Phaser® 6121MFP
Multi-Function Printer

Phaser® 6121MFP Service Manual

xerox

Phaser® 6121MFP 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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xerox

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About this Service Manual

The Phaser 6121MFP 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 printer and attached options. Also included are detailed replacement procedures, parts lists, and wiring diagrams.

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.

Warning

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

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.

Replacement Note

A replacement note provides important information related to parts replacement. When needed, replacement notes appear at the end of the dissasembly procedure.

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.

Manual Organization

The Phaser 6121MFP Service Manual contains these sections:

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 and codes generated by resident diagnostics.

Chapter 4 - General Troubleshooting: Troubleshooting discussions covering troubleshooting procedures not associated with a Service Call code or Control Panel error message.

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 print engine 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.

Reference: This section provides an illustration of the printer's menu structure, printer firmware update instructions, and a list of acronyms and abbreviations.

Symbols Marked on the Product

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

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

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

It may take 30 minutes for the Fuser to cool down.

Do not touch the item.

Do not expose the item to sunlight.

Do not expose the item to light.

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.

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. You must also disconnect the power cord from the printer's Alternating Current (AC) inlet. 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 (ESD) Precautions

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

Ensure 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. To drain the electrostatic charge, touch an earth ground source or wear a wrist strap device connected to an earth ground source. Wearing a wrist strap also prevents accumulation of additional bodily static charges. 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 that the device is being installed in.
- 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 electro-statically sensitive device.
- Handle ICs 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 xiv.

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

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

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

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 6121MFP 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 to minimize hazards from the laser.

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

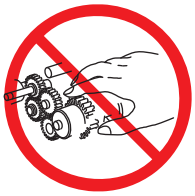
Do not touch any electrical component unless you are instructed to do so by a service procedure.

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 any motor is running.



Servicing Fuser Components

Warning

This printer uses heat to fuse the image to paper. When operating, the Fuser is very hot. Turn the printer power Off and wait at least 5 minutes for the Fuser to cool before you attempt to service the Fuser or adjacent components.

Regulatory Specifications

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 FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential environment. 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 equipment and 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: Low Voltage Directive 2006/95/EC

December 15, 2004: Electromagnetic Compatibility Directive 2004/108/EC

March 9, 1999: Radio & Telecommunications Terminal Equipment Directive 1999/5/EC

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.

General Information

In this chapter...

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

Chapter 1

Printer Introduction and Overview

The Xerox Phaser 6121MFP combines a color laser print engine, scanner, copier, and Fax. The print engine uses a four-pass color laser architecture producing 20 page per minute (ppm) monochrome or 5 ppm color prints on Letter or A4 media. The system connects to the host with USB or 10/100baseT Ethernet ports and provides a 35-sheet Automatic Document Feeder (ADF) and the standard 200-sheet input Tray. The Output Tray holds 100 (75.2 gsm) sheets facedown. Available options include a 500-Sheet Feeder (Tray 2) to add input capacity, and the Duplex Unit enables auto-duplexed (2-sided) printing.

Copy speed is 3 copies per minute (cpm) at a resolution of 600x300 dpi, monochrome copies at10cpm (600x300 dpi) or 20cpm (300x300 dpi). The Fax portion of the system incorporates a resolution of up to 203 dpi by 392 dpi. Fax features include a modem speed of up to 33.6 Kbps using V.34 standard transmission, print capability of up to a maximum of 250 printed pages. The Fax includes a phone book, real time clock, and auto redial.

Technical Support Information

The Xerox Phaser 6121 MFP Color Laser Printer Service Manual is the primary document used for repairing, maintaining, and troubleshooting the printer.

To ensure complete understanding of this product, participation in Xerox Phaser 6121MFP Service Training is strongly recommended. To service this product, Xerox certification for this product is required.

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

- Xerox Global Service Net: https://www.xrxgsn.com/secure/main.p
- 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 6121MFP is available in three configurations. The 3-in-1 version connects to the host by USB and provides platen scan. The 4-in-1 versions are expandable with both the options Tray 2 and Duplex Unit to enable 2-sided printing. The following table lists shared features of all configurations.

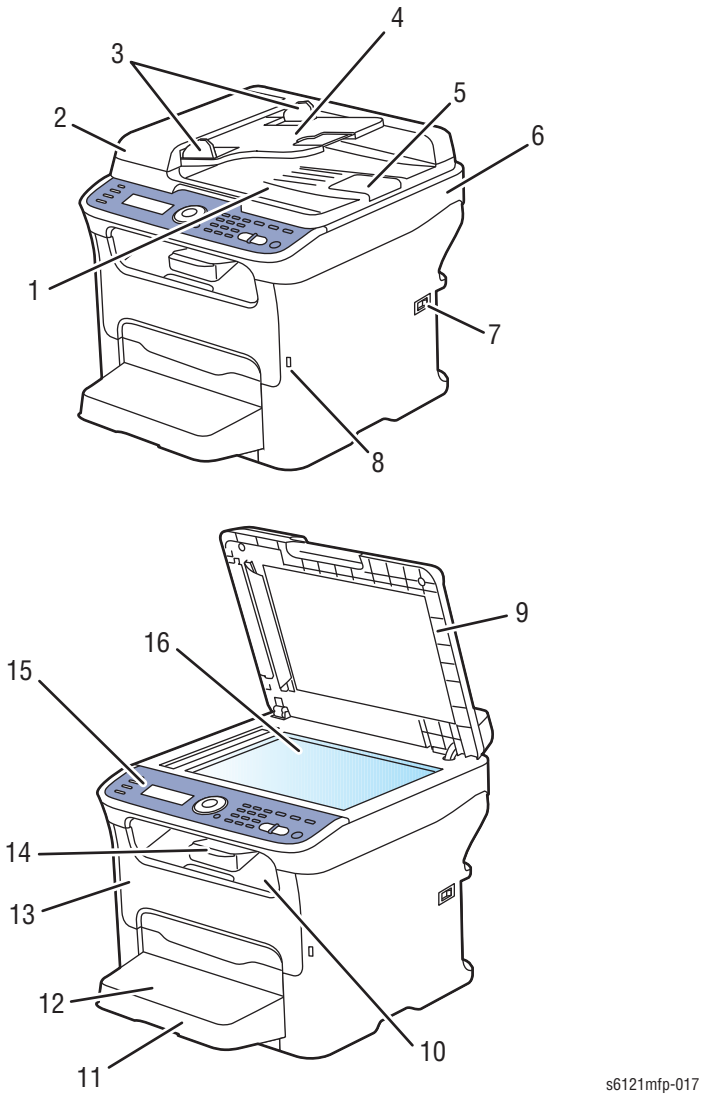
Features	Specification
Processor Speed	120 MHz
Max Print Speed (ppm) color/mono	5/20
Memory	128 MB
USB Port	Yes
Print Resolutions (dpi): Draft Enhanced	 600x600 1200x600
Copy Speed with auto document feeder	Color: 3 cpm (600 x 300 dpi) Monochrome: 10 cpm (600 x 300 dpi) Monochrome: 20 cpm (300 x 300 dpi)
Scan speed (Phaser 6121MFP/N or /D printer configurations only.)	Color: 600 x 600 dpi: 9.94 mm/second 600 x 300 dpi: 19.88 mm/second Monochrome: 600 x 600 dpi: 29.81 mm/second 600 x 300 dpi: 59.62 mm/second 300 x 300 dpi: 119.5.25 mm/second
Scan Resolutions	150 x 150 dpi 300 x 300 dpi

The following table lists printer features by configuration.

	Configuration		
Features	6121/S	6121/N	6121/D
10/100 Ethernet Port	No	Yes	Yes
ADF	No	Yes	Yes
Duplex Unit	No	Optional	Yes
500-Sheet Feeder (Tray 2)	No	Optional	Yes

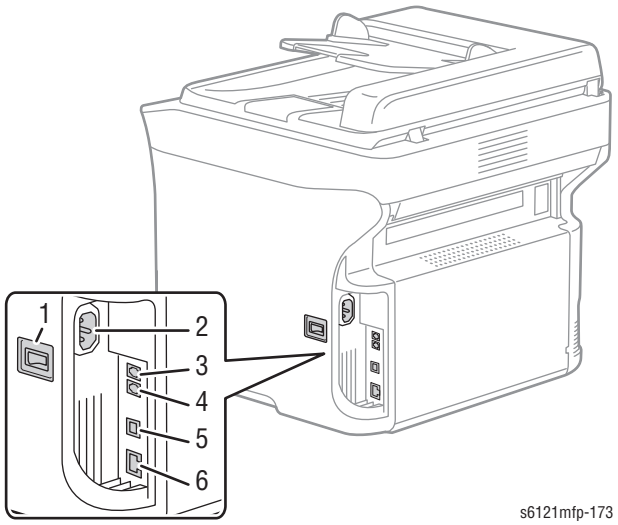
Parts of the Printer

Front Views



Item	Description	Item	Description
1	Document Output Tray	9	Document Cover
2	ADF (Auto Document Feeder) Cover	10	Output Tray
3	ADF Guides	11	Tray 1
4	ADF Tray	12	Tray 1 Dust Cover
5	Document Stopper	13	Front Door
6	Printer Top	14	Tray Extension
7	Power Switch	15	Control Panel
8	USB Drive Port	16	Document Glass

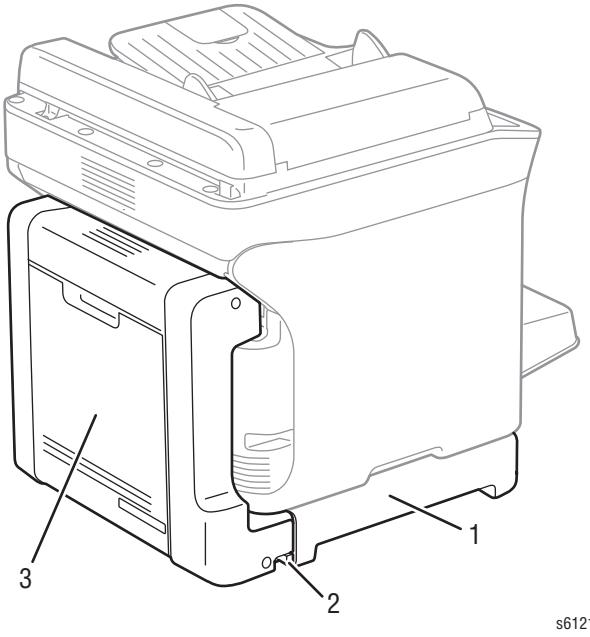
Rear View



Item	Description
1	Power switch
2	Power cord connection
3	Fax Phone line out (Phaser 6121MFP/N and /D only)
4	Line out jack (Phaser 6121MFP/N and /D only)
5	USB cable port
6	Network/Ethernet connections (Phaser 6121MFP/N and /D only)

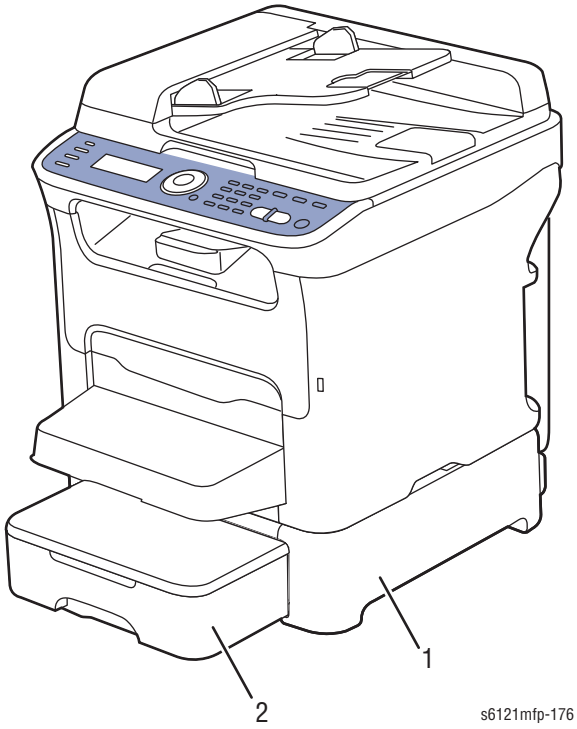
Options

Duplex Unit



Item	Description
1	Duplex Unit Optional Base
2	Release Lever
3	Duplex Unit

Lower Feeder Tray

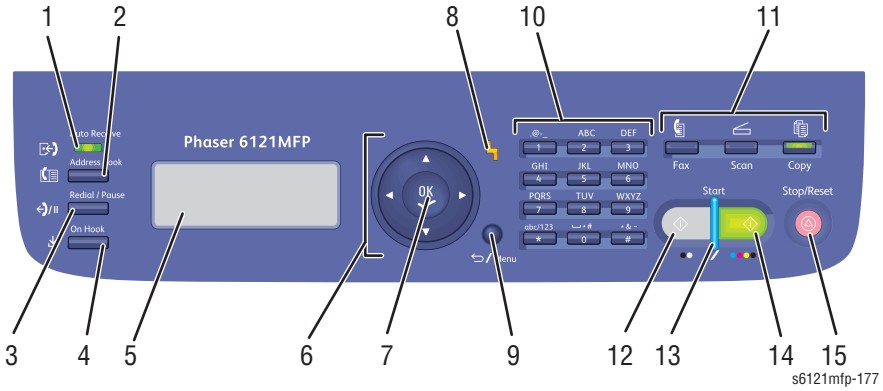


Item	Description
1	Lower Feeder Unit
2	500-Sheet Feeder with Tray Cover

Control Panel

The Control Panel consists of multiple LEDs, a display, and several function buttons. These buttons are used to navigate the menu system, perform functions, and select modes of operation.

Control Panel Button Descriptions



Left side: Fax Controls	Middle	Right side
1. **Auto Receive** LED Remains lit while the automatic receive function is on. Blinks when there is a stored fax in memory. 2. **Address Book** button Press to access the printer's address book, fax numbers, and E-mail addresses. 3. **Redial / Pause** button Recalls the last number dialed. Inserts a pause when a fax number is dialed. 4. **On Hook** button When the fax line is shared with a telephone, pressing On Hook before sending or receiving disables the telephone extension.	5. **Menu Display** window Displays settings, menus, and messages 6. **Navigation / Menu** buttons **Up / Down** arrow buttons move through menus, options. **Back / Forward** arrow buttons move left and right through menus, options. 7. **OK** (confirm) button Press to select the setting that is currently displayed. 8. Alert indicator When lit, indicates an error condition or warning. 9. **Back/Menu** button Press to go to the System Menu, cancel an entered character, or return to the previous screen.	10. Alphanumeric keypad Use to enter information. 11. **Mode** buttons Press to select Fax, Scan, or Copy mode. 12. **B&W Start** button Starts a fax or B&W copy or scan. 13. Ready indicator Lights up when it is OK to press the **Start** button to copy, scan, or fax. 14. **Color Start** button Starts a color copy or scan. 15. **Stop/Reset** button Press to return to the default mode main menu; cancel current print/copy/ fax job.

Maintenance Items

Routine maintenance items are parts or assemblies that require periodic replacement. These items are typically customer replaceable (CRU).

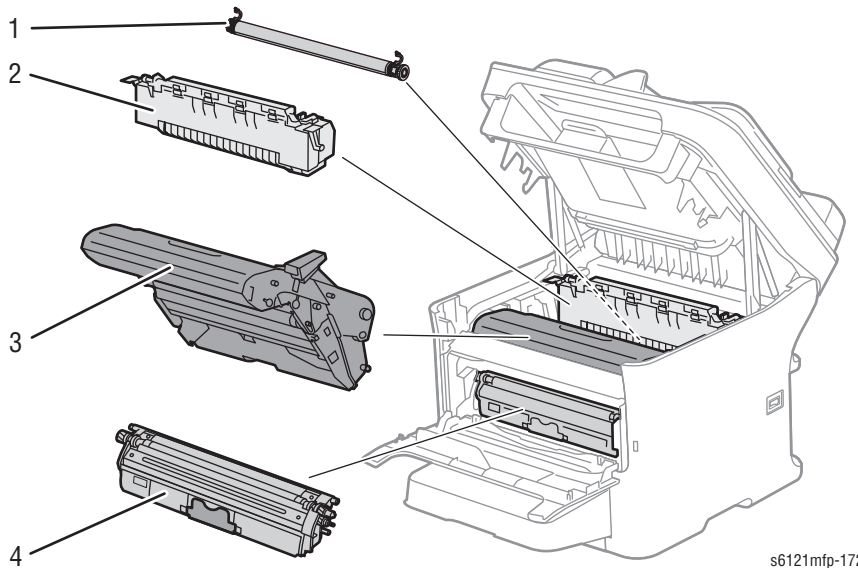
The listed items have limited life and require periodic replacement.

Maintenance Items

Item	Print Life
Transfer Roller	Up to 50,000 pages
Fuser	Up to 50,000 pages
Imaging Unit	Approximately 30,000 pages
Tray Separator Pad	Up to 50,000 pages
ADF Feed Roller	Up to 35,000 pages
ADF Separator Pad	Up to 35,000 pages

Note

Print life is based on “typical” office printing and 5 % coverage per color on 24 lb. paper. Print life figures are not guaranteed and varies depending on usage habits. Imaging Unit print life is based on 3-page jobs using letter-size paper.



Item	Description
1	Transfer Roller
2	Fuser
3	Imaging Unit
4	Toner Cartridge

Consumables

Consumables consist of 4 Toner Cartridges.

Each Toner Cartridge has a CRUM (Customer Replaceable Unit Meter) to record toner usage information. A CRUM counts the amount of remaining toner. When toner empty is detected, Life End status is displayed to indicate toner empty.

CMY Toner is not consumed when printing in monochrome mode or when printing Gray scale. Internal counters track consumables and maintenance life.

Life ratings are based on A-size sheets at 5 % coverage.

	Print Life	
Toner Cartridge	**C,M,Y**	**Black**
Standard Capacity	1,500 pages	1,000 pages
High Capacity	2,500 pages	2,500 pages

Specifications

Printer Specifications

Characteristic	Description	
Type	Desktop full-color laser beam printer	
Printing system	Laser and electrostatic image transfer to plain paper	
Exposure system	2 laser diodes and polygon mirror	
PC drum type	OPC (organic photo conductor)	
Photoconductor cleaning	Blade cleaning system	
Resolution	1200 x 600 dpi, 600 x 600 dpi	
Media feeding	6121MFP/S	Tray 1: 200 sheets
	6121MFP/N/D	Tray 1: 200 sheets Expandable to a two-tray system by adding optional 500-Sheet Lower Feeder Unit.
Developing system	Single-element developing system	
Charging system	DC comb electrode Scorotron system	
Image transfer system	Intermediate transfer belt system	
Media separating	Curvature separation + Charge-neutralizing system	
Fusing system	Roller fusing	
Media exit system	Face down (Output tray capacity: 100 sheets)	
Warm-up time	Average 30 seconds (return to Ready from Energy Saver)	
Print resolution	600 x 600 dpi x 1 bit (Standard) 1200 x 600 dpi x 1 bit (Enhanced)	
Custom media sizes	Paper width: 92 to 216 mm (3.6" to 8.5") Paper length: 195 to 356 mm (Plain paper) 184 to 297 mm (Thick paper)	
Media types	Plain paper (60 to 90 g/m2) Thin card stock 1 (91 to 163 g/m2) Thick card stock 2 (164 to 209 g/m2) Postcards Envelopes Letterhead Label stock	
Tray capacities	Plain paper and letterhead: 200 sheets Thick stock, postcards, labels, and glossy stock: 50 sheets Envelopes: 10 sheets	

Performance Specifications

Characteristic	Specification
Copy speed with auto document feeder (Phaser 6121MFP/N and /D printer configurations only.)	Color: 3 cpm (600 x 300 dpi) Monochrome: 10 cpm (600 x 300 dpi) Monochrome: 20 cpm (300 x 300 dpi)
Copy resolution	600 x 600 dpi x 1 bit
Scan speed (Phaser 6121MFP/N or /D printer configurations only.)	Color: 600 x 600 dpi: 9.94 mm/second 600 x 300 dpi: 19.88 mm/second Monochrome: 600 x 600 dpi: 29.81 mm/second 600 x 300 dpi: 59.62 mm/second 300 x 300 dpi: 119.5.25 mm/second
Scan resolution	150 x 150 dpi 300 x 300 dpi
Fax Modem speed (Phaser 6121MFP/N or /D printer configurations only.)	V.34 (up to 33.6 k bps)
Fax TX speed (Phaser 6121MFP/N or /D printer configurations only.)	3 seconds/page (at V.34)

Controller

The following table lists controller functionality for the Phaser 6121MFP/S.

Characteristic	Description
Memory	RAM (128 MB) Flash ROM (4 MB for F/W)
Interface	USB 2.0 compliant
Hard Disk	Not supported
Support	Microsoft Windows Vista, Windows XP (Service Pack 2 or later), Windows XP Professional x64, Windows Server 2003, Windows Server 2003 x64 Edition, Windows 2000 (Service Pack 4 or later) Mac OS X (10.2.8 or later; We recommend installing the latest patch)

The following table lists controller functionality for the Phaser 6121MFP/N/D.

Characteristic	Description
Standard memory	RAM (128 MB) Flash ROM (4 MB for F/W) Fax (6 MB)
Hard Disk	Not supported
Interface	USB 2.0 (High Speed) compliant, 10Base-T/100Base-T Ethernet, Host USB (for scan to USB memory)
PSTN (Fax) Connector	Two RJ11 (Phone and Line) for US models; phone port is closed in European models
Support	Microsoft Windows Vista, Windows XP (Service Pack 2 or later), Windows XP Professional x64, Windows Server 2003, Windows Server 2003 x64 Edition, Windows 2000 (Service Pack 4 or later) Mac OS X (10.2.8 or later; We recommend installing the latest patch)

Electrical Specifications

Characteristic	Specification
Power Supply Voltage/Frequency	
Line Voltages	110 – 127 VAC
	220 – 240 VAC
Frequency Range	50 – 60 Hz
Current Capacity	110 V Engine: < 9 A 220 V Engine: < 5 A
Power Consumption (with all options, 110 or 220 V)	
Power Saver Mode	10W or less
Standby Mode (Fuser On)	80W or less
Color Continuous Printing	300W or less
B/W Continuous Printing	396W or less
Maximum Value	1060 W or less

Environmental Specifications

Characteristic	Specification
Temperature	
Operating	10 to 35˚ C (50 to 95˚ F)
Storage	-20 to 55˚ C (-4˚ to 131˚ F)
Humidity (% RH)	
Operating	10 to 85 % RH
Storage	35 to 85 % RH
Operating Altitude	0 to 2,500 meters (8,000 feet)
Acoustic Noise LWA(B)	**Sound Pressure (dBA)**
Printing	52
Standby	35

Media and Tray Specifications

Auto Document Feeder

Characteristic	Specification
Paper Size	A4 (210 x 297 mm / 8.2 x 11.5 in.) Letter (8.5 x 11 in.) Legal (8.5 x 14 in.) Custom size range: W: 140 – 216 mm, H: 148 mm – 356 mm
Paper Type (Weight)	Plain (50 – 110 gsm / 16 – 34 lb.)
Loading Capacity	Holds up to 35 standard sheets

Paper Tray 1 – Multi-purpose

Characteristic	Specification
Paper Size	A4 (210 x 297 mm / 8.2 x 11.5 in.) A5 (148 x 210 mm / 5.8 x 8.2 in.) B5 (ISO) (176 x 250 mm) Envelopes C6 (114 x 162 mm) Envelopes DL (110 x 220 mm) Executive (7.25 x 10.5 in.) Foolscap (8 x 13 in.) Government Legal (8.5 x 13 in.) Government Letter (8 x 10.5 in.) Letter (8.5 x 11 in.) Letter Plus (8.5 x 12.69 in.) Legal (8.5 x 14 in.) SP Folio (210 x 330 mm) Statement (5.5 x 8.5 in.) UK Quarto (203 x 254 mm / 8 x 10 in.) Custom size range: W: 92 – 216 mm (3.6 – 8.5 in.) H: 184 – 356 mm (7 – 14 in.)
Paper Type (Weight)	Plain (60 – 90 gsm / 16 – 24 lb.) Letterhead Thin Card Stock (91 – 162 gsm / 30 – 60 lb. Cover) Thick Card Stock (164 – 209 gsm / 61 – 80 lb. Cover) Envelopes (DL and C6 sizes only) Labels
Loading Capacity	200 sheets (20 lb.)

500-Sheet Feeder (Tray 2)

Characteristic	Specification
Paper Sizes	A4, Letter
Paper Type (Weight)	Plain (60 – 90 gsm / 16 – 24 lb.)
Loading Capacity	500 sheets (20 lb.)

Duplex Unit

Characteristic	Specification
Paper Sizes	A4, Letter
Paper Type (Weight)	Plain, Letterhead (60 – 90 gsm / 16 – 24 lb.)

First Print Output Time (FPOT)

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

The following conditions are applied:

- The Controller does not keep the print engine waiting
- The printer is at Ready mode
- Paper is A size Short Edge Feed (SEF)
- Process control time is not included

Size	Tray 1 Normal paper		Tray 2 Normal paper		Tray 1 Thick paper	
	color	mono	color	mono	color	mono
A4/Letter Simplex	< 21 sec.	< 11 sec.	< 21 sec.	< 11 sec.	< 28 sec.	< 19 sec.
A4/Letter Duplex	< 33 sec.	< 23 sec.	< 33 sec.	< 23 sec.	N/A	N/A
Legal Simplex	< 33 sec.	< 11 sec.	N/A	N/A	N/A	N/A
Legal Duplex	N/A	N/A	N/A	N/A	N/A	N/A

First Copy Output Time

First Copy Output Time (FCOT) is defined as the time when the Start button is pressed until the trail edge of the first copied media passes the printer Exit Roller.

The following conditions are applied:

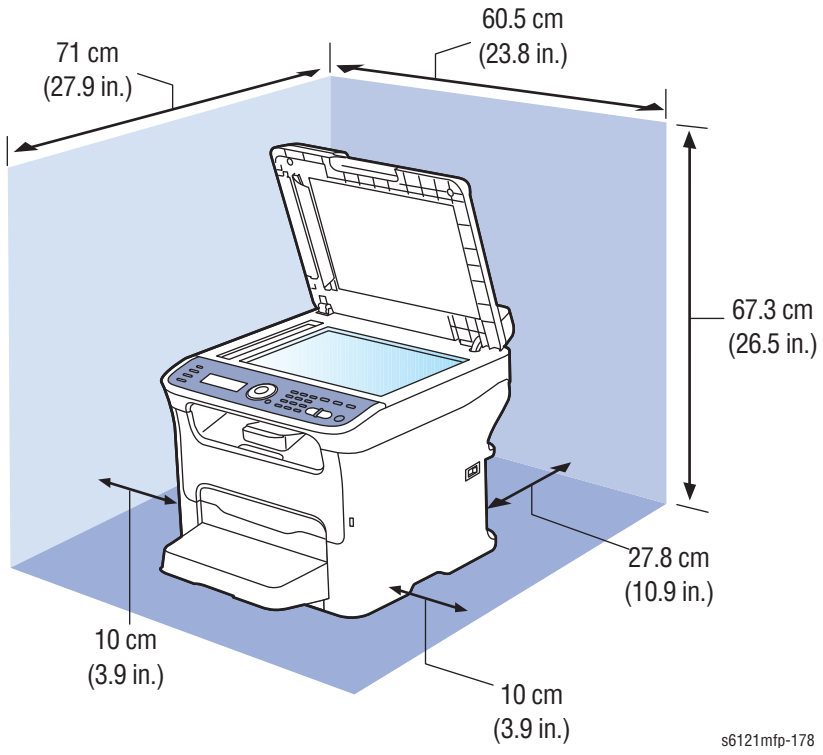
- The Controller does not keep the print engine waiting.
- The printer is at Ready mode (Laser Unit Motor Off, Fuser Ready).
- Paper is A size Short-Edge Feed (SEF).
- Media: Media feed from the standard media tray.

Mode	FCOT (second) Platen	FCOT (second) ADF
Color	57.0 sec.	45.0 sec.
Mono	23.0 sec.	19.0 sec.

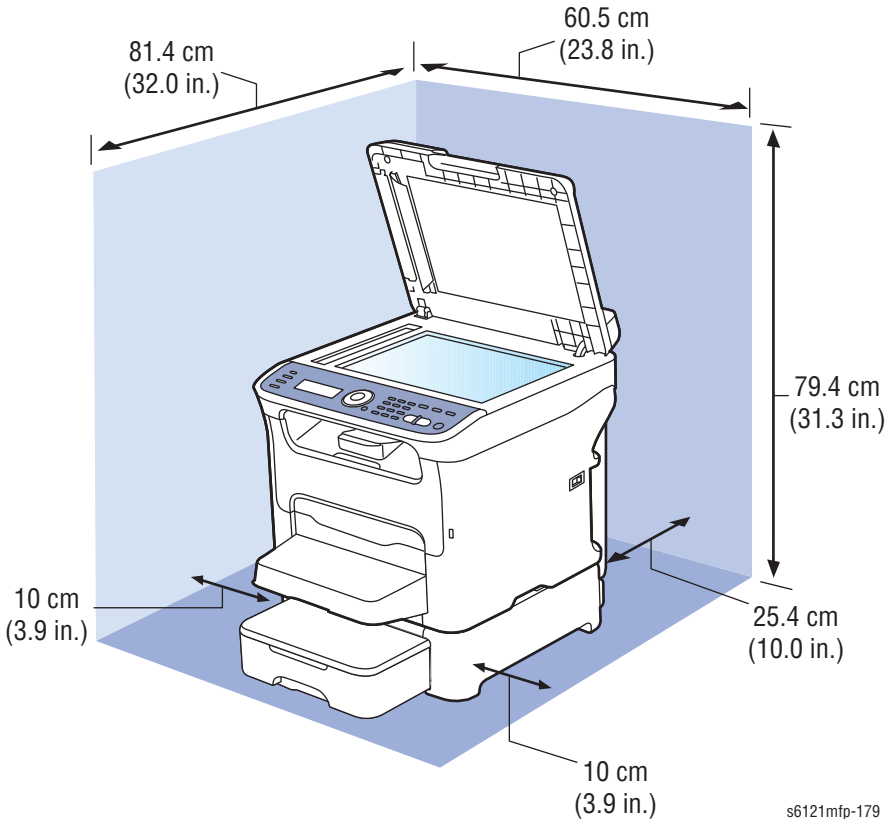
Physical Dimensions and Clearances

Minimum Clearances

Minimum clearances for the Phaser 6121MFP/S.



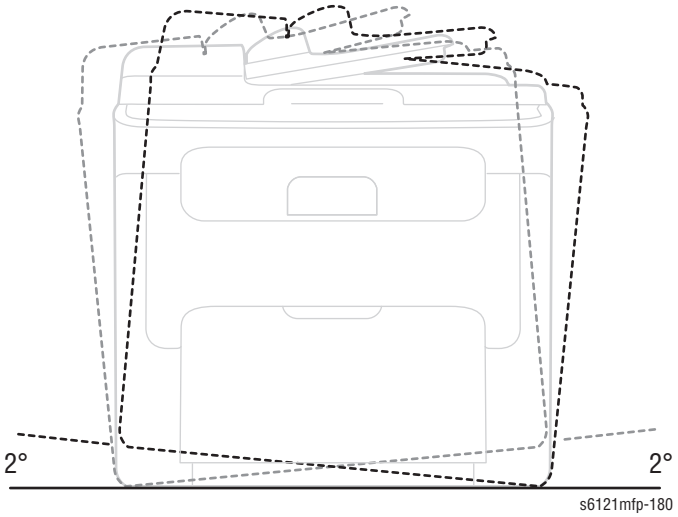
Minimum clearances for the Phaser 6121MFP/N



Mounting Surface Specifications

These specifications apply to any printer used as a table-top printer.

Mounting surface flatness must be within the specified range. The printer must not be tipped or tilted more than 2 degrees.



Known problems that occur as a result of exceeding the mounting surface specifications are:

- Color-to-Color mis-registration, primarily in the horizontal (laser scan) direction.
- A smear or line of toner approximately 40 mm from the trailing edge of the print.

Information Pages

Configuration Page

Print the Configuration Page from the Control Panel, **System Menu** > **Print Config Page**. The Configuration Page includes this information.

Configuration Page Information

General Description	Detail Description
Title	Prints Title of the document
Supplies Status	Shows the status of toner cartridges and Imaging Unit, and displays the remaining life of each as a percentage.
Coverage Information	Shows coverage information for each toner cartridge as a percentage.
Counter Information	Shows usage data by job type.
General Information	Xerox Serial Number, Engine Serial Number, Installation Date, Engine Firmware, Boot Code, Controller Firmware, Language, Energy Saver Mode, Toner Low Prompt, Toner Out Action, Initial Mode, Size Mismatch, Tray type and size
Machine Defaults	Shows the default settings for copying, scanning, and faxing.
Network Settings	Network Interface, Host Name, DHCP/BOOTP, IP Address, Subnet Mask, Gateway Address, MAC Address, DNS Addresses, and the status of Bonjour, HTTP, SNMP, FTP, and IPP
Fax Settings	Fax Number, Tone/Pulse, No. of Ring, Line Monitor, Header, Footer, Fax PTT Country, Send Speed, Receive Speed, ECM Mode
Email Settings	Sender Name, Sender's Email, SMTP Protocol, SMTP Server Address, SMTP Port No., SMTP Authentication, POP Before SMTP, POP3 Server Address, LDAP Protocol, LDAP Server Address, LDAP Port No.

Theory of Operation

In this chapter...

- Operational Overview
- Paper Path of the Printer
- Major Assemblies and Functions
- Media Handling

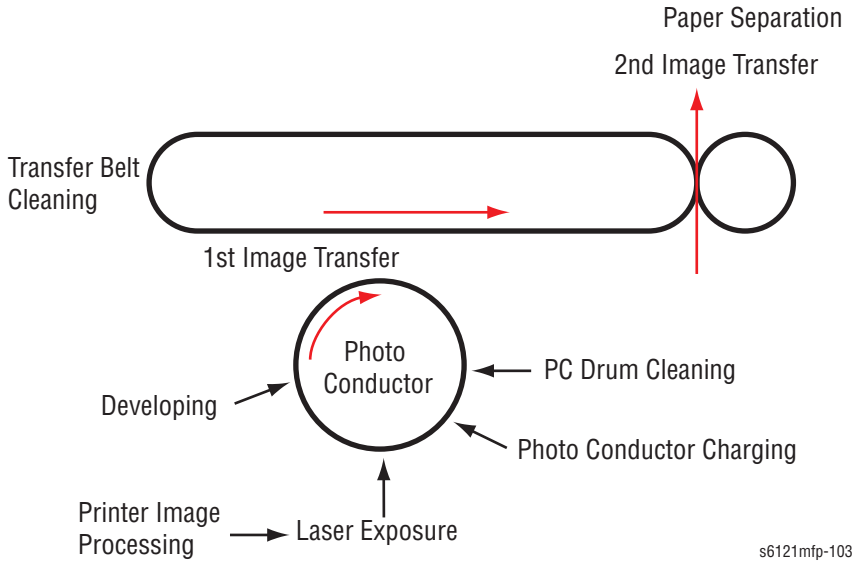
Chapter 2

Operational Overview

The Phaser 6121MFP is a full-color laser printer that utilizes electrophotographic recording principals to place a full color image onto the print media. The system contains a drum and developing unit that places the toner image of each color onto print media producing full-color prints.

Print Process

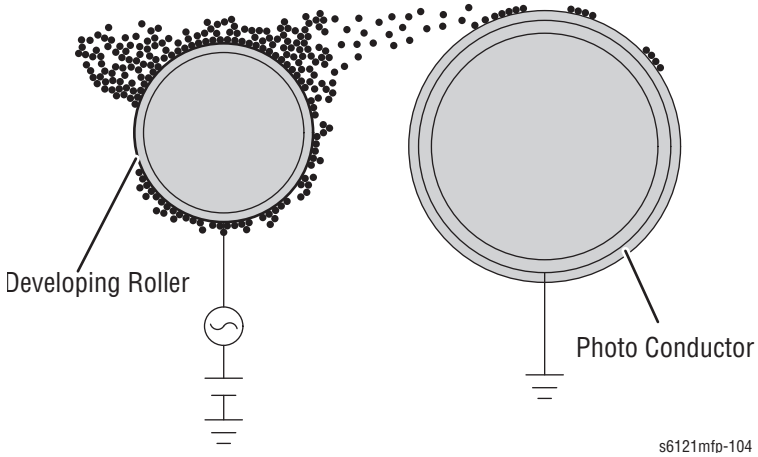
The following illustration shows the Phaser 6121 print cycle.



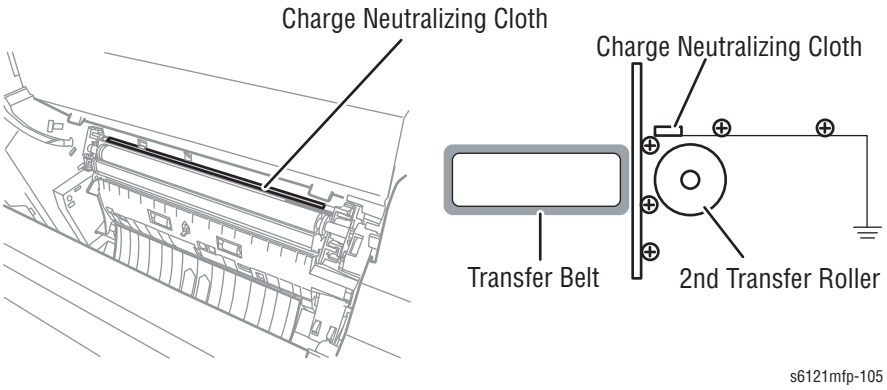
The Phaser 6121 print process consists of these steps:

1. Exposure
   The surface of the Drum is irradiated with the laser light and an electrostatic latent image is formed.
2. Developing
   The toner, negatively charged, is attracted onto the electrostatic latent image formed on the surface of the Drum.

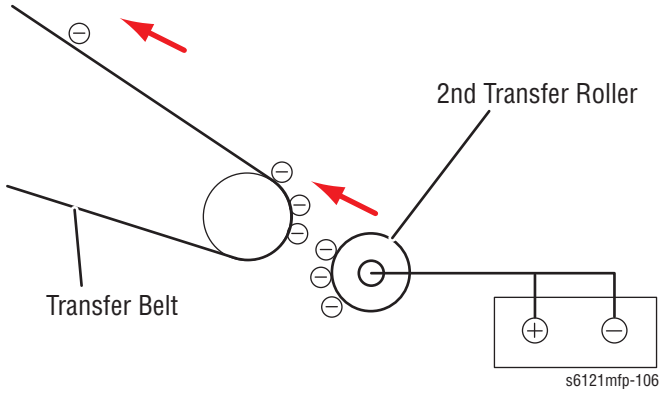
A DC negative bias voltage is applied to the Developing Roller, thereby preventing toner from sticking to the background image portion.



3. Image Transfer to Belt
   A DC positive voltage is applied to the backside of the Transfer Belt to attract the visible, developed image from the surface of the Drum.
4. Image Transfer to Media
   A DC positive voltage is applied to the backside of the paper to attract the visible, developed image on the surface of the Transfer Belt to the media.
5. Paper Separation
   A Charge Neutralizing Cloth is provided on the guide plate to neutralize the charge.



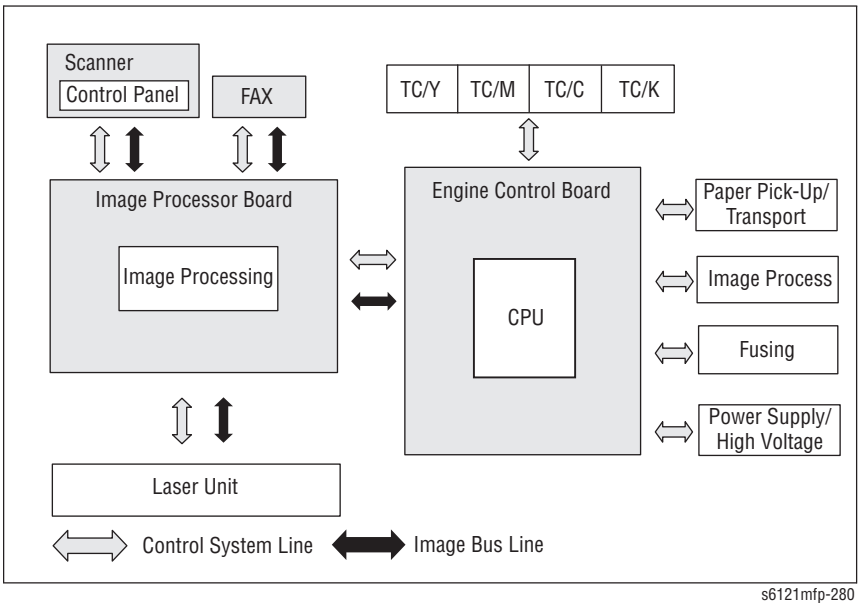
6. Transfer Roller Cleaning
   The residual toner left on the surface of the Transfer Roller is removed by an alternating DC charge that transfers the waste toner back to the Transfer Belt for collection by the Transfer Belt cleaning blade.



7. Transfer Belt Cleaning
   A charge is applied to the Transfer Belt. By potential difference, residual toner on the surface of the Transfer Belt is collected for cleaning. The toner scraped off the surface of the photo conductor is collected in the Imaging Unit.
8. Fusing
   Toner is permanently fused to the paper by the combination of heat and pressure applied by the Fuser.

System Control

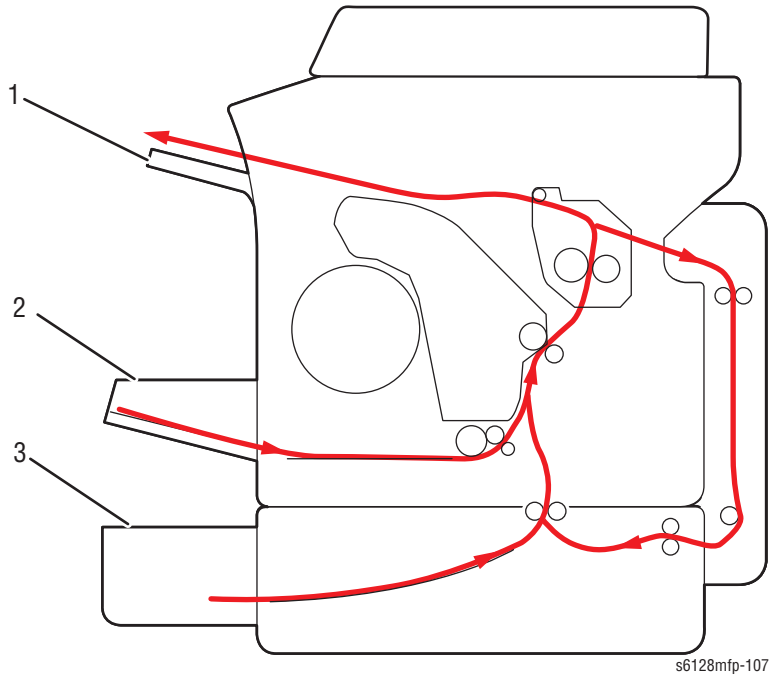
The following diagram shows the major operating components and their basic connection to each other.



Paper Path of the Printer

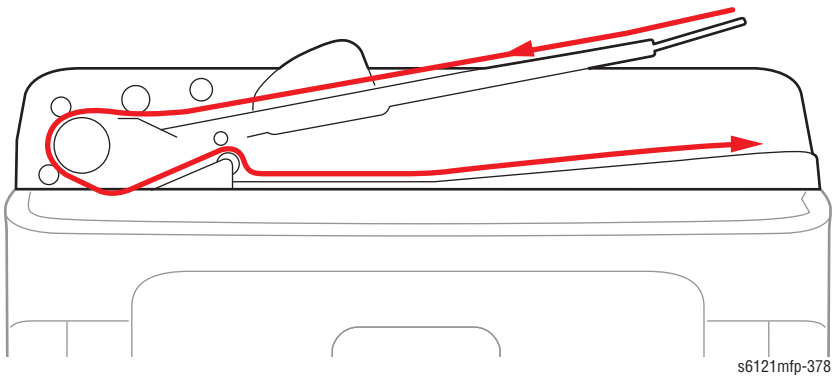
Print Engine Paper Path

The print media is supplied from Tray 1 or the optional Tray 2, and is transported into the printer along the paper path as shown in the diagram.



Item	Description
1	Output Tray
2	Tray 1 (MPT)
3	Tray 2 (Optional 500-Sheet Feeder)

Automatic Document Feeder (ADF) Print Path



Sensors

The printer contains sensors of various types that perform a variety of functions. One group of sensors track the progress of the paper along the paper path, and detects if a jam occurs. Other sensors detect the presence of the Toner Cartridges, stop printer activity if a door is open (interlock), detect the presence of media in the trays, and monitor the fusing temperature.

For an overview of sensors in the printer, see “Sensors and Switches” on page 2-11.

Sensor Types

The types of sensors used vary with function. In general, there are three types in use: photo sensors, microswitches, and thermistors.

Photo Sensors

Two types of photo sensors are used, photo-reflective and photo-receptive. Photo-reflective sensors use light reflected back from an object to detect its presence. Photo-receptive sensors use an actuator or the object itself to block the light path to detect an object or condition.

Photo-reflective sensors have the light emitter and light receiver aligned on a single surface. Output of the photo-receptor is High (> +4.5 V) when light is being reflected back and Low (< +.3 V) when it isn’t. Photo-receptive sensors consist of a LED in one arm of a U-shaped holder, and a photo-transistor in the other arm. When the sensing area is vacant, nothing is between the arms of the sensor, light falls on the photo-receptor sending the signal High. If the light is interrupted, the photo-transistor goes Low.

Microswitches

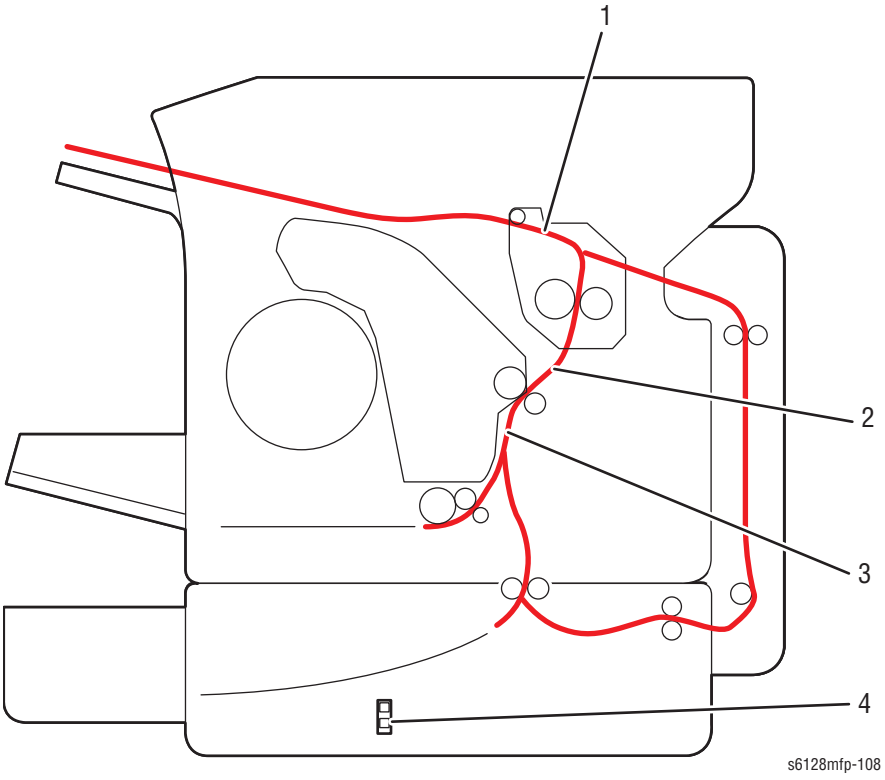
Microswitches are used primarily as cover interlocks. They are in a normally open state, and close when actuated. Microswitches employ hooks or catches for retention in the bracket or frame.

Thermistors

Thermistors have a known value of resistance whose value varies with temperature. Used primarily in the Fuser for temperature sensing.

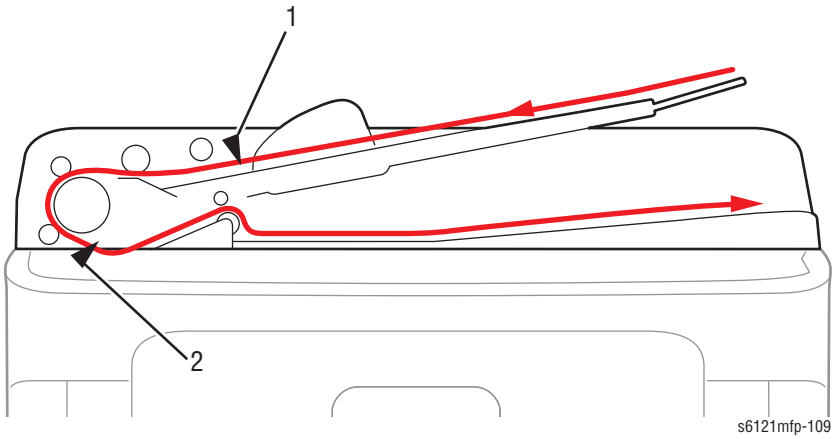
Sensors in the Paper Path

The following illustration identifies the various sensors located along the paper path of a printer equipped with the Lower Feeder Unit and Duplex Unit. Error reporting is dependent on these designators. Error detection is based on paper transport timing through the sensing area.



Item	Description
1	Exit Sensor
2	2nd Image Transfer Retraction Position Sensor
3	Registration Sensor
4	Media Empty Sensor

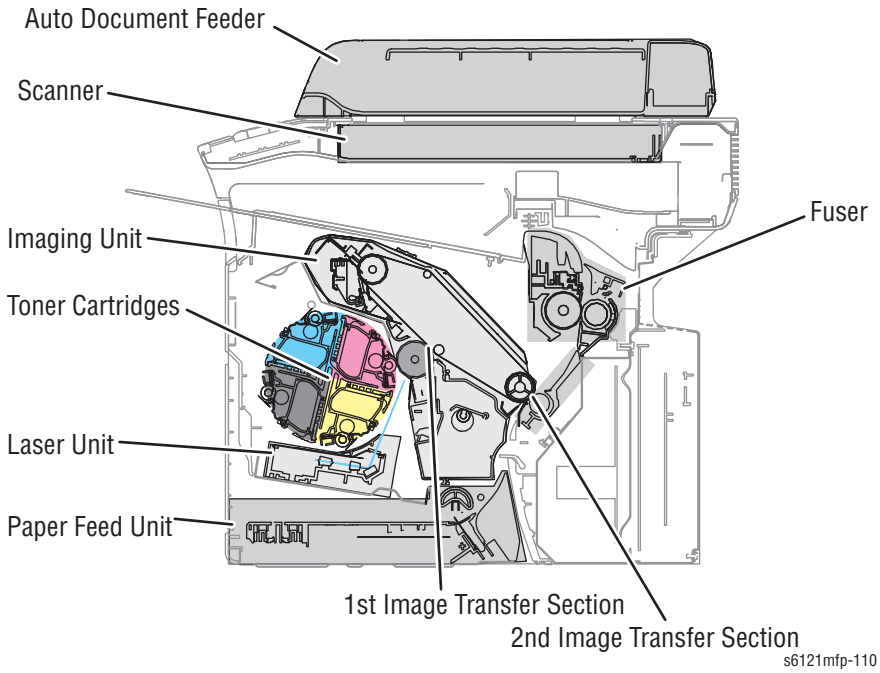
Automatic Document Feeder (ADF) Sensors



Item	Description
1	Paper Feed Sensor
2	ADF Tray

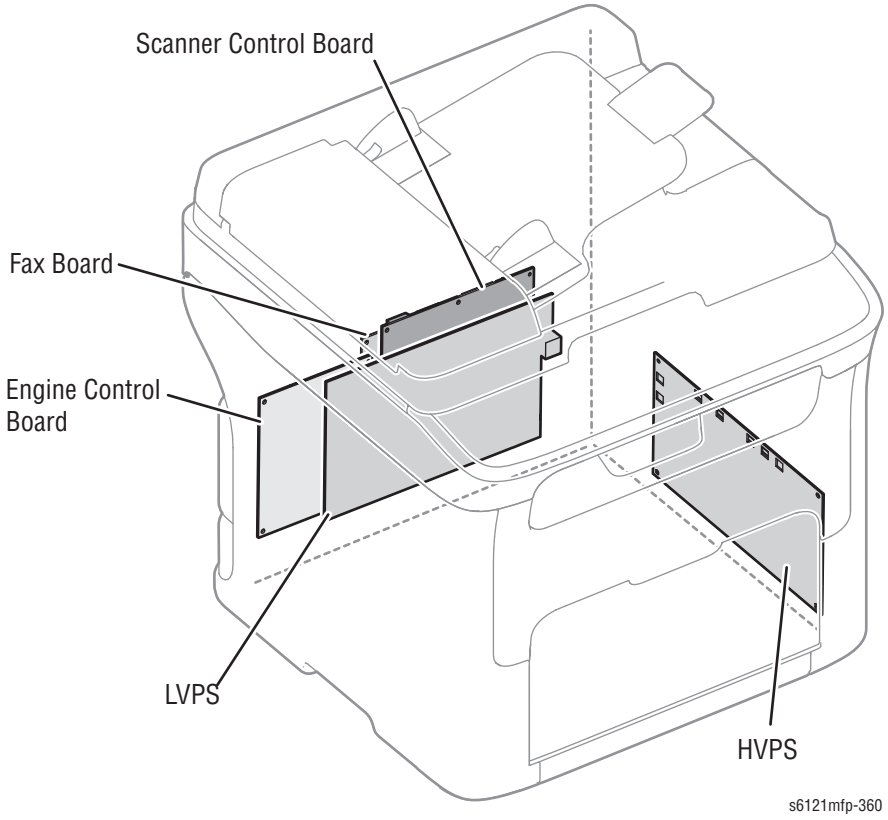
Major Assemblies and Functions

The location of the system's primary functional components is shown.

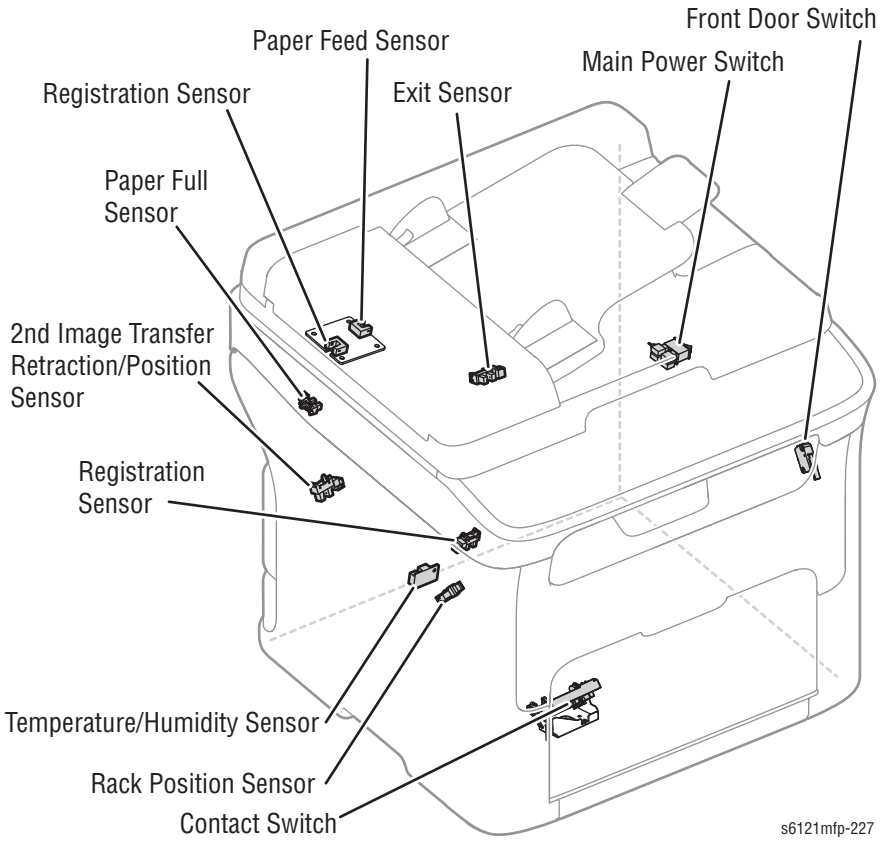


Main Engine Component Overview

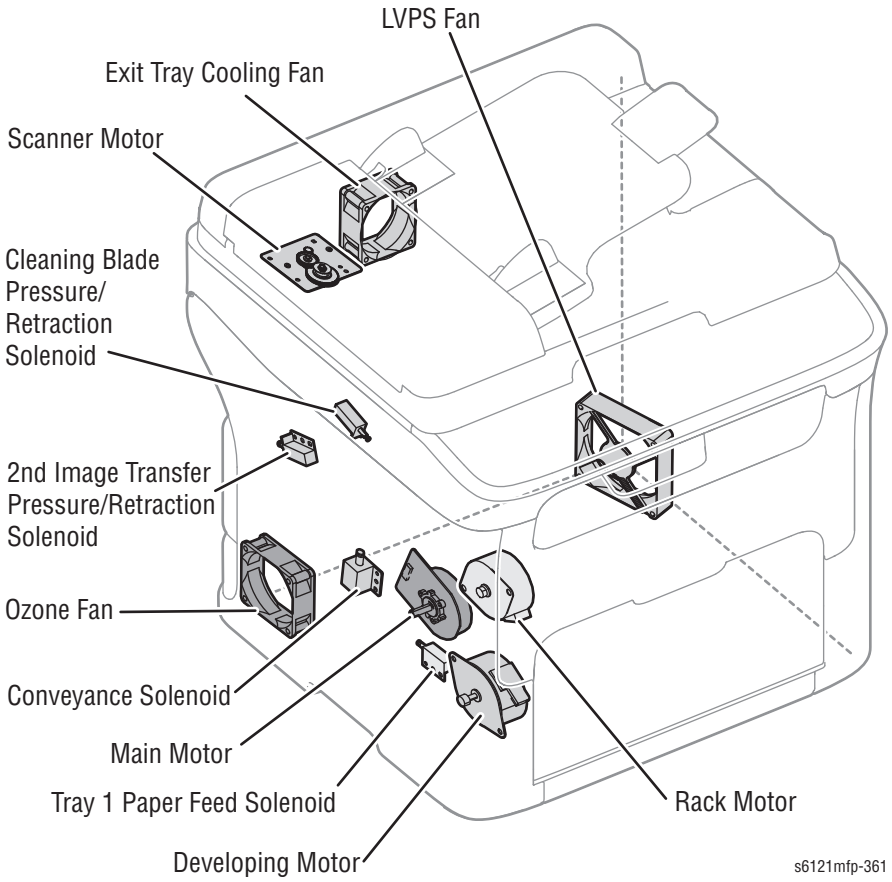
Board Locations



Sensors and Switches

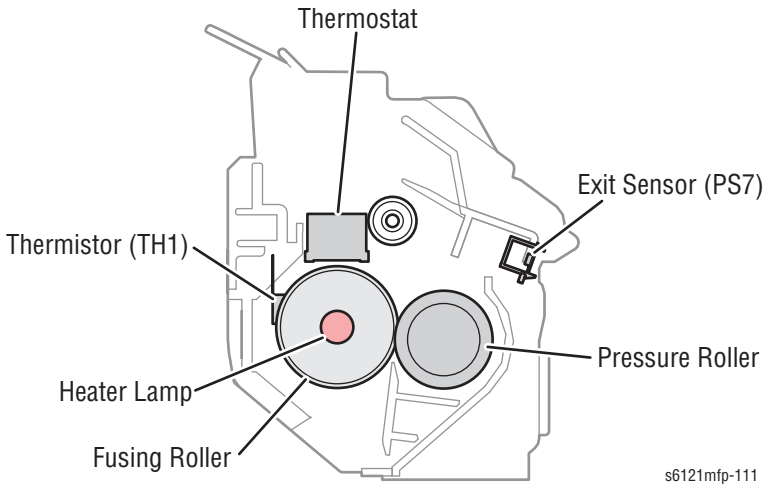


Motors, Fans, and Solenoids



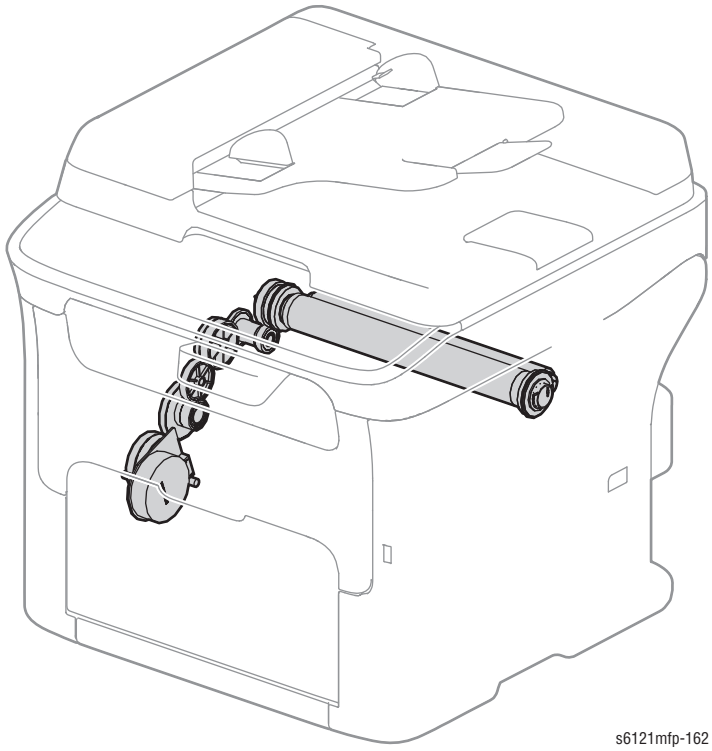
Fuser

Functional components of the Fuser appears below.



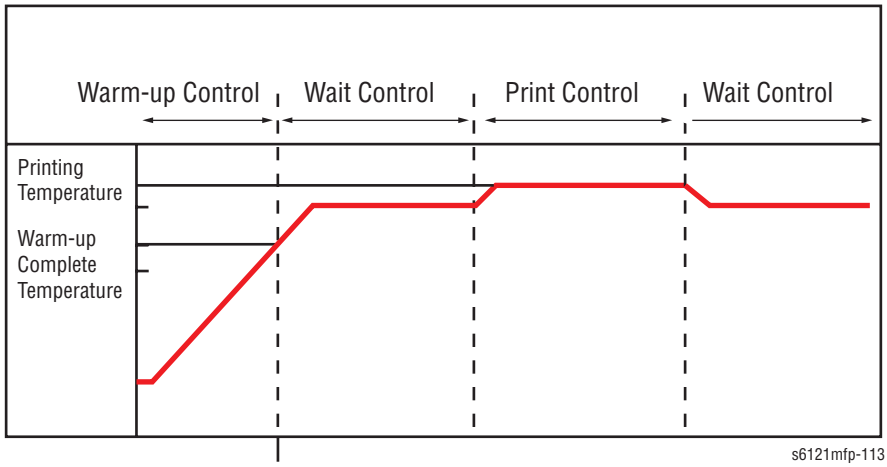
Fuser Drive

The Fuser is driven by the Main Motor.



Fuser Temperature Control

To fuse the image on the media, the heater lamps are turned On and Off as necessary to bring the fusing temperature to an appropriate level. Thermistors are used to detect the surface temperature of the Fuser roller.



Warm-up Control

Control is provided until the Fuser roller reaches the predetermined level.

Control Start Timing

- The power switch is turned On.
- A malfunction or media misfeed is reset.
- The main body leaves the power save mode.
- A door is closed.

Control Termination Timing

- The Fuser roller reaches a predetermined temperature.
- A malfunction or media misfeed is reset.
- A door is opened.

Control Start Decision

Either of the following two control start decisions is made according to the temperature detected by the temperature/humidity sensor. The fusing temperature during the print cycle varies depending on the type of the start control carried out, either low temperature or ordinary start control.

Control Start Decision	Environment on Start
Low temperature start control	The temperature/humidity sensor detects a temperature lower than the predetermined value.
Ordinary start control	The temperature/humidity sensor detects a temperature equivalent to, or higher than, the predetermined value.

Wait Control

Control is provided to ensure that the temperatures at different parts of the Fuser reach a constant level during the wait state.

Control Start Timing

- At the end of the warm-up control.
- At the end of the post-print cycle control (print start control).

Control Termination Timing

- The front cover is opened and closed.
- A malfunction or media misfeed occurs.

Print Control

To ensure a good fixing level and light transmission performance, the fusing speed and Fuser Roller temperature are controlled.

Control Start Timing

A print request is received.

Control Termination Timing

A malfunction or media misfeed occurs.

Print Control Temperatures

- The Fuser Roller temperature is set according to the type of media, main body interior temperature (as measured by the temperature/humidity sensor), and warm-up start decision.
- For types of media other than plain paper, the fusing speed is controlled at the 1/2 speed.

Print Control Temperature Adjustments

- The temperature during print control is adjusted using the menu available from the control panel.
- Adjustment steps are 0°C, -5°C, and -10°C.

Protection Against Abnormally High Temperature

The machine provides protection at three different stages to prevent abnormally high temperature of the Fuser.

Soft Protection

If the Thermistor (TH1) detects a temperature exceeding a predetermined value, the malfunction code representing abnormally high temperature is displayed. At this time, the power supply line is shut down.

If the temperature of the Fusing Roller does not reach a predetermined value within a predetermined period of time after the start of the warm-up cycle, the power supply line is shut down.

Hard Protection

If the CPU overruns and the output level of the CPU of the Mechanical Control Board becomes a HIGH or LOW level, and not a pulse output, and a predetermined temperature or higher is detected, a circuit within the Mechanical Control Board turns OFF the relay to shut down each power supply line.

Thermostat Protection

If a faulty Thermistor (TH) prevents detection of abnormally high temperatures by soft protect or hard protect, the thermostat operates at a predetermined temperature to shut down the power supply line.

PPM control

PPM (page per minute) control prevents the edge temperature of the heating roller from increasing during a multi-print cycle using smaller sized media. The distance between fed sheets is increased according to the number of printed pages that are to be produced and the media length. This evens out the temperature of the heating roller and thus stabilizes fusing performance of the printed toner image.

The PPM control is provided at 20 ppm for a multi-print cycle of producing 20 pages. The number of printed pages per minute is established as detailed below for each media size for the 21st and subsequent pages.

No PPM control is provided for a multi-print cycle of color printing, as it is 1/4 of the monochrome printing.

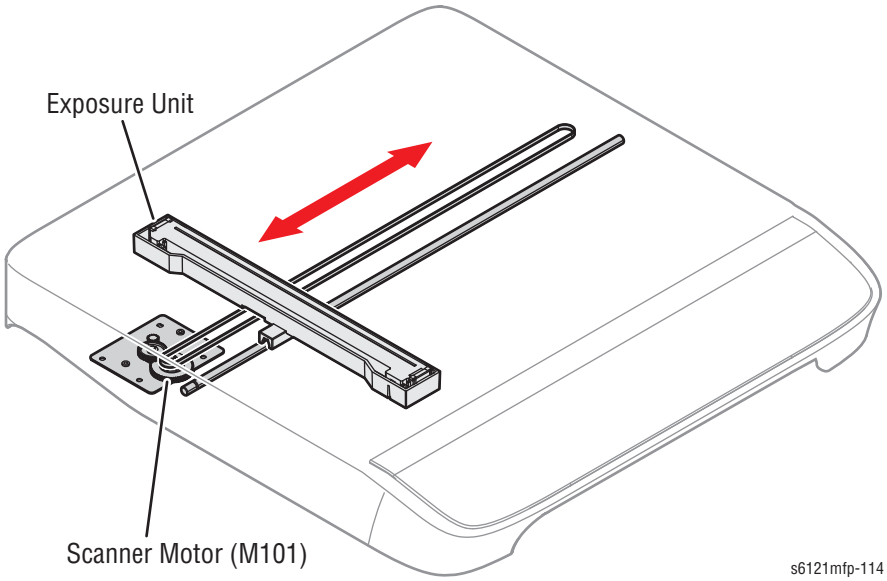
Media Conditions	PPM
A5, invoice	14 ppm
Media having a narrower width and longer length than above	8 ppm

Scanner

Scanner components include:

- Scanner Motor and Drive Belt
- Platen Glass
- Scanhead

Functional components of the Scanner are illustrated below.

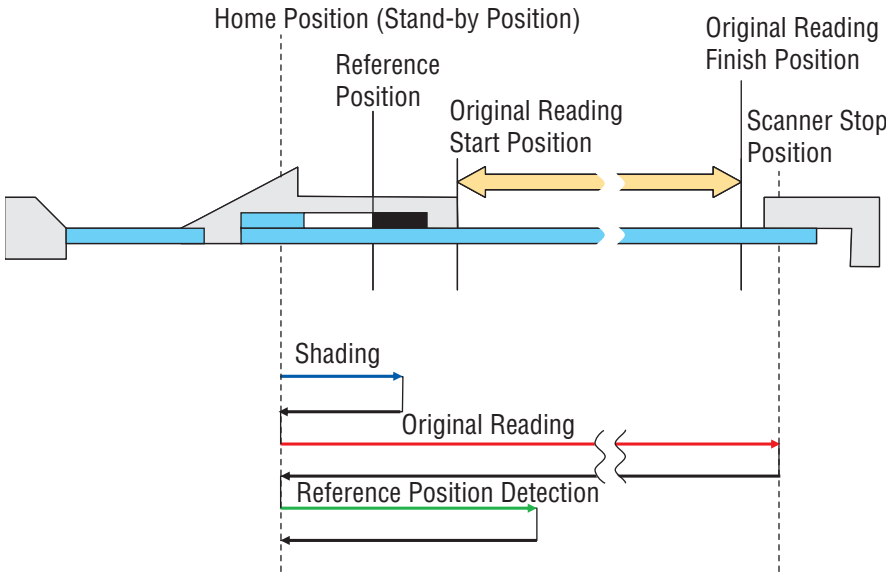


The Scanner does not include sensors for determining the size of the original document. Original media size settings are made on the Control Panel.

Scan from Platen

The Scanner performs these steps during a scan of an original placed on the platen.

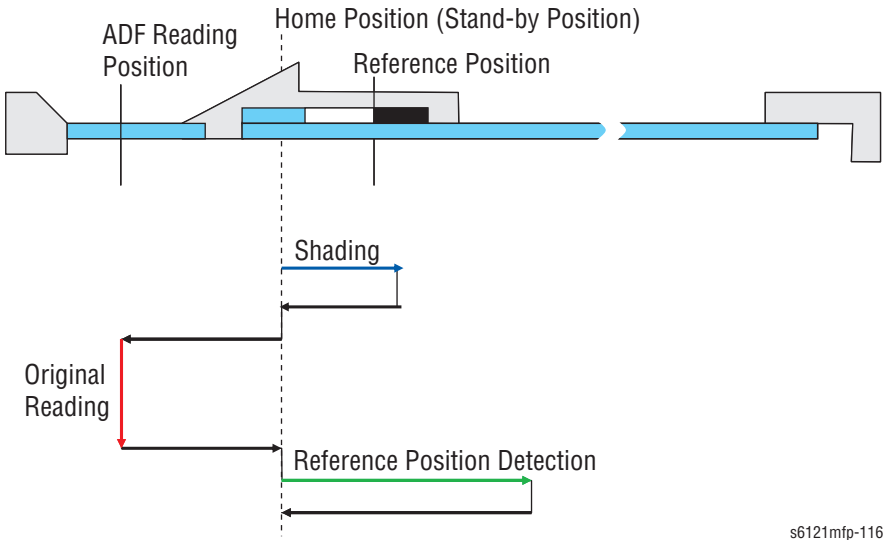
- The exposure unit moves from the home position (stand-by position) reading the calibration sheet to make a shading compensation.
- The exposure units moves to the stand-by position.
- Original image reading starts from the start position of original reading.
- When the original reading completes, it moves to scanner stop position.
- After the reading completes, the exposure lamp lights OFF and it moves to the stand-by position.
- It moves again to detect the reference position.
- It moves to the stand-by position and stops there.



Scan from ADF

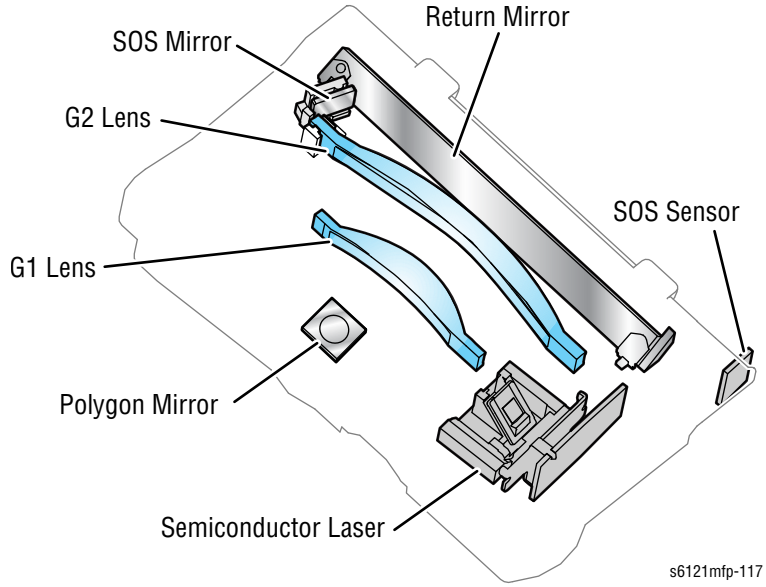
The Scanner performs these steps during a scan of an original placed on the platen.

- The exposure unit moves from the home position (stand-by position) reading the shading sheet to make a shading compensation.
- The exposure units moves to the stand-by position.
- It moves to ADF reading position and original image reading starts.
- After the reading completes, the exposure lamp turns OFF and moves to the stand-by position.
- After it moves again to detect the reference position, it moves to the stand-by position and stops.



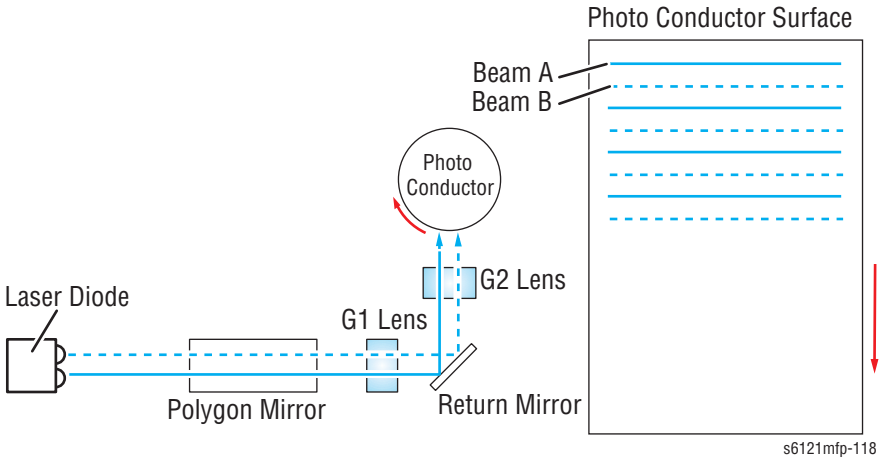
Laser Unit

The Laser Unit in the Phaser 6121 printer has two laser diodes. The laser diode control circuitry adjusts the light intensity for each beam automatically. Image data is transmitted to the laser diodes in the Laser Assembly as digital signals. The laser diodes convert the image data from digital signals to optical signals. The Laser Assembly monitors and adjusts the intensity of the laser beams to attain a stable electrostatic image. The Laser Assembly is replaced as a complete assembly. Functional components within the Laser appear in the following.



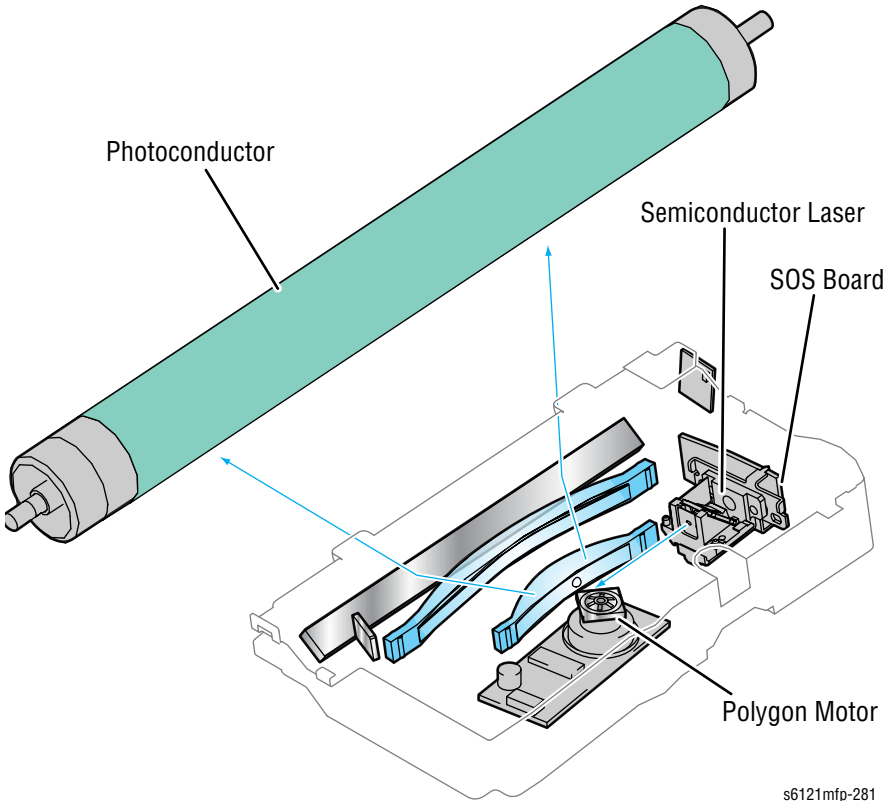
Imaging Unit Exposure

The surface of the Imaging Unit is irradiated with laser light to form an electrostatic latent image. The polygon mirror has four faces. The two-beam laser array consists of two laser diodes arranged vertically. Two lines are scanned through a single face of the polygon mirror.



Laser Write Process

1. The laser light strikes the polygon mirror.
2. The four-sided polygon mirror rotates at high speeds driven by the Polygon Motor.
3. The Start-of-Scan (SOS) Sensor monitors laser light emission and initiates timing for each line of the scanning process.

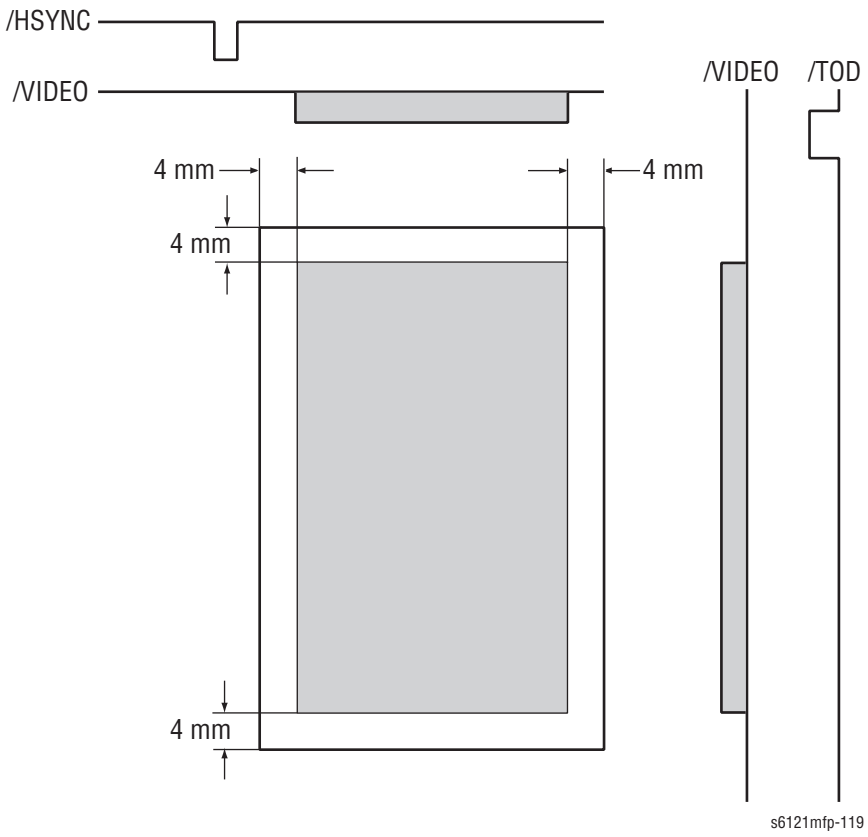


Laser Write Timing

When a Ready signal is detected after the print cycle begins, a Laser On signal is output from the Engine Control Board. The Laser On signal triggers each laser diode illuminating the SOS Board and generating an SOS signal. The SOS signal is used to synchronize the timing at which the laser write each scan line.

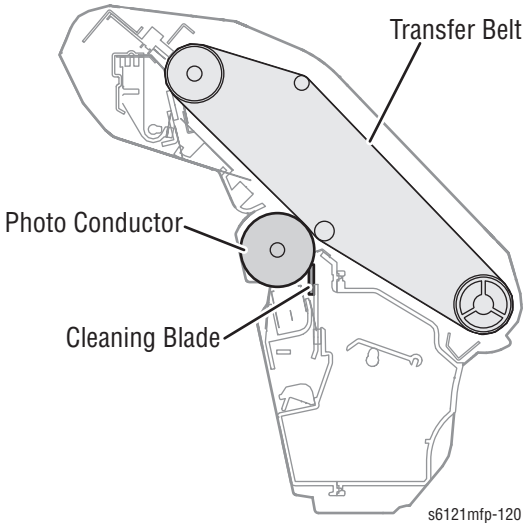
The print start position in the CD direction is determined by the CD Print Start signal (/HSYNC) that is output from the Image Processor Board and the width of the paper.

The print start position in the FD direction is determined by the Image Write Start signal (TOD) that is output from the Image Processor Board and the length of the paper. The laser emission area is determined by the paper size. The area of 4 mm on both the leading and trailing edges of the paper is, however, the void image area.

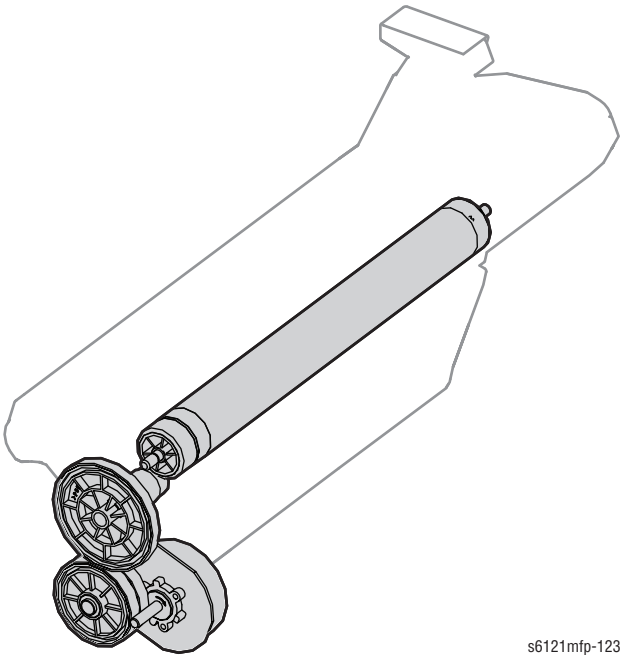


Imaging Unit

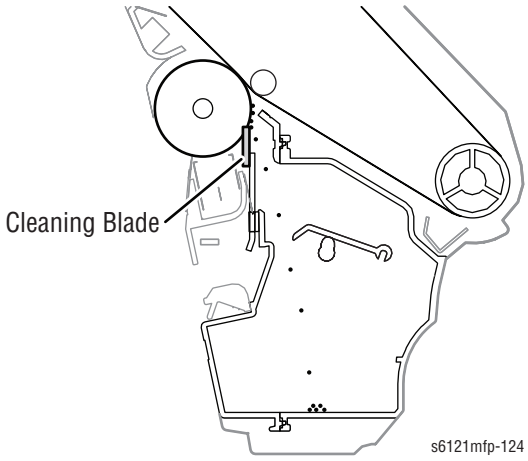
The Imaging Unit contains the photo-conductive drum, cleaning blade, transfer belt, transfer roller, and waste toner reservoir.



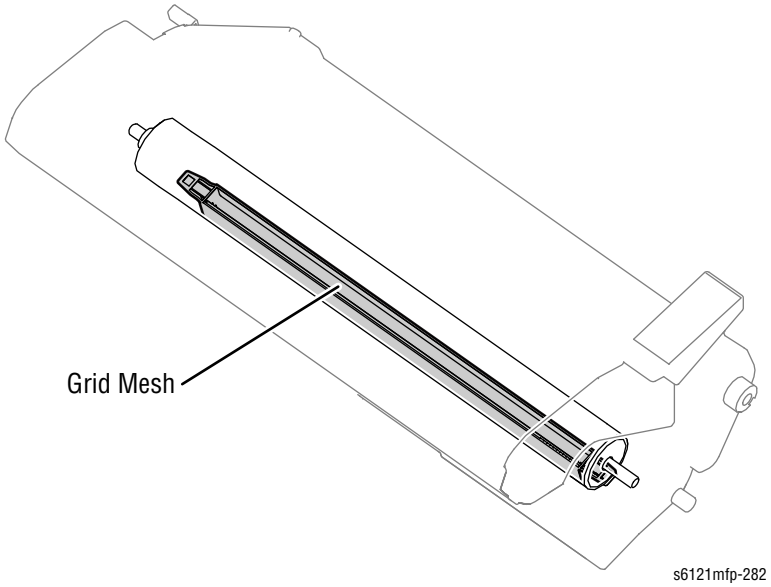
The photo-conductive drum is driven by the Main Motor through a series of gears. When the Main Motor is energized, it turns the drive gear, which in turn rotates the drum.



The cleaning blade is pressed against the drum to remove excess toner. Waste toner is stored in the Imaging Unit.



An electrical charge is applied to the drum by an electrode mounted near the drum. This charge attracts toner from the Toner Cartridge developer roller. The image stabilization control process controls the grid voltage (Vg) applied to the electrode's grid mesh.



Imaging Unit Life

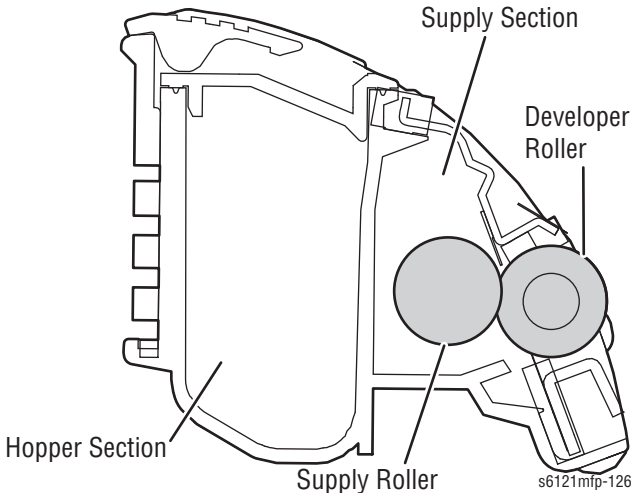
A counter tracks the number of prints since the last detection of a new Imaging Unit. As this count nears its maximum value, the system generates a warning message. When the count reaches the maximum value, a replacement error is generated. The counter is reset following the detection of a new Imaging Unit.

The system checks for a new Imaging Unit when the Power Switch is turned On or the front door is closed. If a new Imaging Unit is detected, the image stabilization sequence is carried out.

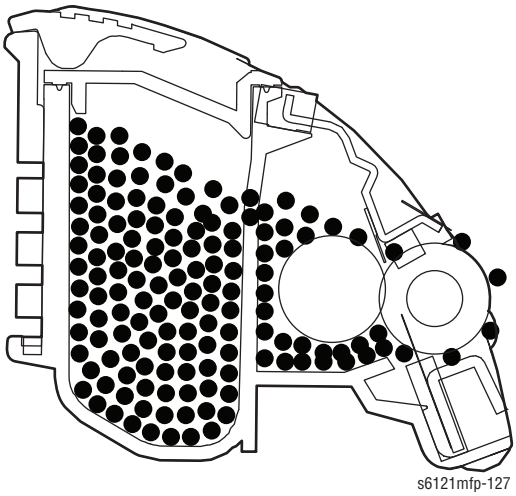
The life counter is reset when a new Imaging Unit is detected. When a predetermined number of printed pages are produced after the life value has been reached, the machine displays a Imaging Unit replacement message.

