Phaser® 3150

THE DOCUMENT COMPANY
XEROX®

laser printer

Service Manual

Phaser 3150 Laser Printer

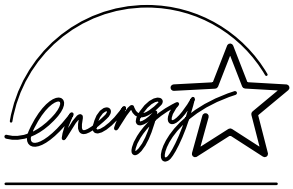
Service Manual

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: July 2004

721P58540



MD/TA

1 Precautions

2 Reference Information

3 Specifications

4 Product Summary

5 Disassembly

6 Alignment and Adjustments

7 Troubleshooting

8 Parts List

9 Block Diagram

10 Connection Diagram

1 Precautions

In order to prevent accidents and to prevent damage to the printer, please read the precautions listed below carefully before servicing the printer.

1.1 Safety Warnings

1. Only to be serviced by appropriately qualified service engineers.

   High voltages and lasers inside this product are dangerous. This printer should only be serviced by a suitably trained and qualified service engineer.

2. Use only Xerox replacement parts.

   There are no user serviceable parts inside the printer. Do not make any unauthorized changes or additions to the printer, these could cause the printer to malfunction and create electric shock or fire hazards.

3. Laser Safety Statement

   The Printer is certified in the U.S. to conform to the requirements of DHHS 21 CFR, chapter 1 Subchapter J for Class 1 laser products, and elsewhere, it is certified as a Class 1 laser product conforming to the requirements of IEC 825. Class 1 laser products are not considered to be hazardous. The laser system and printer are designed so there is never access to laser radiation above a Class 1 level during normal operation, user maintenance, or prescribed service condition.

Warning

Never operate or service the printer with the protective cover removed from Laser assembly. The reflected beam, although invisible, can damage your eyes. When using this product, these basic safety precautions should always be followed to reduce the risk of fire, electrical shock, and bodily injury.

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

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

ATTENTION - RAYONNEMENT LASER INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU.

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

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

ADVARSEL. - USYNLIG LASERSTRÅLNING VED ÅBNING, NÅR SIKKERHEDSBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSAETTELSE FOR STRÅLNING.

ADVARSEL. - USYNLIG LASERSTRÅLNING NÅR DEKSEL ÅPNES. STIRR IKKE INN I STRÅLEN. UNNGÅ EKSPONERING FOR STRÅLEN.

VARNING - OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN. STRÅLEN ÄR FARLIG.

VARO! - AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASER-SÄTEILYLLE ÄLÄ KATSO SÄTEESEEN.

注 意 - 严禁渴开此盖, 以免激光泄露灼伤

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

1.2 Safety Cautions

1.2.1 Toxic Material

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

1. Please keep toner cartridges away from children. The toner powder contained in the toner cartridge may be harmful and if swallowed you should contact a doctor immediately.

1.2.2 Electric Shock and Fire Safety Precautions

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

1. Use only the correct voltage, failure to do so could damage the printer and potentially cause a fire or electric shock.
2. Use only the power cable supplied with the printer. Use of an incorrectly specified cable could cause the cable to overheat and potentially cause a fire hazard.
3. Do not overload the power socket, this could lead to overheating of the cables inside the wall and could lead to a fire hazard.
4. Do not allow water or other liquids to spill into the printer, this can cause electric shock. Do not allow paper clips, pins, or other foreign objects to fall into the printer as these could cause a short circuit leading to electric shock or fire hazard.
5. Never touch the plugs on either end of the power cable with wet hands, this can cause electric shock. When servicing the printer, remove the power plug from the wall socket.
6. Use caution when inserting or removing the power connector. The power connector must be inserted completely otherwise poor contact could cause overheating possibly leading to a fire. When removing the power connector, grip it firmly and pull.
7. Do not allow the power cable to become twisted, bent sharply round corners or otherwise damaged. Do not place objects on top of the power cable. If the power cable is damaged, it could overheat and cause a fire or exposed cables could cause an electric shock. Replace a damaged power cable immediately, do not reuse or repair the damaged cable. Some chemicals can eat through the coating on the power cable, weakening the cover, or exposing cables causing fire and shock risks.
8. Ensure that the power sockets and plugs are not cracked or broken in any way. Any defects should be repaired or replaced immediately. Take care not to cut or damage the power cable or plugs when moving the printer.
9. Use caution during thunder or lightening storms. Xerox recommends that this printer be disconnected from the power source when such weather conditions are present. Do not touch the printer or the power cord if it is still connected to the wall socket in these weather conditions.
10. Avoid damp or dusty areas, install the printer in a clean well ventilated location. Do not position the printer near a humidifier. Damp and dust build up inside the printer can lead to overheating and cause a fire.
11. Do not position the printer in direct sunlight. This will cause the temperature inside the printer to rise leading to the printer failing to work properly and in extreme conditions could lead to a fire.
12. Do not insert any metal objects into the printer through the ventilator fan or other parts of the casing, it could come into contact with a high voltage conductor inside the printer and cause an electric shock.

1.2.3 Handling Precautions

The following instructions are for personal safety, to avoid injury, and to avoiddamage the printer

1. Ensure the printer is installed on a level surface, capable of supporting its weight. Failure to do so could cause the printer to tip or fall.
2. The printer contains many rollers, gears, and fans. Take great care to ensure that you do not catch your fingers, hair, or clothing in any of these rotating devices.
3. Do not place any small metal objects, containers of water, chemicals, or other liquids close to the printer which if spilled could get into the printer and cause damage, electric shock, or a fire hazard.
4. Do not install the printer in areas with high dust or moisture levels, beside an open window, or close to a humidifier or heater.
5. Do not place candles or burning cigarettes on the printer.These can cause a fire.

1.2.4 Assembly and Disassembly Precautions

Always use Xerox parts. Take care to note the exact location of parts and cable routing before disassembling any part of the printer. Ensure all parts and cables are replaced correctly.

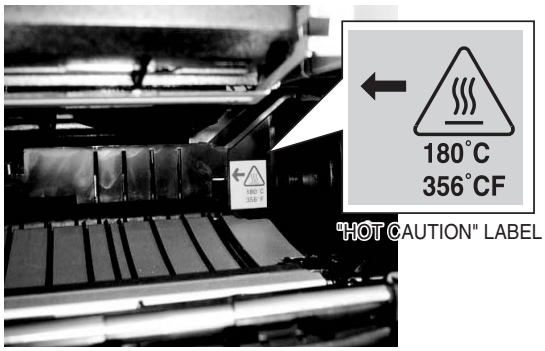
Please carry out the following procedures before disassembly or replacing any parts:

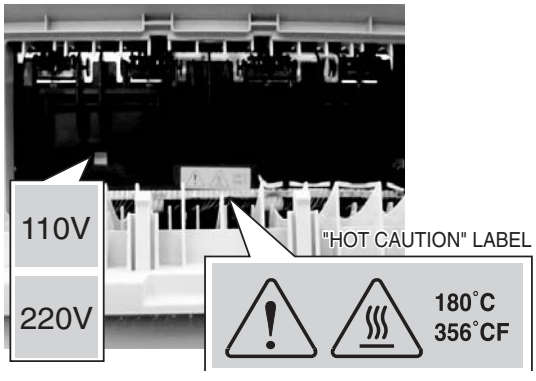
1. Check the contents of the printer memory and make a note of any user settings. These will be erased if the mainboard or network card is replaced.
2. Ensure that power is disconnected from the wall socket before servicing or replacing any electrical parts.
3. Disconnect printer interface cables and power cables before servicing or replacing any parts.
4. Only use approved spare parts. Ensure that part number, product name, any voltage, current, or temperature rating are correct.
5. When removing or re-fitting any parts do not use excessive force, especially when fitting screws into plastic.
6. Take care not to drop any small parts into the printer.

Handling of the OPC Drum

The OPC Drum can be irreparably damaged if:

- Exposed to light. Take care not to expose the OPC Drum either to direct sunlight or to fluorescent or incandescent room lighting. Exposure for as little as 5 minutes can damage the surface photoconductive properties and will result in print quality degradation. Take extra care when servicing the printer. Remove the OPC Drum and store it in a black bag or other lightproof container.
- Take care when working with the covers (especially the top cover) open as light is admitted to the OPC area and can damage the OPC Drum.
- Take care not to scratch the green surface of OPC Drum Unit.
- If the green surface of the Drum Cartridge is scratched or touched, the print quality will be compromised.





1.2.5 Bodily Injury Warnings

1. Use caution around high temperature parts.

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

2. Use caution when around rotating parts.

   When operating the printer, do not put your hands into the rotating parts (Paper feeding entrance, motor, fan, etc.). Remove jewelry and loose clothing before servicing the printer.

3. When you moving the printer.

   This printer weighs 12.7 kg including the toner cartridge and tray. Use safe lifting and handling techniques. Use the lifting handles located on each side of the printer. Back injury could result if you do not lift the printer properly.

4. Ensure the printer is installed properly.

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

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

1.3 ESD Precautions

Some semiconductor components, and the respective sub-assemblies that contain them, are vulnerable to damage by Electro-Static 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).

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 3150 printer.

2.1 Tools for Troubleshooting the Printer

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

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

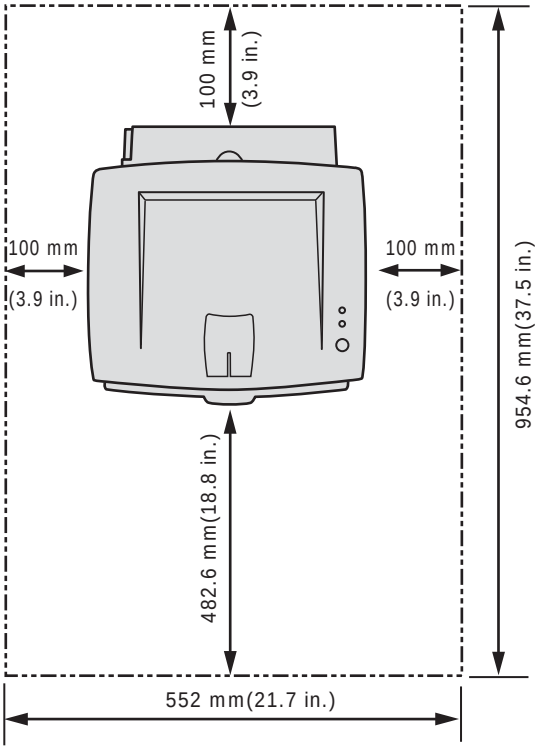
2.2 Acronyms and Abbreviations

	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	Application Specific Integrated Circuit	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	Dots 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 Scanner 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.



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	Laser diode unit and electrophotography
Developing system	Non-magnetic, contacting development system
Exposure System	Semiconductor laser diode beam scanning
Fuser (toner fixing)	Thermal rollers fusing with pressure (heat lamp: 600 Watts)
Resolution	True: 600 x 600 dpi Addressable: 1200 x 1200 dpi Grayscale level: 128 Gray
Print Speed*	A4: 20 ppm Letter/Executive: 22 ppm Legal: 18 ppm
Warm-up time	Cold warm-up and sleep mode: 42 seconds
FPOT	≤ 10 seconds
Feed Method	Tray 1/MPT (Multi-Purpose Tray), Tray 2 (Cassette), Optional Tray 3, 250-sheet feeder
Dimensions	Width: 358 mm (14.1 in.) Depth: 452 mm (17.8 in.) Height: 278 mm (10.9 in.)
Weight	Printer: 10.2 kg (22 lb.) with consumables Optional Tray 2: 3 kg (6.6 lb.) with packaging
Acoustic Noise**	Standby: 39 dBA Printing: 53 dBA
Power Saver Mode	Available, user settings enabled

* Print speed will be affected by the operating system used, computing performance, application software, connection method, media type, media size, and job complexity.

** Sound pressure level, ISO 7779

3.2 Controller/Software Specifications

Item	Description
Processor	SPGPM (Samsung Printer Graphic Processor) 166 MHz
Memory	32 MB, expandable to 144 MB, SDRAM
Emulation	SPL, PCL6 (Firmware), Epson, IBM Proprinter, Optional PostScript 3 SPL, PCL6 (Firmware), KS5843, KSSM, KSC5895
Interface	Standard: IEEE1284, USB 2.0 Auto Interface sensing
Font	Flash memory, 45 scalable, 1 bitmap
Network	Optional: 10/100 Base TX
Test Print	Demo Mode: Press the Cancel key for 2 seconds. Configuration Mode: Press the Cancel key for 6 seconds. Cleaning Mode: Press the Cancel key for 10 seconds.
Operating System Compatibility	Windows 98/NT4/2000/Me/XP Linux OS including Red Hat, Caldera, Debian, Mandrake, Slakware, SuSE, and Turbo Linux

3.3 Electrical Specifications

Item	Description	
Input Voltage	**Low voltage: 100-127 VAC**	**High voltage: 220-240 VAC**
Input Range	90-135 VAC	180-270 VAC
Input Frequency:	50/60 Hz	50/60 Hz
Frequency tolerance	±3 Hz	±3 Hz
Power Consumption	Ready: 70 Watts Average: 400 Watts Maximum: 700 Watts Power Saver: 15 Watts	
Power Saver Mode	User settings available	Off or 5, 10, 15, 30, 45, and 60 min.

3.4 Environmental Range

Items	Operating	Storage	Optimum
Temperature	10 ~ 32° C (50 ~ 90° F)	0 ~ 40 ° C (32 ~ 104° F)	20 - 25° C
Humidity	10 - 80% RH	20 - 95% RH	30 - 70% RH
Altitude	2,500 meters (8,200 feet)		

3.6 Media Specifications

3.6.1 Approved 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.

Tray Support	Media Types / Capacity	Sizes	Weight
Tray 2 **Optional Tray 3**	Plain Paper - 250 sheets	A4, A5, A6, Letter, Legal, Folio, Oficio, Executive, ISO and JIS B5	16 ~ 24 lb. 60 ~ 90 g/m^2
Tray1 / MPT	Plain Paper - 50 sheets OHP film, Label Envelope -10 Card stock; Custom	A4, A5, A6, Letter, Legal, Folio, Oficio, Executive, ISO and JIS B5 Monarch No. 10, C5, C6, DL International Postcard, Letter/A4 Min. 75 x 125 mm	16 ~ 43 lb. 60 ~ 163 g/m^2

3.6.2 Print Margins and Skew

Print Area		Margin	
Guaranteed Print Quality Area	Paper Width (A+B)	A = Left Margin	4.23 mm
		B = Right Margin	4.23 mm
	Paper Length (C+D)	C = Top Margin	4.23 mm
		D = Bottom Margin	4.23 mm
Printable area	Paper Width (A+B)	A = Left Margin	3 mm
		B = Right Margin	3 mm
	Paper Length (C+D)	C = Top Margin	3 mm
		D = Bottom Margin	3 mm
Registration Tolerance	±2.5 mm in the scan direction ±3.0 mm in the process direction		

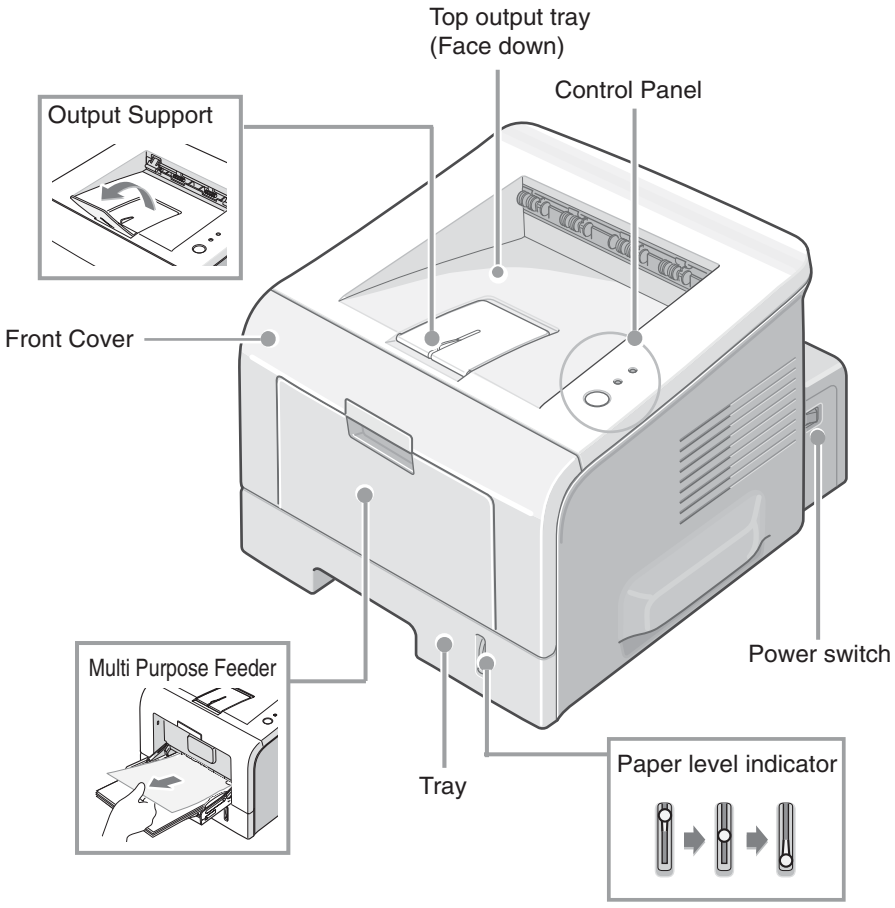
Skew	Tray 1, 2	Tray 3	Length
A. Vertical Skew	< 2.0 mm (0.08 in.)	< 2.5 mm (0.10 in.)	244.3 mm
B. Horizontal Skew	< 1.5 mm (0.06 in.)	< 2.0 mm (0.08 in.)	177.8 mm

4 Product Summary

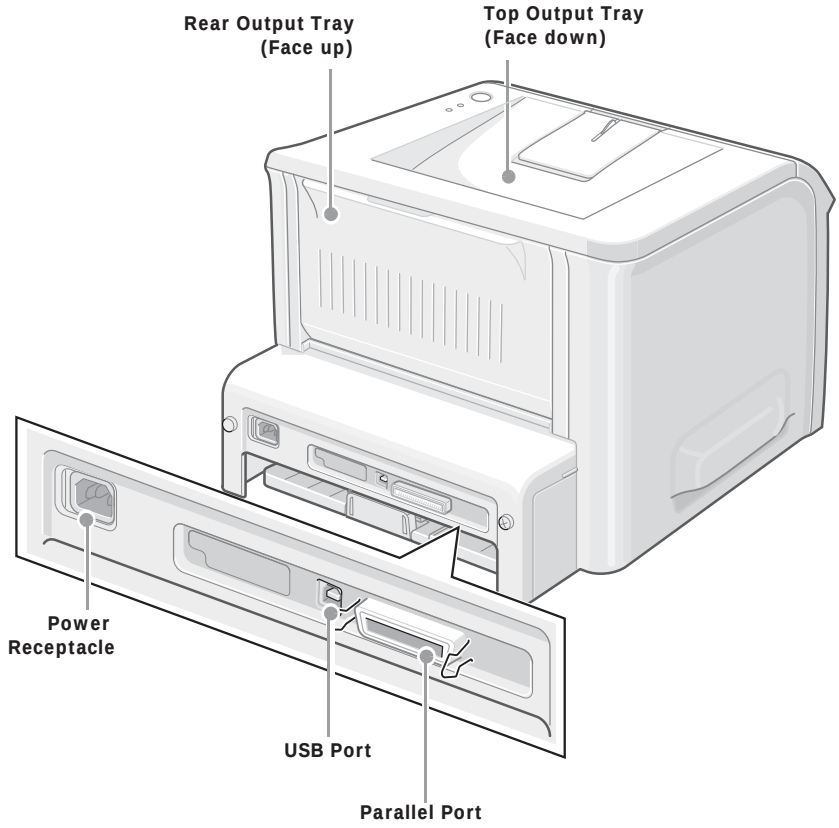
This section describes the functions and operating principals of the printers main components.

4.1 Printer Components

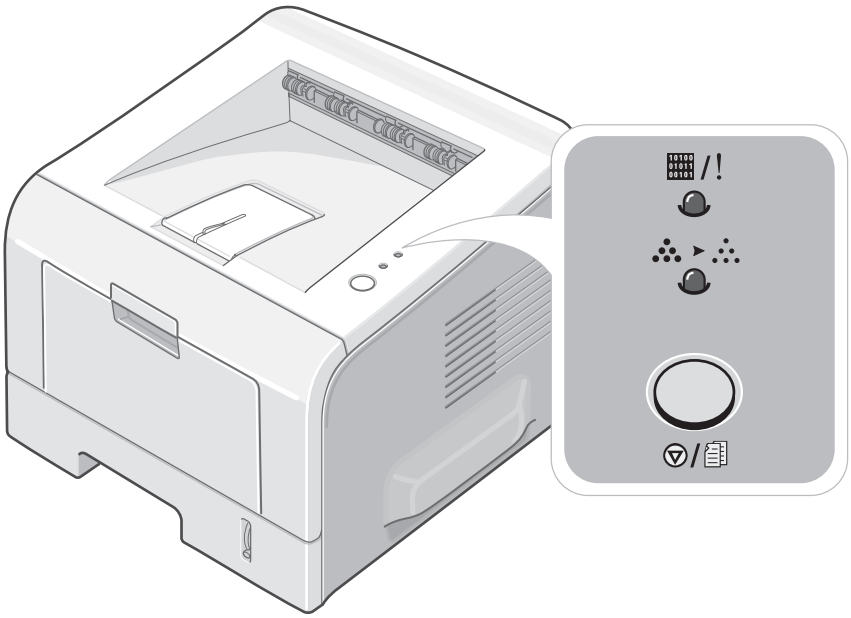
4.1.1 Front View



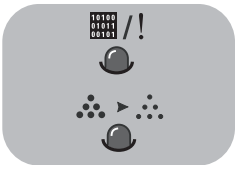
4.1.2 Rear View



4.1.3 Control Panel



ON Line/Error and Toner Save LED's

LED	Description
	The On Line/Error LED is green, when the printer is Ready to Print.
	The On Line/Error LED slowly blinks green when the printer is receiving data, and blinks rapidly while printing.
	The On Line/Error LED is red if an error occurs in the printer.
	The On Line/Error LED will blink red if: ■ The user presses the **Cancel** button to cancel a print job. ■ The printer is in manual feed mode and there is no paper in the Tray1/MPT.
	If the On Line/Error LED is blinking red and orange alternately the printer has detected a non-Xerox toner cartridge.
	If the installed toner cartridge is empty the On Line/Error LED blinks orange and the toner cartridge needs to be replaced.
	If the On Line/Error and Toner Save LEDs all blink at the same time, an internal or hardware malfunction is present. Refer to Section 6.6 for troubleshooting procedures.
	The Toner Save LED comes on when Toner Save mode is enabled. This can be set in the printer driver.

Cancel Button Functions

Printing the Demo Page	In Ready mode, press and hold the **Cancel** button until all LEDs blink slowly and then release, (approximately 2 seconds).
Printing the Configuration Page	In Ready mode, press and hold the **Cancel** button until all LEDs blink quickly and then release, (approximately 6 seconds).
Cleaning inside the printer	In Ready mode, press and hold the **Cancel** button until all LEDs turn on and then release (approximately 10 seconds). After cleaning, one cleaning sheet is printed.
Canceling a print job	To cancel a print job, press the **Cancel** button. The On Line/Error LED blinks while the print job is cleared from both the printer and the computer. The printer then returns to Ready mode. This may take some time depending on the size of the print job. **Note** In Manual Feed mode it is not possible to cancel the print job by pressing this button.

4.2 Printer Theory of Operation

4.2.1 System Summary

The printer consists of the following main functional components:

1) The Firmware

Engine firmware controls the whole printing process.

2) The Print Engine

1. **Engine Frame**
2. **Paper Feed**

   The paper feed system consists of a 250-sheet main paper tray (Tray 2), a multi-purpose paper tray (Tray 1), pickup rollers, friction pads, and feed rollers. The rollers and sensors in the paper feed path control paper registration and guide the paper through the image transfer, image development, image fusing and exit assemblies. The paper path has an anti-static connection to ground to eliminate problems due to static charge on the paper.
3. **Main drive mechanism**

   The main drive is a bi-polar, two phase motor. It drives the drum, paper pick, and paper feed rollers using a gear train mechanism.
4. **Image development unit**

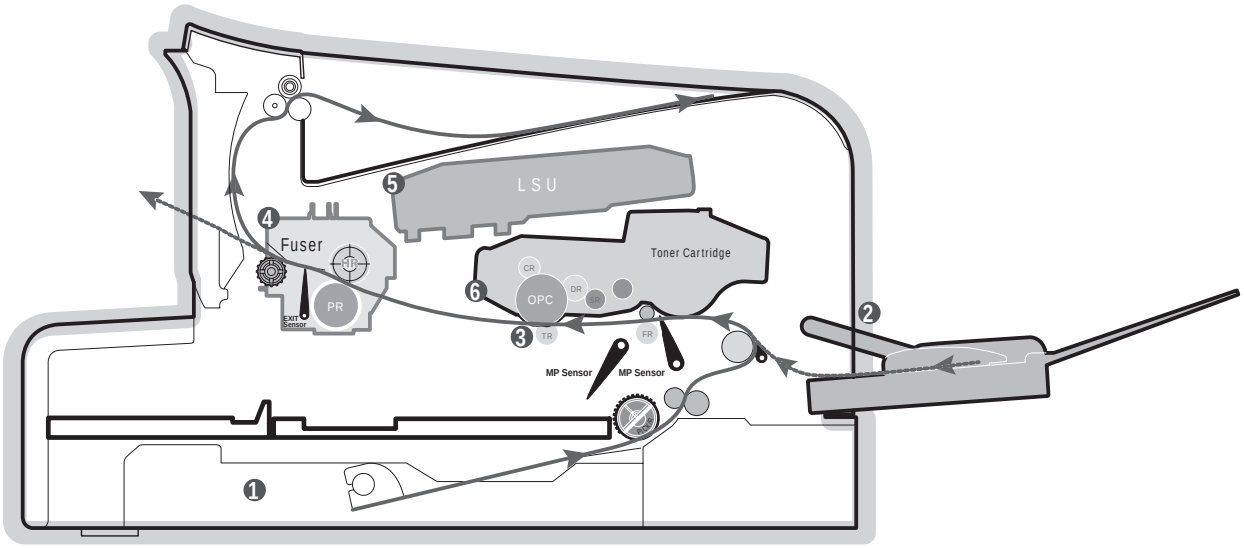
   Using a Laser Scanner Unit (LSU), this portion of the mechanism creates the image on the OPC drum (part of the integrated toner cartridge).
5. **Image transfer unit**

   This unit uses the high voltages supplied by the HVPS to move the image from the OPC drum onto the paper.
6. **Image fusing unit**

   This unit permanently fixes the toner image onto the paper. This is achieved using a temperature controlled heating unit (the fuser).
7. **Electronic boards include:**
   a. The Main control board, consisting of:
      - Main processor asic (166 MHz SPGPm)
      - Memory (Flash ROM containing the control program and DRAM for working memory)
      - Engine interface parts (motor control, fuser control, HVPS control, and sensors)
      - PC Interface (USB , Parallel, Network)
      - Bus, DMA and I/O handling

   b. Control panel
   c. PC Interface

4.2.2 System Layout



1. Cassette
2. Manual Feeder
3. Transfer Roller
4. Fuser
5. LSU(Laser Scan Unit)
6. Toner Cartridge

4.2.3 Paper Feed

The paper feed system consists of a 250- sheet main paper tray (Tray 2), a multi-purpose paper tray (Tray 1), pickup rollers, friction pads and feed rollers. The rollers and sensors in the paper feed path control paper registration and guide the paper through the image transfer, image development, image fusing and exit assemblies. The paper path has an anti-static connection to ground to eliminate problems due to static charge on the paper.

