XEROX

Phaser™ 3425
Laser Printer

# Service Manual

# Phaser™ 3425 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.

PDF Creation: December, 2005

Part Number: N/A

# Copyright

Copyright © 2003, Xerox Corporation. All Rights Reserved. Unpublished rights reserved under the copyright laws of the United States. Contents of this publication may not be reproduced in any form without permission of Xerox Corporation.

Copyright protection claimed includes all forms of matters of copyrightable materials and information now allowed by statutory or judicial law or hereinafter granted, including without limitation, material generated from the software programs which are displayed on the screen such as styles, templates, icons, screen displays, looks, etc.

XEROX®, The Document Company®, the stylized X®, CentreWare®, Made For Each Other®, and PhaserSMART® are registered trademarks of Xerox Corporation. infoSMART™, Phaser™, PhaserPort™, and PhaserTools™ are trademarks of Xerox Corporation.

Adobe® Reader®, Illustrator®, PageMaker®, Photoshop®, PostScript®, ATM®, Adobe Garamond®, Birch®, Carta®, Mythos®, Quake®, and Tekton® are registered trademarks and Adobe Jenson™, Adobe Brilliant Screens™ technology, and IntelliSelect™ are trademarks of Adobe Systems Incorporated or its subsidiaries which may be registered in certain jurisdictions.

Apple®, LaserWriter®, LocalTalk®, Macintosh®, Mac® OS, AppleTalk®, TrueType2®, Apple Chancery®, Chicago®, Geneva®, Monaco®, and New York® are registered trademarks, and QuickDraw™ is a trademark of Apple Computer Incorporated.

PCL® and HP-GL® are registered trademarks of Hewlett-Packard Corporation.

Windows® and Windows NT® are registered trademarks of Microsoft Corporation.

Novell®, NetWare®, NDPS®, NDS®, and Novell Directory Services® are registered trademarks, and IPX™ and Novell Distributed Print Services™ are trademarks of Novell, Incorporated.

Sun® and Sun Microsystems® are registered trademarks of Sun Microsystems, Incorporated. SPARC® is a registered trademark of SPARC International, Incorporated. SPARCstation™ is a trademark of SPARC International, Incorporated, licensed exclusively to Sun Microsystems, Incorporated.

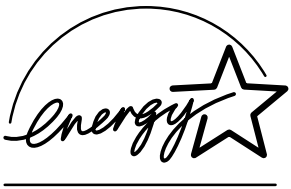
UNIX® is a registered trademark in the US and other countries, licensed exclusively through X/Open Company Limited.

This product uses code for SHA-1 written by John Halleck, which is being used with his permission.

This product includes an implementation of LZW licensed under U.S. Patent 4,558,302.

Other marks are trademarks or registered trademarks of the companies with which they are associated.

As an Energy Star® partner, Xerox Corporation has determined that this product meets the Energy Star guidelines for energy efficiency. The Energy Star name and logo are registered U.S. marks.



# Service Terms

## Manual Terms

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

### Common Acronyms:

The following list defines the acronyms that may be found in this manual.

**ADC:** Automatic Density Control
**BTR:** Bias Transfer Roller
**CRUM:** Customer Replaceable Unit Monitor
**CTD:** Toner Density Control
**DRV:** Motor Driver Board
**ESD:** Electrostatic Discharge
**LSU:** Laser Scanning Unit
**MCU:** Engine Control Board
**NCS:** Non-Contact Sensor
**PHD:** Imaging Unit
**PL:** FRU Parts List.
**PTL:** Pre-Transfer Lamp
**RMI:** Routine Maintenance Item
**RMS:** Root-Mean-Square
**RTC:** Charge Roller

**Note**

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

**Caution**

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

**Warning**

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

## Product Terms

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

**Danger:** A personal injury hazard exists in the area where you see the sign.

# Symbols Marked on the Product

DANGER high voltage.

Protective ground (earth) symbol.

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


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

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

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

# Power Safety Precautions

## Power Source

For 110 VAC printers, do not apply more than 140 volts RMS between the supply conductors or between either supply conductor and ground. Use only the specified power cord and connector. For 220 VAC printers, do not apply more than 264 volts RMS between the supply conductors or between either supply conductor and ground. Use only the specified power cord. This manual assumes that the reader is a qualified service technician.

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

## Disconnecting Power

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

Disconnect the power plug by pulling the plug, not the cord.

Disconnect the power cord in the following cases:

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

# Electrostatic Discharge (ESD) Precautions

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

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

- 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 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, as they can generate electrical charges that may damage some devices.
- Do not remove a static sensitive replacement component or electrical sub-assembly from its protective package until you are ready to install it.
- 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. Simple motions such as your clothes brushing together or lifting a foot from a carpeted floor can generate enough static electricity to damage a static 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).

# Service Safety Summary

## General Guidelines

**Note**

The material presented here is intended as a safety reminder for qualified service personnel. Refer also to the preceding Power Safety Precautions.

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

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

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

**Power source:** This product is intended to operate from a power source that will not apply more then 264 volts rms for a 220 volt AC outlet or 140 volts rms for a 110 volt AC outlet between the supply conductors or between either supply conductor and ground. A protective ground connection by way of the grounding conductor in the power cord is essential for safe operation.

### Warning Labels

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

### Safety Interlocks

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

### CLASS 1 LASER PRODUCT

The Phaser™ 3425 Laser Printer is certified to comply with Laser Product Performance Standards set by the U.S. Department of Health and Human Services as a Class 1 Laser Product. This means that this is a class of laser product that does not emit hazardous laser radiation; this is possible only because the laser beam is totally enclosed during all modes of customer operation. The laser is not hazardous during servicing if you follow the procedures specified in the manual.

# Servicing Electrical Components

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

**Warning**

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

**Warning**

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

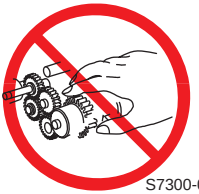
S7300-02

# Servicing Mechanical Components

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

**Warning**

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



S7300-03

# Servicing Fuser Components

**Warning**

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

# Regulatory Specifications

## Federal Communications Compliance

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

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

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

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

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

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

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

# Declaration of Conformity

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

## In the European Union

Following the provisions of the Low Voltage Directive 73/23/EEC and its amendments:

| | |
|---|---|
| EN 60950<br>(IEC 950) | "Safety of Information Technology Equipment including Electrical Business Equipment" |

Following the provisions of the Electromagnetic Compatibility Directive 89/336/EEC and its amendments:

| | |
|---|---|
| EN55022:1998<br>(CISPR 22) | "Limits and Methods of measurement of radio interference characteristics of Information Technology Equipment." Class B. |
| EN61000-3-2:1995<br>+A1:1998+A2:1998<br>(IEC61000-3-2) | “Part 3: Limits - Section 2: Limits for harmonic current emissions (equipment input current less than or equal to 16A per phase).” |
| EN61000-3-3:1995<br>(IEC61000-3-3) | “Part 3: Limits - Section 3: Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current less than or equal to 16A.” |
| EN55024:1998<br>(CISPR 24) | "Information technology equipment - Immunity characteristics - Limits and methods of measurement. " |

| **CISPR 24 Immunity Phenomena** | **Basic Standard** | **Test Specification** |
|---|---|---|
| Electrostatic Discharge | IEC61000-4-2:1995 | 6 kV Contact, 10 kV Air |
| Radio-Frequency Electromagnetic Field (radiated) | IEC61000-4-3:1995 | 80-1000 MHz, 3 V/m, 80% AM @ 1 KHz |
| Fast Burst Transients | IEC61000-4-4:1995 | 5/50 Tr/Th ns, 5 kHz Rep. Freq<br>0.5 kV on Signal Lines<br>1 kV on AC Mains |
| Line Surge | IEC61000-4-5:1995 | Combination wave<br>2.0 kV Common mode<br>2.0 kV Differential mode |
| Radio-Frequency Electromagnetic Field (Conducted) | IEC61000-4-6:1996 | 0.15 - 80 MHz, 3 V, 80% AM @ 1 kHz |

| CISPR 24 Immunity Phenomena | Basic Standard | Test Specification |
|---|---|---|
| Line voltage dips | IEC61000-4-11:1994 | >95% dip for ½ cycle @ 50 Hz<br>30% dip for 25 cycles @ 50 Hz |
| Line voltage drop-out | IEC61000-4-11:1994 | >95% dropout for 250 cycles @ 50 Hz |

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

# Contents

## 3 Error Messages and Codes



## 4 General Troubleshooting

## 10 Wiring Diagrams



## Index

# General Information

## In this chapter...

- Printer Introduction and Overview
- Printer Configurations
- Parts of the Printer
- Phaser 3425 Front Panel Configuration
- Main Board
- Service Parts
- Consumables
- Printer Specifications

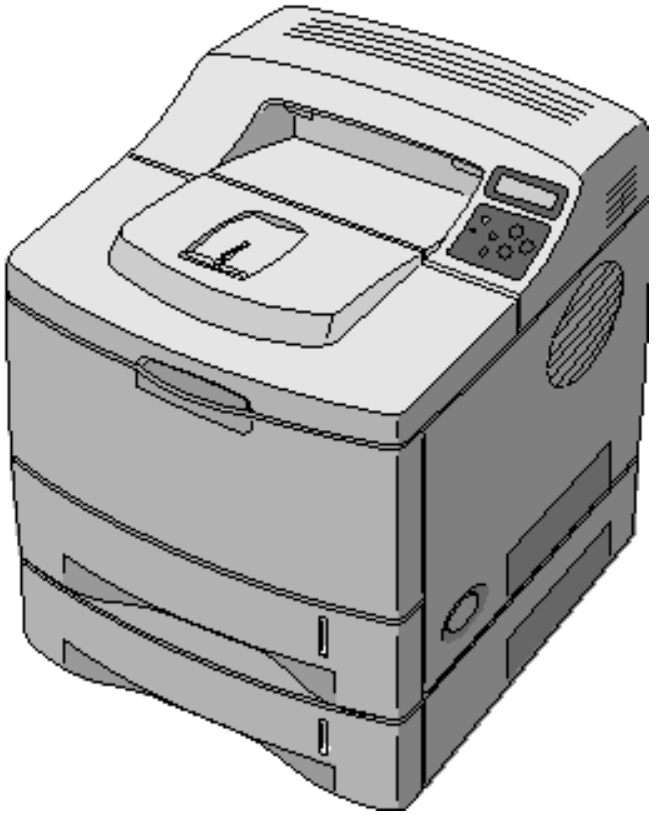
Chapter 1

# Printer Introduction and Overview

The Xerox Phaser™ 3425 Laser Printer Service Manual is the primary document used for repairing, maintaining, and troubleshooting the printer.

To ensure complete understanding of this product, participation in Xerox Phaser 3425 Laser Printer Service Training is strongly recommended.

## Phaser 3425 Laser Printer Shown With Optional Tray 3



# Printer Configurations

The Phaser 3425 Laser Printer combines a 25 page per minute monochrome print engine with an image processor supporting PostScript 3**, PCL6 (Windows), and KSC5843, and KSSM (DOS) page description languages. The printer supports resolutions of 600 and 1200 dots-per-inch (dpi) image quality.

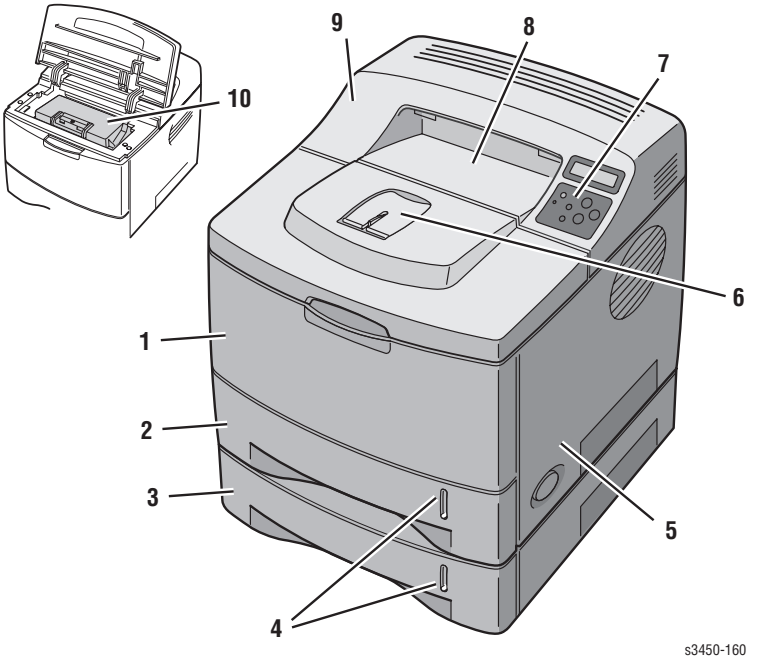
Configuration upgrades available for the Phaser 3425 Laser Printer include a 500 sheet feeder

| Features | Phaser 3425 | Phaser 3425PS |
|---|---|---|
| Print Speed | 25 ppm (letter) 24 (A4) | 25 ppm (letter) 24 (A4) |
| Resolution | 600x600 dpi & 1200IQM | 600x600 dpi & 1200IQM |
| RAM | 32 MB expandable to 160MB | 32 MB expandable to 160MB |
| Print Language | PCL6 | PCL6, **PostScript 3** |
| Ports | USB 2.0, Parallel, 10/100 Base TX | USB 2.0, Parallel, 10/100 Base TX |
| Processor | 266 MHz | 266 MHz |
| Input paper tray | 500 Sheet, Optional 2nd 500 Sheet Tray | 500 Sheet, Optional 2nd 500 Sheet Tray |
| Multi Purpose Tray | 100heet | 100 Sheet |
| Ouput | 250 sheets face down, 100 sheets face up | 250 sheets face down, 100 sheets face up |
| Max Duty Cycle | 100K/mo | **100K/mo** |
| CRU | 5K with Printer, 5K or 10K replacement CRUs | 5K with Printer, 5K or 10K replacement CRUs |
| ERP United States | <$500 | <$600 |

** The postscript is not an option
The customer must be buy a Phaser 3425PS if need this feature.

# Parts of the Printer

## Exterior




1. Tray 1 (MPT)
2. Tray 2 (500 Sheet Feeder)
3. Tray 3 (Optional 500 Sheet Feeder)
4. Paper Level Indicator
5. Right (Main Board) Cover
6. Output Support
7. Front Panel
8. Top Output Tray (Facedown)
9. Top Cover
10. Print Cartridge

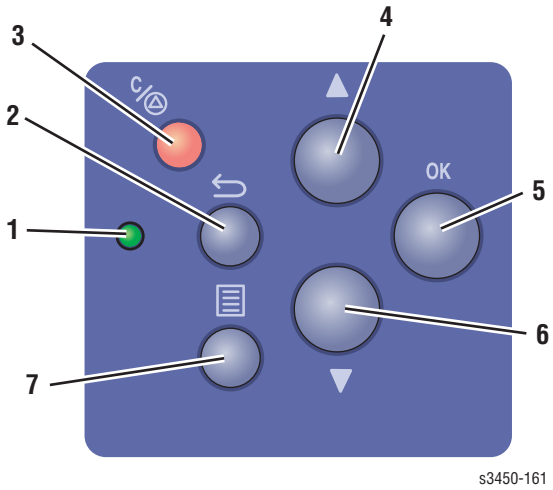
# Phaser 3425 Front Panel Configuration

The front panel consists of a 2 x 16 display, six functional buttons, and an LED. The buttons navigate the menu system, perform functions, and select modes of operation for the printer.

## LED indicator:

- Green = Ready to Print or Printing
- Flashing Green = Receiving, Processing Data, Printing or Power Saver Mode

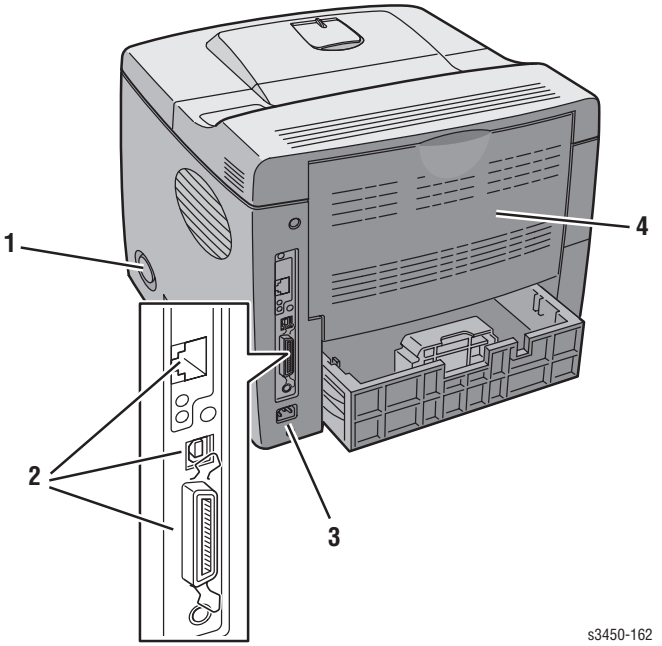
## Front Panel Button Descriptions




| | | | |
|---|---|---|---|
| **1** | LED (On-Line/Status) | **5** | OK (select) Button |
| **2** | Back Button | **6** | Down Arrow Button - Scrolls down menu system |
| **3** | Cancel Button | **7** | Menu Button - Cycles through top level menus |
| **4** | Up Arrow Button - Scrolls up menu system | | |

| Mode | Press this selection at Power On |
|---|---|
| Enter Service Diagnostics | OK (hold the OK button down) |

# Phaser 3425 Laser Printer Rear View




1. Power Switch
2. Rear Panel Interface Ports
3. Power Receptacle
4. Rear Jam Access Door

## Rear Panel Configuration Interfaces

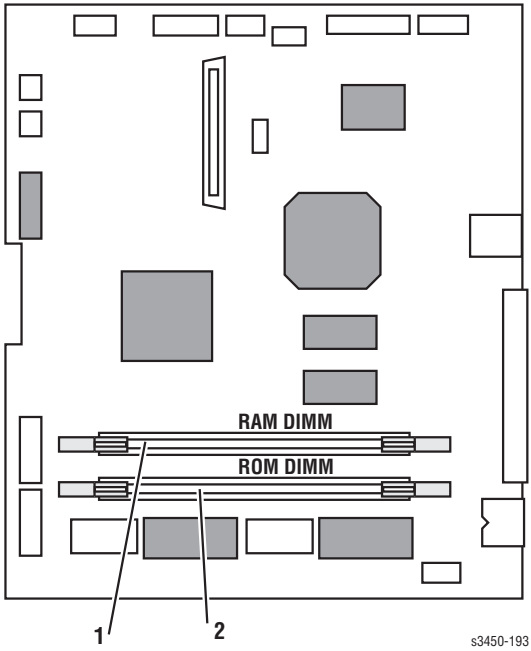
- IEEE 1284 Parallel
- Ethernet 10BaseT and 100Tx
- USB

# Main Board

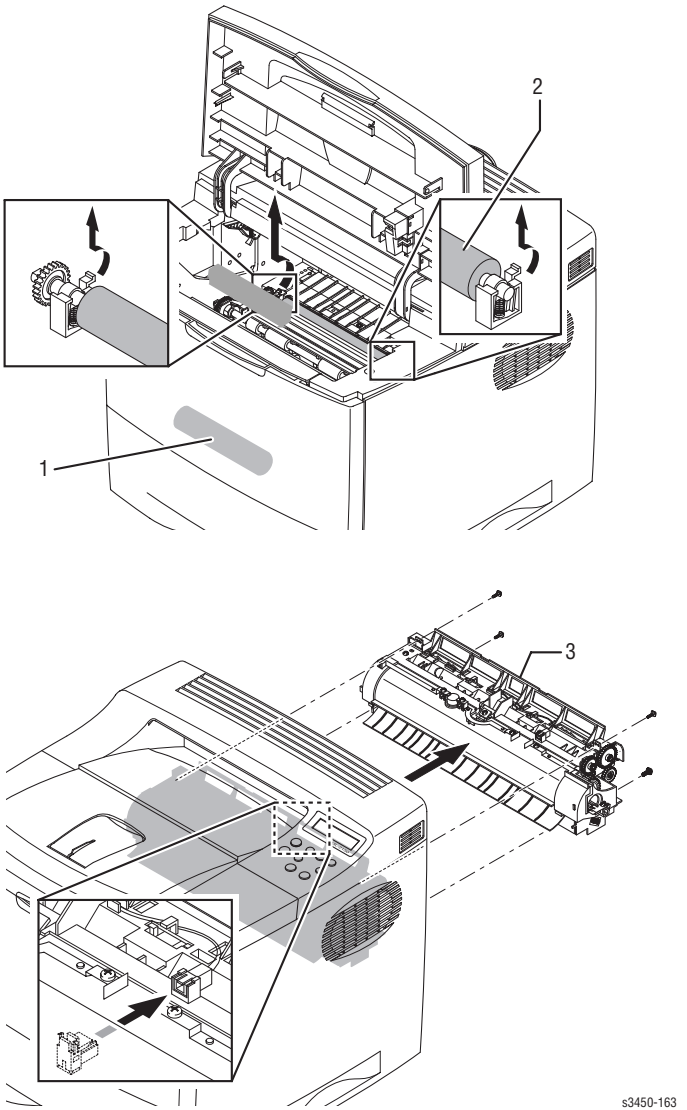
The following components need to be transferred from the old board when installing a new Main Board in the printer.

**Note**

NVRAM parameters are not transferable to the replacement board. These include Serial Number and Copy Count. Serial number can be reinstalled via CentreWare if the NIC Board is installed, or by a downloadable PJL command.

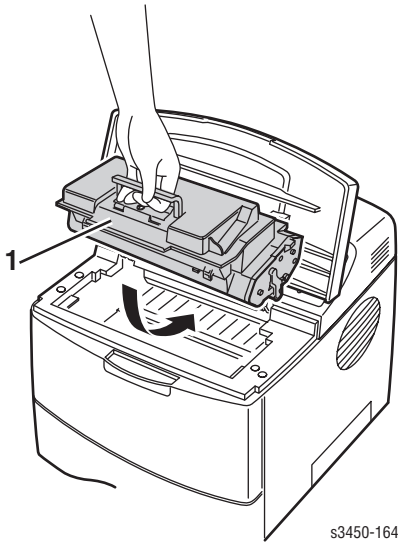



1. Memory (RAM) DIMM
2. Flash Memory (ROM) DIMM




1. Feed Roller
2. Transfer Roller
3. Fuser Assembly

# Consumables




1. Print Cartridge

# Supply Life Counter Behavior

An internal counter tracks copy count information and stores the values in NVRAM. The Main Board monitors this counter in order to display the near end-of-life and end-of-use messages.

Consumable (toner/print cartridge) usage is tracked by the CRUM and monitored by the Main Board in order to display the near end-of-life and end-of-life messages. The value currently stored (in print cartridge cycles) can be viewed using the Read OPC Cycle Service Diagnostic. The trigger values are as follows:

- 10K Cartridge: 78,000 = Toner Low, 92,000 = Replace Cartridge
- 5K Cartridge: 39,000 = Toner Low, 46,000 = Replace Cartridge

Life ratings are based on 5% coverage and an average 4 page job length.

| Consumables | Print Life |
|---|---|
| **Print Cartridge*** | High Capacity 10,000<br>Standard Capacity 5,000 |
| **Service Parts** | |
| **Fuser Assembly** | 125,000 |
| **Transfer Roller** | 125,000 |
| **Feed Roller Kit** | 125,000 |

# Printer Specifications

## Physical Dimensions and Clearances

| Print Engine Dimensions | Value |
|---|---|
| Height: | 326 mm (12.90 inches) (without optional cassette) |
| Width: | 386 mm (15.20 inches) |
| Depth: | 446 mm (17.56 inches) |
| Weight: | 13.7 Kg (30.2 Lbs.) |
| **Optional Feeder Cassette Dimensions** | **Value** |
| Height: | 158 mm (6.22 inches) |
| Width: | 380 mm (14.96 inches) |
| Depth: | 446 mm (17.56 inches) |
| Weight: | 5.4 Kg (11.9 Lbs) (with packaging) |
| **Clearance** | **Value** |
| Top: | 350 mm (13.78 inches) |
| Left: | 100 mm (3.9 inches) |
| Right: | 100 mm (3.9 inches |
| Front: | 482.6 mm (19 inches) |
| Rear: | 320 mm (12.6 inches) |
| Mounting surface level tolerance: | Within 2 degrees of horizontal with all four feet in contact with the surface. |

# Functional Specifications

| Characteristic | Specification |
|---|---|
| Printing process | Non-Impact Electrophotography |
| Color medium | Monochrome |
| Resolution / Addressability | True 600 x 600 dpi/<br>Addressable 1200 x 1200 dpi |
| Operating Modes | **Running Mode:** Print Engine capable of making prints immediately.<br>**Ready Mode:** 20 seconds from completion of a print.<br>**Sleep/ Low Power/ Power Saver Mode:** entered after a specified period of Print Engine inactivity since completion of the last print. |
| Continuous Operating Printing Speed<br><br>ppm = pages per minute<br>ipm = image per minute | **Letter:**<br>25 ppm Simplex, 14 ipm Duplex<br>**A4:**<br>24 ppm Simplex, 13 ipm Duplex |
| Cleaning Cycle interval for continuous printing | |
| First Print-Out (in seconds) | 12 Letter<br>13 A4 |
| Warm-up time | Power-on Boot: 50 seconds or less |

# Electrical Specifications

| Characteristic | Specification | | | |
|---|---|---|---|---|
| Primary line voltages | 100 - 127 V Printer - (90 - 135 V) 13 amp circuit<br>220 - 240 V Printer - (180 - 264 V) 7-8 amp circuit | | | |
| Primary line voltage frequency range | 100 - 120 V Printer - 50/60 Hz ± 3 Hz<br>220 - 240 V Printer - 50/60 Hz ± 3 Hz | | | |
| Power consumption | **Mode** | **Condition** | **100/115 VAC** | **240 VAC** |
| | **Print Mode** | **Max.** | 450 W or less | 450 W or less |
| | **Ready Mode** | **Fuser On** | 100 W or less | 100 W or less |
| | **Sleep Mode** | **Fuser Off** | 15 W or less | 15 W or less |

# Environmental Specifications

| Characteristic | Specification |
|---|---|
| **Temperature:** | Optimal print-quality range: 17º to 26º C (62º to 80º F) |
| Operating | 10º C to 32º C (50º F to 89º F) |
| **Storage** | |
| Unpacked | 5º C to +35º C (41º F to 95º F) |
| Packed 24 month maximum | -20º C to 50º C (-4º F to 130º F) |
| **Humidity** | Optimal print-quality range: 35% to 70% |
| Operating | 20% - 80% |
| Storage Unpacked | 20% - 80% |
| Storage | 10% - 90% |
| **Altitude** | |
| Operating | 0 - 2,500 meters (8,200 ft.) |
| Low Altitude Setting | 0 - 2,050 meters (6,726 ft.) |
| High Altitude Setting | 2,050 - 2,500 meters (6,726 - 8,200 ft.) |
| Transportation | 0 - 6,092 meters (20,000 ft.) |
| **Acoustic Noise** | |
| Idle | 35.0db or less |
| Printing | 49.0db or less |

# Duplex Printing Media Sizes

| | Specification | | Trays |
|---|---|---|---|
| Supported Media Sizes | **Paper Type** | **Size** | |
| | Letter | 215.9 x 279.4 mm (8.5 x 11 in.) | All Trays |
| | Legal | 215.9 x 355.6 mm (8.5 x 14 in.) | All Trays |
| | US Folio | 215.9 x 330.2 mm (8.5 x 13 in.) | All Trays |
| | A4 | 210 x 297 mm (8.27 x 11.69 in.) | All Trays |
| | Custom Size | Min. Width 210 mm (8.27 in.)<br>Max. Width 215.9 mm (8.5 in.)<br>Min. Length 127 mm (5 in.)<br>Max. Length 355.6 mm (14 in.) | Tray 1 Only |

# Media and Tray Specifications

| | Specification | | Trays |
|---|---|---|---|
| Printable Area | Minimum margins = 4 mm (0.16 in.) on all sides<br>Maximum paper size = 215.9 mm x 355.6 mm (8.5 in. x 14 in.)<br>Minimum paper size = 75 mm x 125 mm (3 in. x 5 in.) | | All Trays<br><br>Tray 1 only |
| Supported Media Sizes | **Paper Type** | **Size** | |
| | Letter | 215.9 x 279.4 mm (8.5 x 11 in.) | All Trays |
| | Legal | 215.9 x 355.6 mm (8.5 x 14 in.) | All Trays |
| | Executive | 184.2 x 266.7 mm (7.25 x 10.5 in.) | All Trays |
| | Statement | 139.7 x 215.9 mm (5.5 x 8.5 in.) | Tray 1 Only |
| | US Folio | 215.9 x 330.2 mm (8.5 x 13 in.) | All Trays |
| | A4 | 210 x 297 mm (8.27 x 11.69 in.) | All Trays |
| | A5 | 148 x 210 mm (5.83 x 8.27 in.) | All Trays |
| | US Postcard | 88.9 x 139.7 mm (3.5 x 5.5 in.) | Tray 1 Only |
| | A6 | 105 x 148 mm (4.13 x 5.85 in.) | Tray 1 Only |
| | B5 JIS | 182 x 257 mm (7.16 x 10.12 in.) | All Trays |
| | B5 ISO | 176 x 250 mm (6.93 x 9.84 in.) | All Trays |
| | Custom Size | | Tray 1 Only |
| Supported Media Types and Weights | **Type** | **Weight** | |
| | Plain Paper | 64 - 90 g/m$^2$ (17 - 24 lb. Bond) | All Trays |
| | Heavy Plain Paper | 85 - 105 g/m$^2$ (22 - 28 lb. Bond) | All Trays |
| | Transparency | | All Trays |
| | Thin Card Stock | 100 - 163 g/m$^2$ (26 - 60 lb. Cover) | Tray 1 Only |
| | Thick Card Stock | 160 - 216 g/m$^2$ (59 -80 lb Cover) | Tray 1 Only |
| | Labels | N/A | All Trays |
| | Letterhead | 85 - 105 g/m$^2$ (22 - 28 lb. Bond) | All Trays |
| | Glossy Coated Paper | 120 - 163 g/m$^2$ (81 - 110 lb.) | Tray 1 Only |
| | Business & Greeting Card | N/A | Tray 1 Only |
| | CD/DVD Labels and Inserts | N/A | Tray 1 Only |
| | Digital Photo Paper | 120 - 163 g/m$^2$ (81 - 110 lb.) | Tray 1 Only |
| Supported Envelopes | Envelopes Weight | 20 - 24 lb. Bond | No envelope feeder but up to 10 envelopes may be fed from Tray 1 |
| | Commercial #10 | 4.12 x 9.5 in | |
| | Monarch Envelope | 3.87 x 7.5 in | |
| | Commercial #9 | 5.25 x 7.25 in | |
| | Custom | | |
| | DL Envelope | 110 x 220 mm | |
| | C5 Envelope | 162 x 229 mm | |
| | Note: Envelopes with hot melt type glue are not supported in this printer. No window envelopes, metal clasps, or gummed labels. | | |
| Speciality Media | Other sizes will be handled through Tray 1 with use of the custom size option. | | |
| Tray Capacity | | **Universal Tray** | **Tray 1** |
| | **Standard Paper** | 500 Sheets | 100 Sheets |
| | **Transparency** | 100 Sheets | 50 Sheets |
| | **Envelopes** | N/A | 10 each |

# Theory of Operation

## In this chapter...

- Overview of the Phaser 3425 Laser Printer
- Print Modes
- Printer Controls
- Paper Path of the Printer
- Duplex Paper Path

Chapter 2

# Overview of the Phaser 3425 Laser Printer

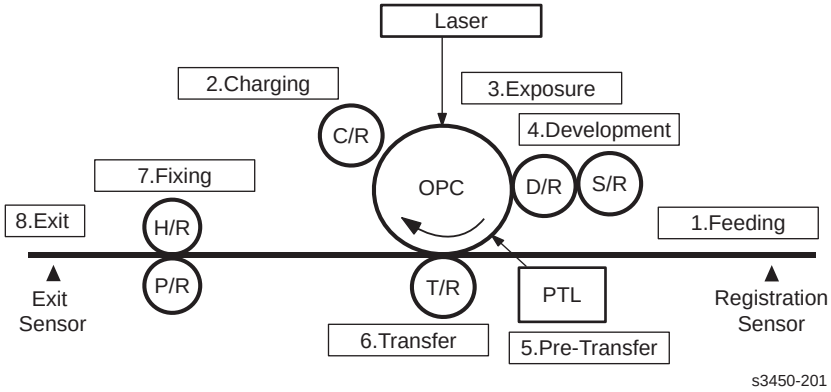
## Summary of the Printing Process

The Phaser 3425 Laser Printer is a desktop monochrome laser printer, applying the principals of an electrophotographic system. The system, comprising a drum and developing unit, places the toner image onto print media producing a monochrome image.

