

Phaser® 3140/3155/3160
Laser Printer



Phaser® 3140/3155/3160 Service Manual



Phaser® 3140/3155/3160 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.

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Contents

1 General Information

Introduction and Overview	1-2
Technical Support Information	1-2
Printer Configurations.....	1-3
Parts of the Printer.....	1-5
Front View	1-5
Rear View	1-6
Control Panel.....	1-7
Maintenance Items	1-9
Consumables	1-10
Print Cartridge Life.....	1-10
Specifications.....	1-11
Printer Specifications	1-11
Print Speed.....	1-12
Warm-Up Time	1-12
Power Save Mode.....	1-12
First Print Output Time.....	1-12
Memory Specifications.....	1-12
Environmental Specifications.....	1-13
Electrical Specifications	1-13
Image Specifications	1-14
Physical Dimensions and Clearances.....	1-15
Mounting Surface Specifications	1-16
Media and Tray Specifications.....	1-16

2 Theory of Operation

Operational Overview	2-2
System Overview	2-2
Paper Path	2-3
Paper Feeding.....	2-3
Drive Assembly	2-6
Laser Unit.....	2-7
Transfer Roller.....	2-7
Print Cartridge.....	2-8
Fuser	2-9
Electrical Components	2-10
Sensor Input Circuit.....	2-16
Driving Circuit.....	2-17
Engine F/W.....	2-18

3 Error Messages and Codes

Introduction	3-2
Diagnostics	3-2
Understanding the Control Panel LEDs	3-3
Jam Errors	3-5
Clearing Paper Jams	3-5
Paper Jam 0	3-8
Paper Jam 1	3-10
Paper Jam 2	3-11
Paper Rolled on the OPC Drum	3-13
Tray and Media Problems	3-14
Paper Tray Empty Indication with Paper in Tray	3-14
Paper Tray Empty With No Indication	3-15
Multiple Sheet Feeding	3-16
Out Bin Full	3-17
Print Cartridge Errors	3-18
Print Cartridge At Or Nearing End Of Life	3-18
Invalid Print Cartridge	3-19
Toner Empty or Exhausted	3-20
Fuser Errors	3-21
Paper Rolled in the Fuser	3-21
Fuser Gear Damaged from Overheating	3-22
Front Cover Errors	3-23
Error Indicated When Front Cover is Closed	3-23
No Error LED Indication for Front Cover	3-24

4 General Troubleshooting

Introduction	4-2
Reports	4-2
Printing Demo Page	4-3
Configuration Report	4-4
Supplies Information Report/Error Information Report	4-5
Cleaning Page	4-7
Servicing Instructions	4-8
Measurement Techniques	4-9
Media-Based Problems	4-10
Mis-Pick	4-10
Inoperable Printer Troubleshooting	4-11
The Printer is Not Responding to the Print Command	4-11
Power Supply Troubleshooting	4-12
AC Power Troubleshooting	4-12
No Power	4-13
USB Port Testing	4-15
USB Port Verification	4-15
Network Configuration Errors	4-16
Send Error	4-16
Operating System and Application Problems	4-17
Common Windows Problems	4-17
SPOOL Error	4-18
Common Macintosh Problems	4-18
Common Linux Problems	4-19
Common PostScript Problems	4-20

5 Print-Quality Troubleshooting

Print-Quality Troubleshooting Overview	5-2
Defects Associated with Specific Components	5-2
Troubleshooting Print-Quality Checklist	5-4
Check the Print Cartridge	5-4
Check the Laser Unit	5-4
Check the Transfer Roller	5-5
Check the Image	5-5
Print-Quality Troubleshooting Procedures	5-8
Print-Quality Defect Definitions	5-8
Repeating Defects	5-9
Printing Begins at Wrong Position	5-10
Light or Undertone Print	5-10
Black Print	5-11
Uneven Density	5-13
Background Contamination	5-14
Ghosting (1)	5-15
Ghosting (2)	5-16
Ghosting (3)	5-17
Ghosting (4)	5-18
Vertical White Lines	5-19
Vertical Lines are Curved	5-20
Vertical Black Line or Band	5-21
Horizontal Black Line or Band	5-22
Black/White Spot	5-23
Skew	5-24
Stains on the Front of the Page	5-26
Stains on the Back of the Page	5-27
Blank Page (1)	5-28
Blank Page (2)	5-29
Incomplete Fusing	5-30
Print-Quality Specifications	5-31
Skew	5-31
Curl	5-31
Registration	5-31
Noise	5-31
Image Area	5-32
Environmental Condition	5-32
Quality Paper	5-32
Paper Condition	5-32
Printer Condition	5-33

6 Adjustments and Calibrations

Adjustments	6-2
Altitude Specifications	6-2

7 Cleaning and Maintenance

Service Maintenance Procedure	7-2
Recommended Tools	7-2
Cleaning	7-2
Cleaning the Print Cartridge	7-3
Cleaning the Laser Unit	7-4
Printing the Print Cleaning Page	7-4
Maintenance	7-5
RIP Procedures	7-5
Firmware Updates	7-5
Firmware Update Procedures	7-5

8 Service Parts Disassembly

Overview	8-2
Standard Orientation of the Printer	8-2
Preparation	8-3
Notations in the Disassembly Text	8-4
Fastener Types	8-5
Maintenance Items and Consumables	8-6
Print Cartridge	8-6
Paper Tray	8-7
Transfer Roller	8-8
Pick Up Roller	8-9
Fuser	8-11
Thermistor	8-13
Thermostat	8-14
Fuser Lamp	8-15
Heat Roller	8-17
Pressure Roller	8-20
Covers	8-23
Front Cover	8-23
Top Cover	8-23
Rear Cover	8-26
Left Side Cover	8-27
Right Side Cover	8-28
Disassembly Procedures	8-29
Tray Holder Pad Assembly	8-29
Laser Unit	8-30
Feeder	8-32
Pick Up Roller Assembly	8-32
Drive Assembly	8-35
Clutch Assembly	8-37
Feed Roller	8-38
Feed Actuator	8-40
Manual Feed Actuator	8-44
Paper Tray Empty Actuator	8-47
Electrical	8-51
Control Panel	8-51
Controller Board	8-51
Power Supply Board	8-54
Fan	8-58
Solenoids and Sensors	8-59
Manual Feed Solenoid	8-59
Pick Up Solenoid	8-61
Out Bin Full Sensor	8-63

9 Parts List

Serial Number Format	9-2
Using the Parts List	9-3
Parts Lists	9-4
Parts List 1.0 Main	9-4
Parts List 2.0 Top Cover	9-6
Parts List 3.0 Covers	9-8
Parts List 4.0 Front Cover	9-10
Parts List 5.0 Rear Cover	9-12
Parts List 6.0 Main Frame	9-14
Parts List 7.0 Drive Assembly (Model 3140)	9-20
Parts List 7.1 Drive Assembly (Models 3155/3160)	9-22
Parts List 8.0 Pick Up Roller Assembly	9-24
Parts List 9.0 Fuser	9-26
Parts List 10.0 Paper Tray	9-30
Xerox Supplies and Accessories	9-32

10 Wiring

Plug/Jack Locators	10-2
Map 1 - Controller Board (3140)	10-4
Map 2 - Controller Board (3155)	10-5
Map 3 - Controller Board (3160B/3160N)	10-6
Map 4 - 110V and 220V Power Supply Boards	10-7
Component Locator Diagrams	10-8
Map 5 - Sensors	10-9
Map 6 - Motor, Solenoids, and Fan	10-10
Wiring Diagrams	10-11
Notations Used in the Wiring Diagrams	10-11
Phaser 3140 Wiring	10-14
3140 System Connections	10-14
3140 Controller Board Wiring	10-15
3140 Laser Unit Wiring	10-16
3140 Power Supply Wiring	10-17
Phaser 3155 Wiring	10-18
3155 System Connections	10-18
3155 Controller Board Wiring	10-19
3155 Laser Unit Wiring	10-20
3155 Power Supply Wiring	10-21
Phaser 3160 Wiring	10-22
3160 System Connections	10-22
3160 Controller Board Wiring	10-23
3160 Laser Unit Wiring	10-24
3160 Power Supply Wiring	10-25

A Reference

Acronyms and Abbreviations	A-2
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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.

Note

A note indicates an operating or maintenance procedure, practice or condition that is necessary to efficiently accomplish a task.

A note can provide additional information related to a specific subject or add a comment on the results achieved through a previous action.



Caution

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



Warning

A warning indicates an operating or maintenance procedure, practice or condition that, if not strictly observed, may result in personal injury.

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



Warning. Danger invisible laser radiation when open. Avoid direct exposure to beam.



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



Warning. Use caution to avoid personal injury.



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



Do not touch the OPC Drum.



Do not expose the item to sunlight.



Do not tilt the Print Cartridge.



Do not expose item to high temperature.



Recycle the item.

Power Safety Precautions

Power Source

For 115 VAC printers, do not apply more than 127 volts RMS between the supply conductors or between either supply conductor and ground. For 230 VAC printers, do not apply more than 254 volts RMS between the supply conductors or between either supply conductor and ground. Use only the specified power cord and connector. 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. A protective ground connection by way of the grounding conductor in the power cord is essential for safe operation.

Disconnecting Power



Warning

Turning the power Off using the power switch does not completely de-energize the printer. Disconnect the power cord from the printer. Disconnect the power cord 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 product,
- 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 Precautions

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

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

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

For qualified service personnel only: Refer also to the preceding “Power Safety Precautions” on page xi.

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 covers 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.

Ozone: During normal operation, this machine produces ozone gas. The amount of ozone produced does not present a hazard to the operator. However, it is advisable that the machine be operated in a well ventilated area.

Warning Labels

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

Safety Interlocks

Make sure all covers 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 3140/3155/3160 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 product does not emit hazardous laser radiation; which is possible only because the laser beam is totally enclosed during all modes of customer operation. When servicing the printer or laser unit, follow the procedures specified in this manual and there will be no hazards from the laser.

Maintenance

Cleaning

Before cleaning this product, unplug the product from the electrical outlet. Always use materials specifically designated for this product, the use of other materials may result in poor performance and create a hazardous situation. Do not use aerosol cleaners; they may be explosive and flammable under certain conditions.

Print Cartridge

The product contains a dry image cartridge that is recyclable. Under various state and local laws, it may be illegal to dispose of the cartridge into the municipal waste. Check with the local waste officials for details on recycling options or the proper disposal procedures.

Fuses



Warning

Do not install a fuse of a different type or rating. Installing the wrong type or rating of fuse can cause overheating and a risk of fire.

Part Replacement

Only use genuine Xerox approved spare parts or components to maintain compliance with legislation and safety certification.

Assembly Precautions

Use extreme care during assembly. Check all harnesses to ensure they do not contact moving parts and can not get trapped between components.

Servicing Electrical Components

Before starting any service procedure, switch the printer power Off 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

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



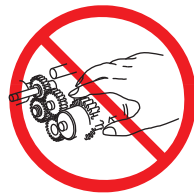
Servicing Mechanical Components

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



Warning

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



Servicing Fuser Components



Warning

This printer uses heat to fuse the toner image to paper. The Fuser is very hot. Turn the printer power Off and wait for the Fuser to cool before attempting to service the Fuser or adjacent components.

Moving the Printer



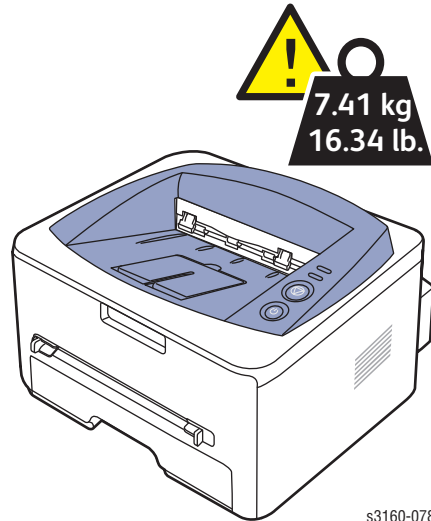
Warning

Parts of the printer are hot. Wait at least 30 minutes for the printer to cool before moving or packing the printer.



Warning

Back injury could result if you do not lift the printer properly. The printer can be lifted by one person. Use proper lifting and handling techniques when moving the printer.



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When shipping the printer, repack the printer using the original packing material and boxes or a Xerox packaging kit. Instructions for repacking the printer are included in the kit. If you do not have all the original packaging, or are unable to repack the printer, contact your local Xerox service representative.



Caution

Failure to properly repackage the printer for shipment can result in damage to the printer. Damage to the printer caused by improper packaging is not covered by the Xerox warranty, service agreement, or Total Satisfaction Guarantee.

Regulatory Information

Xerox has tested this product to electromagnetic emission and immunity standards. These standards are designed to mitigate interference caused or received by this product in a typical office environment.

United States (FCC Regulations)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the Federal Communications Commission (FCC) Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If it is not installed and used in accordance with these instructions, it may cause harmful interference to radio communications. 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 equipment into an outlet on a circuit different from that which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Any changes or modifications not expressly approved by Xerox could void the user's authority to operate the equipment. To ensure compliance with Part 15 of the FCC rules, use shielded interface cables.

Canada (Regulations)

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

European Union



The CE mark applied to this product symbolizes Xerox's declaration of conformity with the following applicable Directives of the European Union as of the dates indicated:

December 12, 2006: Council Directive 2006/95/EC as amended. Approximation of the laws of the member states related to low voltage equipment.

December 15, 2004: Council Directive 2004/108/EC as amended. Approximation of the laws of the member states related to electromagnetic compatibility.

This product, if used properly in accordance with the user's instructions, is neither dangerous for the consumer nor for the environment. To ensure compliance with European Union regulations, use shielded interface cables.

A signed copy of the Declaration of Conformity for this product can be obtained from Xerox.

Manual Organization

The Phaser 3140/3155/3160 Printer Service Manual is the primary document used for repairing, maintaining, and troubleshooting the printer. Use this manual as your primary resource for understanding the operational characteristics of the printer and all available options. This manual describes specifications, theory, and the diagnosis and repair of problems occurring in the print engine and attached options. Also included are detailed replacement procedures, parts lists, and wiring diagrams.

The Phaser 3140/3155/3160 Printer Service Manual contains these chapters:

Introductory, Safety, and Regulatory Information: This section contains important safety information and regulatory requirements.

Chapter 1 - General Information: This section contains an overview of the printer's operation, configuration, specifications, and consumables.

Chapter 2 - Theory of Operation: This section contains detailed functional information on the print engine components.

Chapter 3 - Error Codes and Messages: This section provides detailed troubleshooting procedures for error messages indicated by the printer.

Chapter 4 - General Troubleshooting: This section includes troubleshooting methods for situations where error indicator is not available.

Chapter 5 - Print-Quality Troubleshooting: This section focuses on techniques to correct image quality problems associated with the printer output.

Chapter 6 - Adjustments and Calibrations: This section provides procedures for the adjustment of printer components.

Chapter 7 - Cleaning and Maintenance: This section provides periodic cleaning procedures for the printer.

Chapter 8 - Service Parts Disassembly: This section contains removal procedures for spare parts listed in the Parts List. A replacement procedure is included when necessary.

Chapter 9 - Parts List: This section contains exploded views of the print engine and optional Field Replaceable Units (FRUs), as well as part numbers for orderable parts.

Chapter 10 - Plug/Jack and Wiring Diagrams: This section contains the plug/jack locations and the wiring diagrams for the printer.

Appendix A - Reference: This section provides a list of acronyms and abbreviations.

General Information

In this chapter...

- Introduction and Overview
- Printer Configurations
- Parts of the Printer
- Maintenance Items
- Consumables
- Specifications

Chapter 1

Introduction and Overview

The Xerox Phaser 3140/3155/3160 Printers have a single-pass laser design architecture. Print speeds range between 18 and 24 pages per minute (ppm), and resolution up to 1200 x 1200 dots-per-inch (dpi) image quality depending on the model.

The Phaser 3140/3155/3160 provides a standard 250-Sheet, input tray. The manual feeder holds 1 sheet. The manual feeder supports specialty media, card stock, and envelopes. The output tray holds 100 sheets facedown.

Technical Support Information

The Xerox Phaser 3140/3155/3160 Printer Service Manual is the primary document used for repairing, maintaining, and troubleshooting the printers.

To ensure complete understanding of this product, participation in Xerox Phaser 3140/3155/3160 Printer Service Training is strongly recommended.

For updates to the Service Manual, Service Bulletins, knowledge base, etc., go to:

- Xerox Global Service Net: <https://www.xrsgsn.com/secure/main.pl>
- Service Partners: <http://www.office.xerox.com/partners>

For further technical support, contact your assigned Xerox Technical Support for this product.

Printer Configurations

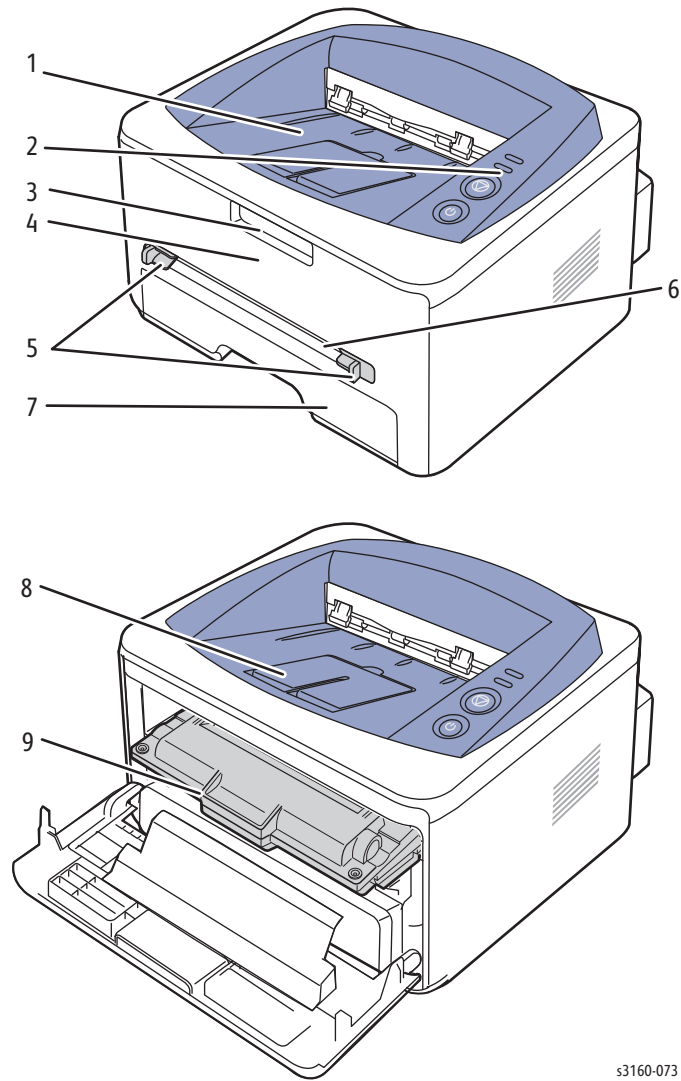
The Phaser 3140/3155/3160 printer is available in four configurations.

Feature	Printer Configurations			
	Phaser 3140	Phaser 3155	Phaser 3160B	Phaser 3160N
Processor Speed	150 MHz	150 MHz	360 MHz	360 MHz
Memory Configuration	8 MB	8 MB	64 MB	64 MB
Duplex Unit	N/A	N/A	N/A	N/A
Fonts				
PCL5e	No	No	Standard	Standard
PCL6	No	No	Standard	Standard
EPSON	No	No	Standard	Standard
IBM ProPrinter	No	No	Standard	Standard
SPL	Standard	Standard	Standard	Standard
Interface				
USB	USB 1.1 (USB 2.0 compatible)	High Speed USB 2.0	High Speed USB 2.0	High Speed USB 2.0
Ethernet Interface	N/A	N/A	N/A	10/100 Base-TX (embedded type)

Feature	Printer Configurations			
	Phaser 3140	Phaser 3155	Phaser 3160B	Phaser 3160N
Network Protocols	N/A	N/A	N/A	TCP/IPv4 DHCP, BOOTP DNS, WINS, Bonjour, SLP, UPnP Standard TCP/IP Printing (RAW), LPR, IPP SNMPv 1/2/3, HTTP (S), Telnet, SMTP, LDAP, IPSec TCP/IPv6 (DHCP, DNS, RAW, LPR, SNMPv 1/2/3, HTTP (S), IPSec)
Network Management	N/A	N/A	N/A	CentreWare IS/CW Web
Tray				
1 Sheet Manual Feeder	Standard	Standard	Standard	Standard
Paper Tray (250 Sheet)	Standard	Standard	Standard	Standard

Parts of the Printer

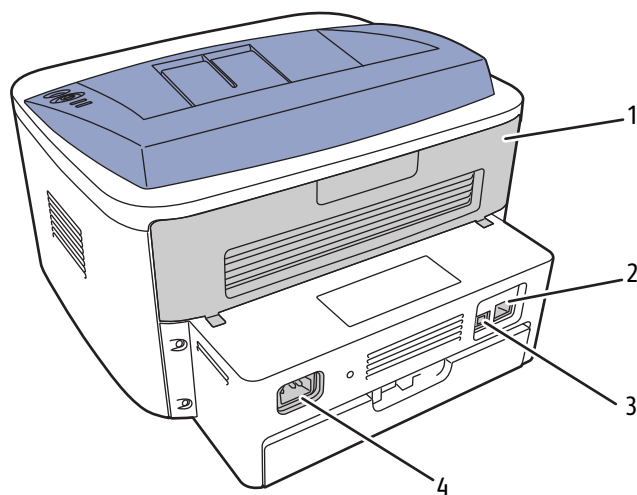
Front View



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Item	Description	Item	Description
1	Output Tray	6	Manual Feeder
2	Control Panel	7	Paper Tray
3	Front Cover Handle	8	Output Support
4	Front Cover	9	Print Cartridge
5	Manual Feeder Guides		

Rear View



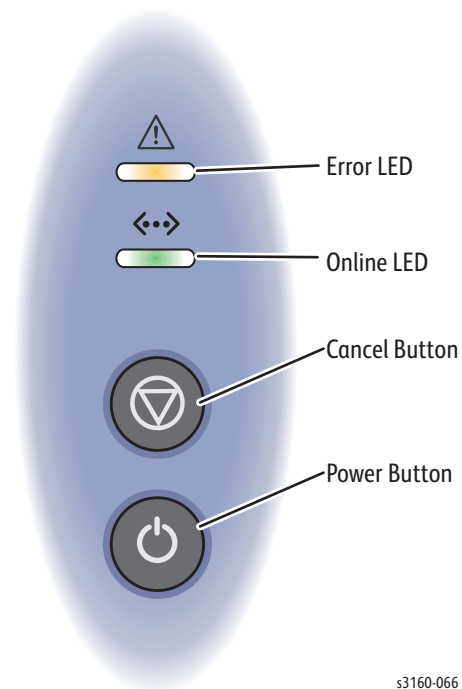
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Item	Description
1	Rear Cover
2	Network Port ^a
3	USB Port
4	Power Receptacle

a. 3160N only

Control Panel

The Control Panel consists of 2 LEDs and 2 function buttons.



s3160-066

Item	Feature	Description
1	Error	When illuminated, indicates a printer error.
2	Online	Displays the online printer status.
3	Cancel	Stops an operation at any time. This button is also used to print Reports.
4	Power	Turns the printer power on and off.

Error LED

LED State	Printer State
Red	<ul style="list-style-type: none">■ The cover is open. Close the cover.■ There is no paper in the tray. Load paper in the tray.■ The printer has stopped due to a major error.■ The Print Cartridge is empty, or needs to be replaced.■ A print cartridge has reached its cartridge life.
Flashing Red	<ul style="list-style-type: none">■ The Print Cartridge toner is low.
Orange	<ul style="list-style-type: none">■ A paper jam/misfeed has occurred.

Online LED

LED State	Printer State
Green	The printer is powered on and can be used.
Blinking Green	<ul style="list-style-type: none">■ When the green LED slowly blinks, the printer is receiving data from the computer.■ When the green LED rapidly blinks, the printer is printing data.

Maintenance Items

A maintenance item is a part or assembly that requires periodic replacement. Tray 1 is customer replaceable.

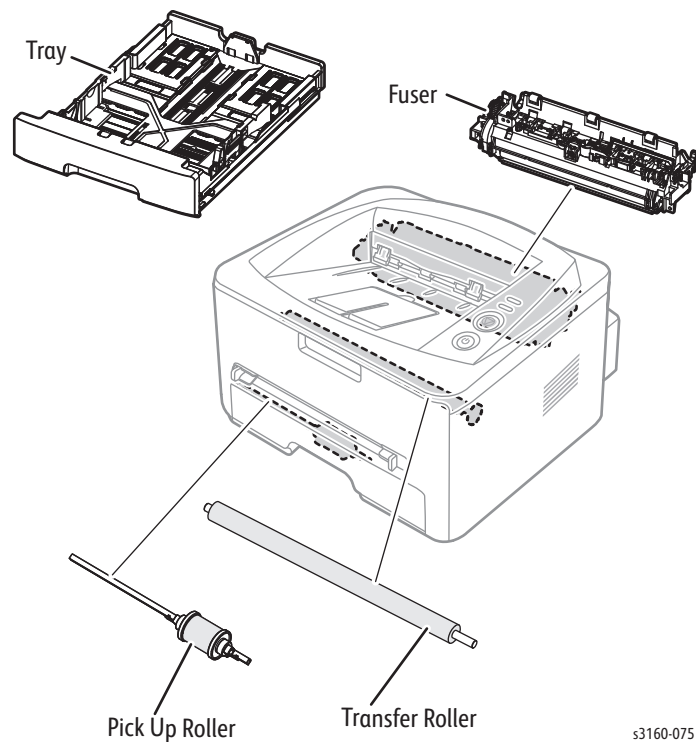
Phaser 3140/3155/3160 Maintenance Items

Item	Print Life
Fuser	50,000 pages
Pick Up Roller	50,000 pages
Transfer Roller	50,000 pages
Paper Tray	50,000 pages

Note

Print life is based on “typical” office printing with 5 % coverage on 24 lb. paper. Print life is not guaranteed and varies depending on usage habits.

Maintenance parts should only be replaced by an authorized service provider, dealer, or the retailer where the printer was purchased. The warranty does not cover the replacement of any maintenance parts after their life span.



s3160-075

Consumables

The Print Cartridge is the only consumable. The Print Cartridge CRUM (Customer Replaceable Unit Meter) records toner usage data. When a print cartridge reaches the end of estimated cartridge life, its status is indicated by the Error LED (page 1-8).

Print Cartridge	Approximate Print Life ^a	
	3140	3155, 3160
Initial Toner	700 pages	1000 pages
Standard Capacity	1,500 pages	1,500 pages
High Capacity	2,500 pages	2,500 pages

a. Declared cartridge yield in accordance with ISO/IEC 19752.

Print Cartridge Life

When the Print Cartridge life has ended, the printer stops accepting print requests. Print the Supplies Information Report (page 4-2) to check Print Cartridge life status.

Print Cartridge Error Information

Print Cartridge	Status	Functionality
Xerox	Toner Low/Red Blinking LED	Continues to print.
Xerox	Toner Empty/Solid Red LED	Device will not print.

Specifications

Printer Specifications

Characteristic	Specifications
Printing Technology	Laser beam printing + Electrophotography
Printer Life	50,000 pages or 5 years, whichever comes first (A4 size, 5% coverage)
Average Monthly Print Volume	750 PV/month (A4, ISO 19572 pattern)
Maximum Monthly Duty Cycle	Phaser 3140: 10,000 pages (A4, ISO 19572 pattern) Phaser 3155: 12,000 pages (A4, ISO 19572 pattern) Phaser 3160: 15,000 pages (A4, ISO 19572 pattern)
Resolution (dpi)	
Phaser 3140, 3155	600 x 600 dpi (software enhanced up to 1200 x 600 dpi)
Phaser 3160	600 x 600 dpi (software enhanced up to 1200 x 1200 dpi)
Operating System	
Mac	Mac OS X 10.3-10.6
Windows	Windows 2000/XP(32/64bit)/Vista(32/64bit)/2003 Server (32/64bit)/2008 Server(32/64bit)
Linux	Red Hat 8-9, Fedora Core 1-4, Mandrake 9.2-10.1, SuSE 8.2-9.2, Mandriva 2005, 2006, 2007 (32bit/64bit), Ubuntu 6.06-7.04, Debian 4.0

Print Speed

Media	Phaser 3140 (ppm)	Phaser 3155/3160 (ppm)
Letter	19	24
A4	18	24
Duplex	Manual	Manual

Warm-Up Time

Warm-up Time is defined as the time when the printer changes from Power-On to Standby mode.

- From Power On (UI Ready): Less than 30 seconds

Power Save Mode

The default setting is 1 minute. Use the Printer Settings Utility or CentreWare IS to change the default setting to 1, 5, 10, 15, 20, 30, 45, 60, or 120 minutes.

First Print Output Time

First Print Output Time (FPOT) is defined as the time from when the engine receives a Start signal in Ready state, until a single page is printed and delivered to the output tray.

Paper Size	FPOT (sec.)	
	Phaser 3140	Phaser 3155, 3160
A4, A5, Letter	Less than 10 seconds	Less than 9 seconds
Legal	Less than 12 seconds	Less than 10 seconds

The following table lists FPOT when the printer is in Power Save mode.

Printer Mode	FPOT (sec.)	
	Phaser 3140	Phaser 3155, 3160
Power Save	Less than 30 seconds	Less than 19 seconds

Memory Specifications

Model	Memory
Phaser 3140, 3155	8 MB
Phaser 3160	64 MB

Environmental Specifications

Characteristic	Specifications
Temperature	
Operating	10° to 32° C (50° to 90° F)
Storage (Unpackaged)	0° to 35° C (32° to 104° F)
Storage (Packaged)	-20° to 40° C (-4° to 104° F)
Humidity	
Operating	10% to 80% RH
Storage (Unpackaged)	20% to 80% RH
Storage (Packaged)	20% to 95% RH
Altitude	
Operating	2,500 meters (8,200 feet)
Storage (Packaged)	0.25 atmospheric pressure (equivalent to 10,300M or 34,000 feet)
Acoustic Noise Level	
Printing Phaser 3140 Phaser 3155, Phaser 3160	Less than 50.0 dB Less than 51.0 dB
Standby	Less than 25.0 dB
Power Save Mode	Background level

Electrical Specifications

Characteristic	Specifications	
Power Supply Voltage/Frequency		
Line Voltages ^a	100-127 VAC (±10%) 220-240 VAC (±10%)	
Frequency Range	50/60 Hz ± 3 Hz	
Power Consumption	AC 110 V	AC 220 V
Ready Mode	Less than 60 W	Less than 60 W
Power Save Mode	Less than 6.5 W	Less than 6.5 W
Average Operation	Less than 400 W	Less than 400 W

a. See the Rating label on the machine for the correct voltage, frequency (hertz), and type of current for your machine.

Image Specifications

Note

Edge-to-edge printing is not available.

Print Margins

Print Area		Margin	
Guaranteed Print Quality Area	Paper Width - (A+B)	A = Left Margin	4.23 mm
		B = Right Margin	4.23 mm
	Paper Length -(C+D)	C = Top Margin	4.23 mm
		D = Bottom Margin	4.23 mm
Maximum	3 mm from edge of paper		

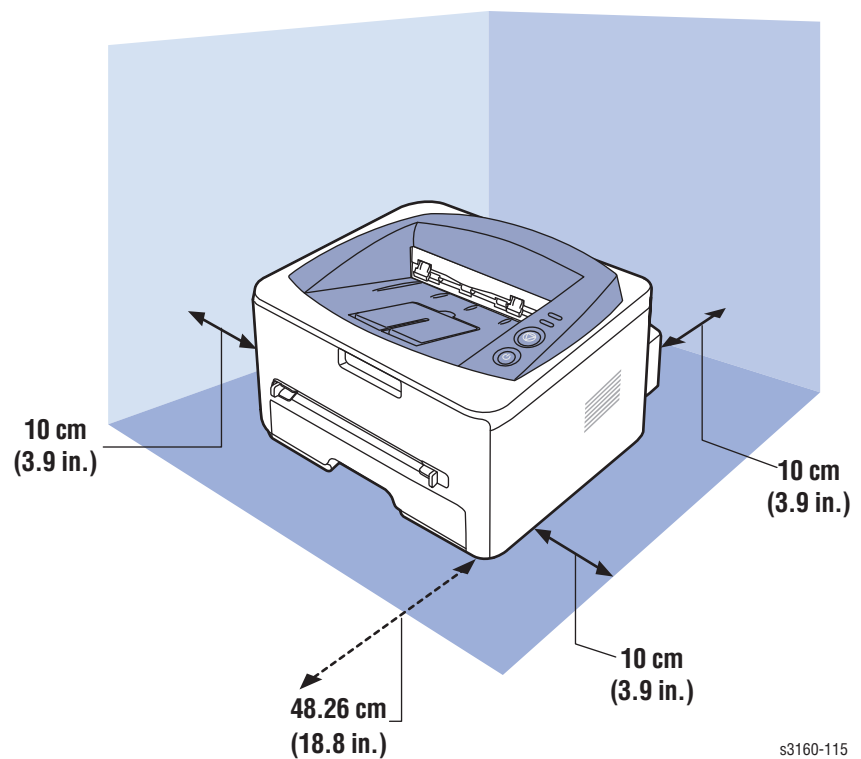
Characteristic	Specifications
Skew	
Vertical	± 2.0 mm / 241.3 mm (Based on 0.0082 mm/mm)
Horizontal	± 1.5 mm / 177.8 mm (Based on 0.0084mm/mm)
Registration	
Left Print Position Accuracy (scanning direction)	± 2.0 mm
Top Print Position Accuracy (feeding direction)	± 2.0 mm

Physical Dimensions and Clearances

Printer Dimensions and Weight

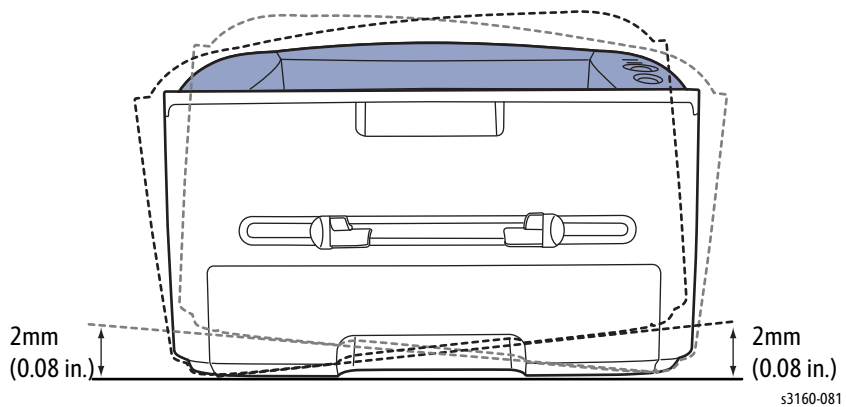
Print Engine	Specification
Height	230 mm (9.1 in.)
Width	360 mm (14.2 in.)
Depth	389 mm (15.3 in.)
Weight	Net.: 7.41 kg (16.34 lb.) Gross: 9.52 kg (20.99 lb.)

Minimum Clearances



Mounting Surface Specifications

The printer must not be tipped or tilted more than 2 mm (0.08 inch).



Failure to adhere to the specified mounting specification will void all guarantees of print-quality and/or performance.

Media and Tray Specifications

This section list supported media for the Phaser 3140/3155/3160 printers.

Supported Paper Type and Size

Paper Type	Paper Size	Dimension	Print Media Weight ^a /Capacity ^b		
			Paper Tray	Manual Tray	
Plain Paper	Letter	216 x 279 mm (8.5 x 11 in.)	<ul style="list-style-type: none"> ■ 60 to 105 g/m² (16 to 28 lb. bond) ■ 250 sheets of 80g/m² (20 lb. bond) 	<ul style="list-style-type: none"> ■ 60 to 163 g/m² (16 to 43 lb. bond) ■ 1 sheet stacking 	
	Legal	216 x 356 mm (8.5 x 14 in.)			
	US Folio	216 x 330 mm (8.5 x 13 in.)			
	A4	210 x 297 mm (8.27 x 11.69 in.)			
	Oficio	216 x 343 mm (8.5 x 13.5 in.)			
	JIS B5	182 x 257 mm (7.17 x 10.12 in.)			<ul style="list-style-type: none"> ■ 60 to 90 g/m² (16 to 24 lb. bond) ■ 150 sheets of 80 g/m² (20 lb. bond)
	ISO B5	176 x 250 mm (6.93 x 9.84 in.)			
	Executive	184 x 267 mm (7.25 x 10.5 in.)			
		A5			148 x 210 mm (5.83 x 8.27 in.)
	A6	105 x 148 mm (4.13 x 5.83 in.)			

Supported Paper Type and Size (Continued)

Paper Type	Paper Size	Dimension	Print Media Weight ^a /Capacity ^b	
			Paper Tray	Manual Tray
Envelope	Envelope Monarch	98 x 191 mm (3.87 x 7.50 in.)	Not available in Paper Tray.	<ul style="list-style-type: none"> ■ 75 to 90 g/m² (20 to 24 lb. bond) ■ 1 sheet stacking
	Envelope No. 10	105 x 241 mm (4.12 x 9.50 in.)		
	Envelope DL	110 x 220 mm (4.33 x 8.66 in.)		
	Envelope C5	162 x 229 mm (6.38 x 9.02 in.)		
	Envelope C6	114 x 162 mm (4.49 x 6.38 in.)		
Thick paper	Refer to Plain Paper section	Refer to Plain Paper section	<ul style="list-style-type: none"> ■ 90 g/m² (24 lb. bond) 	<ul style="list-style-type: none"> ■ 90 g/m² (24 lb. bond) ■ 1 sheet stacking
Thin paper	Refer to Plain Paper section	Refer to Plain Paper section	<ul style="list-style-type: none"> ■ 60 to 70 g/m² (16 to 19 lb. bond) 	<ul style="list-style-type: none"> ■ 60 to 70 g/m² (16 to 19 lb. bond) ■ 1 sheet stacking
Transparency	Refer to Plain Paper section	Refer to Plain Paper section	Not available in Paper Tray.	<ul style="list-style-type: none"> ■ 138 to 146 g/m² (36.81 to 38.91 lb. bond) ■ 1 sheet stacking
Labels ^c	Letter, Legal, US Folio, A4, JIS B5, ISO B5, Executive, A5, Statement	Refer to Plain Paper	Not available in Paper Tray.	<ul style="list-style-type: none"> ■ 120 to 150 g/m² (32 to 40 lb. bond) ■ 1 sheet stacking
Card Stock	Letter, Legal, US Folio, A4, JIS B5, ISO B5, Executive, A5, Statement, PostCard 4x6	Refer to Plain Paper	Not available in Paper Tray.	<ul style="list-style-type: none"> ■ 105 to 163 g/m² (28 to 43 lb. bond) ■ 1 sheet stacking
Custom (minimum size)		76 x 127 mm (3.00 x 5.00 in.)	<ul style="list-style-type: none"> ■ 60 to 163 g/m² (16 to 43 lb. bond) 	N/A
Custom (maximum size)		216 x 356 mm (8.5 x 14.02 in.)		

a. If media weight is over 120 g/m² (32 lb.), load a paper into the tray one by one.

b. Maximum capacity may differ depending on media weight, thickness, and environmental conditions.

c. Smoothness: 100 to 250 (sheffield)

Theory of Operation

In this chapter...

- Operational Overview
- Paper Path

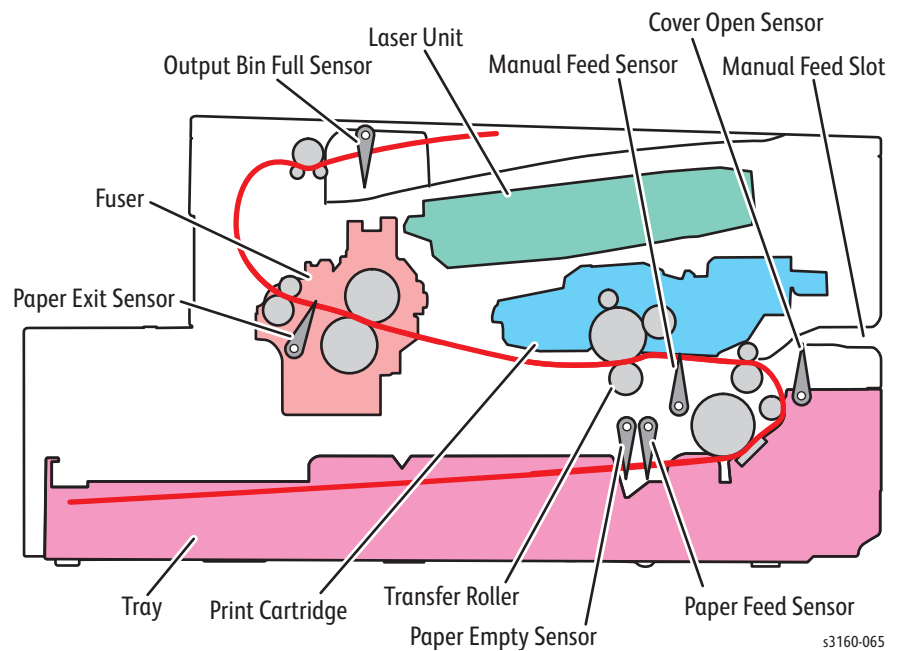
Chapter 2

Operational Overview

The Phaser 3140/3155/3160 is a monochrome printer that has a single-pass laser design architecture, which offers mono print speed up to 24 pages per minute (ppm), and resolution up to 1200 x 1200 dots-per-inch (dpi) image quality. The printer provides a USB interface for all models, and the 3160N supports 10/100 Base-TX ethernet.

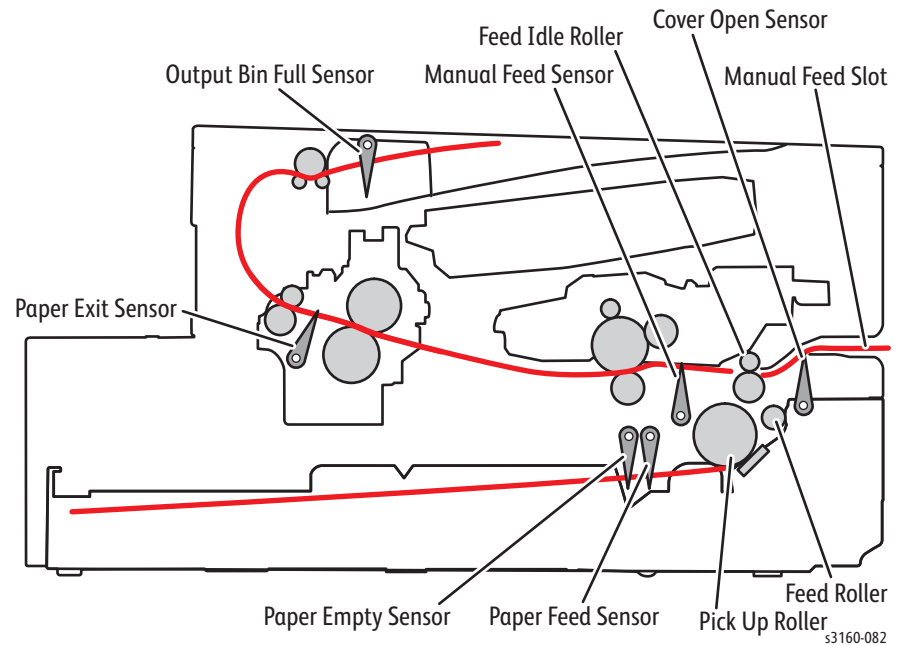
System Overview

The location of the printer's primary functional components is shown in the following illustration.



Paper Path

The media supplied from the Paper Tray is transported through the printer as shown in the illustrations below. Media fed from the manual feed slot enters the media path at the Feed Idle Roller.

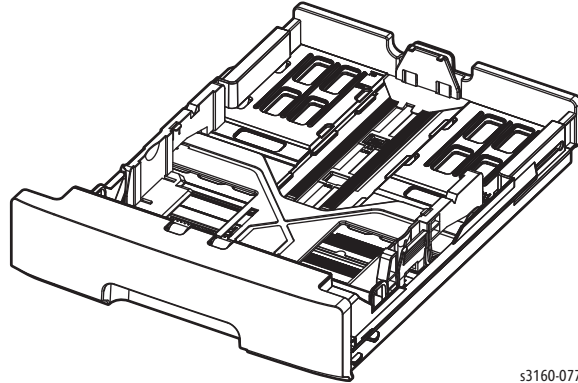


Paper Feeding

The feeding mechanism consists of the manual feeder, Paper Tray, Pick Up Roller, Feed Rollers, and Holder Pad. The rollers and sensors in the paper feed path control paper registration and guide the paper through the image transfer, image development, image fusing, and exit assemblies.

Paper Tray

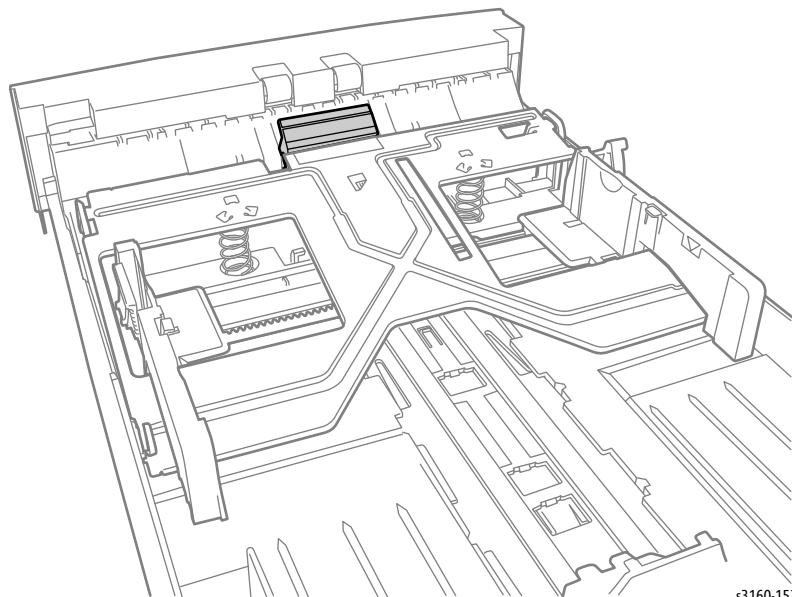
In the Paper Tray, paper is separated by the Holder Pad mounted to the center of the tray. Both the side guide and the rear guide can be adjusted for various paper sizes. The Paper Empty Sensor detects when the Paper Tray needs to be loaded with paper.



s3160-077

Tray Holder Pad

Individual sheets are separated by the Tray Holder Pad in the Paper Tray. When paper feeds into the printer, it passes over the Tray Holder Pad Assembly which uses a spring loaded friction pad to separate the sheets of paper.



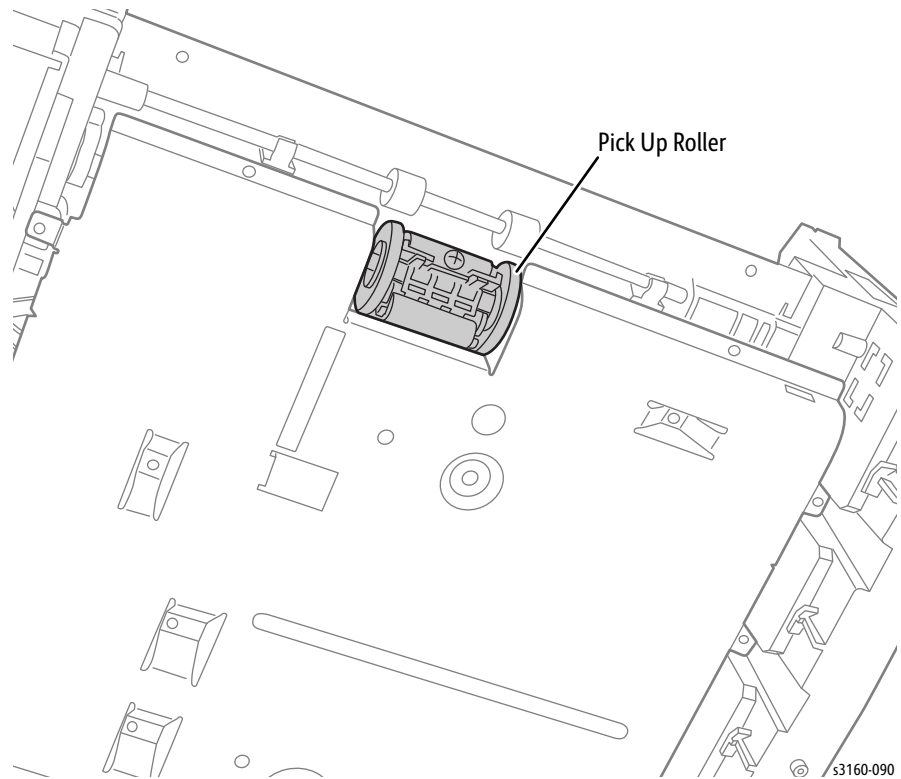
s3160-153

Manual Feeder

The manual feeder is used to hold non-standard or custom paper sizes and special media (envelopes, transparencies, etc.). The manual feeder can hold 1 sheet of paper or 1 envelope.

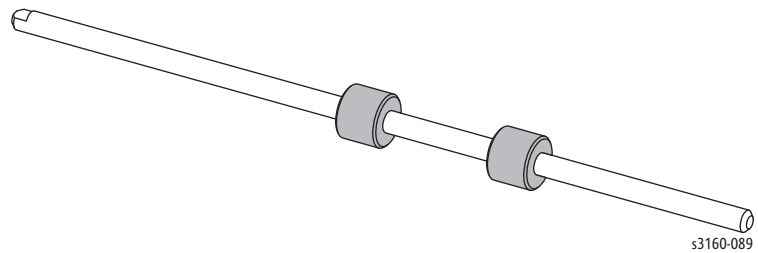
Pick Up Roller

The Pick Up Roller is used to pick up and feed paper into the printer and remove static charge on the paper. The Pick Up Roller is driven by the Pick Up Solenoid.



Feed Roller (Registration)

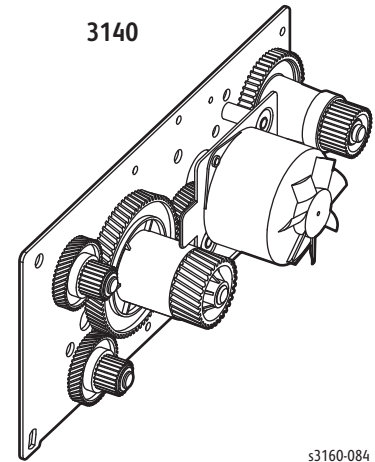
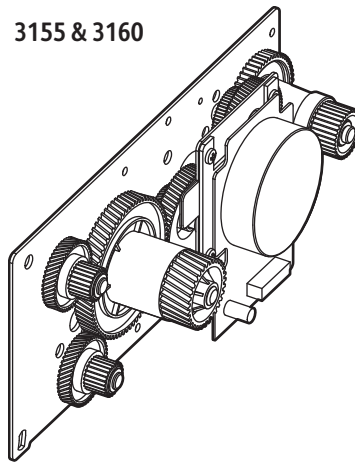
The Feed Roller controls paper registration and guides the paper into the printer.



Drive Assembly

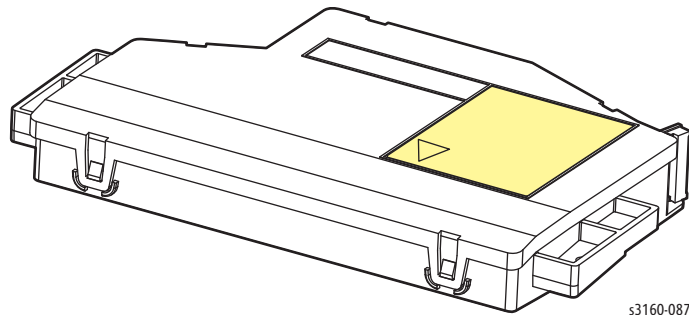
The Drive Assembly receives power from the Controller Board. The Drive Assembly consists of the main motor and gear set mounted to a support plate.

- Motor: 24V DC
- Driving Frequency: 2200 rpm



s3160-084

Laser Unit

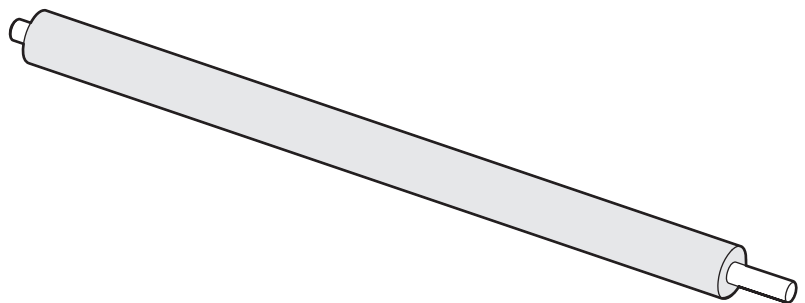


The Laser Unit is the core part of the Phaser 3140/3155/3160 and is controlled by the video controller circuitry of the Controller Board. The Laser Unit converts video data received from the Controller Board into an electrostatic latent image on the surface of the OPC drum. This is achieved by controlling the laser beam and exposing the surface of the OPC drum to the laser light. A rotating polygon mirror reflects the laser light onto the OPC drum. Each face of the mirror produces one scan line. The OPC drum rotates at the same speed as the paper feeding speed. As the OPC drum turns, the laser scans creating the full page image.

The Horizontal Sync (HSYNC) signal is created when the laser beam from the Laser Unit reaches the end of the polygon mirror and the signal is sent to the Controller Board. The controller detects the HSYNC signal and adjusts the vertical line of the image on paper. After the HYSNC signal is detected, the image data is sent to the Laser Unit to adjust the left margin on the paper.

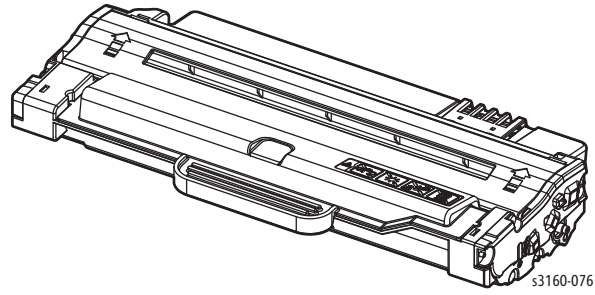
Transfer Roller

The Transfer Roller applies a positive charge to the rear surface of the paper. The negatively charged toner image on the Printer Cartridge OPC drum is attracted to the positive charge on the rear surface of the paper, causing the image to be transferred from the surface of the drum onto the paper. For more information, see "Print Cartridge" on page 2-8.



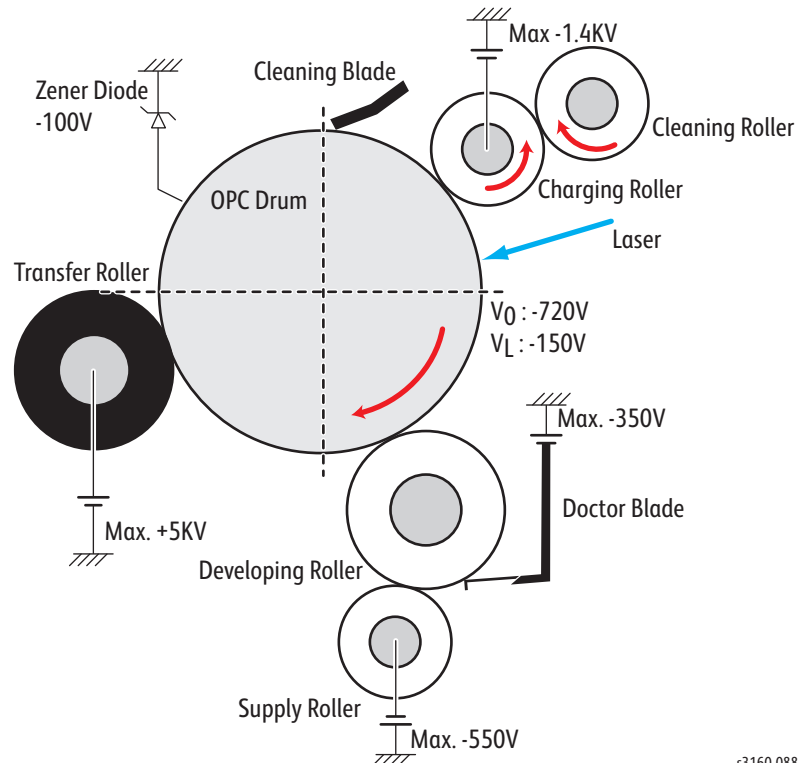
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Print Cartridge



The Print Cartridge is an integral unit containing the OPC unit and toner unit. The OPC unit consists of the OPC drum and charging roller. The toner unit consists of toner, supply roller, developing roller, and cleaning blade.

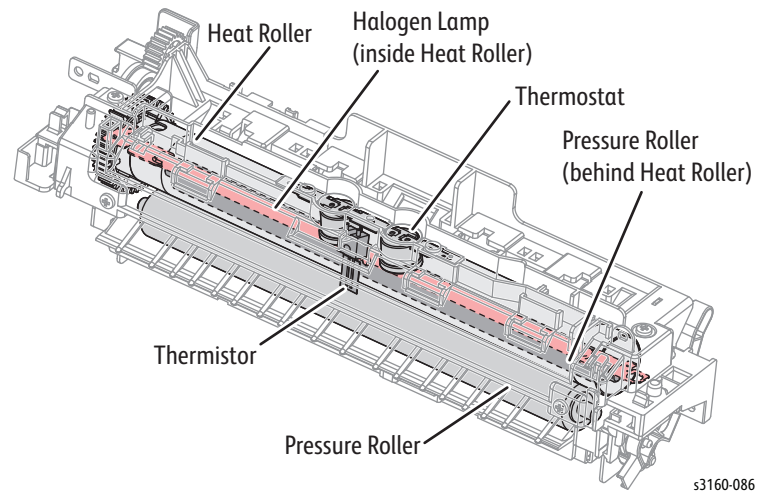
- Developing method: Non-magnetic 1 element contacting method
- Toner: non-magnetic 1 element shatter type toner
- Toner Life: 1,000 pages/2,500 pages (ISO 19752 Pattern/A4 Standard)
- Toner Residual Sensor: Dot count with CRUM(CRU Monitor)
- OPC cleaning blade
- Management of waste toner: Collects toner using the cleaning blade.
- OPC drum protecting shutter: No
- Toner CRUM reader: Identifies whether toner is Xerox branded toner or whether a non-Xerox Print Cartridge is installed.



s3160-088

Fuser

The Fuser consists of a Halogen Lamp, Heat Roller, Pressure Roller, Thermistor, and Thermostat. The Heat Roller transfers heat from the lamp to the paper. The Pressure Roller adheres the melted toner to the media surface. The Thermistor and Thermostat monitor Fuser operating temperature.



Halogen Lamp

- Voltage
 - 120V: 115 V \pm 5 %
 - 220V: 230 V \pm 5 %
- Capacity: 750 Watt \pm 25 W

Thermistor

The Thermistor detects the temperature of the heating unit and feeds the data to the main processor.

Thermostat

When the Heat Lamp becomes too hot, the Thermostat cuts off power to the lamp to prevent overheating.

Heat Roller

The Heat Roller transfers heat from the lamp to the paper. As the paper passes between the Heat Roller and Pressure Rollers, the toner is melted and permanently fixed to the paper. The surface of the Heat Roller is coated with Teflon, so that toner does not stick to the surface.

Pressure Roller

The Pressure Roller is made of a silicon resin and the surface is coated with Teflon. When media passes between the Heat Roller and the Pressure Roller, toner is melted and permanently fixed to the surface of the paper.

Safety Features

Several protection devices are used to prevent Fuser overheating:

- Hardware cuts off Fuser power when overheating is detected.
- Software cuts off Fuser power when overheating is detected.
- Thermostat cuts off power to the lamp.

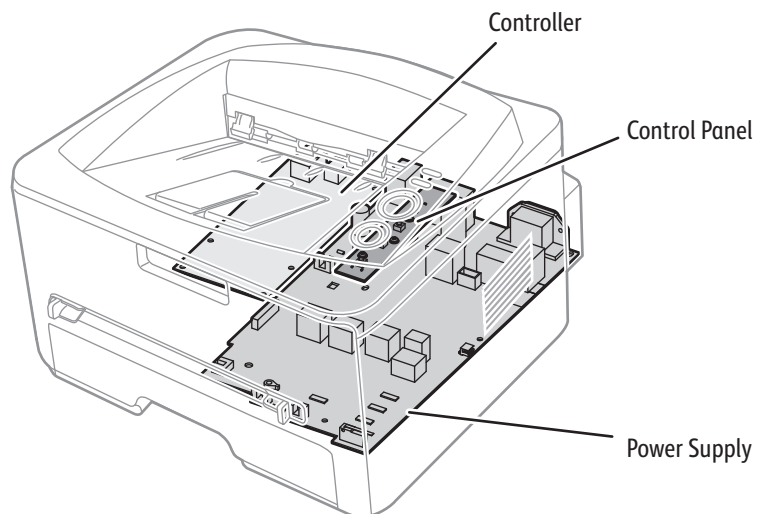
Interlocks disable the Fuser, motor, and Laser Unit.

- Fuser power is cut off when the front cover is opened.
- Fuser cover temperature is maintained at less than 80° C.