1. **Paper separation method**

   Individual sheets are separated in the tray using the ‘friction pad’ method. When paper feeds into the printer it passes over a spring loaded friction pad that separates the sheets of paper.

2. **Paper tray (cassette)**

   The paper trays use a ‘center loading’ method. There are no paper size sensors, instead a software process is used to detect the size of the first sheet of paper as it is fed through the printer. Both the rear and side paper guides are adjustable for various paper sizes.

   There is a ‘Paper Empty’ sensor which detects the presence of paper (Capacity: 250 sheets).

   There is an indicator flag on the front of the tray which indicates the amount of paper remaining.

3. **Pick-up roller**

   The pick-up roller is used to pick and feed paper into the printer. It also is used to remove any static charge on the paper.

4. **Tray1/MPT**

   The multi-purpose tray is used to hold non-standard or custom paper sizes and special media (envelopes, transparencies, etc.). There is an MPT paper empty sensor. The MPT uses a friction pad method to ensure paper separation and can hold a maximum of 50 sheets of paper or envelopes.

5. **SCF (Second Cassette Feeder) or Tray 3**

   The optional third tray unit is universal with the second main tray and also has a capacity of 250 sheets.

4.2.4 Transfer Assembly

The transfer roller transfers toner from the OPC drum to the paper. Toner is transferred from the OPC drum onto the paper using a PTL (Pre-Transfer Lamp) and a transfer roller. The PTL shines light onto the OPC, reducing the electrical charge on the OPC surface improving the efficiency of the transfer.

The transfer assemblies life span is 60,000 sheets.

4.2.5 Drive Assembly

The drive assembly receives power from the main controller board. The main motor powers the paper feed, toner cartridge, fuser unit and all pick-up, feed, and exit rollers.

4.2.6 Fuser Assembly

The fuser assembly uses a heat lamp process. This consists of a heat lamp, heat roller, pressure roller, thermistor, and thermostat. By use of heat and pressure, toner is melted to adhere to the paper surface in order to complete the printing process.

4.2.6.1 Thermistor and Thermostat

The thermistor is used to detect the temperature of the heating unit and feeds this information into the main processor.

If the heat lamp becomes too hot, the thermostat cuts off the power to the lamp in order to prevent overheating and any potential fire hazard is removed.

4.2.6.2 Heat roller

The heat roller transfers the heat from the heat lamp to the paper. The surface of the heat roller is coated with Teflon so that toner does not stick to the surface.

4.2.6.3 Pressure roller

A pressure roller, mounted under the heat roller, is made of a silicon resin and the surface is also coated with Teflon. When paper passes between the heat roller and the pressure roller the toner powder is melted and permanently fixed to the surface of the paper.

4.2.6.4 Safety features

To prevent overheating:

- 1st protection device: Hardware cuts off when overheated.
- 2nd protection device: Software cuts off when overheated.
- 3rd protection device: Thermostat cuts off main power to the lamp.

Safety device

- Fuser power is cut off when the front cover is opened.
- Laser power is cut off when the front cover is opened.
- The temperature of the fuser cover's surface is maintained at less than 80º C to protect the user. A caution label is attached where the customer can see it easily when the rear cover is opened.

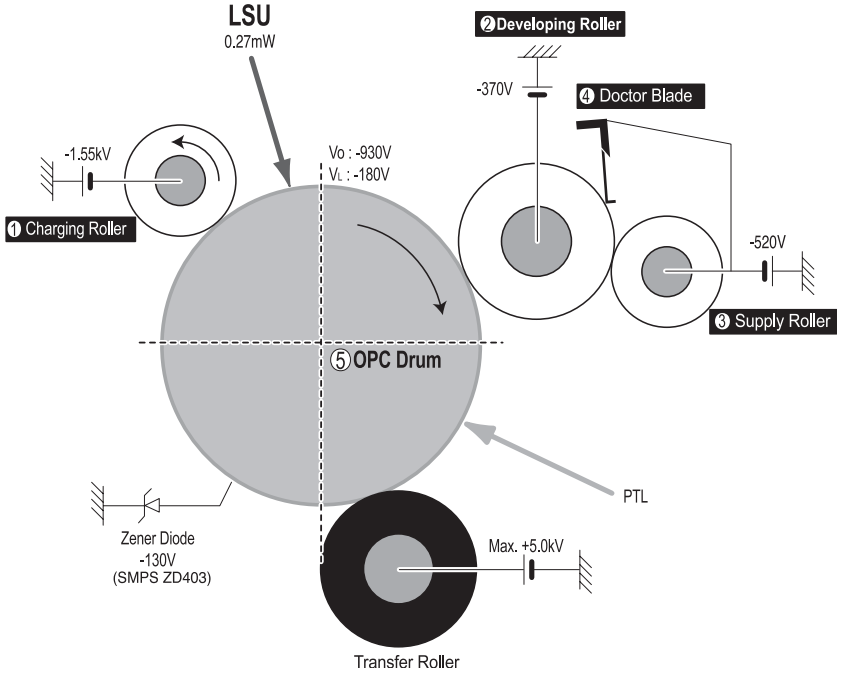
4.2.7 Laser Scanner Unit (LSU)

This is the core of the laser printer. It converts the video data received from the computer into an electrostatic latent image on the surface of the OPC drum. This is achieved by controlling the laser beam and exposing the surface of the OPC drum to the laser light. A rotating polygon mirror reflects the laser light onto the OPC. Each face of the mirror produces one scan line. As the OPC drum turns, the laser scans, to create the full page image.

The HSYNC signal is created when the laser beam from the laser unit reaches the end of the polygon mirror and this signal is sent to the controller. The controller detects the HSYNC signal to adjust the vertical line of the image on paper. In other words after the HSYNC signal is detected the image data is sent to the laser unit to adjust the left margin on the paper.

4.2.8 Toner Cartridge

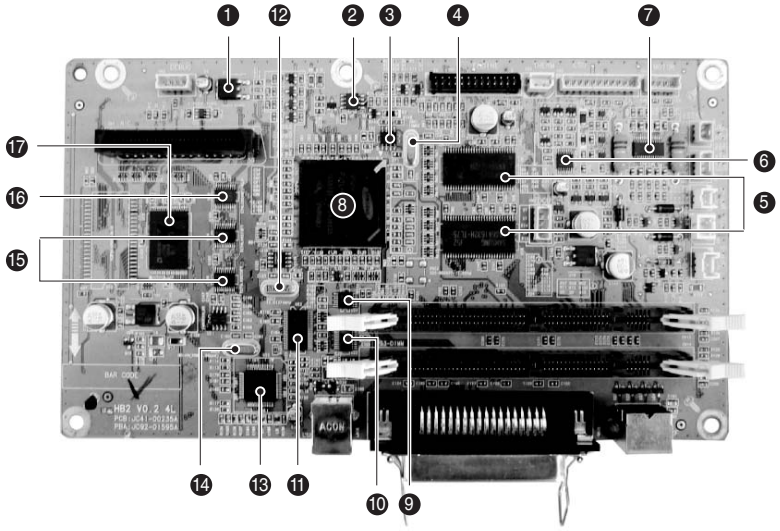
The toner cartridge is an integral unit containing the OPC unit and toner unit. The OPC unit consists of the OPC drum and charge roller. The toner cartridge unit consists of the toner, supply roller, developing roller, and blade (doctor blade).



Developing Method	Non magnetic 1 element contacting method
Toner	Non magnetic 1 element shatter type toner
Toner Life	3,500 sheets / 5,000 sheets (ISO19752 standard)
Toner remaining sensor	No
OPC Cleaning	Film OPC using an electro-static cleaning process
Management of waste toner	Collected using an electro-static process and retained within the toner cartridge. No waste toner to dispose of.
OPC Drum protecting Shutter	No
Toner CRUM Reader	Identifies whether toner is Xerox branded toner or whether a Non-Xerox toner cartridge is installed in the printer

4.3 Main Controller Board (PBA)

The engine board and controller board have been integrated into a single board consisting of the CPU and printer control functions. The CPU functions as the bus controller, I/O handler, motor driver and PC interface. The main board sends the current image video data to the laser unit and manages the electrophotographic printing process. Circuits on the main board drive the main motor (paper feed, cartridge, fuser), clutch, pre-transfer lamp, heat-lamp and fan. The signals from the paper feed jam sensor and paper empty sensor are inputted to the main board from the power supply board.



1.	**U1** Low drop fixed and adjustable positive voltage regulators (LD1117DT)
2.	**U2** Low power, dual bi-polar comparators (LM393D)
3.	**U4** Spread spectrum clock generator (CY25811)
4.	**OSC1** CPU X-TAL (12 MHz)
5.	**U6, U15** SDRAM (K4S641632H)
6.	**U7** Low voltage HEX inverter with 5 V tolerant Schmitt trigger inputs (74LCX14)
7.	**U9** Motor driver (A3977SLP)
8.	**U11** Graphics processor ASIC (SPGPm)
9.	**U24** Low voltage HEX inverter with 5V tolerat Schmitt trigger inputs (74LCX14)
10.	**U23** Parallel port single termination network (ST1284)
11.	**U22** Low voltage IEEE translating transceiver (161284)
12.	**OCS3** Video X-TAL (19.6 MHz)
13.	**U25** USB 2.0 (NET2270)
14.	**OSC4** USB X-TAL (30 MHz)
15.	**U14, U19** Low voltage octal D-type flip-flop (74LVX273)
16.	**U10** Low voltage, bi-directional transceiver (74LCX245)
17.	**U13** Flash Memory (29LV160DB)

4.3.1 ASIC (SPGPm)

- **ARM946ES**
  - 32-bit RISC embedded processor core
  - 16 KB instruction cache and 16 KB data cache
  - No tightly coupled memory
  - Memory protection unit and CP15 control program
- **Dual bus architecture for bus traffic distribution**
  - AMBA high performance bus (AHB)
  - System bus with SDRAM
- **IEEE1284 compliant parallel port interface**
- **Printer Video Controller for LBP engines**
- **Graphic Execution Unit for banding support of printer languages**
- **Printer Video Controller for LBP engines**
  - PVC: Printer Video Controller without RET Algorithm
  - HPVC: Printer Video Controller with RET algorithm

  (Line Memory and Lookup Table Memory: 512 x 8, 4096 x 16)
- **Engine Controller**
  - Motor control unit
  - Motor speed lookup table memory (128 x 16 x 2)
  - Pulse width modulation unit
  - 4 channels are supported
  - ADC interface unit
  - 3 ADC Channels are available
  - ADC Core (ADC8MUX8) maximum clock frequency: 3 MHz
- **USB 2.0 Interface**
- **Package: 272 pins PBGA**
- **Power: 1.8 V(Core), 3.3 V(IO) power operation**
- **Speed: 166 MHz core (ARM946ES) operation, 60 MHz bus operation**

4.3.2 Memory

The board has Flash ROM and DRAM memory units. There are 2 SODIMM sockets to enable extra DRAM or Flash ROM (PostScript option, not available in all countries) to be fitted.

4.3.3 Flash Memory

Flash memory stores the system software code. This can be updated by downloading the system program through the PC Interface. PCL fonts are also stored in the flash memory.

- Capacity: 2 MB
- Access Time: 70 nsec

4.3.4 SDRAM

Used as a swath buffer, systems working memory area, etc. when printing.

- Capacity: 32 MB, expandable up to 144 MB
- Optional Additional DIMM : 16 MB / 32 MB / 64 MB /128 MB
- Type : SDRAM 100 MHz/133 MHz, 16bit

4.3.5 Sensor Input Circuit

4.3.5.1. Paper Empty Sensing

The Paper Empty sensor (Photo Interrupter) on the engine board is monitored by the CPU. When the tray is empty the printer flashes the red error LED.

4.3.5.2. Tray 1/MPT Sensing

Presence of paper in Tray 1 is detected by the MP sensor (photo interrupter) on the frame. The CPU monitors this sensor to recognize paper in Tray 1, and paper is fed if there is paper present.

4.3.5.3. Paper Feeding

When paper passes the actuator on the feed sensor, it is detected by the photo interrupter. The CPU monitors the signal and starts the process of creating the image after a specified delay time. If the feed sensor is not detected within one second after paper is fed, a paper jam0 occurs. (red error LED is lit).

4.3.5.4. Toner Remaining Sensing

The printer does not have a toner remaining sensor.

4.3.5.5. Paper Exit Sensing

This detects that paper exits cleanly from the printer using an exit sensor on the engine board and actuator on the frame. The CPU detects the on/off time of the exit sensor and normal operation or a jam status is reported. If a Jam2 error occurs, the red error LED is lit.

4.3.5.6. Cover Open Sensing

The cover open sensor is located on the power supply board. It is operated by a molded tab on the front cover. When the front cover is open the +24 V and +5 V supplies to the DC fan, solenoid, main motor, polygon motor in the laser unit, HVPS and laser diode are cut off.

4.3.5.7. DC Fan/Solenoid Driving Circuit

A fan driving circuit is controlled by the CPU via a transistor. It is automatically turned off when the printer enters sleep mode. There are two solenoids, these are driven by signals from the CPU (tray paper pick).

4.3.5.8. Motor Driving Circuit

The main motor drives the paper feed, developing unit, fuser, and exit assembly. The circuit is driven by software which controls the acceleration, constant speed, and deceleration profiles. The Motor is driven using an A3977 driver IC.

4.3.5.9 Transfer

The charging voltage, developing voltage, and the transfer voltage are controlled by pulse width modulation (PWM). Each output voltage is changeable according to the PWM duty cycle. The transfer voltage used when the paper passes the transfer roller is decided by environment recognition. The resistance value of the transfer roller changes due to the environment of the room or within the printer. This change in resistance in turn changes the value of the voltage due to loading. This voltage is fed back into the printer through the A/D converter. Based on the value fed back the PWM cycle is changed to maintain the required transfer voltage.

4.3.5.10 Fusing

The temperature of the heat roller's surface is detected according to the resistance value of the thermistor. The thermistor resistance is measured using the A/D converter and thus the CPU can determine the temperature of the heat roller. The AC power is controlled by comparing the target temperature to the value from the thermistor. If the value from the thermistor is out of the controlled range while controlling the fusing process, an error is reported.

See the error table below to identify fuser temperatur errors.

Error	Description	DCU	LED Display
Open heat error	Lower than 68^0 C for more than 25 seconds while warming up.	60	All LEDs blinking
Low heat error	Standby: Lower than 100^0 C for more than 20 seconds. Printing: From 2 consecutive pages; the fixed fusing temperature has been lower than 30^0 C for more than 5 seconds. Higher than 220^0 C for over 3 seconds.	62	All LEDs blinking
Over heat error	It has been higher than 220^0 C for over 3 seconds.	68	All LEDs blinking

4.3.5.11 Laser Scanner Unit (LSU)

The Laser Unit consists of the laser diode and the polygon motor control. When the printing signal occurs, the laser diode is turned on and the polygon motor is enabled. When the light sensor detects the beam, H-SYNC occurs. When the polygon motor speed becomes steady, Ready mode occurs. If these two conditions are satisfied the laser unit is judged to be ready. If the two conditions are not satisfied, one of two errors are reported as shown in the table below.

Error	Description	DCU
Polygon motor error	When the polygon motor speed is not steady.	95
H-SYNC error	The polygon motor speed is steady but the H-SYNC is not generated.	96

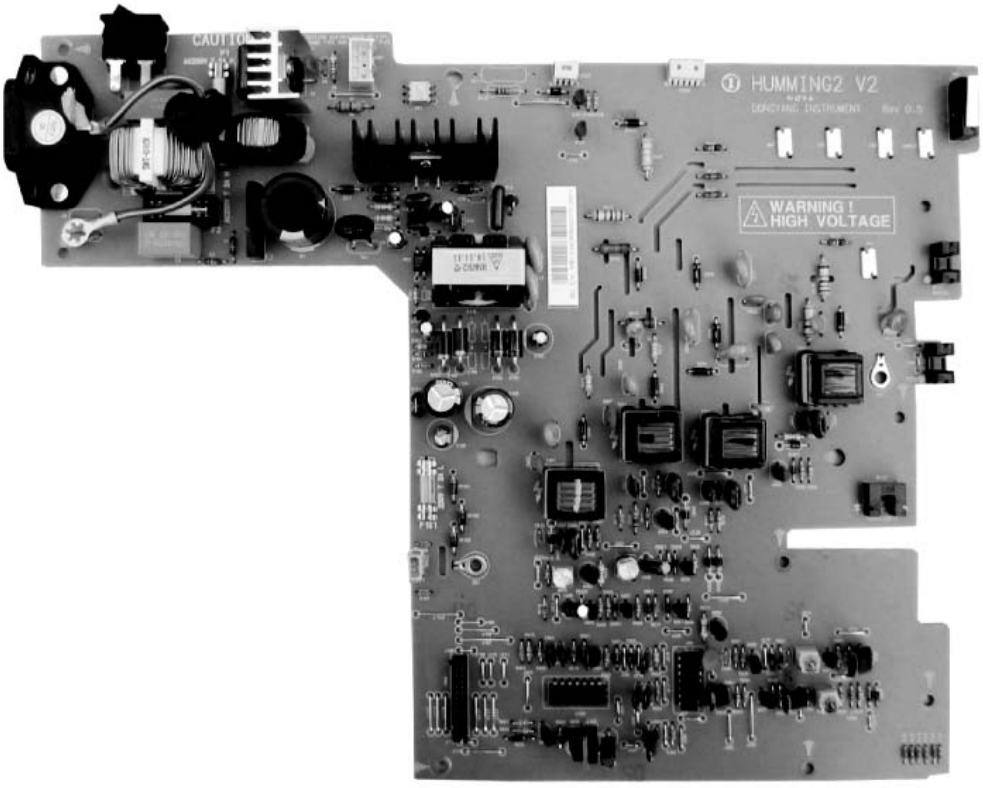
4.4 Switching Mode Power Supply (SMPS) and High Voltage Power Supply (HVPS)

The SMPS and HVPS are on one integrated board.

The SMPS supplies the DC power to the printer. It takes either 110 V or 220 V and outputs the +5 V and +24 V supplies to the main board.

The HVPS creates the high voltage for the THV/MHV/Supply/Dev and supplies it to the toner cartridge. The CPU is used to modify some of these voltage settings to provide the ideal voltages to create the image.

The HVPS uses the 24 V and outputs the high voltage for THV/MHV/BIAS and the outputted high voltage is then supplied to the toner, OPC cartridge, and transfer roller.



4.4.1 High Voltage Power Supply

1) Transfer High Voltage (THV+)

Input Voltage: 24 VDC ± 15%
Output Voltage: MAX +5.0K V ± 5%, (duty variable, no loading

1.2 KV ±15% (when cleaning, 200 M

Output Voltage Trigger: 6.5 uA
Input contrast of the Voltage stability degree :under ± 5 % (fluctuating input 21.6 V~26.4 V)
Loading contrast : ± 5% or less
Output Voltage Rise Time: 100 ms Max
Output Voltage Fall Time: 100 ms Max
Transfer voltage range as environment varies: +650 V(Duty 10%) ~ 5K V (Duty 90%)
Environment Recognition Control Method:

The THV-PWM ACTIVE is the transfer active signal. It detects the resistance by recognizing the voltage value, F/B, while permitting the environmental recognition voltage.

Output Voltage Control Method:

Transfer output voltage is output and controlled by changing the duty cycle of the THV PWM Signal.
10% duty: +650 V; 90% duty: +5K V±5%

2) Charge Voltage (MHV)

Input Voltage: 24 VDC ± 15%
Output Voltage: -1.3K V ~ -1.8K VDC ± 50V
Output Voltage Rise Time: 50 ms maximum
Output Voltage Fall Tim: 50 ms maximum
Output Loading range: 30 Mž ~1000 Mž
Output Control Signal (MHV-PWM): CPU is HV output when PWM is low

3) Cleaning Voltage (THV-)

The (+)Transfer Voltage is not output because the THV PWM is controlled with high.
The (-)Transfer Voltage is output because the THV-Enable Signal is controlled with low.
The output fluctuation range is big because there is no Feedback control.

4) Developing Voltage (DEV)

Input Voltage: 24 VDC ± 15%
Output Voltage: -200 V ~ -600 VDC ±20V
Output Voltage Fluctuation range: PWM Control
Input contrast of the output stability degree: ±5 % or less
Loading contrast: ± 5 % or less
Output Voltage Rise Time: 50 ms maximum
Output Voltage Fall Time: 50 ms maximum
Output Loading range: 10 Mž ~ 1000 Mž
Output Control Signal (BIAS-PWM): the CPU output is HV output when PWM is low.

5) Supply

Output Voltage: -400 V ~ -800 VDC ±50 V (ZENER using, DEV)
Input contrast of the output stability degree: under ±5%
Loading contrast: ±5% or less
Output Voltage Rise Time: 50 ms maximum
Output Voltage Fall Time: 50 ms maximum
Output Loading range: 10 Mž ~ 1000 Mž
Output Control Signal (BIAS-PWM): the CPU is HV output when PWM is low.

4.4.2 Switching Mode Power Supply

The SMPS is the power source for the entire printer system. The SMPS supplies DC power for driving the printer, and the AC heater control which supplies power to fuser. The SMPS has two output channels: 3.3 V and +24 V.

1) AC Input

Input Rated voltage: AC 220 V ~ 240 V, AC 120 V ~ AC 220 V (EXP version)

Input Voltage range: AC 198 V ~ 264 V, AC 90 V ~ 135 V, AC 198 V ~ 264 V (EXP version)

Rated Frequency: 50/60 Hz

Frequency range: 47 ~ 63 Hz

Input Current: Under 4.0A RMS/2.0A RMS (When the fuser lamp is off and input / output voltages are in range)

2) Rated Output Power

No	Item	CH1	CH2	CH3	Remark
1.	Channel name	+3.3 V	+5 V	+24.0 V	
2.	CONNECTOR PIN	CON 3 3.3 V PIN: 3, 4 GND PIN: 5, 6	CON 3 5 V PIN: 8 GND PIN: 7	CON 3 24 V PIN: 11, 12, 13 GND: 9, 10	
3.	Rated output	3.3 V ± 5% (3.2 ~ 3.4 V)	+5 V ± 5% (4.75 ~ 5.25 V)	+24 V ± 10% (21.6 ~ 26.4 V)	
4.	Max output current	1.0 A	0.14A	2.0 A	
5.	Peak loading current	1.5 A	0.14A	2.5 A	1ms
6.	Ripple noise voltage	Under 100mVp-p	100mVp-p	Under 500mVp-p	
7.	Maximum output	3.3 W	0.35 W	48 W	
8.	Peak output	4.95 W	0.7 W	60 W	1ms
9.	Protection for loading shortage and overflowing current	-		-	

3) Consumption Power

No	Item	CH1 +3.3 V	CH2 +5 V	CH3 +24.0 V	Remark
1.	Standby	1.0 A	0.07 A	0.4 A	AVG: 55 Wh
2.	Printing	1.0 A	0.14 A	2.0 A	AVG: 280 Wh

4.5 Engine F/W

4.5.1 Feeding

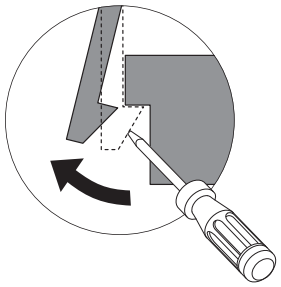
While feeding from the universal trays, the drive for the pickup roller is controlled by the pick-up solenoid. The printer feeds the paper from the Tray1/MPT according to the information provided by the MP sensor, and by driving the main motor, insert the paper in front of the feed sensor.

Jam	Description
Jam 0	This is an indcation that the leading edge of the paper did not pass the feed sensor. ■ After paper pick, paper does not enter the printer. ■ After paper pick, the paper enters the printer but it does not reach the feed sensor in the specified amount of time. ■ If paper has been picked, and the feed sensor is not ON, the printer will re-pick. If after re-picking the feed sensor is still not reported as ON, this error will occur. ■ Even though the paper reaches the feed sensor, the feed sensor is not ON.
Jam 1	This is an indication that the leading edge of the paper has already passed the feed sensor. ■ After the leading edge of the paper passes the feed sensor, the trailing edge of the paper does not pass the feed sensor within the specified time. (The feed sensor cannot be OFF during this time.) ■ After the leading edge of the paper passes the feed sensor, the paper does not reach the exit sensor within the specified time. (The exit sensor cannot be ON during this time.)
Jam 2	The paper is between the feed sensor and the exit sensor. ■ After the trailing edge of the paper passes the feed sensor, the trailing edge of the paper does not pass the exit sensor within the specified time.

5 Disassembly

5.1 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. Using the wrong screw could lead to printer 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.



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 where it is latched.

Caution

To prevent damaging the toner cartridge and degrading print quality, protect the toner cartridge from light when removing it from the printer.

5.1.1 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.