Toner Cartridge

The system employs four Toner Cartridges (CMYK) installed in a revolving Toner Cartridge Rack that positions each cartridge's developer roller over the Drum. A cross section of the Toner Cartridge showing functional components follows.

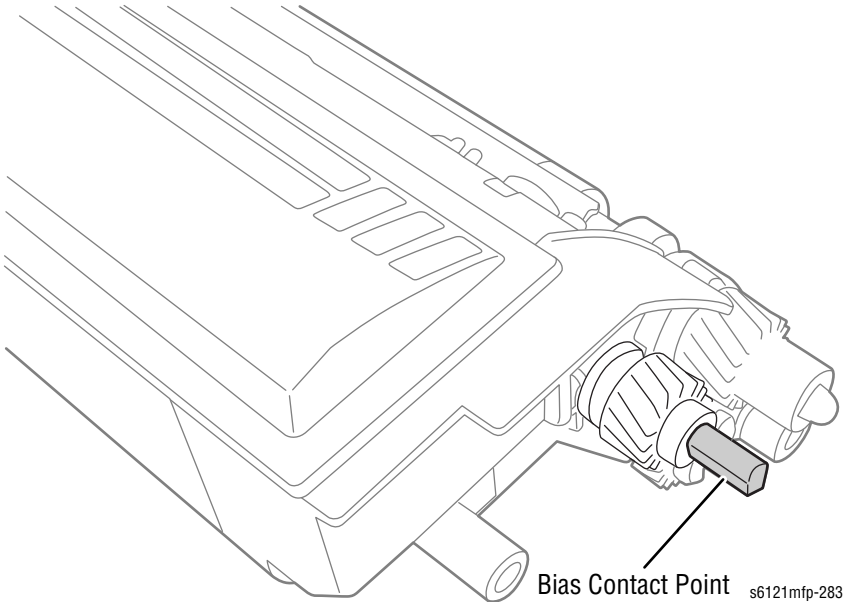


1. Toner stored in the hopper is moved into the toner supply portion by the rotation of the Toner Cartridge rack
2. Toner in the toner supply portion is conveyed by the supply roller onto the developing roller.



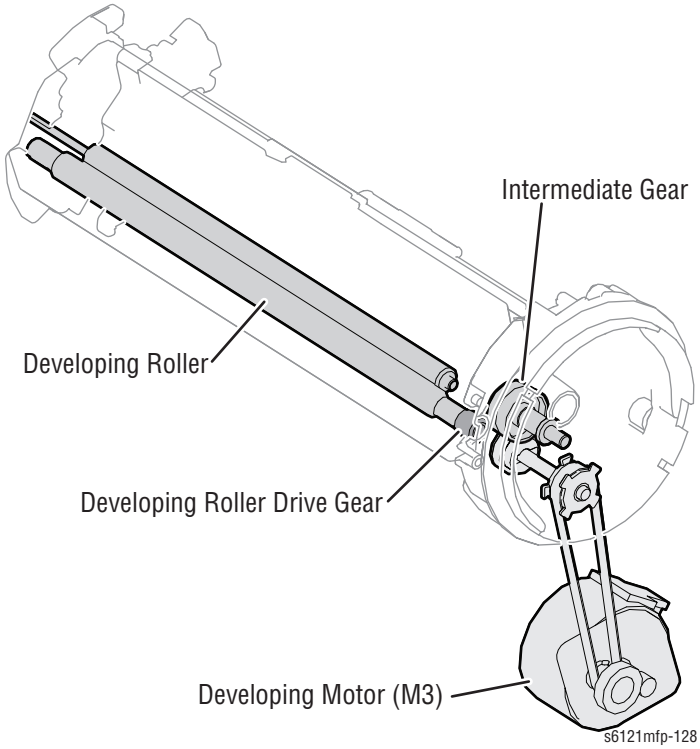
3. Toner then sticks to the electrostatic latent image formed on the surface of the photo conductor drum. That part of toner left on the surface of the developing roller is returned to the toner supply portion.

4. To attract toner to the drum, a developing bias voltage (Vb) that includes both DC (-) and + AC components is applied to the developing roller during development. The AC component is applied only during development. The developing bias voltage (Vb) supplied by the High Voltage Power Supply is applied to the developing roller at the contact point shown below.



Developer Roller Drive

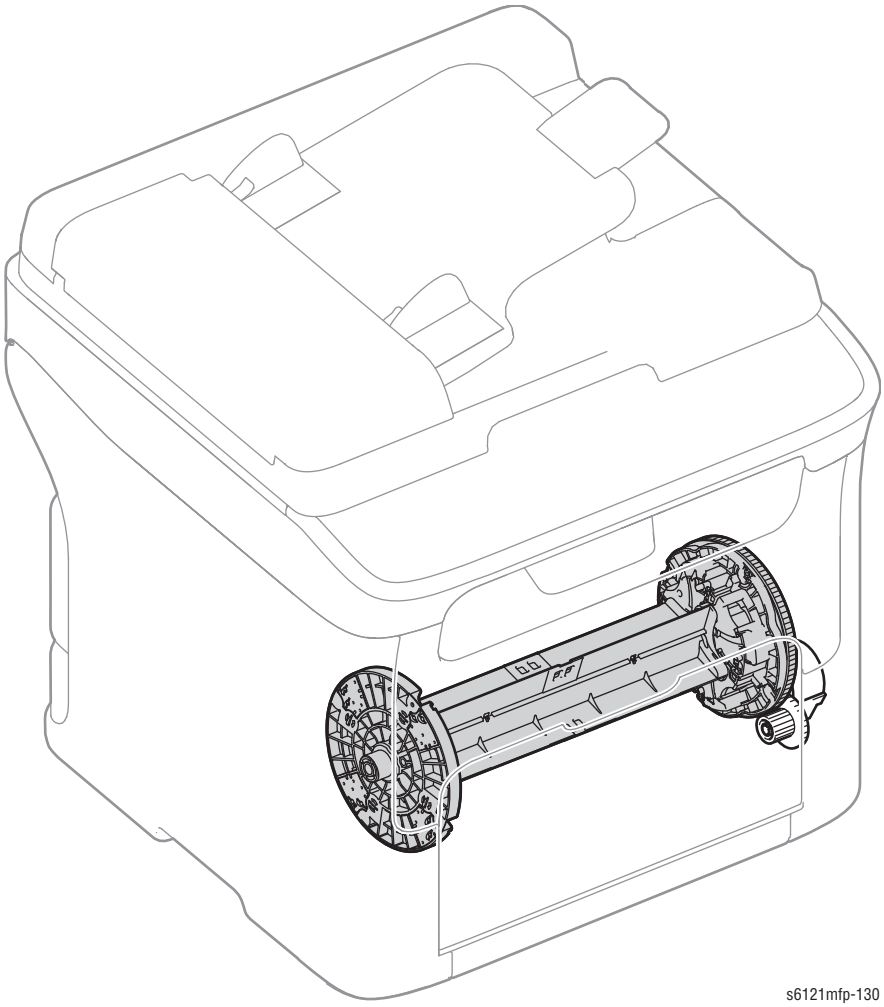
The Developer Roller is driven by the Developing Motor and intermediate gears.



When the Toner Cartridge Rack is stationery at the developing position, the Developer Roller drive gear meshes with intermediate gears allowing the Developing Motor to engage the roller.

Toner Cartridge Rack

The Toner Cartridge Rack holds the four Toner Cartridges and rotates to position each cartridges' Developer Roller in the developing position. The rack is driven by the Rack Motor.

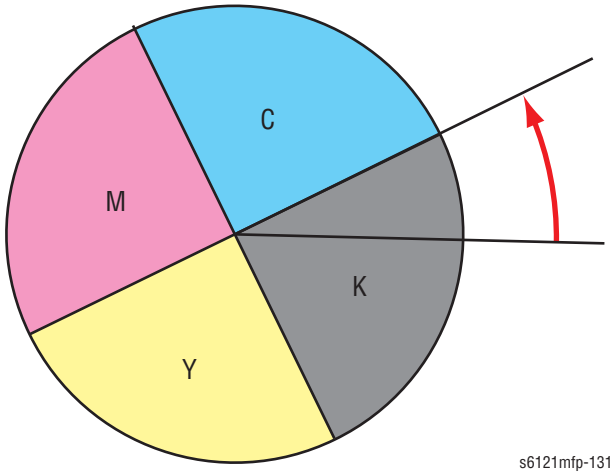


s6121mfp-130

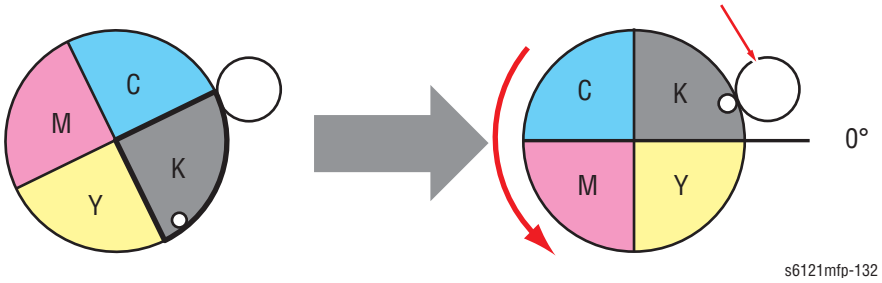
The Toner Cartridge Rack has three stop positions driven by the Rack Motor: the standby (reference) position, the developing position, and the cartridge replacement position.

- The standby position is the Toner Cartridge Rack position when the system completes a warm-up cycle or waits for a print command.
- The development position is when the Toner Cartridge Rack stops during development of a specific color of toner.
- The cartridge replacement position refers to the position at which the Toner Cartridge Rack is stopped for replacement of the Toner Cartridge of a specific color of toner.

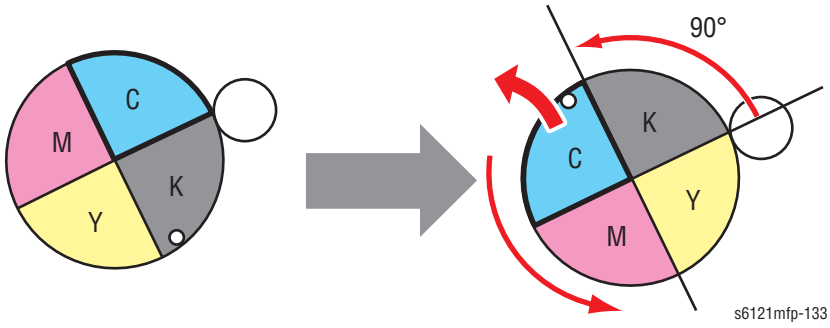
The standby position is 28° degrees before the developing position of the Magenta Toner Cartridge.



The developing position is where the Toner Cartridge Rack is rotated 62° degrees from the standby position.



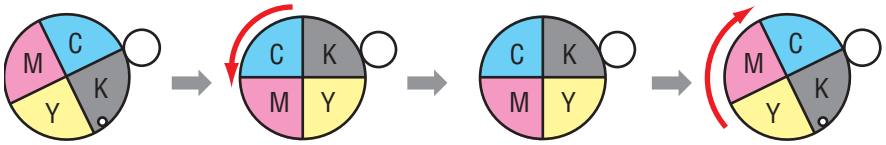
The cartridge replacement position is where the Toner Cartridge Rack is rotated 90° degrees from the developing position.



Monochrome Process Operation

The Toner Cartridge Rack follows these steps for monochrome prints.

1. The Toner Cartridge Rack is stationary at the standby position.
2. When a print request is received from the controller, the Toner Cartridge Rack is rotated to bring the K Toner Cartridge to its developing position.
3. Development of monochrome printing is started.
4. When the development is completed, the Toner Cartridge Rack is rotated and brought to a stop at the standby position.

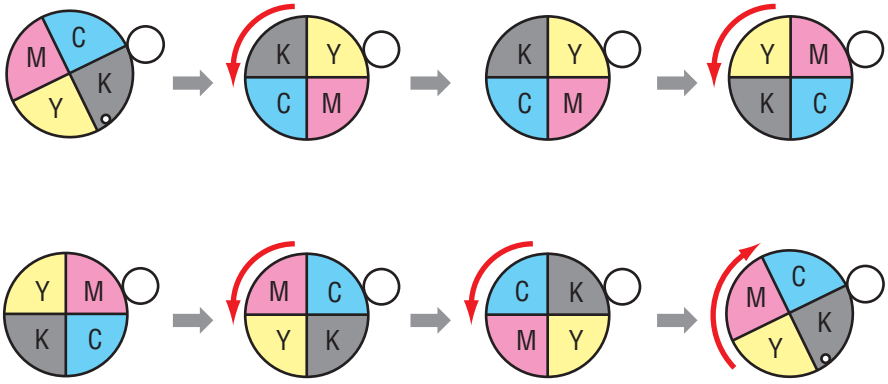


s6121mfp-134

Color Process Operation

The Toner Cartridge Rack follows these steps for color prints.

1. The Toner Cartridge Rack is stationary at the standby position.
2. When a print request is received, the Toner Cartridge Rack rotates to place the Y Toner Cartridge to its developing position.
3. Development of Y is carried out.
4. When development of Y is completed, the Toner Cartridge Rack is rotated to bring the M Toner Cartridge to its developing position.
5. Development of M is carried out.
6. Similarly, the Toner Cartridge Rack rotates and development of C is carried out, followed by K.
7. When the development of K is completed, the Toner Cartridge Rack rotates to the standby position.



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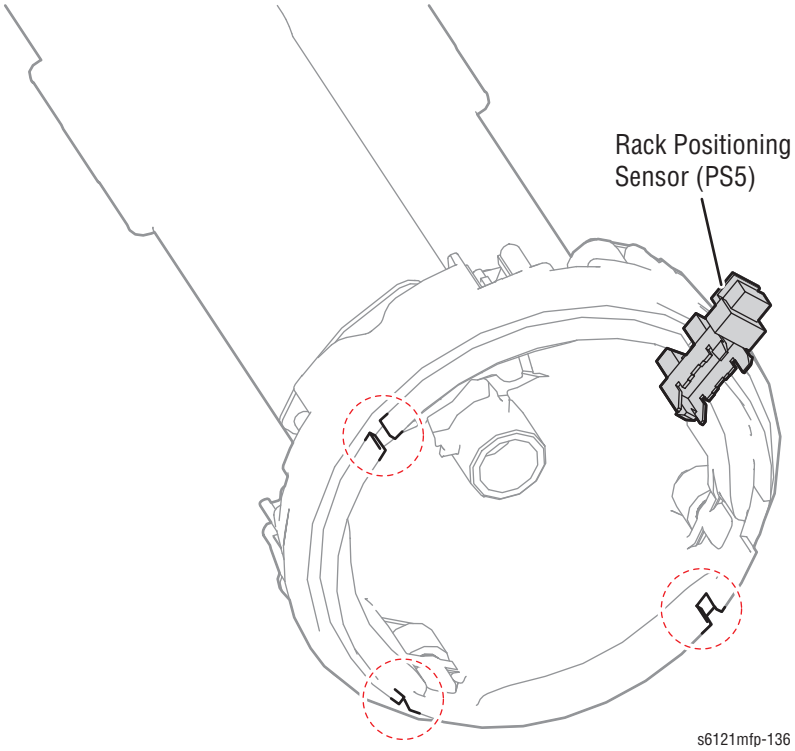
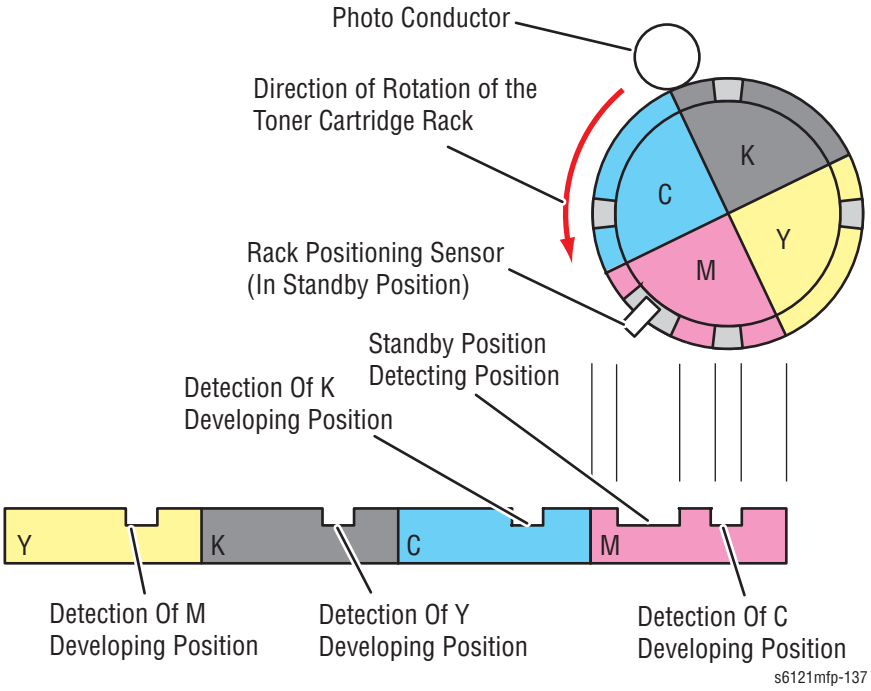
Position Detection

The Toner Cartridge Rack stop position for each color of toner is detected by the Rack Positioning Sensor. Openings around the circumference of the Toner Cartridge Rack actuate the Rack Position Sensor at each stop position.



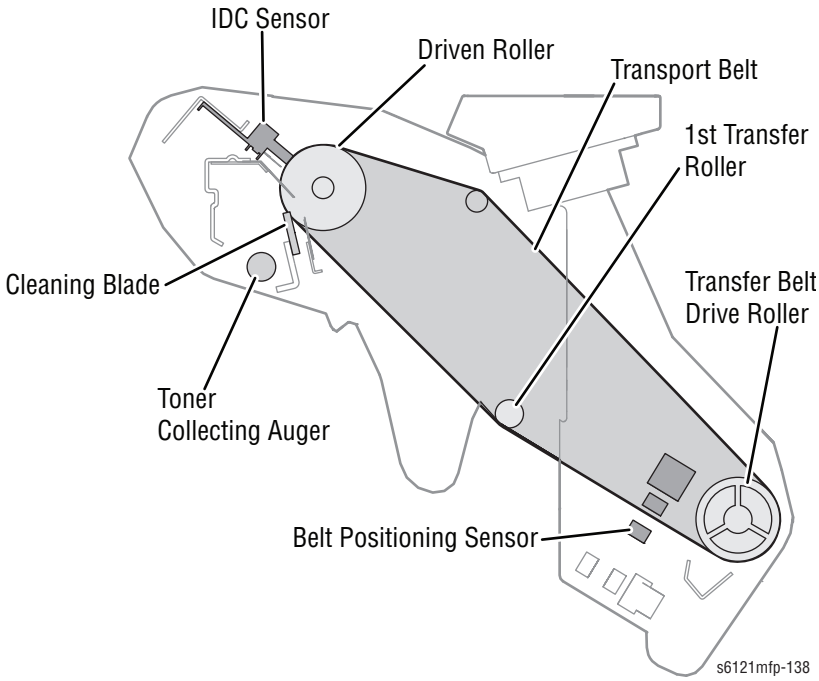
The Magenta Toner Cartridge includes a slit for detecting the standby position. When the Toner Cartridge Rack is rotated, the Rack Positioning Sensor (PS5) detects the standby position slit. To bring the toner cartridge rack to a stop at the corresponding developing position, the rack is rotated from the standby position 62° degrees by the Rack Motor.



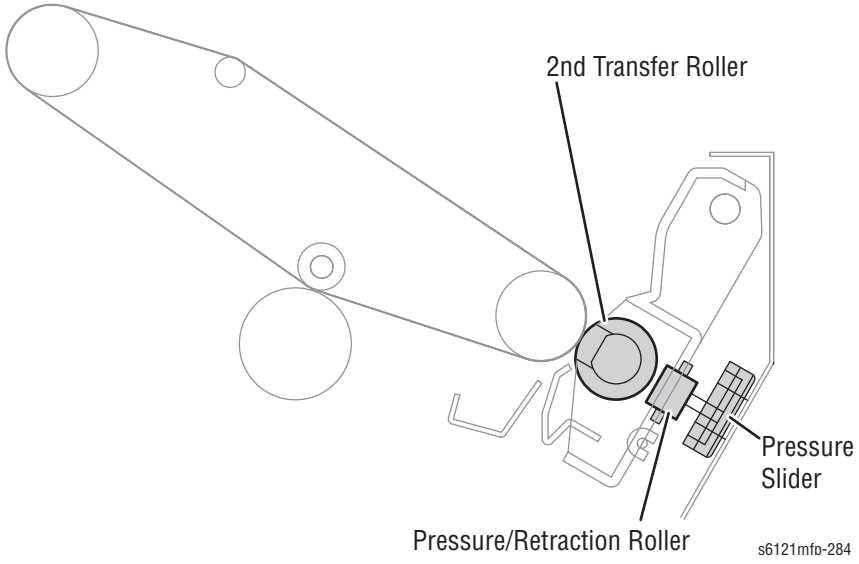
When a replacement request is made for a Toner Cartridge, the Toner Cartridge Rack is rotated 70 degrees from the depleted cartridges' developing position by the Rack Motor.

Transfer Belt

The Transfer Belt serves to accumulate the images produced by the four developer rollers before transferring the composite image to the media with the Transfer Roller. Components of the Transfer Belt appear below.

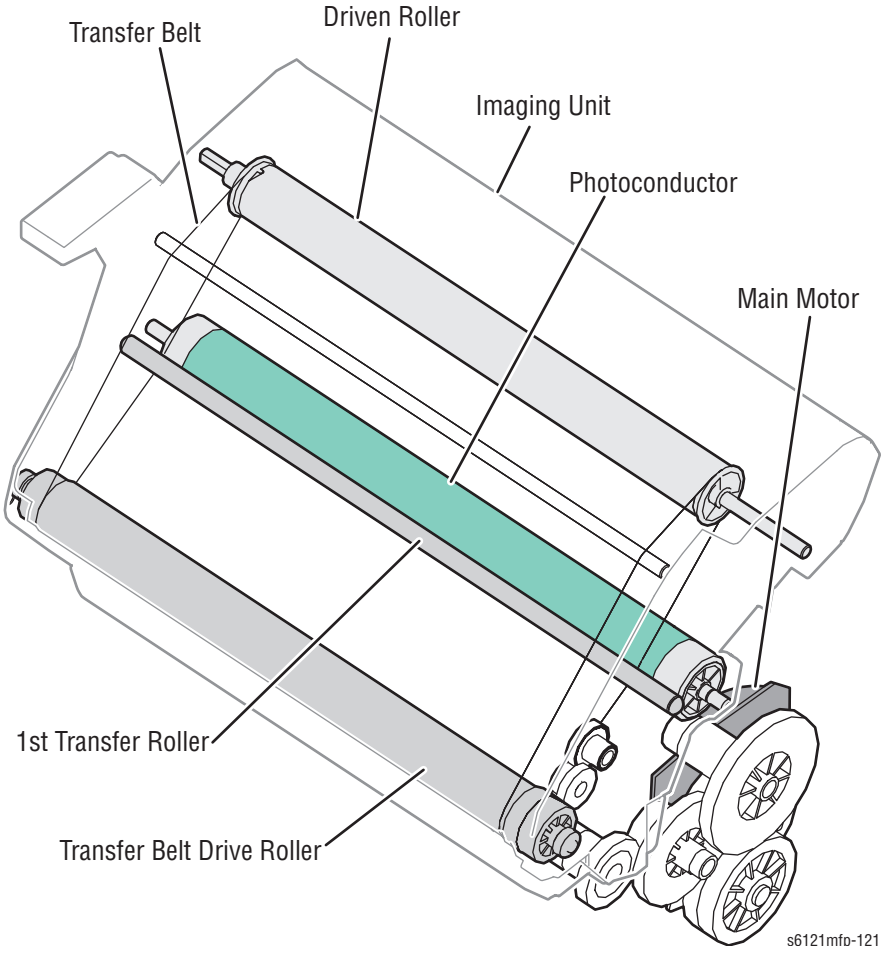


In addition to the Transfer Belt, a Transfer Roller (sometimes referred to as the 2nd Transfer Roller) transfers the composite image to the media for fusing.



Transfer Drive

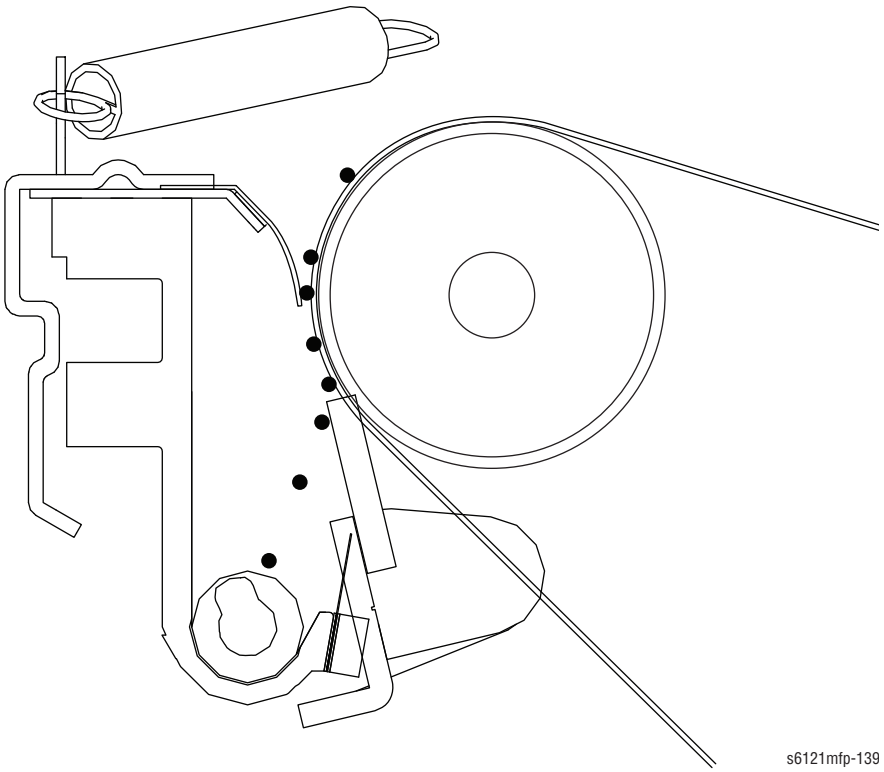
The Transfer Belt and the 2nd Transfer Roller are driven by the Main Motor. The Transfer Roller Clutch at one end of the (2nd) Transfer Roller engages the Main Motor drive.



Transfer Belt Cleaning

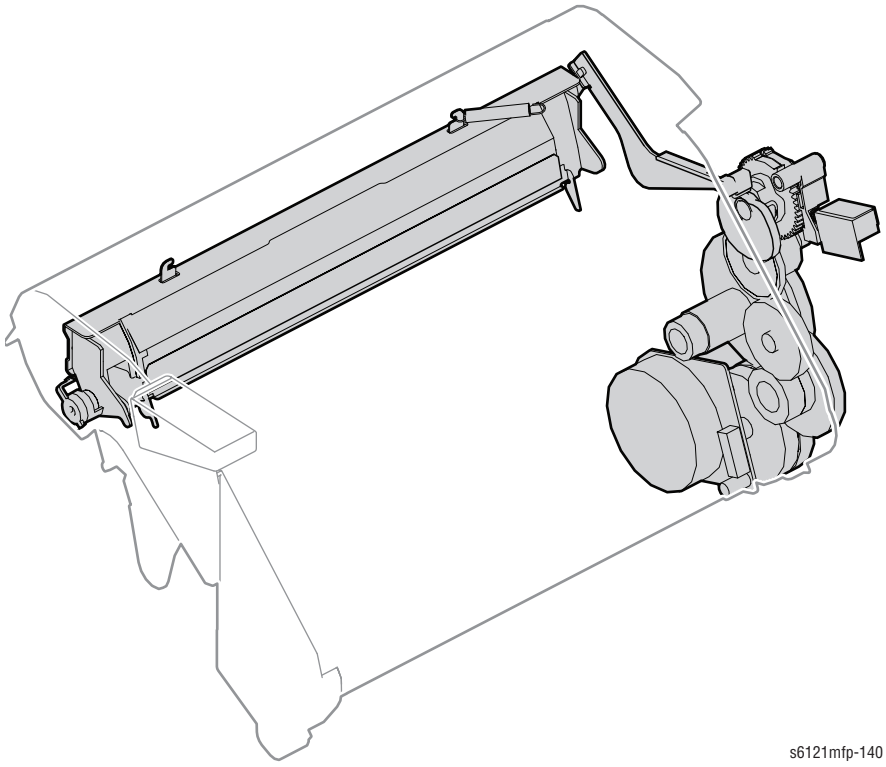
The Transfer Belt Cleaning Blade collects residual toner off the surface of the Transfer Belt, and a toner collecting auger transfers waste toner to the Imaging Unit reservoir. The prevention seal is affixed to prevent waste toner from leaking through a gap above the cleaning blade.

During color printing, an image is formed on the Transfer Belt for each color. The cleaning blade uses a retraction mechanism to lift off the belt during the printing process. However, no pressure/retraction sensor is used to trigger cleaning blade retraction. Instead, the IDC sensor detects a sample image on the Transfer Belt to control the pressure/retraction operation. During monochrome printing, no retraction sequence is needed. The cleaning blade is normally in contact with the Transfer Belt.



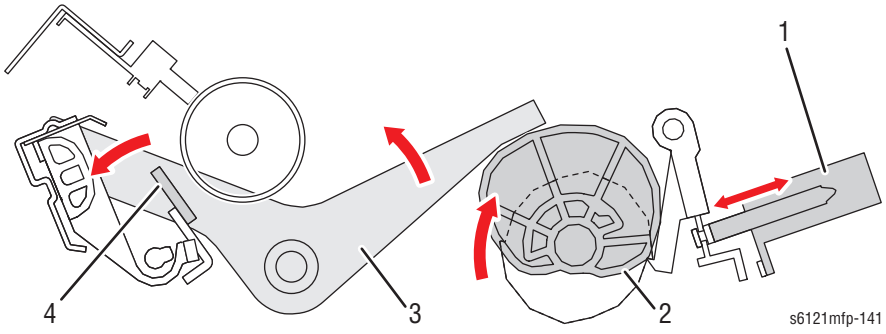
s6121mfp-139

Cleaning Blade retraction operations are driven by the Main Motor, Cleaning Blade Solenoid, pressure cam, and lever. When the Cleaning Blade Solenoid is energized, drive from the Main Motor is transmitted to the pressure cam.



The sequence of events to retract the cleaning blade are:

1. Drive from the Main Motor is transmitted to the drive gear.
2. Rotation of the drive gear is transmitted to the pressure cam.
3. When the cleaning blade pressure/retraction solenoid (SD5) is energized, the half-moon-shaped pressure cam rotates a half turn to push the lever forward.
4. When the lever is pushed forward, the cleaning blade is retracted.



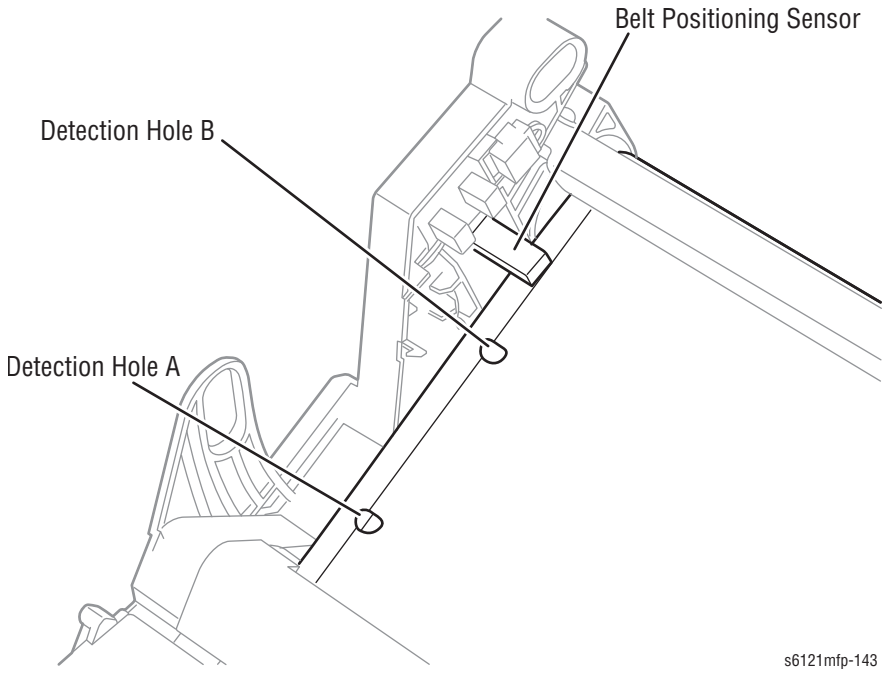
Item	Description
1	Cleaning Blade Pressure/Retraction Solenoid
2	Cam
3	Lever
4	Cleaning Blade

To return the cleaning blade to the Transfer Belt:

1. The cleaning blade pressure/retraction solenoid (SD5) is energized rotating the pressure cam a half turn. This pushes the lever backward.
2. When the lever is pushed backward, the cleaning blade is returned. Then, the cleaning blade is pressed against the transfer belt.

Image development requires the creation of a composite image on the surface of the Transfer Belt. The leading edge of each color component of the image must register correctly on the Transfer Belt's surface. The position of the Transfer Belt is monitored by the Transfer Belt Position Sensor. The optical sensor detects holes in the Transfer Belt.

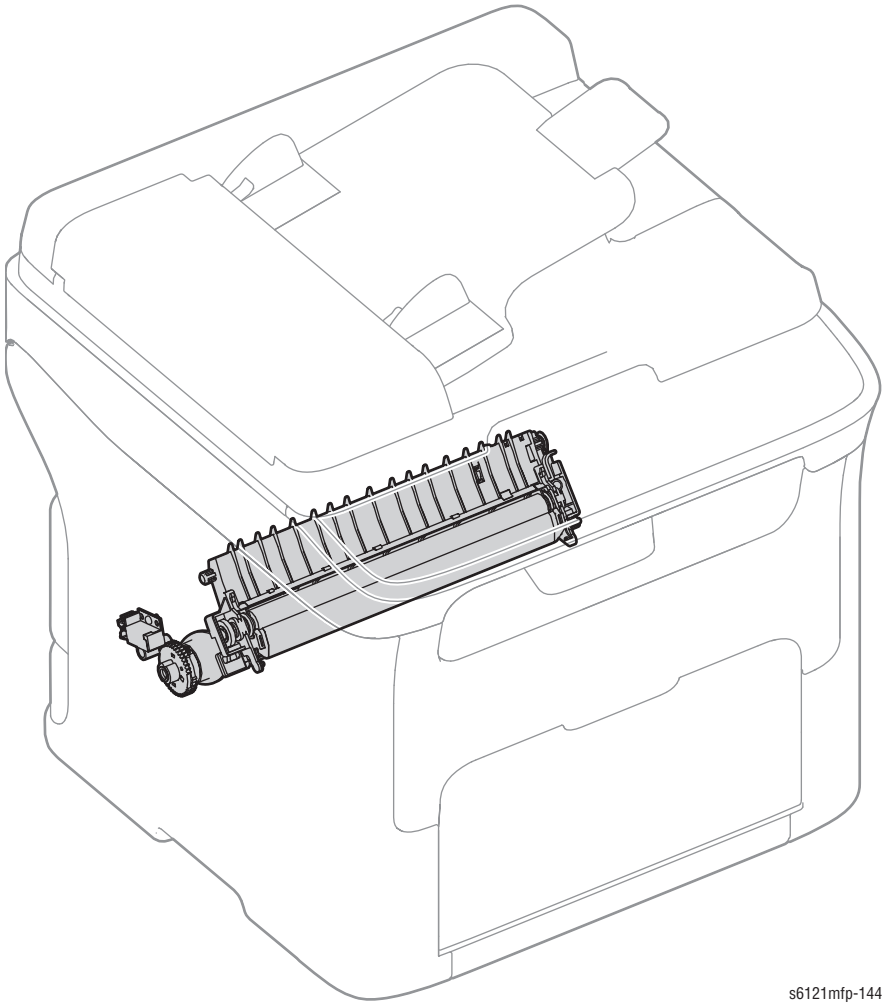
Two detection holes are punched in the Transfer Belt. The image write start position varies according to the media size. For A4 or smaller media, the image write start position, as determined by the sensor, is detection hole A. For a media sizes larger than A4, detection hole B is the reference for the image write start position.



Transfer Roller

The Transfer Roller (sometimes referred to as the 2nd Transfer Roller) transfers the developed image from the Transfer Belt to the media. To allow development of the composite color image on the Transfer Belt, the Transfer Roller retracts from the belt while the image is developed.

The Transfer Roller retraction operation is performed by the Main Motor, Image Transfer Solenoid, and Transfer Roller Clutch. When the Image Transfer Solenoid is energized, drive from the Main Motor is transmitted to the Transfer Roller Clutch.



s6121mfp-144

Transfer Roller Drive

The Transfer roller is driven through a set of intermediate gears by the Main Motor.

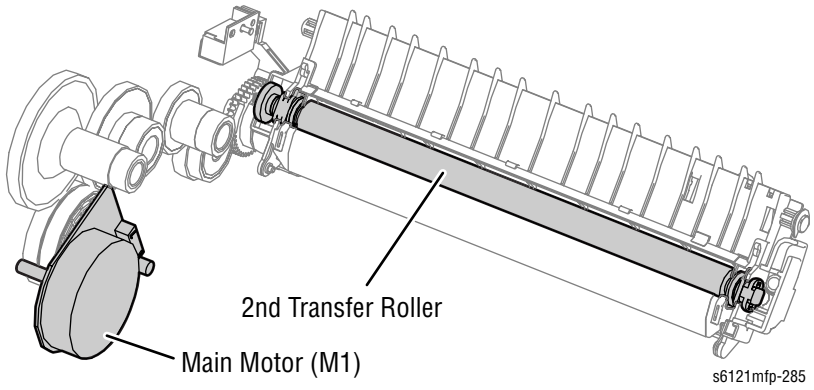
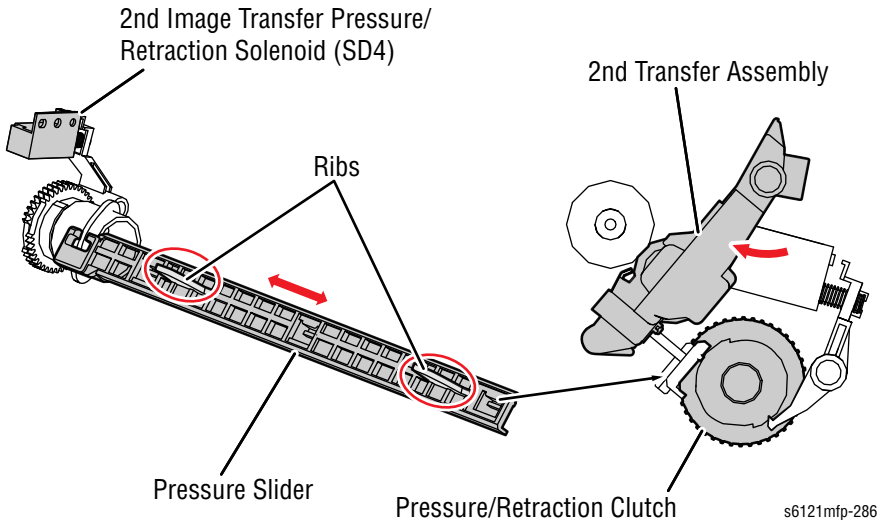


Image Transfer

To apply pressure to the Transfer Roller (sometimes referred to as the 2nd Transfer Roller), the system follows these steps:

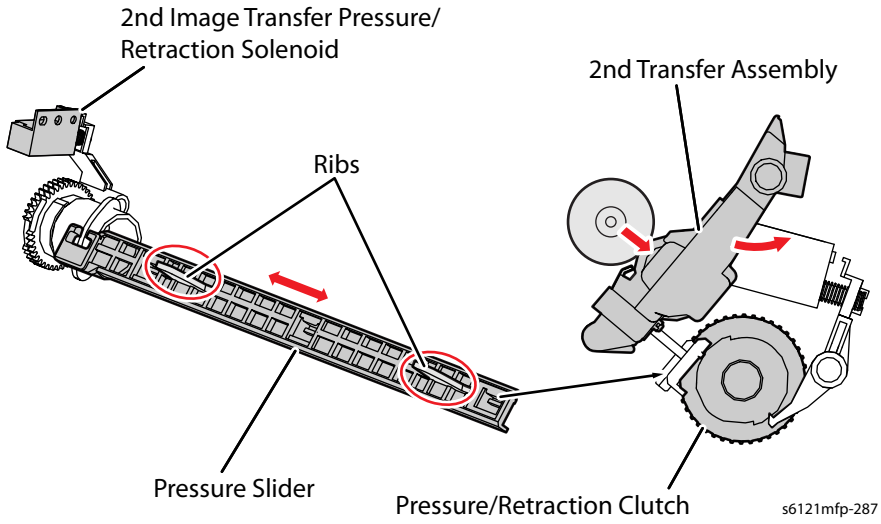
1. Drive from the Main Motor is transmitted to the drive gear.
2. Rotation of the drive gear is transmitted to the Transfer Roller Clutch.
3. When the 2nd Image Transfer Solenoid is energized, the Transfer Roller Clutch rotates a half turn. This moves the Pressure Slider.
4. When the Pressure Slider is moved, the ribs push against the Pressure Retraction Roller.
5. When the assembly is pushed up, the Transfer Roller presses against the Transfer Belt.



Transfer Roller Retraction

To retract the Transfer Roller from the Transfer Belt, the system performs the following steps:

1. When the Image Transfer Solenoid is energized, the Transfer Roller is presses against the Transfer Belt and the Transfer Roller Clutch rotates a half turn. This moves the Pressure Slider.
2. When the Pressure Slider moves, the Transfer Assembly, which has been pushed up by the ribs on the Pressure Slider, lowers.
3. When the Transfer Assembly lowers, the Transfer Roller retracts from the Transfer Belt.



Transfer Roller Cleaning

DC positive and negative transfer bias voltages are alternately applied to the Transfer Roller. These charges oppose those on the Transfer Belt attracting toner residue on the Transfer Roller back to the Transfer Belt. The Transfer Belt cleaning blade collects the waste toner from the belt and stores the waste in the Imaging Unit.

Transfer Roller cleaning occurs when:

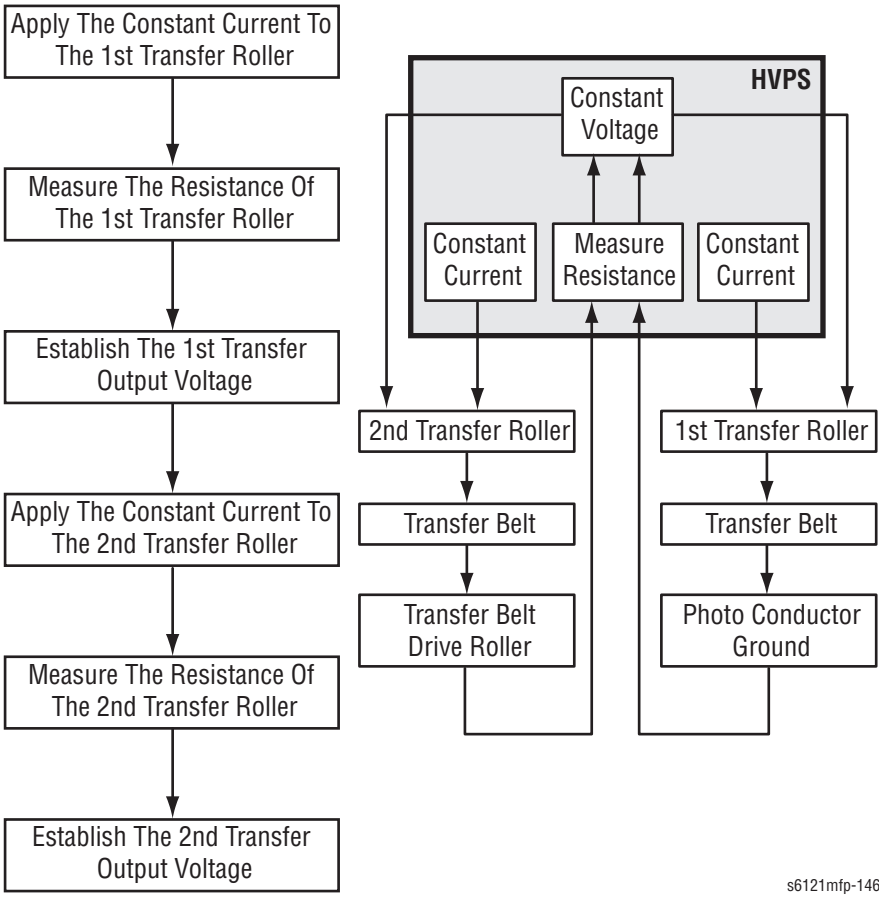
- Power Switch is turned ON.
- Cover is opened and closed.
- A media error occurs during a print cycle.
- A paper empty condition occurs during a print cycle.
- A paper size error occurs during a print cycle.

Process Control

For stable printing, the parameters related to forming both the electrostatic and toner image are continuously monitored and adjusted by the printer. Parameter correction and control over the entire printing process is called “process control”. Two primary process control mechanisms are used by the system, Automatic Transfer Voltage Control (ATVC) and Automatic Image Density Control (ADC).

Automatic Transfer Voltage Control (ATVC)

ATVC optimizes the transfer output. A constant current flows through each of the Transfer Rollers. The resistance of each of the 1st Transfer Roller, the Transfer Roller (sometimes referred to as the 2nd Transfer Roller), and Transfer Belt is measured. ATVC automatically adjusts the appropriate image transfer output voltage (bias) that is applied to each Transfer Roller and transfer belt during the print cycle.



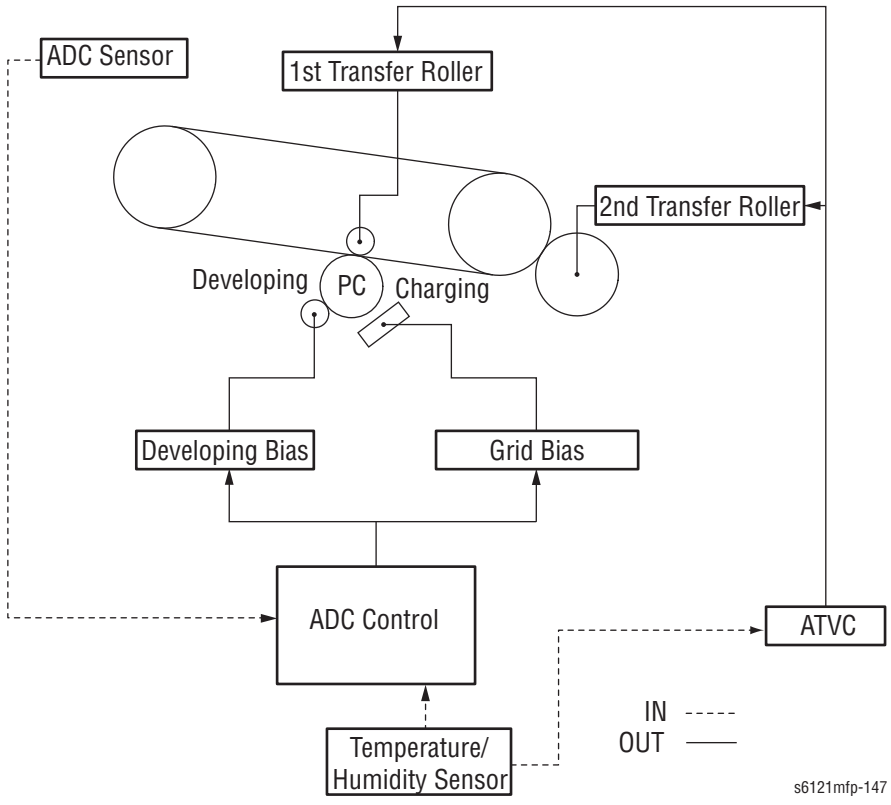
Automatic Density Control (ADC)

ADC stabilizes image density to provide accurate tone reproduction. ADC uses the IDC Sensor and Temperature/Humidity Sensor to monitor system and environmental parameters to regulate the following:

- Leak detection control
  For the clearance between the Drum and Developing Roller, an optimum

developing bias voltage is established that prevents leak image or uneven density.

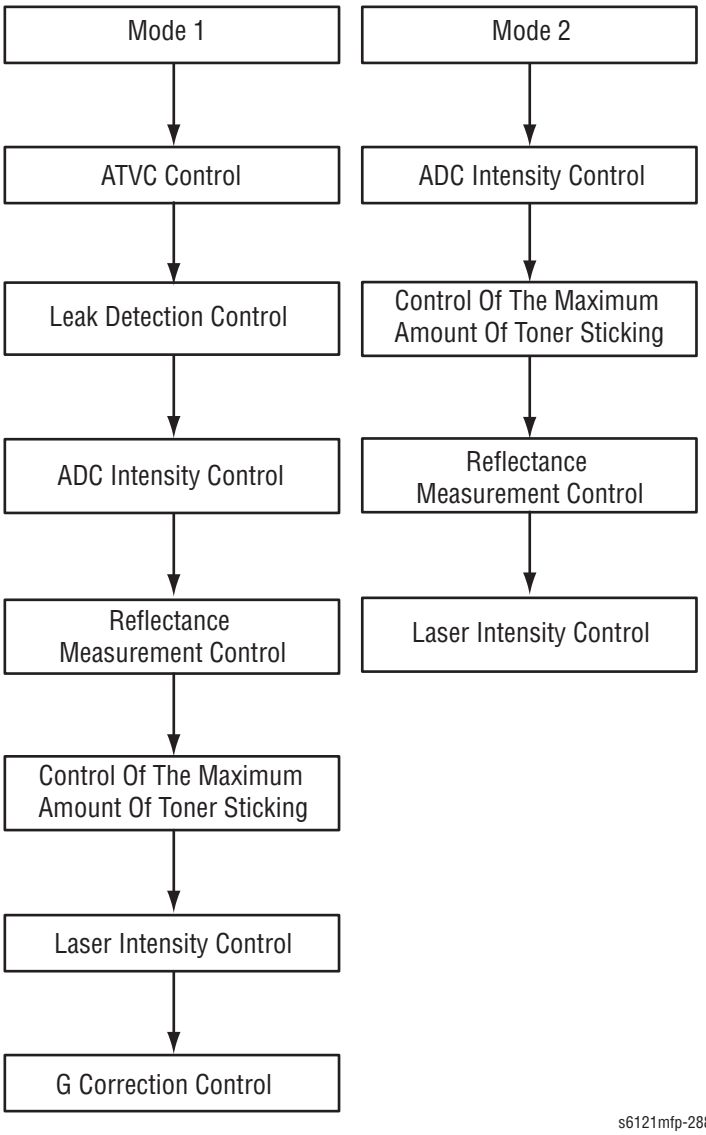
- IDC Sensor intensity control
  Adjustments are made to correct changes in IDC Sensor characteristics due to changes over time or contamination. The IDC Sensor is a photo-reflective sensor that emits light from an LED and detects the reflected light returning from the Transfer Belt. The light emitted from the LED is controlled so that the reflected light density is constant.
- Reflectance measurement control
  The reflectance of the Transfer Belt is measured using the IDC Sensor. The measurement is taken for one complete revolution of the Transfer Belt. The measured value is corrected during the intensity adjustment and G-correction control.
- Toner adherence control
  The developing bias voltage value is adjusted to keep constant the amount of toner sticking to the surface of the Drum with reference to the 100 % solid image.
- Laser intensity adjustment control
  Characteristics of the Drum, developing, and charging processes are affected over time and by the environment. The intensity of the laser light is adjusted so that fine lines and gradations of a predetermined level are reproduced at all times.
- G-correction control
  A gradation pattern is produced on the surface of the Transfer Belt. The IDC Sensor measures the density of the pattern and sends the measured result to the controller for gradation adjustment.



Depending on the state of the system, the process control mechanisms are activated. Factors for each state are listed in the following table.

Mode	Process Control Criteria
Mode 1	■ When the Power Switch is turned On, the current environmental readings are different from when the Power Switch was turned Off. ■ The stored environmental readings taken when Energy Saver mode was entered differ from those taken when the system woke from Energy Saver mode. ■ The Power Switch is turned Off and On or Energy Saver mode is canceled after a predetermined number of printed pages have been produced. ■ A new Imaging Unit or Toner Cartridge is detected.
Mode 2	The Power Switch is turned Off and On, or Energy Saver mode is canceled after a predetermined number of printed pages have been produced.

The process controls invoked and the order in which they occur for each mode appears below.



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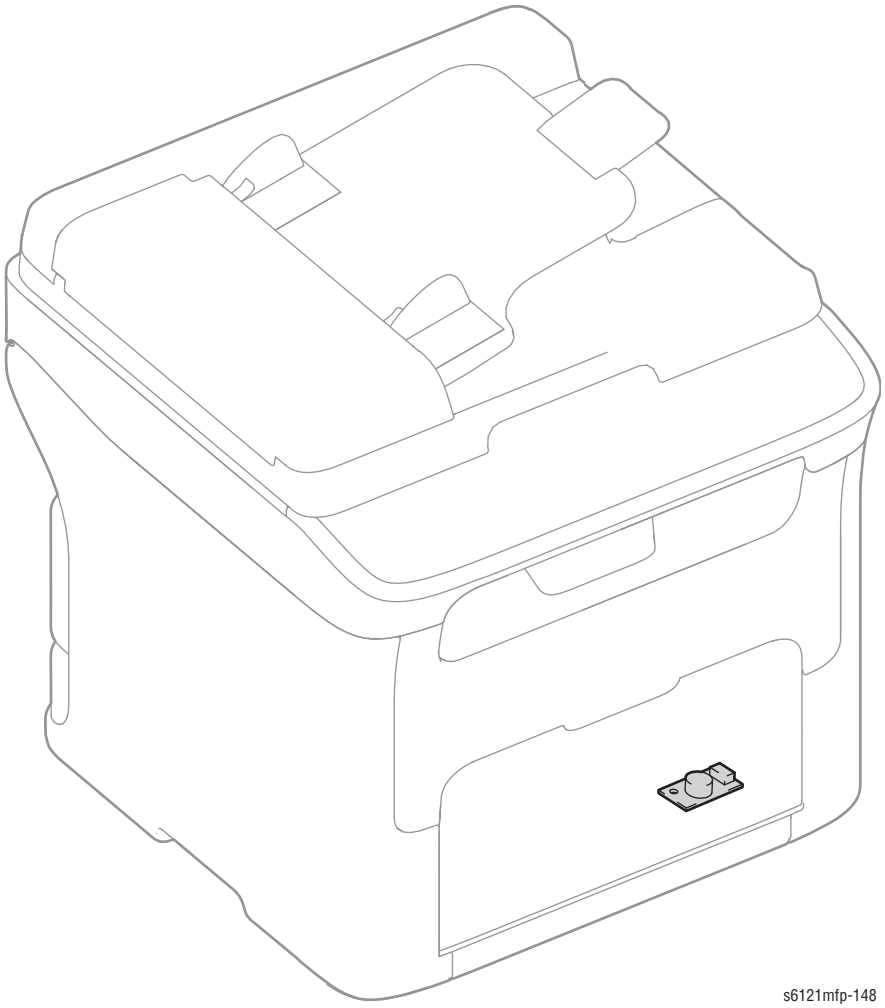
Temperature/Humidity Sensor

The Temperature/Humidity Sensor monitors the internal temperature of the system. It is also used for image stabilization, transfer ATVC, and fusing temperature control.

Note

There is a Control Panel command which obtains environmental temperature and humidity levels. However, this command is for internal use only and not available from the service menus.



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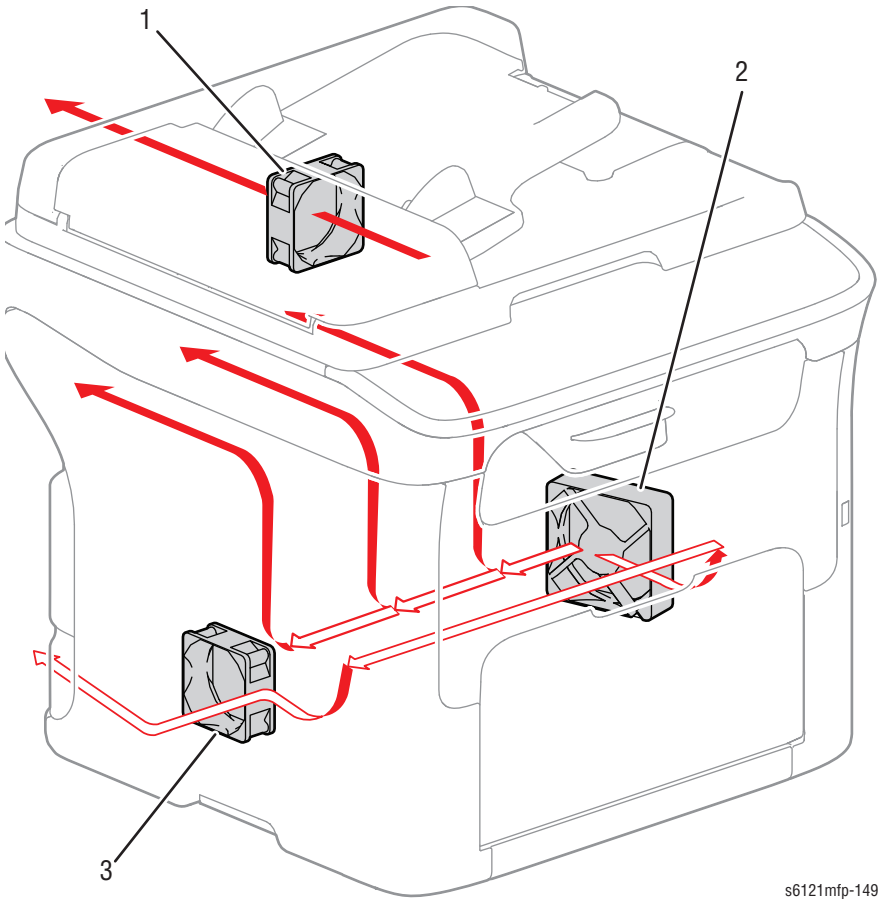
System Thermal Regulation

Fans are the primary means used to limit the rise in internal temperature. Three fans are controlled by specialized circuity on the Main Board. The following illustration shows the location and airflow direction of these fans.



Item	Description
Output Tray Fan	Cools the Scanner and output media.
Power Supply Fan	Draws cool air across the Power Supply.
Ventilation Fan	Recovers toner powder in the Imaging Cartridge and exhausts the ozone produced to the outside.

Power Supply Fan

The Power Supply Fan cools the system Power Supply and operates at full-speed, half-speed, or stopped states.

The Power Supply Fan runs at full-speed for:

- A set period of time after the Power Switch is turned On.
- A set period of time after exiting Energy Saver mode.
- At the start of a print cycle (full-speed rotation after a set period of half-speed rotation).

The Power Supply Cooling Fan runs at half-speed:

- At the end of a print cycle (half-speed rotation following the predetermined period of time needed for full-speed rotation).
- During half-speed rotation under any condition other than above.

The Power Supply Fan stops when:

- The system enters the Energy Saver mode.
- The Power Switch is turned Off.

Ventilation Fan

The Ventilation Fan cools the system cabinet and operates at full-speed when the Main Motor is in operation.

Output Tray Fan

The Output Tray Fan cools the Scanner and operates at full-speed, half-speed, or stopped states according to these conditions:

The Output Tray Fan runs at full-speed:

- A set period of time after the Power Switch is turned On.
- A set period of time after exiting Energy Saver mode.
- At the start of a print cycle (full-speed rotation after a set period of half-speed rotation).

The Output Tray Fan runs at half-speed:

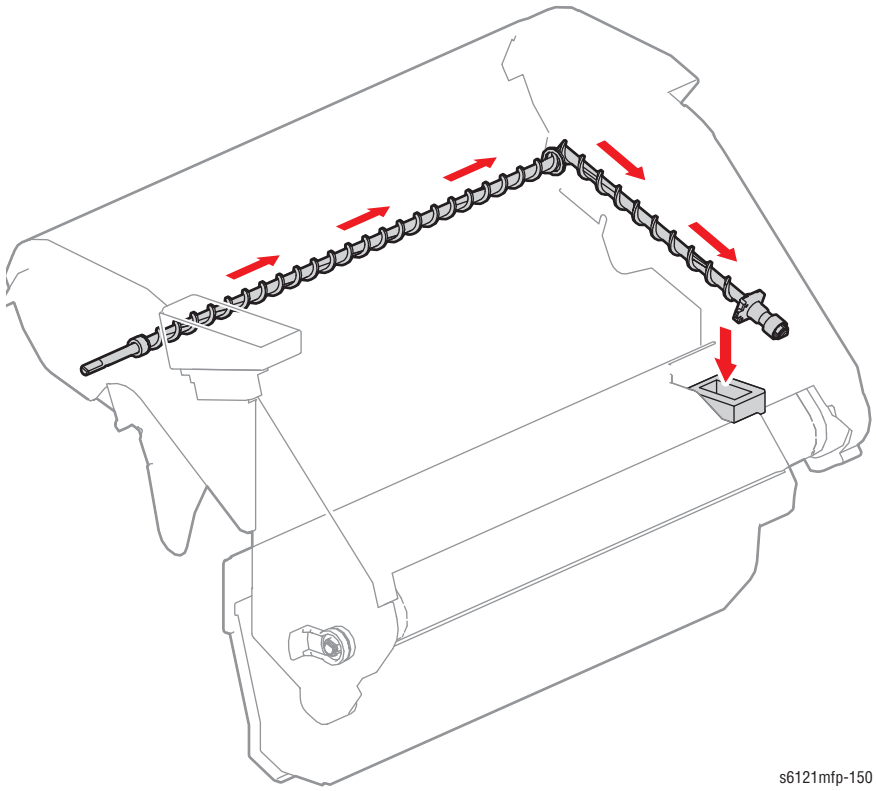
- At the end of a print cycle (half-speed rotation following the predetermined period of time needed for full-speed rotation).
- During standby.

The Output Tray Fan stops when:

- During Energy Saver mode.
- During firmware upgrade.

Waste Toner Collection

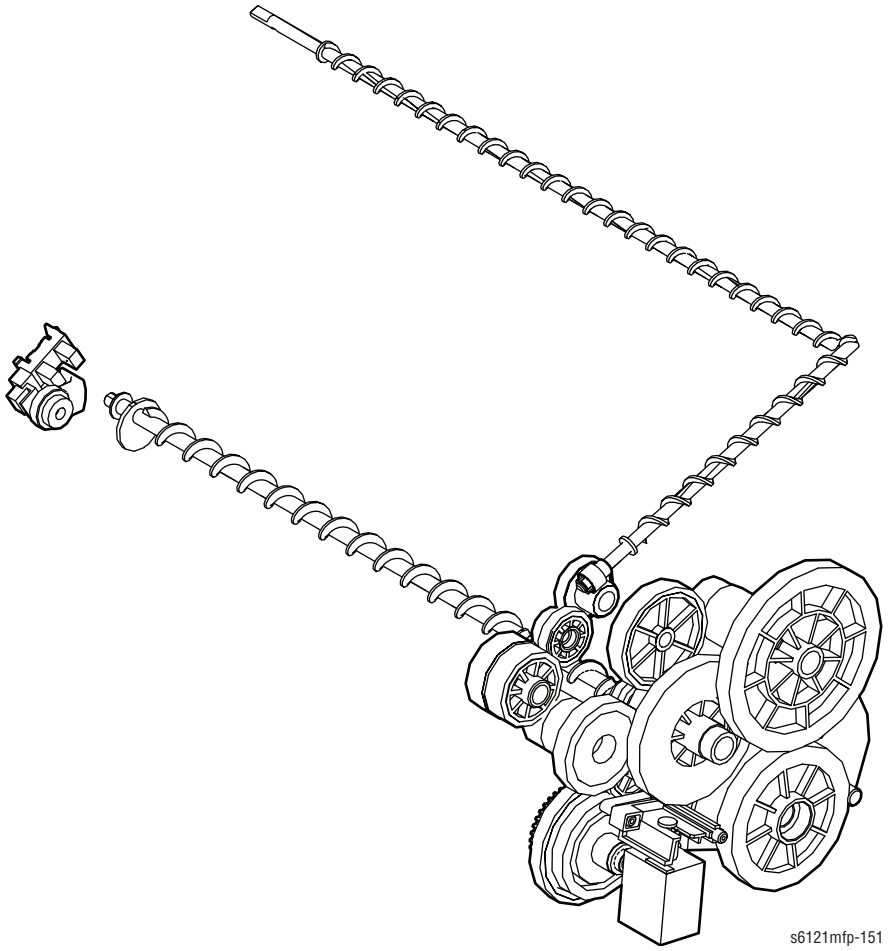
Waste toner removed from the Transfer Belt and drum by the cleaning blade is transferred by two gear driven augers into the Imaging Unit waste toner reservoir.



s6121mfp-150

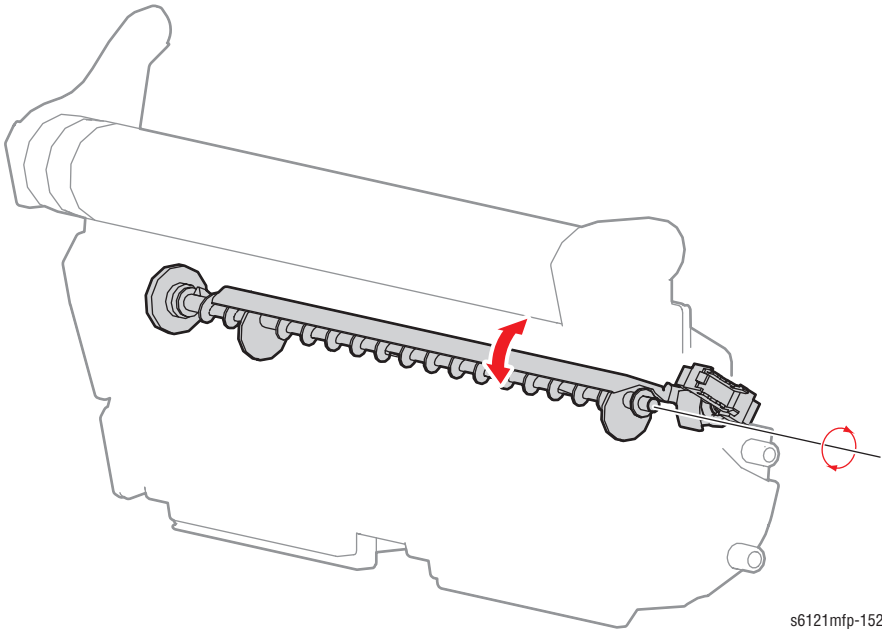
Waste Toner Collection Drive

Waste toner collection augers are driven by the Main Motor.



Waste Toner Full Sensor

Waste toner near full and full conditions are detected by the waste toner near full sensor, toner agitating screw, and an internal counter. An agitating auger is used in the reservoir to provide the maximum waste toner storage capacity. A waste toner near full condition occurs when light emitted from the sensor LED is obstructed during its travel through the light guide.

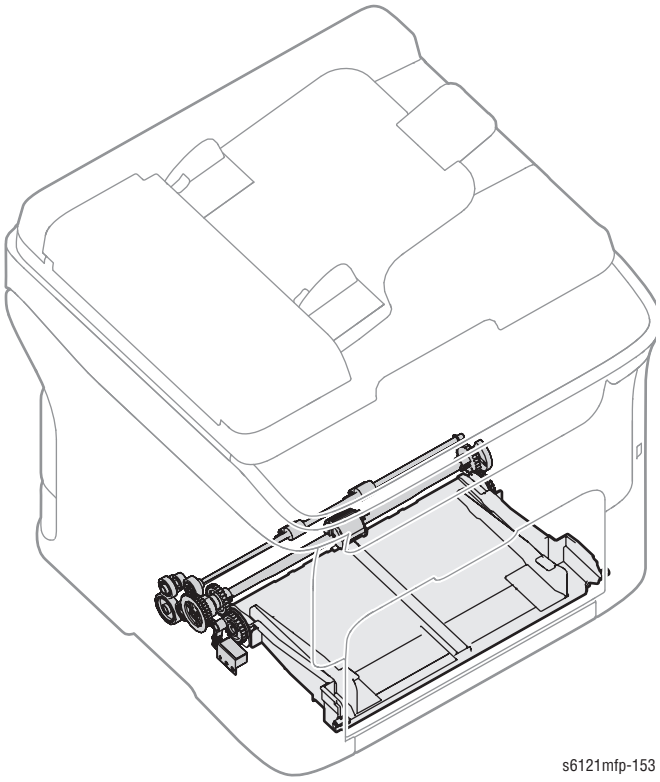


Rotation of the toner agitating screw causes the actuator to move up and down via the float plate, so that the waste toner near full sensor detects “H” and “L” signals alternately. When the amount of waste toner in the waste toner reservoir exceeds a predetermined level, the toner agitating screw no longer rotates. This stops the signal transitions from the waste toner near full sensor indicating a near full condition.

A waste toner full condition exists when 200 images are reached after a waste toner near full condition is detected. When the LED light is unblocked following Imaging Unit replacement, the waste toner full condition is reset.

Media Handling

Tray 1 Feeder



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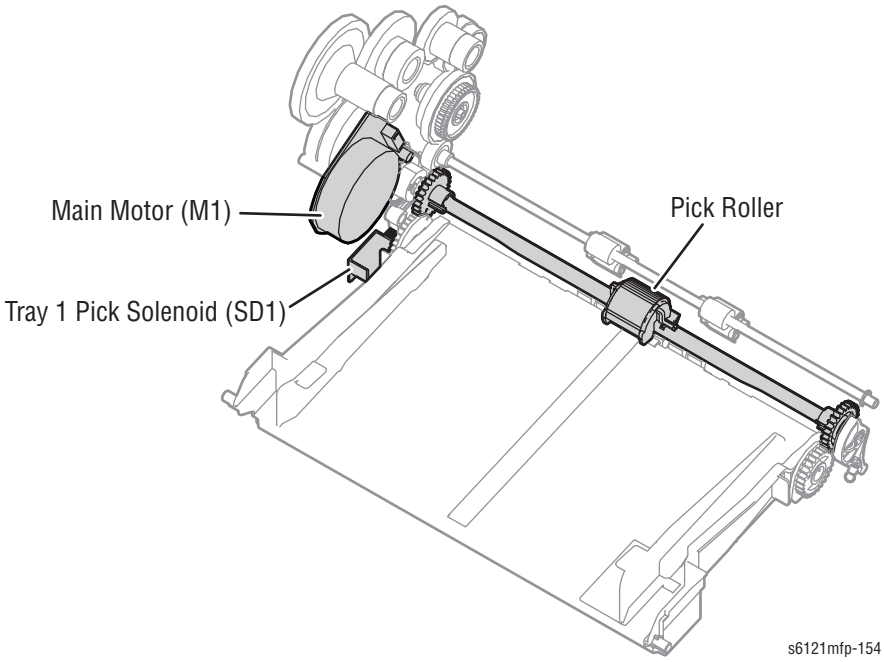
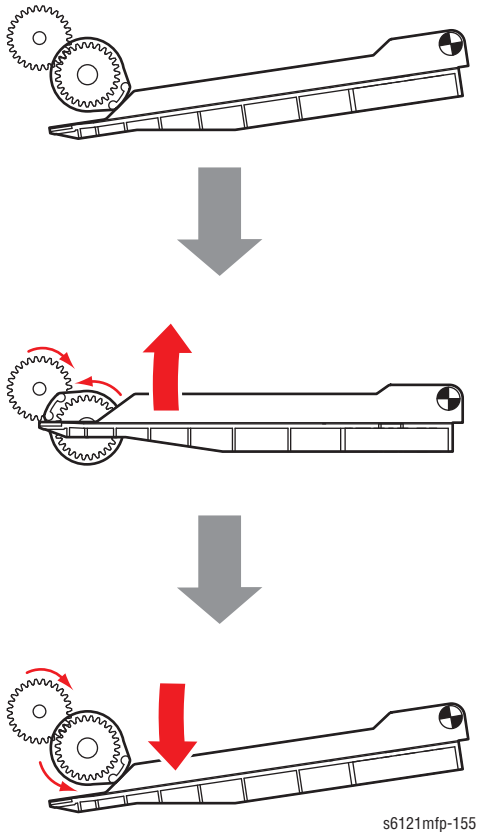
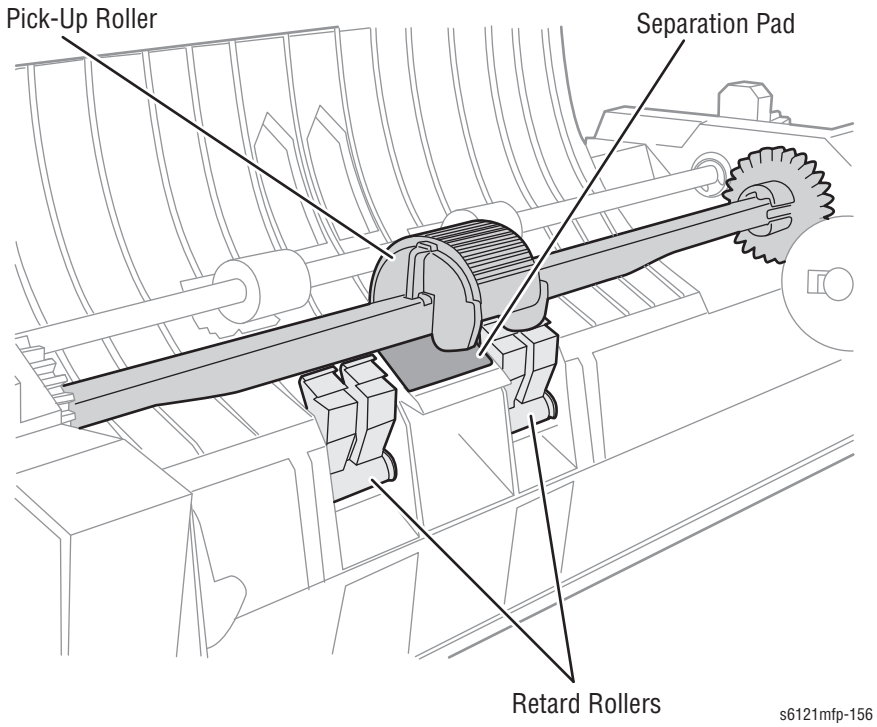
Tray 1 Drive

When the Tray1 Pick Solenoid is energized, drive from the Main Motor is transmitted to the Pick Roller via the Tray 1 Pick Clutch. At the same time, the Lift Cam is rotated, which raises the Lift Plate. The media is taken up and fed in by the Pick Roller.



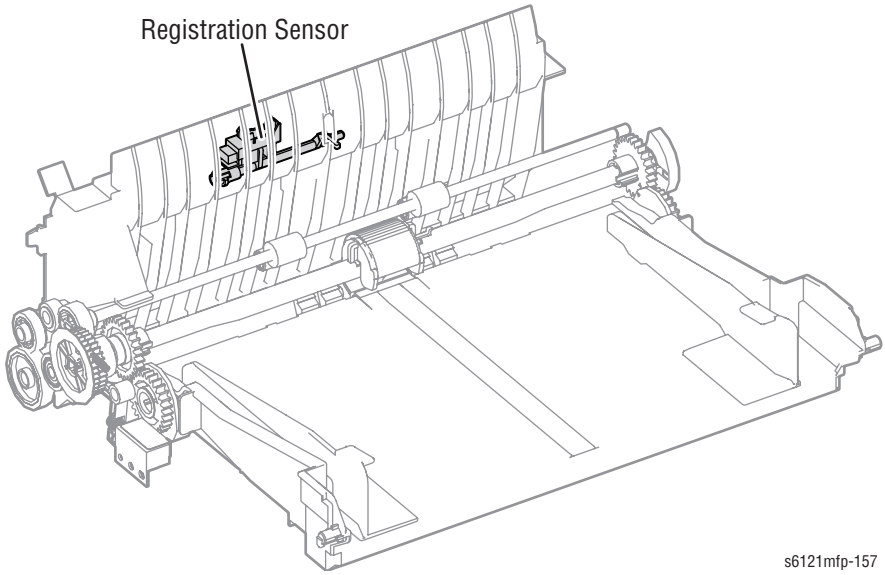


The fixed Separation Pad system plus the Retard Rollers are used for paper separation. This ensures that only one sheet of paper is fed.



Tray 1 Media Detection

Tray media empty/misfeed conditions are detected by the registration sensor.



To reduce the number of detected paper misfeeds, another feed sequence is carried out if a registration sensor signal transition fails to occur within a predetermined period of time. If after the second feed attempt media is not detected, a media empty/misfeed condition is reported.

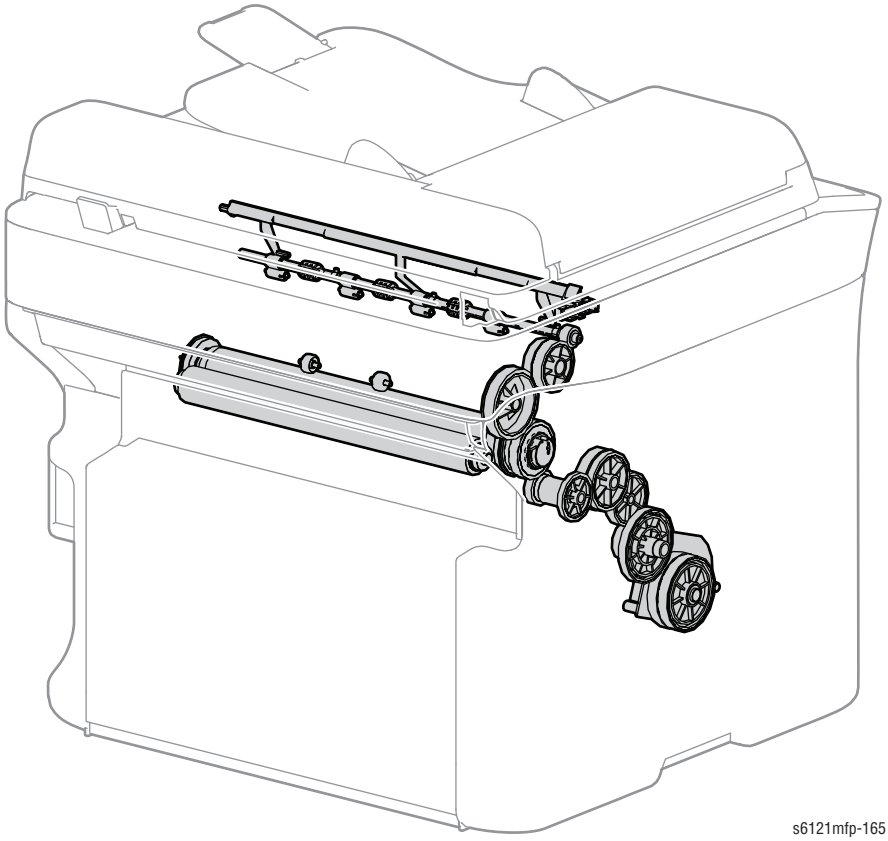
Media Size Detection

Media size is detected using the Registration Sensor. The length of the media is determined by the length of time the Registration Sensor remains High indicating media in the registration section.

If the media size specified by the controller does not match the media size detected by the Registration Sensor, the system displays an error message on the Control Panel. The sheet causing the size error continues through the print process and is output to the tray. Operations for subsequent sheets are specified from the controller.

Output Tray

Media is transported from the Fuser to the output tray using the Exit Roller. The Exit Sensor monitors the media output.



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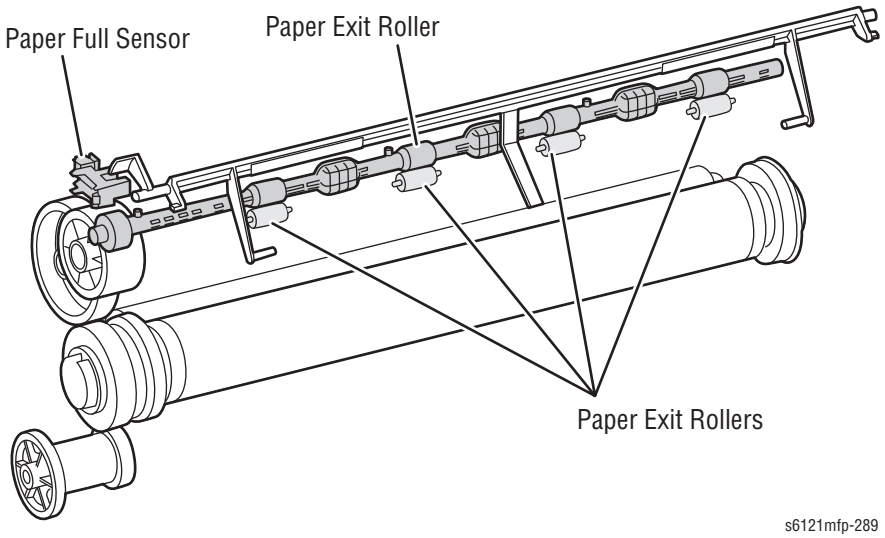
For printers without an installed Duplex Unit, the exit roller is driven by the Main Motor. During 1-sided printing, the exit roller rotates in the forward direction and feeds the media onto the output tray. If an optional Duplex Unit is attached, the exit roller is driven by the Duplex Unit.

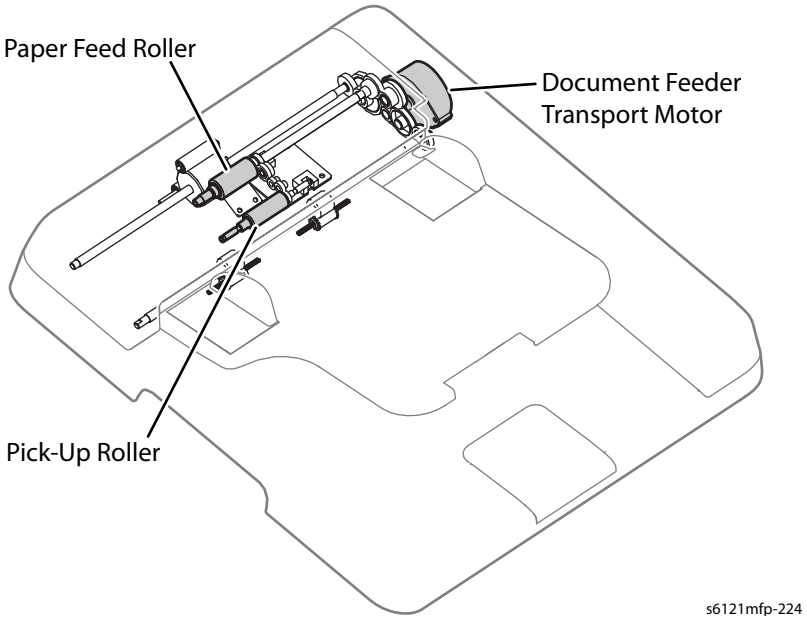
Output Tray Full Sensor

The Output Tray Full Sensor monitors output tray status.



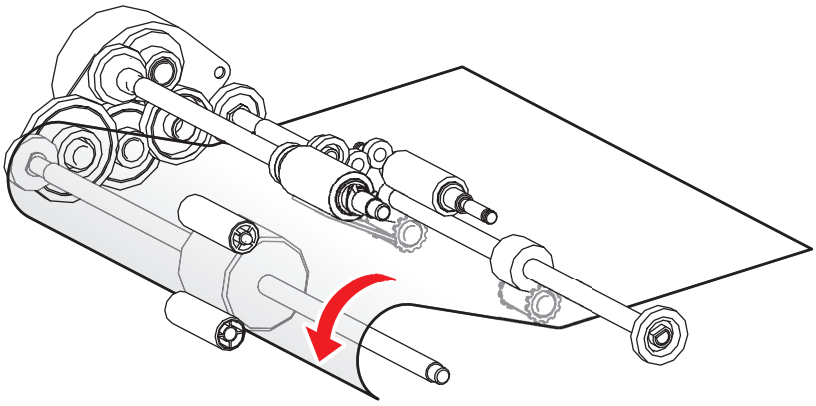
Automatic Document Feeder (ADF)

The ADF feeds documents to the Scanner platen for scanning. The functional components within the ADF are illustrated below.



ADF Pick Operation

1. The media feed sensor detects media loaded in the document feeder.
2. The document stopper establishes the leading edge position of the document. The stopper is lowered in the standby state and raised when the document is taken up and fed in.
3. The document stopper is raised and lowered in synchronism with the raising and lowering motion of the pick-up roller.
4. The pick-up roller and media feed roller turn to take up and feed the original properly.
5. The pick-up roller transports the original up to the media feed roller.
6. The ADF Transport Motor drives the pick-up roller and media feed roller through a gear train.



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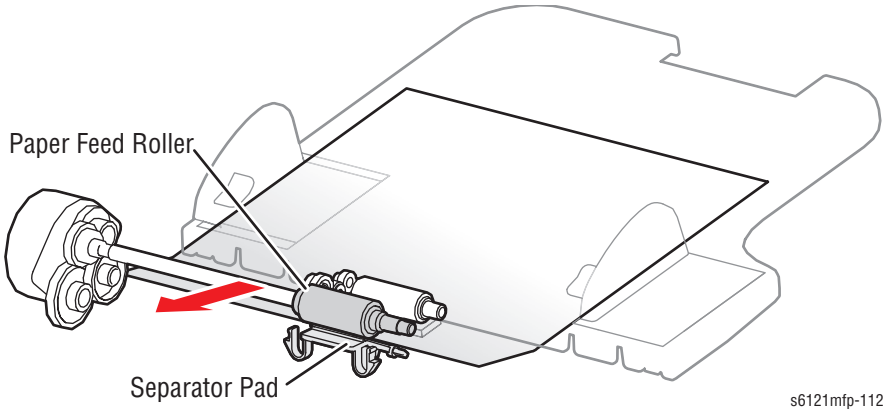
Double feeding of paper is prevented using coefficient of friction between the feed roller and separator pad.



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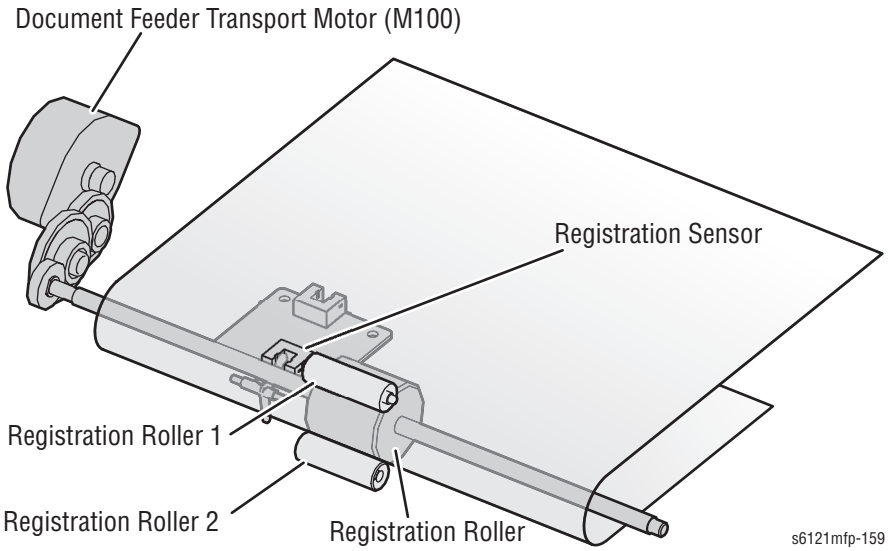
Single sheet feeding The coefficient of friction on the front side of the paper fed between the media feed roller and separator pad is equal to that on the backside of the paper. This allows the media feed roller to transport the paper.

Multiple sheet feeding The coefficient of friction between the paper and separator pad is greater than that between sheets of paper. This ensures that only the first sheet of paper is transported by the media feed roller.