Electrical Components

The printer's major electrical components consist of these boards:

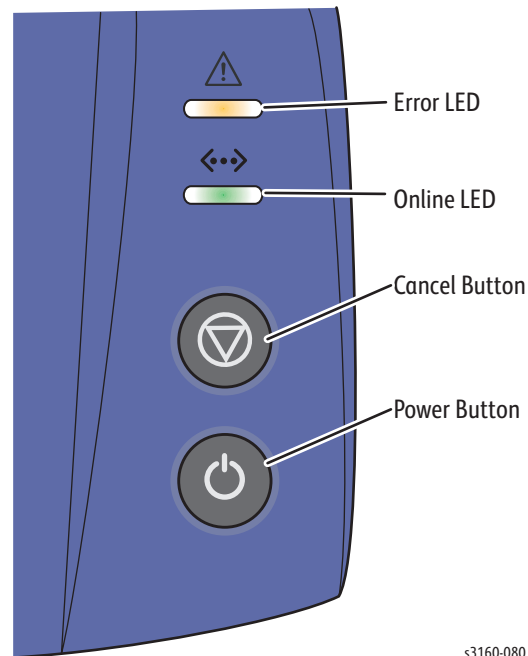
- Control Panel
- Controller
- Power Supply



s3160-091

Control Panel

The Control Panel is the user interface for display of printer status and operation of the printer.



s3160-080

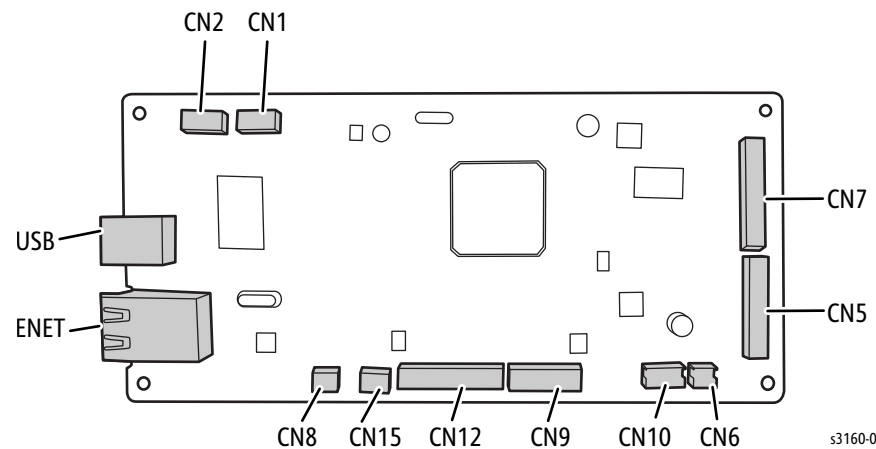
Controller Board

The Controller Board consists of the CPU and printer control functions. The CPU functions as the bus control, I/O handling, drivers, and PC interface. The Controller Board sends the current image video data to the Laser Unit and manages the electrophotographic printing process. Circuits on the Controller Board drive the Motor (paper feed), Clutch, Heat Lamp, and Fan.

The signal from the Out Bin Empty Sensor is input directly to the Controller Board.

Note

Each printer model has a unique Controller Board. The following illustration shows the 3160N Controller Board.



s3160-093

Memory

The Controller Board has Flash and DRAM memory.

- Flash Memory: Stores System Program and can be updated via USB interface.
- DRAM Memory: It is used as Swath Buffer in printing, and System Working Memory Area.

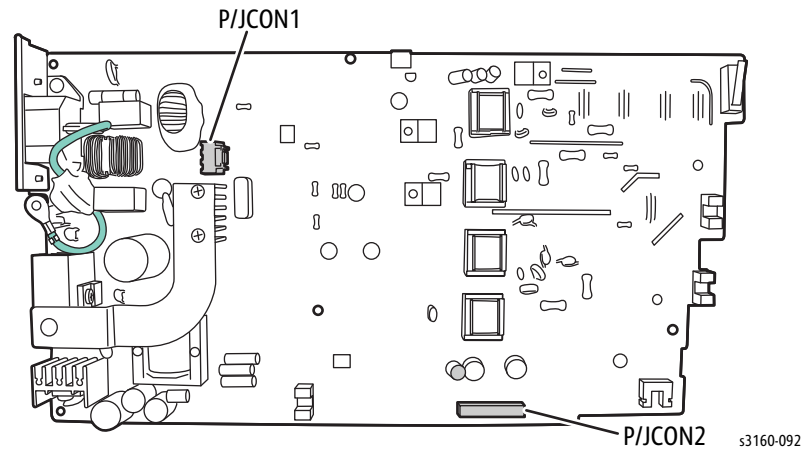
Power Supply Board

The Power Supply board consists of low voltage and high voltage circuitry and supplies power to the entire printer.

The low voltage circuit supplies DC power to the printer. It converts 110V/220V to +5V and +24V DC.

The high voltage circuit outputs the high voltage for the THV/MHV/BIAS signals. The high voltage output is supplied to the Print Cartridge and Transfer Roller.

AC heater control circuitry supplies power to the Fuser.



Transfer High Voltage (THV+)

The (+) Transfer High Voltage is supplied to the Transfer Roller for transferring toner onto the OPC Drum to the paper.

- Input Voltage: 24 VDC \pm 15 %
- Output Voltage: MAX +5.0 KV \pm 5 % (duty variable, no loading)
- Input Contrast of the Voltage Stability Degree: less than \pm 3 % (fluctuating input 21.6V~26.4V)
 - Loading contrast: \pm 3 % or less
- Output Voltage Rising Time: 50 ms Max
- Output Voltage Falling Time: 100 ms Max
- Fluctuating Transfer Voltage with Environmental Various: 0 V~5 KV

- Environment Recognition Control Method: The THV-PWM ACTIVE is the transfer active signal. It detects the resistance change of the transfer roller (due to environmental changes) which alters this voltage feed-back signal. For more information, see “Transfer” on page 2-18.
- Output Voltage Control Method: The Transfer Output Voltage is output and controlled by changing the duty cycle of the THV/PWM signal.

Charge Voltage (MHV)

High voltage is supplied to the OPC drum through the charging roller while charging the skin of the OPC drum.

- Input Voltage: 24 VDC \pm 15 %
- Output Voltage: -1.0 KV ~ -1.8 VDC \pm 3 %
- Output Voltage rising time: 50 ms Max
- Output Voltage Failing Time: 50 ms Max
- Output Control Signal (MHV-PWM): CPU is HV output when PWM is Low.

Cleaning Voltage (THV-)

- -1.2 KV \pm 15 %
- The (+) Transfer Voltage is not output because the THV PWM is controlled with high.
- The (-) Transfer Voltage is output because the THV-Enable Signal is controlled with low.
- The output fluctuation range is large because there is no feedback control and connection resistor.

Developing Voltage (DEV)

The Developing Voltage is supplied to the Developer Roller to transfer to the toner to the charge on the OPC Drum scanned by the laser beam while printing the image. The engine controls whether the high voltage is supplied and its quantity.

- Input voltage: 24 VDC \pm 15 %
- Output voltage: -200 V ~ -600 V DC \pm 3 %
- Output voltage fluctuation range: PWM control
- Input contrast of the output stability degree: \pm 3 % or less
Loading contrast: \pm 3 % or less
- Output voltage rising time: 50 ms Max
- Output voltage falling time: 50 ms Max
- Output Control Signal (BIAS-PWM): The CPU output is HV output when PWM is low.

Supply

- Output voltage: -400 V ~ -800 VDC \pm 50 V (ZENER using, DEV)
- Input contrast of the output stability degree: under \pm 5 %
Loading contrast: \pm 5 % or less
- Output voltage rising time: 50 ms Max
- Output voltage falling time: 50 ms Max
- Output Loading range: 10 M Ohm ~ 1000 M Ohm
- Output control signal (BIAS-PWM): The CPU is HV output when PWM is Low.

Power Supply

The Power Supply (switch-mode power supply, SMPS) supplies DC power for driving the printer, and the AC heater control, which supplies power to the Fuser.

The Power Supply has two output channels: +5.0 V and +24 V.

AC Input

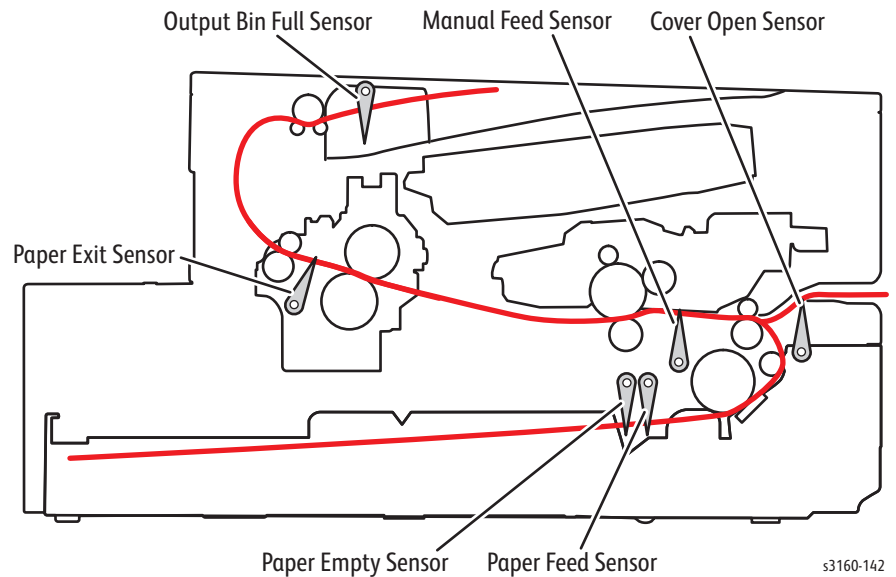
- Input rated voltage:
 - AC 110 V~127 V
 - AC 220 V~240 V
- Input voltage fluctuation range:
 - AC 99 V~140 V
 - AC 198 V~265 V
- Rated frequency: 50/60 Hz
- Rated frequency fluctuating range: 47~63 Hz
- Input current: under 4.0 A/2.0 A (when the lamp is Off or rated voltage is inputted/outputted)

Rated Output Power

Item	CH1	CH2	Remark
Channel Name	+5.0 V	+24.0 V	
Connector Pin	CON2 5V PIN: 8, 15, 16	CON2 24 V PIN: 5, 6, 9, 10, 12	
Rated Output	+5.1 V \pm 5 % (4.845 ~ 5.355 V)	+24 V \pm 15 % (20.4 ~ 27.6 V)	
Max. Output Current	1.2 A	2.0 A	
Peak Loading Current	1.5 A	2.5 A	Under 100 ms

Item	CH1	CH2	Remark
Ripple & Noise Voltage	Under 100 mVp-p	Under 500 mVp-p	
Maximum Output	6 W	48 W	
Peak output	7.5 W	60 W	Under 100 ms
Protection for Loading Shortage and Overflowing Current	Shut down or Fuse Protection	Shut down (or Output Voltage Drop	

Sensor Input Circuit



Paper Empty Sensing

The Paper Empty (width) Sensor on the Power Supply detects the state of paper empty and the state of narrow paper width. If the Paper Empty sensor fails to detect paper existence, it can mean that the Paper Tray is empty, or that narrow paper is installed.

When the print job comes to the CPU, the pickup action is performed regardless of a paper empty condition. If the paper comes through to the Feed Sensor, the CPU recognizes the use of narrow paper, if not, the paper empty state is recognized and the red LED on the Control Panel is illuminated.

Manual Feed Sensing

Through the operation of an actuator on the frame, the Manual Feed Sensor (photo interrupter) detects the existence of paper. The CPU recognizes paper in the manual feeder, and feeds it into the printer.

Paper Feeding/With Print Cartridge Sensing

When media passes the Feed Sensor actuator, the Feed Sensor sends the feed event to the CPU. If the Feed Sensor does not detect media after a predetermined time, a Jam0 state occurs.

Whether the Print Cartridge is inserted or not is detected by CRUM. After the cartridge is mounted, the sub- CRUM reads the print cartridge information from contact with CRUM involved in print cartridge. If the Print Cartridge is invalid, the red LED on the Control Panel illuminates.

Exit Sensor

The Exit Sensor, located on the Fuser, detects the media as it exits the Fuser. The CPU monitors the on/off timing of the Exit Sensor signal and determines normal operation or the presence of a jam (Jam2). If a paper jam is detected, the red LED on the Control Panel illuminates.

Out Bin Full Sensor

The Out Bin Full Sensor detects when the output tray is full. If the sensor detects the output tray is full, the red LED on the Control Panel illuminates.

Front Cover Interlock

The Front Cover Interlock switch is located on the Power Supply. When the Front Cover is open, the +24 V that is supplied to the Motor, solenoids, Fan, Laser Unit, and the high voltage circuitry is cut off. When the Front Cover is open, the Status LED changes to red.

Driving Circuit

Fan and Solenoid Driving

The Fan, Pick Up Solenoid, and the Manual Feed Solenoid are driven by signals from the Controller Board. A diode protects the driving transistor from the noise pulse that is created when the solenoid is de-energizing.

Motor Driving

The Controller Board contains the motor interface circuits, and the Drive Assembly contains a motor control board with a driver IC.

Engine F/W

Control Algorithm

Feeding

The printer feeds the paper from the manual feeder when the Manual Feed Sensor indicates that paper is present in the manual feeder.

When feeding from the Paper Tray, the drive of the Pick Up Roller is controlled by the Pick Up Solenoid. While paper moves, the occurrence of a jam is judged as follows.

Item	Description
JAM 0	<p>The leading edge of the paper did not pass the Feed Sensor.</p> <ul style="list-style-type: none"> ■ After paper has been picked up, paper did not enter the printer. ■ After paper has been picked up, paper enters the printer, but did not reach the Feed Sensor in the specified time. ■ If the Feed Sensor does not indicate On after paper has been picked up, the printer re-picks. If after re-picking, the Feed Sensor is still not activated, a JAM 0 error occurs. This is an indication that the leading edge of the paper already passed the Feed Sensor. ■ Even though paper reaches the Feed Sensor, the Feed Sensor is not activated.
JAM 1	<p>The paper is between the Feed Sensor and the Exit Sensor.</p> <ul style="list-style-type: none"> ■ After the leading edge of the paper passes the Feed Sensor, the trailing edge of the paper cannot pass the Feed Sensor in the specified time. (The Feed Sensor cannot be OFF.) ■ After the leading edge of the paper passes the Feed Sensor, the paper cannot reach the Exit Sensor in the specified time.
JAM 2	<p>After the trailing edge of the paper passes the Feed Sensor, the paper does not pass the Exit Sensor in the specified time.</p>

Transfer

The charging voltage, developing voltage, and transfer voltage are controlled by Pulse Width Modulation (PWM). Each output voltage is changeable due to the PWM duty cycle. The transfer voltage used when the paper passes the Transfer Roller is decided by environmental recognition. The resistance value of the Transfer Roller changes due to the surrounding environment of the printer or the voltage value. This change in resistance in turn changes the value of the voltage due to loading. This voltage is fed back into the printer through the A/D converter. Based on the value fed back, the PWM cycle is changed to maintain the required transfer voltage.

Fusing

The temperature change of the Heat Roller's surface is detected by the value of the Thermistor. The Thermistor resistance is measured using the A/D converter through which the CPU can determine the temperature of the Heat Roller. AC power is controlled by comparing the target temperature to the value from the Thermistor. If the value from the Thermistor is out of the controlled range while controlling the fusing process, an error is reported.

Fuser Thermal Errors

Error	Description	LED Display
Open Heat Error	When the engine operates at the warm-up state, the temperature of the fixing unit is not higher than a specified temperature. When the error occurs, the engine stops all functions and keeps it at error state.	LED blinking.
Low Heat Error	The Low Heat Error can occur when the engine is at Standby, Printing, or Warm-Up mode. If the temperature of the fixing unit is lower than the specified temperature at each state, and the lower temperature state is maintaining during a specified time, the Low Heat Error occurs. When this error occurs, the engine stops all functions and keeps it at error state.	LED blinking.
Over Heat Error	If the temperature of the fixing unit is higher than the expected temperature, and the high temperature state is maintained over a specified time. When this error occurs, the engine stops all functions and keeps it at error state.	LED blinking.

Recovering from Heat Error

The printer automatically recovers from the heat error when the error is only caused by low heat error, and not the heat errors in Warm-Up state and the Over Heat error.

When an error occurs, the engine memorizes the present temperature.

When a Low Heat error occurs, the maximum heat is supplied to the fixing unit. After a specified time elapses, the engine detects the temperature again. If the temperature is higher than the memorized temperature, the error is recovered.

When an Over Heat error occurs, no heat is supplied to the fixing unit. After a specified time elapses, the engine detects the temperature again. If the temperature is a specified degree lower than the memorized temperature, the error is recovered.

Laser Unit

The Laser Unit receives image data from the PVC or HPVC and makes the latent image on the OPC surface. The Laser Unit uses a single beam system.

The errors related to the Laser Unit are shown in the table below:

Error	Description
LReady	When printing starts, the engine drives the polygon motor of the Laser Unit. If the motor is not in a ready status after a specified period of time elapses, the engine detects the error that the polygon motor is not in a ready status. If this error occurs, the engine stops all functions and remains in the error state. The red LED is illuminated to inform the error status to the user.
Hsync	This error occurs when the Polygon Motor speed is steady but the Hsync is not generated. When the polygon motor is ready, the Laser Unit sends a Hsync signal that synchronizes each image line. If the engine does not detect the signal consecutively over a fixed time, it defines the Hsync Error. If this error occurs, the engine stops all functions and remains in the error state. The red LED is illuminated to inform the error status to the user.

LSU Error Recovery

If the LReady or Hsync error happens, the paper exits out beforehand. The engine mode is changed to recovery mode and the engine informs the main system of the engine mode. The engine checks the Laser Unit error, and if the error doesn't recur the printing job will proceed.

Error Messages and Codes

In this chapter...

- Introduction
- Understanding the Control Panel LEDs
- Jam Errors
- Tray and Media Problems
- Print Cartridge Errors
- Fuser Errors
- Front Cover Errors

Chapter 3

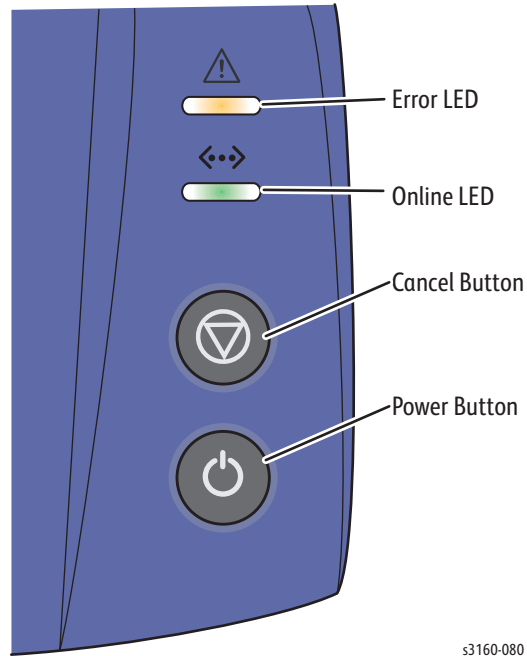
Introduction

This section describes the Control Panel LEDs, jam errors, tray and media problems, and Print Cartridge, Fuser, and Front Cover errors. Printer problems not directly indicated by, or associated with an error message are covered in Chapter 4, “General Troubleshooting.” Print-quality problems are covered in Chapter 5, “Print-Quality Troubleshooting.”

Diagnostics

The printer performs several self-tests. When turned On, a routine of power up tests (POST) checks key operational parameters. During operation, the printer monitors system performance.

Understanding the Control Panel LEDs



s3160-080

The color of the LEDs indicates the printer's current status.

LED	Status	Description	
Error	Red	On	<ul style="list-style-type: none"> ■ The cover is open. Close the cover. ■ There is no paper in the tray. Load paper in the tray. ■ The printer has stopped due to a major error. ■ The Print Cartridge is empty, or needs to be replaced. ■ The Print Cartridge has almost reached its estimated cartridge life.
		Blinking	<ul style="list-style-type: none"> ■ A small amount of toner is left in the cartridge. The estimated cartridge life of toner is close. Prepare a new cartridge for replacement. You may temporarily increase the printing quality by redistributing the toner.
	Orange	On	<ul style="list-style-type: none"> ■ The Print Cartridge is empty, or needs to be replaced. ■ A paper jam has occurred.

LED	Status	Description
Online	Green	On <ul style="list-style-type: none">■ The machine is in power saver mode.■ The machine is online and can receive data from the computer.
		Blinking <ul style="list-style-type: none">■ When the backlight slowly blinks, the machine is receiving data from the computer.■ When the backlight blinks rapidly, the machine is printing data.

Jam Errors

If a paper jam occurs, the LED on the control panel lights orange. Find and remove the jammed paper.

Note

To resume printing after clearing paper jams, you must open and close the Front Cover.

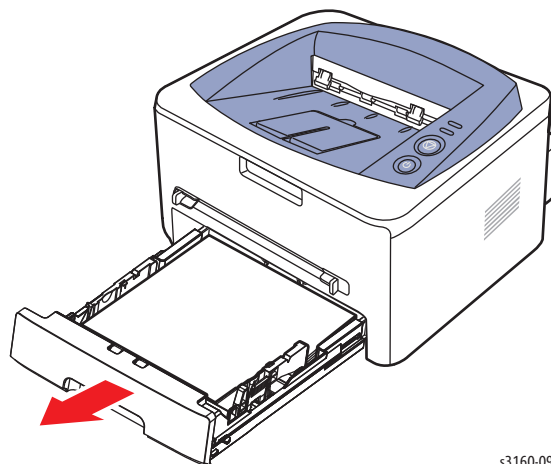
Follow these initial steps when evaluating repeated jams:

1. Ask the customer about the paper types being used. If not on the recommended list, determine if this is contributing to the problem. Recycled, multi-purpose, or copier paper tends to contaminate the paper path. Constant use of special papers such as labels or business cards can also contribute to jamming.
2. Ensure the correct tray loading and setup procedures are followed (securing the guides, selecting the correct paper type, fanning the paper, etc.)
3. Make sure the printer is plugged directly into an electrical outlet. Using extension cords or a power strip is not recommended.
4. Make every attempt to establish a jam rate prior to starting any work.
5. Determine if jamming is occurring in the paper tray or in the manual feeder. This helps to identify any dirty or defective parts.
6. Clear the paper path of any jams and paper debris.
7. Clean the paper rollers in the paper tray and tray slot using a slightly damp (water only) lint free cloth.

Clearing Paper Jams

Paper Jam at the Paper Tray

1. Open and close the Front Cover. The jammed paper should automatically eject from the machine. If the paper does not eject, go to the next step.
2. Pull out the Paper Tray.

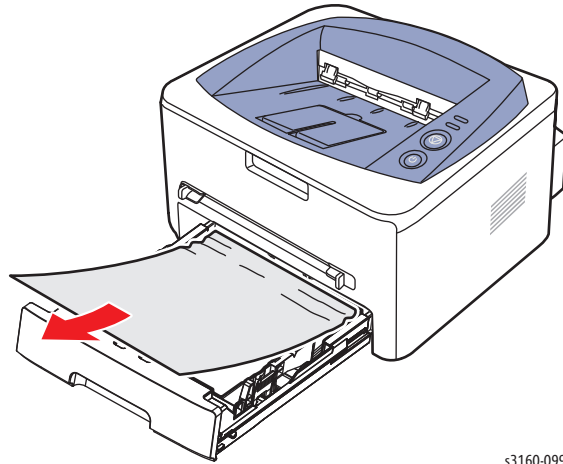


s3160-097

3. Remove the jammed paper by gently pulling it straight out.

Note

If the paper does not move when you pull, or if you do not see the paper in this area, check the Fuser area around the Print Cartridge.

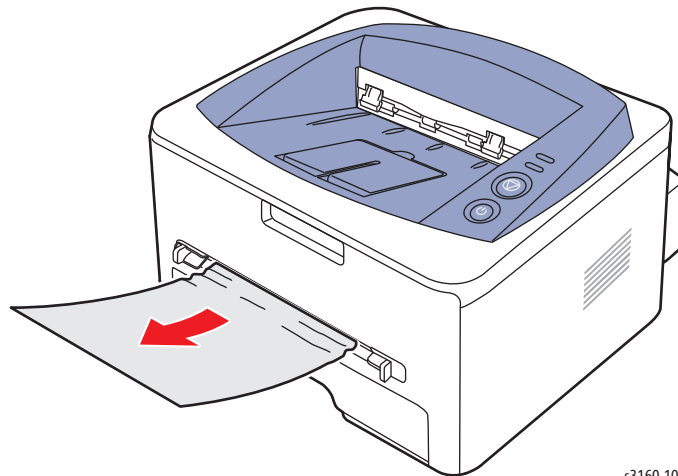


s3160-099

4. Insert the Paper Tray back into the machine until it snaps into place. Printing automatically resumes.

Paper Jam at the Manual Tray

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

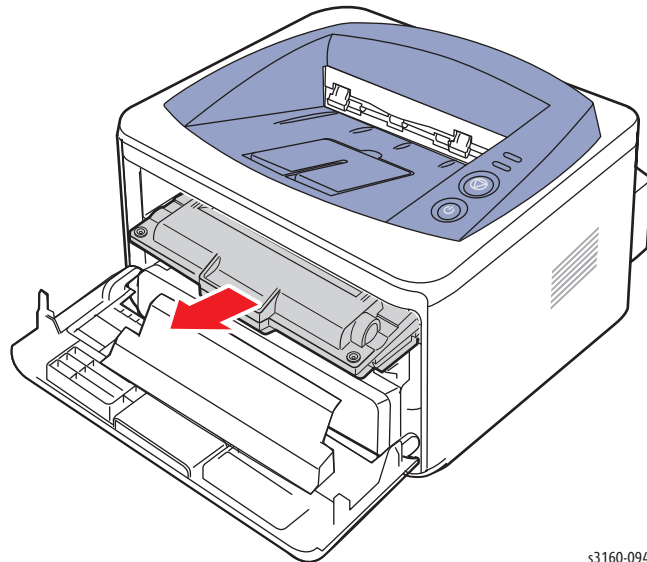


s3160-100

2. Open and close the Front Cover to resume printing.

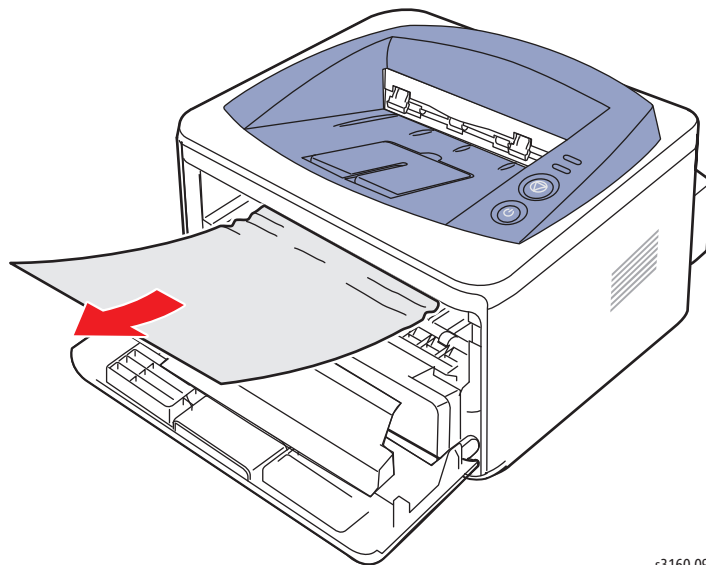
Paper Jam Inside the Printer

1. Open the Front Cover and pull the Print Cartridge out.



s3160-094

2. Remove the jammed paper by gently pulling it straight out.



s3160-096

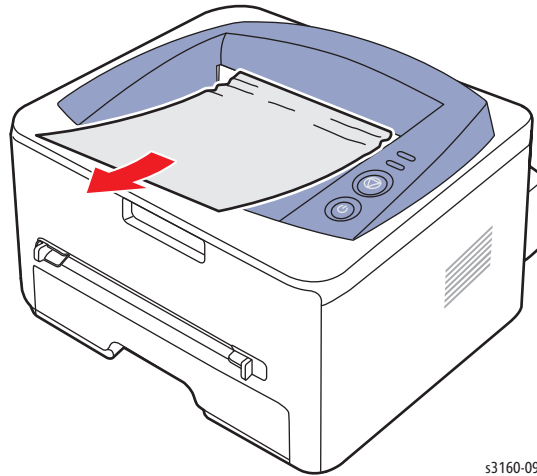
Paper Jam at the Exit Tray

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

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

Note

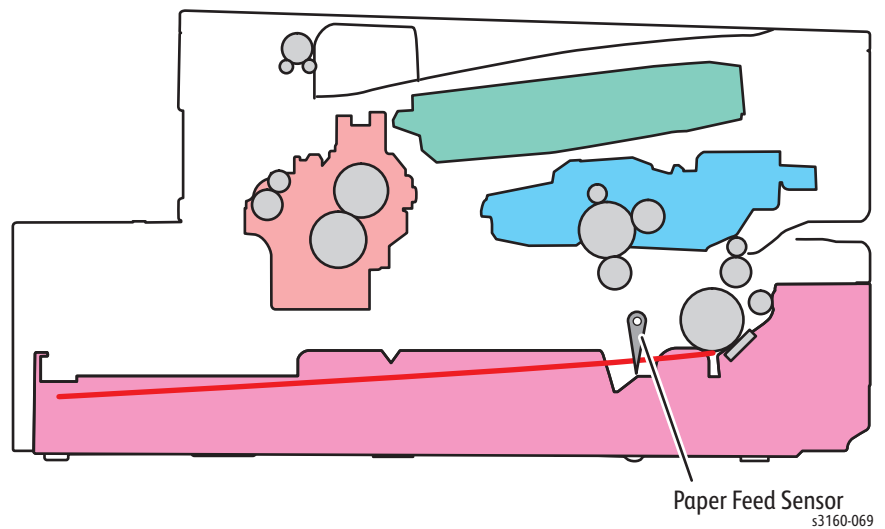
If you do not see the jammed paper, or if there is any resistance when you pull, stop and go to the next step.



3. Open the Rear Cover.
4. Pull the Fuser pressure levers down and remove the paper.
5. Return the pressure levers to their original position.
6. Close the Rear Cover.
7. Open and close the Front Cover, printing automatically resumes.

Paper Jam 0

The leading edge of the paper is jammed between the Pick Up Roller and the Paper Feed Sensor.



Initial Actions

- Clean the Pick Up Roller and Paper Tray Holder Pad.
- Check the paper path for obstructions or debris.
- Cycle printer power.
- If the problem persists, refer to the following procedure.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> ■ Drive Assembly PL7.0 or PL7.1 ■ Power Supply Board, PL1.0.1 ■ Pick Up Solenoid, PL6.0.18 ■ Paper Tray Holder Pad, PL10.0.11 ■ Pick Up Roller Assembly, PL8.0 ■ Feed Actuator, PL6.0.57 	<ul style="list-style-type: none"> ■ Map 1 - Controller Board (3140) ■ Map 2 - Controller Board (3155) ■ Map 3 - Controller Board (3160B/3160N) ■ Map 6 - Motor, Solenoids, and Fan

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Pull out the Paper Tray (page 8-7), and check for a jammed piece of paper in the printer. Did a piece of paper jam in the printer?	Go to step 5.	Go to step 2.
2	Remove the Drive Assembly, and check the cable that connects the Drive Assembly and the Controller board for damage and continuity. Is the cable damaged?	Repair the cable. If the problem persists, go to step 3.	Go to step 3.
3	Replace the Drive Assembly (page 8-35). Does the problem persist?	Go to step 4.	Complete.
4	Replace the Power Supply Board. Does the problem persist?	Go to step 5.	Complete.
5	Check the Pick Up Solenoid for damage or obstructions. Is the Pick Up Solenoid damaged?	Replace the Pick Up Solenoid (page 8-61). If the problem persists, go to step 6.	Go to step 6.
6	Check the Paper Tray Holder Pad. Is the Holder Pad loose due to bad sealing of the side-pad?	Replace the Holder Pad (page 8-29). If the problem persists, go to step 7.	Go to step 7.

Troubleshooting Procedure Table (Continued)

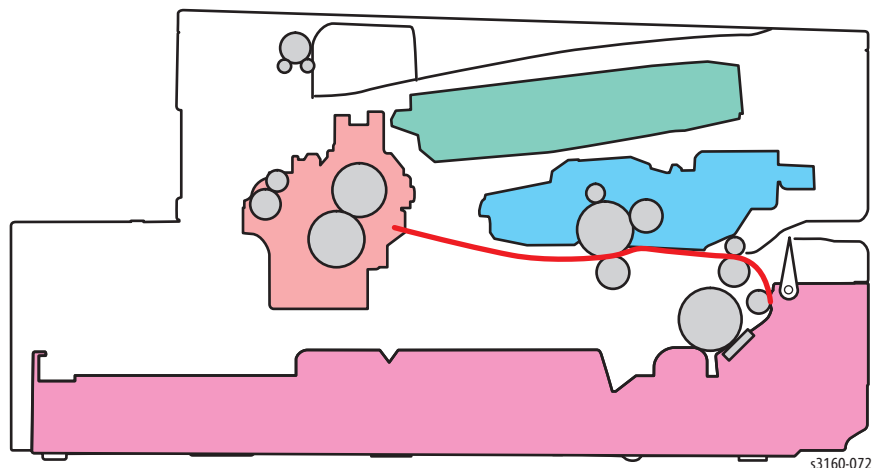
Step	Actions and Questions	Yes	No
7	Check the Pick Up Roller for damage or debris. Is the Pick Up Roller damaged?	Clean or replace the Pick Up Roller Assembly (page 8-9). If the problem persists, go to step 8.	Go to step 8.
8	Check the Feed Actuator for damage. Is the Feed Actuator damaged?	Replace the Feed Actuator (page 8-40). If the problem persists, go to step 9.	Go to step 9.
9	Replace the Power Supply Board (page 8-54).	Complete.	

Paper Jam 1

A Jam 1 occurs when the jam is located in front of or inside of the Fuser, or the media is stuck at the Exit Roller in the Fuser just after passing through the Feed Actuator.

Initial Actions

- Check the paper path for obstructions or debris.
- Cycle printer power.
- If the problem persists, refer to the following procedure.



Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> ■ Power Supply Board, PL1.0.1 ■ Feed Actuator, PL6.0.57 	<ul style="list-style-type: none"> ■ Map 4 - 110V and 220V Power Supply Boards

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Is the jam occurring in front of or inside of the Fuser?	Replace the Power Supply (page 8-54). If the problem persists go to step 2.	Go to step 2.
2	Is the jam occurring in the exit roller and the Fuser just after passing through the Feed Actuator?	Replace the Feed Actuator (page 8-40).	Complete.

Paper Jam 2

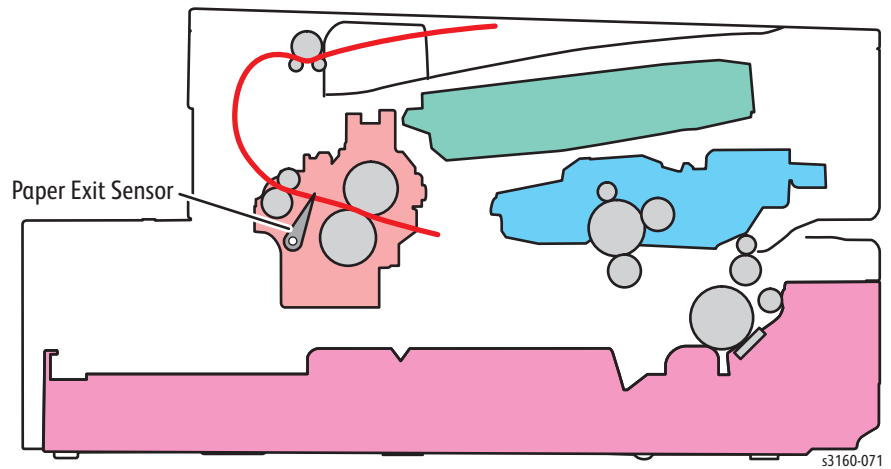
A Jam 2 occurs when there is a jam in front of or inside of the Fuser, or when the media is stuck in the Exit Roller and in the Fuser just after passing through the Feed Actuator.

If the media is rolled in the Fuser Roller, it can be caused by:

- A Fuser guide claw is broken or bent.
- The spring of a guide claw is broken or bent.
- The Heat Roller or Pressure Roller is seriously contaminated with toner.

Initial Actions

- Check the paper path for obstructions or debris.
- Cycle printer power.
- If the problem persists, refer to the following procedure.



Troubleshooting Reference Table

Applicable Parts

- Fuser, PL9.0

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Remove the Top Cover (page 8-23). Go to step 2.		
2	Clean the exit rollers. Go to step 3.		
3	Remove and disassemble the Fuser (page 8-11). Remove the jammed paper. Go to step 4.		
4	Clean the Fuser rollers. Go to step 5.		
5	Inspect the Fuser guide claws and their associated springs. Are any of the guide claws broken or warped, or are any of the guide claw springs missing or bent?	Replace the Fuser.	Go to step 6.
6	Clean the surface of the Pressure Roller with a clean dry cloth. Check the Exit Actuator for damage and functionality, and then reinstall the Fuser. Does the problem persist?	Replace the Fuser.	Complete.

Paper Rolled on the OPC Drum

Media jam in the Print Cartridge. The media is rolled around the OPC drum. Carefully remove the media by gently pulling the media from the Print Cartridge while turning the OPC drum.



Caution

Do not touch the OPC drum or expose the Print Cartridge to light for more than 5 minutes.

Initial Actions

- Check the media weight. Lighter weight media is more likely to jam.
- Cycle printer power.
- If the problem persists, refer to the following procedure.

Troubleshooting Reference Table

Applicable Parts

- Print Cartridge, PL1.0.12

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the media type. Does the media meet specifications?	Go to step 2.	Replace the media.
2	Check the Print Cartridge for damage or debris. Is the Print cartridge damaged or obstructed by debris?	Clean, or replace the Print Cartridge.	Complete.

Tray and Media Problems

Paper Tray Empty Indication with Paper in Tray

The Status LED indicates the Paper Tray is empty but the Paper Tray has paper loaded.

Applicable Error Message

The red Error LED is On.

Initial Actions

- Check the sensor actuator for damage or obstructions.
- Cycle printer power.
- If the problem persists, refer to the following procedure.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> ■ Paper Tray Empty Actuator, PL6.0.56 ■ Power Supply Board, PL1.0.1 ■ Controller Board, PL1.0.2 	<ul style="list-style-type: none"> ■ 3140 Power Supply Wiring ■ 3155 Power Supply Wiring ■ 3160 Power Supply Wiring ■ Map 1 - Controller Board (3140) ■ Map 2 - Controller Board (3155) ■ Map 3 - Controller Board (3160B/3160N) ■ Map 6 - Motor, Solenoids, and Fan

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Paper Tray Empty Actuator for damage. Is the actuator damaged?	Replace the Paper Tray Empty Actuator (page 8-47). If the problem persists, go to step 2.	Go to step 2.
2	Inspect and reseal the wiring harness between Power Supply Board CON2 and Controller Board CN5 (CN7 on 3160 model). Is the wiring harness damaged?	Repair the harness. If the problem persists, go to step 3.	Go to step 3.

Troubleshooting Procedure Table (Continued)

Step	Actions and Questions	Yes	No
3	Replace the Power Supply Board. Does the problem persist?	Replace the Controller Board (page 8-51).	Complete.

Paper Tray Empty With No Indication

The Status LED does not indicate when the Tray is empty.

Initial Actions

- Check the paper path for obstructions or debris.
- Cycle printer power.
- If the problem persists, refer to the following procedure.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> ■ Paper Tray Empty Actuator, PL6.0.56 ■ Power Supply Board, PL1.0.1 ■ Controller Board, PL1.0.2 	<ul style="list-style-type: none"> ■ 3140 Power Supply Wiring ■ 3155 Power Supply Wiring ■ 3160 Power Supply Wiring ■ Map 4 - 110V and 220V Power Supply Boards

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Paper Tray Empty Actuator for damage. Is the actuator damaged?	Repair or replace the actuator (page 8-47).	Go to step 2.
2	Check the continuity of the harness connecting the Power Supply Board CON2 and the Controller Board CN5 (CN7 on the 3160). Is the harness damaged?	Repair the harness. If the problem persists, go to step 3.	Go to step 3.
3	Replace the Power Supply Board (page 8-54). Does the problem persist?	Go to step 4.	Complete.
4	Replace the Controller Board (page 8-51).	Complete.	

Multiple Sheet Feeding

Multiple sheets of media are fed at the same time.

Initial Actions

1. Remove, fan, and reload the media. Ensure that the tray has not been over filled.
2. Try loading paper from a fresh ream, fan the paper, and then insert into the tray or flip existing paper over.
3. Cycle printer power.

If the problem persists, refer to the following procedure.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> ■ Paper Tray Holder Pad Assembly, PL10.0.11 ■ Pick Up Solenoid, PL4.0.37 	<ul style="list-style-type: none"> ■ Map 6 - Motor, Solenoids, and Fan

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the left and right paper guides of the Paper Tray to ensure they are set correctly. Are the paper guides set correctly?	Go to step 2.	Adjust the left and right paper guides.
2	Check the Paper Tray Holder Pad. Is the Holder Pad dirty or damaged?	Clean the Holder Pad, and replace if necessary (page 8-29). If the problem persists, go to step 3.	Go to step 3.
3	Replace the Pick Up Solenoid (page 8-61).	Complete.	

Out Bin Full

The red Error LED is blinking.

Initial Actions

- Check the Out Bin Full Actuator for damage or obstructions.
- Cycle printer power.
- If the problem persists, refer to the following procedure.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> ■ Top Cover, PL2.0 ■ Controller Board, PL1.0.2 ■ Out Bin Full Sensor, PL6.0.73 	<ul style="list-style-type: none"> ■ 3140 Controller Board Wiring ■ 3155 Controller Board Wiring ■ 3160 Controller Board Wiring ■ Map 1 - Controller Board (3140) ■ Map 2 - Controller Board (3155) ■ Map 3 - Controller Board (3160B/3160N) ■ Map 5 - Sensors

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Remove the Top Cover (page 8-23), and check the Output Bin Full Actuator for damage. Is the actuator damaged?	Repair the actuator if possible, or replace the Top Cover (page 8-23). If the problem persists, go to step 2.	Go to step 2.
2	On the Controller Board check for +3.3 V at CN2-1 (CN15-1 on printer model 3160). Is +3.3 V present?	Go to step 3.	Replace the Controller Board (page 8-51). If the problem persists, go to step 3.
3	Check the continuity of the bin full harness connecting the Controller Board and Out Bin Full Sensor. Is the harness damaged?	Repair the harness.	Replace the Out Bin Full Sensor (page 8-63).

Print Cartridge Errors



Caution

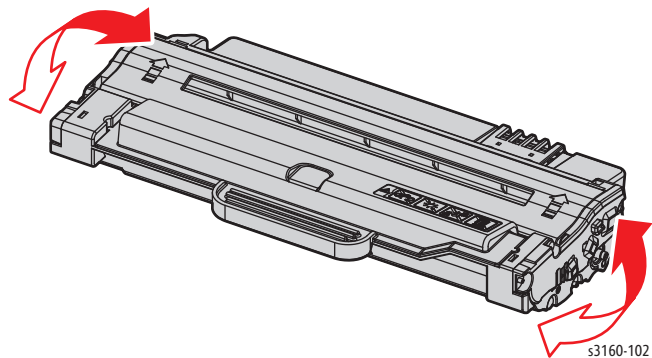
Over exposure to light reduces OPC drum sensitivity. After removal, cover the Print Cartridge to block light from reaching the OPC Drum.

Print Cartridge At Or Nearing End Of Life

If the Error LED is red (not blinking), the Print Cartridge may have reached its estimated end of life. Replace the Print Cartridge.

If the Error LED is red and blinking, it may indicate that the estimated end of Print Cartridge life is approaching. If the printed image is light due to limited toner remaining, use the following procedure to redistribute the toner to temporarily improve image quality.

1. Open the Front Cover.
2. Remove the Print Cartridge.
3. Gently shake the Print Cartridge from side to side 5 or 6 times to distribute toner.



4. Install the Print Cartridge.
5. Close the Front Cover.
6. Cycle printer power to clear the message.
7. If the problem persists, replace the Print Cartridge.

If the problem persists, use the following procedures to troubleshoot the problem.

Invalid Print Cartridge

If the Error LED is red (not blinking), the Print Cartridge may not be a genuine Xerox print cartridge. Non-Xerox or Third Party Print Cartridges can cause malfunctions, print-quality problems, and jam errors.

Initial Actions

- Cycle printer power.
- If problem persists, refer to the following procedure.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> ■ Controller Board, PL 1.0.2 ■ Print Cartridge, PL1.0.12 	<ul style="list-style-type: none"> ■ 3140 Controller Board Wiring ■ 3155 Controller Board Wiring ■ 3160 Controller Board Wiring ■ Map 1 - Controller Board (3140) ■ Map 2 - Controller Board (3155) ■ Map 3 - Controller Board (3160B/3160N)

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Is the Print Cartridge a genuine Xerox cartridge?	Go to step 2.	Replace with a Xerox cartridge.
2	Reseat the Print Cartridge and cycle printer power. Does the error persist?	Go to step 3.	Complete.
3	Reseat CN9 on the Controller Board (CN10 on the 3160) and cycle printer power. Does the error persist?	Go to step 4.	Complete.
4	Check for +3.3V at CN9-4 (CN10-4 on the 3160). Is +3.3V present?	Go to step 5.	Replace the Controller Board (page 8-51).
5	Replace the Print Cartridge (page 8-6). Does the error persist?	Replace the Controller Board (page 8-51).	Complete.

Toner Empty or Exhausted

The Print Cartridge has reached the end of life count. When this error occurs the red Error LED is On.

Initial Actions

- Cycle printer power.
- If problem persists, refer to the following procedure.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> ■ Print Cartridge, PL1.0.12 ■ Controller Board, PL 1.0.2 	<ul style="list-style-type: none"> ■ 3140 Controller Board Wiring ■ 3155 Controller Board Wiring ■ 3160 Controller Board Wiring ■ Map 1 - Controller Board (3140) ■ Map 2 - Controller Board (3155) ■ Map 3 - Controller Board (3160B/3160N)

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print the Configuration Report (page 4-2), and check the Toner Remaining count. Is the cartridge at or near end of life?	Replace the cartridge.	Go to step 2.
2	Reseat the Print Cartridge and cycle printer power. Does the error persist?	Go to step 3.	Complete.
3	Reseat CN9 on the Controller Board (CN10 on the 3160) and cycle printer power. Does the error persist?	Go to step 4.	Complete.
4	Check for +3.3V at CN9-4 (CN10-4 on the 3160). Is +3.3V present?	Go to step 5.	Replace the Controller Board (page 8-51).
5	Replace the Print Cartridge (page 8-6). Does the error persist?	Replace the Controller Board (page 8-51).	Complete.

Fuser Errors

Paper Rolled in the Fuser

There are repeated media jams in the Fuser. When this error occurs the red Error LED is On.



Warning

Allow the Fuser to cool before beginning the repair.

Initial Actions

- Check the media.
- Clean the Fuser's Pressure Roller and Heat Roller.
- Check the Fuser gear.
- If the problem persists, refer to the following procedure.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> ■ Fuser, PL9.0 ■ Drive Assembly, PL7.0 (3140) Drive Assembly, PL7.1 (3155 and 3160) 	<ul style="list-style-type: none"> ■ Map 6 - Motor, Solenoids, and Fan

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Reseat the Fuser connections. Does the error still occur?	Go to step 2.	Complete.
2	Check the Fuser for contamination. Is the Fuser dirty?	Remove (page 8-11), disassemble, and clean the Fuser.	Go to step 3.
3	Check the guide claws for damage? Are the guide claws damaged?	If possible, repair the guide claws.	Go to step 4.
4	Replace the Fuser. Does the problem persist?	Replace the Drive Assembly (page 8-35).	Complete.

Fuser Gear Damaged from Overheating

There is a repetitive jam at the Fuser, or the Fuser rollers are not turning.



Warning

Allow the Fuser to cool before beginning the procedure.

Initial Actions

- Ensure that the Fuser is secured to the printer.
- Cycle printer power.
- If the problem persists, refer to the following procedure.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map Reference
<ul style="list-style-type: none"> ■ Fuser Lamp, PL9.0.13 ■ Fuser, PL9.0 ■ Power Supply, PL1.0.1 ■ Controller Board, PL1.0.2 	<ul style="list-style-type: none"> ■ Map 1 - Controller Board (3140) ■ Map 2 - Controller Board (3155) ■ Map 3 - Controller Board (3160B/3160N)

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Fuser Lamp for damage or overheating. Is the Fuser Lamp damaged?	Replace the Fuser Lamp (page 8-15).	Go to step 2.
2	Replace the Fuser (page 8-11). Does the problem persist?	Go to step 3.	Complete.
3	Replace the Power Supply (page 8-54). Does the problem persist?	Go to step 4.	Complete.
4	Reseat connections on the Controller Board. Does the problem persist?	Replace the Controller Board (page 8-51).	Complete.

Front Cover Errors

Error Indicated When Front Cover is Closed

The Status LED indicates an error even though the Front Cover is closed.

Initial Actions

- Cycle printer power.
- If the problem persists, refer to the following procedure.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> ■ Front Cover, PL1.0.11 ■ Power Supply Board, PL1.0.1 	<ul style="list-style-type: none"> ■ Map 5 - Sensors

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check that the Front Cover open actuator (PL6,0.55) is securely affixed to the frame. Is the actuator firmly attached?	Go to step 2.	Tighten the actuator screw. If the problem persists, go to step 2.
2	Inspect the Front Cover for damage. Is the Front Cover damaged?	Replace the Front Cover. If the problem persists, go to step 3.	Go to step 3.
3	Replace the Power Supply Board (page 8-54).	Complete.	

No Error LED Indication for Front Cover

The Error LED does not indicate an error when the Front Cover is open.

Initial Actions

- Cycle printer power.
- If problem persists, refer to the following procedure.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> ■ Power Supply, PL1.0.1 ■ Control Panel, PL2.0.10 ■ Controller Board, PL1.0.2 	<ul style="list-style-type: none"> ■ Map 1 - Controller Board (3140) ■ Map 2 - Controller Board (3155) ■ Map 3 - Controller Board (3160B/3160N) ■ Map 4 - 110V and 220V Power Supply Boards ■ 3140 Power Supply Wiring ■ 3140 Controller Board Wiring ■ 3155 Power Supply Wiring ■ 3155 Controller Board Wiring ■ 3160 Power Supply Wiring ■ 3160 Controller Board Wiring

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Front Cover open actuator for normal operation. Is the actuator operating normally,	Go to step 2.	Correct the operation of the Front Cover open actuator. If the problem persists, go to step 2.
2	Inspect and reseal the wiring harness between Power Supply Board CON2 and Controller Board CN5 (CN7 on model 3160). Is the wiring harness damaged?	Repair the harness. If the problem persists, go to step 3.	Go to step 3.
3	Replace the Power Supply Board (page 8-54). Does the error still occur?	Go to step 4.	Complete.

Troubleshooting Procedure Table (Continued)

Step	Actions and Questions	Yes	No
4	Inspect and reseal the wiring harness between Control Panel CN1 and Controller Board CN8 (CN9 on model 3160). Is the wiring harness damaged?	Repair the harness. If the problem persists, go to step 5.	Go to step 5.
5	Replace the Control Panel (page 8-51). Does the problem persist?	Replace the Controller Board (page 8-51).	Complete.

General Troubleshooting

In this chapter...

- Introduction
- Reports
- Servicing Instructions
- Measurement Techniques
- Media-Based Problems
- Inoperable Printer Troubleshooting
- Power Supply Troubleshooting
- USB Port Testing
- Network Configuration Errors
- Operating System and Application Problems

Chapter 4

Introduction

This chapter covers the Status LED and general troubleshooting procedures. Troubleshooting print-quality problems are covered in Chapter 5, Print-Quality Troubleshooting.


Reports

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


The following reports are available in the Phaser 3140/3155/3160 printers.

Report	Description	How To Print
Printing Demo Page	Print Printing Demo Page to check that the machine is operating correctly.	In Ready mode, press and hold the Cancel button for approximately 2 seconds until the status LED blinks slowly, and then release.
Configuration Report	Print the Configuration Report to view current printer settings, or to help troubleshoot printer problems.	In Ready mode, press and hold the Cancel button for approximately 5 seconds until the status LED blinks fast, and then release.
Supplies Information Report/Error Information Report	Print the Supplies Information Report to view supply life indicators. The Error Information Report is printed at the same time.	In Ready mode, press and hold the Cancel button for approximately 15 seconds until the status LED blinks fast, and then release.
Print Cleaning Page	If the printer has blurred or smeared printouts, you can clear the problem by printing a cleaning sheet.	In Ready mode, press and hold the Cancel button for approximately 10 seconds until the status LED blinks fast, and then release.

Printing Demo Page



Xerox Phaser® 3160 Black-and-white Laser Printer



Impression de bureau à un prix abordable

La Phaser 3160 est une imprimante laser de bureau compacte à un prix abordable

- Vitesse d'impression au format A4 (8,5 x 11) : jusqu'à 24 ppm
- Impression haute qualité : jusqu'à 600 x 600 ppp (qualité d'image améliorée à 1200 x 1200) et prise en charge des émulations PCL5e/6
- Capacité papier de 250 feuilles
- Connexion USB 2.0 en standard avec Ethernet 10Base-T/100Base-TX sur la configuration N

Impresora de escritorio accesible

La Phaser 3160 es una impresora de escritorio accesible y que ahorra espacio

- Velocidad de impresión de hasta 24 ppm en tamaño carta (24 ppm en tamaño A4)
- Impresión de gran calidad de hasta 600 x 600 ppp (1200 x 1200 con la función de calidad de imagen mejorada) y compatible con las emulaciones de PCL5e/6
- Capacidad de 250 hojas
- Conectividad USB 2.0 estándar, con Ethernet 10/100Base-TX en la configuración N

Impressão da área de trabalho acessível

A Phaser 3160 é uma impressora a laser de mesa acessível e que ocupa pouco espaço

- Velocidade de impressão de 24 ppm em papel carta (24 ppm A4)
- Impressão de alta qualidade com até 600 x 600 dpi (qualidade de imagem aprimorada 1200 x 1200) e suporte para emulações PCL5e/6
- Capacidade para papel de 250 folhas
- Conectividade de USB 2.0 padrão, com configuração 10/100Base-TX Ethernet em N

Доступная настольная печать

Phaser 3160 — доступный по цене, компактный настольный лазерный принтер

- Скорость печати формата Letter до 24 стр/мин (формата А4 — 24 стр/мин)
- Высокое качество печати с разрешением до 600 x 600 точек на дюйм (1200 x 1200 в режиме повышенного качества) и поддержка эмуляции PCL5e/6
- Лоток для бумаги на 250 листов
- Стандартное подключение USB 2.0, с интерфейсом 10/100Base-TX Ethernet в конфигурации N

Affordable desktop printing

The Phaser 3160 is an affordable, space-saving desktop laser printer.

- Up to 24 ppm letter (24 ppm A4) printing speed
- High quality printing with up to 600 x 600 dpi (1200 x 1200 enhanced image quality) and support for PCL5e/6 emulations
- 250-sheet paper capacity
- Standard USB 2.0 connectivity, with 10/100Base-TX Ethernet on N configuration

s3160-121

Configuration Report

Configuration Report		Page 1
Model Name	: Phaser 3160	
Product Information		
Machine Serial Number	: UXA431502	
Installed Date	: YYYYMMDD	
Memory Size	: 64 MB	
Firmware Version		
Firmware Version	: V1.50.00.53 07-06-2009	
Engine Version	: 1.00.03	
PCL5E Version	: PCL5e 5.98 06-01-2009	
PCLXL Version	: PCL6 5.95 06-02-2009	
EPSON Version	: IBM/EPSON 5.20 02-03-2009	
SPL Version	: SPL 5.35 06-03-2009	
Network Information		
Network Version	: V4.01.01(P3160) 07-03-2009	
MAC Address	: 00:00:AA:C9:00:0C	
IP Address	: 169.254.86.155	
Subnet Mask	: 255.255.0.0	
Default Gateway	: 0.0.0.0	
IPv6 Config	: Route	
Link-local Addr	: FE80::200:AAFF:FEC9:C/64	
Stateful Addr	:	
Manual Addr	:	
Current Ethernet Speed	: Auto	
Toner Information		
Toner Remaining	: 95 % (P12.54)	
Page Count	: 20	
Capacity	: 1.0 K	
Serial-No	: CRUM-INIT_TONER	

s3160-119

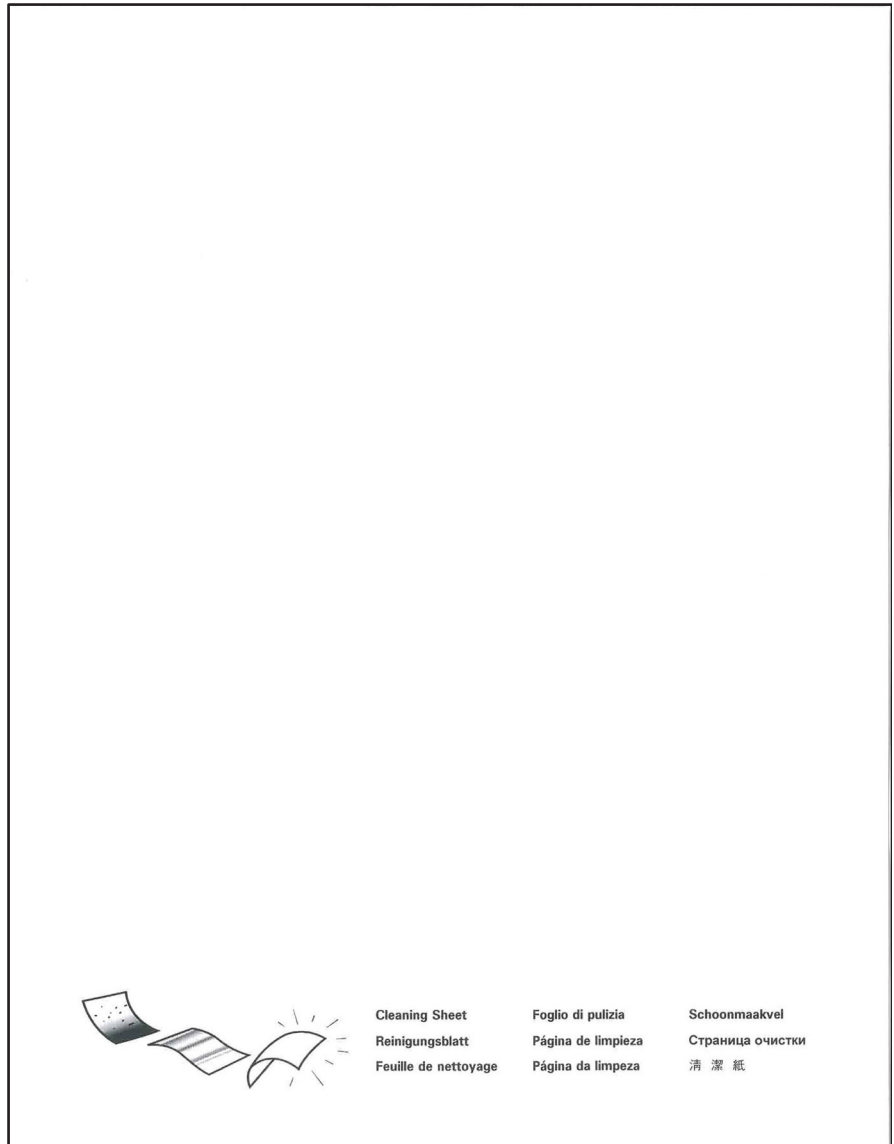
Supplies Information Report/Error Information Report

Supplies Information Report		Page 1
Model Name	: Phaser 3160	
General Information		
Total Page Count	: 16	
Toner Information		
Toner Remaining	: 95 %	
Equivalent Pages printed	: 55 (pages)	
Average Area Coverage	: 11.63%	
Dot Counts	: 80275000	
Page Counts	: 23	
Main Motor on time	: 156 sec, 99%(Life Remaining)	
Clear Toner	: 0	
Replaced Toner Counts	: 0	
Supplier ID	: PT252INI	
Capacity	: 1.0 K	
Supplier	: SAMSUNG(INIT)	
Serial-No	: CRUM-INIT_TONER	
Product Date	: YYYYMMDD	
Toner Event Log		
01	: [INIT_TONER]	[Normal/ / /] [15/0/0/0/0]
02	: [09060238582]	[Normal/ / /] [1/0/0/0/0]
03	: []	[/ / / /] [0/0/0/0/0]
04	: []	[/ / / /] [0/0/0/0/0]
05	: []	[/ / / /] [0/0/0/0/0]
06	: []	[/ / / /] [0/0/0/0/0]
07	: []	[/ / / /] [0/0/0/0/0]
08	: []	[/ / / /] [0/0/0/0/0]
09	: []	[/ / / /] [0/0/0/0/0]
10	: []	[/ / / /] [0/0/0/0/0]
Other Consumables Life		
Fuser Life	: 16/50000 Page	
Transfer Roller Life	: 16/50000 Page	
Pick-up Roller Life	: 16/50000 Page	
Cassette Holder Pad Life	: 16/50000 Page	

s3160-122

Error Information Report		Page 1
Model Name : P3160N		
Event Log Info	Toner Event Log	
01:[0x3006] OPEN_FUSER_ERROR (137)	01:[09080355315][Normal/ / /] [87/0/0/0/0]	
02:	02:[09040941394][Normal/ / /] [16/0/0/0/0]	
03:	03:[INIT_TONER][Normal/ / /] [101/0/0/0/0]	
04:	04:[09060238582][Normal/ / /] [11/0/0/0/0]	
05:	05:[/ / /] [0/0/0/0/0]	
06:	06:[/ / /] [0/0/0/0/0]	
07:	07:[/ / /] [0/0/0/0/0]	
08:	08:[/ / /] [0/0/0/0/0]	
09:	09:[/ / /] [0/0/0/0/0]	
10:	10:[/ / /] [0/0/0/0/0]	
11:		
12:		
13:		
14:		
15:		
16:		
17:		
18:		
19:		
20:		
Error Counts	Fuser Event Log Counts	
PAPER_JAM0 : 0	Fuser Event 45 : 0	
PAPER_JAM1 : 0	Fuser Event 35 : 0	
PAPER_JAM2 : 0	Fuser Event 25 : 0	
DUPLEX_JAM0 : 0	Fuser Event 15 : 0	
DUPLEX_JAM1 : 0		
DUPLEX_JAM2 : 0		
FUSER_EMPTY : 0		
FUSER_DOOR_ERROR : 0		
DIAGNOSE_LOW_HEAT : 0		
DIAGNOSE_OVER_HEAT : 0		
LSU_DIAGNOSE_LREADY : 0		
LSU_DIAGNOSE_HSYNC : 0		
OVER_HEAT_ERROR : 0		
LOW_HEAT_ERROR : 0		
OPEN_FUSER_ERROR : 1		
BLACK_LSU_LOCK_ERROR : 0		
BLACK_HSYNC_ERROR : 0		
DEV_MOTOR_LOCK_ERROR : 0		
FUSER_FAN_LOCK_ERROR : 0		
ENGINE_ERROR : 0		

Cleaning Page



s3160-118

Servicing Instructions

The service checklist below is an overview of the path a service technician should take when servicing the printer and printer optional equipment.