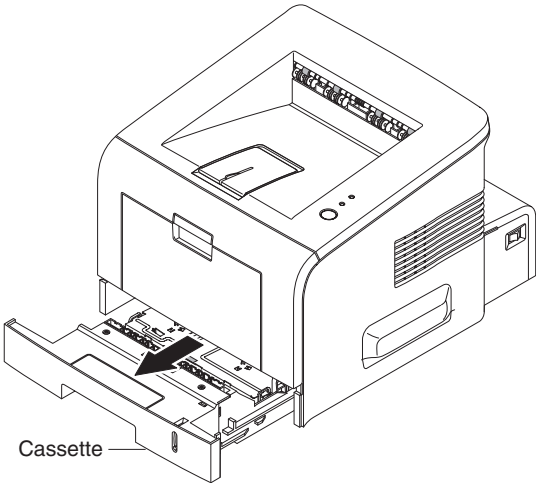
Precautions when checking boards:

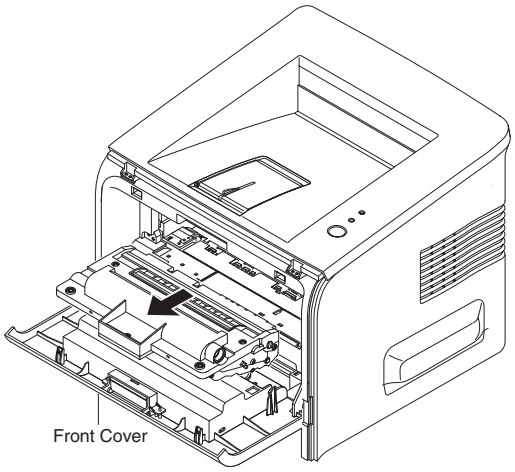
- Before touching a board, touch a grounded area on the printer chassis to discharge any static electrical charge on the body or wear an anti-static wrist strap.

- 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

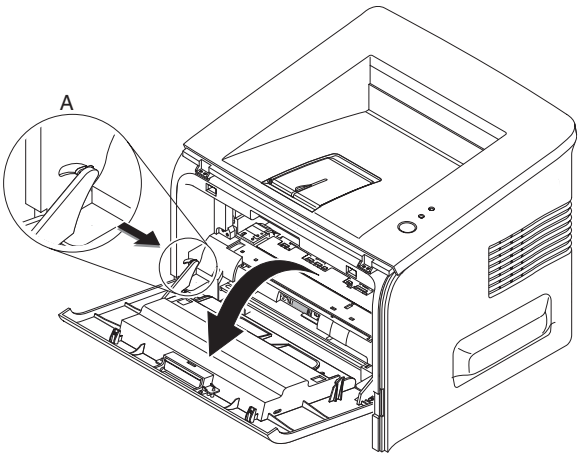
5.2 Front Cover

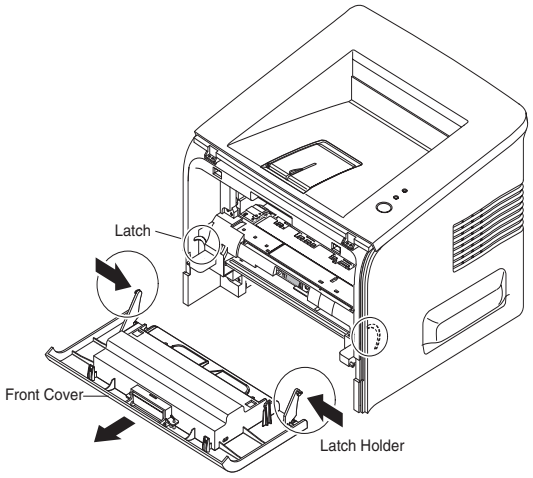
1. Remove the paper tray.
2. Open the front door and remove the toner cartridge.





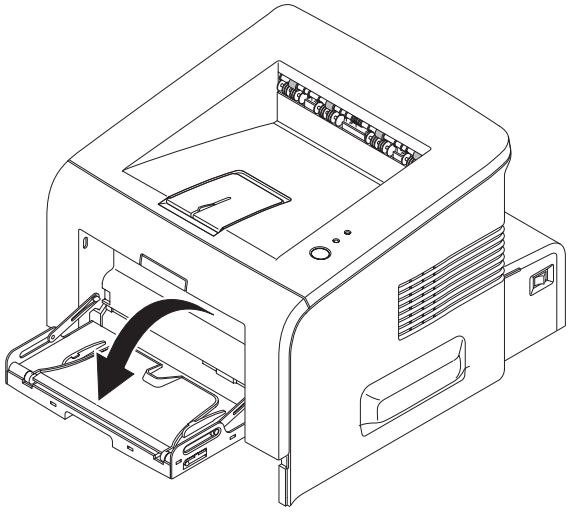
3. With the front cover fully open, carefully release the plastic hinge supports from the guide hooks by pulling inward.
4. Pull the front cover away from the printer to remove.



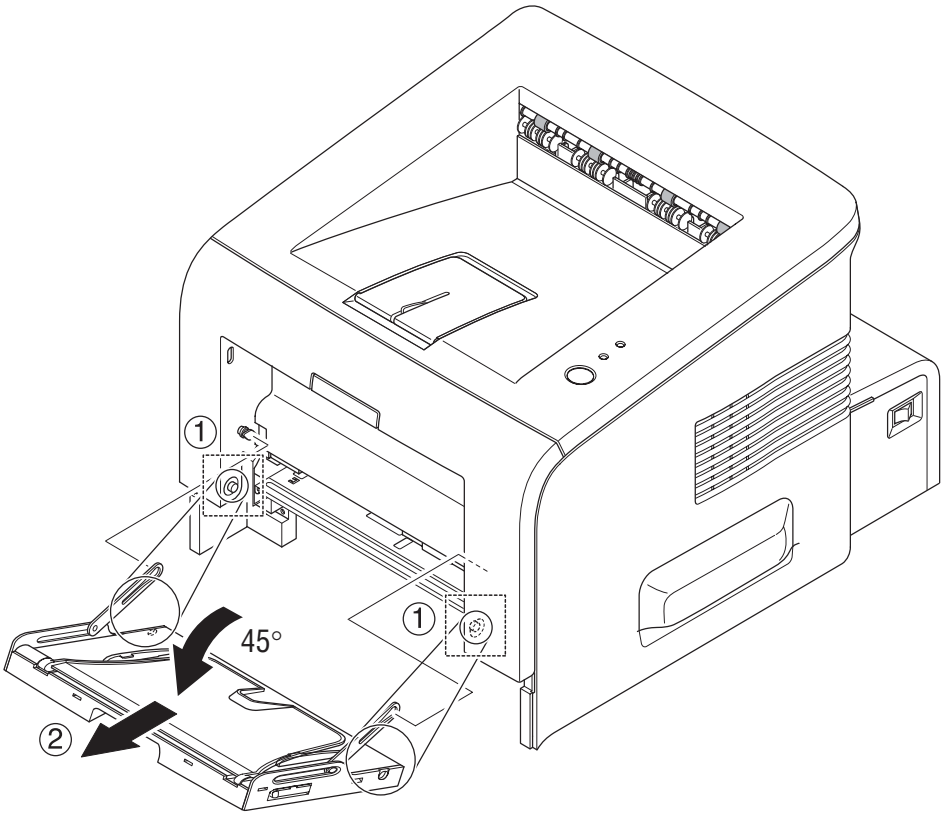


5.3 Tray 1/MPT Assembly

1. Open the Tray1/MPT assembly.



2. With the tray at a 45^{o} angle, carefully release the plastic hinge supports from the guide hooks.
3. Lift the Tray1/MPT assembly off the hinge pins on the front cover.

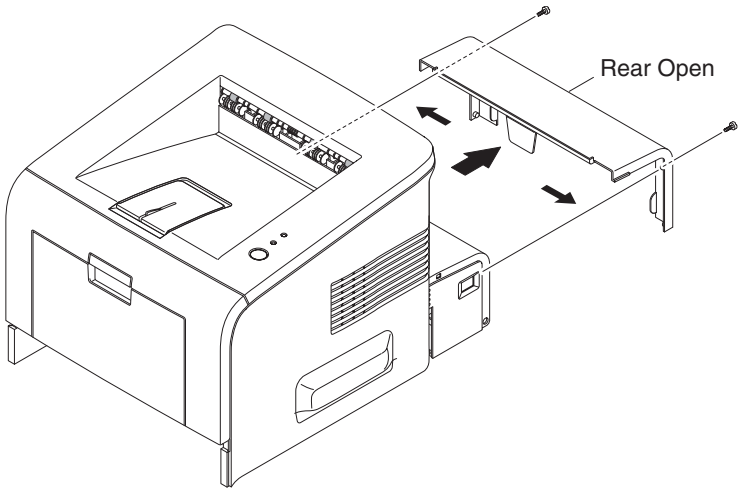


5.4 Rear Cover

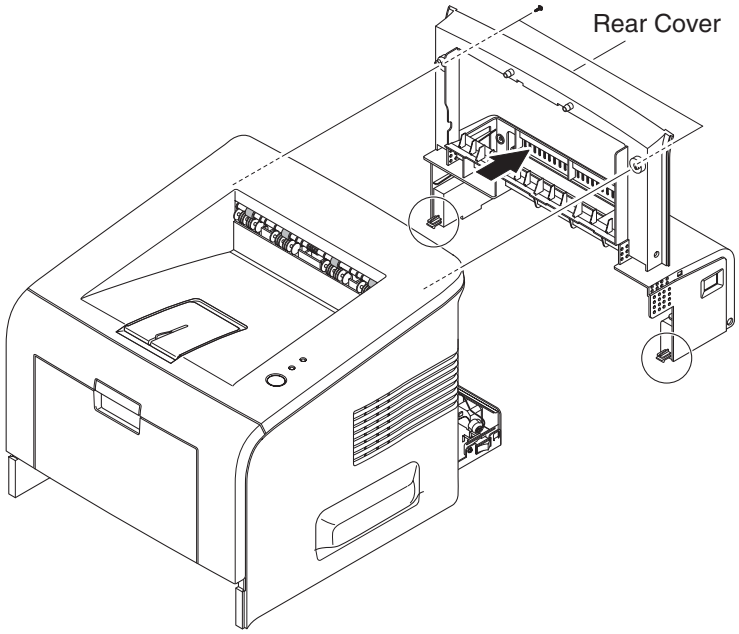
Note

When disassembling the rear cover, move the power switch to the OFF position. When reassembling the rear cover, move the power switch to the ON position.

1. Remove 2 screws securing the rear open cover and remove.



2. Open the face up cover.
3. Remove the 2 screws as shown below.
4. Using a screwdriver, carefully release the 2 tabs securing the rear cover.

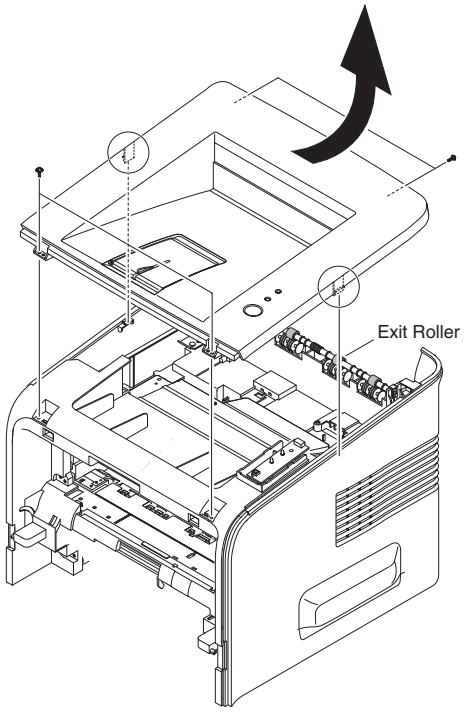


5.5 Top Cover

1. Remove the front cover, see "5.2 Front Cover" on page 5-3.
2. Remove the rear cover, see "5.4 Rear Cover" on page 5-5.
3. Remove 4 screws securing the top cover as shown below.

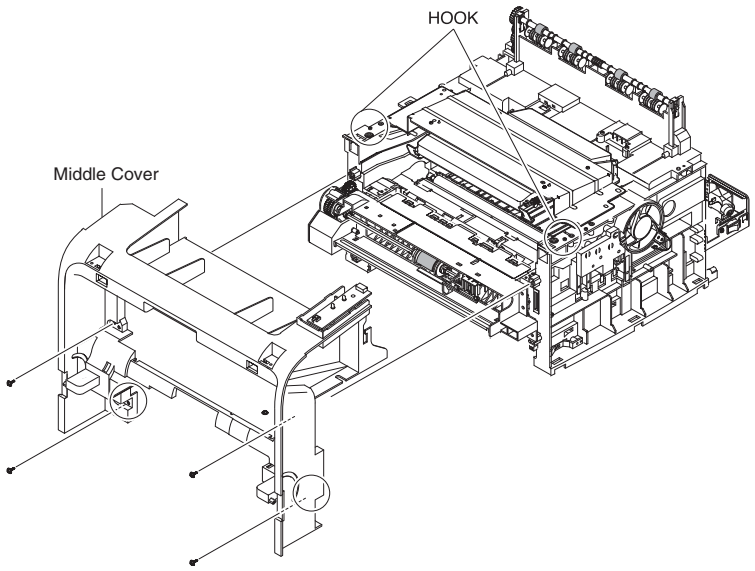
Caution

When removing the top cover, lift the front of the top cover slowly to avoid damaging the exit rollers. Use caution to avoid damaging the exit rollers when reassembling the top cover.



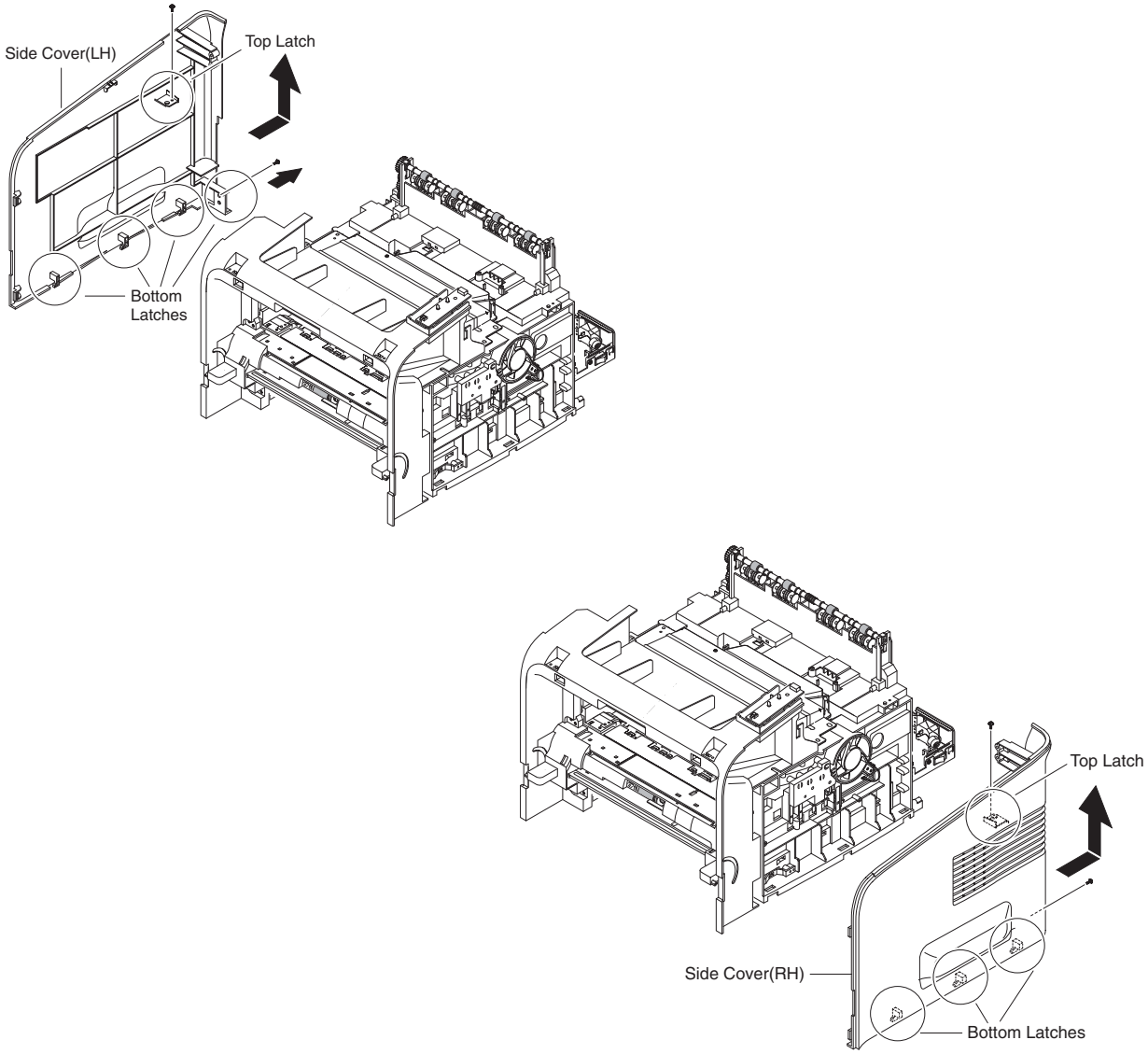
5.6 Middle Cover

1. Remove the rear cover, see "5.4 Rear Cover" on page 5-5.
2. Remove the top cover, see "5.5 Top Cover" on page 5-6.
3. Open the front cover.
4. Remove 4 screws securing the middle cover.
5. Disconnect and free the wiring harness from the middle cover.
6. Lift up on the left side of the middle cover to release it from the retaining pin.



5.7 Side Cover (Left and Right)

1. Remove the front cover, see "5.2 Front Cover" on page 5-3.
2. Remove the rear cover, see "5.4 Rear Cover" on page 5-5.
3. Remove the top cover, see "5.5 Top Cover" on page 5-6.
4. Remove the 2 screws securing the right or left cover.
5. Slide the cover towards the rear of the printer while releasing the top latch, as shown below, to remove the right or left cover.

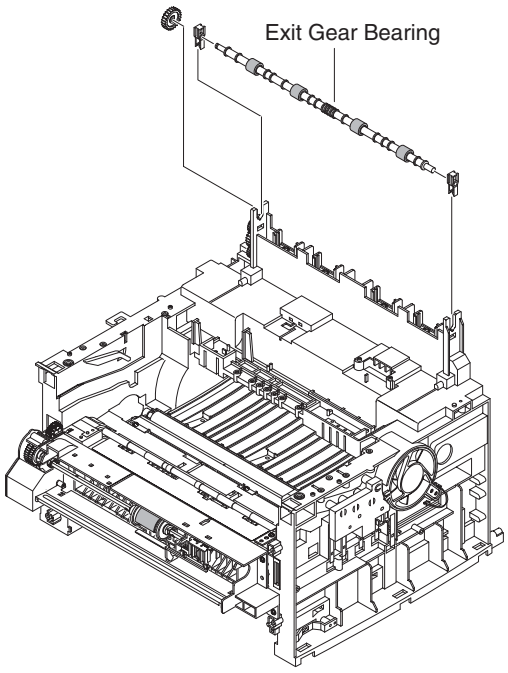


5.8 Exit Roller

1. Remove the front cover, see "5.2 Front Cover" on page 5-3.
2. Remove the rear cover, see "5.4 Rear Cover" on page 5-5.
3. Remove the top cover, see "5.5 Top Cover" on page 5-6.
4. Remove the left and right covers, see "5.7 Side Cover (Left and Right)" on page 5-8.
5. Remove the exit gear, bearing and exit roller as shown below

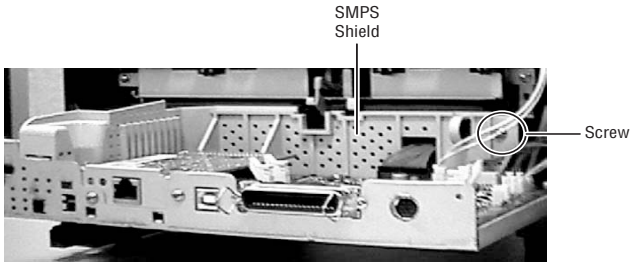
Note

It is not necessary to remove the laser unit or middle cover, although the image below shows them removed from the printer.



5.9 Engine Shield Assembly and Exit Board

1. Remove the rear cover, see "5.4 Rear Cover" on page 5-5.
2. Remove the top cover, see "5.5 Top Cover" on page 5-6.
3. Remove the right cover, see "5.7 Side Cover (Left and Right)" on page 5-8.
4. Remove the paper tray.
5. Remove 1 screw securing the SMPS shield and remove the shield.



6. Disconnect the following wiring harnesses from the SMPS; on the right side printer, the fan (CN3) and the control panel (CN4). On the rear of the printer disconnect the fuser (CN1) and exit sensor (CN6).
7. Disconnect the following wiring harnesses connected to the main board.

CN 5 Laser Unit	**CN 10 Manual Solenoid**
CN 6 Motor	**CN 11 PTL**
CN 8 Pickup Sol	**CN 17 MP sensor**
CN 9 Regi Sol	**CN 18 CRUM**

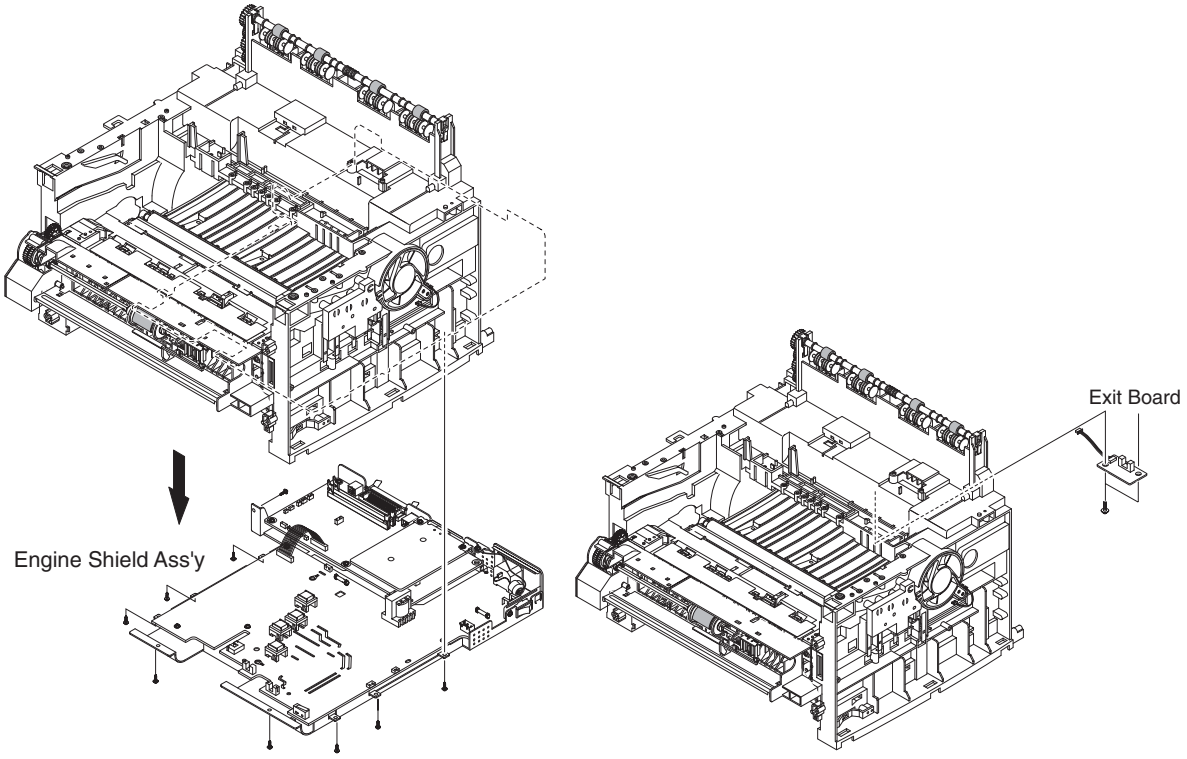
Caution

Be sure all 12 wiring harnesses are diconnected from the assembly.

Caution

In the next step you will be turning the printer over, use caution when working on the printer in order to avoid damaging the exit rollers.

8. Turn the printer onto its top to access and remove the 12 screws on the bottom of the printer securing the engine shield assembly.



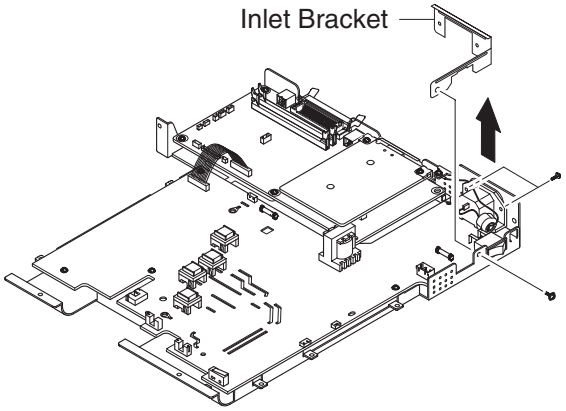
9. Remove 2 screws securing the Exit Board to the print frame.

Caution

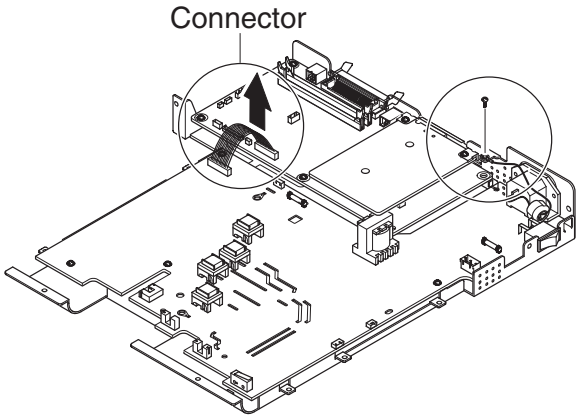
When reassembling the engine shield assembly, be sure the paper out sensor flag is up and out of the way to avoid damaging the flag.