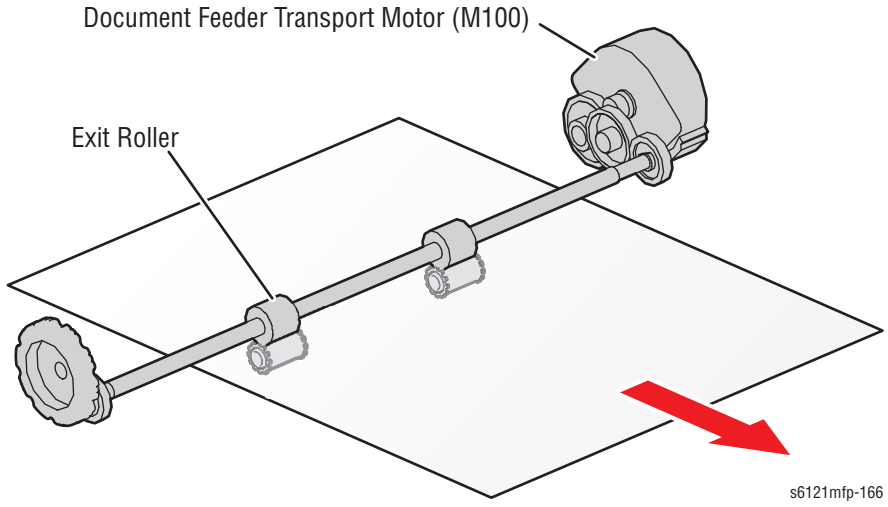
ADF Transport Operation



1. The registration roller is rotated by the drive from the ADF Transport Motor and move the original to the document scanning position.
2. The ADF Transport Motor drives the transport roller through a gear train.
3. Activation of the registration sensor establishes the document scan start timing.
4. Deactivation of the registration sensor establishes the document scan end timing and timing to de-energize the ADF Transport Motor.

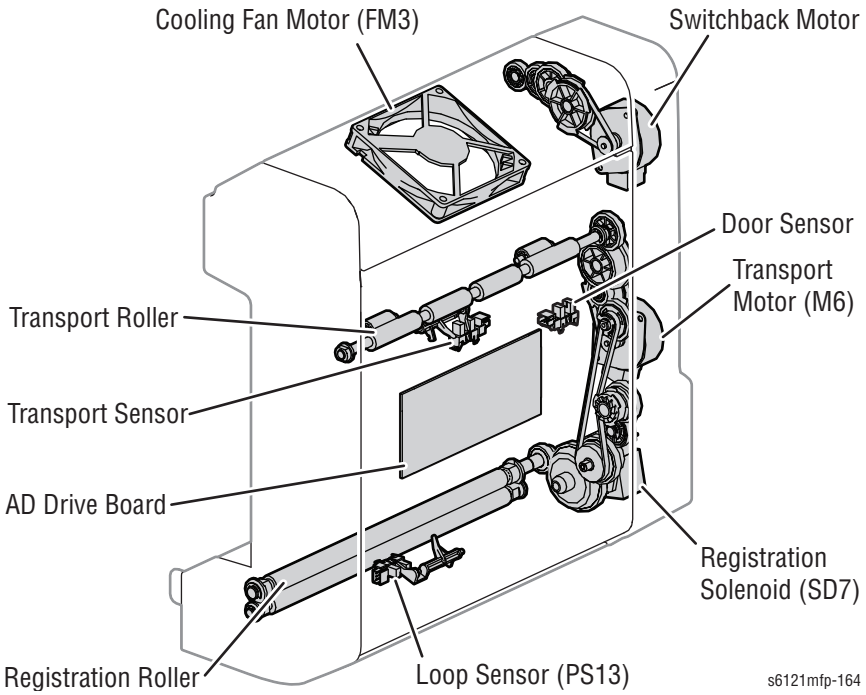
ADF Exit Operation

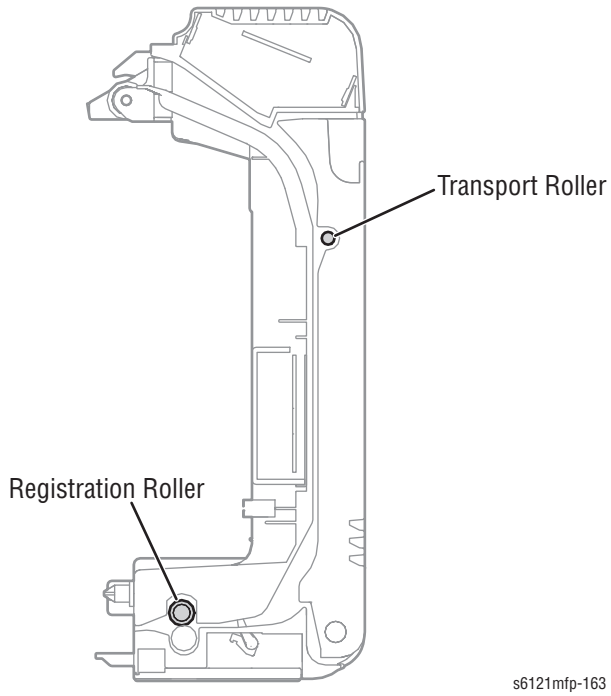
The exit roller, driven by the ADF Transport Motor, turns to feed the original out of the ADF. The original is fed onto the output tray.



Duplex Unit

The Duplex Unit adds 2-sided print capability to the system. The following illustrations show the location of components within the Duplex Unit.

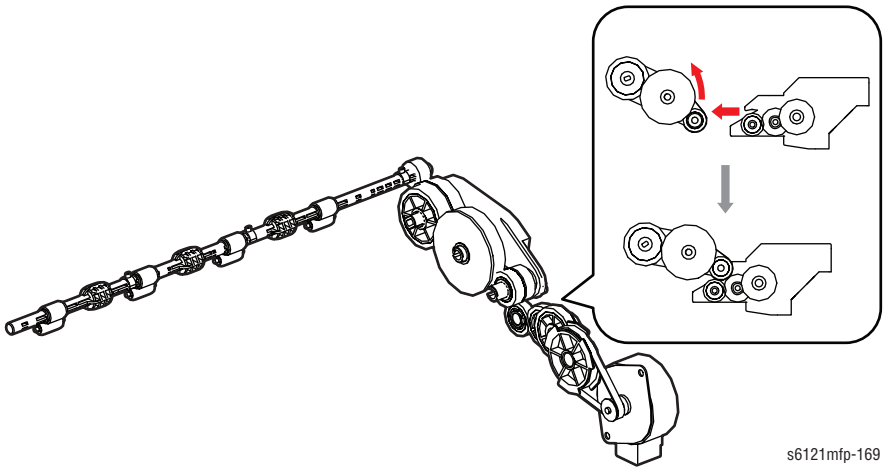




Duplex Unit Drive

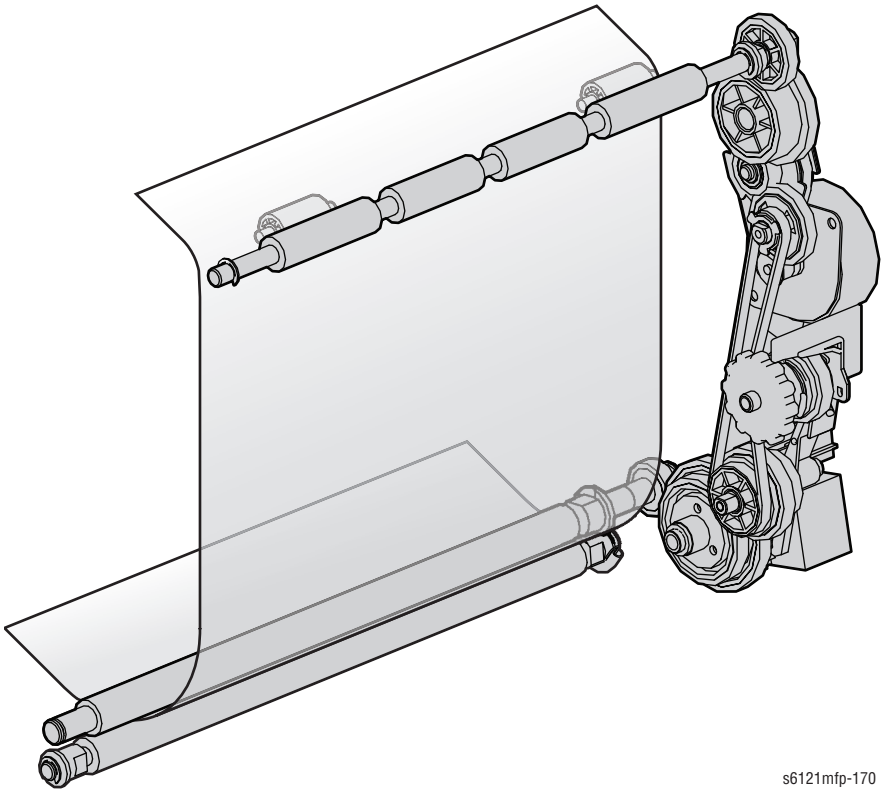
The print engine's Exit Roller, driven by the Fuser gear assembly during one-sided operations, feeds media into the Duplex Unit. For duplex operation, the duplex option lever disconnects drive to the Exit Roller, and engages the Duplex Switchback Motor.

This reverses the Exit Roller feeding the media into the Duplex Unit.



s6121mfp-169

After entering the Duplex Unit, two Transport Rollers, driven by the Duplex Unit Transport Motor, move media through the system.



s6121mfp-170

A loop correction mechanism is provided to prevent skew from occurring in the second page. The Registration Solenoid is energized after the lapse of a given period of time after the Paper Loop Sensor has been activated. This drives the Registration Roller, and the paper is conveyed into the machine.

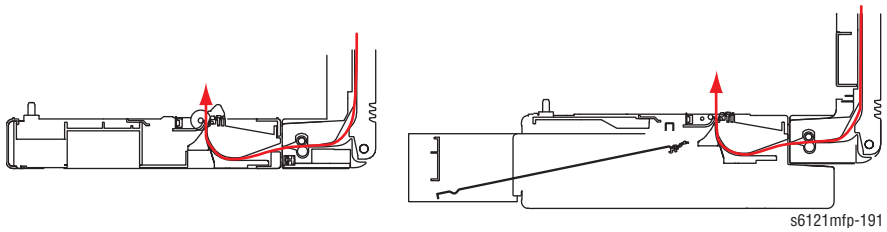
Duplex Unit Transport Operations

The following steps detail the transport operations for single, hand-fed sheets.

1. The first sheet of paper is taken up and fed in from the main tray and the first print cycle begins. Immediately before the one-sided print leaves the Exit Roller, the direction of rotation of the Exit Roller is reversed and the 1-sided print is transported toward and into the Duplex Unit.
2. The print moves through the Duplex Unit and is temporarily stopped at the Duplex take-up position. Any skew in the paper is corrected at the Registration Roller before the paper is fed by the Duplex Unit.
3. The second print cycle begins to produce the second image on the original sheet. While feeding the first two-sided print to the Exit Tray, the first print cycle for the second sheet begins. This process repeats until the print job is complete.
4. The first sheet of paper is then taken up and fed in from the tray and the first print cycle begins to produce the print image on the second page of the original. Immediately before the first one-sided print leaves the Exit Roller, the Exit Roller is reversed and the first 1-sided print is transported into the Duplex Unit.
5. At the same time, the second sheet of paper is fed into the print engine. The first print cycle for the second sheet produces the image on the fourth page of the original.
6. Also at the same time, the first 1-sided print is transported through the Duplex Unit. The main unit produces the print image of the first page of the original on the first one-sided print that has been fed through the Duplex Unit. At the same time, the second sheet of paper is subjected to a switchback sequence at the exit section and fed into the Duplex Unit. Also, the third sheet of paper is taken up and fed into the main unit.
7. While feeding the first 2-sided print out, the main unit produces the print image of the 6th page of the original on the third sheet of paper. The second sheet of paper waits at the Duplex take-up position until the third sheet of paper is subjected to a switchback sequence.
8. Immediately before the first one-sided print leaves the Paper Exit Roller, the direction of rotation of the Paper Exit Roller is reversed and the first 1-sided print for the third sheet is transported toward and into the Duplex Unit.
9. At the same time, the second sheet of paper is fed into the main unit again. The main unit carries out the first print cycle for the second sheet of paper to produce the print image of the third page of the original. At the same time, the first 1-sided print for the third is transported through the Duplex Unit. Also at the same time, the forth sheet of paper is taken up and fed into the main unit.
10. While feeding the second 2-sided print out, main unit produces the print image of the 8th page of the original on the fourth sheet of paper. The third sheet of paper waits at the Duplex take-up position until the fourth sheet of paper is subjected to a switchback sequence. The process repeats until the print job is complete.

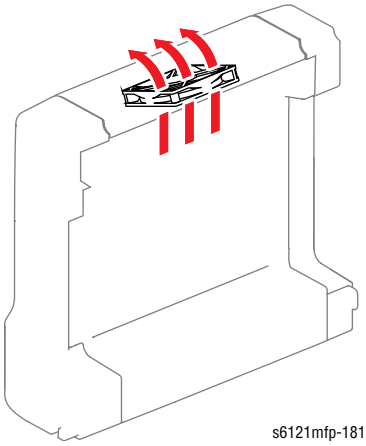
Paper Path Through Duplex Unit

The following illustration shows the paper path through the Duplex Unit with the Duplex Unit Base Attachment, and the paper path through the Duplex Unit with the 500 Sheet Feeder attached.



Duplex Unit Fan

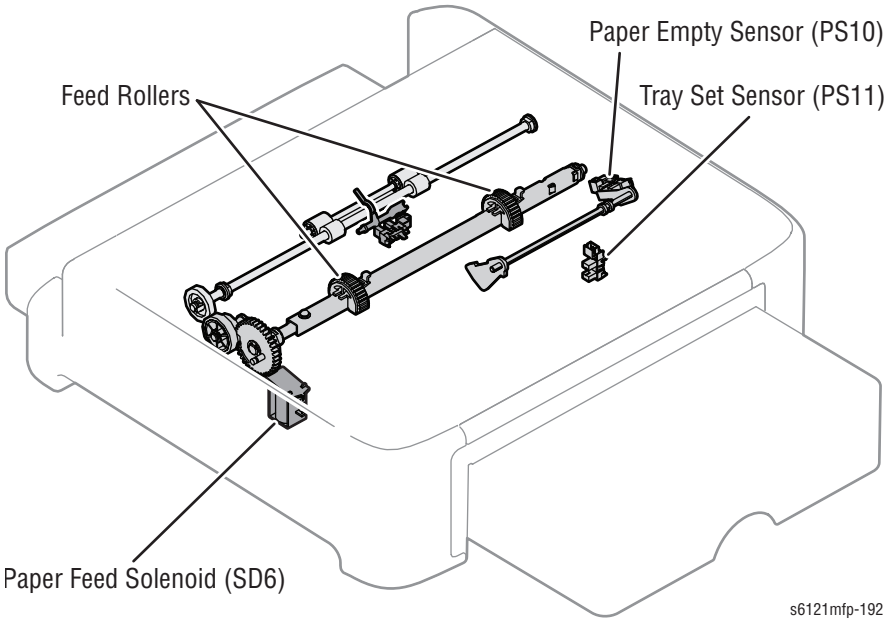
The Duplex Unit Fan moves air through the unit to keep the temperature of the LVPS from rising.



The Duplex Unit Fan operates at full-speed at the start of a duplex operation, and then slows to half-speed after the duplex operation ends. The fan is off when the Duplex Unit is not in use.

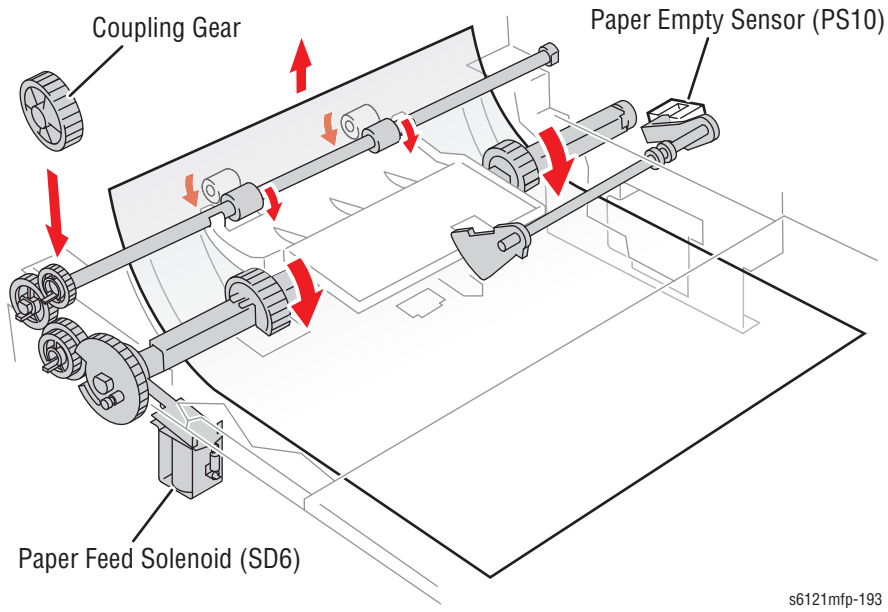
500-Sheet Feeder Unit (Tray 2)

The optional 500-Sheet Feeder is replaced as a single assembly. When installed, the optional feeder is designated as Tray 2. Components of the optional 500-Sheet Feeder appear below.



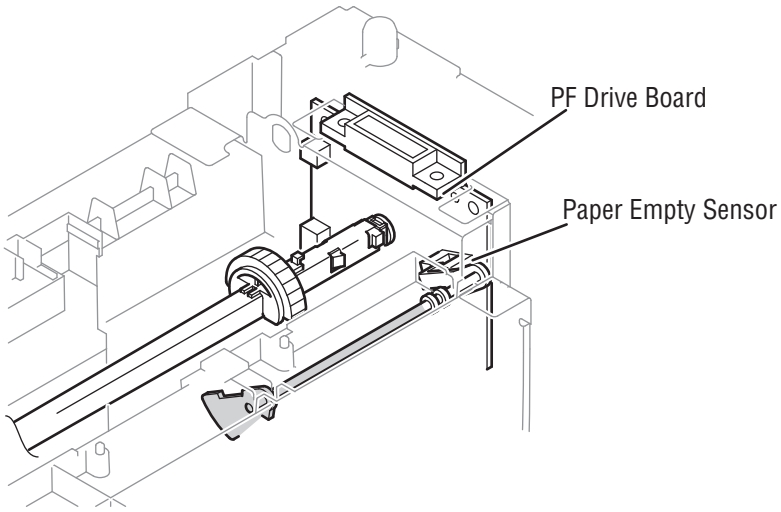
Feeder

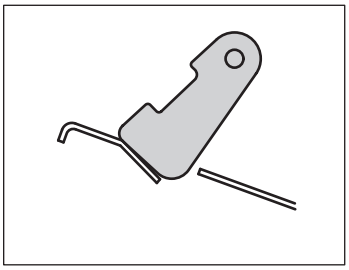
The feeder is driven by the system's Main Motor through a coupling gear. The paper separation mechanism uses separation claws installed in the unit and elasticity of the paper. It ensures that only one sheet of paper is fed in at time. The Pick Solenoid is controlled by the system through the PF Drive Board mounted in the feeder.



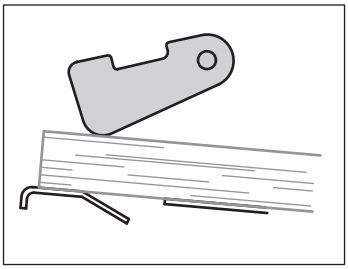
Tray 2 Paper Empty Sensor

The Paper Empty Sensor located on the PF Drive Board detects when the tray is empty. When media is present in the tray, the actuator is raised unblocking the sensor. When the tray is empty, the actuator drops into the slit in the Lift Plate blocking the sensor.





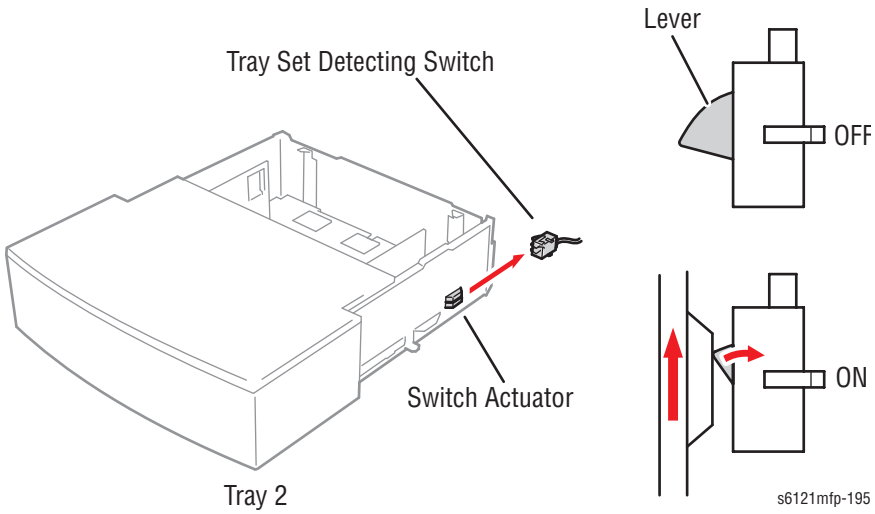
At Paper Empty Condition



Under Normal Conditions s6121mfp-194

Tray Detect Switch

The Tray Detect Switch signals the presence of a tray in the feeder. The switch is On when the tray is fully-inserted in the feeder.



Error Messages and Codes

In this chapter...

Chapter 3

Introduction

This chapter describes error messages and numeric codes displayed on the Control Panel or listed on the Error History page. These error indications serve as the entry point into the troubleshooting process.

Troubleshooting of problems not directly indicated by or associated with an error message or code are covered in Chapter 4, General Troubleshooting. Print quality problems are covered in Chapter 5, Print Quality Troubleshooting.

The printer tracks and reports errors in a number of ways. The two types of error reporting discussed in this section include:

- Error messages and codes displayed on the Control Panel
- Errors listed on the Error Log History List

Accessing the Error Log History List

The Error Code List contains the last 40 errors. Use the following procedure to print the Error Code List:

1. At the Control Panel, enter the Service Mode.
   - On the initial screen, press the following buttons in this order: **OK** > **Stop/Reset** > **0** > **0** > **Stop/Reset** > **0** > **1**
2. Using the **Down Arrow** button, select **Report** and press **OK**.
3. Select **Error Code List** and press **OK**.

   The Error Code List is printed.

Error Code List

Code	Error Times
0001	00000000
0004	00000000
0007	00000000
000A	00000000
000D	00000000
0010	00000000
0013	00000000
0016	00000000
0019	00000000
001C	00000000
001F	00000000
0022	00000000
0025	00000000
0028	00000000
002B	00000000
002E	00000000
0031	00000000
0034	00000000
0037	00000000
003A	00000000
003D	00000000
0040	00000000
0043	00000000
0046	00000000
0049	00000000
004C	00000000
004F	00000000
0052	00000000
0055	00000000
0058	00000000
005B	00000000
005E	00000000
0061	00000000
0064	00000000
0067	00000000
006A	00000000
006D	00000000
0070	00000000
0073	00000000
0076	00000000
0079	00000000
007C	00000000
007F	00000000
0082	00000000
0085	00000000
0088	00000000
008B	00000000
008E	00000000
0091	00000000
0094	00000000
0097	00000000
009A	00000000
009D	00000000
00A0	00000000
00A3	00000000
00A6	00000000
00A9	00000000
00AC	00000000
00AF	00000000
00B2	00000000
00B5	00000000
00B8	00000000
00BB	00000000
00BE	00000000
00C1	00000000
00C4	00000000
00C7	00000000
00CA	00000000
00CD	00000000
00D0	00000000
00D3	00000000
00D6	00000000
00D9	00000000
00DC	00000000
00DF	00000000
00E2	00000000
00E5	00000000
00E8	00000000
00EB	00000000
00EE	00000000
00F1	00000000
00F4	00000000
00F7	00000000
00FA	00000000
00FD	00000000

Code	Error Times
0002	00000000
0005	00000000
0008	00000000
000B	00000000
000E	00000000
0011	00000000
0014	00000000
0017	00000000
001A	00000000
001D	00000000
0020	00000000
0023	00000000
0026	00000000
0029	00000000
002C	00000000
002F	00000000
0032	00000000
0035	00000000
0038	00000000
003B	00000000
003E	00000000
0041	00000000
0044	00000000
0047	00000000
004A	00000000
004D	00000000
0050	00000000
0053	00000000
0056	00000000
0059	00000000
005C	00000000
005F	00000000
0062	00000000
0065	00000000
0068	00000000
006B	00000000
006E	00000000
0071	00000000
0074	00000000
0077	00000000
007A	00000000
007D	00000000
0080	00000000
0083	00000000
0086	00000000
0089	00000000
008C	00000000
008F	00000000
0092	00000000
0095	00000000
0098	00000000
009B	00000000
009E	00000000
00A1	00000000
00A4	00000000
00A7	00000000
00AA	00000000
00AD	00000000
00B0	00000000
00B3	00000000
00B6	00000000
00B9	00000000
00BC	00000000
00BF	00000000
00C2	00000000
00C5	00000000
00C8	00000000
00CB	00000000
00CE	00000000
00D1	00000000
00D4	00000000
00D7	00000000
00DA	00000000
00DD	00000000
00E0	00000000
00E3	00000000
00E6	00000000
00E9	00000000
00EC	00000000
00EF	00000000
00F2	00000000
00F5	00000000
00F8	00000000
00FB	00000000
00FE	00000000

Code	Error Times
0003	00000000
0006	00000000
0009	00000000
000C	00000000
000F	00000000
0012	00000000
0015	00000000
0018	00000000
001B	00000000
001E	00000000
0021	00000000
0024	00000000
0027	00000000
002A	00000000
002D	00000000
0030	00000000
0033	00000000
0036	00000000
0039	00000000
003C	00000000
003F	00000000
0042	00000000
0045	00000000
0048	00000000
004B	00000000
004E	00000000
0051	00000000
0054	00000000
0057	00000000
005A	00000000
005D	00000000
0060	00000000
0063	00000000
0066	00000000
0069	00000000
006C	00000000
006F	00000000
0072	00000000
0075	00000000
0078	00000000
007B	00000000
007E	00000000
0081	00000000
0084	00000000
0087	00000000
008A	00000000
008D	00000000
0090	00000000
0093	00000000
0096	00000000
0099	00000000
009C	00000000
009F	00000000
00A2	00000000
00A5	00000000
00A8	00000000
00AB	00000000
00AE	00000000
00B1	00000000
00B4	00000000
00B7	00000000
00BA	00000000
00BD	00000000
00C0	00000000
00C3	00000000
00C6	00000000
00C9	00000000
00CC	00000000
00CF	00000000
00D2	00000000
00D5	00000000
00D8	00000000
00DB	00000000
00DE	00000000
00E1	00000000
00E4	00000000
00E7	00000000
00EA	00000000
00ED	00000000
00F0	00000000
00F3	00000000
00F6	00000000
00F9	00000000
00FC	00000000
00FF	00000000

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Error Messages

Jam Errors

When a misfeed occurs, the printer displays the corresponding misfeed status on the control panel. Jam error code troubleshooting procedures begin on page 3-56.

Message	Description
Jam at Tray2 Clear jam and open and close cover	Jam at Tray 2.
Check Tray1 paper Load paper or remove top sheet. (Press Start key) to continue	Tray 1 is empty of paper, or there is a paper jam at feed section.
Jam at Duplex Unit Open top cover and duplex unit cover (Press any key)	Paper jam at the Duplex Unit.
Jam at Duplex Unit Open Duplex cover clear jammed paper	Paper jam in the Duplex Unit.
Jam at Transfer Open top cover and remove Imaging Unit clear jammed paper close top cover	Paper jam at Transfer Roller.
Jam at Fuser Open top cover clear jammed paper	Paper jam at Fuser.
Jam at Output tray Open Top cover	Paper jam at Output tray.
Original Doc. Jam Open Doc. Feeder and clear the original. Reinsert original and press the Start key.	Paper jam at the ADF.

Service Call Messages

The following table lists errors that halt printing and require a service technician. All of the call designators (e.g. CALL (0001)) are proceeded with the display of "CAUTION". Service call error code troubleshooting procedures begin on page 3-69.

Message Code	Message	Troubleshooting Procedure
0001	Main motor failure CODE (001) Turn power off, on	page 3-69
001B	Toner rack failure CODE (001B) Turn power off, on	page 3-70
0045	Scanner fan failure CODE (0045) Turn power off, on	page 3-71
004A	Duplex fan failure CODE (004A) Turn power off, on	page 3-72
004C	Exhaust fan failure CODE (004C) Turn power off, on	page 3-73
004E	LVPS fan failure CODE (004E) Turn power off, on	page 3-74
0092	Trans. belt failure CODE (0092) Turn power off, on	page 3-75
0094	Trans. roll failure CODE (0094) Turn power off, on	page 3-76
0300	Laser motor failure CODE (0300) Turn power off, on	page 3-77
0310	Laser unit failure CODE (0310) Turn power off, on	page 3-77
0500	Fuser failure CODE (0500) Turn power off, on	page 3-79
0502	Thermistor failure CODE (0502) Turn power off, on	page 3-80

Message Code	Message	Troubleshooting Procedure
0503	Thermistor failure CODE (0503) Turn power off, on	page 3-79
0510	Fuser failure CODE (0510) Turn power off, on	page 3-80
0520	Fuser failure CODE (0520) Turn power off, on	page 3-80
0650	Scanner home failure CODE (0650) Turn power off, on	page 3-81
0F51	Waste toner failure CODE (0F51) Turn power off, on	page 3-82
1038	Interface failure CODE (1038) Turn power off, on	page 3-83
133C	Fax modem failure CODE (133C) Turn power off, on	page 3-84
13C0	Engine board failure CODE (13C0) Turn power off, on	page 3-84
13DD	Initial toner failed CODE (13DD) Replace toner Contact Xerox for unit exchange	page 3-85
13E2	Engine ROM failure CODE (13E2) Turn power off, on	page 3-85
14A3	Scanner head failure CODE (14A3) Turn power off, on	page 3-86
3C00	Eng. EEPROM failure CODE (3C00) Turn power off, on	Contact a Xerox representative to correct this error.
3C10	Eng. EEPROM failure CODE (3C10) Turn power off, on	Contact a Xerox representative to correct this error.
3FFF	Control ROM failure CODE (3FFF) Turn power off, on	page 3-87

Message Code	Message	Troubleshooting Procedure
CF01	Controller failure CODE (CF01) Turn power off, on	page 3-87

Scan Errors

Code	Display	Content
0100	CANNOT CONNECT SMTP Server	A connection with the specified server was not established when the scanned document was sent in Scan mode..
0101	CANNOT CONNECT POP3 Server	
0102	CANNOT CONNECT DNS Server	
0103	CANNOT CONNECT FTP Proxy Server	
0104	CANNOT CONNECT SMB Server	
0106	FTP SERVER ERROR	The file cannot be saved on the indicated server.
0107	SMB SERVER ERROR	
0108	WRONG PASSWORD FTP Server	The password is incorrect, so the indicated server was not accessed.
0109	WRONG PASSWORD SMB Server	
010A	WRONG PASSWORD SMTP Server	
010B	WRONG PASSWORD POP3 Server	
010D	SERVER MEMORY FULL SMTP Server	The memory of the SMTP server has become full.
010F	CANNOT GET IP SMTP Server	The IP address of the server was not obtained from the DNS server.
0110	CANNOT GET IP POP3 Server	
0111	CANNOT GET IP FTP Server	

Code	Display	Content
0113	COMMUNICATION ERROR SMTP Server	The connection to the server was interrupted during data transmission in Scan mode.
0114	COMMUNICATION ERROR FTP Server	
0115	COMMUNICATION ERROR SMB Server	
0118	DISCONNECT SMTP Server	The connection to the server was interrupted.
0119	DISCONNECT POP3 Server	
011B	DISCONNECT FTP Proxy Server	
011C	DISCONNECT SMB Server	

Fax Errors

There are five possible reasons for fax errors:

1. Communication is discontinued by a machine error.
2. Communication is discontinued by a machine trouble.
3. Communication is discontinued by an error occurring at the destination station.
4. Communication is discontinued by a protocol error.
5. ADF Error on trouble.

When communication is discontinued due to item 3 or 4, transmission is retried. In the other cases, transmission is canceled without retry.

For general Fax troubleshooting procedures, see “Fax Troubleshooting” on page 4-11.

Reception Error Codes

Code	Description
0001	Manual receive mode, no G3 signal received within 35 seconds.
0003	Received DIS after sending DIS signal.
0004	Received DCN after sending DTC signal.
0006	Detect busy tone within receiving phase B.
0009	No signal received within 35 seconds in manual polling mode.
0010	Received DCN signal after sending DTC signal in polling RX.
00110	No correct response received after sending three DTC signal.
0012	Incorrect polling password.
0013	No carrier signal received within 6 seconds after sending CFR in data phase C.
0014	No T.30 signal received after sending FTT signal.
0015	Line polarity change within receiving phase B to D.
0016	Received DCN signal after sending PTT signal.
0017	No response received after sending type of xxx_EOM signal.
0018	Cannot detect energy within 6 seconds after sending FTT command.
0019	Received DCN signal after sending CFR signal.
001A	In phase C, no energy on line over 6 seconds before any corrected ECM frame.
001D	Detected flag, but no signals after CFR.
0020	Cannot correct frame within 6 seconds or in no-ECM mode, one decoding line over 6 seconds.
0021	File full.

Code	Description
0022	Owing to noise interference on the line, receiving side can not receive correct data within specified time (no ECM).
0023	Received PWD error in RSD or upgrade F/W.
0024	TX and RX machine have different machine IDs in upgrade F/W.
0025	TX and RX machine have different company IDs in upgrade F/W.
0026	Remote monitor level error, remote side can not access in upgrade F/W.
0027	Remote monitoring prohibited.
002A	Line problem.
0030	Cannot receive any signal within 6 seconds at phase D.
0031	Received incorrect signal at phase D (not EOP, MPS, EOM, DCS PPS_Q, PPS_Q, etc.).
0032	Carrier signal not received within 6 seconds after sending MCF or RTP, RTN signal.
0033	Received DCN signal at phase D within pages (not last page).
0039	In non-ECM mode, data received but the next line data not received within 13.1 seconds.
003F	Remote side TSI not defined in machine one touch or speed dial directory.
0040	Carrier signal not received within 6 seconds after sending CTR.
0041	Carrier signal not received within 6 seconds after sending PPR.
0042	Correct signal not received after sending RNR signal.
0043	Received incorrect signal at phase D in ECM mode.
0044	Carrier /FSK signal not received within 6 seconds after sending MCF in ECM mode.
0045	Correct signals not received after sending RNR response with ERR signal.
0046	Received incorrect signal after sending RNR (Receiver Not Ready).
0047	Correct signal not received after sending ERR signal.
0048	Correct signal not received after receiving PPS_PRI_Q, PRI_Q, or EOR_PRI_Q.
0049	Correct signal not received within 13 seconds after sending PIP/PIN signal.
004A	Line energy over threshold last 60 seconds after MCF, and can not detect FSK or carrier signal in ECM mode.
004B	Cannot detect correct FSK signal even though detected FSK tone within 6 seconds.
004C	Handshake failure during re-train or between page in V.34 RX.
004E	Received DCN signal after sending DIS in V.34.
004F	Remote side disconnected after sending ANSam in V.8 phase.
0050	Correct signal not received after sending CJ signal in V.8 phase.
0051	Phase 3 signal not received within 20 seconds after phase 2 in V.34.

Code	Description
0052	Phase 4 signal not received within 20 seconds after phase 3 in V.34.
0053	Modem disconnect after phase 4 in V.34.
0054	Remote side disconnected after phase 4 in V.8.
0055	Received incorrect signal after sending DIS signal in V.34.
0056	Modem disconnect after sending CFR in V.34.
0057	Image signal not detected within 6 seconds after sending CFR.
0058	Image signal not detected within 6 seconds after modem enter to primary phase in V.34.
005A	Modem can not detect a correct ECM frame with 3 minutes in phase C.
005B	Cannot detect phase 5 signal within 6 seconds after primary channel.
005C	Detect busy tone within control channel after phase C.
005D	Modem can not detect any correct ECM frame with 12 seconds in phase C.
005E	Control channel signal not detected within 6 seconds after receiving RCP frame.
005F	Silence not detected after sending JM signal for polling TX function.
0060	There are no bulletin files to be polled in V.34.
0061	V.21 or V.8 signal not detected within 35 seconds.
0062	Modem disconnect in phase D after sending out flags sequence in control channel.
0063	Flag sequence not received in control channel within 6 seconds in phase D.
0064	Control channel signal not detected in phase D within 60 seconds even though energy still on the line.
0065	Control channel signal not detected within 60 seconds after detect silence in phase D.
0066	T.30 signal or carrier not received after sending CFR in V.34.
0070	User pressed stop key when receiving.
0071	Memory full when receiving.
0072	Received EOR_Q Signal.

Reception Error Troubleshooting

An error code can have more than one definition (cause), and more than one solution.

Error code: 0001
Definition: Manual receive mode, no G3 signal received within 35 sec.
Solution: 1. Check whether the sender is the fax machine or not. 2. Check that the telephone line is connected correctly. 3. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 4. Boost the TX Level of sender's machine. 5. Boost the printers' TX Level.<*1>. 6. Set SOFT SW21[3] to "1"(DIS signal length=4 bytes). **NOTE** The default setting is "0"(DIS signal length=8 bytes).

Error code: 0003
Definition: Received DIS after sending DIS signal.
Solution: The cause is the sender did not place the original document correctly for faxing. Ask sender to place the original document correctly and resend the fax.

Error code: 0014
Definition: Can't receive T.30 signal after sending FTT signal.
Solution: 1. Ask sender to resend the fax. 2. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 3. Boost the TX Level of sender's machine. 4. Boost the machine TX Level.

Error code: 0016
Definition: Receive DCN signal after sending FTT signal.
Solution: 1. Ask the sender to resend the fax. 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0017
Definition: Can't receive any response from remote side after sending type of xxx_EOM signal.
Solution: 1. Ask sender to resend the fax. 2. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 3. Boost the TX Level of sender's machine. 4. Boost the machine TX Level.

Error code: 0018
Definition: Can't detect energy within 6 seconds after sending FTT command.
Solution: 1. Ask sender to resend the fax. 2. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 3. Boost the TX Level of sender's machine. 4. Boost the machine TX Level.

Error code: 0019
Definition: Received DCN signal sending CFR signal
Solution: 1. Ask sender to resend the fax. 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 001A
Definition: No energy on line over 6 sec. within phase C before any corrected ECM frame.
Solution: 1. Ask the sender to resend the fax. 2. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 3. Change the machine setting to ECM OFF, and then resend again. 4. Boost the TX Level of sender's machine.

Error code: 001D
Definition: Detect flag but nothing after CFR.
Solution: 1. Ask the sender to resend the fax. 2. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 3. Boost the TX Level of sender's machine.

Error code: 0020
Definition: Can't correct frame within 6 sec. Or in no-ECM mode, one decoding line over 6 sec.
Solution: 1. Ask the sender to resend the fax. 2. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 3. Boost the TX Level of sender's machine.

Error code: 0021
Definition: File full.
Solution: 1. Print out the receiving data stored in the fax memory or delete the unnecessary data. 2. Execute MEMORY CLEAR. 3. Reboot the printer.

Error code: 0022
Definition: Owing to noise interference on the line, receiving side can't receive correct data within specified time (no ECM).
Solution: 1. Ask the sender to resend the fax. 2. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 3. Boost the TX Level of sender's machine. 4. Boost the machine TX Level.<*1>.

Error code: 002A
Definition: Line Problem.
Solution: 1. Check whether the telephone line is connected correctly. 2. Check that the dialing number is correct. 3. Check that the dial type setting (DTMF/PULSE) is applicable for the telephone network system. 4. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 5. Adjust the SOFT SW07[8] to “0”, and disable the dial tone detect before dial.

Error code: 0030
Definition: Can't receive any signal within 6 second at phase D.
Solution: 1. Ask the sender to resend the fax. 2. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 3. Boost the TX Level of sender's machine. 4. Boost the machine TX Level.<*1>.

Error code: 0031
Definition: Received incorrect signal at phase D (not EOP, MPS,EOM,DCS PPS_Q, PPS_Q, etc.).
Solution: Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0032
Definition: Can't receive carrier within 6 seconds after sending MCF. Or RTP, RTN signal.
Solution: 1. Ask the sender to resend the fax. 2. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 3. Boost the TX Level of sender's machine. 4. Boost the machine TX Level.<*1>. 5. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0039
Definition: In non-ECM mode, when machine already received the data but next line data doesn't receive within 13.1 seconds.
Solution: 1. Ask the sender to resend the fax. 2. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 3. Boost the TX Level of sender's machine

Error code: 003F
Definition: Remote side TSI not define in machine one touch or speed dial directory.
Solution: 1. Register the remote side telephone number in ONE TOUCH DIAL LIST or SPEED DIAL LIST of machine. 2. Print out the ONE TOUCH DIAL LIST and SPEED DIAL LIST to confirm that the registered telephone number is the same as the coming sender's number.

Error code: 0040
Definition: Can't receive carrier within 6 sec. After sending CTR.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Print out the protocol report, and provide it to Technical Support for analysis. 3. Boost the TX Level of sender's machine.

Error code: 0041
Definition: Can't receive carrier within 6 sec. After sending PPR.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Print out the protocol report, and provide it to Technical Support for analysis. 3. Boost the TX Level of sender's machine.

Error code: 0043
Definition: Receive incorrect signal at phase D in ECM mode.
Solution: 1. Change the machine setting to ECM OFF, and then ask sender resend again. 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0044
Definition: Can't receive carrier /FSK signal within 6 sec. After sending MCF. In ECM mode.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Change the machine setting to ECM OFF, and then ask sender resend again. 3. Boost the TX Level of sender's machine. 4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0045
Definition: Can't receive any correct signal after sending RNR response with ERR signal.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Print out the protocol report, and provide it to Technical Support for analysis. 3. Boost the TX Level of sender's machine.

Error code: 0046
Definition: Receive incorrect signal when sending RNR which response with ERR signal.
Solution: Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0047

Definition: Can't receive correct signal after sending ERR signal.

Solution:

1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider.
2. Print out the protocol report, and provide it to Technical Support for analysis.
3. Boost the TX Level of sender's machine.

Error code: 0048

Definition: Can't receive correct signal after receive PPS_PRI_Q or PRI_Q,EOR_PRI_Q.

Solution:

1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider.
2. Print out the protocol report, and provide it to Technical Support for analysis.
3. Boost the TX Level of sender's machine

Error code: 0049

Definition: Can't receive correct signal after sending PIP/PIN signal within 13 sec.

Solution:

1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider.
2. Print out the protocol report, and provide it to Technical Support for analysis.
3. Boost the TX Level of sender's machine.

Error code: 004A

Definition: Line energy over threshold last 60 sec. After MCF, and can not detect FSK or carrier signal in ECM mode.

Solution:

1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider.
2. Change the machine setting to ECM OFF, and then ask sender resend again.
3. Reduce the TX Level of sender's machine.
4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 004B
Definition: Can't detect correct FSK signal even through detected FSK tone within 6 sec.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Print out the protocol report, and provide it to Technical Support for analysis. 3. Boost the TX Level of sender's machine.

Error code: 004C
Definition: Handshake fail during re-train or between page in V34 RX.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Change the machine setting to ECM OFF, and then ask sender resend again. 3. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 004E
Definition: Receive DCN signal after sending DIS in V.34.
Solution: 1. Ask the sender to resend the fax. 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 004F
Definition: Remote side disconnected after sending ANSam in V.8 phase.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Change the machine setting to ECM OFF, and then ask sender resend again. 3. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0050
Definition: Remote side disconnected after sending ANSam in V.8 phase.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Change the machine RX speed to V.17, and then ask sender resend again. 3. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0051
Definition: Can't receive phase 3 signal after phase 2 within 20 seconds in V.34.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Change the machine setting to ECM OFF, and then ask sender resend again. 3. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0052
Definition: Can't receive phase 4 signal after phase 3 within 20 seconds in V.34.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Change the machine TX speed to V.17, and then ask sender resend again. 3. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0054
Definition: Remote side disconnected after phase 4 in V.8.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Change the machine RX speed to V.17, and then ask sender resend again. 3. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0055

Definition: Receive incorrect signal after sending DIS signal in V.34.

Solution:

1. Change the machine RX speed to V.17, and then ask sender to resend.
2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0056

Definition: Modem disconnect after sending CFR in V.34.

Solution:

1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider.
2. Change the machine RX speed to V.17, and then ask the sender to resend the fax.
3. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0058

Definition: Can't detect image signal within 6 seconds after modem enters primary phase in V.34.

Solution:

1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider.
2. Change the machine RX speed to V.17, and then ask the sender to resend the fax.
3. Change the machine setting to ECM OFF, and then ask the sender to resend the fax.
4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 005A

Definition: Modem can not detect any correct ECM frame with 3 minutes in phase C.

Solution:

1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider.
2. Change the machine setting to ECM OFF, and then ask the sender to resend the fax.
3. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 005B
Definition: Can't detect phase 5 signal after primary channel within 6 seconds.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 005C
Definition: Detect busy tone within control channel after phase C.
Solution: 1. Ask the sender to resend the fax. 2. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 3. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 005D
Definition: Modem can not detect any correct ECM frame with 12 Sec in phase C.
Solution: 1. Ask the sender to resend the fax. 2. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 3. Change the machine setting to ECM OFF, and then ask the sender to resend the fax. 4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 005E
Definition: Can't detect control channel signal after received RCP frame within 6 seconds.
Solution: 1. Ask the sender to resend the fax. 2. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 3. Boost the TX Level of sender's machine. 4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0060
Definition: There are no any bulletin files to be polled in V.34.
Solution: POLLING TX is not available.

Error code: 0061
Definition: Machine cannot detect V.21 or V.8 signal with 35 seconds.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the TX Level of sender's machine. 3. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0062
Definition: Modem disconnect in phase D after pinter sending flags sequence in control channel.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the TX Level of sender's machine. 3. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0063
Definition: Can't receive any flag sequence in control channel within 6 seconds in phase D.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the TX Level of sender's machine. 3. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0064
Definition: Can't detect any control channel signal in phase D within 60 seconds even through there is still energy on the line.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the TX Level of the sender's machine. 3. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0065
Definition: Can't detect any control channel signal within 60 seconds after detecting silence in phase D.
Solution: 1. Ask the sender to resend the fax. 2. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 3. Boost the TX Level of the sender's machine. 4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0066
Definition: Can't receive T.30 signal or carrier after sending CFR in V.34.
Solution: 1. Ask the sender to resend the fax. 2. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 3. Change the machine RX speed to V.17, and then ask sender resend again. 4. Boost the TX Level of the sender's machine. 5. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0070
Definition: User pressed **Stop** key within receiving.
Solution: Ask the sender to resend the fax.

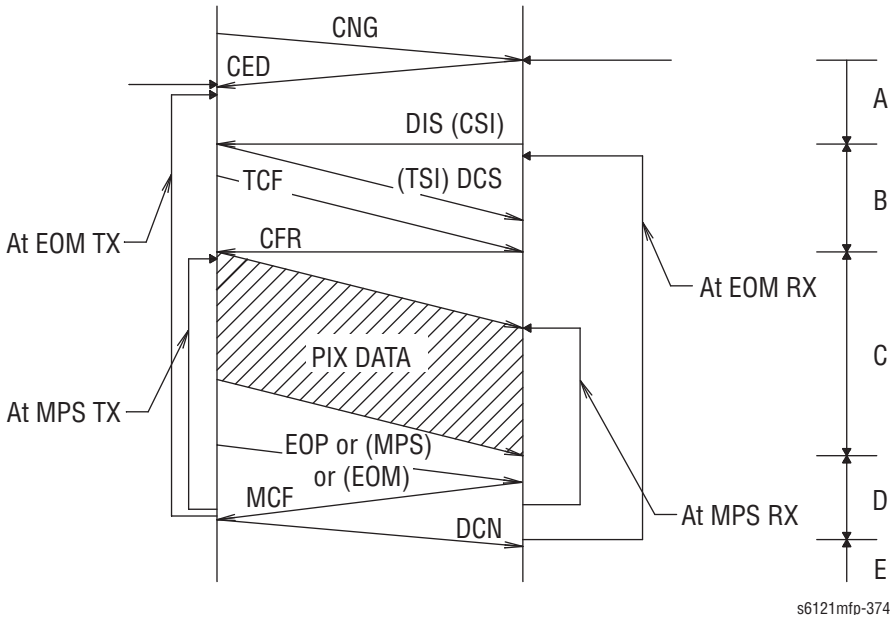
Error code: 0071
Definition: Memory full within receiving.
Solution: 1. Split the document into several copies at sender, and send them individually. 2. Print out the receiving data which was stored in the fax memory or delete the unnecessary data. 3. Reboot the machine. 4. Execute MEMORY CLEAR.

Error code: 0072
Definition: Received EOR_Q Signal.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Reduce the TX Level of sender's machine. 3. Print out the protocol report, and provide it to Technical Support for analysis.

Transmission Errors

The transmission error before “Phase-B” performs redial according to the redial interval of each country and the number of times.

The transmission error after “Phase-C” performs redial only one time. Transmission is canceled when an error occurs again.



For information on the acronyms in the illustration above, see “Common Fax Transfer Commands” on page 4-11.

Code	Possible Causes of Error
0080	Cannot detect a G3 signal within 35 seconds specified by ITU-T in phase B.
0081	Received DTC signal in transmission phase.
0082	Transmitting unit receives a signal other than DIS or DTC and DCN in phase B.
0083	Detected FSK signal, but did not receive any signal within 35 seconds.
0084	Detect DCN signal in phase B.
0085	Transmitting unit sending DCS 3 times consecutively, but each time responds with DIS/DTC.
0086	Detected responds signal other than DTC, DIS, FTT, DCN or CFR after sending DCS.
0087	Training attempt has failed because speed of the unit can not adjust to lower speed.
0088	Received DCN signal after sending out DCS signal.
008B	Receiver’s protocol of DIS is received, but it is not compatible with this machine.

Code	Possible Causes of Error
008D	Receiver's protocol of DIS is received, but remote side can not receive documents temporarily. This can be caused by out of paper condition or other reason.
008E	Remote side CSI number not defined in machine one touch or speed dial directory.
008F	Modem not ready to receive V.34 data within 6 seconds after received CFR signal.
0090	Called side document not ready for polling.
0091	Sending DCS+TCF signal 3 times consecutively but no signal in response from receiver.
0092	Remote side disconnected within transmitting phase.
0093	Received DCN signal after sending out DCS signal for V.34.
0094	Time out during transmit ECM frame or RCP command.
0095	Wrong ID number when Polling RX.
0099	Remote side disconnect after primary channel.
009A	Cannot detect any signal after sending CI signal.
009C	Received DCN after sending DTC in V.34 polling RX.
009D	Remote side hang up before V.34 modem enter phase 2 state in V.34 polling RX.
009F	No response received from other side after sending PPS_EOM signal.
00A0	User stopped or canceled transmission job.
00A1	Document jam within transmission.
00AE	Cannot finish V.8 procedure or detect V.21 signal within 30 seconds after CM signal.
OOAF	Modem can not enter into control channel after TX side sending RCP signal for V.34.
00B0	No command received after resending DCS signal in V.34 TX.
00B1	Cannot finish V.8 procedure or detect V.21 signal within 35 seconds after ANSam signal.
00B2	Cannot detect phase 2 signal within 30 seconds after sending CJ signal.
00B3	Cannot detect correct V.21 or JM signal after sending CM signal.
00B4	Cannot detect correct phase 2 signal within 25 seconds after CM/JM signal exchange.
00B5	Cannot detect phase 3 signal within 25 seconds after phase 2.
00B6	Cannot detect phase 4 signal within 25 seconds after CM/JM exchange.
00B7	Cannot detect phase 5 signal within 30 seconds after phase 4.
00B8	Remote side disconnect after sending DCS signal in V.34.
00B9	Receive T.30 signal other than DIS, DCS, CFR after sending DCS signal in V.34.

Code	Possible Causes of Error
00BA	Did not receive correct signal after sending DTC signal in V.34.
00BB	DIS signal received after sending DTC in V.34.
00BC	Modem is not ready within 10 seconds after entering primary channel in V.34.
00BD	Cannot detect correct V.21 or JM signal after detected FSK frequency.
00BE	Remote side has no document to be polled after V8 handshaking.
00BF	Capability mismatch.
00C0	Remote side disconnect before entering primary channel in V.34.
00C1	At phase D, transmitting units out EOP 3 times consecutively, but receive no answer from receiving unit.
00C2	Remote side disconnect after sending out V.8 CM signal.
00C4	After sending MPS signal, the received signal is not one of MCF, RTN, PIP, PIN, RTP, or DCN.
00C5	Received DCN signal after sending MPS signal.
00C9	At phase D, sending MPS 3 times consecutively, but no answer from receiving unit.
00CA	After sending EOP signal, the received is not one of MCF, RTN, PIP, PIN, PRI-EOP, or DCN.
00CB	After sending EOP signal, received DCN signal.
00CC	After sending EOM signal, the received signal is not one of MCF, RTN, PIP, PIN, RTP, or DCN.
00CD	At phase D, transmitting EOM 3 times consecutively, but receive no answer.
00CE	At phase-D, transmitting EOM, but receive DCN.
00CF	Received incorrect signal after sending DTC signal for V.34 polling.
00D0	Received ERR signal after sending EOR_NULL.
00D1	Received incorrect response after sending PPS_EOP signal in V.34.
00D2	Received DCN after sending PPS_EOP signal.
00D3	Received DCN after sending PPS_NULL signal.
00D4	Received DCN after sending PPS_EOM signal.
00D8	Cannot detect correct phase 3 signal for polling within 25 seconds.
00D9	Cannot detect correct phase 3 signal after detect silence after phase 2.
00DA	Can not detect phase 4 signal within 30 seconds or remote side hang up over 6 seconds.
00DB	Cannot detect any T.30 signal within 15 seconds during phase 4.
00DC	Received T.30 signal in phase 4 other than DCS, DIS or DTC.
00DE	Remote side no SUB capability in V.34.
00E0	At phase-D, transmitting PPS_NULL 3 times consecutively but receive no answer.

Code	Possible Causes of Error
00E1	Received incorrect response after sending PPS_NULL.
00E2	Received no response in RR response procedure after sending PPS_NULL.
00E4	At phase-D, transmitting PPS_MPS 3 times consecutively but receive no answer.
00E5	Received incorrect response after sending PPS_MPS.
00E6	Received no response in RR response procedure after sending PPS_MPS.
00E7	Received DCN after sending PPS_MPS.
00E8	At phase-D, transmitting PPS_EOP 3 times consecutively but receive no answer.
00E9	Receive PIN signal after sent last page three times.
00EA	Did not receive a response in RR response procedure after sending PPS_EOP.
00EB	At phase-D, transmitting PPS_EOM 3 times consecutively but receive no answer.
00EC	Received incorrect response after sending PPS_EOM.
00ED	Did not receive a response in RR response procedure after sending PPS_EOM.
00EE	At phase-D, transmitting EOR_NULL 3 times consecutively but receive no answer.
00EF	Received incorrect response after sending EOR_NULL.
00F0	Did not receive a response procedure after sending EOR_NULL.
00F1	At phase-D, transmitting EOR_MPS 3 times consecutively but receive no answer.
00F2	Received incorrect response after sending EOR_MPS.
00F3	Received ERR signal after sending EOR_MPS.
00F4	Did not receive a response in RR response procedure after sending EOR_MPS.
00F5	At phase-D, transmitting EOR_EOP 3 times consecutively but receive no answer.
00F6	Received incorrect response after sending EOR_EOP.
00F7	After Received ERR, no response received after sending EOR_EOP command.
00F8	At phase-D, transmitting EOR_EOM 3 times consecutively but receive no answer.
00F9	Received incorrect response after sending EOR_EOM.
00FA	Received ERR signal after sending EOR_EOM.
00FB	No response received in RR response procedure after sending EOR_EOM.
00FC	No response received after sending CTC.

Code	Possible Causes of Error
00FD	Cannot speed down to lower speed in ECM mode.
00FE	Memory full for transmission.
00FF	Redial failed.

Transmission Error Troubleshooting

<*1> in the following tables indicate that the adjustment is in the Service Mode. For instructions on entering Service Mode, see page 6-2.

Error code: 0080
Definition: Can't detect any G3 signal within 35 sec. specified by ITU-T in phase B.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0081
Definition: Received DTC signal in transmission phase.
Solution: Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0082
Definition: Transmitting unit receives a signal other than DIS or DTC. And DCN in phase B.
Solution: Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0083
Definition: Detected FSK signal, but can't receive any signal within 35 seconds.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the TX Level of sender's machine. 3. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0084
Definition: Detect DCN signal in phase B.
Solution: 1. Ask the sender to resend the fax. 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0085
Definition: Transmitting unit sending DCS 3 times consecutively, but each time responds with DIS/DTC.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the machine TX Level.<*1>

Error code: 0086
Definition: Detected response signal other than DTC, DIS, FTT, DCN or CFR after sending DCS.
Solution: Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0087
Definition: Training attempt has failed because speed unit cannot adjust to low lower speed.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the machine TX Level.<*1> 3. Adjust the SOFT SW12[6-7] to “11”, while receiving 4 PPR, the speed will down. 4. Change the machine TX speed to V.17, then resend again. 5. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0088
Definition: Received DCN signal after sending out DCS signal.
Solution: 1. Resend the fax 2. Register the telephone number in the printer. 3. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 008B
Definition: Receiver's protocol of DIS is received, but it is not compatible with our machine.
Solution: 1. Change the machine TX speed to V.33.6, then resend again. 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 008D
Definition: Receiver's protocol of DIS is received, but remote side can't receive document temporarily, may be cause by run out of paper or other reason.
Solution: 1. Contact the recipient, and ask that the machine be refilled with paper. 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 008F
Definition: Modem not ready to receive V.34 data within 6 seconds after received CFR signal.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Change the machine TX speed to V.17, then resend again. 3. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0091
Definition: Sending out DCS+TCF signal 3 times consecutively but no signal in response from receiver.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the TX Level of sender's machine.<*1> 3. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0093
Definition: Received DCN signal after sending out DCS signal for V.34.
Solution: 1. Resend the fax. 2. Register the telephone number in the printer. 3. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 0094
Definition: Time out during transmit ECM frame or RCP command.
Solution: 1. Change the machine setting to ECM OFF, then resend again. 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 009A
Definition: Can't detect any signal after sending CI signal.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the TX Level of sender's machine. 3. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 009F
Definition: No response received from other side after sending PPS_EOM signal.
Solution: 1. Resend the fax. 2. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 3. Boost the machine TX Level.<*1> 4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00A0
Definition: User stopped or canceled the transmission job.
Solution: Resend the fax.

Error code: 00A1
Definition: Document jam within transmission.
Solution: Clear the jam, and then resend the fax.

Error code: 00AE
Definition: Can't finish V.8 procedure or detect V.21 signal after CM signal within 30 seconds.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the machine TX Level.<*1> 3. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00AF

Definition: Modem can not enter into control channel after TX side sending RCP signal for V.34.

Solution:

1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider.
2. Boost the machine TX Level.<*1>
3. Change the machine TX speed to V.17, and then resend.
4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00B1

Definition: Can't finish V.8 procedure or detect V.21 signal after ANSam signal within 35 seconds.

Solution:

1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider.
2. Boost the machine TX Level.<*1>
3. Change the machine TX speed to V.17, and then resend.
4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00B2

Definition: Can't detect phase 2 signal after our side sending CJ signal within 30 seconds.

Solution:

1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider.
2. Boost the machine TX Level.<*1>
3. Change the machine TX speed to V.17, and then resend.
4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00B3

Definition: Can't detect correct V.21 or JM signal after sending CM signal.

Solution:

1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider.
2. Boost the machine TX Level.<*1>
3. Change the machine TX speed to V.17, and then resend.
4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00B4
Definition: Can't detect correct phase 2 signal within 25 second after CM/JM signal exchange.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the machine TX Level.<*1> 3. Change the machine TX speed to V.17, and then resend. 4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00B5
Definition: Can't detect phase 3 signal after PHASE 2 within 25 seconds.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the machine TX Level.<*1> 3. Change the machine TX speed to V.17, and then resend. 4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00B6
Definition: Can't detect phase 4 signal within 25 seconds after CM/JM exchange.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the machine TX Level.<*1> 3. Change the machine TX speed to V.17, and then resend. 4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00B7
Definition: Can't detect phase 5 signal after phase 4 within 30 seconds.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the machine TX Level.<*1> 3. Change the machine TX speed to V.17, and then resend. 4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00B8
Definition: Remote side disconnect after our side sending DCS signal in V.34.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the machine TX Level.<*1> 3. Change the machine TX speed to V.17, and then resend. 4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00B9
Definition: Receive T.30 signal other than DIS, DCS, CFR after sending DCS signal in V.34.
Solution: 1. Change the machine TX speed to V.17, then resend again. 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00BC
Definition: Modem is not ready within 10 second after entering primary channel in V.34.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the machine TX Level.<*1> 3. Change the machine TX speed to V.17, and then resend. 4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00BD
Definition: Can't detect correct V.21 or JM signal after detected FSK frequency.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the TX Level of sender's machine. 3. Change the machine TX speed to V.17, and then resend. 4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00BF
Definition: Capability no match.
Solution: 1. Change the machine TX speed to V.17, and then resend. 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00C0
Definition: Remote side disconnect before entering primary channel in V.34.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Resend the fax. 3. Change the machine TX speed to V.17, and then resend. 4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00C1
Definition: At phase-D, transmitting units out EOP 3 times consecutively, but receive no answer from receiving unit.
Solution: 1. Resend the fax 2. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 3. Set SOFT SW21[5] to “1”(T4 timer=4.5 sec.). 4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00C2
Definition: Remote side disconnect after sending out V.8 CM signal.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Resend the fax. 3. Change the machine TX speed to V.17, and then resend. 4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00C4
Definition: After sending MPS signal, the received signal is not one of MCF, RTN, PIP, PIN, RTP, or DCN.
Solution: 1. Set SOFT SW21[5] to “1”(T4 timer=4.5 sec.). 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00C5
Definition: Received DCN signal after sending MPS signal.
Solution: 1. Resend the fax. 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00C9
Definition: At phase-D, sending MPS 3 times consecutively, but no answer from receiving unit.
Solution: 1. Resend the fax 2. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 3. Boost the TX Level of sender's machine. 4. Adjust the SOFT SW02[7-8] to “01” or “10” or “11”, then resend it again. 5. Set SOFT SW21[5] to “1”(T4 timer=4.5 sec.) 6. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00CA
Definition: After sending EOP signal, the received is not one of MCF, RTN, PIP, PIN, PRI-EOP, DCN.
Solution: 1. Resend the fax 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00CB
Definition: After sending EOP signal, the received is DCN signal.
Solution: 1. Resend the fax 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00CC
Definition: After sending EOM signal, the received is not one of MCF, RTN, PIP, PIN, RTP, or DCN.
Solution: Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00CD
Definition: At phase-D, transmitting units out EOM 3 times consecutively, but no answer received.
Solution: 1. Resend the fax 2. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 3. Boost the TX Level of sender's machine. 4. Adjust the SOFT SW02[7-8] to “01” or “10” or “11”, and then resend. 5. Set SOFT SW21[5] to “1”(T4 timer=4.5 sec.). 6. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00CE
Definition: At phase-D, transmitting units out EOM, but receive DCN.
Solution: 1. Resend the fax. 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00D0
Definition: Received ERR signal after sending EOR_NULL.
Solution: Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00D1
Definition: Received incorrect response after sending PPS_EOP signal in V.34.
Solution: 1. Change the machine TX speed to V.17, and then resend. 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00D2
Definition: Received DCN after sending PPS_EOP signal.
Solution: Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00D3
Definition: Received DCN after sending PPS_NULL signal.
Solution: Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00D4
Definition: Received DCN after sending PPS_EOM signal.
Solution: Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00D9
Definition: Can't detect correct phase 3 signal after detecting silence after phase 2.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the machine TX Level.<*1> 3. Change the machine TX speed to V.17, and then resend. 4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00DA
Definition: Can't detect phase 4 signal within 30 seconds or remote side hang up over 6 seconds.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the machine TX Level.<*1> 3. Change the machine TX speed to V.17, and then resend. 4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00DB
Definition: Didn’t receive any T.30 signal within 15 seconds in phase 4.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the machine TX Level.<*1> 3. Change the machine TX speed to V.17, and then resend. 4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00DC
Definition: Received T.30 signal in phase 4 other than DCS, DIS or DTC.
Solution: 1. Change the machine TX speed to V.17, and then resend. 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00E0
Definition: At phase-D, transmitting PPS_NULL 3 times consecutively but receive no answer.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the TX Level of sender's machine. 3. Boost the machine TX Level.<*1> 4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00E1
Definition: Received incorrect response after sending PPS_NULL.
Solution: 1. Resend the fax. 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00E2
Definition: No response received in RR response procedure after sending PPS_NULL.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the TX Level of sender's machine. 3. Boost the machine TX Level.<*1> 4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00E4
Definition: At phase-D, transmitting units out PPS_MPS 3 times consecutively but receive no answer.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the TX Level of sender's machine. 3. Boost the machine TX Level.<*1> 4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00E5
Definition: Received incorrect response after sending PPS_MPS.
Solution: 1. Resend the fax 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00E6
Definition: Received no response in RR response procedure after sending PPS_MPS.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the TX Level of sender's machine. 3. Boost the machine TX Level.<*1> 4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00E7
Definition: Received DCN after sending PPS_MPS.
Solution: Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00E8
Definition: At phase-D, transmitting PPS_EOP 3 times consecutively but receive no answer.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Boost the TX Level of sender's machine. 3. Boost the machine TX Level.<*1> 4. Set SOFT SW21[5] to “1”(T4 timer=4.5 sec.). 5. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00E9
Definition: Receive PIN signal after sent last page three times.
Solution: Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00EA

Definition: No response received in RR response procedure after sending PPS_EOP.

Solution:

1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider.
2. Boost the TX Level of sender's machine.
3. Boost the machine TX Level.<*1>
4. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00EB

Definition: At phase-D, transmitting units out PPS_EOM 3 times consecutively but receive no answer.

Solution:

1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider.
2. Change the machine setting to ECM OFF, and then resend.
3. Boost the TX Level of sender's machine.
4. Boost the machine TX Level.<*1>
5. Set SOFT SW21[5] to “1”(T4 timer=4.5 sec.).
6. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00EC

Definition: Received incorrect response after sending PPS_EOM.

Solution:

1. Change the machine setting to ECM OFF, and then resend.
2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00ED

Definition: No response received in RR response procedure after sending PPS_EOM.

Solution:

1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider.
2. Change the machine setting to ECM OFF, and then resend.
3. Boost the TX Level of sender's machine.
4. Boost the machine TX Level.<*1>
5. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00EE

Definition: At phase-D, transmitting EOR_NULL 3 times consecutively but receive no answer.

Solution:

1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider.
2. Change the machine setting to ECM OFF, and then resend.
3. Boost the TX Level of sender's machine.
4. Boost the machine TX Level.<*1>
5. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00EF

Definition: Received incorrect response after sending EOR_NULL.

Solution:

1. Change the machine setting to ECM OFF, and then resend.
2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00F0

Definition: Did not receive a response procedure after sending EOR_NULL.

Solution:

1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider.
2. Change the machine setting to ECM OFF, and then resend.
3. Boost the TX Level of sender's machine.
4. Boost the machine TX Level.<*1>
5. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00F1

Definition: At phase-D, transmitting units out EOR_MPS 3 times consecutively but receive no answer.

Solution:

1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider.
2. Change the machine setting to ECM OFF, and then resend.
3. Boost the TX Level of sender's machine.
4. Boost the machine TX Level.<*1>
5. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00F2
Definition: Received incorrect response after sending EOR_MPS.
Solution: 1. Resend the fax. 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00F3
Definition: Received ERR signal after sending EOR_MPS.
Solution: 1. Change the machine setting to ECM OFF, and then resend. 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00F4
Definition: No response received in RR response procedure after sending EOR_MPS.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Change the machine setting to ECM OFF, and then resend. 3. Boost the TX Level of sender's machine. 4. Boost the machine TX Level.<*1> 5. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00F5
Definition: At phase-D, transmitting units out EOR_EOP 3 times consecutively but receive no answer.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Change the machine setting to ECM OFF, then resend again. 3. Boost the TX Level of sender's machine. 4. Boost the machine TX Level.<*1> 5. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00F6
Definition: Received incorrect response after sending EOR_EOP.
Solution: 1. Change the machine setting to ECM OFF, then resend again. 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00F7
Definition: After Received ERR, no response received after sending EOR_EOP command.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Change the machine setting to ECM OFF, and then resend. 3. Boost the TX Level of sender's machine. 4. Boost the machine TX Level.<*1> 5. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00F8
Definition: At phase-D, transmitting units out EOR_EOM 3 times consecutively but receive no answer.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Change the machine setting to ECM OFF, and then resend. 3. Boost the TX Level of sender's machine. 4. Boost the machine TX Level.<*1> 5. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00F9
Definition: Received incorrect response after sending EOR_EOM.
Solution: 1. Change the machine setting to ECM OFF, and then resend. 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00FA
Definition: Received ERR signal after sending EOR_EOM.
Solution: 1. Change the machine setting to ECM OFF, and then resend. 2. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00FB
Definition: No response received in RR response procedure after sending EOR_EOM.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Change the machine setting to ECM OFF, and then resend. 3. Boost the TX Level of sender's machine. 4. Boost the machine TX Level.<*1> 5. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00FC
Definition: No response received after sending CTC.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Change the machine setting to ECM OFF, and then resend. 3. Boost the TX Level of sender's machine. 4. Boost the machine TX Level.<*1> 5. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00FD
Definition: Can't speed down to lower speed in ECM mode.
Solution: 1. Check the phone line for noise, and if necessary, replace the telephone line or contact your Telecom Service Provider. 2. Change the machine setting to ECM OFF, and then resend. 3. Boost the TX Level of sender's machine. 4. Boost the machine TX Level.<*1> 5. Adjust the SOFT SW12[6-7] to “11”, while receiving 4 PPR, the speed will down. 6. Print out the protocol report, and provide it to Technical Support for analysis.

Error code: 00FE
Definition: Memory full for transmission.
Solution: 1. Split the document into several copies, and send them individually. 2. Print out the receiving data which was stored in the fax memory or delete the unnecessary data. 3. Reboot the machine. 4. Execute MEMORY CLEAR.

Error code: 00FF
Definition: Redial failed.
Solution: 1. Check whether the dialing number is correct or not. 2. Check whether the telephone line is connected correctly or not. 3. Faxing by Manual TX. 4. Check that the machine setting matches the switchboard. 5. Adjust the SOFT SW07[8] to “0”, disable the dial tone detect before dial. 6. Adjust the SOFT SW21[1-2] to “11”, increase T1 time. 7. Adjust the SOFT SW15[6-8] to “000” or “001” or “010” or “101”, to match the switchboard environment.

Other Error/Warning Messages

These are errors that require customers to do some corrective action. Some require user intervention to continue printing.

Message	Description
Toner not installed Install CMYK toner	The indicated toner cartridge(s) is missing.
Toner empty Replace CMYK toner	The indicated toner cartridge(s) is empty.
Toner life end Replace CMYK toner	The indicated toner cartridge(s) is at end of life and should be replaced.
Invalid Toner Replace with correct toner and press OK	Indicates a non Xerox toner cartridge is installed.
Imaging Unit life at end of life. Replace Imaging Unit	The Imaging Unit is at end of life.
Memory file full (Press any key)	Memory is full. Clear/print saved fax jobs.

Message	Description
Paper size error Load ( ) paper	Paper size error in printing.
Output tray full Remove output paper	The Output Tray is filled to capacity.
Tray2 open Close Tray2	The 500-sheet feeder tray is open.
Tray2 empty Load ( ) paper	The 500-sheet feeder tray is empty.
Top cover open Close top cover	The top cover is open.
Duplex cover open Close duplex cover	The Duplex Unit cover is open.
Reproduction of this original may be prohibited. Please check the original.	This error occurs when the printer detects that it is scanning currency.
Fax request ( ) Load ( ) paper (Press any key)	A Fax job specifying a specific paper type/size has been requested. Load the appropriate paper to continue.
Phone line in use Check the handset	The fax line is in use.
Phone line problem Check phone line (Press any key)	Fax line problem.
Redials failed Please resend (Press any key)	The specified number of redials failed to successfully complete the fax job.
Fax data lost	Fax data was lost. Retry sending the fax job.
Memory full Unable to scan/fax (Press any key)	The memory is full and the printer is unable to scan or fax.
Memory file full Unable to scan/fax (Press any key)	Memory is full. Clear/print saved fax jobs.
Job cancelled (Press any key)	The job was cancelled.
Unable to connect *xxxx* Server (Press any key)	The printer was unable to connect to the server. Where *xxxx* can be SMTP, POP3, DNS, SMS, or LDAP.
FTP server error	An error occurred at the server.
SMB server error (Press any key)	An error occurred at the server.
Incorrect password for *xxxx* Server (Press any key)	The password specified for *xxxx* server is incorrect. Where *xxxx* can be SMTP, POP3, LDAP, FTP, or SMB.

Message	Description
Memory full at SMTP Server (Press any key)	The SMTP server's memory is full.
USB memory full Scan to USB memory (Press any key)	The USB memory is full.
Unable to resolve IP for *xxxx* Server (Press any key)	The specified IP address for the server cannot be resolved. Where *xxxx* can be SMTP, POP3, LDAP, or FTP.
Communication error with *xxxx* Server (Press any key)	A communication error occurred with the specified server. Where *xxxx* can be SMTP, FTP, SMB, or USB.
Connection failed with host (Press any key)	The connection with the host failed.
Disconnected from *xxxx* Server (Press any key)	The printer lost connection with the server. Where *xxxx* can be SMTP, POP3, DNS, FTP, SMB, or LDAP.
Disconnected from USB memory (Press any key)	The printer lost connection with the USB memory.
No suitable paper Load ( ) paper	The paper type required for the job needs to be loaded.
Remove original in document feeder	This error occurs when there is an original in the ADF, but the job calls for flatbed scanning.
No suitable paper Check duplex setting	
Reload 12 original into Document Feeder and press OK key	An error occurred that requires the originals to be reloaded.
Recipient memory is full, cannot accept fax or Email	The recipient machine memory is full and cannot currently accept fax or email.
Manual input is limited to 16 fax recipients	Group dial can be set to 50 destinations by CWIS, but at the Control Panel a maximum of 15 address can be specified.
Duplicate setting	This error occurs when a duplicate Scan or Fax Address entry is made.
TCP/IP is disabled	The functionality is disabled.
No Email Server	This error occurs when the email server doesn't respond. Verify that the SMTP settings are correct.
FTP is disabled	The functionality is disabled.
SMB is disabled	The functionality is disabled.
SMTP is disabled	The functionality is disabled.
Fax Comm Error	A communication error occurred during the fax job.

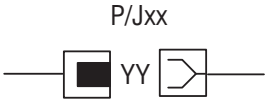
Message	Description
Memory near full	A memory near full condition currently exists.
Mem. full. Cancel TX?	A memory near full condition exists, and the printer is prompting you to cancel the fax job.
Communication error with POP3 server	A communication error occurred with the POP3 server.
Cannot find restore file. Please check USB memory.	This error occurs when trying to restore the Fax Address Book via USB. The error is generated if a Address book file is not found on USB drive.
Process error - Belt Open and close cover	
Process error - IDC Open and close cover	

Using the Troubleshooting Procedures

1. **Applicable Status Code(s)** lists the error message(s) addressed by each troubleshooting procedure.
2. **Applicable Parts** and **Wiring and Plug/Jack References** assist you in locating information available for a particular part or procedure.
3. Follow each **step** in a troubleshooting procedure sequentially in the order given until the problem is fixed or resolved.
4. The **Actions and Questions** box instructs you to perform a certain action or procedure. Also included are precautions and/or additional procedures you must follow to isolate the problem.
5. Some actions are followed by a question. If your response to the question is **Yes**, then follow the instructions for a **Yes** reply. If your response to the question is **No**, then follow the instructions for a **No** reply.
6. Note that two types of photo sensors are used: photo-reflective and photo-receptive. Photo-reflective sensors use light reflected back from an object to detect its presence or absence. Photo-receptive sensors use an actuator or the object itself to block the light path to detect an object or condition.
7. Troubleshooting procedures frequently ask you to take voltage readings or test for continuity or resistance at certain test points. The **Wiring and Plug/Jack References** table provides pointers to the diagrams that provide this information.
8. Troubleshooting procedures often ask you to replace a printer component. When instructed to replace a non-spared component and that component is part of a parent assembly, replace the entire parent assembly.

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 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 Diagrams” for the location of all wiring harnesses and pins.
5. When you are instructed to run a test, run the Service Diagnostics test associated with the component being examined.
6. 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.
7. Before measuring voltages make sure the printer is switched On, the Imaging Unit and the paper trays are in place, and the interlock switch is actuated, unless a troubleshooting procedure instructs otherwise.
8. 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

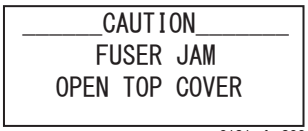
gating (a voltage drop) occurs during component actuation. Gating signals can be nothing more than a pulse, resulting in a momentary drop in voltage that can be difficult or impossible to read on the average multi-meter.

9. 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.
10. Ensure that you are using a supported media size and type, refer to “Printer Specifications” on page 1-11.
11. 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 section “Plug/Jack Designations and Locator Diagrams” on page 10-2.
12. 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

Jam Error Procedures

When a jam occurs, an error message appears on the Control Panel in a form similar to the one shown below.



s6121mfp-296

Initial Actions for Jam Errors

Some initial steps to take when evaluating repeated jams:

1. Clear the paper path of any jams and paper debris.
2. Make every attempt to establish a jam rate prior to starting any work. If possible print an Error History Report and note the page count between jams.
3. Determine if jamming is occurring in one tray but not another. This helps to identify any dirty or defective parts.
4. Clean the Feed and Retard Rollers in the paper tray and tray slot using a slightly damp (water only) lint free cloth.
5. Ask the customer about the paper types being used. If not on the recommended list, determine if this is contributing to the problem. See “Media and Tray Specifications” on page 1-15.
   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.
6. Ensure the correct tray loading and setup procedures are followed (securing the guides, selecting the correct paper type, fanning the paper, etc.)
7. Make sure the printer is plugged directly into an electrical outlet. Using extension cords or a power strip is not recommended.
8. Verify that the printer is operating within standard environmental specifications:
   - The temperature is 10 to 35° C (50 to 95° F).
   - Relative humidity is 10 to 85 %.

   If the printer is operating in an environment that is outside of these conditions, jam errors can occur more frequently. You can move the printer to another location, or correct the environment that the printer operates in.
9. Cycle printer power, and if the problem persists, follow the troubleshooting procedure.

Jam Errors

This table lists the jam errors.

Jam Error Summary

Message	Misfeed Location	Misfeed processing location	Go to
Main Print Engine			
Check Tray1 paper Load paper or remove top sheet. (Press Start key) to continue	Tray1 media feed section	Top cover	page 3-58
Jam at Transfer Open top cover and remove Imaging Unit clear jammed paper close top cover	Transfer Roller	Top cover	page 3-59
Jam at Fuser Open top cover clear jammed paper	Fuser	Top cover	page 3-61
Jam at Output tray Open Top cover	Exit section	Top cover	page 3-63
Automatic Document Feeder Jams			
Original Doc. Jam Open Doc. Feeder and clear the original. Reinsert original and press the Start key.	Document feed	ADF top cover	page 3-64
	Document transport		
	Document exit		
500-Sheet Feeder Tray			
Jam at Tray2 Clear jam and open and close cover	Tray 2 feeder	Tray2	page 3-65
Duplex Unit Jams			
Jam at Duplex Unit Open top cover and duplex unit cover (Press any key)	Switch back section	Duplex Unit door	page 3-66
Jam at Duplex Unit Open Duplex cover clear jammed paper	Duplex in transport section	Duplex Unit door	page 3-67

Jam Error Procedures

Check Tray 1 Paper

The leading edge of the media does not reach the registration sensor on time after the Tray1 feed solenoid has been energized. This is a feed error at Tray 1.

Applicable Error Code

- Check Tray1 Paper
  Load Paper
  or remove top sheet.

Initial Actions

Follow the directions in “Initial Actions for Jam Errors” on page 3-56.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Registration Sensor, PL7.2.3 ■ Tray 1 Pick-up Solenoid, PL6.0.19 ■ Engine Control Board, PL13.0.20	■ Board Locations (page 2-10) ■ Sensors and Switches (page 2-11) ■ Motors, Fans, and Solenoids (page 2-12) ■ Imaging Wiring (page 10-15) ■ Map 1 - Engine Control Board Plug/Jack Locator (page 10-5)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check the media. Is the paper damp or the incorrect media for the printer?	Replace with paper that meets the specifications for the printer. If the problem persists, go to step 2.	Go to step 2.
2	Check the Engine Control Board connectors P/J10 and P/J12. Are the connectors seated properly?	Go to step 3.	Reseat the connectors. If the problem persists, go to step 3.

Troubleshooting Procedure Table (continued)

Step	Action and Questions	Yes	No
3	Check for +5 V at P/J12-6. Is the voltage present?	Go to step 4.	Replace the Paper Path Guide Assembly page 8-98. If the problem persists, go to step 4.
4	Check for +24 V at P/J10-2. Is the voltage present?	Go to step 5.	Replace the solenoid (page 8-100). If the problem persists, go to step 5.
5	Replace the Engine Control Board (page 8-59).	Complete.	

Jam at Transfer

Detection of misfeed at 2nd transfer section For misfeed detection, the Registration Sensor (PS2) is unblocked after a specified period of time. In some cases, the 2nd Image Retraction Position Sensor (PS3) is not blocked by the paper that has moved past the position at which the sensor is blocked.

Detection of media left in 2nd transfer section For detection of paper, the Registration Sensor (PS2) is blocked when the power switch is turned ON, a cover is opened and closed, or a misfeed or malfunction is reset. In some cases, the2nd Image Retraction Position Sensor (PS3) is blocked when the power switch is turned ON, a cover is opened and closed, or a misfeed or malfunction is reset.

Applicable Error Code

- Jam at Transfer
  Open top cover and
  remove Imaging Unit
  clear jammed paper
  close top cover

Initial Actions

Follow the directions in “Initial Actions for Jam Errors” on page 3-56.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Registration Sensor (PS2), PL7.2.3 ■ 2nd Image Transfer Retraction Sensor (PS3), PL4.0.9 ■ Registration Roller Solenoid, PL9.1.21 ■ Engine Control Board, PL13.0.20	■ Board Locations (page 2-10) ■ Sensors and Switches (page 2-11) ■ Motors, Fans, and Solenoids (page 2-12) ■ Imaging Wiring (page 10-15) ■ Map 1 - Engine Control Board Plug/Jack Locator (page 10-5)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check the Engine Control connectors P/J10 and P/J12. Are the connectors seated properly?	Go to step 2.	Reseat the connectors. If the problem persists, go to step 2.
2	Check the signal at P/J12-6 on the Engine Control Board and activate the Registration Sensor. The voltage level should change between +5 V and 0 V. Is the sensor operational?	Go to step 3.	Replace the Registration Sensor (page 8-106). If the problem persists, go to step 3.
3	Check the signal at P/J12-3 on the Engine Control Board and activate the 2nd Image Transfer Retraction Position sensor. Is the sensor operational?	Go to step 4.	Replace the sensor. If the problem persists, go to step 4.
4	Check the Registration Roller Solenoid at P/J10-4, and at the same time print a page. Is the solenoid operational?	Go to step 5.	Replace the solenoid (page 8-101). If the problem persists, go to step 5.
5	Replace the Engine Control Board (page 8-59).	Complete.	

Jam at Fuser

For detection of misfeeds, the paper does not block the Exit Sensor (PS4) even after the lapse of a predetermined period of time following the activation of the Registration Roller Solenoid. In some cases, the Exit Sensor is unblocked within a predetermined period of time after it has been blocked by the paper, or the Main Motor, the Polygon Motor, and Rack Motor are energized even after the lapse of a predetermined period of time after paper information has been created.

For detection of paper left in the fusing section, the Exit Sensor is blocked when the power switch is turned ON, a cover is opened and closed, or a misfeed or malfunction is reset.

Applicable Error Code

- Jam at Fuser
  Open top cover
  clear jammed paper

Initial Actions

Follow the directions in “Initial Actions for Jam Errors” on page 3-56.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Exit Sensor, PL11.0.15 ■ Registration Roller Solenoid, PL9.1.21 ■ Image Processor Board, PL13.0.29/30 ■ Engine Control Board, PL13.0.20 ■ Fuser, PL11.0.18	■ Board Locations (page 2-10) ■ Sensors and Switches (page 2-11) ■ Motors, Fans, and Solenoids (page 2-12) ■ Map 1 - Engine Control Board Plug/Jack Locator (page 10-5) ■ Map 2 - Image Processor Board Plug/Jack Locator (page 10-6) ■ Power Supply Wiring (page 10-17) ■ Imaging Wiring (page 10-15)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check all Engine Control Board connectors. Are the connectors seated properly?	Go to step 2.	Reseat the connectors. If the problem persists, go to step 2.
2	On the Engine Control Board, check the Exit Sensor at P/J6-3 and perform a print job. The voltage level should change when the sensor is activated. Is the sensor operational?	Go to step 3	Replace the Fuser (page 8-9). If the problem persists, go to step 3.
3	Check the Registration Roller Solenoid at P/J10-4, and at the same time print a page. Is the solenoid operational?	Go to step 4.	Replace the solenoid (page 8-101). If the problem persists, go to step 4.
4	Replace the Fuser. **NOTE** If you already replaced the fuser, go to step 5. Does the problem still persist?	Go to step 5.	Complete.
5	Replace the Image Processor Board (page 8-66). Does the problem still persist?	Go to step 6.	Complete.
6	Replace the Engine Control Board (page 8-59).	Complete.	

Jam at Output Tray

For detection of misfeed, the Exit sensor is not unblocked even after the lapse of a predetermined period of time after it has been blocked by the paper.

For detection of paper left in the exit section, the Exit Sensor is blocked when the power switch is turned ON, a cover is opened and closed, or a misfeed or malfunction is reset.

Applicable Error Code

- Jam at Output tray
  Open Top cover

Initial Actions

Follow the directions in “Initial Actions for Jam Errors” on page 3-56.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Exit Sensor, PL11.0.15 ■ Engine Control Board, PL13.0.20 ■ Fuser, PL11.0.18	■ Board Locations (page 2-10) ■ Sensors and Switches (page 2-11) ■ Motors, Fans, and Solenoids (page 2-12) ■ Map 1 - Engine Control Board Plug/Jack Locator (page 10-5) ■ Power Supply Wiring (page 10-17)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check Engine Control Board P/J6 connector. Is the connector seated properly?	Go to step 2.	Reseat the connector. If the problem persists, go to step 2.
2	Replace the Fuser (page 8-9). Does the problem persist?	Go to step 3.	Complete.
3	Replace the Engine Control Board (page 8-59).	Complete.	

Original Doc. Jam

Use this procedure for all ADF jams.

Applicable Error Code

- Original Doc. Jam
  Open Doc. Feeder and
  clear the original.
  Reinsert original
  and press the Start key.

Initial Actions

Follow the directions in "Initial Actions for Jam Errors" on page 3-56.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ ADF Unit, PL1.1.6 ■ Image Processor Board, PL13.0.29	■ Image Processor Board Wiring (page 10-16)

Warning

To avoid the potential of electric shock, ensure the power to the printer is off and the power cord is disconnected from the wall outlet prior to performing each step of the following troubleshooting procedure.

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check the media specifications (page 1-15). Does the selected paper meet specifications?	Go to step 2.	Reload the printer with the proper media and go to step 2.
2	Clean the ADF Feed Roller (page 7-8). Does the problem persist? **NOTE** To check operation of the ADF, enter Service Mode, and select **Function > ADF Feed Test,** and then press **OK**. To stop the test, press the **Stop** button.	Go to step 3.	Complete.
3	Check the Image Processor Board connectors P/J1 and P/J4. Are the connectors seated properly?	Go to step 4.	Reseat the connectors. If the problem persists, go to step 4.

Troubleshooting Procedure Table (continued)

Step	Action and Questions	Yes	No
4	Replace the ADF Unit (page 8-39). Does the problem persist?	Complete.	Go to step 5.
5	Replace the Image Processor Board.	Complete.	