The following procedures are summarized. The printing process is composed of the following steps. See the illustration on the following page as a reference.

1. **Charging:** The charge roller is negatively charged at approximately -1400 VDC by the high voltage power supply (HVPS). The charge roller is kept in contact with the drum surface to provide a uniform negative charge of approximately -800 VDC on the drum surface as it rotates at a constant speed.
2. **Exposure:** The laser unit emits laser beams in response to image data from the Main board. The laser beams are directed onto the drum surface through a system of mirrors and lenses. A rotating polygonal mirror causes the laser beams to scan the drum surface from end to end (axially) as it rotates. The beams are turned on to print a pixel and off when no printing is required. The negative charge on the drum surface is reduced to approximately -250 VDC at each point where the energized laser beam strikes, to form an invisible electrostatic latent image on the drum surface.
3. **Development:** Negatively charged toner particles from the toner hopper are applied to the supply roller and are then applied to the developer roller in a even layer controlled by the metering blade. The developer roller turns against the drum and the toner particles are attracted to the relatively positive latent image. The toner forms a visible image on the drum surface.
4. **Pre-Clean:** The pre-transfer lamp exposes the developed suface of the drum lowering the surface potential and thereby providing enhanced transfer efficiency.
5. **Transfer:** The finished toner image on the drum is transferred onto the print media using the voltage supplied by the transfer roller. The conductive transfer roller receives a high positive voltage (approximately +1000 VDC) from the HVPS that puts it at a higher potential than the drum. Since the transfer roller is located behind the print media, the toner image is attracted to the high potential and deposits on the surface of the print media.
6. **Fixing:** The finished toner image is impermanent and easily smeared. To fix the image, the print media goes through the Fuser where it passes between a pressure roller and the heat roller. The toner is fused onto the print media by the combination of heat and pressure.

   The heat roller is heated by a Halogen lamp. The roller surface temperature is detected by a Thermistor. The information is fed back to the lamp control to maintain a surface temperature of 185º C during printing and 145º C during standby. If the thermistor detects a Fuser overheat condition, it disconnects AC power to the Fuser.
7. **Cleaning:** After the image is transferred to the print media, a cleaning blade inside the cartridge removes any remaining toner particles from the drum.




# Print Modes

The Phaser 3425 Laser Printer provides four print modes: draft, 300, 600, and enhanced. Print modes are front panel selectable.

- Draft mode: Uses a combination of reduced toner output and the lowest resolution (300 x 300 dpi) to extend print cartridge life.
- 300: Used for printing with a resolution of 300 x 300 dpi.
- 600: Used for printing with a resolution of 600 x 600 dpi.
- Enhanced mode: Used for printing on plain paper with an addressable resolution of 1200 x 1200 dpi.

# Printer Controls

## Paper Size Control

The paper size selection for Tray 2 and Tray 3 is set by moving the paper guide in the tray. This in turn sets the plastic “fingers” on the side of the paper tray to a specific postion.The position of the “fingers” activates the correct combination of the three paper size switches, located in each paper tray slot, for the selected paper size. Additionally, the back of the tray must be pulled down in order to select the two largest sizes, US Folio and Legal. Not all sizes can be used in both trays. Refer to "Media and Tray Specifications" on page 1-14 for a complete listing of the media types for each tray. Additional media types can be used in Tray 1 (MPT). After inserting the media in Tray 1, use the front panel controls to select the media type.

### Paper Size Switches are identified as SW1, SW2, and SW3

| Paper Size | Paper Size Switch | | |
|---|---|---|---|
| | SW1 | SW2 | SW3 |
| LEGAL14" | ON | ON | ON |
| US FOLIO (LEGAL 13”) | ON | ON | OFF |
| EXECUTIVE | ON | OFF | ON |
| B5 | ON | OFF | OFF |
| A4 | OFF | ON | ON |
| LETTER | OFF | OFF | ON |
| A5 | OFF | ON | ON |
| No Tray | OFF | OFF | OFF |

## Selective Control; Paper Pick

When not otherwise controlled by operator selection from the control panel, the default paper pick selected at power ON is Tray 2. The tray in the optional Feeder is Tray 3. If the default tray is empty, the printer will automatically switch to any other tray that contains paper unless Tray Chaining is set to OFF.

# Laser Light Intensity Control

Image data is transmitted to the laser diode in the Laser Unit as digital signals. The laser diode converts the image data from digital signals to optical signals; data expressed by blinking laser beams. The laser unit monitors the output to determine if variations in the light intensity from the laser beam, variations in the optical system (such as mirrors and lenses), or variations in drum sensitivity are preventing the system from obtaining a proper electrostatic image and, if necessary, adjusts the light intensity to attain a stable electrostatic image.

# Process Control

For stable printing, the parameters related to forming both the electrostatic and toner image must be continuously monitored and adjusted by the printer. Parameter correction and control over the entire printing process is called “process control”. In the Phaser 3425 Laser Printer, the process is controlled by using feedback circuits to monitor changes in the printing environment for each section (i.e. charging, development, transfer, fixing, etc.) and adjusting the appropriate supply voltages to achieve optimum printing results.

# Toner Control

Print Cartridge installation and Toner Level are detected by the Print Cartridge Interconnect Board and the associated signals are supplied to the Main Board. The CRUM not only detects cartridge presence, it also determines whether it is a genuine Xerox cartridge. When the toner remaining falls to 15%, the printer displays a low toner message on the front panel display.

# Fuser Control

## Fuser temperature control

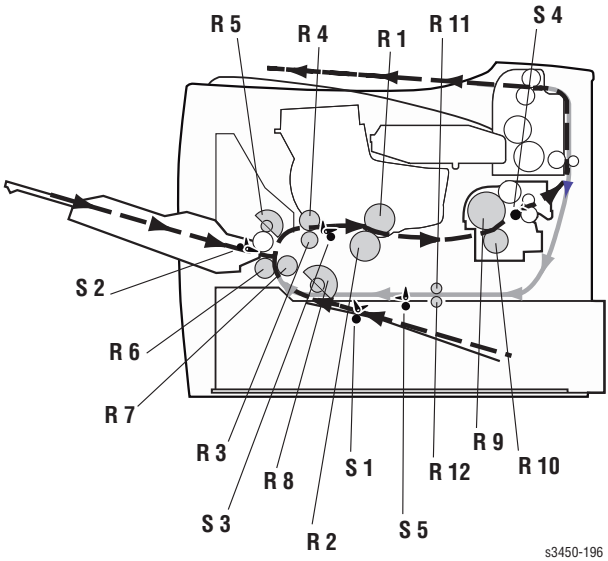
During fuser temperature control the printer’s target temperature is set. The heat roller surface temperature is controlled to match the target temperature by turning the heater lamp on/off.

The heat roller surface temperature is detected by a Thermistor. If the Thermistor shows that the temperature is higher than the target, the heater lamp is turned off. If the detection result is low, the heater lamp is turned on. The Fuser Control circuit keeps the Fuser temperature at 185º C during printing and at 145º C during standby.

# Paper Path of the Printer

Papers that meet the specifications may be fed from Trays 1 and 2, or the optional Tray 3. If you use thick paper (from the RCP Menu) with a weight of more than 105 g/m$^2$ (60 lb), you must insert the paper into Tray 1 and select the paper type. Paper will exit the printer to the face down top tray. A door at the rear of the printer provides access for jam clearance.

The diagram below shows the paper path through the Phaser 3425 Laser Printer and identifies the major components. The simplex paper path is shown in black and the duplex path is shown in grey.



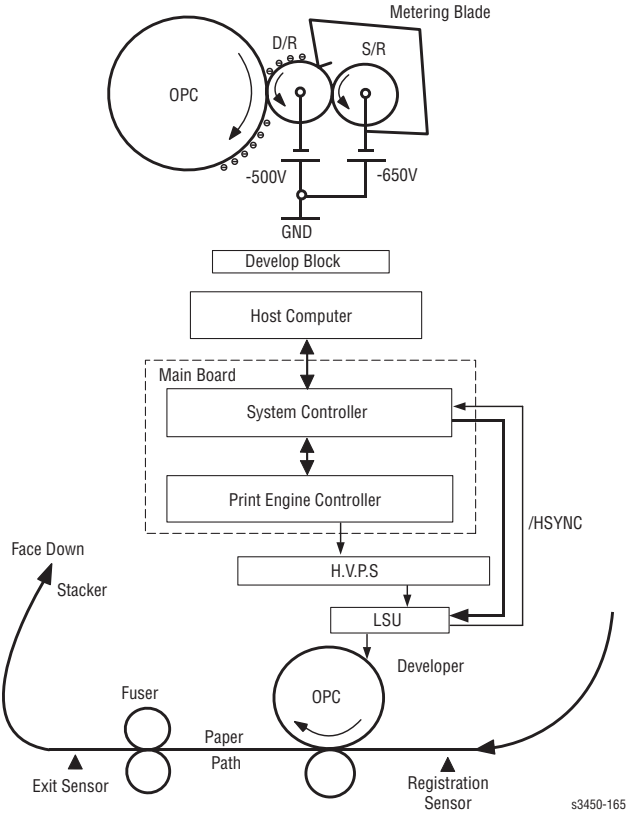

**R1**: Print Cartridge Drum
**R2**: Transfer Roller
**R3**: Registration Roller
**R4**: Idle Roller
**R5**: Tray 1 Pick Up Roller
**R6**: Retard Roller
**R7**: Feed Roller
**R8**: Pick Up Roller
**R9**: Heat Roller
**R10**: Pressure Roller
**R11**: Duplex Roller
**R12**: Duplex Idle Roller
**S1**: Paper Empty Sensor (Tray 2)
**S2**: Paper Empty Sensor (Tray 1)
**S3**: Registration Sensor
**S4**: Exit Sensor
**S5**: Duplex Sensor

# Duplex Paper Path

When duplex print mode is selected, the paper is first printed on side one. When the image on side one of the paper is fused, as detected by the Fuser Exit Sensor, the drive motor reverses. The paper is fed through the duplexer and back up to the feed roller with side two positioned for printing.

# Major Assemblies and Functions

The Phaser 3425 Laser Printer contains several subsystems. Each subsystem contains Service Parts identified in the parts list in Chapter 9 of this manual. For information on repairing or replacing sub-assemblies and Service Parts, refer to the Removal and Replacement Procedures in Chapter 8 of this manual. Some components may not be replaceable except as part of a larger component.



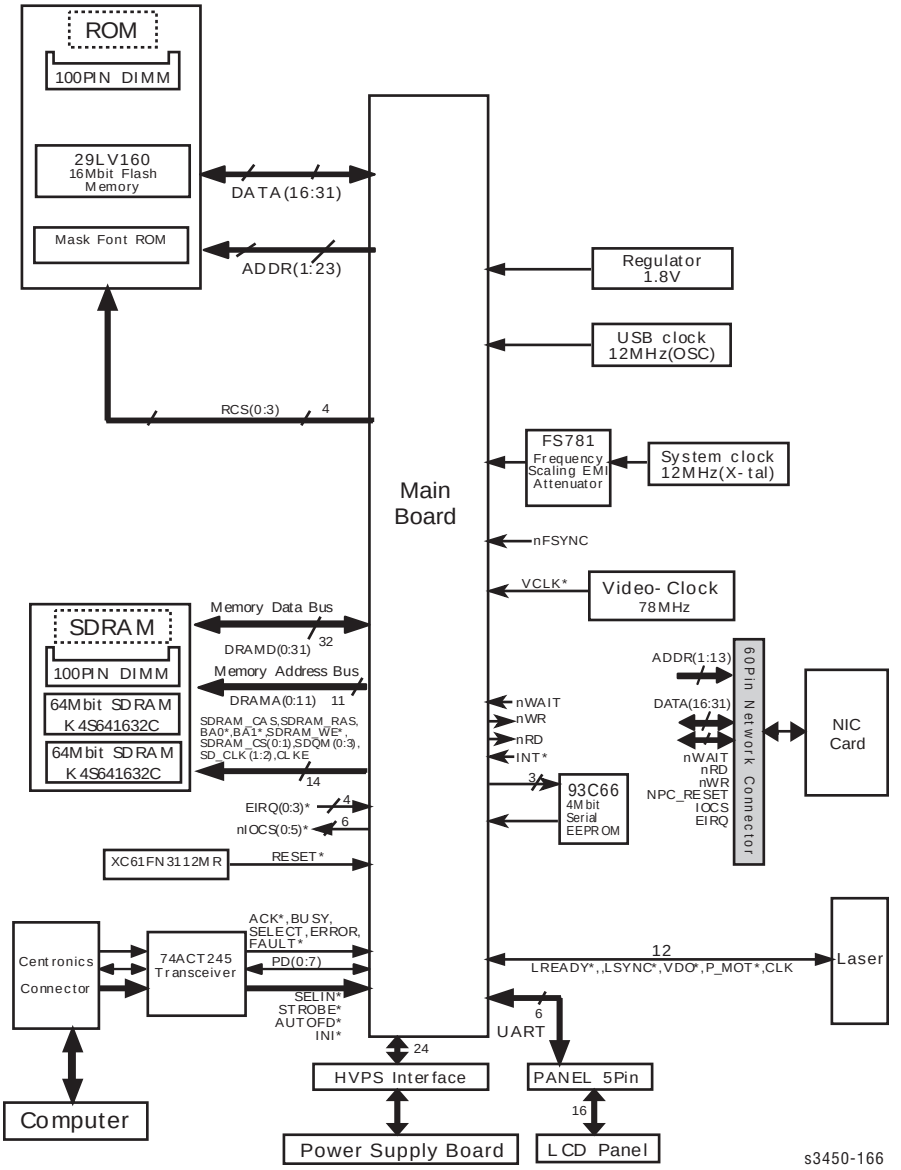

## Main Board

The Main Board combines the Image Processor and Engine Control functions. It contains a 266 MHz, Power PC processor and comes with a standard memory capacity of 32 Mbytes. The board provides one expansion slot that allows available memory to be expanded up to 160 Mbytes by adding an additional 32 Mbyte, 64 Mbyte, or 128 Mbyte DIMM.

.

## Image Processor Function

The host computer connects to the Main Board using a bi-directional parallel or Universal Serial Bus (USB) cable, or via an optional RJ45 Ethernet Network Card. The Main Board receives image data from the host computer and converts the image to a bitmap image. It then sends the current image to the Laser Scanner assembly.




Main Board Wiring Diagram

## Print Engine Control Function

The Print Engine Control function is composed of two sections:

- Power Distribution
- Engine Control

The power distribution section receives AC voltage and creates the required DC outputs (3.3 VDC, 5 VDC, and 24 VDC) to power the printer components. It also supplies AC voltage to the Fuser assembly.

The engine control section provides all of the principle operating voltages and control signals for the following printer operations:

- Main Drive Motor
- Fuser Assembly
- High Voltage Power Supply (HVPS)
- Laser Scanner Unit (LSU)
- Sensors
- Solenoids
- Thermistor
- All parts related to the xerographic process
- Optional Paper Tray 3 and Tray 1

The HVPS section generates and supplies the following voltages:

- Transfer Voltage
- Charge Voltage
- Bias Voltage
- Supply Voltage

The Bias, Supply, and Charge voltages are used by the Print Cartridge.

.

## Print Cartridge

The Print Cartridge receives image data in the form of pulsed laser light from the Laser Scan Unit and creates the image via the xerographic process. The Print Cartridge contains the following components:

- Charge Roller
- Drum
- Developer Roller (D/R)
- Supply Roller (S/R)
- Metering Blade
- Cleaning Blade

## Laser Scan Unit (LSU)

The Laser Scan Unit receives the bit mapped image data from the Main Board and uses that information to turn the laser beam on and off as required to correctly expose the drum. Image data transfer from the Main Board is controlled by a synchronization signal from the LSU so the vertical scanning line is synchronized with the printed page. The LSU contains the following components:

- Laser Diode: generates the laser beam.
- Rotating Polygon Mirror: scans the laser beam across the drum, axially.
- Beam Detector: synchronizes the left margin.
- Optical Lens System: focuses the laser beam onto the surface of the drum.
- Mirrors: reflect the laser beam onto the surface of the drum.

## Transfer Roller

The transfer subsystem consists of the Pre-Transfer Lamp (PTL) and the Transfer Roller. The PTL exposes the drum surface after the latent image has been developed to lower surface potential of the drum. This provides enhanced transfer efficiency.

The transfer roller provides a high positive potential on the back of the print media. This potential attracts the negatively charged toner image from the drum and deposits it on the surface of the print media.

## Fuser Assembly

The Fuser Assembly contains the entire Fuser Subsystem and is a field replaceable Service Part. The Fuser Assembly contains the following components:

- Heat Lamp and Heat Roller: a halogen lamp generates the heat for the heat roller. The Heat Roller melts the toner so it adheres to the paper.
- Pressure Roller: provides pressure on the opposite side of the print media so the heat roller can embed the melted toner in the media.
- Thermistor: monitors the surface temperature of the Heat Roller. This information is used to control the heat lamp and thus keep the heat roller at the correct temperature.
- Thermostat: prevents overheat damage when unexpected system faults occur.

## Paper Feed Drive

The drive for all rollers is provided by the main drive motor and a series of drive gears. When the main motor turns, all the paper path components also turn except the Pick-Up Roller. The Pick-Up Roller assembly includes a mechanical clutch, released by the paper feed solenoid.

## Paper Out Sensor

The paper supply is monitored by the Paper Out Sensor. When the tray runs out of paper, the sensor will send a signal to the Main Board, the control panel LED will blink yellow, and the Paper Out message for the appropriate tray will display on the control panel.

## Paper Feed Sequence

When the Main Board is ready to feed paper, it energizes the paper feed solenoid. The solenoid armature releases the media unit clutch and the pick-up roller makes one revolution. This drives the paper to the feed roller and retard roller. The pick-up roller is designed with one flat side. The flat side always faces the paper supply when not feeding paper. This shape allows paper to be moved in and out of the assembly.

The feed roller and retard roller drive the paper to the registration transport assembly which in turn drives the paper towards the transfer area. Before arriving at the transfer area, the paper actuates the Registration Sensor.

## Registration Sensor

The Registration Sensor has two purposes. First, it is used to monitor paper movement. If the paper takes too long getting to the sensor, or it stays at the sensor location too long, the Main Board will shut down the machine, the control panel LED will blink red, and a “Jam” error message will display on the control panel.

Second, the signal generated by the sensor tells the Main Board that the paper is almost at the transfer area and it is time to start the xerographic process. It is important that the leading edge of the paper enters the transfer area at the same time as the leading edge of the developed image on the drum.

## Paper Transport

The registration transport assembly continues to drive the paper into the transfer area, where the image is transferred from the drum to the paper.

The paper continues to the fusing area where it goes between the fuser rollers. The heat roller is heated by a halogen lamp. When the paper goes between the heat roller and the pressure roller, the toner is melted into the paper forming a permanent image. The temperature of the heat roller is monitored by a thermistor that sends signals to the Main Board.

The fuser drives the paper into the exit rollers and the exit rollers drive the paper into the output tray. When printing the first side of a duplex print job, the drive direction is reversed when the exit sensor is actuated. Paper is then directed into the Duplex Unit for printing on the second side.

## Fuser Exit Sensor

The Exit Sensor monitors the paper movement. If the paper takes too long getting to the sensor, or it stays on the sensor too long, the Main Board will shut down the machine, the Control Panel LED will blink red, and a JAM 2 error message will display on the Control Panel. The signal from the Exit Sensor is also used to control paper feed to the Duplex Unit for duplex print jobs.

## Duplex Unit

The Duplex Unit is mounted in the bottom of the printer. As paper leaves the fuser and is picked up by the Exit Rollers, the drive direction is reversed to send the paper down to the Duplex Unit. As the paper passes through the Duplex Unit, it activates the Duplex Sensor. This in turn activates the feed roller to position the paper for printing on the second side.

# Error Messages and Codes

## In this chapter...



Chapter 3

# Introduction

This section covers troubleshooting procedures for the Phaser 3425 Laser Printer front panel error messages and codes. Only jams and fatal errors will produce an associated numeric code. Error messages and codes are generally specific, making it important that service personnel and users record errors exactly when reporting problems with the printer. Any code associated with an error message or jam can be viewed by displaying the **Fault History** or **Jam History** on the front panel.

Some procedures require running service diagnostic test functions to verify a specific printer part is operating correctly. For information on Service Diagnostics and all internal printer test functions, see the table "Service Diagnostics Menu Map" on page 3-9.

To troubleshoot problems, such as start up and power on, media, paper path, print-quality or image problems, and electrical failures not associated with a front panel message or code, refer to the section "General Troubleshooting" on page 4-1 or to "Print-Quality Troubleshooting" on page 5-1.

If an error message or code is not visible on the front panel, the **Fault History** and **Jam History** list errors reported by the printer. The error codes that will display when viewing the **Fault History** and **Jam History** logs and the equivalent Printer Error Messages are listed in the following code conversion tables.

| Fault History Code | Printer Error Message |
|---|---|
| 41 | Insufficient Memory |
| 44 | Output Tray Is Full |
| 5A | Laser Failure |
| 53 | Replace Print Cartridge |
| 55 | Invalid Print Cartridge |
| 56 | Fuser Failure/Open Fuser Error |
| 57 | Fuser Failure/Low Heat Error |
| 58 | Fuser Failure/Over Heat Error |

| Jam History Code | Jam Error Message |
|---|---|
| 01 | Jam At Tray 1, 2, or 3 |
| 02 | Jam At Top |
| 03 | Jam At Exit |
| 04 | Jam At Duplex |
| 05 | Jam At Tray/Remove Tray 2 |

When an error first occurs, record the error message and code then cycle power to the printer to see if the error recurs. Fault History can be accessed one of two ways:

## Accessing Fault History

1. View the printer's fault history on the front panel.
   a. Go to **Troubleshooting --> Service Tools --> Fault History** or **Jam History**. **Or...**
2. If the printer is connected to a network and has a TCP/IP address, view the printer's web page using a web browser.
   a. Open a web browser.
   b. Enter the printer's IP address as the URL.
   c. Select the Troubleshoot link and the fault history will be displayed.

# Servicing Instructions

The Service Flowchart is an overview of the path a service technician should take, using this technical manual, to service the print engine and options. If you choose not to use the Service Flowchart, it is recommended that you start at the appropriate troubleshooting table and proceed from there.

Always follow the safety measures detailed in the front of the manual when servicing the printer. See “Service Safety Summary” on page vii .

**Step 1: Identify the Problem:**

1. Verify the reported problem does exist.
2. Check for any error codes and write them down.
3. Print normal customer prints and service test prints.
4. Make note of any print quality problems in the test prints.
5. Make note of any mechanical or electrical abnormalities present.
6. Make note of any unusual noise or smell coming from the printer.
7. View the fault history and jam history under the Service Tools Menu.
8. Verify the AC input power supply is within proper specifications by measuring the voltage at the electric outlet while the printer is running.

**Step 2: Inspect and Clean the Printer:**

1. Switch OFF printer power.
2. Disconnect the AC power cord from the wall outlet.
3. Verify the power cord is free from damage or short circuit and is connected properly.
4. Remove the Print Cartridge and protect it from light.
5. Inspect the printer interior and remove any foreign matter such as paper clips, staples, pieces of paper, dust or loose toner.
6. Do not use solvents or chemical cleaners to clean the printer interior.
7. Do not use any type of oil or lubricant on printer parts.
8. Use only an approved toner vacuum.
9. Clean all rubber rollers with a lint-free cloth, dampened slightly with cold water.
10. Inspect the interior of the printer for damaged wires, loose connections, toner leakage, and damaged or obviously worn parts.
11. If the Print Cartridge appears obviously damaged, replace with a new one.

**Step 3: Find the Cause of the Problem:**

1. Use the Error Messages and Codes and troubleshooting procedures to find the cause of the problem.
2. Use Diagnostics to check printer and optional components.
3. Use the Wiring Diagrams and Plug/Jack Locator to locate test points.
4. Take voltage readings at various test points as instructed in the appropriate troubleshooting procedure.
5. Use the "Front Panel Test Print" on page 5-3, to isolate problems with the Main Board.

| Step 4: Correct the Problem |
|---|
| 1. Use the Parts List to locate a part number.<br>2. Use the Removal and Replacement Procedures to replace the part. |
| **Step 5: Final Checkout** |
| 1. Test the printer to be sure you have corrected the initial problem and there are no additional problems present. |

# Using the Troubleshooting Procedures

1. Each **Step** in a Troubleshooting Procedure instructs you to perform a certain action or procedure. The steps are to be followed sequentially until the problem is fixed or resolved.
2. The **Actions and Questions** box contains additional information and/or additional procedures you must follow to isolate the problem.
3. When a procedure instructs you to test a component using service diagnostics, see the "Service Diagnostics Menu Map" on page 3-9 for the detailed steps and functions for testing parts of the printer.
4. The action is followed by a question. If your response to the question is "**Yes**", then follow the instructions for a "**Yes**" reply. If your response to the question is "**No**", then follow the instructions for a "**No**" reply.
5. Troubleshooting Procedures may ask you to take voltage readings or test for continuity at certain test points within the printer. For detailed diagrams, refer to Chapter 10, "Wiring Diagrams" on page 10-1 for complete information on test point locations and signal names.
6. Troubleshooting Procedures often ask you to replace a printer component, Chapter 8, "Service Parts Disassembly" on page 8-1 provides detailed steps for removing and replacing all major parts of the printer. Chapter 9, "Parts Lists" on page 9-1 details the location, quantity and part number for all spared printer parts.

# General Notes on Troubleshooting

1. Unless indicated otherwise, the instruction “Switch ON printer main power” means for you to switch ON printer power and let the printer proceed through POST to a ‘Ready’ condition.
2. When instructed to take voltage, continuity or resistance readings on wiring harness, proceed as follows; Check P/J 232–1 to P/J 210–5 by placing the red probe (+) of your meter on pin 1 of P/J 232, and place the black probe (–) of your meter on pin 5 of P/J 210.
3. When you are instructed to take resistance readings between “P/J 232 <=> P/J 210” (without specified pin numbers), check all pins. Refer to "Wiring Diagrams" on page 10-1 for the location of all wiring harnesses and pins.
4. When you are instructed to take a voltage reading, the black probe (–) is generally connected to a pin that is either RTN (Return) or SG (Signal Ground). You can substitute any RTN pin or test point in the printer, and you can use FG (frame ground) in place of any SG pin or test point.
5. Before measuring voltages make sure the printer is switched ON, the Imaging Unit and the paper trays are in place, and the interlock switches are actuated, unless a troubleshooting procedure instructs otherwise.
6. All voltage values given in the troubleshooting procedures are approximate values. The main purpose of voltage readings is to determine whether or not a component is receiving the correct voltage value from the power supply and if gating (a voltage drop) occurs during component actuation. Gating signals may be nothing more than a pulse, resulting in a momentary drop in voltage that may be difficult or impossible to read on the average multi-meter.
7. When a troubleshooting procedure instructs you to replace a non-spared component and that component is part of a parent assembly, you should replace the entire parent assembly.

# Voltage Measurements

1. Power and signal grounds are connected to the frame ground. All circuit troubleshooting can be performed using the metal frame (chassis) as the grounding point. To locate connectors or test points, refer to "Wiring Diagrams" on page 10-1 for more information.

Unless otherwise specified, the following voltage tolerances are used within this section:

| Stated | Measured |
|---|---|
| +3.3 VDC | +3.135 to +3.465 VDC |
| +5.0 VDC | +4.75 to +5.25 VDC |
| +24.0 VDC | +21.6 to +26.4 VDC |
| 0.0 VDC | Less than +0.5 VDC |

# Service Diagnostics

The Phaser 3425 Laser Printer has built-in diagnostics to aid in troubleshooting problems with the printer. The Service Diagnostics Menu provides a means to test sensors, motors, switches, clutches, fans and solenoids. Diagnostics also contain built-in test prints, cleaning procedures, printer status and some NVRAM access.

Service diagnostics are to be executed through the front panel by a certified service technician only. The printer must be rebooted to enter Service Diagnostics:

## Entering Service Diagnostics:

1. Turn the printer power OFF.
2. Hold down the **OK** button and turn the printer back ON.
3. Continue to hold the button until the following mesage is displayed on the front panel: **"Diagnostic Mode" / "Press Menu Key"**, and then release the **OK** button.
4. Press the **Menu** button and use the Arrow buttons to scroll through the available functions (see the following Button Functions and Menu Map).