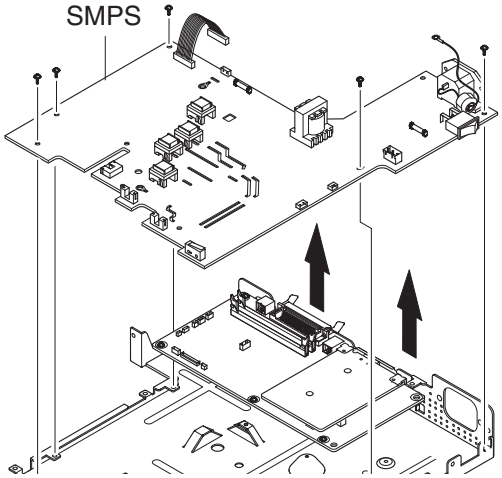
5.10.1 SMPS

1. Remove the front cover, see "5.2 Front Cover" on page 5-3.
2. Remove the rear cover, see "5.4 Rear Cover" on page 5-5.
3. Remove the top cover, see "5.5 Top Cover" on page 5-6.
4. Remove the left and right covers, see "5.7 Side Cover (Left and Right)" on page 5-8.
5. Remove the engine shield assembly, see "5.9 Engine Shield Assembly and Exit Board" on page 5-10.
6. Remove the 3 screws (one is to ground) securing the inlet bracket and remove the bracket.



7. Unplug 1 connector from the main board.
8. Remove the 6 screws securing the SMPS to the shield.



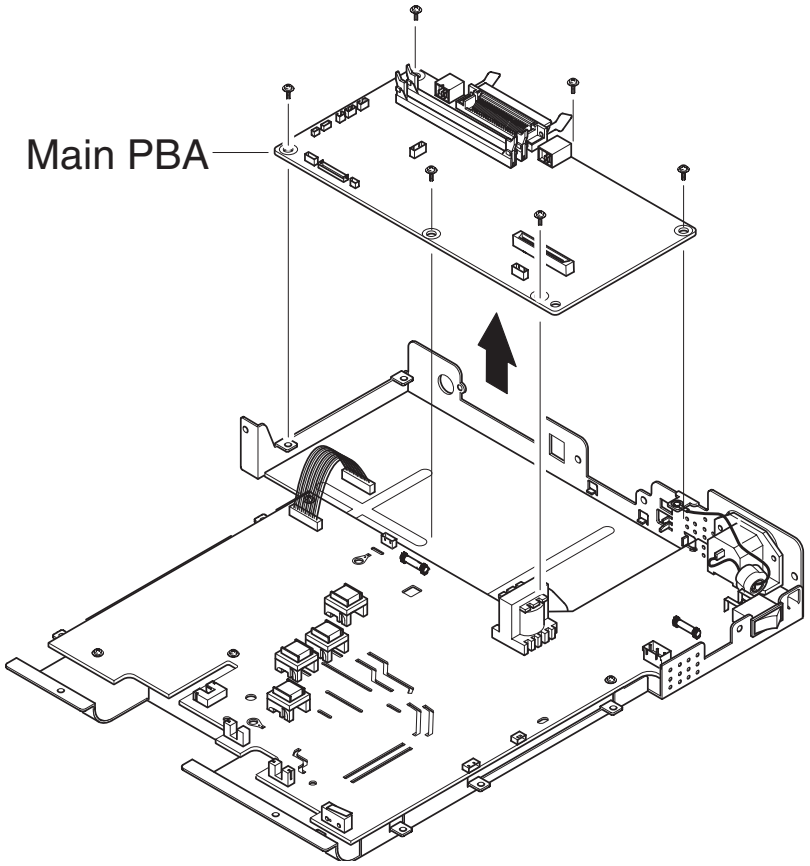


5.10.2 Main Board

1. Remove the rear cover, see "5.4 Rear Cover" on page 5-5.
2. Remove the SMPS shield, see step 5 in "5.9 Engine Shield Assembly and Exit Board" on page 5-10.
3. Disconnect all harnesses from the main board.
4. Remove the 8 screws securing the main board to the printer and remove the main board

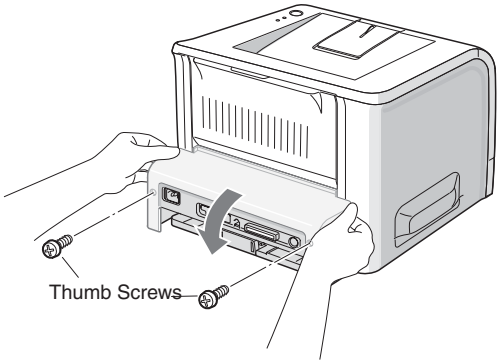
Note

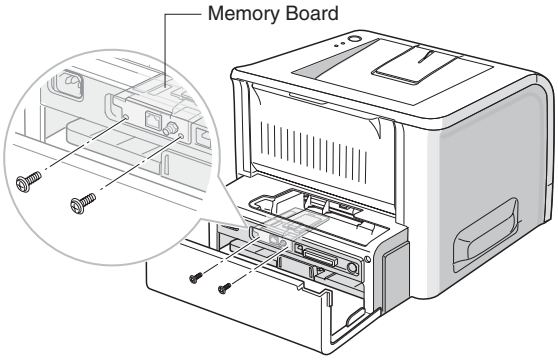
2 screws are securing the network card or plate.

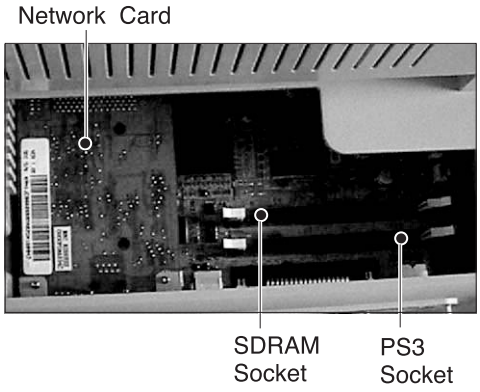


5.10.3 Removing the Network Card or Optional Memory Modules

You only need to open the rear open cover to access the memory modules and network card.





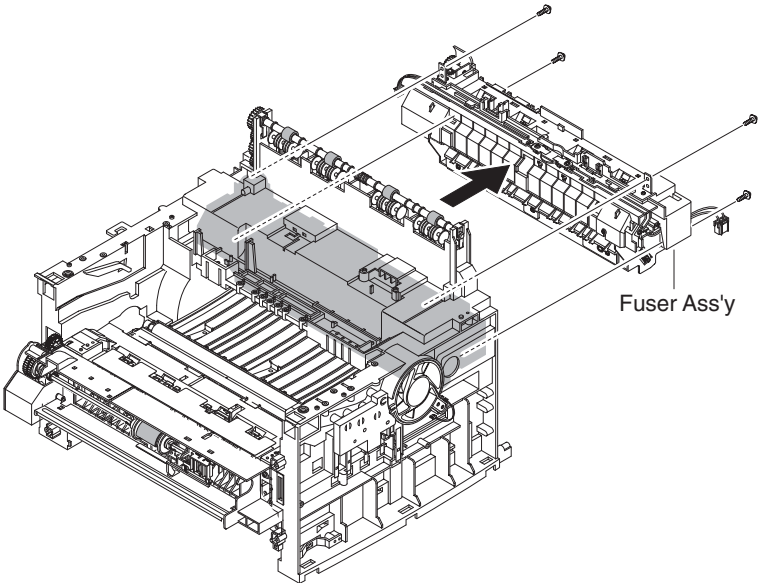


5.11 Fuser Assembly

Warning

*The fuser assembly is **HOT**. Let the fuser cool before removing.*

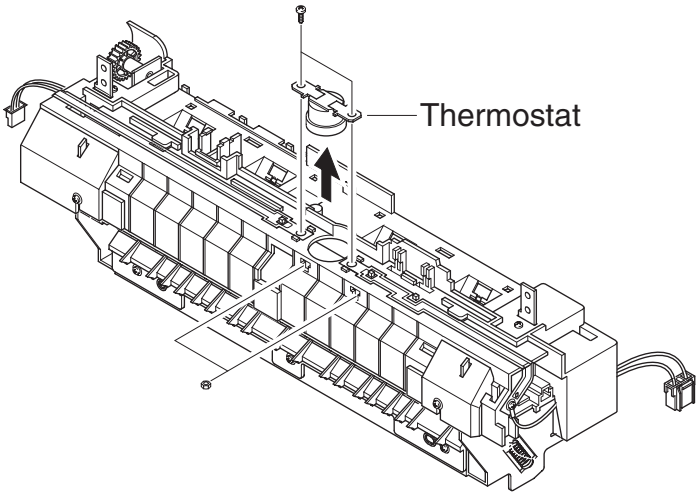
1. Remove the rear cover, see "5.4 Rear Cover" on page 5-5.
2. Unplug 2 connectors, one from the main board and one from the SMPS.
3. Remove 4 screws securing the fuser assembly.



Caution

When removing the thermostat, the 2 screws are secured by nuts that are not captured. These can fall out and get lost if you tip the fuser assembly.

4. Remove the 2 screws securing the thermostat and lift the thermostat out.



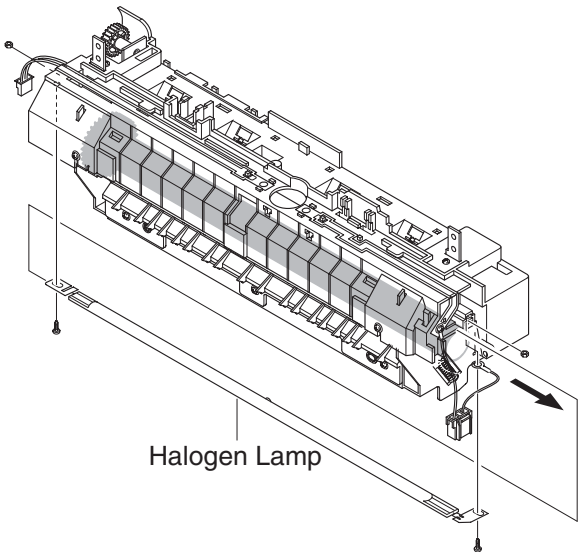
Caution

There are 2 securing nuts the screws go through that are not captured. These can fall out and get lost when tipping the fuser assembly.

Caution

*Hold the Halogen lamp by the end terminals. **DO NOT TOUCH** the lamp itself, this will damage it and cause the fuser to malfunction.*

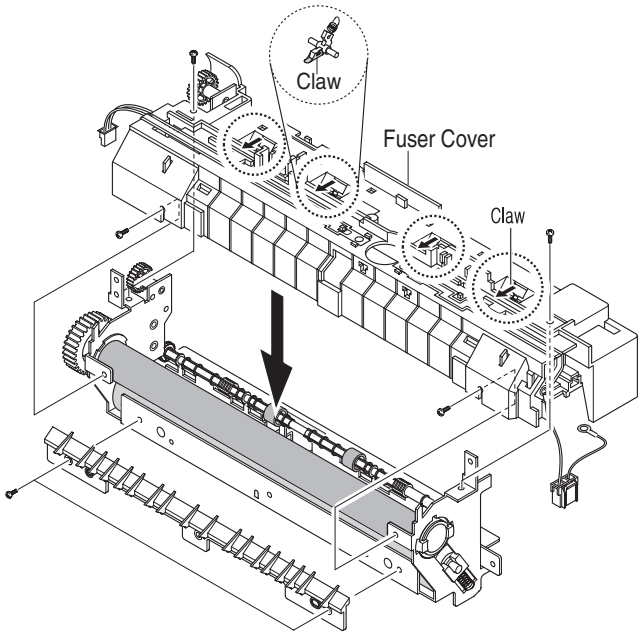
5. Remove the 2 screws securing the Halogen lamp. Then remove the lamp from the heat roller as shown below.



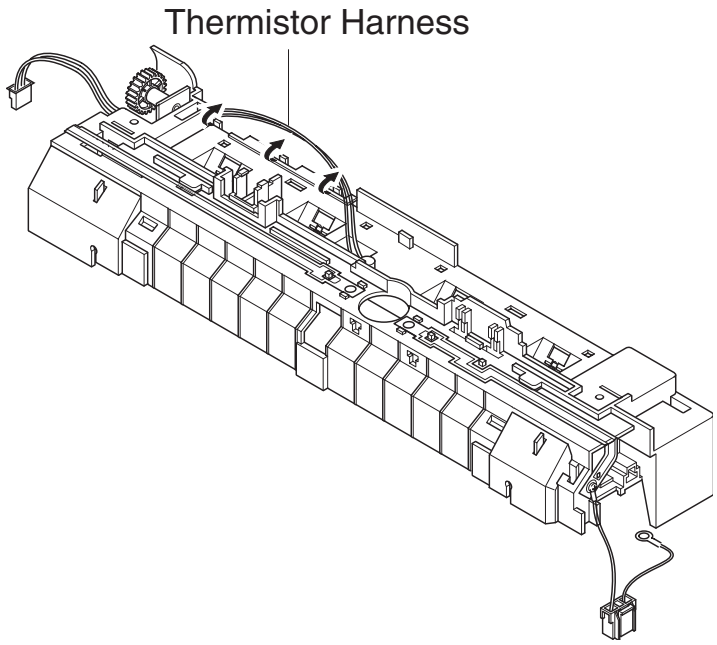
Caution

When disassembling the fuser, note the orientation of the spring loaded stripper fingers (claws). If reassembled improperly the claws will damage the heat roller causing the fuser to malfunction.

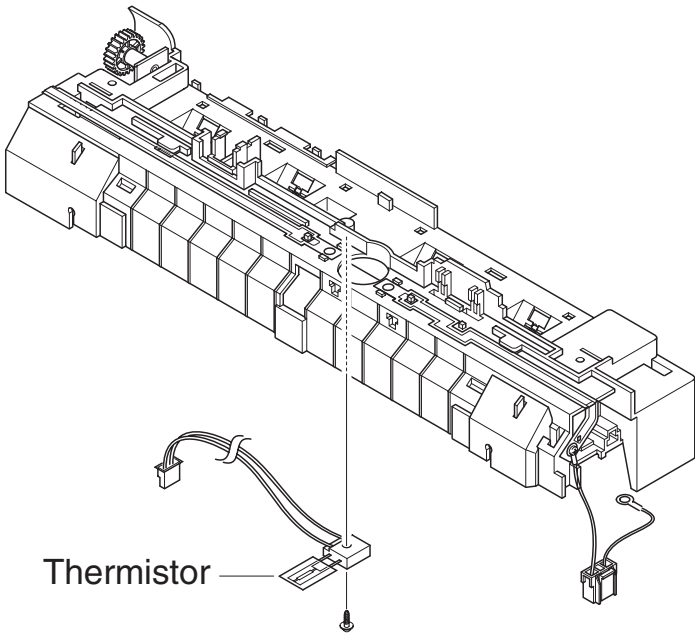
6. Remove the 4 screws securing the fuser cover and 2 screws securing the guide to disassemble the fuser.



7. Free the thermister harness as shown below.

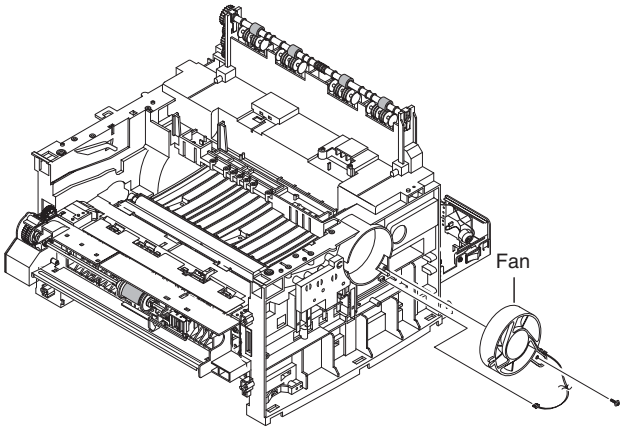


8. Remove 1 screw securing the thermister and remove from the fuser assembly.



5.12 Fan

1. Remove the front cover, see "5.2 Front Cover" on page 5-3.
2. Remove the rear cover, see "5.4 Rear Cover" on page 5-5.
3. Remove the top cover, see "5.5 Top Cover" on page 5-6.
4. Remove the right cover, see "5.7 Side Cover (Left and Right)" on page 5-8.
5. Disconnect the connector from the SMPS.
6. Remove 1 screw securing the fan.



5.13 Laser Scanner Unit (LSU)

1. Remove the front cover, see "5.2 Front Cover" on page 5-3.
2. Remove the rear cover, see "5.4 Rear Cover" on page 5-5.
3. Remove the top cover, see "5.5 Top Cover" on page 5-6.
4. Remove the left and right covers, see "5.7 Side Cover (Left and Right)" on page 5-8.
5. Remove 1 screw to the control panel board and remove the board.
6. Remove the 4 screws securing the LSU.

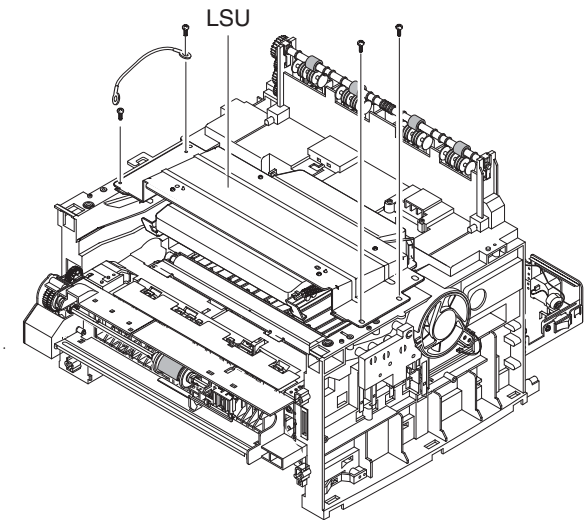
Caution

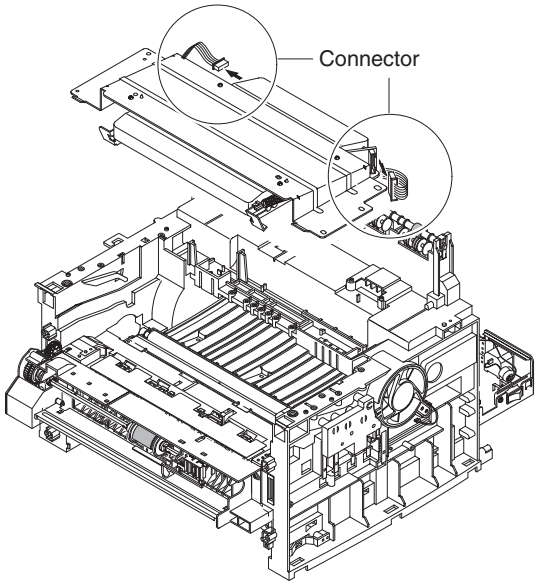
Be careful not to get fingerprints on the window of the laser unit (bottom of assembly).

Note

The laser unit securing screws are numbered and need to be tightened down in the correct order when reassembling.

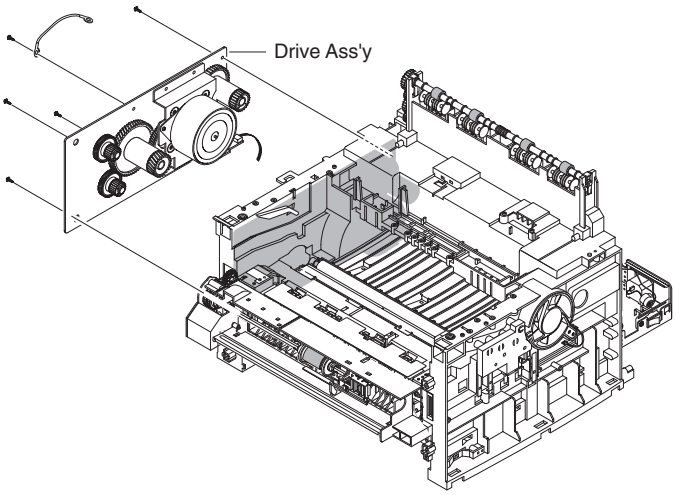
7. Disconnect the two connectors to the LSU, and remove the laser unit





5.14 Drive Assembly

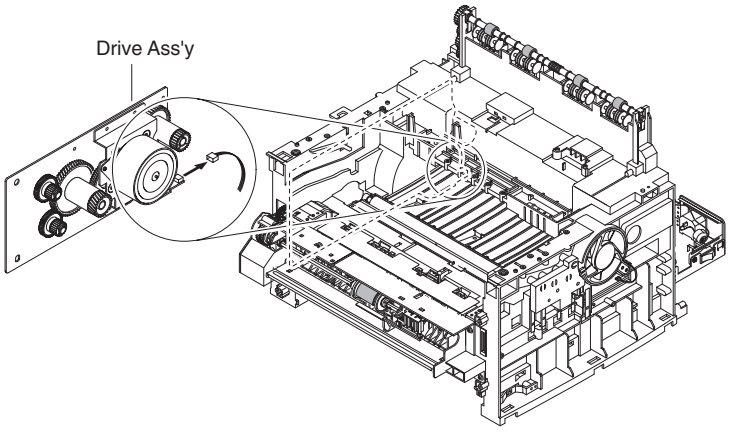
1. Remove the front cover, see "5.2 Front Cover" on page 5-3.
2. Remove the rear cover, see "5.4 Rear Cover" on page 5-5.
3. Remove the top cover, see "5.5 Top Cover" on page 5-6.
4. Remove the left and right covers, see "5.7 Side Cover (Left and Right)" on page 5-8.
5. Remove the 6 screws securing the drive assembly.



Note

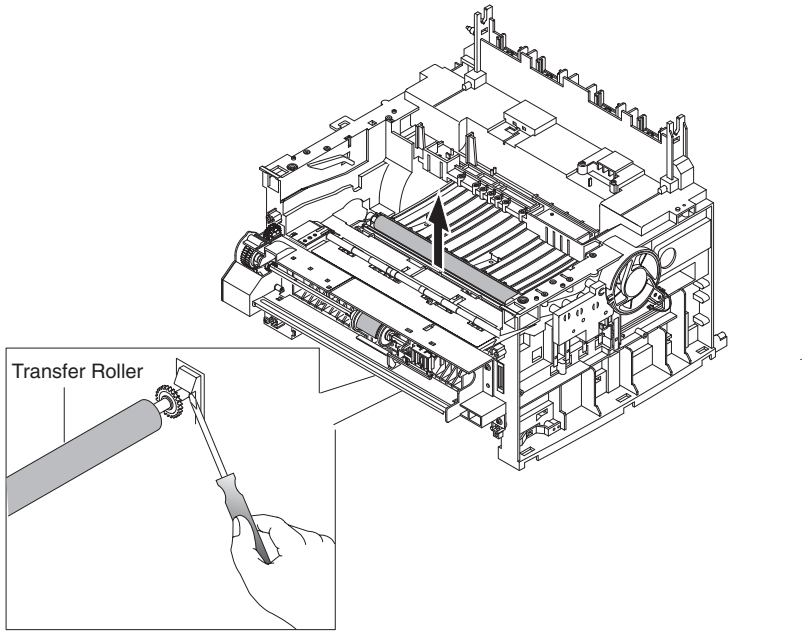
The drive assembly screws are numbered and need to be tightened down in the correct order when reassembling.

6. Disconnect 1 connector from the drive assembly to remove the drive.



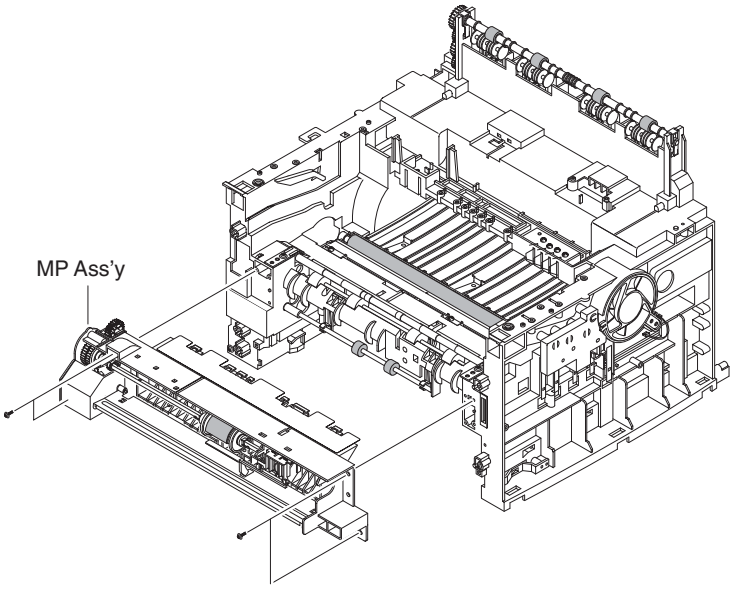
5.15 Transfer Assembly

1. Remove the front cover, see "5.2 Front Cover" on page 5-3.
2. Remove the toner cartridge.
3. Remove the rear cover, see "5.4 Rear Cover" on page 5-5.
4. Remove the middle cover, see "5.6 Middle Cover" on page 5-7.
5. Remove the top cover, see "5.5 Top Cover" on page 5-6.
6. Remove the left and right covers, see "5.7 Side Cover (Left and Right)" on page 5-8.
7. Remove the LSU, see "5.13 Laser Scanner Unit (LSU)" on page 5-19.
8. Using a screwdriver, unlatch the transfer roller as shown below.
9. Pull the transfer roller up and to the right in order to remove it from the printer.



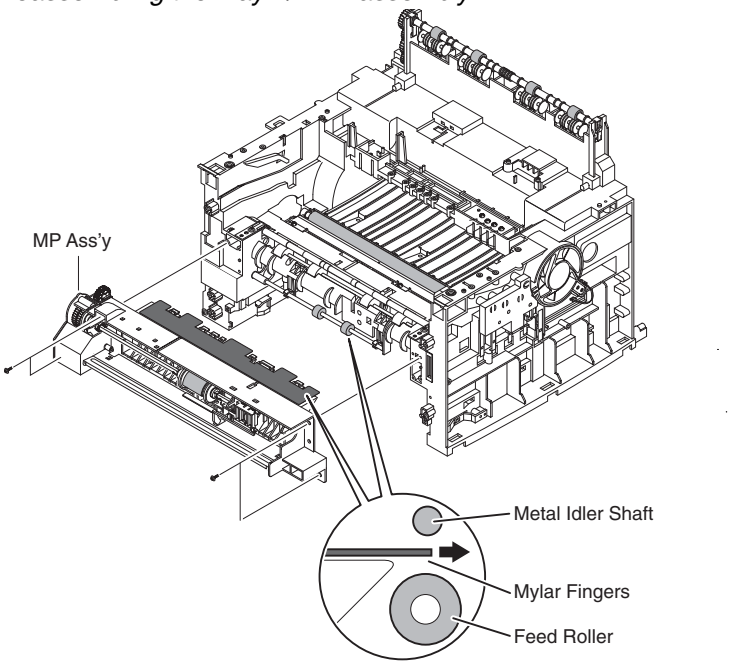
5.16.1 Tray 1/MPT Assembly

1. Remove the front cover, see "5.2 Front Cover" on page 5-3.
2. Remove the rear cover, see "5.4 Rear Cover" on page 5-5.
3. Remove the middle cover, see "5.6 Middle Cover" on page 5-7.
4. Remove the top cover, see "5.5 Top Cover" on page 5-6.
5. Remove the left and right covers, see "5.7 Side Cover (Left and Right)" on page 5-8.
6. Disconnect the MP solenoid and MP sensor connectors from the main board.
7. Remove the 4 screws from the front of the assembly and remove.