Step 1: Identify the Problem

1. Verify the reported problem exists.
2. Print normal customer prints and the printer Demo page.
3. Make note of any print-quality problems in the test prints.
4. Make note of any mechanical or electrical abnormalities present.
5. Make note of any unusual noise or smell coming from the printer.
6. Is the Online LED on? If not check that the power cable, Control Panel, and Power Supply are connected correctly.
7. Verify the AC input power supply is within proper specifications by measuring the voltage at the electric outlet while the printer is running.
8. Does the drive motor or other components initialize (listen for the motor and fan)? If not, check the for proper connections.

Step 2: Inspect and Clean the Printer

1. Turn the printer power Off.
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. Remove the Transfer Roller.
6. Inspect the printer interior and remove any debris such as paper clips, staples, pieces of paper, dust, or loose toner.
7. Do not use solvents or chemical cleaners to clean the printer interior.
8. Do not use any type of oil or lubricant on the printer parts.
9. Use only an approved toner vacuum.
10. Clean all rubber rollers with a lint-free cloth, dampened slightly with cold water and mild detergent.
11. Inspect the interior of the printer for damaged wires, loose connections, toner leakage, and damaged or obviously worn parts.
12. If the Print Cartridge appears damaged, replace with a new one.

Step 3: Check the Installation Environment

1. Ensure the installation surface is flat, level, and free from vibration. If necessary move the printer.
2. Ensure that the temperature and humidity of the surroundings are within specification. If necessary, move the printer.
3. Ensure that the printer is positioned away from any air conditioning or other heating or cooling equipment. Also ensure that it is not positioned in a direct draft from any air conditioning, fan, or open window. If necessary move the printer.
4. Ensure the printer is not positioned in direct sunlight. If it is unavoidable, use a curtain to shade the printer.

5. Ensure the printer is installed in a clean dust free environment. Move the printer to a clean area if necessary.
6. Some industrial or cleaning processes give off fumes which can affect the printer. Move the printer away from this type of air pollution.

Step 4: Find the Cause of the Problem

1. Use the troubleshooting procedures to find the cause of the problem.
2. Use the Wiring Diagrams and Plug/Jack Locator to locate test points.
3. Take voltage readings as instructed in the appropriate troubleshooting procedure.

Step 5: Correct the Problem

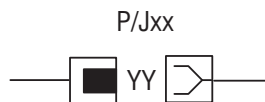
1. Use the Parts List to locate a part number.
2. Use the Disassembly procedures to replace the part.

Step 6: Final Checkout

1. Test the printer to be sure you have corrected the initial problem and there are no additional problems present.

Measurement Techniques

1. Unless indicated otherwise, the instruction “switch On printer power” means for you to switch On printer power and let the printer proceed through Power On Self Test (POST) to a ‘Ready’ condition.
2. Conventions used in this manual to represent connectors



Plug and Jack

3. When instructed to take voltage, continuity, or resistance readings on a 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.
4. When you are instructed to take resistance readings between “P/J 232 <=> P/J 210” (without specified pin numbers), check all pins. Refer to the section “Wiring” for the location of all wiring harnesses and pins.
5. 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.
6. Before measuring voltages make sure the printer is switched On, the consumables and the paper trays are in place, and the interlock switch is actuated, unless a troubleshooting procedure instructs otherwise.
7. 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.
8. 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.

9. Ensure that you are using a supported media size and type.
10. 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 the “Wiring” section 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

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 1-16. The customer should use a quality laser printer paper. The printer may have trouble picking glossy or overly smooth paper.
2. Inspect the paper for bent, torn, or folded corners.
3. Check the paper path for obstructions or debris.
4. Ensure that the paper guides are set correctly.
5. Ensure that the media is a supported type for the tray. See “Media and Tray Specifications” on page 1-16, for the correct media types, sizes, and weights for each tray.
6. Load a fresh ream of paper in the tray.

Mis-Pick

1. Check that the correct type of media for the tray is being used and the paper guides are set correctly. See “Media and Tray Specifications” on page 1-16.
2. Remove, fan, and reload the media. Ensure that the tray has not been over filled.
3. Try loading paper from a fresh ream, fan the paper, and then insert into the tray or flip existing paper over.
4. Clean the Feed Rollers with a clean, dry, lint-free wipe. If necessary, replace the Feed Rollers (page 8-38).

Inoperable Printer Troubleshooting

The Printer is Not Responding to the Print Command

The printer is On, but does not respond after a print command is sent.

1. Print the Print Demo page (page 4-2). If the page prints correctly the problem is not in the printer.
2. Check that the computer and the printer are properly connected.
 - a. Reconnect the cable(s) if not properly connected.
 - b. Replace the cable(s) if damaged.
3. The printer does not print from Windows environment.
 - a. Check that the printer driver is set up correctly.
 - b. If the printer driver is properly set up, try printing a test page from the driver properties.
 - c. Check on which program is not printing.
 - d. If no applications can print, open Notepad and send a print job using Notepad.
 - e. If the problem is within a single application, adjust the printing properties within that program.
 - f. If changing the properties in the application print dialog box does not solve the problem, uninstall and reinstall new printer driver.

Power Supply Troubleshooting



Warning

Hazardous voltage is connected to the wall outlet.

AC Power Troubleshooting

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
<ul style="list-style-type: none"> ■ Power Supply, PL1.0.1 	<ul style="list-style-type: none"> ■ Map 4 - 110V and 220V Power Supply Boards

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the voltage at the AC wall outlet. Is there approximately 110 VAC (or 220 VAC if the printer is a 220 V configuration) at the AC wall outlet?	Go to step 2.	Notify the customer of improper AC output from the outlet.
2	Check the power cord for defects or loose connection. Is the Power Cord loose or defective?	Replace or reconnect the Power Cord.	Replace the Power Supply (page 8-54).

No Power

When the printer is turned On, no activity is detected.



Warning

Hazardous voltage is connected to the Power Supply.

Initial Actions

- Cycle printer power.
- If problem persists, refer to the following procedure.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> ■ Power Cord, PL1.0.13 ■ Power Supply, PL1.0.1 ■ Controller Board, PL1.0.2 	<ul style="list-style-type: none"> ■ Map 1 - Controller Board (3140) ■ Map 2 - Controller Board (3155) ■ Map 3 - Controller Board (3160B/3160N) ■ 3140 Power Supply Wiring ■ 3155 Power Supply Wiring ■ 3160 Power Supply Wiring

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the connection to the wall outlet. Is the printer connected to the outlet?	Go to step 2.	Connect to the wall outlet.
2	Check the condition of the Power Cord. Is the Power Cord damaged?	Replace the Power Cord.	Go to step 3.
3	Check the wall outlet. Is the proper supply voltage present?	Go to step 4.	Use a different outlet.
4	Check the output supplies on the Power Supply. Check for +24 V at each of the following pins: CON2-5, 6, 9, 10, and 12. Check for +5 V at CON2-8, 15, and 16. Is the correct voltage present at each pin?	Go to step 5.	Replace the Power Supply (page 8-54).

Troubleshooting Procedure Table (Continued)

Step	Actions and Questions	Yes	No
5	Check and reseal the wiring harness between the Power Supply CON2 and Controller Board CN5 (CN7 on model 3160). Is the wiring harness damaged?	Repair the harness. If the problem persists, go to step 6	Go to step 6.
6	Check and reseal the wiring harness between Control Panel CN1 and Controller Board CN8 (CN9 on model 3160). Is the wiring harness damaged?	Repair the harness. If the problem persists, go to step 7.	Replace the Controller Board (page 8-51). If the problem persists, go to step 7.
7	Replace the Control Panel (page 8-51).	Complete.	

USB Port Testing

In situations where USB communications fail, test the printer's USB Port directly using a USB cable and a second, known good, USB Port. A successful test using this procedure eliminates the printer's USB Port as the root cause.

- Check that the driver software is properly installed on the host.
- Make sure the USB cable is connected at both ends and is serviceable.

Note

The testing procedure was developed for Windows XP. If a different operating system is in use, adapt the steps as necessary.

USB Port Verification

1. Check that the printer is Ready
2. Insert the driver software into the computer.
3. If the installer auto runs, exit the installer window.
4. Connect a USB cable between the printer and computer's USB Ports. The computer automatically detects the new hardware and creates a driver.

Note

If the driver is not installed on the computer, locate the driver files on the CD-ROM. Once the files are located, the computer installs the driver and automatically configures it to match the printer's feature set.

5. Open the Printers and Faxes window on the computer by clicking Start, Settings, and then Printers and Faxes.
6. Locate the correct entry for the printer being tested and display its properties from the File menu pull-down.
7. Open the General tab and click the Print Test Page button to generate the test print. If the test page prints, the USB port is functioning normally.

Network Configuration Errors

Note

This section on network errors applies to the 3160N model only.

Send Error

Failed to access, authenticate, or connect to the SMTP/SMB/FTP server.

Initial Actions

- Check network and data configuration settings.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Controller Board, PL1.0.2	■ Map 3 - Controller Board (3160B/3160N)

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the network connection to the printer using the ping command. Does the printer respond?	Go to step 4.	Go to step 2.
2	Check the LAN connections. Is the connection secure?	Go to step 3.	Reseat the LAN connector.
3	Print a Configuration Report (page 4-2). Are the Network Information settings correct?	Go to step 4.	Correct printer settings.
4	Check server configuration. Is the server configured to accept incoming data?	Go to step 5.	Correct server settings.
5	Cycle printer power. Does the error persist?	Replace the Controller Board (page 8-51).	Complete.

Operating System and Application Problems

Common Windows Problems

The following messages may appear under various conditions.

Condition	Solutions
<ul style="list-style-type: none"> ■ General Protection Fault ■ Exception OE ■ Spool32 ■ Illegal Operation 	Close all other applications, reboot Windows, and try printing again.
<ul style="list-style-type: none"> ■ Fail to print ■ A printer time-out error occurred 	Wait until the printer finishes the print job. If the message appears in Standby mode or after printing has been completed, check the cable connection and/or whether an error has occurred.

The Printer is Not Responding to the Print Command

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

1. Print the Printing Demo page (page 4-2). If the page prints correctly the problem is not in the printer.
2. Check that the computer and the printer are properly connected.
 - a. Reconnect the cable(s) if not properly connected.
 - b. Replace the cable(s) if damaged.
3. Check that the printer driver is set up correctly, the correct port is selected, and the printer port settings are correct.
4. If the printer driver is properly set up, try printing a test page from the driver properties.
5. If the problem is within a single application, adjust the printing properties within that program.

If changing the properties in the application print dialog box does not solve the problem, uninstall and reinstall the printer driver.

Note

Check the Xerox web site for a newer version of the print driver before reinstalling.

SPOOL Error

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

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

How to Delete the Data in the SPOOL Manager

In the SPOOL Manager, the installed drivers and the list of documents waiting to be printed are shown. Select the document to be deleted and click Delete in the menu.

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

Common Macintosh Problems

The following messages may appear under various conditions.

Condition	Possible Cause	Solutions
The printer does not print a PDF file correctly. Some parts of graphics, text, or illustrations are missing.	Incompatibility between the PDF file and Acrobat products.	Printing the PDF file as an image may solve this problem: From the Acrobat printing options, turn On Print As Image. NOTE It takes longer to print when using a PDF file as an image.
The document has printed, but the print job has not disappeared from the spooler in Mac OS 10.3.2.		Update your Mac OS to OS 10.3.3 or higher.
Some letters do not display normally during cover sheet printing.	Mac OS cannot find the font during cover page printing.	Only alphanumeric characters are allowed on the cover page.

Common Linux Problems

The following messages may appear under various conditions.

Condition	Solutions
The printer does not print.	<ul style="list-style-type: none"> ■ Check if the printer driver is installed on the computer. ■ Open Unified Driver Configurator and switch to the Printers tab in the Printers Configuration window to check the list of available printers. ■ Make sure that the printer is displayed on the list. If not, add the printer. ■ Check if the printer is started. Open the Printers Configuration window and select your printer from the printers list. Check the description in the Selected printer pane. If the printer status contains the “stopped” string, press the Stop button. Normal operation should restore. The “stopped” status can be activated when some problems occur in printing. ■ Check if your application has a special print option such as “=oras.” If “-oraw” is specified in the command line parameter, then remove it to print properly. For Gimp front-end, select “print” --> “Setup printer” and edit command line parameter in the command item.
When printing a document over the network in SuSE 9.2, the printer does not print.	The CUPS (Common Unix Printing System) version distributed with SuSE Linux 9.2 (cups-1.1.21) has a problem with IPP (Internet Printing Protocol) printing. Use the socket printing instead of IPP or install the later version of CUPS (cups-1.1.22 or higher).

Common PostScript Problems

The following errors are PostScript language specific that may occur when multiple printer languages are being used.

Note

To receive a printed or screen displayed message when PostScript errors occur, open the Print Options window and click the appropriate selection next to the PostScript errors section.

Condition	Possible Cause	Solutions
PostScript file does not print.	The PostScript driver may not be installed correctly.	<ul style="list-style-type: none"> ■ Print a Configuration page and verify that the PostScript version is available for printing. ■ Install the PostScript driver.
“Limit Check Error” message is displayed.	The print job was too complex.	Change the complexity of the print job.
A PostScript error page prints.	Print job may not be PostScript.	Make sure that the print job is a PostScript job. Check whether the software application expected a setup or PostScript header file to be sent to the printer.
When printing a document using a Macintosh with Acrobat Reader 6.0 or higher, colors print incorrectly.	The resolution setting in the printer driver may not be matched with that in Acrobat Reader.	Make sure that the resolution setting in your printer driver matches information in Acrobat Reader.

Print-Quality Troubleshooting

In this chapter...

- Print-Quality Troubleshooting Overview
- Troubleshooting Print-Quality Checklist
- Print-Quality Troubleshooting Procedures
- Print-Quality Specifications

Chapter 5

Print-Quality Troubleshooting 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, eliminate as many variables as possible. The first step is to generate a print using the Printing Demo page embedded in the printer on laser paper from the approved media list. Refer to “Media and Tray Specifications” on page 1-16 for supported and specialty media that have been tested and approved for use in the Phaser 3140/3155/3160. Use paper from a fresh ream that is acclimated to room temperature and humidity.

If the print-quality defect is still present when printing on approved media from an unopened ream of paper, then investigate software applications and environmental conditions.

Check the temperature and humidity under which the printer is operating. Compare this to the “Environmental Specifications” on page 1-13. Extreme temperature and humidity can adversely affect the xerographic and fusing characteristics of the printer.

When analyzing a print-quality defect, determine if the defect is repeating or random occurrence. Continuous defects in the process direction, such as Voids and Lines, are the most difficult to diagnose. Inspect the visible surfaces of all rollers for obvious defect. If no defects are found, replace the Print Cartridge, Transfer Roller, Fuser, and Laser Unit one at a time until the defect is eliminated.

Defects Associated with Specific Components

Some print-quality problems are associated with specific assemblies; the most common problems and the associated assemblies follow.

Laser Unit

- Black Print (page 5-11)
- Vertical White Lines (page 5-19)
- Vertical Lines are Curved (page 5-20)

Fuser

- Ghosting (3) (page 5-17)
- Ghosting (4) (page 5-18)
- Stains on the Back of the Page (page 5-27)
- Incomplete Fusing (page 5-30)

Transfer Roller

- Uneven Density (page 5-13)
- Background Contamination (page 5-14)
- Ghosting (1) (page 5-15)
- Vertical White Lines (page 5-19)
- Vertical Black Line or Band (page 5-21)
- Black/White Spot (page 5-23)
- Skew (page 5-24)
- Stains on the Front of the Page (page 5-26)
- Stains on the Back of the Page (page 5-27)

Print Cartridge

- Light or Undertone Print (page 5-10)
- Uneven Density (page 5-13)
- Background Contamination (page 5-14)
- Ghosting (1) (page 5-15)
- Ghosting (3) (page 5-17)
- Vertical White Lines (page 5-19)
- Vertical Black Line or Band (page 5-21)
- Horizontal Black Line or Band (page 5-22)
- Black/White Spot (page 5-23)
- Stains on the Front of the Page (page 5-26)
- Blank Page (1) (page 5-28)
- Blank Page (2) (page 5-29)
- Incomplete Fusing (page 5-30)

Power Supply Board

- Light or Undertone Print (page 5-10)
- Black Print (page 5-11)
- Background Contamination (page 5-14)
- Ghosting (1) (page 5-15)
- Ghosting (3) (page 5-17)
- Incomplete Fusing (page 5-30)

Controller Board

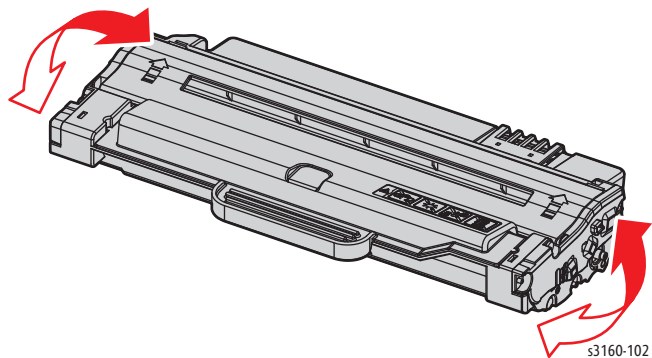
- Black Print (page 5-11)
- Ghosting (1) (page 5-15)
- Vertical Lines are Curved (page 5-20)
- Blank Page (2) (page 5-29)

Troubleshooting Print-Quality Checklist

As a first step to troubleshooting print quality problems, perform these checks to isolate or correct the reported problem.

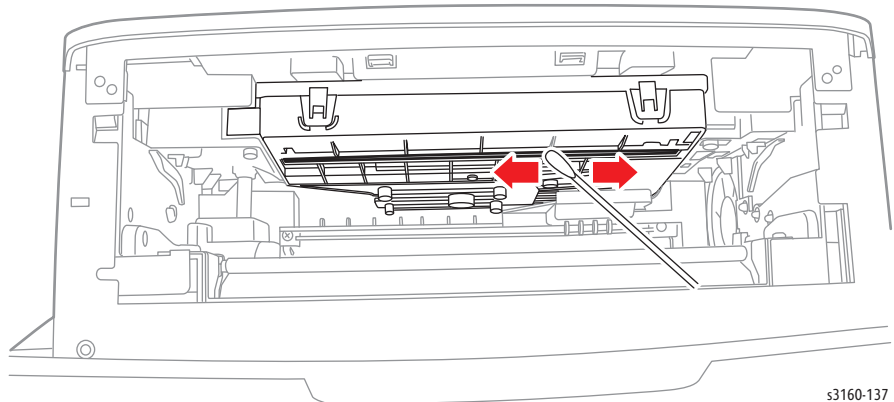
Check the Print Cartridge

Check the amount of toner remaining. Low toner causes print-quality problems such as fading, streaking, white lines, or dropouts. If toner is low, remove the Print Cartridge and gently agitate the cartridge from side-to-side to distribute toner and temporarily extend cartridge life. Replace the cartridge if the life count is at or near end of life.



Check the Laser Unit

Paper, toner, and dust particles can accumulate inside the printer and cause print-quality problems such as smearing or toner specks. One area where accumulations of dust and debris often occur is the Laser Unit lens. Remove the Print Cartridge, and clean the laser lens using a dry cotton swab or lint-free cloth.



Check the Transfer Roller

Surface damage or the accumulation of dust and debris on the Transfer Roller can also cause print quality defects. Remove and inspect the Transfer Roller (page 8-8). Replace the roller if excessively worn or damaged.



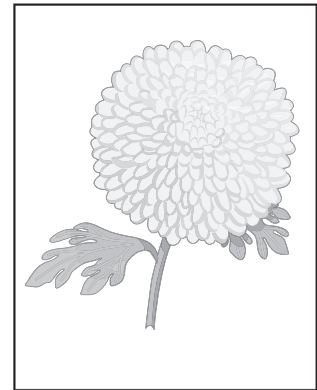
Caution

Do not touch the surface of the Transfer Roller. Clean the Transfer Roller surface with a dry cotton swab or lint-free cloth.

Check the Image

Examine the print to determine the defect type. Match the defect to one or more of the following examples. Use the accompanying procedure to isolate or resolve the problem. If the defect persists, go to the troubleshooting procedure for the observed defect.

1. Print is too light.
 - a. The toner may be too low. Check the amount of toner and change the Print Cartridge if necessary.
 - b. If you are printing on a rough print surface, change the media type settings.
 - c. Check that the correct type of media is used.
 - d. The Print Cartridge may need to be replaced. Replace the Print Cartridge.



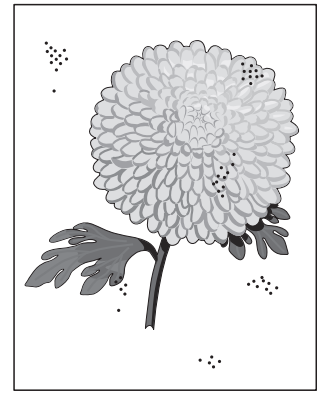
Light or Undertone Print

2. Toner smears or print comes off the page.
 - a. If you are printing on thick or uneven media, change the media type settings to a heavier type.
 - b. Check that the media meets specifications (refer to “Media and Tray Specifications” on page 1-16).



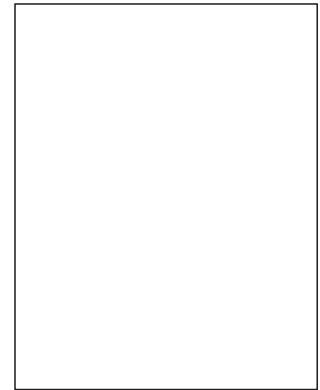
Smudges or Smears

3. Toner spots appear on the page and printing is blurred.
 - a. Print the Cleaning Page several times (page 4-2).
 - b. Check the Print Cartridge to make sure that it is installed correctly.
 - c. Replace the Print Cartridge.



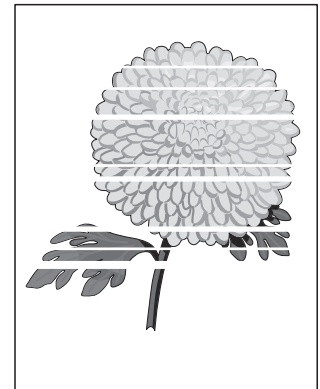
Random Spots

4. Entire page is white.
 - a. Ensure the packaging material is removed from the Print Cartridge.
 - b. Check the Print Cartridge to make sure that it is installed correctly.
 - c. Toner may be low. Change the Print Cartridge.
 - d. Check the Laser windows for obstructions.



Blank Print

5. Streaks appear on the page.
 - a. Toner may be low. Change the Print Cartridge.



Horizontal Band, Void, or Streaks

7. Part of the page prints.
 - a. Check the Print Cartridge to make sure it is installed correctly.



Partial Band

8. The job prints, but the top and side margins are incorrect.
 - a. Ensure the media size settings match the loaded media.
 - b. Ensure the margins are set correctly in your software application and evaluate the print.

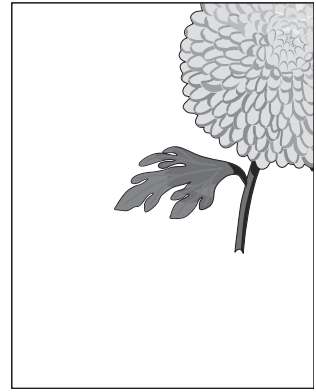
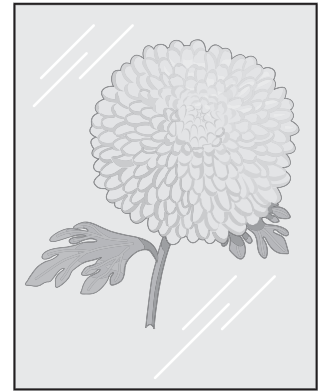


Image Not Centered

9. Printing on both ends of the transparencies is faded.

This occurs when the printer is operating at a location where relative humidity reaches 85° or more.

- a. Adjust the humidity or relocate the printer to an appropriate environment.



Light Print on Transparency

Print-Quality Troubleshooting Procedures

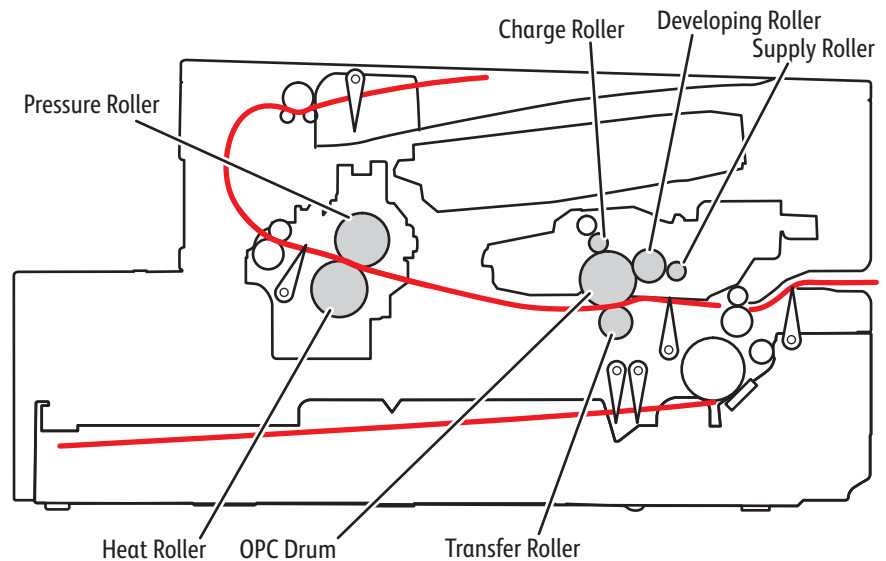
Print-Quality Defect Definitions

The following table lists print-quality defects, their definition, and the page where each corrective procedure appears.

Defect	Definition	Go to
Repeating Defects	A pattern of horizontal lines or spots.	page 5-9
Printing Begins at Wrong Position	Printing begins at wrong position on the paper.	page 5-10
Light or Undertone Print	The overall image density is too light.	page 5-10
Black Print	The entire image area is black.	page 5-11
Uneven Density	Density is uneven between left and right sides.	page 5-13
Background Contamination	A light or gray contamination appears on all or most of the page.	page 5-14
Ghosting (1)	There is ghosting at 75.3 mm intervals on the entire print.	page 5-15
Ghosting (2)	Ghosting appears at 75.3 mm intervals when printing on card stock or transparencies from the manual feeder.	page 5-16
Ghosting (3)	White ghosting appears at 75.3 mm intervals.	page 5-17
Ghosting (4)	There is ghosting at 75.3 mm intervals. Fuser operating temperature is too high.	page 5-18
Vertical White Lines	There is faded or white lines from the leading edge to the trailing edge.	page 5-19
Vertical Lines are Curved	The vertical components of the image are curved.	page 5-20
Vertical Black Line or Band	There are faded or black lines from the leading edge to the trailing edge.	page 5-21
Horizontal Black Line or Band	There are black lines running parallel with the leading edge of the print.	page 5-22
Black or White Spots	The toner image is not completely fused to the paper. The image easily rubs off.	page 5-23
Skew	The printed image is not parallel with the media.	page 5-24
Stains on the Front of the Page	The background of the front of the page is stained.	page 5-26
Stains on the Back of the Page	The back of the page is stained.	page 5-27
Blank Page (1)	The entire image area is blank.	page 5-28
Blank Page (2)	The entire print is blank. One or several blank pages are printed.	page 5-29

Repeating Defects

When horizontal lines or spots occur repetitively, it could indicate a roller defect. Measure the interval of the print defect and check the measurement against the roller diameters in the table. The interval does not necessarily match the circumference of the roller.



s3160-141

Roller Dimensions

Roller	Circumference	Abnormal Image	Part	Parts List No.
OPC Drum	75.3 mm (2.96 in)	White spots, Black spots	Print Cartridge	PL1.0.12
Charge Roller	37.5 mm (1.48 in)	Ghosting, Black spot and Periodic band	Print Cartridge	PL1.0.12
Supply Roller	49 mm (1.93 in)	Periodic bands of different density	Print Cartridge	PL1.0.12
Developing Roller	35 mm (1.38 in)	White spots, Black bands	Print Cartridge	PL1.0.12
Transfer Roller		Ghosting or poor fusing	Transfer Roller	PL1.0.8
Pressure Roller		Background	Fuser	PL9.0.34
Heat Roller		Black spot and image ghost	Fuser	PL9.0.36

Printing Begins at Wrong Position

Printing begins at wrong position on the paper.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Replace the Feed Sensor Actuator (page 8-40).	Complete.	

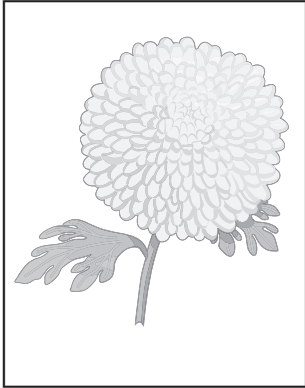
Light or Undertone Print

The overall image density is too light. The Print Cartridge is at or near end of life, Toner Save mode is On, or the high-voltage contacts between the Power Supply and Print Cartridge are damaged or dirty.

Initial Actions

- Check the Print Cartridge life count.
- Agitate the Print Cartridge to redistribute the toner.
- Set Toner Save mode to Off.

Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none">■ Power Supply Board, PL1.0.1■ Print Cartridge, PL1.0.12	

Light or Undertone Print

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridge. Is the Print Cartridge empty?	Replace the Print Cartridge (page 8-6).	Go to step 2.
2	Check Toner Save mode. Is Toner Save mode enabled?	Go to step 3.	Disable Toner Save mode.
3	Check the ambient temperature. Is the ambient temperature below 10° C?	Relocate the printer.	Go to step 4.
4	Check the interior for toner spills. Is there toner spilled inside?	Clean the inside of the printer.	Go to step 5.
5	Check the Power Supply Board installation. Reseat the connectors if necessary. Does the image quality improve?	Complete.	Replace the Power Supply Board (page 8-54).


Black Print

The entire image is black. Charge voltage from the Power Supply Board to the Print Cartridge is not available due to damaged or dirty contacts.

Initial Actions

- Check the connection between the Controller Board and Power Supply Board.
- Check the connection between the Power Supply Board and Print Cartridge.

Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> ■ Controller Board, PL1.0.2 ■ Power Supply Board, PL1.0.1 ■ Laser Unit, PL6.0.79 	 <p>Black Print</p>

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the connectors between the Controller Board and Power Supply Board. Are the connectors secure?	Go to step 3.	Reconnect the connectors. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Replace the Power Supply Board (page 8-54). Does the error still occur?	Go to step 4.	Complete.
4	Does the error still occur?	Replace the Laser Unit (page 8-30). Go to step 5.	Complete.
5	Does the error still occur?	Replace the Controller Board (page 8-51).	Complete.

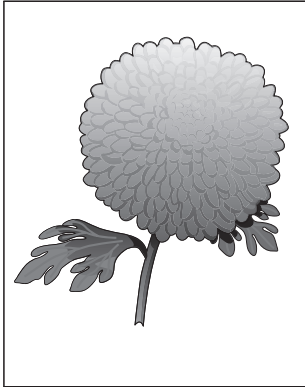
Uneven Density

Print density is uneven between the left and right sides. Possible causes include; uneven spring force at the ends of the Transfer Roller, the springs are damaged, the Transfer Roller is improperly installed, or the Transfer Roller bushing or holder is damaged.

Initial Actions

- Check the paper transfer path.
- Ensure there is no debris in the transfer path.

Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> ■ Transfer Roller, PL1.0.8 ■ Print Cartridge, PL1.0.12 	 <p>Color Uneven or Wrong (Process Direction)</p>

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Transfer Roller installation. Reseat the Transfer Roller if necessary (page 8-8). Does the image quality improve?	Complete.	Go to step 2.
2	Check the Print Cartridge. Is the Print Cartridge empty or damaged?	Replace the Print Cartridge (page 8-6).	Complete.


Background Contamination

There is toner contamination on all or most of the page. The contamination appears as a very light gray dusting. The Print Cartridge is designed to print 2,000 sheets at 5 % coverage. If prints typically are below 5 % coverage, background contamination can occur.

Initial Actions

- Check the paper transfer path.
- Ensure there is no debris in the transfer path.

Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> ■ Power Supply Board, PL1.0.1 ■ Transfer Roller, PL1.0.8 ■ Print Cartridge, PL1.1.12 	

Background Contamination

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the paper condition. Is the paper dry, a recommended type, and loaded in the correct position?	Go to step 2.	Replace the paper.
2	Print out the Supplies Information Report (page 4-2), and check usage patterns. Does the typical print have less than 5 % coverage?	Go to step 3.	Go to step 4.
3	Check the Print Cartridge. Is the Print Cartridge at or near end of life?	Replace the Print Cartridge (page 8-51).	Go to step 4.
4	Check the Transfer Roller movement. Does the Transfer Roller rotate smoothly?	Go to step 5.	Clean the Transfer Roller bushings.

Troubleshooting Procedure Table (Continued)

Step	Actions and Questions	Yes	No
5	Check the Power Supply Board installation. Reseat the connectors on the board if necessary. Does the image quality improve?	Complete.	Replace the Power Supply Board (page 8-54).

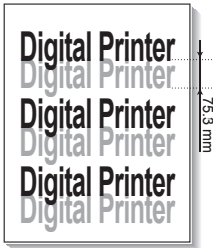
Ghosting (1)

There is ghosting at 75.3 mm intervals on the whole print. Charge voltage from the Power Supply Board to the Print Cartridge is not available due to damaged or dirty contacts or a failed Power Supply.

Initial Actions

- Check the connection between the Power Supply Board and Print Cartridge.
- Check the Print Cartridge and Transfer Roller life.

Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> ■ Power Supply Board, PL1.0.1 ■ Transfer Roller, PL1.0.8 ■ Print Cartridge, PL1.0.12 ■ Controller Board, PL1.0.2 	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridge life counter. Is the Print Cartridge near end of life or damaged?	Replace the Print Cartridge (page 8-6).	Go to step 2.
2	Check the Transfer Roller life counter. Is the Transfer Roller at or near end of life?	Replace the Transfer Roller (page 8-8).	Go to step 3.
3	Check the ambient temperature. Is the ambient temperature below 10° C?	Relocate the printer.	Go to step 4.

Troubleshooting Procedure Table (Continued)

Step	Actions and Questions	Yes	No
4	Clean the Power Supply Board contacts. Does the image quality improve?	Complete.	Go to step 5.
5	Replace the Power Supply Board (page 8-54). Does the image quality improve?	Complete.	Go to step 6.
6	Check the Controller Board installation. Reseat the Controller Board connectors. Does the image quality improve?	Complete.	Replace the Controller Board (page 8-51).

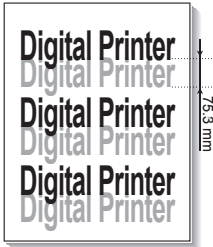
Ghosting (2)

There is ghosting at 75.3 mm intervals when printing on card stock or transparencies using the manual feeder. When printing on thicker media or transparencies, a higher transfer voltage is required. Setting the Paper Type to Thick provides a higher voltage level to the Print Cartridge.

Initial Actions

- Check that the Paper Type is set to Thick in the printer driver.
- Verify the paper is within the printer specifications (refer to “Media and Tray Specifications” on page 1-16).

Troubleshooting Reference Table

Applicable Parts	Example Print
	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check that Paper Type is set to Thick in the printer driver. Is the driver set to Paper Type Thick?	Clean the Power Supply Board contacts. If problem persists, go to Ghosting (1).	Set Paper Type to Thick.


Ghosting (3)

There is white ghosting at 75.3 mm intervals.

Initial Actions

- Verify the paper is within the printer specifications (refer to “Media and Tray Specifications” on page 1-16).

Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> ■ Print Cartridge, PL1.0.12 ■ Power Supply, PL1.0.1 	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print the Supplies Information Report (page 4-2), and check if the Print Cartridge is at end of life. Is the Print Cartridge at end of life?	Replace the Print Cartridge (page 8-6). If the problem persists, go to step 2.	Go to step 2.
2	Replace the Power Supply Board (page 8-54).	Complete.	


Ghosting (4)

There is ghosting at 75.3mm intervals. Fuser operating temperature is too high.

Initial Actions

- Ensure there is no debris in the Fuser.
- Verify the paper is within the printer specifications (refer to “Media and Tray Specifications” on page 1-16).

Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> ■ Fuser, PL9.0 	



Warning

Allow the Fuser to cool before starting the procedure.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Remove and disassemble the Fuser (page 8-11). Remove contaminated toner particles on the roller, and clean any foreign matter between the Thermistor and Heat Roller. NOTE If the Heat Roller is deformed, replace it (page 8-17). Does the problem persist?	Replace the Fuser (page 8-11).	Complete.


Vertical White Lines

There are faded or completely non-printed lines along the page in the process direction. Possible causes include dust or debris blocking the path between the Laser Unit and Print Cartridge, or a build up of debris on the OPC drum cleaning blade.

Initial Actions

- Clean the Laser Unit window.
- Ensure there is no dust or debris on the Print Cartridge or Fuser components.

Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> ■ Print Cartridge, PL1.0.12 ■ Transfer Roller, PL1.0.8 ■ Laser Unit, PL6.0.79 	 <p style="text-align: center;">Vertical Blank Lines</p>

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridge life usage. Is the Print Cartridge empty?	Replace the Print Cartridge (page 8-6).	Go to step 2.
2	Check the Laser Unit window. Is there contamination on the Laser Unit window?	Clean the Laser Unit window.	Go to step 3.
3	Check the Print Cartridge for debris. Is there any debris on the OPC drum?	Clean the drum.	Go to step 4.
4	Check the OPC Drum on the Print Cartridge for damage. Is the OPC Drum damaged?	Replace the Print Cartridge (page 8-6).	Go to step 5.

Troubleshooting Procedure Table (Continued)

Step	Actions and Questions	Yes	No
5	Check the Transfer Roller surface for damage. Is the Transfer Roller surface damaged?	Replace the Transfer Roller (page 8-8). If the problem persists, go to step 6.	Go to step 6.
6	Replace the Fuser (page 8-11). Does the problem persist?	Replace the Laser Unit (page 8-30).	Complete.

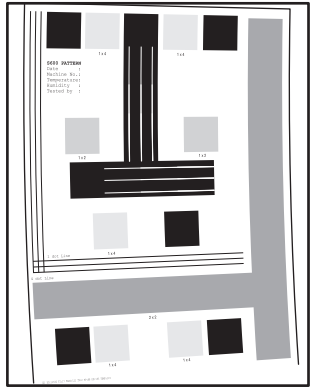
Vertical Lines are Curved

When printing, vertical lines are not straight.

Initial Actions

- Cycle printer power.
- If the problem persists, refer to the following procedure.

Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> ■ Laser Unit, PL6.0.79 ■ Controller Board, PL1.0.2 	 <p style="text-align: center;">Vertical Lines Are Curved</p>

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Replace the Laser Unit Does the problem persists?	Go to step 2.	Complete.
2	Replace the Controller Board (page 8-51).	Complete.	

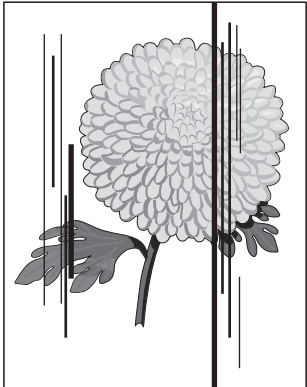
Vertical Black Line or Band

There are faded or black lines along the page in the direction of paper travel from the leading edge to the trailing edge. This often occurs when the developer roller or cleaning blade in the Print Cartridge is damaged.

Initial Actions

- Check the condition of the Print Cartridge.
- Check the surface of the Transfer Roller.

Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> ■ Transfer Roller, PL1.0.8 ■ Print Cartridge, PL1.0.12 	 <p style="text-align: center;">Vertical Stripes</p>

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridge for damage. Is the Print Cartridge damaged?	Replace the Print Cartridge (page 8-6).	Go to step 2.
2	Check the Transfer Roller surface for damage. Is the Transfer Roller surface damaged?	Replace the Transfer Roller (page 8-8).	Complete.

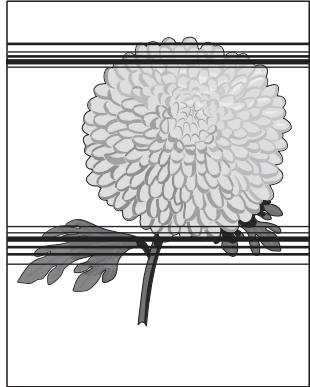
Horizontal Black Line or Band

There are black lines running parallel with the leading edge of the print, perpendicular to the direction of the paper travel. This can occur when the high voltage contacts to the Print Cartridge are damaged or dirty. Staining of Print Cartridge components can also cause horizontal banding.

Initial Actions

- Check the connection between the Power Supply and Print Cartridge.
- Check Print Cartridge life.

Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> ■ Print Cartridge, PL1.0.12 	 <p style="text-align: center;">Horizontal Stripes</p>

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Clean all Print Cartridge contacts. Does the image quality improve?	Complete.	Go to step 2.
2	Does the defect occur at a regular interval? <ul style="list-style-type: none"> ■ OPC Drum = 75.3mm ■ Charge roller = 37.5mm ■ Supply roller = 49mm ■ Develop roller = 35mm ■ Transfer roller = 46.2mm ■ Heat Roller = 63.9mm ■ Pressure Roller = 75.3mm 	Clean the right side OPC Drum gear.	Go to step 3.
3	Check the right side OPC Drum gear for damage. Is the Gear damaged?	Replace the Print Cartridge (page 8-6).	Complete.


Black/White Spot

Dark or blurry spots appear on the page. If black spots occur periodically, the rollers in the Print Cartridge may be contaminated with dust or debris. If faded areas or voids occur in a black image at intervals of 75.3 mm, or black spots occur elsewhere, check the OPC drum surface.

Initial Actions

- Check Print Cartridge life.
- Ensure there is no debris on the OPC drum of the Print Cartridge.

Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> ■ Transfer Roller, PL1.0.8 ■ Print Cartridge, PL1.0.12 	 <p style="text-align: center;">Random Spots</p>

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the paper path. Is there any debris or toner contamination on the paper path?	Clean the paper path.	Go to step 2.
2	Print the Print Cleaning Page several times (page 4-2). Does the error still occur?	Go to step 3.	Complete.
3	Check for spots at regular intervals. <ul style="list-style-type: none"> ■ Charge roller: 37.5 mm interval ■ OPC drum: 75.3 mm interval Is there repeating spots on the page?	Replace the Print Cartridge (page 8-6).	Go to step 4.
4	Check the Print Cartridge for damage. Is the Print Cartridge damaged?	Replace the Print Cartridge (page 8-6).	Go to step 5.

Troubleshooting Procedure Table (Continued)

Step	Actions and Questions	Yes	No
5	Print the Supplies Information Report (page 4-2) and check the Transfer Roller life. Is the Transfer Roller life expired?	Replace the Transfer Roller (page 8-8).	Complete.

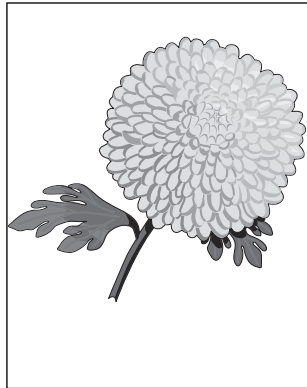
Skew

The printed image is not parallel with both sides of the paper.

Initial Actions

- Determine where the skew is introduced (Tray, Fuser)
- Check for debris in the media path or on the rollers.

Troubleshooting Reference Table

Applicable Notes	Example Print
<ul style="list-style-type: none"> ■ Transfer Roller, PL1.0.8 ■ Pick Up Roller, PL8.0 ■ Holder Pad, PL10.0.11 	

Skew 2

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check media condition. Is the media dry, recommended type, and loaded correctly?	Go to step 2.	Replace the media.
2	Open and close the Rear Cover. Does the error still occur?	Go to step 3.	Complete.
3	Check the Transfer Roller. Is the surface clean and smooth?	Go to step 4.	Clean or replace the Transfer Roller (page 8-8).

Troubleshooting Procedure Table (Continued)

Step	Action and Questions	Yes	No
4	Reseat the Print Cartridge. Does the error still occur?	Go to step 5.	Complete.
5	Reload the media in the Paper Tray and reseal the paper guides. Does the error still occur?	Go to step 6.	Complete.
6	Check the media path. Is there any debris in the media path?	Remove the debris.	Go to step 7.
7	Replace the Paper Tray Pick Up Roller (page 8-9). Does the error still occur?	Replace the Paper Tray Holder Pad (page 8-29).	Complete.


Stains on the Front of the Page

The background of the front of the page is stained. This could indicate toner leakage from the Print Cartridge or damage or debris on the Transfer Roller surface.

Initial Actions

- Check for toner leakage from the Print Cartridge.
- Print the Print Cleaning Page (page 4-2).

Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> ■ Print Cartridge, PL1.0.12 	 <p style="text-align: right;">Repeating Defects</p>

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Transfer Roller for contamination. Is the Transfer Roller surface dirty?	Print the Print Cleaning Page (page 4-2) several times.	Go to step 2.
2	Check the Print Cartridge for damage or leakage. Is the Print Cartridge damaged?	Replace the Print Cartridge (page 8-6).	Complete.


Stains on the Back of the Page

The background on the back of the page is stained at 47.0 mm intervals.

Initial Actions

- Print the Print Cleaning Page (page 4-2) several times.
- Check for damage or debris in the Fuser.

Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> ■ Transfer Roller, PL1.0.8 ■ Fuser, PL9.0.0 	 <p>Residual Image/Ghosting</p>



Warning

Allow the Fuser to cool before starting the procedure.

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print the Print Cleaning Page (page 4-2) several times. Does the error persist?	Go to step 2.	Complete.
2	Replace the Transfer Roller (page 8-8). If the Transfer Roller is contaminated severely, replace it. Does the error persist?	Go to Step 3.	Complete.
3	Disassemble the Fuser and clean the Heat Roller, Pressure Roller, and the area between the Heat Roller and Thermistor. Does the error persist?	Replace the Fuser (page 8-11).	Complete.

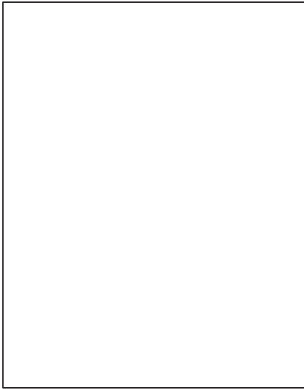
Blank Page (1)

The entire image area is blank. Charge voltage from the Power Supply Board to the Print Cartridge is not available due to damaged or dirty contacts.

Initial Actions

- Check the connection between the Power Supply Board and Print Cartridge.
- Ensure there is no debris on the transfer path.

Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> ■ Print Cartridge, PL1.0.12 	 <p style="text-align: center;">Blank Print</p>

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Clean the contacts on the Print Cartridge and inside of the printer. Does the error still occur?	Go to step 2.	Complete.
2	Replace Print Cartridge (page 8-6).	Complete.	

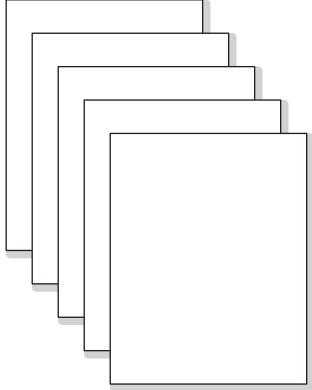
Blank Page (2)

The entire image area is blank. One or several blank pages are printed, or when the printer is turned On, several blank pages are printed. Charge voltage from the Power Supply Board to the Print Cartridge is not available due to damaged or dirty contacts, or the Pick Up Solenoid has failed.

Initial Actions

- Check the connections between the Controller Board, the Power Supply Board, and the Print Cartridge.
- Ensure there is no debris on the transfer path.

Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> ■ Controller Board, PL1.0.2 ■ Print Cartridge, PL1.0.12 ■ Pick Up Solenoid, PL6.0.18 	 <p style="text-align: center;">Multiple Blank Prints</p>

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Clean the contacts on the Print Cartridge and inside of the printer. Does the error still occur?	Replace the Print Cartridge. If the error persists, go to step 2.	Complete.
2	Check the Pick Up Solenoid operation. Does the solenoid operate correctly?	Go to Step 3.	Replace the Pick Up Solenoid (page 8-61).
3	Reseat the Controller Board connections. Does the error still occur?	Replace the Controller Board (page 8-51).	Complete.

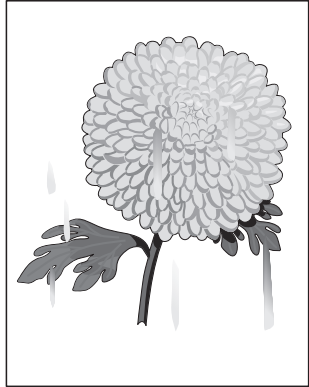
Incomplete Fusing

The toner is not completely fused to the paper and easily rubs or flakes off.

Initial Actions

- Verify the correct media type is set.

Troubleshooting Reference Table

Applicable Parts	Example Prints
<ul style="list-style-type: none"> ■ Fuser, PL9.0.0 ■ Print Cartridge, PL1.0.12 ■ Power Supply, PL1.0.1 	 <p style="text-align: center;">Smudges or Smears</p>

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print the Print Cleaning Page (page 4-2) several times. Does the problem persist?	Go to Step 2.	Complete.
2	Check the media. Is the media dry, a recommended type, and loaded correctly?	Go to step 3.	Replace the media.
3	Check the media settings. Does the loaded media type/size match the setting displayed in Printing Preferences?	Go to Step 4.	Adjust the setting to a heavier type.
4	Check the Print Cartridge. Is the Print Cartridge damaged?	Go to step 5.	Replace the Print Cartridge (page 8-6).
5	Reseat the Fuser. Does the problem persist?	Go to step 6.	Complete.
6	Replace the Fuser (page 8-11). Does the problem persist?	Replace the Power Supply (page 8-54).	Complete.

Print-Quality Specifications

Note

The printed image has 4 mm margins on all sides.

The Print-Quality specifications are as follows.

Skew

- Vertical Skew: ± 2.0 mm (Paper Tray) / 241.3 mm
- Horizontal Skew: ± 1.5 mm (Paper Tray) / 177.8 mm

Curl

For 20lb paper

- < 20 mm (0.79") Max, Environment: at NN/LL condition with 5 % page coverage
- < 30 mm (1.18") Max, Environment: at LL/HH condition with 5 % page coverage

For 24lb paper

- < 30 mm (1.18") Max, Environment: at all condition with 5 % page coverage

Measure the highest corner of 10 sheets of simplex output 5 minutes after output on flat surface. Load the paper as indicated on the wrapper. If there is no designation for proper paper up-side, test using both sides.

Registration

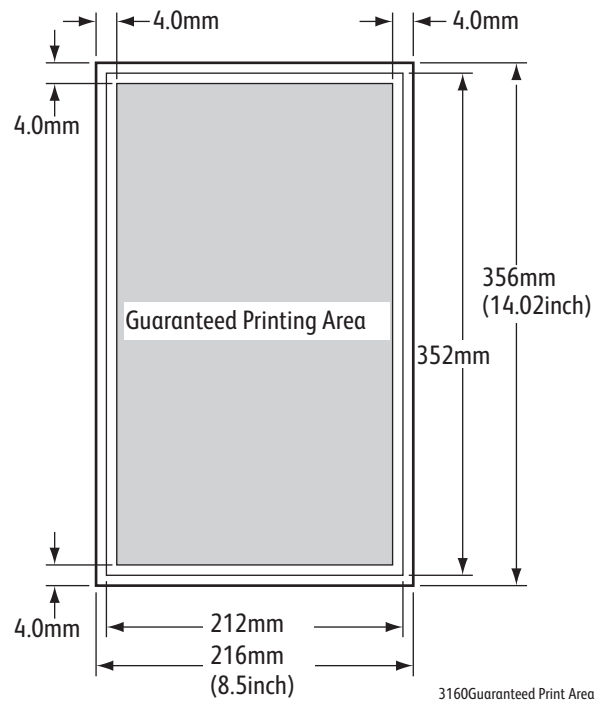
Left print position (scanning direction): ± 2.0 mm

Top print position (feeding direction): ± 2.0 mm

Noise

- Ready Mode: < 25 dB(A)
- Printing Mode:
 - Phaser 3140: < 50 dB(A)
 - Phaser 3155, Phaser 3160: < 51 dB(A)

Image Area



Environmental Condition

- Temperature: 10° C - 32° C (50° F - 90° F)
- Humidity: 20 to 80 % RH

Note

Defects may occur from condensation after 30 minutes if the printer is turned On in a critical environment such as 85% at 10° C (50° F).

Quality Paper

The print-quality is best when quality paper is fed from the tray. The print quality is evaluated on the maximum size of each standard paper.

- Black and White Quality: Xerox-brand 4200 paper

Paper Condition

Paper should be fresh and stored in the operating environment for 12 hours before use for printing.

Printer Condition

The specified print quality is guaranteed with the printer in specified normal environmental condition.

Adjustments and Calibrations

In this chapter...

- Adjustments

Chapter 6

Adjustments

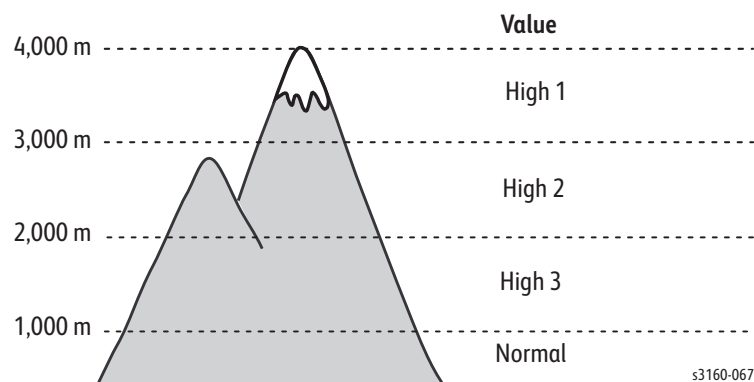
Altitude Specifications

Print quality is affected by atmospheric pressure, which varies by altitude. The following information contains instructions and specifications for adjusting altitude information for the Phaser 3140/3155/3160.

Note

Verify the Phaser 3140/3155/3160 printer driver has been installed.

Prior to performing the altitude adjustment procedure, determine the altitude location of the printer and the appropriate value to be adjusted for the printer.



Making Altitude Adjustments

For Phaser 3160

1. From the **Start** menu, select **Programs > Xerox Phaser 3160 > Printer Settings Utility**.
2. On the left column, select **Setting**.
3. On the right column, select **Altitude Adjustment**.
4. On the **Altitude Adjustment** pull-down menu, select the appropriate altitude setting for the printer.
5. Click the **Apply** button to change the altitude information.
6. Click the **Exit** button to close the **Printer Settings Utility** window.

For Phaser 3140 and 3155

1. Click the Windows Start menu.
 - For Windows 2000, select **Settings > Printers**.
 - For Windows XP/2003, select **Control Panel > Printers and Faxes**.
 - For Windows 2008/Vista, select **Control Panel > Hardware and Sound > Printers**.
2. Select the your printer's driver and right-click to open **Properties**.
3. In printer driver properties, select **Device Options**.
4. Select necessary options in the **Altitude Adjustment** drop-down list.
5. Click **OK**.

Cleaning and Maintenance

In this chapter...

- Service Maintenance Procedure
- Cleaning
- Maintenance
- Firmware Updates

Chapter 7

Service 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 and reduces the probability of service calls in the future.

The frequency of use, Average Monthly Print Volume (AMPV), media used, and environment determine how critical cleaning the printer is and how often it is necessary.

Recommended Tools

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

Cleaning

Perform these cleaning steps as indicated by the operating environment.



Warning

Never apply alcohol or other chemicals to any parts of the printer. Do not use aerosol cleaners; they may be explosive and flammable under certain conditions.



Caution

Never use a damp cloth to clean up toner. Be sure to place the Print Cartridge in a light-protective bag as exposure to light can quickly degrade 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 the printer Off and disconnect the power cord.
4. Remove the Print Cartridge, Transfer Roller, Fuser, side covers, and Rear Cover before cleaning each part and the printer's interior.
5. Clean the Fan.
6. Ensure that all cover vents are clean and free of obstructions.
7. Remove and clean the paper trays.
8. Clean all rubber rollers with a lint-free cloth slightly dampened with cold water.

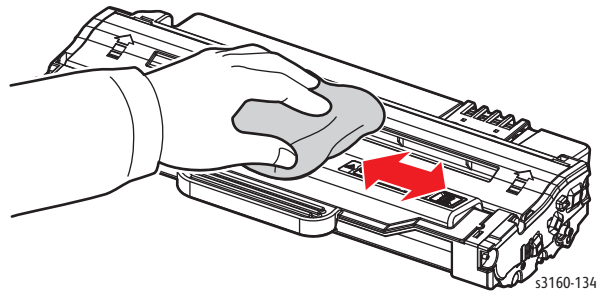
Cleaning the Print Cartridge



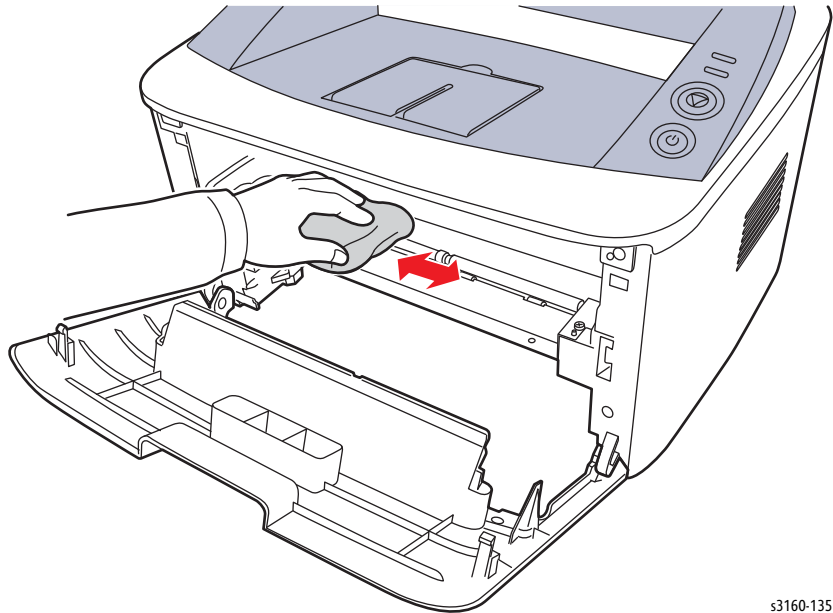
Caution

Do not touch the OPC Drum or expose the Print Cartridge to light for more than 5 minutes.

1. Open the Front Cover.
2. Remove the Print Cartridge (page 8-6).
3. Use a dry lint-free cloth to wipe to clean the Print Cartridge.

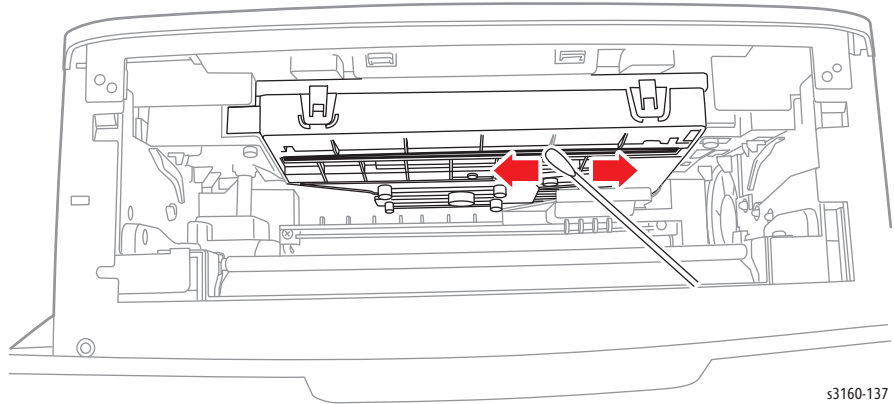


4. Use a dry lint-free cloth to wipe any dust and/or spilled toner from the Print Cartridge area. Remove any paper debris from the area.