# Service Diagnostic Front Panel Button Descriptions

| Button | Function |
|---|---|
| **BACK** | Returns to the prior higher level menu structure, if available.<br>If help text is displayed on the front panel, pressing BACK will restore the current menu item and remove the help text. |
| **CANCEL** | Terminates the current test.<br>Cancels current INFO display. |
| **MENU** | Cycles through all of the top level menu items. |
| **UP** | Scrolls up one menu item within a menu list. This control does not 'wrap'.<br>Used to increment data in tests requiring user input. |
| **DOWN** | Scrolls down one menu item within a menu list. This control does not 'wrap', the end of a menu list is designated by three asterisks.<br>Used to decrement data in tests requiring user input. |
| **OK** | Enters the highlighted menu. Executes the current test item.<br>Used to select a data value entered by the user. |

# Service Diagnostics Menu Map

| Function | Function | Function | Description | Display |
|---|---|---|---|---|
| Tray 3 Interface | | | Selects and checks Tray 3 interface. | Tray 3 Interface PASS (FAIL) |
| Test Pattern | | | Pressing OK implements printing the test pattern using either the Simplex or Duplex print routine. The displayed location should be checked for normal operation during print. The location order for normal print routines is listed below. | Pattern Print (Location) |

1. Simplex: (1 - 999) Press UP/DOWN/OK
   a. 1 Page: Laser Start -> Pick Up -> Reg. Sensor On -> Exit Sensor On -> End
   b. More Than 1 Page: Laser Start -> Pick Up -> Reg. Sensor On -> Pick Up -> Reg. Sensor On -> ... -> Exit Sensor On -> End
2. Duplex: (1 - 999) Press UP/DOWN/OK
   a. 1 Page: Laser Start -> Pick Up -> Reg. Sensor On -> Exit Sensor On -> Duplex Sensor On -> Reg. Sensor On -> Exit Sensor On -> End
   b. More Than 1 Page: Laser Start -> Pick Up -> Reg. Sensor On -> Exit Sensor On -> Duplex Sensor On -> Reg. Sensor On -> Pick Up -> Reg. Sensor On -> ... -> Exit Sensor On -> End

| Function | Function | Function | Description | Display |
|---|---|---|---|---|
| Motor/Fan | Main Motor | | Main drive motor runs after OK button is pressed and stops when the Cancel button is pressed. | Main Motor (ON / OFF) |
| | Laser Motor | | Laser motor runs after OK button is pressed and stops when the Cancel button is pressed. | Laser Motor (ON / OFF) |
| | Exit Forward | | Exit motor runs in forward direction when OK button is pressed and stops when Cancel is pressed. | Exit Forward (ON / OFF) |
| | Exit Backward | | Exit motor runs in reverse when OK is pressed and stops when Cancel is pressed. | Exit Backward (ON / OFF) |
| | Tray 3 Motor | | Tray 3 motor runs when OK button is pressed and stops when Cancel is pressed. If Tray 3 is not installed, test does not run. “Tray 3 Not Installed” displays. | Tray 3 Motor (ON / OFF) |
| | Fan-Sub | | The sub fan runs after OK button is pressed and stops when Cancel is pressed. | Fan-Sub (ON / OFF) |
| | Fan-Main | | The main fan runs after OK button is pressed and stops when Cancel is pressed. | Fan-Main (ON / OFF) |
| Solenoid/ Clutch | Tray 1 Solenoid | | When OK button is pressed, Tray 1 solenoid is energized for 150 msec; then automatically de-energized. | Tray 1 Solenoid (ON / OFF) |
| | Tray 2 Solenoid | | When OK button is pressed, Tray 2 solenoid is energized for 150 msec; then automatically de-energized. | Tray 2 Solenoid (ON / OFF) |
| | Tray3 Solenoid | | When OK button is pressed, Tray 3 solenoid is energized for 150 msec; then automatically de-energized. | Tray 3 Solenoid (ON / OFF) |
| | Reg. Clutch | | When OK button is pressed, Regi clutch is energized for 1 sec; then automatically de-energized.<br>Main motor runs 2 sec before clutch is energized to enable checking the clutch state. | Reg. Clutch (ON / OFF) |
| | Tray 3 Clutch | | When OK button is pressed, Tray 3 clutch is energized for 1 sec; then automatically de-energized.<br>Main motor runs 2 sec before clutch is energized to enable checking the clutch state.<br>If Tray 3 not installed, test does not run. “Tray 3 Not Installed” displays. | Tray 3 Clutch (ON / OFF) |

| Function | Function | Function | Description | Display |
|---|---|---|---|---|
| Sensor | Paper Size Sensor | | Compares selected media size with size actually loaded. If Tray 3 is installed, both Tray 2 and Tray 3 sizes will display. | Paper size: Letter |
| | Tray 1 NP Sensor | | With tray down, touch sensor and confirm message changes to “Tray 1 With Paper”. | Tray 1 W/ Out Paper |
| | Tray 2 NP Sensor | | With tray extended, touch sensor and confirm message changes to “Tray 2 With Paper”. | Tray 2 W/ Out Paper |
| | Tray 3 NP Sensor | | With tray extended, touch sensor and confirm message changes to “Tray 3 With Paper”. | Tray 3 W/ Out Paper |
| | Duplex Sensor | | Remove Tray 2, pull down on duplex jam gate, actuate the sensor, and confirm that message changes to “Duplex Sensor On”. | Duplex Sensor Off |
| | Cover Open Sensor | | With cover open, touch sensor and confirm message changes to “Cover Closed”. | Cover Open |
| | Reg. Sensor | | With cover open and print cartridge out, touch sensor; confirm message changes to “Reg. Sensor With Paper”. | Reg. Sensor W/ Out Paper |
| | Exit Sensor | | With back cover open, push a sheet of paper into exit path and confirm message changes to “Exit Sensor With Paper”. | Exit Sensor W/Out Paper |
| | Output Full Sensor | | Touch sensor in output bin and verify that message changes to “Output Bin Full”. | Output Bin Not Full |

| Function | Function | Function | Description | Display |
|---|---|---|---|---|
| HVPS | Dev Bias | | Developer Bias (+500V) turns on when OK is pressed and goes off when Cancel is pressed. Measure voltage with a DMM, if required. | Dev Bias Test (ON/ OFF) |
| | Charge Roll | | Charge Roller Voltage (+1200V) turns on when OK is pressed and goes off when Cancel is pressed. Returns an ADC value for voltage. | Charge Roll Test (ON/ OFF) |
| | Transfer Roll (+) | | Positive Transfer Voltage (+1200V) turns on when OK is pressed and goes off when Cancel is pressed. Returns an ADC value for voltage. | Transfer Roll (+) Test (ON/OFF) |
| | Transfer Roll (-) | | Negative Transfer Voltage (-800V) turns on when OK is pressed and goes off when Cancel is pressed. Measure voltage with a DMM, if required. | Transfer Roll (ON/OFF) |
| | Pre-transfer Lamp (PTL) | | PTL turns on when OK is pressed and goes off when Cancel is pressed. Visual confirmation is possible with the cover open and the Print Cartridge out. | PTL (ON/OFF) |
| Laser Scanning Unit (LSU) | Laser Diode | | Laser Diode turns on when OK is pressed and goes off when Cancel is pressed. | Laser Diode Test (ON/ OFF) |
| | Laser Ready | | Displays the appropriate message when the LSU is ready to print (laser diode is on, polygon speed stable). | Laser Ready Test (Pass/Error) |
| Fuser | Fuser Control | | When “Target Temp” displays, (default is 150º C), use the arrow buttons to change target if desired, and press OK. The target temp and current temp will display on the bottom line. Change is only effective during test and does not change operationg temp. Bracketed letter following the target temp indicates Fuser state: [O] is on [X] is off. | Target/ Current XXX / XXX [O] |
| OPC (Print Cartridge) Cycle | Read OPC Cycle | | Displays the currently stored value for the number of cycles by the Print Cartridge. Ranges are as follows:<br>10K Cartridge:<br>■ 78,000 = Toner Low<br>■ 92,000 = Replace Cart.<br>5K Cartridge:<br>■ 39,000 = Toner Low<br>■ 46,000 = Replace Cart. | Total OPC Cycle [XXX] |

# Error Messages and Codes Summary Table

## Error Messages and Codes Summary Table

| Error Type | Front Panel Message | Code |
|---|---|---|
| **Fuser** | | |
| | Fuser Failure (open/disconnected Fuser) | 0x56 |
| | Engine Fuser Low Heat Error | 0x57 |
| | Engine Fuser Over Heat Error | 0x58 |
| **Laser Errors** | | |
| | Laser Failure (Polygon motor not ready) | 0x5A |
| **Jam Errors** | | |
| | Jam At Tray [1] [2] [3]/ Remove All Paper | 0x01 |
| | Jam At Top/ Open Top Cover | 0x02 |
| | Jam At Exit/ Open Top Cover | 0x03 |
| | Jam At Duplex/ Open Top Cover | 0x04 |
| | Jam At Tray/ Remove Tray 2 | 0x05 |
| **Memory Errors** | | |
| | Insufficient Memory | 0x41 |
| **Tray Errors** | | |
| | Output Tray is Full | 0x44 |
| **Toner Errors** | | |
| | Replace Print Cartridge | 0x53 |
| | Invalid Print Cartridge | 0x55 |

# Fuser Failure/Low Heat/or Overheat/ 0x56/ 0x57/0x58

The printer's front panel displays "Fuser Failure, Engine Fuser Over Heat Error, or Engine Fuser Low Heat Error". The fuser has been removed, reseated, and locked into place. Any obstructions, media, or debris has been removed from the fuser paper path. Printer power has been cycled and the error still appears.

## Troubleshooting Reference

| Applicable Parts | Wiring and Plug/Jack Map References |
|---|---|
| Fuser heat lamp | "Print Engine Interconnect Diagram" on page 10-2 |
| Fuser overheat thermostat | |
| Thermistor | |
| Main Board | |

## Troubleshooting Procedure

| Steps | Actions and Questions | Yes | No |
|---|---|---|---|
| 1 | Remove Fuser | Go to Step 2. | - - |
| 2 | Check resistance of overheat thermostat. Is thermostat open? | Replace Fuser. | Go to Step 3. |
| 3 | Check resistance of thermistor. Is thermistor open? | Replace Fuser. | Go to Step 4. |
| 4 | Check resistance of heat lamp. Is heat lamp open? | Replace Fuser. | Replace Main Board. |

# LSU Error or 0x5A

The printer's front panel displays "Laser Failure". The LSU has been removed, reseated, and locked into place. Any obstructions, media, or debris has been removed from the paper path. Printer power has been cycled and the error still appears.

## Troubleshooting Reference

| Applicable Parts | Wiring and Plug/Jack Map References |
|---|---|
| LSU | "Print Engine Interconnect Diagram" on page 10-2 |
| Print Engine Controller Board | |

## Troubleshooting Procedure

| Steps | Actions and Questions | Yes | No |
|---|---|---|---|
| 1 | Check that the laser connectors are properly seated. | Go to Step 2. | Reseat the connectors. |
| 2 | Use the embedded diagnostics to check laser motor operation. Does the laser motor run? | Go to Step 3. | Replace LSU. |
| 3 | Does error recur? | Replace Main Board. | Complete |

# Jam At Tray [1] [2] [3] or 0x01

The printer's front panel displays "Jam At Tray [1] [2] [3]". The active tray (Tray 2 or Tray 3) has been removed, reseated, and locked into place. Any obstructions, media, or debris has been removed from the input paper path. Printer power has been cycled and the error still appears.

## Troubleshooting Reference

| Applicable Parts | Wiring and Plug/Jack Map References |
|---|---|
| Pickup unit | "Print Engine Interconnect Diagram" on page 10-2 |
| Tray 1, 2, or 3 Solenoid | |
| Regi Clutch or Feed Clutch | |
| Feed Sensor | |

## Troubleshooting Procedure

| Steps | Actions and Questions | Yes | No |
|---|---|---|---|
| 1 | Using the embedded diagnostics, check operation of the tray solenoids. Do the tray solenoids operate correctly? | Go to Step 2. | Replace the inoperative solenoid. |
| 2 | Using the embedded diagnostics, check operation of the Regi Clutch and Feed Clutch. Do the clutches operate correctly? | Go to Step 3. | Replace the defective clutch. |
| 3 | If paper feeds into the printer and the Jam error message appears, use the embedded diagnostics to check feed sensor operation. Does the feed sensor operate correctly? | Go to Step 4. | Replace the defective sensor or actuator. |
| 4 | Check the side guides for the inoperative tray for damage or improper seating. Are guides damaged or loose? | Replace damaged part. | Go to Step 5. |
| 5 | Check the surface of the pick-up rollers for dirt or damage. Are the rollers dirty or damaged? | Clean rollers with a soft cloth very slightly dampened with water or replace if damaged. | Replace Main Board. |

# Jam At Top(0x02) or Jam At Exit (0x03)

The printer's front panel displays "Jam At Top or Jam At Exit". Any obstructions, media, or debris has been removed from the paper path. Printer power has been cycled and the error still appears.

## Troubleshooting Reference

| Applicable Parts | Wiring and Plug/Jack Map References |
|---|---|
| Fuser | "Print Engine Interconnect Diagram" on page 10-2 |
| Power Supply Board | |
| Main Board | |

## Troubleshooting Procedure

| Steps | Actions and Questions | Yes | No |
|---|---|---|---|
| 1 | Does paper jam in front of or just inside the Fuser? | Replace the Power Supply Board. | Go to Step 2. |
| 2 | If paper jams in the fuser and the fuser discharge roller after leaving the Regi Sensor, use the embedded diagnostics to check operation of the Regi Sensor. Does the sensor operate correctly? | Replace the Main Board. | Replace the damaged sensor. |
| 3 | Does the error recur? | Go to Step 4. | Complete |
| 4 | If paper exits the printer but "Jam At Exit" occurs, use the embedded diagnostics to check operation of the Fuser Exit Sensor. Does the sensor operate correctly? | Replace the Power Supply Board. | Replace the Fuser. |

# Jam At Duplex (0x04) or Jam At Tray (0x05)

The printer's front panel displays "Jam At Duplex or Jam At Tray". Any obstructions, media, or debris has been removed from the duplex paper path. Printer power has been cycled and the error still appears.

## Troubleshooting Reference

| Applicable Parts | Wiring and Plug/Jack Map References |
|---|---|
| Duplex Sensor | "Print Engine Interconnect Diagram" on page 10-2 |
| Duplex Assembly | |
| Power Supply Board | |
| Main Board | |
| Transport Roller Shaft Assembly | |

## Troubleshooting Procedure

| Steps | Actions and Questions | Yes | No |
|---|---|---|---|
| 1 | Does paper jam after reversal but before reaching duplex sensor? | Replace Transport Roller Shaft Assembly. | Go to Step 2. |
| 2 | Does problem recur? | Replace Duplex Assembly. | Complete |
| 3 | If paper jam occurs at the Feed Roller, use the embedded diagnostics to check operation of the Duplex Sensor. Does the sensor operate correctly? | Replace the Power Supply Board. | Replace the Duplex Sensor. |
| 4 | Does problem recur? | Replace the Main Board. | Complete |

# Output Tray Is Full or 0x44

The printer's front panel displays "Output Tray Is Full". The output tray has been emptied of all paper. Printer power has been cycled and the error still appears.

## Troubleshooting Reference

| Applicable Parts | Wiring and Plug/Jack Map References |
|---|---|
| Tray Full Sensor | "Print Engine Interconnect Diagram" on page 10-2 |
| Main Board | |

## Troubleshooting Procedure

| Steps | Actions and Questions | Yes | No |
|---|---|---|---|
| 1 | Check the operation of the sensor actuator. Does the actuator bind or show signs of damage? | Replace sensor actuator. | Go to Step 2. |
| 2 | Use the embedded diagnostics to check operation of the Tray Full Sensor. Does the sensor operate correctly? | Replace Main Board. | Replace Tray Full Sensor. |

# Replace Print Cartridge (0x53) or Invalid Print Cartridge (0x55)

The printer's front panel displays "Replace Print Cartridge". The Print Cartridge has been replaced with the correct Xerox Print Cartridge. Printer power has been cycled and the error still appears.

## Troubleshooting Reference

| Applicable Parts | Wiring and Plug/Jack Map References |
|---|---|
| Cover open interlock switch | "Print Engine Interconnect Diagram" on page 10-2 |
| Switch actuator lever | |
| Main Board | |

## Troubleshooting Procedure

| Steps | Actions and Questions | Yes | No |
|---|---|---|---|
| 1 | Is the switch actuating lever on top of the Print Cartridge damaged? | Replace Print Cartridge. | Go to Step 2. |
| 2 | Is the Cover Open Switch connector (CN20) properly connected to the Main Board? | Go to Step 3. | Reconnect CN20. |
| 3 | Use the embedded diagnostics to check operation of the Cover Open Switch. Does the switch operate correctly? | Replace the Main Board. | Replace the Cover Open Switch. |

# General Troubleshooting

## In this chapter...



Chapter 4

# Introduction

This chapter covers the general start-up, Power On Self Test, and power supply operations of the printer to aid in troubleshooting problems not associated with an error code or front panel error message. For troubleshooting problems associated with an error code or front panel error message, notes on how to use the troubleshooting procedure tables, and how to use service diagnostics, see Chapter 3 "Error Messages and Codes" on page 3-1.

Troubleshooting procedures will isolate a problem to a specific component or subassembly, in some cases including the wiring harness.

# Preliminary Procedures

1. Is the AC power provided at the wall outlet within specifications for this printer; either 110 VAC or 220 VAC?
2. Is the AC power cord in good condition (not frayed or broken)?
3. Is one end of the AC power cord connected to the printer?
4. Is the other end of the AC power cord plugged into a grounded three-pronged AC wall outlet?
5. Is the printer located in an area where the temperature and humidity are moderate and stable as recommended in the General Information section?
6. Is the printer located in an area that is free of dust?
7. Is the printer located away from water outlets, steamers, electric heaters, volatile gases, or open flames?
8. Is the printer shielded from the direct rays of the sun?
9. Does the printer have the correct ventilation space around all sides as recommended in the "Physical Dimensions and Clearances" on page 1-11?
10. Is the printer sitting on a level and stable surface?
11. Is the paper stock used in the printer as recommended in the "Media and Tray Specifications" on page 1-14?
12. Does the customer use the printer as instructed in the User Guide?
13. Are consumables replaced at the intervals recommended in "Consumables" on page 1-9?
14. Is the Print Cartridge properly installed?
15. Are all of the printer assemblies in place and are all printer covers and doors firmly closed?

# Front Panel Troubleshooting

## No Front Panel Display after Power is Turned ON

1. Verify that power cord is securely plugged into both the printer and the grounded, three prong AC outlet with the appropriate power available.
2. Ensure that all covers are securely closed.
3. Verify that Top Cover, Print Cartridge, and Fuser Gate interlocks are functional.
4. Replace the Power Supply Board.
5. Replace the Main Board.
6. Replace the Front Panel.

## Front Panel LED is On, Front Panel Display is Blank

1. Remove and reseat all connections to the Main Board.
2. Remove and reseat the Front Panel connector.
3. Replace the Front Panel wiring harness.
4. Replace the Front Panel.
5. Replace the Main Board.

## Front Panel Continually Displays “Close Cover or Check Cartridge”

1. Verify that the Top Cover is securely closed.
2. Ensure that the Print Cartridge is properly installed and securely seated.
3. Verify that the Top Cover, Print Cartridge, and Fuser Gate interlocks are functional.
4. Replace the Main Board.

## Front Panel Continually Displays “No Paper in Tray [x]”

1. Ensure that the specified tray contains paper.
2. Verify that the Paper Out actuator is in the correct position and moves without binding.
3. Replace the Paper Out Sensor.
4. Replace the Main Board.

## Front Panel Continually Displays “Output Tray Is Full”

1. Empty the output tray.
2. Ensure that the Output Full Actuator is in the correct position and moves without binding.
3. Verify that all harness connections to the Output Full Sensor are secure.
4. Replace the Output Full Sensor.
5. Replace the Output Full Sensor Harness.
6. Replace the Exit Roller Assembly.
7. Replace the Main Board.

# Paper Size Switch Assembly

Paper size and tray installation is determined by a combination of ON/OFF statuses of the upper, middle, and lower switches of the Switch Paper Size Assembly.

| Paper size | Switches | | |
|---|---|---|---|
| | Upper | Middle | Lower |
| LEGAL14" | ON | ON | OFF |
| LEGAL13" | ON | OFF | ON |
| EXECUTIVE | OFF | ON | ON |
| B5 | OFF | OFF | ON |
| A4 | OFF | ON | ON |
| LETTER | ON | OFF | OFF |
| A5 (for reference only, supported in Tray 1 only) | OFF | OFF | OFF |
| No Tray | OFF | OFF | OFF |

# Power Supply Troubleshooting

## Troubleshooting References

| Applicable Parts | Wiring and Plug/Jack Map References |
|---|---|
| Power Supply Board | |
| AC Switch Harness Assembly | |

## Procedure

| Step | Action and Questions | Yes | No |
|---|---|---|---|
| 1 | a. Check the voltage at the AC wall outlet. Is there approximately 110 VAC (or 220 VAC if the printer is a 220 V model) at the AC wall outlet? | Go to Step 2. | Notify the customer of improper AC output from the outlet. |
| 2 | a. Check the power cord for defects or a loose connection. | Replace or reseat the power cord. | Go to Step 3. |
| 3 | a. Disconnect the Power Cord and turn the AC switch ON.<br>b. Check the AC Switch Harness for continuity. | Replace the Power Supply Board. | Replace the AC Switch Harness Assembly. |

# Media Jams and the Paper Path

## Media-based Problems

1. Check that the correct type of media is being used. For the correct media types and weights, see "Media and Tray Specifications" on page 1-14. The customer should be using a quality laser printer paper.
2. Inspect the paper for bent, torn, or folded corners.
3. Ensure that the correct media type is set in the front panel.
4. Ensure that the paper guides are set correctly.
5. Ensure that media is a supported type for the tray. See "Media and Tray Specifications" on page 1-14, for correct media types, sizes and weights.
6. Load a fresh ream of paper in the tray.
7. Prior to performing any of the Jam procedures, verify that the Registration and Fuser Exit actuators are not being held in the actuated position and that they move freely without binding.

## Paper Mis-feed from Tray 1 (MPT)

### Troubleshooting References

| Applicable Parts | Wiring and Plug/Jack Map References |
|---|---|
| Tray 1 Actuator | |
| Tray 1 Assembly | |

### Procedure

| Step | Action and Questions | Yes | No |
|---|---|---|---|
| 1 | a. Is paper loaded correctly? | Go to Step 2. | Load paper correctly. |
| 2 | a. Is tray damaged?<br>b. Are parts missing? | Replace Tray 1 Assembly. | Go to Step 3. |
| 3 | a. Is Tray 1 actuator binding? | Repair or replace Tray 1 Actuator. | Go to Step 4. |
| 4 | a. Is Tray 1 Solenoid operational? Refer to "Service Diagnostics Menu Map" on page 3-9. | Go to Step 5. | Replace Tray 1 Solenoid. |
| 5 | a. Are the feed roller or retard/drag pads damaged or dirty? | Clean if dirty. | Replace damaged parts. |

# Paper Mis-feed from Tray 2

## Troubleshooting References

| Applicable Parts | Wiring and Plug/Jack Map References |
|---|---|
| Main Board | |
| Tray 2 Pick-Up Roller | |
| Tray 2 Assembly | |

## Procedure

| Step | Action and Questions | Yes | No |
|---|---|---|---|
| 1 | a. Is paper loaded correctly? | Go to Step 2. | Load paper correctly. |
| 2 | a. Is the tray damaged?<br>b. Are parts missing? | Replace Tray 2 Assembly. | Go to Step 3. |
| 3 | a. Is Tray 2 Feed Solenoid release arm binding or unable to move freely? Refer to "Service Diagnostics Menu Map" on page 3-9. | Repair or replace solenoid. | Go to Step 4. |
| 4 | a. Does Tray 2 Pick Roller rotate when the Solenoid actuates? Refer to "Service Diagnostics Menu Map" on page 3-9. | Go to Step 5. | Replace Pick Roller Assembly. |
| 5 | a. Is the feed roller dirty? | Clean if dirty. | Replace Tray 2 Assembly Replace Main Board. |

# Paper Mis-feed from Tray 3 (Optional Feeder)

## Troubleshooting References

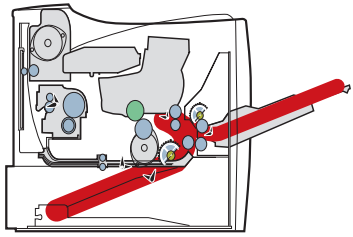
| Applicable Parts | Wiring and Plug/Jack Map References |
|---|---|
| Main Board | |
| Tray 3 Assembly | |

## Procedure

| Step | Action and Questions | Yes | No |
|---|---|---|---|
| 1 | a. Is paper loaded correctly? | Go to Step 2. | Load paper correctly. |
| 2 | a. Is the tray damaged?<br>b. Are parts missing? | Replace Tray 3 Assembly. | Go to Step 3. |
| 3 | a. Is Tray 2 chute obstructed? | Clear obstruction. | Go to Step 4. |
| 4 | a. Is the interface connector between the printer and Tray 3 damaged? | Replace interface harness. | Go to Step 5. |
| 5 | a. Does Tray 3 Pick Roller rotate when the Solenoid actuates? Refer to "Service Diagnostics Menu Map" on page 3-9. | Go to Step 5. | Replace Tray 3 Assembly. |
| 6 | a. Are the feed roller or retard/drag pads dirty ? | Clean if dirty. | Replace Tray 3 Assembly Replace Main Board. |

# Jam At Tray [1] [2] [3] (Jam 0)

Paper jams at or just after the Registration Sensor.



## Troubleshooting References

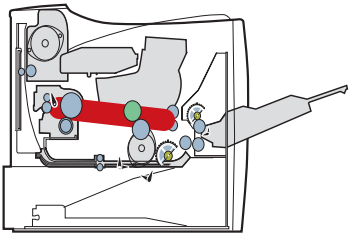
| Applicable Parts | Wiring and Plug/Jack Map References |
|---|---|
| Registration/Feed Sensor Actuator | |
| Transfer Roller | |
| Registration Assembly | |
| Print Cartridge | |
| Main Board | |

## Procedure

| Step | Action and Questions | Yes | No |
|---|---|---|---|
| 1 | Is the Registration/Feed Sensor Actuator damaged or binding? | Repair or replace the actuator and/or sensor. | Go to Step 2. |
| 2 | Do the Registration Rollers turn freely? | Go to Step 3. | Replace Registration Assembly. |
| 3 | Does the Transfer Roller turn freely? | Go to Step 4. | Replace the Transfer Roller. |
| 4 | Inspect the paper transport area for obstructions. | Clear obstruction. | Go to Step 5. |
| 5 | Does the Print Cartridge drum bind or stall? | Replace Print Cartridge. | Replace Main Board. |

# Jam At Top (Jam 1)

Paper jams in front of or just inside the Fuser Assembly.



## Troubleshooting References

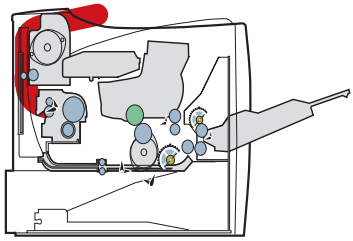
| Applicable Parts | Wiring and Plug/Jack Map References |
|---|---|
| Exit Sensor Actuator | |
| Registration Sensor Actuator | |
| Fuser Assembly | |
| Power Supply Board | |

## Procedure

| Step | Action and Questions | Yes | No |
|---|---|---|---|
| 1 | Is the Exit Sensor Actuator damaged or binding? | Repair or replace the actuator and/or sensor. | Go to Step 2. |
| 2 | Is the Registration Sensor Actuator damaged or binding? | Repair or replace the actuator and/or sensor. | Go to Step 3 |
| 3 | Is paper wrapped around the Fuser rollers or blocking Fuser exit? | Remove paper and clean Fuser rollers. | Go to Step 4. |
| 4 | Is Fuser operational, the Fuser Rollers turn freely when the motor is on? | Go to Step 5. | Replace Fuser Assembly. |
| 5 | Use the embedded diagnostics to check the Fuser Exit Sensor. Is the sensor operational? | Replace Power Supply Board. | Replace Fuser Exit Sensor. |

# Jam At Exit (Jam 2)

Paper jams in the Fuser Assembly outlet or the Exit Roller Assembly.



## Troubleshooting References

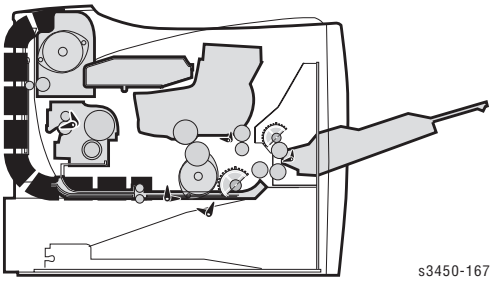
| Applicable Parts | Wiring and Plug/Jack Map References |
|---|---|
| Exit Sensor Actuator | |
| Fuser Assembly | |
| Exit Transport Assembly | |
| Main Board | |

## Procedure

| Step | Action and Questions | Yes | No |
|---|---|---|---|
| 1 | Is the Exit Sensor Actuator damaged or binding? | Repair or replace the actuator and/or sensor. | Go to Step 2. |
| 2 | Inspect the Exit Roller Assembly. Is it damaged or binding? | Replace the Exit Roller Assembly. | Go to Step 3. |
| 3 | Inspect the Fuser. Is any paper wrapped around the Fuser rollers? | Remove obstruction and clean Fuser rollers. | Go to Step 4. |
| 4 | Is the Fuser Assembly operational (rotates when the Fuser motor is on)? | Go to Step 5. | Replace the Fuser Assembly. |
| 5 | Use the embedded diagnostics to check the Fuser Exit Sensor. Is the sensor operational? | Replace Main Board. | Replace Fuser Exit Sensor. |

# Jam At Duplex (Duplex Jam 1)

Paper jams in the Exit Transport Assembly or before, or in the Duplex Feed Rollers.




## Troubleshooting References

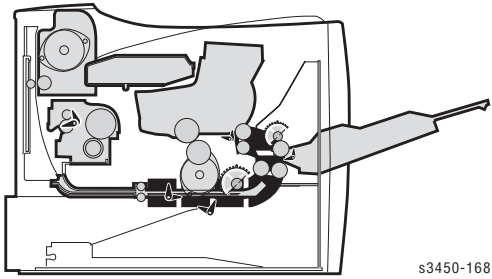
| Applicable Parts | Wiring and Plug/Jack Map References |
|---|---|
| Exit Sensor Actuator | |
| Exit Roller Assembly | |
| Transport Roller Assembly | |
| Main Board | |

## Procedure

| Step | Action and Questions | Yes | No |
|---|---|---|---|
| 1 | Is the Exit Sensor Actuator damaged or binding? | Repair or replace the actuator and/or sensor. | Go to Step 2. |
| 2 | Inspect the Exit Roller Assembly. Is it damaged or binding? | Replace the Exit Roller Assembly. | Go to Step 3. |
| 3 | Inspect the Duplexer. Is any paper wrapped around the Duplex Rollers? | Remove obstruction and clean rollers. | Go to Step 4. |
| 4 | Is the Transport Roller Assembly operational (rotates freely without binding)? | Go to Step 5. | Replace Transport Roller Assembly. |
| 5 | Use the embedded diagnostics to check the Fuser Exit Sensor. Is the sensor operational? | Replace Main Board. | Replace Exit Sensor. |

# Jam At Tray/Remove Tray 2 (Duplex Jam 2)

Paper Jam between the Duplex Feed Rollers and the Registration Rollers.




## Troubleshooting References

| Applicable Parts | Wiring and Plug/Jack Map References |
|---|---|
| Duplex Exit Sensor Actuator | |
| Duplex Assembly | |
| Feed Roller Assembly | |
| Print Engine Controller Board | |

## Procedure

| Step | Action and Questions | Yes | No |
|---|---|---|---|
| 1 | Is the Duplex Sensor Actuator damaged or binding? | Repair or replace the actuator and/or sensor. | Go to Step 2. |
| 2 | Use the embedded diagnostics to check the Duplex Sensor. Is the sensor operational? | Go to Step 3. | Replace Duplex Sensor. |
| 3 | Inspect the Duplex Assembly. Is any paper wrapped around the Duplex rollers? | Remove obstruction and clean rollers. | Go to Step 4. |
| 4 | Is the Duplex Roller operational (rotates freely without binding)? | Go to Step 5. | Replace Duplex Assembly. |
| 5 | Does the Feed Roller Assembly operate properly without binding? | Replace Print Engine Controller Board. | Replace the Feed Roller Assembly. |

# CRUM Toner Error

## Troubleshooting References

| Applicable Parts | Wiring and Plug/Jack Map References |
|---|---|
| Print Cartridge | |
| Toner Sensor Harness | |
| Print Cartridge Interconnect Board | |

## Procedure

| Step | Action and Questions | Yes | No |
|---|---|---|---|
| 1 | Open the top cover and ensure that the Print Cartridge is properly seated. Does the error clear after reseating the cartridge? | Complete | Go to Step 2. |
| 2 | Reseat all harness connections to the Print Cartridge Interconnect Board. Does the error clear? | Complete | Go to Step 3. |
| 3 | Check continuity between the Print Cartridge Interconnect Board and CN6 on the Main Board. Does the harness show continuity? | Go to Step 4. | Replace Harness. |
| 4 | Check Print Cartridge. Does the cartridge contain toner and appear to be operating properly? | Replace Print Cartridge Interconnect Board. | Replace Print Cartridge. |

# Print-Quality Troubleshooting

## In this chapter...

- Print-Quality Problems Overview
- Defects Associated with Specific Printer Components
- Front Panel Test Print
- Print-Quality Troubleshooting

Chapter 5

# Print-Quality Problems Overview

Print-quality defects can be attributed to printer components, consumables, media, internal software, external software applications, and environmental conditions. To successfully troubleshoot print quality problems, as many variables as possible must be eliminated. The first step is to generate prints using printable pages embedded in the printer on laser paper from the approved media list. The paper should be from an unopened ream that has been acclimated to room temperature.

See the approved media list from, "Xerox Supplies" on page 9-25 for media that has been tested and approved for use in the Phaser 3425 Laser Printer. If the print quality defect is still present when printing on approved media from an unopened ream of paper, then components, software applications, and environmental conditions need to be researched.

When analyzing a print-quality defect, first determine if the defect is repeating or random. Repeating defects can often be associated with a particular component. The visible surfaces of all rollers should be inspected for obvious defects.

# Defects Associated with Specific Printer Components

Some print quality problems can be associated with specific assemblies, the most common problems and the associated assemblies are listed below. Also, refer to the specific print quality troubleshooting procedure for more information.