Check the ADF functionality with the test described in "Paper Feed Test" on page 6-31.

Jam at Tray 2

For detection of misfeed at tray 2 feed section, the leading edge of the paper does not unblock the Registration Sensor (PS2), even after the lapse of a predetermined period of time after the Feed Solenoid (SD6) has been energized.

Applicable Error Code

Jam at Tray 2
Clear jam and
open and close cover

Initial Actions

Follow the directions in "Initial Actions for Jam Errors" on page 3-56.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Registration Sensor (PS2), PL7.2.3 ■ Paper Path Guide Assembly, PL7.2.22 ■ Engine Control Board, PL13.0.20	■ Board Locations (page 2-10) ■ Engine Control Board Wiring (page 10-14)

Warning

To avoid the potential of electric shock, ensure the power to the printer is off and the power cord is disconnected from the wall outlet prior to performing each step of the following troubleshooting procedure.

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Perform a Tray 1 Paper Feed test (page 6-31). Does Tray 1 feed paper normally?	Go to step 5.	Go to step 2.
2	Clean the 500-Sheet Feeder Paper Pick-up Roller (page 7-10). Does the problem persist?	Go to step 2.	Complete.
3	Check the Engine Control Board connector P/J21. Is the connector seated properly?	Go to step 3.	Reseat the connector. If the problem persists, go to step 3.
4	On the Engine Control Board, check the Registration Sensor signal at P/J12-6. Is the sensor operational?	Go to step 4.	Replace the Registration Sensor (page 8-106). If the problem persists, go to step 4.
5	Replace the 500-Sheet Feeder (page 8-109). Does the problem persist?	Go to step 5.	Complete.
6	Replace the Engine Control Board (page 8-59).	Complete.	

Jam at Duplex Unit Open Top Cover and Duplex Unit Cover

For detection of misfeed at the Duplex Unit reverse drive/storage section, the Transport Sensor (PS15) is not unblocked even after the lapse of a predetermined period of time when the Duplex Switchback Motor has been energized for reverse drive.

Applicable Error Code

- Jam at Duplex Unit Open top cover and duplex unit cover

Initial Actions

Follow the directions in “Initial Actions for Jam Errors” on page 3-56.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Transport Sensor (PS15), PL14.1.7 ■ Duplex Unit, PL14.1 ■ Engine Control Board, PL13.0.20	■ Board Locations (page 2-10) ■ Engine Control Board Wiring (page 10-14)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Clean the Duplex Unit Transport Rollers, and if applicable, clean the Duplex Unit Attachment Feed Rollers (page 7-12). Does the problem persist?	Go to step 2.	Complete.
2	Check that the Transport Sensor (PS15) actuator functions properly and correct if necessary. Does the problem persist?	Replace the Transport Sensor (page 8-108). If the problem persists, go to step 3.	Complete.
3	Replace the Duplex Unit (page 8-110). Does the problem persist?	Go to step 4.	Complete.
4	Replace the Engine Control Board (page 8-59).	Complete.	

Jam at Duplex Unit, Open Duplex Unit Cover, Clear Jammed Paper

For the detection of a misfeed at the Duplex Unit feed section, the Paper Loop Sensor (PS13) is blocked after a predetermined period of time after a duplex feed sequence is started. Another indication could be that the Paper Loop Sensor is not blocked after a predetermined period of time after a duplex feed sequence is started.

In some cases, the Transport Sensor is not blocked even after the lapse of a predetermined period of time after a duplex feed sequence is started.

Applicable Error Code

- Jam at Duplex Unit
  Open Duplex Unit cover
  clear jammed paper

Initial Actions

Follow the directions in “Initial Actions for Jam Errors” on page 3-56.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Loop Sensor (PS13), PL14.1.7 ■ Transport Sensor (PS15), PL14.1.7 ■ Duplex Unit, PL14.1 ■ Engine Control Board, PL13.0.20	■ Board Locations (page 2-10) ■ Engine Control Board Wiring (page 10-14)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Verify the media is supported for use in Tray 2. See “Media and Tray Specifications” on page 1-15. Is the media supported?	Go to step 2.	Replace the paper with a supported paper type.
2	Check that the Duplex Unit door is able to close completely. Is it closed?	Go to step 3.	Fix the problem preventing the door from closing. If the problem persists, go to step 3.
3	Clean the Duplex Unit Transport Rollers, and if applicable, clean the Duplex Unit Attachment Feed Rollers(page 7-12). Does the problem persist?	Go to step 2.	Complete.
4	Check the Paper Loop Sensor (PS13) actuator, and then replace the sensor. Does the problem persist?	Go to step 3.	Complete.
5	Check the Transport Sensor (PS15) actuator, and then replace the sensor. Does the problem persist?	Go to step 4.	Complete.
6	Replace the Duplex Unit (page 8-110). Does the problem persist?	Go to step 5.	Complete.
7	Replace the Engine Control Board (page 8-59).	Complete.	

Service Call Error Troubleshooting Procedures

0001 Main Motor Failure

The Main Motor lock signal remains HIGH for a predetermined consecutive period of time while the Main Motor remains energized.

Initial Actions

Power down and reboot the printer.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Main Motor, PL9.1.6 ■ Engine Control Board, PL13.0.20 ■ Power Supply, PL13.0.17	■ Board Locations (page 2-10) ■ Motors, Fans, and Solenoids (page 2-12) ■ Map 1 - Engine Control Board Plug/Jack Locator (page 10-5) ■ Engine Control Board Wiring (page 10-14)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check the Engine Control Board connector P/J8. Is the connector seated properly?	Go to step 2.	Reseat the connector. If the problem persists, go to step 2.
2	Check the Main Motor for proper positioning. Is the motor engaged with the gears?	Go to step 3.	Reseat the motor drive properly. If the problem persists, go to step 3.
3	Check the operation of the Main Motor. Is the motor faulty?	Replace the motor (page 8-79). If the problem persists, go to step 4.	Go to step 4.
4	On the Engine Control Board, check P/J2 at pins 1, 5, and 7 for +24V. Are the voltages present?	Go to step 5.	Go to step 6.

Troubleshooting Procedure Table (continued)

Step	Action and Questions	Yes	No
5	Replace the Engine Control Board (page 8-59). Does the problem persist?	Go to step 5.	Complete.
6	Replace the Power Supply (page 8-72).	Complete.	

001B Toner Rack Failure

Initial Actions

Reseat the toner cartridges, and then power down and reboot the printer.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Rack Positioning Sensor, PL5.1.12 ■ Engine Control Board, PL13.0.20	■ Board Locations (page 2-10) ■ Motors, Fans, and Solenoids (page 2-12) ■ Map 1 - Engine Control Board Plug/Jack Locator (page 10-5) ■ Engine Control Board Wiring (page 10-14)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check the Rack Motor connector P/J5 on the Engine Control Board. Is the connector seated properly?	Go to step 2.	Reseat the connector. If the problem persists, go to step 2.
2	Check the Engine Control Board connector P/J5. Is the connector seated properly?	Go to step 3.	Reseat the connector. If the problem persists, go to step 3.
3	Check the Rack Positioning Sensor at PJ5-11. Is the sensor on?	Go to step 4.	Replace the sensor. If the problem persists, go to step 4.
4	Replace the Engine Control Board (page 8-59).	Complete.	

0045 Scanner Fan Failure

Possible causes:

- The Exit Tray Cooling Fan Motor does not rotate evenly even after the lapse of a given period of time while it is being started.
- The fan motor lock signal remains HIGH for a given period of consecutive time while the exit tray cooling fan motor is being rotated.

Initial Actions

Power down and reboot the printer.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Engine Control Board, PL13.0.20 ■ Image Processor Board, PL2.0.4	■ Board Locations (page 2-10)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check the Engine Control Board connector P/J24. Is the connector seated properly?	Go to step 2.	Reseat the connector. If the problem persists, go to step 2.
2	Clean the Exit Tray Cooling Fan air intake Check the fan for possible overload and correct as necessary. Does the problem persist?	Go to step 3.	Complete.
3	Replace the Exit Tray Cooling Fan (page 8-96). **NOTE** During replacement, check if the fan is obstructed and correct if necessary. If the problem persists, replace the fan. Does the problem persist?	Go to step 3.	Complete.
4	Replace the Image Processor Board (page 8-66).	Complete.	

004A Duplex Unit Fan Failure

The Duplex Unit Fan Motor lock signal remains HIGH for a predetermined consecutive period of time while the cooling fan motor remains energized.

Initial Actions

Power down and reboot the printer.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Engine Control Board, PL13.0.20 ■ Duplex Unit, PL14.1	■ Board Locations (page 2-10) ■ Map 1 - Engine Control Board Plug/Jack Locator (page 10-5) ■ Engine Control Board Wiring (page 10-14)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check the Engine Control Board connector P/J21. Is the connector seated properly?	Go to step 2.	Reseat the connector. If the problem persists, go to step 2.
2	Replace the Engine Control Board (page 8-59). Does the problem persist?	Go to step 3.	Complete.
3	Replace the Duplex Unit.	Complete.	

004C Exhaust Fan Failure

The Ventilation Fan Motor does not rotate evenly even after the lapse of a given period of time while it is starting.

Initial Actions

Power down and reboot the printer.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Ventilation Fan Motor, PL7.2.20 ■ Engine Control Board, PL13.0.20 ■ Power Supply, PL13.0.17	■ Board Locations (page 2-10) ■ Motors, Fans, and Solenoids (page 2-12) ■ Map 1 - Engine Control Board Plug/Jack Locator (page 10-5) ■ Engine Control Board Wiring (page 10-14)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check the Engine Control Board connector P/J16. Is the connector seated properly?	Go to step 2.	Reseat the connector. If the problem persists, go to step 2.
2	Check the operation of the Ventilation Fan Motor. Is the motor faulty?	Replace the motor (page 8-95). If the problem persists, go to step 5.	Go to step 5.
3	On the Engine Control Board, check for +24 VDC at P/J2-1, 5, and 7. Check for +5 VDC at P/J2-2. Are the voltages present and within specification?	Go to step 4.	Replace the Power Supply (page 8-72). If the problem persists, go to step 4.
4	Replace the Engine Control Board (page 8-59).	Complete.	

004E LVPS Fan Failure

Possible causes:

- The Power Supply Cooling Fan Motor does not rotate evenly even after the lapse of a given period of time while it is being started.
- The motor lock signal remains HIGH for a given period of consecutive time while the Power Supply Cooling Fan Motor is being rotated.

Initial Actions

Power down and reboot the printer.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Power Supply Cooling Fan Motor, PL12.0.11 ■ Engine Control Board, PL13.0.20 ■ Power Supply, PL13.0.17	■ Board Locations (page 2-10) ■ Motors, Fans, and Solenoids (page 2-12) ■ Map 1 - Engine Control Board Plug/Jack Locator (page 10-5) ■ Engine Control Board Wiring (page 10-14)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check the High Voltage Board connectors CN1 and CN2, and the Engine Control Board connector P/J17. Are the connectors seated properly?	Go to step 2.	Reseat the connector(s). If the problem persists, go to step 2.
2	Check the Power Supply Cooling Fan Motor control signals at CN2. Are the signals operating correctly?	Replace the motor (page 8-95). If the problem persists, go to step 3.	Go to step 3.
3	Check the Power Supply Cooling Fan Motor control signals at PJ17 on the Engine Control Board. Are the control signals operating correctly?	Replace the High Voltage Board (page 8-57). If the problem persists, go to step 4.	Go to step 4.

Troubleshooting Procedure Table (continued)

Step	Action and Questions	Yes	No
4	On the Engine Control Board, check for +24 VDC at P/J2-1, 5, and 7. Check for +5 VDC at P/J2-2. Are the voltages present and within specification?	Go to step 5.	Replace the Power Supply (page 8-72). If the problem persists, go to step 5.
5	Replace the Engine Control Board (page 8-59).	Complete.	

0092 Transfer Belt Failure

The belt positioning sensor does not detect the transfer belt position detection hole a second time even after the lapse of a predetermined period of time after it has detected one while the transfer belt is rotated.

Initial Actions

Power down and reboot the printer.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Imaging Unit, PL4.0.13 ■ Engine Control Board, PL13.0.20	■ Board Locations (page 2-10) ■ Sensors and Switches (page 2-11) ■ Motors, Fans, and Solenoids (page 2-12) ■ Map 1 - Engine Control Board Plug/Jack Locator (page 10-5) ■ Imaging Wiring (page 10-15)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check the Engine Control Board connector P/J9. Is the connector seated properly?	Go to step 2.	Reseat the connector. If the problem persists, go to step 2.
2	Replace the Imaging Unit. Does the problem persist?	Go to step 3.	Complete.
3	Replace the Engine Control Board.	Complete.	

0094 Transfer Roll Failure

Possible causes:

- The 2nd Image Transfer Retraction Position Sensor(PS3) is not activated (retracted position) within a given period of time after the retraction sequence of the 2nd transfer roller has been started.
- The 2nd Image Transfer Retraction Position Sensor is not deactivated (pressed position) within a given period of time after the pressure sequence of the 2nd transfer roller has been started.

Initial Actions

Power down and reboot the printer.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ 2nd Image Transfer Retraction Position Sensor (PS3), PL4.0.9 ■ 2nd Image Transfer Retraction Position Solenoid (SD4), PL7.2.23 ■ Main Motor, PL9.1.6 ■ Engine Control Board, PL13.0.20	■ Board Locations (page 2-10) ■ Sensors and Switches (page 2-11) ■ Motors, Fans, and Solenoids (page 2-12) ■ Map 1 - Engine Control Board Plug/Jack Locator (page 10-5) ■ Imaging Wiring (page 10-15)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check the Main Motor connector CN37. Is the connector seated properly?	Go to step 2.	Reseat the connector. If the problem persists, go to step 2.
2	Check the Main Motor for proper drive coupling and correct as necessary. Does the problem persist?	Go to step 3.	Complete.
3	Check the 2nd Image Transfer Retraction Position Solenoid connector CN5. Is the connector seated properly?	Go to step 4.	Reseat the connector. If the problem persists, go to step 4.

Troubleshooting Procedure Table (continued)

Step	Action and Questions	Yes	No
4	Check the 2nd Image Transfer Retraction Position Solenoid for proper drive coupling and correct as necessary. Does the problem persist?	Go to step 5.	Complete.
5	Check the 2nd Image Transfer Retraction Position Sensor control signal for a voltage change at P/J12-3 on the Engine Control Board. Is the signal operating correctly?	Go to step 6.	Replace the Engine Control Board (page 8-59). If the problem persists, go to step 6.
6	Replace the 2nd Image Transfer Retraction Position Solenoid. Does the problem persist?	Go to step 7.	Complete.
7	Replace the 2nd Image Transfer Retraction Position Sensor.	Complete.	

0300 Laser Motor Failure and 0310 Laser Unit Failure

Possible causes:

- The Polygon Motor does not rotate evenly even after the lapse of a given period of time after it has been started.
- The motor lock signal remains HIGH for a given period of consecutive time while the Polygon Motor is being rotated.
- The SOS signal is not detected within a given period of time after the output of the laser has been started.

Initial Actions

Power down and reboot the printer.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Laser Unit, PL4.0.13 ■ Engine Control Board, PL13.0.20 ■ Power Supply, PL13.0.17	■ Board Locations (page 2-10) ■ Map 1 - Engine Control Board Plug/Jack Locator (page 10-5) ■ Engine Control Board Wiring (page 10-14)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check the Engine Control Board connectors P/J18 and P/J19. Are the connectors seated properly?	Go to step 2.	Reseat the connectors. If the problem persists, go to step 2.
2	On the Engine Control Board, check: ■ P/J19-1 for +24V ■ P/J18-10 and -11 for +5V Are the voltages present?	Go to step 4.	Go to step 3.
3	On the Engine Control Board, check P/J2-2 for +5 V. Check P/J2-1, -5, and -7 for +24V. Are the voltages present?	Go to step 4.	Replace the Power Supply (page 8-72). If the problem persists, go to step 4.
4	Replace the Laser Unit. Does the problem persist?	Go to step 3.	Complete.
5	Replace the Engine Control Board.	Complete.	

0500 Fuser Failure and 0503 Thermistor Failure

The thermistor does not detect the specified temperature and the warm-up cycle is not completed even after the lapse of a given period of time.

Initial Actions

Power down and reboot the printer.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Fuser, PL4.0.13 ■ Engine Control Board, PL13.0.20 ■ Power Supply, PL13.0.17	■ Board Locations (page 2-10) ■ Map 1 - Engine Control Board Plug/Jack Locator (page 10-5) ■ Power Supply Wiring (page 10-17)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check that the Fuser is installed correctly and reseat it. Does the problem persist?	Go to step 2	Complete.
2	Change the Fuser (page 8-9), and then turn the printer on, open the top cover, and press the following keys in this order: **2 > 6 > 2 > 3 > 7**. Turn the printer off and then back on. Does the problem persist?	Go to step 3.	Complete.
3	Replace the Engine Control Board (page 8-59). Does the problem persist?	Go to step 4.	Complete.
4	Replace the Power Supply (page 8-72).	Complete.	

0502 Thermistor Failure, 0510 Fuser Failure, and 0520 Fuser Failure

0502 Thermistor Failure The temperature detected by the thermistor does not reach an expected level after the warm-up cycle starts.

0510 Fuser Failure The temperature detected by the thermistor remains lower than expected for a given period of time or longer.

0520 Fuser Failure The temperature detected by the thermistor remains higher than expected for a given period of time or longer.

Initial Actions

Power down and reboot the printer.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Fuser, PL4.0.13 ■ Engine Control Board, PL13.0.20 ■ Power Supply, PL13.0.17	■ Board Locations (page 2-10) ■ Map 1 - Engine Control Board Plug/Jack Locator (page 10-5) ■ Power Supply Wiring (page 10-17)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check that the Fuser is installed correctly. Does the problem persist?	Go to step 2.	Complete.
2	Check the Engine Control Board connectors P/J2, P/J3, and P/J6. Are the connectors seated properly?	Go to step 3	Reseat the connectors. If the problem persists, go to step 3.
3	Check the Low Voltage Power Supply connectors CN3, CN5, and CN7. Are the connectors seated properly?	Go to step 4.	Reseat the connectors. If the problem persists, go to step 4.
4	Replace the Fuser (8-9). Does the problem persist?	Go to step 5.	Complete.
5	Replace the Engine Control Board (page 8-59). Does the problem persist?	Go to step 6.	Complete.
6	Replace the Power Supply (page 8-72).	Complete.	

0650 Scanner Home Failure

Possible causes:

- A low motor lock signal is not detected even after the lapse of a predetermined period of time after the Polygon Motor has been started.
- The motor lock signal remains HIGH for a predetermined consecutive period of time while the Polygon Motor remains energized.

Initial Actions

Power down and reboot the printer.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Engine Control Board, PL13.0.20 ■ Image Processor Board, PL2.0.4	■ Board Locations (page 2-10)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check connector P/J2 on the Image Processor Board. Is the connector seated properly?	Go to step 2.	Reseat the connector. If the problem persists, go to step 2.
2	Replace the Scanner (page 8-31). Does the problem persist?	Go to step 3.	Complete.
3	Replace the Engine Control Board (page 8-59). Does the problem persist?	Go to step 4.	Complete.
4	Replace the Power Supply (page 8-72).	Complete.	

0F51 Waste Toner Failure

It is determined that the LED and photo receiver are faulty through a check made when a new imaging cartridge is detected.

Initial Actions

Power down and reboot the printer.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Imaging Unit, PL4.0.13 ■ Engine Control Board, PL13.0.20	■ Board Locations (page 2-10) ■ Map 1 - Engine Control Board Plug/Jack Locator (page 10-5) ■ Imaging Wiring (page 10-15)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check the Engine Control Board connector P/J9. Is the connector seated properly?	Go to step 2	Reseat the connector. If the problem persists, go to step 3.
2	Change the Imaging Unit (page 8-6). Does the problem persist?	Go to step 3.	Complete.
3	Replace the Engine Control Board (page 8-59).	Complete.	

1038 Interface Failure

Possible causes:

- Engine Control Board to Image Processor Board connection failure.
- The copier determines that there is an error if the Engine Control Board fails to send an acknowledgement signal to the Image Processor Board for a given period of time or more.
- An error command signal is transmitted from the Image Processor Board to Engine Control Board.
- An error status signal is transmitted from the Engine Control Board to Image Processor Board.

Initial Actions

Power down and reboot the printer.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Engine Control Board, PL13.0.20 ■ Image Processor Board, PL2.0.4	■ Board Locations (page 2-10)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check every connector on the Engine Control Board and the Image Processor Board. Are the connectors seated properly?	Go to step 2.	Reseat the connectors. If the problem persists, go to step 2.
2	Replace the Image Processor Board (page 8-66). Does the problem persist?	Go to step 3.	Complete.
3	Change the Engine Control Board (page 8-59).	Complete.	

133C Fax Modem Failure

Initial Actions

Power down and reboot the printer.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Fax Board, PL13.0.30	■ Board Locations (page 2-10)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Replace the Fax Board (page 8-66).	Complete.	

13C0 Print Control Board Malfunction

Initial Actions

Power down and reboot the printer.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Engine Control Board, PL13.0.20	■ Board Locations (page 2-10)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Replace the Engine Control Board (page 8-59).	Complete.	

13DD Initial Toner Failure

The printer determines that an initial toner cartridge has been installed. The printer is programmed to only use initial toner cartridges one time.

Initial Actions

Install a Xerox Standard or High Capacity cartridge. For toner cartridge part numbers, see “Xerox Supplies and Accessories” on page 9-54.

13E2 Engine ROM Failure

Flash ROM writing is found faulty during a check.

Initial Actions

Power down and reboot the printer.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Engine Control Board, PL13.0.20 ■ Image Processor Board, PL2.0.4	■ Board Locations (page 2-10)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check the Engine Control Board connectors. Are the connectors seated properly?	Go to step 2.	Reseat the connectors. If the problem persists, go to step 2.
2	Replace the Engine Control Board (page 8-59). Does the problem persist?	Go to step 3.	Complete.
3	Replace the Image Processor Board (page 8-66).	Complete.	

14A3 Scanner Head Failure

The intensity of the light emitted from the exposure lamp of the scanner falls short of the specified value.

Initial Actions

Power down and reboot the printer.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Scanner, PL2.0.4 ■ Image Processor Board, PL13.0.29/30	■ Board Locations (page 2-10)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check the connectors on the Image Processor Board. Are the connectors seated properly?	Go to step 2.	Reseat the connectors. If the problem persists, go to step 2.
2	Replace the Scanner (page 8-31). Does the problem persist?	Go to step 3.	Complete.
3	Change the Image Processor Board (page 8-66).	Complete.	

3FFF Control ROM Failure

Possible causes:

- The copier determines that there is an error if writing to the flash ROM fails during upgrading of the firmware.
- When the power switch is turned ON, the error indicator lights up steadily and a corresponding message appears on the display.
- If this error message appears, no operations are possible. It is not possible to upgrade the firmware from a PC connected through USB connection.

Initial Actions

Power down and reboot the printer.

Procedure

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Engine Control Board, PL13.0.20 ■ Image Processor Board, PL13.0.29/30	■ Board Locations (page 2-10) ■ Map 1 - Engine Control Board Plug/Jack Locator (page 10-5)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Identify the specific firmware that is responsible for the error, and then rewrite the firmware (page A-15). Does the problem persist?	Go to step 2.	Complete.
2	Unplug the NVRAM chip on the Engine Control Board, and then plug the chip back in. Does the problem persist?	Go to step 3.	Complete.
3	Change the Engine Control Board (page 8-59). Does the problem persist?	Go to step 4.	Complete.
4	Change the Image Processor Board (page 8-66).	Complete.	

CF01 Controller Failure

The printer determined that there is an NVRAM failure. Contact a Xerox representative to correct this error.

General Troubleshooting

In this chapter...

Chapter 4

Introduction

This chapter covers troubleshooting procedures not associated with a Service Call code or Control Panel error message.

For troubleshooting problems associated with a Service Call code or Control Panel error message, refer to “Error Messages and Codes” on page 3-1. Print-quality problems are covered in “Print-Quality Problems Overview” on page 5-2.

Caution

Probable causes of trouble are that the printer, computer, server or other hardware is not correctly set for the network environment you are using, or a printer restriction has been exceeded.

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 does exist.
2. Check for any error codes and write them down.
3. Print normal customer prints and service test prints.
4. Make note of any print-quality problems in the test prints.
5. Make note of any mechanical or electrical abnormalities present.
6. Make note of any unusual noise or smell coming from the printer.
7. View the Jam Counter and Trouble Counter pages on the Service menu.
8. Verify the AC input power supply is within proper specifications by measuring the voltage at the electric outlet while the printer is running.

Step 2: Inspect and Clean the Printer

1. 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 them from light.
5. Inspect the printer interior and remove any foreign matter such as paper clips, staples, pieces of paper, dust, or loose toner.
6. Do not use solvents or chemical cleaners to clean the printer interior.
7. Do not use any type of oil or lubricant on printer parts.
8. Use only an approved toner vacuum.
9. Clean all rubber rollers with a lint-free cloth, dampened slightly with cold water and mild detergent.
10. Inspect the interior of the printer for damaged wires, loose connections, toner leakage, and damaged or obviously worn parts.
11. If the Print Cartridges appear obviously damaged, replace with new ones.

Step 3: Find the Cause of the Problem

1. Use the error messages and Codes and troubleshooting procedures to find the cause of the problem.
2. Use Service Diagnostics to check the printer and optional components.
3. Use the Wiring Diagrams and Plug/Jack Locator to locate test points.
4. Take voltage readings as instructed in the appropriate troubleshooting procedure.

Step 4: Correct the Problem

1. Use the Parts List (page 9-1)to locate a part number.
2. Use the FRU Disassembly procedures to replace the part.

Step 5: Final Checkout

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

Service Diagnostic Tests

The Service Mode has the following tests in the Function menu:

- **Paper Feed Test**
  Checks the paper feeding in the paper take-up/transport sections without printing on the paper.
- **ADF Feed Test**
  Check the paper feeding in the paper take-up/transport sections in the Automatic Document Feeder.
- **Check Scan Window**
  Check for dirt in the scanning section of the Automatic Document Feeder.
- **Fax Res. Copy Test**
  Stores a fax image in memory and provides a printed copy.
- **Scan Test**
  Checks the lighting of the Exposure Lamp and the movement of the Scanner Unit.

For instruction on using these tests, see “Functional Tests” on page 6-31.

General Printer Problems

Symptom	Cause	Solution
No power to the printer.	The power cord is not correctly plugged into the outlet.	Turn off the printer if on, confirm that the power cord is correctly plugged in, then turn on the printer.
	Something is wrong with the outlet connected to the printer.	Plug another electrical device into the outlet and see whether it operates properly.
	The power switch is not correctly turned on.	Turn off the printer, then turn on the printer.
	The printer is connected to an outlet with a voltage or frequency that does not match the printer specifications.	Use a power source with the specifications listed in "Electrical Specifications" on page 1-14.
The control panel displays the Toner Low message much sooner than expected.	One of the toner cartridges may be defective.	Remove the toner cartridges and inspect them for damage. Replace any that are damaged.
	Printed with heavy toner coverage.	Check the paper specifications to ensure you are using the correct type. Also check that you are using Xerox-approved toner.
Cannot print.	The tray is out of paper.	Verify that at least Tray 1 is loaded with paper, in place, and secure.
	There is a paper misfeed or jam.	Clear the misfed paper. See "Jam Errors" on page 3-57.

Symptom	Cause	Solution
When the paper type or paper size for Tray 1 is changed, the printer control panel displays the message Check Fax Mode.	If a fax is received, it could not be printed on paper of the currently specified type or size. However, you can still copy and print.	Press the Fax button and then check the error details. To print a received fax, change the paper type setting to Plain Paper and the paper size to Letter, A4, or Legal (whichever is in the paper tray).
Printing takes more time than expected.	The printer is set to a slow printing mode (for example, Thick Cardstock).	It takes more time to print with special media. When using regular paper, make sure that the paper type is set properly in the printer driver.
	The printer is set to Energy Saver mode.	It takes more time for printing to start in Energy Saver mode.
	If an error is detected while the print job is being transmitted while the printer is in Copy mode, it takes a while to process the error and resume the printing job.	Wait. No action is needed.
Blank pages are printed.	One or more of the toner cartridges are defective or empty.	Inspect the toner cartridges. The image may not print correctly or not at all if the cartridges are empty.
Not all of the pages print.	A different user accidentally canceled the job.	Try printing the remaining pages.
	The paper tray is empty.	Verify that the tray is loaded with paper.
	A document is printed with an overlay file which has been created by an unsuitable printer driver.	Print the overlay file using a suitable printer driver.

Symptom	Cause	Solution
Some parts of the image are lost during 2-up copying.	When printing envelopes, the scale was specified and then 2-up copying was set.	With 2-up copying, the scale is automatically adjusted. For 2-up copying on media with a narrow printing area, set 2-up copying and then adjust the scale if necessary.
The printer resets or turns off frequently.	The power cord is not correctly plugged into the outlet.	Turn off the printer, confirm that the power cord is correctly plugged into the outlet, then turn on the printer.
The printer is making unusual noises.	The printer is not level.	Place the printer on a flat, hard, level surface.
	The paper tray is not installed correctly.	Remove the tray that you are printing from and reinsert it completely into the printer.
	There is a foreign object stuck inside the printer.	Turn off the printer and remove the object.
	The Fuser or Duplex Unit are not installed incorrectly.	Remove each unit and reinstall correctly.
With 2-up on multiple copies, the output is incorrect.	Both the printer driver and the application have been set for collation.	For 2-up copying on multiple copies, choose Collate only in the printer driver's Basic tab. Do not set collation in the application.
Booklet Left and Right Binding output is incorrect.	Both the printer driver and the application have been set for collation.	For Booklet Left Binding and Booklet Right Binding, choose Collate only in the printer driver's Basic tab. Do not set collation in the application.

Symptom	Cause	Solution
When copying or scanning with the auto document feeder, a band appears at the end of the image or paper (5 to 6 mm).	A malfunction may have occurred while paper was being transferred with the auto document feeder.	■ If a band appears in the copy after copying, select a copy density setting that is one level darker. ■ If a band appears in the image after scanning, scan using the document glass instead of the auto document feeder.
Cannot copy using the auto document feeder.	Envelope DL or Envelope C6 is set to the auto document feeder.	Place the document on the document glass. With the Envelope DL size, some areas may not be copied.
Scanned images are not clear.	Resolution is set to 150 x 150 dpi while the Original Document Type is set to Mixed or Text.	Set the Original Document Type to Photo.
Some areas of the scanned image are missing.	Acrobat 8 (Macintosh version) is used for scanning the image.	With the Acrobat Scan setting, turn off the OCR and Filtering functions.
The paper is wrinkled.	The paper is moist from humidity or spilled water.	Remove the moist paper and replace it with new, dry paper.
	The media feed roller or Fuser is defective.	Inspect them for damage.
	You are using unsupported media (wrong size, thickness, type, etc.).	Use Xerox-approved media only. See “Media and Tray Specifications” on page 1-15.
Data was sent to the printer but it does not print.	An error message is displayed in the control panel menu.	Handle according to the message displayed.
It takes a very long time to transfer scan data to the USB flash drive.	The response time may be slow depending on the USB memory device that is used.	Wait until the transfer is finished.
You cannot enter Scan mode or Fax mode.	An error has occurred in Copy mode.	Correct the cause of the error and then select a different mode.

2-Sided Printing Problems

If you have problems when copying or printing on two sides of a sheet, then the media or the settings you are using are probably not correct.

- Make sure that you are using approved media. Only plain paper in either Letter or A4 size are usable in the Duplex Unit.
- Do not do 2-sided printing on envelopes, labels, postcards, thin or think card stock, letterhead, or on plain paper with a size other than Letter or A4.
- Make sure you do not have mixed media types in the tray.
- In the printer driver Layout tab, under Print on Both Sides, choose **Short Edge Binding** (flipped as on a clipboard) or **Long Edge Binding** (flipped as in a loose-leaf notebook).
- For 2-up on 2-sided pages, choose **Collate** only in the printer driver's Basic tab. Do not set collation in the application.

Changing the Duplexing Speed

If you are having problems with image transfer during 2-sided printing or copying, you can change the duplexing speed.

To change the duplexing speed:

1. On the printer control panel, press the **Back/Menu** button to enter the System Menu, then press the **Down Arrow** button and go to **General Setup**. Press **OK**.
2. Arrow down to **Duplex Speed** and press **OK**.
3. Select from the following options as your situation requires:
   - Automatic: The printer chooses the processing speed based on environmental conditions (temperature and humidity).
   - Speed: The printer uses the fastest speed available for the media type being used.
   - Quality: The printer uses a slower speed for optimal print quality.
4. Press **OK**.

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 1-15. 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 correct media type is set in the Control Panel.
5. Ensure that the paper guides are set correctly.
6. Ensure that the media is a supported type for the tray. See "Media and Tray Specifications" on page 1-15, for the correct media types, sizes, and weights for each tray.
7. Load a fresh ream of paper in the tray.

Multiple-Sheet Pick

1. Ensure that the paper is in good condition and is listed as supported media; quality office laser printer paper works best.
2. Ensure that the printer is printing within its environmental specifications by printing and reviewing the Status page.
3. Remove the tray and remove the media, fan, and reload the media. Ensure that the guides are securely against the paper and the tray has not been over filled.
4. Try loading paper from a fresh ream, fan the paper, and then insert into the tray or flip existing paper over.
5. Check the tray's Retard Roller for damage.
6. Clean the Feed Rollers with a clean, dry, lint-free wipe.
7. Replace the Feed Rollers.
8. Replace the paper tray.

Mis-Pick

1. Check that the correct type of media for the tray is being used and the paper guides are set correctly.
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.

Control Panel Troubleshooting

Printer Does Not Come to a "Ready" State

1. Reseat connectors on the Image Processor Board.
2. Refer to "Power Supply Problems" on page 4-26.
3. Replace the Control Panel (page 8-54).
4. Repair/replace the Control Panel wiring harness.

Control Panel LED is On, Control Panel Display is Blank

1. Remove and reseat the Image Processor Board connectors.
2. Replace the Control Panel (page 8-54).
3. Inspect and repair the Control Panel wiring harness.
4. Replace the Image Processor Board (page 8-66).

Fax Troubleshooting

If the Fax isn't operating correctly, try using the copy function. If the copy function's printing results are correct, the probability of a fault in the Fax itself is low. The fault is likely in the telephone line or receiving Fax. If the fault is in the telephone line, first retry sending the data. If there is no improvement, contact the telephone company. If the copy function's printing results are incorrect, troubleshoot the printer to correct the problem.

Fax Protocol Report

The Protocol Report provides transmission results, timing, and communications activity information about each Fax transmission. The Protocol Report provides a detailed log of the communications activity between devices. Use this report to diagnose possible communications errors between machines.

Enabling the Protocol Report

To set the desired behavior of the Protocol Report:

1. At the initial screen on the Control Panel, press **OK** > **Stop/Reset** > **0** > **0** > **Stop/Reset** > **0** > **1**.
2. Select **Service's Choice** and press **OK**.
3. Select **Protocol Report** and press **OK**.
4. Set the desired setting:
   - Off: Disable the T.30 communication report.
   - On: Print a T.30 communication report after every Fax transmission.
   - On Error: Print a T.30 communication report only when an error occurs.

Common Fax Transfer Commands

The most common commands exchanged between Fax machines during a typical transfer of data are listed in the following table. When reviewing the Protocol Report, trace the exchange of commands to identify irregularities. Commands in parentheses (_) may or may not appear in the log.

Command	Definition	Appropriate Responses
(NSF) (CSI) DIS	Negotiating capabilities from a manual receiver or an auto answer terminal.	(NSC) (CIG) DTC (TSI) DCS (NSF) (CSI) DIS (CRP) (TSI) (NSS) (PWD) (SEP) (CIG) DTC (PWD) (SUB) (TSI) DCS
(NSC) (CIG) DTC (PWD) (SEP) (CIG) DTC	Mode setting from calling terminal. This is a poll operation.	(TSI) DCS (NSF) (CSI) DIS (CRP) (TSI) (NSS)

Command	Definition	Appropriate Responses
(TSI) DCS (TSI) (NSS) (PWD) (SUB) (TSI) DCS	Mode setting from manual transmitter or automatic receiver.	CFR FTT (NSC) (CIG) DTC (NSF) (CSI) DIS (CRP)
CTC	Mode setting from the transmitter to the receiver.	(CTR) (CRP)
(EOR-NULL)	Indicates the next block transmission from the transmitter to the receiver.	(ERR) (RNR) (CRP)
(EOR-MPS) or (EOR-EOP) or (EOR-EOM) or (EOR-PRI-MPS) or (EOR-PRI-EOP) or (EOR-PRI-EOM)	Indicate the next message transmission from the transmitter to the receiver.	(ERR) (RNR) PIN (CRP)
MPS or EOP or EOM or (PRI-MPS) or (PRI-EOP) or (PRI-EOM)	Post-message commands.	MCF RTP RTN PIP PIN (CRP)
(PPS-NULL)	Post-message command for a partial page: from the transmitter to the receiver.	(PPR) MCF (RNR) (CRP)
(PPS-MPS) or (PPS-EOP) or(PPS-EOM) or (PPS-PRI-MPS) or (PPS-PRI-EOP) or (PPS-PRI-EOM)	Post-message commands for a complete page: from the transmitter to the receiver.	(PPR) MCF (RNR) PIP PIN (CRP)
(RR)	Ask for the status of the receiver: from the transmitter to the receiver.	(RNR) (ERR) MCF PIP PIN (CRP)
DCN	Phase E command.	None

Transmission Fault

1. Problem with printing quality at receiving Fax, such as corrupt image, lines in image, or top/bottom cut off.

   a. If a copy is normal.

   Cause: Degraded telephone line connection is caused by noise, etc., or a fault in receiving Fax's printer.

   Corrective Action: Determine whether the fault is in the telephone or receiving Fax by trying a copy function at the receiving Fax.

   Note

   If the telephone line is degraded, white horizontal lines, missing rows, and/or cut-off top/bottom may occur. Branch connections or incoming call (call waiting) may also cause image corruption.

   b. If copy function is faulty.

   Cause: Dirt or fault in scanner.

   Corrective Action: Clean the document glass or repair the scanner. If the original is being sent from the ADF, try making a copy with the original placed on the platen. If this resolves the problem, the fault is in the ADF.

2. Cannot dial.

   Cause: No connection. Incorrect setup of dial type and/or line type.

   Corrective Action: Reconnect the telephone line. Reset the dial type and/or line type to correct the settings.

Transmission Failure Troubleshooting Procedure

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Make a phone call to the fax number. If you don't hear the Fax communication sounds, the number is not a fax number. Is the number correct?	Go to step 2.	Retry the fax transmission with the correct number. If the problem persists, go to step 2.
2	Did the Fax Protocol Report print out?	Check the latest TX result. If an error code is displayed, refer to the Transmission Errors list (page 3-26) for more information.	Go to step 3.

Troubleshooting Procedure Table (continued)

Step	Action and Questions	Yes	No
3	Check that the phone line from the wall is connected to the Fax LINE connector. If the phone jack is correctly install, you can hear dial tone when press down the “On hook” key. Is the telephone line from the wall connected to the LINE connector?	Go to step 4.	Connect the phone line to the LINE connector. If the problem persists, go to step 4.
4	Check that the appropriate dialing type in the TX printer matches your actual phone line network capability (DTMF/PULSE). Is the dialing type set correctly?	Go to step 5.	Change the dialing type to match your phone line. If the problem persists, go to step 5.
5	Test your phone line with a telephone. If the phone number cannot be called, the problem is with your phone line. Is your telephone line operating correctly?	Go to step 6.	Call your telephone company for line repair. If the problem persists, go to step 6.
6	Check that the receiving fax machine is on and the receiving mode is set to Manual RX. Is the receiving fax machine ready to receive faxes?	Go to step 7.	Prepare the receiving fax machine for incoming faxes and retry the transmission. If the problem persists, go to step 7.

Printer Can't Fax In VOIP System Environment

Review the following information to determine why machine can't Fax properly in VOIP system environment.

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Is Soft SW21[5]=”1”?	Complete	Set Soft SW21[5]=”1”

Image Quality Problems with Received Fax

Use this procedure if the received fax has poor image quality.

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Check the sending printers scanner glass. Is the glass clean	Go to step 2.	Clean the glass with a soft, dry cloth.
2	Is the TX density set to an unsuitable level?	Adjust the TX density level (**Utility > Fax TX operation > Density level**).	Go to step 3.
3	The poor image quality may be caused by the RX machine. Confirm that the RX machine is working correctly.	Complete.	

Reception Fault

1. Cannot Receive.

   a. Fax memory is full.

   Cause: An attempt was made to send document data in excess of the available memory capacity.

   Corrective Action: On the receiving side, wait until the current fax job is printed completely.

   b. The printer displays some fault messages.

   Cause: A fault occurred in the printer.

   Corrective Action: Refer to the appropriate fault error procedures to resolve the problem.

   c. Distinctive ring pattern detection fails.

   Cause: The distinctive ring pattern is set incorrectly (applicable only in USA and Canada).

   Corrective Action: Check the ring pattern provided by the telephone service provider, and select the correct pattern for fax.

2. Problem with printing quality, such as corrupted image, lines in image, or top/bottom cut off.

   a. If copy function is normal.

   Cause: Degraded telephone line connection is caused by noise, etc., or a fault occurs in the sending Fax's scanner.

   Corrective Action: Determine whether fault is in the telephone line or at sending Fax by trying the copy function at sending Fax.

   Note

   If the telephone line condition is degraded, white horizontal lines, missing rows, and/or image cut-off at either top or bottom may occur. Branch connections or an incoming call (Call Waiting) may also cause image corruption.

   b. If copy function is faulty.

   Cause: Dirt or fault in printer.

   Corrective Action: Clean all parts of the printer or repair the printer.

Fax Reception Failure Troubleshooting

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Is the printer turned on?	Go to step 2.	Turn the printer on and have the fax resent to the printer. If the problem persists, go to step 2.
2	Is the printer loaded with paper?	Go to step 3.	Load the printer with paper.
3	Check the control panel for indication of a paper jam. Is there a paper jam?	Clear the paper jam and resend the fax.	Go to step 4.
4	Is the printer in Admin. Management Mode?	If the printer is in the Admin. Management Mode, it is unable to receive faxes. Log out of Admin. Management Mode and resend the fax.	Go to step 5.
5	If the recipient password has been set the printer will not accept faxes. Is the recipient password set?	Set Memory Receive mode to Off. (**Fax Default Setup > Receive Option > Memory Receive**)	Go to step 6.
6	Is the receiving printer set to Manual Receive Mode? (**Fax Default Setup > Receive Option > Receive Mode**)	Change the Receive Mode to Auto Receive.	Go to step 7.
7	Was the original document loaded properly at the sending machine? **NOTE** The poor image quality of received fax may be caused by the TX machine.	Go to step 8.	Have the sender resend the fax. If the problem persists, go to step 8.

Troubleshooting Procedure Table (continued)

Step	Action and Questions	Yes	No
8	Check that the phone line from the wall is connected to the Fax LINE connector. If the phone jack is correctly install, you can hear dial tone when press down the “On hook” key. Is the telephone line from the wall connected to the LINE connector?	Go to step 9.	Connect the phone line to the LINE connector. If the problem persists, go to step 9.
9	Test your phone line with a telephone. If the phone number cannot be called, the problem is with your phone line. Is your telephone line operating correctly?	Complete.	Call your telephone company for line repair.

Poor Image Quality in Received Fax Troubleshooting

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Is the image quality of copies made at the printer also poor?	Replace the Imaging Unit (page 8-6).	Go to step 2.
2	Is the original glass of transmitting machine dirty? **NOTE** The poor image quality of received fax may be caused by the TX machine.	Have the sender clean the transmitting machines glass, and then resend the fax. If the problem persists, go to step 3.	Go to step 3.
3	Have the sender verify that the sending machine is set to a resolution appropriate for the document that is being transmitted. **NOTE** The poor image quality of received fax may be caused by the TX machine.	Complete.	

One Page Fax Printed on Multiple Pages

A single page fax will print on multiple pages if the original document paper size is too big.

You can use the Scale to Fit function to select whether documents longer than the current paper size are printed reduced, split, or discarded. In the Fax menu, select **Fax Default Setup** > **Receive Option** > **Scale to Fit** and then select one of the following options.

On: The document is printed at a reduced size.

Off: The document is printed at full size and split onto multiple pages

Crop: The document is printed, but any part that does not fit within the page is erased.

Other Fax Problems

Branch Connection (Parallel Connection)

During Fax reception, if the handset of another telephone on a branch connection is lifted, the received image can be corrupted or a transmission error may occur. Branch connection may also interfere with Caller ID, Call Waiting, or the receiving operation of the connected telephones.

Call Waiting

If a call comes in during Fax sending/reception, the image may be corrupted.

Digital Subscriber Line

Digital Subscriber Line (DSL) is a high-speed digital transmission method using existing telephone lines. Because the line is used for both voice and data transmission, various problems may occur, such as noise during spoken conversation, low sound volume, and mis-dialing. Replacing the splitter may improve the situation.

The Digital Subscriber Line cannot be directly connected to a fax machine; the line must be connected via a filter.

There are several types of DSL:

- ADSL (Asymmetric Digital Subscriber Line) – Transmits digital information at a high-speed bandwidth on phone lines. ADSL provides continuously available connection with differing upstream and downstream transmission speeds and simultaneously accommodates analog (voice) and digital information on the same line. Downstream data rates are offered from 512 Kbps to about 6 Mbps.
- SDSL (Symmetric Digital Subscriber Line) – Runs over one pair of copper wires with symmetrical upstream and downstream transmission speeds up to 3 Mbps, with a maximum range up to 3 km.
- VDSL (Very high Bit Rate Digital Subscriber Line) – An xDSL technology that provides faster data transmission over a single twisted pair of copper wires. VDSL transmits data from 13 Mbps ~ 55 Mbps over short distances, usually between 1000 and 4500 feet.

Noise

If electronic equipment (television, computer, microwave, etc.) or devices equipped with motors are located near a Fax, noise from the electronic equipment may degrade the line condition.

Also, a telephone line, acting as an antenna, may absorb electric waves generated from wireless or broadcasting equipment.

Because Fax data is audio data, the line quality affects the quality/stability of image data as well as that of conversation.

Printer Doesn't Go Into Off-Hook State

Use the following procedure if the printer doesn't go into Off-Hook state when you pick up the phone.

Initial Actions

- Cycle printer power
- If the problem persists, follow the procedure.

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Is the handset broken?	Replace the handset.	Go to step 2.
2	Try each of the following settings for Soft SW16(6-8) and check if the problem is corrected: 000 001 010 101 Is the problem still occurring?	Go to step 3.	Complete.
3	Check the Fax Control Board for correct installation and reseat it. Is the problem still occurring?	Go to step 4.	Complete.
4	Replace the Fax Control Board. Is the problem still occurring?	Have the input current from the phone line checked by a qualified professional.	Complete.

Control Panel Displays “Talking”

Initial Actions

- Cycle printer power
- If the problem persists, follow the procedure below.

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Is the telephone line connected correctly?	Go to step 2.	Connect the line correctly.
2	Is the handset lifted off the hook?	Place the handset on the hook.	Go to step 3.
3	Check the Fax Control Board for correct installation and reseat it. Is the problem still occurring?	Go to step 4.	Complete.
4	Replace the Fax Control Board.	Complete.	

Fax Failure After Installation/Relocation

The Fax has failed to send after installation. The following troubleshooting procedure applies to this error.

Initial Actions

- Disconnect all devices other than the Fax machine.
- Cycle printer power.

If the problem persists, use the following procedure.

The conventional analog telephone line uses standard RJ-11 cable, which has two conductors. However, the four-conductor cables commonly available are backward compatible with RJ-11 and can be used with no problems. On the other hand, since these four-conductor cables are also used for ISDN systems, the number of elements is not the key for identification of the type of line/service.

Troubleshooting Procedure

Applicable Parts	Wiring and Plug/Jack Map References
■ Image Processor Board, PL13.0.29/30	■ Map 3 - Fax Board Plug/Jack Locator (page 10-7)

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the telephone services for screening feature such as call blocking. Is the line identified?	Go to step 2.	Go to step 4.
2	Manually dial any local phone number using touch tone, pulse 20PPM and pulse 10PPM in this order. Is there a connection?	Go to step 3.	Request the phone company for a line repair.
3	Manually dial any out-of-area phone number. Is there a connection?	Go to step 6.	Check if the transmission route consists of multiple telephone service providers. Confirm that your telephone line supports faxing.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Check the line type. ■ Confirm that the line is not an ISDN/xDSL/IP phone line but an analog line. ■ If no dial tone is present at Off hook, the line may be faulty. For PSTN: ■ Is there a continuous tone present at the hook? ■ Does the cable have 2 conductors?	Manually dial any local phone number using touch tone.	Go to step 5.
5	Is the line a PBX?	Go to step 8.	Request the telephone company for a line repair.
6	Update Fax Setting information for a new fax job. Send a fax to another fax machine. Did the fax transmit?	Go to step 10.	Go to step 7.
7	Check the outside line prefix is added. Is the fax number correct?	Check **System** > **Admin Menu** > **Fax Settings**: Ans Select Line Type Dialing Type	Retry the fax transmission.
8	Manually dial any local phone number using touch tone with the outside line prefix (i.e., 9). Is there a connection?	Go to step 3.	Go to step 9.
9	Check for the pulse. Manually dial using pulse 20PPM. Is there a connection?	Go to step 3.	Set pulse to 10PPM. Go to step 3.
10	Receive a fax from another fax machine. Did the reception complete?	Complete. Connect additional devices such as external telephone and answering machine.	Go to step 11.
11	Replace the Image Processor Board (page 8-66).	Complete.	

Fax Failure After Continuous Normal Operation

The Fax has failed to send or receive after continuous normal operation. The following troubleshooting procedure applies to this error.

Initial Actions

- Disconnect all the devices other than the Fax machine.
- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Image Processor Board, PL13.0.29/30	■ Map 3 - Fax Board Plug/Jack Locator (page 10-7)

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the error message on the Control Panel. Is there an error code?	Refer to the appropriate error code procedure (“Error Messages and Codes” on page 3-1).	Go to step 2.
2	Has the Fax machine been relocated?	Refer to “Fax Failure After Installation/Relocation” on page 4-22).	Go to step 3.
3	Has the line contract been switched to ISDN/xDSL or IP-phone?	Check the Fax configuration for the TA/xDSL modem, etc.	Go to step 4.
4	Has there been any change of line contract for the line type (Pulse to Tone, Tone to Pulse, etc.)?	Correct the Line Type setting.	Go to step 5.
5	Does the manual dialing function properly?	Go to step 6.	Replace the Image Processor Board (page 8-66).

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
6	Check the cable type. ■ Two-conductor (PSTN) ■ Four-conductor (PBX) Check the cable condition. ■ Normal continuity ■ Straight, unlooped, uncoiled routing ■ Appropriate cable length Is the cable type correct and in good condition?	Go to step 7.	Replace the cable.
7	Is the paper size correct?	Go to step 8.	Replace the paper.
8	Press the Fax button, and then select **Delay Send.** Is the Delayed Send on?	Go to step 9.	Go to step 11.
9	Is the Delayed Send on a specified time, and does the Fax job complete at the specified time?	Complete.	Go to step 10.
10	Is the Local Time setting correct?	Go to step 11.	Set the Local Time setting.
11	Replace the Image Processor Board (page 8-66).	Complete.	

Power Supply Problems

Power Supply Troubleshooting

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ LVPS, PL10.6.16 ■ Engine Control Board, PL13.0.20	■ Engine Control Board Wiring (page 10-14)

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	Is the Fuse on the Power Supply open?	Replace the Power Supply (page 8-72).	Go to step 3.
3	On the Power Supply, check that connectors CN5, CN6, and CN7 are properly seated. Are the connectors properly seated?	Go to step 4.	Reseat the connectors. If the problem persists, go to step 4.
4	Check voltages at P/J2 on the Engine Control Board: 24 V (pins 1, 5, and 7), and 5 V (pin 2). Are all of the voltages present?	Replace the Engine Control Board.	Replace the Power Supply (page 8-72).

Control Panel Indicators Do Not Light

No Control Panel or Faulty Indicator lights.

Initial Actions

- Remove system power and reboot.
- View any control panel activity.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Image Processor Board, PL13.0.29/30 ■ Control Panel Board, PL2.0.5 ■ Power Supply 1, PL13.0.17	■ Board Locations (page 2-10) ■ Map 1 - Engine Control Board Plug/Jack Locator (page 10-5) ■ Power Supply Wiring (page 10-17)

Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Is power source voltage being applied to connector CN3 of the Power Supply?	Go to step 2.	Check wiring from the AC power plug through the Power Switch to CN1 (pin 1) of the Power Supply. If problem persists, go to step 2.
2	Are fuses (F1 and F2) on the Power Supply conducting?	Go to step 3.	Replace the Power Supply (page 8-72). If the problem persists, go to step 3.
3	Is P/J1 on the Engine Control Board seated properly?	Go to step 4.	Reseat the connector. If the problem persists, go to step 4.
4	Is P/J10 on the Image Processor Board properly connected?	Go to step 5.	Reseat the connector. If the problem persists, go to step 5.

Troubleshooting Procedure Table (continued)

Step	Action and Questions	Yes	No
5	Is CN701 on the Control Panel properly connected?	Go to step 6.	Reseat the connector. If the problem persists, go to step 6.
6	Replace the Control Panel (page 8-54). Is the system operational?	Complete.	Go to step 7.
7	Replace the Image Processor Board (page 8-66).	Complete.	

Abnormal Noise and Electrical Problems

Initial Troubleshooting Actions

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 Imaging Unit and protect it from light.
5. Inspect the printer interior and remove any foreign matter such as paper clips, staples, pieces of paper, dust, or loose toner.
6. Do not use solvents or chemical cleaners to clean the printer interior.
7. Do not use any type of oil or lubricant on printer parts.
8. Use only an approved toner vacuum.
9. Clean all rubber rollers with a lint-free cloth, dampened slightly with cold water and mild detergent.
10. Inspect the interior of the printer for damaged wires, loose connections, toner leakage, and damaged or obviously worn parts.
11. If the Print Cartridges appear obviously damaged, replace with new ones.

Electrical Noise

There is a variable pitch sound coming from the printer. Electrical noise can be either noise in the electrical lines or static in electromagnetic communications.

Initial Actions

- Cycle printer power.
- If the problem persists, follow the procedure below.

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ HVPS, PL4.1.19 ■ Fuser, PL11.0.18 ■ Imaging Unit, PL4.1.21	Board Locations (page 2-10) Main Engine Component Overview (page 2-10)

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check external noise. ■ Are there other electrical appliances within 3 meters of the printer? ■ Turn the electrical appliances Off or relocate the printer at least 6 meters away from other electrical appliances. Does the electrical noise still persist?	Go to step 2.	Complete.
2	Check the AC ground. Is the AC power supply outlet wired and grounded appropriately?	Go to step 3.	Request the client to fix AC power supply outlet.
4	Check the High Voltage Board and the six high voltage springs for dirt. If dirty, remove the High Voltage Board and clean it and the six springs. (page 8-57). Does the electrical noise still persist?	Go to step 5.	Complete.
5	Reseat the Imaging Unit and the Fuser.	Complete.	

Abnormal Noise During Standby

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
■ Power Supply (PL13.0.17)	Map 5 - Power Supply Plug/Jack Locator (page 10-9)

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Replace the Power Supply (page 8-72).	Complete.	

Operating System and Application Problems

Windows 2000, Windows XP, Windows Server Troubleshooting

Note

For Window XP, select Classic Look or the Windows XP procedures will not match the following procedures. To select **Classic Look**, click **Start**, **Settings**, **Taskbar,** and **Start Menu**. Select the **Start Menu** tab, and then **Classic Start Menu**. Click **OK**.

This troubleshooting section assumes you have completed the following tasks.

- Loaded a Phaser printer PCL or PostScript printer driver.
- Printed and kept a current copy of the Configuration page.

Verify Settings

1. Verify the settings on the Configuration page.
   - **IP Address Source** is set to: **DHCP**, **Control Panel**, **BOOTP**, or **Auto IP** (depending on your network configuration).
   - **Current IP Address** is set correctly. (Note this address if it is assigned by Auto IP, DHCP, or BOOTP.)
   - **Subnet Mask** is set correctly (if used).
   - **Default Gateway** is set correctly (if used).
   - **LPR** is enabled. Verify that the LPR and AppSocket settings are set as desired.
   - **Interpreters**: **Auto, PCL**, or **PostScript** (depending on your driver).
2. Verify that the client is logged into the network and printing to the correct print queue. The user should also have access to the Phaser printer queue.

Verify Driver Installation

1. From the desktop, right-click **My Network Places**, and select **Properties**.
2. Right-click **Local Area Connection** and select **Properties**.
3. Click the **General** tab. View the list of installed network protocols to verify that TCP/IP is installed. (For more information, contact your network administrator.)
4. Click **Install** to install any components not listed, and then restart your computer.
5. From the **Start** menu, select **Start** > **Settings** > **Printers and Faxes**.
6. Right-click the printer icon, and select **Properties**.
7. Click the **Advanced** tab. Verify that the correct printer driver is installed.
8. Click the **Ports** tab. Verify that the IP Address in the **Print to the Following Ports** list is identical to the one on the Configuration page. You may need to click the **Configure Port** button to see the IP address. If necessary, re-select the TCP/IP number used for the printer.

Macintosh Troubleshooting (Mac OS 10.2 and Higher)

The following procedures eliminates cabling, communication, and connection problems. Once you complete these steps, print a test page from your software application.

Macintosh Troubleshooting OS 10.2 Step-by-Step

Perform these steps **only** for Mac OS 10.2 and higher.

1. For **AppleTalk**, perform the steps below. For **TCP/IP**, proceed to step 2.
   a. From the printer's **Control Panel**, verify that the **EtherTalk** is enabled. If it not, enable **EtherTalk**, and reset the printer.
   b. Print the Configuration page and verify that **EtherTalk** is enabled.
   c. From the Configuration page, verity the **Zone**. If you have multiple zones on your network, verify that your printer appears in the desired zone.
2. Open the **Network Utility** and click the **Ping** tab.
3. Enter the printer's IP address.
4. Click **Ping**. If you do not get a response, verify that your TCP/IP settings are correct for your printer and computer.

Print-Quality Troubleshooting

In this chapter...

Chapter 5

Print-Quality Problems Overview

Print-quality defects can be attributed to printer components, consumables, media, internal software, external software applications, and environmental conditions. To successfully troubleshoot print-quality problems, eliminate as many variables as possible. The first step is to generate prints using information pages embedded in the printer on laser paper from the approved media list. Refer to "Media and Tray Specifications" on page 1-15 for supported and specialty media that have been tested and approved for use in the Phaser 6121MFP. 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.

Determine the temperature and humidity under which the printer is operating. Compare this to the "Environmental Specifications" on page 1-14. Extreme temperature and humidity can adversely affect print quality.

When analyzing a print-quality defect, first determine if the defect occurs in all colors or only one color and if it is repeating or a random occurrence.

Defects Associated with Specific Printer Components

Some print-quality problems are associated with specific assemblies. The xerographic component is listed with the associated print-quality defects. Refer to the specific print-quality troubleshooting procedure for detail information.

Toner Cartridge

- Light Prints (page 5-10)
- Foggy Background (page 5-12)
- Gradation Reproduction Failure (page 5-20)
- Void Areas and White Spots (page 5-21)
- Colored Spots (page 5-23)
- Uneven Pitch (page 5-29)
- Uneven Density in the Feed Direction (page 5-33)
- Uneven Density in The Scan Direction (page 5-34)

ADF

- Skew (page 5-31)

Scanner

- Blank Copy or Black Copy (page 5-8)
- Light Print (page 5-10)

- Foggy Background (page 5-12)
- White or Colored Lines and Bands in Feed Direction (page 5-14)
- Black Spots (page 5-19)
- Skew (page 5-31)

Imaging Unit

- Blank Copy or Black Copy (page 5-8)
- Light Print (page 5-10)
- Foggy Background (page 5-12)
- White or Colored Lines and Bands in Feed Direction (page 5-14)
- White or Colored Lines and Bands in Scan Direction (page 5-16)
- Gradation Reproduction Failure (page 5-20)
- Void Areas and White Spots (page 5-21)
- Colored Spots (page 5-23)
- Blurred Image (page 5-24)
- Incorrect Color Image Registration (page 5-25)
- Brush Effect or Blurred Image (page 5-27)
- Back Marking (page 5-28)
- Uneven Pitch (page 5-29)
- Uneven Density in the Feed Direction (page 5-33)
- Uneven Density in The Scan Direction (page 5-34)

Laser Unit

- Blank Copy or Black Copy (page 5-8)
- Light Print (page 5-10)
- Foggy Background (page 5-12)
- White or Colored Lines and Bands in Feed Direction (page 5-14)
- White or Colored Lines and Bands in Scan Direction (page 5-16)
- Gradation Reproduction Failure (page 5-20)
- Blurred Image (page 5-24)
- Incorrect Color Image Registration (page 5-25)
- Uneven Density in the Feed Direction (page 5-33)

Transfer Roller

- Blank Copy or Black Copy (page 5-8)
- Light Print (page 5-10)
- White or Colored Lines and Bands in Feed Direction (page 5-14)
- White or Colored Lines and Bands in Scan Direction (page 5-16)
- Void Areas and White Spots (page 5-21)
- Incorrect Color Image Registration (page 5-25)
- Back Marking (page 5-28)
- Uneven Pitch (page 5-29)
- Uneven Density in the Feed Direction (page 5-33)
- Uneven Density in The Scan Direction (page 5-34)

Fuser

- White or Colored Lines and Bands in Feed Direction (page 5-14)
- White or Colored Lines and Bands in Scan Direction (page 5-16)
- Void Areas and White Spots (page 5-21)
- Colored Spots (page 5-23)
- Poor Fusing Performance or Offset (page 5-26)
- Brush Effect or Blurred Image (page 5-27)
- Back Marking (page 5-28)
- Uneven Pitch (page 5-29)

Repeating Defects

Repeating Defects

Maintenance Item	Component	Distance between Defects
Developer Assembles	Magnetic (Mag) Roller [YMCK]	34 mm (1.34 in.)
Imaging Unit	Drum Charge (RTC) Rollers	31 mm (1.22 in.)
	OPC Drum Rollers	74 mm (2.91 in.)
	IDT Rollers	132 mm (5.20 in.)
Transfer Roller	Transfer Roller	64 mm (2.52 in.)
Fuser	Heat Roller	83 mm (3.26 in.)
	Belt	94 mm (3.70 in.)

Initial Actions for Troubleshooting Print-Quality

Check the Media and Media Settings

Check that the media is clean and dry, and that the media used is supported by this printer. See “Media and Tray Specifications” on page 1-15.

Verify the media settings are correct at the Control Panel.

Check Printer Condition

Toner

Low toner can cause print-quality problems, such as fading, streaking, White lines, or dropouts. Print a small document from different software applications to replicate the problem and check the amount of toner available. If the toner is low, replace the affected cartridges.

Cleaning

Paper, toner, and dust particles can accumulate inside the printer and cause print-quality problems such as smearing or specks. Clean the inside of the printer to reduce these problems. Refer to “Cleaning” on page 7-2.

Calibration

Calibration performs three primary adjustments:

- Color registration
- Toner density
- Toner reproduction curve (used for converting screen colors to CMYK values)

For optimum print quality, the printer automatically performs a calibration cycle after the following events:

- A toner cartridge has been replaced.
- The imaging unit has been replaced.
- 200 pages have printed since the last calibration.
- A big temperature or humidity change has occurred.
- The printer is restarted after settings have been changed.

Normally you would not need to perform a calibration routine unless you are having problems with printing colors.

To perform a manual calibration cycle:

1. On the printer control panel, press the **Back/Menu** button to enter the System Menu.
2. Press the **Down Arrow** button to go to **General Setup** and then press the **OK** button.
3. Arrow down to **Calibrate Now?** and press **OK**.
4. Arrow up to **Yes** and press **OK**.
   The printer performs a calibration cycle, which takes about 2 minutes.

Environmental Checks

Verify that the printer is operating within standard environmental specifications:

- The temperature is 10 to 35° C (50 to 95° F).
- Relative humidity is 10 to 85 % .

If the printer is operating in an environment that is outside of these conditions, print quality can suffer. You can move the printer to another location, or correct the environment that the printer operates in.

Print Quality Troubleshooting

The following table provides a list of possible print quality problems and lists pages for more information.

Print Quality Summary

Print Quality Problem	Go to
Blank Copy or Black Copy	5-8
Light Print	5-10
Foggy Background	5-12
White or Colored Lines and Bands in Feed Direction	5-14
White or Colored Lines and Bands in Scan Direction	5-16
Black Spots	5-19
Gradation Reproduction Failure	5-20
Void Areas and White Spots	5-21
Colored Spots	5-23
Blurred Image	5-24
Incorrect Color Image Registration	5-25
Poor Fusing Performance or Offset	5-26
Brush Effect or Blurred Image	5-27
Back Marking	5-28
Uneven Pitch	5-29
Skew	5-31
Uneven Density in the Feed Direction	5-33
Uneven Density in The Scan Direction	5-34

Printing Test Patterns

Many of the troubleshooting procedures require that you print one of the printers built-in test patterns. Use the following procedure to print the test pattern.

1. On the initial screen, press the following keys in this order.
   OK > Stop/Reset > 0 > 0 > Stop/Reset > 0 > 1.
2. Press the **Down Arrow** button to navigate to **Function**, and then press **OK**.
3. Navigate to **Prn Test Pattern**, and then press **OK**.
4. Select a paper tray and press **OK**.
5. Select a test pattern, and then press **OK**.

Automatic Document Feeder (ADF) Print Quality Problems

The source of print quality problems from the Automatic Document Feeder (ADF) Unit generally come from two sources:

1. **Skewing when copying from the ADF.** If skewing occurs when using the ADF, try using the platen and repeat the copy. If the image is fine from the platen, but skews from the ADF itself, perform the skew adjustment. See "Skew" on page 5-31. If this adjustment does not resolve the issue then replace the ADF Unit (page 8-39).
2. **Banding defects that occur as a result of uneven feeding motion.** In this condition, the original page pauses occasionally at uneven intervals. This causes a banding pattern on the output copy. In this case, clean the feed rollers and validate the thickness of the original document. Copy media out of specification from the document glass. If cleaning does not solve the problem, then replace the ADF Unit (page 8-39).

Blank Copy or Black Copy

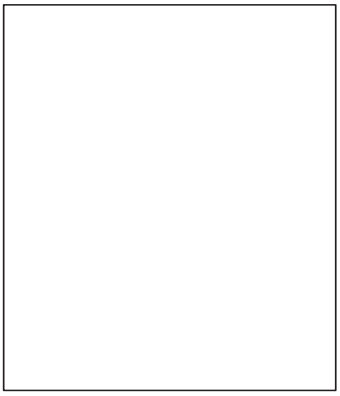
The printed copies are either blank or solid black.

Initial Actions

Perform the initial actions listed on page 5-5.

.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Scanner Unit, PL1.1.6 ■ Engine Control Board, PL13.0.20 ■ Image Processor Board, PL13.0.29/30 ■ Imaging Unit, PL4.0.13 ■ Laser Unit, PL4.0.2 ■ High Voltage Board, PL13.0.6	 Blank Print  Black Print

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print Test Pattern 3 (see page 5-7). Does the defect occur on the printed output?	Go to step 6.	Go to step 2.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
2	Reseat all connectors and cables on the Image Processor Board and on the Engine Control Board. Perform a copy job. Does the defect still occur?	Replace the Scanner Unit (page 8-31). If the problem persists, go to step 3.	Complete.
3	Check connectors P/J18 and P/J19 on the Engine Control Board, and P/J8 on the Image Processor Board. Are they seated properly?	Go to step 4.	Reseat the connectors. If the problem persists, go to step 4.
4	Replace the Image Processor Board (page 8-66). Does the defect still occur?	Go to step 5.	Complete.
5	Reseat CN6 on the Power Supply and P/J9 on the Image Processor Board. Does the error still occur when copying?	Replace the Power Supply (page 8-72).	Complete.
6	Inspect the Imaging Unit. Is the gear of the Imaging Unit drive mechanism installed properly?	Go to step 7.	Correct the drive transmitting section or replace the Imaging Unit. If the problem persists, go to step 7.
7	Is the charge corona voltage contact or photo-conductor ground contact of the Imaging Unit connected properly?	Go to step 8.	Check, clean, or correct the contact. If the problem persists, go to step 8.
8	Check that all connectors and cables are securely connected to the High Voltage Board. Are the connectors seated properly?	Go to step 9.	Reseat the connectors. If the problem persists, go to step 9.
9	Replace the following units, listed in order, until problem is eliminated: Imaging Unit (page 8-6), High Voltage Board (page 8-57), Engine Control Board (page 8-59), and Laser Unit (page 8-50).	Complete.	

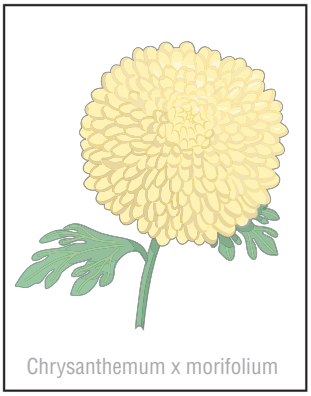
Light Print

The overall image density is too light.

Initial Actions

Perform the initial actions listed on page 5-5.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Scanner Unit, PL2.0.4 ■ Imaging Unit, PL4.0.13 ■ Transfer Roller, PL7.1.10 ■ High Voltage Board, PL13.0.6 ■ Laser Unit, PL4.0.2 ■ Toner Cartridge (See consumables parts list)	 Light or Undertone Print

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print Test Pattern 3 (see page 5-7). Does the defect occur on the printed output?	Go to step 4.	The problem is associated with the scanner system. Go to step 2.
2	Increase the copy darkness level using the control panel adjustment, and then make another copy. Does the defect still occur?	Go to step 3.	Complete.
3	Reseat all connectors and cables between the Scanner Unit and the Image Processor Board, and then make another copy. Does the defect still occur?	Replace the Scanner Unit (page 8-31).	Complete.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Inspect the Imaging Unit. Is the outside of the unit or the contact dirty?	Clean the unit. If the problem persists, go to step 5.	Go to step 5.
5	Inspect the laser window. Is the window dirty?	Carefully clean the surfaces. If the problem persists, go to step 6.	Go to step 6.
6	Is the 2nd Transfer Roller contact dirty?	Clean the contact. If the problem persists, go to step 7.	Go to step 7.
7	Has the problem been eliminated?	Complete.	Replace the following units, listed in order, until the problem is eliminated: Toner Cartridge (page 8-20) Imaging Unit (page 8-6), Transfer Roller (page 8-56), Laser Unit (page 8-50), Engine Control Board (page 8-59), and High Voltage Board (page 8-57).

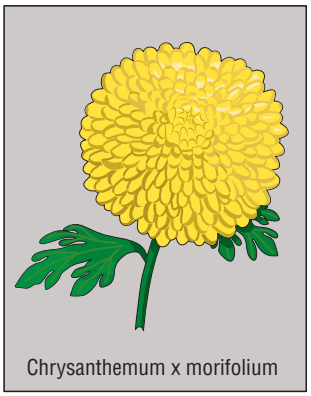
Foggy Background

The background image is either distorted or foggy.

Initial Actions

Perform the initial actions listed on page 5-5.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Scanner Unit, PL2.0.4 ■ Toner Cartridge (See consumables parts list) ■ Imaging Unit, PL4.0.13 ■ Laser Unit, PL4.0.2	 Background Contamination

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print Test Pattern 3 (see page 5-7). Does the defect occur on the printed output?	The problem is in the print image system. Go to step 4.	The problem is in the Scanner system. Go to step 2.
2	This defect often occurs when copying books or other material that prevents the ADF from fully closing. If the ADF does not fully close, external light can produce background on the copy. Open and Close the ADF and verify it closes completely. Does the defect still occur?	Go to step 3.	Complete.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
3	Reseat all connectors and cables between the Scanner Unit and the Image Processor Board, and then make another copy. Does the defect still occur?	Replace the Scanner Unit (page 8-31).	Complete.
4	Remove the Imaging Unit. Wipe the transfer belt with a clean white cloth. Is toner evident on the cloth?	The cleaning blade may not be operating correctly. Go to step 5.	Go to step 9.
5	Replace the Imaging Unit. Does the problem persist?	Go to step 6.	Complete.
6	Check the Cleaning Blade Solenoid connector CN6, and Engine Control Board connector P/J5. Are the connectors seated properly?	Go to step 7.	Reseat the connectors. If the problem persists, go to step 7.
7	Replace the Cleaning Blade Solenoid (page 8-104). Does the problem persist?	Go to step 8.	Complete.
8	Replace the Engine Control Board (page 8-59).	Complete.	
9	Are the developing bias contact terminals of both the Toner Cartridge and the Imaging Unit in good contact?	Go to step 10.	Clean the contact terminals. If the problem persists, go to step 10.
10	Check the connectors and terminal contacts of the Laser Unit. Are the connectors, window surface, and contact terminals connected properly?	Go to step 11.	Reseat the connectors and clean the terminal contacts. If the problem persists, go to step 11.
11	Has the problem been eliminated?	Complete.	Replace the following units until problem is eliminated: Laser Unit (page 8-50), Toner Cartridge (page 8-20).

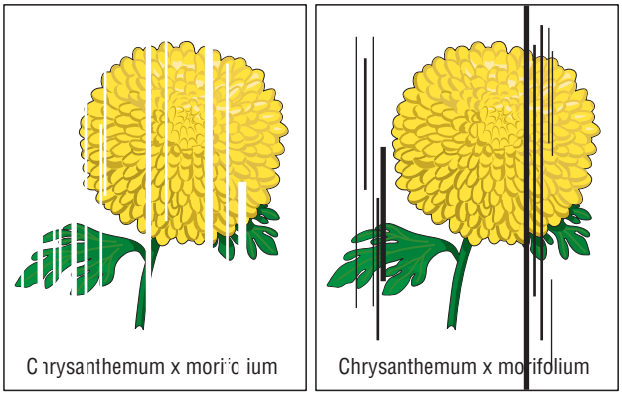
White or Colored Lines and Bands in Feed Direction

Vertical lines or bands in the output indicate problems in the feed direction.

Initial Actions

Perform the initial actions listed on page 5-5.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Scanner Unit, PL2.0.4 ■ Imaging Unit, PL4.0.13 ■ Fuser, PL11.0.18 ■ Transfer Roller, PL7.1.10 ■ Laser Unit, PL4.0.2	 Vertical Blank Lines Vertical Stripes

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print Test Pattern 3 (see page 6-32). Does the defect occur on the printed output?	The problem is in the print image system. Go to step 4.	The problem is in the Scanner system. Go to step 2.
2	This defect often occurs when foreign material (paper dust, toner, or other material) deposits on the document glass. The scanhead detects the foreign material while scanning, and the defect appears as streaks or spots on the copy output. Thoroughly clean the document glass. Does the defect still occur?	Go to step 3.	Complete.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
3	Reseat all connectors and cables between the Scanner and the Image Processor Board, and the Engine Control Board, and then make another copy. Does the defect still occur?	Replace the Scanner Unit (page 8-31).	Complete.
4	Does the defect occur in only one color on the test print?	Replace the toner cartridge associated with the defect. If the defect persists, go to step 5.	Go to step 5.
5	Inspect the Imaging Unit:		
	Are there scratches or lines evident on the photo conductor surface?	Replace the Imaging Unit (page 8-6).	
	Is the connector or contact terminal of the Imaging Unit dirty?	Clean the contact terminal.	
	Does the problem persist?	Go to step 6.	Complete.
6	Check the Laser Unit:		
	Are the connectors and terminal contacts of the Laser Unit connected properly?		Reseat the connectors and clean the terminal contacts.
	Is the laser window surface clean?	Go to step 7.	Clean the laser window. If the problem persists, go to step 7.
7	Is the Transfer Roller dirty or damaged?	Replace the roller (page 8-56). If the problem persists, go to step 8.	Go to step 8.
8	Check the paper path. Is there a foreign object or obstruction in the path?	Remove the object and reprint the test page. If the problem persists, go to step 9.	Go to step 9.
9	Inspect the Fuser. Is the fusing entrance guide plate or the separation claw dirty or scratched?	Clean the guide plate and reprint the test sheet. If the problem persists go to step 10.	Go to step 10.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
10	Replace the Fuser (page 8-9). Does the problem persist?	Go to step 11.	Complete.
11	Replace the Imaging Unit. If the problem persists, replace the toner cartridges (page 8-20). If the problem persists, replace the Laser Unit (page 8-50).		

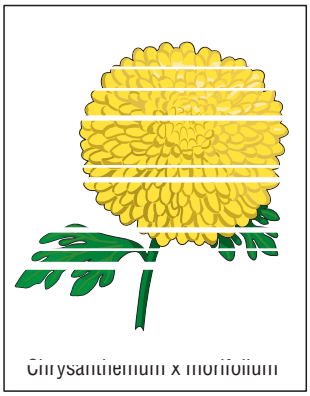
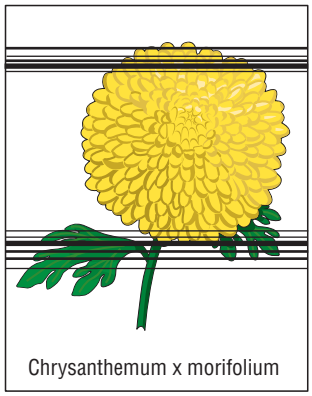
White or Colored Lines and Bands in Scan Direction

Horizontal lines or bands in the copy indicate problems in the scan direction.

Initial Actions

Perform the initial actions listed on page 5-5.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Imaging Unit, PL4.0.13 ■ Transfer Roller, PL7.1.10 ■ Fuser, PL11.0.18 ■ Laser Unit, PL4.0.2 ■ Power Supply, PL13.0.17	 Horizontal Band, Void, or Streaks  Chrysanthemum x morifolium Horizontal Stripes

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print Test Pattern 3 (see page 6-32). Does the defect occur on the printed output?	The problem is in the print image system. Go to step 4.	The problem is in the Scanner system. Go to step 2.
2	This defect often occurs when foreign material (i.e. paper dust, toner, or other material) deposits on the document glass. The scanhead detects the foreign material while scanning, and the defect appears as streaks or spots on the copy output. Thoroughly clean the document glass. Does the defect still occur?	Go to step 3.	Complete.
3	Reseat all connectors and cables between the Scanner, the Image Processor Board, and the Engine Control Board. Make another copy. Does the defect still occur?	Replace the Scanner Unit (page 8-31).	Complete.
4	Does the defect occur in only one color on the test print?	Replace the toner cartridge associated with the defect. If the defect persists, go to step 5.	Go to step 5.
5	Inspect the Imaging Unit:		
	Are there scratches or lines evident on the photo conductor surface?	Replace the Imaging Unit (page 8-6).	
	Is the outside of the Imaging Unit surface dirty?	Carefully clean the surface.	
	Is the connector or contact terminal of the Imaging Unit dirty?	Clean the contact terminal.	
	Does the problem persist?	Go to step 6.	Complete.
6	Is the developing bias contact terminal of the toner cartridge connected properly?	Go to step 7.	Clean the contact terminal or reconnect the connector. If the problem persists, go to step 7.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
7	Check the connectors and terminal contacts of the Laser Unit. Are the connectors and contact terminals connected properly?	Go to step 8.	Reseat the connectors and clean the terminal contacts. If the problem persists, go to step 8.
8	Is the Transfer Roller dirty or damaged?	Replace the roller (page 8-56). If the problem persists, go to step 9.	Go to step 9.
9	Check the paper path. Is there a foreign object or obstruction in the path?	Remove the object and reprint the test page. If the problem persists, go to step 10.	Go to step 10.
10	Inspect the Fuser. Is the fusing entrance guide plate dirty or scratched?	Clean the guide plate and reprint the test sheet. If the problem persists, replace the Fuser (page 8-9) and go to step 11.	Go to step 11.
11	Has the problem been eliminated?	Complete.	Replace the Power Supply (page 8-72).

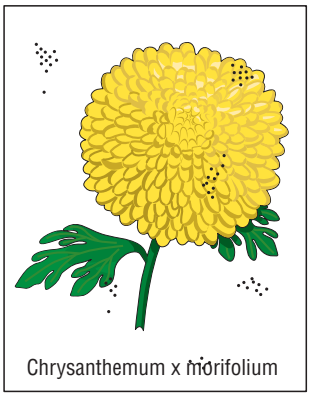
Black Spots

The background image of all copies includes black spots.

Initial Actions

Perform the initial actions listed on page 5-5.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Scanner Unit, PL2.0.4	 Random Spots

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	This defect can occur when foreign material is on the document glass. The scanhead detects the foreign material while scanning, and the defect appears as spots on the copy output. Thoroughly clean the document glass. Does the defect still occur?	Go to step 2.	Complete.
2	Reseat all connectors and cables between the Scanner Unit and the Image Processor Board, and then make another copy. Does the defect still occur?	Replace the Scanner Unit (page 8-31).	Complete.

Gradation Reproduction Failure

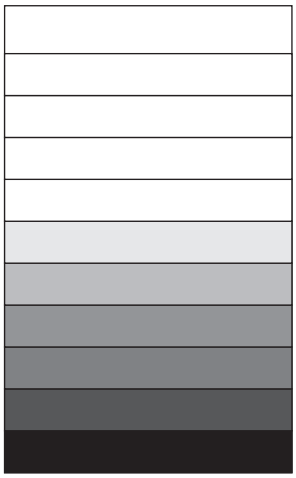
The overall image becomes less and less clear with each copy.

Initial Actions

Perform the initial actions listed on page 5-5.

- Verify the media settings are correct at the Control Panel.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Laser Unit, PL4.0.2 ■ Imaging Unit, PL4.0.13 ■ High Voltage Board, PL13.0.6 ■ Toner Cartridge (See consumables parts list)	 s6121mfp-329

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print Test Pattern 3 (page 6-32). Is the error present in only one color?	Replace the toner cartridge associated with the defect. If the defect persists, go to step 2.	Go to step 2.
2	Inspect the Imaging Unit. Is the outside of the unit dirty?	Clean the unit. If problem persists, go to step 3.	Go to step 3.
3	Inspect the laser window. Is the outside of the surface dirty?	Carefully clean the surfaces. If the problem persists, go to step 4.	Go to step 4.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
4	Has the problem been eliminated?	Complete.	Replace the following units until the problem is eliminated: Toner Cartridge (page 8-20), Laser Unit (page 8-50), High Voltage Board (page 8-57).

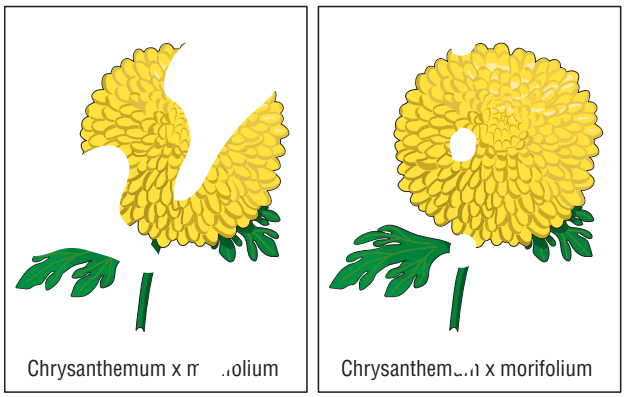
Void Areas and White Spots

Missing spots or areas on the copy.

Initial Actions

Perform the initial actions listed on page 5-5.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Imaging Unit, PL4.0.13 ■ Transfer Roller, PL7.1.10 ■ Toner Cartridge (See consumables parts list) ■ Fuser, PL11.0.18	 Partial Band Repeating Defects

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print Test Pattern 3 (page 5-7). Is the error present in only one color?	Replace the toner cartridge associated with the defect. If the defect persists, go to step 2.	Go to step 2.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
2	Inspect the Imaging Unit. Is the transfer belt dirty with fingerprints or oil?	Wipe the surface clean with a soft cloth. If the problem persists, go to step 3.	Go to step 3.
3	Is the Transfer Roller damaged or dirty?	Replace the roller (page 8-56). If the problem persists, go to step 4.	Go to step 4.
4	Check the paper path. Is there a foreign object or obstruction in the path?	Remove the object and reprint the test sheet. If the problem persists, go to step 5.	Go to step 5.
5	Inspect the Fuser. Are the green release levers in the closed position?	Close the green release levers and go to step 6.	Go to step 6.
6	Has the problem been eliminated?	Complete.	Replace the toner cartridge (page 8-20). If the problem persists, replace the Laser Unit (page 8-50).

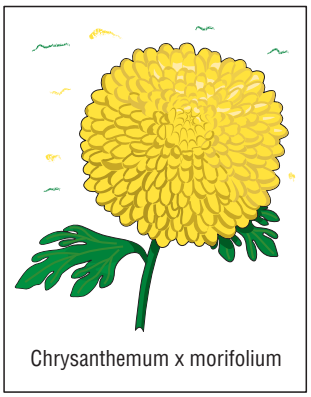
Colored Spots

Random colored spots on copies.

Initial Actions

Perform the initial actions listed on page 5-5.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Imaging Unit, PL4.0.13 ■ Transfer Roller, PL7.1.10 ■ Toner Cartridge (see Consumables Parts List) ■ Fuser, PL11.0.18	 White Portion is Colored

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print Test Pattern 3 (page 5-7). Is the error present in only one color?	Go to step 3.	Go to step 2.
2	Inspect the Imaging Unit. Are there scratches or lines on the photo conductor surface?	Replace the Imaging Unit (page 8-6). If the problem persists, go to step 3.	Go to step 3.
3	Is the Transfer Roller damaged?	Replace the roller (page 8-56). If the problem persists, go to step 4.	Go to step 4.
4	Check the paper path. Is there a foreign object or obstruction in the path?	Remove the object and reprint the test sheet. If the problem persists, go to step 5.	Go to step 5.
5	Inspect the Fuser. Is the Fuser Roller dirty or scratched?	Replace the Fuser (page 8-9). If the problem persists, go to step 6.	Go to step 6.
6	Has the problem been eliminated?	Complete.	Replace the toner cartridge (page 8-20).

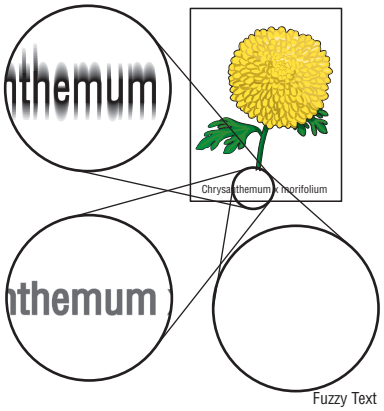
Blurred Image

The overall image density is blurry.

Initial Actions

Perform the initial actions listed on page 5-5.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Laser Unit, PL4.0.2 ■ Imaging Unit, PL4.0.13	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Inspect the Laser Unit. Is the window surface dirty?	Carefully clean the window surface. If the problem persists, go to step 2.	Go to step 2.
2	Has the problem been eliminated?	Complete.	Replace the following units, listed in order, until problem is eliminated: Imaging Unit (page 8-6), Laser Unit (page 8-50).

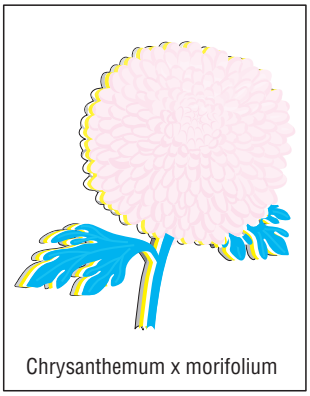
Incorrect Color Image Registration

The composite color image is misaligned or presents an incorrect color scheme.

Initial Actions

Calibrate the printer first (see “Calibration” on page 5-5), and then perform the rest of the initial actions listed on page 5-5.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Imaging Unit, PL4.0.13 ■ Transfer Roller, PL7.1.10 ■ Laser Unit, PL4.0.2 ■ Engine Control Board, PL13.0.20	 Color Registration

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Inspect the Imaging Unit:		
	Is the drive coupling to the machine dirty?	Clean.	
	Is the unit installed in the proper position?	If there is dirt on the drum, carefully clean the surface. If there are scratches, replace the unit (page 8-6). If the problem persists, go to step 2.	Reinstall the Imaging Unit. If the problem persists, replace the Imaging Unit. If the problem persists, go to step 2.
2	Has the problem been eliminated?	Complete.	Replace the following units, listed in order, until problem is eliminated: Engine Control Board (page 8-59), Laser Unit (page 8-50).