Caution

There is a flexible, mylar paper guide that needs to rest between the metal idler shaft and the feed rollers when reassembling the Tray 1/MPT assembly.

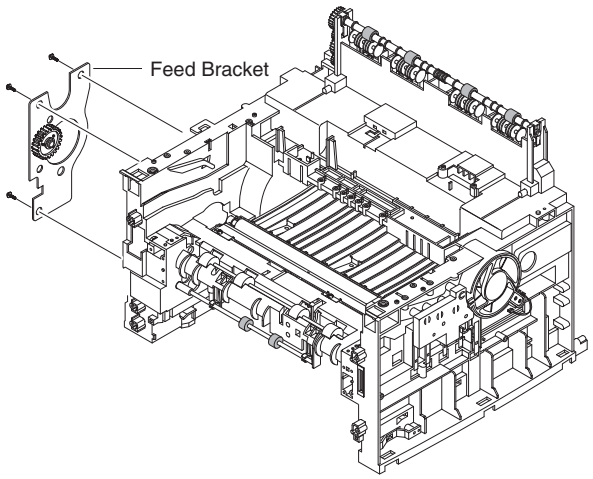


5.16.2 Feed Roller

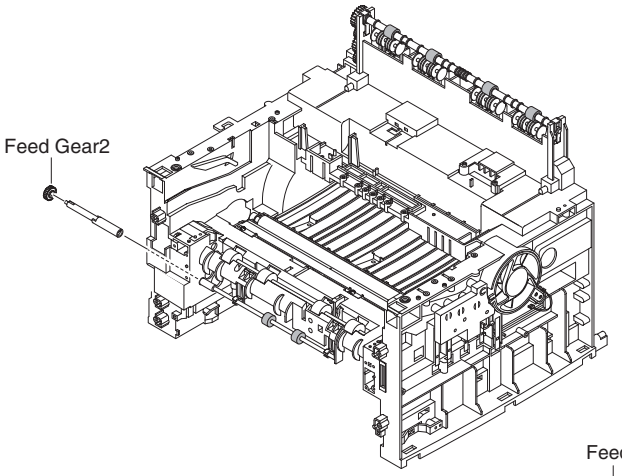
1. Remove the drive assembly, see "5.14 Drive Assembly" on page 5-20.
2. Remove the Tray 1/MPT assembly, see "5.16.1 Tray 1/MPT Assembly" on page 5-22.
3. Remove the 3 screws (gold) from the feed bracket.

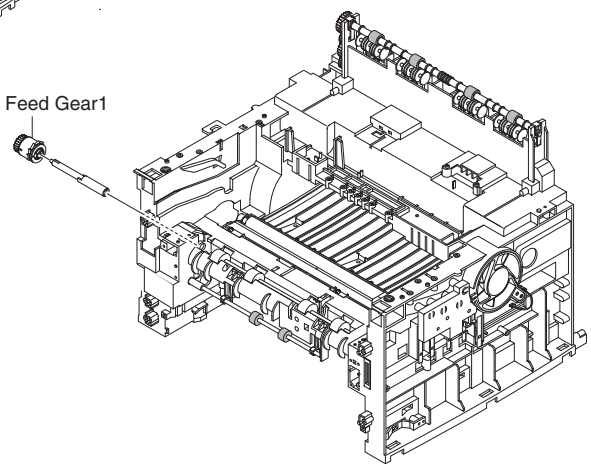
Note

The feed bracket screws are numbered and need to be tightened down in the correct order when reassembling.

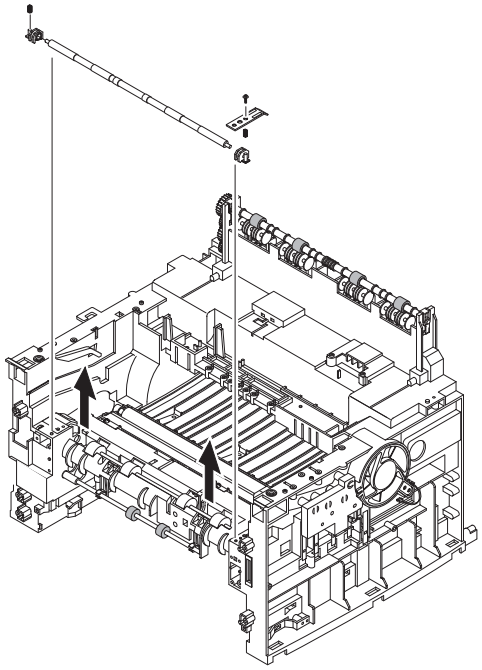


4. Remove the feed gear 2 (lower) and then feed gear 1 (upper) as shown below.

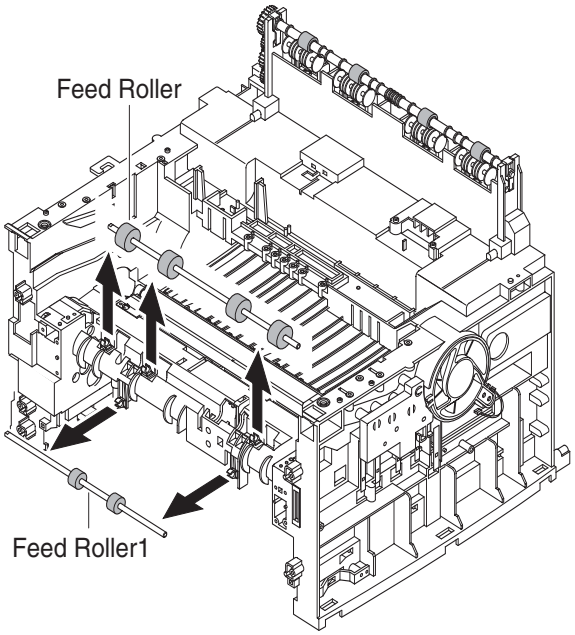




5. Remove the screw from the right idler bushing plate.
6. Remove the plate, idler spring and bushing.
7. Slide the feed shaft idler to the right and out of the printer.



8. Remove the feed roller and feed roller 1 as shown below.

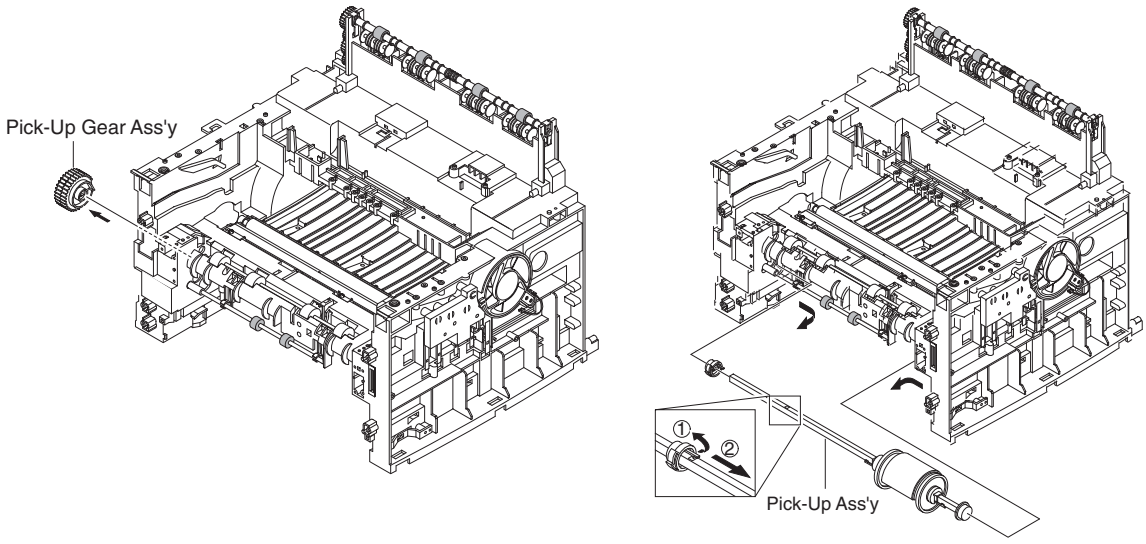


5.17 Pick-Up Assembly, Solenoids, and Pick Roller

1. Remove the front cover, see "5.2 Front Cover" on page 5-3.
2. Remove the rear cover, see "5.4 Rear Cover" on page 5-5.
3. Remove the middle cover, see "5.6 Middle Cover" on page 5-7.
4. Remove the top cover, see "5.5 Top Cover" on page 5-6.
5. Remove the left and right covers, see "5.7 Side Cover (Left and Right)" on page 5-8.
6. Remove the engine shield assembly, see "5.9 Engine Shield Assembly and Exit Board" on page 5-10.
7. Remove the drive assembly, see "5.14 Drive Assembly" on page 5-20.
8. Remove the feed bracket, see "5.16.2 Feed Roller" on page 5-23
9. Remove the pick-up gear, and then the pick-up assembly as shown below.

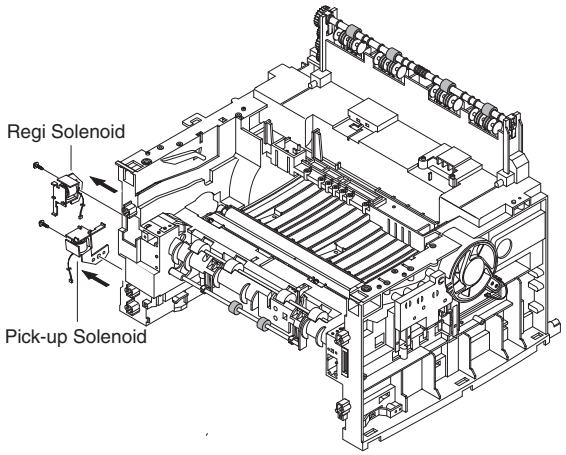
Note

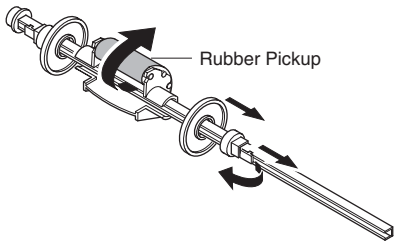
Note the orientation of the gear for reassembly.



10. Disconnect the main clutch and registration clutch harness's from the main board.
11. Remove the 2 screws securing the solenoids (2).
12. Unroute the harness's through the printer frame to remove the solenoids.

13. Remove the pick roller as shown below on the right.





6 Alignment and Adjustments

This chapter describes some of the main service procedures including:

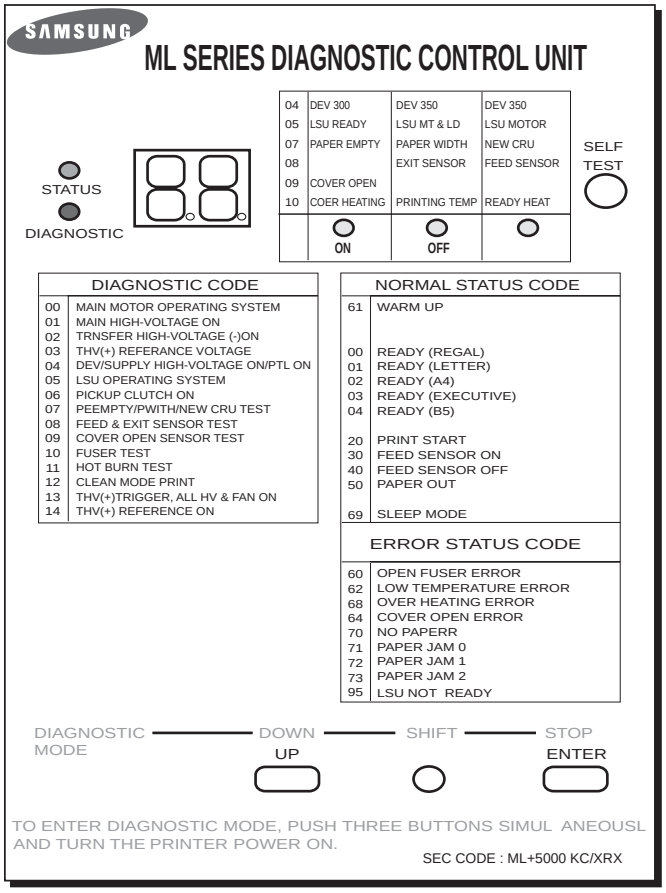
- Using the DCU for diagnostics
- Clearing paper jam and test patterns

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

6.1 How to Use the Diagnostic Control Unit (DCU)

6.1.1 DCU Setup

You can use the DCU test unit as an aid to diagnosing printer problems. To connect the DCU to the printer, open the rear access cover and then connect the DCU harness wire (10 pin/4 pin) to CN2 on the main controller board.



6.1.2 Status Monitoring Code

The DCU can be used in 2 modes: Status Monitoring and Self Diagnostic.

To use the DCU in Status monitoring mode, connect the DCU and turn printer power ON. The 7 segment LED display will show various codes that show the progress of the printer operation.

Normal Code Table

When the printer is warming up, or during a print job, the display indicates the papers postion in the printer.

Code	State	Description
78	System initialization	The main processor is starting up.
61	Warming up	The printer is ON, the cover is open or closed.
00 - 05	Ready (code dependent on paper size)	The printer is Ready. The paper is detected when the first page is printed. **00**: Legal, **01**: Letter, **02**: A4, **03**: EXEC, **04**: B5, **05**: Other
20	Print start	The engine controller received the print order from the video controller. **20**: Tray 2, **21**: Tray 1/MPT, **22**: Optional Tray 3
30	Feed sensor ON	The paper is passing out of the feed sensor.
40	Feed sensor OFF	The paper has passed out of the feed sensor.
50	Paper out	The paper has passed out of the exit sensor.
69	Sleep Mode	The fuser power is turned OFF to minimize power consuption.

Error Codes

If a problem is detected during the print process, printing is stopped and an error code is displayed.

Code	State	Description
60, 62, 68	Fuser Error	An error has occured in the fuser, see section "4.3.5.10 Fusing" on page 4-11. **60**: Open fuser error, **62**: Low heat error, **68**: Overheat error
64	Cover open	The printer cover is open.
65	CRU Error	The toner cartridge is not installed.
70	No paper	There is no paper loaded in the tray.
71	Paper Jam0	Paper is jammed between the pick rollers and the feed sensor.
72	Paper Jam1	Paper is jammed between the exit sensor and feed sensor.
73	Paper Jam2	Paper is jammed just after passing through the exit sensor.
95	Laser Unit no ready	The LSU motor is not ready or the Hsync signal was not output.

6.1.3 Self Diagnostic Mode

If an error appears, use the Self Diagnostic mode for fault finding as many safety features are disabled.

To Enter Self Diagnostic Mode:

a. Connect the DCU.
b. Turn the printer ON while holding down the **[Down]**, **[Shift]** and **[Stop]** at the same time.
c. Code **78** will now appear on the display, continue to hold the buttons for approximately 3 seconds until **00** appears on the display, and then release the buttons.

Running Tests from the DCU:

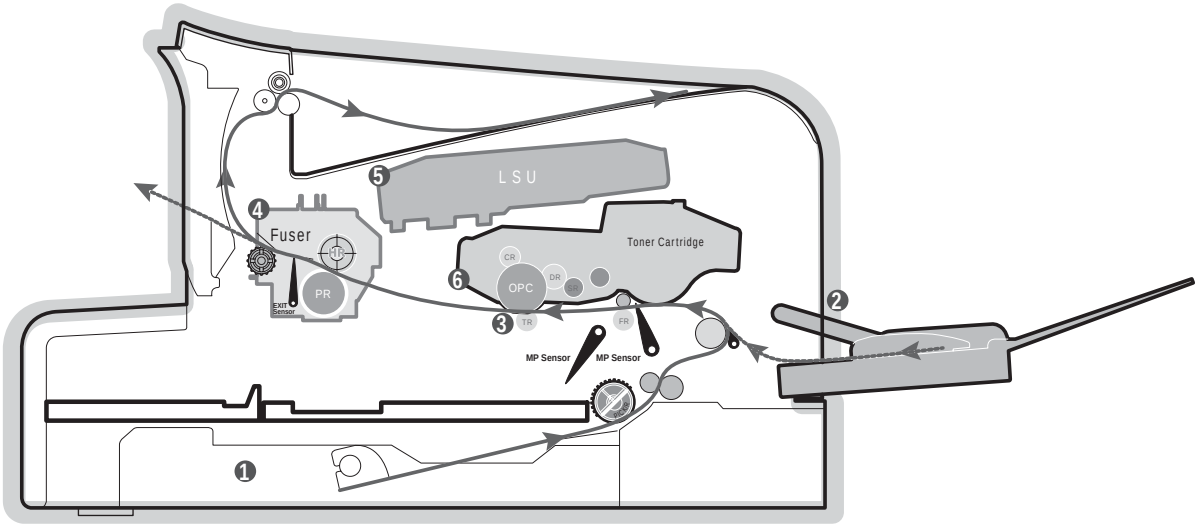
- Use the **[Up]** or **[Shift][Up]** buttons to select the required test.
- To start the test, press the **[Enter]** button.
- To stop the test, press the **[Shift]** and **[Enter]** buttons together.

Code	Description
00	Main motor operating system The main motor is tested.
01	Main high voltage ON (MHV-) -1550 voltage output to MHV terminal **Note** *High voltage probe should not be used.*
02	Transfer high voltage (-) on (THV-) -1200 voltage output to THV terminal **Note** *High voltage probe should not be used.*
03	Transfer high voltage (+) on (THV-) +1300 voltage output to THV terminal **Note** *High voltage probe should not be used.*
04	DEV/Supply high voltage -430 voltage output to DEV terminal **Note** *High voltage probe should not be used.*
05	Laser operating system The laser scanning motor is started and the ON LED is lit. When the laser motor is ready the 3rd LED is lit.
06	Pickup clutch ON Tests the Tray 2 solenoid.
07	Paper empty sensor test The ON LED indicates the status of Tray 2's paper empty sensor.

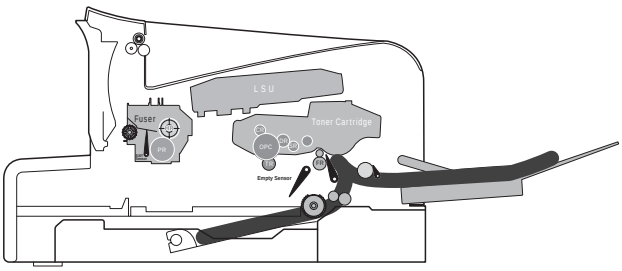
08	Feed and exit sensor test The OFF LED indicates the status of the exit sensor. The 3rd LED indicates the status of the feed sensor. **Note**: The feed sensor also detects the presensce of the toner cartridge.
09	Cover open sensor test The ON LED indicates the status of the cover open sensor.
10	Fuser test When **[Enter]** is pressed, the heat lamp is turned ON. The ON and OFF LEDs indicate the lamp status.
11	Hot burn test When the **[Enter]** button is pressed, the printer continuously prints without detection. Turn the power OFF to stop this test.
12	Cleaning mode print This causes the cleaning cycle to be repeated continously. Turn the power OFF to stop this test.
13	THV(+) Trigger All HV High voltage is output to each high voltage terminal. The laser unit and fan are started. In this mode the electronic resistance of the transfer roller is detected and the THV is checked.
14	PTL Test Tests the pre-transfer lamp. The ON and OFF LEDs indicate the lamp status.
15	Fan test Tests the fan. The ON and OFF LEDs indicate the fan status.
16	Regi clutch test Tests the registration clutch. The ON and OFF LEDs indicate the clutch status.
17	Regi sensor test Tests the registration sensor. The ON and OFF LEDs indicate the sensor status.
18	MP pickup test Tests the Tray 1/MPT pick clutch. The ON and OFF LEDs indicate the clutch status.
19	MP sensor test Tests the Tray 1/MPT sensor. The ON and OFF LEDs indicate the sensor status.

Code	Function	Enter	LED	Stop	Remark
00	Motor	Motor Run		Motor Stop	
01	MHV	Mhv On		Mhv off	-1550 V
02	THV(-)	Thv Negative On		Thv Negative Off	
03	THV(+)	Thv On		Thv Off	+1300 V
04	DEV	Dev On		Dev Off	+430 V
05	LSU	LSU Run	● ● ● On Off Ready	LSU Stop	
06	PICK UP	Pick Up On		Pick Up Off	
07	P EMPTY		● ● ● Paper Empty		
08	SENSOR		● ● ● Exit Feed		
09	COVER		● ● ● Cover Open		
10	Fuser	Fuser On		Fuser Off	160 C
11	HotBurn	HotBurn On			
12	Clean Print	Clean Printing			
13	Thv Reference		● ● ● Low Adequate High		
14	PTL	PTL On		PTL Off	
15	Fan	Fan On		Fan Off	
16	Regi Clutch	Regi Clutch		Regi Clutch Off	
17	Regi Sensor		● ● ● Manual Sensor		
18	MP Pickup	MP Pickup On		MP Pickup Off	
19	MP Sensor		● ● ● MP Empty		

6.2 Paper Path



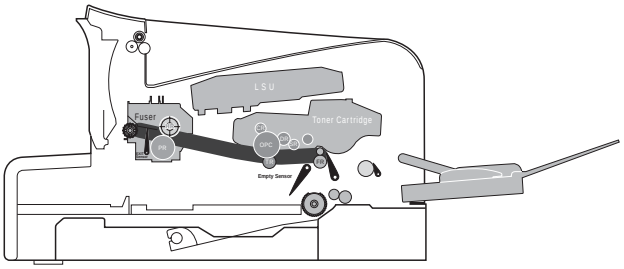
1. Cassette
2. Manual Feeder
3. Transfer Roller
4. Fuser
5. LSU(Laser Scan Unit)
6. Toner Cartridge



After receiving the print command, the printer feeds paper from Tray 1, 2, or optional Tray 3.

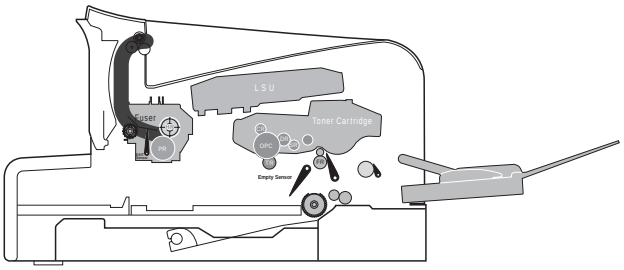
Jam0:

If the paper does not pass the feed senosr in the specified amount of time a Jam0 occurs. See the first illustration to the left.



Jam1

A Jam 1 will occur if after passing the feed sensor, the paper does not reach the exit sensor in the specified amount of time. See the second illustration to the left.



Jam2

A Jam 2 occurs if the paper does not leave the exit sensor in the specified amount of time while exiting the printer. See the third illustration to the left.

6.3 Clearing Paper Jams

The leading causes of paper jams are:

- The tray is loaded improperly or overfilled.
- The tray has been pulled out during a print job.
- The front cover has been opened during a print job.
- Paper that does not meet specifications has been used.
- Paper that is outside of the supported size range has been used.

If a paper jam occurs, the On Line/Error LED on the control panel lights red. Find and remove any jammed paper in the printer. If there is no paper visible, look inside the printer.

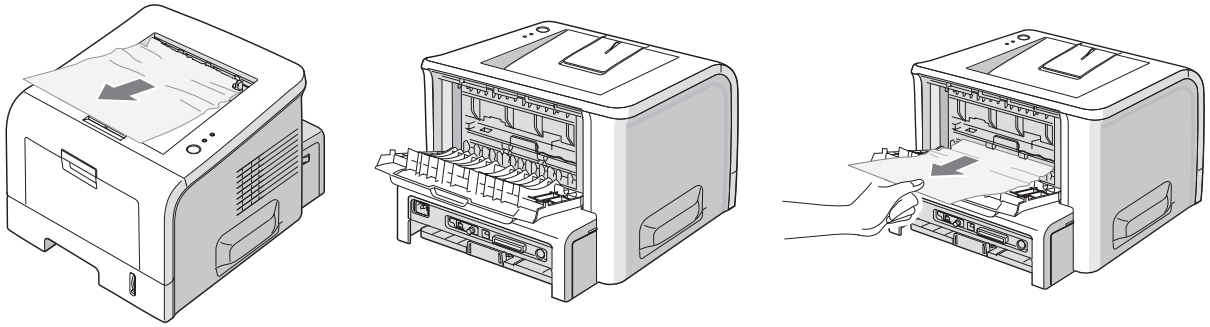
Caution

Do not use tweezers or other sharp metal tools when removing a paper jam. You can damage the toner cartridge, fuser rollers, or potentially damage wiring leading to the potential for electric shock.

Note

If the paper tears while removing a jam, ensure that ALL fragments of paper are removed from within the printer, otherwise jamming will still occur.

6.3.1 Jam2: Paper in the Exit Area



Warning

Paper jammed in this area is very close to the fuser and burns can occur.

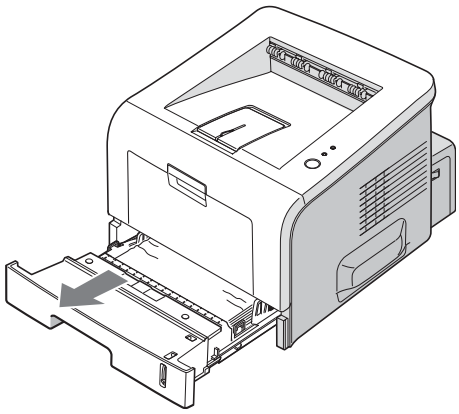
1. If the paper jams as it exits to the output tray and a long portion of the paper is visible, pull the paper straight out. When pulling the jammed paper, if there is any resistance and the paper does not move immediately, stop pulling and continue with the next step.
2. Open the rear output tray.
3. Loosen the paper if it is caught in the feed rollers, then pull the paper gently out.