## Print Cartridge

- Streaks
- Fine Lines
- Banding in Process Direction
- Uneven Density
- Voids
- Repeating Defects

## Transfer Roller

- Toner on the back side of the printed page (simplex mode)
- Light Prints
- Repeating Defects
- Spots on Image

## Fuser

- Hot or Cold Offsetting
- Repeating Defects
- Voids

### Repeating Defects

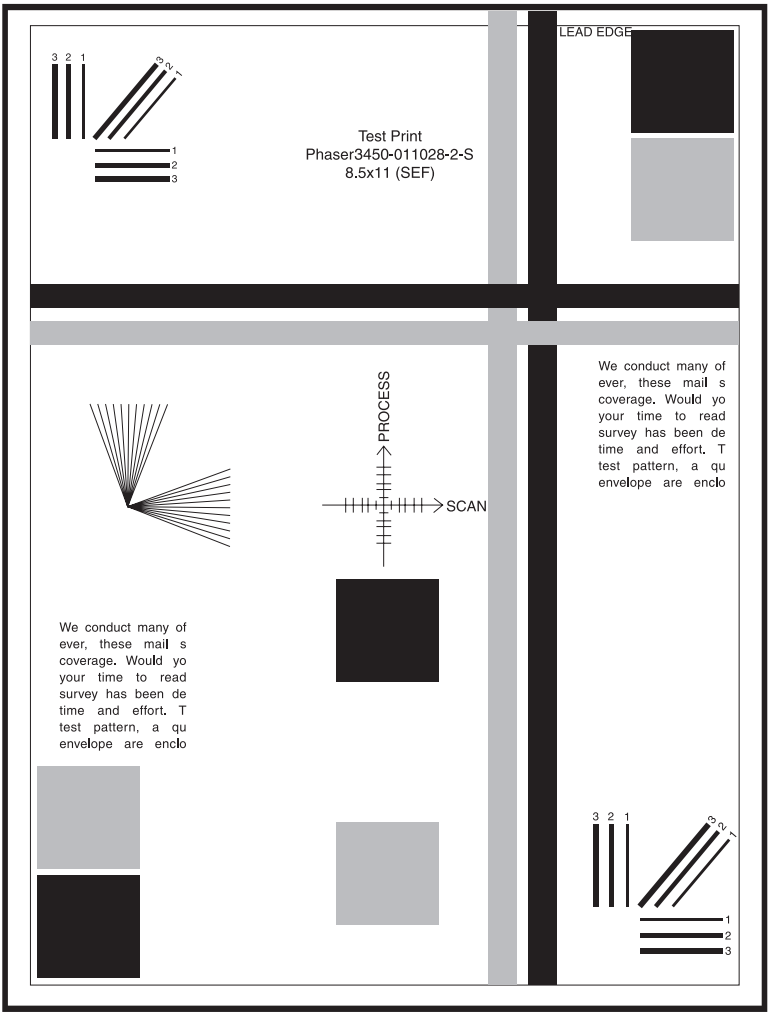
| Assembly | Component | Distance between Defects | Typical Defect |
|---|---|---|---|
| Print Cartridge | Developer Roller | 49 mm (1.93 in.) | Horizontal image band |
| | Drum | 95 mm (3.74 in.) | White spots on black image or black spots on white |
| | Drum Charge Rollers | 38 mm (1.50 in.) | Black spots |
| | Supply Roller | 45 mm (1.77 in.) | Light or dark horizontal image bands |
| Transfer Roller | Transfer Roller | 57 mm (2.24 in.) | Image ghost |
| Fuser Assembly | Heat Roller | 82 mm (3.23 in.) | Black spots and image ghost |
| | Pressure Roller | 92 mm (3.62 in.) | Black spots on back |

# Front Panel Test Print

A test print is available to aid in determining the quality of output from the printer and to assist in troubleshooting problems. Each area of the test print is used for a print-quality parameter. The following pages explain each of the areas and the print-quality parameters.

From the printers front panel menus select **Troubleshooting --> Service Tools --> Test Prints**.

Use supported paper from a fresh, unopened ream (whenever possible), to check the image quality of prints. Make five copies of the test print. Discard the first two prints and retain the remaining prints for image-quality analysis.



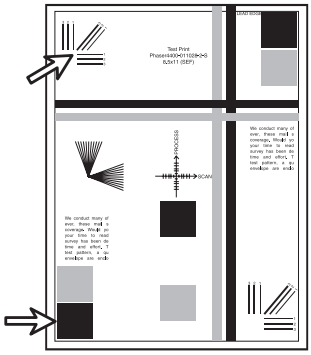

s3450-200

# Deletions

Inspect the test print for the presence of deletions or unprinted spots. If these are found go to Spot or Vertical Deletions on page 5-9.

# Fusing

Rub the image three times at the indicated points with a soft cloth or tissue. The toner should not lift off of the surface of the print. If the image smears or toner lifts off the image onto the cloth, refer to Unfused Image on page 5-10.

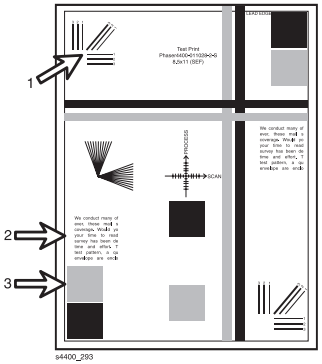



# Resolution

Observe the three resolution check points on several test prints.

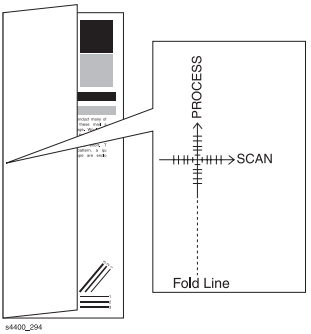
- Ensure that the 2 pixel horizontal, vertical, and diagonal lines are clear and continuous. The diagonal lines might appear to be narrower than the others.
- Characters in the text paragraphs should be uniform and equal in density.
- The halftone patches should be uniform in appearance.

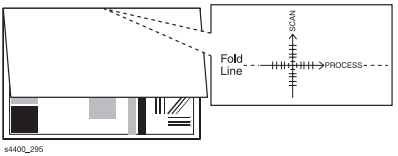
If the image does not meet the criteria refer to Non-Uniform Image on page 5-8 or Character Defects on page 5-9.



# Registration and Skew

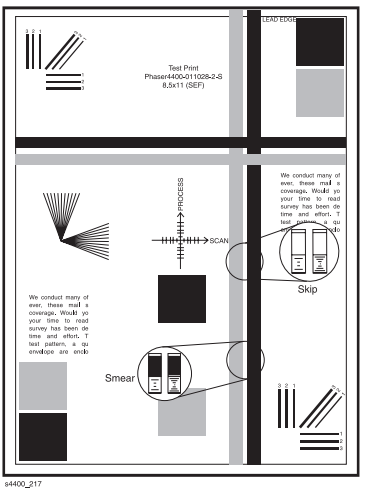
Fold the paper from two consecutive test prints in half (first side edge to side edge and then top edge to bottom edge). Observe the fold lines with reference to the crosshairs of the printed target. The fold line should be aligned perpendicular to the target crosshairs and should be within ±2.0 mm of the target crosshairs (each line on the target is 1.0 mm). If the image does not meet the criteria refer to Skewed Image on page 5-10.



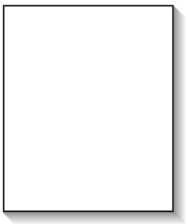

# Skips or Smears

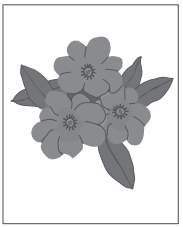
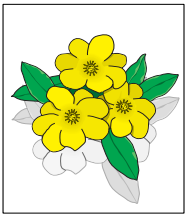
Check the test print in the indicated areas for loss, stretching, or distortion of the image in bands across the process direction that make the image seem distorted, blurred, or compressed. If these faults are observed refer to Skips/Smears on page 5-10.



# Print-Quality Troubleshooting

The following table provides examples or descriptions of various image or printing defects that may be observed in the Phaser 3425 Laser Printer. The table also lists possible causes and solutions.

| Image Defect | Possible Cause | Solution |
|---|---|---|
| **No Image/Blank Prints** Prints have no visible image  | ■ Seal tape was not removed from the cartridge.<br>■ Low or no toner<br>■ Defective ground to the Print Cartridge.<br>■ Main Board<br>■ Incorrect high-voltage output from the Power Supply Board. | ■ Ensure that sealing tape has been removed.<br>■ Verify Print Cartridge ground.<br>■ Verify continuity between the cartridge ground and frame.<br>■ Replace in the following order:<br>  ■ Print Cartridge<br>  ■ Main Board<br>  ■ Power Supply Board<br>  ■ Laser Assembly |
| **Light Prints:** All areas of the print are light   | ■ Media (paper)<br>■ Verify Remote Control Panel settings.<br>■ Seal tape was not removed from the cartridge.<br>■ Low toner<br>■ Transfer Roller<br>■ Laser contamination or obstruction.<br>■ Incorrect high-voltage output.<br>■ Low ambient temperature (<10º C). | ■ Verify paper meets printer specifications. Print 20 to 30 pages using the recommended paper.<br>■ Verify that the Remote Control Panel is **not** set to Economode or that Toner Density menu is not set to “light.”<br>■ Ensure that the sealing tape has been removed.<br>■ Verify low toner warning is not displayed on front panel. Remove the Print Cartridge and shake, reinstall or replace.<br>■ Inspect the Transfer Roller for contamination and verify high-voltage contacts. Replace as required.<br>■ Inspect the Laser assembly for any obstructions; clean laser.<br>■ Replace the Power Supply Board. |
| **Black Prints:** The prints are completely black, has no visible image.  | ■ No charge voltage. Power Supply Board<br>■ Print Cartridge<br>■ Main board<br>■ Laser is always on. | ■ Verify the high-voltage contacts are operational and make good contact with the print cartridge.<br>■ Replace in the following order:<br>  ■ Print Cartridge<br>  ■ Power Supply Board<br>  ■ Main Board<br>  ■ Laser Assembly |

| Image Defect | Possible Cause | Solution |
|---|---|---|
| **Dark Image:** All areas of the print are too dark.<br>  | ■ Verify Remote Control Panel settings.<br>■ Print Cartridge.<br>■ Incorrect high-voltage outputs (Developer Bias voltage).<br>■ Laser assembly | ■ Verify Remote Control Panel setting for the Toner Density menu is not set to "dark."<br>■ Verify that the high-voltage contacts are operational and make good contact with the print cartridge.<br>■ Replace the following in order:<br>  ■ Print Cartridge<br>  ■ Power Supply Board<br>  ■ Laser assembly |
| **Background:** Uniform toner contamination in non-image area<br>  | ■ Media (paper).<br>■ Operating environment.<br>■ Print Cartridge.<br>■ Transfer Roller.<br>■ Incorrect High Voltage outputs. | ■ Verify that paper meets printer specifications. Print 20 to 30 pages using recommended paper. If using recycled paper, try non-recycled paper.<br>■ Printer is installed in specified environment?<br>■ Replace Print Cartridge.<br>■ Inspect Transfer Roller for contamination and good electrical contact, replace if required.<br>■ Clean PTL<br>■ Replace Power Supply Board |
| **Ghosting:** Image from the previous page prints on consecutive pages.<br>  | ■ Operating environment<br>■ Media (paper)<br>■ Print Cartridge<br>■ Transfer Roller<br>■ Fuser assembly<br>■ Incorrect high voltage outputs. | ■ Printer is installed in specified environment?<br>■ Verify that paper meets printer specifications. Print 20 to 30 pages using recommended paper.<br>■ Determine ghosting pitch and replace the corresponding assembly.<br>***NOTE:*** *Refer to "Defects Associated with Specific Printer Components" on page 5-2 for defect pitch*.<br>■ Replace Power Supply Board. |
| **Non-Uniform Image:** The Line darkness and solid-area density image vary across the print.<br>  | ■ Print Cartridge<br>■ Print Cartridge grounding<br>■ Unstable high voltage output.<br>■ Transfer Roller contamination.<br>■ Laser Window or optic contamination. | ■ Ensure that Cartridge is not out of toner. Inspect Drum for deterioration or contamination.<br>■ If defective, replace the Print Cartridge.<br>■ Verify Print Cartridge ground. Check continuity between cartridge ground contact and frame ground. Ensure that drum contact is clean and undamaged.<br>■ Inspect the Transfer Roller spring tension and bearing contacts.<br>■ Remove Laser assembly, clean window or replace assembly as necessary .<br>■ Replace Power Supply Board. |

| Image Defect | Possible Cause | Solution |
|---|---|---|
| **Black Spots/Marks:** There are spots and/or marks of toner on the printed side of the page.   | ■ Print Cartridge<br>■ Fuser assembly<br>■ Paper transports<br>■ Transfer Roller | ■ Replace the Print Cartridge.<br>***NOTE:*** *Refer to "Defects Associated with Specific Printer Components" on page 5-2 for defect pitch*.<br>■ Inspect /clean/replace Fuser assembly as necessary.<br>■ Clean contamination from paper transports and exit rollers.<br>■ Clean /replace Transfer Roller |
| **Spot or Vertical Deletions:** Solid areas are marked with irregular white spots.   | ■ Damp paper<br>■ Foreign matter contamination of printer components.<br>■ Print Cartridge<br>■ Transfer Roller | ■ Replace paper.<br>■ Check printer components for surface contamination or paper scraps. Clean as required.<br>■ If deletions repeat every 95 mm, replace Print Cartridge.<br>***NOTE:*** *Refer to "Defects Associated with Specific Printer Components" on page 5-2 for defect pitch*.<br>■ Remove the Transfer Roller and clean (dust off). If deletions repeat every 57 mm, replace Transfer Roller. |
| **Horizontal Bands:** Dark bands appearing in the horizontal direction.   | ■ Print Cartridge<br>■ Fuser Assembly<br>■ Transfer Roller<br>■ Incorrect high voltage outputs.<br>■ Laser Assembly | ■ Replace the Print Cartridge.<br>■ Inspect /clean/replace Fuser Assembly as necessary.<br>■ Inspect the Transfer Roller spring tension and bearing contacts.<br>■ Replace Power Supply Board.<br>■ Replace Laser Assembly. |
| **Character Defects:** Garbled print, missing, repeating or scrambled characters are problems relating to font data or character generation. | ■ Loose/defective interface cables; cable not within specification.<br>■ Optional DIMM memory<br>■ Main Board | ■ Inspect cable connections; verify that cables meet specified requirements.<br>■ Replace optional DIMM memory.<br>■ Replace Main Board. |

| Image Defect | Possible Cause | Solution |
|---|---|---|
| **Unfused Image:** Part or all of the image is unfused. | ■ Paper quality (damp paper)<br>■ Operating environment<br>■ Remote Control Panel settings<br>■ Fuser Assembly<br>■ Main Board | ■ Paper is too thick, damp or contains a high percentage of cotton.<br>■ Printer is not installed in specified environment.<br>■ Verify Remote Control Panel settings, such as envelope.<br>■ Inspect /clean/replace Fuser assembly as necessary.<br>■ Replace Main Board. |
| **Skewed Image:** The printed image is not parallel with the sides of the page. | ■ Paper<br>■ Paper tray<br>■ Pick-up roller assembly/Paper transportation<br>■ Fuser Assembly | ■ Inspect paper for damage. Replace as necessary.<br>■ Check paper tray for damage. Properly install fresh paper in the paper tray.<br>■ Inspect Pick-up roller assembly. Replace as necessary.<br>■ Inspect paper transportation areas for proper operation.<br>■ Inspect /clean/replace Fuser assembly as necessary. |
| **Skips/Smears:** Skips, loss or stretching of the image in bands across the process direction. Smears, the distortion of the image in bands across the process direction. Causes image to appear blurred or compressed. | ■ Paper transportation<br>■ Main drive motor assembly<br>■ Fuser Assembly<br>■ Print Cartridge | ■ Inspect paper transportation areas for proper operation.<br>■ Inspect main drive motor assembly for damage or worn gears. Replace as necessary.<br>■ Inspect /clean/replace Fuser assembly as necessary page 8-5.<br>■ Replace Print Cartridge. |
| **OHP Print Distortion:** Trembling appearance when printing on transparencies. | ■ Remote Control Panel settings<br>■ Recommended Media<br>■ Transfer roller voltage | ■ Verify Remote Control Panel is configured to Transparency mode.<br>■ Verify transparency meets printer specifications.<br>■ Inspect the Transfer Roller spring tension and bearing contacts.<br>■ Replace Power Supply Board. |

# Adjustments and Calibrations

## In this chapter...

- Margin Calibration
- Resetting NVRAM

Chapter 6

# Margin Calibration

The Margin Calibration has no effect on the printer's image registration. Image registration is not adjustable on the Phaser 3425 Laser Printer.

## Margins - Simplex Top/Left

The Simplex Top and Left adjustment provides a method of changing the margin settings when a print driver is not being used. The simplex margin settings are only effective with PCL5e.

The default setting for Simplex Top/Left is 0.0".

## Margins - Duplex Top/Left

The Duplex Top and Left adjustment provides a method of changing the margin settings for the first imaged side of a duplex page. The duplex margin settings can be used with or without a print driver.

The default setting for Duplex Top/Left is 0.20".

# Resetting NVRAM

Resetting NVRAM returns all the System Control Board NVRAM-stored parameters to their factory default values. The print counts and the Adobe firmware serial number are not affected by this reset. You can reset the PostScript NVRAM using the Troubleshooting/Service Tools Menu.

# Cleaning and Maintenance

## In this chapter...

- Service Preventive Maintenance Procedure
- Recommended Tools
- Cleaning
- Printing a Cleaning Sheet

Chapter 7

# Service Preventive Maintenance Procedure

Perform the following procedures whenever you check, service, or repair a printer. Cleaning the printer, as outlined in the following steps, assures proper operation of the printer and reduces the probability of having to service the printer in the future.

The frequency of use and the type of paper a customer prints on determines how critical and how often cleaning the machine is necessary. Record the number of sheets printed.

## Recommended Tools

- Toner vacuum cleaner
- Clean water
- Clean, dry, lint-free cloth
- Black light protective bag

# Cleaning

**Caution**

Never apply alcohol to any parts in the printer.
Never use a damp cloth to clean up toner.
If you remove the Print Cartridge, place it in a light protective bag. Exposure to light can degrade its performance and result in early failure.

1. Record number of sheets printed.
2. Print several sheets of paper to check for problems or defects.
3. Turn off the printer.
4. Remove any debris or foreign objects.
5. Remove any loose toner from the interior of the printer using a Type II toner vacuum only.
6. Remove and clean the paper trays.
7. Clean pick rollers with a slightly damp, lint-free cloth.

# Printing a Cleaning Sheet

If you are experiencing blurred, faded, or smeared printouts, you may be able to correct the problem by printing either or both of the cleaning sheets available in the **Troubleshooting/Service Tools** menu. The **Fuser Clean** sheet cleans toner debris out of the Fuser, and the **Print Cart Clean** sheet cleans the drum in the Print Cartridge.

Print the cleaning sheets as follows:

1. Ensure that the printer is turned on, at the Ready state, and with approved paper loaded in the tray.
2. Press the **Menu** button on the Front Panel, **Menu/Information** displays.
3. Use the arrow buttons to scroll through the menu until **Troubleshooting** displays on the bottom line.
4. Press **OK**. **Troubleshooting/Margins** displays.
5. Press the down arrow button to display **Service Tools** on the bottom line and press **OK. Service Tools/ Test Prints** displays.
6. Use the arrow buttons to scroll through the menu until **Fuser Clean** displays. Press **OK**. The printer will enter the cleaning mode and print out a Fuser cleaning page.
7. Repeat steps 2 through 6 but scroll until **Print Cart Clean** displays to clean the print cartridge.

# Service Parts Disassembly

## In this chapter...



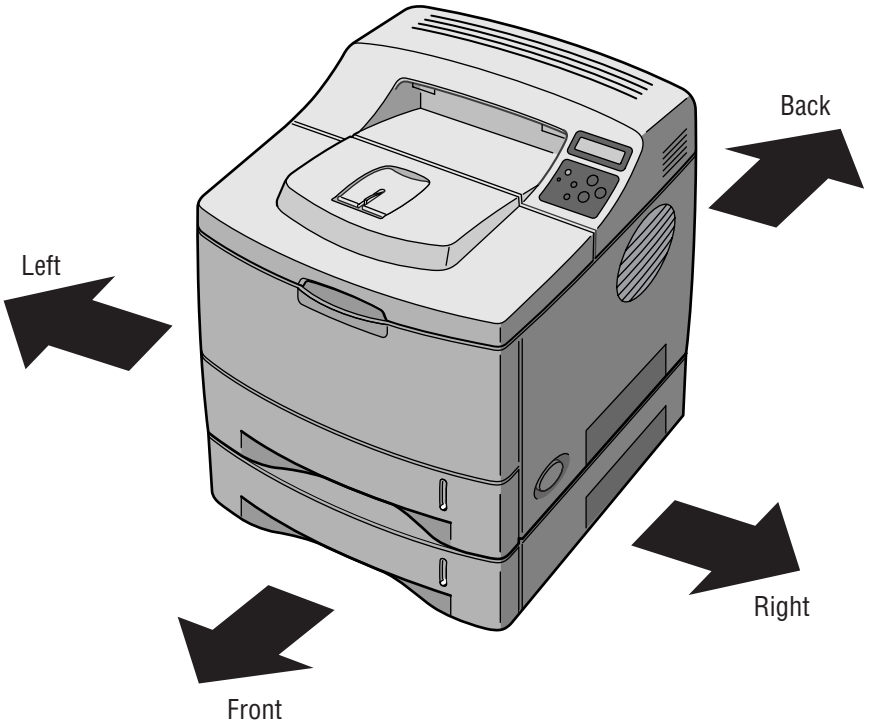
Chapter 8

# Overview

This section contains the removal and replacement procedures for selected parts of the printer according to the Service Parts List. Not all Replacement Procedures are included in this Service Manual. In most cases, to reinstall a part, simply reverse the Removal Procedure shown. In some instances, the Replacement Procedure is included, because it may contain special steps. For specific assemblies and parts, refer to the "Parts Lists" on page 9-1.

## Standard Orientation of the Printer

When needed, the orientation of the printer is called out in the procedure for locating printer parts. Refer to the printer orientation graphic for locating the right, left, front and back sides of the printer.



# General Notes on Disassembly

## Preparation

Before you begin any Removal and Replacement Procedure:

1. Switch OFF the printer power and disconnect the power cord from the wall outlet.
2. Remove the Imaging Unit and protect it from exposure to light by covering it with a light proof bag or by placing it in a light-tight container. Disconnect all computer interface cables from the printer.
3. Wear an electrostatic discharge wrist strap to help prevent damage to the sensitive electronics of the printer circuit boards.
4. Remove the Fuser Assembly or wait at least 5 minutes after you have switched OFF printer power for the Fuser to cool before you work on or around the Fuser.
5. Tray 2 can interfere with the removal of many printer parts. Remove Tray 2 before further disassembly.

**Note**

Part names that appear in the disassembly procedures may not exactly match the names that appear in the Parts List. For example; a part called the Registration Transport Assembly may appear on the Parts List as Assembly, Transport Regi.

**Caution**

Many parts are secured by plastic tabs. DO NOT over flex or force these parts. Do not over torque the screws threaded into plastic parts.
Always use the correct type and size screw. Using the wrong screw can damage tapped holes. Do not use excessive force to either remove or install either a screw or a printer part.
A spring hook is required for removal and replacement of the various springs in the printer. Springs can be damaged using pliers or other tools for this task.

**Warning**

Unplug the AC power cord from the wall outlet before removing any printer part.

### Notations in the disassembly text

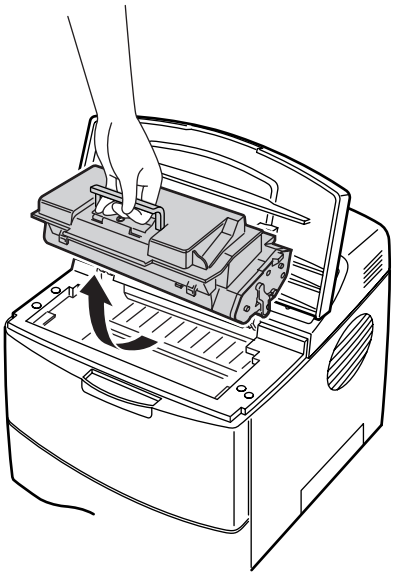
- The notation “(item X)” points to a numbered callout in the illustration corresponding to the disassembly procedure being performed.
- The notation “PL*X.X.X*” indicates that this component is listed in the Service Parts List.
- Bold arrows in an illustration show direction of movement when removing or replacing a component.

# Removing Service Parts and Consumables

Routine Maintenance Items for the Phaser 3425 Laser Printer include the Transfer Roller and Fuser Assembly. Consumables consist of the Print Cartridge.

## Print Cartridge Removal (PL 9.1.8)

1. Power down the printer and disconnect the power cord from the wall outlet.
2. Open the top cover on the printer.
3. Grasp the handle on the top of the Print Cartridge and pull it toward the front of the printer while also lifting it out of the printer.



4. Place the Print Cartridge in a light proof bag or other light proof container.

**Caution**

Leaving the Print Cartridge exposed to light for periods in excess of a few minutes can degrade its performance and result in early failure.

## Transfer Roller Removal (PL 9.1.23)

1. Power down the printer and disconnect the power cord from the wall outlet.
2. Open the top cover.
3. Remove the Print Cartridge and protect it from exposure to light.

4. Lift the lever on the Bearing Clip at each end of the Transfer Roller.

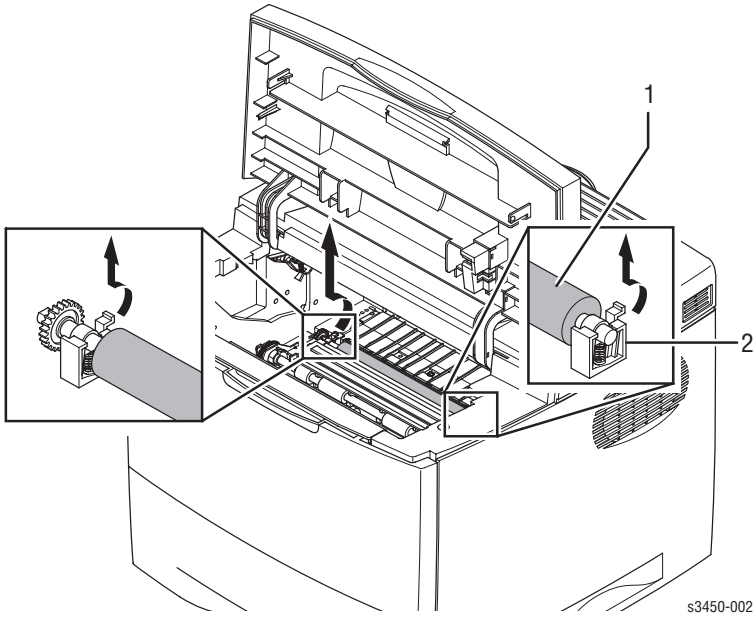
**Caution**

The gear on the end of the Transfer Roller shaft is not secured in place. Hold the gear when removing the roller to prevent it from falling into the printer.

**Note**

The 2 bearing clips are not interchangeable. The clip with the ground contact goes on the gear side of the Transfer Roller.

5. Slide the roller slightly to the right so the end of the shaft clears the lip on the printer case and lift the Transfer Roller, together with the Bearing Clips and the Transfer Roller Gear, out of the printer.




1. Transfer Roller 2. Bearing Clip

# Fuser Removal PL 9.3.40)

**Warning**

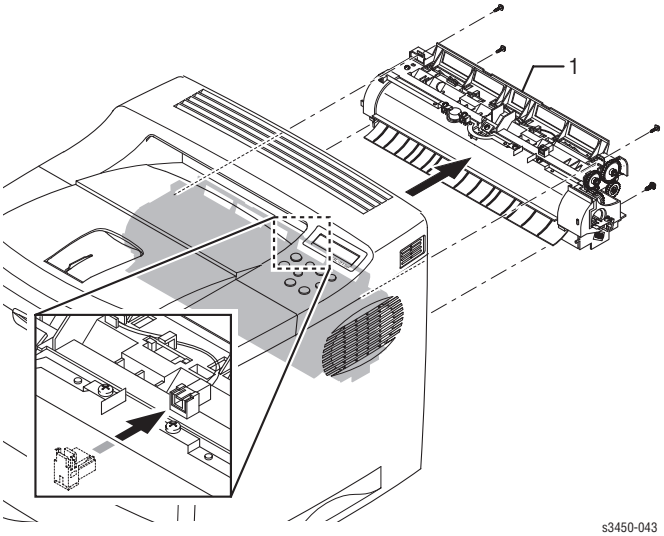
The Fuser may be hot. Turn off power and allow at least 5 minutes for the Fuser to cool before removal.

1. Power down the printer and remove the power cord from the wall outlet.
2. Remove the rear cover (page 8-14).

3. Using the included screwdriver, remove the 4 screws securing the Fuser to the printer chassis.
4. Pull back on both ends of the Fuser to remove it.

### Note

The Fuser (1) is secured using two different size screws. When reinstalling, the long screws go on the top and the short screws go on the bottom.




## Reassembly

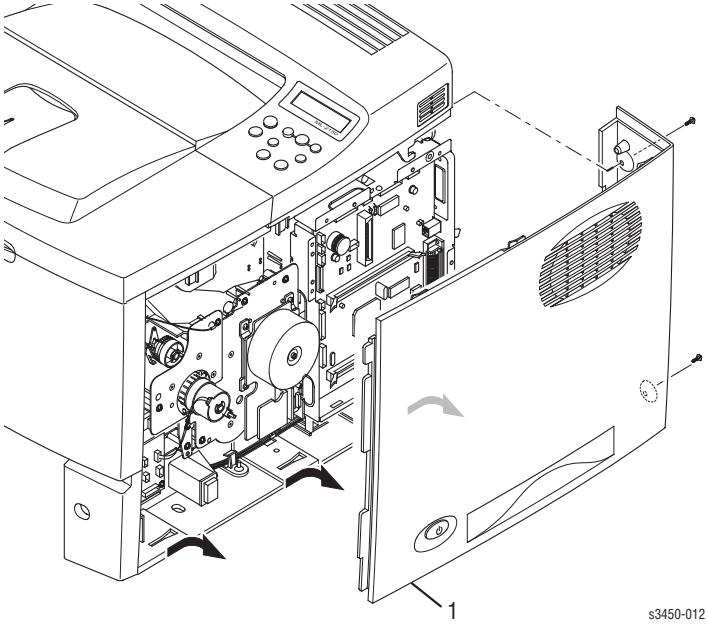
### Caution

When reinstalling the Fuser, insert it gently and be careful not to force the gears. Make sure that the Fuser is firmly seated on both ends and that the ground wire (lower LEFT end) is not trapped under Fuser. The long screws go on top and the short screws go on the bottom. Failure to reconnect the ground wire can result in a premature printer failure. If the Fuser is not fully seated, the fins on the inside of the rear cover will hit the Fuser when the cover is closed.

# Print Engine Disassembly

## Right Cover Assembly (PL 9.2.2)

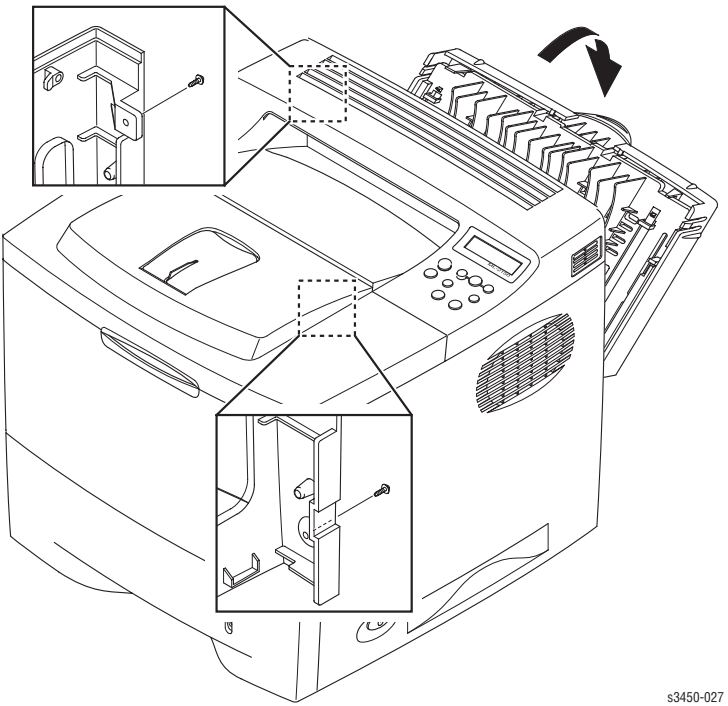
1. Power down the printer and remove the power cord from the wall outlet.
2. Remove the 2 screws securing the Right Cover (1) to the back of the printer.




3. Slide the cover toward the back of the printer to disengage the 3 retaining hooks on the lower edge of the cover, then lean the top of the cover outward and remove it from the printer.

# Left Cover Assembly (PL 9.2.4)

1. Power down the printer and remove the power cord from the wall outlet.
2. Remove the 2 screws securing the Left Cover to the back of the printer. You will need to open the rear cover to access the upper screw.




**Note**

The rear cover will have to be closed most of the way when sliding the left hand cover assembly to the rear so the cover will clear the bottom lip of the rear cover. The rear cover will then have to be opened slightly to clear the retaining boss for the upper screw.

3. Slide the cover toward the back of the printer to disengage the 3 retaining hooks on the lower edge of the cover, then lean the top of the cover outward and remove it from the printer.