Cleaning the Laser Unit

1. Open the Font Cover.
2. Remove the Print Cartridge (page 8-6).
3. Use a dry Q-tip to wipe the long strip of glass of the Laser Unit.



Printing the Print Cleaning Page

If the printer has blurred or smeared printouts, you can clear the problem by printing a cleaning sheet.

In Ready mode, press and hold the Cancel button for approximately 10 seconds until the status LED blinks fast, and then release.

For more information on other internal printer pages, see “Reports” on page 4-2.

Maintenance

RIP Procedures

Perform these maintenance procedures while servicing the printer.

- Clean the Feed Rollers, Exit Rollers, and Guides; replace if necessary.
- Remove and clean the paper tray.
- Print the Configuration and Error Information reports (page 4-2); diagnose and repair any problems as indicated.
- Check cleanliness of the interior and exterior, including fan; if necessary, clean (dust or vacuum) these areas.
- Review proper printer operation using a customer file, if possible. Check with the customer regarding any special applications they may be using.
- Review with the customer all work performed and discuss proper printer care.

Firmware Updates

The Controller Board firmware can be updated by customers and service technicians. Firmware updates are available at www.xerox.com/office/support.

Firmware Update Procedures

There are two methods for upgrading firmware, USB and Network.

1. Download the applicable files from the Xerox support web site. Unzip (decompress) the files.
2. Be sure your appropriate firmware updating option (Network or USB) is available and connected.
3. Reboot the printer.

Using a USB Connection

Before starting the following procedure, download the firmware package from the Xerox web site.

1. Connect PC and printer with a USB Cable.
2. Unzip all of the files included in the downloaded firmware file.
3. At the DOS Prompt, verify that you're at the root directory of the file. Type **usblist2 Rom_file_name.fl5** and press **Enter**.
4. On the printer's Control Panel, the red LED starts blinking. When the firmware update is complete, the red LED stops blinking and the printer resets.

Using a Network Connection

1. Ensure the printer is connected to the computer with a network connection.
2. Verify that you have downloaded the *.fls file.
3. Open a web browser.
4. Enter the printer's IP address.
5. The CentreWare IS window is displayed.
6. Click the **Print** tab.



7. On the left side, click **Firmware Download**.
8. Click the **Browse** button and locate the “*.fls” file on your computer.
9. Select the “*.fls” file and click **Open**.
10. Click the Blue button to start the firmware update process.
11. A processing window is displayed.
12. Click **OK** to close the status window when the firmware upgrade is complete.
13. Print a Configuration page and verify the firmware information.

Service Parts Disassembly

In this chapter...

- Overview
- Maintenance Items and Consumables
- Covers
- Disassembly Procedures
- Feeder
- Electrical
- Solenoids and Sensors

Chapter 8

Overview

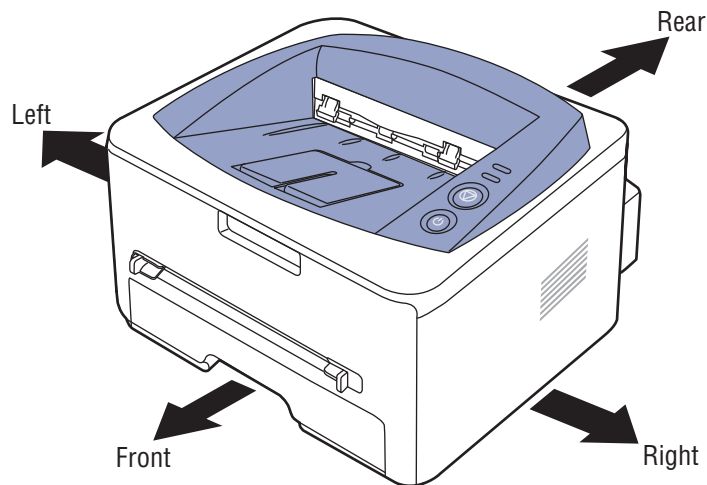
This section contains the removal procedures for field-replaceable parts of the printer listed in the Parts List. In most cases, the replacement procedure is simply the reverse of the removal procedure. In some instances, additional steps are necessary and are provided for replacement of the parts. For specific assemblies and parts, refer to “Parts Lists” on page 9-4.

Note

Always use the correct type and size screw (page 8-5). Using the wrong screw can damage tapped holes. Do not use excessive force to remove or install either a screw or a printer part.

Standard Orientation of the Printer

When needed, the orientation of the printer is called out in the procedure as an aid for locating the printer parts. The following illustration identifies the Front, Rear, Left, and Right sides of the printer.



s3160-101

Preparation

Before you begin any removal and replacement procedure:

1. Wear an Electrostatic Discharge wrist strap to help prevent damaging to the sensitive electronics of the print circuit boards.
2. Turn the printer power Off and disconnect the power cord from the wall outlet.
3. Disconnect all computer interface cables from the printer.
4. Remove the Paper Tray (page 8-7).
5. Open the Front Cover.
6. Remove the Print Cartridge (page 8-6).



Caution

Do not touch the OPC drum or expose the Print Cartridge to light for more than 5 minutes.

Note

Names of parts that appear in the removal and replacement procedures may not match the names that appear in the Parts List. For example, a part called the Registration Chute Assembly in a removal procedure may appear on the Parts List as Assembly Registration Chute. When working on a removal procedure, ignore any prerequisite procedure for parts already removed.



Caution

Many parts are secured by plastic tabs. Do not over flex or force these parts. Do not over torque screws threaded into plastic parts.



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 “PLX.X.X” indicates that this component is listed in the Parts List.
- Bold arrows in an illustration show direction of movement when removing or replacing a component.
- The notation “(tap, plastic, 10 mm)” or “(metal, 6 mm)” refer to the type of screw being removed.

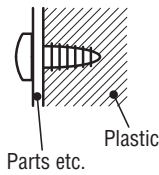
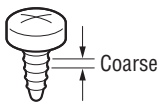
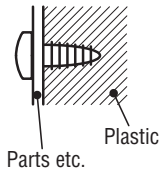
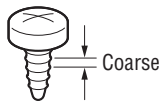
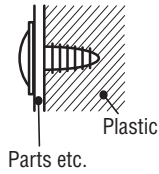
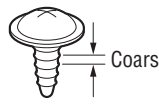
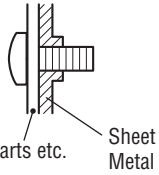
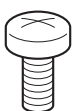
Note

Provides information specific to the replacement of parts or assemblies.

Fastener Types

The following table lists the primary types of Posi-Drive screws used to assemble the printer. The procedures provide dimensional specifications for screws being removed.

Posi-Drive Screw Types used in the Printer

Type	Application	Shape	Characteristics
Self-tapping, plastic, black			<ol style="list-style-type: none"> 1. Black colored. 2. Screw thread is coarse compared to metal screw. 3. Screw tip is thin.
Self-tapping, plastic, silver			<ol style="list-style-type: none"> 1. Silver colored. 2. Screw thread is coarse compared to metal screw. 3. Screw tip is thin.
Self-tapping, plastic with flange, silver			<ol style="list-style-type: none"> 1. Silver colored. 2. Screw thread is coarse compared to metal screw. 3. Screw tip is thin. Screw has a flange.
Sheet Metal, silver			<ol style="list-style-type: none"> 1. Silver colored. 2. Diameter is uniform.



Caution

Use care when installing self-tapping screws in plastic. To properly start the screw in plastic, turn the screw counter-clockwise in the hole until you feel the screw engage the threads, then tighten as usual. Always use the correct type and size screw and properly align the screw to prevent damaging the tapped holes. Do not use excessive force to remove or install either a screw or a printer part.

Maintenance Items and Consumables

Maintenance items include the Transfer Roller, Fuser, Pick Up Roller, and Tray. The Print Cartridge is the only consumable item.

Print Cartridge

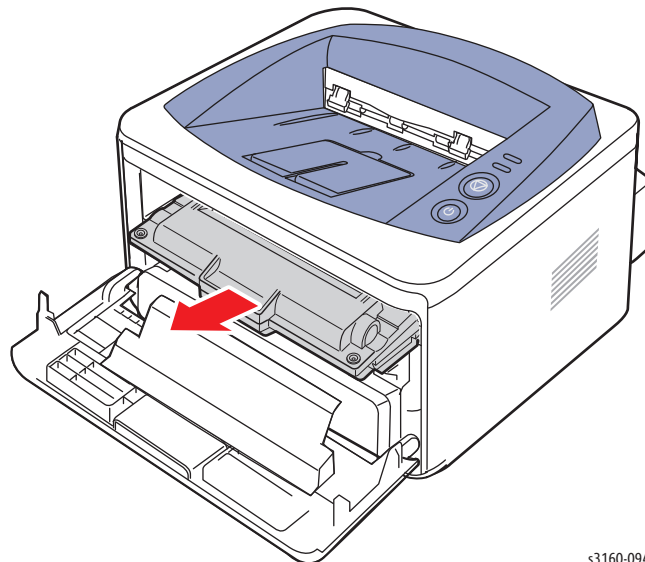
PL1.0.12



Caution

Do not touch the OPC drum or expose the Print Cartridge to light for more than 5 minutes.

1. Open the front cover.
2. Pull the Print Cartridge out.

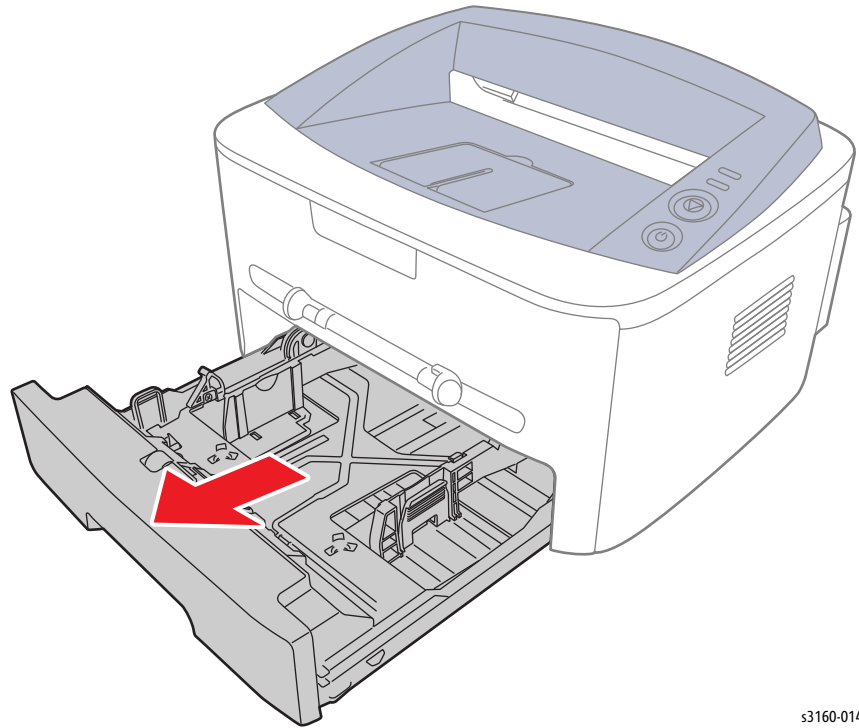


s3160-094

Paper Tray

PL10.0

1. Pull the Tray out of the printer.



s3160-014

Transfer Roller

PL1.0.8



Caution

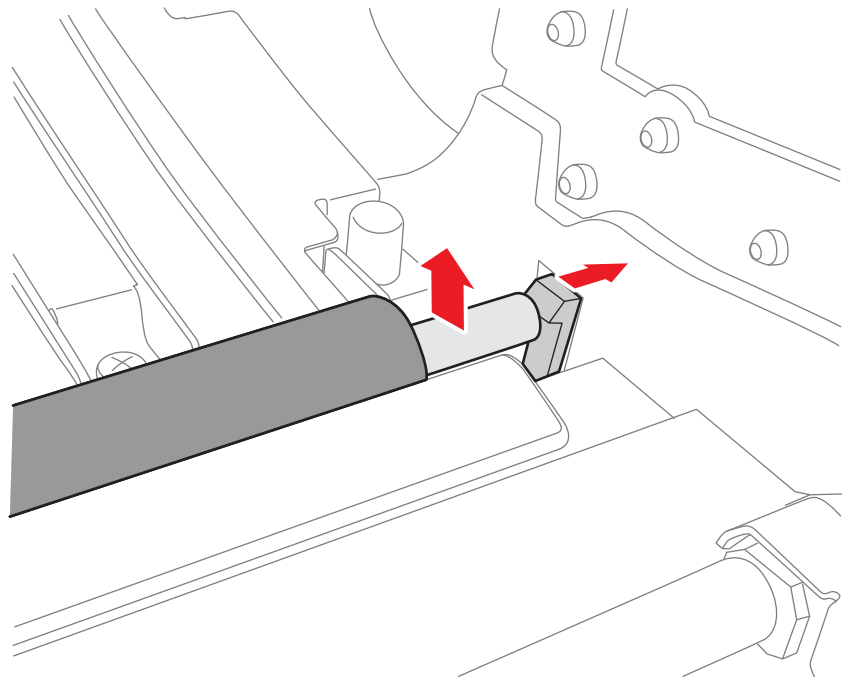
Do not touch the surface of the Transfer Roller.

1. Open the Front Cover.
2. Take out the Print Cartridge (page 8-6).
3. Remove the Laser Unit (page 8-30).
4. Take off the Transfer Roller by releasing the right side from the hook.



Caution

Use a screwdriver to gently push on the hook while using care to not break the hook.



s3160-104

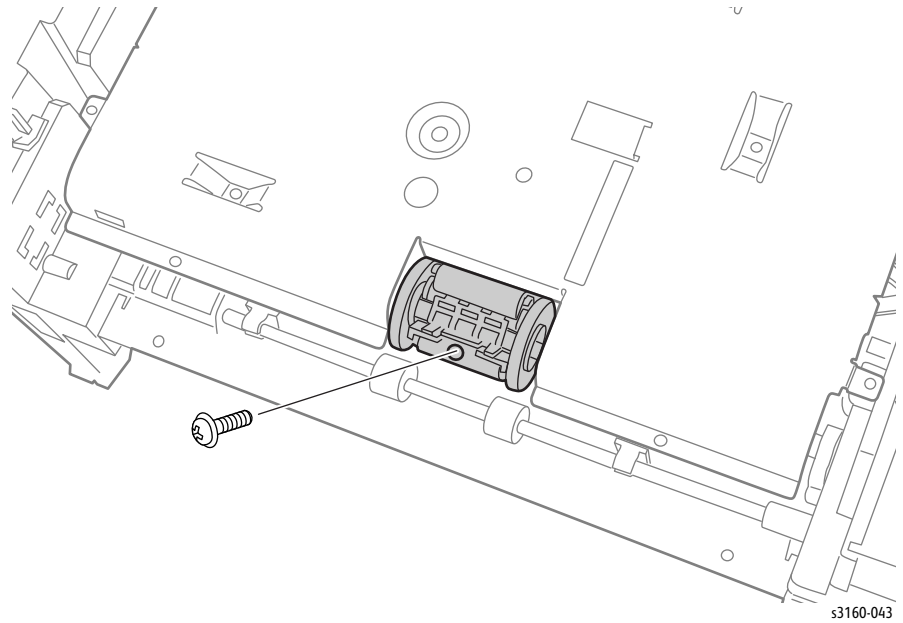
Replacement Note

When replacing the Transfer Roller, wrap a sheet of paper around it to avoid touching the roller.

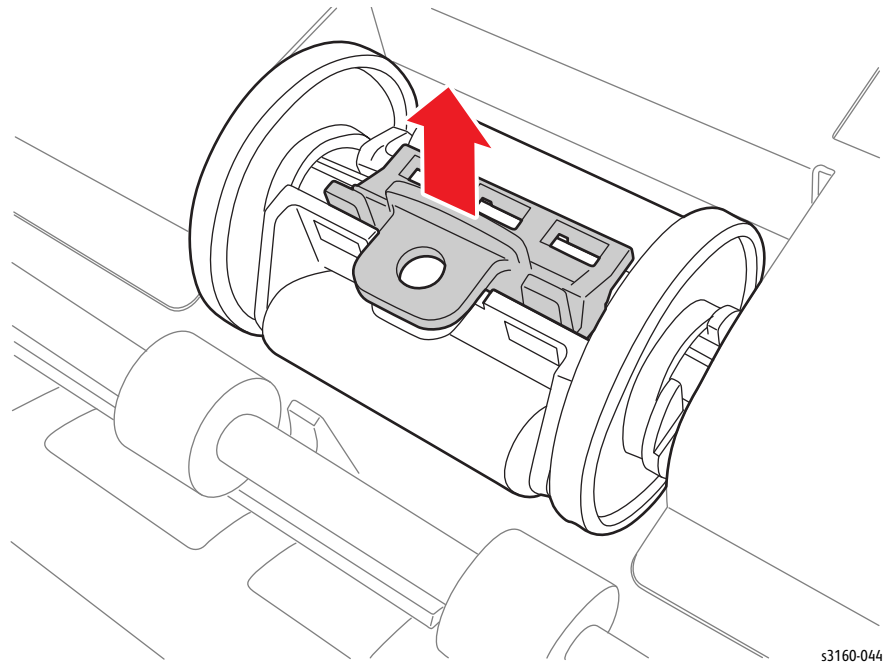
Pick Up Roller

PL8.0

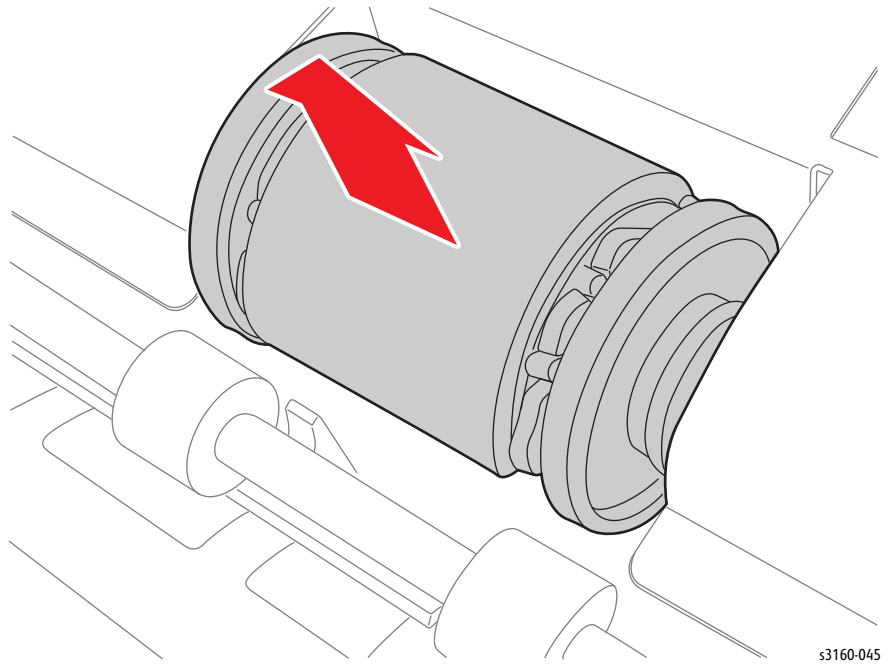
1. Remove the Paper Tray.
2. Turn the printer over.
3. Remove 1 screw (silver, 6 mm, plastic, tap).



4. Use a flat screwdriver to carefully lift the tab off of the Pick Up Roller.

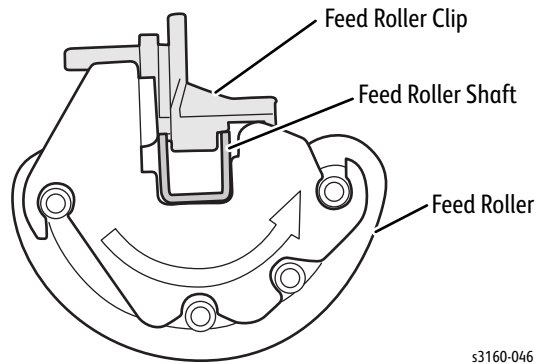


5. Rotate the Pick Up Roller and lift it off the shaft.



Replacement Note

The following illustration shows how the Pick Up Roller is attached to the Feed Roller Shaft.



Fuser

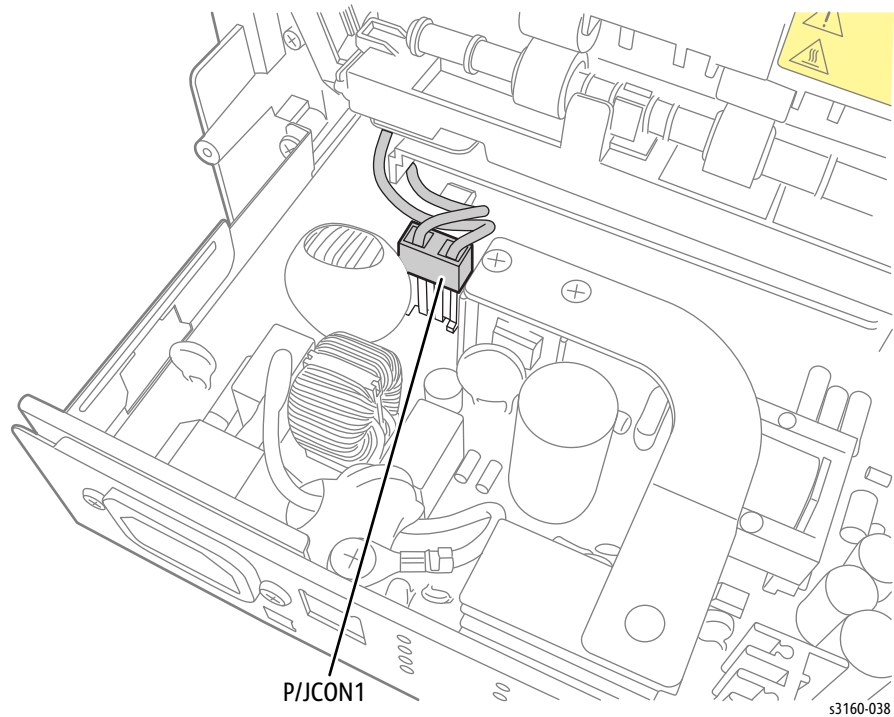
PL9.0



Warning

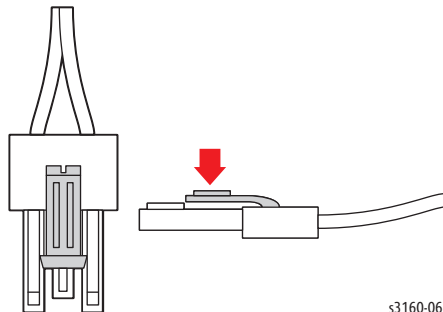
Allow the Fuser to cool 30 minutes before performing this procedure.

1. Remove the Rear Cover (page 8-26).
2. On the Power Supply, remove CON1.

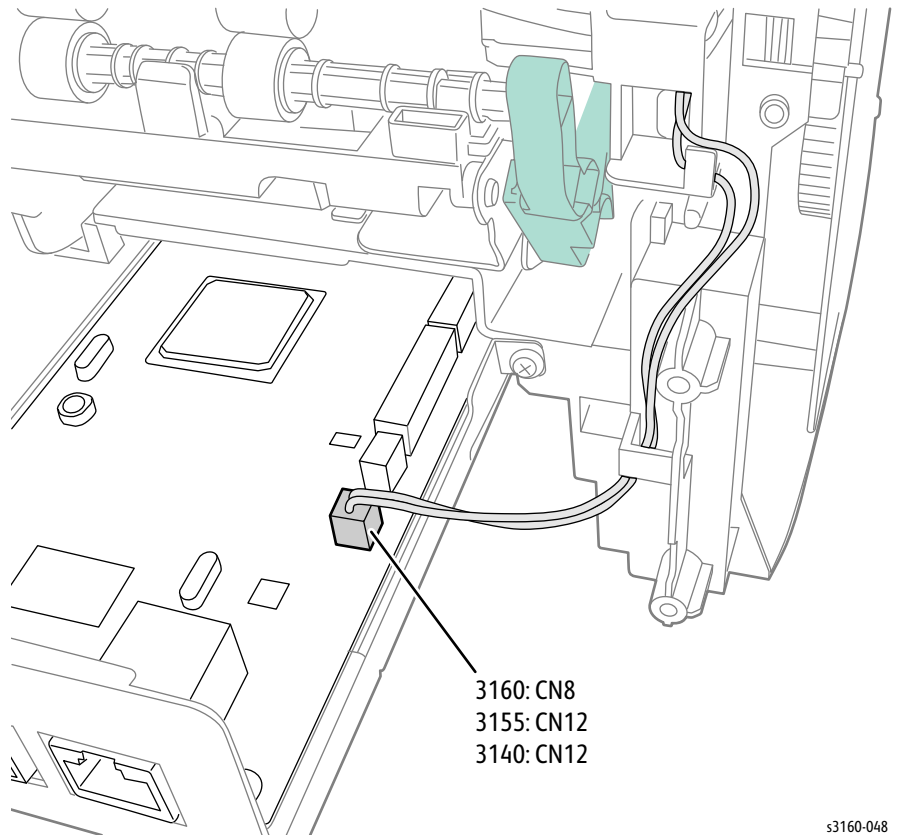


Note

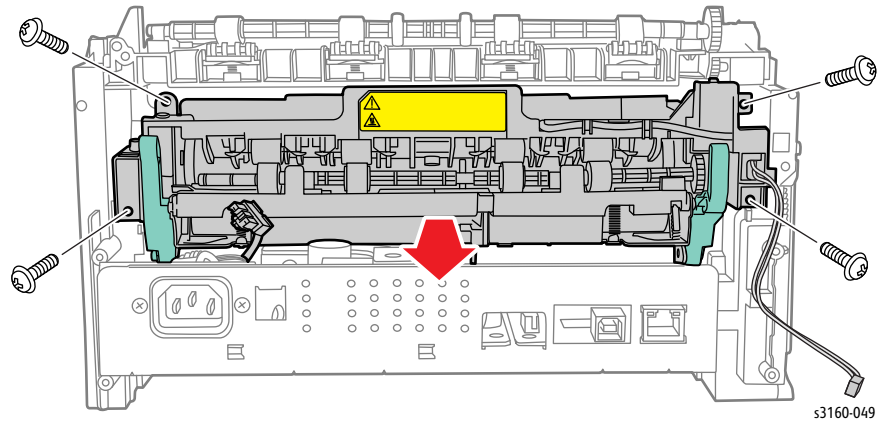
Press the connector lock to remove CON1.



3. Remove the Fuser Thermistor cable from the Controller Board. The connector number varies depending on your printer model. See the following illustration.



4. Remove 4 screws (10 mm, silver, tap) securing the Fuser.



5. Pull the Fuser out of the printer.

Thermistor

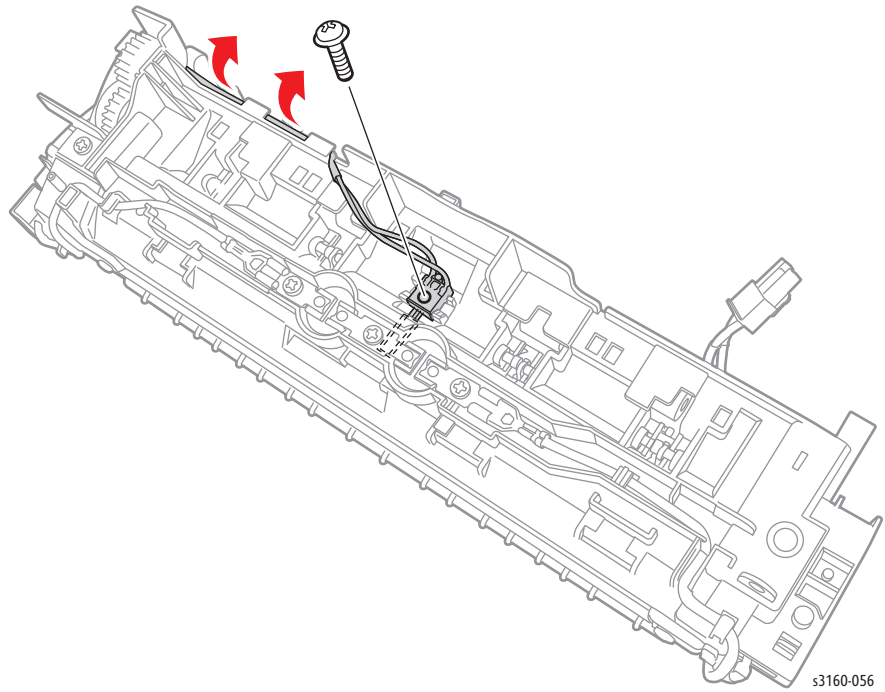
PL9.0.11



Warning

Turn the printer power Off and allow the Fuser to cool 30 minutes before performing this procedure.

1. Remove the Fuser (page 8-11).
2. Remove 1 screw (10 mm, silver, tap) securing the Thermistor.



3. Remove the wiring harness from the harness guide and remove the Thermistor.

Thermostat

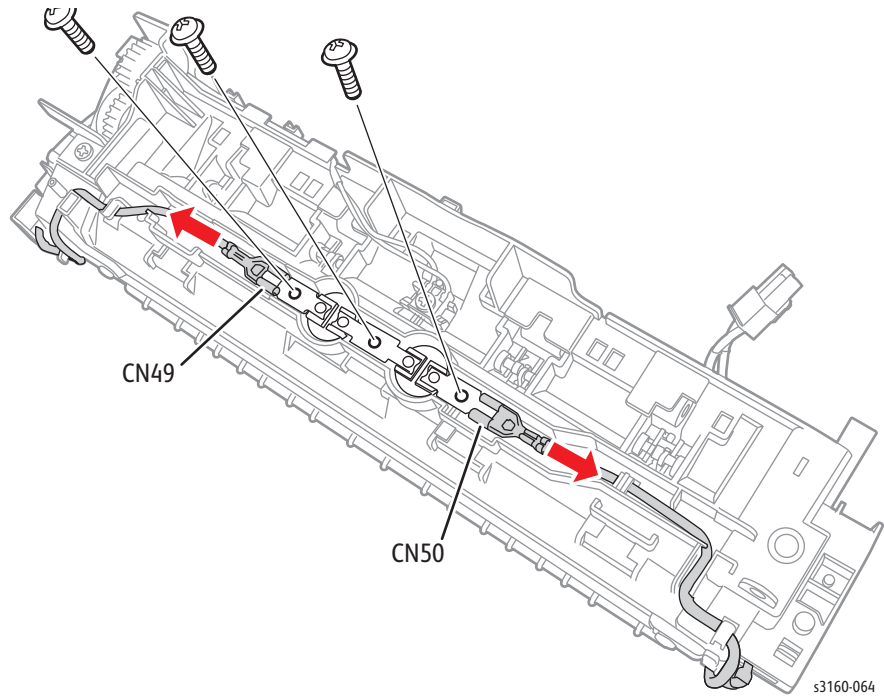
PL9.0.12



Warning

Turn the printer power Off and allow the Fuser to cool 30 minutes before performing this procedure.

1. Remove the Fuser (page 8-11).
2. Remove 3 screws (8 mm, black) that secure the Thermostat.



3. Lift the Thermostat away from the Fuser Cover.
4. Disconnect the wiring harness connectors CN49 & CN50 from the Thermostat.
5. Remove the Thermostat.

Fuser Lamp

PL9.0.13



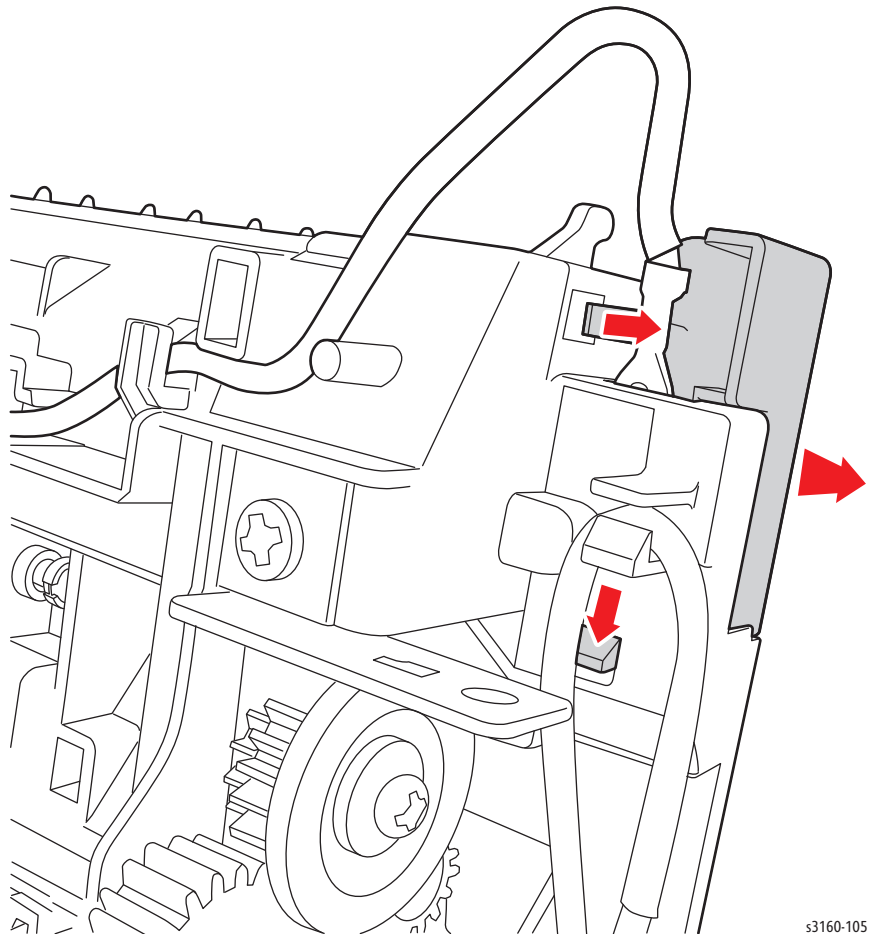
Warning

Turn the printer power Off and allow the Fuser to cool 30 minutes before performing this procedure.

1. Remove the Fuser (page 8-11).
2. Release the 2 tabs on the right Fuser lamp cap and remove the cap.

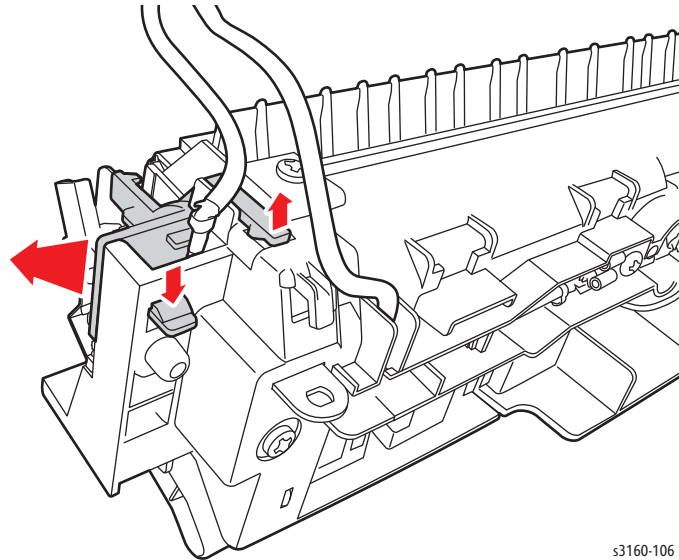
Caution

Take care to not over flex the tabs as they can easily break.



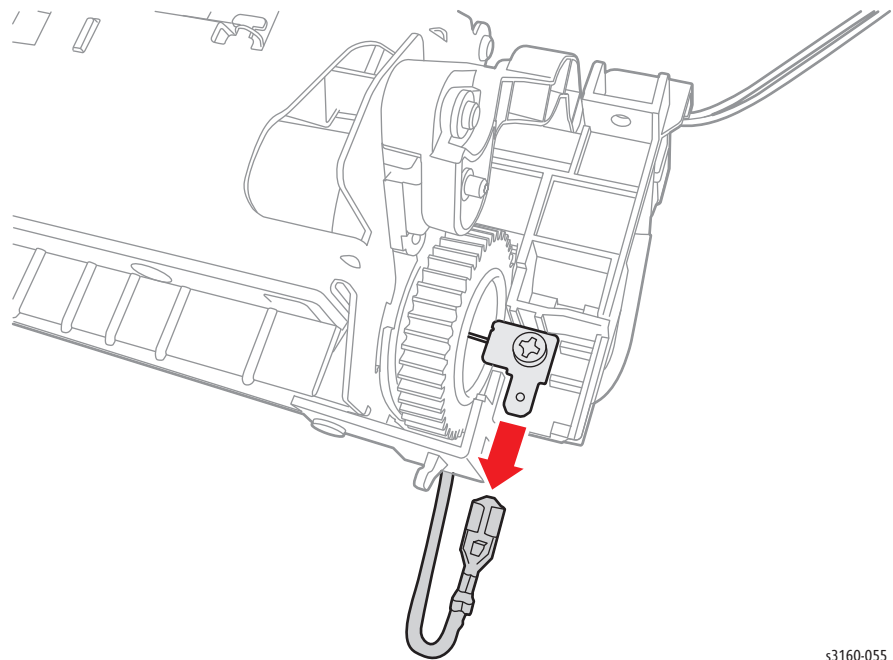
s3160-105

3. Release the 3 tabs on the left Fuser lamp cap and remove the cap.



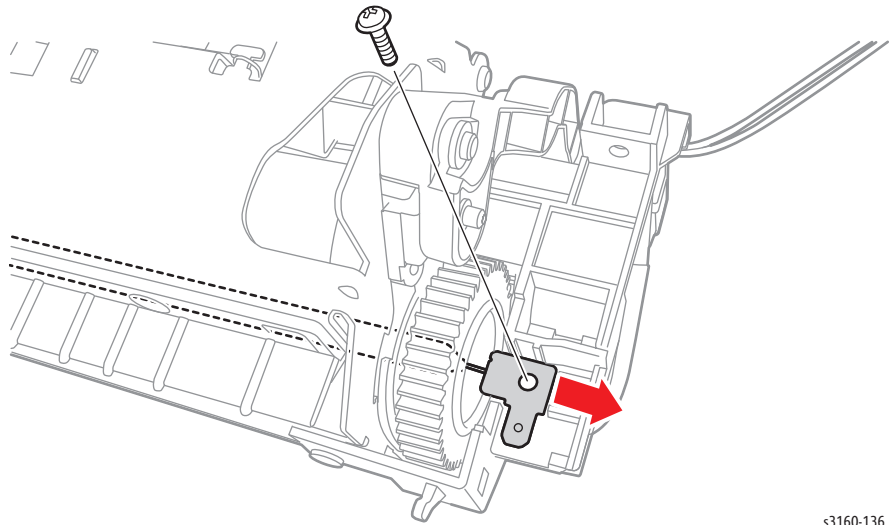
s3160-106

4. Disconnect the lamp wires on **both** sides of the Fuser.



s3160-055

5. Remove 2 screws (8 mm, black, tap), one on each end of the Fuser, and gently slide the Fuser Lamp out of the Fuser.



s3160-136

**Caution**

Hold the halogen lamp by the ends so there is no transfer of oil from your hands onto the lamp, which can damage the lamp.

Heat Roller

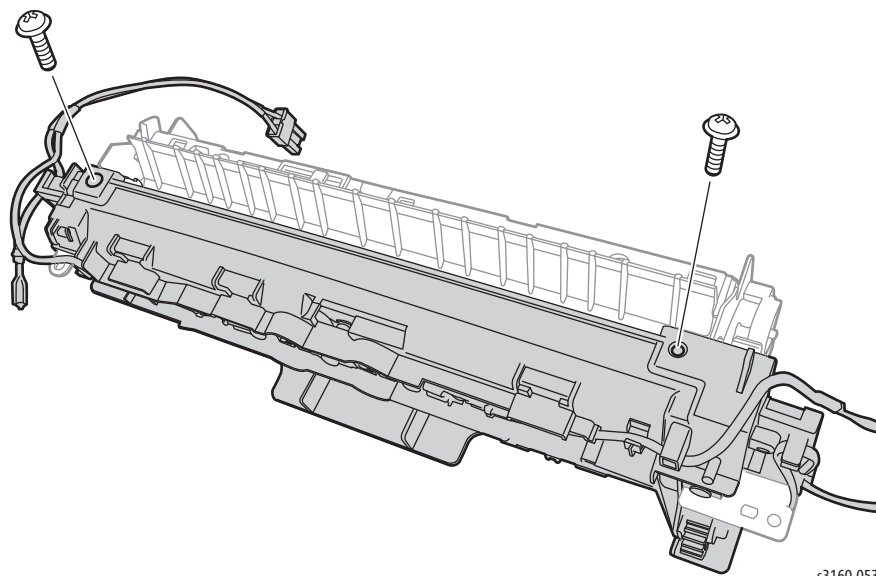
PL9.0.36

**Warning**

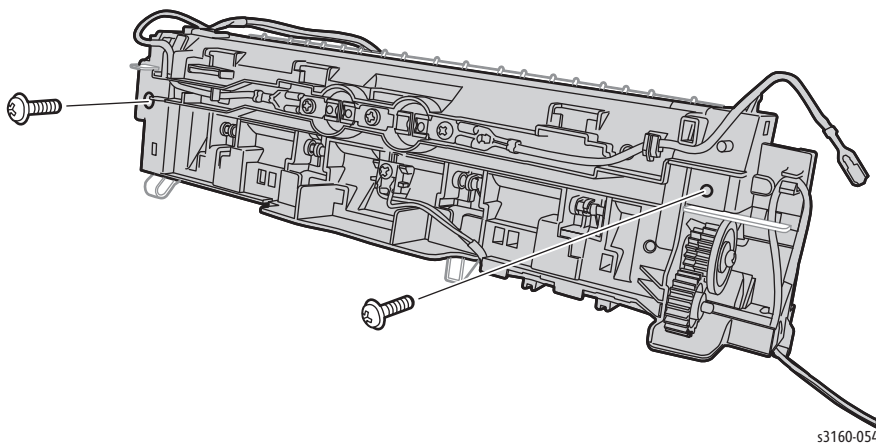
Turn the printer power Off and allow the Fuser to cool 30 minutes before performing this procedure.

1. Remove the Fuser (page 8-11).
2. Remove the Fuser Lamp (page 8-15).

3. Remove 2 screws (6 mm, silver).

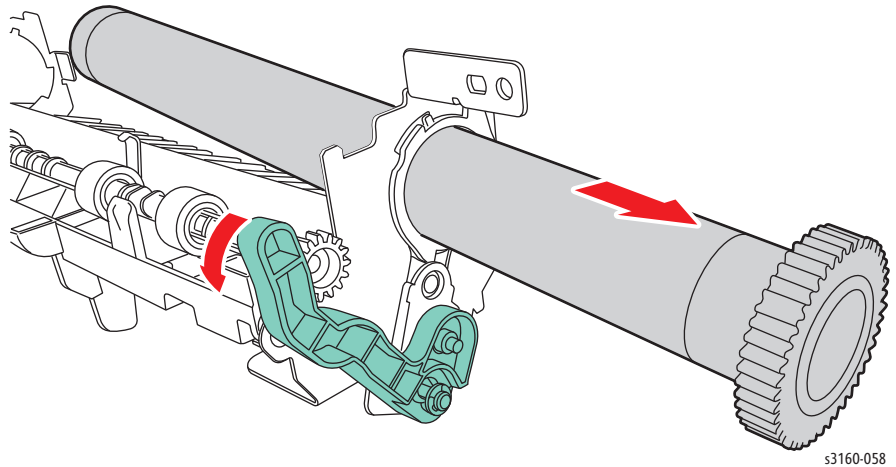


4. Remove 2 screws (6 mm, silver).



5. Lift the Fuser Cover off the Fuser.

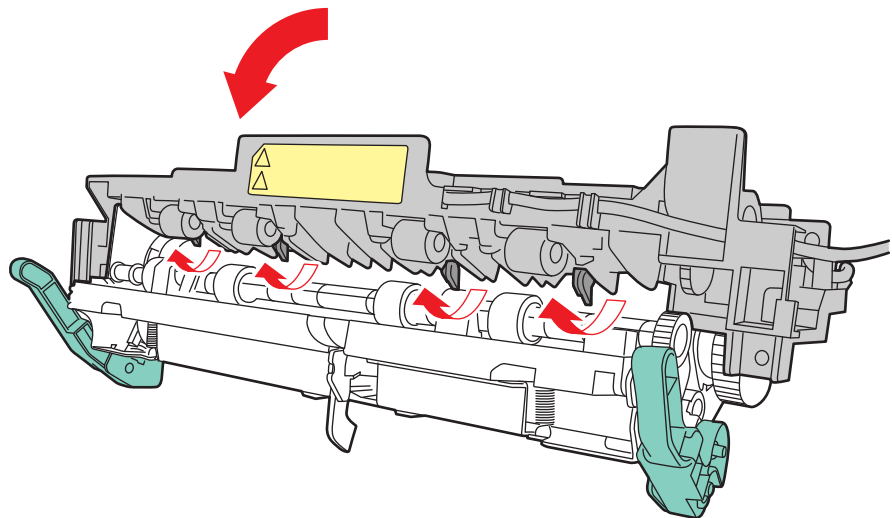
6. Open both Fuser lever arms, and then slide the Heat Roller out of the Fuser frame.



7. Remove the Fuser Gear from the Heat Roller.

Replacement Note

When reassembling the Fuser, gently pull the claw guides towards the front of the Fuser to avoid breaking them. Starting on the right, pull the right-most claw forward and then lower the cover slightly to hold the claw in place. Move to the left and repeat the process with the next claw. Repeat until each claw is pulled forward and secure the cover.



Pressure Roller

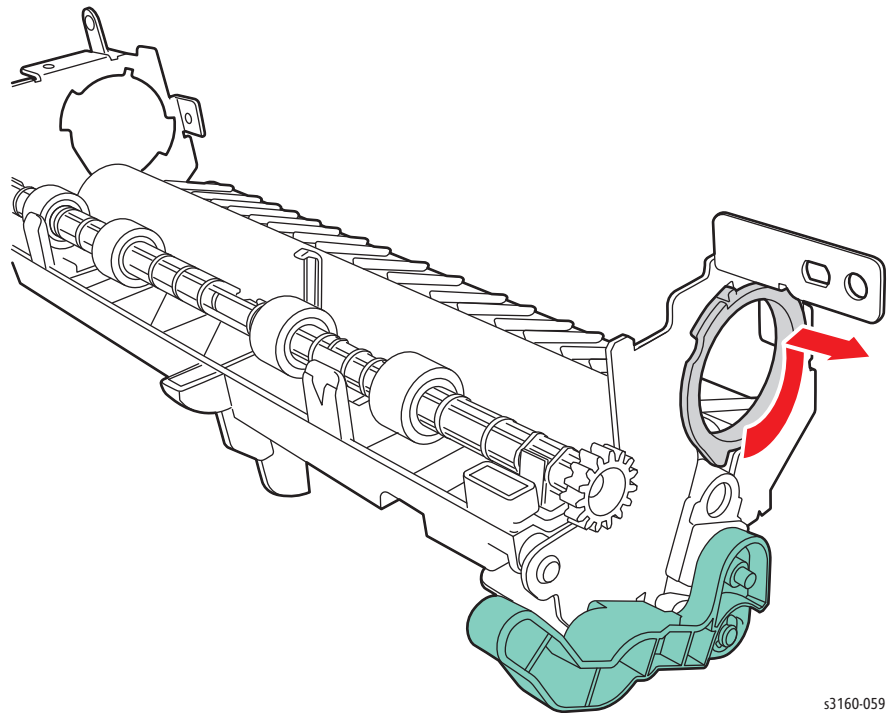
PL9.0.34



Warning

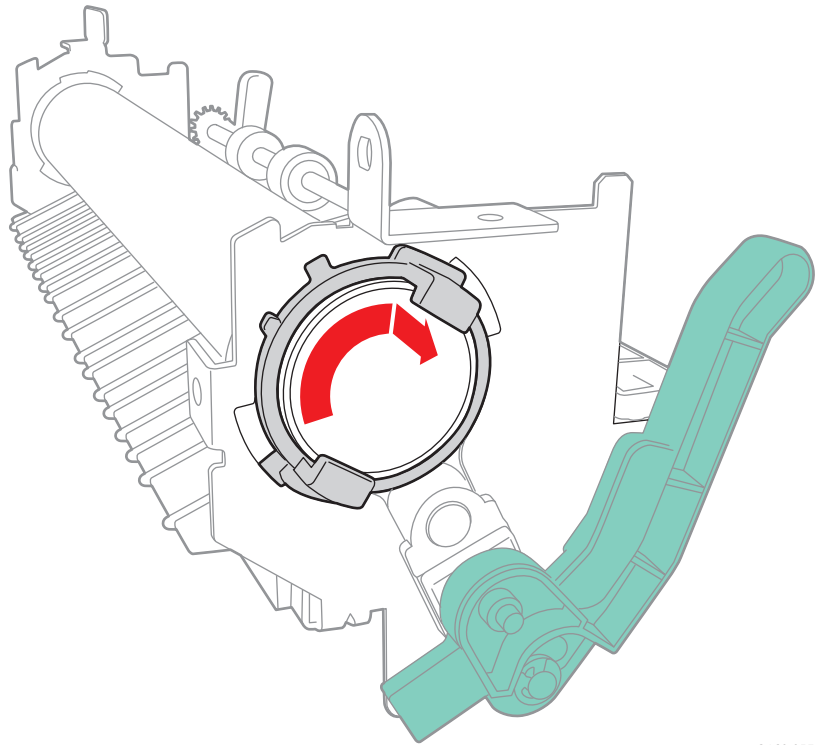
Turn the printer power Off and allow the Fuser to cool 30 minutes before performing this procedure.

1. Remove the Fuser (page 8-11).
2. Remove the Heat Roller (page 8-17).
3. Rotate the Right Bushing counter-clockwise and then remove it.



s3160-059

4. Rotate the Left Bushing clockwise and then remove it.

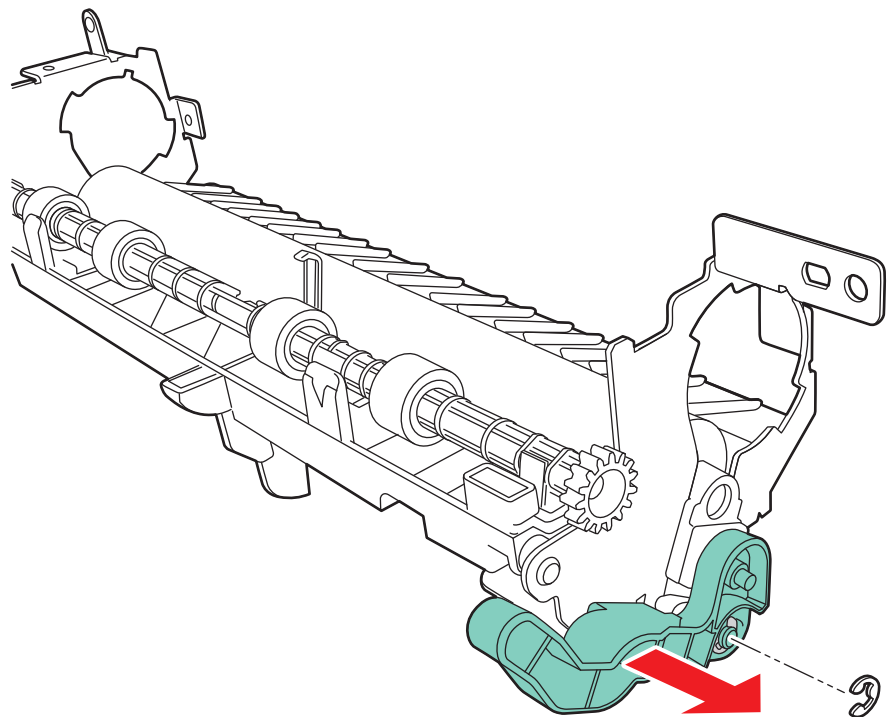


s3160-057

5. Release the e-ring and washer that secures the Jam Link Lever, and then remove the Jam Link Lever.

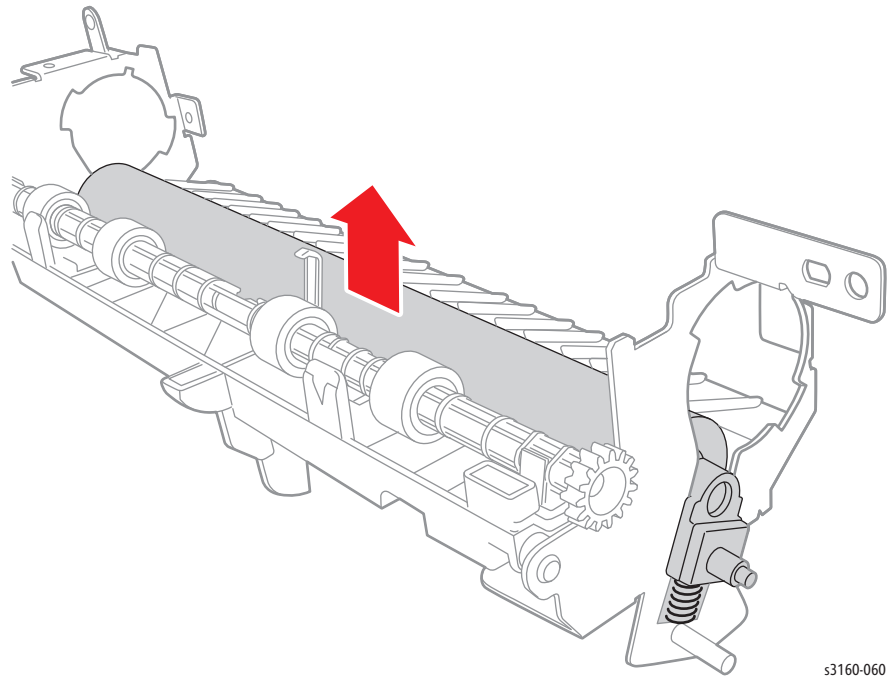
Note

You can remove the e-ring/washer from either the left or right lever.



s3160-116

6. Slide the Pressure Roller High Bushing up and away from the Fuser Frame, and then remove the Pressure Roller.

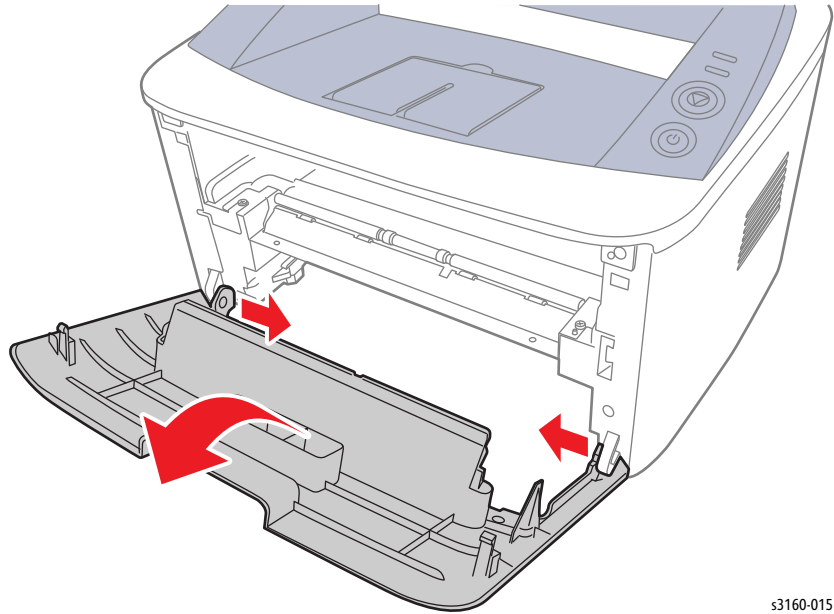


Covers

Front Cover

PL1.0.11

1. Remove the Tray (page 8-7).
2. Take off the front cover by removing both hooks.



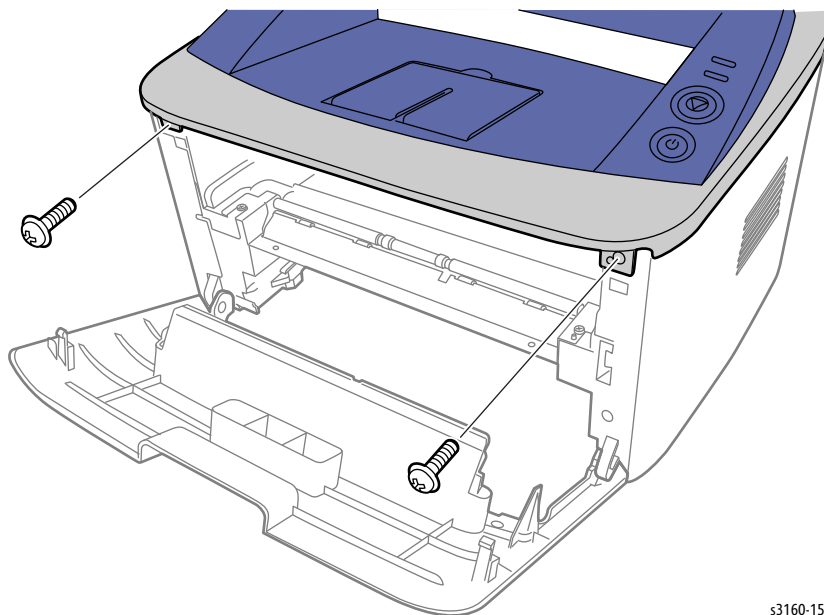
s3160-015

Top Cover

PL1.0.10

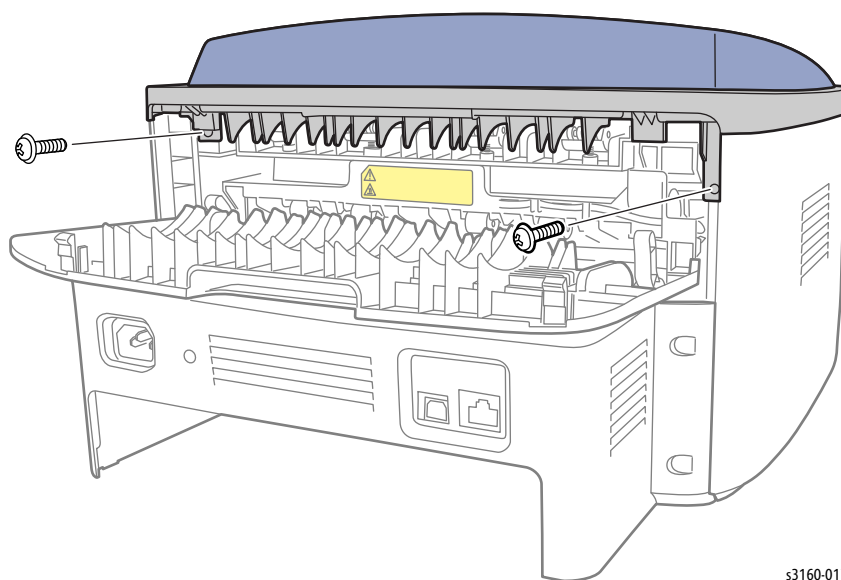
1. Open the Front Cover.