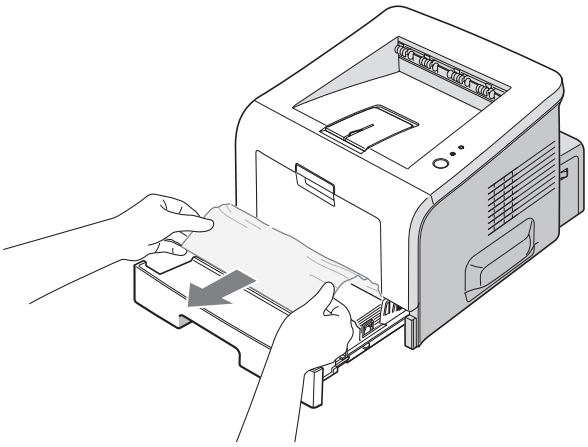
Warning

Be careful when you open the rear cover as the inside of the printer is still hot.

4. Close the rear output tray. Open and close the front cover. Printing can now resume.

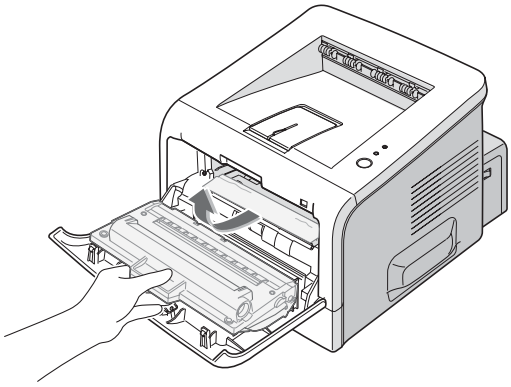
6.3.2 Jam0: Paper in the Feed Area

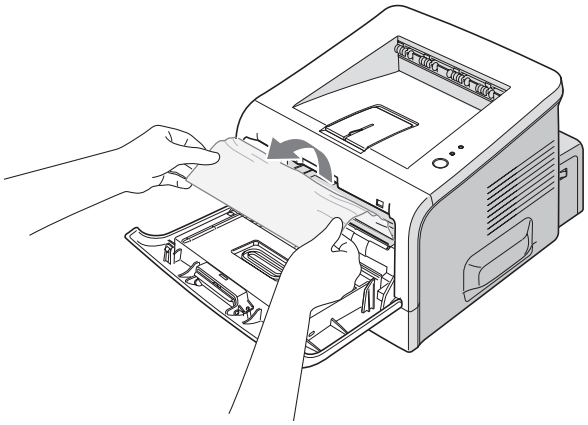




1. Slide out the tray to expose the jammed paper.
2. Remove any jammed paper by pulling the visible edge away from the tray.
3. Make sure that all of the paper is properly aligned in the tray.
4. Slide the tray back into the printer. Open and close the front cover. Printing can now be resumed.

6.3.3 Jam1: Paper Around the Toner Cartridge





1. Open the front cover and remove the toner cartridge.
2. Gently pull the paper toward you. Check that there is no other paper left in the printer.
3. Reinstall the toner cartridge, and then close the cover. Printing can now be resumed.

6.3.4 Tips for Avoiding Paper Jams

By selecting the correct paper types, most paper jams can be avoided. To help prevent paper jams always perform the following:

- Ensure that the adjustable guides are positioned correctly against the paper.
- Do not overload the tray. Ensure that the paper is below the paper capacity mark located on the inside right of the tray.
- Do not remove the paper or paper tray from the printer while printing.
- Flex, fan, and straighten the paper before loading.
- Do not use creased, damp or highly curled paper.
- Do not mix paper types in the input tray.
- Use only recommended print media.
- Ensure that the recommended print side is correctly oriented when loading paper into the tray(s).

6.4 Sample Patterns

This product has the several sample patterns to aid in verifying the existence of abnormalities within the printer. The patterns help to regularly maintain the product. The following patterns are available:

- Demo Page
- Configuration Page
- Cleaning Sheet

6.4.1 Printing a Demo or Configuration Page

Print a Demo Page or a Configuration Sheet to make sure that the printer is operating correctly. The Demo Page or Configuration Page shows the printer's current configuration.

1. Hold down the **Cancel** button for about 2 seconds to print a Demo Page.
2. Hold down the **Cancel** button for about 6 seconds to print the printer Configuration Page.

6.4.2 Printing a Cleaning Sheet

If you are experiencing blurred, faded, or smeared prints, printing a cleaning sheet cleans the drum inside the toner cartridge. This process will produce a page with toner debris, which should be discarded.

1. Ensure the printer is turned ON and in Ready mode with paper loaded in the tray.
2. Press and hold down the **Cancel** button on the control panel for about 10 seconds.
3. The printer automatically picks a sheet of paper from the tray and prints out a cleaning sheet with dust or toner particles on it.

Note

The cleaning process takes some time. To stop printing, turn the power OFF.

6.5 Consumables and Replacement Parts

The life cycle outlined below is a general guideline for maintenance purposes and is for reference only. Environmental conditions (temperature, humidity, dust, etc.) and actual use can cause these figures to vary.

Component	Replacement Cycle
Transfer Roller	60,000 pages
Fuser	80,000 pages
Toner Cartridges	3,500 Standard / 5,000 High-Capacity pages

6.6 The LED Display Status for Each Error

Error	LED Status	DCU Code
Open Fuser Error	The **[Error]** LED (red) and the **[Toner Save]** LED are simultaneously flashing at 1 second intervals.	60
Over Heat Error	The **[Error]** LED (orange) and the **[Toner Save]** LED are simultaneously flashing at 1 second intervals.	68
Low Heat Error	The **[Error]** LED (red) and the **[Toner Save]** LED are simultaneously flashing at 4 second intervals.	62
Laser not Ready Error (Motor Error)	The **[Error]** LED (green) and the **[Toner Save]** LED are simultaneously at 1 second intervals.	95
Laser Not Ready Error 6 (HSYNC Error)	The printer has stopped and the **[Error]** LED (green) and the **[Toner Save]** LED are simultaneously flashing at 4 second intervals.	96
Toner Cartridge Crum	If the On Line/Error **[Error]** LED is blinking (red) and (orange) alternately, the printer has detected a non-Xerox toner cartridge.	
Toner Cartridge Empty	The printer has stopped and the **[Error]** LED is blinking (orange).	

6.7 Periodic Defective Image (Repeating Defects)

If a mark or other printing defect occurs at regular intervals down the printed page it may be caused by a damaged or contaminated roller. Measure the repeating defect and refer to the table below to identify the problem component.

No	Roller	Defective image	Typical defect
1	OPC Drum	75.5 mm	white spot on black image or black spot
2	Charge Roller	37.7 mm	black spot
3	Supply Roller	44.9 mm	light or dark horizontal image band
4	Developing Roller	35.3 mm	horizontal image band
5	Transfer Roller	47.1 mm	image ghost
6	Heat Roller	78 mm	black spot and image ghost
7	Pressure Roller	75.5 mm	black spot on the backside

7 Troubleshooting

7.1 Print Quality Problems

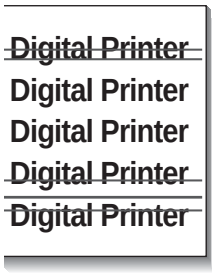
7.1.1 Vertical Black Line and Band

Example	Possible Cause	Sequence of Repair Actions
There are straight, black, vertical lines or banding on the printed image.		
	1. Damaged developer roller, deformed doctor blade, or cleaning blade within the toner cartridge.Scratched surface on the charge roller within the toner cartridge. 2. Depression or deformation on the surface of the transfer roller. 3. Contaminated Fuser.	a. Print a cleaning sheet. b. Replace the toner cartridge and re-test. c. Replace the transfer roller and re-test. d. Replace the fuser.

7.1.2 Vertical White Lines

Example	Possible Cause	Sequence of Repair Actions
There are white, vertical voids in the printed image.		
	1. Contamination on the window or internal lens of the laser mirror. 2. Foreign object inside the toner cartridge. 3. Low toner. 4. If the fuser is defective, voids occur periodically at the top of a black image. 5. Contamination on the OPC drum. 6. Depression or deformation on the surface of the transfer roller.	a. Clean the laser window with a recommended cleaner (IPA) and a clean cotton swab. b. If dirt is inside the laser unit, replace it. c. Replace the toner cartridge. d. Open the front cover and check/remove any contamination inside the printer that corresponds to the position of the voids. e. If the problem is not solved, replace the toner cartridge. f. Replace the transfer roller.

7.1.3 Horizontal Black Band

Example	Possible Cause	Sequence of Repair Actions
Dark or blurry horizontal stripes periodically appear on the printed image.		
	1. Bad contacts on the toner cartridge high voltage terminals. 2. The rollers in the toner cartridge may be contaminated. ■ Charge roller = 37.7 mm ■ Supply roller = 44.9 mm ■ Develop roller = 35.3 mm ■ Transfer roller = 47.1 mm	a. Clean all HV contacts on the cartridge and primter frame. b. Ensure all toner or paper dust particles are removed. c. Clean the Gear that has a relatively small tooth gap on the OPC drum. d. If the problem persists replace the toner cartridge.

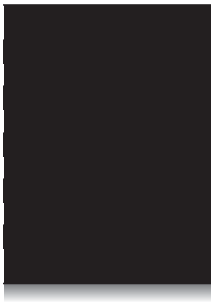
7.1.4 Black/White Spot

Example	Possible Cause	Sequence of Repair Actions
Dark or blurry spots are randomly spread on the page, or white spots are randomly on the page.		
	1. If dark or blurry black spots appear, the rollers in the developer may be contaminated. ■ Charge roller: 37.7 mm ■ OPC drum: 75.5 mm 2. If faded areas or voids appear every 75.5 mm or if black spots occur elsewhere, the OPC drum surface is damaged. 3. If a black image is partially broken, the transfer voltage is incorrect or the transfer roller is at its end of life. 4. If the spots appear at 78 mm, the fuser heat roller is contaminated.	a. Print several OPC cleaning mode prints and then run the self-test 2 or 3 times. b. 75.5 mm repeating defect: Examine the surface of the OPC drum and clean with a soft, lint free cloth. c. 37.7 mm repeating defect: Replace the toner cartridge. d. If the transfer roller is at its end of life, replace the transfer roller. e. 78 mm defect: Replace the fuser. **NOTE:** Cleaning the inside of the printer to remove excess toner or paper dust will reduce the occurrence of this problem.

7.1.5 Light Image

Example	Possible Cause	Sequence of Repair Actions
The printed image is too light, with no ghosting.		
	1. Toner Save mode is enabled. 2. The developer roller is contaminated or the toner cartridge is almost empty. 3. The ambient temperature is below 10^{o} C. 4. Bad contact caused by dirty terminals on the toner cartridge or inside the printer. 5. Abnormal output voltage from the HVPS.	a. Turn Toner Save mode off. b. Replace the toner cartridge and re-test. c. Cycle power to the printer and wait 30 minutes then try printing again. d. Clean the cartridge and printer contacts. e. Clean the inside of the printer. f. Replace the HVPS if none of the above procedures fix the problem.

7.1.6 Dark Image or Completely Black Print

Example	Possible Cause	Sequence of Repair Actions
The printed image is dark or the page is entirely black.		
	1. Charge voltage fault due to bad contact between the toner cartridge and printer contacts. 2. No charge voltage in the engine board. 3. VD0 signal on the main board is in a LOW state.	a. Clean the high voltage contact terminals. b. Check the state of the connector between the main board and the HVPS. c. Replace the HVPS. d. Replace the laser unit. e. Replace the main board.

7.1.7 Uneven Density

Example	Possible Cause	Sequence of Repair Actions
Print density is uneven from left to right.		
	1. The toner level is not even on the toner cartridge roller due to a damaged blade or low toner. 2. The life of the toner cartridge has expired. 3. The pressure force on the left and right springs of the transfer roller are not even or the springs are damaged. 4. The transfer roller is improperly installed. 5. The transfer roller bearings or holders are damaged. 6. Laser window is dirty.	a. Remove the toner cartridge and gently shake it to loosen toner. b. Replace the toner cartridge and retest. c. Replace the left and right bushings and spring assemblies. d. Clean the laser window.

7.1.8 Background Contamination

Example	Possible Cause	Sequence of Repair Actions
Light or dark background contamination appears all over the paper.		
	1. Using unsupported media. 2. Printing large quantities of low coverage (2%) pages or not using the printer for a long period of time. 3. The toner cartridge life has expired. 4. The transfer rollers up/down movement is off. 5. There is a problem with the HVPS.	a. Use only approved media. b. The toner cartridge is designed to print 5,000 sheets at 5% coverage. If 2% is consistently used, background contamination can occur. c. Replace the toner cartridge. d. Clean the transfer roller bushings. e. Clean the high voltage terminals. f. Replace the HVPS.

7.1.9 Ghosting 1

Example	Possible Cause	Sequence of Repair Actions
There is ghosting at **75.5** mm intervals from the OPC drum while printing on card stock, transparencies or using the MPT.		
	**1.** When printing on card stock, thick paper or transparenices a higher transfer voltage is required.	**a.** Ensure supported media is being used and the correcy type is selected in the printer driver and software application.

7.1.10 Ghosting 2

Example	Possible Cause	Sequence of Repair Actions
Ghosting appears at **75.5** mm on the whole print.		
	**1.** Bad contacts caused by contamination from toner particles between the high voltage terminals, the printer, and the electrodes of the toner cartridge. **2.** Bad contacts caused by contamination from toner particles between the high voltage terminals the printer, and the one on the high voltage supply board. **3.** The toner life has expired. **4.** The transfer life has expired. **5.** The ambient temperature is too low. **6.** There is a damaged cleaning blade in the toner cartridge.	**a.** Clean all high voltage contacts. **b.** Replace the HVPS. **c.** Replace the toner cartridge. **d.** Replace the transfer roller. **e.** Replace the main board.

7.1.11 Ghosting 3

Example	Possible Cause	Sequence of Repair Actions
Ghosting occurs at **78 mm** intervals.		
	1. Fuser contamination or termperature control problem.	a. Replace the fuser.

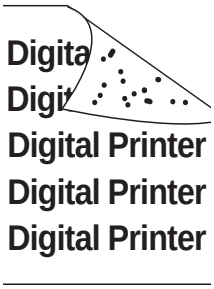
7.1.12 Ghosting 4

Example	Possible Cause	Sequence of Repair Actions
White ghosting occurs every **32 mm** on a black image.		
	1. The life of the toner cartridge may be expired. 2. Abnormal output from the HVPS.	a. Replace the toner cartridge. b. Check the HVPS supply voltage. c. Clean all high voltage terminals on the cartridge and in the printer. d. Replace the HVPS.

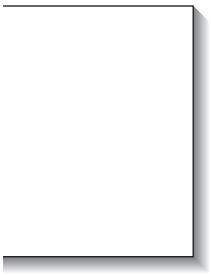
7.1.13 Stains on the Front of the Page

Example	Possible Cause	Sequence of Repair Actions
	1. Toner leakage due to an improperly sealed toner cartridge. 2. The charge roller may be contaminated.	a. Run the PC cleaning mode print 2 to 3 times and perform the self test 2 to 3 times to remove contamination. b. Replace the toner cartridge.

7.1.14 Stains on the Back of the Page

Example	Possible Cause	Sequence of Repair Actions
The back of the page is stained at 47 mm intervals.		
	1. Transfer roller is contaminated. 2. Pressure roller is contaminated.	a. Run the OPC cleaning mode print 2 to 3 times then run the self test to remove contamination from the transfer roller. b. Replace the transfer roller. c. Replace the fuser.

7.1.15 Blank Page is Printed 1

Example	Possible Cause	Sequence of Repair Actions
The printed page is blank.		
	1. Bad ground contacts in the OPC and/or toner cartridge.	a. Clean the ground terminals on the toner cartridge and inside the printer. b. Check the OPC ground or the OPC diode for defects or an open circuit (inside left side of printer).

7.1.16 Blank Page is Printed 2

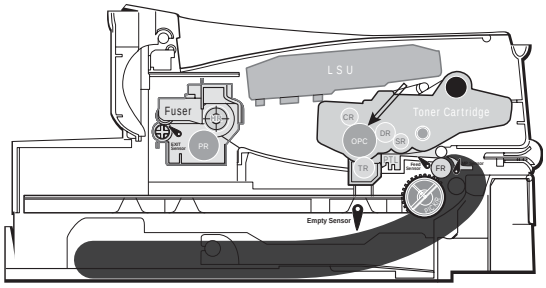
Example	Possible Cause	Sequence of Repair Actions
Blank page is printed, one or several blank pages are printed, or when the printer is first powered on several blank pages are printed.		
	1. Bad ground contacts in the OPC and/or toner cartridge. 2. Defective solenoid.	a. Delete all print jobs in the queue and cycle power to the printer and try printing again. b. Clean the ground terminals on the toner cartridge and inside the printer. c. Check the OPC ground or the OPC diode for defects or an open circuit (inside left side of printer). d. Run the engine self test using the DCU (refer to code 6) to check the solenoid. e. Replace the main board.

7.2 Paper Feed Problems

7.2.1 Wrong Print Position

Printing begins at the wrong position on the paper.	
Possible Cause	**Solution**
1. Defective feed sensor.	**a.** Replace the defective acutator/sensor.

7.2.2 Jam 0



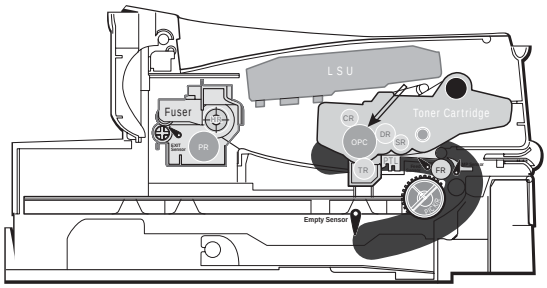
Description:

Paper does not leave the tray.

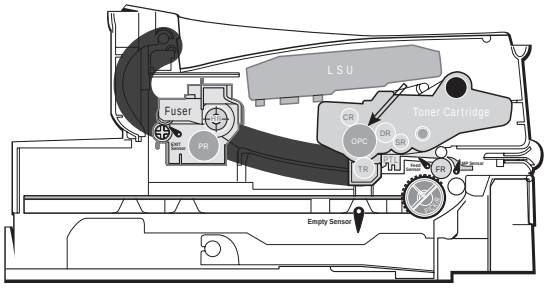
Jam0 occurs if the paper is not fed into the printer.

Possible Cause	**Solution**
1. Defective solenoid. **2.** Defective feed sensor. **3.** Problem with the MP lift plate and springs. **4.** Defective paper separator pad. **5.** Contaminated or defective pick roller.	**1.** Use diagnostics to test the solenoid. Replace the solenoid if defective. **2.** Test the feed sensor. Replace if defective. **3.** Replace the tray if defective. **4.** Clean the pick roller. Replace if defective. **5.** Ensure all rollers are free from debris and rotating freely. **6.** Check the SMPS, main board and all connections. Replace any defective parts.

7.2.3 Jam 1

	Description: There is a paper jam in front of or inside the fuser. There is a paper jam stuck in the discharge roller and in the fuser, just after passing the feed actuator.
Possible Cause	Solution
1. Defective exit sensor/actuator. 2. Defective feed actuator.	a. Replace the exit sensor, SMPS, or main board. b. Replace the feed actuator and spring if defective.

7.2.4 Jam 2

	Description: There is an accordian jam in front of or inside the fuser. There is an accordian jam stuck in the discharge roller and in the fuser, just after passing the feed actuator.
Possible Cause	**Solution**
1. If the paper has exited the printer and a Jam2 occurs the exit sensor is defective: ■ After paper passes the exit sensor, the flag should return to its normal position. The flag may stick or return too slowly due to contamination or foreign objects obstructing its path. 2. If there is an accordian paper jam in the fuser: ■ The guide claw is damaged. ■ The spring on the guide is damaged. ■ The heat roller or pressure roller is contaminated with toner.	a. Look for debris or contamination around the exit sensor and actuator. b. Check the exit sensor and actuator for damage. c. Replace if defective. d. Replace the fuser.

7.2.5 Multiple Pick

Description: Multiple sheets of paper are picked from the tray at the same time.	
Possible Cause	**Solution**
1. The paper guides are set incorrectly. 2. The paper has a rough surface. 3. The friction pad is damaged or contaminated. 4. The solenoid is not functioning properly.	a. Adjust the guides so they fit snuggly against the paper in the tray. b. Make sure the paper size selected in the print driver is the same as the paper in the tray. c. Use the appropriate supported paper type for this printer. d. Clean the friction pad or replace if damaged. e. Replace the solenoid.

7.2.6 Paper Rolled in the Fuser

Description: There is an accordian jam in the fuser.	
Possible Cause	**Solution**
1. The pressure roller or heat roller is damaged or not functioning properly. 2. The paper guides or springs are damaged.	a. Replace the fuser.

7.2.7 Paper Rolled in the OPC Drum

Description: Paper is caught or rolled up in the OPC.	
Possible Cause	**Solution**
1. The paper is too thin. 2. The paper is curled.	a. Use the appropriate supported paper type for this printer. b. Load a fresh ream of paper. **NOTE**: To remove paper rolled up in the OPC: ■ Remove the toner cartridge from the printer, take care not to touch the green surface. use the gerar on the side to rotate the OPC drum and pull the paper from the toner cartridge. ■ Clean any fingerprints on the OPC gently with a soft, lint free cloth, using caution not to scratch the surface.

7.3 Printer Faults

7.3.1 All LEDs Blinking (Fuser Error)

Description:

- All the lamps on the control panel blink.
- The fuser drive gear breaks or melts.
- When printing the motor skips or makes a noise due to a defective fuser drive gear.

Possible Cause	Sequence of Repair Actions
1. The thermostat, fuser power cable or heat lamp has an open circuit. 2. The thermistor is faulty. 3. The drive gear melted.	a. Use the DCU to test the fuser. b. Replace the fuser.

7.3.2 All LEDs Blinking (Scan Error)

Description: All LEDs are blinking on the control panel.

Possible Cause	Sequence of Repair Actions
1. The laser cable or connector is faulty. 2. The laser motor is faulty. 3. The HSYNC signal.	a. Replace the laser unit or cable. b. Replace the main board if the error persists after replacing the laser unit.

7.3.3 Fuser Gear Melted Due to Overheating, Causing a Paper Jam

Description: Constant jam where paper is entering the fuser unit or the fuser rollers are not turning.

Possible Cause	Sequence of Repair Actions
1. The heat lamp, thermistor, thermostat, or fuser rollers are damaged.	a. Use the DCU to check the fuser. Codes: 60, 62, 0r 68. b. Replace the fuser unit. c. Replace the main board.

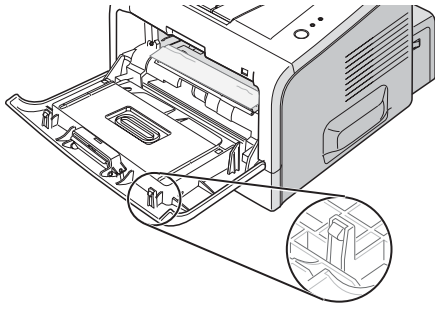
7.3.4 Paper Empty Error

Description: The paper empty LED is lit even when paper is loaded in the tray.	
Possible Cause	**Sequence of Repair Actions**
1. The paper empty sensor or actuator is damaged or faulty. 2. The main board is faulty. 3. Faulty cable or connector.	a. Use the DCU test 08. b. Replace the defective actuator or sensor. c. Replace the main board.

7.3.5 Paper Empty Error Without Indication

Description: The paper empty LED does not light when the paper tray is empty.	
Possible Cause	**Sequence of Repair Actions**
1. The paper empty sensor or actuator is damaged or faulty. 2. The main board is faulty. 3. Faulty cable or connector.	a. Use the DCU test 08. b. Replace the defective actuator or sensor. c. Check and replace the wiring to the control panel if faulty. d. Replace the main board.

7.3.6 Cover Open

	Description: The error LED is lit even though the cover is closed.
Possible Cause	**Sequence of Repair Actions**
1. The interlock may be stuck or faulty. 2. The interlock tab on the front cover may be damaged. 3. The sensor switch on the main board may be defective.	a. Use the DCU test 09 and check for error code 64. b. Replace the interlock if faulty. c. Replace the front cover. d. Replace the main board.

7.3.7 No Error Lamp When the Cover is Open

Description: The error LED is not lit when the front cover is open.	
Possible Cause	**Sequence of Repair Actions**
1. The interlock may be stuck or damaged. **2.** The control panel LED may be faulty. **3.** The sensor switch on the main board may be faulty.	**a.** Use the DCU test 09 and check for error code 64. **b.** Replace the interlock if faulty. **c.** Replace the front cover. **d.** Replace the cabling or control panel. **e.** Replace the main board.

7.3.8 Defective Motor Operation

Description: The main motor is faulty and paper does not feed into the printer, resulting in a Jam0.	
Possible Cause	**Sequence of Repair Actions**
1. The main motor harness or motor board may be faulty. **2.** The main board may be faulty. **3.** The SMPS may be faulty.	**a.** Use the DCU test 00 to test the main motor. **b.** Replace the motor or harness if faulty. **c.** Replace the main board. **d.** Replace the SMPS.

7.3.9 No Power

Description: When the printer is powered ON the LEDs on the control panel do not come on.	
Possible Cause	**Sequence of Repair Actions**
1. The SMPS or power input are faulty. **2.** Lamps don't come on, but other normal start-up sounds are heard. **3.** After replacing the SMPS, the lamps do not come on and no start up sounds are heard.	**a.** Replace the power supply cable. **b.** Check the power fuse on the SMPS, replace the SMPS if necessary. **c.** Check the control panel wiring. Replace the harness or control panel if faulty. **d.** Replace the main board.

7.3.10 Printed Vertical Lines Become Curved

Description: When printing the vertical lines are not straight.	
Possible Cause	**Sequence of Repair Actions**
1. The +24 V supply to the laser unit is faulty.	**a.** Use the DCU test 05 to test the laser motor. **b.** If the voltage is stable, replace the laser unit. **c.** If the voltage is not 24 volts, replace the SMPS. **d.** Replace the main board.

7.4 Toner Cartridge Servicing

Use only Xerox toner cartridges in the printer. Non-Xerox toner or Third Party toner refills are not guaranteed to work with this printer and can cause malfunctions, print-quality problems, and jamming to occur.