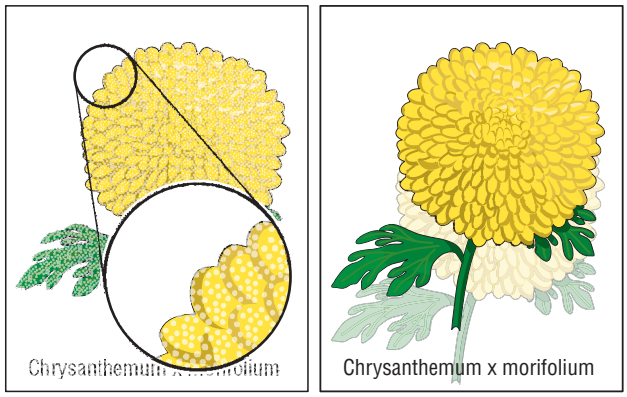
Poor Fusing Performance or Offset

The fusing process or offset is incorrect.

Initial Actions

Perform the initial actions listed on page 5-5.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Engine Control Board, PL13.0.20 ■ Fuser, PL11.018	 Incomplete Transfer Residual Image/Ghosting

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the media. Is the paper damp or the incorrect media for the printer?	Replace with paper that meets the specifications for the printer. If the problem persists, go to step 2.	Go to step 2.
2	Inspect the Fuser. Are the green fuser separator levers in the correct position?	Go to step 3.	Close the levers. If the problem persists, go to step 3.
3	Replace the following units, listed in order, until problem is eliminated: Engine Control Board (page 8-59), Fuser (page 8-9).		

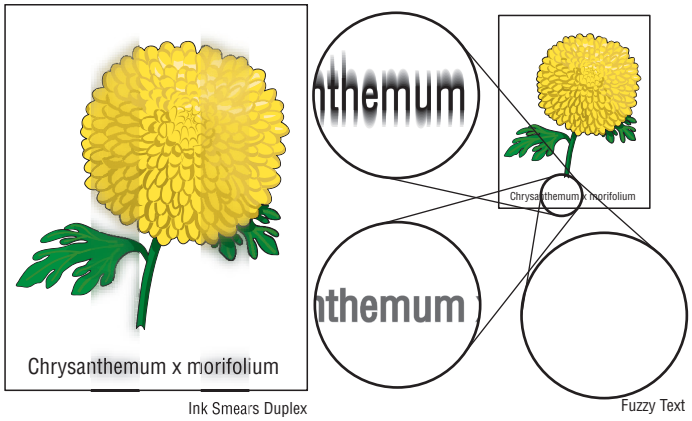
Brush Effect or Blurred Image

The image on the copy appears blurry or smeared.

Initial Actions

Perform the initial actions listed on page 5-5.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Imaging Unit, PL4.0.13 ■ Fuser, PL11.0.18	

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the media. Is the paper damp or the incorrect media for the printer?	Replace with paper that meets the specifications for the printer. If the problem persists, go to step 2.	Go to step 2.
2	Replace the Imaging Unit (page 8-6). Does the problem persist?	Go to step 3.	Complete.
3	Inspect the Fuser. Is the fusing entrance guide plate dirty or scratched?	Clean the guide plate. If the problem persists go to step 4.	Go to step 4.
4	Replace the Fuser (page 8-9).		

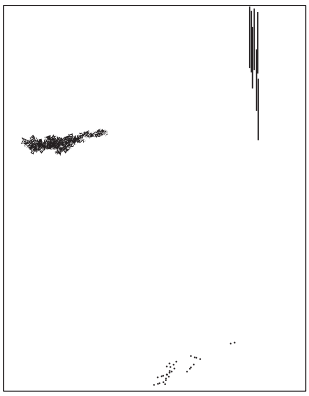
Back Marking

The copy includes markings on the backside of the image.

Initial Actions

Perform the initial actions listed on page 5-5.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Imaging Unit, PL4.013 ■ Transfer Roller, PL7.1.10 ■ Fuser, PL11.0.18 ■ High Voltage Board, PL13.0.6	 Toner on Back of Print

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the paper path. Is there a foreign object in the paper path?	Remove the obstruction. If the problem persists, go to step 2.	Go to step 2.
2	Inspect the Fuser. Is the fusing entrance guide plate dirty, or is the Fuser Roller dirty or scratched?	Clean or replace the Fuser (page 8-9). If the problem persists, then go to step 3.	Go to step 3.
3	Check the Transfer Roller. Is the roller dirty or damaged?	Replace the Transfer Roller (page 8-9). If the problem persists, go to step 4.	Go to step 4.
4	Has the problem been eliminated?	Complete.	Replace the following units, listed in order, until the problem is eliminated: Imaging Unit (page 8-6), Fuser (page 8-9), High Voltage Board (page 8-57).

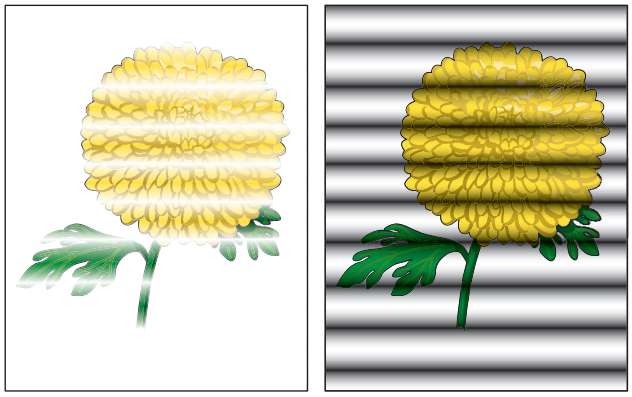
Uneven Pitch

The pitch along the feed direction is uneven or inconsistent.

Initial Actions

Perform the initial actions listed on page 5-5.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Toner Cartridge ■ Imaging Unit, PL4.0.13 ■ Transfer Roller, PL7.1.10 ■ Fuser, PL11.0.18	 Repeating Light or Dark Lines

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Do faint lines occur at a pitch of 25 mm in the main scanning direction?	Allow the printer to stand idle in an environment free of high humidity.	Go to step 2.
2	Inspect the toner cartridge. Is the drive mechanism clean? Are the cartridges for each color in place?	Go to step 3.	Clean the mechanism and reinstall the cartridge. If the problem persists, go to step 3.
3	Inspect the Laser Unit. Is the unit secured in position with the fixing screw?	Go to step 4.	Tighten the fixing screw. If the problem persists, go to step 4.
4	Inspect the Imaging Unit. Is the photo-conductor surface dirty or scratched?	Replace the Imaging Unit (page 8-6). If the problem persists, go to step 5.	Go to step 5.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
5	Check the Transfer Roller. Is the roller dirty, deformed, or worn?	Replace the Transfer Roller (page 8-56). If the problem persists, go to step 6.	Go to step 6.
6	Inspect the Fuser. Are the rollers and drive mechanism dirty, scratched, or worn?	Replace the Fuser (page 8-9). If problem persists, then go to step 7.	Go to step 7.
7	Has the problem been eliminated?	Complete.	Replace the following units, listed in order, until problem is eliminated: Toner Cartridge (page 8-20), Imaging Unit (page 8-6).

Skew

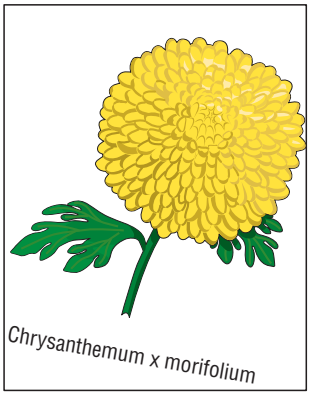
The print on the copy is on an uneven skew from the original.

Initial Actions

Check to see if the skew is within specification. See the Skew specification in "Print-Quality Specifications" on page 5-35.

Perform the initial actions listed on page 5-5.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Scanner Unit, PL2.0.4 ■ ADF Feed Roller, PL1.1.4 ■ ADF Pick Pad, PL1.2.9 ■ Feed Roller, PL6.0.1 ■ Laser Unit, PL4.0.2 ■ Engine Control Board, PL13.0.20	 Skew 2

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print Test Pattern 3 (page 6-32). Is the skew error present?	Go to step 7.	Go to step 2.
2	Does the paper feed through the ADF?	Go to step 3.	Go to step 6.
3	Check the document. Does the document meet the ADF specifications?	Readjust the ADF paper guide to ensure it is adjusted correctly. Go to step 4.	Use the document glass mode or change the paper type.
4	Does the image print correctly?	Complete.	Go to step 5.
5	Check the ADF Feed Roller and Pick Pad. Is there damage or debris on the Feed Roller or Pick Pad?	Remove the debris or replace the ADF Feed Roller (page 8-14) and Pick Pad (page 8-18).	Replace the ADF Unit (page 8-39).

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
6	Check the document setting. Is the document placed on the document glass correctly?	Replace the Scanner (page 8-31).	Reseat the document.
7	Is the paper dry, a recommended type, and loaded in the correct position?	Go to step 8.	Replace the paper with paper that is new, dry, and approved for the printer, then go to step 8.
8	Print Test Pattern 3. Does the defect persist?	Go to step 9.	Complete.
9	Check that the paper tray paper guides are set correctly. Does the defect persist?	Go to step 10.	Complete.
10	Reseat the Imaging Unit. Does the defect persist?	Go to step 11.	Complete.
11	Inspect the Feed Roller. Clean (page 7-5) or replace as necessary. Does the problem persist?	Go to step 12.	Complete.
12	Replace the Laser Unit (page 8-50). Does the problem persist?	Go to step 13.	Complete.
13	Replace the Engine Control Board (page 8-59).		

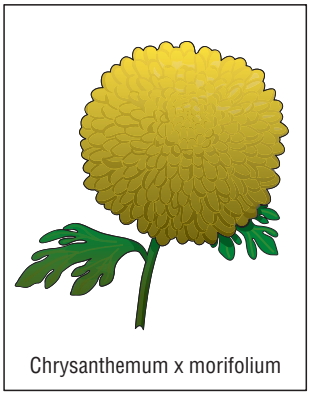
Uneven Density in the Feed Direction

The density of the print along the length of the copy is inconsistent.

Initial Actions

Perform the initial actions listed on page 5-5.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Imaging Unit, PL4.0.13 ■ High Voltage Board, PL13.0.6 ■ Laser Unit, PL4.0.2 ■ Transfer Roller, PL7.1.10 ■ Toner Cartridge (See consumables parts list)	 Color Uneven or Wrong (Process Direction)

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print Test Pattern 3 (page 5-7). Is the error present in only one color?	Replace the toner cartridge associated with the defect. If the defect persists, go to step 2.	Go to step 2.
2	Is the contact terminal of the Imaging Unit dirty?	Clean the contact terminal. If the error persists, go to step 3.	Go to step 3.
3	Is the Laser Unit window surface dirty?	Carefully clean the surface. If problem persists, go to step 4.	Go to step 4.
4	Has the problem been eliminated?	Complete.	Replace the following units, listed in order, until problem is eliminated: Imaging Unit (page 8-6), Laser Unit (page 8-50), High Voltage Board (page 8-57).

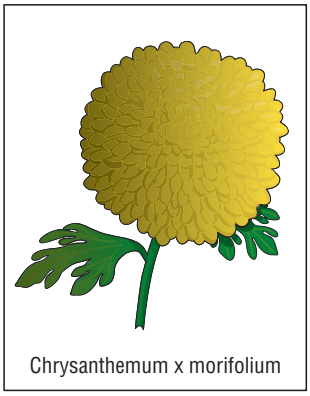
Uneven Density in The Scan Direction

The density of the print along the width of the copy is inconsistent.

Initial Actions

Perform the initial actions listed on page 5-5.

Troubleshooting Reference Table

Applicable Parts	Example Print
■ Imaging Unit, PL4.0.13 ■ High Voltage Board, PL13.0.6 ■ Toner Cartridge (See consumables parts list)	 Color Uneven or Wrong (Scan Direction)

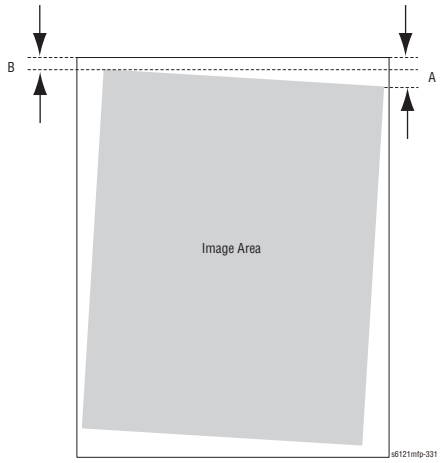
Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Print Test Pattern 3 (page 5-7). Is the error present in only one color?	Replace the toner cartridge associated with the defect. If the defect persists, go to step 2.	Go to step 2.
2	Is the contact terminal of the Imaging Unit dirty?	Clean the contact terminal. If the error persists, go to step 3.	Go to step 4.
3	Has the problem been eliminated?	Complete.	Replace the following units, listed in order, until problem is eliminated: Imaging Unit (page 8-6), High Voltage Board (page 8-57).

Print-Quality Specifications

Note

The printed image has 4 mm margins on all sides.

Characteristic	Specification
Printable Area	214 mm x 352 mm (Legal size - 4 mm on all sides)
Simplex Skew Vertical Horizontal Scanner ADF	A rectangular box of 189mm by 256mm is used to measure skew. < ± 2.0 mm (0.08 in.) < ± 1.5 mm (0.06 in.) ± 1.0 % ± 1.3 % To measure skew, measure the margin of the paper at the leading edge of each corner, and then take the difference between them. 
Duplex Skew Vertical Horizontal	 < 3.0 mm (0.12 in.) < 2.5 mm (0.10 in.)
Perpendicularity	114.5 mm ± 0.8 mm
Parallelism	
Horizontal	180 mm ± 1.2 mm
Vertical	234 mm ± 1.2 mm
Linearity	
Scanning Direction Line Scanner ADF	 0.5 mm or less 0.5 mm or less
Feeding Direction Line Scanner ADF	 0.7 mm or less 0.7 mm or less

Characteristic	Specification
Magnification Error	
Horizontal Simplex	234 mm ± 0.5 mm
Horizontal Duplex	234 mm ± 0.8 mm
Vertical Simplex	190 mm ± 0.5 mm
Vertical Duplex	190 mm ± 0.8 mm
Image Registration	
Leading Edge	± 2.5 mm (0.10 in.)
Side Edge	± 2.0 mm (0.08 in.)

Adjustments and Calibrations

In this chapter...

- Adjust Function Procedures
- Service Mode
- Maintenance Mode

Chapter 6

Adjust Function Procedures

Using the Adjust Functions

The Adjustment Setting section contains detailed information on the adjustment items and procedures for this machine. Before attempting to solve the customer problem, perform these checks:

- The power supply voltage meets the specifications.
- The power supply is properly grounded.
- The installation site is environmentally appropriate: high temperature, high humidity, direct sunlight, ventilation, etc.; levelness of the installation site.
- The original has a problem that may cause a defective image.
- The density is properly selected.
- The original glass or related part is dirty.
- Correct paper is being used for printing.
- The units, parts, and supplies used for printing are properly replenished.
- Toner is not running out.

Service Mode

Entering Service Mode

1. On the initial screen, press the following buttons in this order.
   OK > Stop/Reset > 0 > 0 > Stop/Reset > 0 > 1

   The Control Panel displays the following:

   Service Mode
   Service's Choice
   Adjustment
   Counter
2. Press **Up** or **Down** to navigate through the menu.
3. Once you find the desired function, press the **OK** button again to enter the submenu or initiate the action.

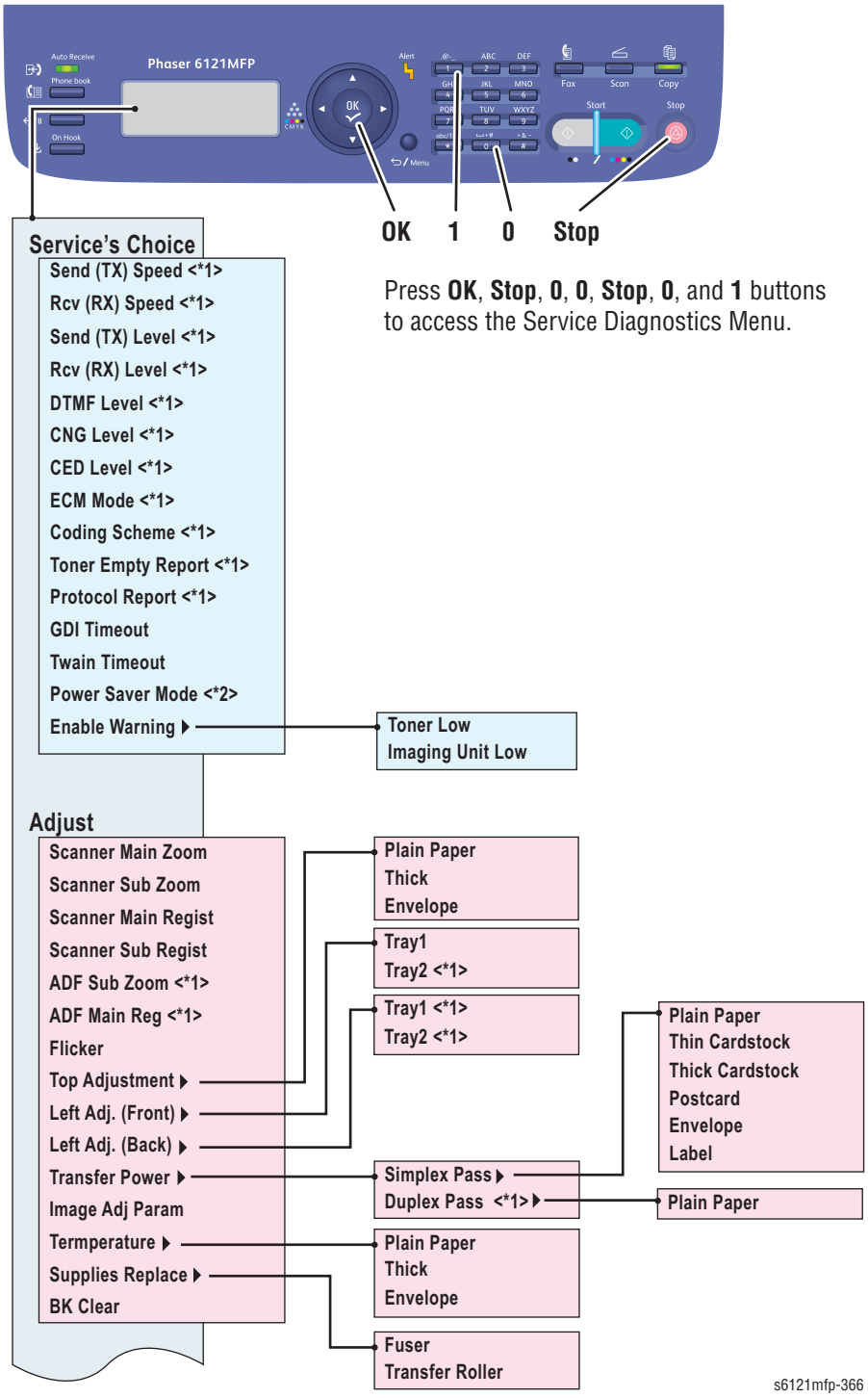
Note

Pressing the **Back/Menu** at any level takes you up to the previous command level.

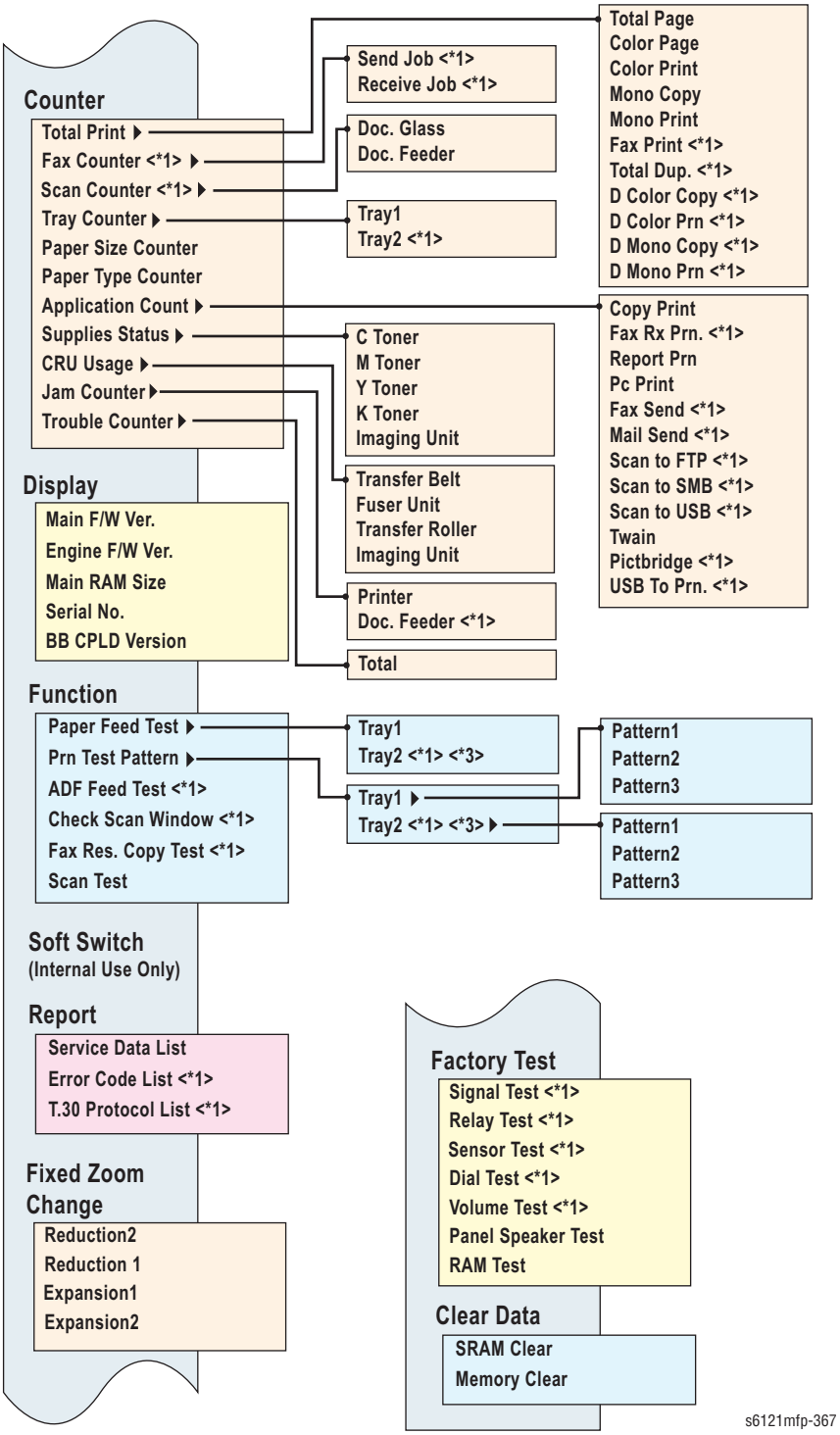
Exiting Service Mode

1. Press **Stop/Reset** to exit.

Service Mode Menu Maps



Press **OK**, **Stop**, **0**, **0**, **Stop**, **0**, and **1** buttons to access the Service Diagnostics Menu.


Counter
Total Print
Fax Counter <*1>
Scan Counter <*1>
Tray Counter
Paper Size Counter
Paper Type Counter
Application Count
Supplies Status
CRU Usage
Jam Counter
Trouble Counter
Send Job <*1>
Receive Job <*1>
Doc. Glass
Doc. Feeder
Tray1
Tray2 <*1>
C Toner
M Toner
Y Toner
K Toner
Imaging Unit
Transfer Belt
Fuser Unit
Transfer Roller
Imaging Unit
Printer
Doc. Feeder <*1>
Total
Total Page
Color Page
Color Print
Mono Copy
Mono Print
Fax Print <*1>
Total Dup. <*1>
D Color Copy <*1>
D Color Prn <*1>
D Mono Copy <*1>
D Mono Prn <*1>
Copy Print
Fax Rx Prn. <*1>
Report Prn
Pc Print
Fax Send <*1>
Mail Send <*1>
Scan to FTP <*1>
Scan to SMB <*1>
Scan to USB <*1>
Twain
Pictbridge <*1>
USB To Prn. <*1>
Display
Main F/W Ver.
Engine F/W Ver.
Main RAM Size
Serial No.
BB CPLD Version
Function
Paper Feed Test
Prn Test Pattern
ADF Feed Test <*1>
Check Scan Window <*1>
Fax Res. Copy Test <*1>
Scan Test
Tray1
Tray2 <*1> <*3>
Tray1
Tray2 <*1> <*3>
Pattern1
Pattern2
Pattern3
Pattern1
Pattern2
Pattern3
Soft Switch
(Internal Use Only)
Report
Service Data List
Error Code List <*1>
T.30 Protocol List <*1>
Fixed Zoom Change
Reduction2
Reduction 1
Expansion1
Expansion2
Factory Test
Signal Test <*1>
Relay Test <*1>
Sensor Test <*1>
Dial Test <*1>
Volume Test <*1>
Panel Speaker Test
RAM Test
Clear Data
SRAM Clear
Memory Clear
s6121mfp-367

Service Mode Menu

The table below lists the menu options available from the Service mode menu. The table contains notations that have the following meanings:

- <*1>: Displayed on Phaser 6121MFP/N/D.
- <*2>: If the printer is a 220V model, this menu item doesn't display.
- <*3>: Displayed only when the lower feeder unit is installed.

Service Mode Menu

Service Mode	Parameter		Go to
Services's Choice	Send (TX) Speed <*1>		page 6-9
	Rcv (RX) Speed <*1>		page 6-9
	Send (TX) Level <*1>		page 6-9
	Rcv (RX) Level <*1>		page 6-10
	DTMF Level <*1>		page 6-10
	CNG Level <*1>		page 6-10
	CED Level <*1>		page 6-10
	ECM Mode <*1>		page 6-11
	Coding Scheme <*1>		page 6-11
	Toner Empty Report <*1>		page 6-11
	Protocol Report <*1>		page 6-12
	GDI Time-out		page 6-12
	Twain Time-out		page 6-13
	Power Saver Mode <*2>		page 6-13
	Enable Warning	Toner Low	page 6-13
		Imaging Unit Low	

Service Mode Menu (continued)

Service Mode	Parameter			Go to
Adjust	Scanner Main Zoom			page 6-14
	Scanner Sub Zoom			page 6-15
	Scanner Main Regist			page 6-16
	Scanner Sub Regist			page 6-17
	ADF Sub Zoom<*1>			page 6-19
	ADF Main Reg<*1>			page 6-20
	ADF Sub Reg<*1>			page 6-21
	Flicker			page 6-22
	Top Adjustment	Plain Paper		page 6-22
		Thick		
		Envelope		
	Left Adj. (Front)	Tray1		page 6-23
		Tray2 <*1>		
	Left Adj. (Back)	Tray1 <*1>		page 6-23
		Tray2 <*1>		
	Transfer Power	Simplex Pass	Plain Paper	page 6-24
			Thin Cardstock	
			Thick Cardstock	
			Postcard	
			Envelope	
			Label	
		Duplex Pass <*1>	Plain Paper	page 6-24
	Image Adj Param			page 6-25
	Temperature	Plain Paper		page 6-26
		Thick		
		Envelope		
	Supplies Replace	Fuser		page 6-27
		Transfer Roller		
	BK Clear			page 6-27

Service Mode Menu (continued)

Service Mode	Parameter		Go to
Counter	Total Print	Total Page	page 6-28
		Color Copy	
		Color Print	
		Mono Copy	
		Mono Print	
		Fax Print <*1>	
		Total Dup. <*1>	
		D Color Copy <*1>	
		D Color Prn <*1>	
		D Mono Copy <*1>	
		D Mono Prn <*1>	
	Fax Counter <*1>	Send Job<*1>	page 6-28
		Receive Job <*1>	
	Scan Counter	Doc. Glass	page 6-28
		Doc. Feeder	
	Tray Counter	Tray1	page 6-28
		Tray2 <*1>	
	Paper Size Counter		page 6-28
	Paper Type Counter		page 6-28
	Application Count	Copy Print	page 6-29
		Fax Rx PRN. <*1>	
		Report Prn.	
		Pc Print	
		Fax Send<*1>	
		Mail Send<*1>	
		Scan To FTP <*1>	
		Scan To SMB <*1>	
		Scan To USB <*1>	
		Twain	
		Pictbridge <*1>	
		USB TO Prn. <*1>	
	Supplies Status	C Toner	page 6-29
		M Toner	
		Y Toner	
		K Toner	
		Imaging Unit	
	CRU Usage	Transfer Belt	page 6-29
		Fuser	
		Transfer Roller	
		Imaging Unit	

Service Mode Menu (continued)

Service Mode	Parameter			Go to
	Jam Counter	Printer		page 6-30
		Doc. Feeder <*1>		
	Trouble Counter	Total		page 6-30
Display	Main F/W Ver.			page 6-30
	Engine F/W Ver.			page 6-30
	Main RAM Size			page 6-31
	Serial No.			page 6-31
	BB CPLD Version			page 6-31
Function	Paper Feed Test	Tray1		page 6-31
		Tray2 <*1> <*3>		
	Prn Test Pattern	Tray1	Pattern1	page 6-32
			Pattern2	
			Pattern3	
		Tray2 <*1> <*3>	Pattern1	
			Pattern2	
			Pattern3	
	ADF Feed Test <*1>			page 6-35
	Check Scan Window<*1>			page 6-35
	Fax Res. Copy Test <*1>			page 6-36
	Scan Test			page 6-36
Soft Switch				page 6-36
Report	Service Data List			page 6-37
	Error Code List<*1>			page 6-39
	T.30 Protocol List<*1>			page 6-39
Fixed Zoom Change	Reduction2			page 6-40
	Reduction1			
	Expansion1			
	Expansion2			
Factory Test	Signal Test <*1>			page 6-41
	Relay Test <*1>			page 6-41
	Sensor Test <*1>			page 6-41
	Dial Test <*1>			page 6-41
	Volume Test <*1>			page 6-41
	Panel Speaker Test			page 6-41
	RAM Test			page 6-41
Clear Data	SRAM Clear			page 6-42
	Memory Clear			page 6-42

Service's Choice Function Descriptions

Send(TX) Speed

Sets the transmit start speed.

Default Setting

The default setting is V.34 33600 bps.

Available Settings

Choose the mode from among the following.

- V.34: 33600 (default), 31200, 28800, 26400, 24000, 21600, 19200, 16800
- V.17: 14400, 12000, 9600, 7200
- V.29: 9600, 7200
- V.27: 4800, 2400

Rcv(RX) Speed

Sets the reception start speed.

Default Setting

The default setting is V.34 33600 bps.

Available Settings

Choose the mode from among the following.

- V.34: 33600 (default), 31200, 28800, 26400, 24000, 21600, 19200, 16800
- V.17: 14400, 12000, 9600, 7200
- V.29: 9600, 7200
- V.27: 4800, 2400

Send(TX) Level

Sets PSK/FSK signal output level.

Default Setting

The default setting is -9 dBm.

Available Settings

-17 to -10 dBm, -9 dBm (default), or -8 to -2 dBm.

Rcv(RX) Level

Reception sensitivity level.

Default Setting

The default setting is -43 dBm.

Available Settings

-49 to -36 dBm.

DTMF Level

Dual tone output level.

Default Setting

The default setting is -9 dBm.

Available Settings

-17 to -2 dBm.

CNG Level

Calling tone output level.

Default Setting

The default setting is -11 dBm.

Available Settings

-17 to -2 dBm.

CED Level

Answer tone output level.

Default Setting

The default setting is -11 dBm.

Available Settings

-17 to -2 dBm.

ECM Mode

Select error correction mode.

Default Setting

The default setting is On.

Available Settings

- On: When an error occurs during communication, resend the frame where the error occurs.
- Off: Any error is ignored during communication.

Coding Scheme

Select compression method in TX/ RX mode.

Default Setting

The default setting is JBIG.

Available Settings

- MMR: A compression method.
- MR: A compression method.
- MH: The simplest compression method.
- JBIG: The most complex compression method that generates the smallest code.

Toner Empty Report

Send a report when toner empty errors occur. Enter the Fax number where the report is sent. The report is sent at 20 minute, 24 hours, 48 hours, or 72 hours after the error occurs or until the condition is clear.

Note

Fax number specifications: An up-to-20-digit number that may consist of [0-9], [*], [#], [pause], and [space] (0-9, #, *, pause, _).

Default Setting

The default setting is Off.

Available Settings

- On: Generate a report to report destination.
- Off: No generate report.

Protocol Report

The Protocol Report provides transmission results, timing, and communications activity information about each Fax transmission.

Default Setting

The default setting is Off.

Available Settings

- Off: Disable the T.30 communication report.
- On: Print a T.30 communication report after every Fax transmission.
- On Error: Print a T.30 communication report only when an error occurs.

GDI Time-out

Specifies the time for GDI time out.

Default Setting

The default setting is 60 seconds.

Available Settings

- 5 Sec
- 10 Sec
- 20 Sec
- 30 Sec
- 40 Sec
- 50 Sec
- 60 Sec

TWAIN Time-out

Specifies the time for TWAIN time-out.

Default Setting

The default setting is 6 minutes.

Available Settings

- 2 minutes
- 4 minutes
- 6 minutes
- 8 minutes
- 10 minutes
- 12 minutes
- 14 minutes
- 16 minutes
- 18 minutes

Power Save Mode

Set to activate Power Save mode when no print jobs have been received or Control Panel operation has not been made for a given period.

Default Setting

The default setting is On.

Available Settings

- On
- Off

Enable Warning

Specifies whether or not a warning appears when either the toner or Imaging Unit is about to run out.

Default Setting

The default setting is On.

Available Settings

There is a On/Off setting for Toner Low and Imaging Unit Low.

Adjustment Function Descriptions

Different adjust items are applicable and the corresponding adjust values become valid according to the specific sub-function of the main function (Copy, Fax, Twain, or NetScan) as detailed in the following table.

	Function							
	Copy		Fax		Twain		Scan	
Adjust item	CIS	ADF	CIS	ADF	CIS	ADF	CIS	ADF
Scanner Main Zoom	O	O	O	O	X	X	X	X
Scanner Sub Zoom	O	X	O	X	X	X	X	X
Scan Main Regist	O	X	O	X	O	X	O	X
Scan Sub Regist	O	X	O	X	O	X	O	X
ADF Sub Zoom	X	O	X	O	X	X	X	X
ADF Main Reg	X	O	X	O	X	O	X	O
ADF Sub Reg	X	O	X	O	X	O	X	O

Scanner Main Zoom

Adjust for variations in the accuracy of IR parts and their mounting accuracy by varying the scanning zoom ratio in the main scanning direction.

Note

Adjust CIS Main Zoom after replacement of the Image Processor Board or Scanner.

Print Test Pattern 1 (page 6-32). Adjust the width of D in the copy of Test Pattern 1 so that the following specification is met 100 mm ± 0.5 mm (Zoom Ratio = Full Size:100 %).

Default Setting

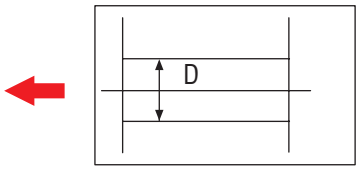
The default setting is 0 %.

Adjustment Range

-2.0 % to +2.0 % in 0.2 % increments.

Procedure

1. Print Test Pattern 1 (page 6-32) from Tray 1 using letter or A4 media.



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2. Place the test pattern vertically on the platen and make a copy.
3. Check that the copy meets the specification, 100 mm ± 0.5 mm.
4. If the width of D is out of specification, adjust the value.
5. Press the **Down Arrow** button to select **Adjustment** and then press the **OK** button.
6. Using the **Up** or **Down Arrow** buttons, adjust the setting, then press the **Select** button.
7. Check zoom adjustment by repeating steps 2 through 6. Continue adjustment until the specification is met.

Note

If the width of D in the copy of TP 1 is longer than the printed version, decrease the setting.
If the width of D in the copy of TP 1 is shorter than the printed version, increase the setting.

Scanner Sub Zoom

To adjust for variations in the accuracy of IR parts and their mounting accuracy by varying the scanning zoom ratio in the sub-scanning direction.

Note

Adjust Scanner Sub Zoom after replacement of a Image Processor Board or Scanner.

Adjust the width of E in the copy of Test Pattern 1 so that the following specification is met: 200 mm ± 1 mm (Zoom Ratio = Full Size:100 %).

Default Setting

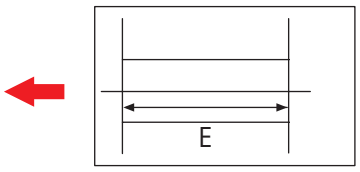
The default setting is 0 % .

Adjustment Range

-2.0 % to +2.0 % in 0.2 % increments.

Procedure

1. Print Test Pattern 1 from Tray 1 using letter or A4 media.



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2. Place the test pattern vertically on the platen and make a copy.
3. Check that the copy meets the specification, 200 mm ± 1 mm.
4. If the width of E is out of specification, adjust the value.

Note

If the width of E in the copy of TP 1 is greater than the printed version, decrease the setting.

5. Press the **OK** button.
6. Using the **Up** or **Down Arrow** buttons, adjust the setting, then press the **OK** key.
7. Check zoom adjustment by repeating steps 1 through 6. Continue adjustment until the specification is met.

Scan Main Regist

To adjust for variations in the accuracy of IR parts and their mounting accuracy by varying the scanning start position in the main scanning direction.

Note

Adjust Scan main registration after replacement of the Platen Glass, Scanner, or Image Processor Board. Perform Scanner Main Zoom adjustment (page 6-14) before adjusting Scan Main Regist.

Adjust the widths A and B in the copy of TP1 so that the following specification is met: 0 mm ± 2.0 mm.

Default Setting

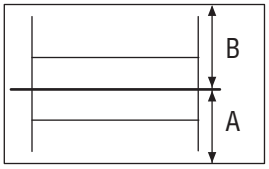
The default setting is 0 mm.

Adjustment Range

-5.0 mm to +5.0, in 0.5 mm increments.

Procedure

1. Print Test Pattern 1 from Tray 1 using letter or A4 media.



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2. Place the test pattern vertically on the platen and make a copy.
3. Check the copy against the print.
4. If the widths of A and B are out of specification (0 mm ± 2.0 mm), adjust the value.

Note

If the width of A is less than the width of B on the copy of TP 1 compared to the printed version, increase the setting.

5. Press the **OK** button.
6. Using the **Up** or **Down Arrow** buttons, adjust the setting, then press the **OK** button.
7. Check registration adjustment by repeating steps 1 through 6. Continue adjustment until the specification is met.

Scan Sub Regist

Function

To vary and adjust the print start position in the sub-scanning direction.

Use

If the image on the copy deviates in the sub scan direction, or when the Laser Unit or original glass has been replaced.

Note

Perform after the Prn Main Regist adjustment has been performed.

Adjustment

Adjust the width of C in the printed Test Pattern 1 so that the following specification is met.

Specification

20 ± 2.5 mm

Default Setting

0 mm

Adjustment Range

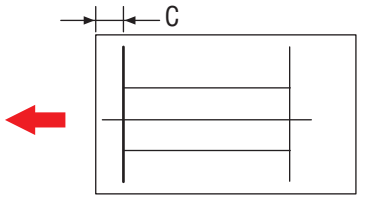
-5.00 mm to +5.00 mm.

Step

0.5 mm

Procedure

1. Print Test Pattern 1 (page 6-32).



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2. Check width C on the printed page produced.
3. Check that the width of C in the copy of the test pattern meets the specification. If the width of C is out of specification, adjust it according to the following procedure.
   a. Enter the **Adjustment** menu in the service mode.
   b. Select **CIS Sub Regist** and press the **OK** button.
   c. Using the **Up** and **Down Arrow** buttons, change the setting value and then press the **OK** button.
   d. Print Test Pattern 1 again and recheck the width of C.

Adjustment

- If the width of C in the test pattern is longer than the specified width, increase the setting.
- If the width of C in the test pattern is shorter than the specified width, decrease the setting.

ADF Sub Zoom

Function

To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning zoom ratio in the sub-scanning direction (when using the Automatic Document Feeder).

Use

When the Image Processor Board or the original glass is replaced, or when a new Auto Document Feeder Unit is mounted.

Note

When the Image Processor Board is replaced, the ADF Sub Zoom value is cleared. If you replace the Image Processor Board, perform the Scanner Sub Zoom adjustment (page 6-15) and then adjust the ADF Sub Zoom.

Default Setting

0 mm

Adjustment Range

-2.0 % to +2.0 %, Step: 0.4 %.

Setting/Procedure

1. Print Test Pattern 1 (page 6-32).
2. Enter the **Adjustment** menu in the service mode.
3. Select **ADF Sub Zoom** and press the **OK** button.
4. Place the test pattern into the Automatic Document Feeder and make a test copy.

   Note

   Position the test pattern vertically. Use A4 or Letter paper loaded into Tray 1 to make the test copy.

5. Check that the width of E in the copy of Test Pattern 1 meets the specification.
   - Calculation:
     (1 - Width of E in the document ÷ Width of E in the copy) × 100.
   - If the width of E is out of specification, adjust it according to the following procedure.
6. Press the **Menu** button.
7. Using the **Up and Down Arrow** buttons, change the setting value and then press the **OK** button.
8. Place the test pattern into the Automatic Document Feeder. Then, make a test copy and recheck it.

ADF Main Reg

Function

To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning start position in the main scanning direction when using the Automatic Document Feeder.

Use

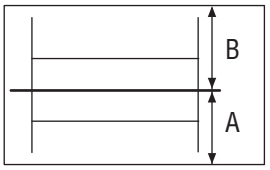
When the Image Processor Board or the original glass is replaced, or when a new Auto Document Feeder Unit is mounted.

Note

Use this command after performing the Scanner Sub Zoom and the ADF Sub Zoom adjustments.

Adjustment Specification

Adjust the amount that widths A and B in the copy of the Test Pattern 1 so that the following specification is met.



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Default Setting

0 mm

Adjustment Range

-5.0 mm to +5,0 mm, Step: 0.5 mm.

Settings/Procedure

1. Print Test Pattern 1 (page 6-32).
2. Enter the **Adjustment** menu in the service mode.
3. Select **ADF Main Regist** and press the **OK** button.
4. Place the test pattern into the Automatic Document Feeder and make a test copy.

5. Check the amount that widths A and B in the copy of the test pattern are shifted. If the shift is out of specification, adjust it according to the following procedure.
   a. Press the **OK** button.
   b. Using the **Up** and **Down Arrow** buttons, change the setting value and then press the **OK** button.
   c. Place the test pattern 1 into the Automatic Document Feeder. Then, make a test copy again and check it.
   - If the width of A is less than the width of B, increase the setting.
   - If the width of B is less than the width of A, decrease the setting.

ADF Sub Reg

Function

To adjust for variations in the accuracy of all parts and their mounting accuracy by varying the scanning start position in the sub-scanning direction when using the Automatic Document Feeder.

Use

When the original glass is replaced, or when a new Auto Document Feeder Unit is mounted.

Note

Perform this adjustment after the Scanner Sub Zoom and ADF Sub Zoom adjustments have been performed.

Adjustment Specification

Adjust the width of C in the copy of the test pattern1 so that the specification of 20 mm ± 2.5 mm.

Adjustment Range

-5.0 mm to +5.0 mm, Step 0.5 mm.

Setting/Procedure

1. Print the test pattern1 (page 6-32).
2. Enter the **Adjustment** menu in the service mode.
3. Select **ADF Sub Reg**, and press the **OK** button.
4. Place test pattern in the ADF with its printed surface up.
5. Select **Test Copy** and press the **OK** button to make a test copy.

   Note

   Position the test pattern vertically.
   Use A4 or Letter paper loaded into Tray 1 to make the test copy.

6. Check that the width of C in the copy of the test pattern is shifted.

7. If the width of C is out of specification, adjust it according to the following procedure.
8. Select **Adjustment**, and press the **OK** button.
9. Using the **Up** and **Down Arrow** buttons, change the setting value and then press the **OK** button.
10. Place the test pattern1 into the Automatic Document Feeder. Then, make a test copy again and check it.

Flicker

Function

Eliminates flickers of a room fluorescent light when it occurs due to power source use environment or similar reason.

Use

Use when the fluorescent light flickers due to power source use environment or similar reason.

Setting

- ON
- OFF (default)

Top Adjustment

Function

Adjusts the top margin of media for single-sided printing.

Use

To correct a misaligned print image.

Plain Paper: Adjust the head margin of plain paper.

Thick: Adjust the head margin of thick paper.

Envelope: Adjust the head margin of envelopes.

Adjustment Range

-15 to +15 mm, Step 0.21 mm.

Procedure

1. Select **Top Adjustment** and press the **OK** button.
2. Select the desired paper type and press the **OK** button.
3. Select desired adjustment amount with the **Up** and **Down Arrow** buttons, and the press the **OK** button.

Left Adj. (Front)

Function

Adjusts the left margin of media for single-sided printing.

Use

To correct a misaligned print image.

Tray 1: Adjust the left margin of media fed from tray 1 (manual tray).

Tray 2: Adjust the left margin of media fed from tray 2.

Adjustment Range

-15 to +15 mm, Step 0.21 mm.

Procedure

1. Select **Left Adj. (Front)** and press the **OK** button.
2. Select desired tray and press the **OK** button.
3. Select desired adjustment amount with the **Up** and **Down Arrow** buttons, and then press the **OK** button.

Left Adj. (Back)

Function

Adjusts the left margin of media for double-sided printing.

Use

To correct a misaligned print image.

Tray 1: Adjust the left margin of duplex print media fed from tray 1 (manual tray).

Tray 2: Adjust the left margin of duplex print media fed from tray 2.

Adjustment Range

-15 to +15 mm, Step 0.21 mm.

Procedure

1. Select **Left Adj. (Back)** and press the **OK** button.
2. Select desired tray and press the **OK** button.
3. Select desired adjustment amount with the **Up** and **Down Arrow** buttons, and then press the **OK** button.

Transfer Power (Simplex Pass)

Function

Adjusts the 2nd image transfer output (ATVC) on single-sided pages for each paper type.

Use

Use when the transfer failure at the trailing edge occurs.

Adjustment Range

-8 to +7 (default is 0).

Adjustment Instructions

To increase the ATVC value (in the direction of a foggier image), decrease the setting value.

To decrease the ATVC value (in the direction of a less foggy image), increase the setting value.

Procedure

1. Select **Transfer Power** and press the **OK** button.
2. Select **Simplex Pass** and press the **OK** button.
3. Select desired media type with the up **Up** and **Down Arrow** buttons, and then press the **OK** button.
4. Select desired setting value with the **Up** and **Down Arrow** buttons, and then press the **OK** button.

Transfer Power (Duplex Pass)

Function

Adjusts the 2nd image transfer output (ATVC) on duplexed pages for each paper type.

Use

Use when the transfer failure at the trailing edge occurs.

Adjustment Range

-8 to +7 (default is 0).

Adjustment Instructions

To increase the ATVC value (in the direction of a foggier image), decrease the setting value.

To decrease the ATVC value (in the direction of a less foggy image), increase the setting value.

Procedure

1. Select **Transfer Power** and press the **OK** button.
2. Select **Duplex Pass** and press the **OK** button.
3. Select desired media type with the up **Up** and **Down Arrow** buttons, and then press the **OK** button.
4. Select desired setting value with the **Up** and **Down Arrow** buttons, and then press the **OK** button.

Image Adj Param

Function

Adjusts the printer in case of an image quality problem (uneven density).

Use

To correct image quality problems (uneven density) due to the printer being operated at a high altitude.

Default Setting

The default setting is 0.

Adjustment Range

Four levels of adjustment are available: 0, 1, 2, and 3.

Setting	Value
0	0 V
1	-100 V
2	-200 V
3	-300 V

Procedure

1. Select **Img Adjust Param** and press the **OK** button.
2. Select the desired setting with the **Up** and **Down Arrow** buttons, and then press the **OK** button.

Temperature

Function

Adjusts the fusing heating temperature for each paper type so as to ensure good fusing performance that varies with varying environmental conditions.

Use

When fusing performance is poor, or wax streak or offset occurs when the type of paper is changed or environmental conditions change.

Use this function when using curled paper, or paper misfeed as a result of the curled paper occurs. Curling occurs under varying environmental conditions or depending on the type of paper used.

Default Setting

The default setting is 0˚ C.

Adjustment Range

-10˚ C, -5˚ C, and 0˚ C.

Procedure

1. Select **Temperature** and press the **OK** button.
2. Select the type of paper and press the **OK** button.
3. Select desired setting value with the **Up** and **Down Arrow** buttons, and then press the **OK** button.

Adjustment Instructions

If fusing performance is poor, increase the setting.

If wax streaks occur, decrease the setting.

If offset is poor, decrease the setting.

If curling of the paper occurs, decrease the setting.

BK Clear

Function

Clears the engine information backup data.

Use

Use when the engine information backup data is cleared.

Note

Execute this function to synchronize data when the Image Processor Board or the Engine Control Board is replaced with a new one.

To decrease the ATVC value (in the direction of a less foggy image), increase the setting value.

Procedure

1. Select **BK Clear** and press the **OK** button.
2. Press the **OK** button to clear the backup data.

Supplies Replace

Function

Resets either the fuser counter or the transfer roller counter.

Use

Use when either the Fuser or the Transfer Roller has been replaced.

Procedure

1. Select Supplies Replace and then either Fuser or Transfer Roller.
2. Press **OK**.
3. Press **OK** and reset the counter.

Counter Function Descriptions

Total Print

Menu Item	Description
Total Page	Displays a list of all copies, faxes, and pages printed.
Color Copy	Displays the number of color copies made.
Color Print	Displays the number of color printed pages produced.
Mono Copy	Displays the number of monochrome copies made.
Mono Print	Displays the number of monochrome printed pages produced.
Fax Print	Displays the number of fax printed pages produced.
Total Dup.	Displays the total number of sheets of duplex copy or duplex print.
D Color Copy	Displays the number of duplex color printed pages produced.
D Color Prn	Displays the number of duplex monochrome copies made.
D Mono Copy	Displays the number of duplex monochrome copies made.
D Mono Prn	Displays the number of duplex monochrome printed pages produced.

Fax Counter

Displays the number of faxes sent and received.

Scan Counter

Displays the number of scans made.

Tray Counter

Displays the number of sheets of paper used for each tray.

Paper Size Counter

Displays the number of sheets of paper used for each size and type.

Paper Type Counter

Displays the number of sheets of paper used for each paper type.

Application Count

Function:

Displays the number of sheets of paper used by each application.

Use:

When checking the number of sheets of paper used by each application.
Copy Print: Number of copies made.
Fax Rx Prn.: Number of printed pages received by Fax.
Report Prn.: Number of printed report pages.
Pc Print: Number of printed pages produced from PC.
Fax Send: Number of transmitting to Fax.
Mail Send: Number of transmitting to mail server.
Scan To FTP: Number of transmitting to FTP server.
Scan To SMB: Number of transmitting to SMB.
Scan To USB: Number of transmitting to USB memory.
Twain: Number of transmitting to PCl.
USB TO Prn.: Number of sheets counts at the time of the completion of USB printing.

Supplies Status

Displays toner and image unit status by percentage.

CRU Usage

Function

Displays the remaining life of the maintenance service parts.

Use

To check the remaining life of the maintenance service parts.
Transfer Belt: Displays the remaining life of the transfer belt.
Fuser: Displays the remaining life of the Fuser.
Transfer Roller: Displays the remaining life of the transfer roller.
Imaging Unit: Displays the remaining life of the drum unit.

Jam Counter

Function

Displays the number of misfeeds that have occurred.

Use

When checking for the number of misfeeds that have occurred in the printer or ADF.

Trouble Counter

Function

Displays the number of malfunctions detected.

Use

When checking for the number of malfunctions detected.

Display

Main F/W Version

Function

Displays the version of the controller firmware.

Use

When upgrading the firmware.
When the Image Processor Board has been replaced with a new one.

Engine F/W Version

Function

Displays the version of the engine firmware.

Use

When the Engine Control Board has been replaced with a new one.

Main RAM Size

Function

Displays the size of the main memory.

Use

When checking the memory size.

Serial No.

Function

Displays the serial number of the printer engine.

BB CPLD Version

Function

Displays the version of the BB CPLD firmware.

Functional Tests

Paper Feed Test

Function

To check the paper feeding in the paper take-up/transport sections without printing on the paper.

Use

When a paper misfeed occurs.

Procedure

1. Select the paper tray.
2. Press **OK** to begin testing paper feeding.
3. Press **Stop** to stop testing paper feeding.

Note

Do not use this procedure when warming up the printer.

Print Test Pattern

Three test patterns are available for making adjustments. They are Pattern 1, Pattern2, and Pattern3.

To make a test print:

1. In Service Mode, select **Function** > **Prn Test Pattern**.
2. Select the tray that you want to test, and then select the desired test pattern.

Pattern 1 Function

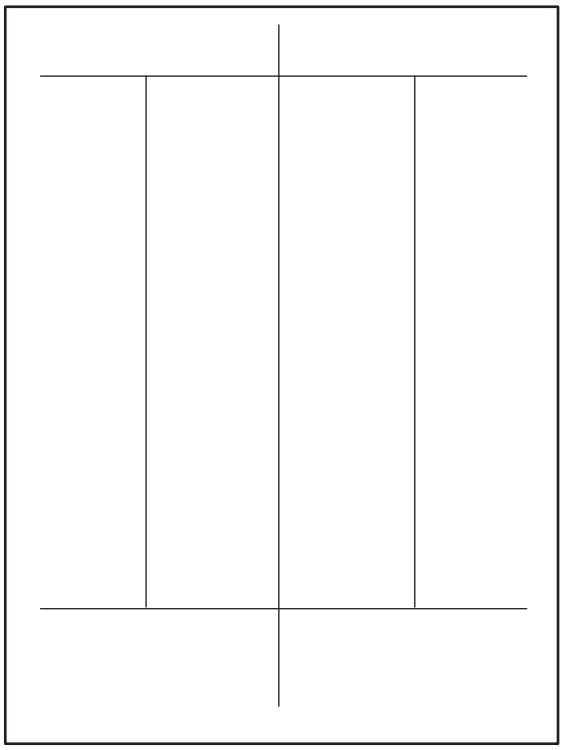
To print the test pattern for adjusting the image.

Pattern 1 Use

If there is tilt or when registration or zoom ratio adjustments are performed.

Pattern 1 Procedure

1. Select the paper tray.
2. Select **Pattern1**.
3. Press **OK** to print the test pattern.



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Pattern 2 Function

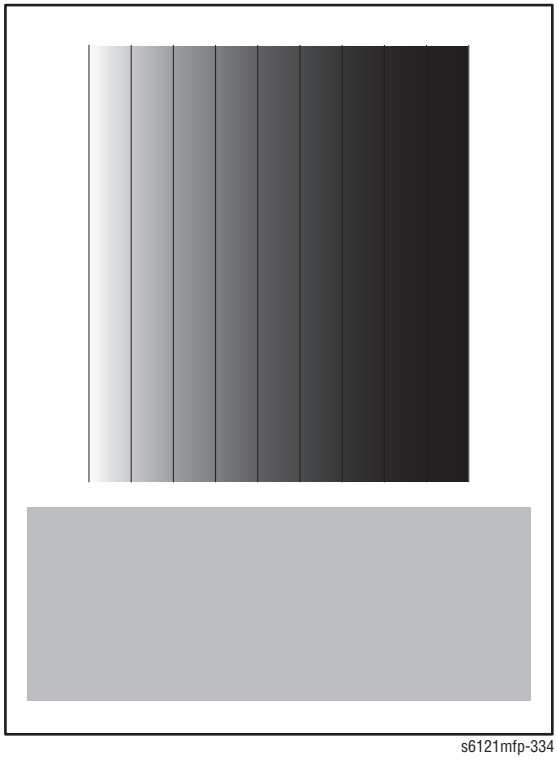
To print the test pattern for halftones and gradations.

Pattern 2 Use

When checking density and pitch irregularities, or when checking reproducibility of gradations.

Pattern 2 Procedure

1. Select the paper tray.
2. Select **Pattern2**.
3. Press **OK** to print the test pattern.



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Pattern 3 Function

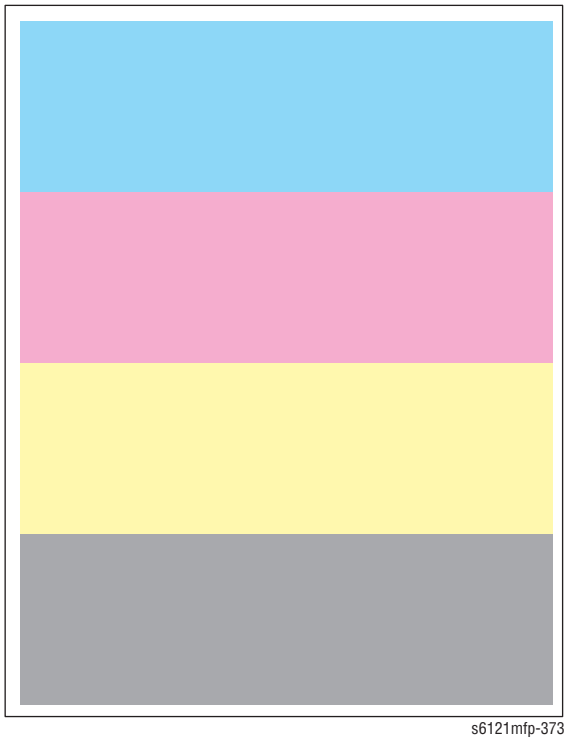
To print the test pattern for checking image density.

Pattern 3 Use

To check for density level consistency of all four toner cartridges.

Pattern 3 Procedure

1. Select the paper tray.
2. Select **Pattern3**.
3. Press **OK** to print the test pattern.



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ADF Feed Test

Function

To check the paper feeding in the paper take-up/transport sections in the Automatic Document Feeder.

Use

When a document misfeed occurs.

Procedure

1. Load paper into the Automatic Document Feeder.
2. Select **Function > ADF Feed Test**, and press **OK**.
3. Press the **Stop** key to stop testing paper feeding.

Check Scan Window

Function

To check for dirt in the scanning section of the Automatic Document Feeder.

Use

If spots appear in the copies.

Procedure

1. Load A4S or LetterS paper into Tray1.
2. Select **Function > Check Scan Window**, and press **OK**.
   Two copy samples are fed out.
3. Check that no spots appear in the copy samples.

Fax Res. Copy Test

Function

Stores a fax image in memory and provides a printed copy.

Use

To test the creation of a fax image.

Procedure

1. Select **Function > Fax Res. Copy Test**, and press **OK**.
2. Press the **Menu** key to begin the Fax Res. CopyTest.
   A printed copy is delivered to the output tray.

Scan Test

Function

To check the lighting of the Exposure Lamp and the movement of the Scanner Unit.

Use

If the scanner malfunctions.

Procedure

1. Select **Function > Scan Test**, and press **OK**.
2. Press the **Stop** key to stop the scanner test.

Soft Switch

Soft Switch Information unavailable. Used for internal development unless otherwise specified in troubleshooting procedures.

Report

Service Data List

Function

Print service data list report and Error log history list.

Service Data List

Includes the following items:

- Communication History and Counter
- Adjust
- RX In Memory
- Main RAM Size
- ROM Id

Retrieving the Service Data List

1. Enter the Service Mode.
2. Select **Report** and press **OK**.
3. Select **Service Data List** and press the Menu **OK** button.

Service Data List

Name : Joe Average
Tel : 5031234567
Date : Jun. 05. 2009 13:58

--Soft Switch –

SW01-SW16	00	20	80	0C	00	00	07	61	00	81	00	80	10	00	01	03
SW17-SW32	00	00	68	00	80	06	00	00	00	28	00	A7	14	68	00	00
SW33-SW48	C0	82	10	8A	00	C1	00	08	00	00	00	04	00	06	00	89
SW49-SW64	01	00	00	00	00	B0	00	00	00	00	00	21	0F	00	80	10

--Communication History & Counter –

000028: ECM RX TIME	000017: ECM TX TIME
000002: G3 RX TIME	000000: G3 RX PAGE
000001: V.17 14.4K	000000: V.17 12K
000000: V.17 9.6K	000000: V.17 7.2K
000000: V.29 9.6K	000000: V.29 7.2K
000000: V.27 4.8K	000002: V.27 2.4K
000000: G3 TX TIME	000000: G3 TX PAGE
000004: V.17 14.4K	000000: V.17 12K
000000: V.17 9.6K	000000: V.17 7.2K
000000: V.29 9.6K	000000: V.29 7.2K
000000: V.27 4.8K	000000: V.27 2.4K
000027: V.34 RX TIME	000028: V.34 RX PAGE
000002: 33.6K	000010: 31.2K
000003: 28.8K	000004: 26.4K
000004: 24.0K	000002: 21.6K
000002: 19.2K	000000: 16.8K
000000: 9.6K	000000: 7.2K
000000: 4.8K	000000: 2.4K
000013: V.34 TX TIME	000013: V.34 TX PAGE
000002: 33.6K	000006: 31.2K
000005: 28.8K	000000: 26.4K
000000: 24.0K	000000: 21.6K
000000: 19.2K	000000: 16.8K
000000: 9.6K	000000: 7.2K
000000: 4.8K	000000: 2.4K
000013: JBIG TX TIME	000056: JBIG RX TIME
000261: TOTAL COUNTER	
000113: COPY PRINT	000125: FAX PRINT
00098: REPORT PRINT	000023: PC PRINT

-- Adjust --

Cis Main Zoom	: 0	Left Adj Back		Image Adj Param	: 0
Cis Sub Zoom	: 0	Tray1	: -02		
Cis Main Regist	: 0	Tray2	: 0	Temperature	
				Plain Paper	: 0
Adf Main Regist	: 0	Transfer Power		Cardstock	: 0
Adf Sub Regist	: 0	Simplex Pass		Envelope	: 0
Adf Sub Regist	: -1.5	Plain Paper	: 0		
		Thin Cardstock	: 0		
Flicker	: 0	Thick Cardstock	: 0		
		Postcard	: 0		
Top Adjustment		Envelope	: 0		
Plain Paper	: -05	Label	: 0		
Cardstock	: -05	Duplex Pass			
Envelope	: -05	Plain Paper	: 0		

Left Adj Front
Tray1 : -02
Tray2 : 0

RX in memory :
Main RAM Size : 128Mb

-- ROM ID --
Main : 03/04/2009 V055 XC
Boot : 2008/09/12 V0.13 XC
Engine: AOHF-50G0-05X2-02

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Error Log History List

Includes the following items:

- Index: Index number from 0 - 9999
- Error: Error code number
- Maker: NSF frame maker code
- Tele.: Remote side or TX side telephone number for that transaction

Retrieving the Error Log History List

1. Enter the Service Mode.
2. Select **Report** and press the **OK** button.
3. Select **Error Log History List** and press the **OK** button.

Error Code List

Function

Print error code (Code) and error occurrence time (Error Times).

Procedure

1. Enter the Service Mode.
2. Select **Report** and press the **OK** button.
3. Select **Error Code List** and press the **OK** button.

T.30 Protocol List

Function

Print out T.30 or V8 protocol after communication with the following data:

- SESSION: Session number
- FUNCTION: Function Name
- DESTINATION STATION: Destination Name/Tel. No.
- DATE/TIME: Communication Date & Time
- PAGE: Total page number for this session
- MODE: Communication speed and ECM mode
- RESULT: Communication result
- TX: T.30 command sent by local Fax
- RX: T.30 command received from remote Fax
- DATA: T.30 frame that include address & control & Data

Procedure

1. Enter the Service Mode.
2. Select **Report** and press the **OK** button.
3. Select **T.30 Protocol List** and press the **OK** button.

Fixed Zoom Change

Function

The fixed zoom ratios can be changed.

Procedure

1. Enter the Service Mode.
2. Select **Fixed Zoom Change** and press the **OK** button.
3. Select the fixed zoom ratio that you wish to change and press the **OK** button.
4. Use the 10-Key Pad to type in the following metric (or inch) fixed zoom ratio.

Metric Values

Setting name	Initial zoom ratio	Setting range
Reduction2	70 %	51 % to 70 %
Reduction1	81 %	71 % to 99 %
Expansion1	115 %	101 % to 140 %
Expansion2	141 %	141 % to 199 %

Inch Values

Setting name	Initial zoom ratio	Setting range
Reduction2	64 %	51 % to 64 %
Reduction1	78 %	65 % to 99 %
Expansion1	129 %	101 % to 153 %
Expansion2	154 %	154 % to 199 %

Factory Test

The following tests are for factory adjustment only.

Signal Test

This test is for factory adjustment only.

Relay Test

This test is for factory adjustment only.

Sensor Test

This test is for factory adjustment only.

Dial Test

This test is for factory adjustment only.

Volume Test

Checks the volume of the speaker.

Panel Speaker Test

Checks the operation of the display and all indicators and buttons. When the panel buzzer test is finished, press the panel reset key twice.

RAM Test

Tests reading and writing of RAM memory.

Clear Data

SRAM Clear

Function

To clear the errors and reset settings to default for the following functions.

- Menu: Set to default
- User Service Mode: Set to default
- Display: [Print Report] - [TX/RX Result] Clear
- Fax function: Clear
- Service's Choice: Set to default

Notes

- Before executing SRAM Clear, record the settings that are initialized through SRAM Clear.
- For recording the setting values, it is a good idea to print the reports and lists.
- Some settings are not included in any reports or lists. Make a note of them separately.
- After SRAM Clear has been executed, reenter the recorded data.

Memory Clear

Function

To clear the settings for the functions listed below and return the functions to their default settings:

- Service's Choice: Set to default.
- Fixed Zoom Change: Set to default.

Notes

- Before executing Memory Clear, record the setting values that are to be initialized through Memory Clear.
- For recording the setting values, it is a good idea to print the reports and lists.
- Some settings are not included in any reports or lists. Make a note of them separately.
- After Memory Clear has been executed, make necessary entries of data again based on the recorded values.

Maintenance Mode

Maintenance Mode Entry Procedure

The Maintenance Mode offers a shortcut to accessing the Service Mode functionality found in the Service's Choice and Adjustment submenus.

For a description of the Fax Maintenance menu items found in the Service Mode Service's Choice menu, see page 6-9.

For a description of the Adjustment menu items found in the Service Mode Adjustment menu, see page 6-14.

Caution

Ensure appropriate security for the Maintenance Mode entry procedure. NEVER give it to any unauthorized person.

Procedure

1. On the initial screen, press the **Menu** button, and then press and hold down the **Left Arrow** key (for at least 2 seconds).
2. The window displays the following:

   Maintenance
   FAX Maintenance
   Adjustment
3. Press the **Down Arrow** button to locate all command lines in the displayed function tree.

Exiting

Press **Stop** to exit Maintenance Mode.

Cleaning and Maintenance

In this chapter...

Chapter 7

Maintenance Summary

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

The frequency of use, Average Monthly Print Volume (AMPV), type of media printed on, and operating environment are factors in determining how critical cleaning the machine is and how often it is necessary. Record the number of sheets printed.

Recommended Tools

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

Cleaning

Perform the following general cleaning steps as indicated by the printer's operating environment.

Caution

Never apply alcohol or other chemicals to any parts of the printer. Never use a damp cloth to clean up toner. If you remove the Imaging Unit, place it in a light-protective bag or otherwise protect it 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 power Off and disconnect the power cord.
4. Remove the Imaging Unit, Fuser, Toner Cartridges, Left and Right Side Covers, and Rear Cover before cleaning.
5. Clean the fans.
6. Ensure that all cover vents are clean and free of obstructions.
7. Remove any debris or foreign objects from the Fuser, Transfer Belt, Imaging Unit, and inside of the printer.
8. Remove and clean the paper trays.
9. Clean all rubber rollers with a lint-free cloth slightly dampened with cold water.

Maintenance Procedures

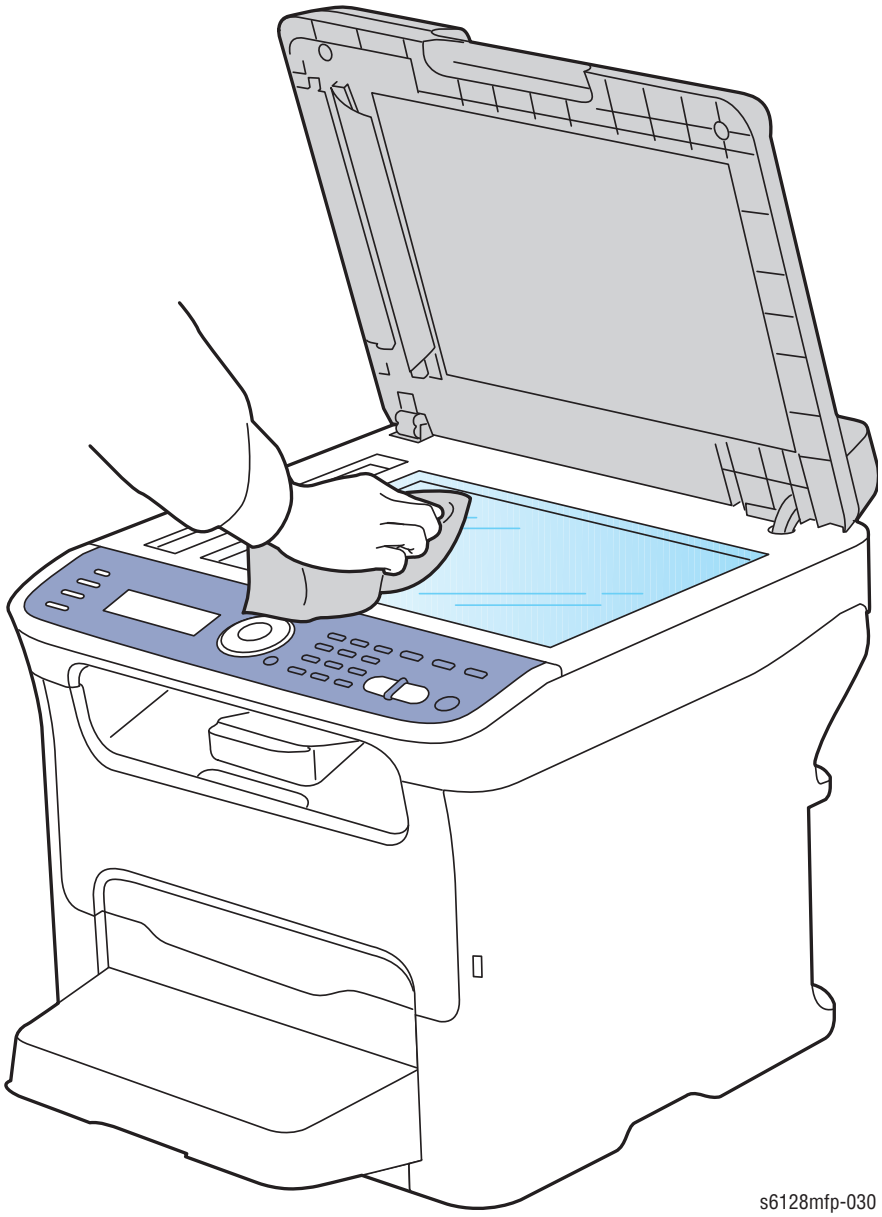
RIP (Repair, Inspect, and Prevent) Procedure

Perform these routine maintenance procedures during the course of servicing the printer.

- Clean the Feed Rollers, Exit Rollers, and Guides; replace if necessary.
- Remove and clean the paper trays.
- Print a Configuration and Error History pages, diagnose, and repair any problems as indicated.
- Check the printer engine and image processor firmware fans; if necessary, clean (dust or vacuum) these areas.
- Check cleanliness of the interior and exterior, including fans; 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 are running.
- Review with the customer all work that was performed and discuss proper printer care.

Clean the Scanner Glass

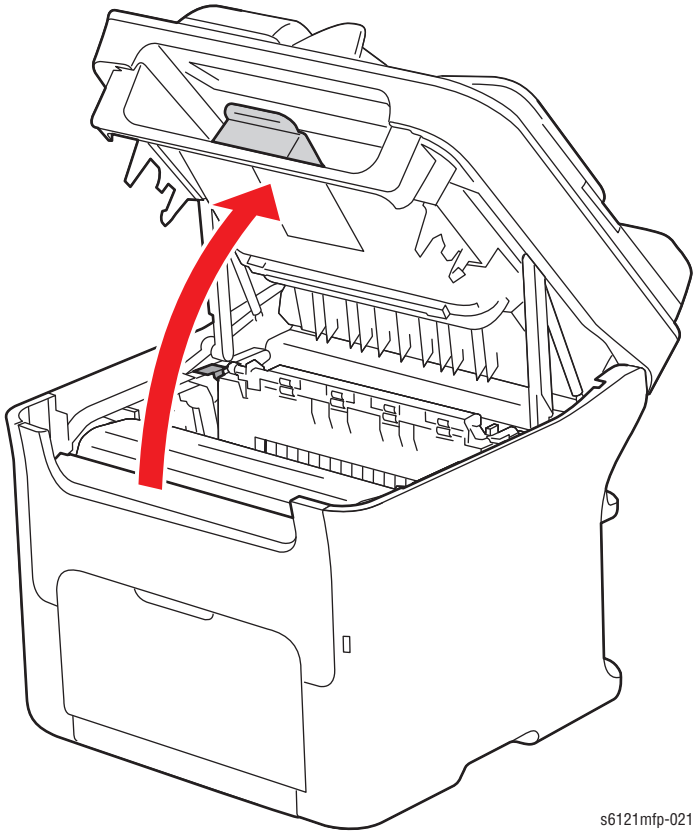
1. Lift the scanner cover.
2. Clean the glass with a clean soft cloth.



s6128mfp-030

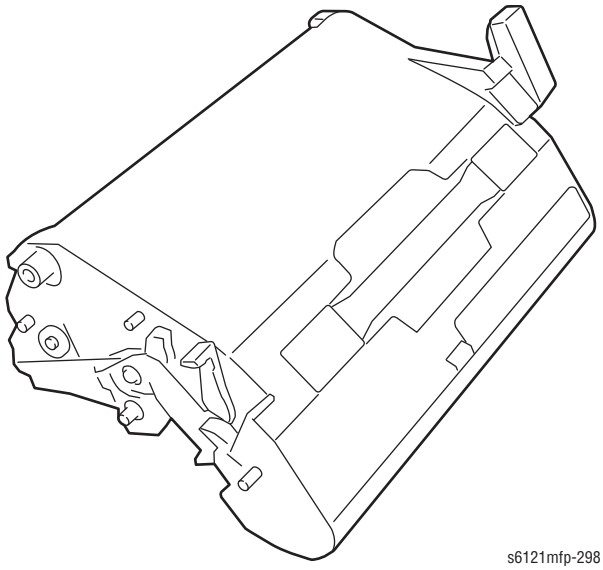
Feed Roller

1. Open the Top Cover.



2. Remove the Imaging Unit (page 8-6).

3. Position the removed Imaging Unit as shown.



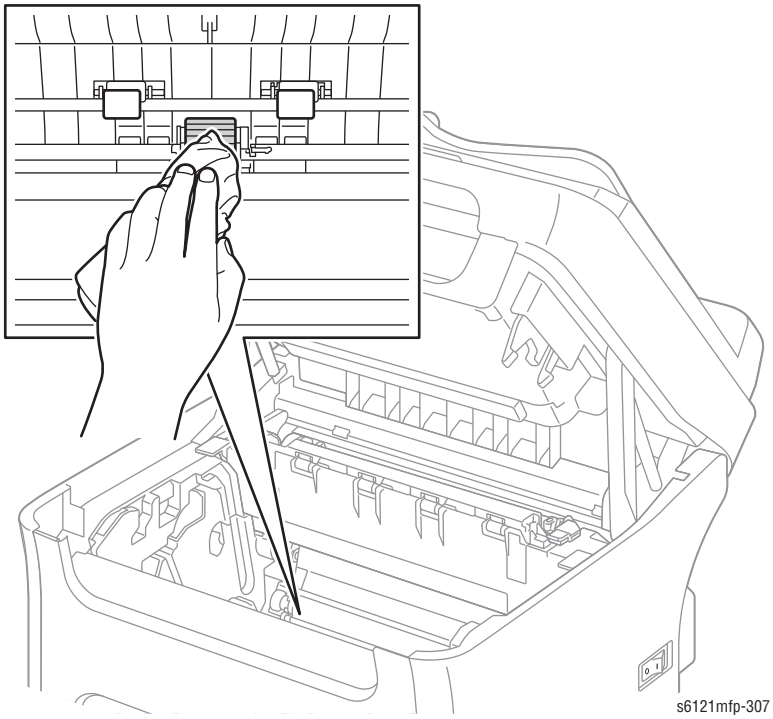
Note

Keep the Imaging Unit horizontal and place it where it can not become dirty.

Note

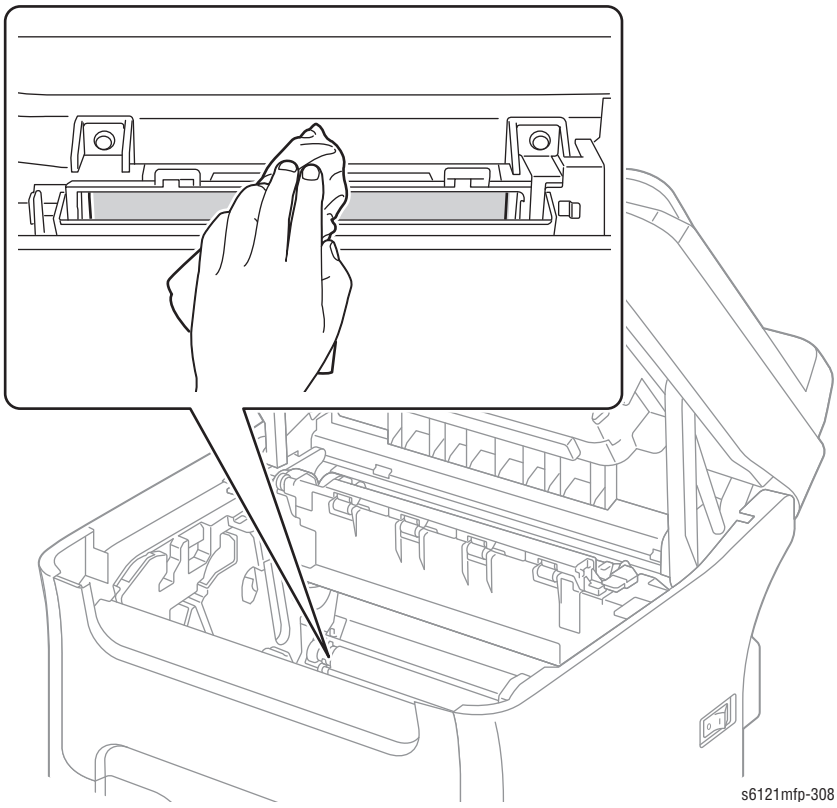
Do not leave the Imaging Unit removed for more than 15 minutes, and do not place the removed Imaging Unit in a location where it is exposed to direct light (such as sunlight).

4. Using a soft cloth dampened with water, wipe any dirt or dust from the pick up roller.



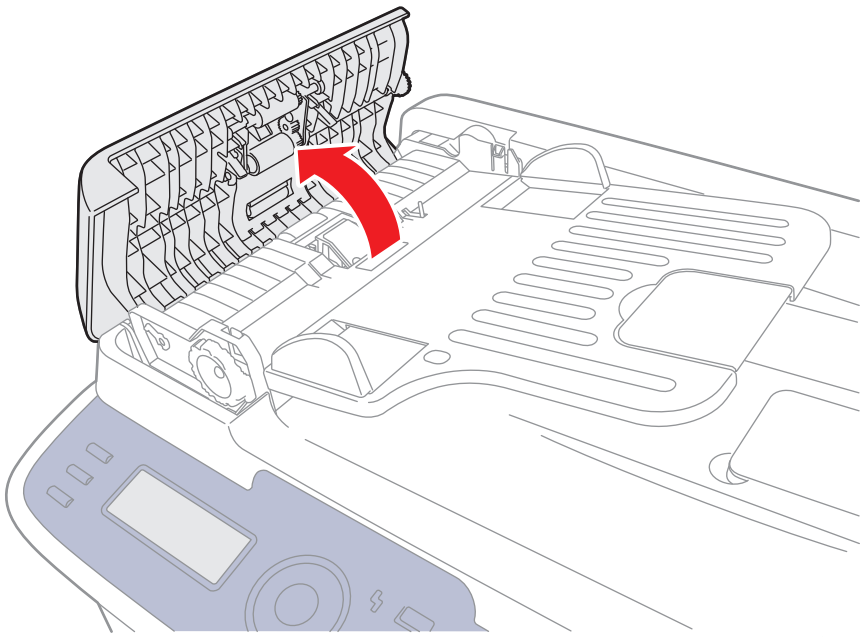
Laser Window

1. At the main menu, press the **Menu** button.
2. Press the **Down Arrow** and select **Replace Toner**.
3. Press the **Down Arrow** and select **Clean Laser Lens**.
4. Follow the instructions on the control panel, and clean the Laser Unit window with a clean soft cloth.