2. Remove 2 screws (10 mm, silver, tap) on the front of the printer.



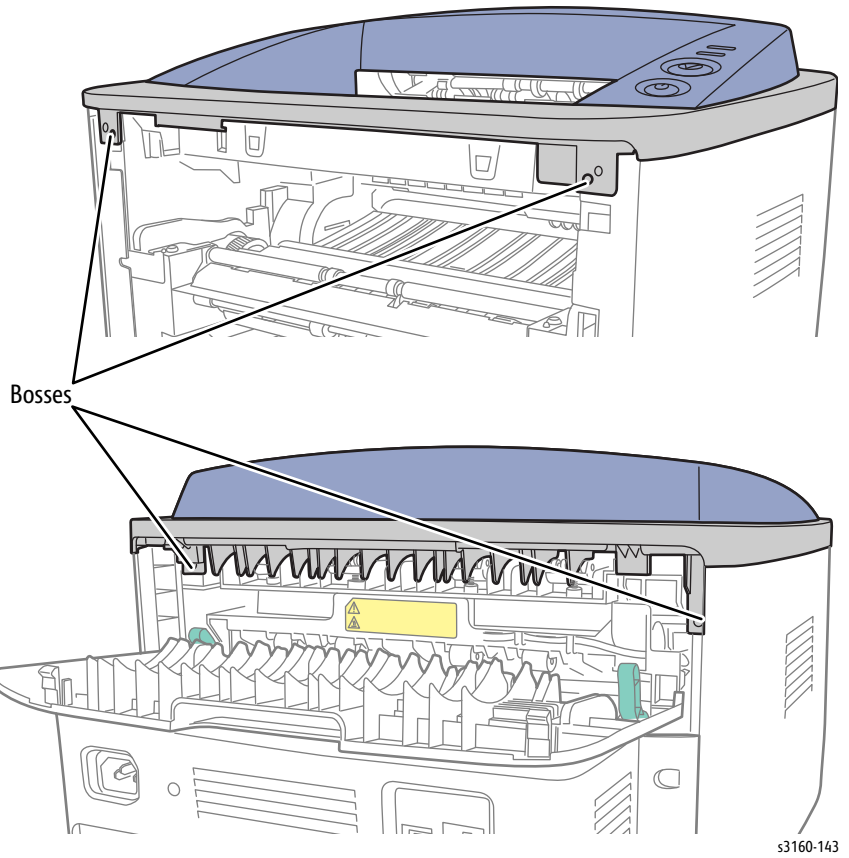
s3160-157

3. Open the Rear Cover.
4. Remove 2 screws (10 mm, silver, tap) on the rear of the printer.



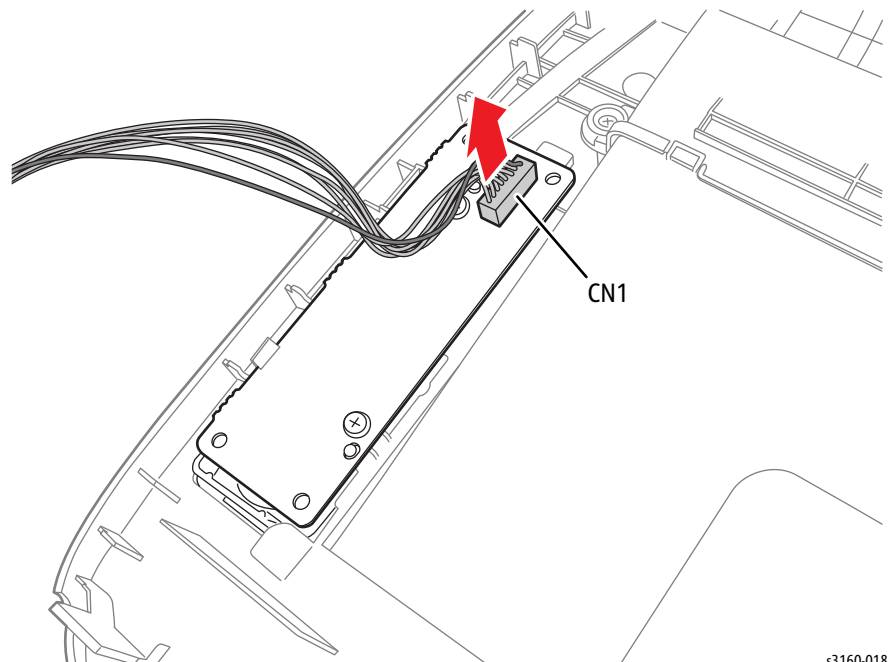
s3160-017

5. Lift the Top Cover off of the bosses at the front and rear of the printer.



s3160-143

6. Lift the Top Cover off of the printer and disconnect CN1.

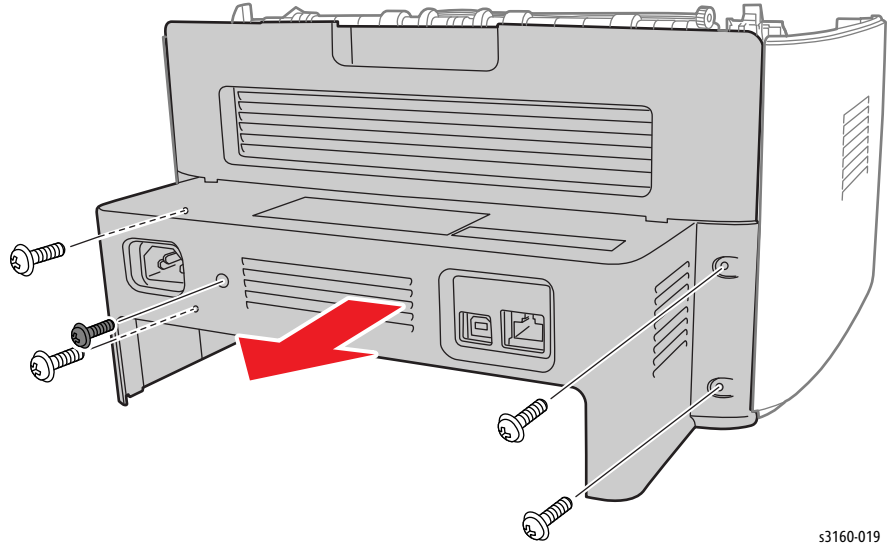


s3160-018

Rear Cover

PL3.0.1

1. Remove 4 screws (10 mm, silver, tap) and 1 black screw (8 mm, black, tap) from the rear cover.



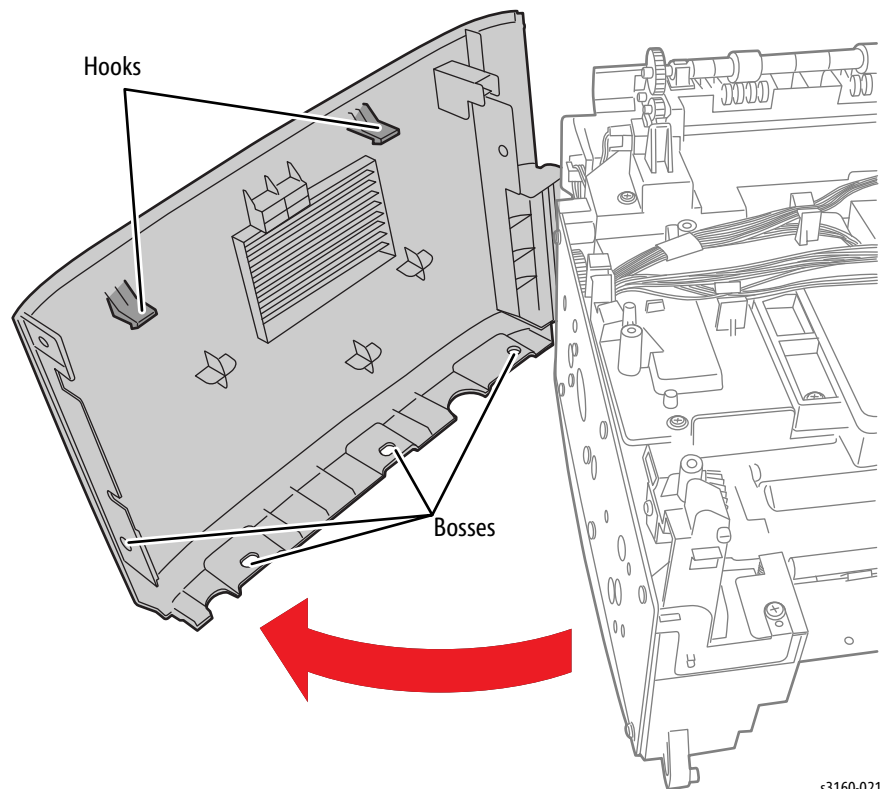
s3160-019

2. Remove the Rear Cover.

Left Side Cover

PL3.0.3

1. Remove the Front Cover (page 8-23).
2. Remove the Top Cover (page 8-23).
3. Remove the Rear Cover (page 8-26).
4. Lift the Left Side Cover off of the 2 bosses on the front of the printer.
5. Lift the top 2 hooks on the Left Side Cover off of the printer.
6. Lift the Left Side Cover off of the 2 bosses on the rear of the printer and remove the cover.

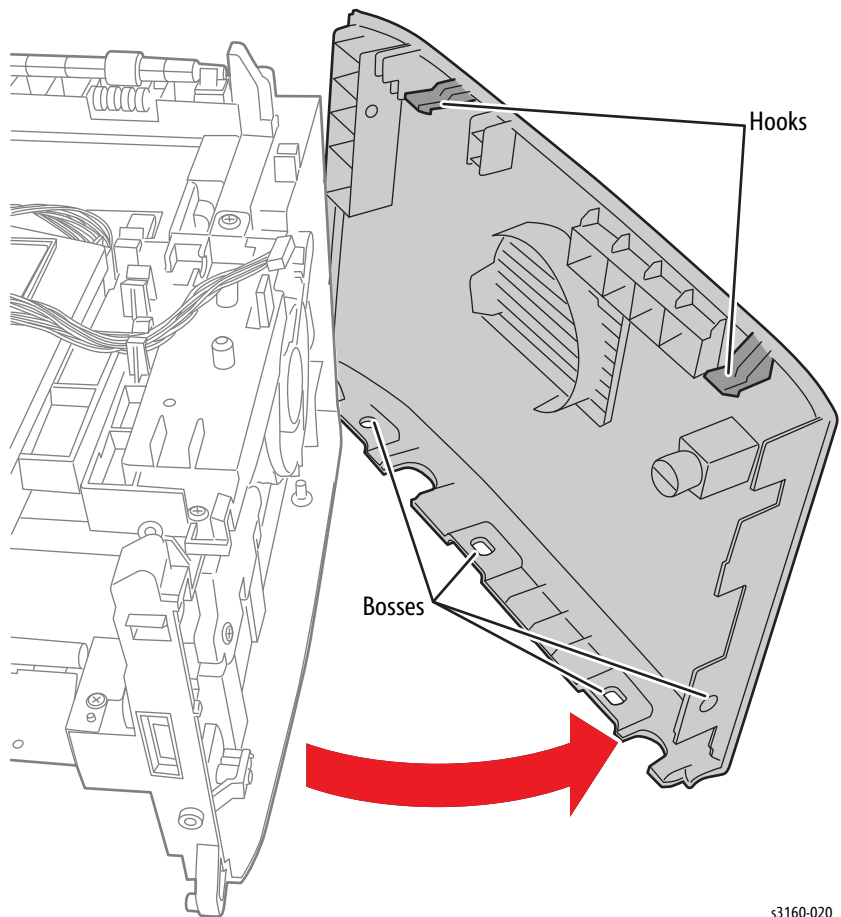


s3160-021

Right Side Cover

PL3.0.4

1. Remove the Front Cover (page 8-23).
2. Remove the Top Cover (page 8-23).
3. Remove the Rear Cover (page 8-26).
4. Lift the Right Side Cover off of the 2 bosses on the front of the printer.
5. Lift the top 2 hooks on the Right Side Cover off of the printer.
6. Lift the Right Side Cover off of the 2 bosses on the rear of the printer and remove the cover.



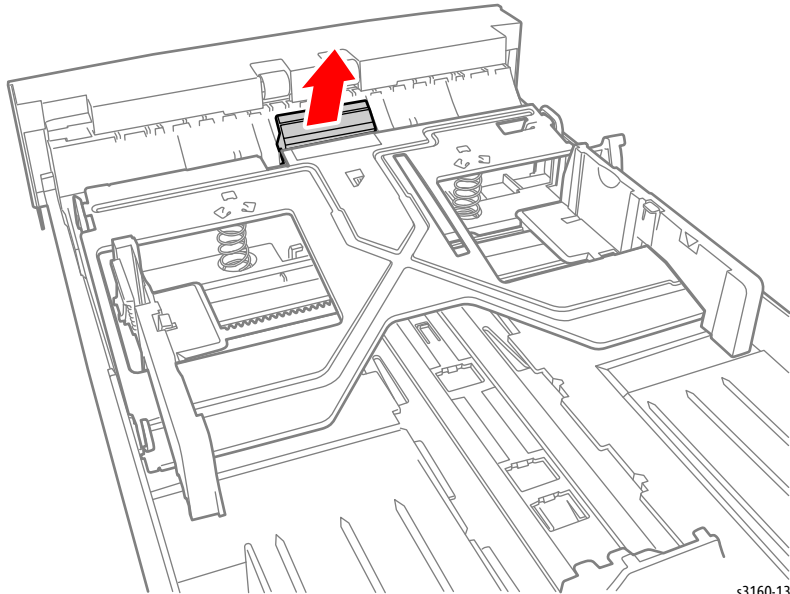
s3160-020

Disassembly Procedures

Tray Holder Pad Assembly

PL10.0.11

1. Remove the Tray (page 8-7).
2. Remove paper from the Tray.
3. Unhook the latches on the left and right sides of the Holder Pad and remove it.

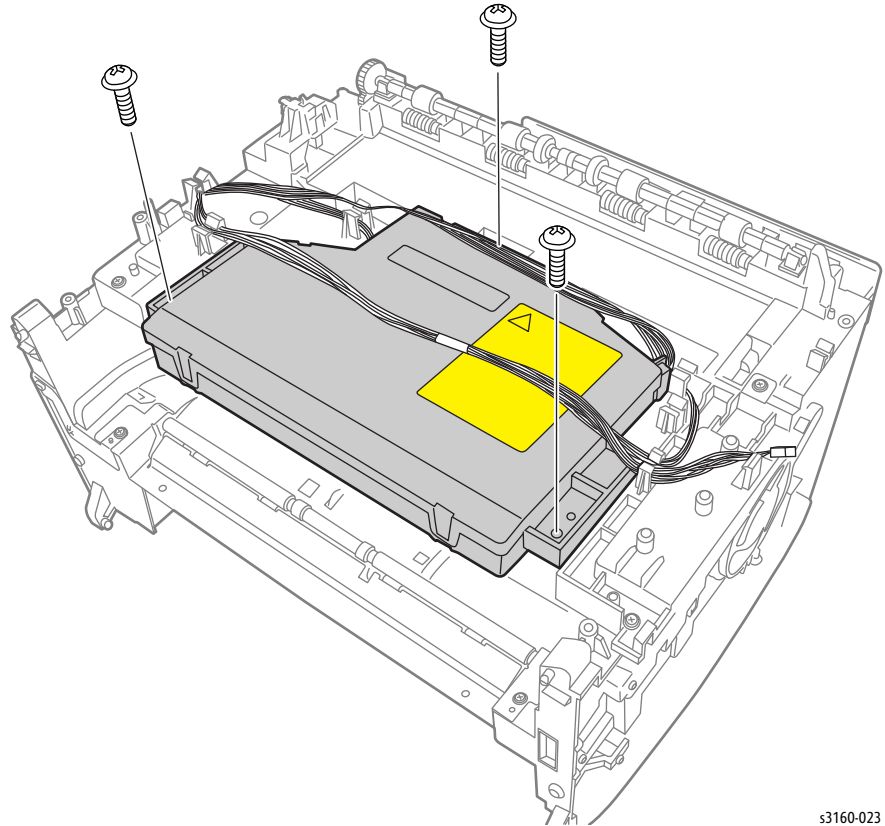


s3160-138

Laser Unit

PL6.0.79

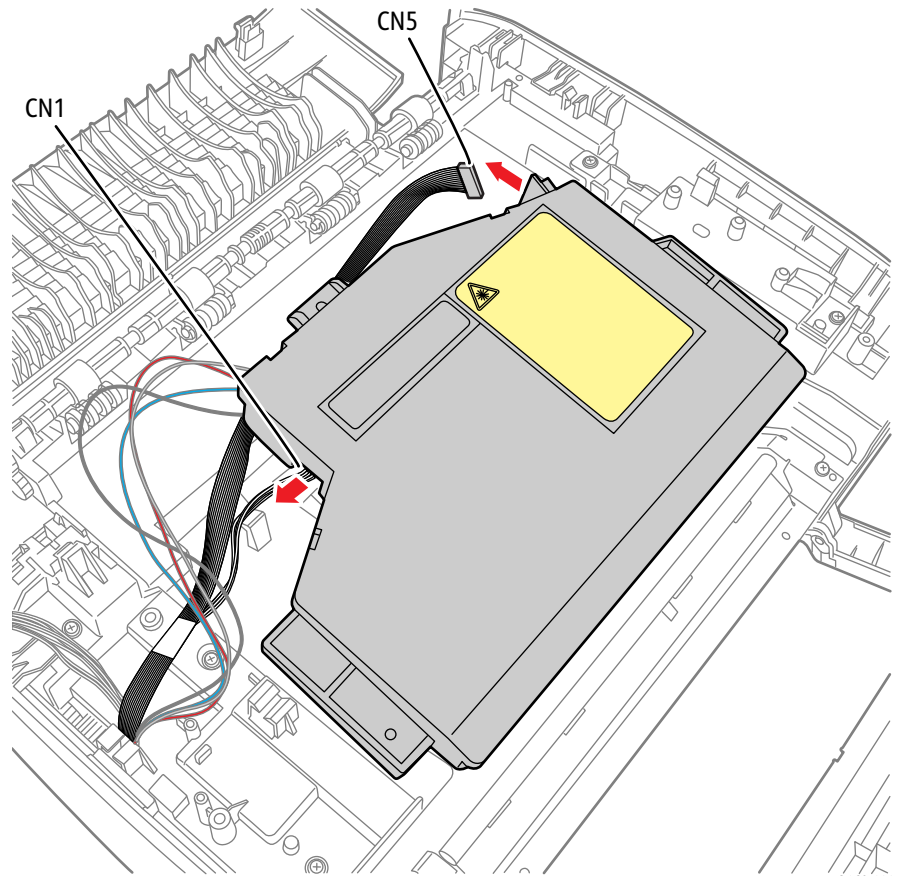
1. Remove the Top Cover (page 8-23).
2. Remove 3 screws (10 mm, silver, tap).



s3160-023

3. Move the harness that lays over the top of the Laser Unit out of the way.

4. Lift the Laser Unit slightly, and disconnect CN1 and CN5.



s3160-144

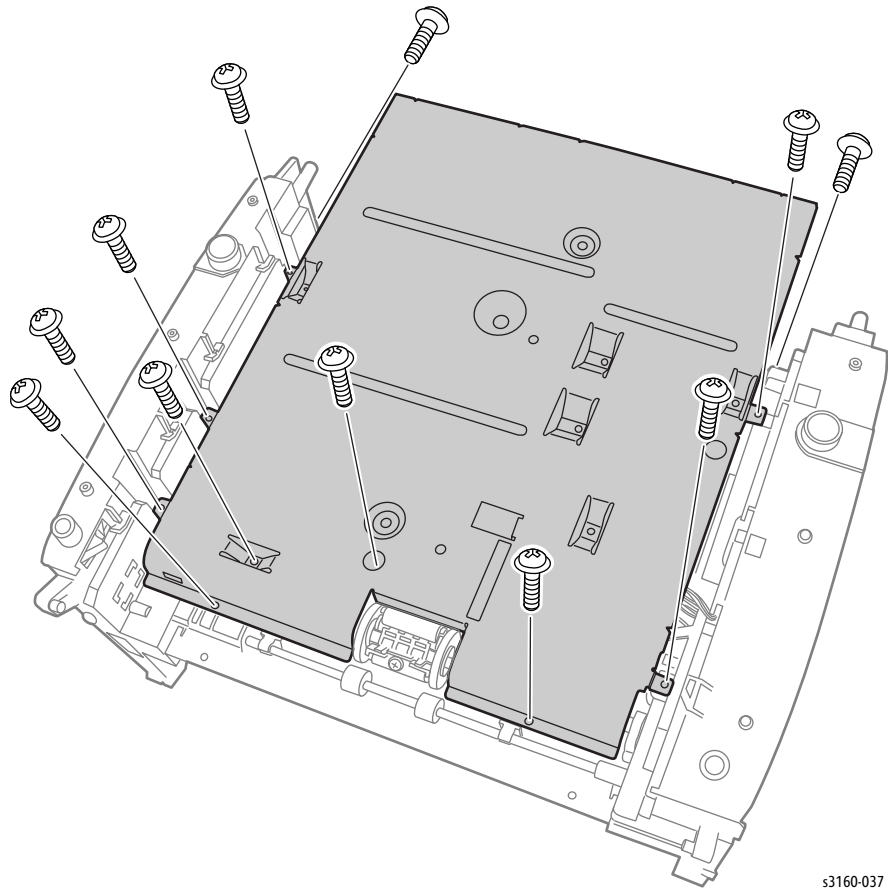
5. Remove the Laser Unit.

Feeder

Pick Up Roller Assembly

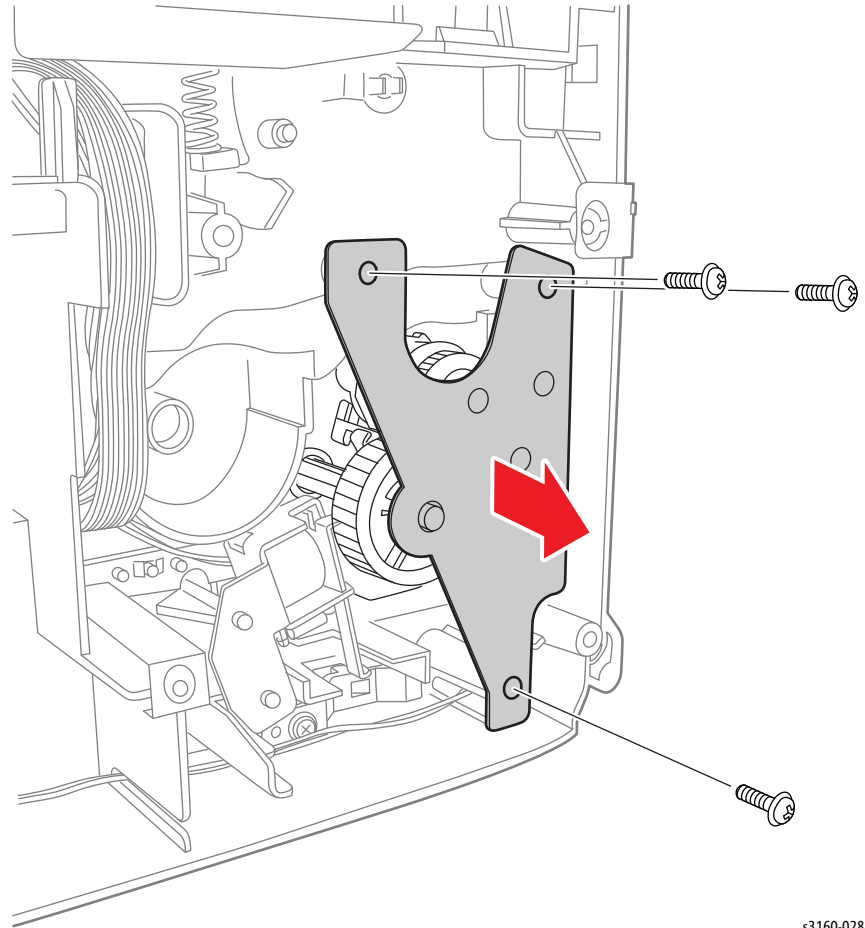
PL8.0

1. Remove the Print Cartridge (page 8-6).
2. Remove the Paper Tray (page 8-7).
3. Turn the printer over, and remove 11 screws (10 mm, silver, tap) on the Engine Shield assembly.



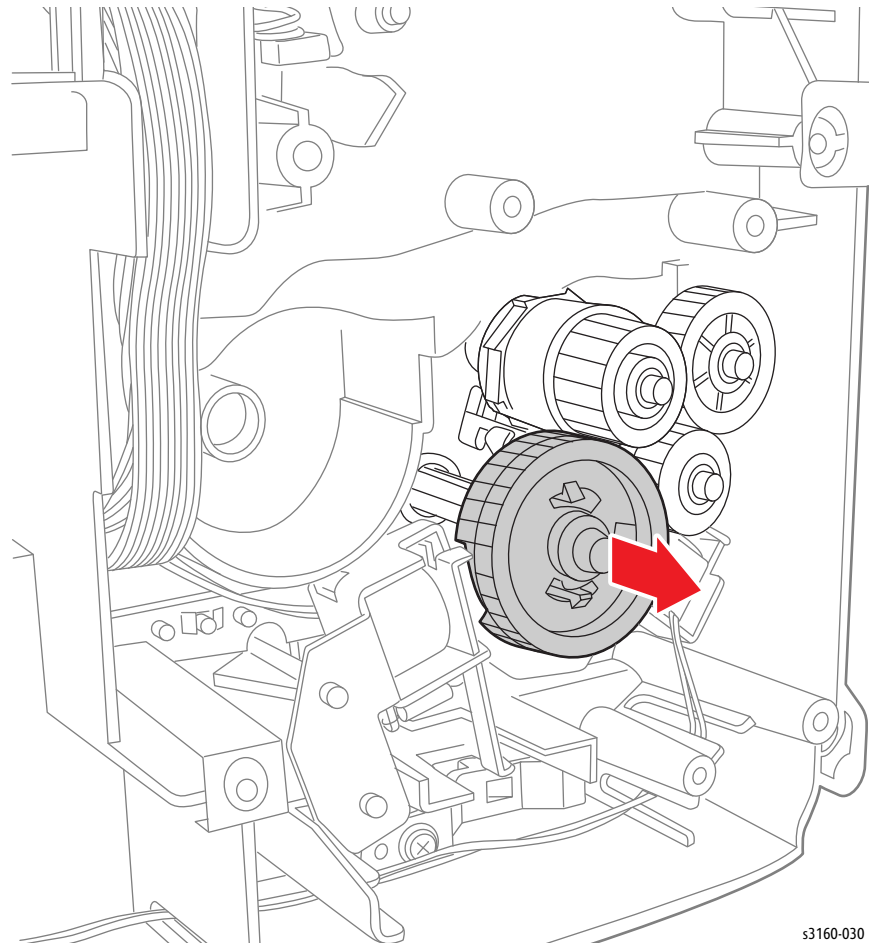
4. Lift the Engine Shield Assembly slightly and disconnect all cables on the boards to remove the assembly.
5. Remove the Drive Assembly (page 8-35).

6. Remove 3 screws (10 mm, silver, tap) and remove the Feed Bracket.



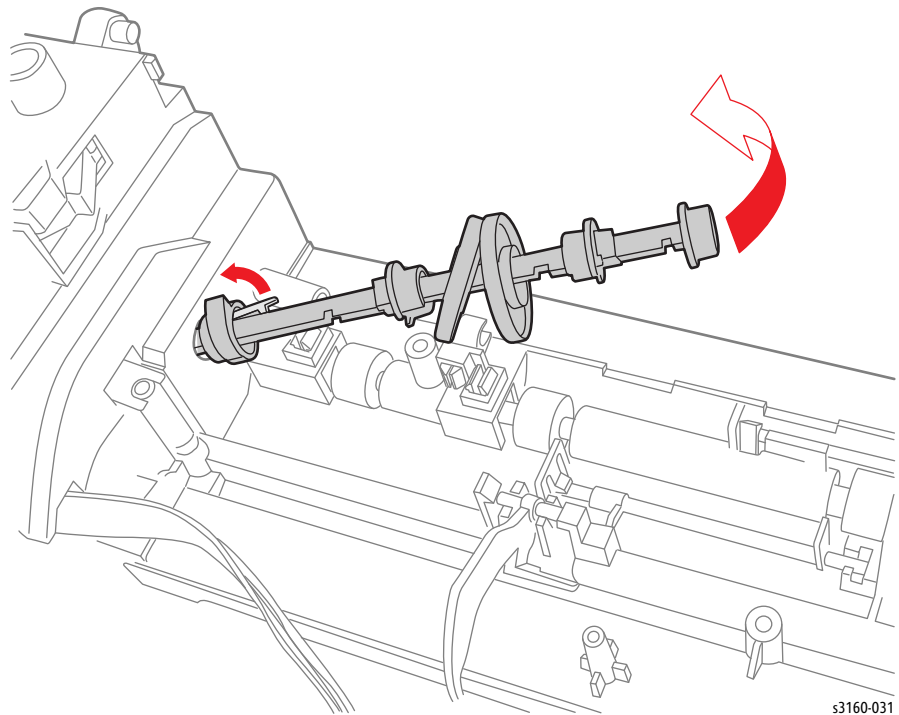
s3160-028

7. Remove the Pick Up Gear.



8. Turn the printer upside down with the rear of the printer facing you.

9. Lift the clip on the Pick Up Shaft and slide the Pick Up Assembly slightly to the left, and then lift the assembly and slide it to the right to remove it.



Replacement Note

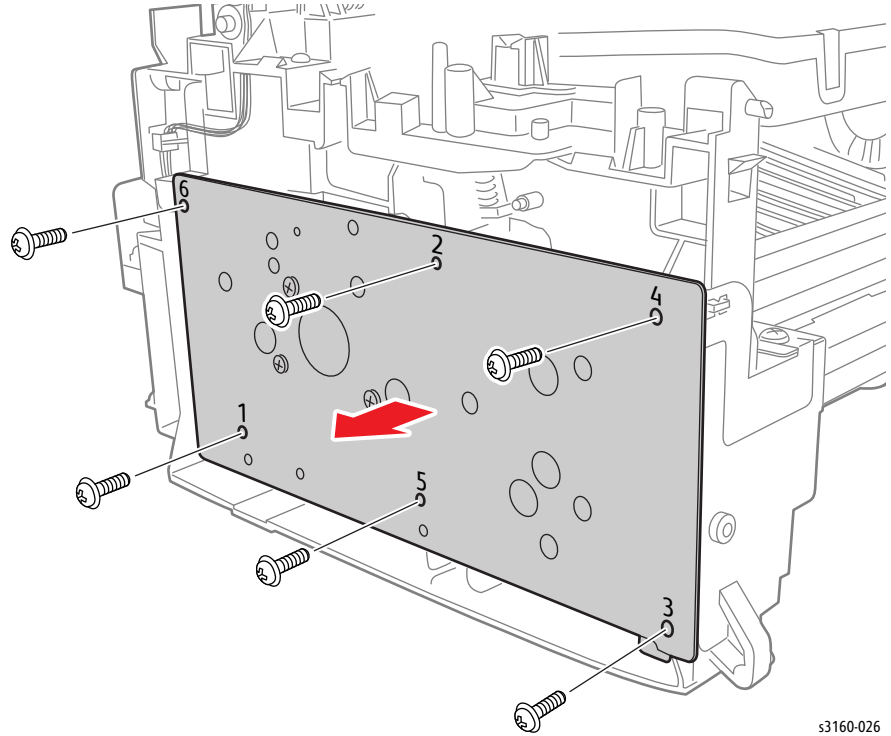
The back panel of the Drive Assembly is numbered to show the order that the screws should be installed during installation. Start the 6 screws in the order listed, and then tighten them in the same order. When installed on the printer, the numbers on the bracket are upside down.

Drive Assembly

PL7.0 and 7.1

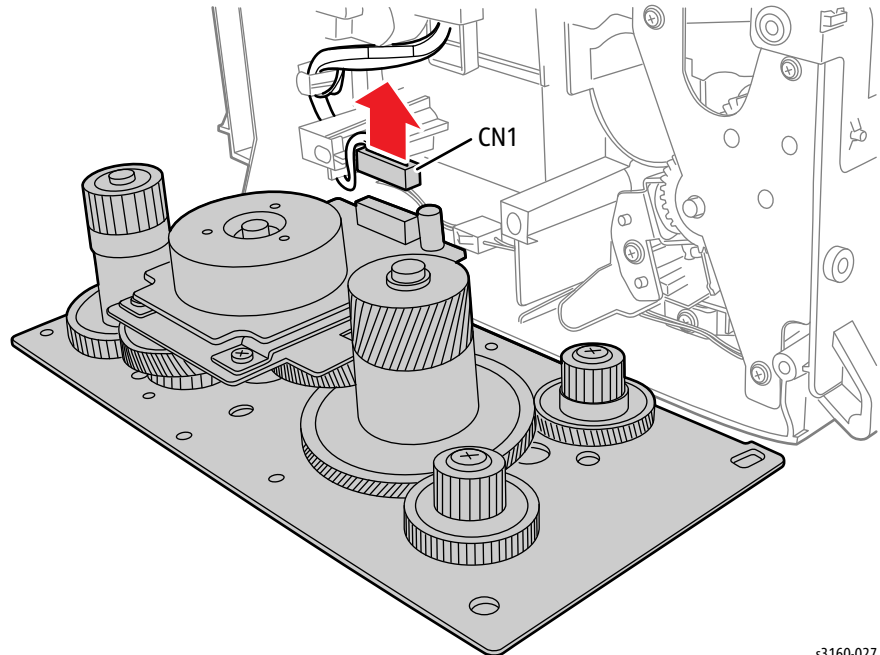
1. Remove the Left Cover (page 8-27).

2. Remove 6 screws (10 mm, silver) that secure the Drive Assembly.



s3160-026

3. Disconnect the Drive Assembly wiring harness connector CN1 and remove the Drive Assembly.



s3160-027

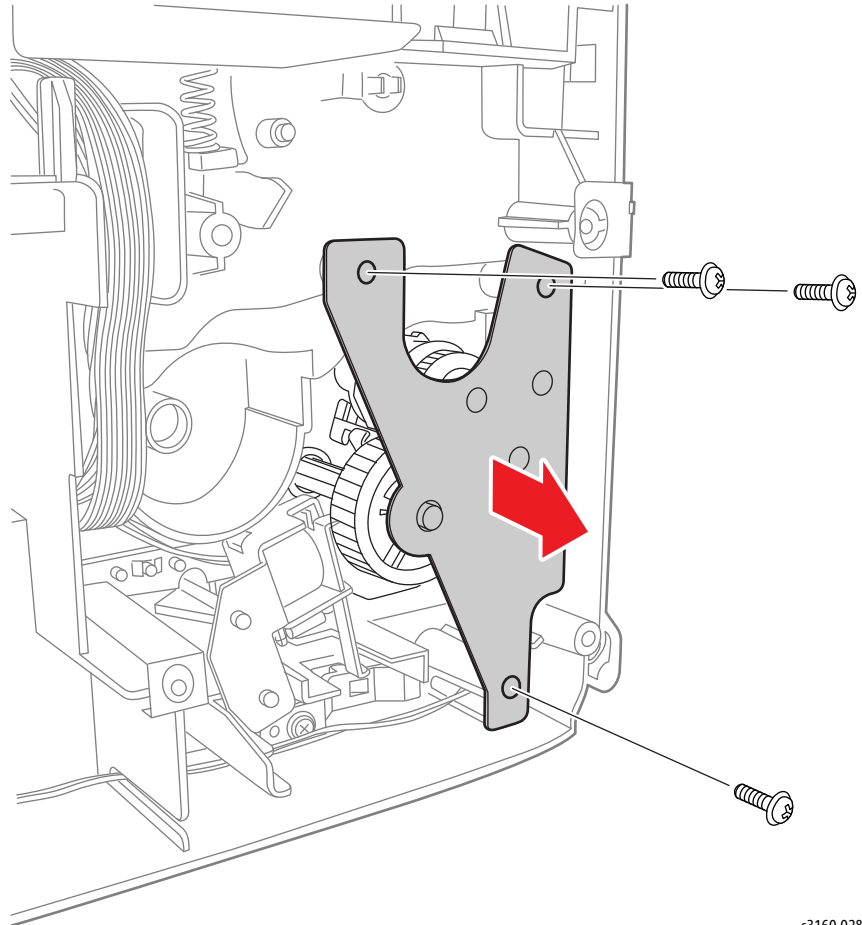
Replacement Note

The Drive Assembly bracket and Engine Shield are numbered to show the order that the screws should be installed during installation. Start all 6 screws in the order listed, and then tighten them in the same order. When installed on the printer, the numbers on the bracket are upside down.

Clutch Assembly

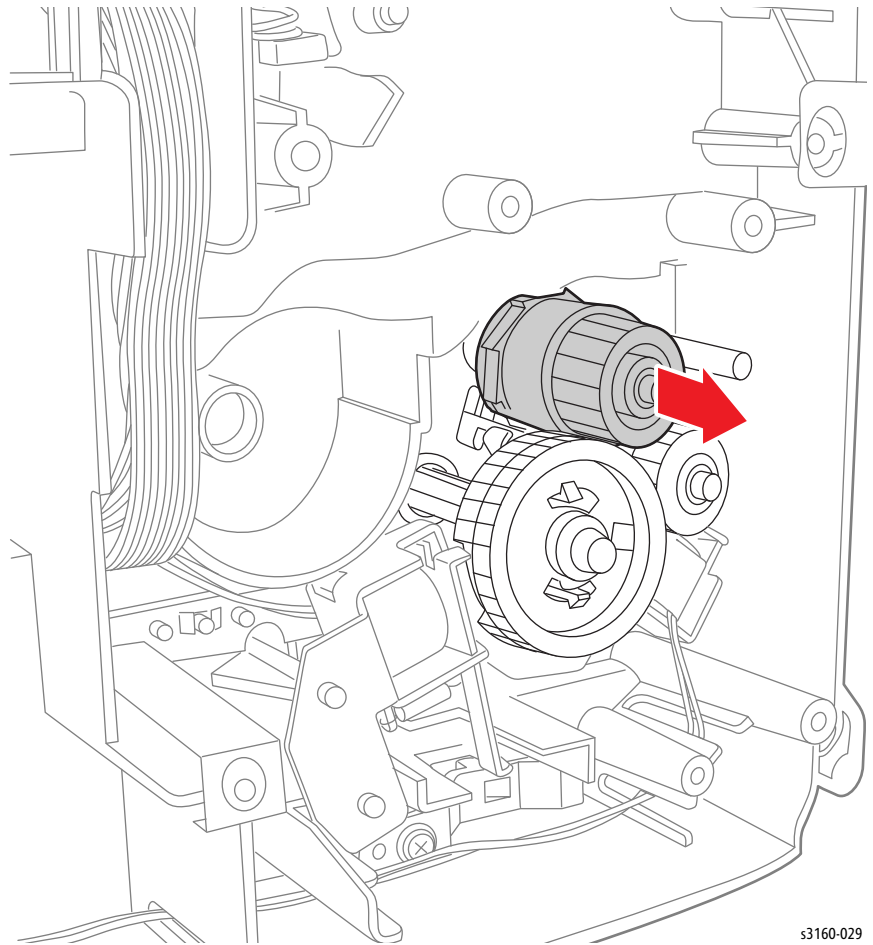
PL6.0.68

1. Remove the Drive Assembly (page 8-35).
2. Remove 3 screws (10 mm, silver, tap) and remove the Feed Bracket.



s3160-028

3. Remove the Idler Gear (black), and then pull the Clutch Assembly out.

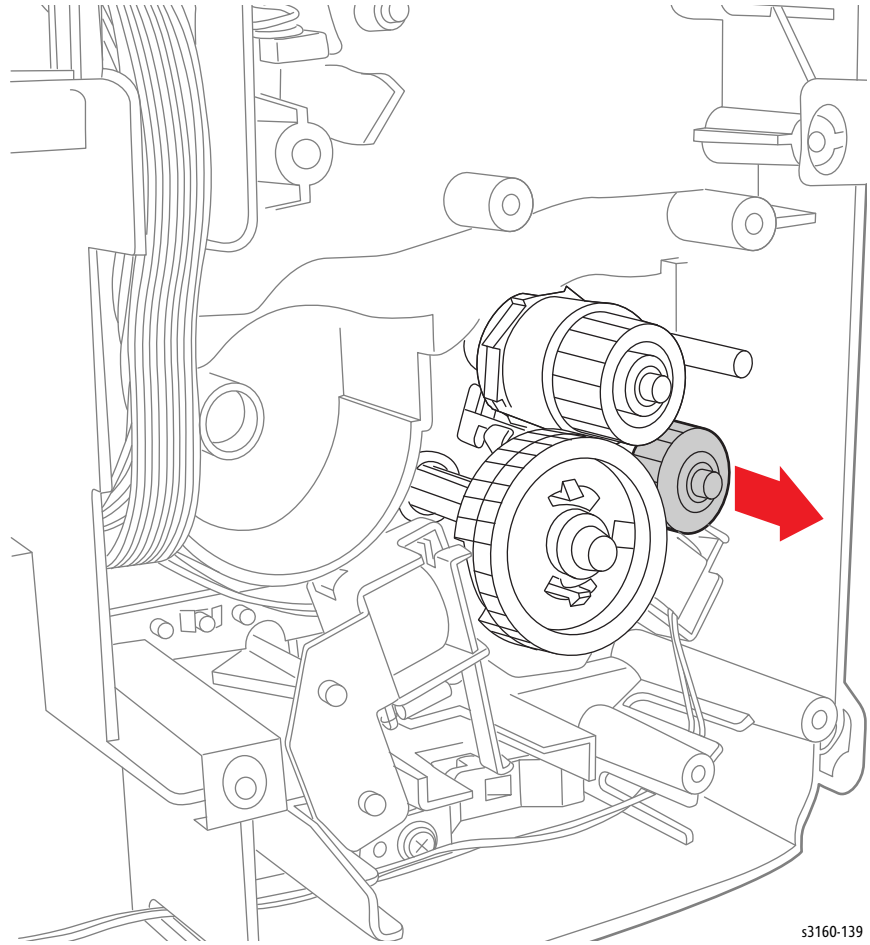


Feed Roller

PL6.0.42

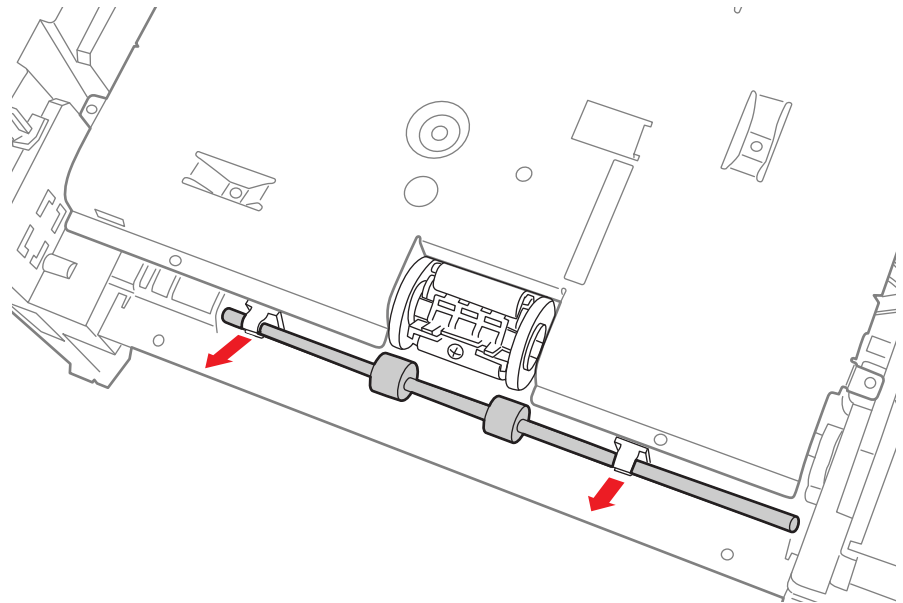
1. Remove the front cover (page 8-23).
2. Remove the Drive Assembly (page 8-35).

3. Remove the Feed Shaft.



s3160-139

4. Unclip the Feed Roller from the 2 clips.

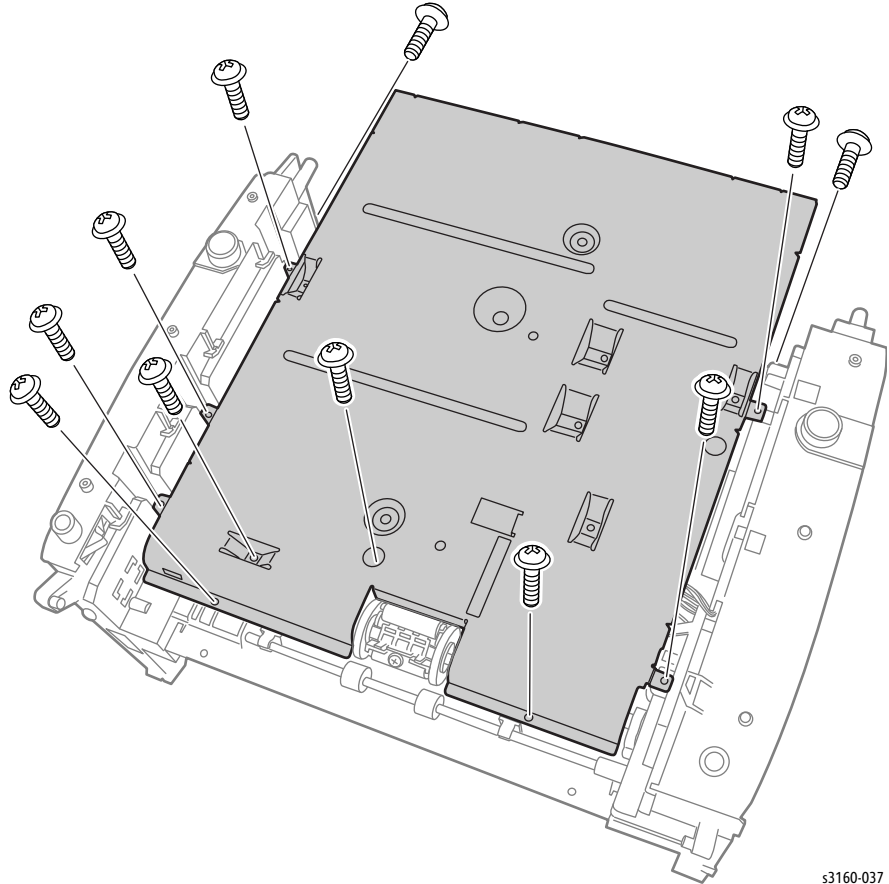


s3160-140

Feed Actuator

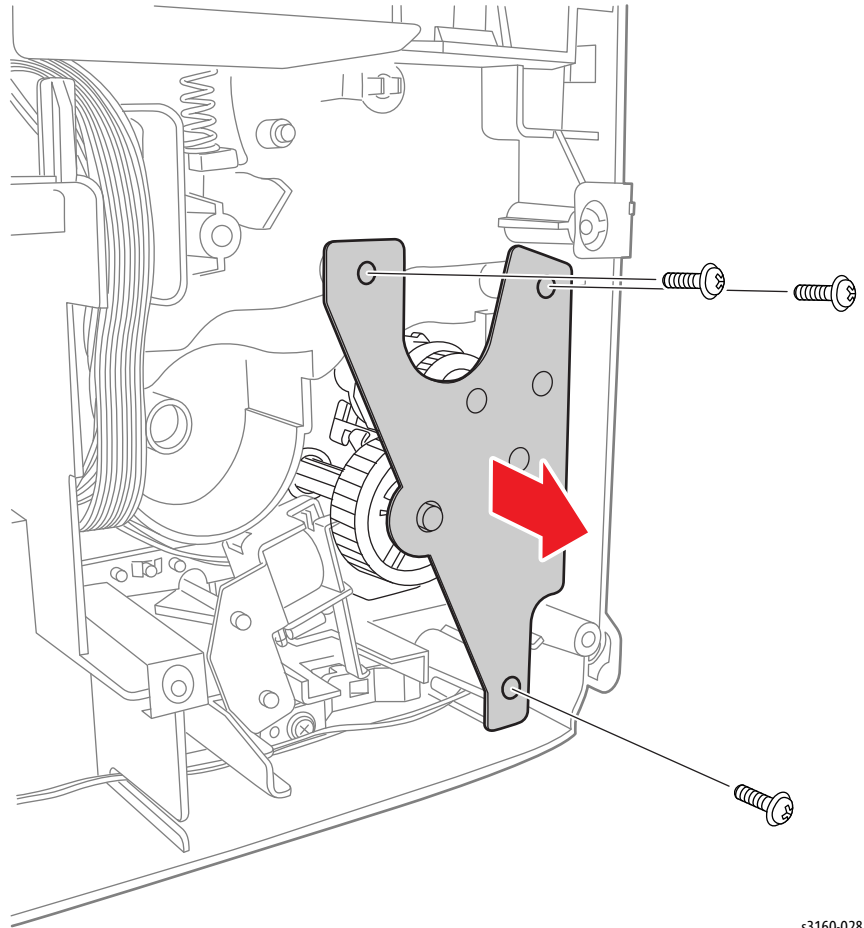
PL6.0.57

1. Remove the Print Cartridge (page 8-6).
2. Remove the Paper Tray (page 8-7).
3. Turn the printer over, and remove 11 screws (10 mm, silver, tap) on the Engine Shield assembly.



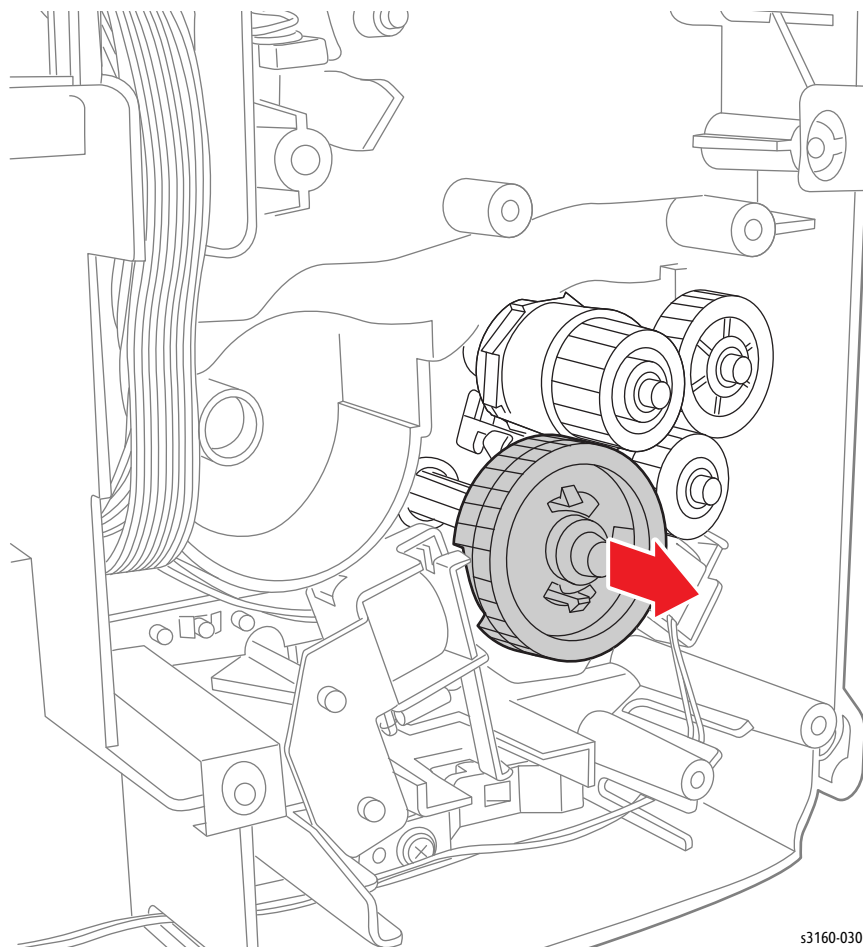
4. Lift the Engine Shield Assembly and disconnect all cables on the boards to remove the assembly.
5. Remove the Drive Assembly (page 8-35).

6. Remove 3 screws (10 mm, silver, tap) and remove the Feed Bracket.



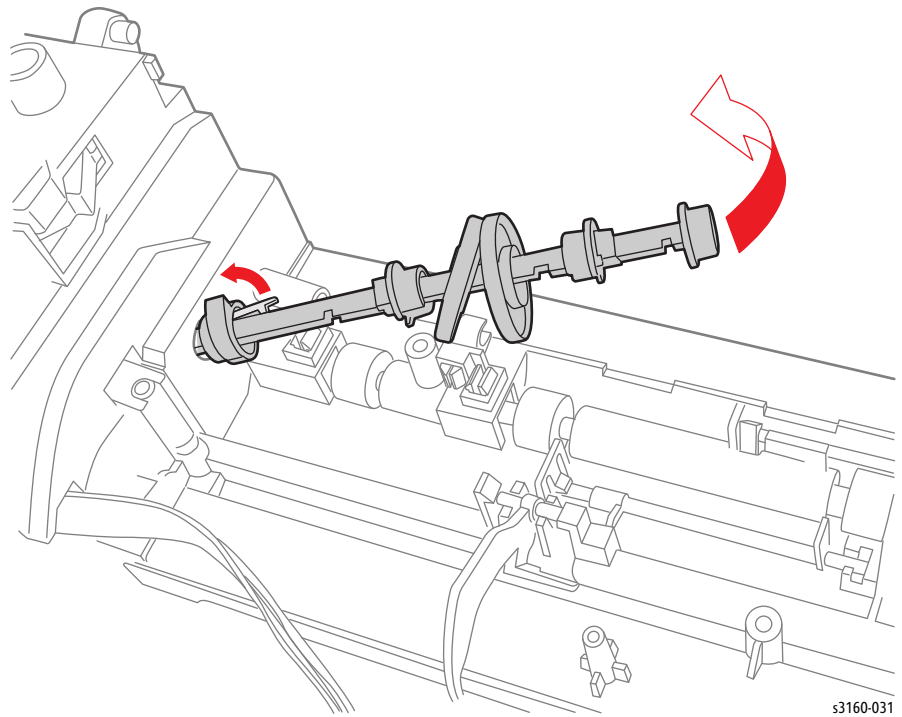
s3160-028

7. Remove the Pick Up Gear.



8. Turn the printer upside down with the rear of the printer facing you.

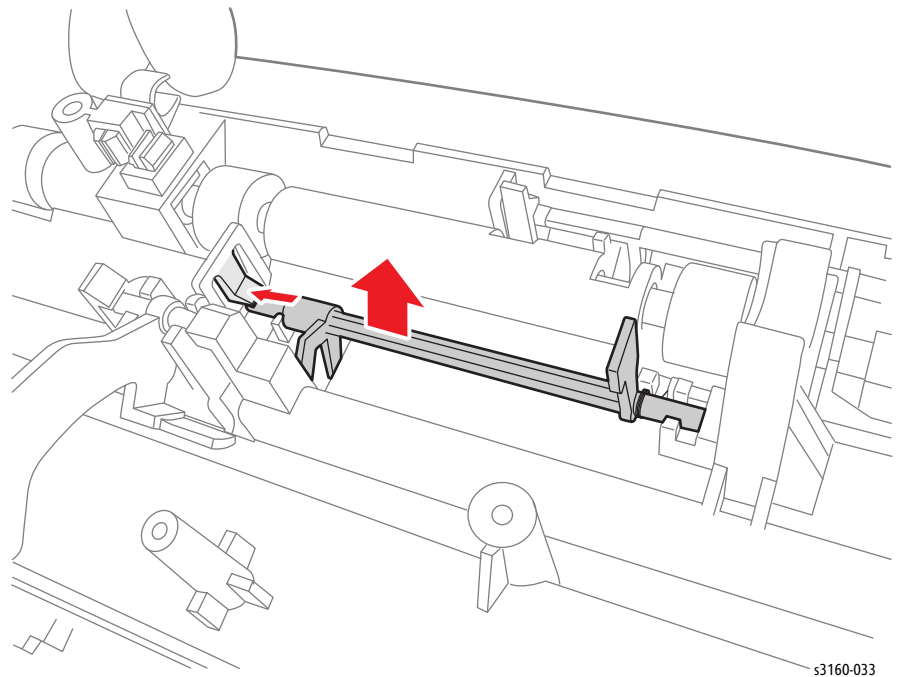
9. Lift the clip on the Pick Up Shaft and slide the Pick Up Assembly slightly to the left, and then lift the assembly and slide it to the right to remove it.



10. Gently press the tab and remove the Feed Actuator.

Note

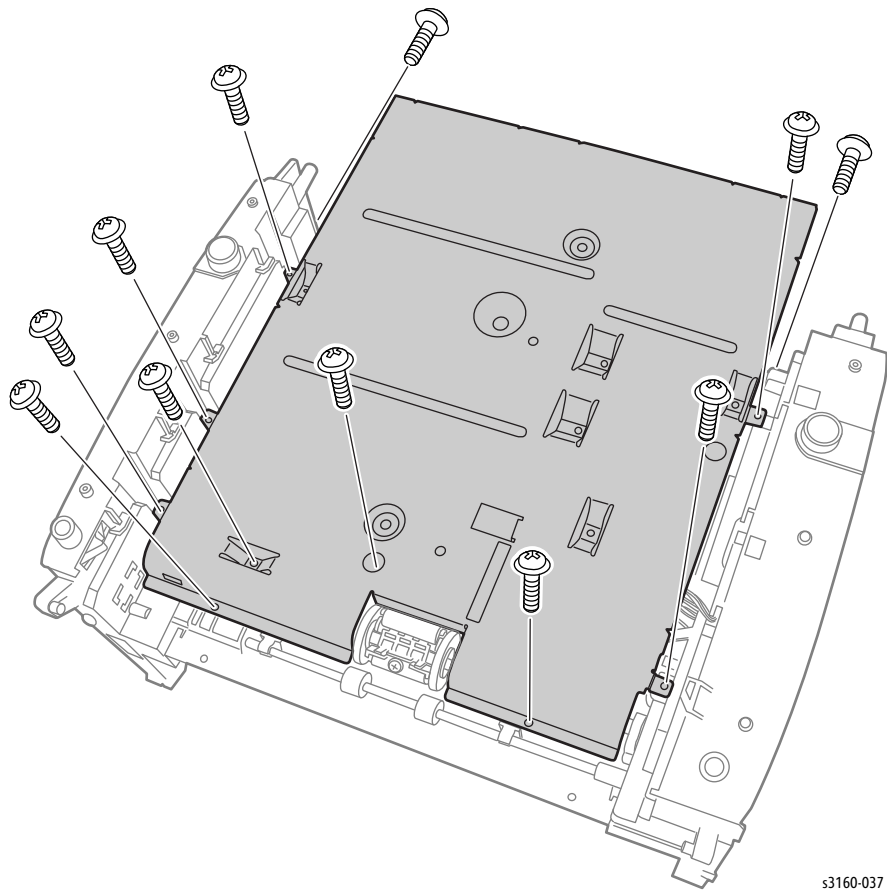
For reinstallation purposes, observe the position of the spring on the Feed Actuator.



Manual Feed Actuator

PL6.0.58

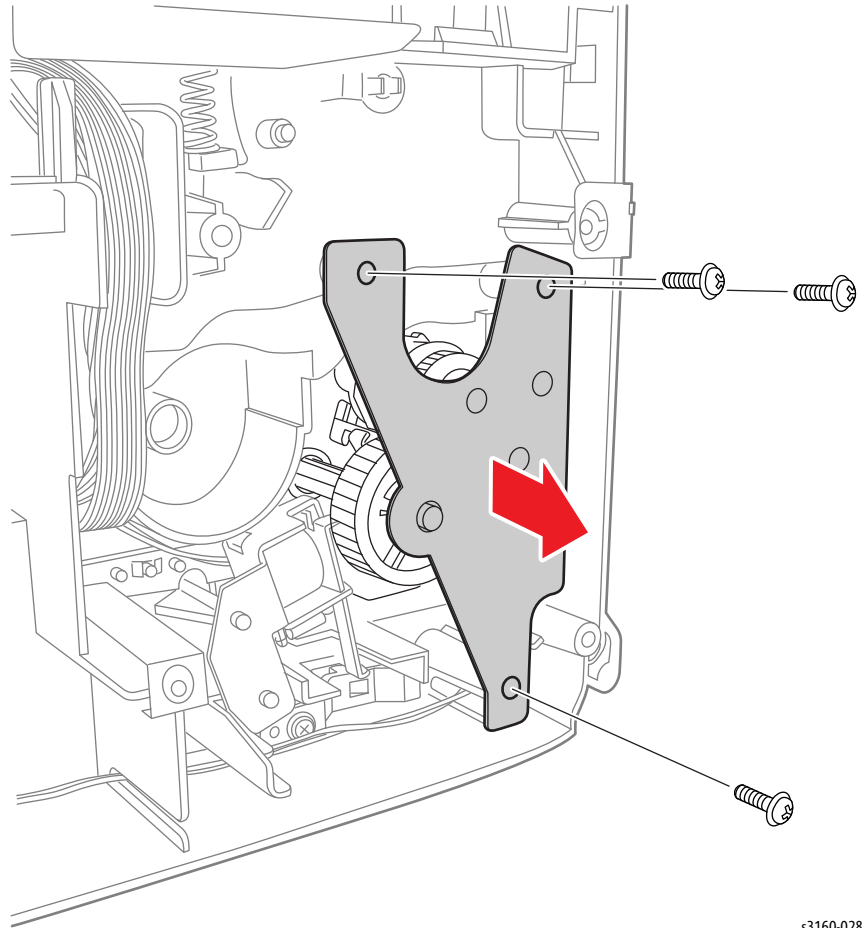
1. Remove the Print Cartridge (page 8-6).
2. Remove the Paper Tray (page 8-7).
3. Turn the printer over.
4. Remove 11 screws (10 mm, silver, tap) on the Engine Shield assembly.



s3160-037

5. Lift the Engine Shield Assembly and disconnect all cables on the boards and remove the assembly.
6. Remove the Drive Assembly (page 8-35).

7. Remove 3 screws (10 mm, silver, tap) and remove the Feed Bracket.

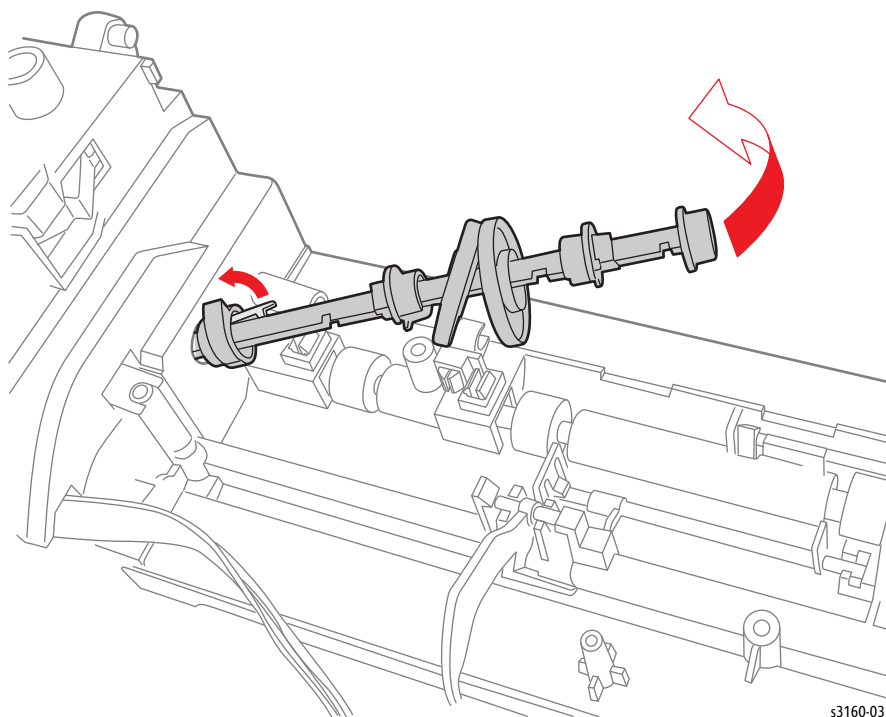


s3160-028

8. Remove the Feed Roller (page 8-38).

9. Turn the printer upside down with the rear of the printer facing you.

10. Lift the clip on the Pick Up Shaft and slide the Pick Up Assembly slightly to the left, and then lift the assembly and slide it to the right to remove it.