7.4.1 Precautions for Toner Cartridges

Excessive exposure to direct light for more than a few minutes can cause damage to the cartridge and degrade print quality.

7.4.2 Toner Cartridge Life

If the printed image is light due low toner life remaining, you can temporarily improve the print quality by redistributing the toner (shake the toner cartridge); however, you should replace the toner cartridge to solve the problem.

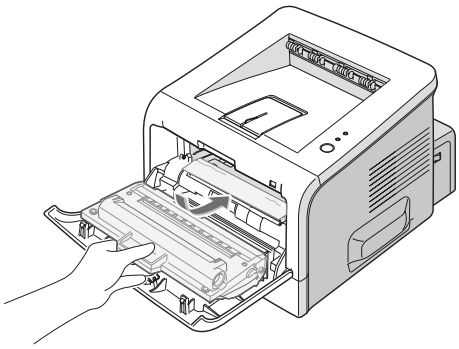
7.4.3 Redistributing Toner

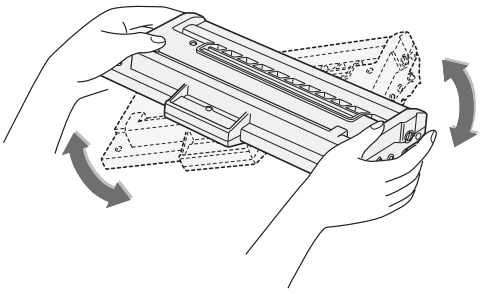
When toner is low, faded or light areas may appear on a printed page. You may be able to temporarily improve the print quality by redistributing the toner. The following procedures can allow you to finish the current print job before replacing the toner cartridge.

1. Grasp the front cover and pull it toward you to open.
2. Remove the toner cartridge from the printer.

Warning

Avoid reaching too far into the printer. The fuser area may be hot.





3. Gently shake the toner cartridge from side to side five or six times to redistribute the toner.
4. Reinsert the toner cartridge into the printer. Ensure that the toner cartridge snaps into place.
5. Close the front cover. Make sure that the cover is securely closed.

Note

If the toner gets on your clothing, wipe it off with a dry cloth and wash clothing in cold water. Hot water sets the toner in the fabric.

7.5 Software Problems

7.5.1 The Printer is Not Responding to the Print Command

The printer is on, but not operating in print mode.

1. Print a Demo Page:
   a. When the Ready LED lights, press and hold the **[Cancel]** button until the LEDs flash then release.
   b. If the test print works, there are no hardware problems within the printer and the user should check the application settings.
   c. If the test print did not print, use the DCU in diagnostic mode to continue troubleshooting.
2. Check that the computer and the printer are properly connected.
   a. Reconnect or replace the connection from printer to computer if faulty or damaged.
   b. If the connection is sound, continue troubleshooting.
3. The printer is not printing from Windows.
   a. If you use windows, check that the printer driver in the is set up correctly, the correct port is selected and **Use On-line** is selected in the driver.
   b. If the printer driver is properly set up, try printing a test page from the driver properties window.
   c. Verify which program is not printing.
   d. If no programs can print, try opening Notepad and printing from there.
   e. If the problem is within a single application, adjust the printing properties within that program.
   f. If changing the properties in the application print dialog box does not solve the problem, uninstall and reinstall a new driver.
   g. If the printer is not printing from all programs, and the user is printing using the parallel port, check the port settings. Ensure the following settings:
      - CMOS is on ECP
      - the address is IRQ 7
      - 378 (for parallel port 1).
   h. Try using USB instead.

7.5.2 The Printer is Not Responding to a Print Command or Strange Fonts are Printing

After receiving a print command, there is no reponse from the printer.

1. Ensure there is sufficient hard disk space for the termporary work files created during printing.
   a. The message “ insufficient printer memeory” means there is a hard disk space problem, rather than a printer RAM problem. Free up space on the hard disk. Use the disk utilities program to delete unnecessary files.
2. The error occurs even though there is plenty of hard disk space.
   a. The connection or communication between the printer port and computer is incorrect.
   b. Verify the cable is properly connected and configured for printing. Make sure the CMOS settings are correctly set. For the printer port:
   - Select ECP which supports 12-bit data transfer or SPP which supports 8-bit data transfer.

7.5.3 SPOOL Error

Simultaneous Peripheral Operations Online (SPOOL) is the process Windows uses to manage print jobs. Jobs are processed and then stored on the hard disk until the printer is ready to accept them.

1. Insufficient space on the hard disk in the directory assigned for the basic spool.
   a. Delete any unnecessary files to provide more space for spool storage.
2. If previous printing errors were not solved.
   a. There may be files from previous failed print jobs on the hard disk with the name in the form '*.jnl'. Delete these files and reboot Windows to restart the printer.
3. There may be a conflict with other drivers or programs.
   a. Shut down all other programs except the current one, if possible.
4. When an application program or the printer driver is damaged.
   a. Delete the printer driver completely and reinstall it.
5. When some files related to the OS are damaged or virus infected.
   a. After rebooting the computer, check for viruses, restore the damaged files and reinstall the application program which is not working properly.
6. Computer memory is insufficient to support printing.
   a. Add up more memory to the PC.

How to delete the data in the spool manager.

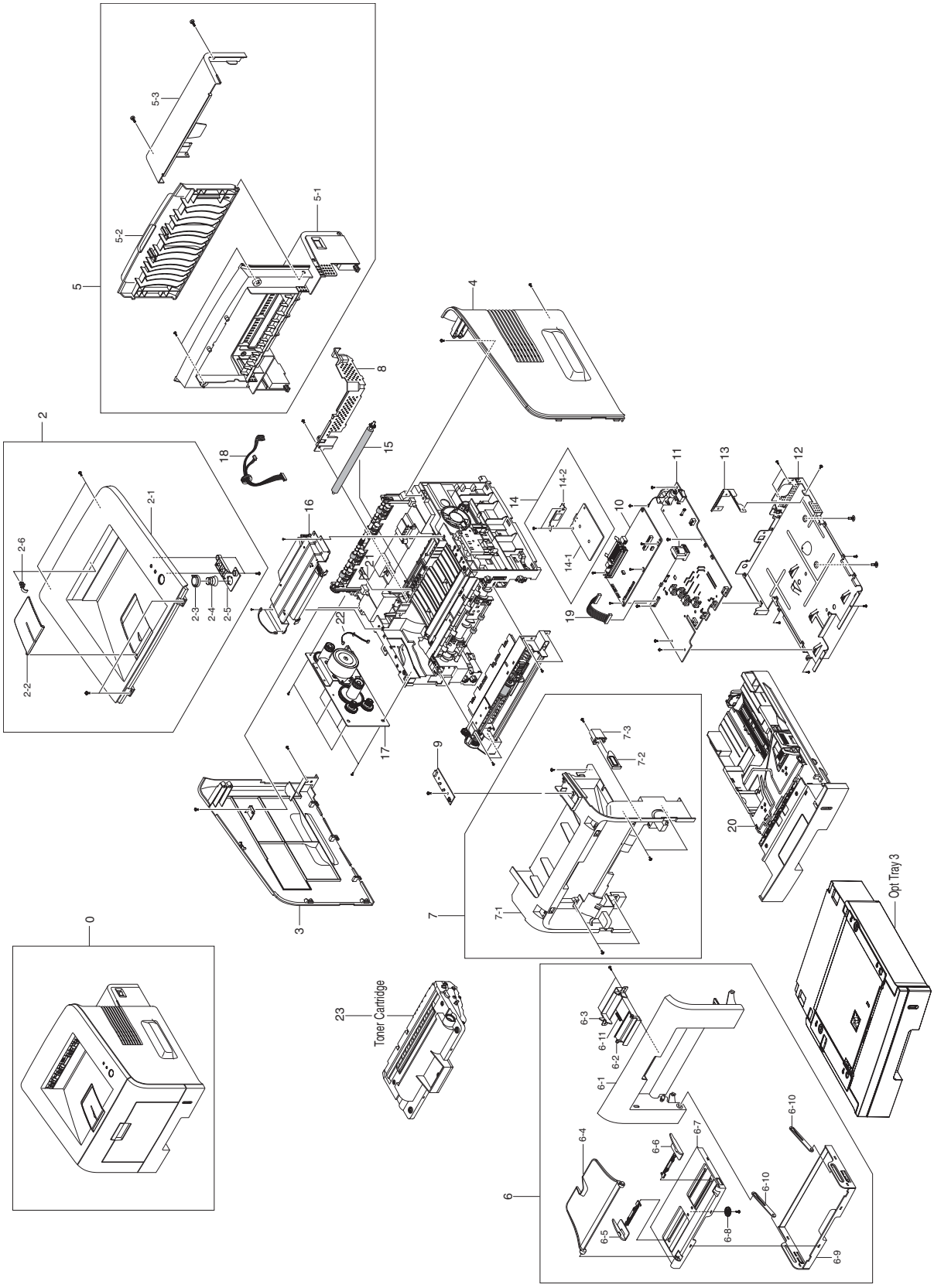
In the spool manager, the installed drivers and the list of the documents waiting to be printed are shown. Select the document to be deleted and check delete in the menu.

If the job you are deleting is the current job any job data that has already been transferred to the printer's memory will still be printed. If there is a problem with the printer (out of toner, offline, out of paper, etc.) the job may take a long time to delete as it must wait for a time out.

8 Parts List

Contents

8.1 Main Assembly

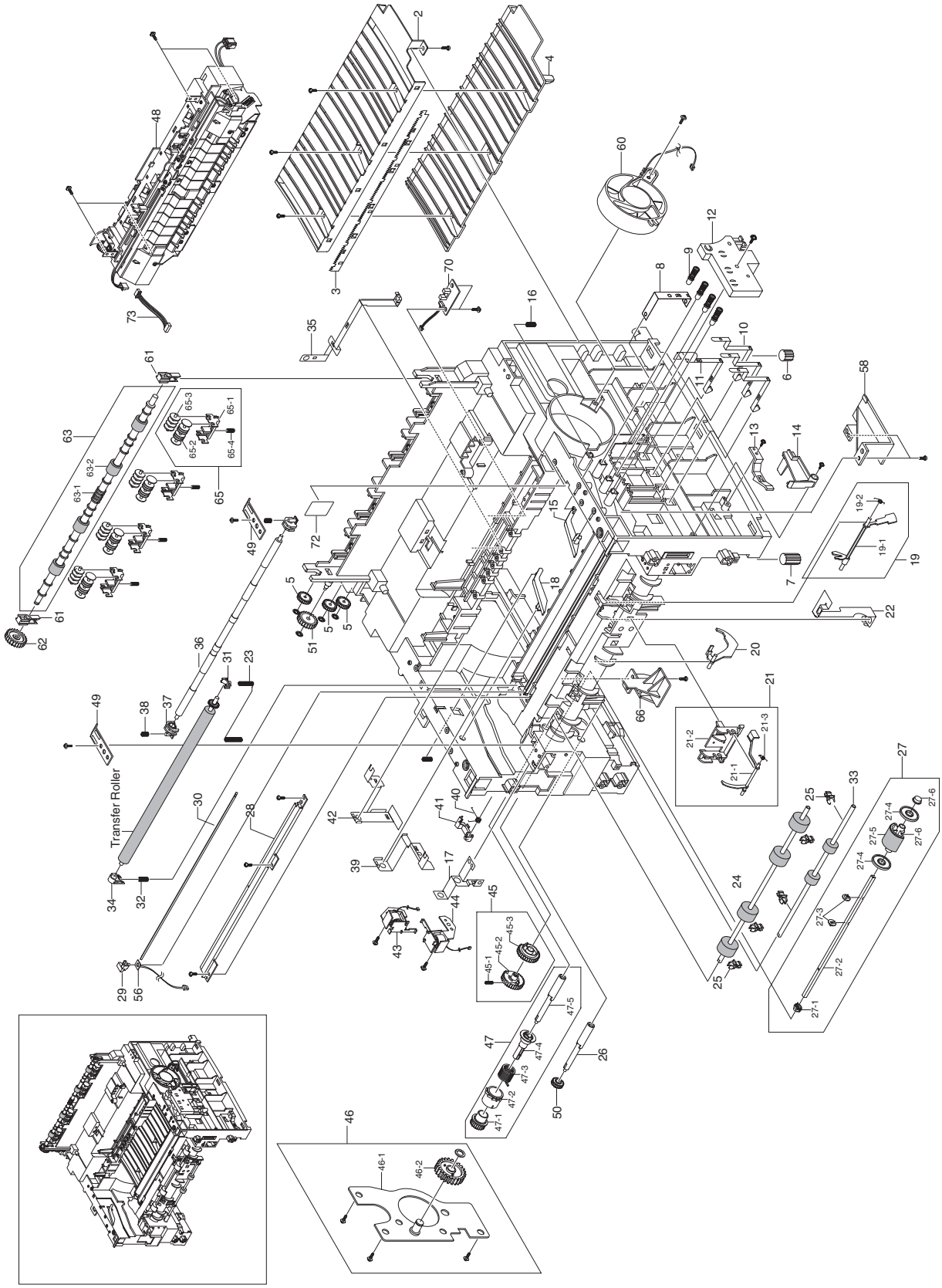


Main Assembly Parts List 8.1

No.	Part Name and (part description)	Qty	Part number	Remark
0	SET			
1	ELA HOU-FRAME-220V, HB2	1		
1	ELA HOU-FRAME-110V, HB2	1		
2	MEA UNIT-COVER TOP	1	002N02314	
2-1	COVER-M-TOP	1		
2-2	PMO-STACKER RX	1		
2-3	KEY-M-ON LINE	1		
2-4	SPRING-CS	1		
2-5	LENS LED-M-LED	1		
2-6	BUSH-M-F/DOWN	1		
3	COVER-M-SIDE L	1	002N02317	
4	COVER-M-SIDE R	1	002N02318	
5	MEA UNIT-COVER REAR	1	002N02319	
5-1	COVER-M-REAR	1		
5-2	COVER-FACE UP	1		
5-3	COVER-M-REAR OPEN	1		
6	MEA UNIT-COVER FRONT	1	002N02316	
6-1	COVER-M-FRONT	1		
6-2	KNOB-M-LOCKER	1		
6-3	HOLDER-M-LOCKER	1		
6-4	TRAY-EXIT-MP	1		
6-5	ADJUST-M-MP L	1		
6-6	ADJUST-M-MP R	1		
6-7	TRAY-M-COVER-MP	1		
6-8	GEAR-PINION	1		
6-9	TRAY-M-CASE-MP	1		
6-10	TRAY-M-LINK-MP	2		
6-11	SPRING-CIS(C2)	1		
7	MEA UNIT-COVER MID	1	002N02315	
7-1	COVER-M-MIDDLE	1		
7-2	PMO-M-SUB ACTUATOR	1		
7-3	CAP-M-SUB ACTUATOR	1		
8	COVER-M-SMPS REAR	1		
9	PBA MAIN-PANEL	1	101N01330	
10	PBA MAIN-CONTROLLER	1	140N62926	
11	SMPS-V2_220V	1	105N02039	220V
	SMPS-V1_110V	1	105N02038	110V
12	MEA UNIT-SHIELD	1		
13	BRACKET-P-INLET	1		
14	NETWORK OPTION (ELA HOU-NPC3_PRT)	1	097N01438	
14-1	BRACKET-NPC	1		
14-2	PBA SUB-NPC3_PRT	1		
14	ELA HOU-WLAN NPC	1		
15	MEA ETC-TR	1	022N02079	
16	UNIT-LSU	1	122N00235	
17	ELA UNIT-RX-DRIVE	1	007N01270	
18	CBF HARNESS-LSU	1	152N02010	

No.	Part Name and (part description)	Qty	Part number	Remark
19	CBF HARNESS-ENGINE	1	152N02012	
20	MEA UNIT-CASSETTE (PAPER TRAY)	1	109R00749	
21	PLATE CHANNEL	1		
22	MOTOR HARNESS-DRIVE	1	152N11566	
23	TONER CARTRIDGE 3.5k STANDARD CAP	1	109R00746	
23	TONER CARTRIDGE 5k HIGH CAPACITY	1	109R00747	

8.2 Frame Unit Assemly

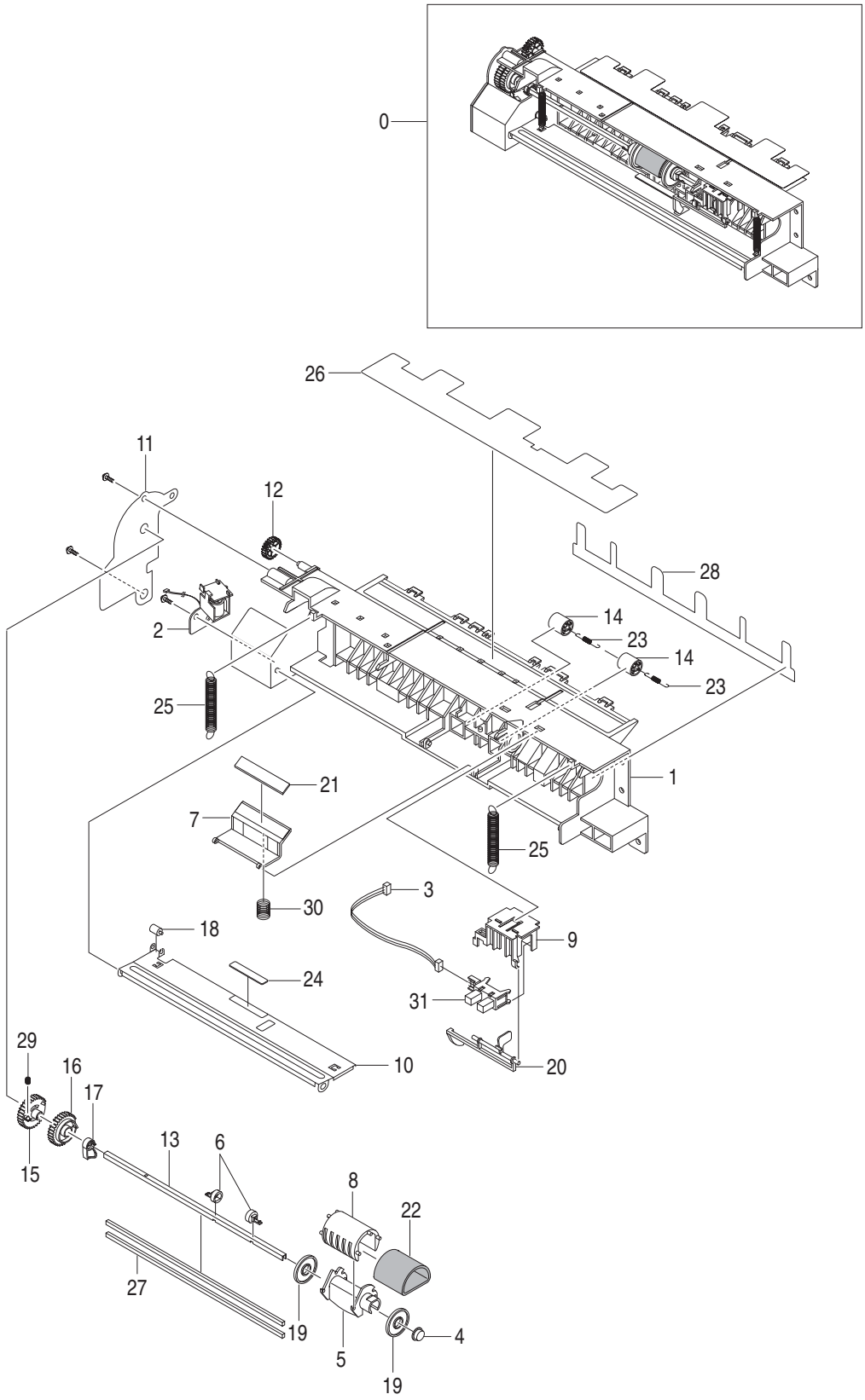


Frame Unit Assembly Parts List 8.2

No.	Part Name and (part description)	Qty	Part number	Remark
0	ELA UNIT-FRAME 110V	1		110V
	ELA UNIT-FRAME 220V	1		220V
1	FRAME-BASE R2	1		
2	GUIDE-P-TR	1	038N00407	
3	PLATE-P-SAW	1		
4	GUIDE-M-TR RIB	1	038N00408	
5	PMO-GEAR_EXIT_DRV16	3		
6	FOOT-BACK	2		
7	FOOT-FRONT	2		
8	GROUND-GUDIE TR R2	1		
9	MEC-TERMINAL	4		
10	PLATE-TERMINAL CON R2	3		
11	PLATE-TERMINAL CR R2	1		
12	HOUSING-TERMINAL R2	1	002N02320	
13	PMO-LOCKER CST	2	120N00427	
14	PMO-ACTUATOR CVR OPEN	1	120N00423	
15	PMO-PLATE GUIDE DEVE_R	1	032N00390	
16	SPRING ETC-GUIDE DEVE	2		
17	GROUND-PUSH BUSHING	1		
18	PMO-PLATE GUIDE DEVE_L	1	032N00391	
19	MEA UNIT-ACT FEED	1		
19-1	PMO-ACT FEED R2	1	120N00444	
19-2	SPRING-TS	1		
20	PMO-ACTUATOR EMPTY	1	120N00425	
21	MEA UNIT-ACT MANUAL	1		
21-1	PMO-ACT MANUAL R2	1	120N00446	
21-2	HOLDER-ACT MANUAL R2	1		
21-3	SPRING-TS	1		
22	GROUND-EARTH TR R2	1		
23	GROUND-TERMINAL TR	1		
24	ROLLER-FEED ROLLER 1	1	022N02080	
25	PMO-BUSHING FEED	5	016N00274	
26	SHAFT-FEED	1		
27	MEA UNIT-PICKUP	1	022N02084	
27-1	BUSH-M-PICK_UP L	1		
27-2	SHAFT-P-PICK_UP	1		
27-3	STOPPER-PICK UP_R2	2		
27-4	PMO-IDLE PICK_UP	2		
27-5	SPONGE-ROLLER PICK_UP	1		
27-6	BUSH-M-PICK_UP R	1		
27-7	HOUSING-PICK UP_R2	1		
27-8	HOUSING-PICK UP2_R2	1		
27-9	SHAFT-CORE	2		
28	IPR-P-EARTH TRANSFER	1	117N01616	
29	HOLDER-PTL R2	1		
30	LENS-PTL	1	062N00246	
31	PMO-BUSHING_TR(L)	1		

No.	Part Name and (part description)	Qty	Part number	Remark
32	SPRING ETC-TR L HAWK	1		
33	ROLLER-FEED	1	022N01607	
34	BUSH-M-TR L	1		
35	GROUND-FUSER R2	1		
36	SHAFT-FEED IDLE	1		
37	BUSH-M-FEED IDLE	2		
38	SPRING ETC-TR	2		
39	GROUND-DRIVE2 R2	1		
40	SPRING-TS	1		
41	CAM-M-PICK_UP	1	008N01738	
42	GROUND-DRIVE R2	1		
43	SOLENOID-FEED ROCKY2	1	121N01074	
44	SOLENOID-HB (MANUAL)	1	700N00094	
45	MEA UNIT-GEAR PICKUP	1	007N01271	
45-1	GEAR-PICK UP B_R2	1		
45-2	GEAR-PICK UP A_R2	1		
45-3	SPRING-CS	1		
46	MEA UNIT-BRACKET FEED	1	030N00690	
46-1	BRACKET-FEED R2	1		
46-2	GEAR-Z35 IDLE	1		
47	MEA UNIT-CLUTCH	1	022N01609	
47-1	GEAR-FEED 1	1		
47-2	PMO-COLLAR_SPRING	1		
47-3	SPRING-TS	1		
47-4	PMO-HUB CLUTCH	1		
47-5	SHAFT-FEED	1		
48	ELA HOU-FUSER 110V	1	126N00229	110V
	ELA HOU-FUSER 220V	1	126N00230	220V
49	PLATE-PUSH BUSHING	2		
50	GEAR-FEED 2	1		
51	GEAR-IDLE 23	1		
52	SPRING-TS	1		
54	IPR-P-TERMINAL DEVE KEY	3		
56	PBA SUB -PTL	1		
58	HOLDER-TERMINAL R2	1		
60	FAN-DC	1	127N07328	
61	MEC-BEARING,EXIT	2		
62	GEAR-EXIT F/DOWN	1		
63	ROLLER-EXIT F/DOWN	1		
64	RMO-RUBBER EXIT	4		
65	MEA RACK-EXIT ROLLER	4	022N02081	
65-1	PMO-HOLDER EXIT ROLL	1		
65-2	PMO-ROLLER FD F	1		
65-3	PMO-ROLLER FD R	1		
65-4	SPRING ETC-EXIT ROLL FD	1		
66	GUIDE-SUB FRONT	1		
70	PBA SUB-EXIT SENSOR	1	130N01360	
72	LABEL(R)-HOT CAUTION,KME	1		
73	HARNESS-FUSER	1		