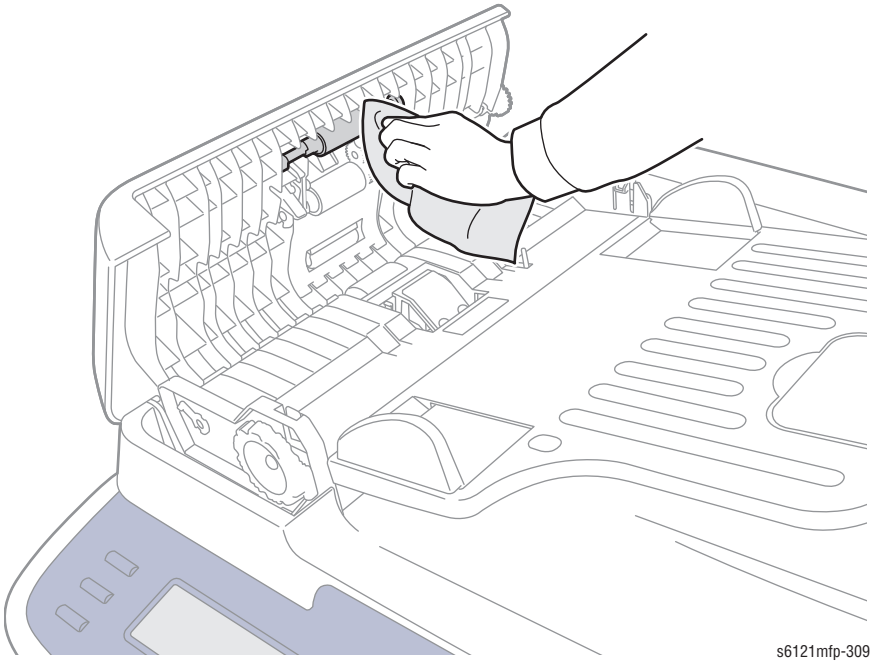


ADF Retard Roller and Feed Roller

1. Open the ADF Top Cover.

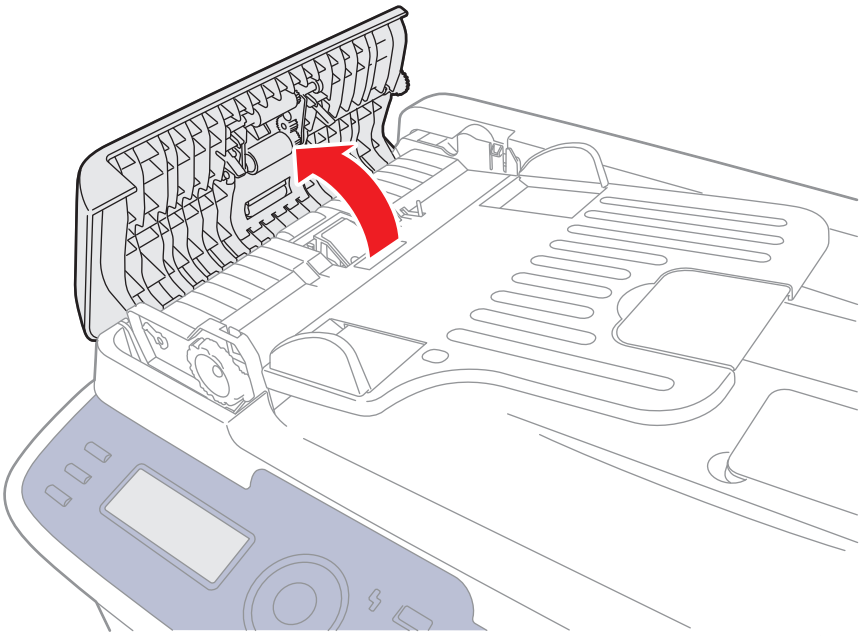


2. Wipe the Retard Roller and the Feed Roller clean of dirt using a soft cloth dampened with water.



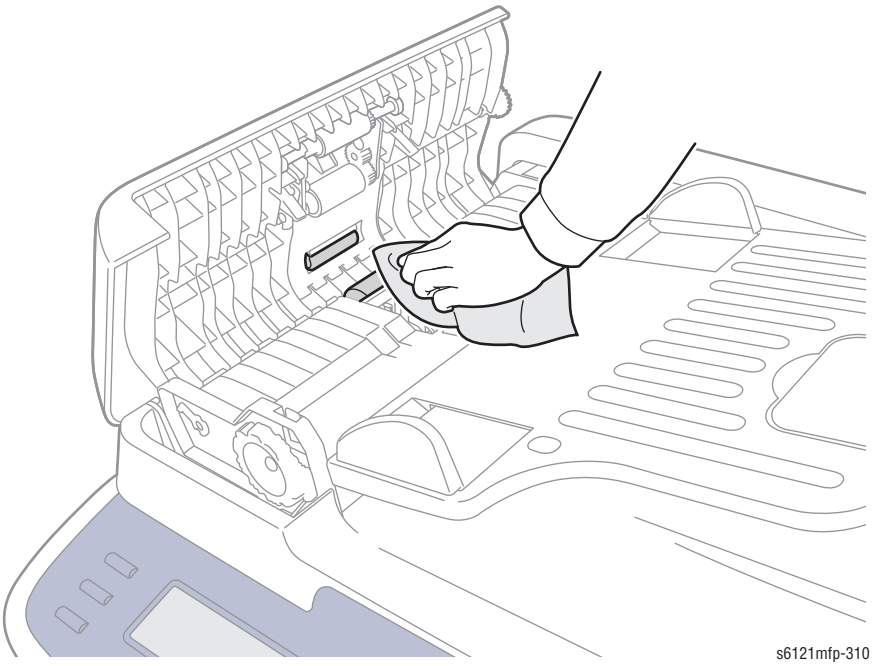
ADF Pick Pad

1. Open the ADF Top Cover.



s6121mfp-203

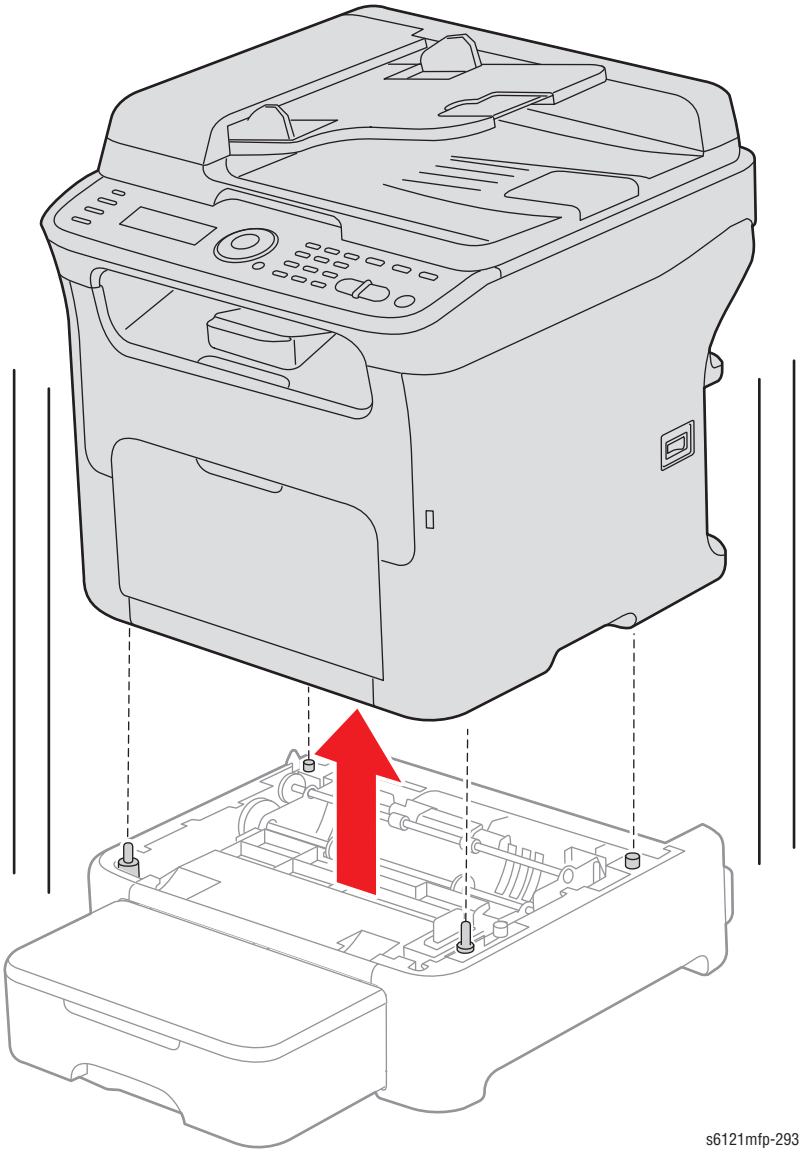
2. Wipe the ADF Pick Pad clean of dirt using a soft cloth dampened with water.



s6121mfp-310

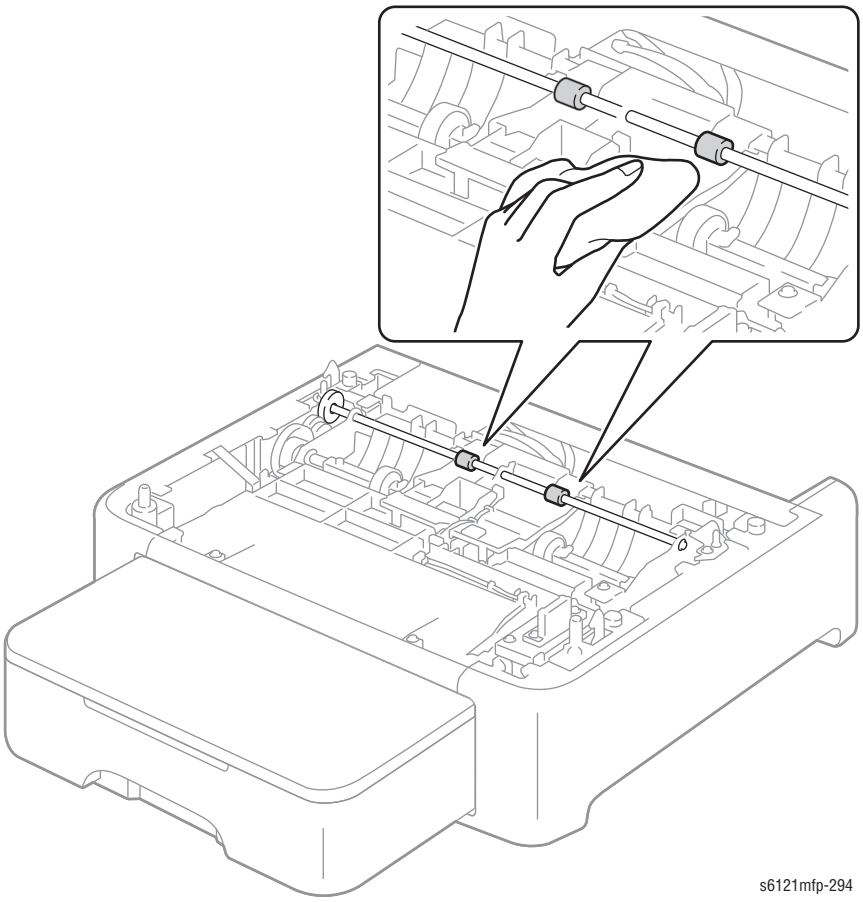
500-Sheet Feeder Paper Pick-up Roller

1. Lift the printer main body and then remove the 500-Sheet Feeder Unit from the printer.



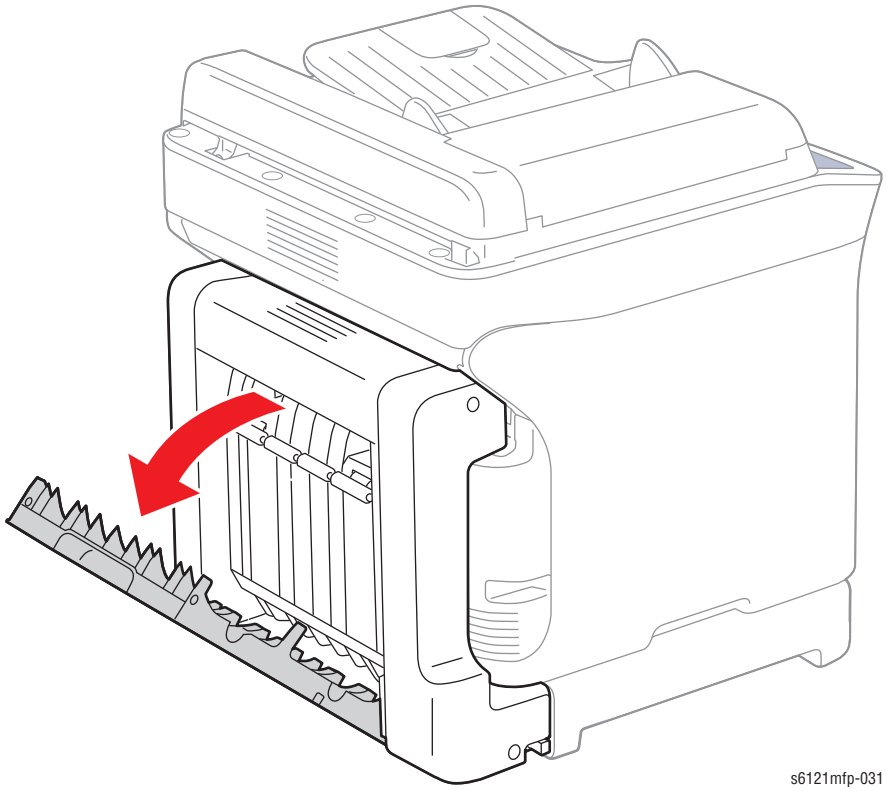
s6121mfp-293

2. Wipe the Paper Pick-up Roller clean of dirt using a soft cloth dampened with water.



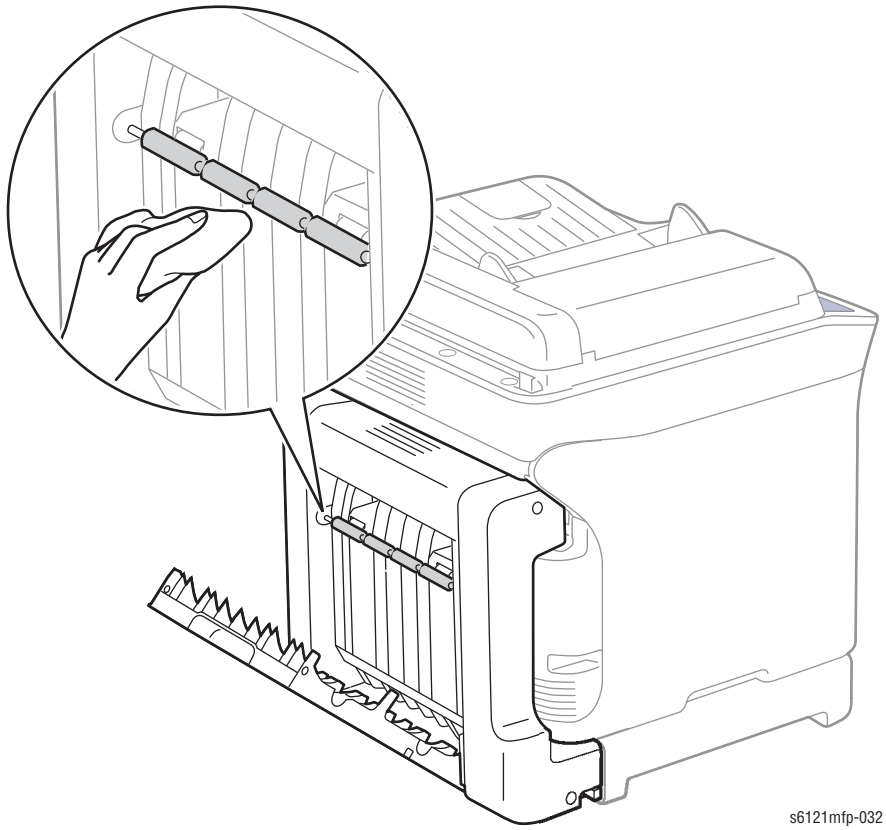
Duplexer Transport Rollers

1. Open the duplex door.



s6121mfp-031

2. Using a soft cloth dampened with water, wipe the transport rollers clean of dirt.

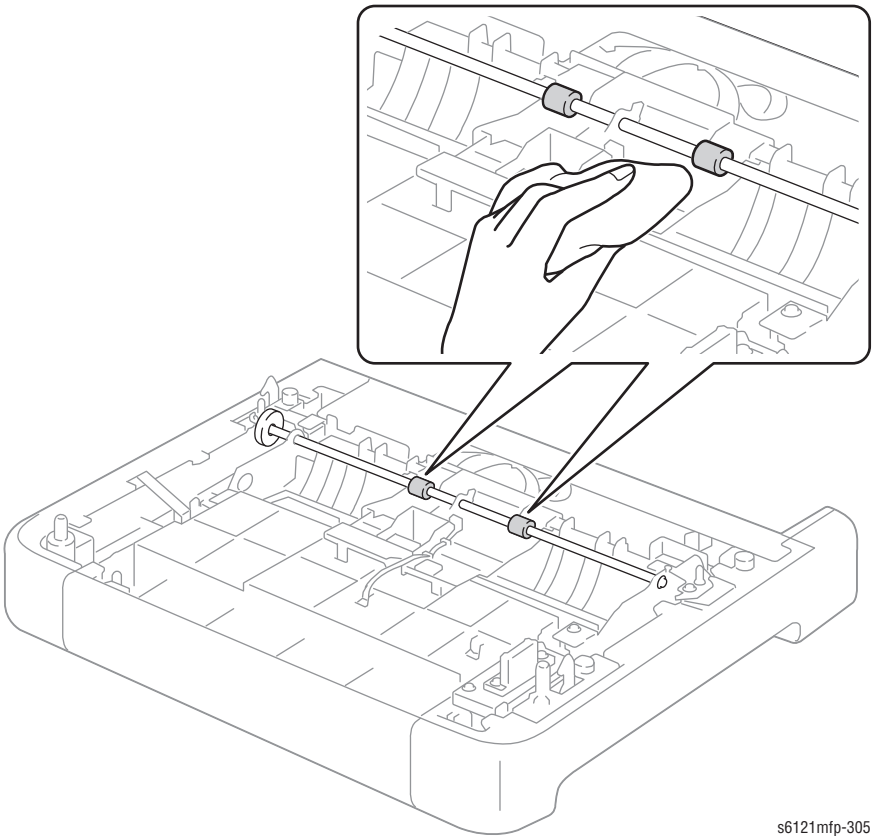


Duplex Attachment Feed Rollers

Note

This procedure is only valid if the Duplex Attachment is installed on the printer.

1. Lift the main printer body off of the Duplex Attachment (see page 7-10).
2. Using a soft cloth dampened with water, wipe the Duplex Attachment Feed Rollers clean of dirt.



s6121mfp-305

Service Parts Disassembly

In this chapter...

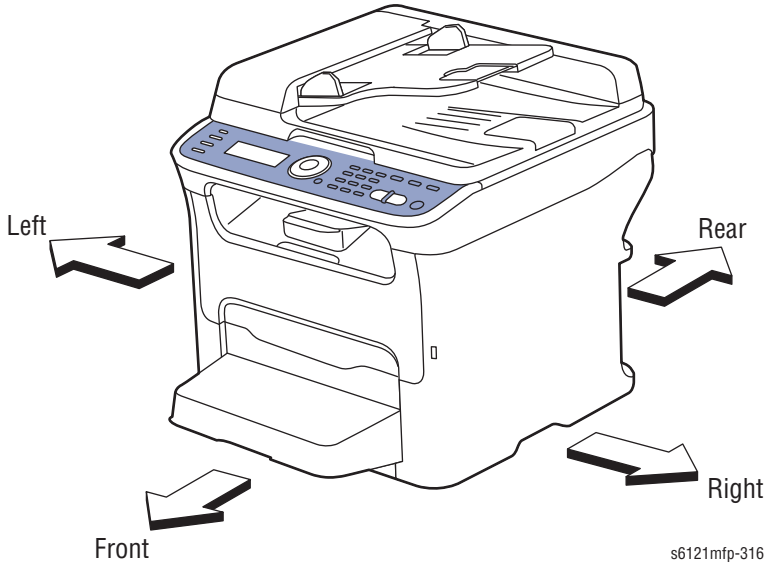
Chapter 8

Overview

This section contains the removal procedures for field-replaceable parts 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 the “Parts List” in Chapter 9.

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 figure identifies the Front, Rear, Left, and Right sides of the printer.



Preparation

Before you begin any servicing procedure:

Warning

Unplug the power cord from the wall outlet.

Warning

Allow the Fuser to cool before starting the procedure.

Caution

Remove and cover the Imaging Unit to avoid light exposure.

1. Wear an Electrostatic Discharge wrist strap.
2. Turn Off power and disconnect the power cord from the wall outlet.
3. Disconnect all cables from the printer.
4. Remove these items:
   a. Tray 1.
   b. Imaging Unit (page 8-6).
   c. Fuser (page 8-9).
   d. Toner Cartridges (page 8-20).

Caution

Many parts are secured by plastic tabs. DO NOT over flex or force these parts. DO NOT over torque the screws threaded into plastic parts.

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 Paper Tray in a removal procedure may appear on the Parts List as CASSETTE, ASSY. When working on a removal procedure, ignore any prerequisite procedure for parts already removed.

Notations in the Disassembly Text

- The notation “(item X)” points to a numbered callout in the illustration corresponding to the disassembly procedure being performed.
- The notation “PL*X.X.X*” indicates that this component is listed in the 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.

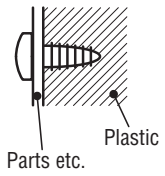
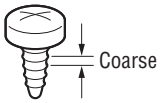
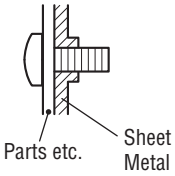
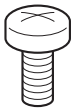
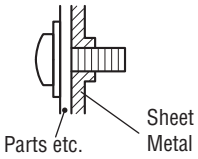
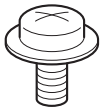
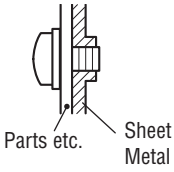
Replacement Note

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 this Product

Type	Application	Shape	Characteristics
Self-tapping, plastic			1. Silver colored. 2. Screw thread is coarse compared to metal screw. 3. Screw tip is thin.
Sheet Metal, silver			1. Silver colored. 2. Diameter is uniform.
Sheet Metal, with flange			1. Silver colored. 2. Screw has a flange. 3. Diameter is uniform.
Sheet Metal, silver with lock washer			1. Silver colored. 2. Includes a toothed washer. 3. Diameter is uniform. 4. Used for grounding terminals.

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. Improperly aligning or over tightening the screw can result in damage to previously tapped threads.

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

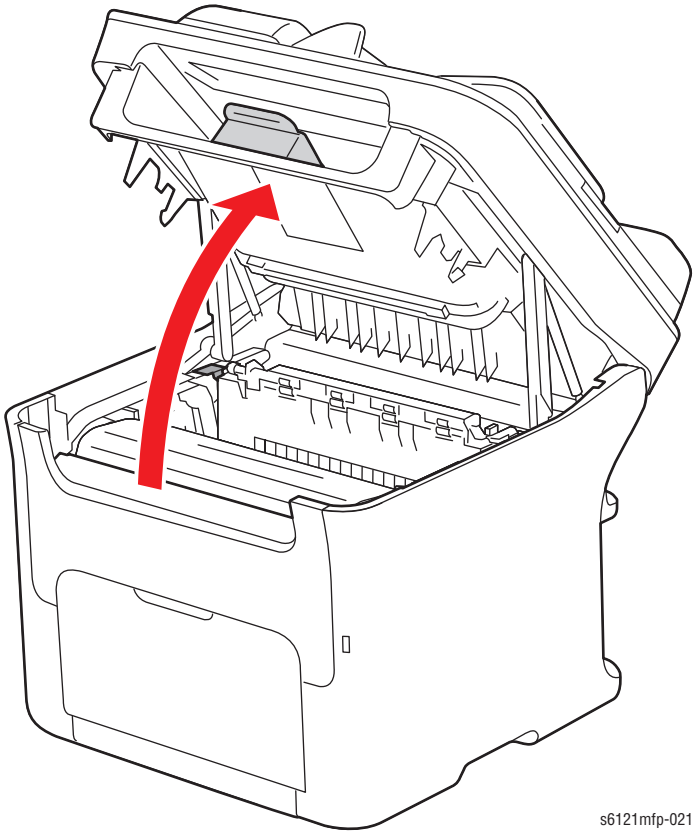
Maintenance Items and Consumables

Maintenance items include the Imaging Unit, Fuser, and Feed Roller. Consumables consist of the four Toner Cartridges.

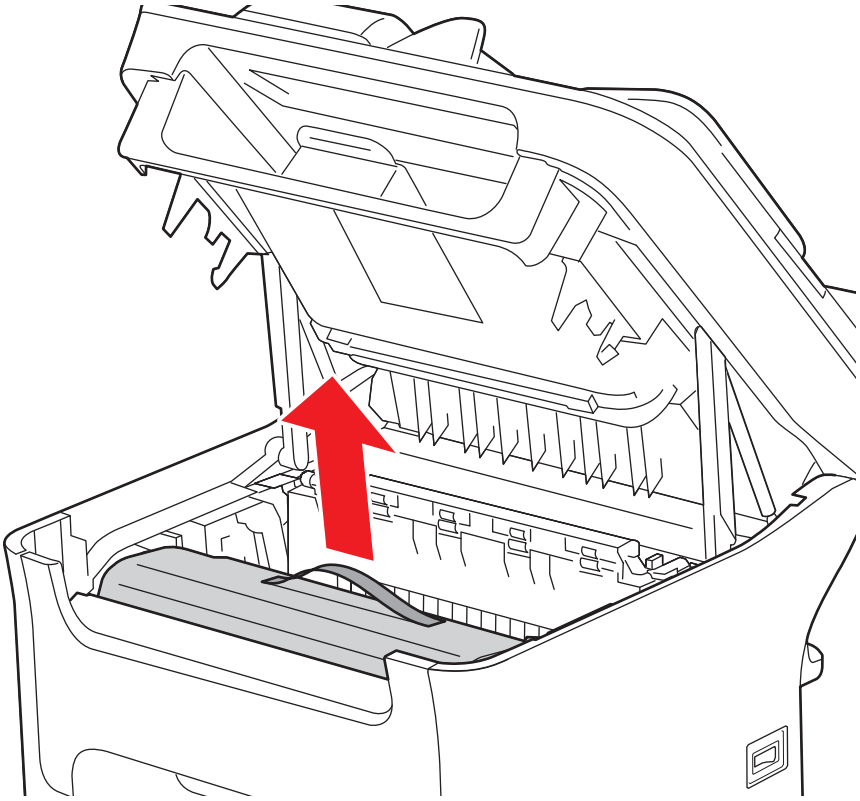
Imaging Unit

PL4.0.13

1. Lift the Top Cover.



2. Remove the Imaging Unit.



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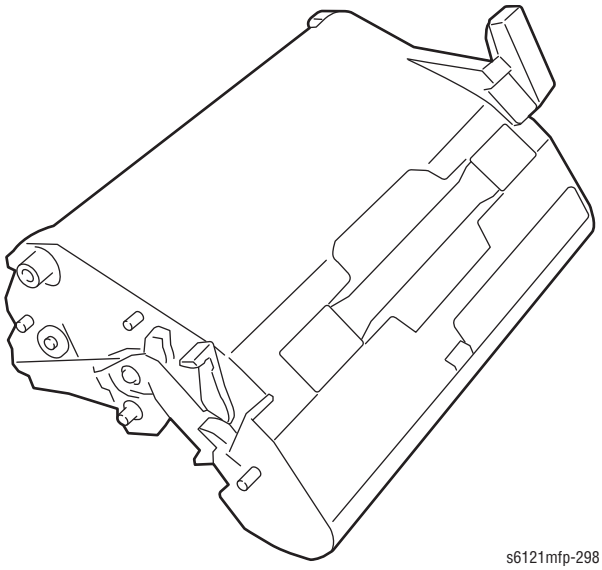
3. Position the removed Imaging Unit as shown.



Note

Keep the Imaging Unit horizontal and place it where it can not become dirty.

Note

Do not leave the Imaging Unit removed for more than 15 minutes, and do not place the removed Imaging Unit in a location where it is exposed to direct light (such as sunlight).

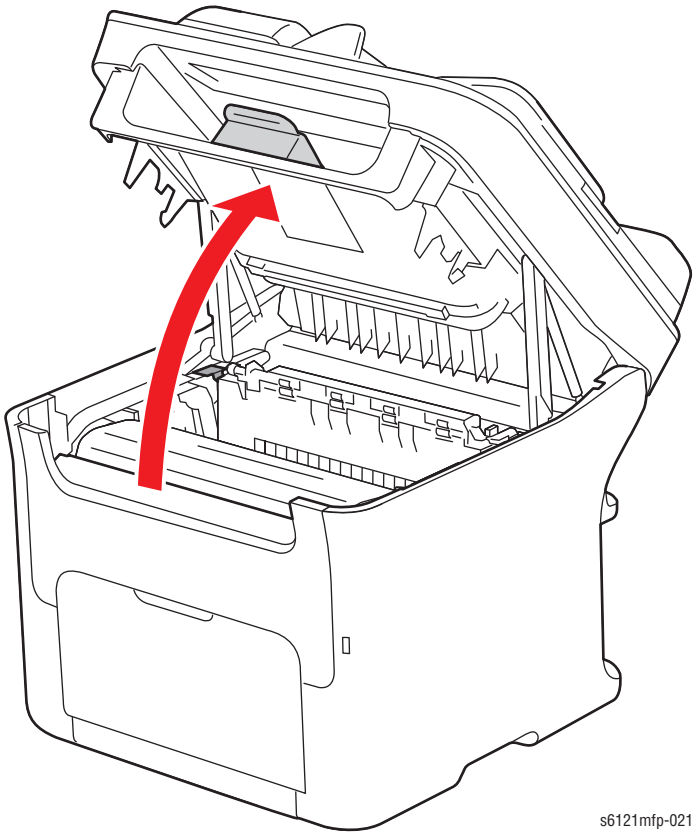
Fuser

PL11.0.18

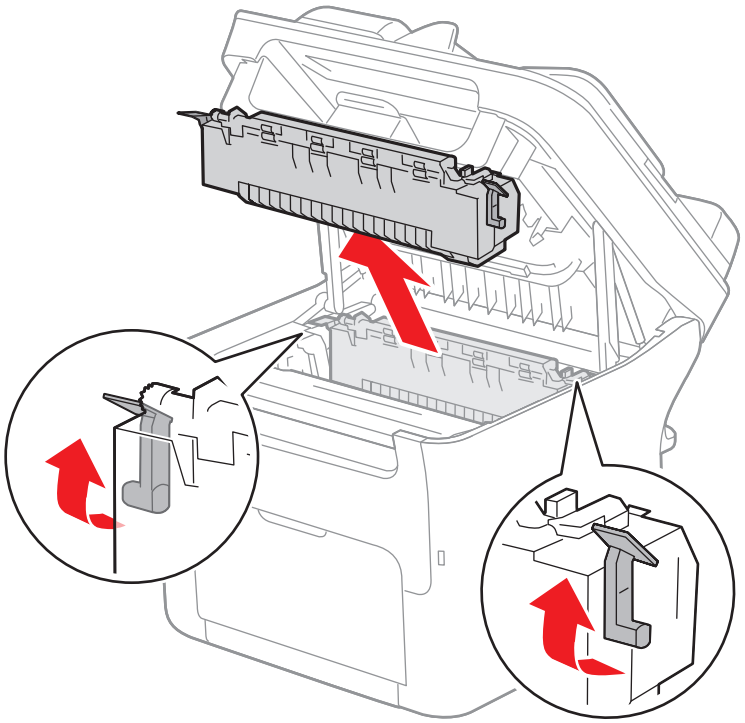
Warning

Allow the Fuser to cool before servicing the printer.

1. Lift the Top Cover.



2. Pull up the levers to unlock the fuser and then remove it.



s6121mfp-198

Replacement Note

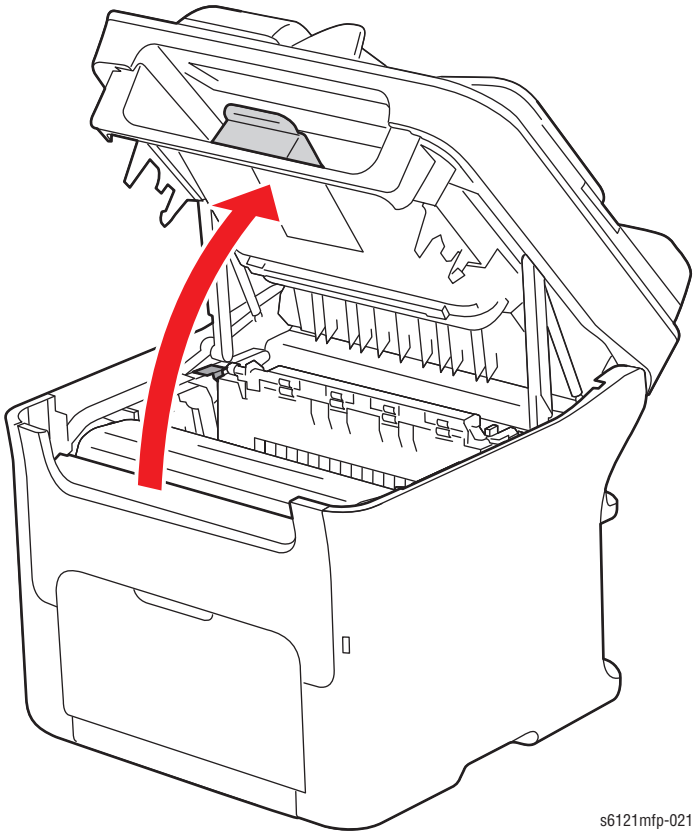
If the Fuser being replaced has reached end-of-life:

- Reset the Fuser counter in the service menu.
- It is highly recommended that the Feed and Separator Rollers be replaced also.

Feed Roller

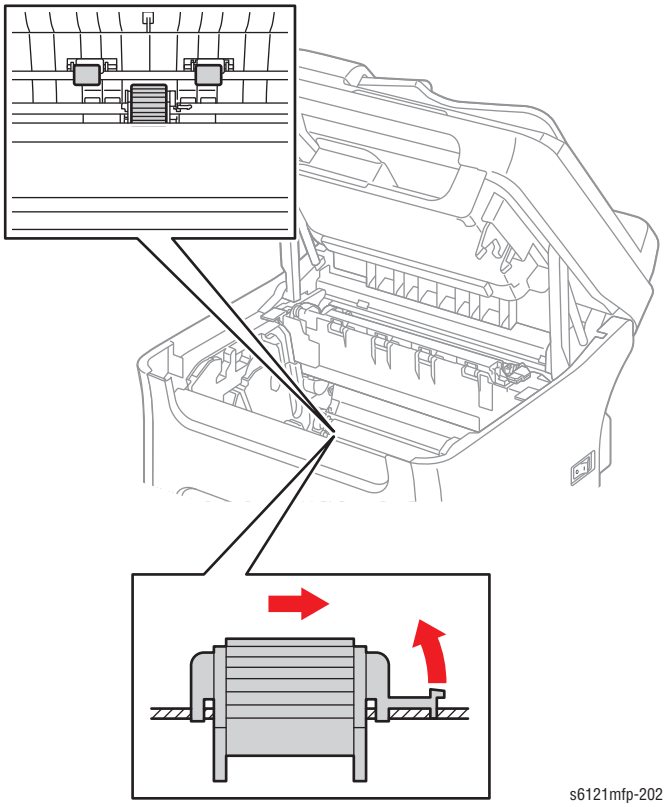
PL6.0.1

1. Open the Top Cover.



2. Remove the Imaging Unit (page 8-6).

3. Remove the Feed Roller.

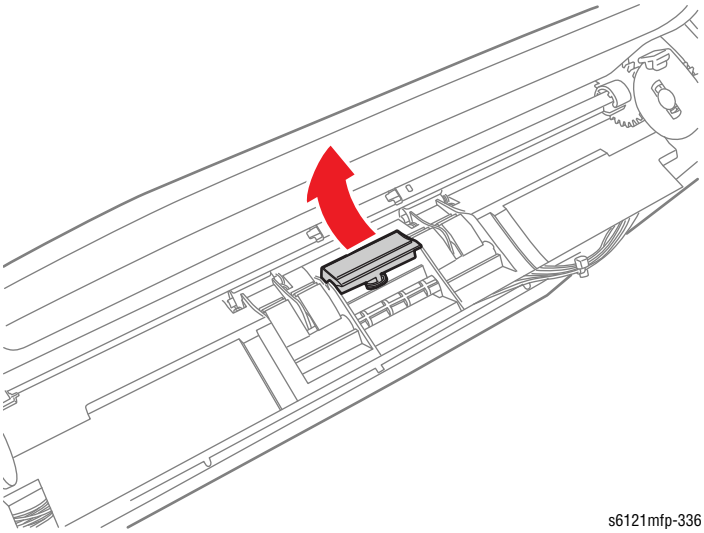


s6121mfp-202

Separation Pad

PL6.0.7

1. Remove the Lifting Plate Assembly (page 8-43).
2. Remove the Separation Pad.



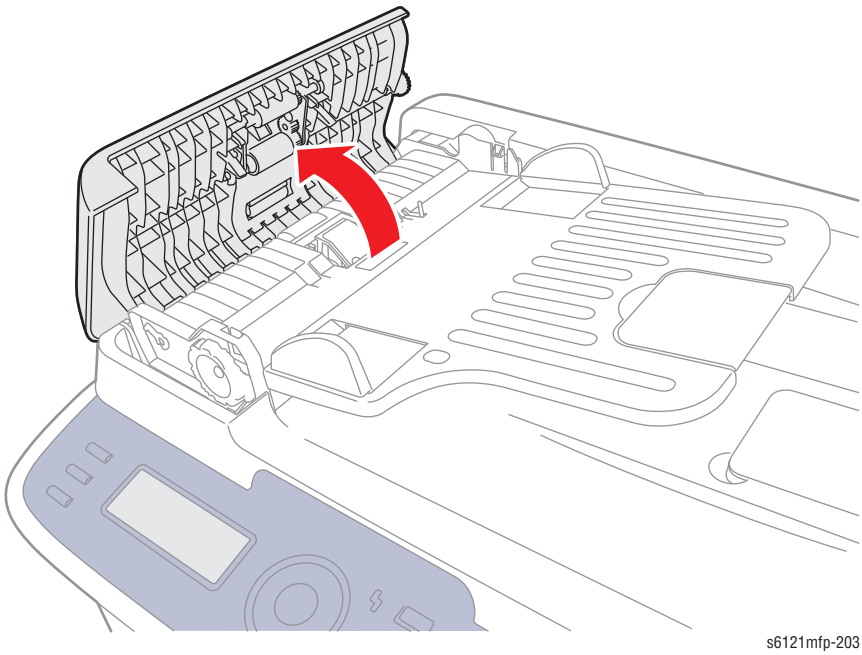
s6121mfp-336

3. Remove the spring and install it on the new pad.

ADF Pick-up Roller

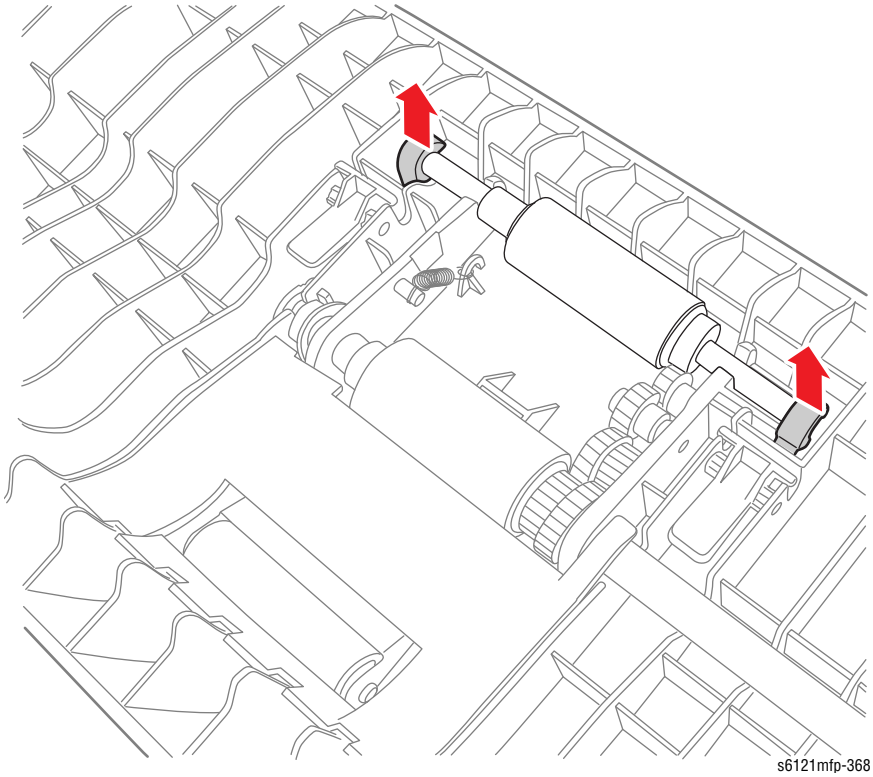
PL1.1.3

1. Open the ADF Top Cover.



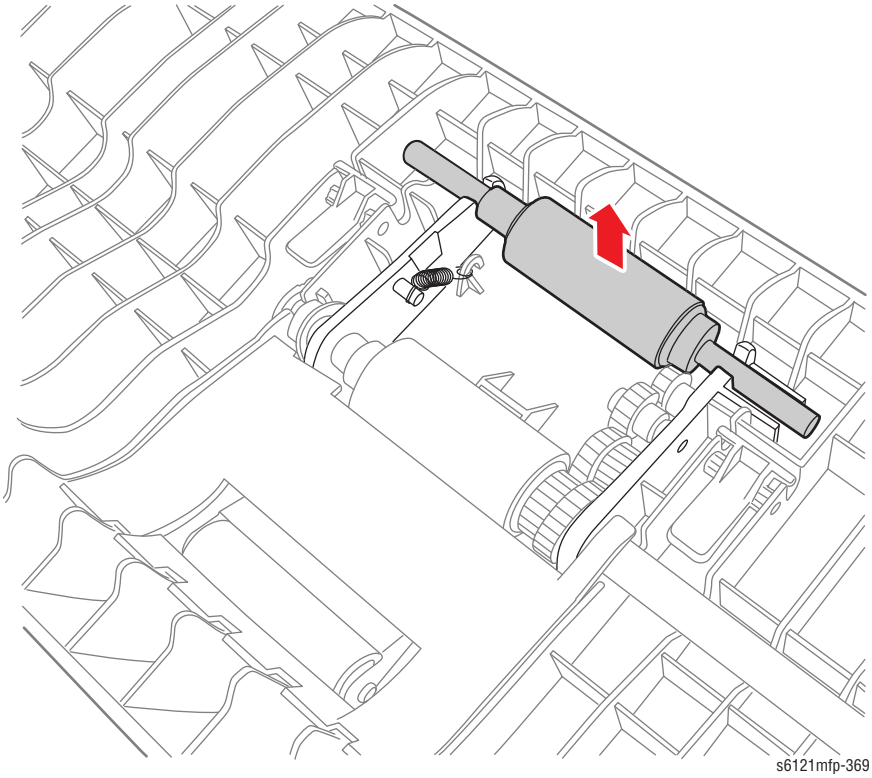
s6121mfp-203

2. Unsnap the 2 clips on the ADF Pick-up Roller shaft.



s6121mfp-368

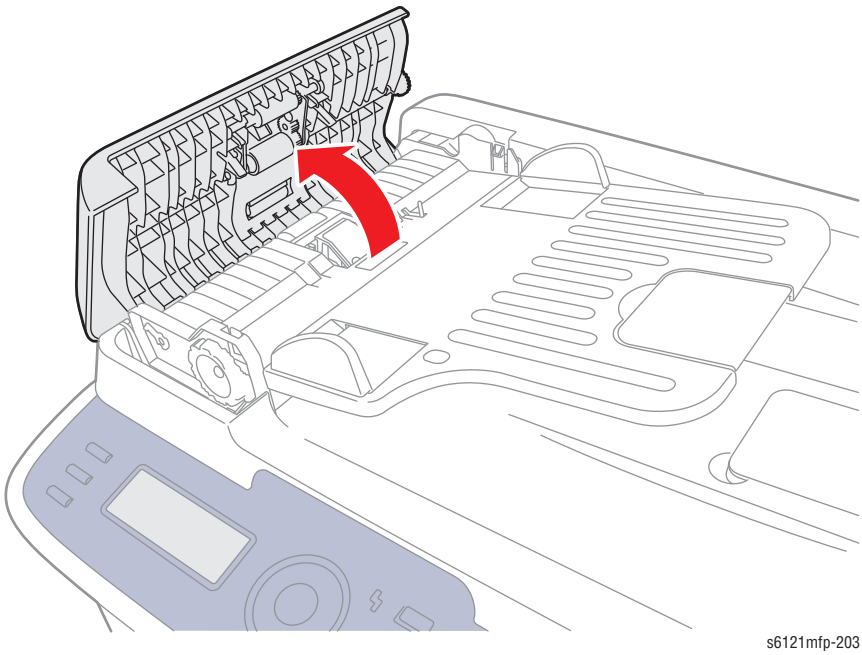
3. Unsnap the ADF Pick-up Roller shaft from the assembly, and remove the roller from the shaft.



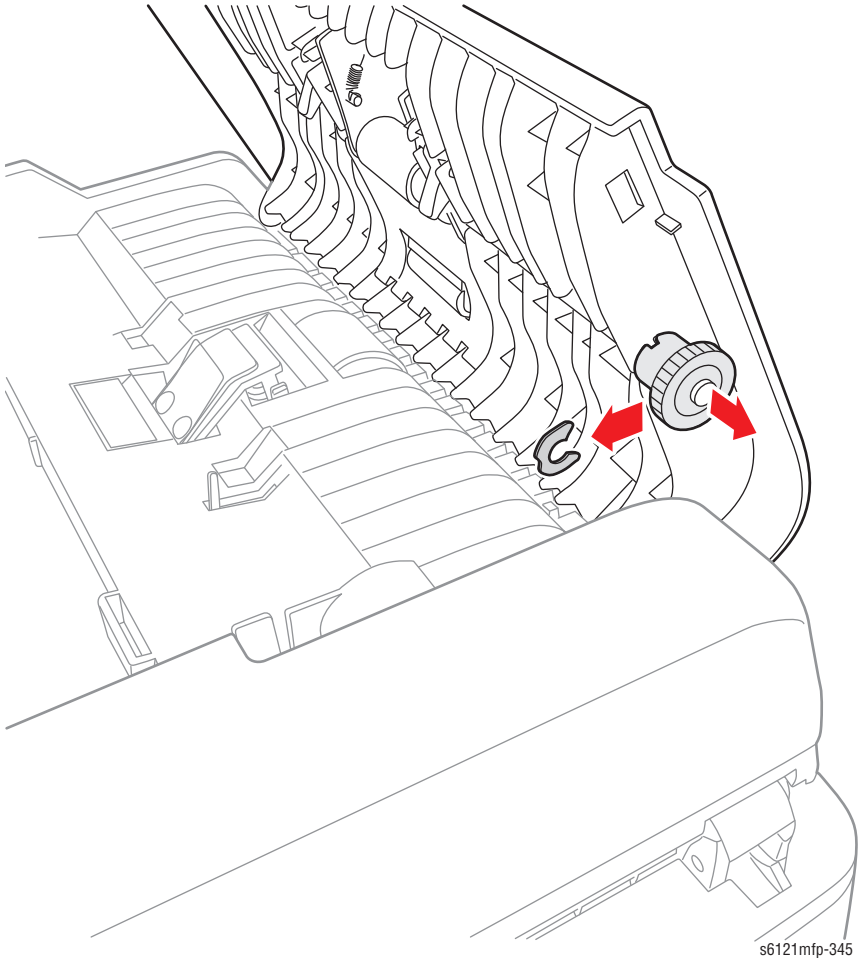
ADF Feed Roller

PL1.1.4

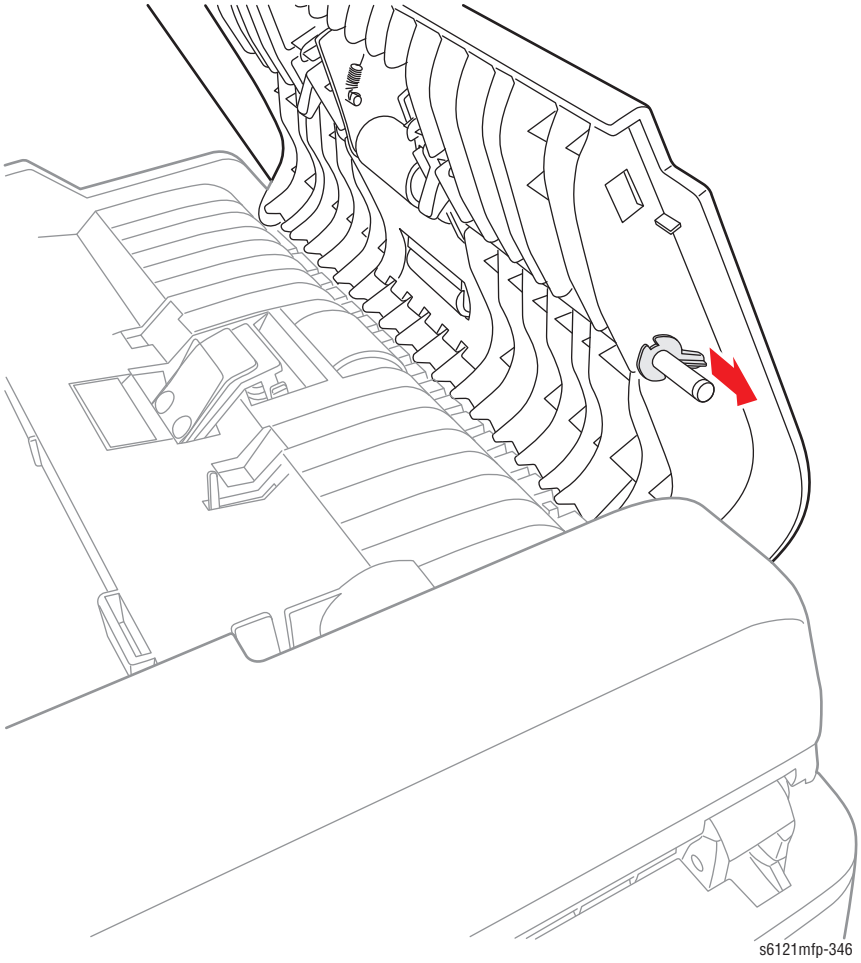
1. Open the ADF Top Cover.



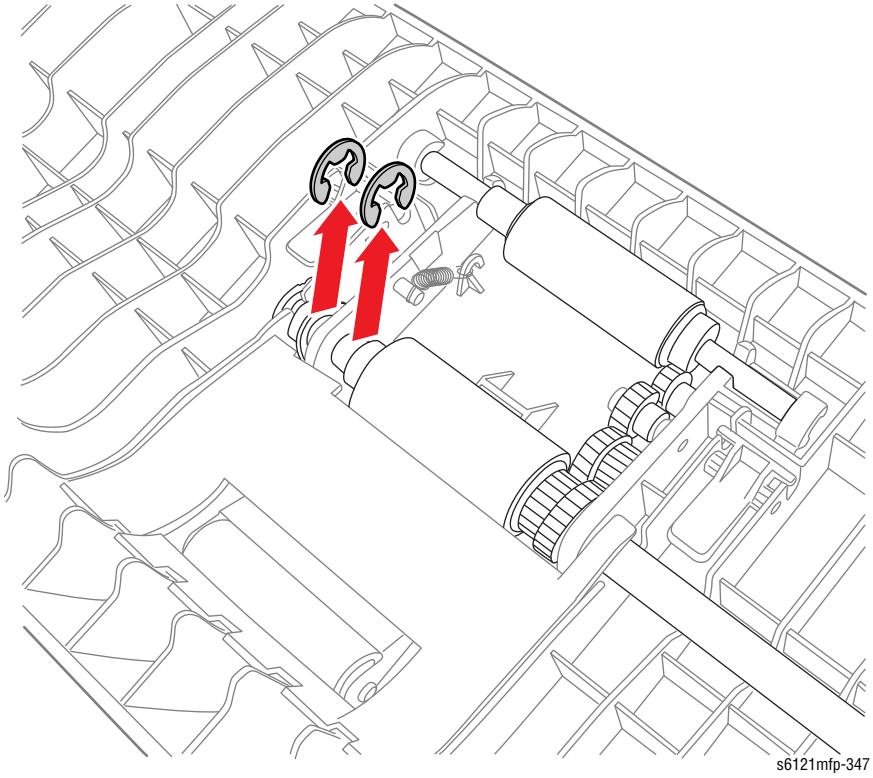
2. Remove the C-ring from the end of the shaft and remove the gear assembly.



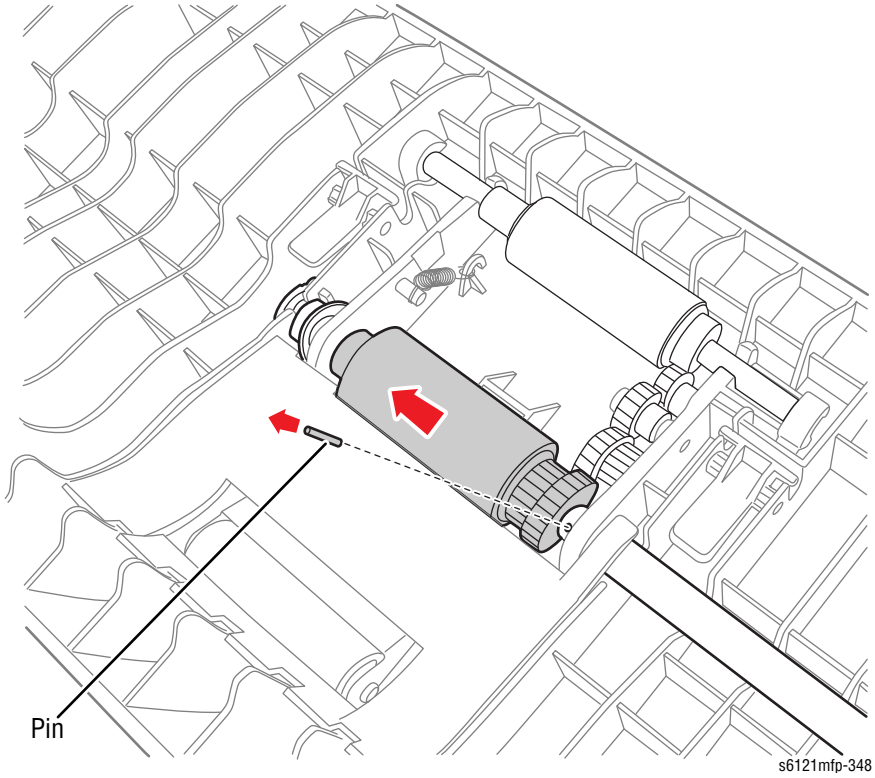
3. Pull up on the bushing tab and rotate the bushing clockwise until you can pull the bushing off of the shaft.



4. Remove 2 C-clips as shown.

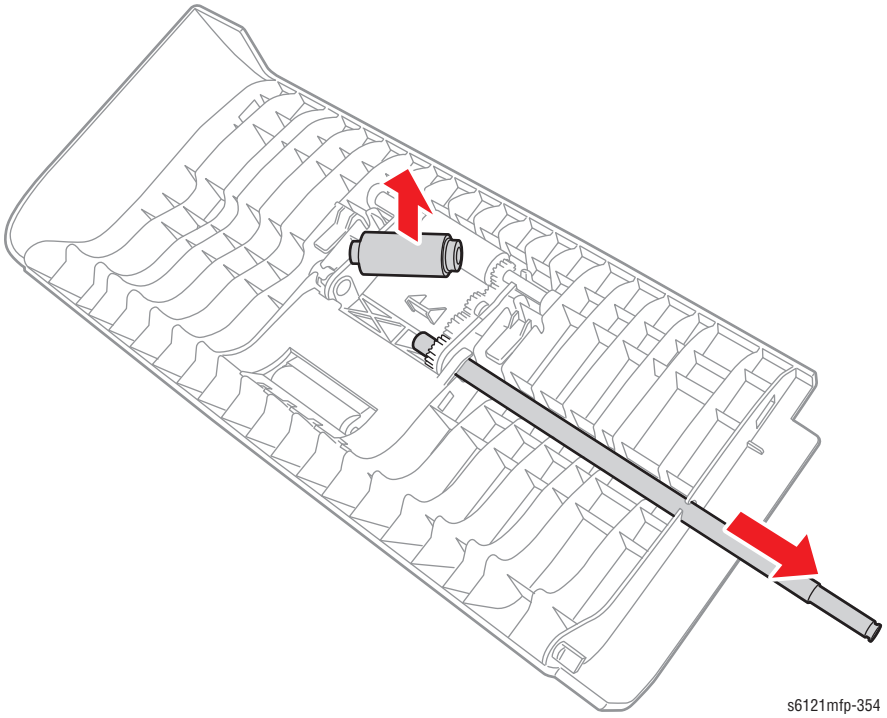


5. Slide the roller and gears in the direction of the arrow.



6. Rotate the shaft until you can see the pin sticking through the shaft.
7. Carefully remove the pin.

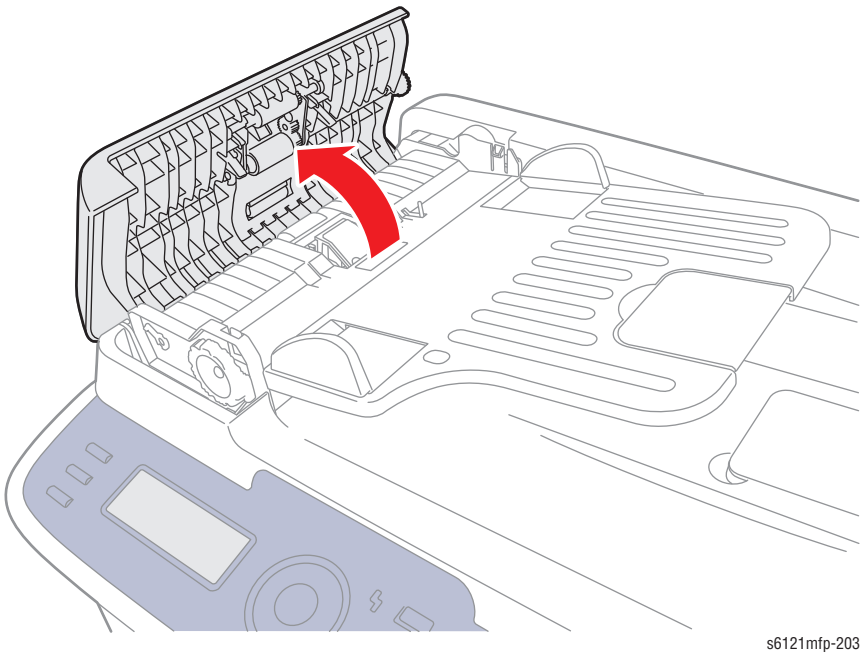
8. Slide the shaft out of the ADF Top Cover until you can remove the ADF Feed Roller.



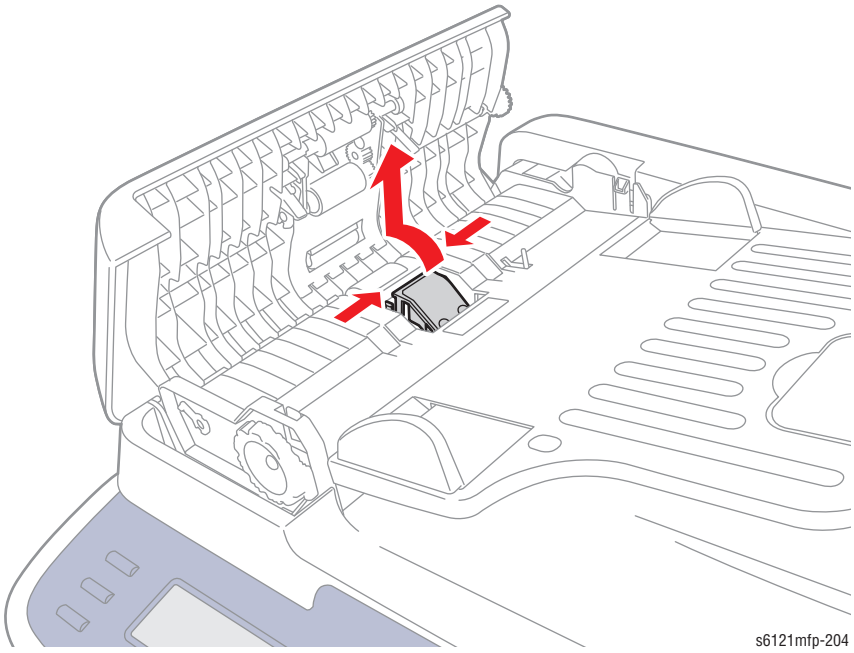
ADF Pick Pad

PL1.2.9

1. Open the ADF Top Cover.



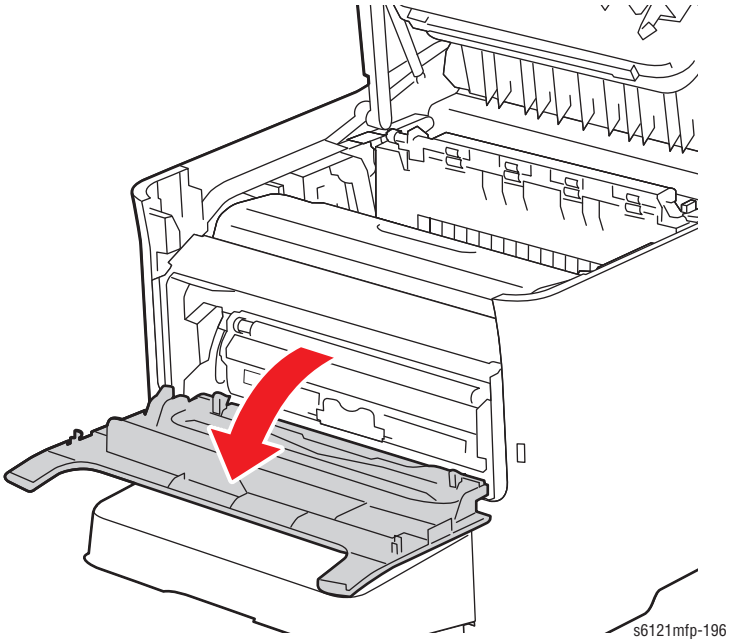
2. Squeeze the tabs on the ADF Pick Pad and remove it.



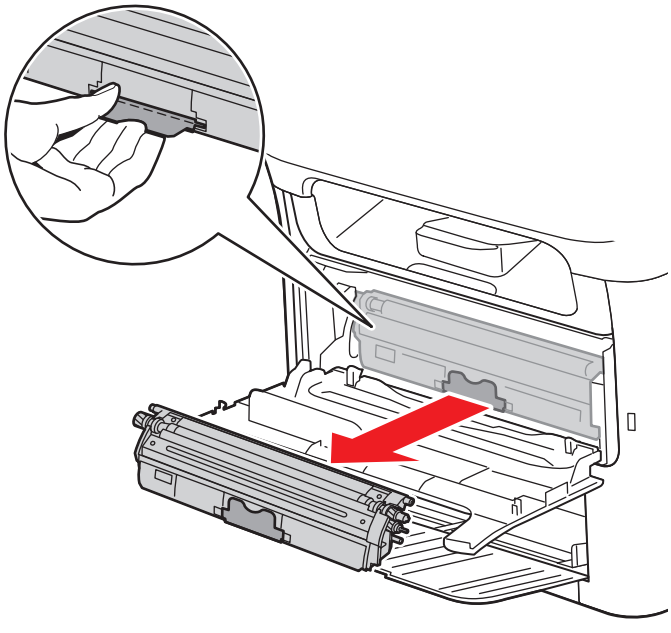
Toner Cartridges

To replace toner cartridges when the printer is turned off, see “Replacing Toner Cartridges Manually” on page 8-23.

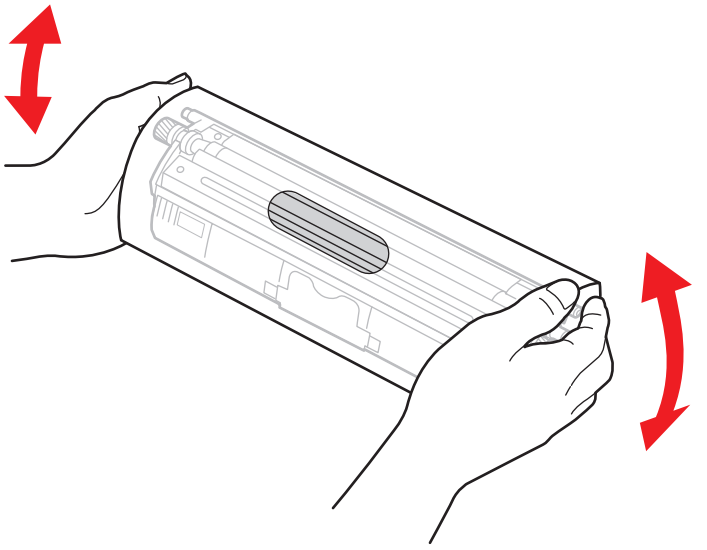
1. At the main menu, press the **Menu** button.
2. Press the **Down** arrow button and select **Replace Toner**.
3. Press the **Down** arrow button and select **Toner Change**.
4. Select the toner cartridge that you want to replace and press **OK**.
5. Open the Front Cover.



6. Hold onto the handle, pull it and remove the Toner Cartridge.



7. Shake the cartridge a few times to distribute the toner.



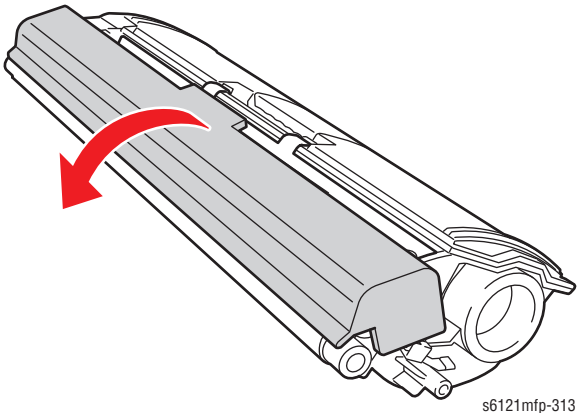
s6121mfp-312

Note

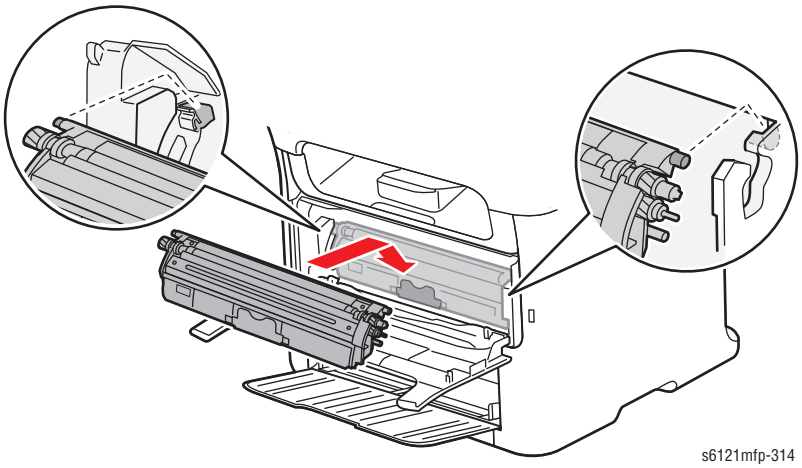
Do not tip the toner cartridge to a vertical position.

s6121mfp-311

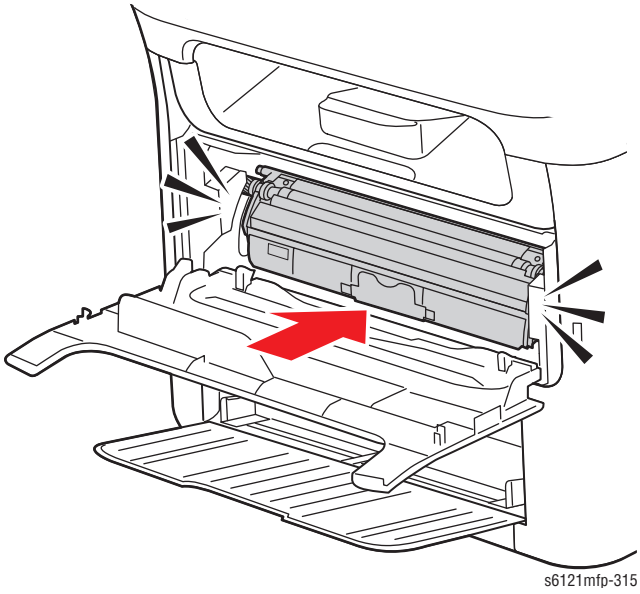
8. Remove the protective cover.



9. Aligning the shaft on both sides of the Toner Cartridge with the rails in the machine, install the cartridge.



10. Press down on the Toner Cartridge until it snaps into place.

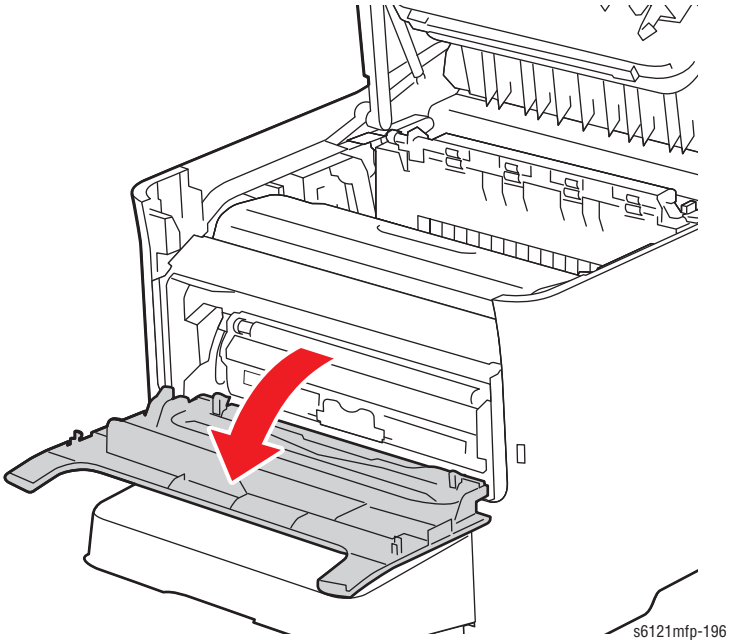


11. Close the Front Cover and press the **Stop** button.

Replacing Toner Cartridges Manually

Use this procedure to replace toner cartridges when the printer is turned off.

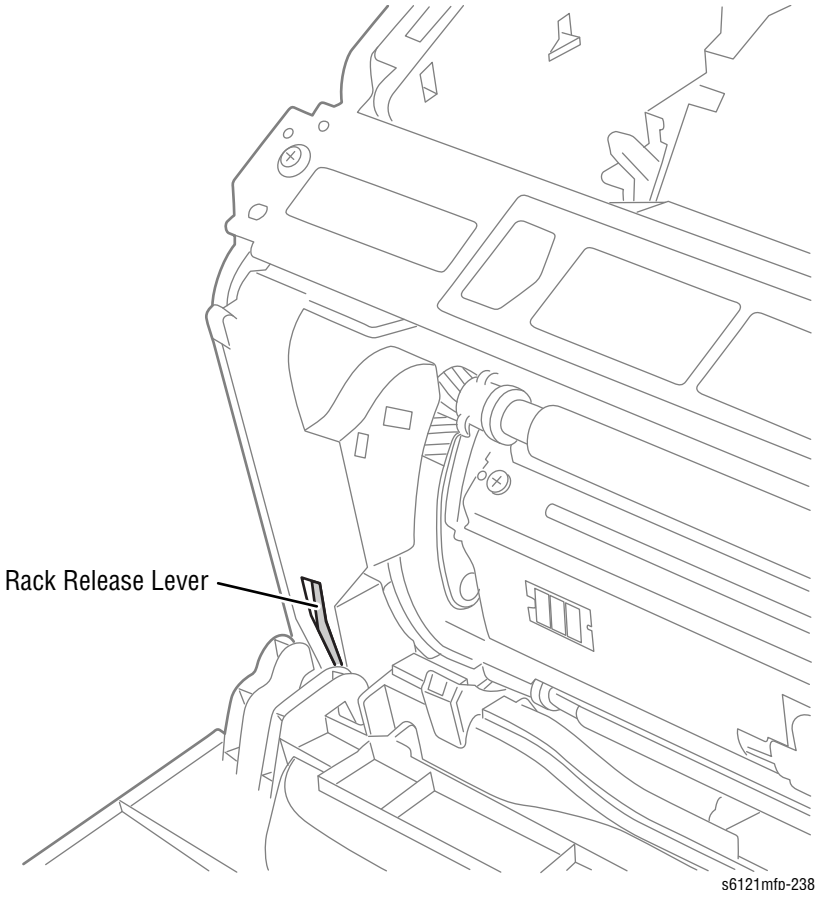
1. Open Front Cover.



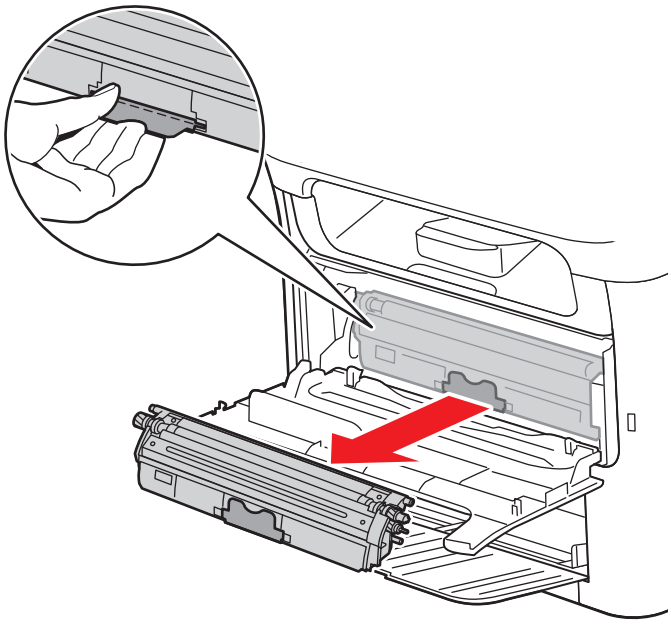
2. Press and hold the rack release lever, and then rotate the rack until the toner cartridge is easily removed.

Caution

When rotating the rack, do not touch the Developing Rollers.

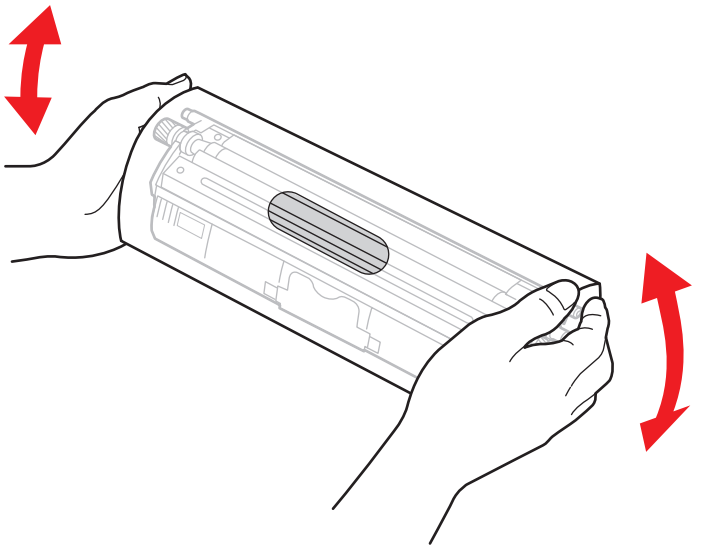


3. Hold onto the handle, pull it and remove the Toner Cartridge.



s6121mfp-023

4. Shake the cartridge a few times to distribute the toner.



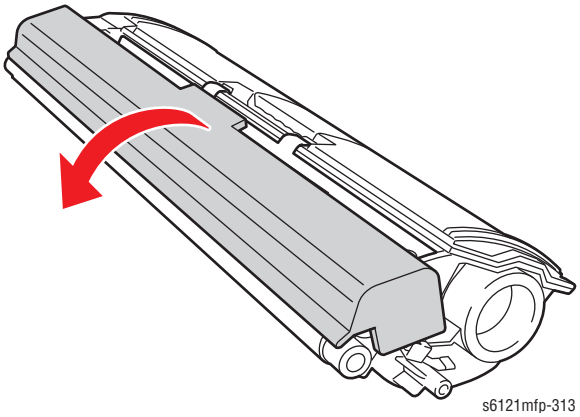
s6121mfp-312

Note

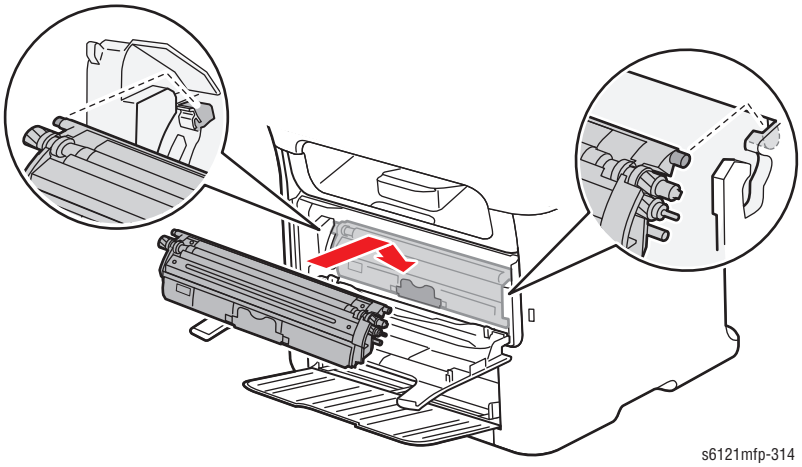
Do not tip the toner cartridge to a vertical position.

s6121mfp-311

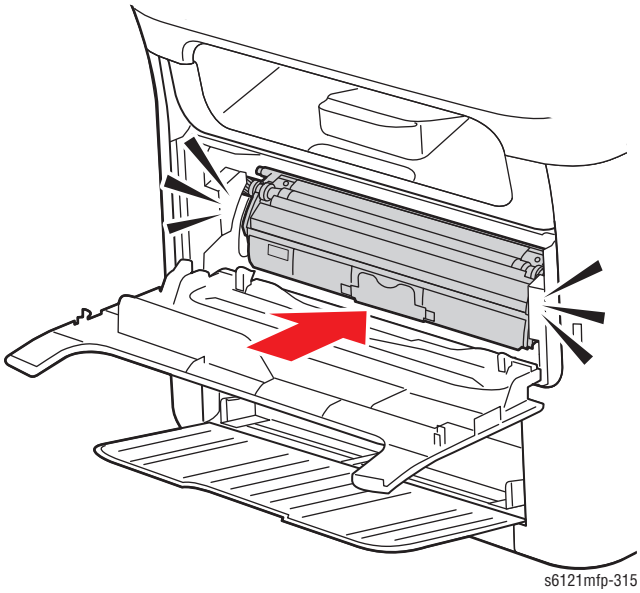
5. Remove the protective cover.



6. Aligning the shaft on both sides of the Toner Cartridge with the rails in the machine, install the cartridge.



7. Press down on the Toner Cartridge until it snaps into place.



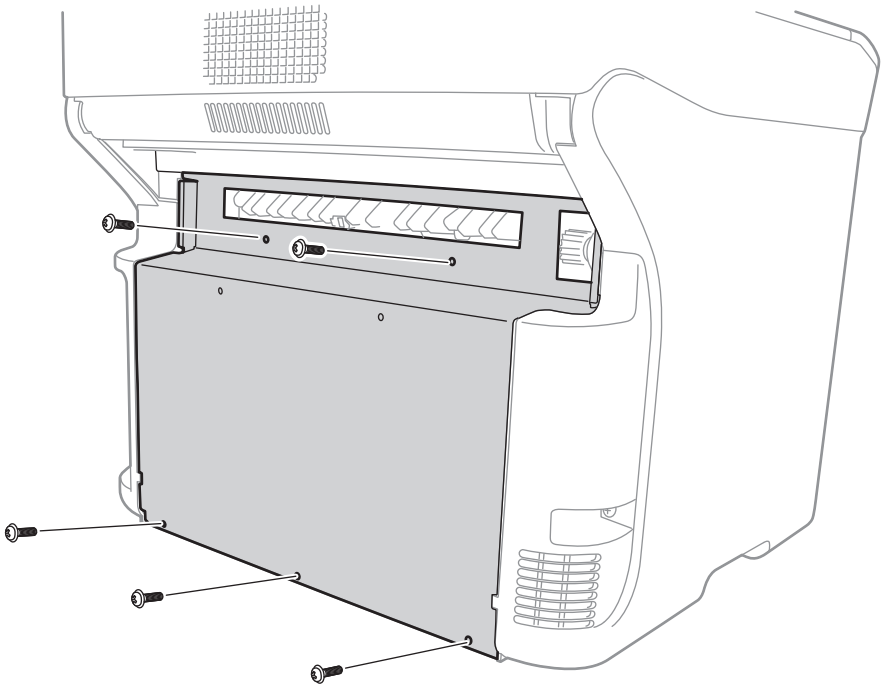
8. Close the Front Cover.

Covers

Rear Cover

PL3.0.15

1. Remove 5 screws (metal, 8mm) that secure the rear cover.



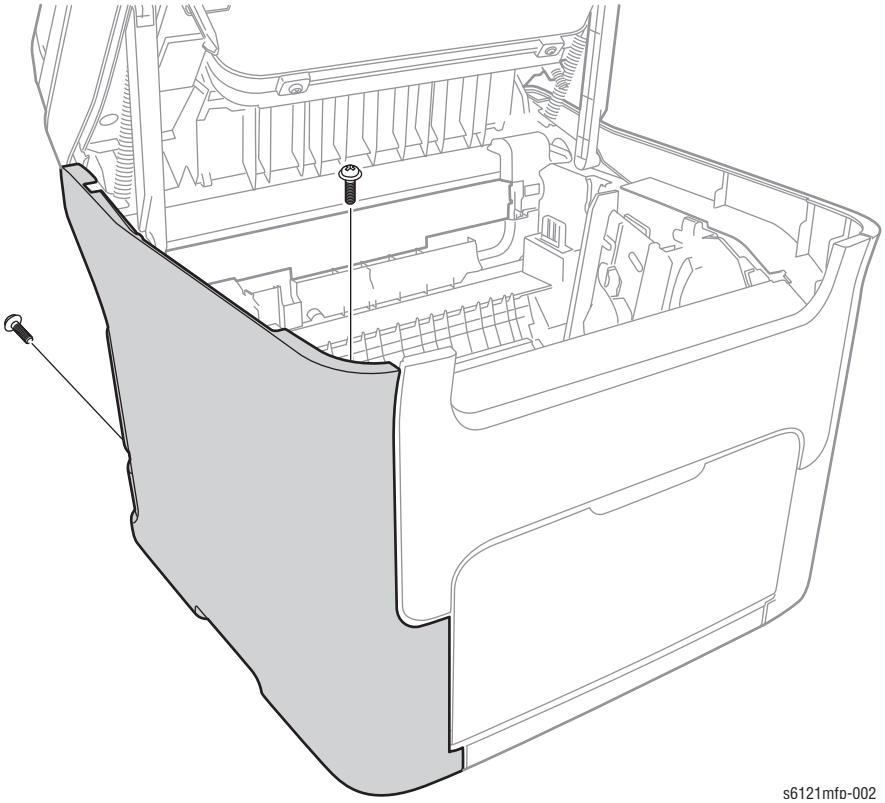
s6121mfp-001

Left Side Cover

PL 3.0.12

1. Remove the rear cover (page 8-28).
2. Open the top cover.
3. Open the front cover.

4. Remove 2 screws (metal, 10 mm) that secure the left side cover.

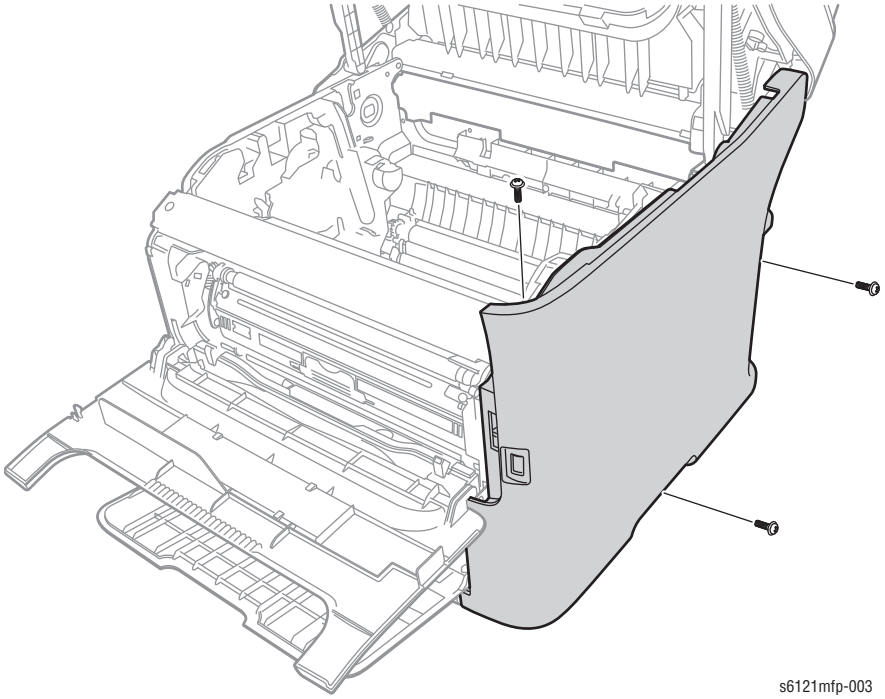


Right Side Cover

PL 3.0.1

1. Open the top cover.
2. Open the front cover.

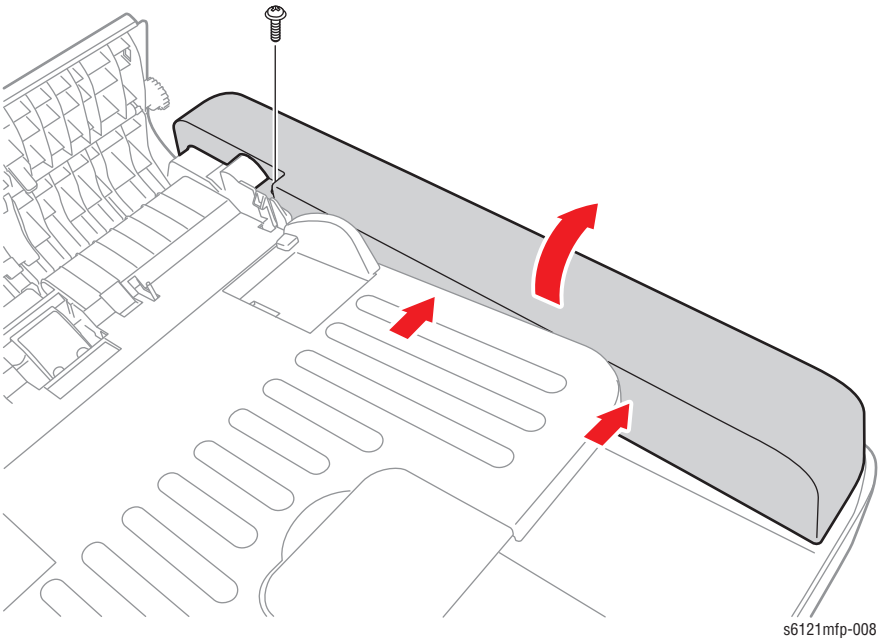
3. Remove 3 screws (metal, 10 mm) that secure the right side cover.



ADF Rear Cover

PL 1.1.5

1. Open the ADF top cover.
2. Remove 1 screw (silver, tap, 10 mm), and squeeze the ADF top cover to unhook the 2 tabs that secure it.

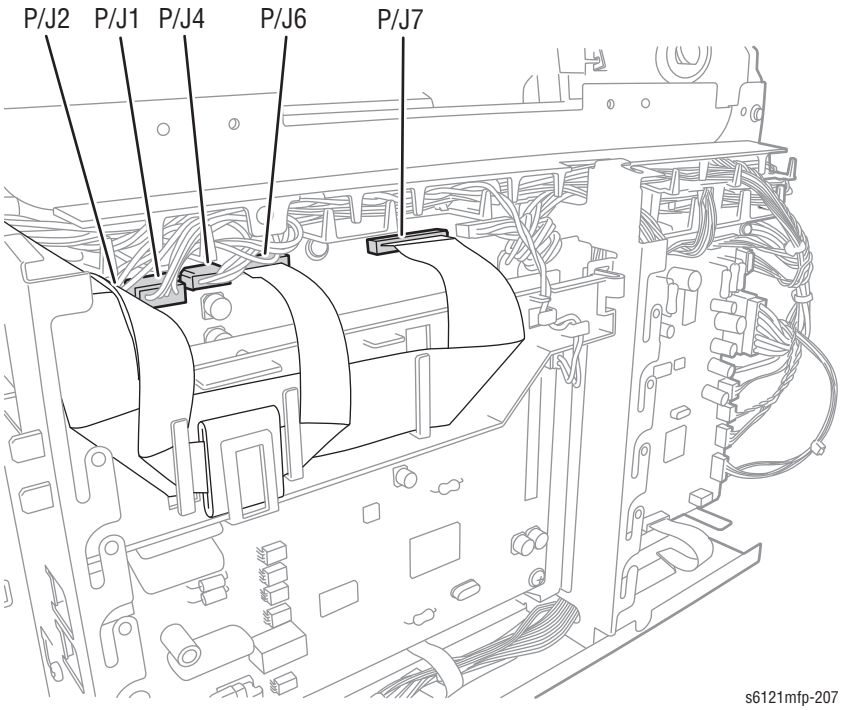


Disassembly Procedures

Scanner

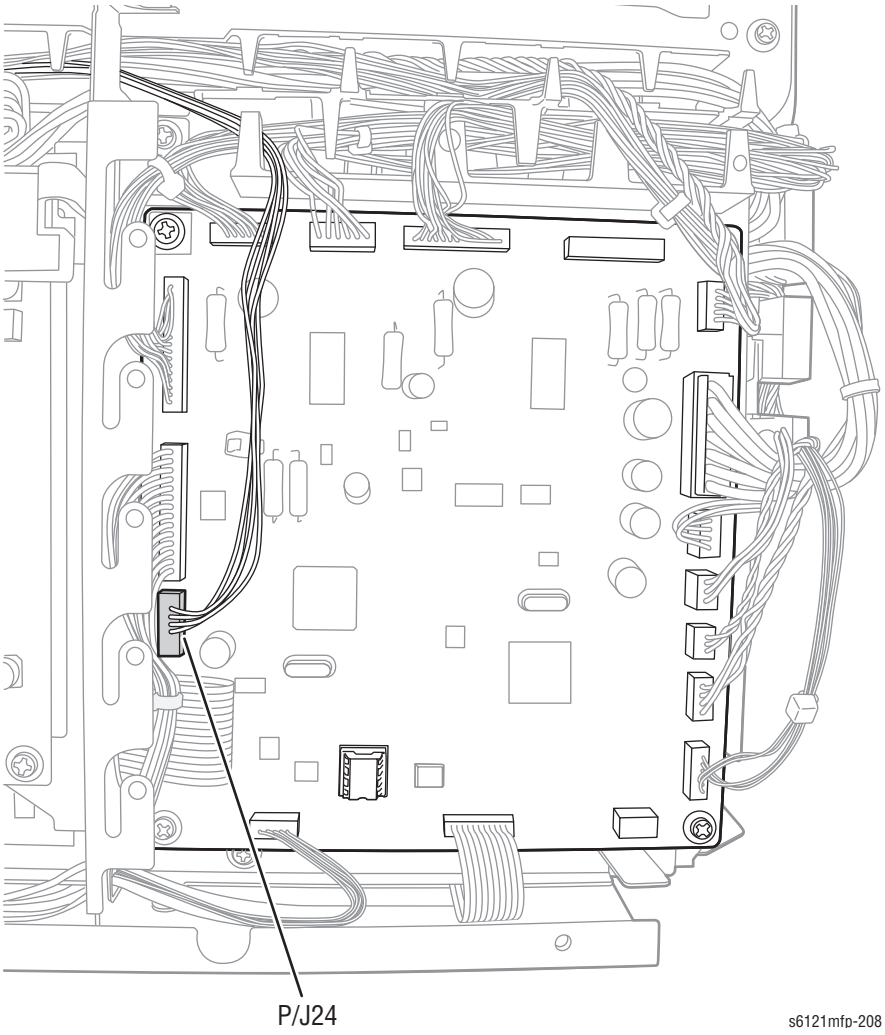
PL2.0.4

1. Remove the Rear Side Cover (page 8-28).
2. Remove the Left Side Cover (page 8-28).
3. Remove the Right Side Cover (page 8-29).
4. On the Image Processor Board, disconnect the 2 flat cables at P/J6 and P/J7, and release them from the cable guide.