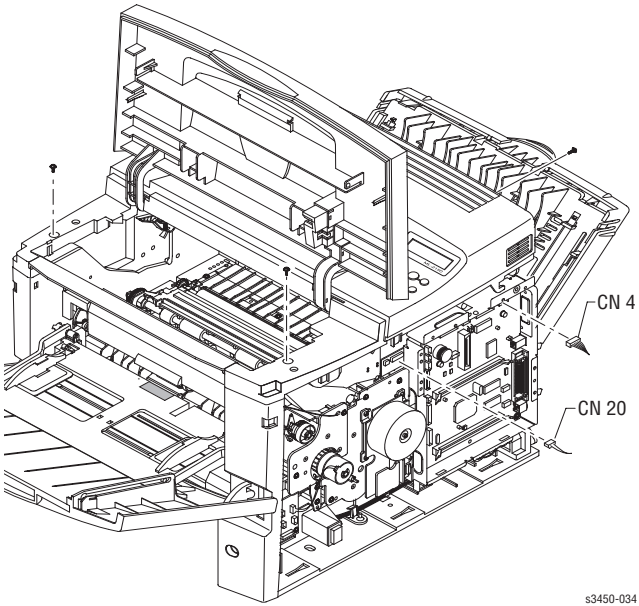
# Top Cover Assembly (PL 9.2.1)

1. Remove the Print Cartridge (page 8-4) and protect it from light.
2. Remove the Right Cover Assembly (page 8-7) and the Left Cover Assembly (page 8-8) from the printer.
3. Open Tray 1, the rear cover, and the front section of the Top Cover.

**Note**

If the NIC Card is installed, remove it ( page 8-17) to access the connectors on the Main Board.

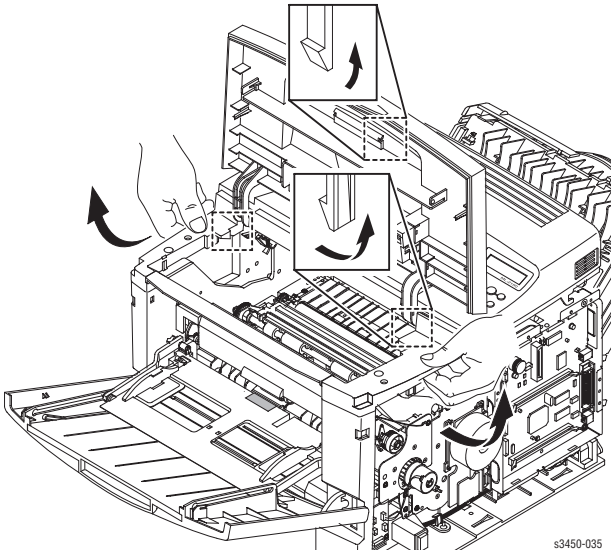
4. Disconnect CN 4 (Front Panel) from the Main Board and CN 2 (Cover Open) from the Cover Interconnect Board.
5. Remove 3 screws (2 at the top front and 1 on the rear edge) that secure the Top Cover to the printer assembly.



6. Unlatch the retaining hooks on both sides of the Top Cover and the one at the left rear corner. The hook at the left rear corner requires the use of a small screwdriver to release. Remove the Top Cover Assembly from the printer.

**Caution**

Remove the cover carefully while feeding the cables and connectors removed from the Main Board through the chassis access holes.



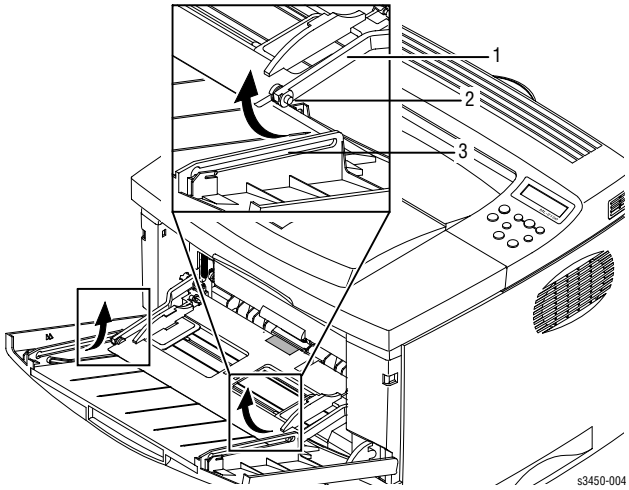

## Tray 1 Cover Assembly (PL 9.1.2)

1. Power down the printer and remove the power cord from the wall outlet.
2. Open Tray 1.

**Caution**

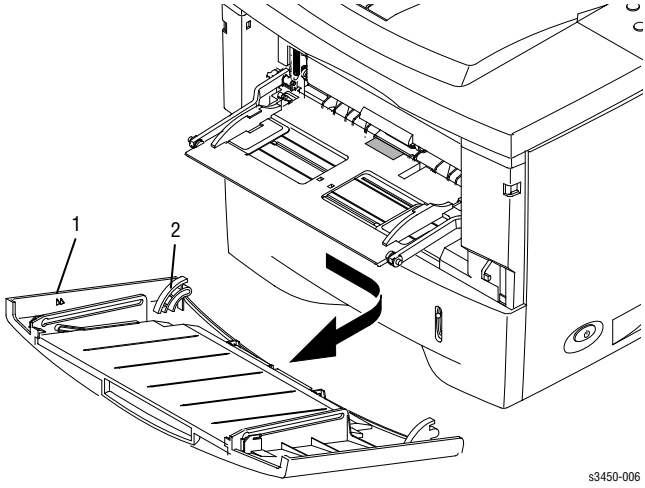
Use caution when pushing outward on the top of the slot tracks in the next Step. If you exert too much pressure you can break the track.

3. Close the Tray 1 cover about half way then push outward on the top of the left slot track that the link pin rides in and disconnect the Tray Link from the left cover slot. Next, flex the top of the right track and release right Tray Link.




1. Tray Link 2. Link Pin 3. Slot Track

4. Raise the cover slightly, so the boss, located behind the hinge on the left side of the cover, clears the hinge pin mount, and slide the cover to the right and pull out to remove it from the printer.




1. Tray 1 Cover 2. Hinge

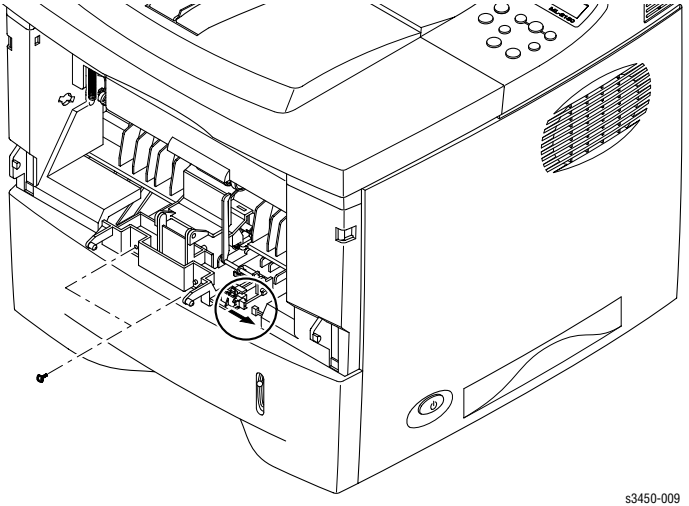
# Retard Assembly (PL 9.3.7)

1. Remove the Tray 1 Cover Assembly (page 8-10).

**Note**

Removing Tray 2 is not required, however it will provide increased access.

2. Unplug the connector on the Tray 1 Empty Sensor. This comes from CN 13 on the Connector Board.
3. Remove 2 screws securing the Retard Assembly to the printer chassis.




**Caution**

There is a spring mounted under the pressure arm of the Retard Assembly. Be careful not to lose the spring. When reinstalling the Retard Assembly ensure that the spring is securely mounted and seats correctly over the boss on the chassis. When properly installed the Retard pressure arm should move smoothly up and down against the spring pressure.

4. Pull outward to remove the Retard Feeder Assembly with the Tray 1 Empty Sensor and Actuator from the printer.

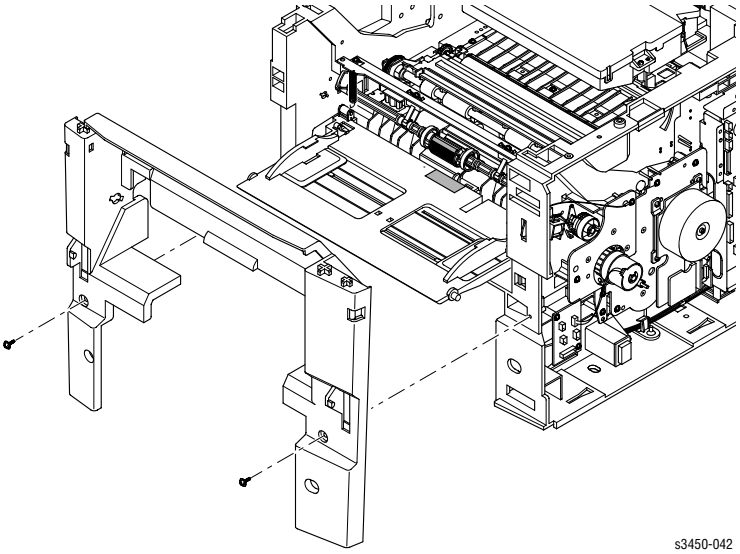
# Front (Inner) Cover (PL 9.2.5)

**Note**

Tray 2 must be removed in order to remove the Front Cover.

1. Remove the Print Cartridge (page 8-4) and protect it from light.

2. Remove the Tray 1 Cover Assembly (page 8-10).
3. Remove the Top Cover Assembly (page 8-9).
4. Disconnect the Tray 1 Lift Plate Links from the Tray 1 Lift Plate by pulling outward on the end of the Link arms where they connect to the lift plate.
5. Rotate each Link to align the key with the slot in the frame mounting hole and remove the Links.
6. Remove the two screws securing the Front Cover to the printer, unlatch the two retaining hooks on each side, and remove the Front Cover.




# Tray 1 Lift Plate (PL 9.1.3)

1. Remove the Front (Inner) Cover (page 8-12).
2. Disconnect the 2 Bias Springs from the metal frame.

**Note**

In some cases, the Bias Springs will slip off of the plastic mounting arms on the Lift Plate easily and they can be disconnected just as readily that way. However, there is less chance of damage when removing the springs from the metal frame.

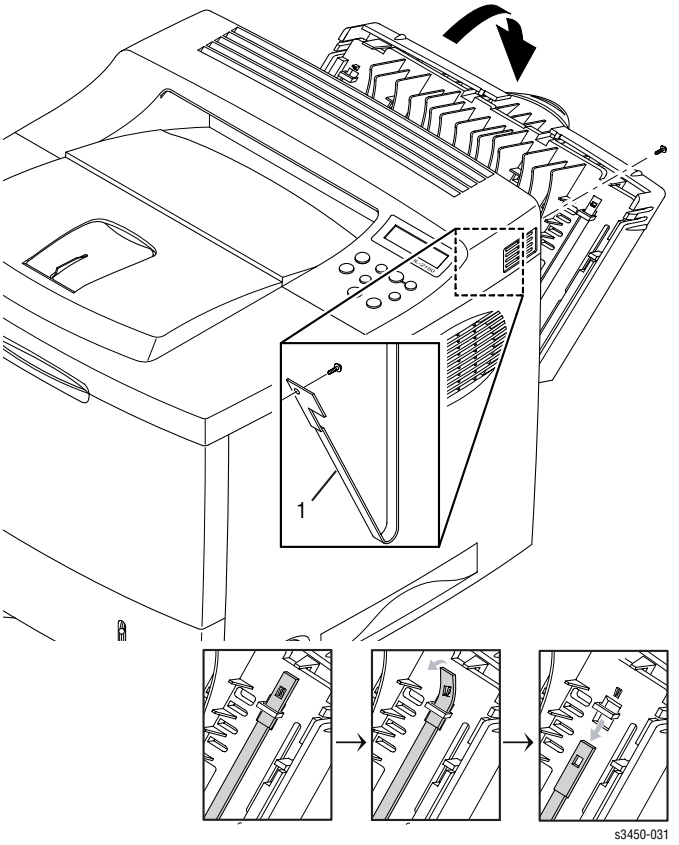
3. Remove the Tray 1 Lift Plate.

# Rear Cover Assembly (PL 9.2.3)

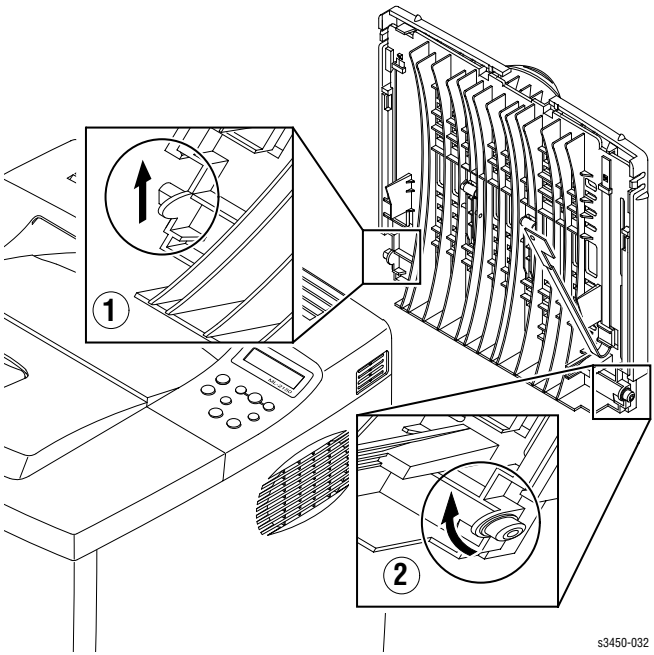
1. Open the rear cover and remove the screw that secures the strap to the rear of the printer.

**Note**

You can also pry the cover end of the strap off the retainer and slide it free of the cover while leaving it and the screw attached to the rear of the printer.



2. Rotate the rear cover until the flat surface of the left hinge pin (refer to standard orientation drawing on page 8-2) aligns with the slot as shown in ① below. Pull up on the left side of the cover to free the left hinge pin.

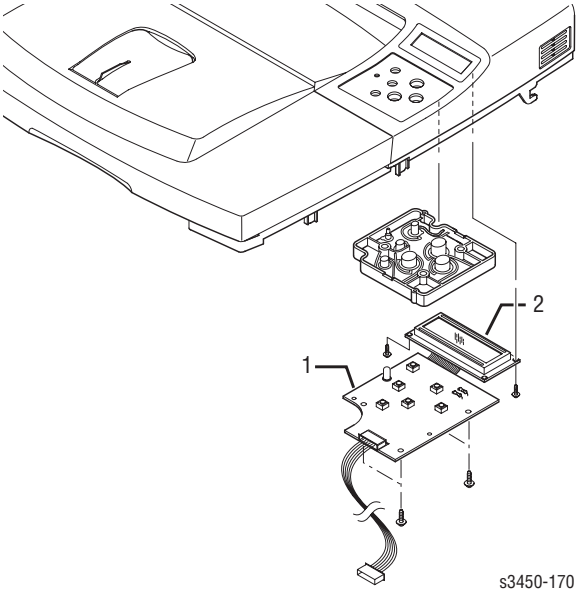



3. Slide the rear cover to the left to free the right hinge pin (see ② above), and remove the rear cover.
4. If you are replacing the rear cover assembly, remove the strap for use on the new cover assembly. Pry the top end of the strap off of the retaining boss on the rear cover. Slide the strap down to remove it from the rear cover.

## Front Panel Assembly (PL 9.2.1.8)

1. Remove the Print Cartridge (page 8-4) and protect it from light.
2. Remove the Top Cover Assembly (page 8-9).

3. Remove the 6 screws that secure the Front Panel Assembly to the Top Cover and remove the Front Panel Assembly.




1. Button Panel
2. LCD Panel

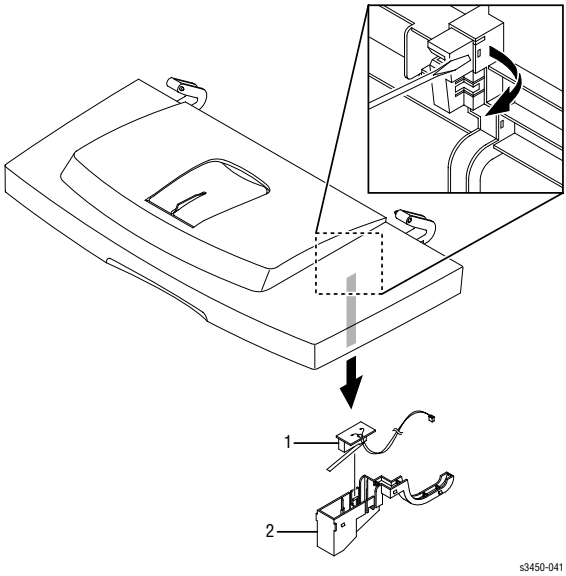
# Cover Open Interlock Switch (PL 9.2.1.16)

**Note**

It is not mandatory to remove the Top Cover to access the interlock switch, however the Right Cover must be removed in order to disconnect the interlock switch connector CN 2 from the Cover Interconnect Board. Routing the switch cable to the Main Board is easier with the Top Cover removed.

1. Remove the Print Cartridge (page 8-4) and protect it from light.
2. Remove the Top Cover Assembly (page 8-9).
3. Open the front section of the Top Cover to access the Interlock Switch cover.

4. Using a small flat blade screwdriver, pry outward to release the retainers (6) that secure the interlock switch cap, and pull the cap free of the cover.




1. Interlock Switch 2. Switch Cap

5. Remove the Cover Open Interlock Switch

## NIC Board (PL 9.1.41)

1. Remove the Right Cover Assembly (page 8-7).

**Caution**

Observe proper ESD procedures when removing or replacing any circuit boards in the printer. Refer to "General Notes on Disassembly" on page 8-3.

2. Remove 2 thumbscrews securing the NIC Board to the rear edge of the Main Board mounting bracket.
3. Pull up on the front edge of the NIC Board to remove it from the connector (CN 9) on the Main Board and remove the NIC Board to the right.

# Main Board (PL 9.1.10)

**Note**

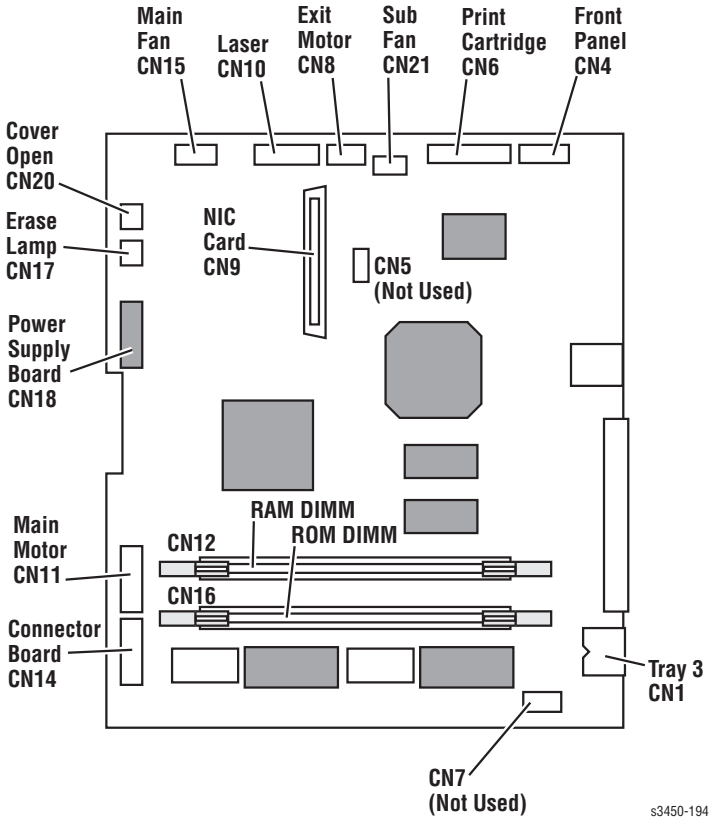
If the NIC Board is installed, it must be removed (see page 8-17) to access the retaining screws for the Main Board.

1. Remove the Right Cover Assembly (page 8-7).

**Caution**

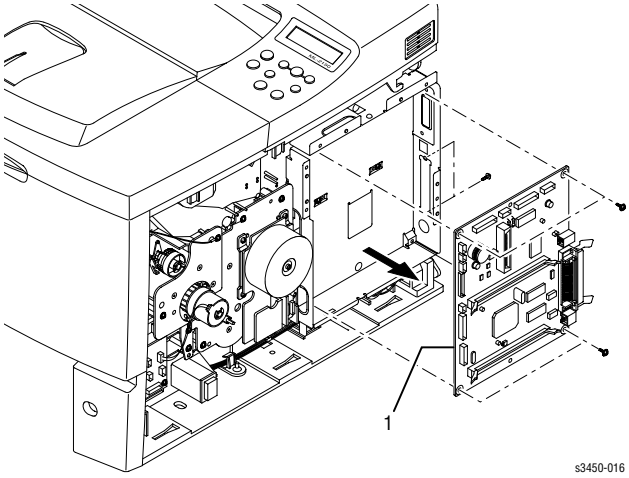
Observe proper ESD procedures when removing or replacing any circuit boards in the printer. Refer to "General Notes on Disassembly" on page 8-3.

2. Disconnect all connectors from the Main Board.




3. Remove 6 screws securing the Main Board to the Main Board Bracket (4 on the right side of the printer and 2 from the rear of the printer).

4. Position the retainers on the parallel port connector straight out from the connector for removal. Move the board toward the front of the printer so the connectors clear the bracket and remove the Main Board to the right.




**Note**

NVRAM parameters are not transferable to the replacement board. These parameters include Serial Number and copy count. Serial Number can be reinstalled via CentreWare if the NIC Board is installed or via a downloadable PJL command.

### Replacement Notes

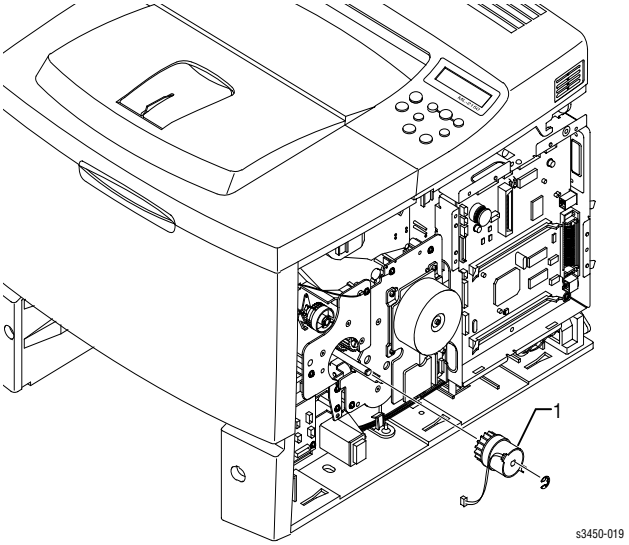
**Note**

When reinstalling the Main Board, the short machine screw goes in the top right corner of the board.

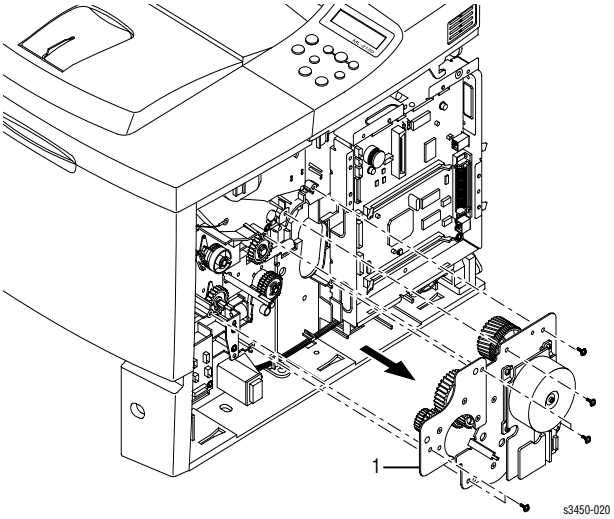
## Main Drive Assembly (PL 9.1.11)

1. Remove the Right Cover Assembly (page 8-7).
2. Disconnect CN 14 connecting the Registration Clutch to the Connector Board (see "Map 2 Connector Board" on page 10-4).
3. Disconnect CN 1 from the Main Drive Assembly. The cable connects to CN 11 on the Main Board (see "Print Engine Interconnect Diagram" on page 10-2).
4. Remove 1 screw securing the AC Terminal Cover to the Main Drive Assembly and remove the cover.

5. Remove the e-ring that secures the Registration Clutch to the Feed Roller Shaft and remove the Registration Clutch.




6. Remove the screw securing the Cover Interconnect Board to the Main Drive and move it out of the way.
7. Remove 6 screws that secure the Main Drive to the printer chassis, and remove the Main Drive.



## Replacement Notes

**Note**

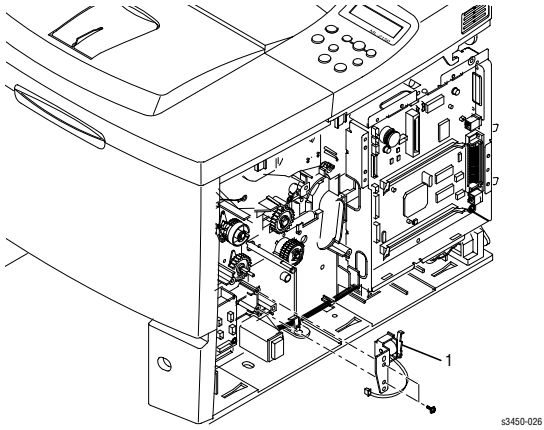
A ground wire and a discharge capacitor are secured to the Main Drive Assembly by 2 of the mounting screws. Note the position for reassembly.

**Note**

Seat the right side of the Main Drive first, then work the left side into position while aligning the gears. Reattach the Cover Interconnect Board after the Main Drive is positioned.

# Tray 2 Solenoid (PL 9.1.28)

1. Remove the Main Drive Assembly (page 8-19).
2. Disconnect CN 10 between the Tray 2 Solenoid and the Connector Board.
3. Remove 2 screws that secure the Tray 2 Solenoid to the chassis, and remove the Tray 2 Solenoid.




# Tray 2 No Paper Sensor (PL 9.3.44)

1. Remove the left cover from the printer (page 8-8)
2. Disconnect CN 2 (to Registration Sensor) from the sensor board.
3. Disconnect CN 3 (to Print Cartridge Interconnect Board) from the sensor board.
4. Remove 2 screws securing the Tray 2 No Paper Sensor to the printer chassis and remove the sensor.

# Paper Size Sensor (PL 9.3.36)

**Note**

If the optional Tray 3 Feeder is installed, it must be removed before perfoming this procedure.

1. Remove the left cover from the printer (page 8-8).
2. If Tray 2 has not already been removed, remove it now.
3. Disconnect CN 1 (to the Print Cartridge Interconnect Board) from the Paper Size Sensor.
4. Gently turn the printer upside down.

**Note**

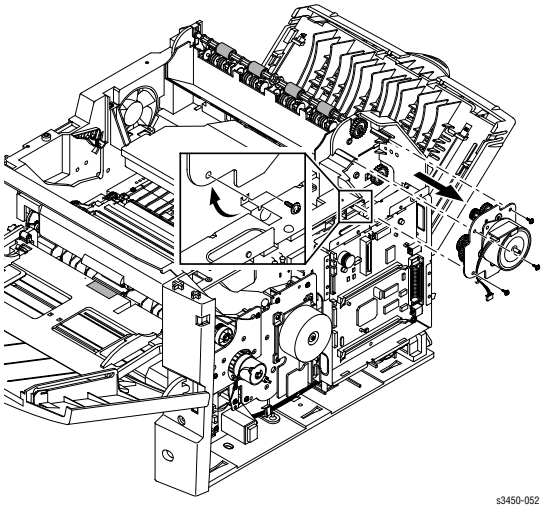
The Paper Size Sensor can be removed and replaced without removing the rear crossbar. However, to provide improved access, remove the crossbar screw above the Paper Size Sensor and loosen the screw on the other side so you can swing the crossbar out of the way.

5. On the left side of the printer, remove 2 screws, one on either side of the rear crossbar, that secure the Paper Size Sensor to the printer chassis.
6. Pull up on the sensor assembly until it is clear of the mounting pins and then remove it from the printer.

# Exit Motor Drive Assembly (PL 9.1.20)

1. Remove the Print Cartridge (page 8-4) and protect it from light.
2. Remove the Top Cover Assembly (page 8-9).
3. Disconnect the Exit Motor Drive harness connector from the Exit Motor.

4. Remove 3 screws that secure the Exit Motor Drive Assembly to the printer chassis and remove the drive assembly.




**Caution**

Do not lose the thermal insulating washers on each of the mounting screws between the screw head and the motor.

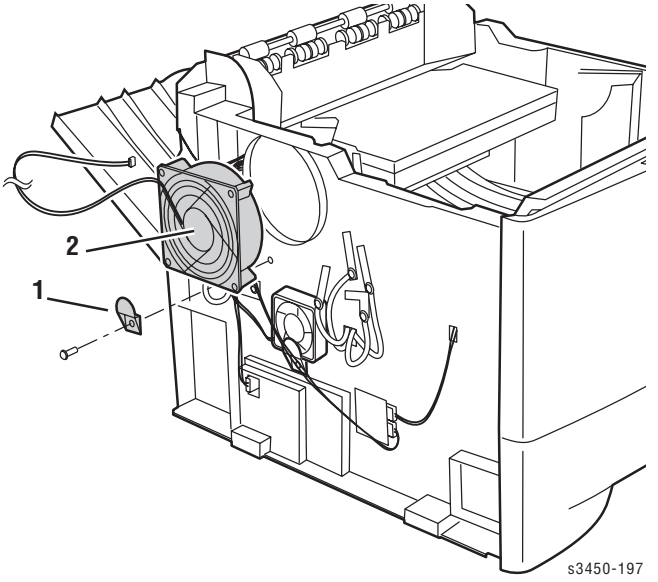
## Main Fan Assembly (PL 9.1.19)

1. Remove the Top Cover Assembly (page 8-9).
2. Disconnect the Main Fan connector CN 15 from the Main Board (see "Map 1 Main Board" on page 10-3).

**Note**

If you wish, you can loosen the screws securing the Laser Assembly and tilt it to provide additional access to remove the cable. This will be necessary when routing the cable back under the Laser Assembly during reinstallation.

3. Remove 1 screw securing the Fan retainer (stopper) and remove the fan to the left while feeding the cable through the printer from the right side.




1. Stopper 2. Main Fan

## Reinstallation Notes

**Note**

If not already done during removal, loosen the screws securing the Laser Assembly sufficiently to route the fan cable under the laser.

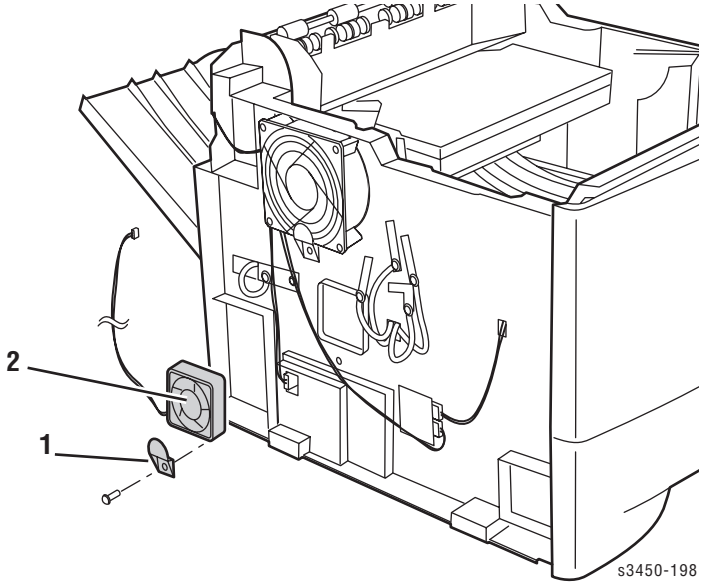
# Sub Fan Assembly (PL 9.3.35)

1. Remove the Top Cover Assembly (page 8-9).
2. Disconnect the Sub Fan connector CN 21 from the Main Board.

**Note**

If you wish, you can loosen the screws securing the Laser Assembly and tilt it to provide additional access to remove the cable. This will be necessary when routing the cable back under the Laser Assembly during reinstallation.