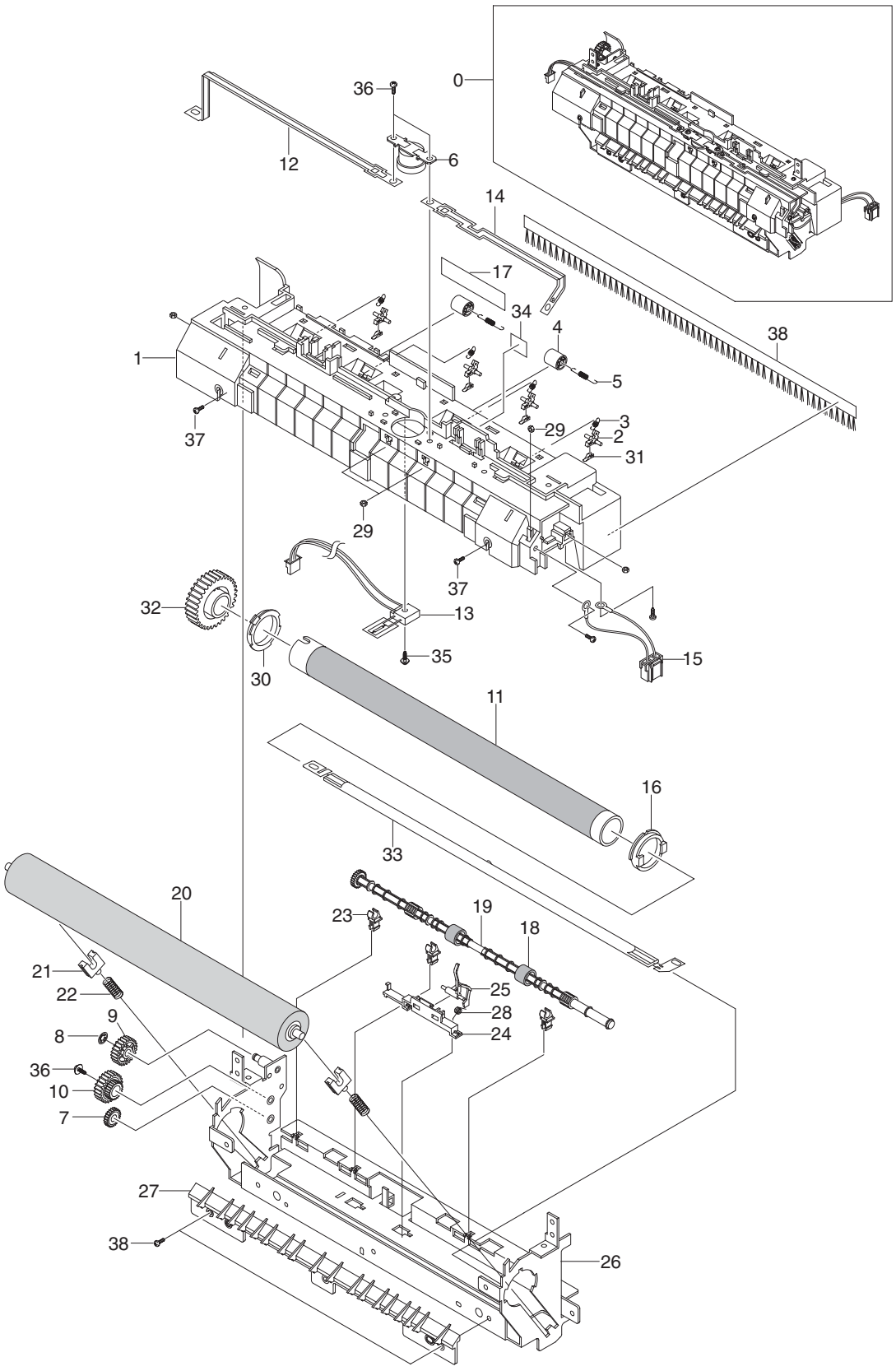
8.3 MP Assembly



MP Assembly Parts List 8.3

No.	Part Name and (part description)	Qty	Part number	Remark
0	ELA UNIT-MP	1	022N02085	
1	FRAME-17-MP	1		
2	SOLENOID-MP	1	121N01075	
3	CBF HARNESS-MPF SEN	1		
4	BUSH-M-PICK-UP R	1		
5	HOUSING-M-PICK UP2_R2	1		
6	STOPPER-M-PICK UP_R2	2		
7	HOLDER-M-PAD_MP	1		
8	HOUSING-M-PICK UP_MP	1		
9	HOLDER-M-SENSOR_MP	1		
10	PLATE-P-KNOCK UP_MP	1		
11	BRACKET-P-PICK UP_MP	1		
12	GEAR-IDLE 23	1		
13	SHAFT-P-PICK_UP	1		
14	ROLLER-M-IDLE FEED	2		
15	GEAR-M-PICK UP_MP	1		
16	GEAR-M-HOLDER_MP	1		
17	CAM-M-PICK UP_MP	1		
18	PMO-ROLLER CAM_MP	1		
19	PMO-IDLE PICK UP	2		
20	PMO-M-ACT EMPTY MP	1		
21	RPR-FRICTION PAD	1	019N00742	
22	RUBBER-PICK UP_MP	1		
23	SPRING-ETC-EXIT ROLL FD	2		
24	RPR-PAD CASSETTE	1		
25	SPRING-ES	2		
26	SHEET GUIDE PAPER R2	1		
27	SHAFT-P-CORE	2		
28	SHEET GUIDE MP	1		
29	SPRING-CS	1		
30	SPRING-ES	1		
31	PHOTO INTERRUPTER	1		

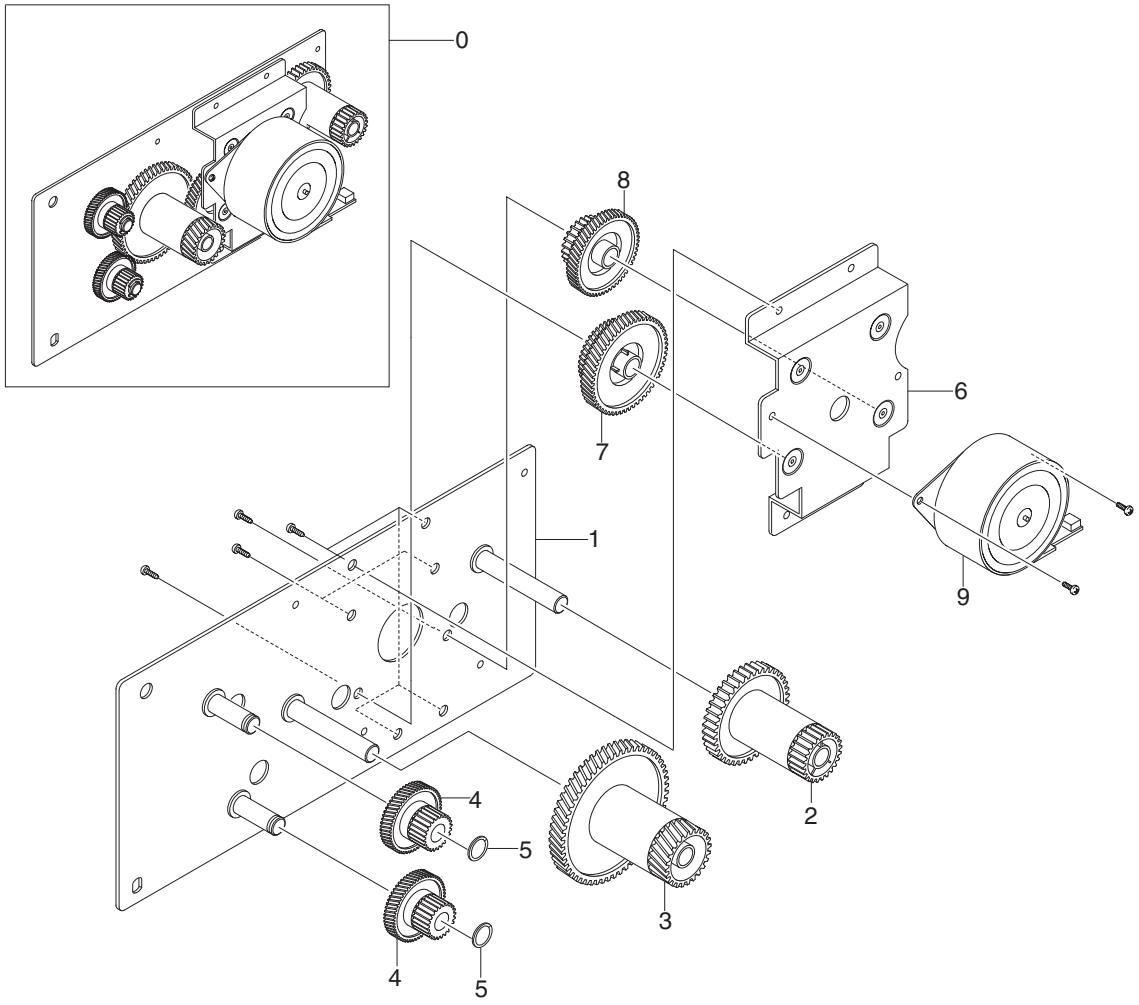
8.4 Fuser Unit Assembly



Fuser Assembly Parts List 8.4

No.	Part Name and (part description)	Qty	Part number	Remark
0	ELA HOU-FUSER 110V	1	126N00229	110V
0	ELA HOU-FUSER 220V	1	126N00230	220V
1	COVER-FUSER R2	1		
2	HOLDER-PLATE CLAW R2	4		
3	SPRING ETC-CLAW	4		
4	PMO-ROLLER_EXIT	2		
5	SPRING ETC-FUSER EXIT	2		
6	THERMOSTAT-150	1	130N01265	
7	PMO-GEAR_EXIT_DRV16	1		
8	GEAR-IDLE 23	1		
9	RING-E	1		
10	GEAR-RDCN 25/15	1		
11	ROLLER-HEATER	1		
12	ELECTRODE-LFET R2	1		
13	THERMISTOR-NTC	1	130N01266	
14	ELECTRODE-RIGHT R2	1		
15	CBF HARNESS-FUSER 110V	1		WHITE
	CBF HARNESS-FUSER 220V	1		BLACK
16	BUSH-HR R_R2	1		
17	LABEL(P)-CAUTION, HOT_FUSER	1		
18	RMO-RUBBER_EXIT	2		
19	ROLLER-M-EXIT F/UP	1		
20	ROLLER-PRESSURE	1		
21	BEARING-PRESSURE/R	2		
22	SPRING-CS	2		
23	PMO-BUSHING TX	3		
24	HOLDER-ACTUATOR	1		
25	PMO-ACTUATOR EXIT R2	1		
26	FRAME-FUSER R2	1		
27	GUIDE-INPUT R2	1		
28	SPRING-TS	1		
29	NUT-HEXAGON	5		
30	BUSH-HR L_R2	1		
31	PLATE-P-CLAW	4		
32	GEAR-FUSER R2	1		
33	LAMP-HALOGEN 110V	1	122N00231	110V
	LAMP-HALOGEN 220V	1	122N00229	220V
34	LABEL(R)-HV FUSER	1		
35	SCREW-TAPTIEE	1		
36	SCREW-ASS'Y MACH	6		
37	SCREW-TAPTIEE	6		
38	BRUSH-ANTISTAIC	1		

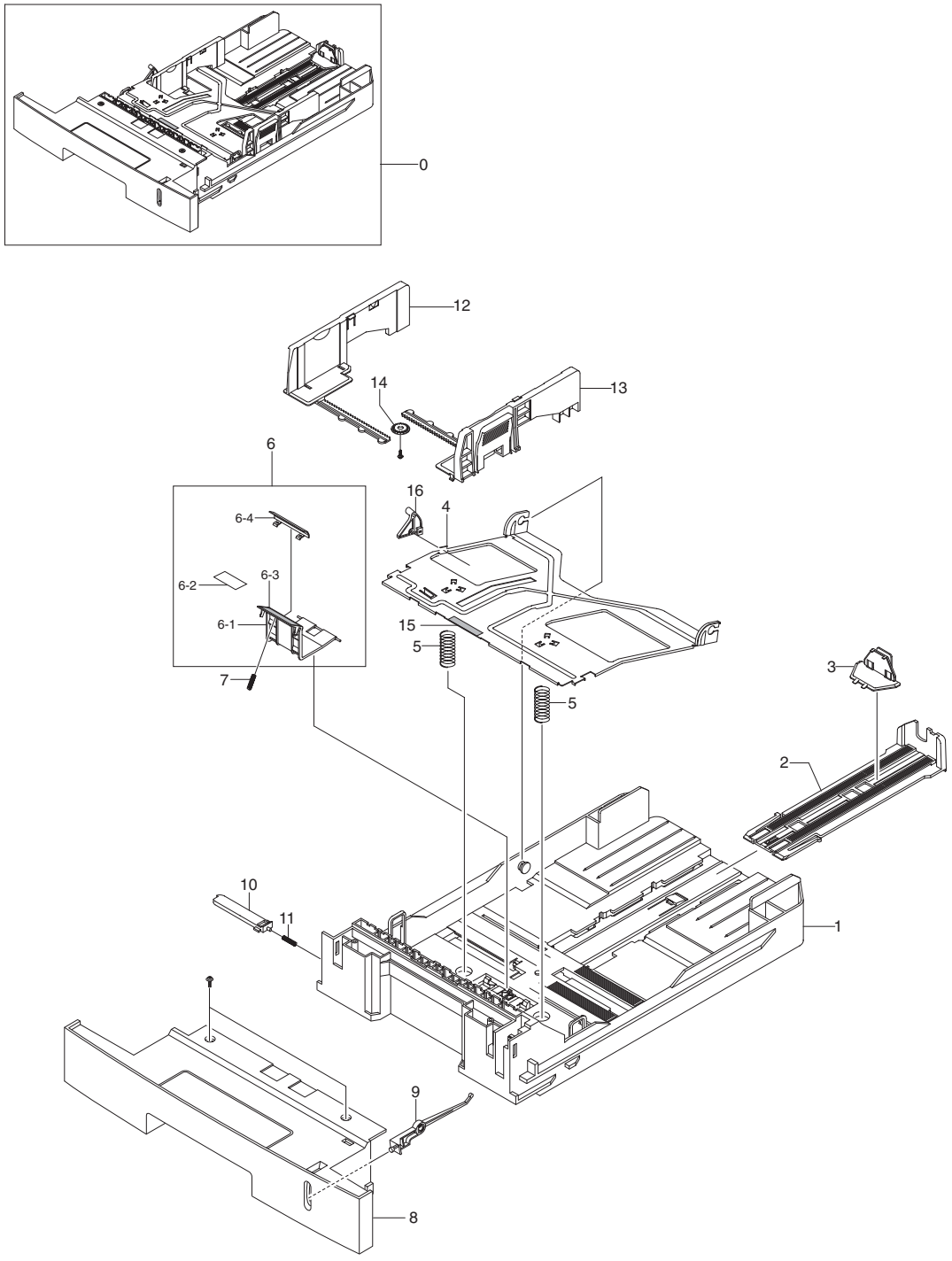
8.5 Main Drive Unit Assembly



Main Drive Unit Assembly Parts List 8.5

No.	Part Name and (part description)	Qty	Part number	Remark
0	ELA UNIT- DRIVE	1	007N01270	
1	BRACKET-GEAR MAIN	X		
2	GEAR-RDCN 53/26	1		
3	GEAR-RDCN 113/33	1		
4	GEAR-RDCN 57/18	2		
5	WASHER-PLAIN	2		
6	BRACKET-MOTOR MAIN	1		
7	GEAR-RDCN	1		
8	GEAR-RDCN	1		
9	MOTOR STEP-HUMMINGBIRD	1		

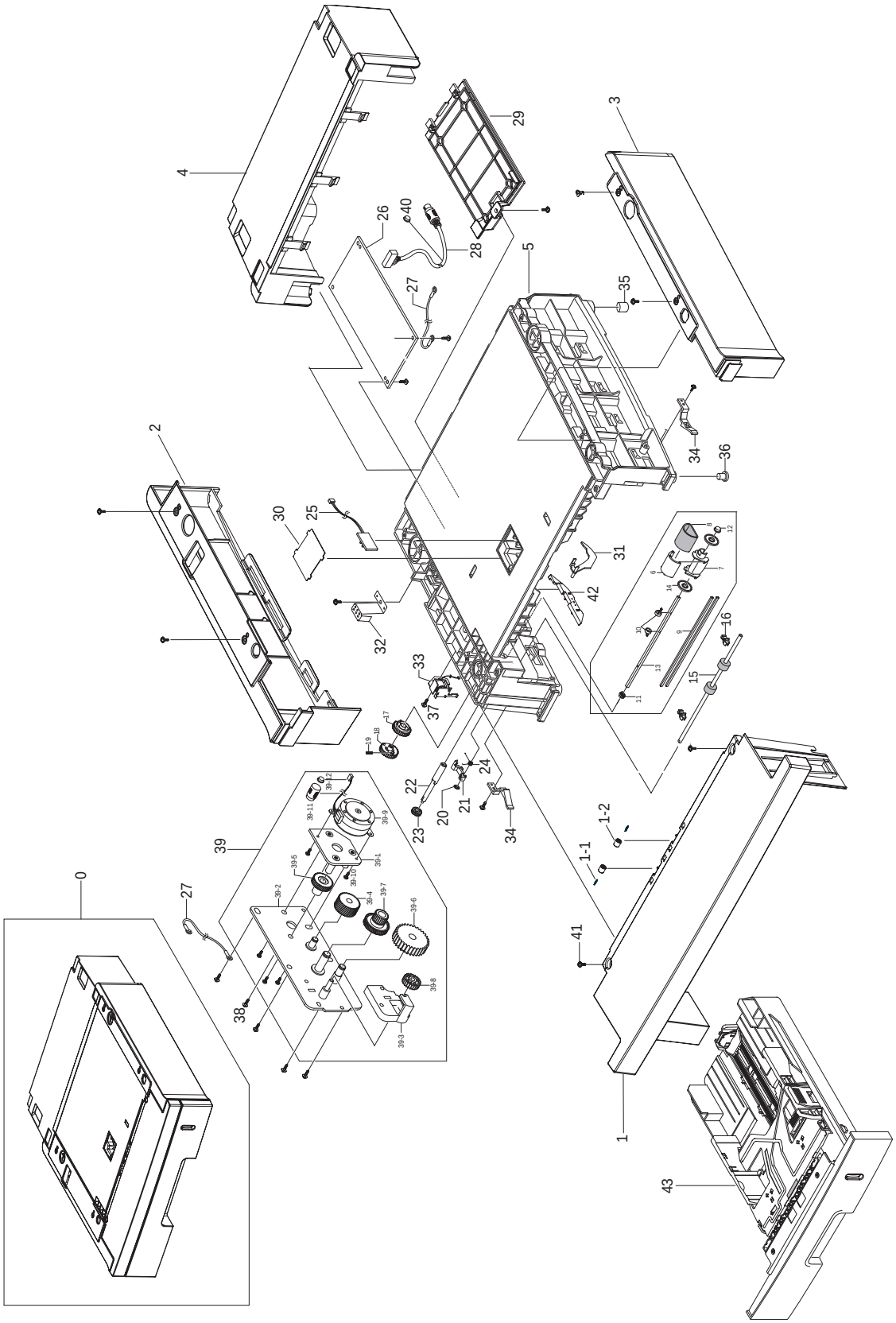
8.6 Tray 2 (Cassette) Unit Assembly



Tray 2 (Cassette) Unit Assembly Parts List 8.6

No.	Part Name and (part description)	Qty	Part number	Remark
0	MEA UNIT-CASSETTE, USA	1	109R00749	
1	FRAME-M-CASSETTE	1		
2	GUIDE-M-EXTENSION LARGE	1		
3	GUIDE-EXTENSION SMALL	1		
4	PLATE-P-KNOCK_UP	1		
5	SPRING-CS	2		
6	MEA UNIT-HOLDER PAD	1		
6-1	HOLDER-M-PAD	1		
6-2	SHEET-HOLDER PAD R2	1		
6-3	RPR-FRICTION PAD	1	019N00742	
6-4	IPR-PLATE PAD	1		
7	SPRING ETC-EXIT ROLL FD	1		
8	COVER-SUB CASSETTE R2	1		
9	INDICATOR-M-CST PAPER	1		
10	PMO-PLATE_LOCKER	1		
11	SPRING ETC-LOCKER,PLATE	1		
12	ADJUST-M-CASSETTE_L	1		
13	ADJUST-M-CASSETTE_R	1		
14	GEAR-PINION	1		
15	RPR-PAD CASSETTE	1		
16	CAM-KNOCK UP	1		

8.7 Tray 3 (SCF - Optional Cassette) Unit Assembly



Tray 3 (SCF - Optional Cassette) Assembly Parts List 8.7

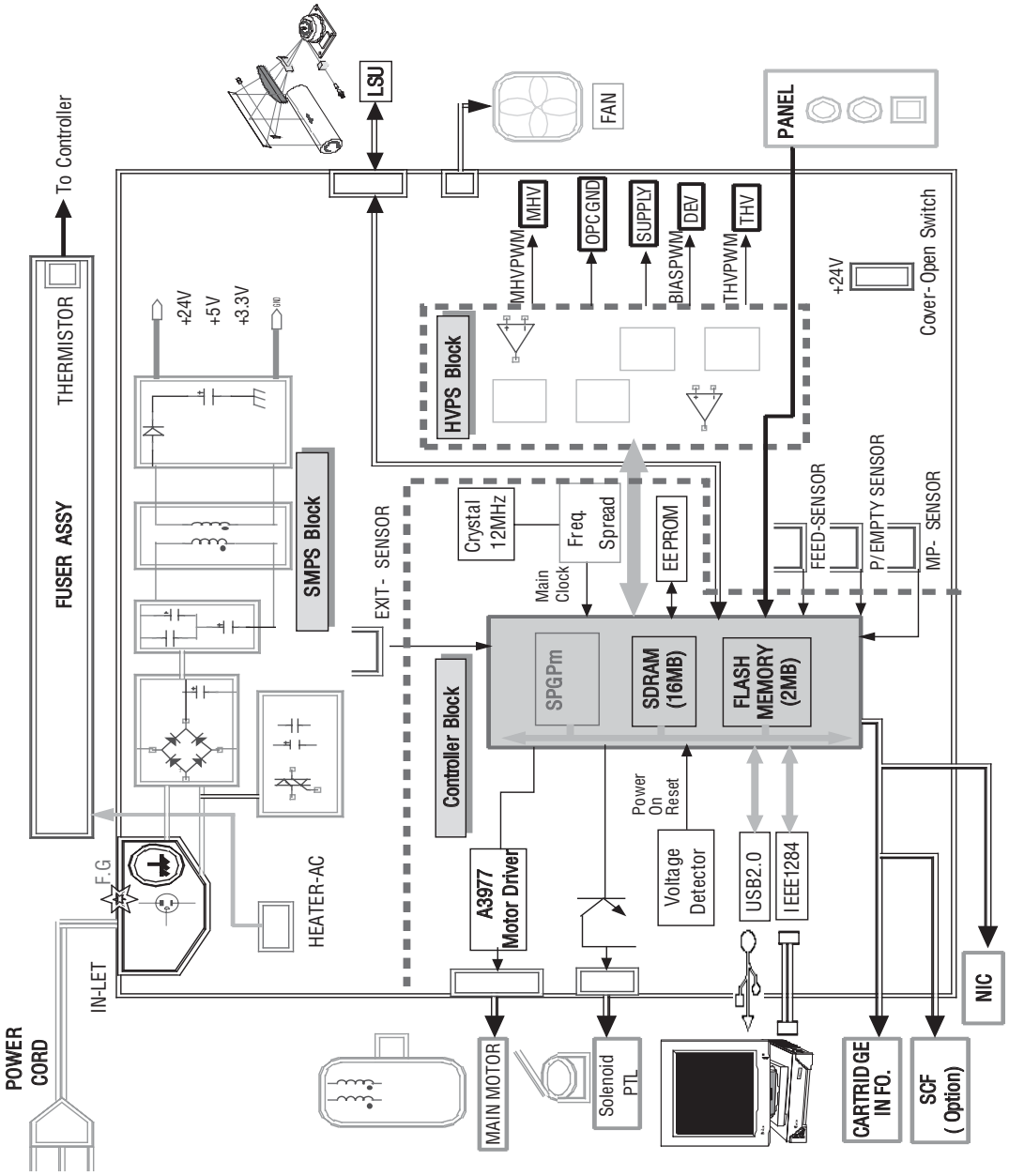
No.	Part Name and (part description)	Qty	Part number	Remark
0	ELA HOU-SCF H2	1	097N01439	
1	COVER-M-FRONT SCF H2	1		
1-1	SPRING-ES	2		
1-2	ROLLER-IDLE FEED	2		
2	COVER-M-LEFT SCF H2	1		
3	COVER-M-RIGHT SCF H2	1		
4	COVER-M-REAR SCF H2	1		
5	FRAME-M-SCF	1		
6	HOUSING-M-PICKUP _R2	1		
7	HOUSING-M-PICKUP2 _R2	1		
8	SPONGE-ROLLER PICK_UP	1		
9	SHAFT-P-CORE	2		
10	STOPPER-M-PICK_UP_R2	2		
11	BUSHING-PICK_UP L	1		
12	BUSHING-PICK_UP R	1		
13	SHAFT-P-PICK_UP	1		
14	PMO-IDLE PICK_UP	2		
15	ROLLER-FEED	1		
16	PMO-BUSHING FEED	2		
17	PMO-GEAR PICK_UP A	1		
18	PMO-GEAR PICK_UP B	1		
19	SPRING-CS	1		
20	RING-CS	1		
21	CAM-M-PICK_UP	1		
22	SHAFT-FEED	1		
23	GEAR-FEED 2	1		
24	SPRING-TS	1		
25	PCB-SENSOR	1		
26	PBASUB-SCF	1		
27	CBF HARNESS-SCF GND	2		
28	CBF HARNESS-SCF	1		
29	COVER-M-SIMM R2	1		
30	SHEET-COVER SENSOR	1		
31	PMO-ACTUATOR EMPTY	1		
32	IPR-GND TOP	1		
33	SOLENOID-HB (MANUAL)	1		
34	PMO-LOCKER CST	2		
35	FOOT-BACK	2		
36	FOOT-FRONT	2		
37	SCREW-ASS'Y TAPT	1		
38	SCREW-TAPTITE	4		
39	ELAHOU-MOTOR SCF	1		
39-1	BRKT-P-MOTOR SCF	1		
39-2	BRKT-P-GEAR SCF	1		
39-3	BRKT-M-FEED SCF	1		
39-4	GEAR 61/47 IDLE	1		
39-5	GEAR 59 IDLE	1		

No.	Part Name and (part description)	Qty	Part number	Remark
39-6	GEAR 35 IDLE	1		
39-7	GEAR-RDCN 57/18	1		
39-8	GEAR-IDLE 23	1		
39-9	MOTOR STEP(SCF)	1		
39-10	SCREW-MACHINE	5		
39-11	CORE-FERRITE	1		
39-12	CABLE TIE	1		
40	BUSH CABLE	1		
41	SCREW-TAPTITE	14		
42	GUIDE-M-KNOCKUP	1		
43	MEA UNIT-CASSETTE	1	109R00749	

Xerox Options and Accessories

Part Name and (part description)	Qty	Part number	Remark
POWER CORD, 110 V	1	117N01602	
USB CABLE	1	117N01313	
DCU Tool	1	600T80340	
OPTIONAL TRAY 3	1	097N01439	
MEMORY	1		
32 MB		097N01434	
64 MB		097N01435	
128 MB		097N01436	
NETWORK CARD	1	097N01438	
POSTSCRIPT OPTION	1	097N01437	

9 Block Diagram



10 Connection Diagram