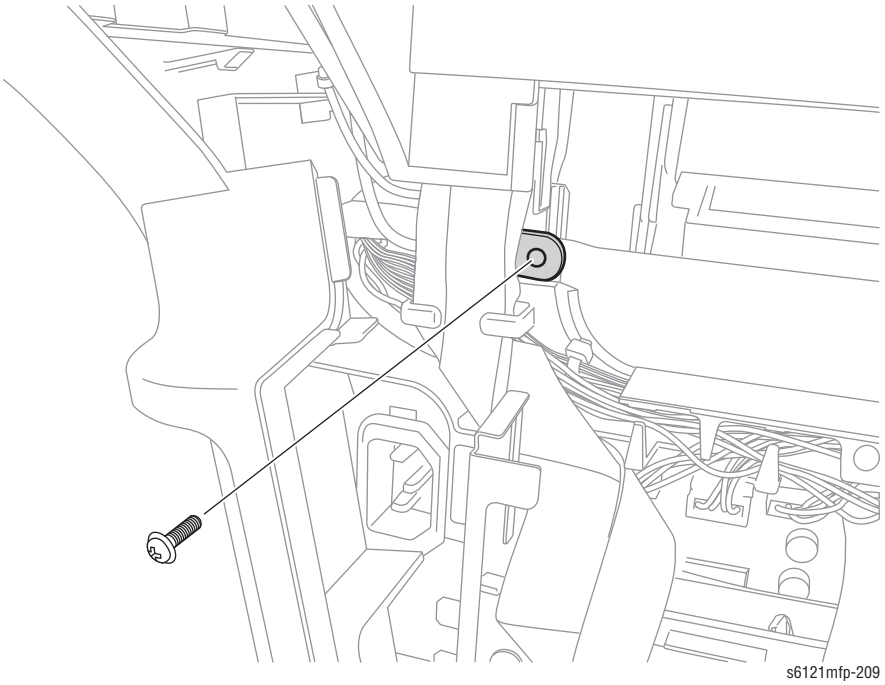


5. Remove the cables from P/J1. P/J2, and P/J4, and unthread them from the harness guide.

6. On the Engine Control Board, remove connector PJ24 and remove the harness from the harness guide.

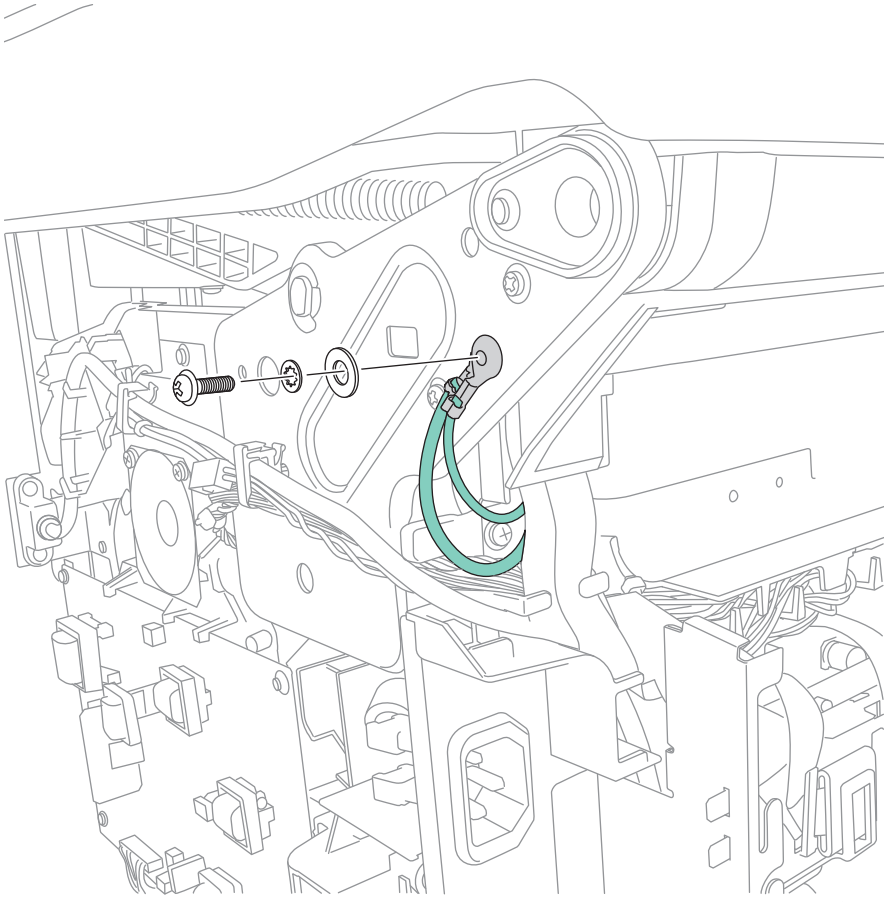


7. Remove the screw (metal, 6mm), and remove the harness band.



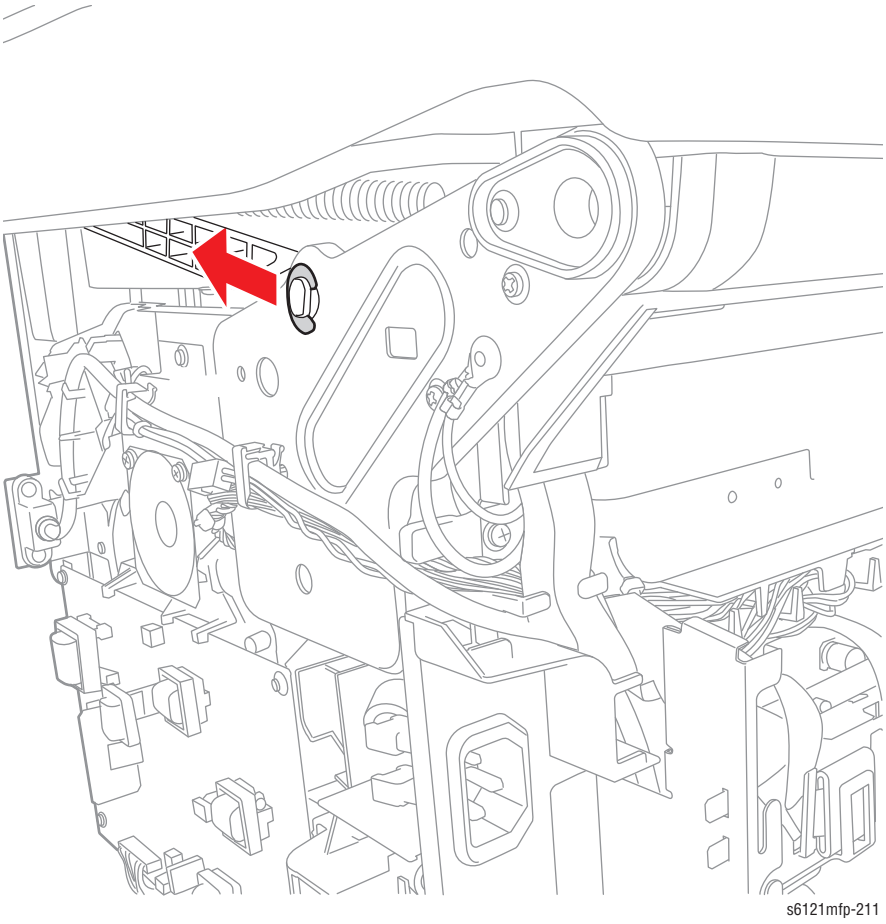
s6121mfp-209

8. On the right side of the printer, remove the ground wire screw (metal, 6mm, with lock washer and flat washer).

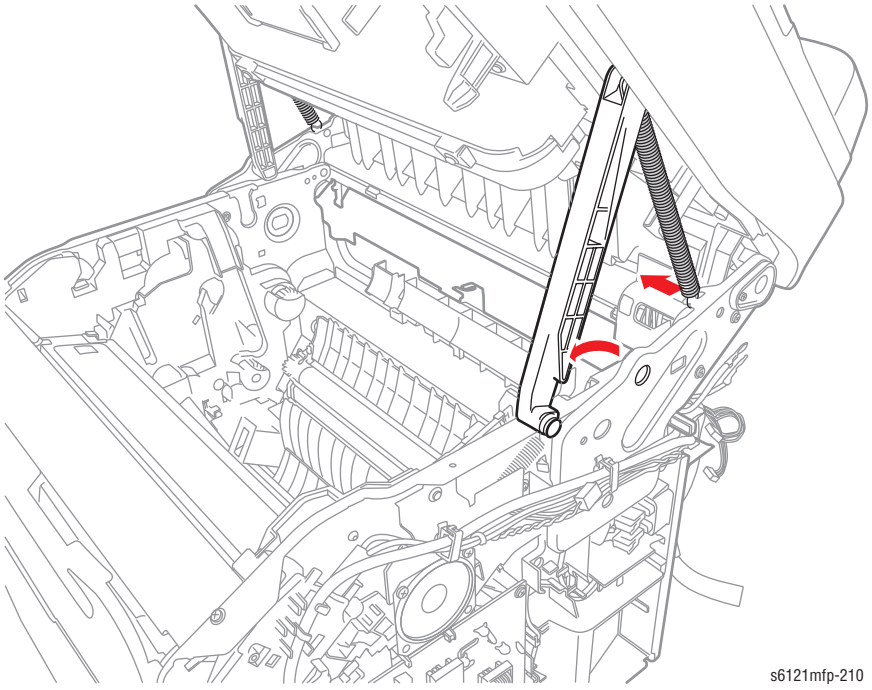


s6121mfp-009

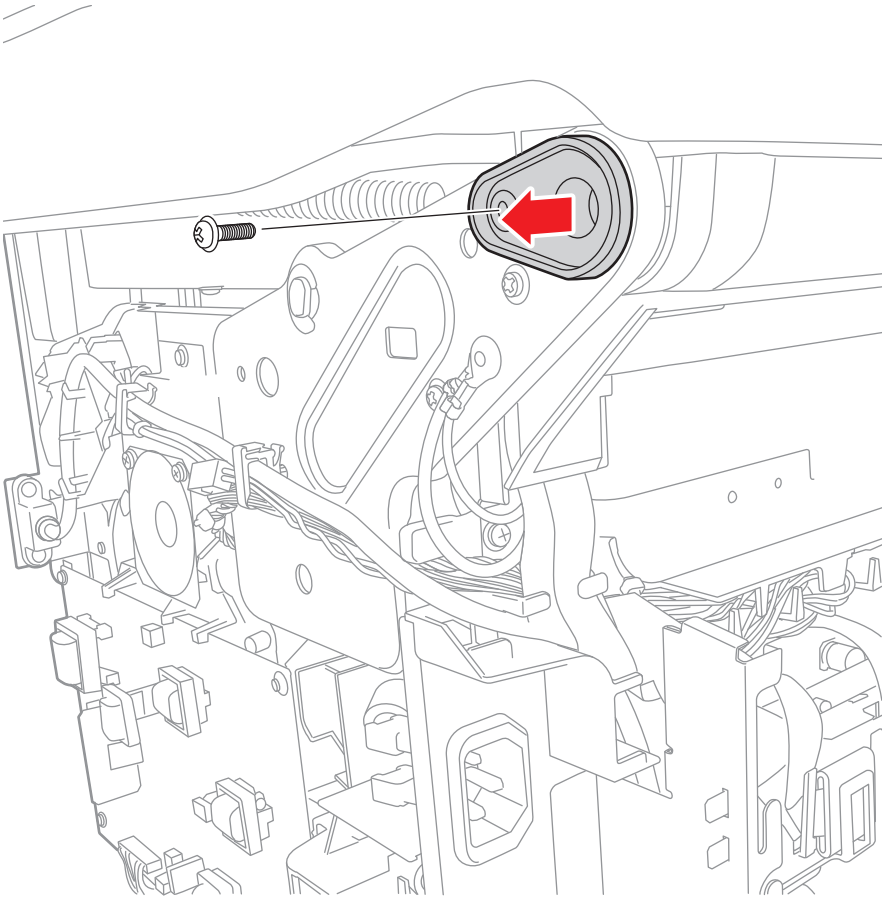
9. Remove the e-ring



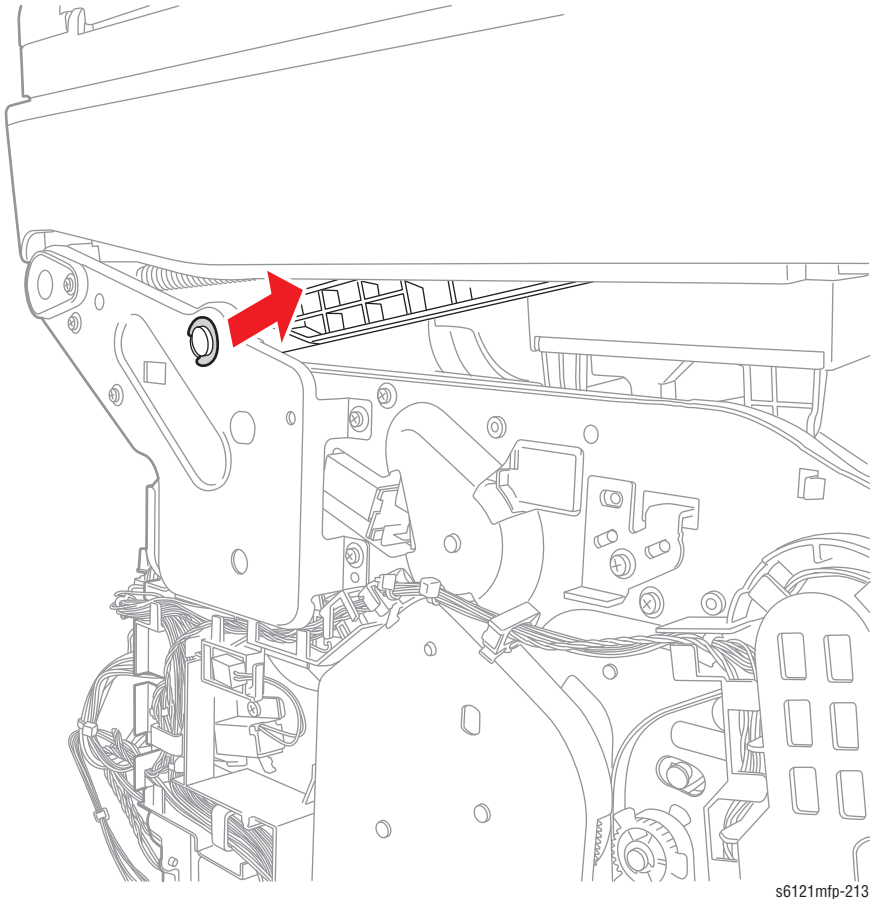
10. Remove the arm and the spring from the notch on the plate.



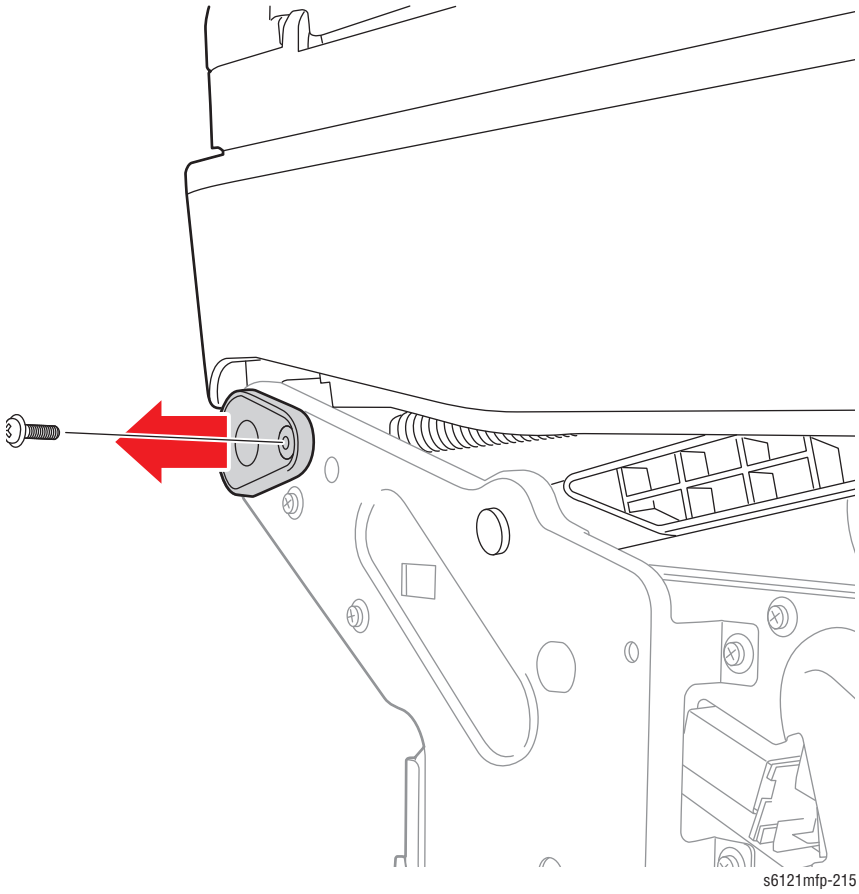
11. Remove the screw (metal, 6mm) and the stopper.



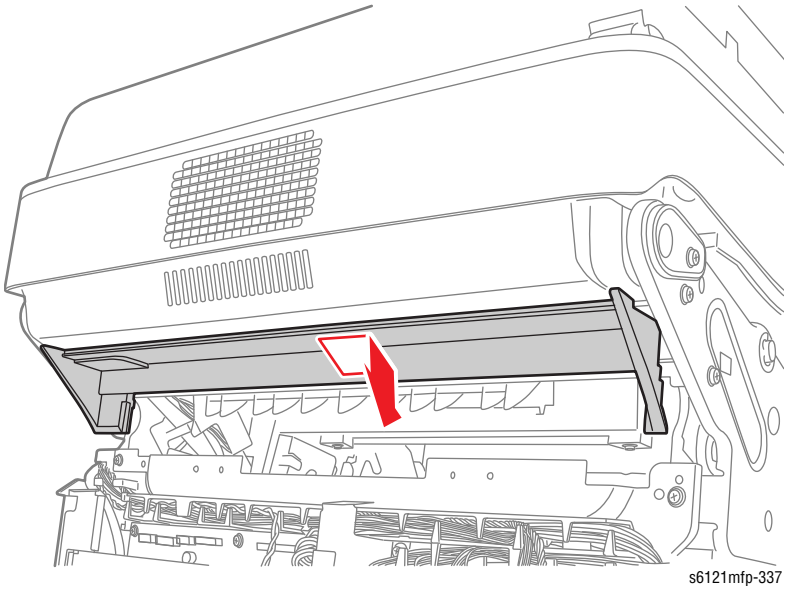
12. On the left side of the printer, remove the e-ring and the arm, and then remove the spring from the notch on the plate.



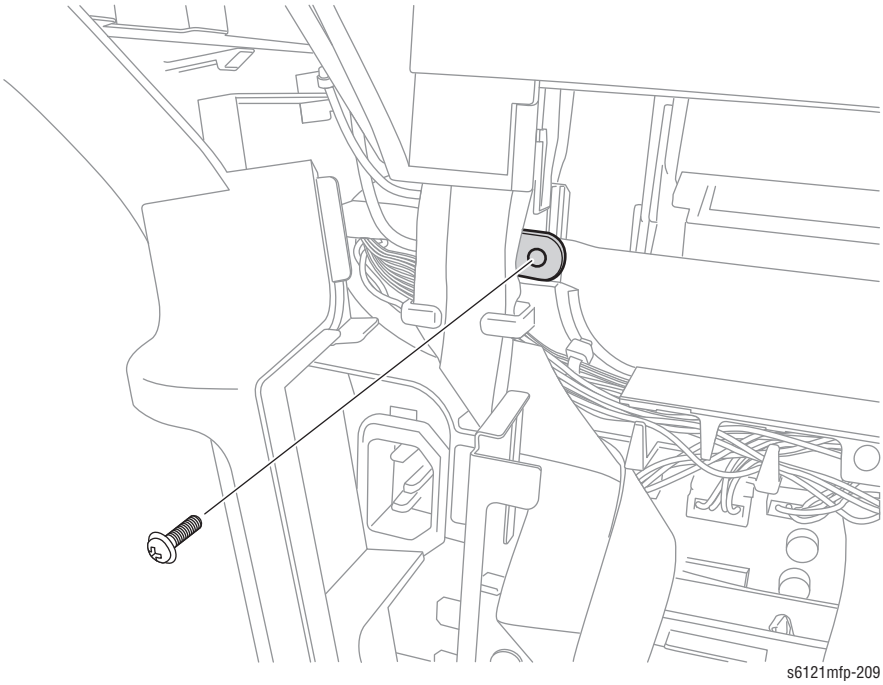
13. Remove the screw (metal, 6mm) and the stopper.



14. Remove the Upper Rear Cover.



15. Remove the cable clamp screw (metal, 6mm).

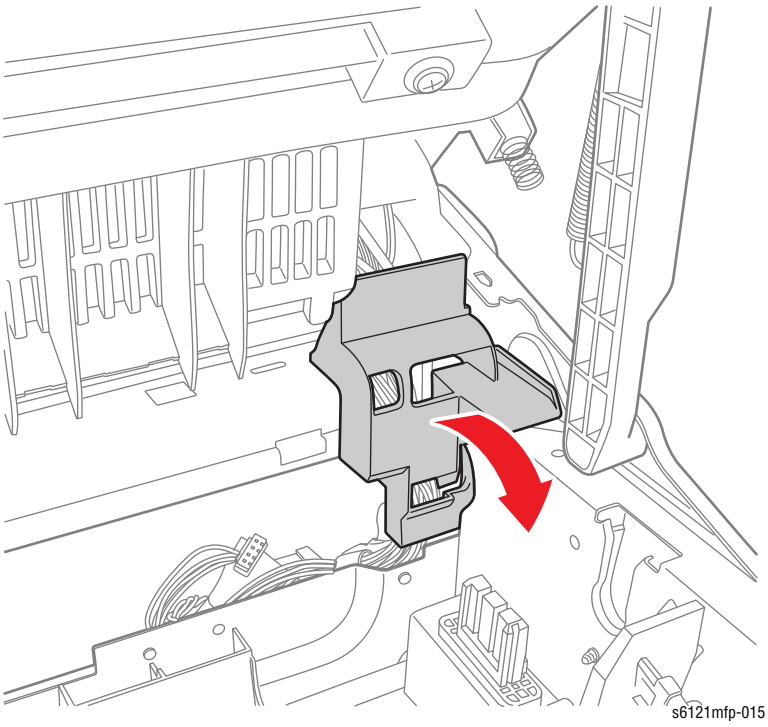


16. Unlace the harnesses from the guide

Note

Note the orientation of the harnesses through the guide.

17. Lift the Scanner slightly, and then unhook the tab and remove the second harness guide as shown below.



18. Pull out the harnesses and remove the Scanner.

Replacement Note

Thread the harnesses through the second harness guide before putting the scanner back on the printer.

Replacement Note

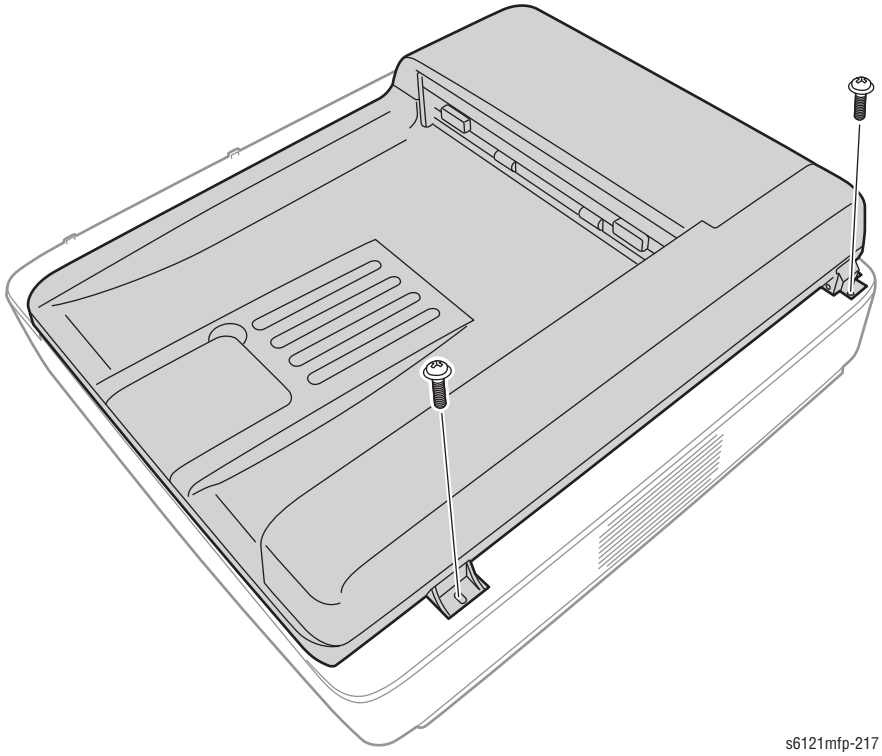
When replacing the scanner, you must transfer the following parts from the old assembly to the new scanner before reinstallation:

- ADF
- Spring Mechanism
- Exit Chute

ADF Unit

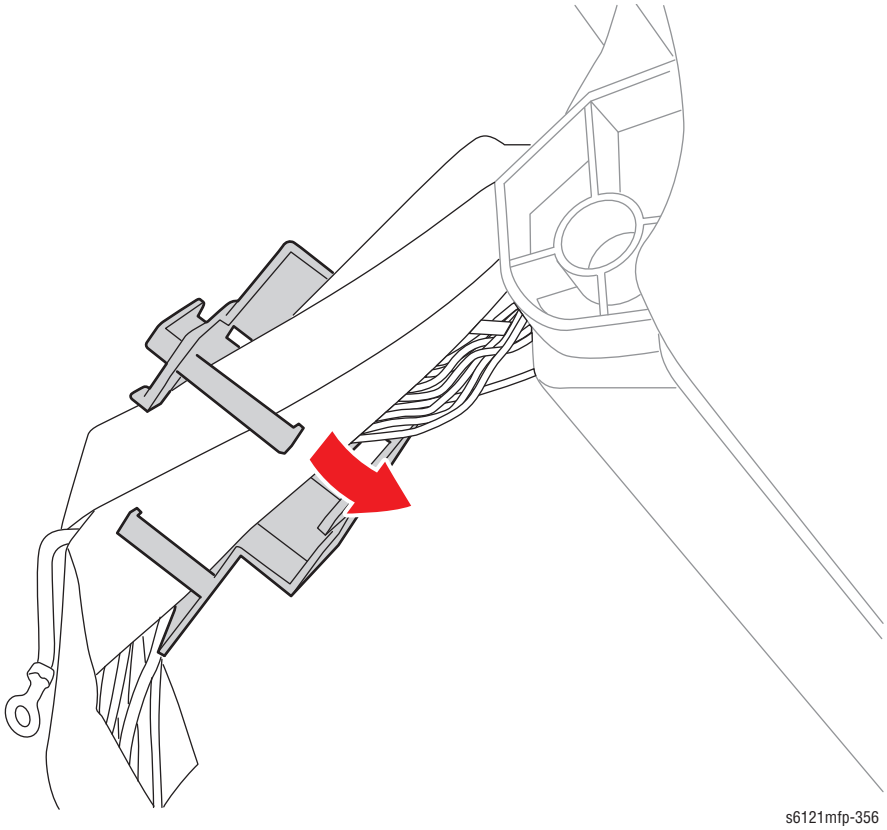
PL1.1.6

1. Remove the scanner unit (page 8-31).
2. Remove 2 screws (silver, tap, 10 mm).



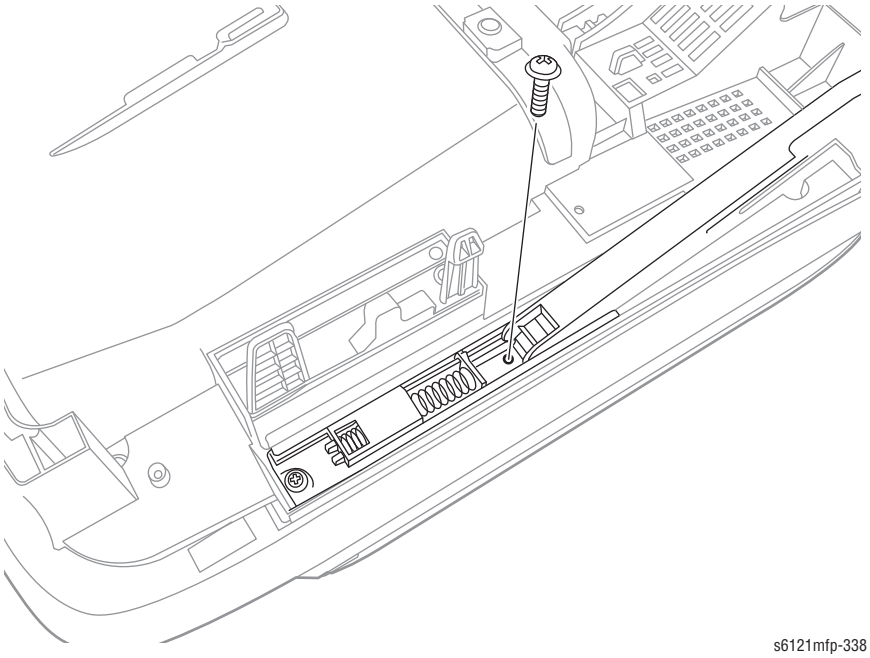
s6121mfp-217

3. Remove the harnesses from the harness guide.



s6121mfp-356

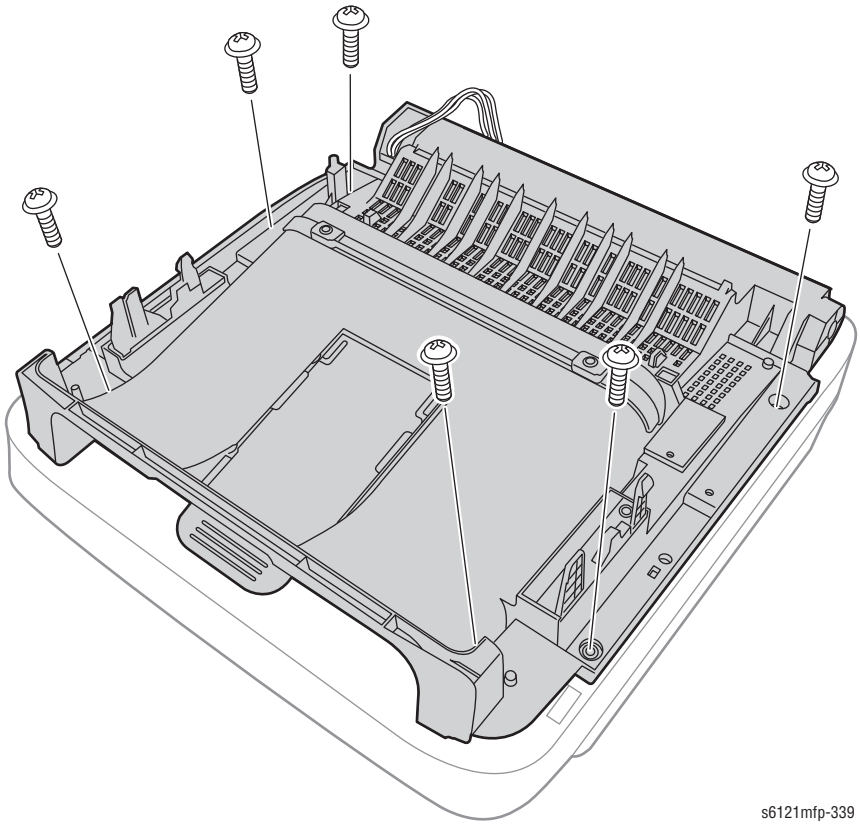
4. Remove the screw (metal, 8mm) and remove the arm unit.



s6121mfp-338

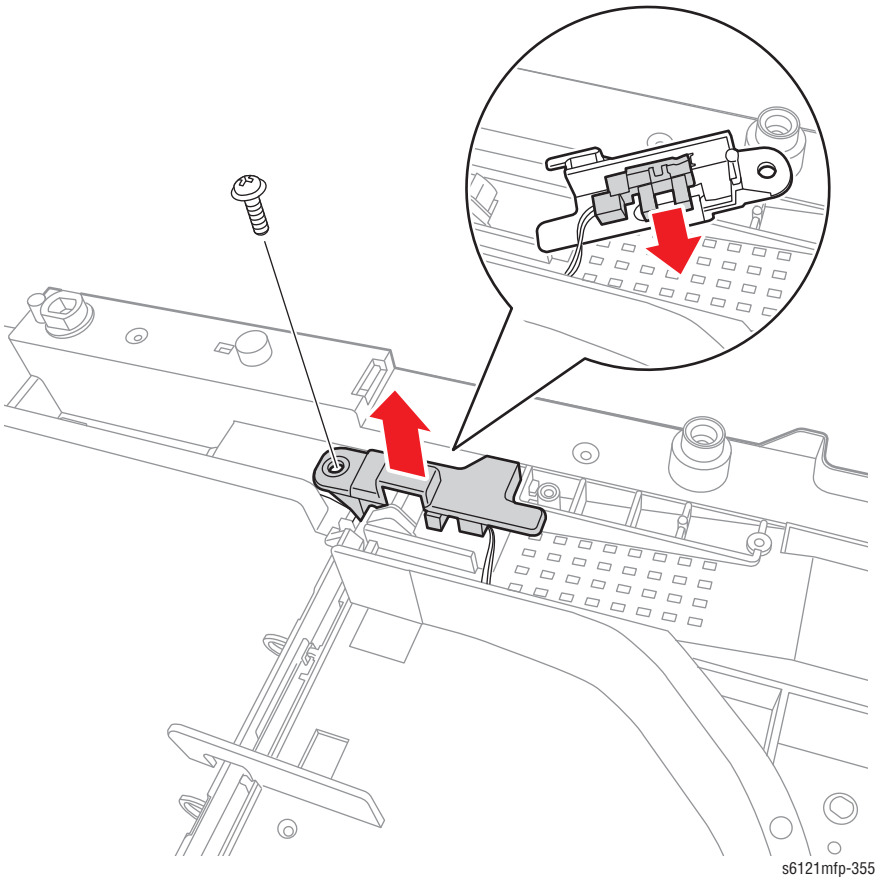
5. Repeat step 4 to remove the arm unit on the opposite side.

6. Remove 6 screws (metal, 8mm) and remove the Scanner Unit Lower Cover Assembly.



s6121mfp-339

7. Remove the clamp from the Sensor Harness.

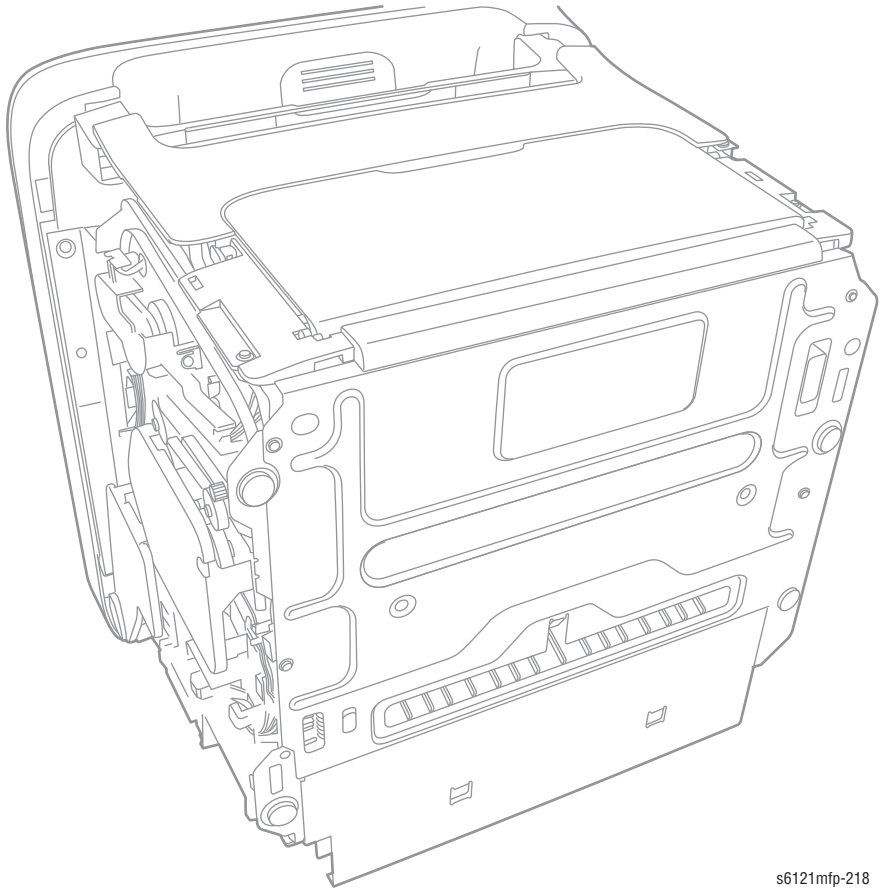


8. Pull the harnesses through the scanner unit and remove the ADF.

Lifting Plate Assembly

PL6.0.35

1. Remove the Rear Side Cover (page 8-28).
2. Remove the Left Side Cover (page 8-28).
3. Remove the Right Side Cover (page 8-29).
4. Remove the Scanner (page 8-31).
5. Lay the printer on its rear side.

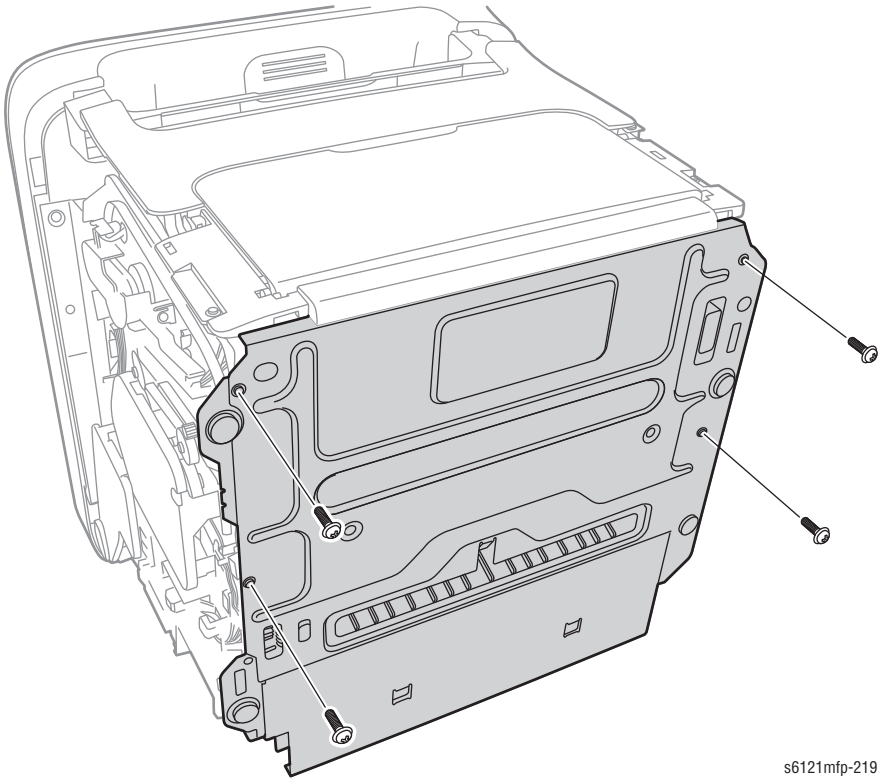


s6121mfp-218

6. Remove 4 screws (metal, 6mm) and remove the bottom plate.

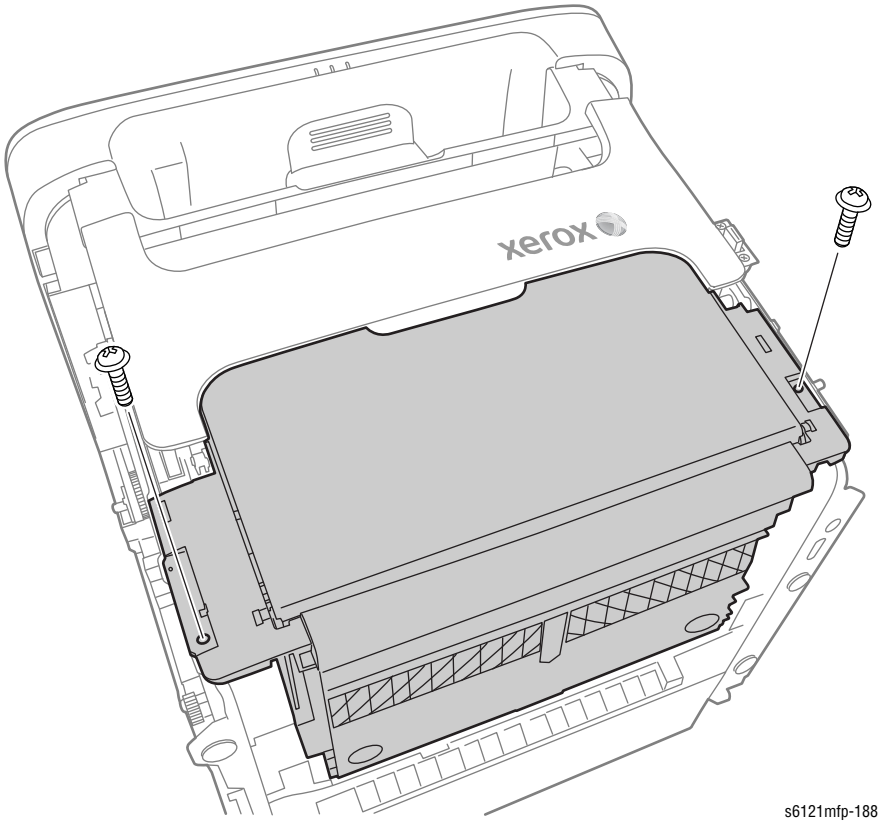
Note

Be careful to not lose the Lifting Plate springs.



s6121mfp-219

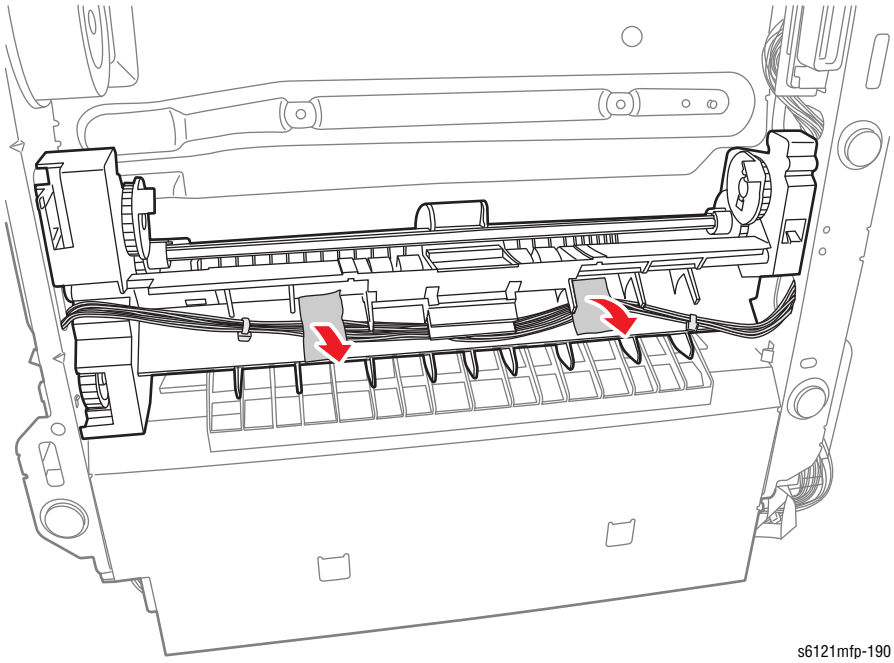
7. Remove 2 screws (metal, 8mm) and remove the Lifting Plate Assembly.



Feeder

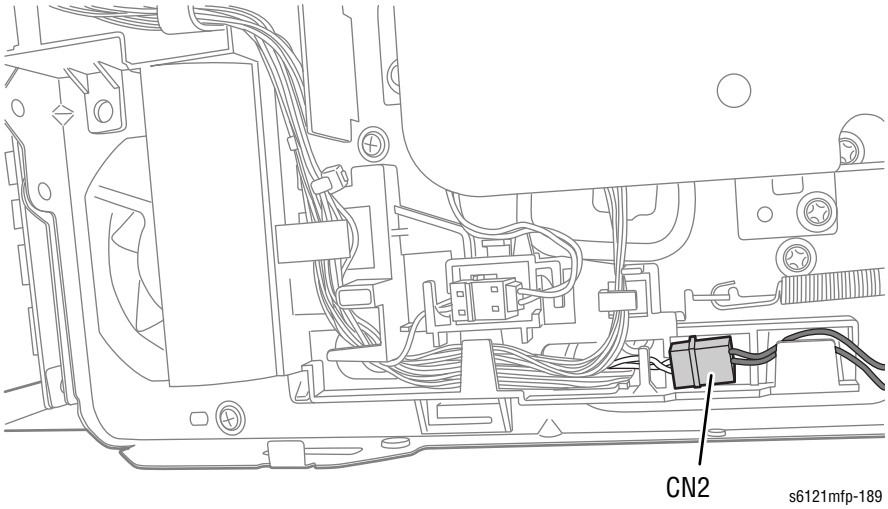
PL6.0.36

1. Remove the Rear Side Cover (page 8-28).
2. Remove the Left Side Cover (page 8-28).
3. Remove the Right Side Cover (page 8-29).
4. Remove the Scanner (page 8-31).
5. Remove the Lifting Plate Assembly (page 8-43).
6. Remove the 2 pieces of tape.



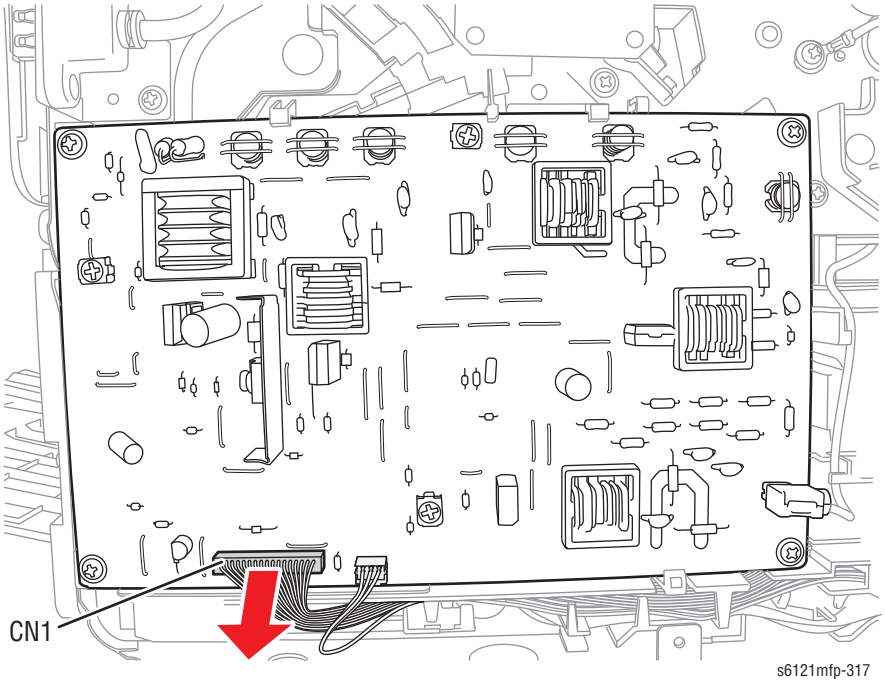
s6121mfp-190

7. Disconnect the Feed Solenoid CN2 connector.

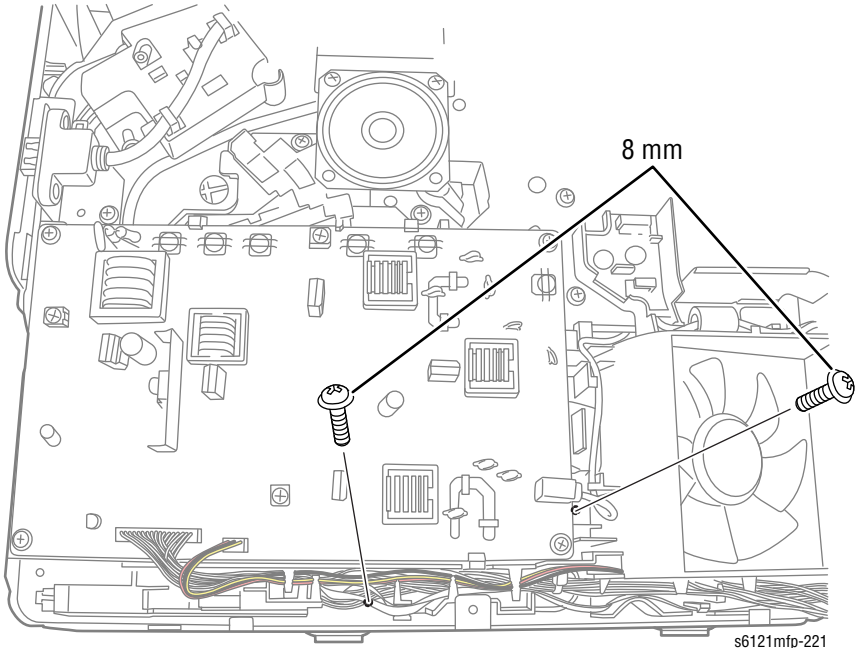


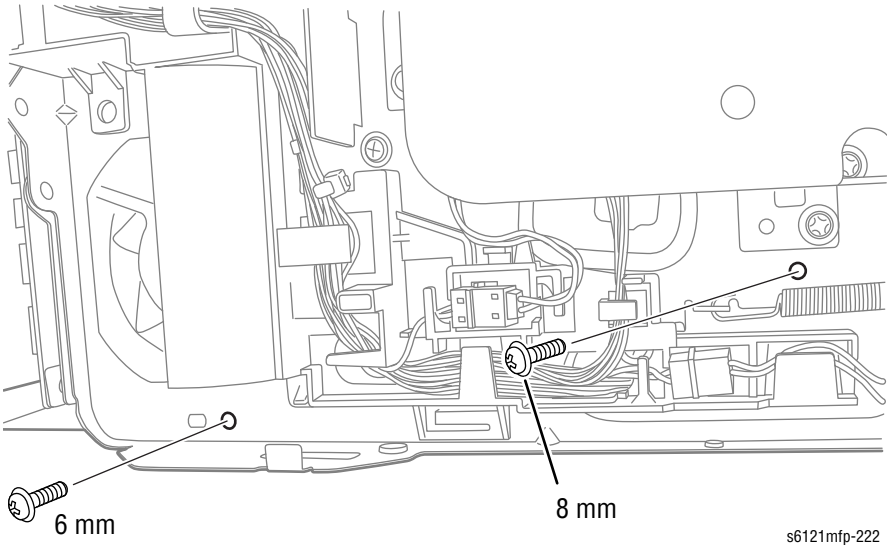
s6121mfp-189

8. Disconnect CN1 on the High Voltage Board, and guide the harness through the printer frame and through the frame on the opposite side.



9. Remove 4 screws (one metal, 6mm, and three metal, 8mm). 2 screws are located on each side of the printer.

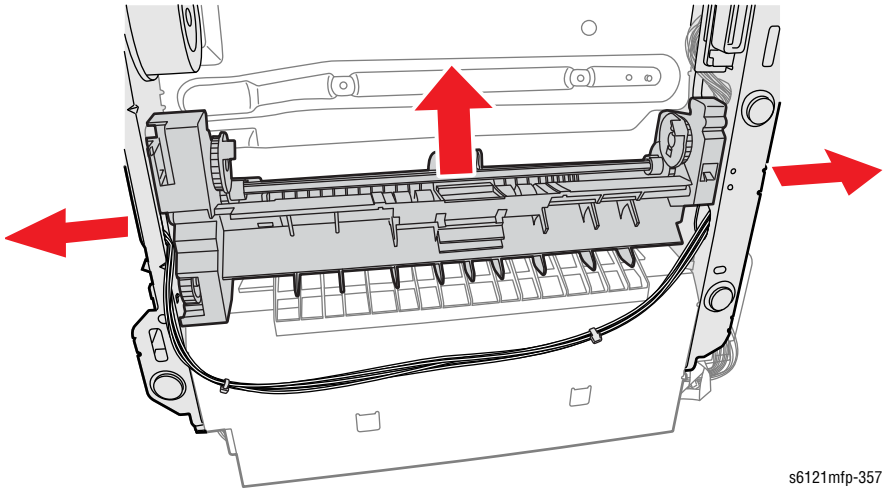




10. Remove the Feeder.

Note

You may have to gently flex the printer frame to remove the feeder.

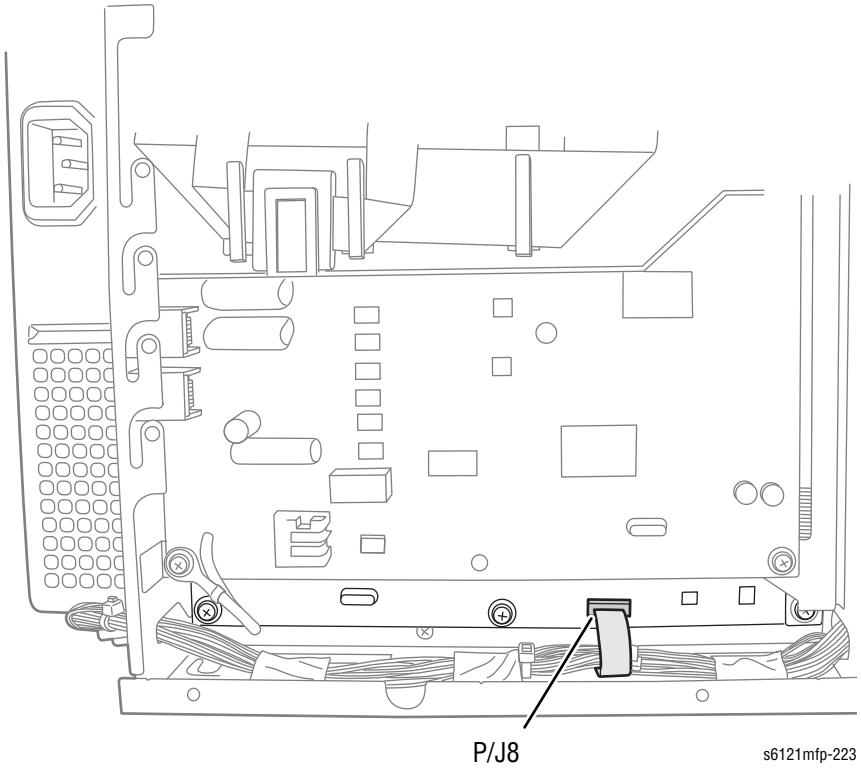


s6121mfp-357

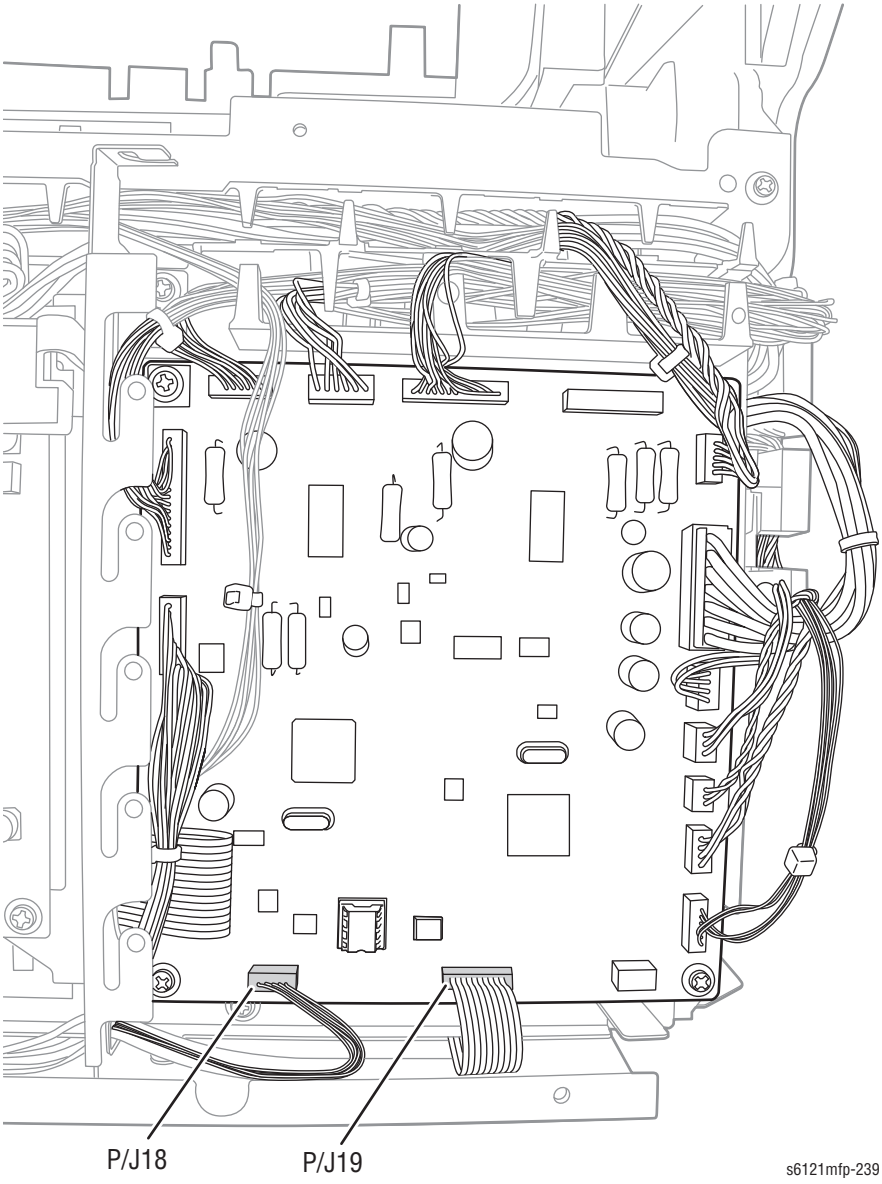
Laser Unit

PL4.0.2

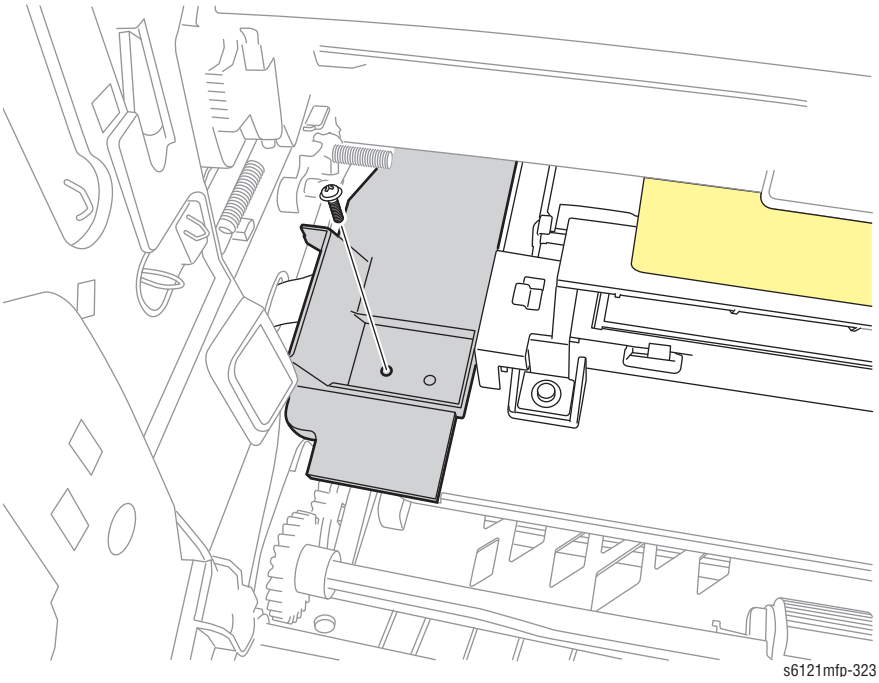
1. Remove the Imaging unit (page 8-6).
2. Remove the Rear Side Cover (page 8-28).
3. Remove the Left Side Cover (page 8-28).
4. Remove the Right Side Cover (page 8-29).
5. Remove the High Voltage Board (page 8-57).
6. Remove the Toner Cartridges (page 8-20).
7. Disconnect P/J8 from the Image Processor Board.



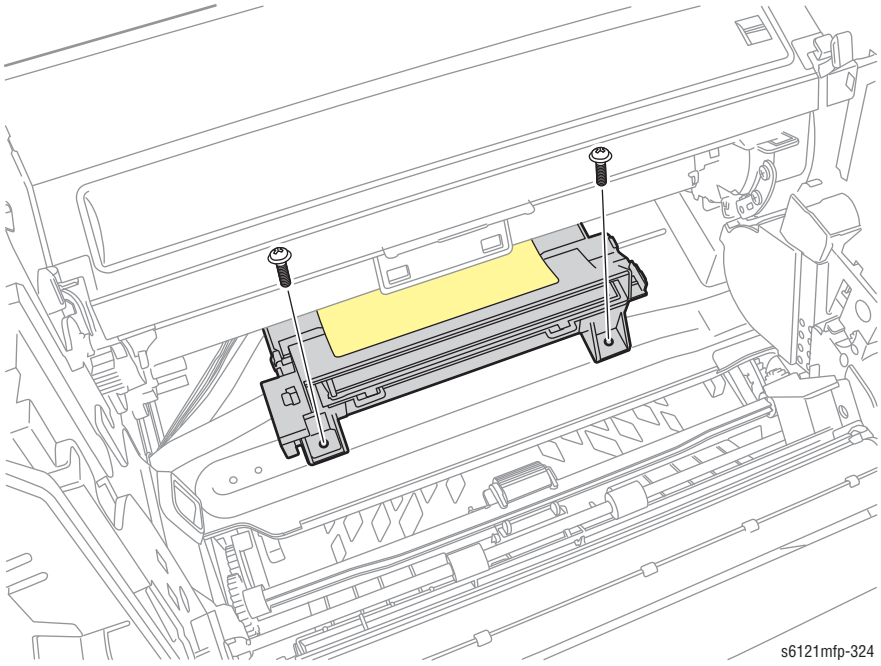
8. Disconnect P/J18 and P/J19 from the Engine Control Board.



9. Remove the screw (metal, 8mm), and then remove the guide.



10. Remove 2 screws (metal, 8mm).

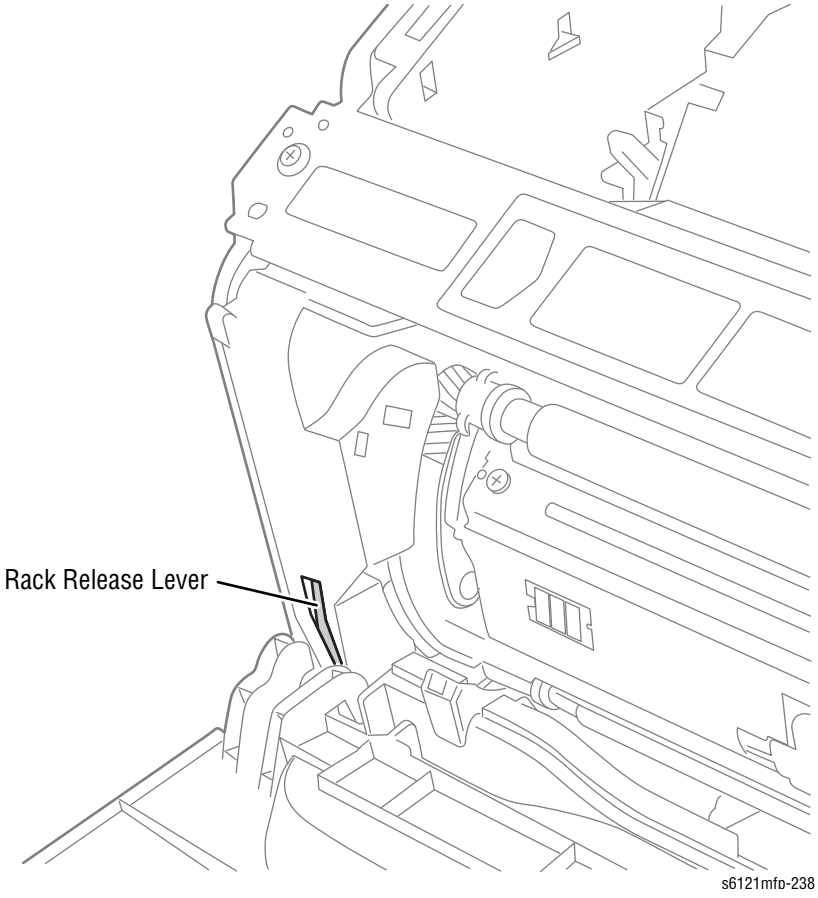


11. Remove a toner cartridge.

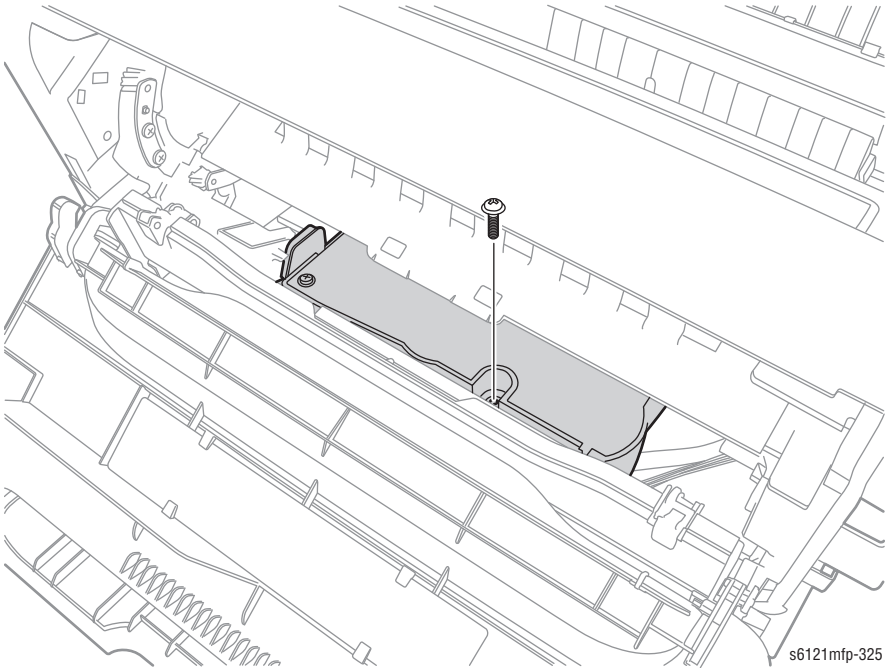
12. Press and hold the rack release lever, and then rotate the rack until you have access to the screw shown in the next step.

Caution

When rotating the rack, do not touch the Developing Rollers.



13. Remove the screw (metal, 8mm) and then remove the Laser Unit.

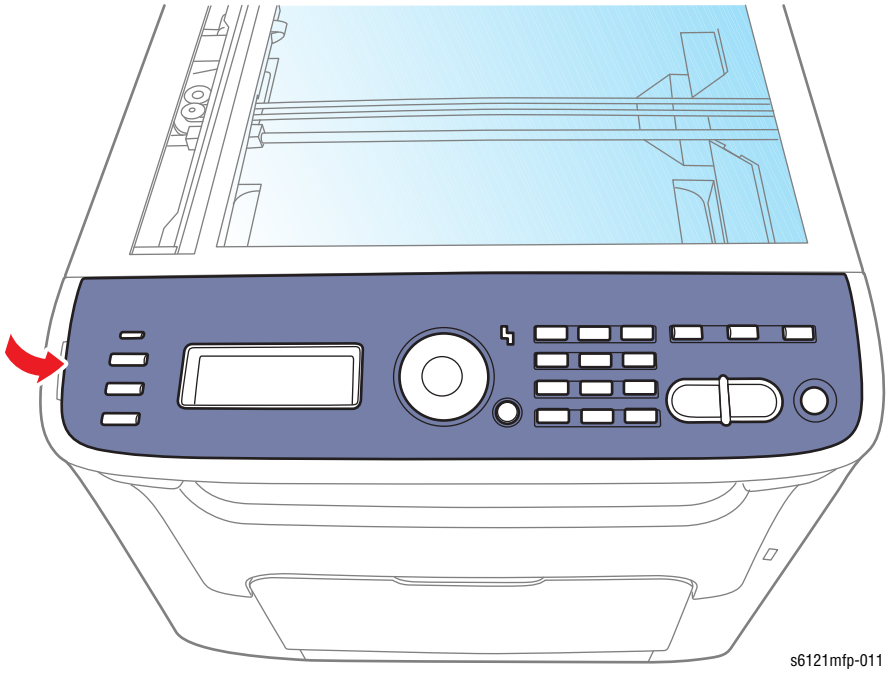


Electrical

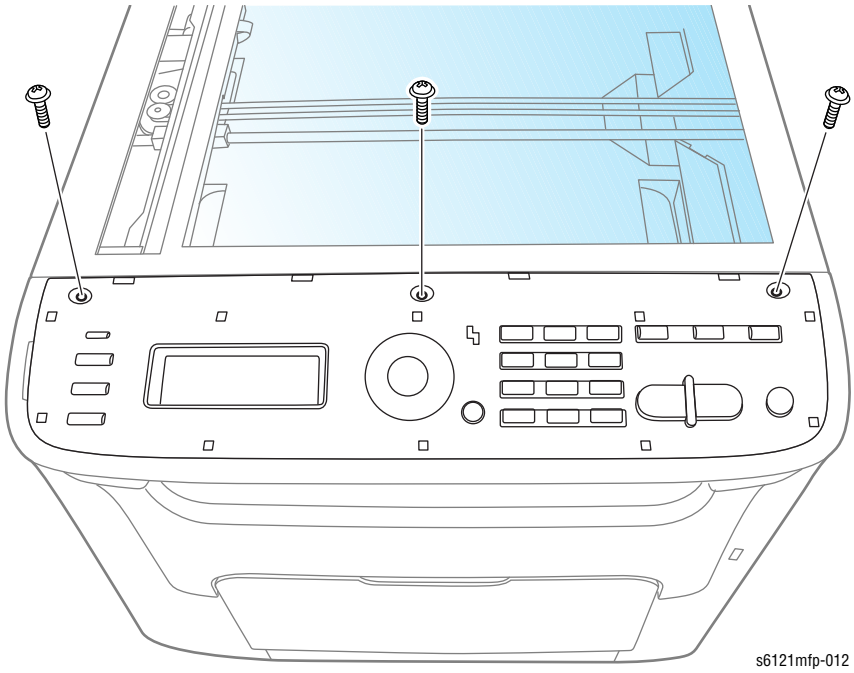
Control Panel

PL2.0.5

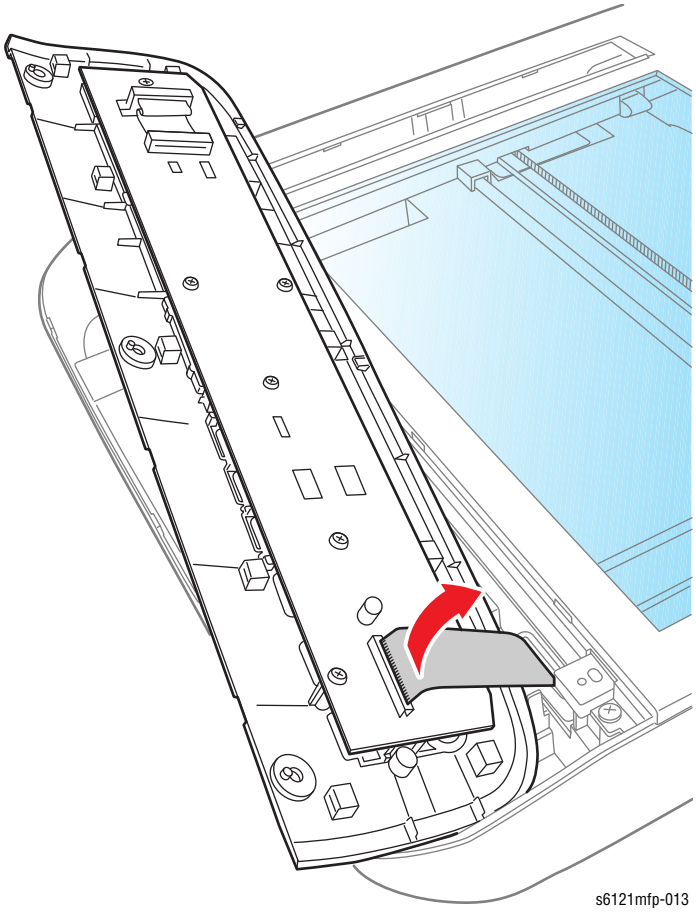
1. Gently lift the control panel bezel.



2. Remove 3 screws (silver, tap, 10 mm) that secure the control panel.



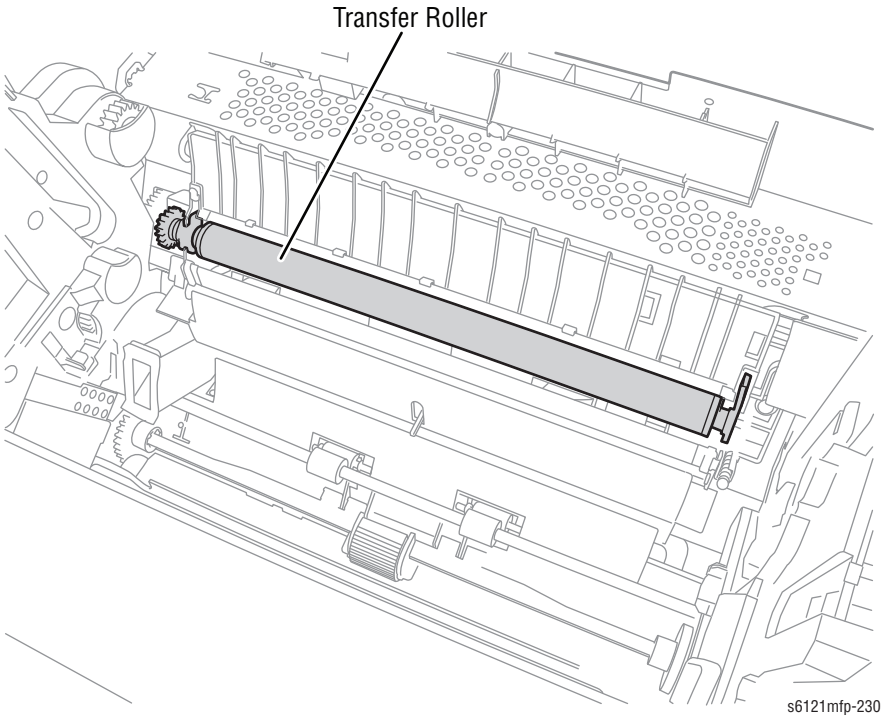
3. Disconnect CN701 from the Control Panel.



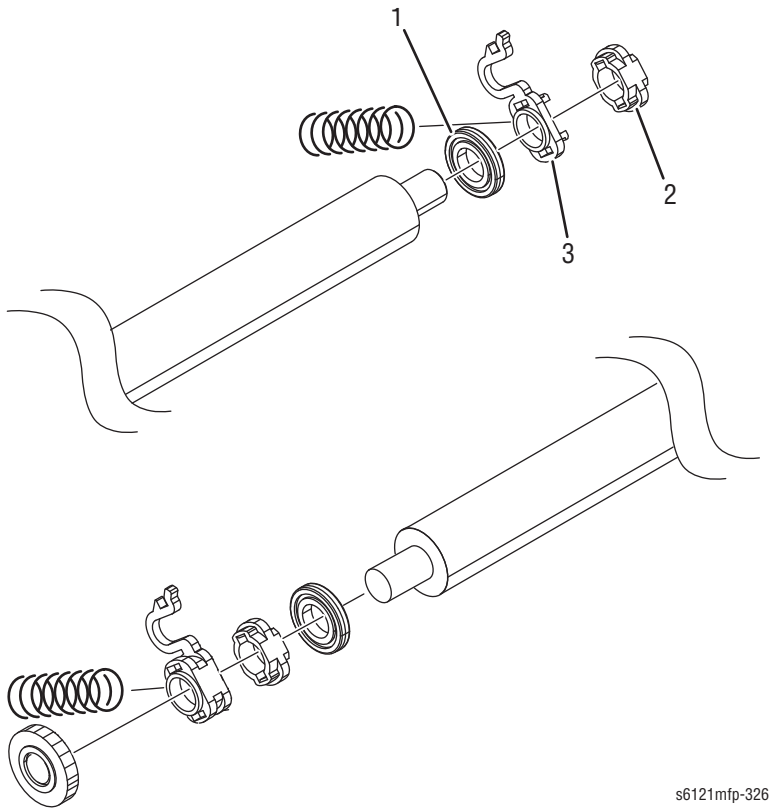
Transfer Roller

PL7.1.10

1. Remove the Imaging Unit (page 8-6).
2. Remove the Transfer Roller by squeezing the white tabs of the holders located on both sides, and then pull out the roller.



3. Remove the gear, bushing, 2 holders, and 2 collars.



Item	Description
1	Collar
2	Cap
3	Holder

Replacement Note

If the Transfer Roller is replaced with a new one.

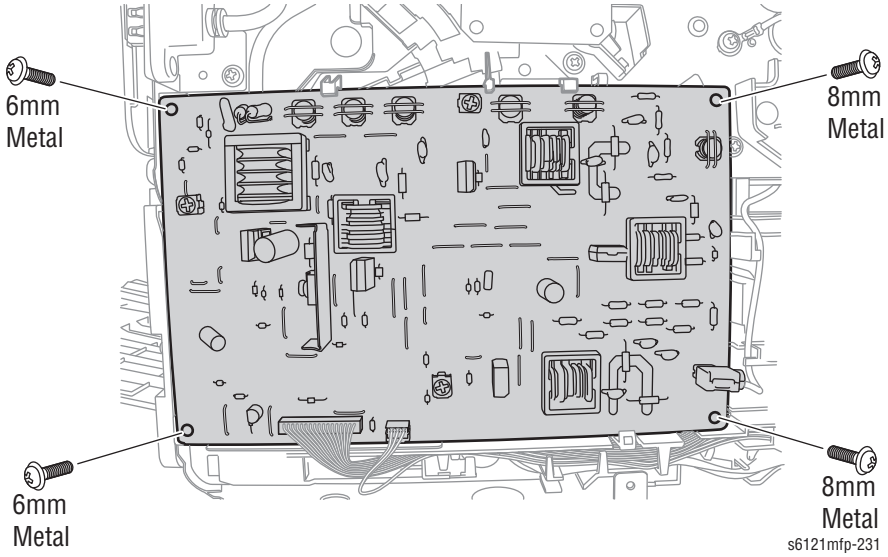
1. Reset the Transfer Roller counter in the service menu. See page 6-27.
2. It is highly recommended that the Feed and Separator Rollers be replaced also.

High Voltage Board

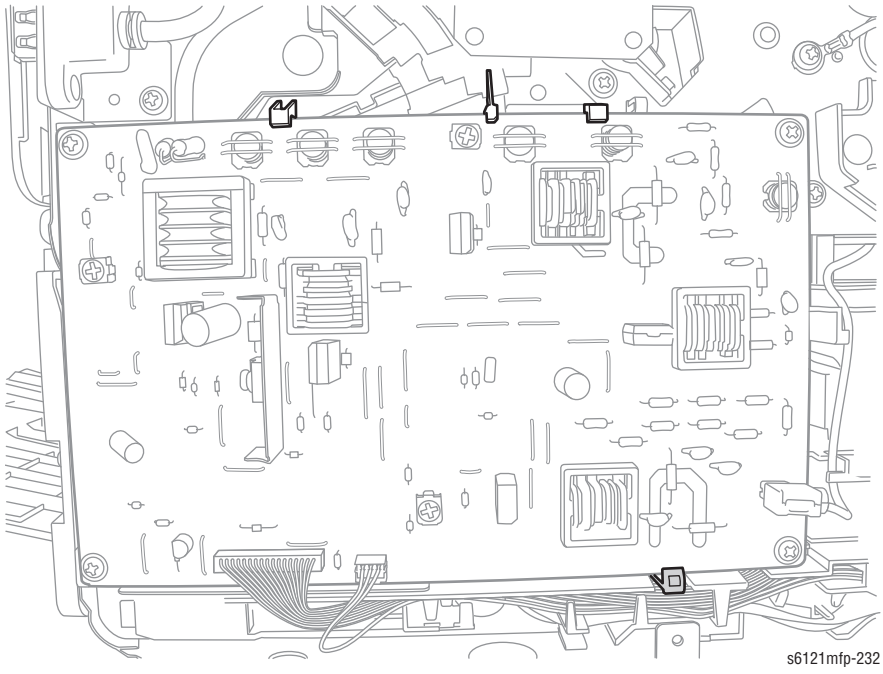
PL13.0.6

1. Remove the Right Cover (page 8-29).
2. Disconnect three connectors (CN1, CN2, and T2) from the High Voltage Board.

3. Remove 4 screws (two metal, 6mm, and two metal, 8mm).



4. Press down on the lower tab and remove the High Voltage Board.



Replacement Note

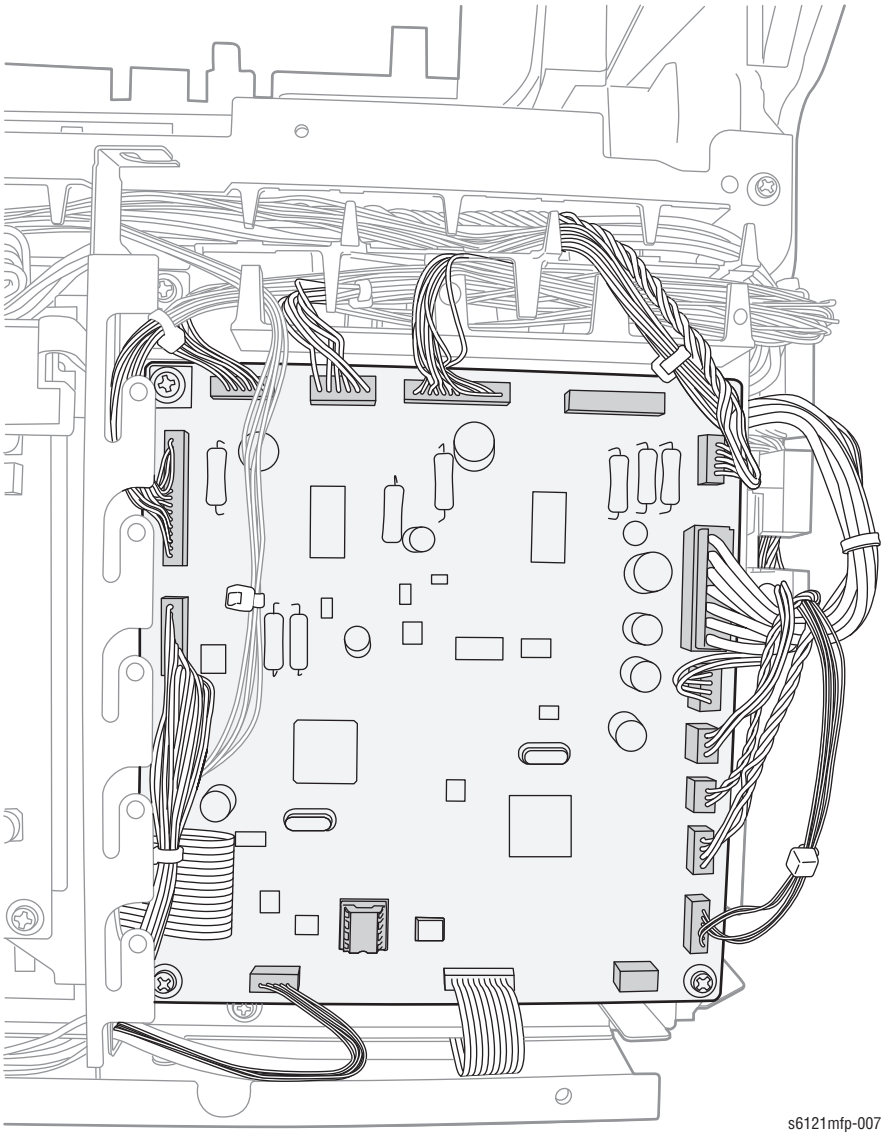
When replacing the High Voltage Board:

1. Ensure that the board is installed underneath all four tabs. See step 4.
2. Use the correct screws on each side of the board (on the left use two 6mm screws, on the right use two 8mm screws).

Engine Control Board

PL13.0.20

1. Remove the Rear Cover (page 8-28).
2. Remove the Left Side Cover (page 8-28).
3. Disconnect all connectors on the Engine Control Board.



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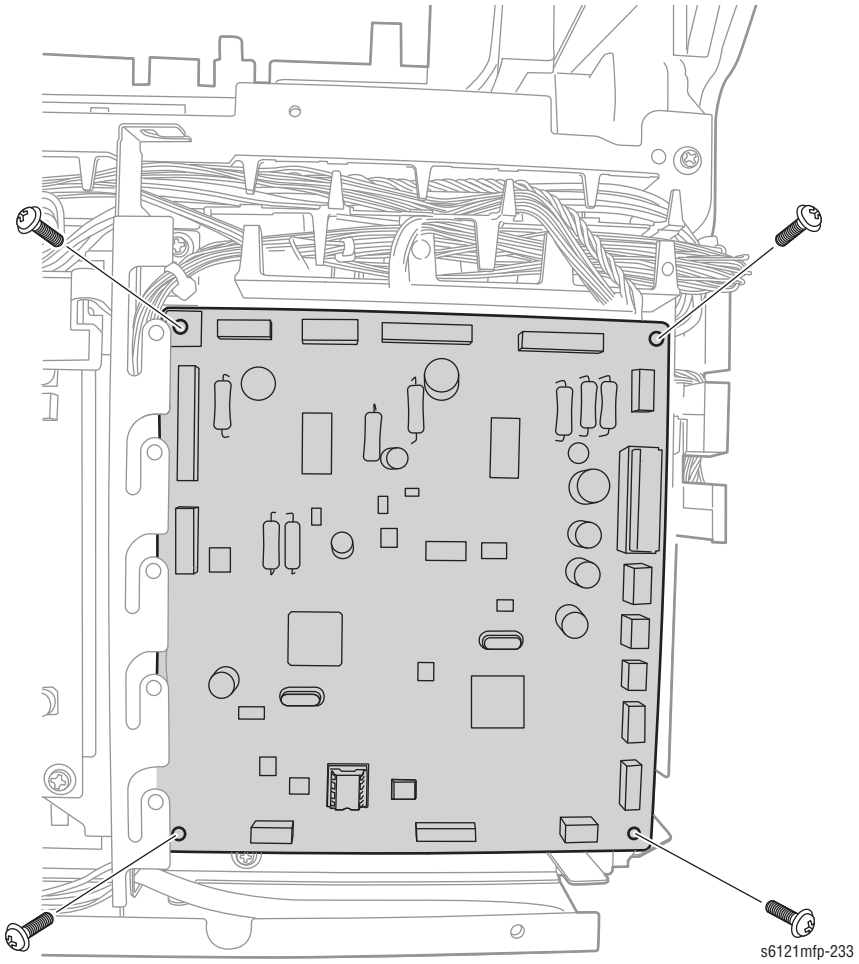
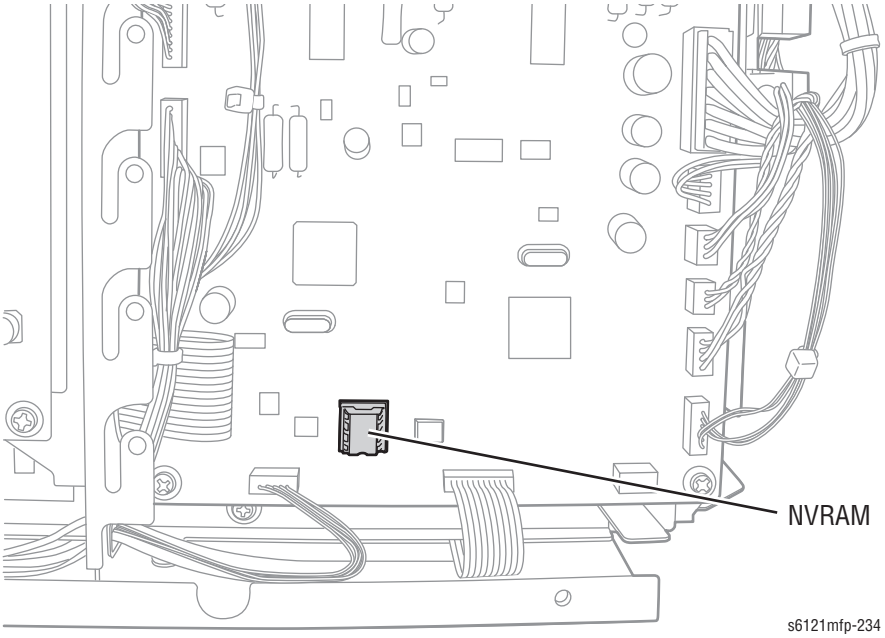
4. Remove 4 screws (metal, 6mm) and remove the Engine Control Board.

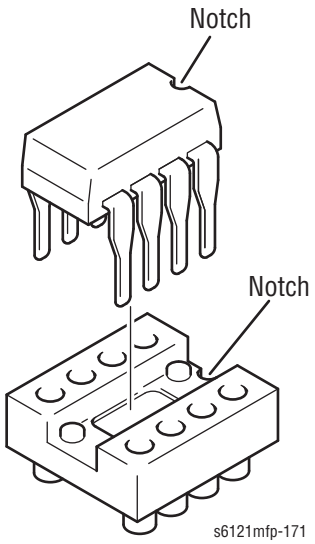


Replacement Note

When the Engine Control Board is replaced, remount parameter chip IC9. Remove the chip from the old Engine Control Board, and mount it on the new Engine Control Board.