3. Remove 1 screw securing the Fan retainer (stopper) and remove the fan to the left while feeding the cable through the printer from the right side.




1. Stopper 2. Sub Fan

## Reinstallation Notes

**Note**

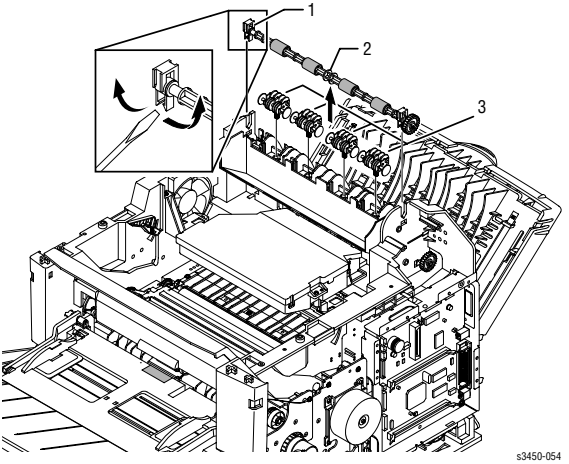
If not already done during removal, loosen the screws securing the Laser Assembly sufficiently to route the fan cable under the laser.

Install the Sub Fan with the label facing in to ensure proper air flow.

# Exit Roller Assembly (PL 9.3.21) Transport Roller Assembly (PL9.3.24)

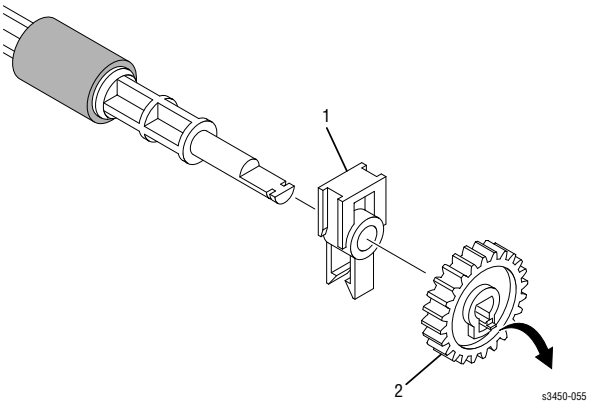
1. Remove the Print Cartridge (page 8-4) and protect it from light.
2. Remove the Top Cover Assembly (page 8-9).

3. Using a small flat blade screwdriver spread the plastic latch hooks on the bottom of the bearing while pulling up on the left end of the Exit Roller shaft.




1. Bearing 2. Exit Roller 3. Exit Idler Roller Assemblies

4. Press down on the tab securing the Exit Roller gear to the shaft. Remove the gear.
5. Repeat the procedure for the bearing on the right end of the Exit Roller shaft and remove the shaft.




1. Bearing 2. Exit Gear

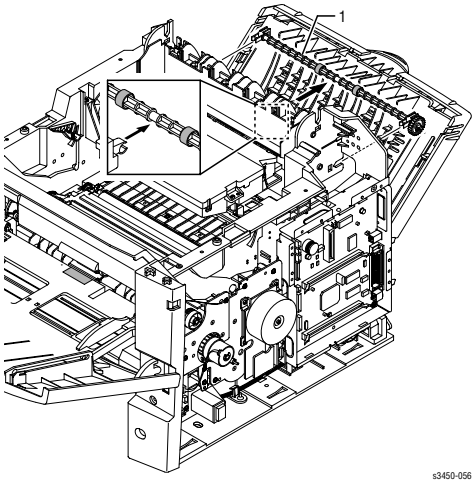
6. Lift the Exit Shaft Assembly out of the exit frame.

**Caution**

The Exit Idler Roller Assemblies are not captured in the exit frame and can be dropped.

7. Lift the Exit Idler Roller Assemblies out of the exit frame.

8. Using a small flat blade screwdriver spread the plastic latch hooks on the bottom of the bearing while pulling the left end of the Transport Roller Shaft Assembly to the rear.
9. Continue pulling the Transport Roller Shaft Assembly to the rear to remove it from the center bearing.




10. Press down on the tab that secures the Transport Roller Shaft Assembly gear to the shaft and remove the gear.
11. Repeat the procedure for the bearing on the right end of the Transport Roller Shaft Assembly and remove the shaft.
12. Slide the bearings off both ends of the Transport Roller Shaft Assembly.

**Note**

The bearings can be left in place on the shaft unless they or the shaft are being replaced.

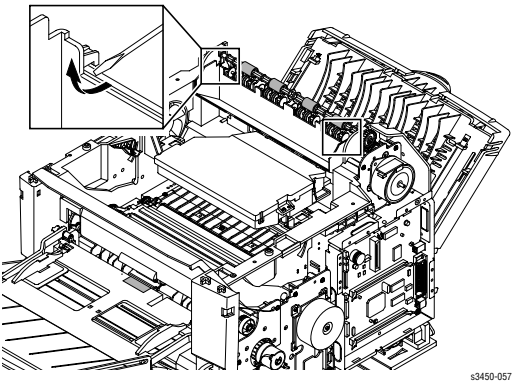
**Note**

On reassembly, ensure that the Output Full Sensor actuator moves freely.

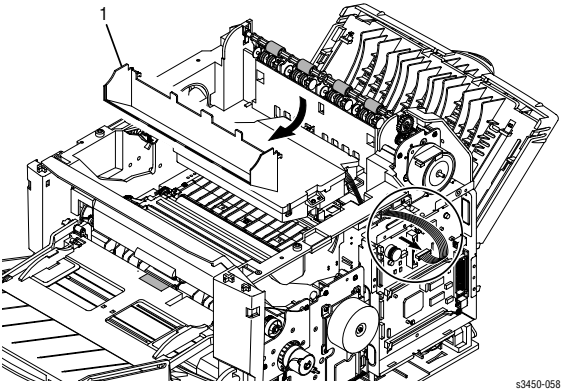
## Laser Assembly (PL 9.1.16)

1. Remove the Print Cartridge (page 8-4) and protect it from light.
2. Remove the Top Cover Assembly (page 8-9).

3. Using a small flat bladed screwdriver, release the latch hook on each side of the Intermediate Output Tray.




4. Remove the Intermediate Output Tray (item 1) towards the front of the printer.




5. Remove 3 screws securing the Laser Assembly to the printer chassis and lift the Laser sufficiently to access the harness.

**Caution**

Be careful not to touch the window on the underside of the Laser Assembly.

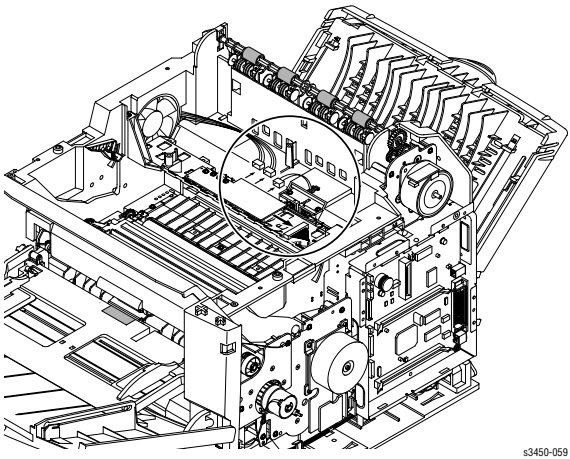
6. Carefully peel back the foam pad securing the laser harness to the bottom of the Laser Assembly and disconnect the 2 harness connectors from the Laser.

**Note**

If the foam pad is damaged during removal, it is not critical to unit performance.

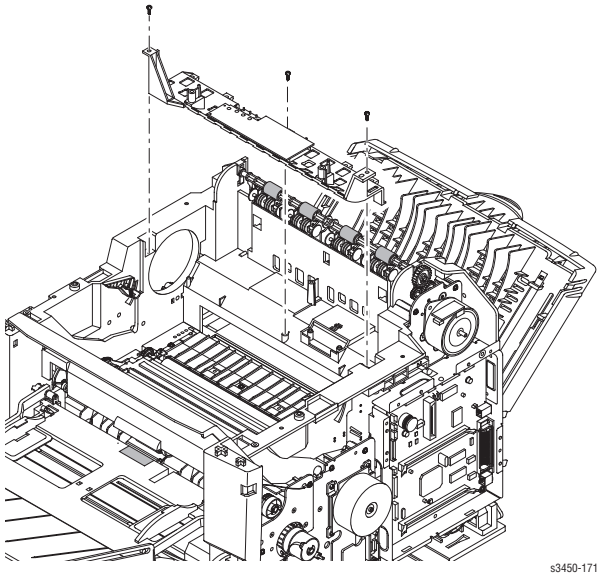
# Print Cartridge Interconnect Assembly (PL 9.3.53)

1. Remove the Laser Assembly (page 8-27).
2. If the NIC Board is installed, remove it (page 8-17).
3. Disconnect CN 4, CN 7, CN 8, and CN 9 from the Print Cartridge Interconnect Assembly.



s3450-059

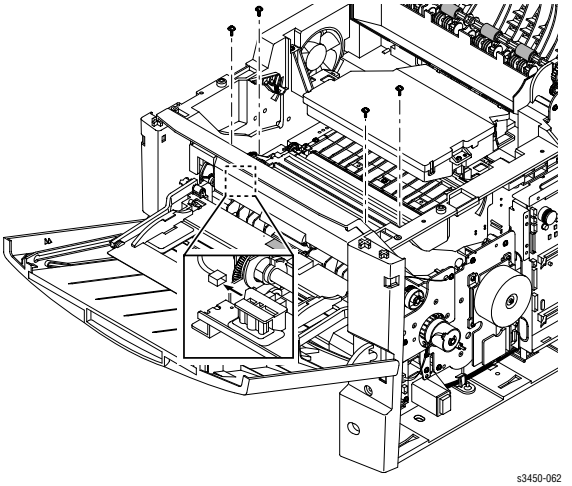
4. Disconnect CN 6 from the Main Board.
5. Remove the 3 screws securing the Print Cartridge Interconnect Assembly and remove the Assembly.



s3450-171

# Registration Transport Assembly (PL 9.1.9)

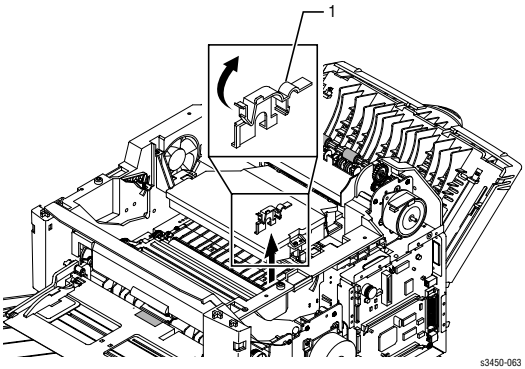
1. Remove the Print Cartridge (page 8-4) and protect it from light.
2. Remove the Top Cover Assembly (page 8-9).
3. Disconnect the connector from the Registration Sensor.




4. Remove the 4 screws that secure the Registration Transport Assembly to the chassis.
5. Lift up on the latch handle at the front and remove the gear cap (item 1) at the right end of the Registration Transport Assembly.

**Note**

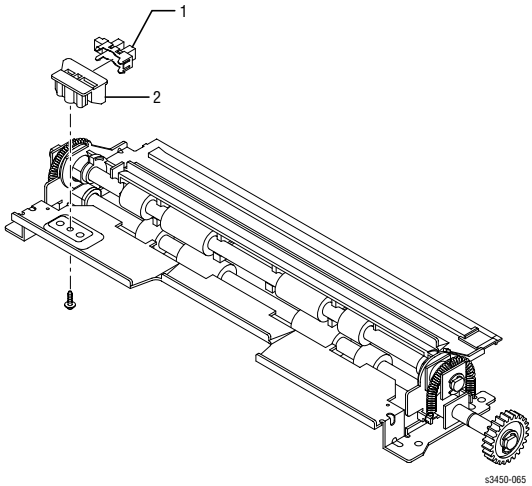
The gear cap is the same color black as the printer frame and can be difficult to see. Look at the right end of the Registration Transport Assembly and you will see the cap just to the right of the bearing.



6. Lift the Registration Transport Assembly out of the printer.

## Registration Sensor (PL 9.7.10)

1. Remove the Registration Transport Assembly (page 8-30).
2. Remove 1 screw (accessed from the bottom of the Assembly), that secures the Registration Sensor to the Registration Transport Assembly and remove the Sensor Holder and the Sensor.

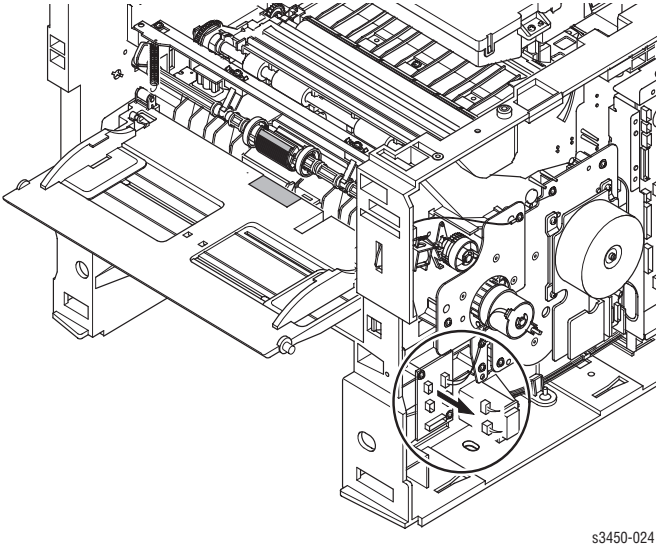



1. Regi Sensor 2. Sensor Holder

## Tray 1 Feed Roller Assembly (PL 9.3.2)

1. Remove the Front (Inner) Cover Assembly (page 8-12).

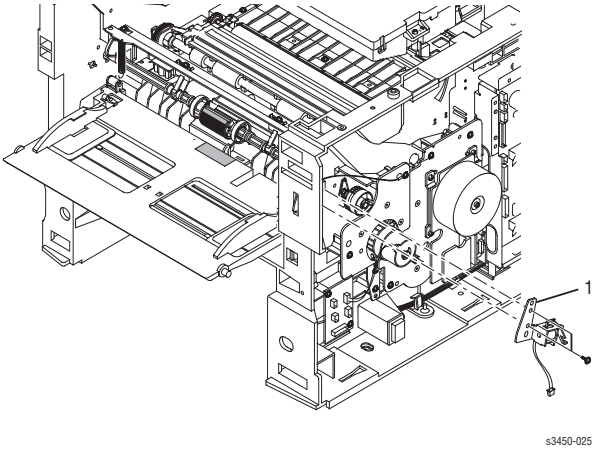
2. Disconnect CN 11 connecting the Tray 1 Solenoid to the Connector Board (see "Map 2 Connector Board" on page 10-4).



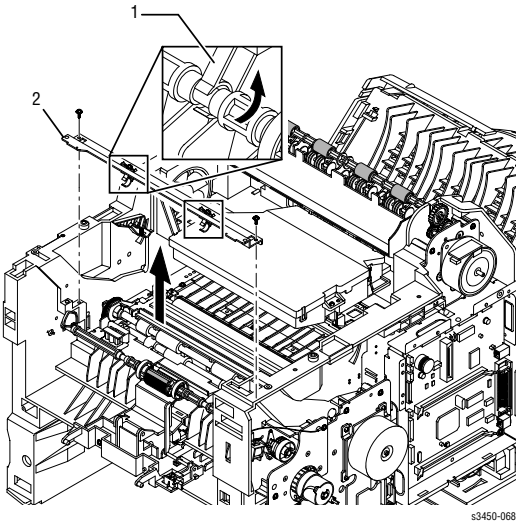

3. Remove 2 screws securing the Tray 1 Solenoid (item 1) to the chassis and remove the solenoid.

**Note**

The ground wire will also be removed at this time. Be sure to replace it when replacing the solenoid.

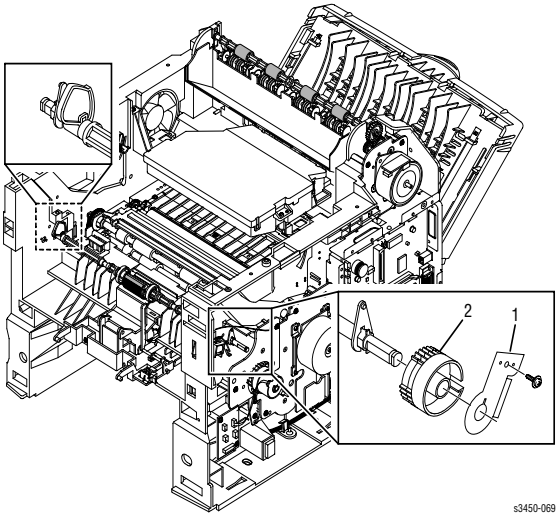


**4.** Remove 2 screws, one at each end of the Tray 1 Pick Up Rack, and unsnap the rack with the 2 bushings that secure the rack to the Tray 1 Feed Roller Shaft.



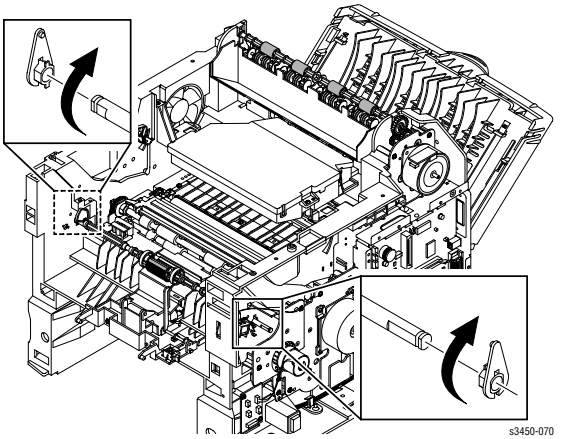

**1.** Bushing **2.** Tray 1 Pick Up Rack

**5.** Remove 1 screw on the right side of the printer that secures the bracket over the right end of the Feed Roller Shaft. Remove the bracket and the Tray 1 Gear.

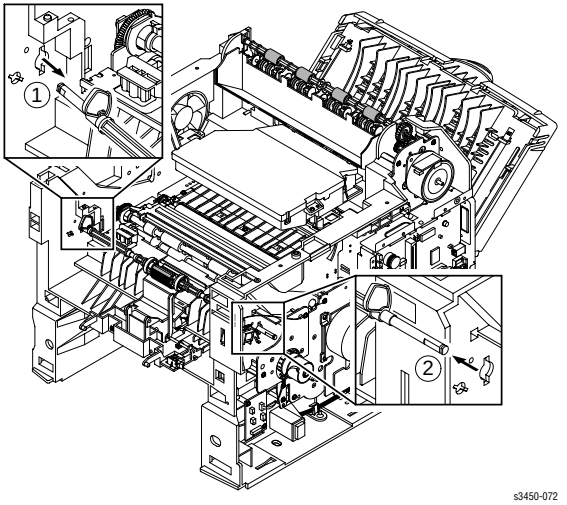



**1.** Bracket **2.** Tray 1 Gear

6. Pull out on the top of the bearing retainer on both sides of the printer to free the tab from the retaining hole in the chassis, then rotate the bearings to the rear to remove them from the shaft.




7. Slide the shaft towards the right side far enough to free the left end of the shaft as shown by ① below.
8. Pull the left end of the shaft forward while sliding the right end of the shaft free as shown by ② below. Remove the Pick Up Assembly from the printer.



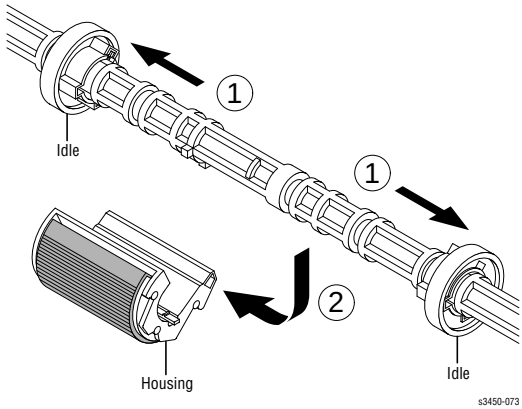
# Tray 1 Pick Roller (PL 9.3.2.4)

1. Remove the Inner Front Cover (page 8-12).
2. Release the securing tabs and push both idle rollers outward from the sides of the Pick Roller as shown by ① below.

**Note**

If it is necessary to rotate the Pick Roller for removal, release the solenoid, then rotate the shaft gear clockwise.

3. Release the securing tab on the Pick Roller, slide it to the right and then, using a small flat screwdriver, gently pry the Pick Roller free of the shaft as shown by ② below.

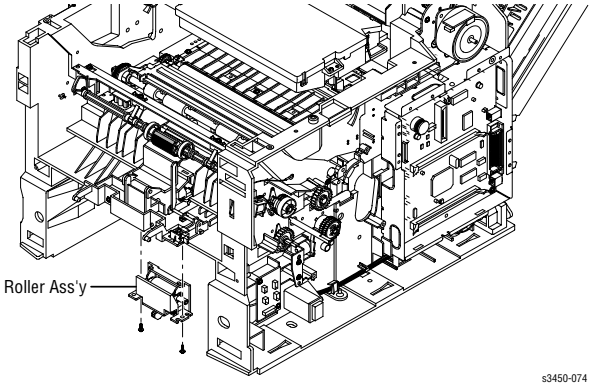



**Note**

After installation, ensure that the Pick Roller does not rotate independently of the shaft. If it does, it is not properly installed.

# Tray 2 Retard Assembly (PL 9.3.7)

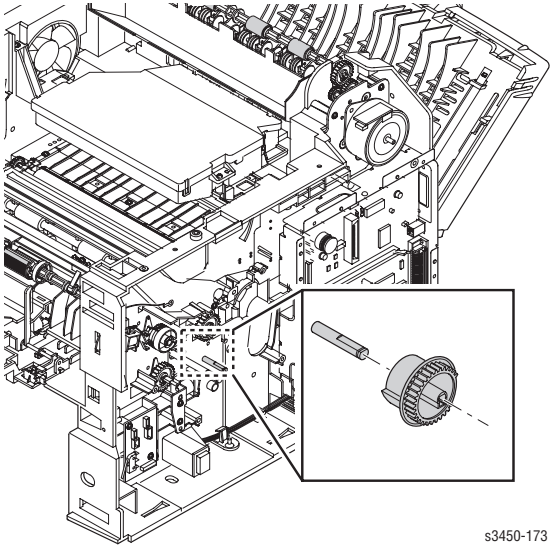
1. Remove the Front (Inner) Cover (page 8-12).
2. Remove 2 screws and drop the Retard Roller Frame Assembly.




# Tray 2 Paper Pick Assembly (PL 9.3.67)

1. Remove the Front (Inner) Cover Assembly (page 8-12).
2. Remove the Main Drive Assembly (page 8-19).

3. On the right side of the printer, press down the retaining tab and remove the Feed Roller Shaft Gear Assembly from the Feed Roller Shaft.

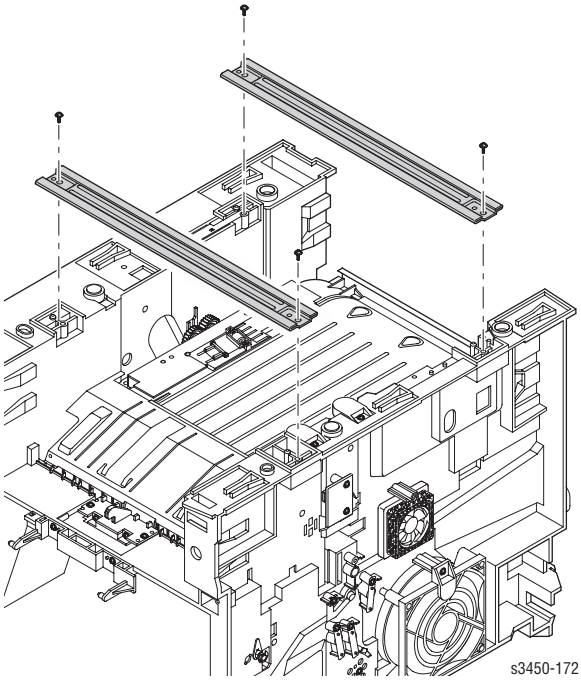


s3450-173

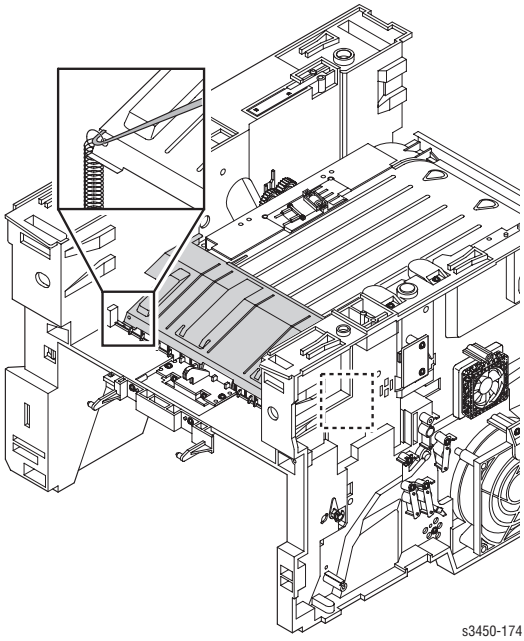
4. Turn the printer upside down, remove 4 screws, and remove the 2 Bottom Cross Bars from the printer.

**Caution**

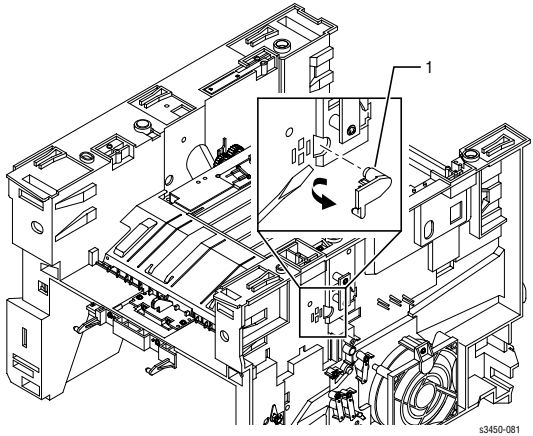
The Tray Full actuator is exposed with the top cover removed. Be careful when you turn the printer over to avoid damaging the actuator.



5. With the printer upside down, disconnect 2 springs from the pickup assembly to the front corners of the Duplex Guide Plate.

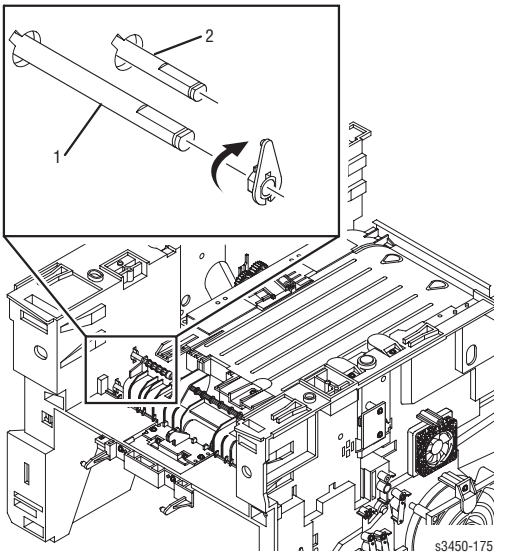



6. Using a screwdriver, pry up the locking tab and remove the stopper on the left side of the printer.



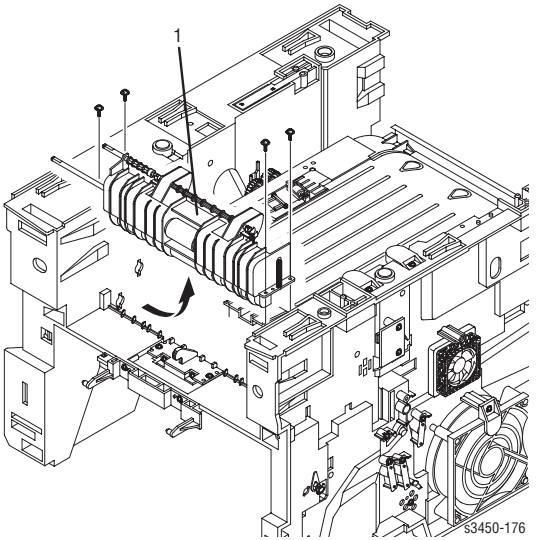

7. Remove the screw securing the ground wire on the right side of the Duplex Guide Plate.
8. Remove the Duplex Guide Plate from the printer.

9. Pull out on the top of the bearing retainer for the Feed Roller Shaft on the right side of the printer. Pull out to free the bearing from the chassis, then rotate the bearing to the rear and remove it from the shaft.




1. Feed Roller 2. Pick Up Roller

10. Remove 4 screws securing the Paper Pick Assembly, slide the assembly to the right side of the printer, lift the left end and slide the assembly up and out to the left side of the printer.



## Reassembly Notes

**Note**

When reinstalling the Duplex Guide Plate, make sure the plate is past the flange before you reinstall the springs.

**Note**

Be sure that you reinstall the ground wire on the right side of the Duplex Guide Plate.

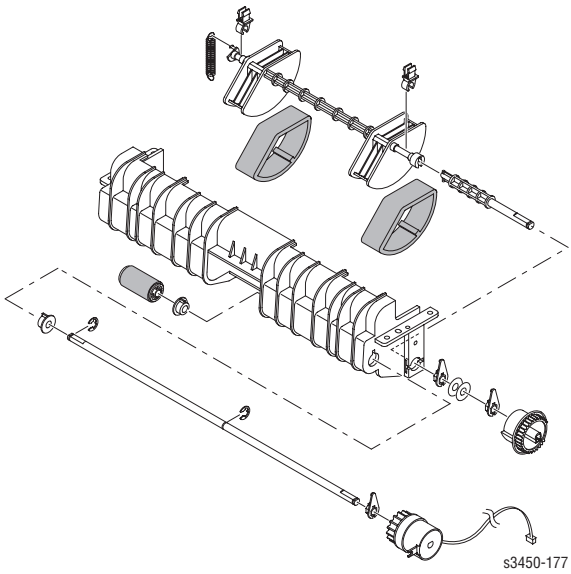
# Tray 2 Pick Roller (PL 9.3.67.3)

1. Remove the Tray 2 Paper Pick Assembly (page 8-36).
2. Remove the spring (release from the shaft) on the left side of the pick roller shaft.

**Caution**

Be careful not to drop the spring during removal.

3. Remove the bearing on the right end of the pick roller shaft and slide the end of the shaft to the right to disengage the shaft coupling.
4. Pull the center shaft out of the retaining clips.
5. Pull the segmented roller off of the roller core.
6. Slide the new segmented roller on to the roller core and reassemble the Paper Pick Assembly by reversing the previous steps..



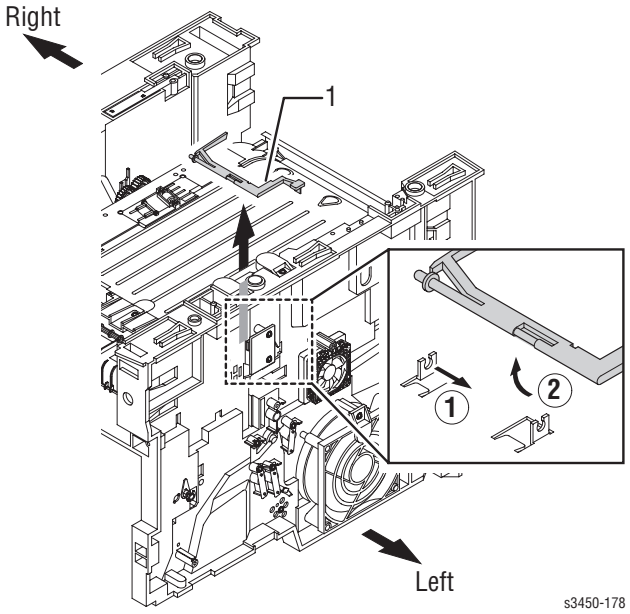
## Reassembly Notes

**Caution**

When reinstalling the Pick Roller, be careful not to damage the springs.

# Power Supply Board (PL 9.1.13)

1. Remove the Duplex Guide Plate from the printer (page 8-36, Steps 1 through 8).
2. Slide the Tray 2 Paper Out Actuator (item 1) to the left ① until the end is free of the retainer clip, then lift up ② to remove it from the printer.