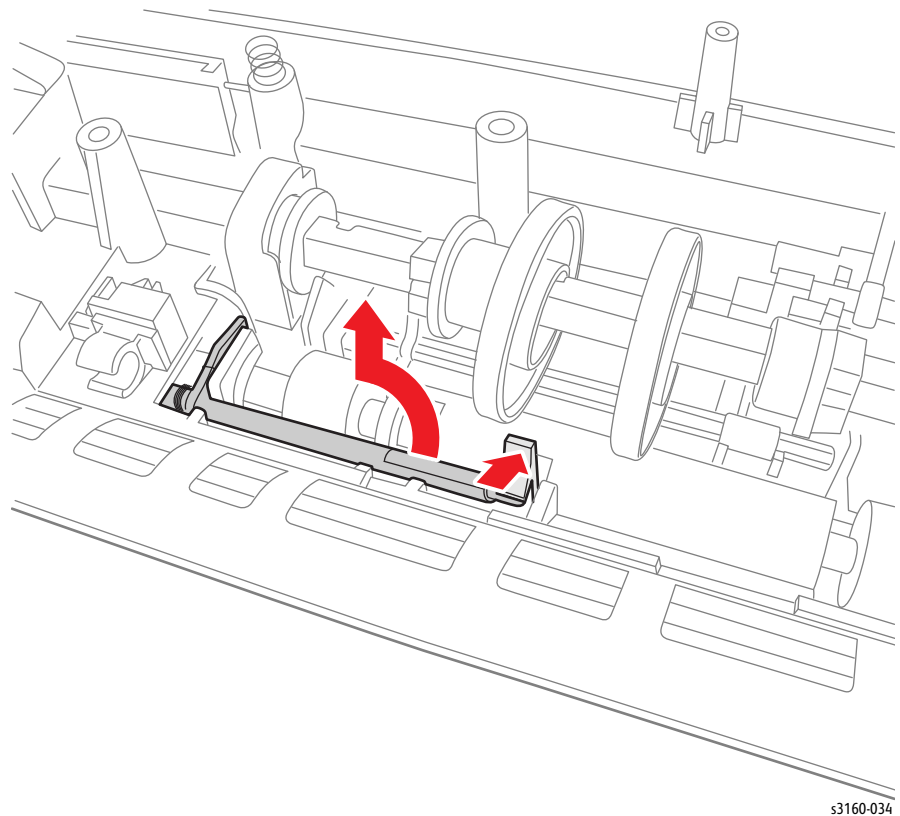


s3160-031

11. Remove the Manual Feed Actuator by gently pushing on the tab and then lift the actuator out.

Note

For reinstallation purposes, observe the position of the spring on the Manual Feed Actuator. If necessary, wind the spring around the shaft 1 time to increase tension during reinstallation.



s3160-034

Replacement Note

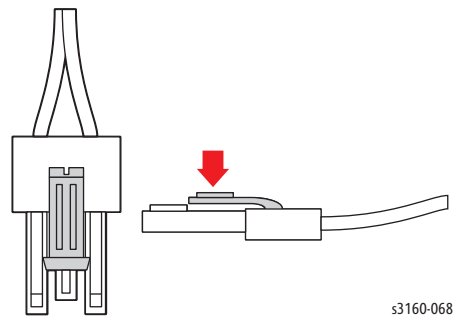
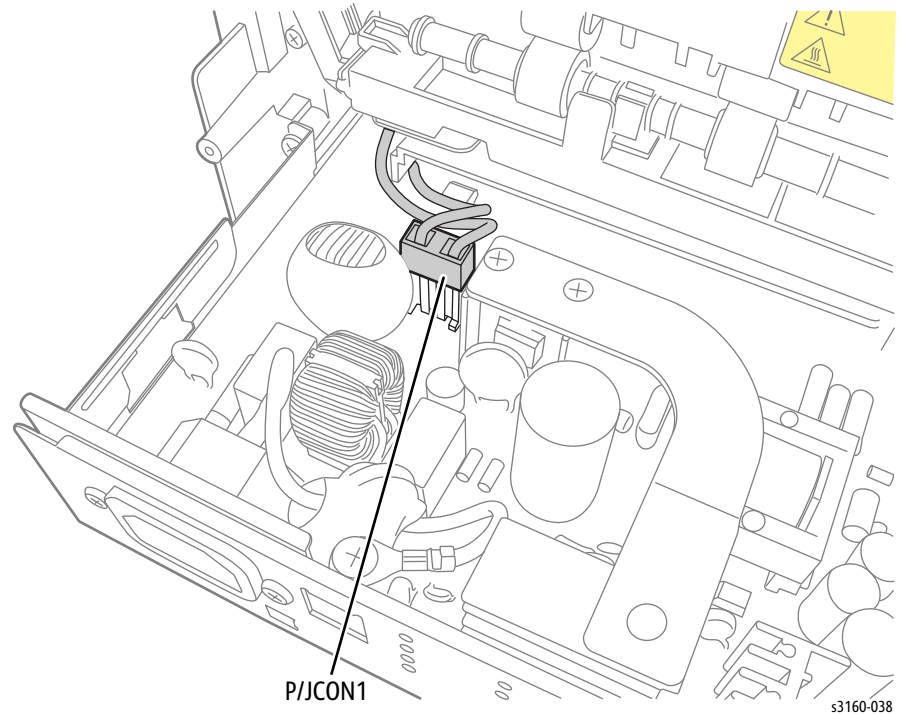
If necessary, wind the spring around the shaft 1 time to increase tension during reinstallation.

Paper Tray Empty Actuator

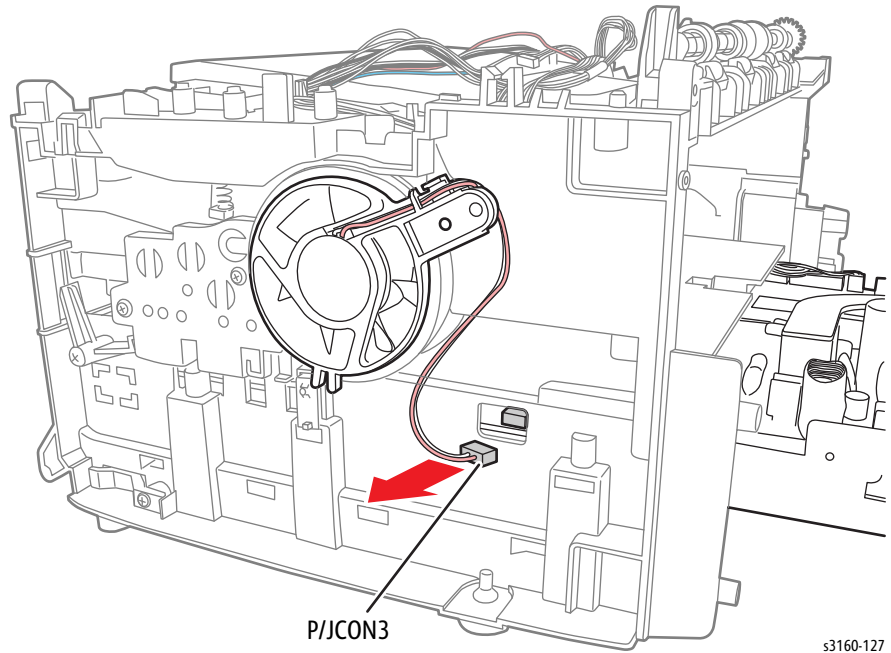
PL6.0.56

1. Remove the Print Cartridge (page 8-6).
2. Remove the Tray (page 8-7).
3. Remove the Rear Cover (page 8-26).

4. On the Power Supply Board, disconnect CON1.

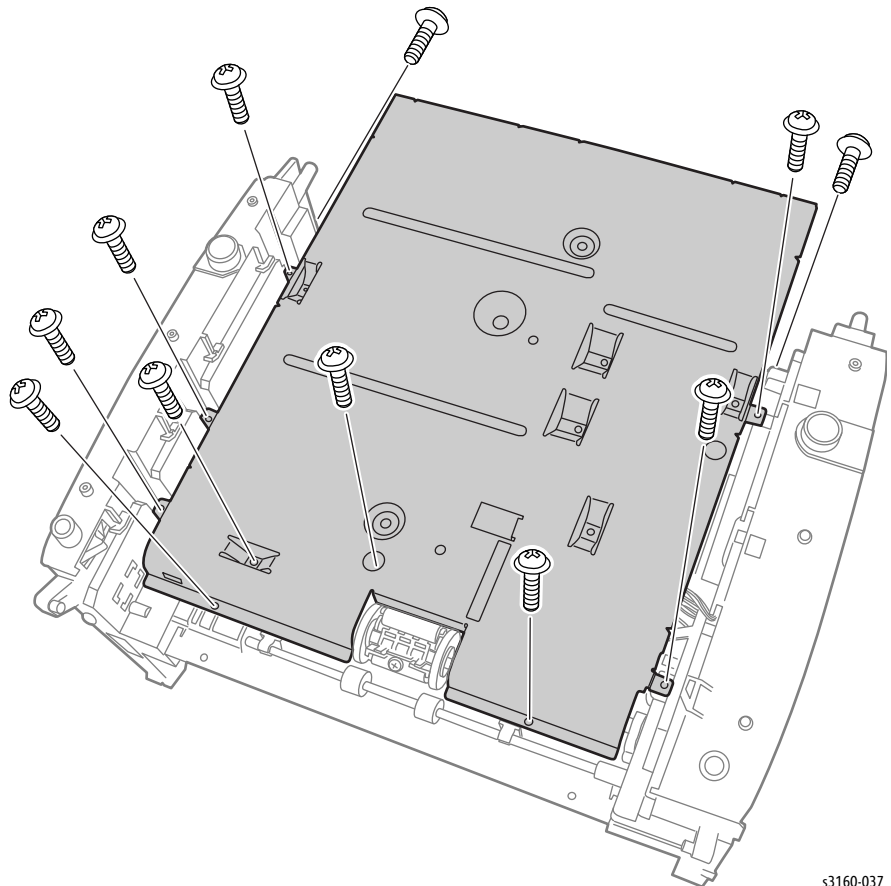


5. Disconnect CON3.

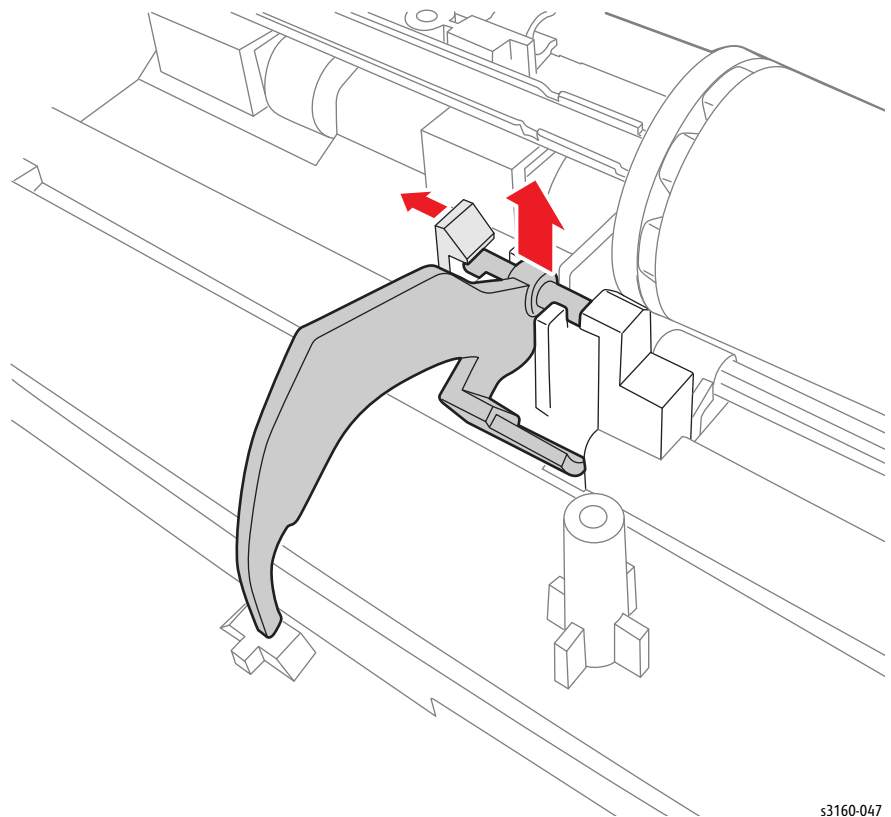


6. Turn the printer over.

7. Remove 11 screws (10 mm, silver, tap) on the Engine Shield assembly.



8. Gently turn the Engine Shield Assembly over and disconnect all cables on the Controller Board and remove the assembly.
9. Gently press on the tab and lift the Tray Empty Actuator out of the printer.



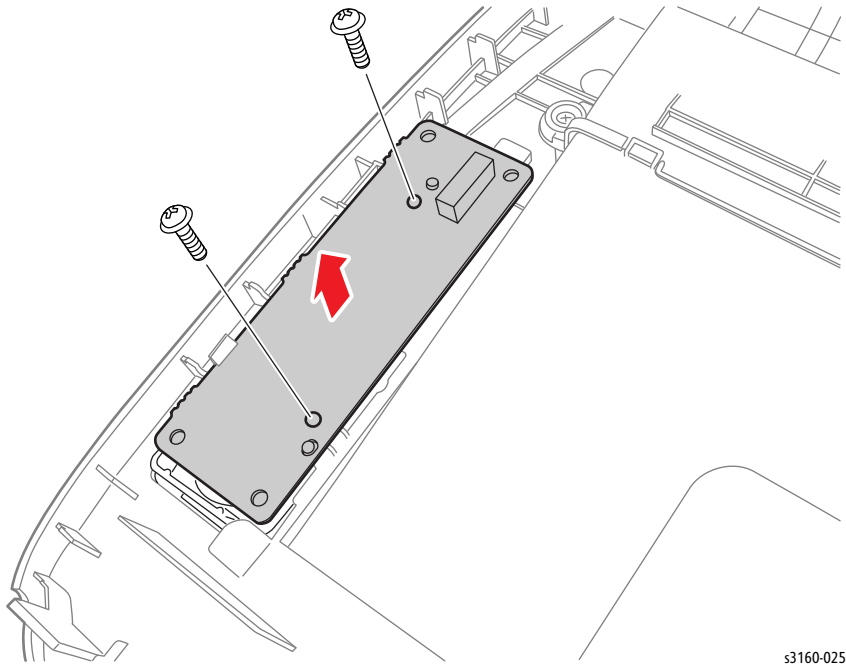
s3160-047

Electrical

Control Panel

PL2.0.10

1. Remove the Top Cover (page 8-23).
2. Remove 2 screws (10 mm, silver, tap), and then remove the Control Panel.



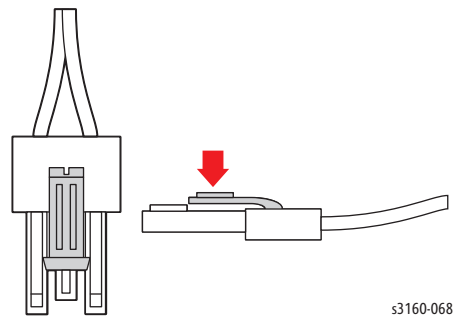
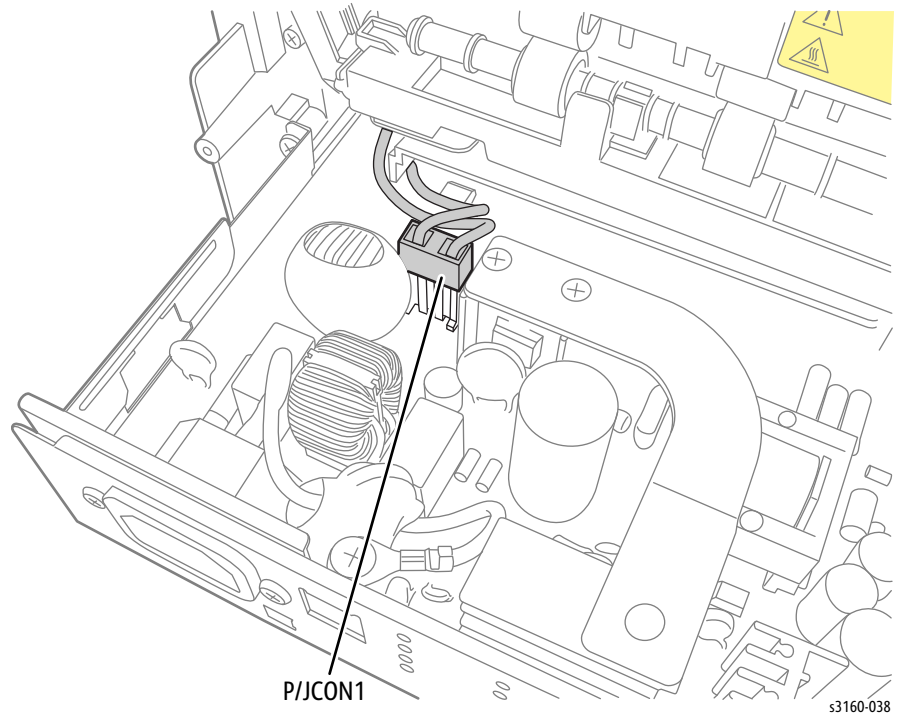
s3160-025

Controller Board

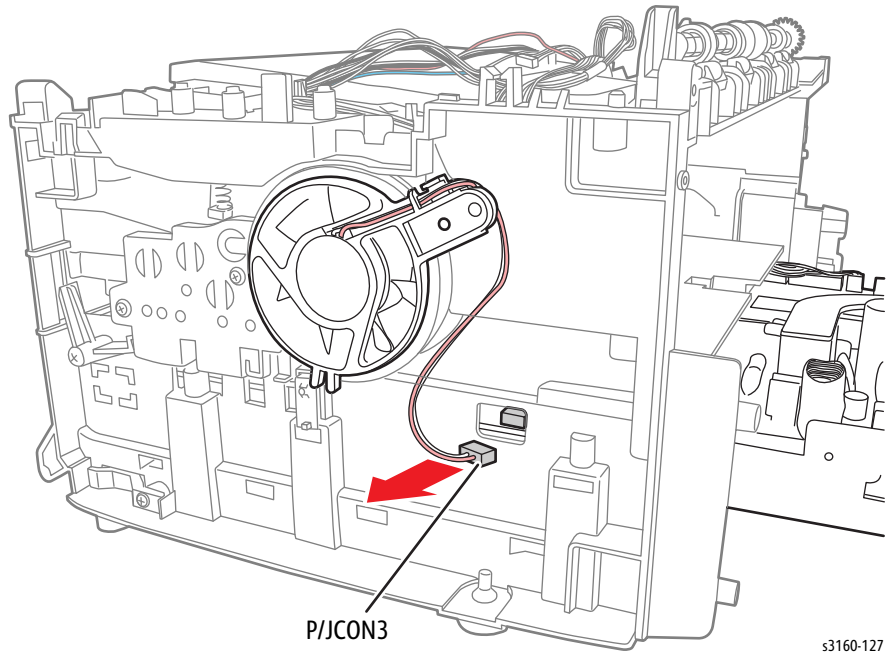
PL1.0.2

1. Remove the Print Cartridge (page 8-6).
2. Remove the Tray (page 8-7).
3. Remove the Rear Cover (page 8-26).

4. On the Power Supply Board, disconnect CON1.

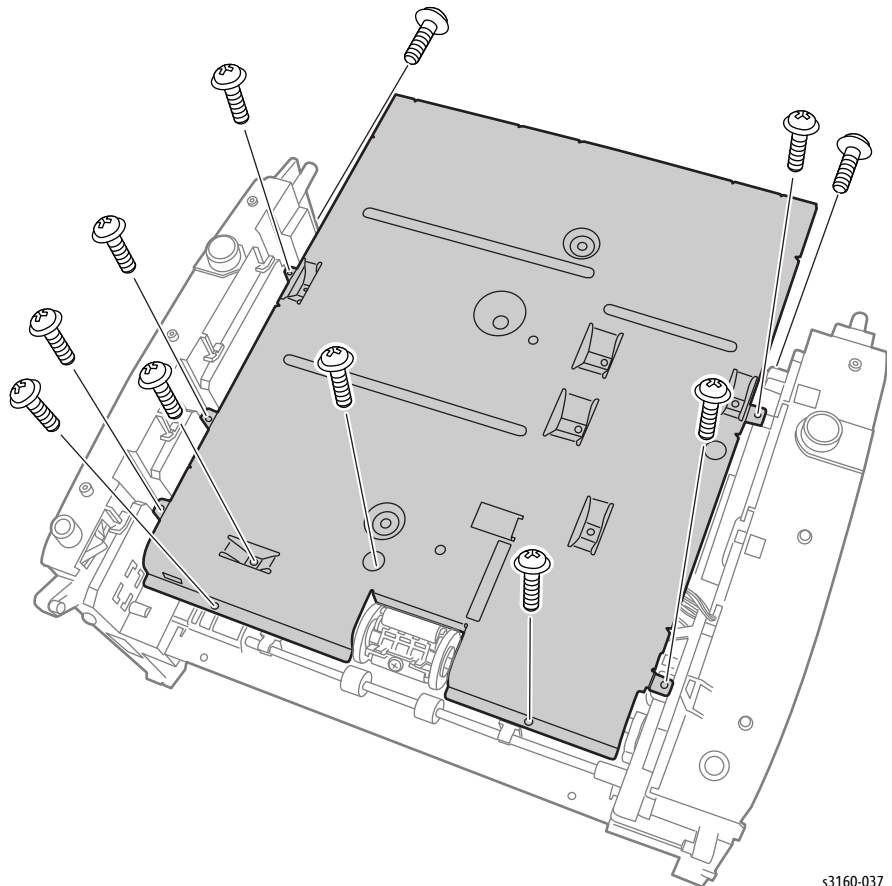


5. Disconnect CON3.

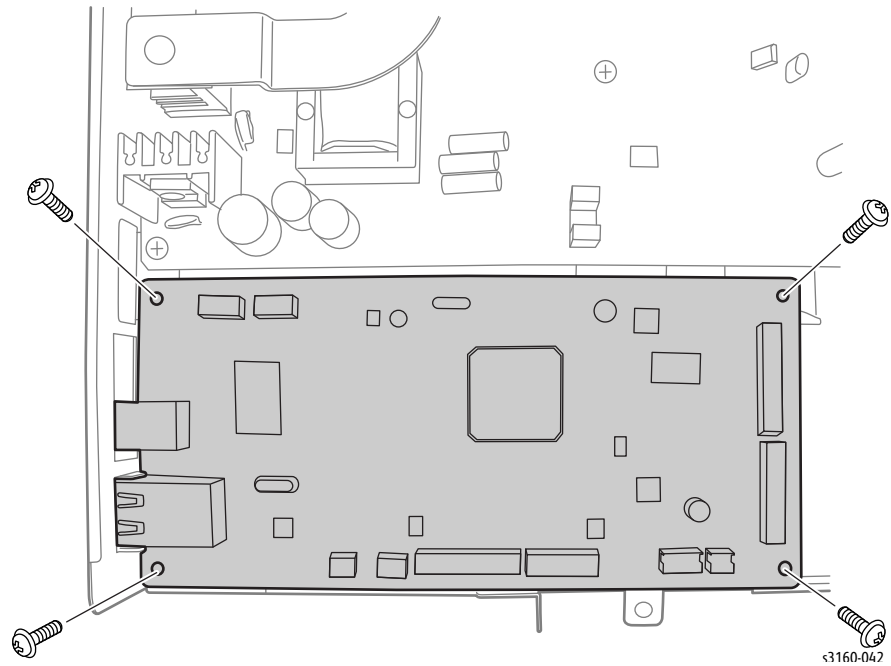


6. Turn the printer over.

7. Remove 11 screws (10 mm, silver, tap) on the Engine Shield assembly.



8. Gently turn the Engine Shield Assembly over and disconnect all cables on the Controller Board and remove the assembly.
9. Remove 4 screws (silver, 6mm) from the Controller Board.



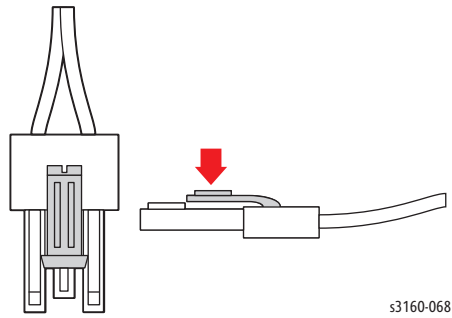
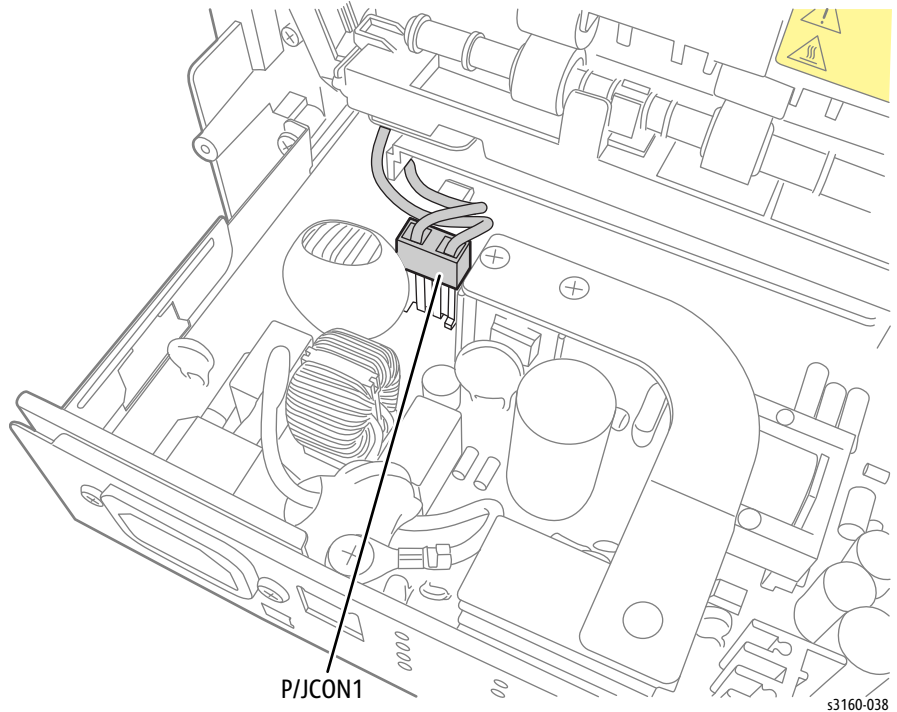
10. Remove the Controller Board.

Power Supply Board

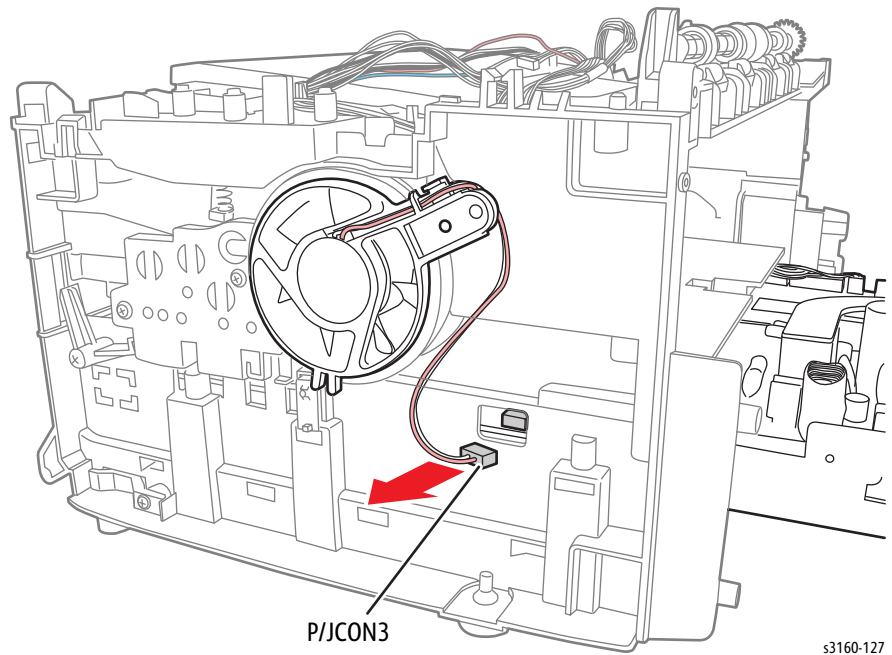
PL1.0.1

1. Remove the Print Cartridge (page 8-6).
2. Remove the Tray (page 8-7).
3. Remove the Rear Cover (page 8-26).

4. Disconnect CON1 on the Power Supply Board.



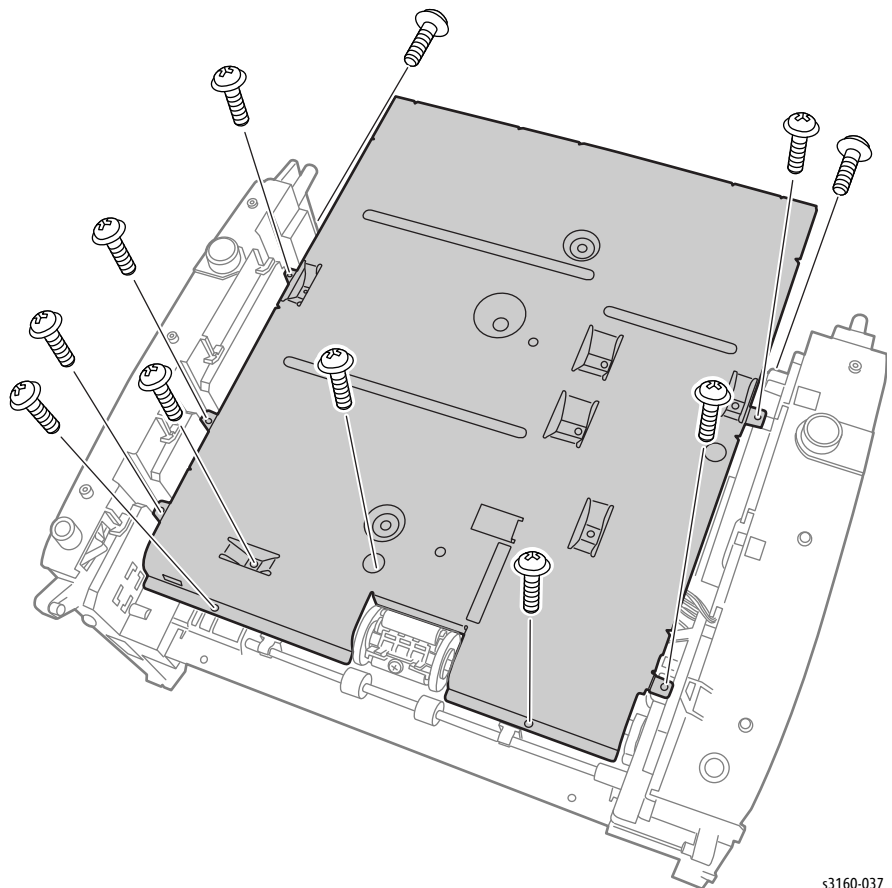
5. Disconnect CON3.



s3160-127

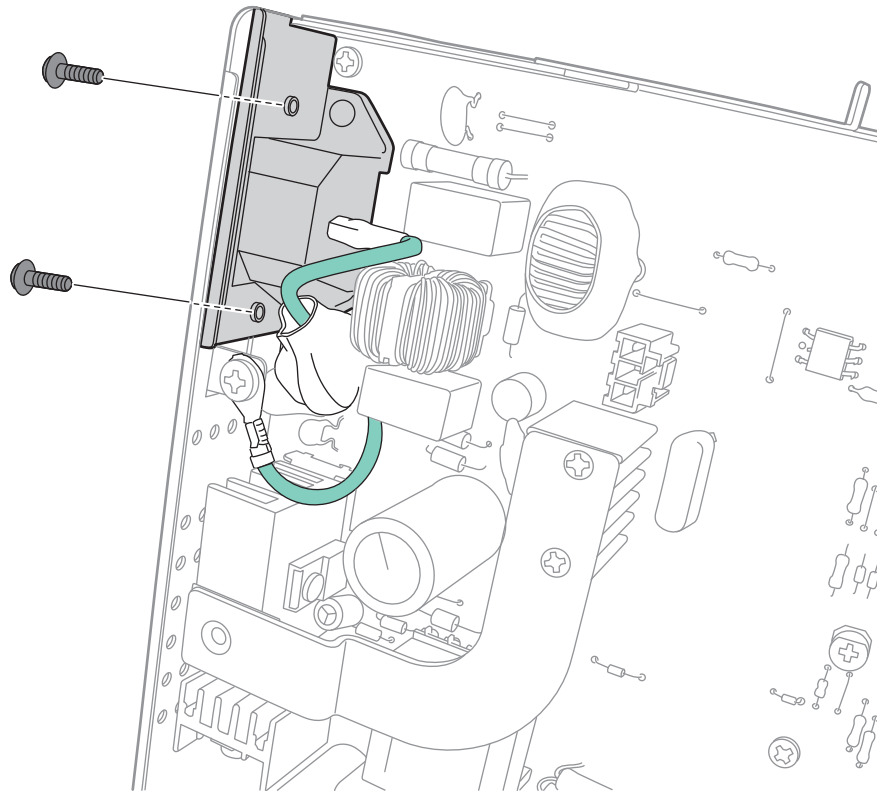
6. Turn the printer over.

7. Remove 11 screws (10 mm, silver, tap) on the Engine Shield assembly.



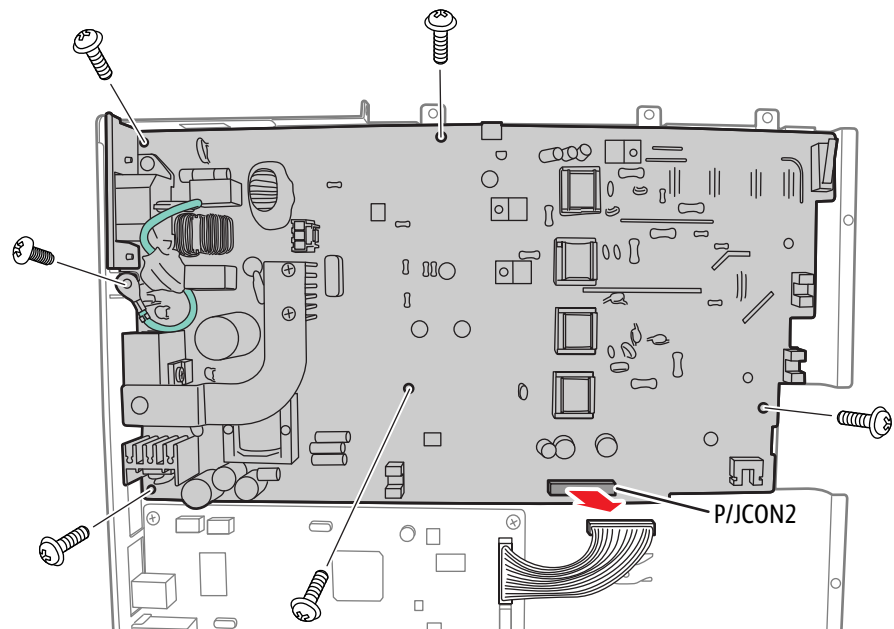
s3160-037

8. Gently turn the Engine Shield Assembly over and disconnect all cables on the boards to remove the assembly.
9. Remove 2 screws (black, 8 mm, tap) from the power supply connector.



s3160-117

10. Disconnect CON2 on the Power Supply Board.
11. Remove 5 screws (silver, 6mm).
Remove the ground wire screw (silver, 6mm). Note that the ground wire screw is slightly larger in diameter than the other screws.



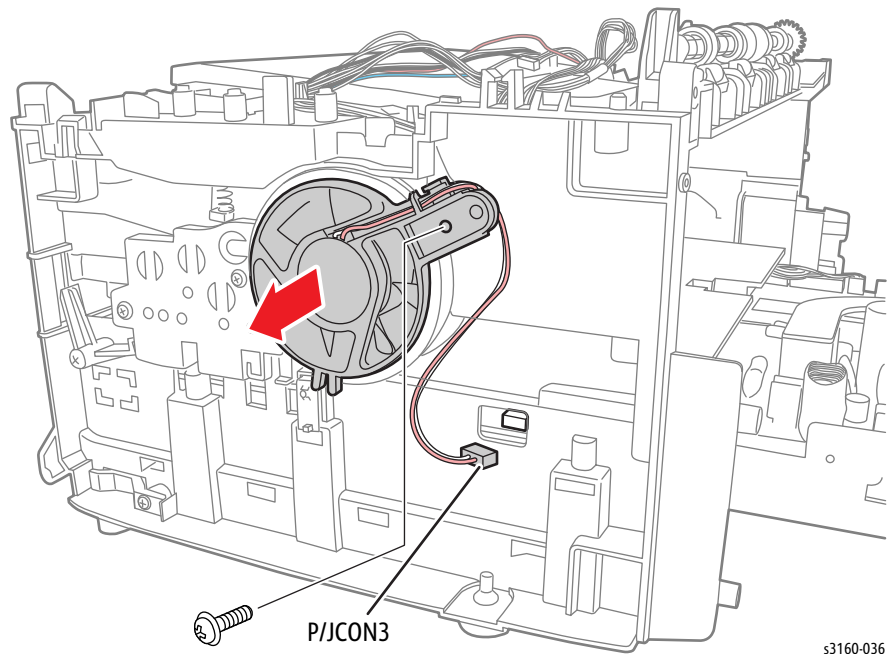
s3160-040

12. Remove the Power Supply Board.

Fan

PL6.0.4

1. Remove the Top Cover (page 8-23).
2. Remove the Left Cover (page 8-26).
3. Remove 1 screw (10 mm, silver, tap), and then unplug fan connector CON3.



s3160-036

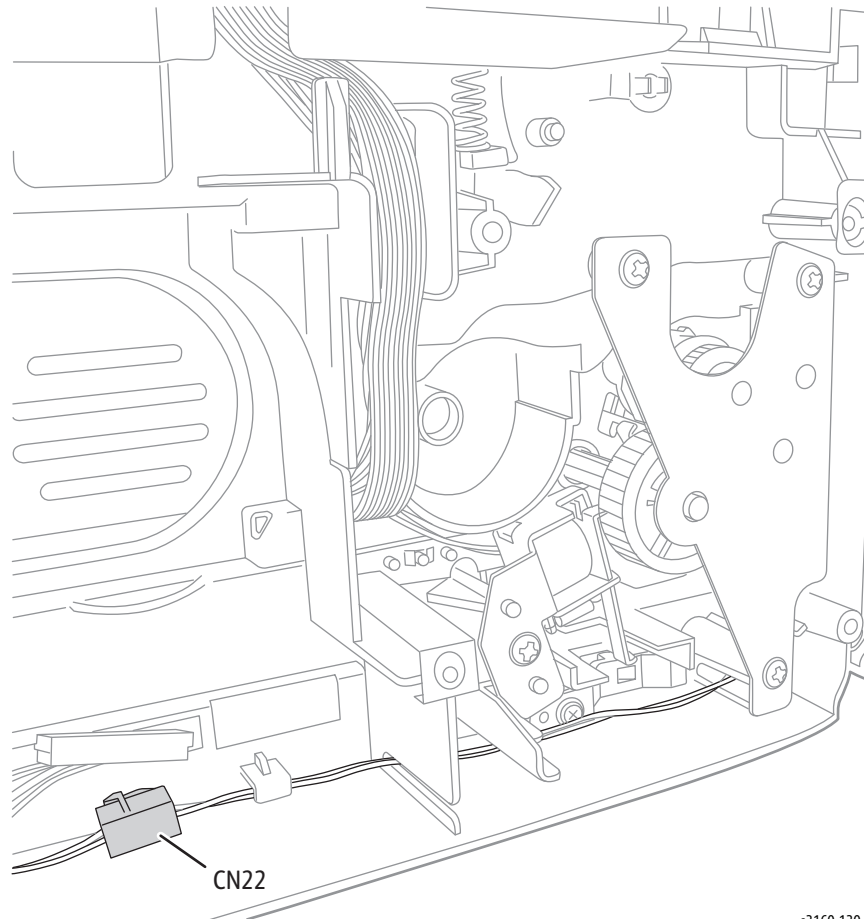
4. Remove the Fan.

Solenoids and Sensors

Manual Feed Solenoid

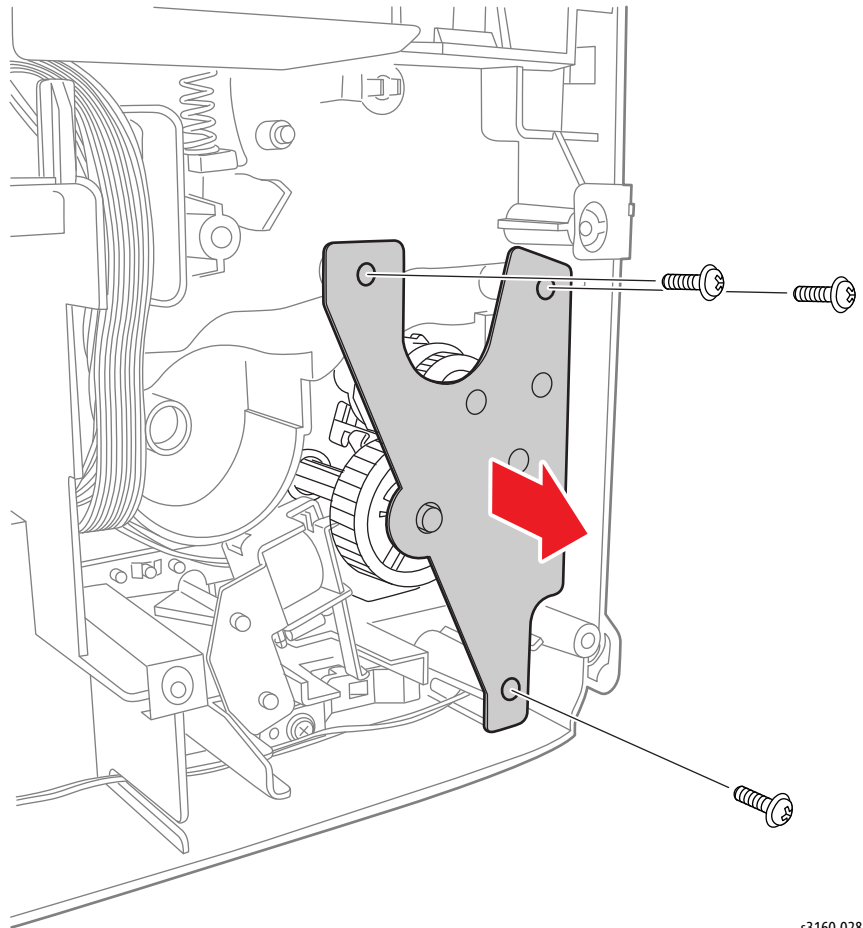
PL6.0.19

1. Remove the Drive Assembly (page 8-35).
2. Disconnect the black and gray wiring harness connector CN22.



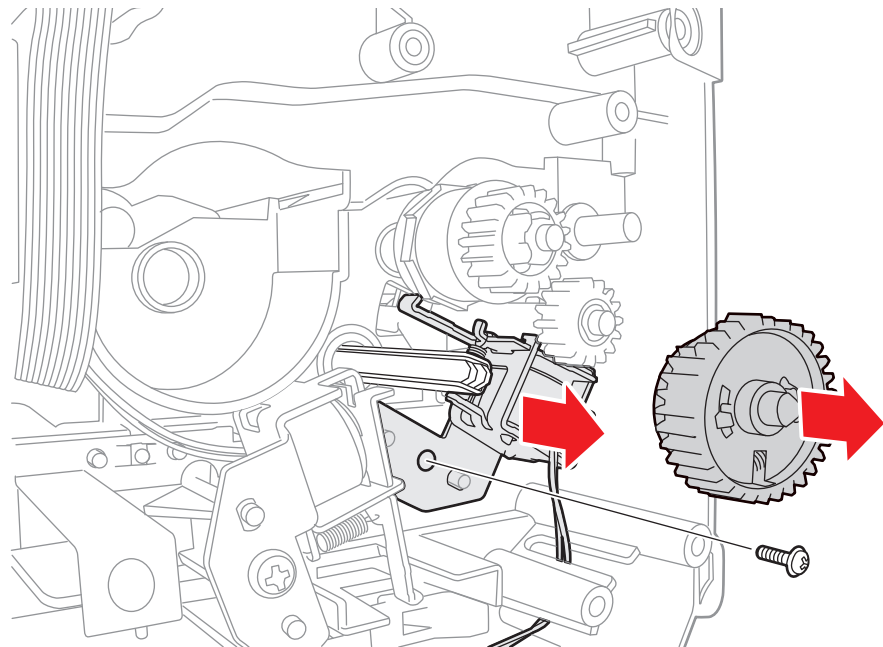
s3160-130

3. Remove 3 screws (10 mm, silver, tap) and remove the Feed Bracket.



s3160-028

4. Remove the Pick Up Gear Assembly.
Remove 1 screw (10 mm, silver, tap) that secures the Manual Feed Solenoid.



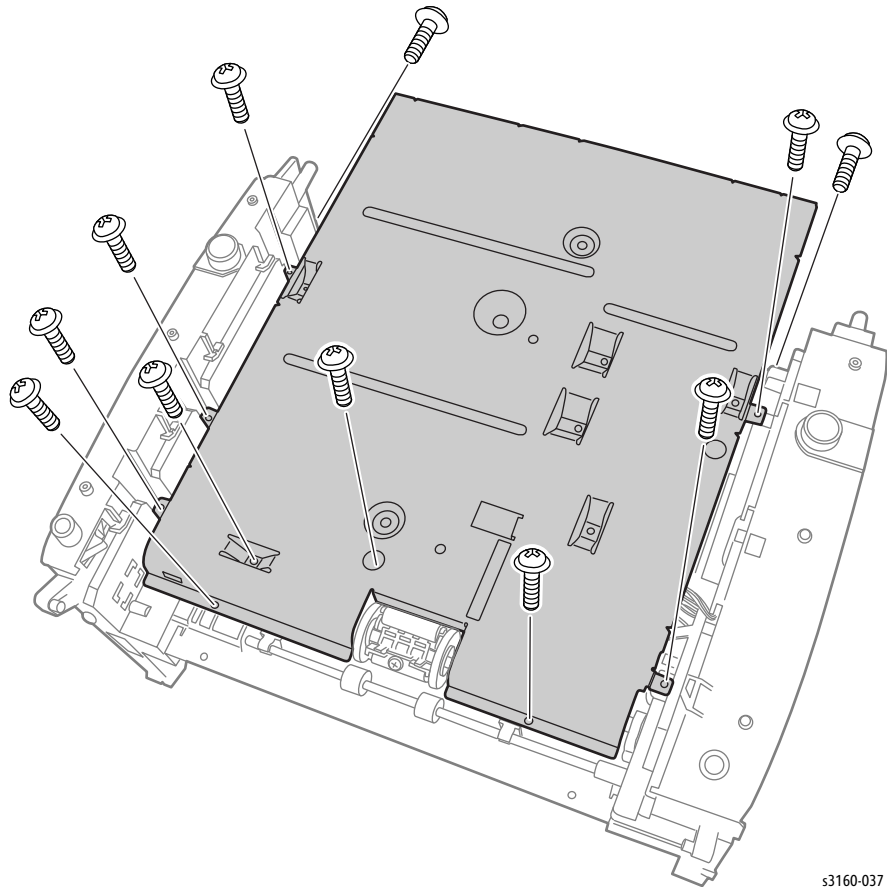
s3160-062

5. Remove the Manual Feed Solenoid.

Pick Up Solenoid

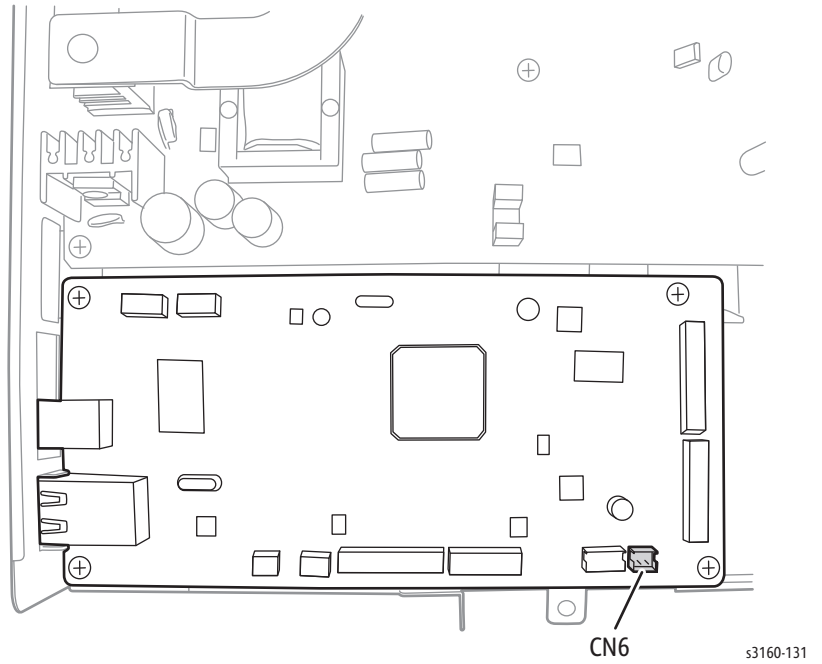
PL6.0.18

1. Remove the Print Cartridge (page 8-6).
2. Remove the Paper Tray (page 8-7).
3. Remove the Rear Cover (page 8-26).
4. Turn the printer over.
5. Remove 11 screws (10 mm, silver, tap) on the Engine Shield assembly.

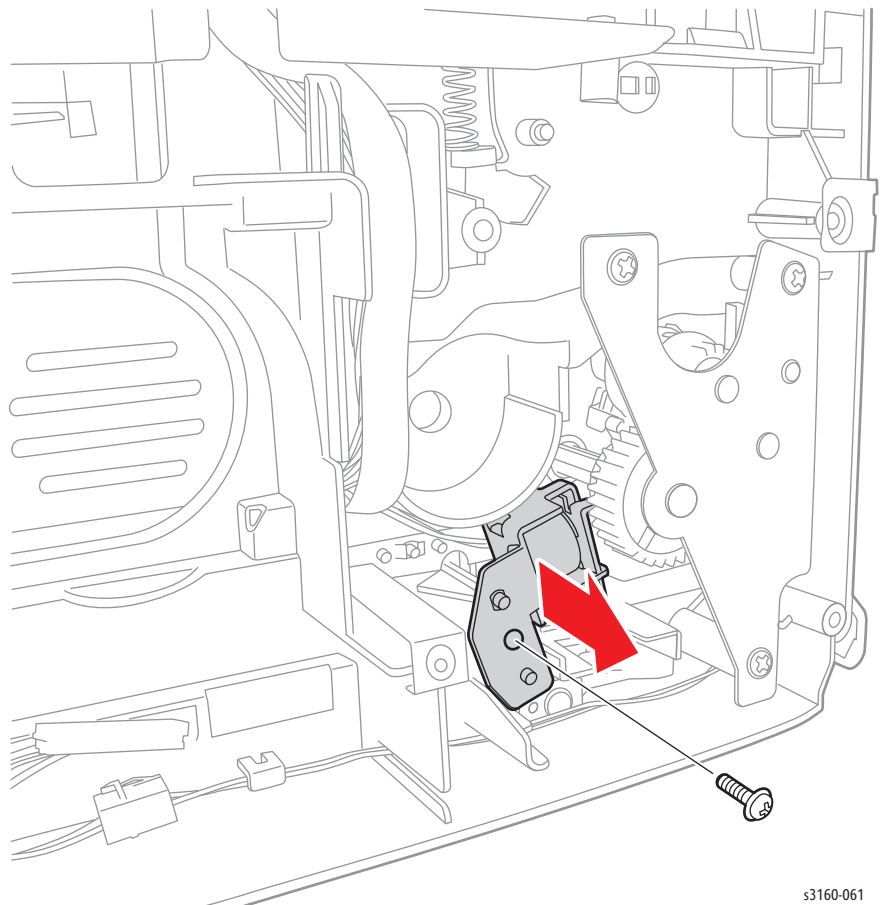


s3160-037

6. Lift the Engine Shield Assembly and disconnect CN7 (CN6 on the 3160) on the Controller Board.



7. Remove the Drive Assembly (page 8-35).
8. Remove 1 screw (10 mm, silver, tap) that secures the Pick Up Solenoid.

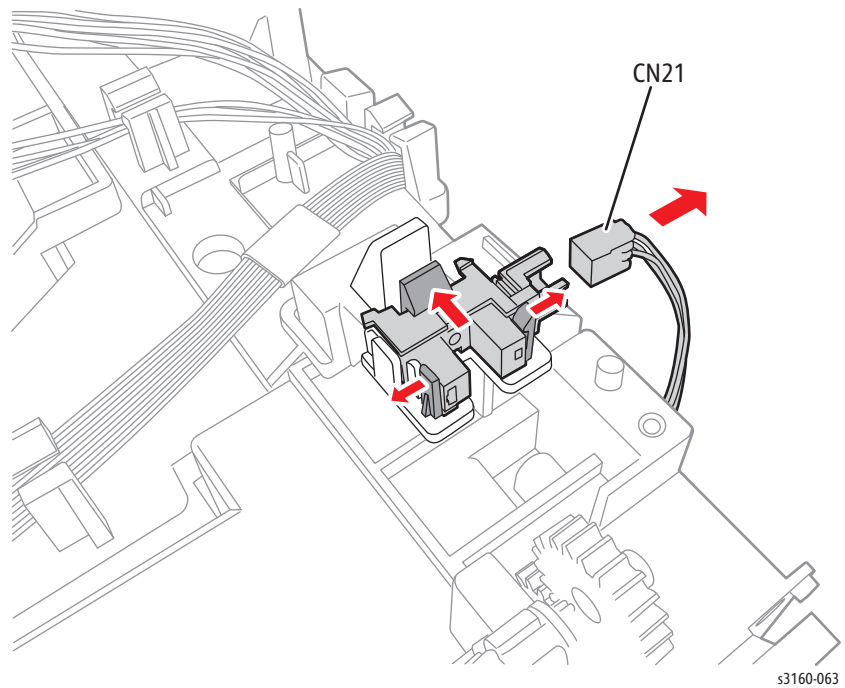


- Carefully thread the solenoid cable through the side of the printer and remove the solenoid.

Out Bin Full Sensor

PL6.0.73

- Remove the Top Cover (page 8-23).
- Disconnect the wiring harness CN21, and then press the tabs and remove the sensor.



Parts List

In this chapter...

- Serial Number Format
- Using the Parts List
- Parts Lists
- Xerox Supplies and Accessories

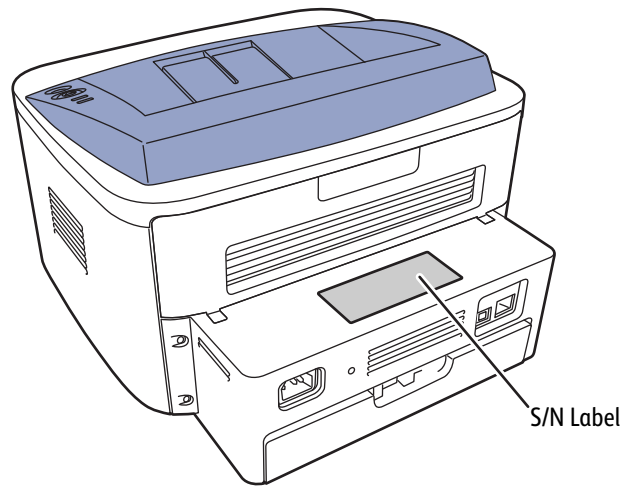
Chapter 9

Serial Number Format

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

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

The serial number is found on a label located on the back of the printer.



s3160-123

The nine-digit serial number has the following format:

PPPSSSSS

PPP = Three digit alphanumeric product code

Product Code	Product
TVB	3140, 110 V Engine
TVX	3140, 220 V Engine
UWX	3155, 220 V Engine
UWB	3160B, 220 V Engine
UXA	3160N, 110 V Engine
UXB	3160N, 220 V Engine

SSSSSS = Six digit numeric serial number based on the following table:

Product	Starting Serial Number	Ending Serial Number
3140, 110 V Engine	041501	071500
3140, 220 V Engine	071501	271500
3155, 220 V Engine	301501	401500
3160B, 220 V Engine	401501	431500
3160N, 110 V Engine	431501	461500
3160N, 220 V Engine	461501	511500

Example

UXB461515: Xerox Serial Number

UXB: Product Code for the Phaser 3160N, 220V printer

461515 = Serial Number for 3160N

Using the Parts List

- **ID No.:** The callout number from the exploded part diagram.
- **Name/Description:** The name of the part to be ordered and the number of parts supplied per order.
- **Part Number:** The material part number used to order that specific part.
- Parts identified throughout this manual are referenced **PL#.#.#**; For example, PL3.1.10 means the part is item 10 of Parts List 3.1.
- 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.
- 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.
- An asterisk (*) following a part name indicates the page contains a note about this part.
- The notation (NS) next to a part indicates that particular part is not spared, but contained in a kit or major assembly.
- 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

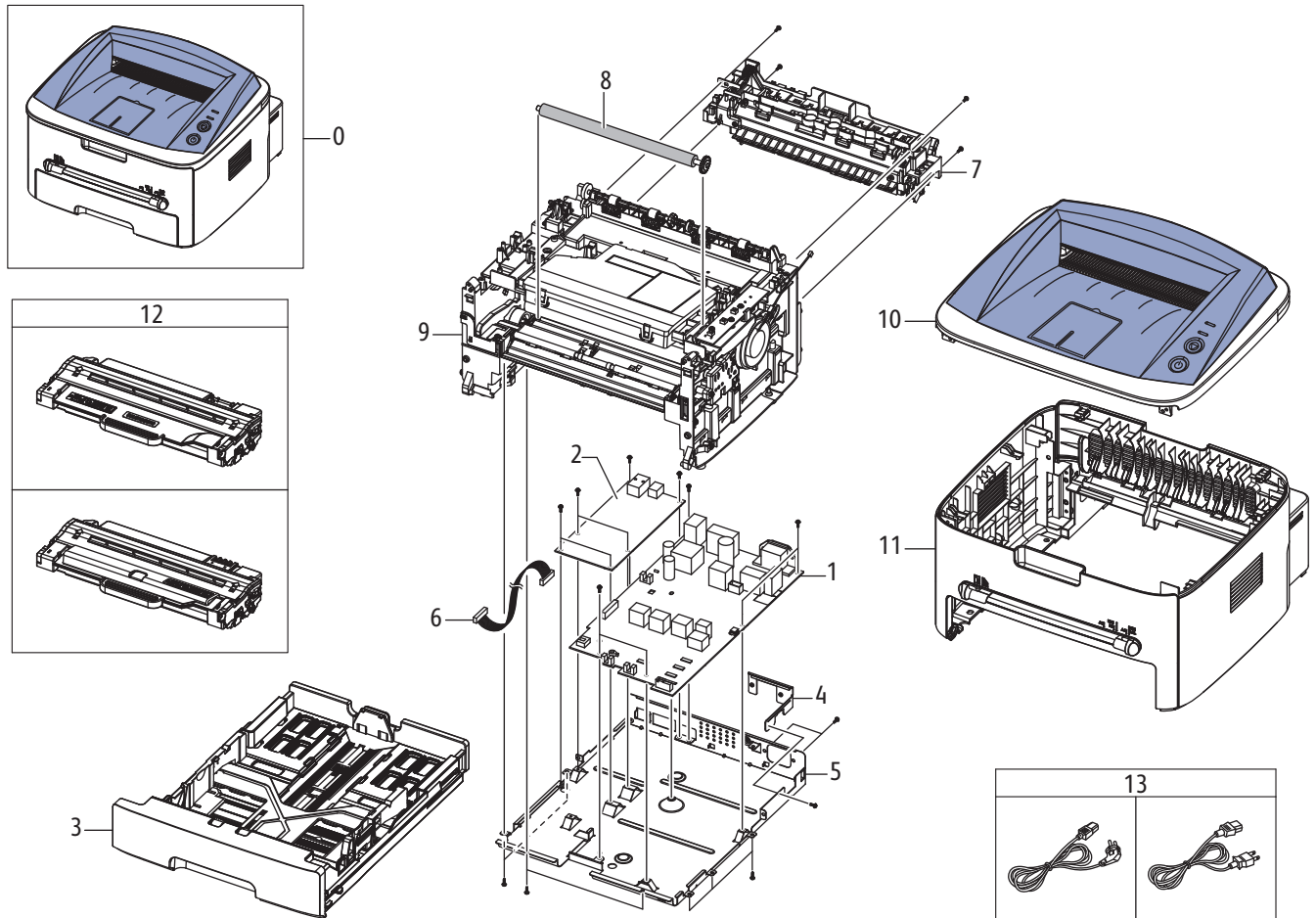
Only parts showing part numbers are available for ordering by support. Parts not showing part numbers are available on the parent assembly.

