)
14	DATA(24)	↔	14	XPData(24)
15	nNPC_INT	←	15	nXIRQ_OUT
16	DGND		16	GND
17	A_ADDR(5)	→	17	XPAddr(3)
18	A_ADDR(4)	→	18	XPAddr(2)
19	A_ADDR(3)	→	19	XPAddr(1)
20	+3.3V	→	20	VDD3
21	NC		21	NC
22	DATA(23)	↔	22	XPData(23)
23	DATA(22)	↔	23	XPData(22)
24	NC		24	NC
25	DATA(21)	↔	25	XPData(21)
26	NC		26	NC
27	DATA(20)	↔	27	XPData(20)
28	A_ADDR(15)	→	28	XPAddr(13)
29	DATA(19)	↔	29	XPData(19)
30	A_ADDR(14)	→	30	XPAddr(12)
31	DATA(18)	↔	31	XPData(18)
32	A_ADDR(13)	→	32	XPAddr(11)
33	DATA(17)	↔	33	XPData(17)
34	A_ADDR(12)	→	34	XPAddr(10)
35	DATA(16)	↔	35	XPData(16)
36	A_ADDR(11)	→	36	XPAddr(9)
37	A_ADDR(6)	→	37	XPAddr(4)
38	A_ADDR(10)	→	38	XPAddr(8)
39	nNPC_RST	→	39	nRESET_P
40	A_ADDR(9)	→	40	XPAddr(7)
41	nWAIT	←	41	nXPWAIT
42	A_ADDR(8)	→	42	XPAddr(6)
43	NC		43	NC
44	A_ADDR(7)	→	44	XPAddr(5)
45	NC		45	NC
46	NC		46	NC
47	NC		47	NC
48	DGND		48	GND
49	NC		49	NC
50	nRD	→	50	nXPRE
51	nWR	→	51	nXPWE
52	DGND		52	GND
53	NC		53	NC
54	NC		54	NC
55	NC		55	NC
56	DGND		56	GND
57	nPRT_IRQ	→	57	nXIRQ_IN
58	DGND		58	GND
59	DGND		59	GND
60	DGND		60	GND

(21) Main BD(CN16) ↔ Tray 2(SCF)(CN9)

(Secondary Cassette Feeder)

Pin	Signal Name	Dir	Pin	Signal Name
1	+3.3V	→	1	3.3V
2	STS_SCF	←	2	SCF_STS
3	CMD_SCF	→	3	SCF_CMD
4	CLK_SCF	→	4	SCF_CLK
5	RDY_SCF	←	5	SCF_RDY
6	+24V	→	6	24VS
7	DGND		7	DGND
8	AGND		8	AGND

(22) Main BD(CN21) ↔ Sensor(Paper Empty)

Pin	Signal Name	Dir	Pin	Signal Name
1	+3.3V	→	1	<-
2	nS_EMPT	←	2	<-
3	DGND		3	<-
4	NC		4	<-

(23) Main BD(CN31) ↔ Sensor(MPTEmpty)

Pin	Signal Name	Dir	Pin	Signal Name
1	+3.3V	→	1	<-
2	nS_MP_EMPT	←	2	<-
3	DGND		3	<-
4	NC		4	<-

(24) Main BD(CN33)↔Sensor(Feed)

Pin	Signal Name	Dir	Pin	Signal Name
1	+3.3V	→	1	<-
2	nS_FEED	←	2	<-
3	DGND		3	<-

(25) Main BD(CN19)↔Sensor(Exit)

Pin	Signal Name	Dir	Pin	Signal Name
1	+3.3V	→	1	<-
2	nS_EXIT	←	2	<-
3	DGND		3	<-
4	NC		4	<-

(26) Main BD(CN23)↔Clutch(Feed)

Pin	Signal Name	Dir	Pin	Signal Name
1	+24VF	→		<-
2	nCLT_FEED	→		<-

(27) Main BD(CN25)↔Solenoid(Pick up)

Pin	Signal Name	Dir	Pin	Signal Name
1	+24VF	→		<-
2	nSOL_PICKUP	→		<-

(28) Main BD(CN32)↔Solenoid(MPT)

Pin	Signal Name	Dir	Pin	Signal Name
1	+24VF	→		<-
2	nSOL_MP	→		<-
3	NC			<-

(29) Main BD(CN24)↔Solenoid(Duplex)

Pin	Signal Name	Dir	Pin	Signal Name
1	+24VF	→		<-
2	nSOL_DUP	→		<-

(30) Main BD(CN26)↔Solenoid(T2 home)

Pin	Signal Name	Dir	Pin	Signal Name
1	+3.3V	→	1	<-
2	NC		2	<-
3	nSOL_T2	→	3	<-

(31) Main BD(CN17)↔Sensor(Waste Toner)

>> CN1(TX)				
Pin	Signal Name	Dir	Pin	Signal Name
1	+3.3V	→	1	<-
2	DGND		2	<-
>> CN1(RX)				
3	nS_TONER_RX	←	1	<-
4	DGND		2	<-
5	NC			

(32) Main BD(CN15) ↔ Sensor(Temp 1)

Pin	Signal Name	Dir	Pin	Signal Name
1	A_TEMP	←	1	<-
2	GNDA		2	<-

(33) Main BD(CN10) ↔ Transfer Belt (ITB) (Drawer Connector on Frame)

Pin	Signal Name	Dir	Pin	Signal Name
1	+5VL	→	J7	<-
2	nS_ITB_HOME	←	J6	<-
3	DGND		J5	<-
4	+5VL	→	J4	<-
5	DGND		J3	<-
6	nLED_ON	→	J14	<-
7	V_MON	←	J13	<-
8	GNDA		J12	<-
9	+5VL	→	J11	<-
10	AN_CTD	←	J10	<-
11	ITB_CRUM_SCL		J9	<-
12	ITB_CRUM_SDA	←	J8	<-
			J1	NC
			J2	NC

(34) Main BD(CN12) ⟷ Laser Unit (LSU)

Pin	Signal Name	Dir	Pin	Signal Name
>> LD Part				
1	nHSYNC	→	1	*HSYNC
2	+5VL	→	2	+5V
3	DGND		3	GND
4	nLDON_LSU	→	4	*LD ON
5	VDO_LSU+	→	5	*VIDEO+
6	VDO_LSU-	→	6	*VIDEO-
7	nSH_LSU	→	7	*S/H
>> Motor Part				
8	CLK_LSU	→	1	CLK
9	nRDY_LSU	←	2	*READY
10	nSTART_LSU	→	3	*START
11	AGND		4	GND
12	+24V	→	5	VCC

(35) Main BD(CN11) ⟷ PTL(CN1)

Pin	Signal Name	Dir	Pin	Signal Name
1	+5V	→	1	<-
2	EN_ERASER	→	2	<-

(36) Main BD(CN8) ⟷ ERASER(CN1)

Pin	Signal Name	Dir	Pin	Signal Name
1	+5VL	→	1	<-
2	EN_ERASER	→	2	<-

* (+5V ÊResistance(150 Ohm) ÊCN11-1)

(37) Main BD(CN6) ⟷ Imaging Unit (OPC)

Pin	Signal Name	Dir	Pin	Signal Name
1	A_OPC_KEY	←		<-
2	DGND	→		<-

(38) Main BD(CN13) ↔ Sensor(Temp 2)

Pin	Signal Name	Dir	Pin	Signal Name
1	A_TEMP2	←	1	<-
2	NC		2	<-
3	GNDA		3	<-