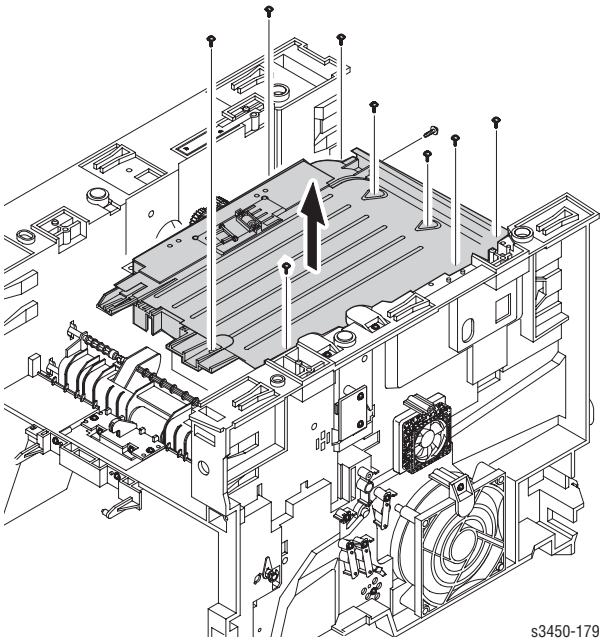
3. Remove 9 screws and slightly lift the Duplex Assembly from its mounting location.

**Note**

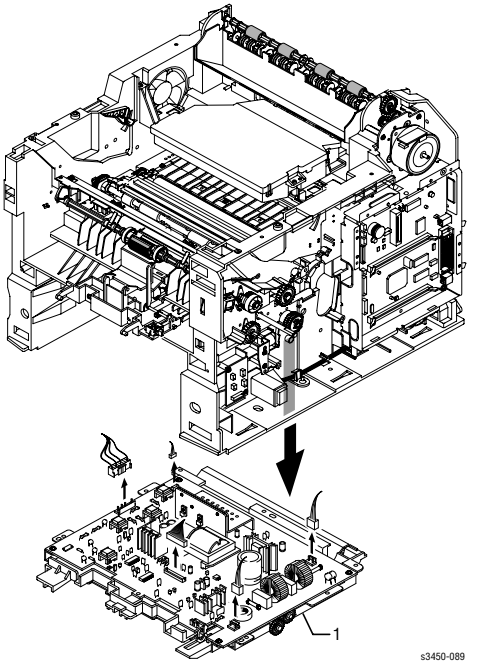
The screw that secures the ground wire to the back edge of the assembly is the short machine screw.

**Caution**

Do not attempt to remove the Power Supply Board Assembly from the printer until you first disconnect all 5 connectors.



4. Disconnect 5 connectors (CN 1, CN 2, CN 3, CN 4, and CN 101) from the Power Supply Board, then remove the Power Supply Board Assembly to a work surface with the Power Supply up.



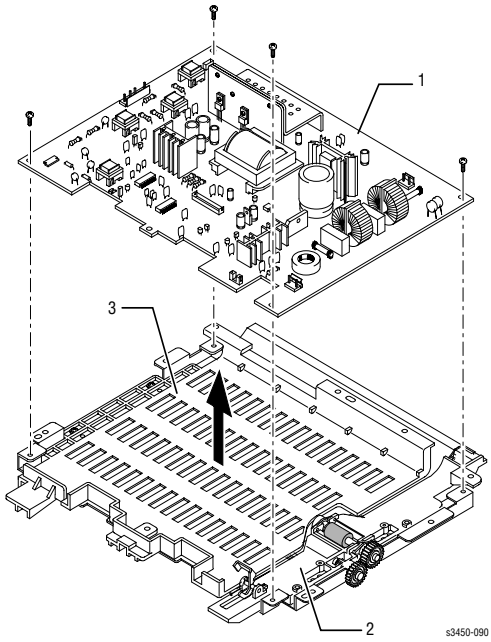

## Reassembly Notes

**Note**

CN3 must be dressed correctly for reassembly. If CN3 is pulled too far forward, assembly will be difficult.

# Duplex Assembly (PL 8.8.2)

1. Remove the Power Supply Board (page 8-42).
2. Remove 4 screws securing the Power Supply Board to the Duplex Assembly and remove the board.




1. Power Supply Board
2. RH Guide (Duplex)
3. LH Guide (Duplex)

# Exit Sensor (PL 9.3.62)

1. Remove the Power Supply Board (page 8-42).
2. Remove 2 screws securing the Exit Sensor to the chassis and remove the Exit Sensor.

# Parts Lists

## In this chapter...



Chapter 9

# Using the Parts List

1. **No.:** The callout number from the exploded part diagram.
2. **Part Number:** The material part number used to order specific parts.
3. **Qty:** This number represents the parts per printer, not the number of parts supplied in the actual part order.
4. **Name/Description:** Details the name of the part to be ordered and the number of parts supplied per order.
5. Parts identified throughout this manual are referenced **PL #.#.#**; For example, PL 3.1.10 means the part is item 10 of Parts List 3.1.
6. A black triangle preceding a number followed by a parenthetical statement in an illustrated parts list means the item is a parent assembly, made up of the individual parts called out in parentheses.
7. The notation "**with X~Y**" following a part name indicates an assembly that is made up of components X through Y. For example, "1 (with 2~4)" means part 1 consists of part 2, part 3, and part 4.
8. An asterisk (*) following a part name indicates the page contains a note about this part.
9. The notation (NS) next to a part indicates that pariticular part is not spared, but contained in a kit or major assembly.
10. The notation "**J1<>J2 and P2**" is attached to a wire harness. It indicates that connector Jack 1 is attached to one end of the wire harness and connector J2 is attached to the other end that is plugged into P2.

**Note**

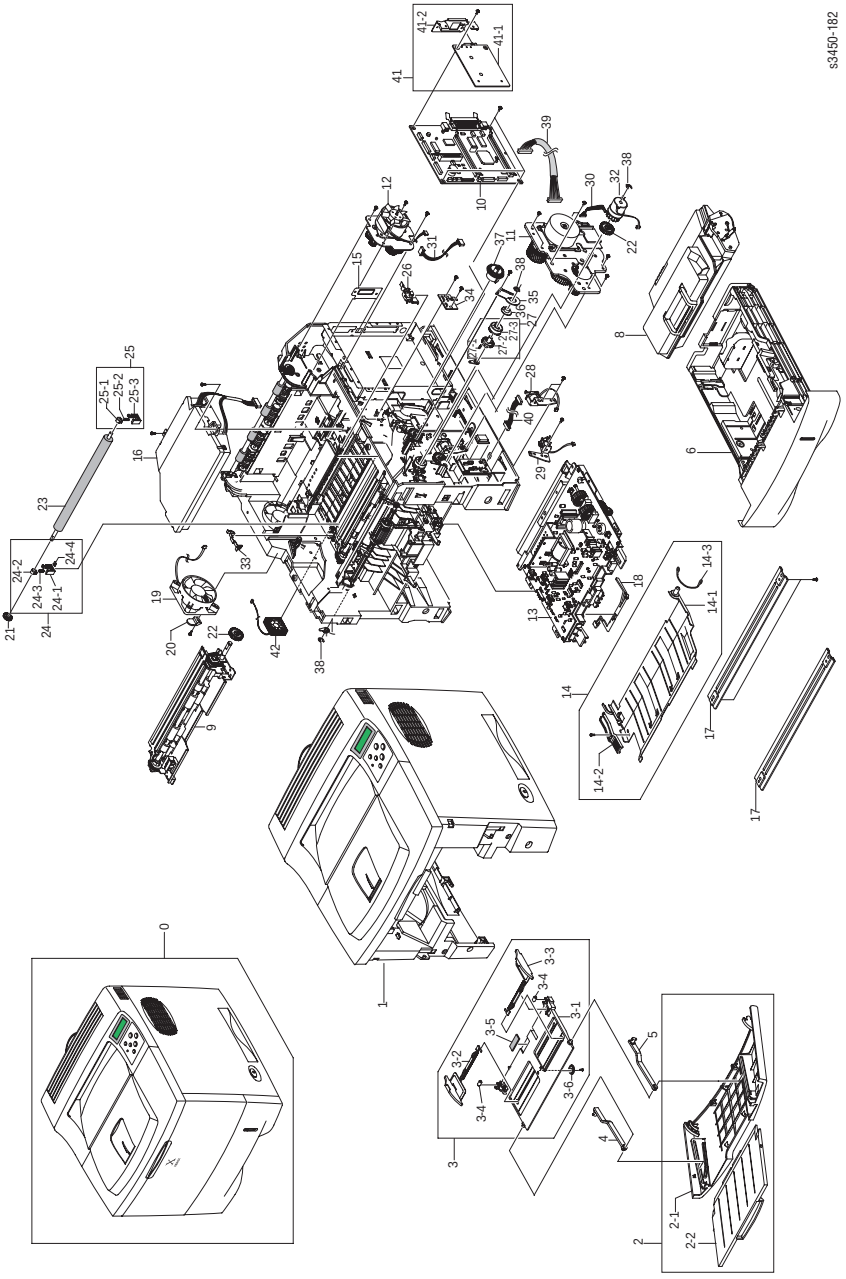
Only parts showing part numbers are available for support. Parts not showing part numbers are available on the parent assembly.

**Legend:**

| Identifier | Meaning |
|---|---|
| C | C-ring |
| E | E-ring |
| KL | K-clip |
| S | Screw |

# Print Engine Parts

## Main Unit



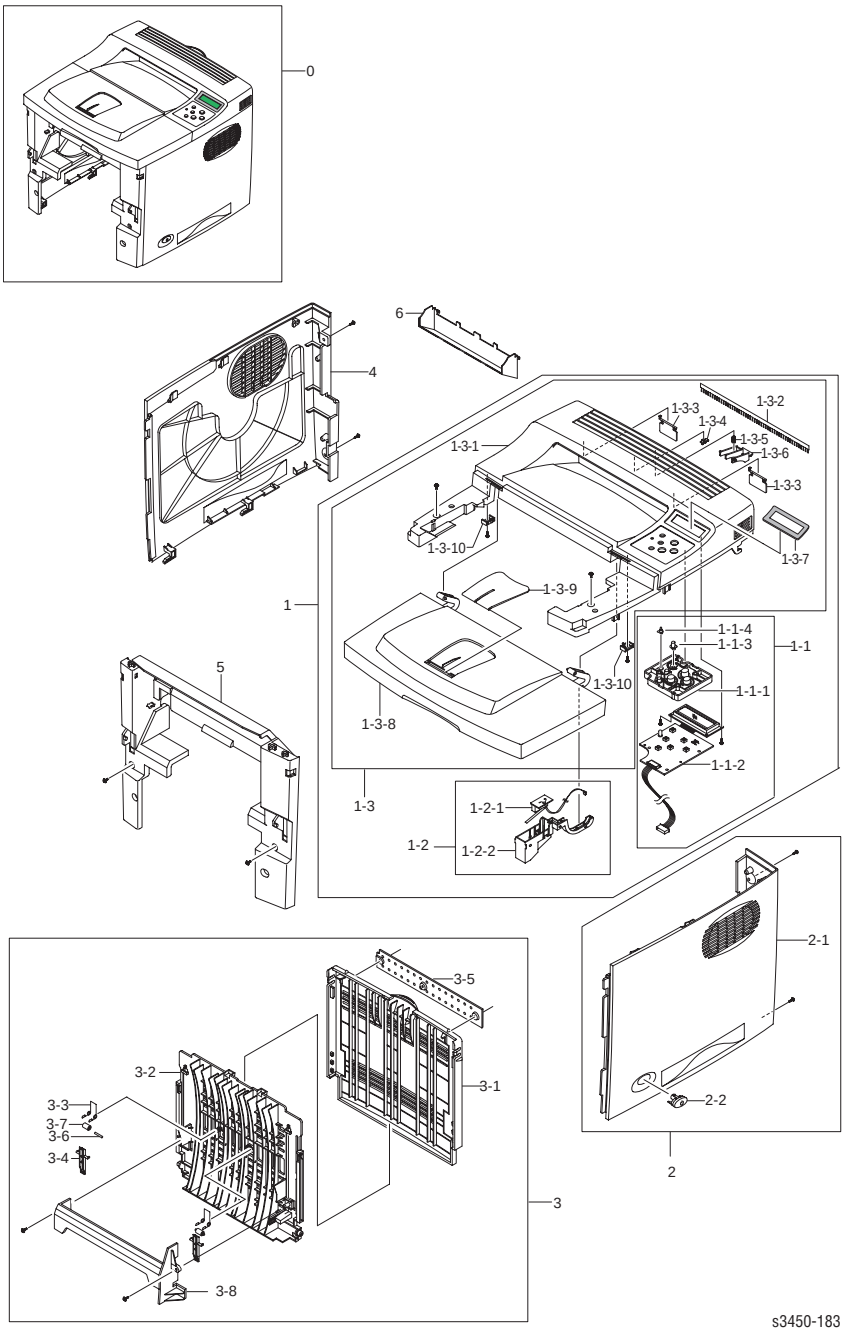
## Service Parts List 9.1 Main Unit

| No. | Name/Description | Qty | Part Number |
|---|---|---|---|
| 1 | Base Housing | 1 | NS |
| 2 | Tray 1 Cover Assy (with 2-1, 2-2) | 1 | 2.1 Part # 002N02468<br>2.2 Part # 002N02469 |
| 3 | Tray 1 Assembly (with 3-1 ~ 3-6) | 1 | 050K55430 |
| 4 | Tray 1 Link (Left) | 1 | NS |
| 5 | Tray 1 Link (Right) | 1 | NS |
| 6 | Paper Tray | 1 | 109R00722 |
| 7 | Frame Assy | 1 | NS |
| 8 | Print Cartridge (5K)<br>Print Cartridge (10K) | 1<br>1 | 106R00687<br>106R00688 |
| 9 | Reg Transport Assy | 1 | 059K39130 |
| 10 | Main Board (Duplex)<br>Main Board (Non-Duplex) | 1<br>1 | 960K12200<br>960K12360 |
| 11 | Main Drive Motor Assembly | 1 | 127K44860 |
| 12 | Exit Motor Assembly | 1 | 127K44870 |
| 13 | Power Supply Board (110 Volts)<br>Power Supply Board (220 Volts | 1<br>1 | 105K27080<br>105K27090 |
| 14 | Duplex Guide Plate (with 14-1 ~ 14-3) | 1 | NS |
| 15 | Bracket Dummy Control | | NS |
| 16 | Laser Assembly | 1 | 122K02450 |
| 17 | Cross Bar | 2 | NS |
| 18 | Tray 2 Empty Actuator | 1 | 120E26090 |
| 19 | Fan DC (Main) | 1 | 127E14630 |
| 20 | Stopper Fan | | NS |
| 21 | Gear, Transfer Rol l | 1 | 007N01013 |
| 22 | Gear Regi Z25 | | NS |
| 23 | Transfer Roller | 1 | 022E29520 |
| 24 | Transfer Roller Bearing, Right (with 24-1 ~ 24-4) | 1 | 019E63470 |
| 25 | Transfer Roller Bearing, Left (with 25-1 ~ 25-3) | 1 | 019E63480 |
| 26 | Cap-M-Gear | 1 | 807E06450 |
| 27 | Gear Assembly | 1 | 007K13470 |
| 28 | Tray 2 Solenoid | 1 | 121E19250 |
| 29 | Tray 1 Solenoid | 1 | 121E19260 |

## Service Parts List 9.1 Main Unit (Continued)

| No. | Name/Description | Qty | Part Number |
|---|---|---|---|
| 30 | Harness, Main Motor | | NS |
| 31 | Harness, Motor | | NS |
| 32 | Reg Clutch | 1 | 121E19270 |
| 33 | PMO Cap TR | | NS |
| 34 | PBA Sub Cover Joint | | NS |
| 35 | Bracket-P Shaft MP | | NS |
| 36 | Bearing Pick Up | | NS |
| 37 | Gear Pick Up Cam | | NS |
| 38 | E-Ring | | NS |
| 39 | CBF Harness SMPS | | NS |
| 40 | CBF Harness MPF Joint | | NS |
| 41 | Network Interface | | N/A |
| 42 | Fan DC (Sub) | 1 | 127N07300 |

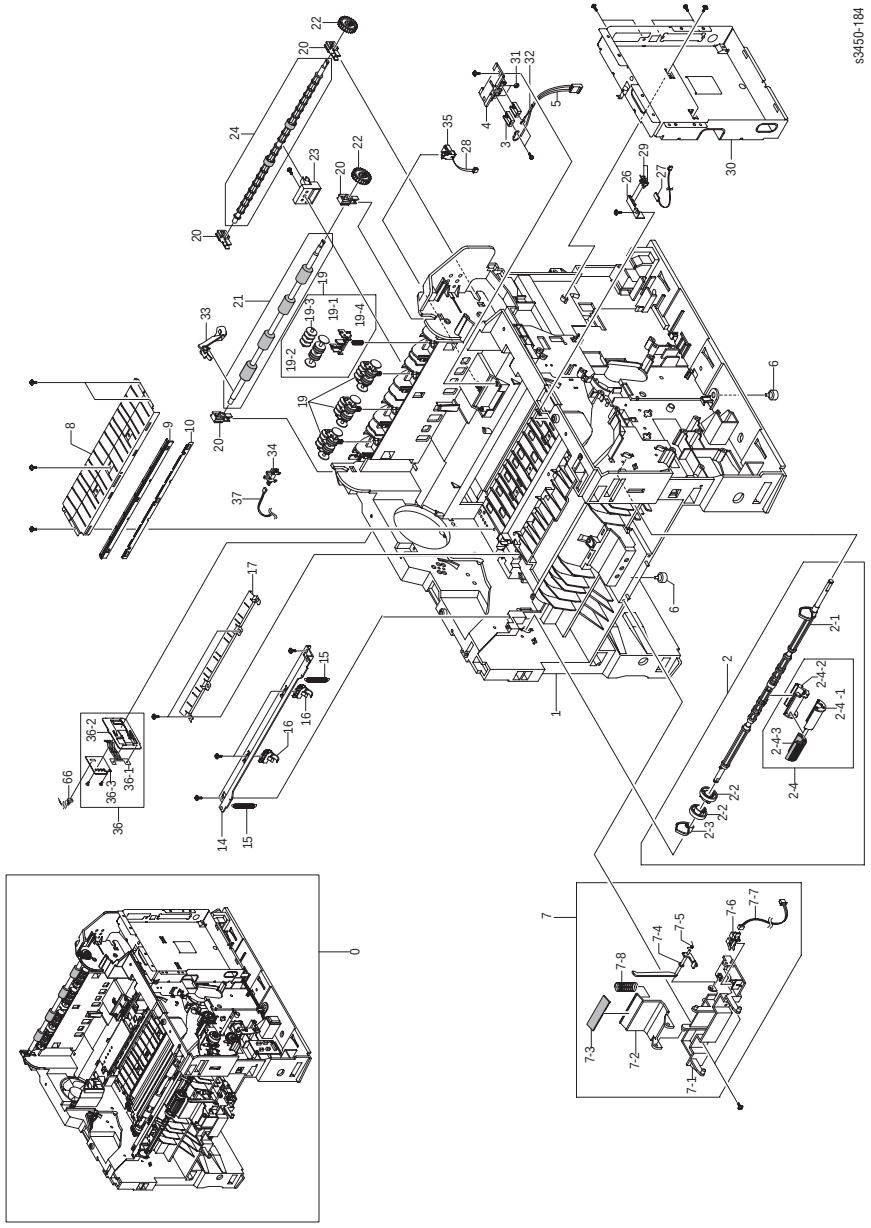
# Covers


0
6
4
1-3-1
1-3-3
1-3-2
1-3-4
1-3-5
1-3-6
1-3-3
1-3-10
1-3-7
1-3-9
1
1-1-4
1-1-3
1-1
1-3-10
1-1-1
5
1-3-8
1-1-2
1-3
1-2-1
1-2
1-2-2
2-1
2-2
2
3-5
3-2
3-1
3-3
3-7
3-6
3-4
3
3-8
s3450-183

## Service Parts List 9.2 Covers

| No. | Name/Description | Qty | Part Number |
|---|---|---|---|
| 1 | Top Cover Assembly (with 1-1 ~ 1-3) | | NS |
| 1-1 | Front Panel (with 1-1-1 ~ 1-1-4) | | 003N00979 |
| 1-2 | Top Cvr Intlck Switch (with 1-2-1 and 1-2-2) | | 002N02471 |
| 1-3 | Top Cover (with 1-3-1 ~ 1-3-10) | 1 | 002N02470 |
| 2 | Right Cover Assembly (with 2-1 and 2-2) | 1 | 802K69580 |
| 3 | Rear Cover Assembly (with 3-1 ~ 3-8) | 1 | 802K69591 |
| 4 | Left Cover | 1 | 802E66540 |
| 5 | Front Inner Cover | 1 | 802E66550 |
| 6 | Output Tray Cover | 1 | 802E66560 |

# Frame 1 Assembly



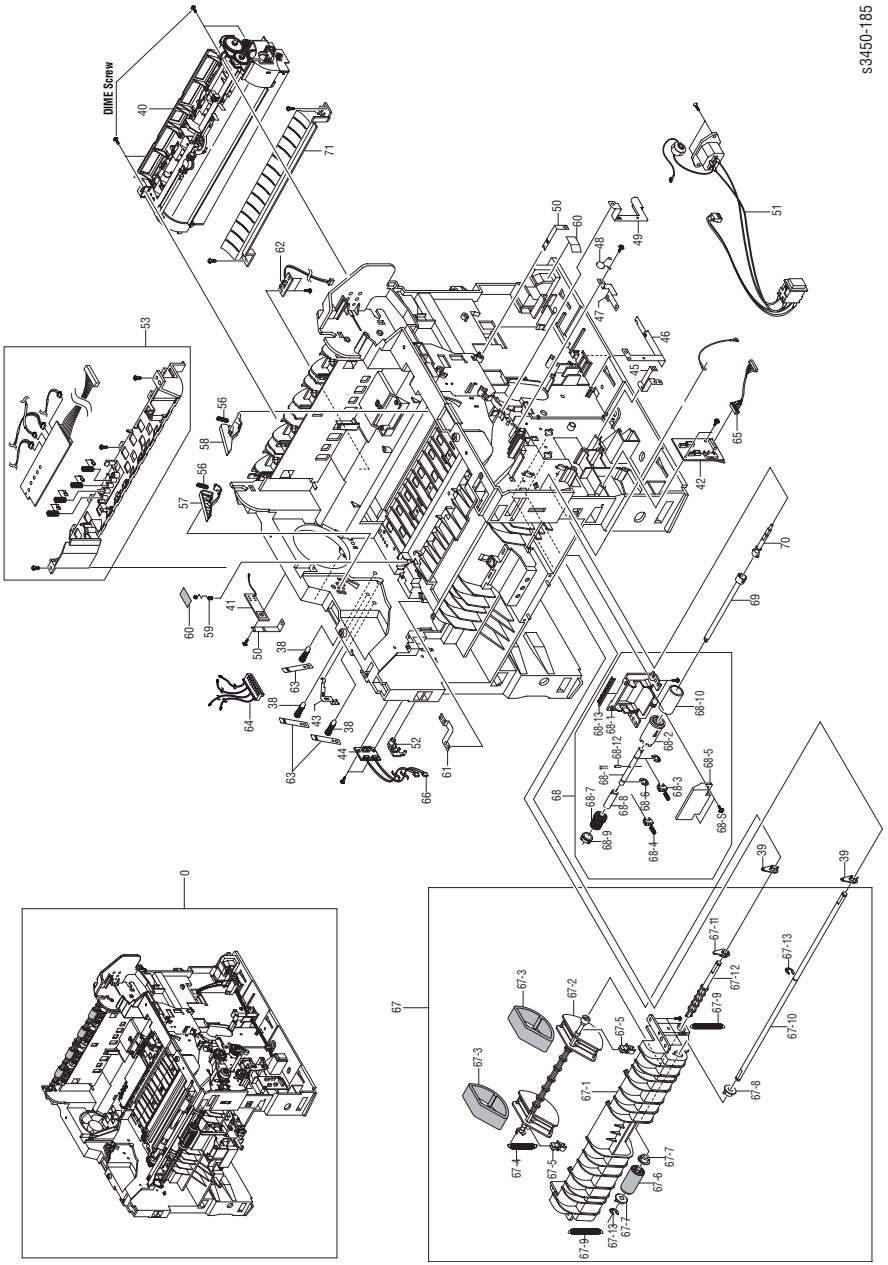
## Service Parts List 9.3 Frame 1 Assembly

| No. | Name/Description | Qty | Part Number |
|---|---|---|---|
| 1 | Frame M Base | | NS |
| 2 | Tray 1 Feed Assy (with 2-1 ~ 2-3) | 1 | 059K39080 |
| 2-4 | Tray 1 Feed Roller (with 2-4-1 ~ 2-4-3) | 1 | 059K39090 |
| 3 | IPR Terminal FU | | NS |
| 4 | PMO Housing Terminal | | NS |
| 5 | CBF Harness Fuser 220V | | NS |
| 6 | Foot ML-80 | | NS |
| 7 | Retard Feeder Assy (with 7-1 ~ 7-8) | 1 | 019N00853 |
| 8 | Guide P Transfer | | NS |
| 9 | PMO Holder Plate Saw | | NS |
| 10 | IPR Plate Saw | | NS |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | Guide P Regi Upper | | NS |
| 15 | Spring ETC Lever | | NS |
| 16 | Holder M Bushing TX | | NS |
| 17 | Guide Plate Paper | | NS |
| 18 | | | |
| 19 | Exit Idler roller Assy (with 19-1 ~ 19-4) | 1 | 059K39110 |
| 20 | Bearing | 4 | 013E25770 |
| 21 | Exit Shaft Roller Assy | 1 | 006K29340 |
| 22 | Exit Gear | 2 | 013E25780 |
| 23 | Holder M Bushing Exit | | NS |
| 24 | Transport Exit Shaft Assy | 1 | 006K29350 |
| 25 | IPR Terminal TR Hawk | | NS |
| 26 | Cap M Wire PTL Lower | | NS |
| 27 | PBA Sub PTL2 | | NS |
| 28 | CBF Harness Thermistor | | NS |
| 29 | Terminal P PTL | | NS |
| 30 | Shield P Controller | | NS |

## Service Parts List 9.3 Frame 1 Assembly (Continued)

| No. | Name/Description | Qty | Part Number |
|---|---|---|---|
| 31 | Nut Hex | | NS |
| 32 | Cable Tie | | NS |
| 33 | Actuator Out Full | | NS |
| 34 | Photo Interrupter | | NS |
| 35 | Connector | | NS |
| 36 | Paper Size Sensor Assy (with 36-1 ~ 36-3) | 1 | 110K14290 |
| 37 | Harness Out Full | | NS |

# Frame 2 Assembly



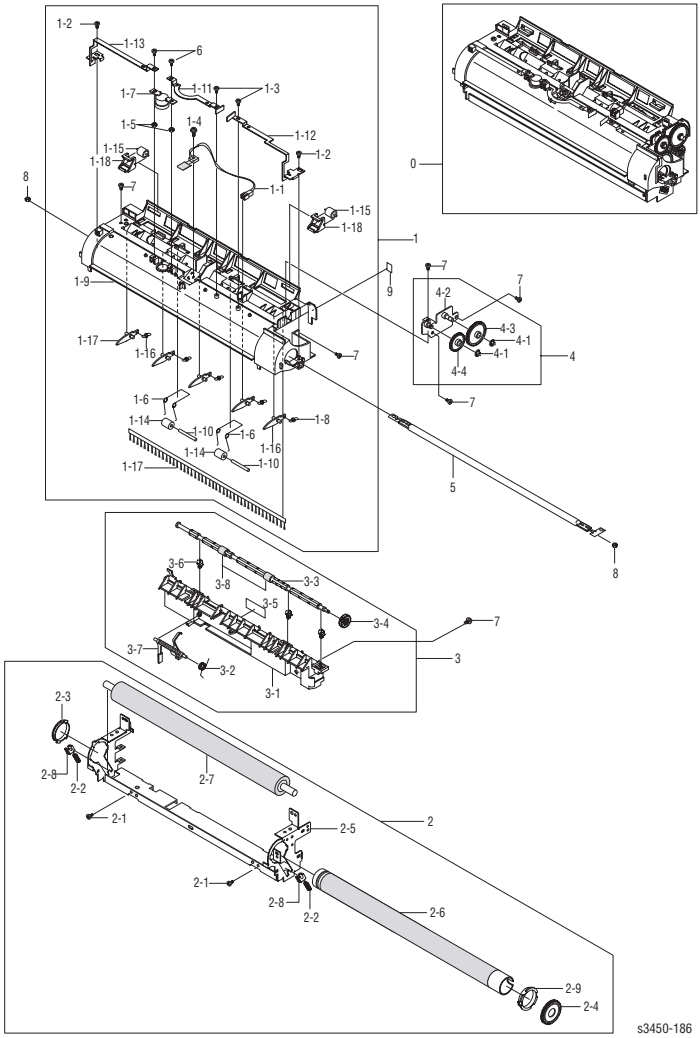
## Service Parts List 9.4 Frame 2 Assembly

| No. | Name/Description | Qty | Part Number |
|---|---|---|---|
| 38 | MEA Unit Terminal L | | NS |
| 39 | PMO Bearing Shaft | | NS |
| 40 | Fuser Assy 110V<br>Fuser Assy 220V | 1<br>1 | 126N00248<br>126N00249 |
| 41 | PBA Main Zener | | NS |
| 42 | Interface PWBA | 1 | 960K12210 |
| 43 | IPR P Ground OPC | | NS |
| 44 | Tray 2 Empty Sensor Assy | 1 | 130K68290 |
| 45 | IPR P GND Solenoid Feed | | NS |
| 46 | IPR P GND SCF Main | | NS |
| 47 | IPR P GND Regi Roller | | NS |
| 48 | ELA HOU Varistor | | NS |
| 49 | IPR P GND Motor Main2 | | NS |
| 50 | IPR P GND Guide TR | | NS |
| 51 | AC Harness Assy | 1 | 962K26720 |
| 52 | Hinge M Front Guide Dup | | NS |
| 53 | Print Cartridge Interconnect Board | 1 | 001N00468 |
| 54 | | | |
| 55 | | | |
| 56 | Spring ETC Guide DEVE | | NS |
| 57 | PMO Guide DEVE L | | NS |
| 58 | PMO Guide DEVE R | | NS |
| 59 | Terminal P TR Cardinal | | NS |
| 60 | Sheet Cover TR | | NS |
| 61 | IPR P Ground Plate Paper | | NS |
| 62 | Exit Sensor | 1 | 130E11100 |
| 63 | Terminal P HV Cardinal | | NS |
| 64 | CBF Harness HVPS | | NS |
| 65 | CBF Harness Connector | | NS |
| 66 | CBF Harness Sensor | | NS |
| 67 | Tray 2 (Tray 3) Feed Assy (with 67-1, 67-2, 67-4 ~ 67-13) | 1 | 059K39120 |
| 67-3 | Tray 2 (Tray 3) Feed Roller | 2 | 022E29530 |

## Service Parts List 9.4 Frame 2 Assembly (Continued)

| No. | Name/Description | Qty | Part Number |
|---|---|---|---|
| 68 | Tray 2 (3) Retard Assy (with 68-1 ~ 68-13) | 1 | 022E29540 |
| 69 | Shaft M Coupling Retard | | NS |
| 70 | Shaft M Gear Retard | | NS |
| 71 | Guide M Front | | NS |