Abbreviations

Abbreviation	Meaning
C	C-ring
E	E-ring
KL	K-clip
S	Screw

Parts Lists

Parts List 1.0 Main

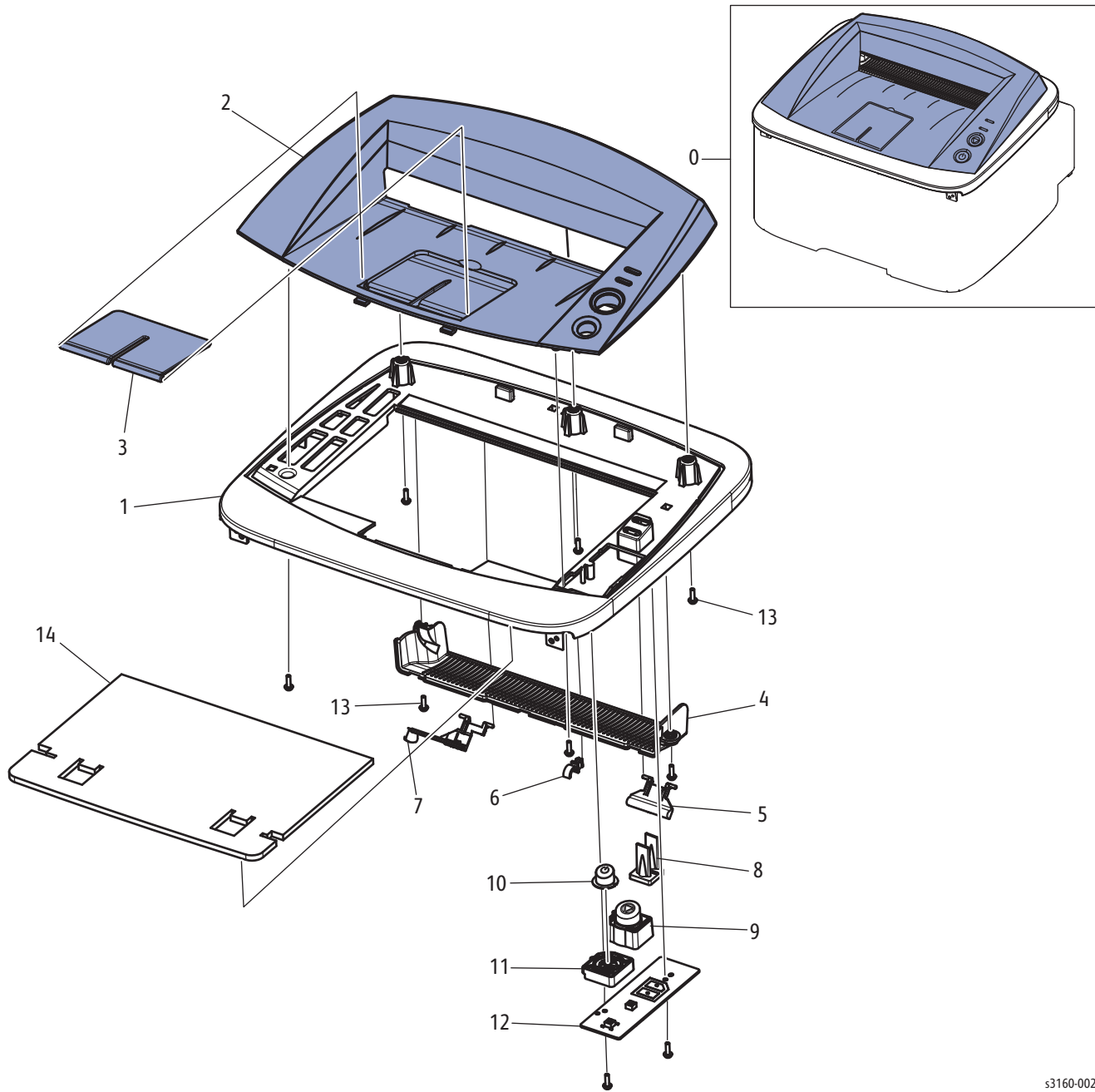


s3160-001

Parts List 1.0 Main

ID No.	Name/Description	Part Number
1.	Power Supply Board, 110V Power Supply Board, 220V	105N02172 105N02173
2.	Controller Board 3140 3155 3160B 3160N	140N63413 140N63414 140N63415 140N63411
3.	Paper Tray	050N00547
4.	Power Inlet Bracket	—
5.	Engine Shield	—
6.	Engine Harness	—
7.	Fuser - 110V Fuser - 220V	126N00332 126N00333
8.	Transfer Roller	022N02354
9.	Main Frame	—
10.	Top Cover	002N02909
11.	Front Cover 3140 3155 3160B 3160N	002N02910 002N02911 002N02912 002N02906
12.	Print Cartridge - 1.5K Print Cartridge - 2.5K	108R00908 108R00909
13.	Power Cord, 110V Power Cord, 220V	105N02072 117N01769

Parts List 2.0 Top Cover

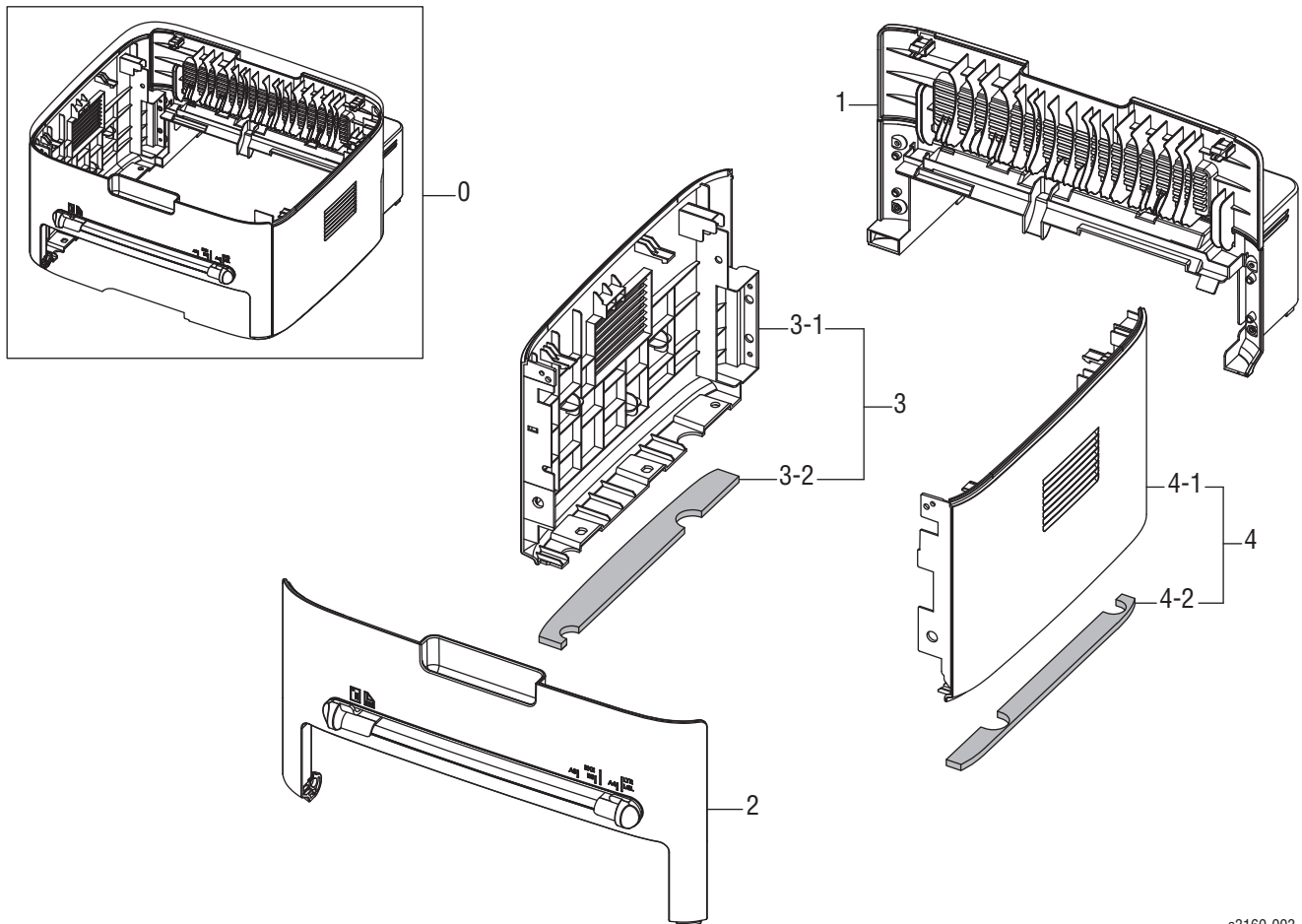


s3160-002

Parts List 2.0 Top Cover

ID No.	Name/Description	Part Number
0.	Top Cover Assembly	002N02909
1.	Top Cover	—
2.	Cover-Top Upper	—
3.	Stacker	—
4.	Exit Cover	—
5.	PMO-Sub_M_Stacker	—
6.	PMO-Bushing_F/Down	—
7.	Out Bin Full Actuator	—
8.	LED Lens	—
9.	Key-Start	—
10.	Key-Power	—
11.	Key-Power Holder	—
12.	Control Panel	140N63412
13.	Screw-Taptype	—
14.	Sponge-Cover_Top (3155 and 3160 models only)	—

Parts List 3.0 Covers

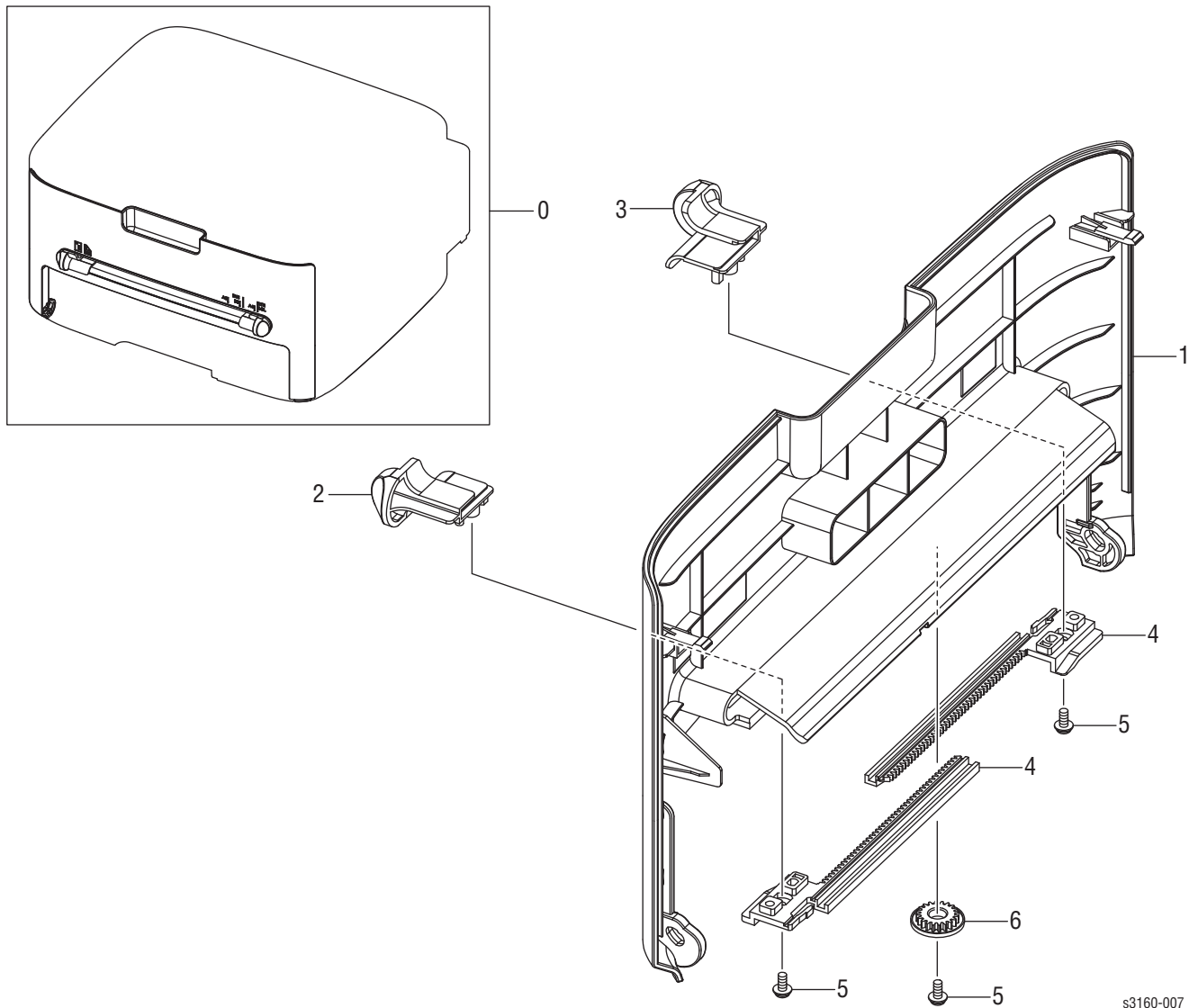


s3160-003

Parts List 3.0 Cover Assemblies

ID No.	Name/Description	Part Number
1.	Rear Cover Assembly 3140/3155/3160B 3160N	002N02913 002N02905
2.	Front Cover Assembly 3140 3155 3160B 3160N	002N02910 002N02911 002N02912 002N02906
3.	Left Cover Assembly	002N02907
4.-	Right Cover Assembly	002N02908

Parts List 4.0 Front Cover

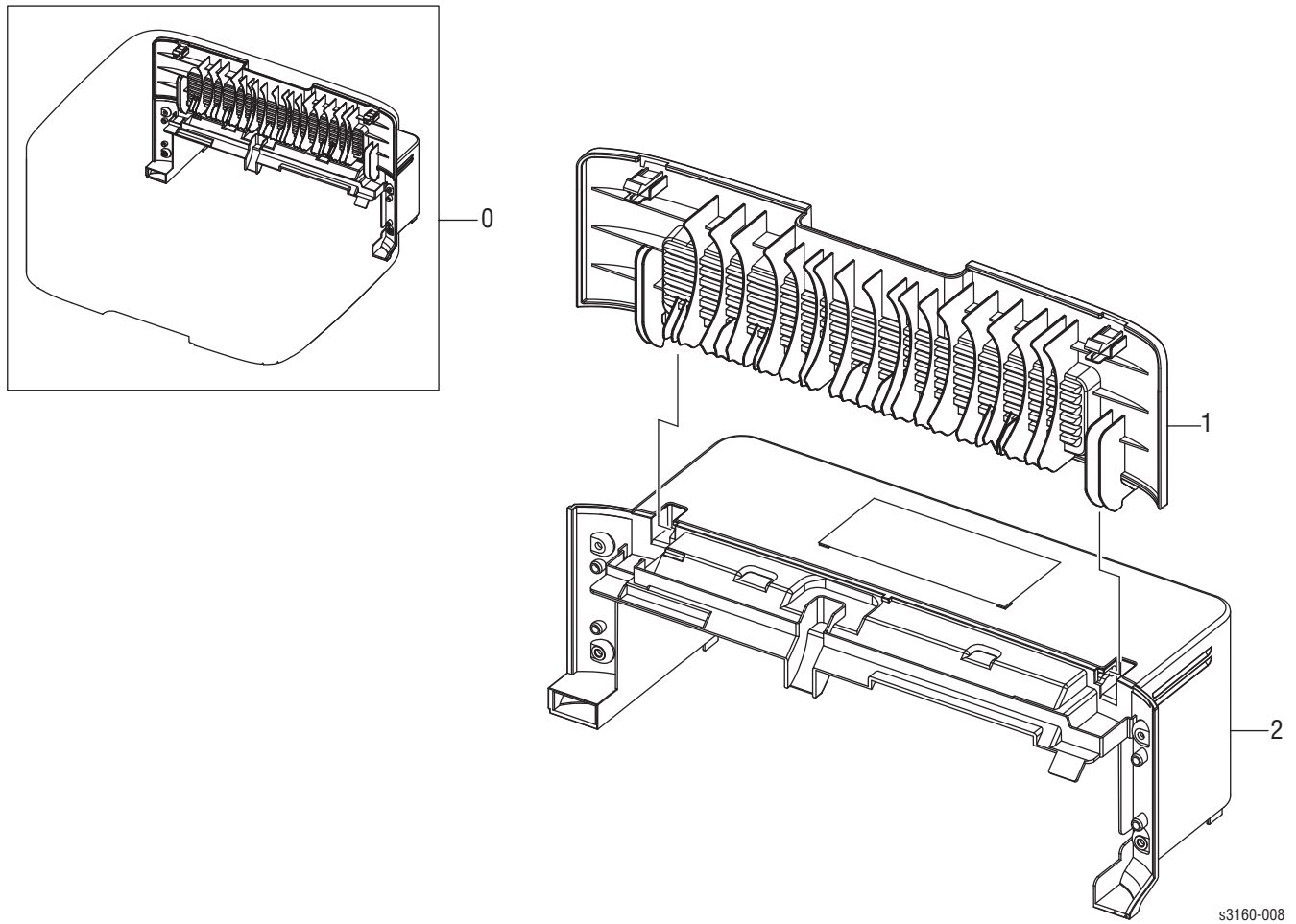


s3160-007

Parts List 4.0 Cover Assemblies

ID No.	Name/Description	Part Number
1.	Front Cover Assembly	
	3140	002N02910
	3155	002N02911
	3160B	002N02912
	3160N	002N02906
2.	Adjust-Manual_Right	—
3.-	Adjust-Manual_Left	—
4.	Adjust Rack-M-Manual	—
5.	Screw-Taptype	—
6.	Gear-Rack_Pinion	—

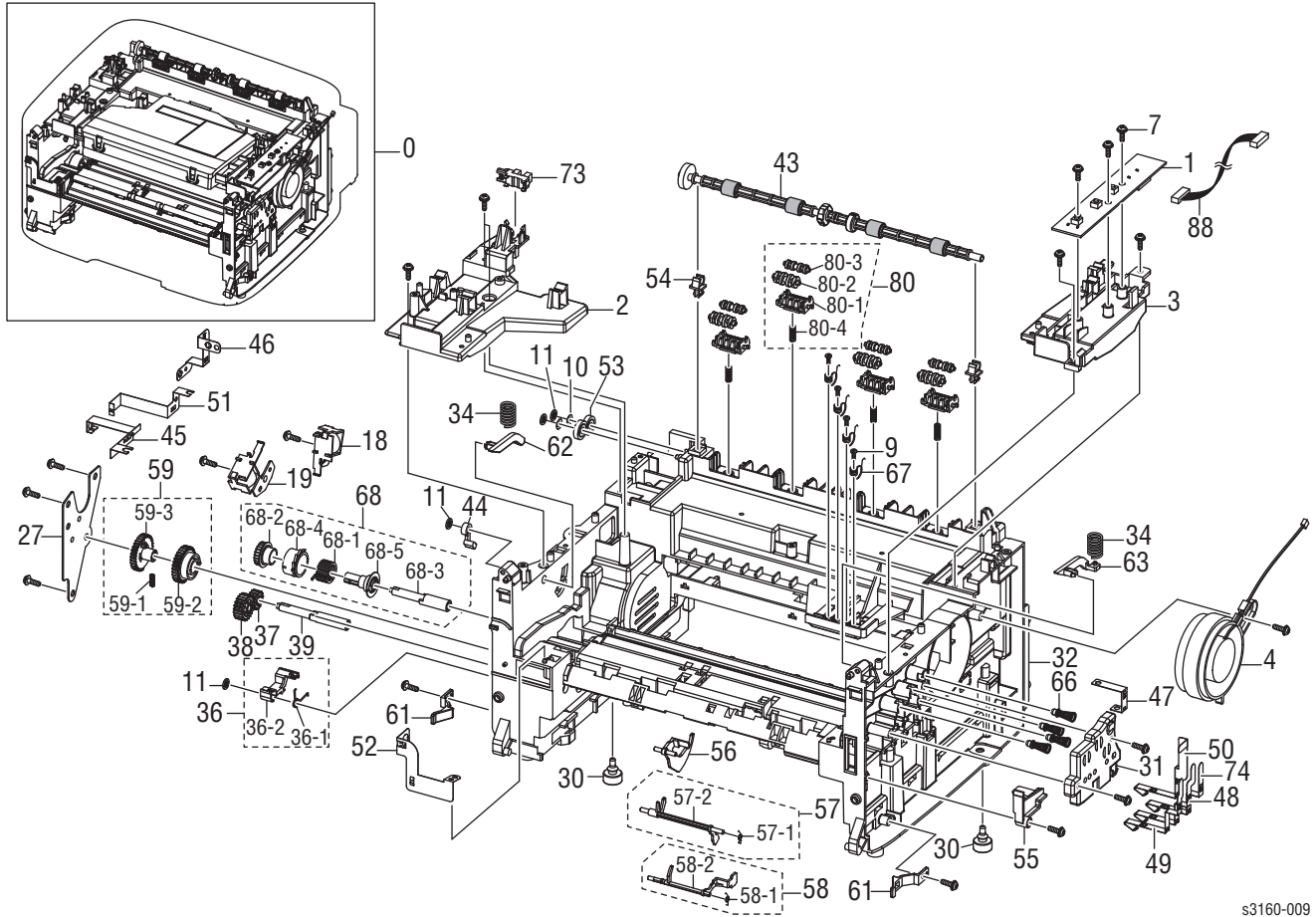
Parts List 5.0 Rear Cover



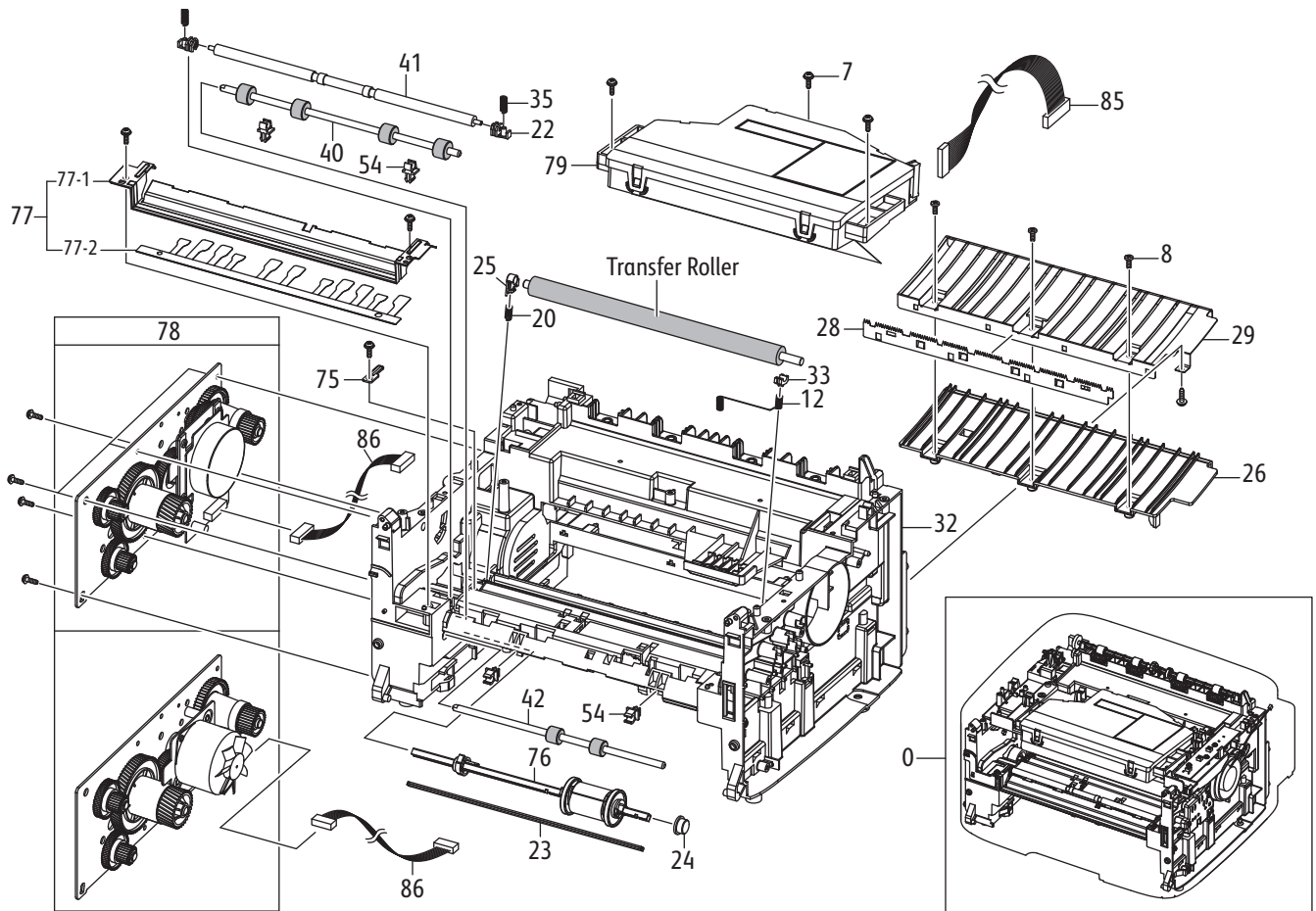
Parts List 5.0 Cover Assemblies

ID No.	Name/Description	Part Number
0.	Rear Cover Assembly 3140/3155/3160B 3160N	002N02913 002N02905
1.	Upper Rear Cover	—
2.	Lower Rear Cover	—

Parts List 6.0 Main Frame



s3160-009



s3160-010

Parts List 6.0 Frame

ID No.	Name/Description	Part Number
1.	Control Panel	140N63412
2.	Frame-Holder_LSU_L	—
3.	Frame-Holder_LSU_R	—
4.	Fan	127N07583
7.	Screw-Taptype	—
8.	Screw-Taptype	—
9.	Screw-Taptype	—
10.	Washer-Plain	—
11.	Ring-CS	—
12.	Spring-Etc	—
18.	Pick Up Solenoid	121N01168
19.	Manual Solenoid	121N01162
20.	Spring-CS	—
22.	Bush-M-Feed Idle	—
23.	Shaft-P-Core	—
24.	Bush-M-Pick Up R	—
25.	Bush-M-TR L	—
26.	Guide-M-TR Rib	—
27.	Feed Bracket	—
28.	Plate-P-Saw	—
29.	Guide-P-TR	—
30.	Foot-ML80	—
31.	Housing-Terminal	—
32.	Frame-Base	—
33.	Bush-TR_L	—
34.	Spring ETC-Guide Deve	—
35.	Spring ETC-TR	—
36.	Frame-Left Stopper Pick Up	—
36-1.	Spring-TS	—
36.2.	Cam-M-Pick Up	—
37.	Gear-Feed 2	—
38.	Gear-Idle 23	—
39.	Shaft-Feed	—
40.	Roller-Registration	—
41.	Shaft-Idle Feed	—

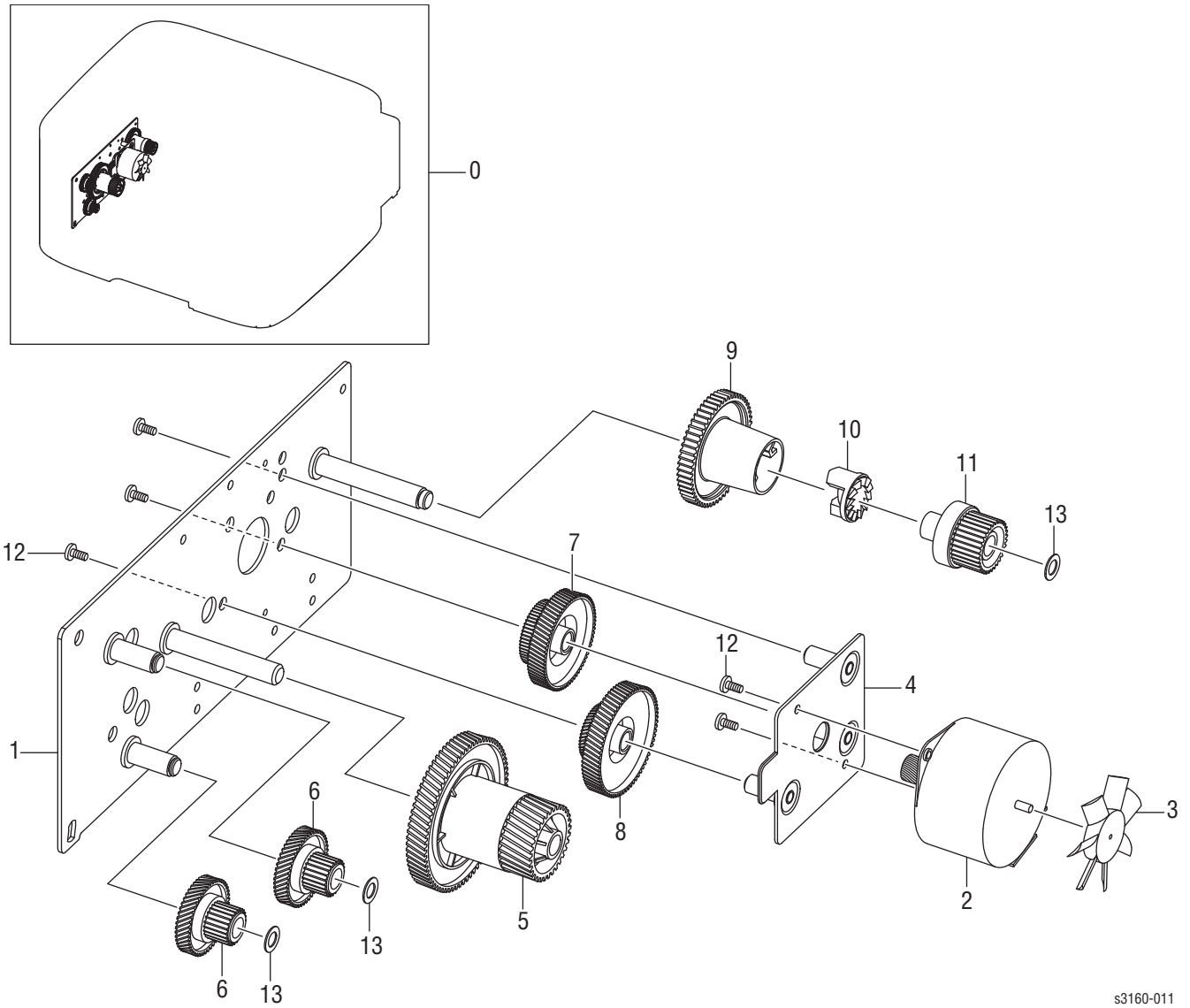
Parts List 6.0 Frame (Continued)

ID No.	Name/Description	Part Number
42.	Roller-Feed	022N02421
43.	Frame-Roller Exit Face Down	—
44.	Stopper-Lever_DR	—
45.	IPR-P-Ground_Drive	—
46.	Ground-Fuser	—
47.	IPR-P-Ground_TR	—
48.	Terminal-Con	—
49.	Terminal-Supply	—
50.	Terminal-CR	—
51.	IPR-P_Ground_Drive2	—
52.	IPR-P-Ground_Guide Paper	—
53.	PMO-Gear_Exit_DRV16	—
54.	PMO-Bushing Feed	—
55.	Cover Open Actuator	—
56.	Paper Tray Empty Actuator	120N00425
57.	Feed Actuator	
57-1.	Spring-TS	009N01653
57-2.	PMO-Feed Actuator	022N02127
58.	Manual Feed Actuator	120N00532
58-1.	Spring-TS	009N01657
58-2.	PMO-Actuator Manual	709N00007
59.	Pick Up Gear Unit	—
59-1.	Spring-CS	—
59-2.	PMO-Gear Pick Up A	—
59-3.	PMO-Gear Pick Up B	—
60.	PMO-Locker CST	—
61.	PMO-Plate Guide Deve_L	—
62.	PMO-Plate Guide Deve_R	—
66.	MEC-Terminal	—
67.	Terminal-CRUM	—
68.	Clutch Assembly	005N01031
68-1.	Spring-TS	—
68-2.	Gear-Feed 1	—
68-3.	Shaft-Feed	—
68-4.	PMO-Collar Spring	—
68-5.	PMO-Hub Clutch	—
73.	Photo-Interrupter	130N01574
74.	IPR-P-Terminal CON	—
75.	Bracket-Bush_TR L	—

Parts List 6.0 Frame (Continued)

ID No.	Name/Description	Part Number
76.	Pick Up Roller Assembly	001N00518
77.	Frame-Front Guide Paper	—
77-1.	Guide-P-Paper	—
77-2.	Sheet-Guide_Paper	—
78.	Drive Bracket	
	3140	030N00771
	3155/3160	030N00770
79.	Laser Unit	130N01579
80.	Frame-Roller Decurl	—
80-1.	Holder-M-Exit F/Down	—
80-2.	Roller-M-Exit FR	—
80-3.	Roller-M-Exit Main	—
80-4	Spring-CS	—
84.	Harness-Bin full	—
85.	Harness-Laser	—
86.	Harness-Step Motor Clutch	—
87.	Harness-CRUM	—
88.	Harness-OPE	—

Parts List 7.0 Drive Assembly (Model 3140)

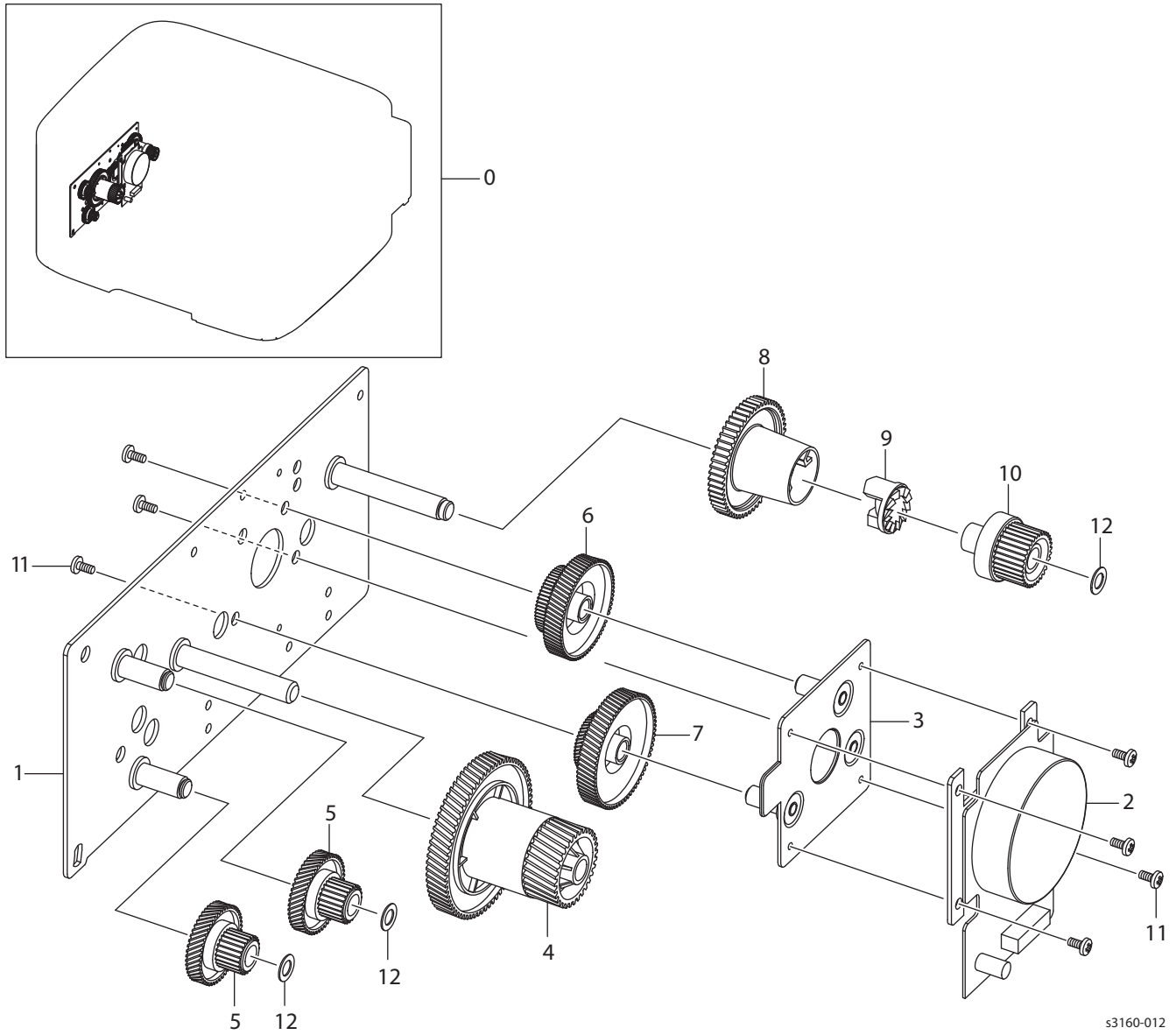


s3160-011

Parts List 7.0 Drive Assembly (Model 3140)

ID No.	Name/Description	Part Number
0.	Drive Assembly	030N00771
1.	Bracket Gear	—
2.	Step Motor	—
3.	Impeller	—
4.	Step Motor Bracket	—
5.	Gear RDCN OPC	—
6.	Gear RDCN 57/18	—
7.	Gear RDCN 90/31	—
8.	Gear RDCN 103/41	—
9.	Gear DRV Fuser Out	—
10.	Gear Hub Clutch	—
11.	Gear DRV Fuser In	—
12.	Screw-Taptype	—
13.	Plain Washer	—
14.	Motor BLDC	—

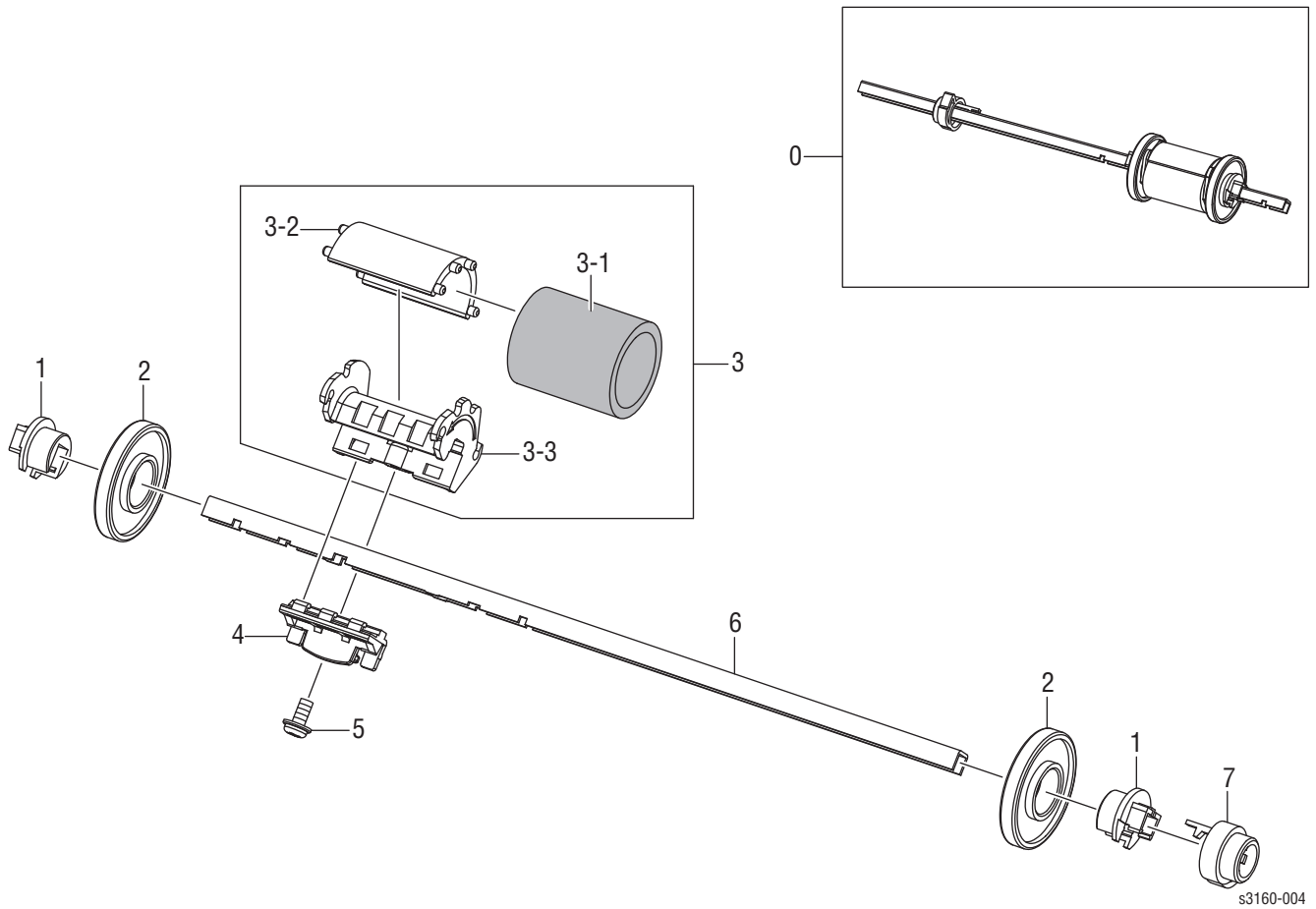
Parts List 7.1 Drive Assembly (Models 3155/3160)



Parts List 7.1 Drive Assembly (Models 3155/3160)

ID No.	Name/Description	Part Number
0.	Drive Assembly	030N00770
1.	Bracket P Gear 1400	—
2.	Motor BLDC	—
3.	Bracket Motor Step	—
4.	Gear RDCN OPC	—
5.	Gear RDCN 57/18	—
6.	Gear RDCN 90/31	—
7.	Gear RDCN 103/41	—
8.	Gear DRV Fuser Out	—
9.	Gear Hub Clutch	—
10.	Gear DRV Fuser In	—
11.	Gear Fuser DR OUT 37	—
12.	Gear Hub Clutch	—
13.	Gear DRV Fuser In	—
14.	Screw-Taptype	—
15.	Plain Washer	—

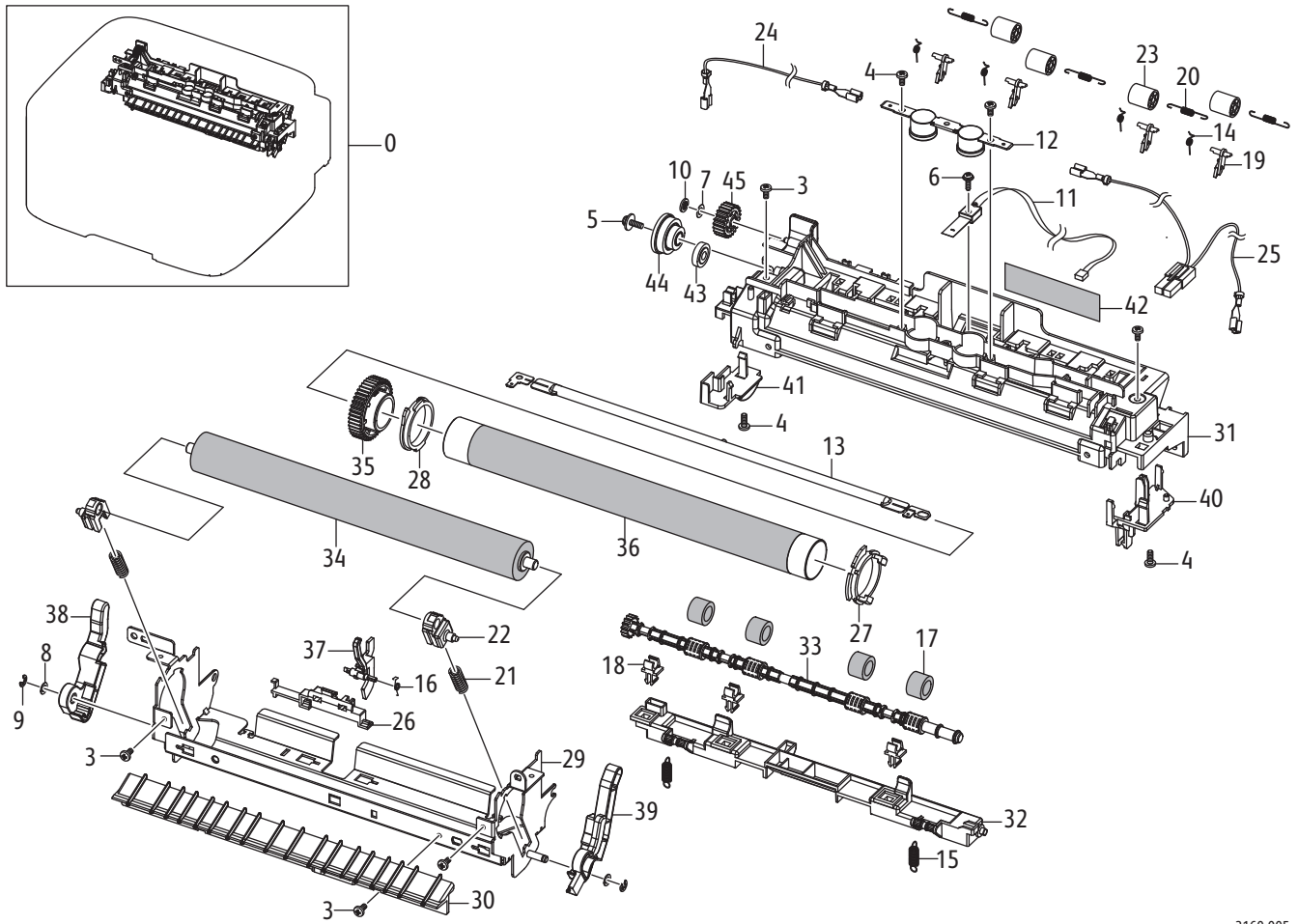
Parts List 8.0 Pick Up Roller Assembly



Parts List 8.0 Pick Up Roller Assembly

ID No.	Description	Part Number
0.	Pick Up Roller Assembly	001N00518
1.	Pick Up Stopper	—
2.	PMO-Idle Pick Up	—
3.	Frame Base- Pick Up Rubber	—
3-1.	Pick Up Rubber	—
3-2.	Pick Up Rubber Housing	—
3-3.	Pick Up Housing	—
4.	Pick up Holder	—
5.	Screw-Taptype	—
6.	Shaft-P-Pick Up	—
7.	Bush-M-Pick Up L	—

Parts List 9.0 Fuser



s3160-005

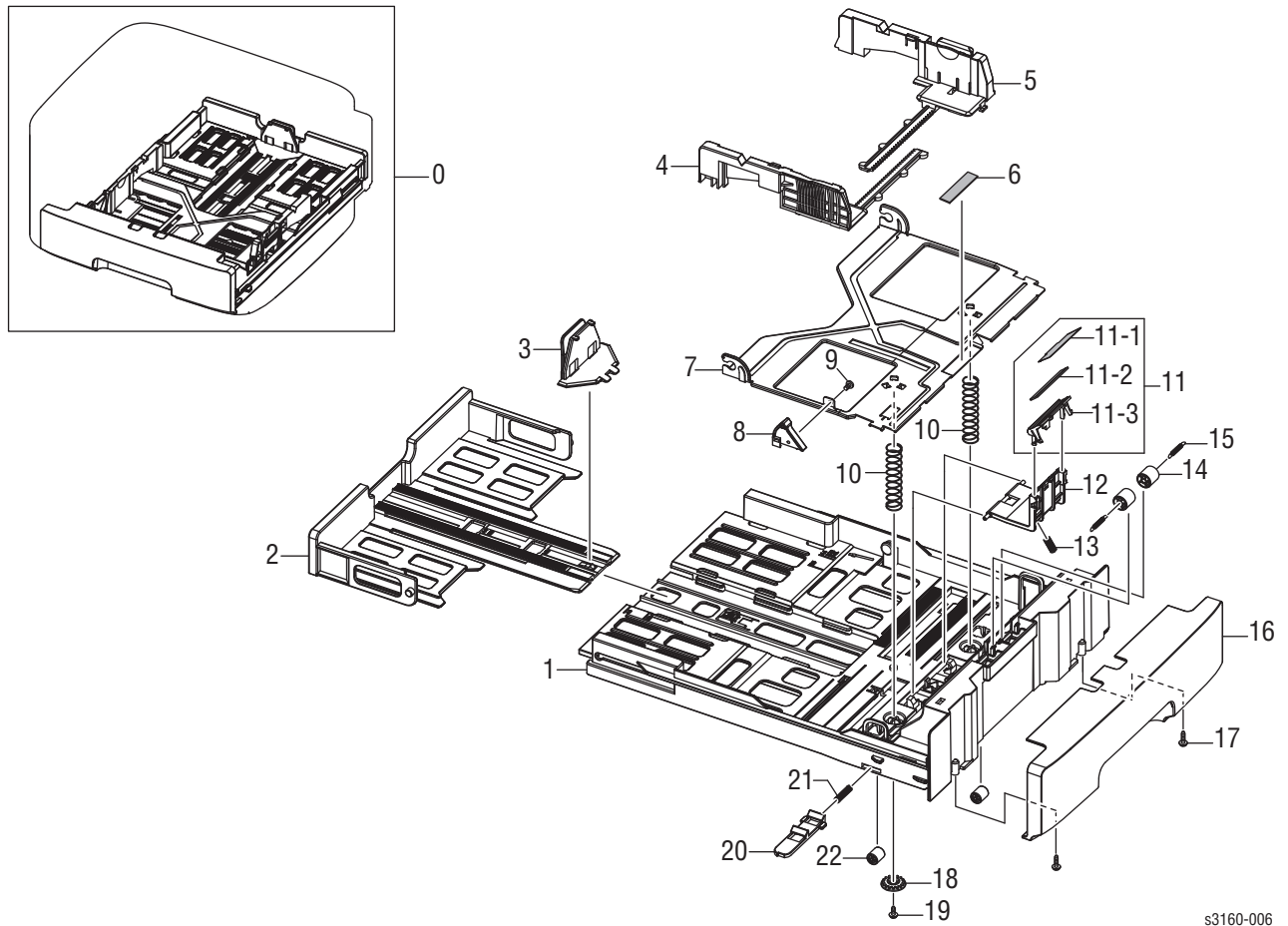
Parts List 9.0 Fuser

ID No.	Name/Description	Part Number
0.	Fuser (110V) Fuser (220V)	126N00332 126N00333
3.	Screw-Taptype	—
4.	Screw-Taptype	—
5.	Screw-Taptype	—
6.	Screw-Taptype	—
7.	Washer Plain	—
8.	Washer Plain	—
9.	E-Ring	—
10.	Ring-CS	—
11.	Thermistor	130N01578
12.	Thermostat	130N01490
13.	Halogen Lamp 110V 220V	122N00269 122N00270
14.	Spring TS	—
15.	Spring ES	—
16.	Spring TS	009N01657
17.	RMO Rubber Exit	—
18.	PMO Bushing TX	—
19.	Guide Claw	—
20.	Spring ETC-Fuser Exit	—
21.	Spring ETC-PR(7300)	—
22.	Bush-PR High	—
23.	PMO-Exit Roller	—
24.	Harness-Fuser Joint	—
25.	Harness-Fuser AC	—
26.	Holder-Actuator	—
27.	Bush-M-HR R R2	—
28.	Bush-M-HR L R2	—
29.	Fuser Frame	—
30.	Input Guide	—
31.	Fuser Cover	—
32.	Fuser Dummy Cover	—
33.	Roller-M-Exit F/Up	—
34.	Pressure Roller	022N01611
35.	Gear Fuser	—
36.	Heat Roller	022N02310

Parts List 9.0 Fuser

ID No.	Name/Description	Part Number
37.	Exit Actuator	—
38.	Lever Link Jam-L	—
39.	Lever Link Jam-R	—
40.	CAP Lamp-L	—
41.	CAP Lamp-R	—
42.	Caution Label	—
43.	PMO-Gear Exit Drv16	—
44.	Gear-RDCN Exit	—
45.	Gear-Idle 23	—

Parts List 10.0 Paper Tray



s3160-006

Parts List 10.0 Paper Tray Assembly

ID No.	Description	Part Number
0.	Paper Tray	050N00547
1.	Tray Frame	—
2.	Guide-Extension CST	—
3.	PMO Extension Small	—
4.	Adjust-M Cassette-R	—
5.	Adjust-M Cassette-L	—
6.	RPR-Pad Tray	—
7.	Plate-P-Knock Up	—
8.	Cam-M-Knock Up	—
9.	Screw-Taptype	—
10.	Spring-CS	—
11.	Tray Holder Pad Assembly	019N00998
11-1.	Sheet-Holder Pad	—
11-2.	Friction Pad	—
11-3.	Holder Pad	—
12.	Holder Pad Housing	—
13.	Spring ETC-Exit Roll FD	—
14.	Roller-M-Idle Feed	—
15.	Spring-ES	—
16.	Tray Cover	—
17.	Screw-Taptype	—
18.	Gear-Pinion	—
19.	Screw-Taptype	—
20.	PMO-Plate Locker	—
21.	Spring ETC-Locker, Plate	—
22.	PMO-Roller Upper DP	—

Xerox Supplies and Accessories

Consumables and Maintenance Items

Parts List Reference	Description	Part Number
PL1.0.11	Transfer Roller (50K)	022N02354
PL8.0.0	Fuser - 110V (50K)	126N00332
	Fuser - 220V (50K)	126N00333
PL1.0.12	Print Cartridge - 2.5K	108R00909
	Print Cartridge - 1.5K	108R00908

Power Cords

Description	Part Number
Power Cord, 110V	105N02072
Power Cord, 220V	117N01769

Wiring

- Plug/Jack Locators
- Component Locator Diagrams
- Wiring Diagrams
- Phaser 3140 Wiring
- Phaser 3155 Wiring
- Phaser 3160 Wiring

Chapter 10

Plug/Jack Locators

The Plug/Jack Locator diagrams show the P/J locations within the printer. Use these illustrations to locate connections called out in the Troubleshooting procedures presented in Sections 3, 4, and 5.

1. Locate the P/J connector designator in the first column of the table.
2. With this information, go to the map listed in the second column.
3. Use the coordinates to locate the connection indicated on the map with its P/J designation number.
4. The Description column provides a brief description of each connection.