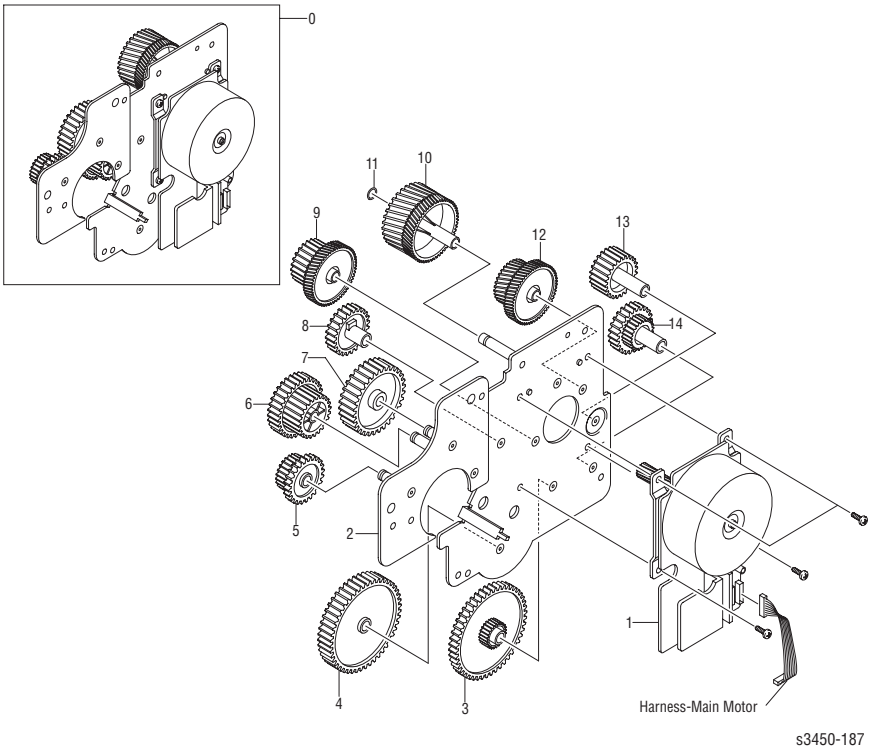
# Fuser Assembly




## Service Parts List 9.5 Fuser

| No. | Name/Description | Qty | Part Number |
|---|---|---|---|
| 0 | Unit Fuser 110V<br>Unit Fuser 220V | 1<br>1 | 126N00248<br>126N00249 |

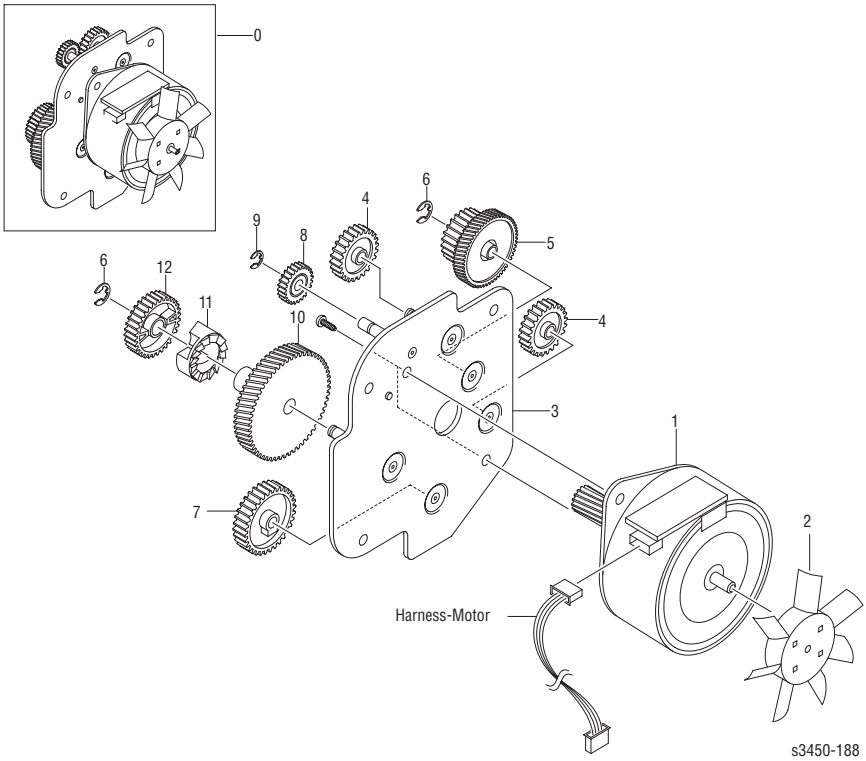
# Main Drive Motor Assembly




## Service Parts List 9.6 Main Drive

| No. | Name/Description | Qty | Part Number |
|---|---|---|---|
| 0 | Main Drive Motor Assy | 1 | 127N07411 |

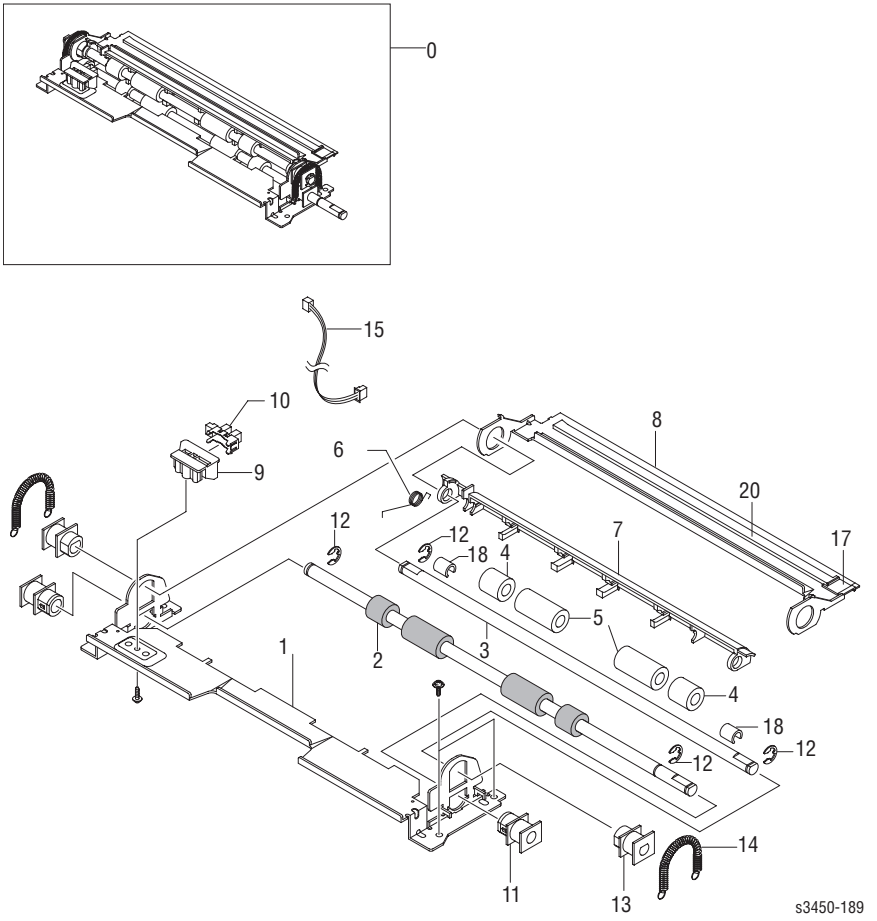
# Exit Drive Motor Assembly




## Service Parts List 9.7 Exit Drive

| No. | Name/Description | Qty | Part Number |
|---|---|---|---|
| 0 | Exit Motor Assy | 1 | 127K44870 |

# Registration Transport Assy



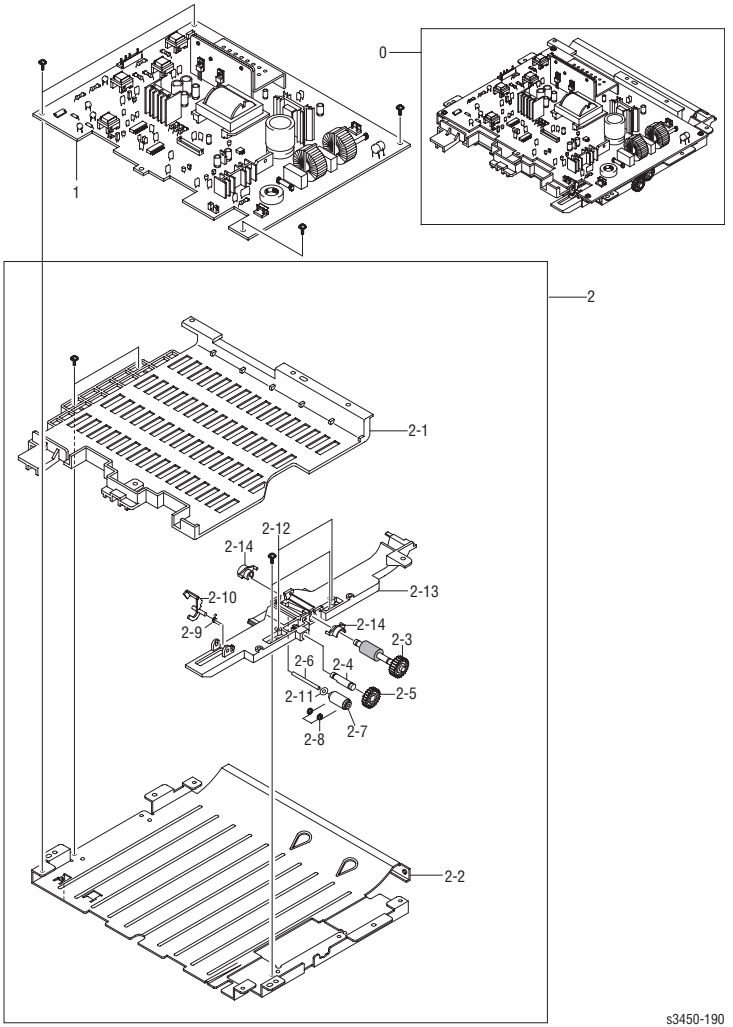

## Service Parts List 9.8 Registration Transport Assy

| No. | Name/Description | Qty | Part Number |
|---|---|---|---|
| 0 | Reg Transport Assy | 1 | 022N02195 |
| 1 | Guide P Regi Lower | | NS |
| 2 | Roller regi Lower L | | NS |
| 3 | Shaft Regi Upper | | NS |
| 4 | Roller M Regi Idle S | | NS |
| 5 | Roller M Regi Idle L | | NS |

## Service Parts List 9.8 Registration Transport Assy (Continued)

| No. | Name/Description | Qty | Part Number |
|---|---|---|---|
| 6 | Spring TS | | NS |
| 7 | Paper Guide | | NS |
| 8 | Guide P Regi Plate | | NS |
| 9 | Holder M Sensor | | NS |
| 10 | Photo Interrupter | 1 | 110K14300 |
| 11 | Bush M Roller Regi L | | NS |
| 12 | E-Ring | | NS |
| 13 | Bush M Roller Regi L | | NS |
| 14 | Spring ES | | NS |
| 15 | CBF Harness MP Empty | | NS |
| 16 | Washer Plain | | NS |
| 17 | Cap M Wire PTL Upper | | NS |
| 18 | Cap M Bushing Actuator | | NS |
| 19 | Cap P Bushing Regi Lower | | NS |
| 20 | PBA Main PTL1 | | NS |

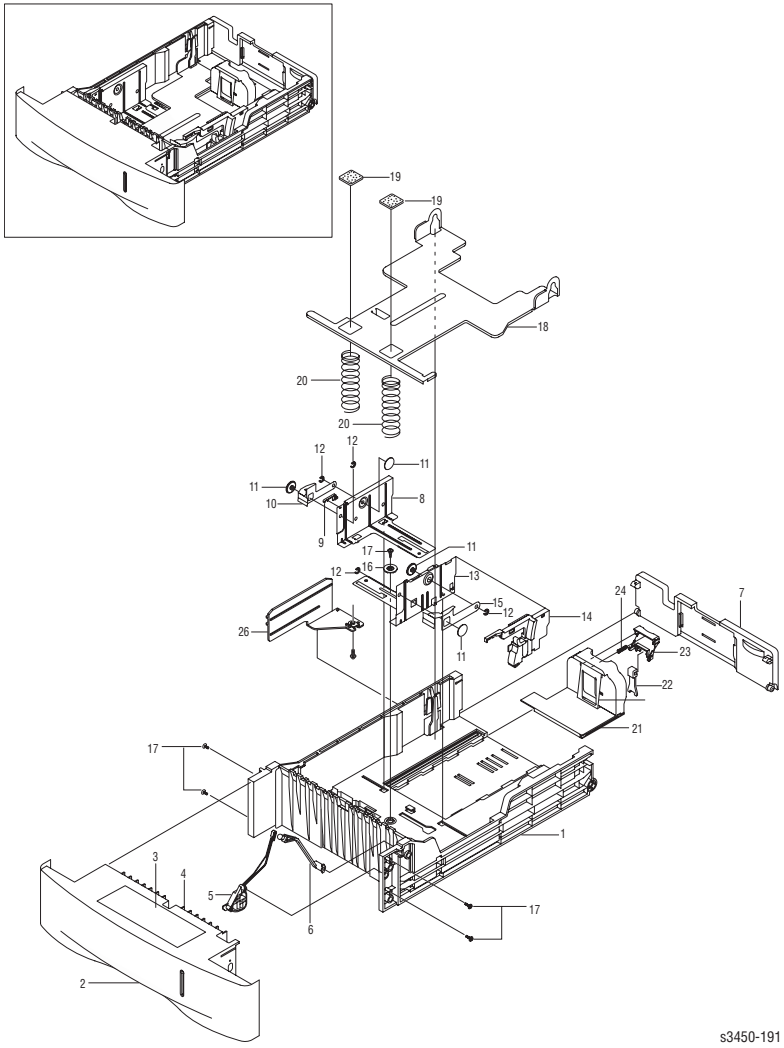
# Power Supply/Duplex Assembly




## Service Parts List 9.9 HVPS/Duplex Assembly

| No. | Name/Description | Qty | Part Number |
|---|---|---|---|
| 0 | Power Supply Board (110 Volts) (with 1 and 2)<br>Power Supply Board (220 Volts) (with 1 and 2) | 1<br>1 | 105K27081<br>105K27091 |
| 1 | SMPS-V1_HVPS<br>SMPS-V2_HVPS | | NS<br>NS |
| 2 | Duplex Roller Assembly (with 2-1 ~ 2-14) | 1 | 022N02196 |

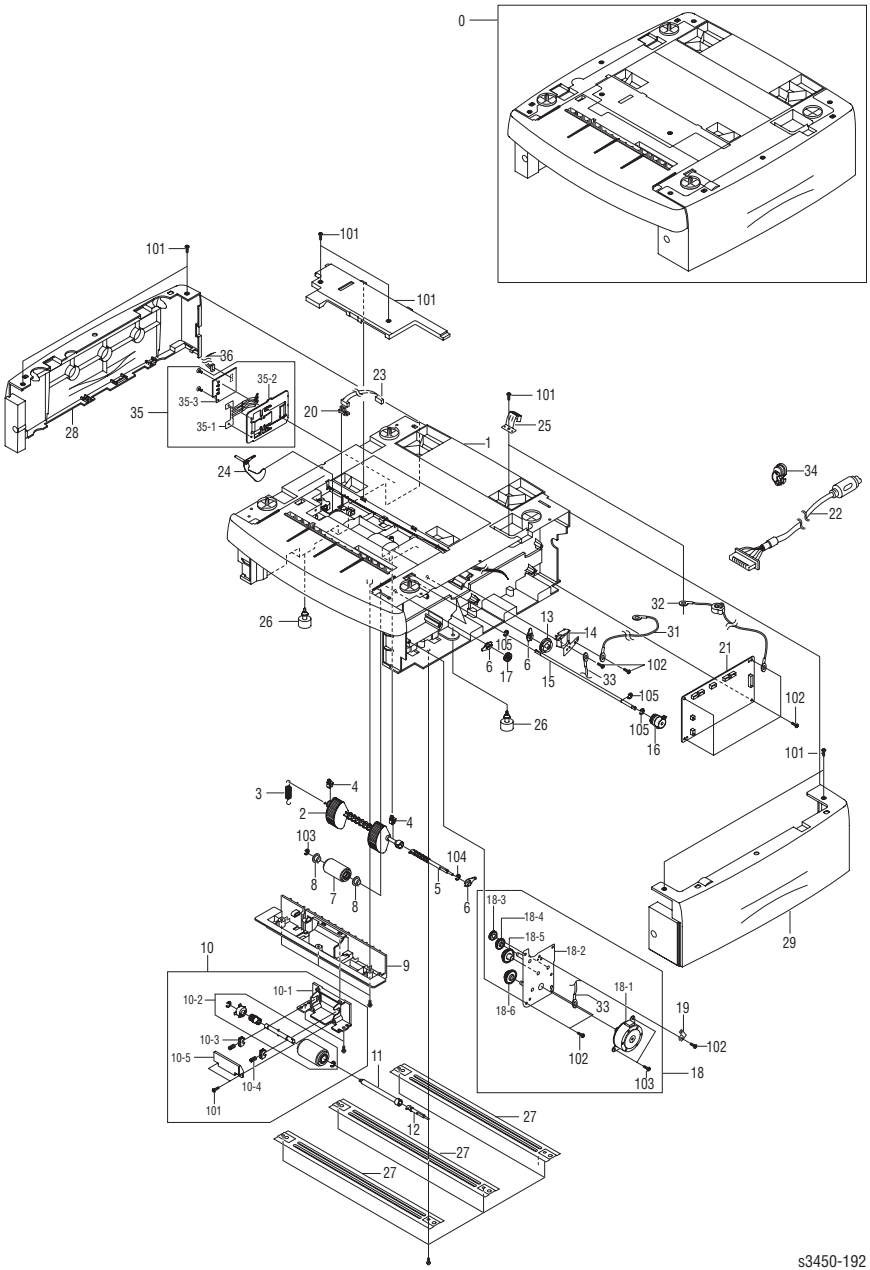
# Paper Tray




## Service Parts List 9.10 Paper Tray

| No. | Name/Description | Qty | Part Number |
|---|---|---|---|
| 0 | Paper Tray (with 1 ~ 26) | 1 | 109R00722 |

# Optional Lower Feeder Assembly



## Service Parts List 9.11 Optional Lower Feeder

| No. | Name/Description | Qty | Part Number |
|---|---|---|---|
| 0 | 500 Sheet Feeder (with paper tray) | 1 | 097S03131 |
| 1 | PMO Frame SCF | | NS |
| 2 | Tray 3 Feed Assy | 1 | 059K39120 |
| 3 | Spring Pick Up | | NS |
| 4 | PMO Bushing TX | | NS |
| 5 | Shaft Pick Up | | NS |
| 6 | PMO Bearing Shaft | | NS |
| 7 | MEA Unit Roller Feed | | NS |
| 8 | Bearing Pick Up | | NS |
| 9 | PMO Guid Inner SCF | | NS |
| 10 | Tray 3 Retard Assy | 1 | 022E29540 |
| 11 | Coupling Retard Shaft SCF | | NS |
| 12 | Shaft Gear Retard | | NS |
| 13 | Gear Pick Up Cam SCF | | NS |
| 14 | Tray 3 Solenoid | 1 | 121E19260 |
| 15 | Shaft Feed SCF | | NS |
| 16 | Tray 3 Feed Clutch | 1 | 121E19270 |
| 17 | Gear Regi Z25 | | NS |
| 18 | ELA Unit Bracket SCF | | NS |
| 18-1 | Tray 3 Feed Motor | 1 | 127E14650 |
| 19 | IPR GND Spring Feed | | NS |
| 20 | Photo Interrupter | | NS |
| 21 | Tray 3 Control Board | 1 | 960K12220 |
| 22 | Tray 3 Interface Cable | 1 | 962K26730 |
| 23 | Cable Photo Interrupter | | NS |
| 24 | Tray 3 Empty Actuator | 1 | 120E26100 |
| 25 | IPR GND Top | | NS |
| 26 | Foot Rubber Hawk 16 | | NS |
| 27 | IPR Bar Cross Bottom | | NS |
| 28 | PMO Cover L SCF | | NS |
| 29 | PMO Cover R SCF | | NS |

## Service Parts List 9.11 Optional Lower Feeder (Continued)

| No. | Name/Description | Qty | Part Number |
|---|---|---|---|
| 30 | PMO Cover Dummy SCF | | NS |
| 31 | CBF Harness SCF GND | | NS |
| 32 | CBF Harness LIU GND | | NS |
| 33 | CBF Harness OPE | | NS |
| 34 | Bush Cable | | NS |
| 35 | ELA HOU CST Sensor Hawk 16 | | NS |
| 36 | Harness Paper Size | | NS |
| 101 | Screw Taptite | | NS |
| 102 | Screw Taptite | | NS |
| 103 | Screw Machine | | NS |
| 104 | E-ring | | NS |
| 105 | E-ring | | NS |

# Xerox Supplies

## Repair Kits, World Kits, and Repackaging Kits

| Description | Part Number |
|---|---|
| World Kit | N/A |
| Phaser 3425 Getting Started Pack | N/A |
| Cushion Main Repackaging Phaser 3425 | 095N00276 |
| Main Shipping Box, Repackaging | 095N00275 |
| High-Capacity Print Cartridge Box | N/A |
| Standard-Capacity Print Cartridge Box | N/A |
| 500-Sheet Paper Tray Box | N/A |
| 550-Sheet Feeder Box | N/A |
| Transfer Roller Box | N/A |

## Power Cords

| Description | Part Number |
|---|---|
| Cable Assy, 3,18AWG, 115 V, 98, 0 L | 161-0066-00 |
| Cable PWR EURO 220 V , 99 L | 161-0066-09 |
| Cable PWR U.K. 240 V, 96 L | 161-0066-10 |
| Cable PWR AUST 240 V, 96 L | 161-0066-11 |
| Cable Assy SWISS 220/240 V, 50 Hz | 161-0154-00 |
| Cable Assy PWR. DANISH, 250 V | 161-0240-00 |
| Cable Assy PWR, PRC | 161-0304-00 |
| Power, 240 V, ARGENTINA | 161-0307-00 |

## Upgrade Kits and Options

| Description | Part Number |
|---|---|
| Memory | |
| 32 Mbytes, 8M x 32, PC133; Memory DIMM | 097S03132 |
| 64 Mbytes, 8M x 64, PC133; Memory DIMM | 097S03133 |
| 128 Mbytes, 16M x 64, PC133; Memory DIMM | 097S03136 |
| 500 Sheet Feeder with Tray | 097S03131 |
| Network Interface | N/A |
| 500 Sheet Replacement Paper Tray | 109R00722 |

## Consumables

| Description | Part Number |
|---|---|
| **Print Cartridge - Phaser 3450 Laser Printer** | |
| Standard-Capacity (5K) | 106R01033 |
| High-Capacity (10K) | 106R01034 |

## Service Parts

| Description | Part Number |
|---|---|
| Transfer Roller | 022E29520 |
| Fuser Assembly (110 V) | 126N00248 |
| Fuser Assembly (220 V) | 126N00249 |
| Hardware Kit | 600N01672 |

## Software and Documentation

| Description | Part Number |
|---|---|
| Software and Documentation CD | 301N15890 |
| Service Manual | ONLY PDF FORMAT |

# Wiring Diagrams

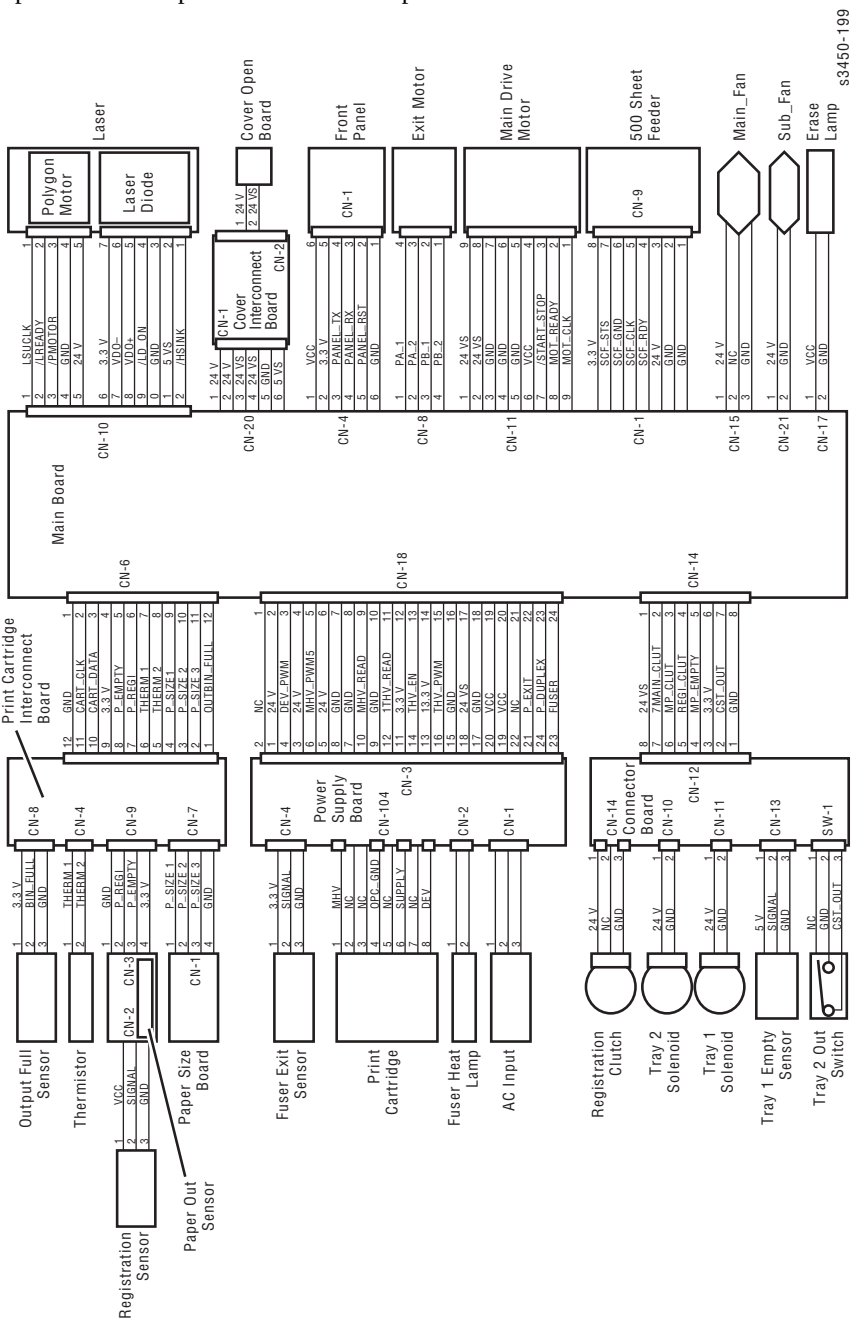
## In this chapter...



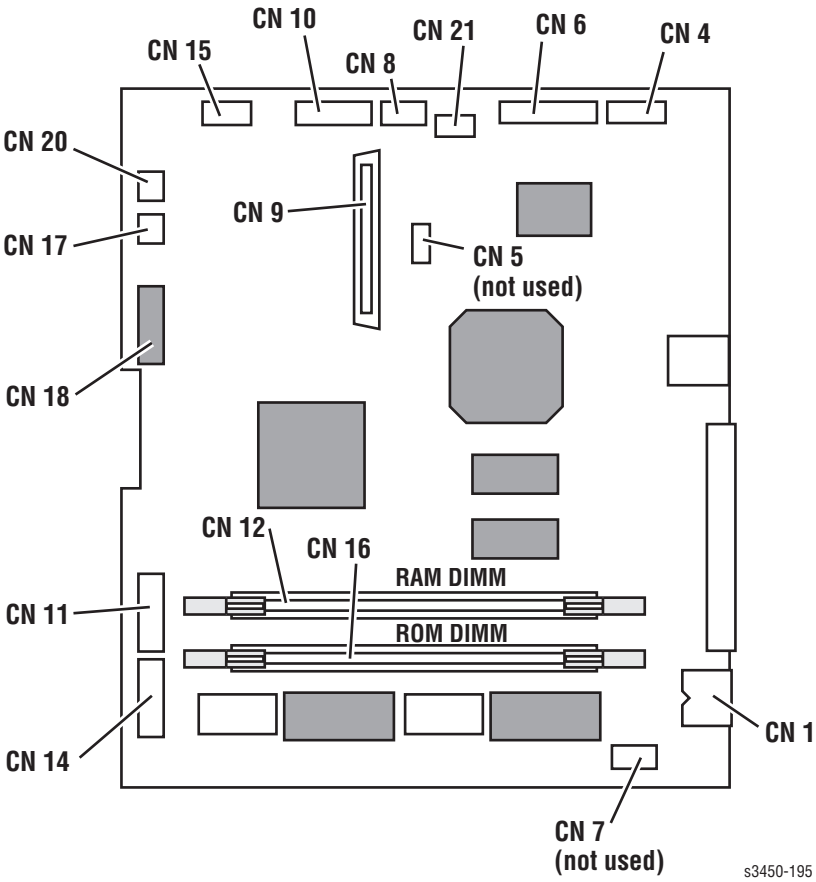
Chapter 10

# Print Engine Interconnect Diagram

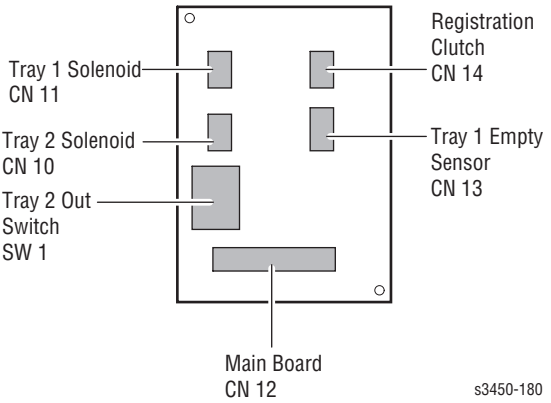
Use the following interconnect diagram to identify specific connectors (CN) within the printer with respect to the main components.



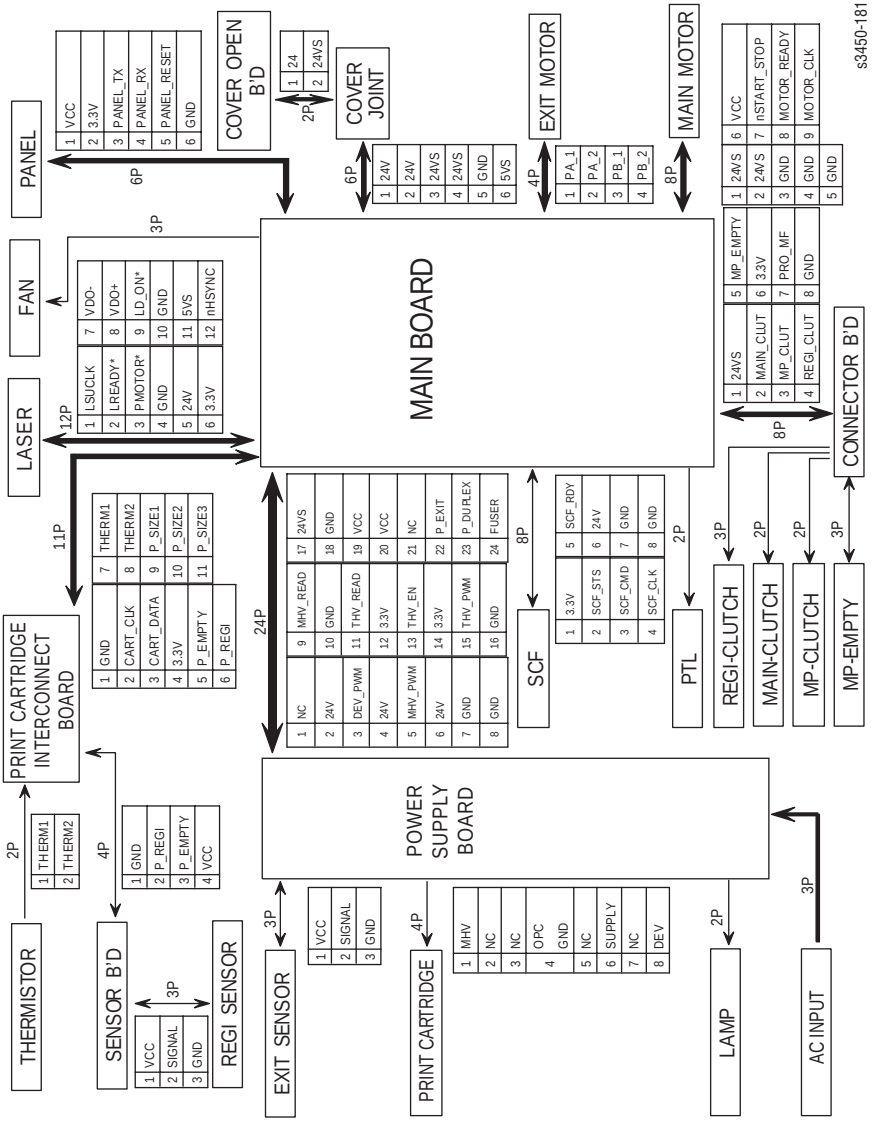
# Map 1 Main Board



# Map 2 Connector Board



# Connection Diagram



# Index

## S



## T



## U



## V



## X