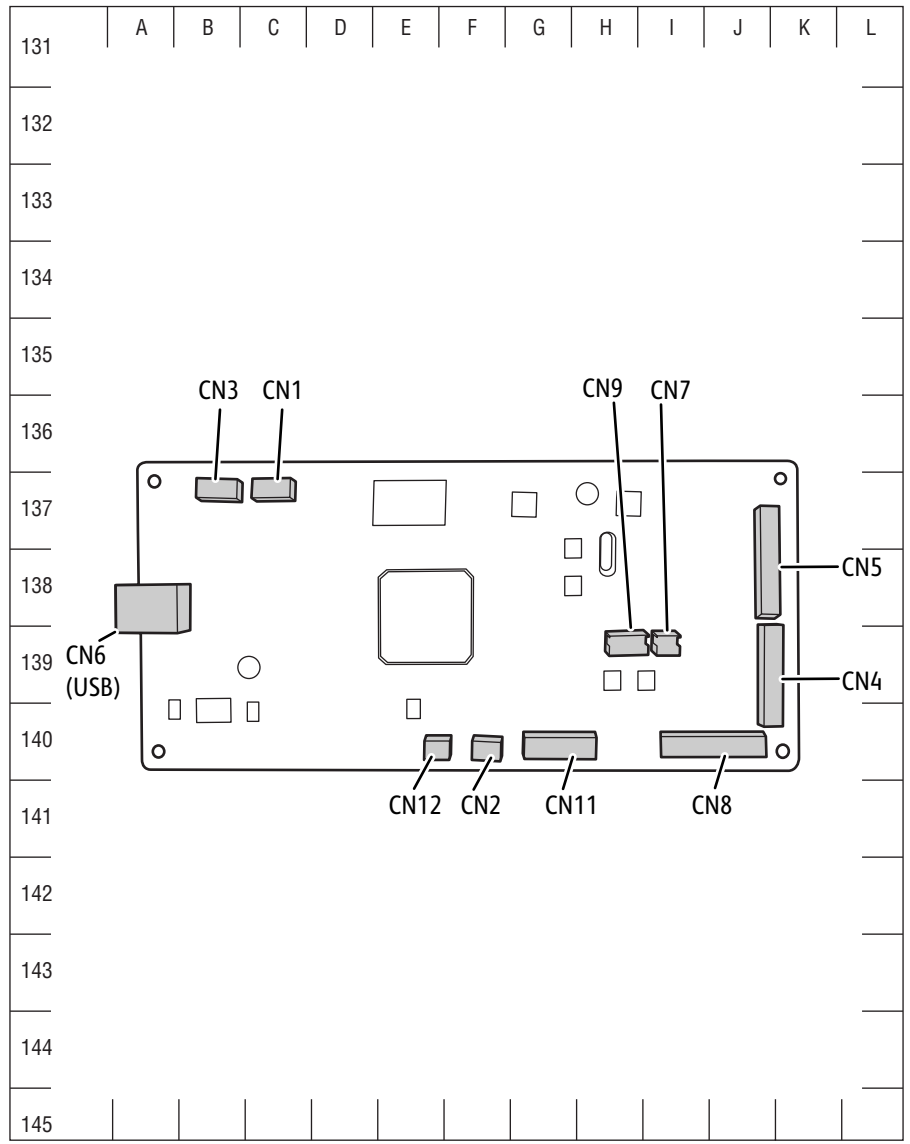
Controller Board and Power Supply Plug/Jack Designators and Locator

P/J	Map	Coordinates	Description
3140 Controller Board			
CN1	1	C-137	N/A
CN2	1	F-140	Out Bin Full Sensor
CN3	1	B-137	N/A
CN4	1	J-139	Laser Unit
CN5	1	J-137	Power Supply
CN6	1	A-138	USB Port
CN7	1	I-139	Pick Up Solenoid
CN8	1	J-140	Control Panel
CN9	1	H-139	Print Cartridge CRUM
CN11	1	G-140	Motor/Manual Solenoid
CN12	1	E-140	Fuser Thermistor
3155 Controller Board			
CN1	2	C-137	N/A
CN2	2	B-137	Out Bin Full Sensor
CN4	2	J-139	Laser Unit
CN5	2	K-138	Power Supply
CN6	2	F-140	Motor/Manual Solenoid
CN7	2	J-140	Pick Up Solenoid
CN8	2	G-140	Control Panel
CN9	2	I-140	Print Cartridge CRUM
CN11	2	A-138	USB Port
CN12	2	D-140	Fuser Thermistor
3160B and 3160N Controller Board			
CN1	3	C-137	N/A
CN2	3	B-137	N/A
CN3	3	A-138	USB Port
CN4	3	A-139	Ethernet Port (3610N only)
CN5	3	J-139	Laser Unit
CN6	3	J-140	Pick Up Solenoid

Controller Board and Power Supply Plug/Jack Designators and Locator

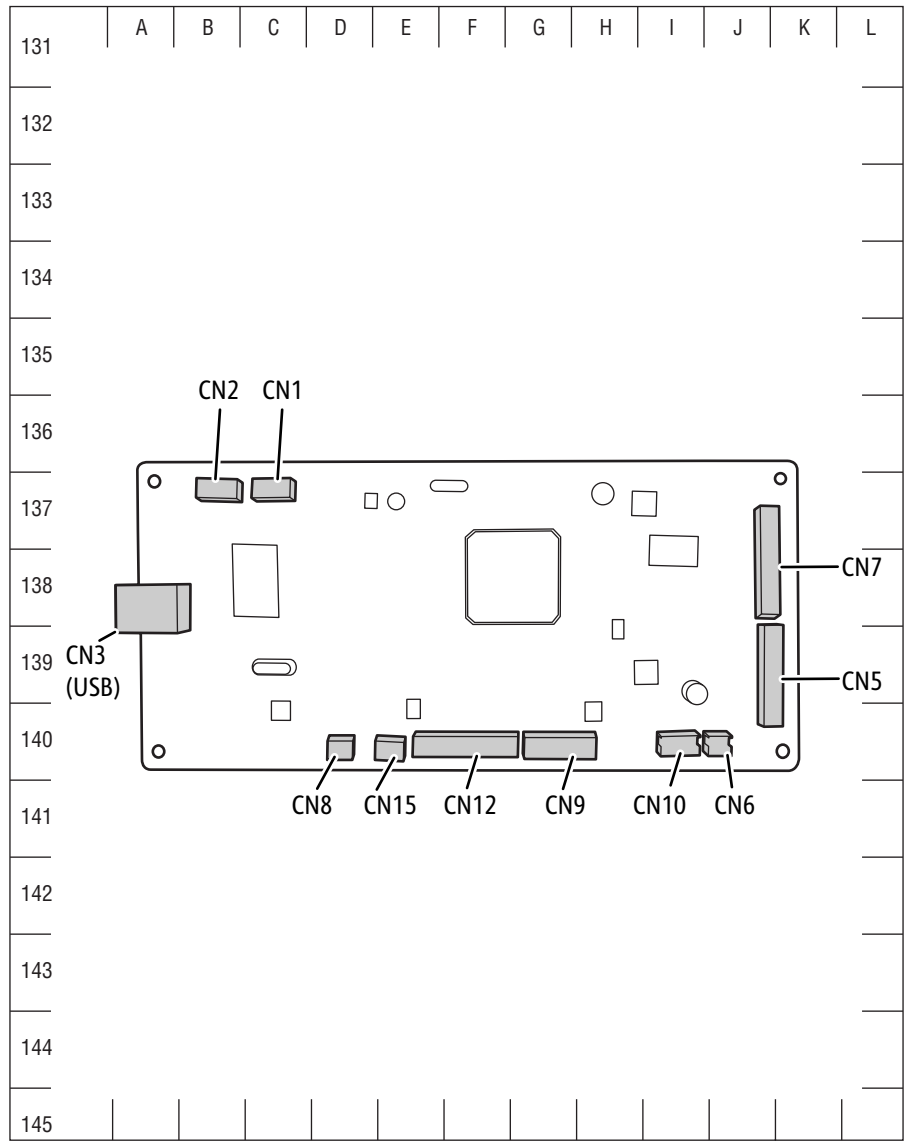
P/J	Map	Coordinates	Description
CN7	3	J-138	Power Supply
CN8	3	D-140	Fuser Thermistor
CN9	3	G-140	Control Panel
CN10	3	I-140	Print Cartridge CRUM
CN12	3	F-140	Manual Feed Solenoid and Motor
CN15	3	E-140	Out Bin Full Sensor
Power Supply Board			
CON1	4	C-135	Fuser
CON2	4	H-139	Controller Board Interface
CON3	4	F-134	Fan

Map 1 - Controller Board (3140)



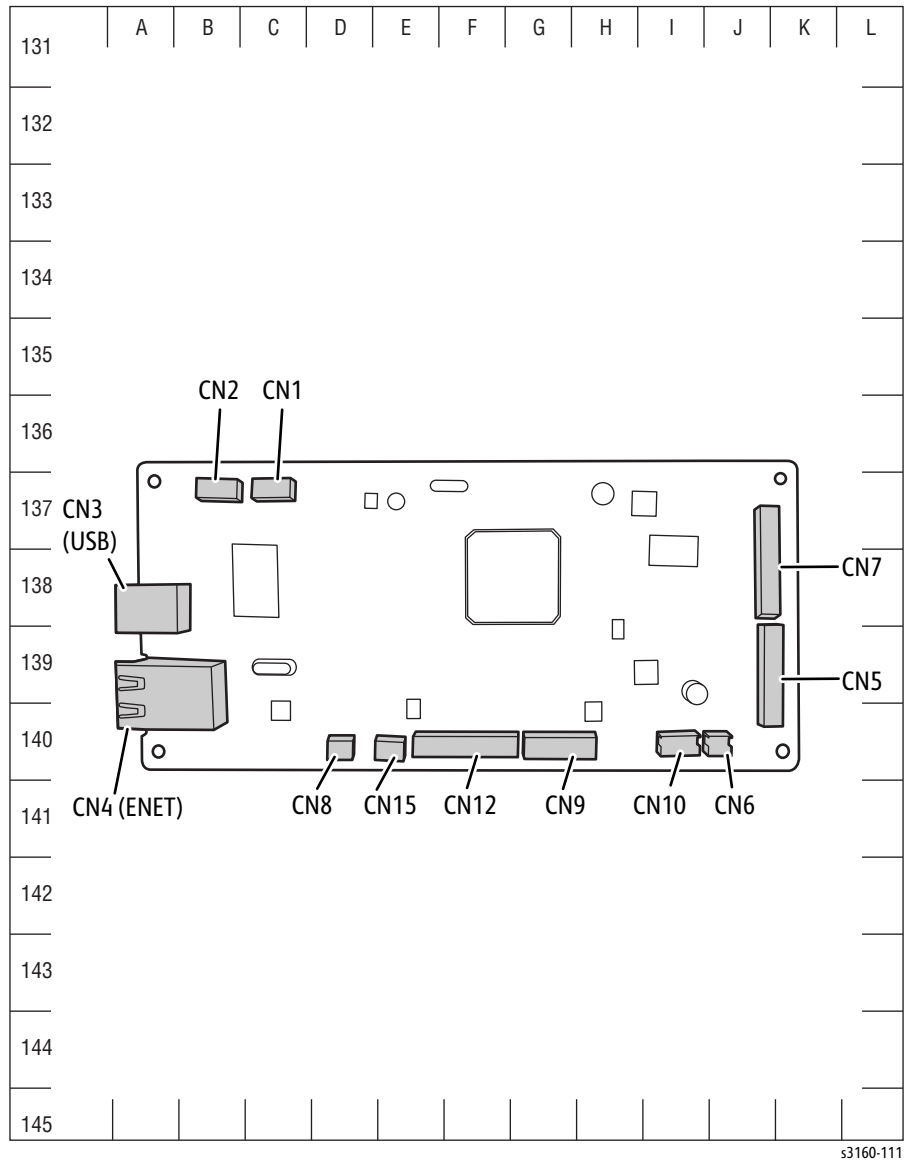
s3160-155

Map 2 - Controller Board (3155)

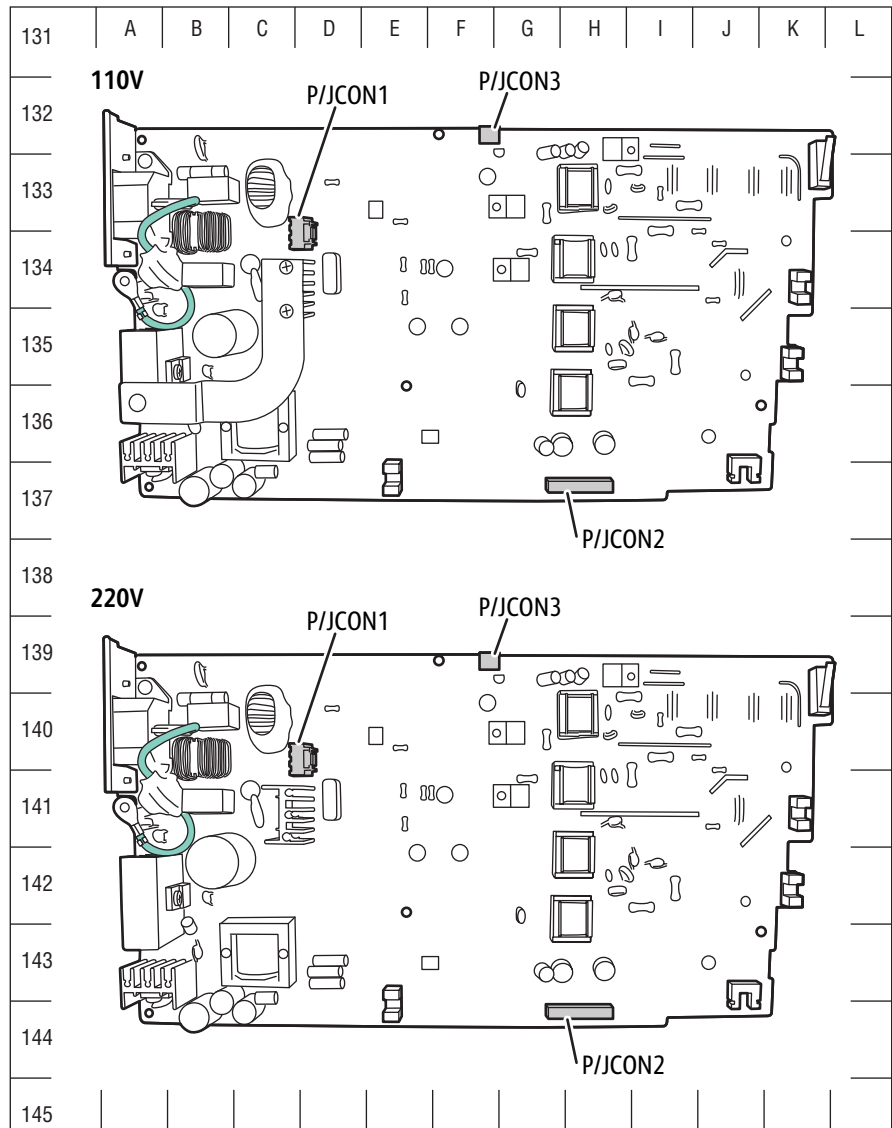


s3160-154

Map 3 - Controller Board (3160B/3160N)



Map 4 - 110V and 220V Power Supply Boards



s3160-112

Component Locator Diagrams

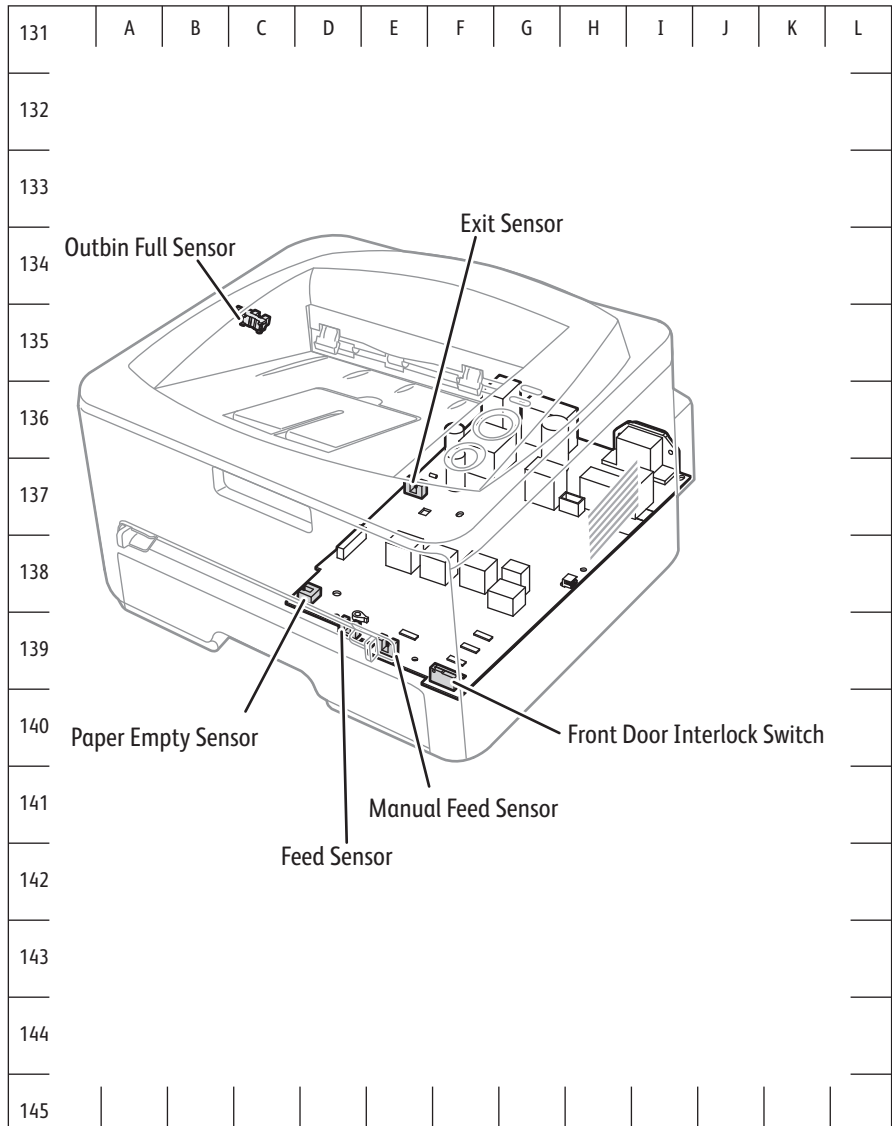
Maps 6 and 7 indicate the location of key components within the printer.

1. Map 5 - Sensors
2. Map 6 - Motor, Solenoids, and Fan

Component Locator

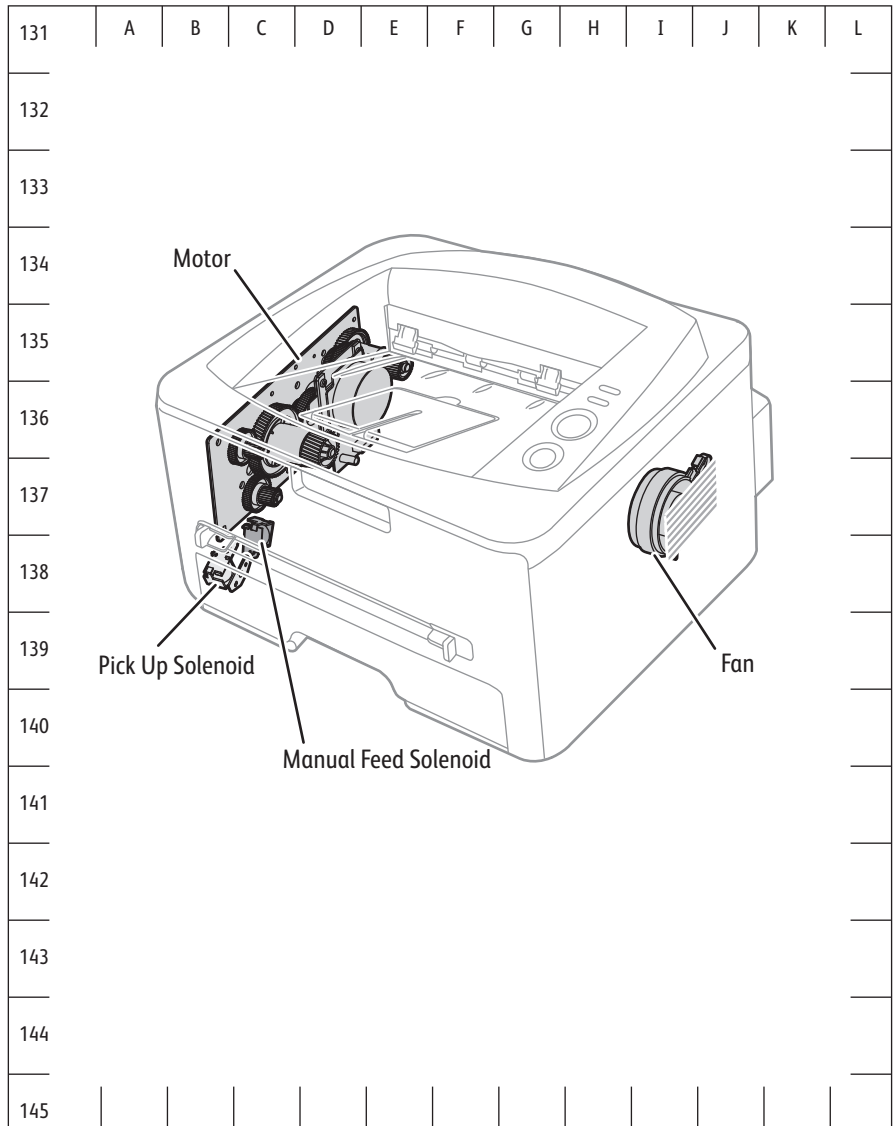
Component	Map	Coordinates
Out Bin Full Sensor	5	C-135
Paper Empty Sensor	5	D-138
Manual Feed Sensor	5	E-139
Feed Sensor	5	D-139
Exit Sensor	5	E-137
Front Cover Interlock Switch	5	E-139
Pick Up Solenoid	6	B-138
Manual Feed Solenoid	6	C-138
Motor	6	D-136
Fan	6	I-137

Map 5 - Sensors



s3160-113

Map 6 - Motor, Solenoids, and Fan

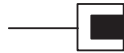
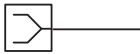






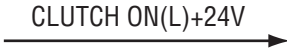


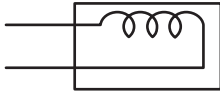
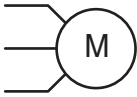
s3160-114


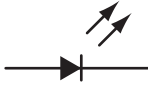




Wiring Diagrams

Notations Used in the Wiring Diagrams

The following table lists the symbols used in the wiring diagrams.

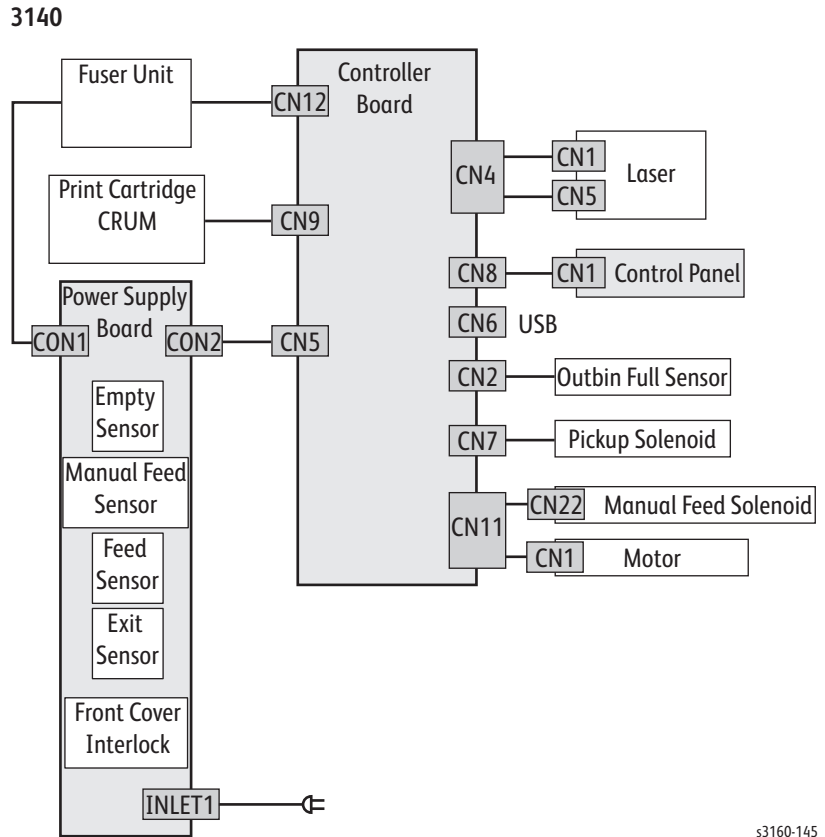
Symbol	Description
 <p style="text-align: center;">Plug</p>	Denotes a Plug.
 <p style="text-align: center;">Jack</p>	Denotes a Jack.
<p style="text-align: center;">P/Jxx</p>  <p style="text-align: center;">Plug and Jack</p>	Denotes Pin yy and Jack yy of the connector Pxx and Jxx.
<p style="text-align: center;">JPxxx</p>  <p style="text-align: center;">Jumper</p>	Denotes a Jumper Point (JPxxx/xxx). Each end of the Jumper connection has a numeric designation.
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> <p>Fuser PL X.Y.Z</p> </div> <p style="text-align: center;">Subassembly 1</p>	Denotes the parts. PL X.Y.Z implies the item "Z" of plate (PL) "X.Y" in Parts List.
<div style="border: 1px dashed black; padding: 5px; width: fit-content; margin: 0 auto;"> <p>Heater</p> </div> <p style="text-align: center;">Subassembly 2</p>	Denotes functional parts attached with functional parts name.

Symbol	Description
 <p style="text-align: center;">Subassembly 3</p>	<p>Denotes the control and its outline in the Board.</p>
 <p style="text-align: center;">Connection Wire</p>	<p>Denotes a connection between parts with harness or wires, attached with signal name/ contents.</p>
 <p style="text-align: center;">Function Logic 1</p>	<p>Denotes the function, and logic value of the signal to operate the function (Low: L, High: H). The given voltage is for signal in high status. The arrow indicates the direction of signal.</p>
 <p style="text-align: center;">Function Logic 2</p>	<p>Denotes the function, and logic value of the signal when the function operated (Low: L, High: H). The given voltage is for signal in high status. The arrow indicates the direction of signal.</p>
 <p style="text-align: center;">Connection of Wires</p>	<p>Denotes a connection between wires.</p>
 <p style="text-align: center;">Solenoid/Clutch</p>	<p>Denotes a Clutch or Solenoid.</p>
 <p style="text-align: center;">Motor</p>	<p>Denotes a Motor.</p>

Symbol	Description
 <p>Optic Sensor</p>	Denotes a Photo Sensor.
 <p>LED</p>	Denotes an LED.
 <p>Safety Interlock Switch</p>	Denotes a Safety Interlock Switch.
 <p>On Off Switch</p>	Denotes an On-Off Switch (single-pole, single-throw switch).
 <p>Temperature Switch</p>	Denotes an On-Off Switch (Temperature - normally close).
 <p>NPN Phototransistor</p>	Denotes an NPN Photo-transistor.
I/L +24 VDC	Denotes DC voltage when the Interlock Switch in MCU Board turns On.
+5 VDC +3.3 VDC	Denotes DC voltage.
SG	Denotes signal ground.
AG	Denotes analog ground.
RTN	Denotes return.

Phaser 3140 Wiring

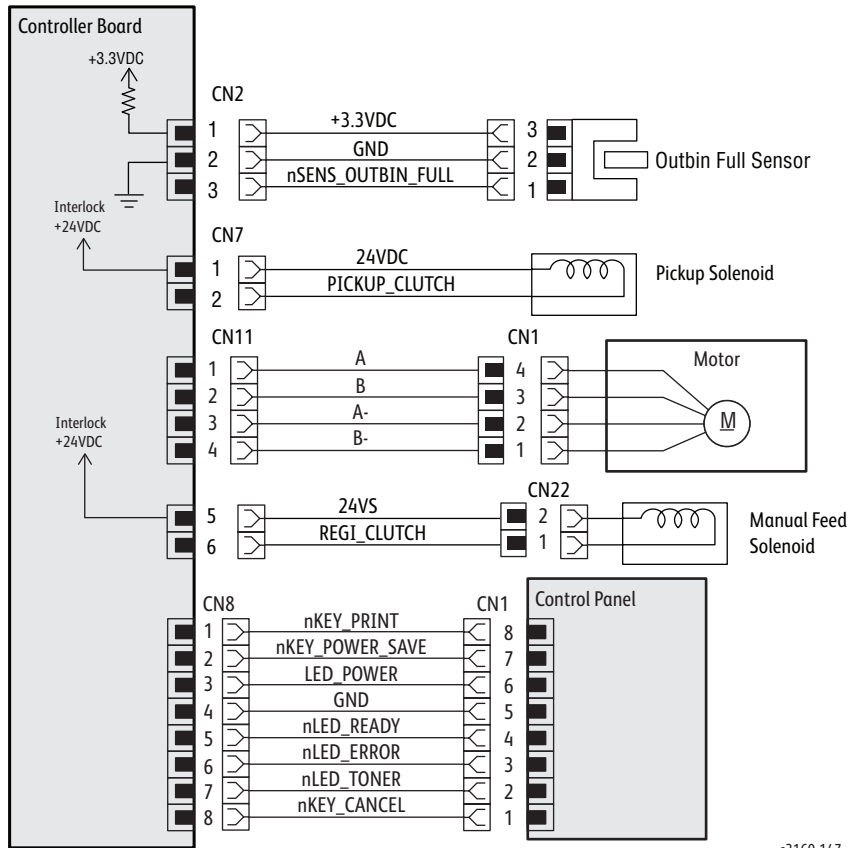
3140 System Connections



s3160-145

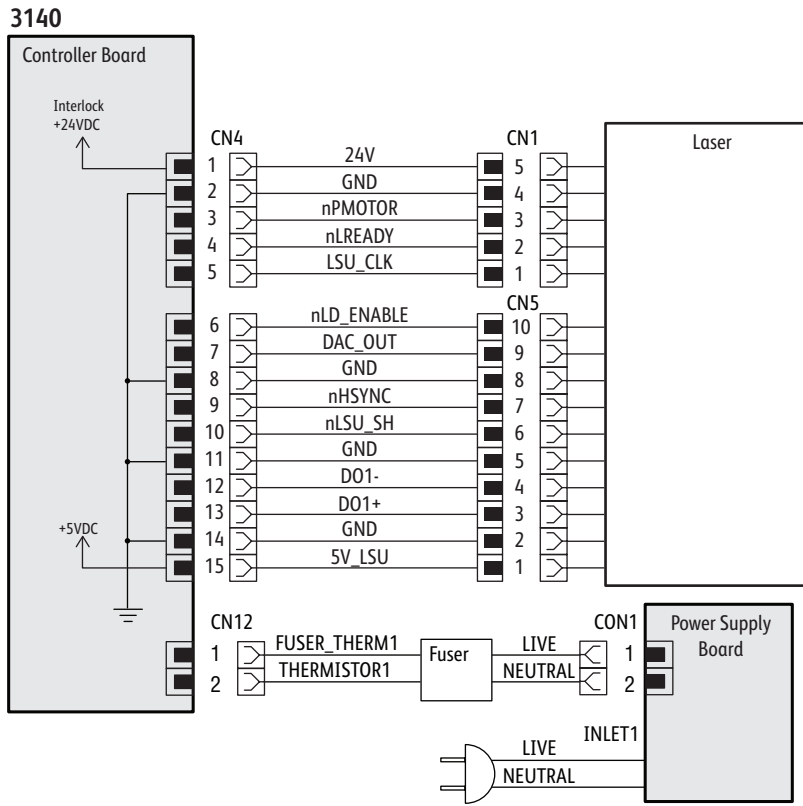
3140 Controller Board Wiring

3140



s3160-147

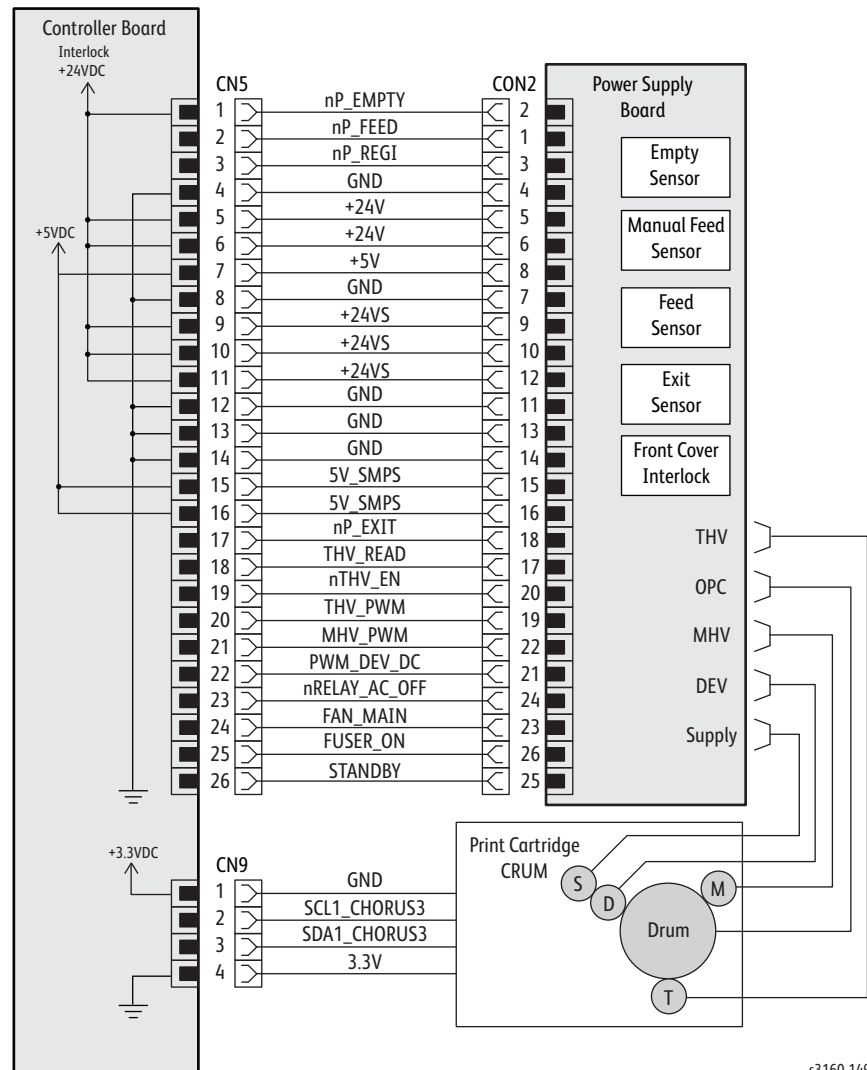
3140 Laser Unit Wiring



s3160-148

3140 Power Supply Wiring

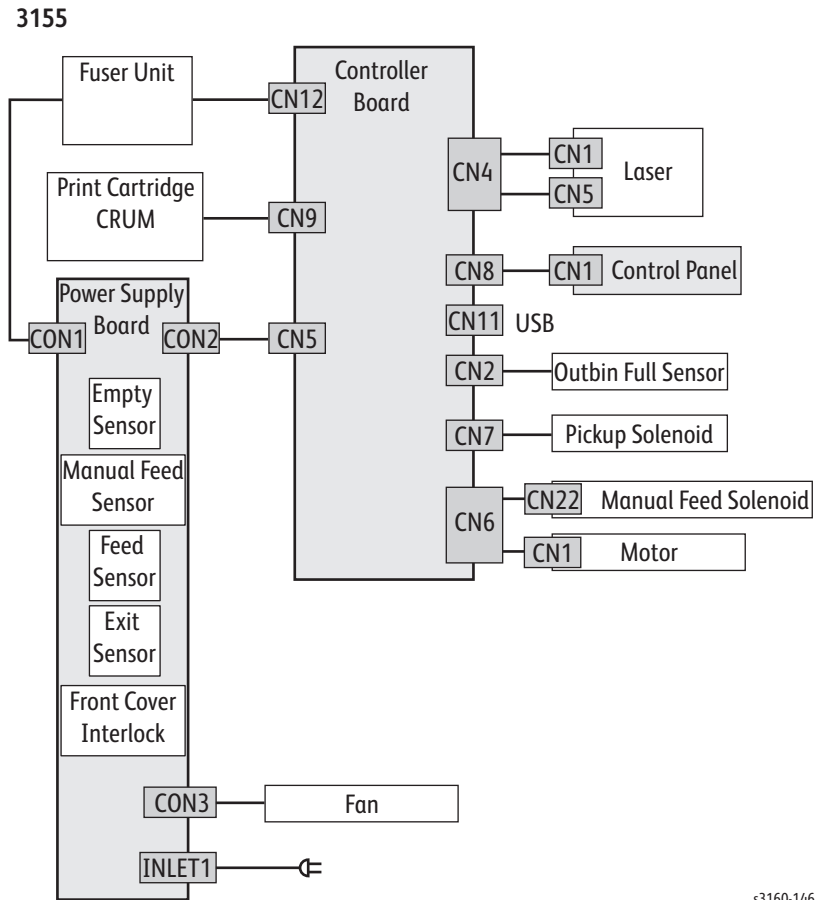
3140



s3160-149

Phaser 3155 Wiring

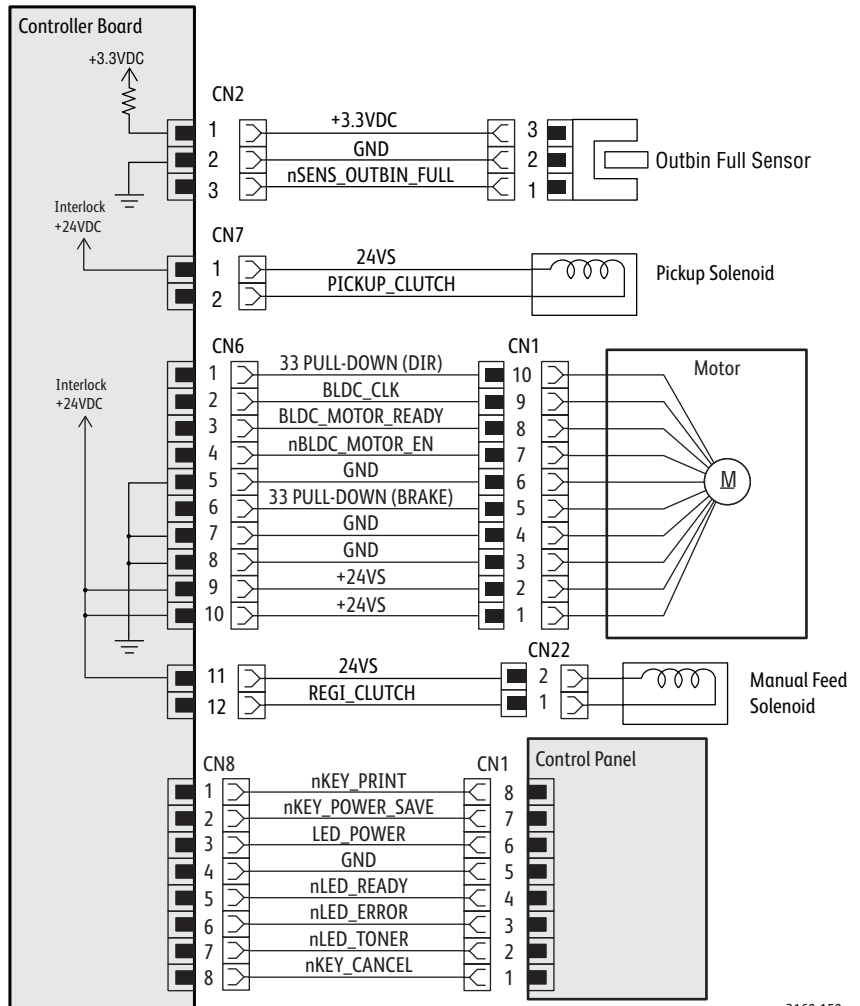
3155 System Connections



s3160-146

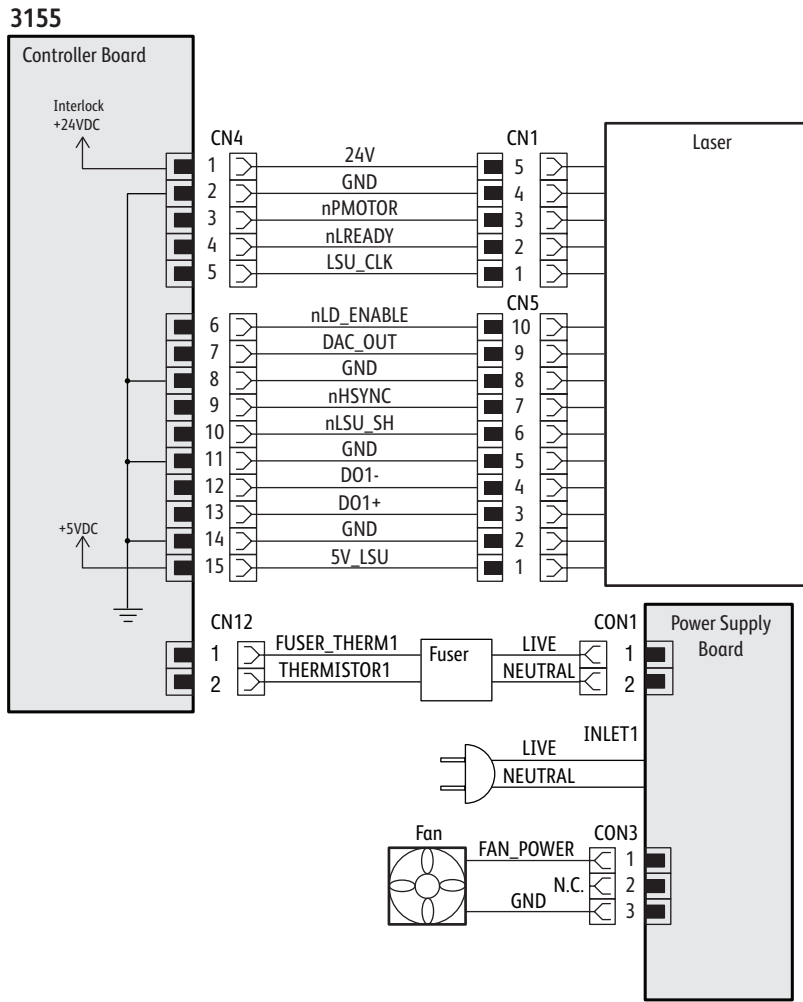
3155 Controller Board Wiring

3155



s3160-150

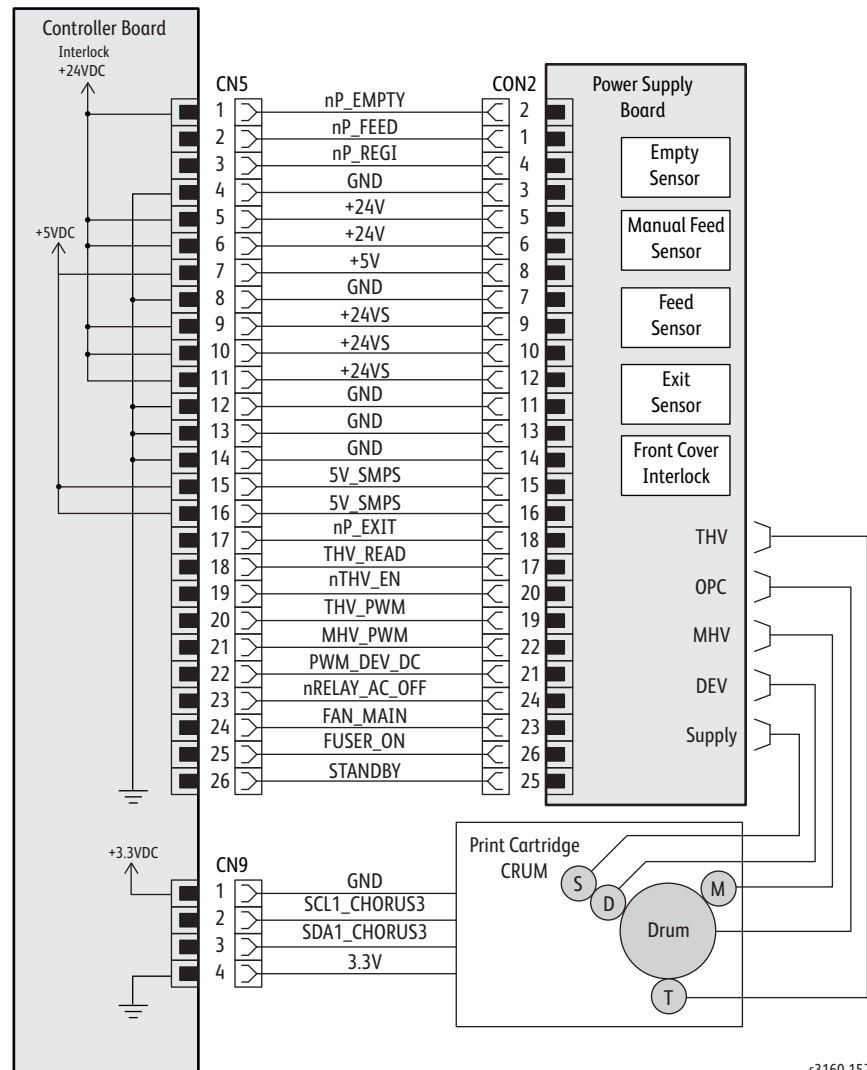
3155 Laser Unit Wiring



s3160-151

3155 Power Supply Wiring

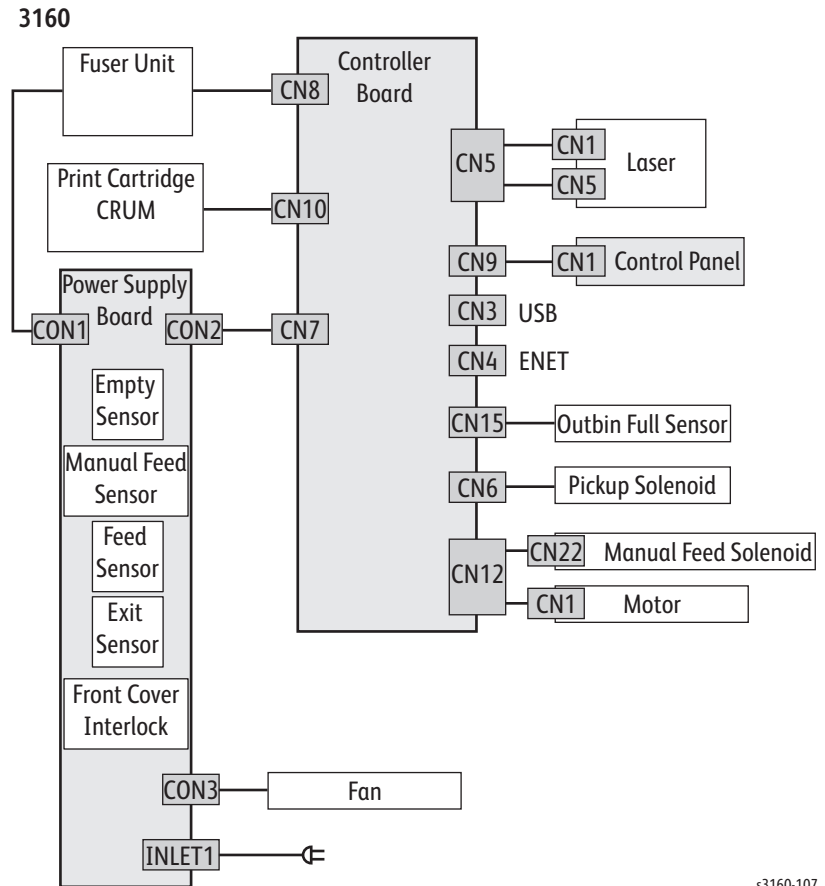
3155



s3160-152

Phaser 3160 Wiring

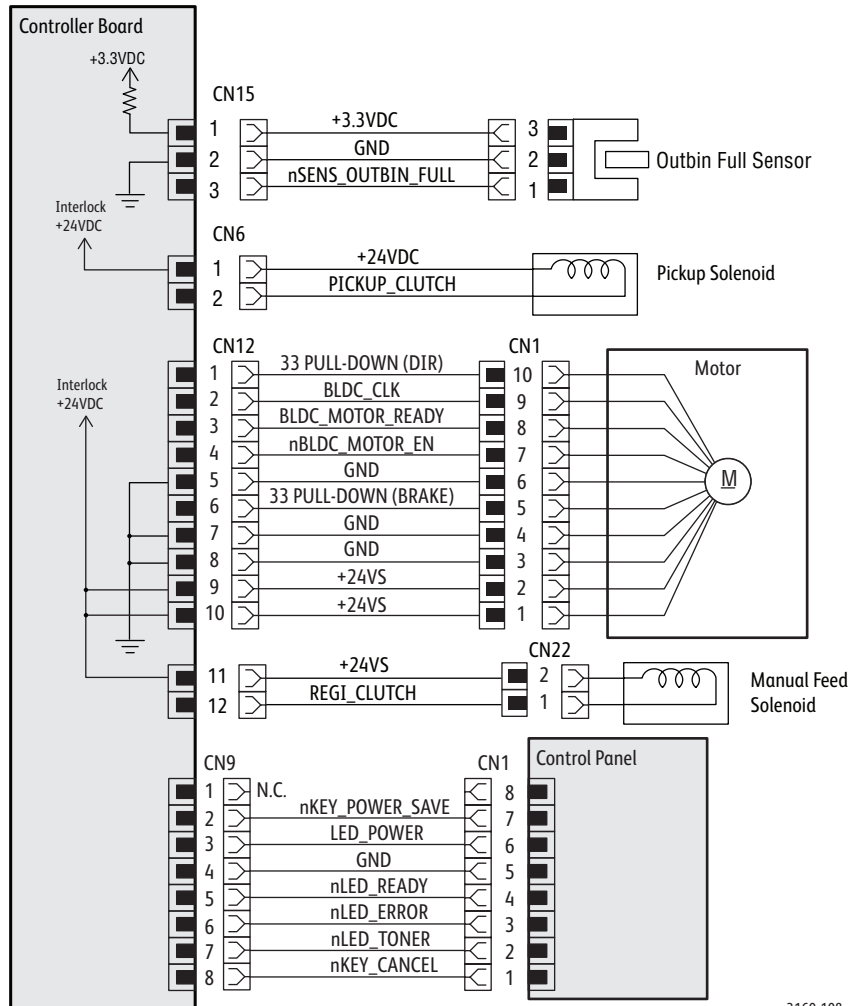
3160 System Connections



s3160-107

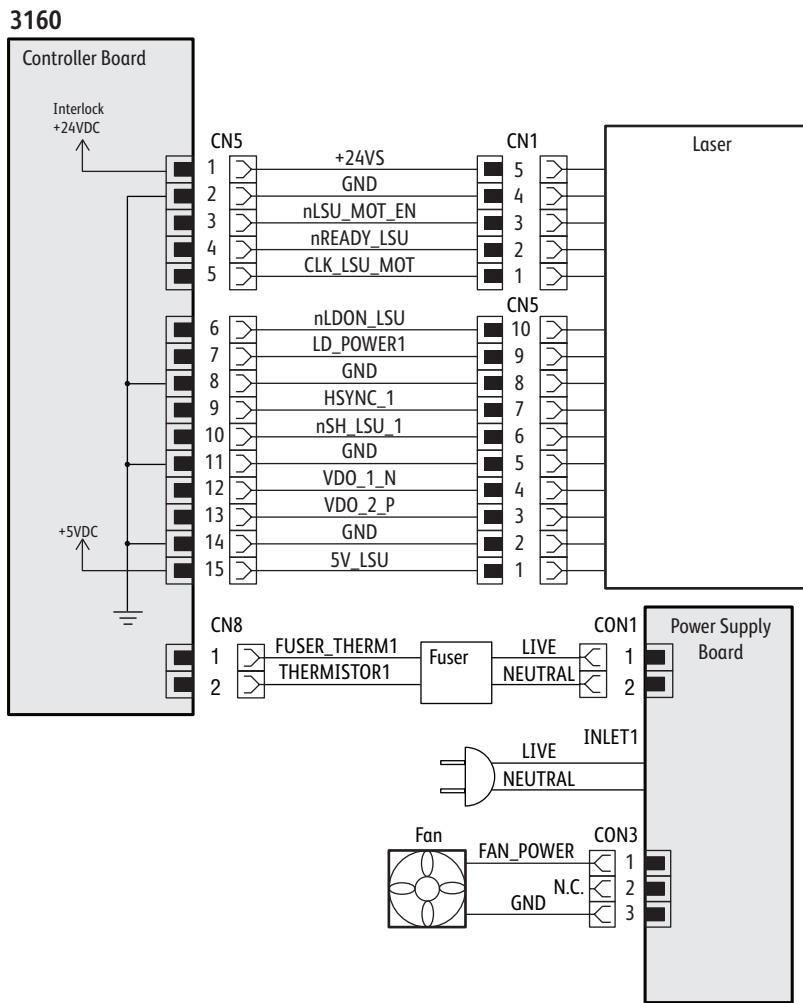
3160 Controller Board Wiring

3160



s3160-108

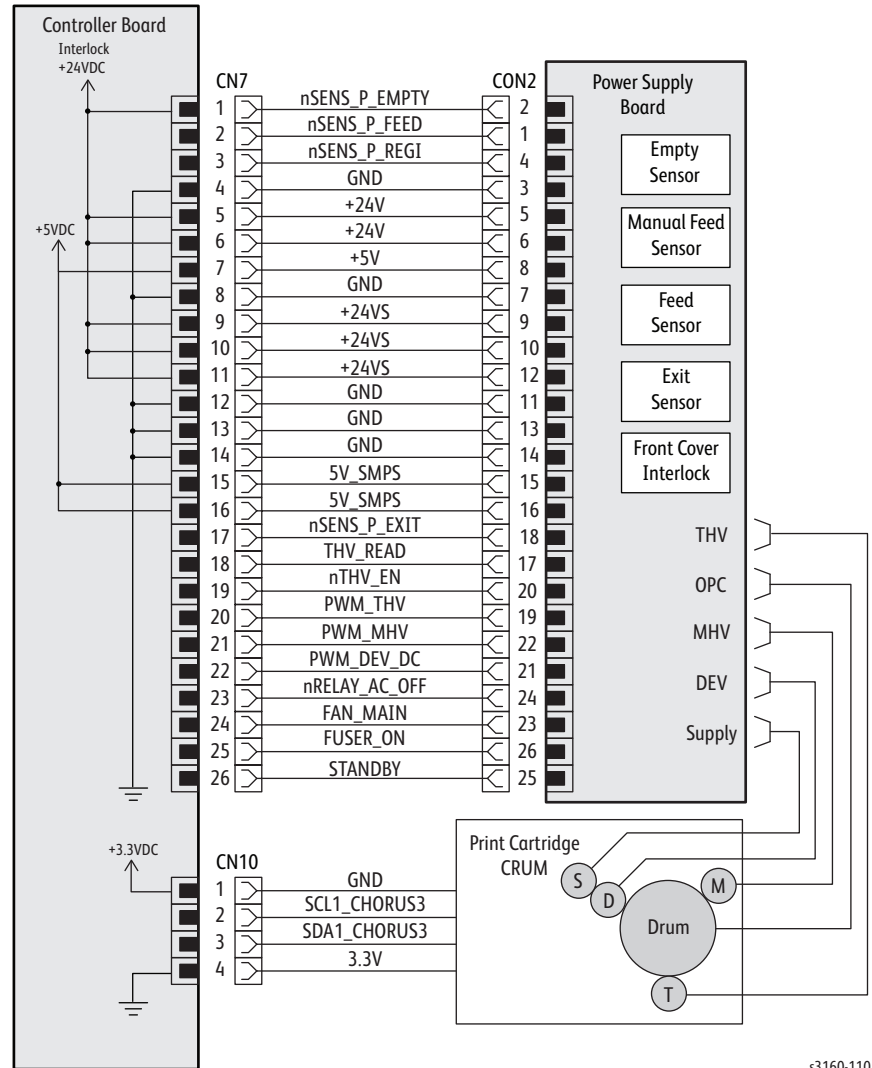
3160 Laser Unit Wiring



s3160-109

3160 Power Supply Wiring

3160



s3160-110

Reference

Contents...

- Acronyms and Abbreviations

Appendix **A**

Acronyms and Abbreviations

Acronym	Description
A3	Paper size 297 millimeters (11.69 inches) x 420 millimeters (16.54 inches).
A4	Paper size 210 millimeters (8.27 inches) x 297 millimeters (11.69 inches).
A5	Paper size 148 millimeters (5.82 inches) x 210 millimeters (2.10 inches).
AC	Alternating Current is type of current available at power source for the printer.
AMPV	Average Monthly Print Volume
ASIC	Application Specific Integrated Circuit
ASSY	Assembly
BIOS	Basic Input Output System
BOOTP	Boot Parameter Protocol
BSD	Block Schematic Diagram
BTM	Bottom
CAM	Cam Shaft
CCD	Charged Coupled Device (Photoelectric Converter)
CD	Compact Disc
CLT	Clutch
CMOS	Complementary Metal Oxide Semiconductor
CN	Connector
CON	Connector
CPU	Central Processing Unit
CRU	Customer Replaceable Unit
CRUM	Customer Replaceable Unit Meter/Memory
CST	Cassette
dB	Decibel
dBa	decibel ampere
dBm	decibel milliwatt
DAA	Data Access Arrangement
DC	Direct Current is type of power for printer components. Machine converts AC power from power source to DC power.
DCU	Diagnostic Control Unit
DDR2 DIMM	Double Data Rate Dual In-Line Memory Module
DEVE	Developer
DHCP	Dynamic Host Configuration Protocol

Acronym	Description
DIMM	Dual In-line Memory Module
DPI	Dot Per Inch
DRAM	Dynamic Random Access Memory
DRV	Drive
DUP	Duplex
DVM	Digital Voltmeter
EEPROM	Electrically Erasable Programmable Read-Only Memory
EMI	Electro Magnetic Interference
EP	electrophotographic
EPP	Enhanced Parallel Port
EOM	End of Message
ESD	Electrostatic Discharge
FCC	Federal Communications Commission
FCOT	First Copy Out Time
FDR	Feeder
FPOT	First Print Output Time
FRU	Field Replaceable Unit
GB	Giga Byte
GDI	graphics device interface
GND	Ground
HARN	Harness
HCF	High-Capacity Feeder
HUM	Humidity
HVPS	High-Voltage Power Supply
Hz	Hertz (cycles per second)
IC	Integrated Circuit
IEC	International Electrotechnical Commission
I/F	Interface
I/O	Input and Output
IDE	Intelligent Drive electronics or Imbedded Drive Electronics
IEEE	Institute of Electrical and Electronics Engineers. Inc.
IP	Image Processor
IPA	Isopropyl Alcohol
KB	Kilo Byte
LAN	Local Area Network
LCD	Liquid Crystal Display

Acronym	Description
LD	Laser Diode
LED	Light Emitting Diode
LSU	Laser Scanning Unit
LVPS	Low-Voltage Power Supply
MB	Mega Byte
MHz	Mega Hertz
MM	Millimeters
MOT	Motor
NVM	Non-Volatile Memory
NVRAM	Non-Volatile Random Access Memory
OHP	Overhead Paper (Transparency)
OPC	Organic Photo Conductor
OPT	Optional
PBA	Printed Board Assembly
PCL	Printer Command Language
PDL	Page Description Language
P/J	Plug Jack (electrical connections)
PPD	PostScript Printer Description
PPM	Pages Per Minute
PS	PostScript
PWBA	Printed Wiring Board Assembly
PWM	Pulse Width Modulation
RAM	Random Access Memory
RH	Relative Humidity
ROM	Read-Only Memory
ROS	Raster Output Scanner - Laser Unit
SMPS	Switching Mode Power Supply
SNR	Sensor
SOL	Solenoid
SOS	Start of Scan
SPOOL	Simultaneous Peripheral Operations Online
SW	Switch
SYNC	Synchronous or Synchronization
THV	Transfer High Voltage
TNR	Toner

Acronym	Description
UI	User Interface
USB	Universal Serial Bus

Index

A

abbreviations, A-2
AC
 input connection, 1-6
 requirements, 1-13
 troubleshooting, 4-12
altitude adjustment, 6-2

B

background contamination, 5-14
banding, 5-22
black lines, 5-21
black prints, 5-11
blank prints, 5-28
button
 definitions, 1-7
 location, 1-7

C

clearances, 1-15
Clutch Assembly
 part number, 9-17
clutch assembly
 removal, 8-37
consumable, 1-10
 Print Cartridge, 1-10
Control Panel
 buttons, 1-7
 description, 1-7
 Error LED, 1-8
 Online LED, 1-8
 part number, 9-7
 removal, 8-51
Controller Board, 2-11
 3140 wiring, 10-15
 3155 wiring, 10-19
 3160 wiring, 10-23
 connector definitions, 2-11
 designators, 10-2

 operation, 2-11
 part number, 9-5
 removal, 8-51
CRUM, 2-8
curl, 5-31

D

dimensions, 1-15
Drive Assembly, 2-6
 operation, 2-6
 part number
 3140, 9-21
 3155/3160, 9-23
 removal, 8-35

E

electrostatic discharge, 0-xii
Error LED
 color codes, 1-8
Ethernet
 port location, 1-6
Exit Actuator
 Spring
 part number, 9-27
Exit Sensor, 2-17
Exit Sensor Actuator
 location, 2-17

F

Fan, 2-17
 part number, 9-16
 removal, 8-58
fasteners, 8-5
 precautions, 8-5
Feed Actuator
 part number, 9-17
 removal, 8-40
 Spring
 part number, 9-17

Feed Pad Assembly, 2-4

Feed Roller

- operation, 2-5
- part number, 9-17
- removal, 8-38

Feed Sensor, 2-16

Firmware update, 7-5

fonts

- supported, 1-3

Front Cover

- interlock switch, 2-17
- part number, 9-5
- removal, 8-23

Fuser, 2-9

- error recovery, 2-19
- Exit Sensor, 2-17
- ghosting image, 5-18
- Heat Roller, 2-9
- image defects, 5-9
- jam, 3-21
- life count, 1-9
- location, 1-9
- operation, 2-9
- overheat protection, 2-10
- part number, 9-5
- Pressure Roller, 2-10
- removal, 8-11
- thermistor, 2-9
- thermostat, 2-9

Fuser Lamp

- part number, 9-27
- removal, 8-15

H

Heat Roller, 2-9

- operation, 2-9, 2-19
- part number, 9-27
- removal, 8-17

I

image area, 5-32

interlock

- Front Cover, 2-17
- functions, 2-10

L

Laser Unit, 2-7

- 3140 wiring, 10-16
- 3155 wiring, 10-20
- 3160 wiring, 10-24

cleaning, 7-4

errors, 2-20

HSYNC, 2-7

operation, 2-7, 2-20

part number, 9-18

removal, 8-30

LED

status/errors, 3-14, 3-15, 3-23, 3-24

Left Cover

part number, 9-9

Left Side Cover

removal, 8-27

light prints, 5-10

M

maintenance items, 1-9

Manual Feed Actuator

assembly, part number, 9-17

part number, 9-17

removal, 8-44

Spring

part number, 9-17

Manual Feed Solenoid, 2-17

removal, 8-59

Manual Feeder, 2-4

supported media, 1-2

Manual Solenoid

part number, 9-16

margins, 1-14

media

supported types, 1-16

transport path, 2-3

memory

specifications, 1-12, 2-12

N

noise, 5-31

Non-Xerox Print Cartridge, 1-10

O

Online LED

color codes, 1-8

OPC drum, 2-7

ghosting image, 5-15

image defects, 5-9

Out Bin Full Sensor, 2-17

part number, 9-17

removal, 8-63

Output Tray

capacity, 1-2

P

Paper Empty Sensor, 2-16

Paper Tray

- life count, 1-9
- part number, 9-5

Paper Tray Empty Actuator

- part number, 9-17
- removal, 8-47

Paper Tray Holder Pad Assembly

- part number, 9-31
- removal, 8-29

Pick Up Roller, 2-5

- life count, 1-9
- location, 1-9
- operation, 2-5
- part number, 9-18, 9-25
- removal, 8-9, 8-32

Pick Up Solenoid, 2-17

- part number, 9-16
- removal, 8-61

PostScript

- common problems, 4-20

Power Cord

- part number, 9-5, 9-32

Power Supply

- 3140 wiring, 10-17
- 3155 wiring, 10-21
- 3160 wiring, 10-25
- part number, 9-5
- removal, 8-54
- troubleshooting, 4-12

Pressure Roller, 2-10

- operation, 2-10
- part number, 9-27
- removal, 8-20

Print Cartridge

- cleaning, 7-3
- components, 2-8
- consumables, 1-10
- CRUM, 2-8
- drum cleaning page, 7-4
- ghosting image, 5-15
- jam in OPC, 3-13
- life count, 1-10
- low toner, 5-4
- non-Xerox Print Cartridge, 1-10
- operation, 2-8
- part number, 9-5

Print speed, 1-12

Printable area, 1-14

printer

- cleaning, 7-2
- component life, 1-9
- defect definitions, 5-8
- dimensions, 1-15
- electrical requirements, 1-13
- image area, 5-32

- image defects, 5-5
- installation clearances, 1-15
- life count, 1-11
- media path, 2-3
- moving, 0-xvi
- no output, 4-11, 4-17
- no power, 4-13
- noise, 5-31
- operating environment, 1-13
- overview, 2-2
- power consumption, 1-13
- print quality defects, 5-2
- print speed, 1-12
- serial number, 9-2
- surface requirements, 1-16
- system overview, 2-2
- wiring, 10-14, 10-18, 10-22

print-quality

- defects, 5-8
- specifications, 5-31
- troubleshooting, 5-8

R

Rear Cover, 1-6

- part number, 9-9, 9-13
- removal, 8-26

repeating defects, 5-9

reports

- maintenance reports, 4-2

Right Cover

- part number, 9-9

Right Side Cover

- removal, 8-28

Roller

- Heat Roller, 2-9
- heat roller, 2-19
- image defects, 5-9
- Pick Up Roller, 2-5
- Pressure Roller, 2-10
- Tray Pick Up Roller, 2-5

S

Safety

- precautions, 0-xi
- service, 0-xiii
- symbols, 0-x

Sensor

- Exit, 2-17
- Feed, 2-16
- Front Cover interlock, 2-17
- Out Bin Full, 2-17
- Paper Empty, 2-16
- Toner Cartridge, 2-16

- serial number
 - format, 9-2
 - location, 9-2
- service instructions, 4-8
- skew
 - specifications, 5-31
 - troubleshooting, 5-24
- solenoid
 - removal, 8-59, 8-61
- specifications
 - altitude, 6-2
 - electrical, 1-13
 - environmental, 1-13
 - functional, 1-11
 - image, 1-14
 - memory, 1-12
 - print-quality, 5-31
- supplies and accessories
 - power cords, 9-32
- system connections
 - 3140, 10-14
 - 3155, 10-18
 - 3160, 10-22

T

- Technical Support, 1-2
- thermal errors, 2-19
- Thermistor, 2-9
 - part number, 9-27
 - removal, 8-13
- Thermostat, 2-9
 - part number, 9-27
 - removal, 8-14
- Toner Cartridge
 - removal, 8-6
 - sensor, 2-16
- Top Cover
 - part number, 9-5, 9-7
 - removal, 8-23
- Transfer Roller, 2-7
 - image defects, 5-9
 - life count, 1-9
 - location, 1-9

- operation, 2-7
- part number, 9-5
- removal, 8-8

Tray, 2-4

- capacity, 1-2
- holder pad, 2-4
- media guides, 2-4
- options, 1-4
- supported media, 1-16

troubleshooting

- inoperable printer, 4-11
- measurement techniques, 4-9
- media-based problems, 4-10
- mis-picks, 4-10
- operating systems, 4-17
- power supply, 4-12
- USB port, 4-15

U

USB

- port testing, 4-15
- rear port, 1-6
- troubleshooting, 4-15

V

- vertical lines, 5-20
- vertical voids, 5-19
- voltage
 - input requirements, 0-xi
 - measured tolerances, 4-10

W

- warm-up time, 1-12
- wiring
 - Phaser 3140, 10-14
 - Phaser 3155, 10-18
 - Phaser 3160, 10-22

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