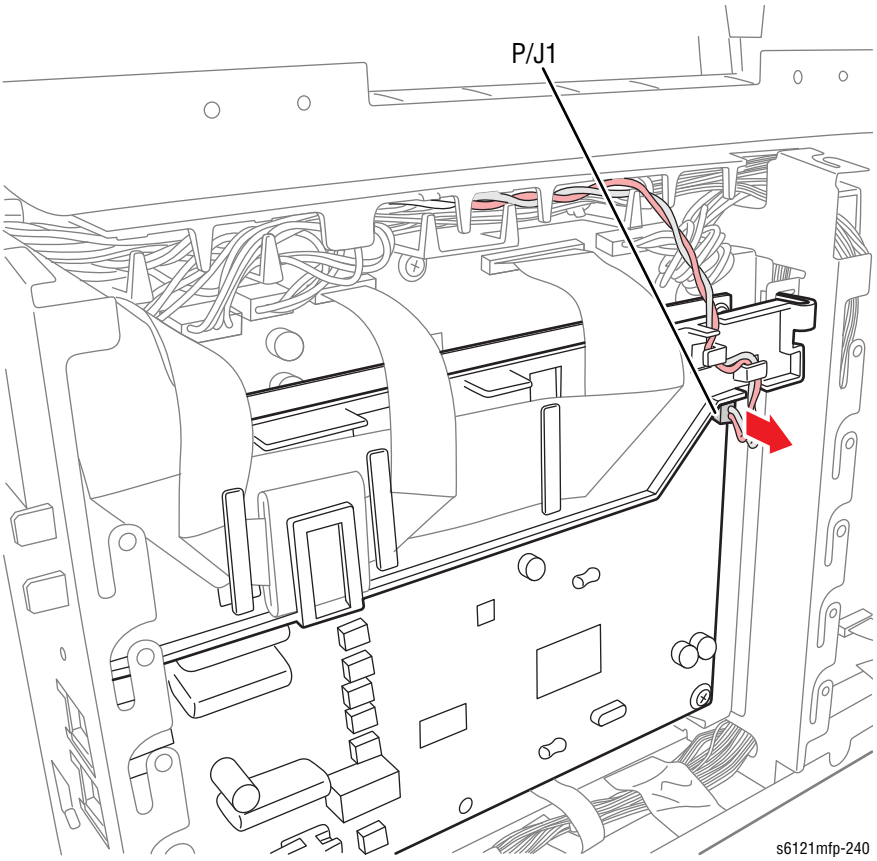
Align the notch on the chip with the notch in the socket.



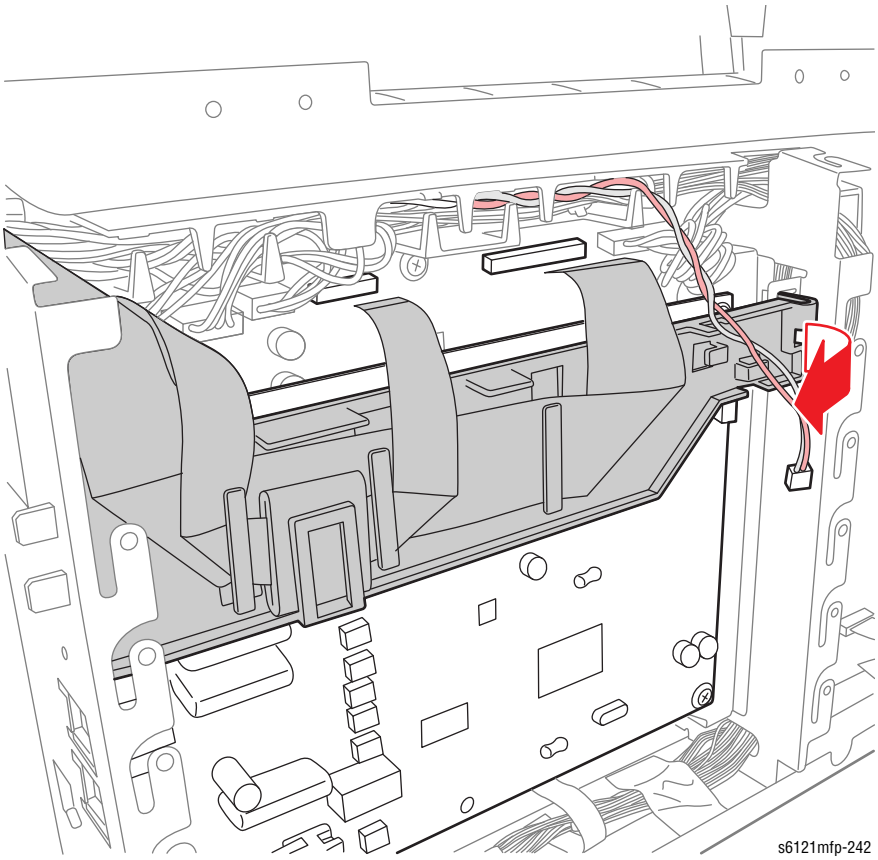
Fax Board

13.0.30

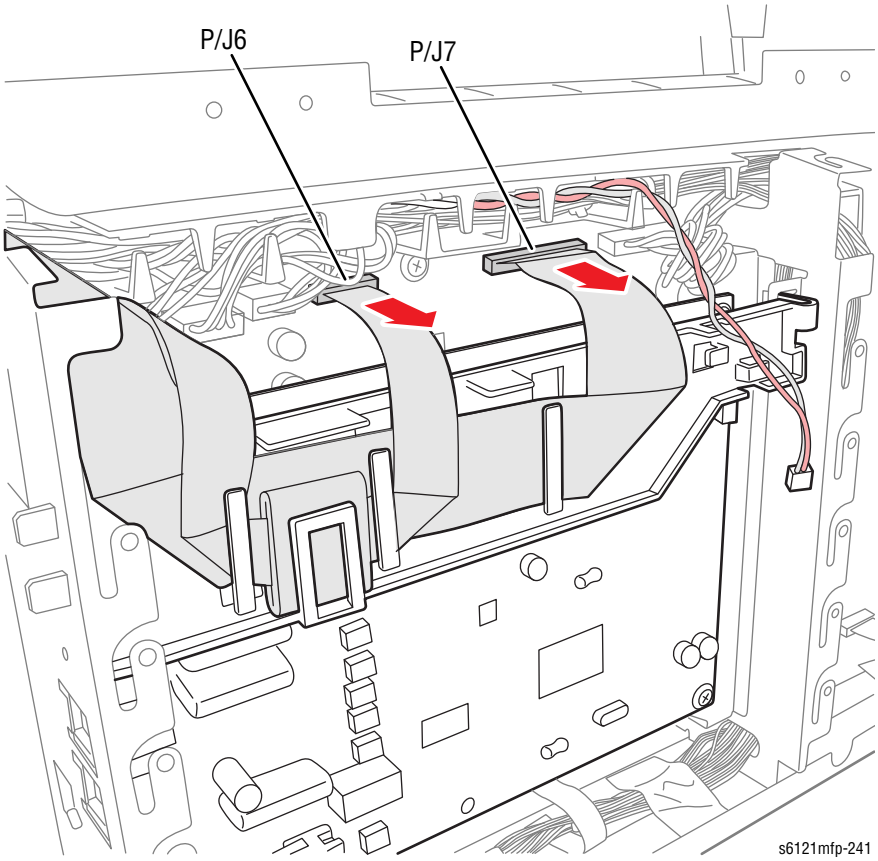
1. Remove the Rear Cover (page 8-28).
2. Remove the Right Side Cover (page 8-29).
3. Disconnect connector P/J1 on the Fax Board.



4. Unhook the tab and remove the harness guide.



5. Disconnect P/J6 and P/J7 on the Image Processor Board.



6. Remove 4 screws (metal, 6mm) and remove the Fax Board.

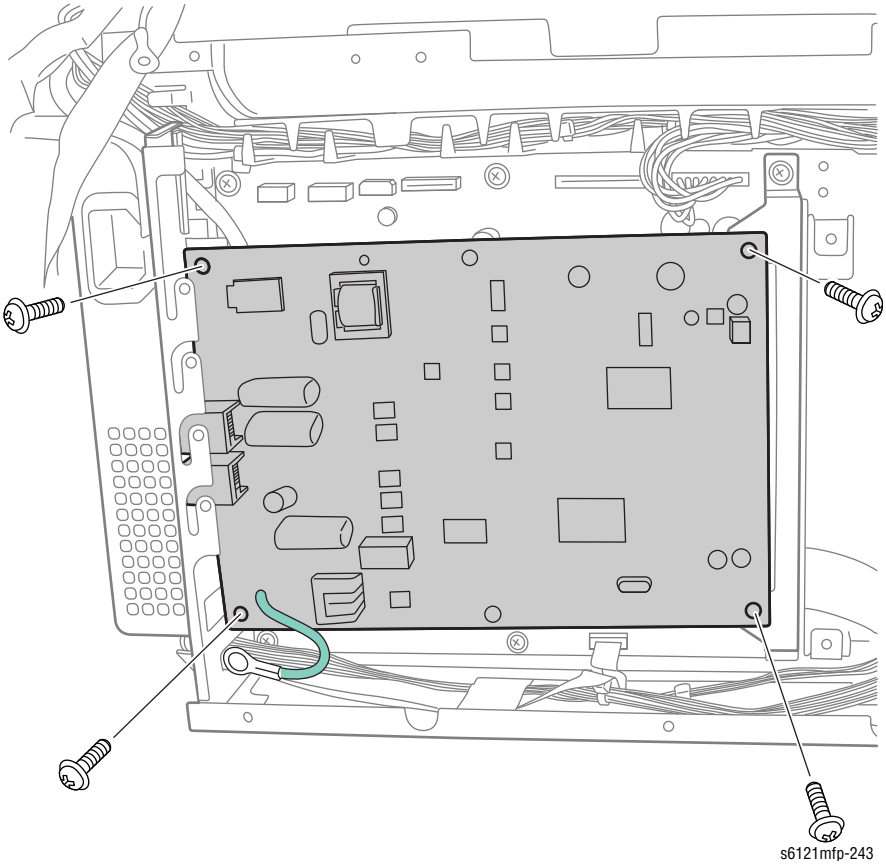
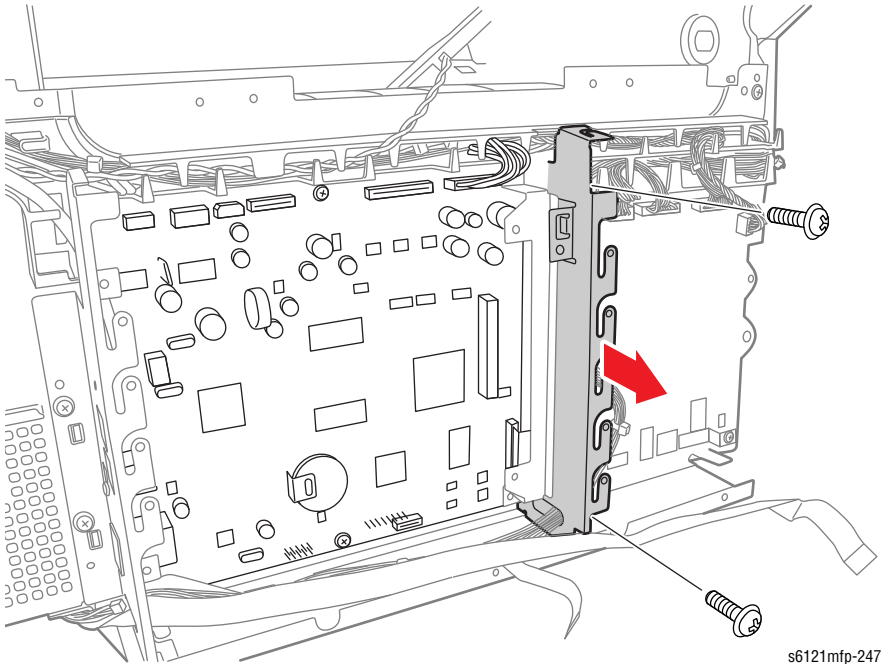


Image Processor Board

PL13.0.29

1. Remove the Rear Cover (page 8-28).
2. Remove the Right Side Cover (page 8-29).
3. Remove the Engine Control Board (page 8-59).
4. Remove the Fax Board (page 8-62).
5. Remove 2 screws (metal, 6mm) and remove the bracket.



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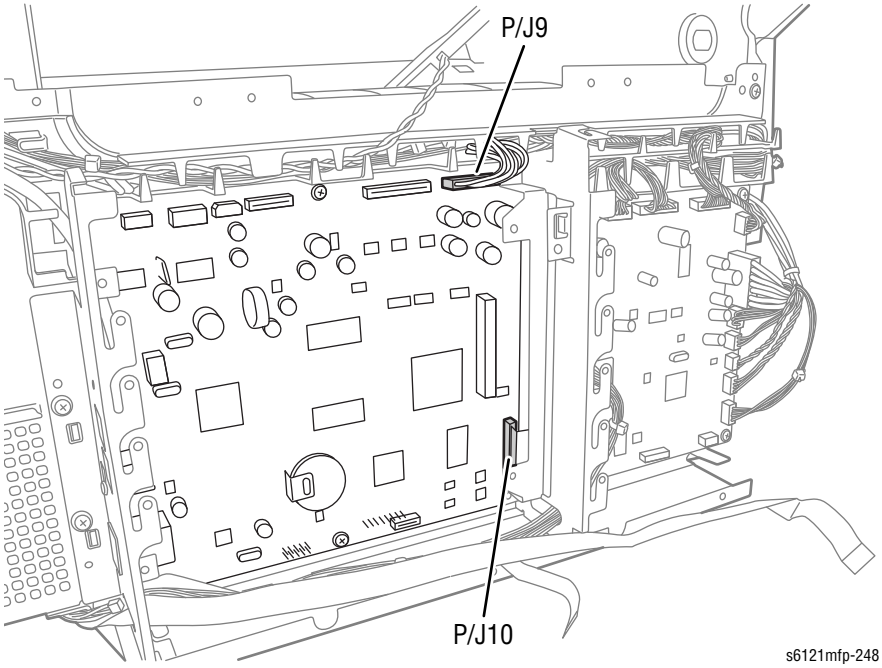
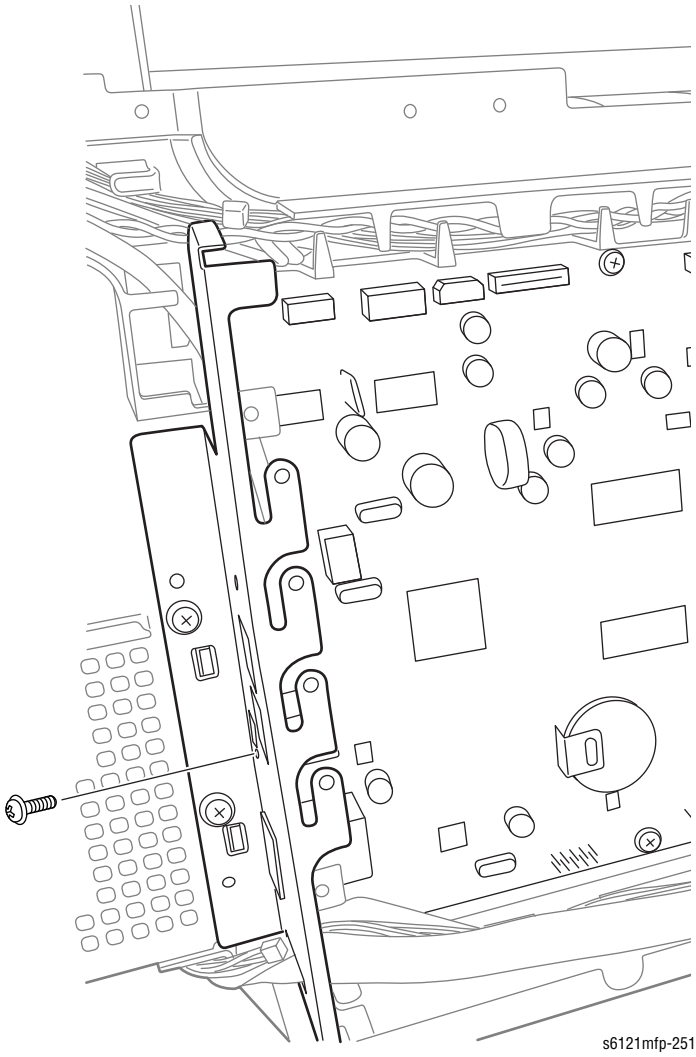
6. Disconnect all connectors from the Image Processor Board.

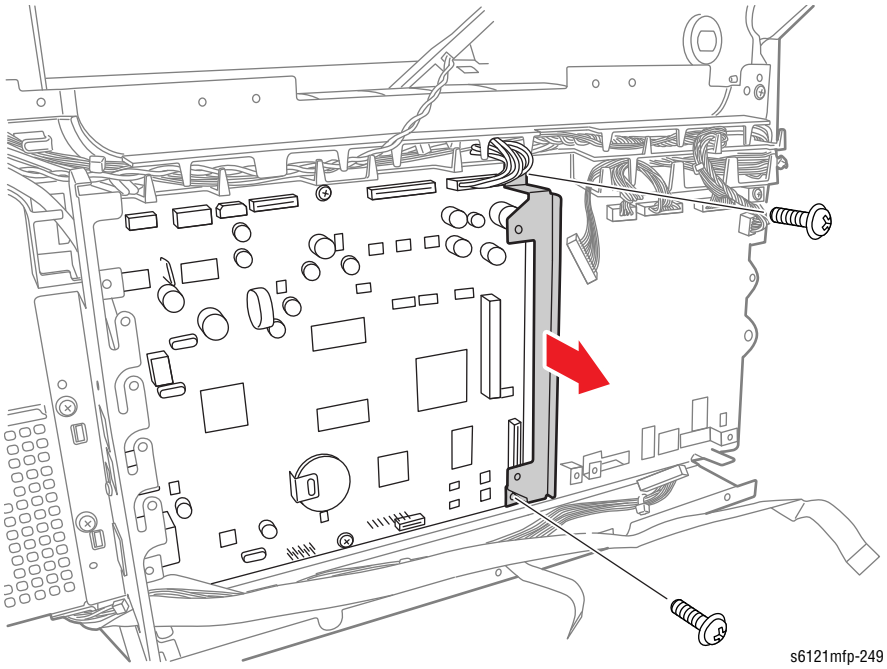


s6121mfp-248

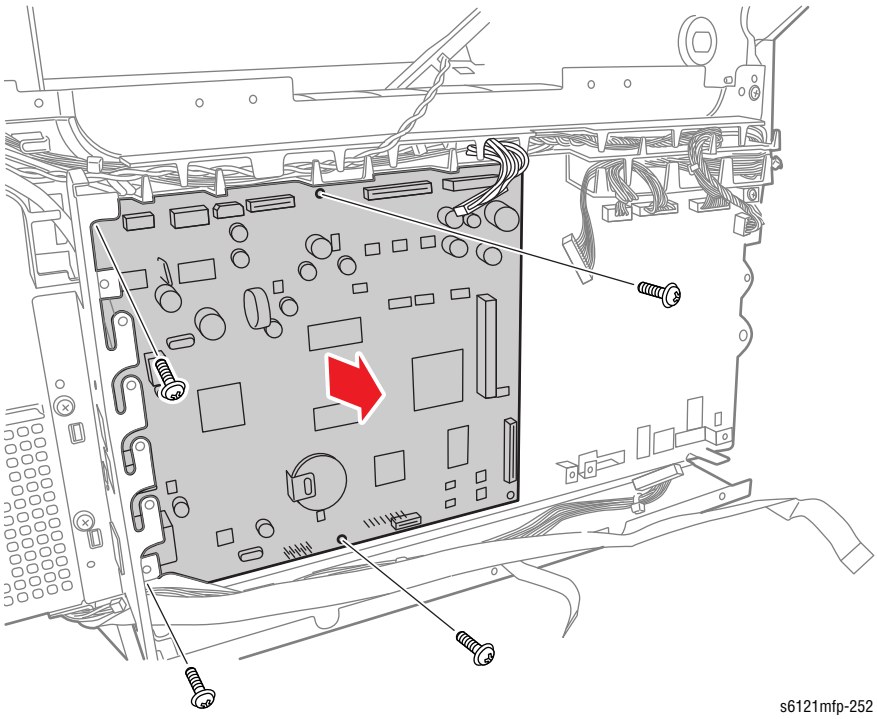
7. Remove the screw (metal, 6mm, flangeless) from the USB connector.



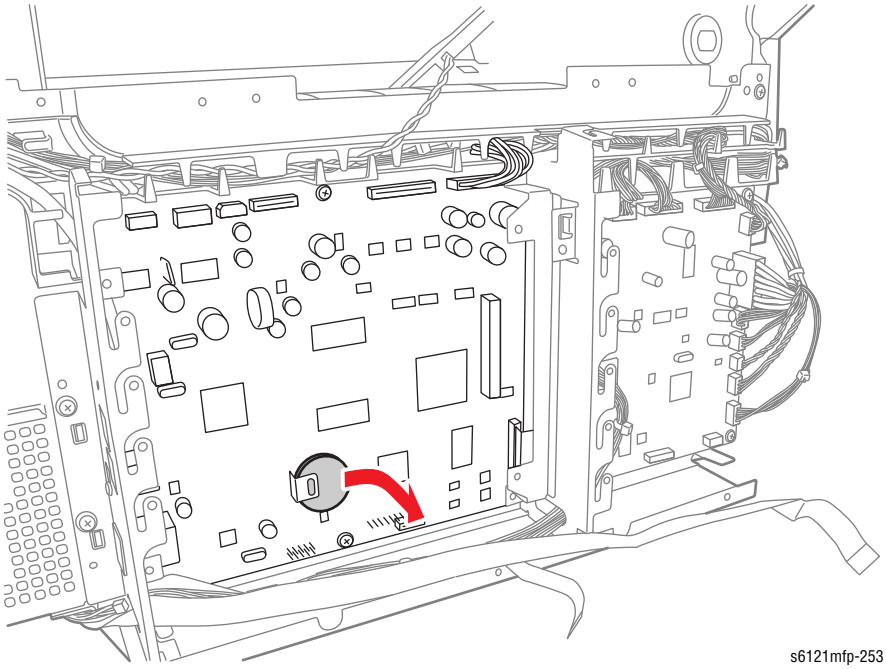
8. Remove 2 screws (metal, 6mm) and remove the bracket.



9. Remove the 4 remaining screws (metal, 6mm) and remove the board.



10. Remove the back up battery on the Image Processor Board.



Replacement Note

For the Phaser 6121MFP/N and /D, boot data is written to the Image Processor Board, and firmware data is written to the Fax Board. To avoid problems, replace the Image Processor Board and Fax Board at the same time.

Note

When the Image Processor Board is replaced, the setting values for the following items are cleared. Enter new setting values in the service mode.

The new setting values are set at shipment, and those values are shown on the label located inside of the front door.

Item for adjustment	6121/S	6121/N and /D
CIS MAIN ZOOM	Yes	Yes
CIS SUB ZOOM	Yes	Yes
CIS MAIN REGIST	Yes	Yes
CIS SUB REGIST	Yes	Yes
ADF SUB ZOOM	No	Yes
ADF MAIN REG	No	Yes

Note

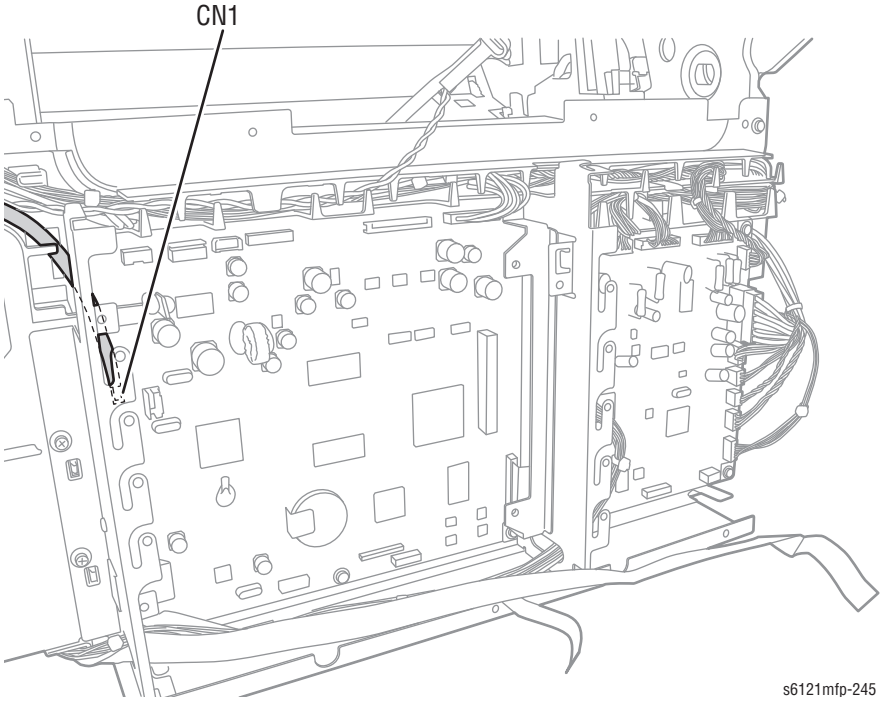
When replacing the Image Processor Board:

- Upgrade the firmware to the latest version. See “Firmware Update” on page A-15.
- Clear the information backup data. See BK CLEAR on page 6-27.

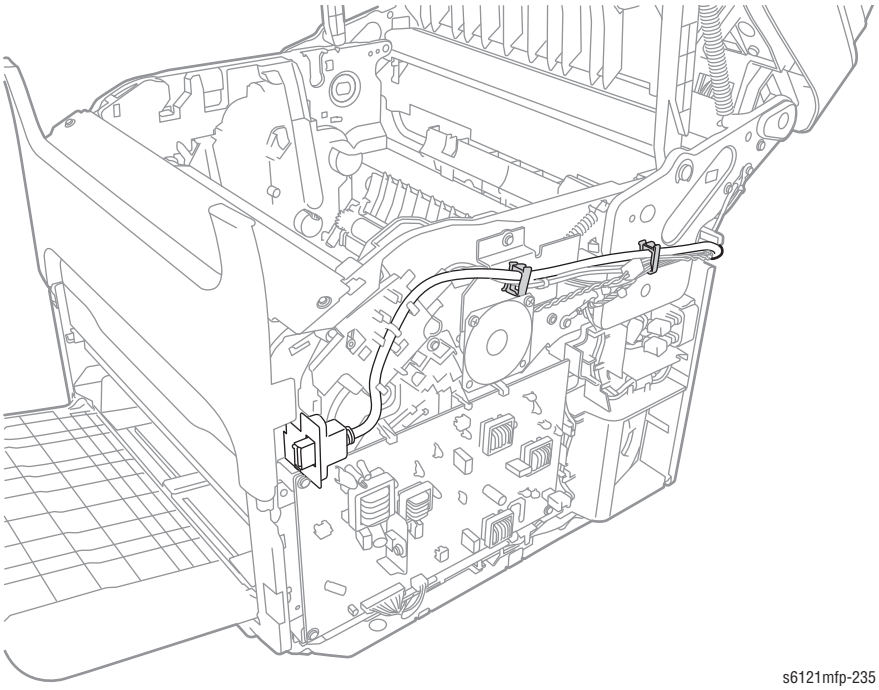
USB Board

PL13.0.8

1. Remove the Rear Cover (page 8-28).
2. Remove the Right Side Cover (page 8-29).
3. Remove the Fax Board (page 8-62).
4. Disconnect CN1 from the Image Processor Board.

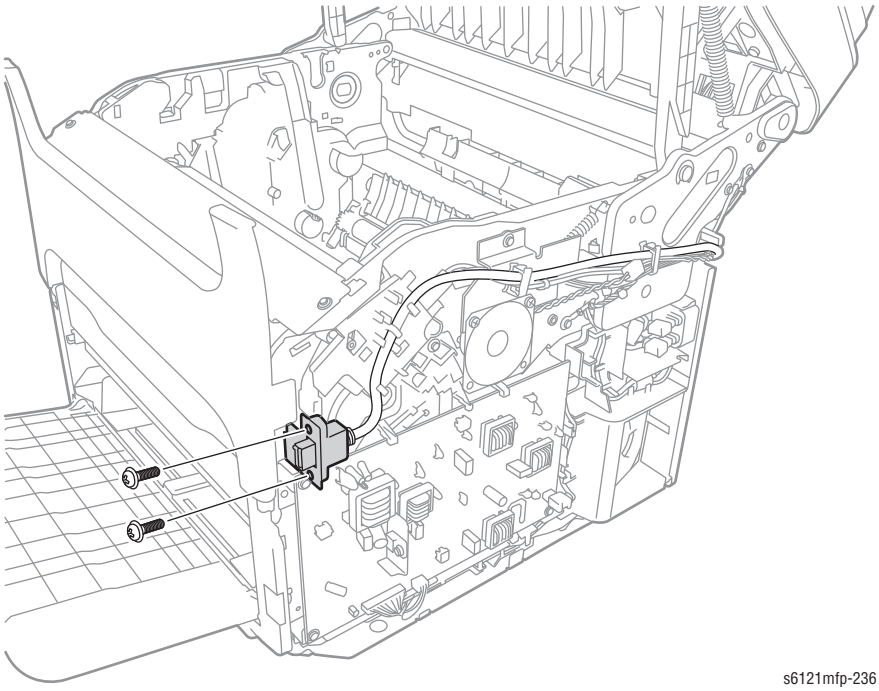


5. Remove the harness from the 2 wire saddles.



s6121mfp-235

6. Remove 2 screws (metal, 6mm) and remove the USB Board.

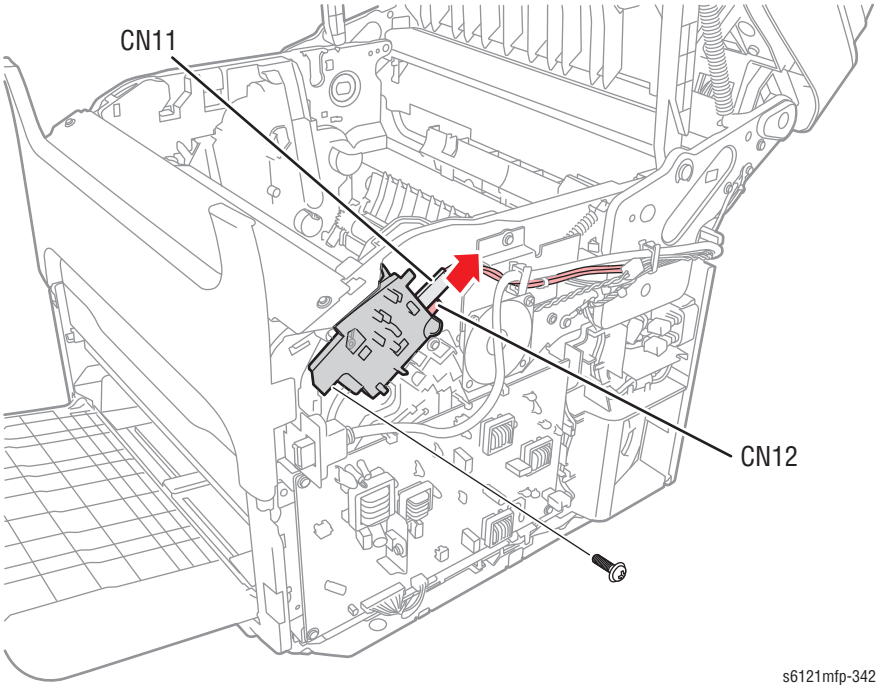


s6121mfp-236

Power Supply

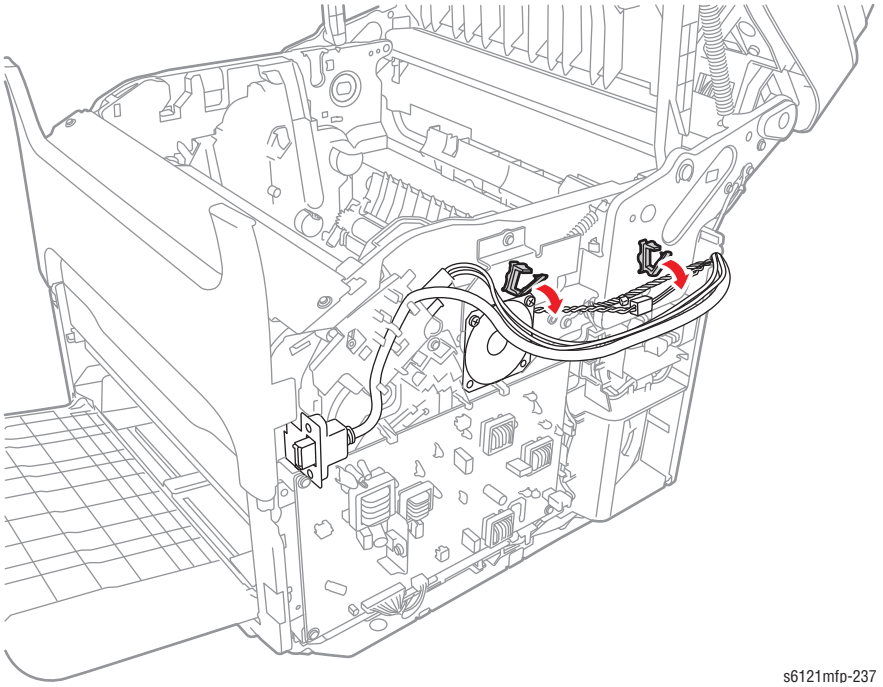
PL13.0.17

1. Remove the Rear Cover (page 8-28).
2. Remove the Left Side Cover (page 8-28).
3. Remove the Right Side Cover (page 8-29).
4. Remove the Engine Control Board (page 8-59).
5. Remove the Image Processor Board (page 8-66).
6. Disconnect the Front Door Switch connectors CN11 and CN12.



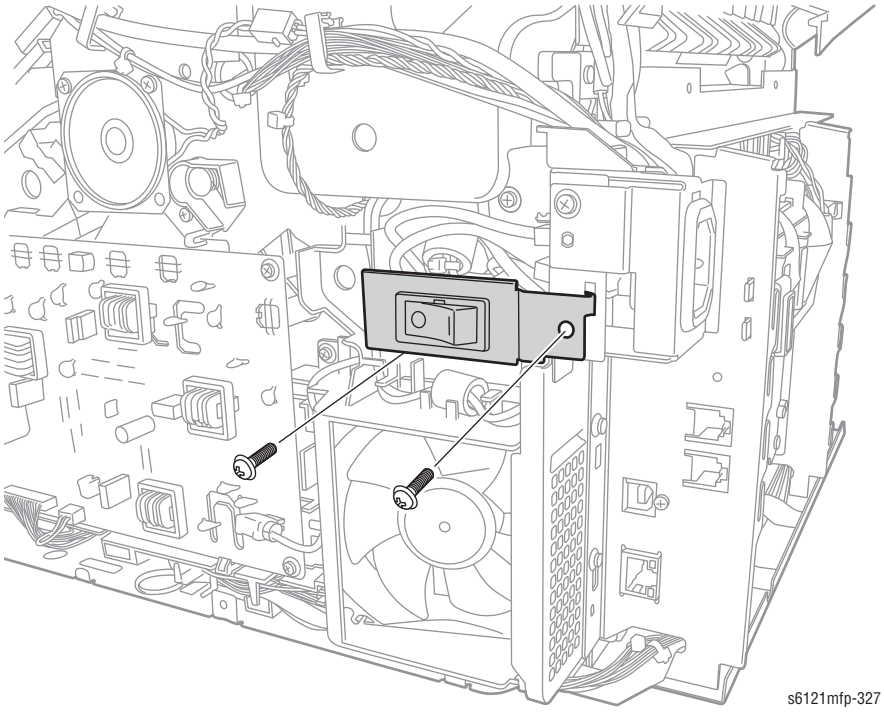
s6121mfp-342

7. Open the wire guides and unlace the Front Door Switch wires from the guides.



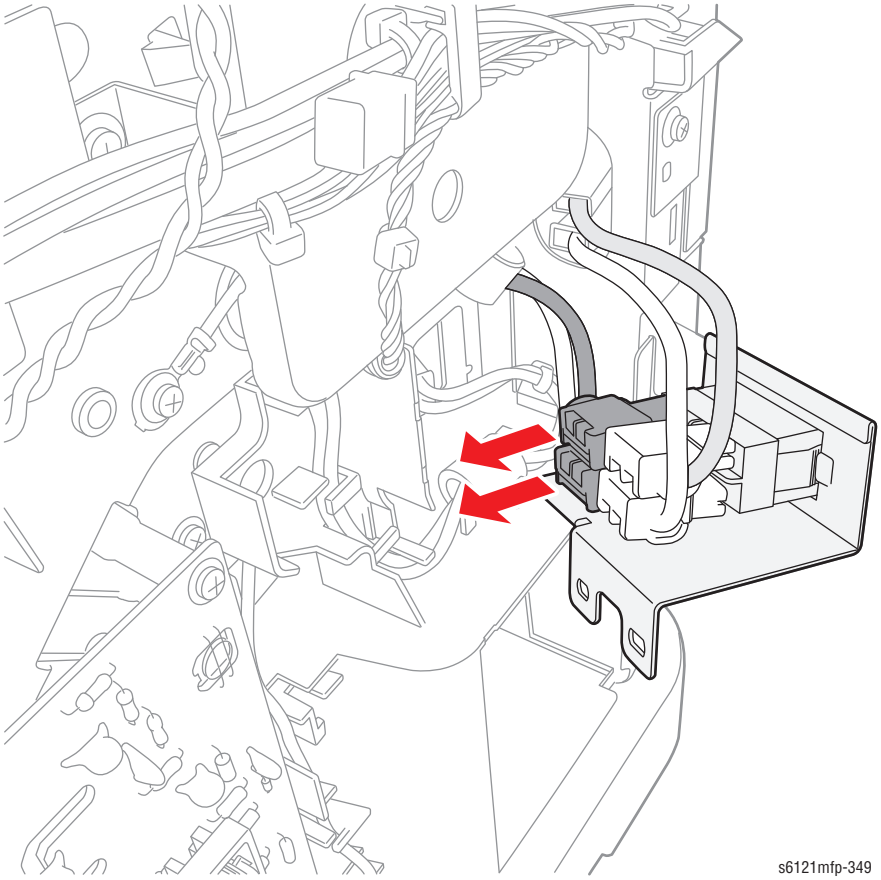
s6121mfp-237

8. Remove 2 screws (metal, 6mm, with lock washer and washer) from the power switch.

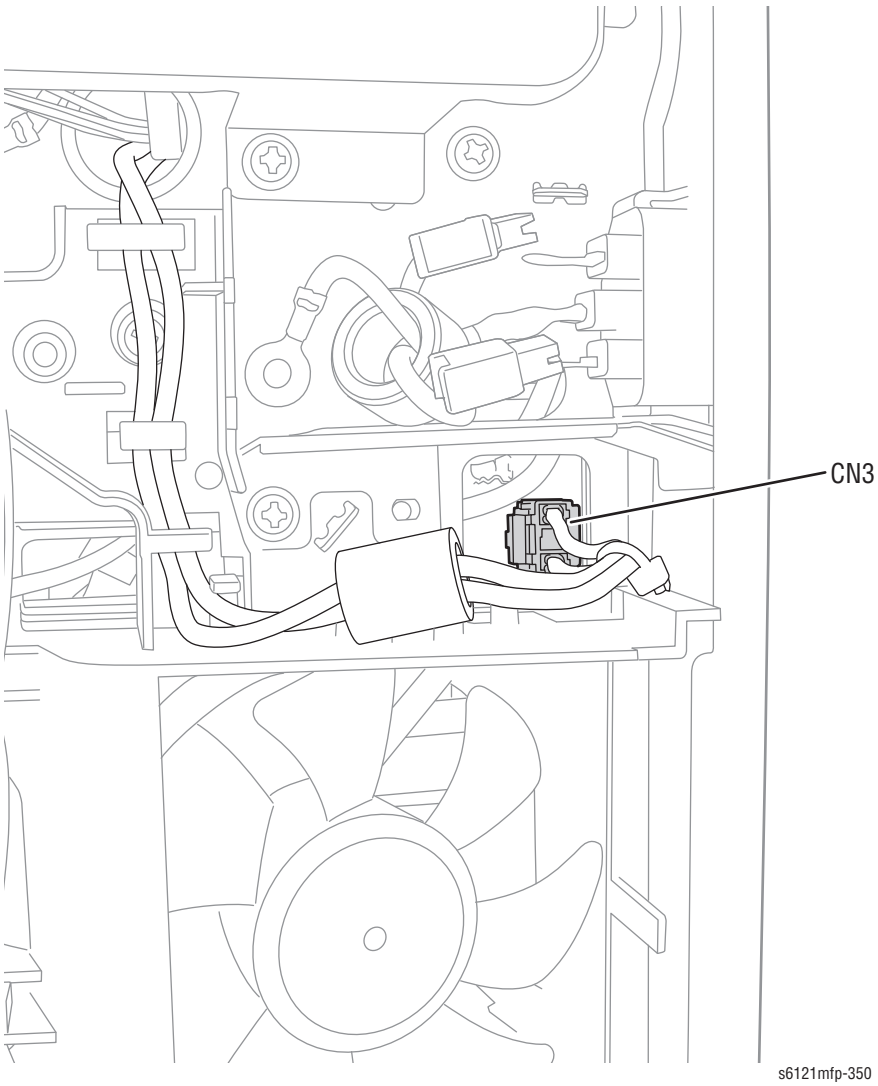


s6121mfp-327

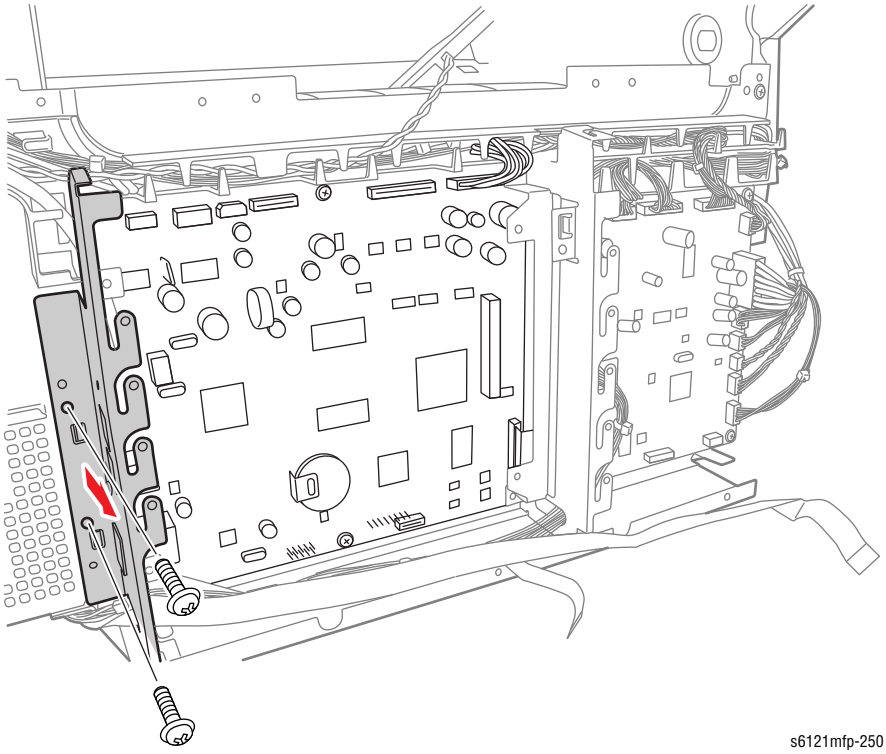
9. Disconnect connectors CN9, CN10 from the power switch.



10. Disconnect connector CN13.

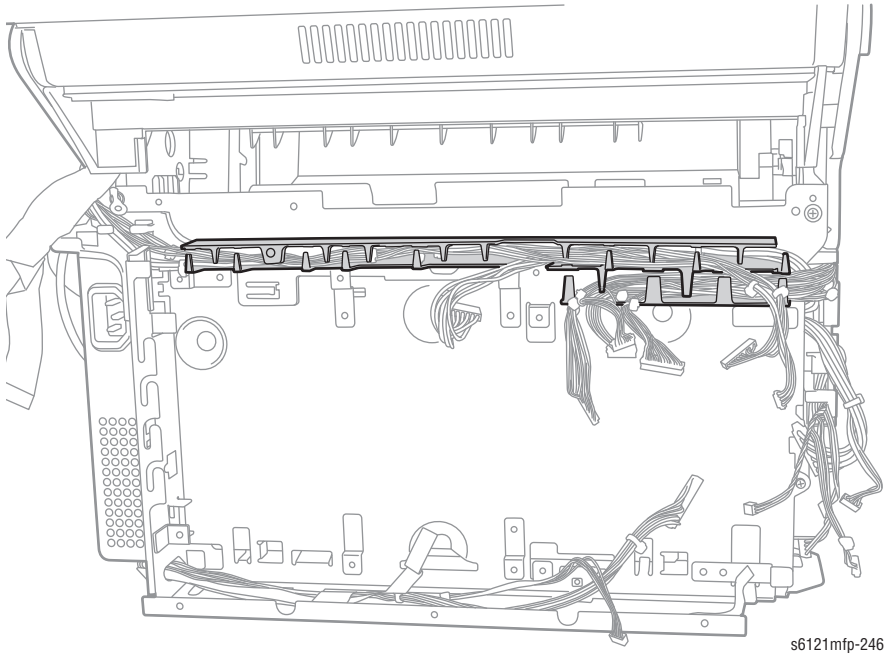


11. Remove 2 screws (metal, 6mm, with lock washer and washer) and remove plate.



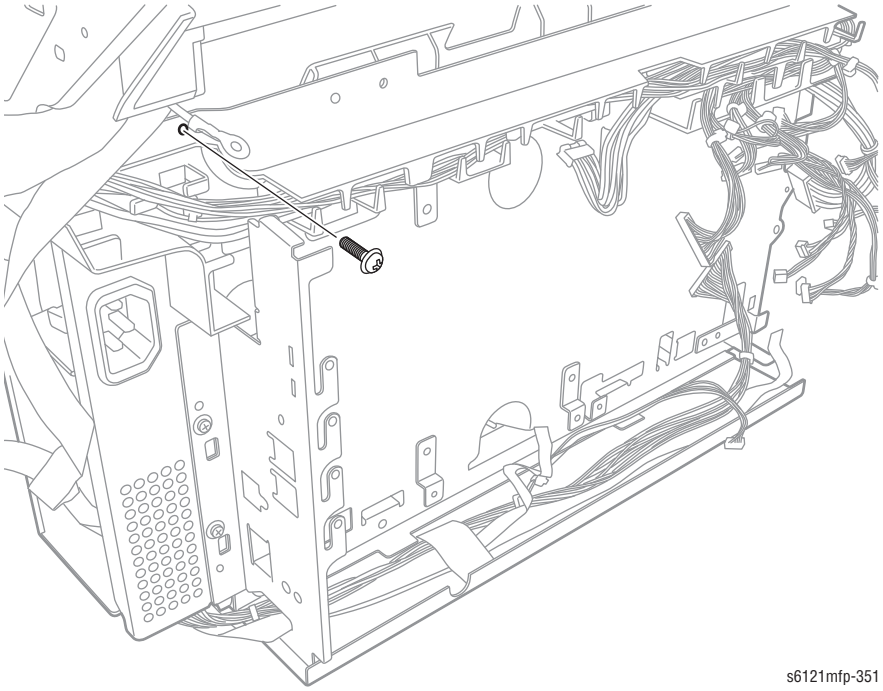
s6121mfp-250

12. Remove the harnesses and the harness guide.



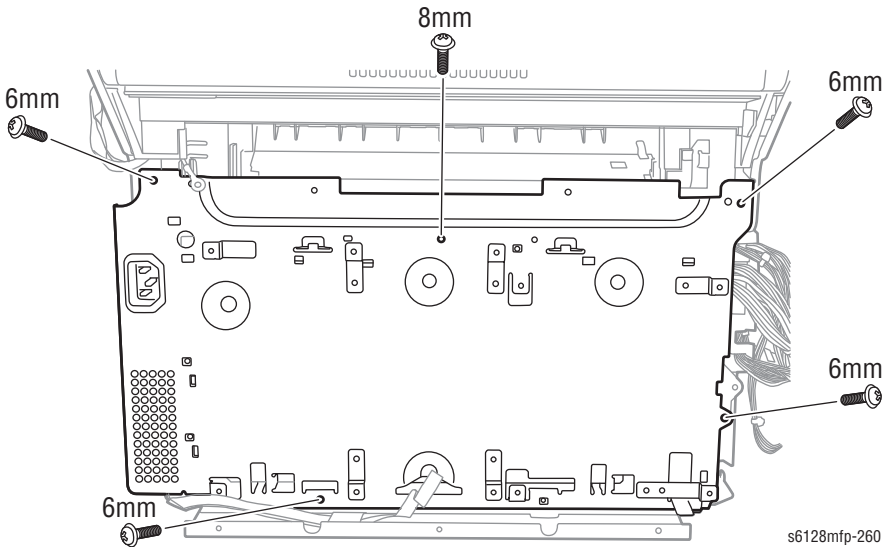
s6121mfp-246

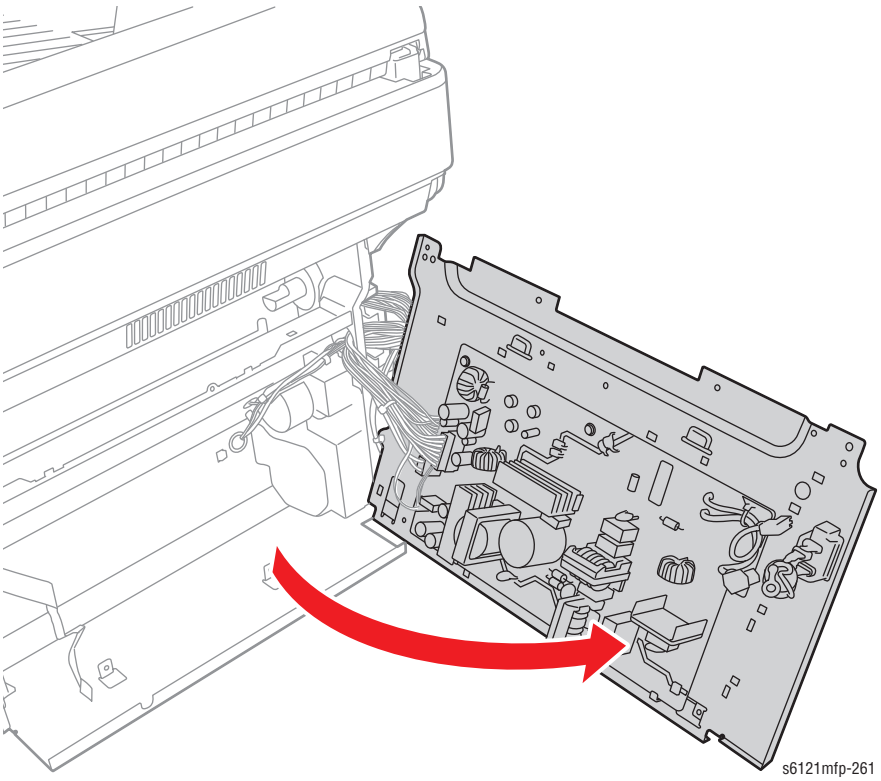
13. Remove the screw (metal, 6mm) and remove the harness band.



s6121mfp-351

14. Remove 4 screws (metal, 6mm, with lock washer and flat washer) and 1 screw (metal, 8mm) and pull out the power supply unit.

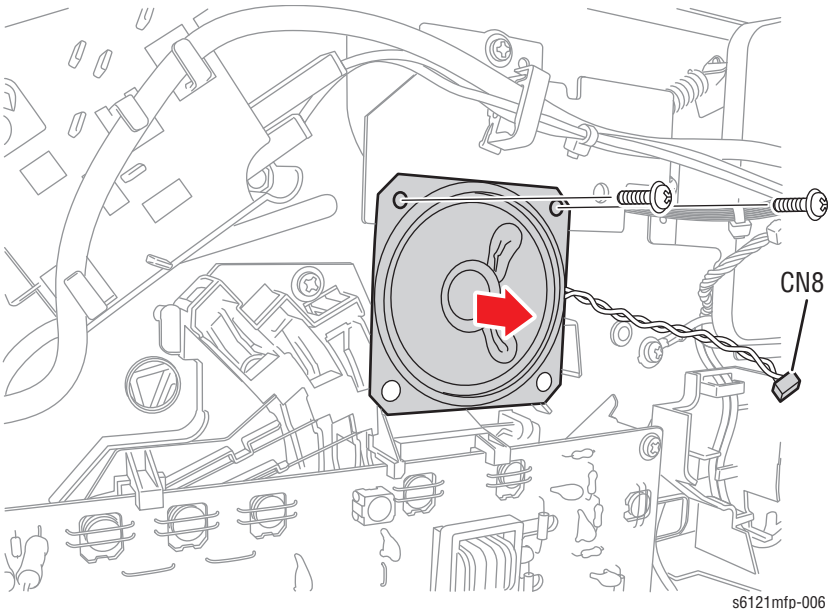




Speaker

PL13.0.5

1. Remove the Right Side Cover (page 8-29).
2. Disconnect connector CN8 and remove 2 screws (metal, 6mm) to remove the speaker.

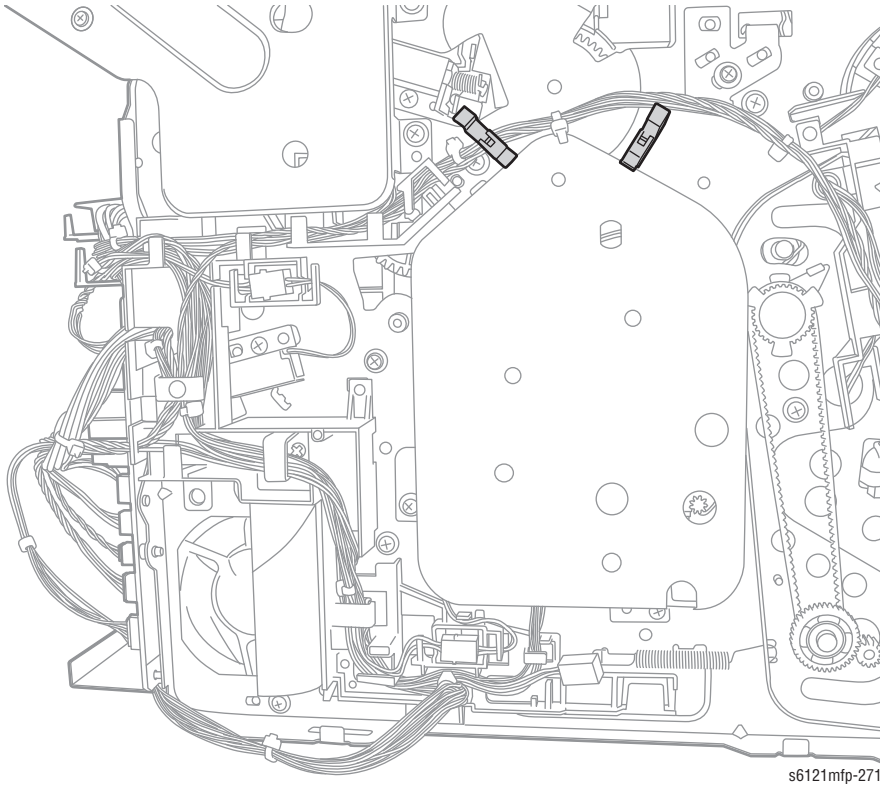


Main Motor

PL9.1.6

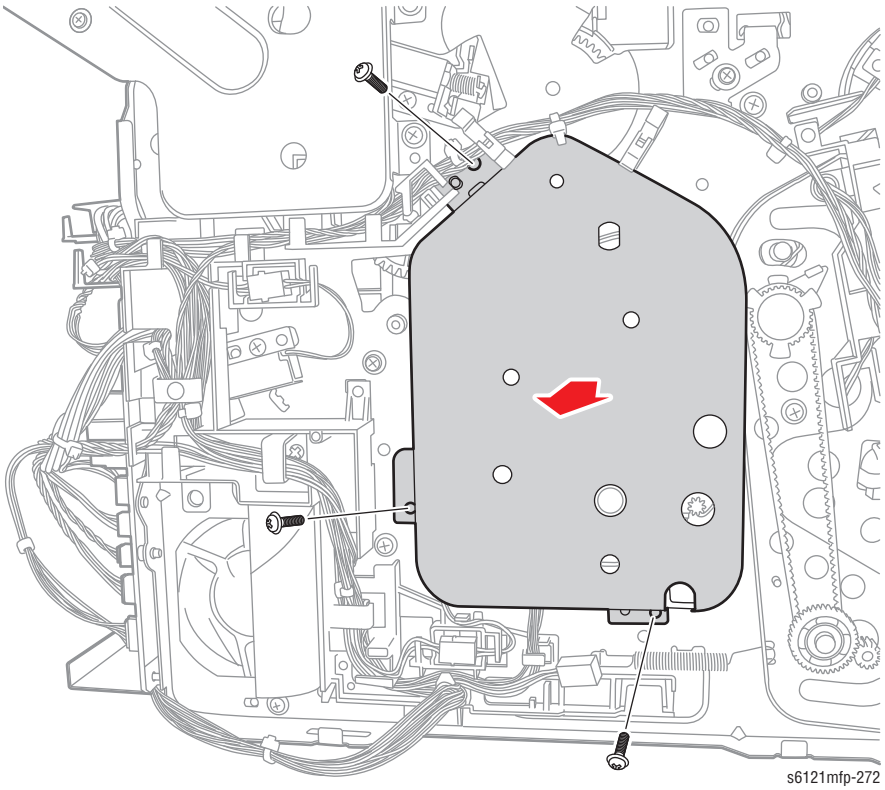
1. Remove the Left Cover (page 8-28).
2. Remove all toner cartridges (page 8-20).

3. Remove the harness from 2 wire saddles.



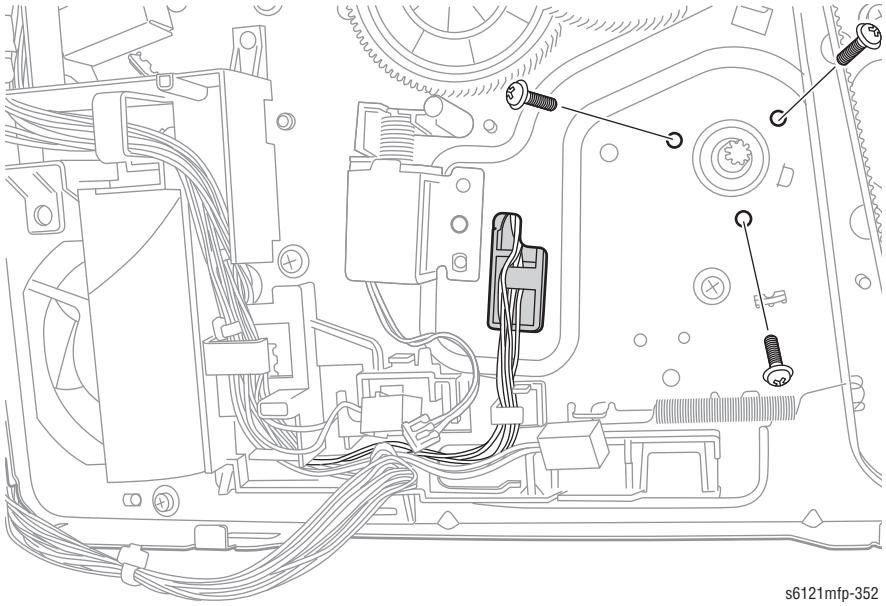
s6121mfp-271

4. Remove 3 screws (metal, 6mm, with washer and lock washer) and remove the cover plate.



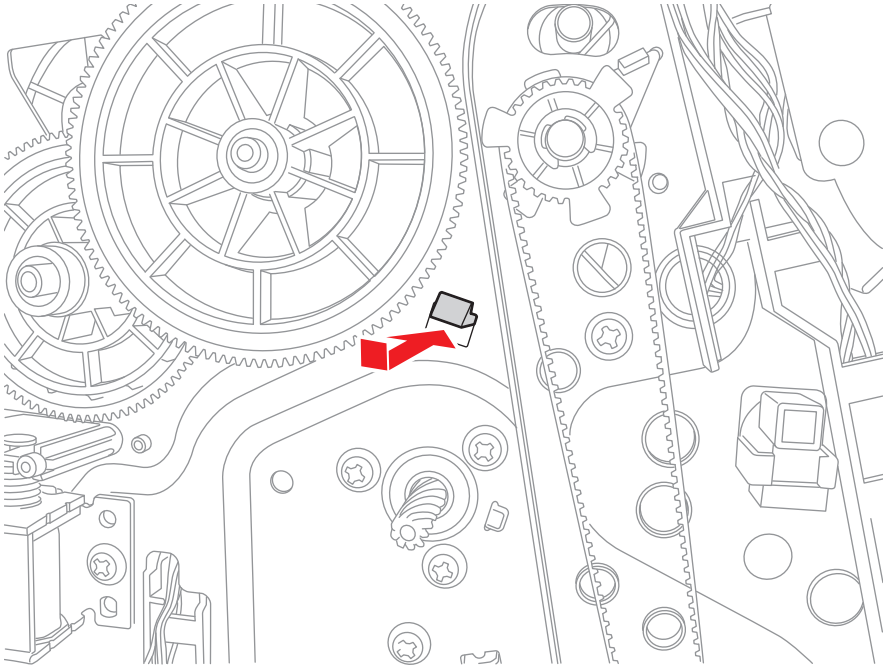
s6121mfp-272

5. Remove 3 screws (metal, 6mm, with washer and lock washer), and then remove the harness from the harness guide.



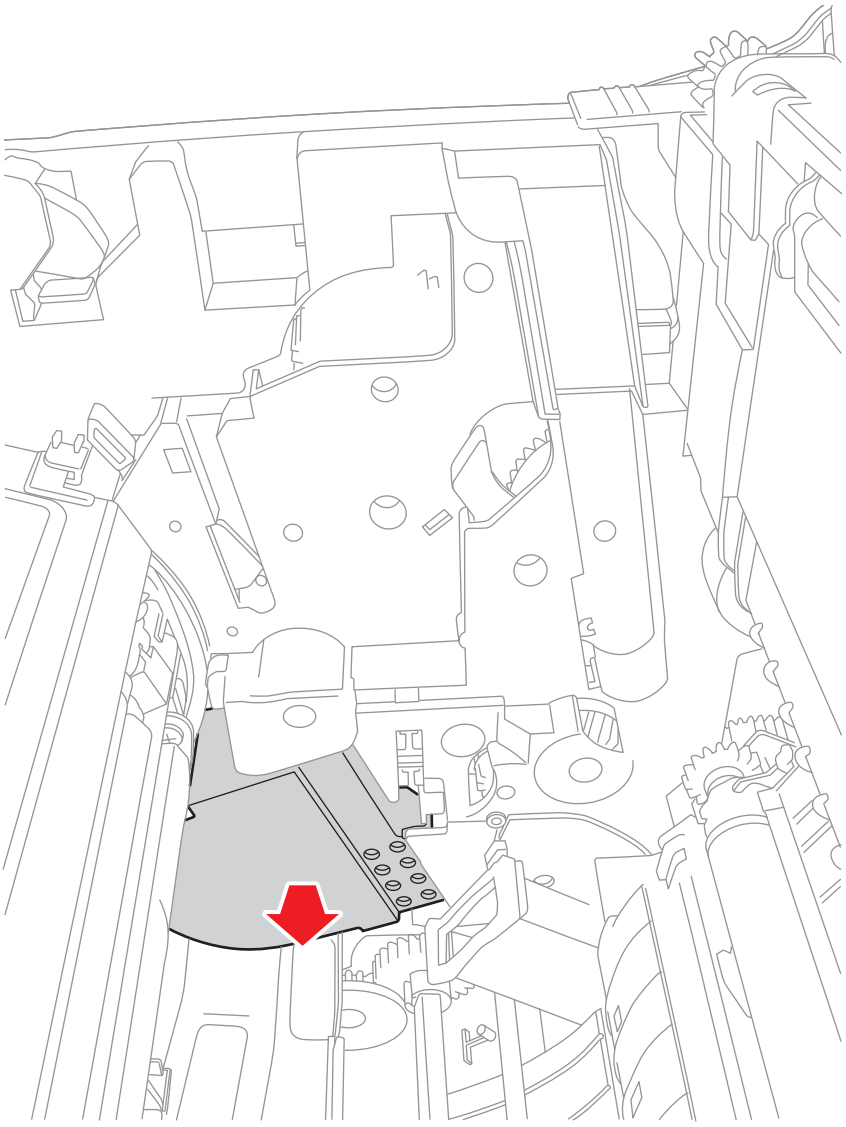
s6121mfp-352

6. Unlock the motor cover tab.



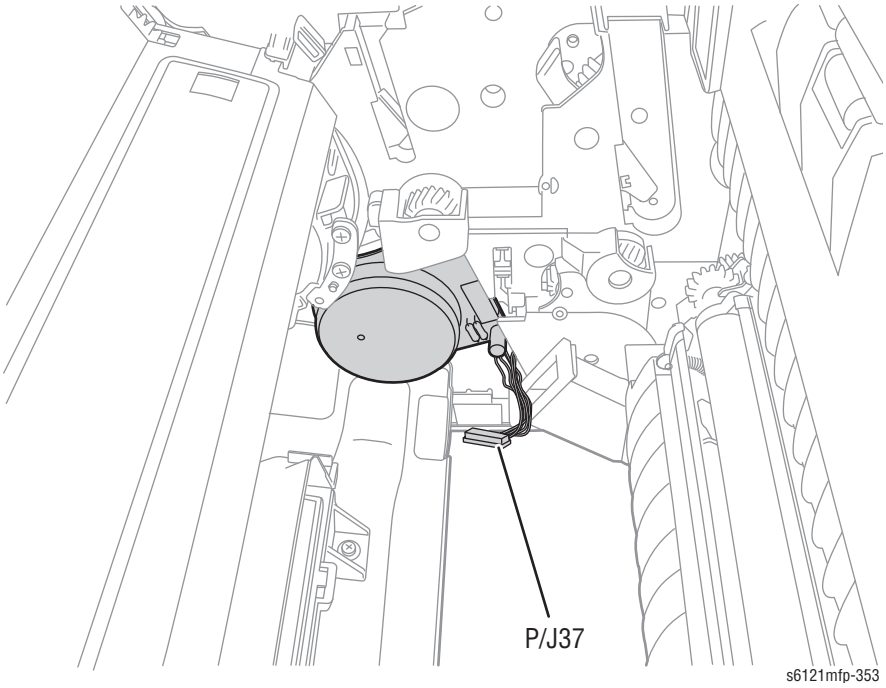
s6121mfp-358

7. Remove the motor cover.



s6121mfp-359

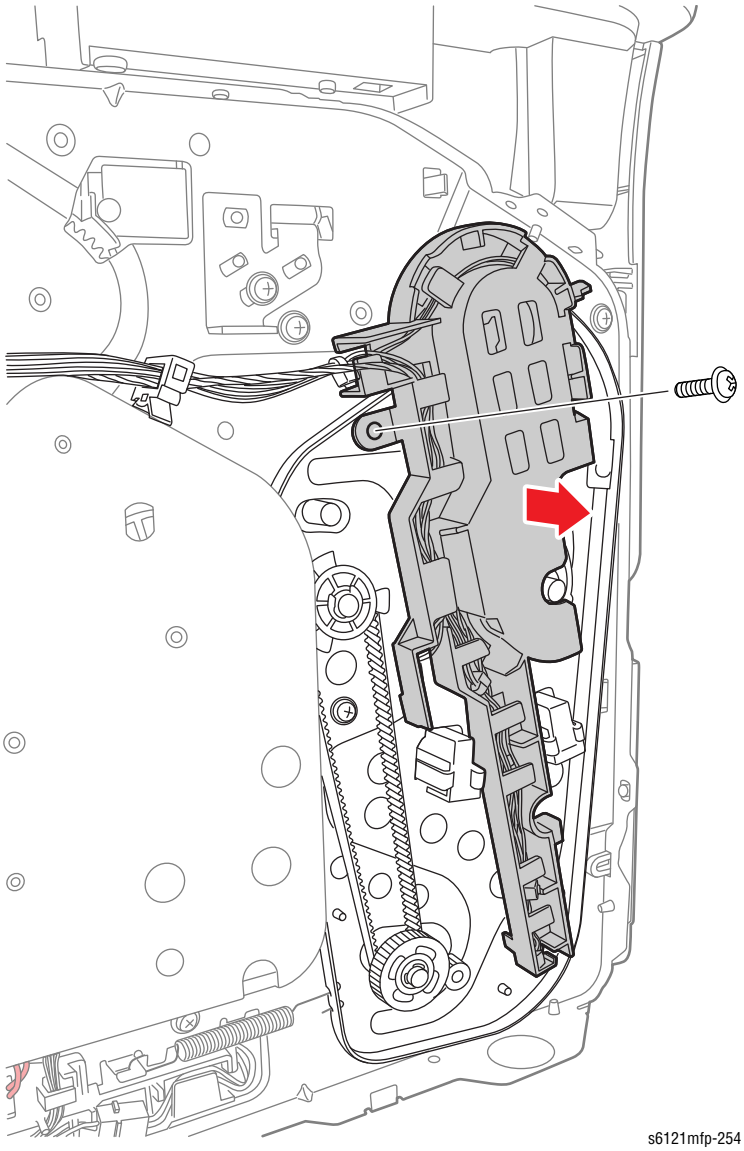
8. Disconnect P/J37 and remove the Main Motor.



Developing Motor

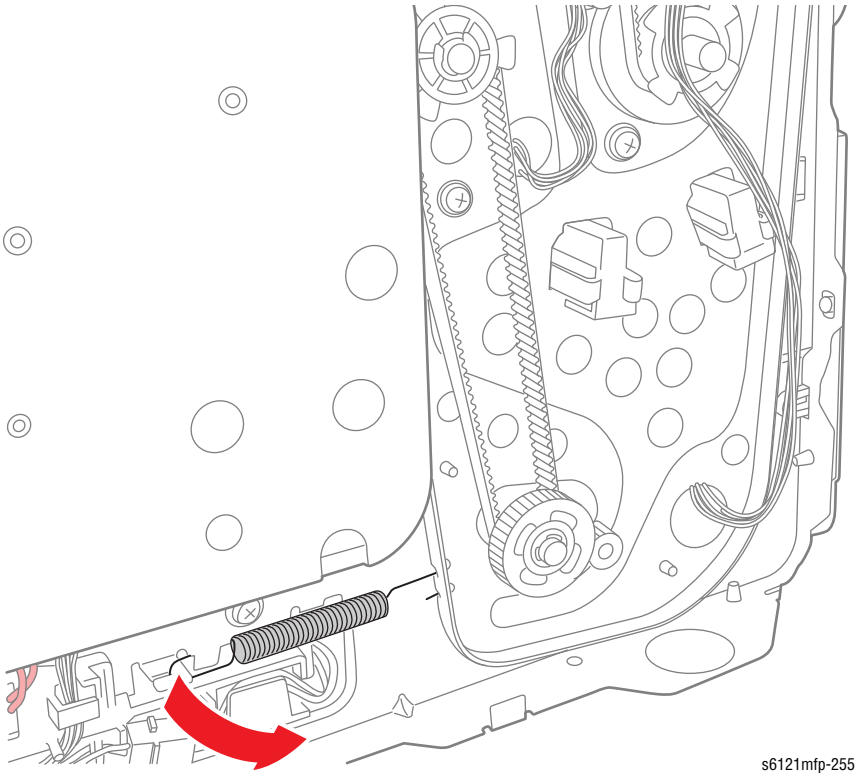
PL5.1.5

1. Remove the Left Cover (page 8-28).
2. Remove the harness guide screw (metal, 6mm), and then remove the harness and harness guide.

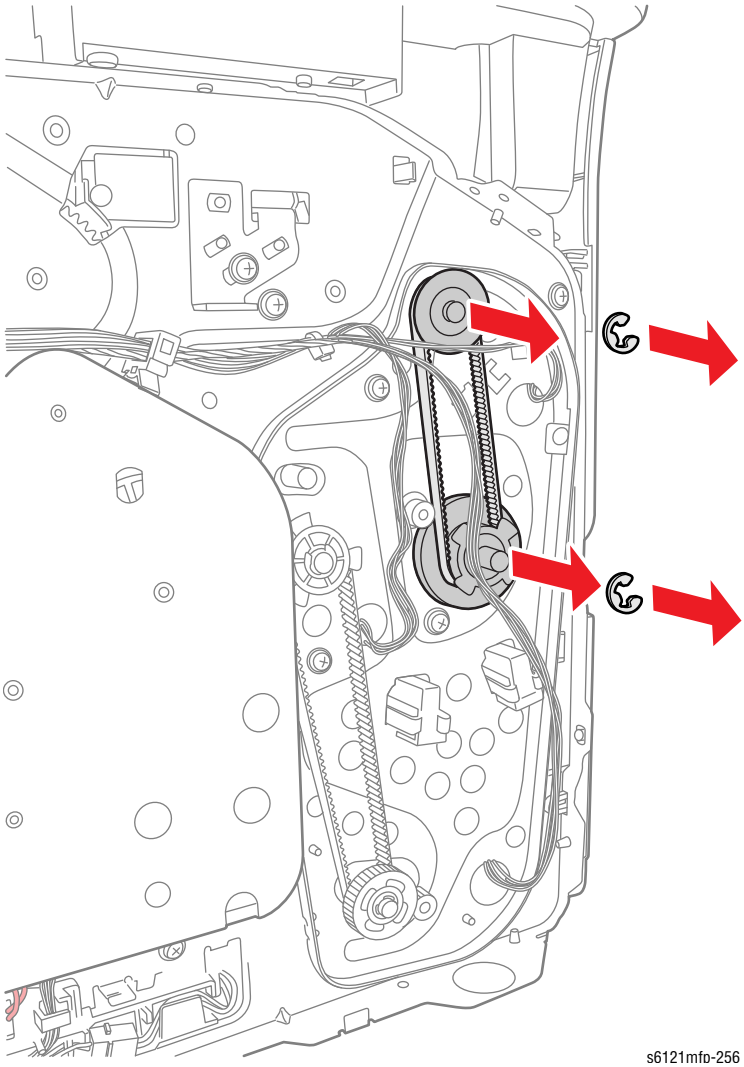


s6121mfp-254

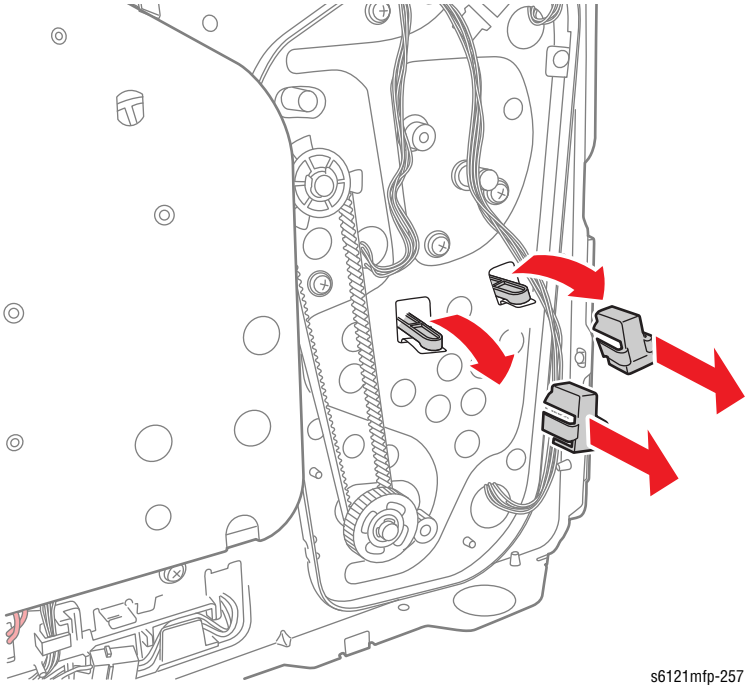
3. Remove the spring.



4. Remove 2 E-rings, belt, 2 gears, and bearing.

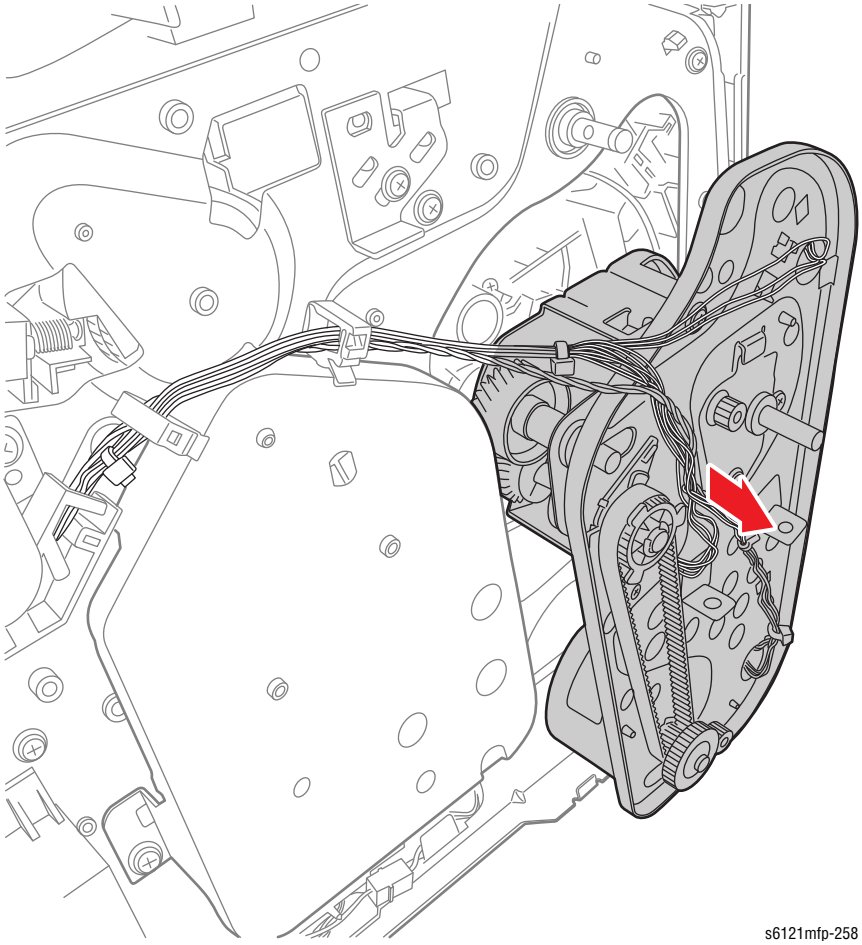


5. Remove the 2 lever covers (held in by hooks on 2 sides), and pull the 2 levers up and out to remove.



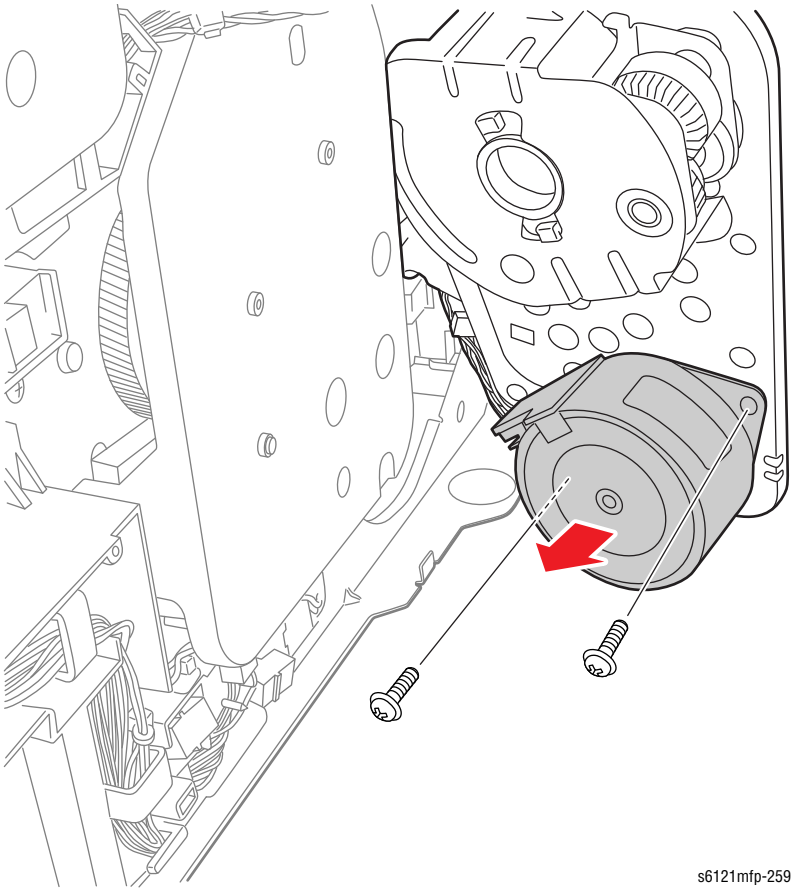
s6121mfp-257

6. Slide out the motor assembly.



s6121mfp-258

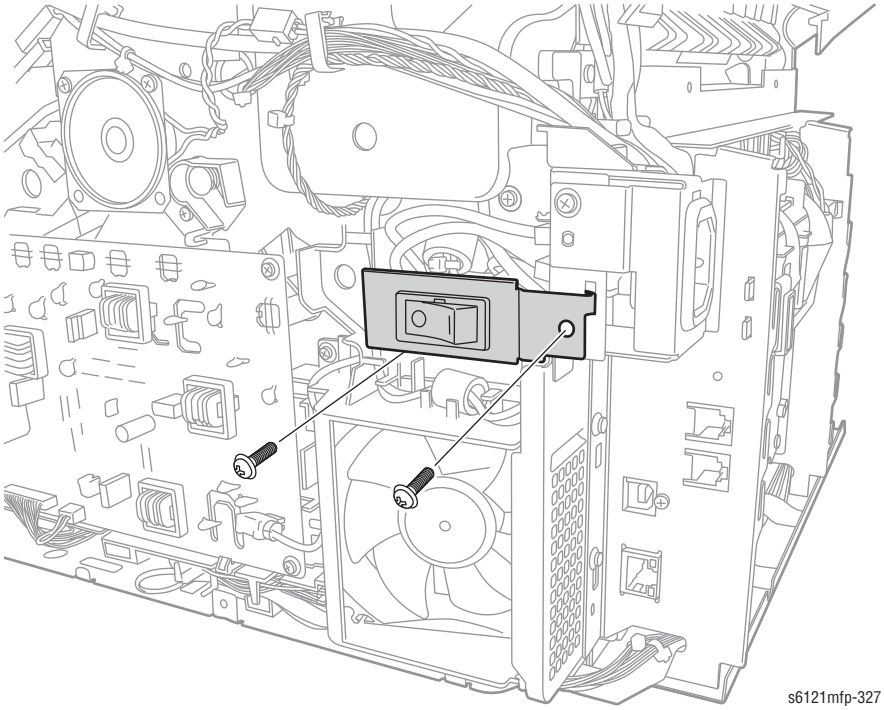
7. Remove 2 screws (metal, 6mm) and disconnect connector and remove the Developing Motor.



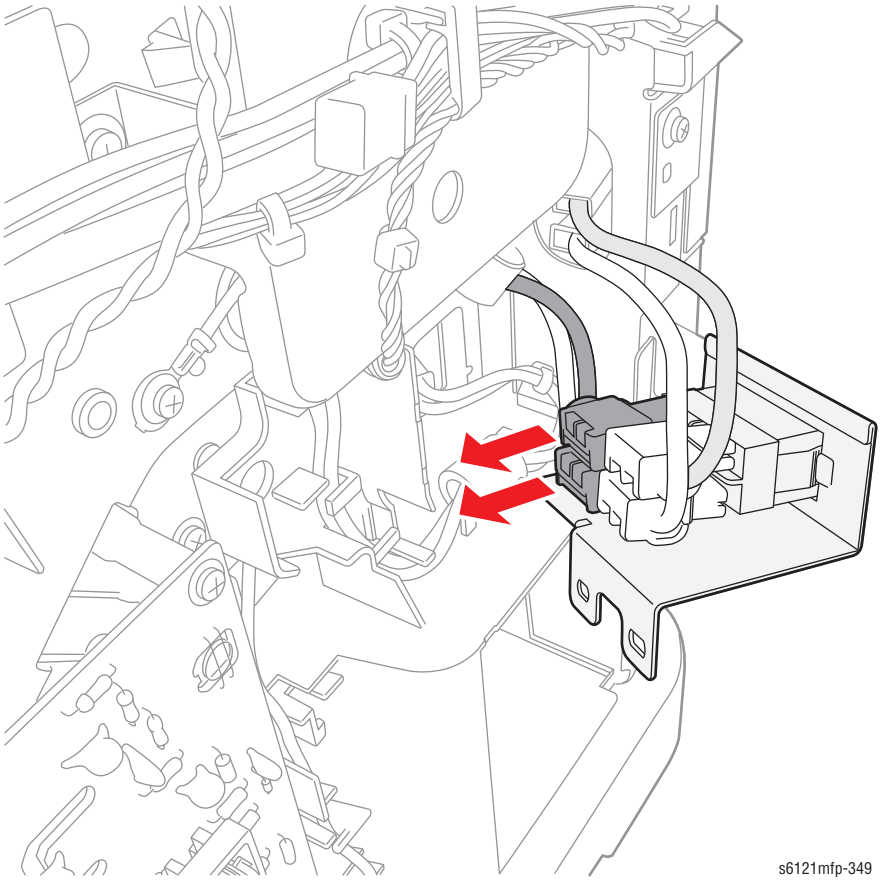
Power Supply Fan Motor

PL12.0.11

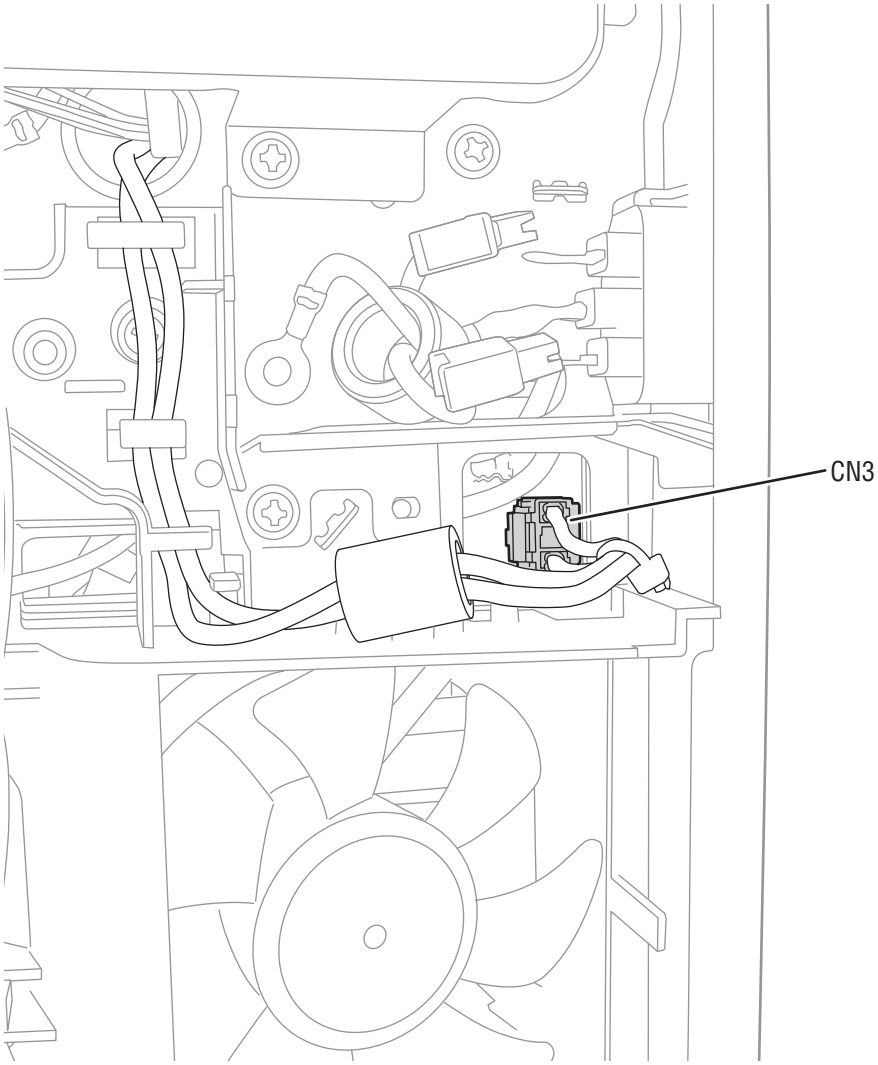
1. Remove the Rear Cover (page 8-28).
2. Remove the Right Side Cover (page 8-29).
3. Remove the High Voltage Board (page 8-57).
4. Remove 2 screws (metal, 6mm, with lock washer and washer) and remove the power switch.



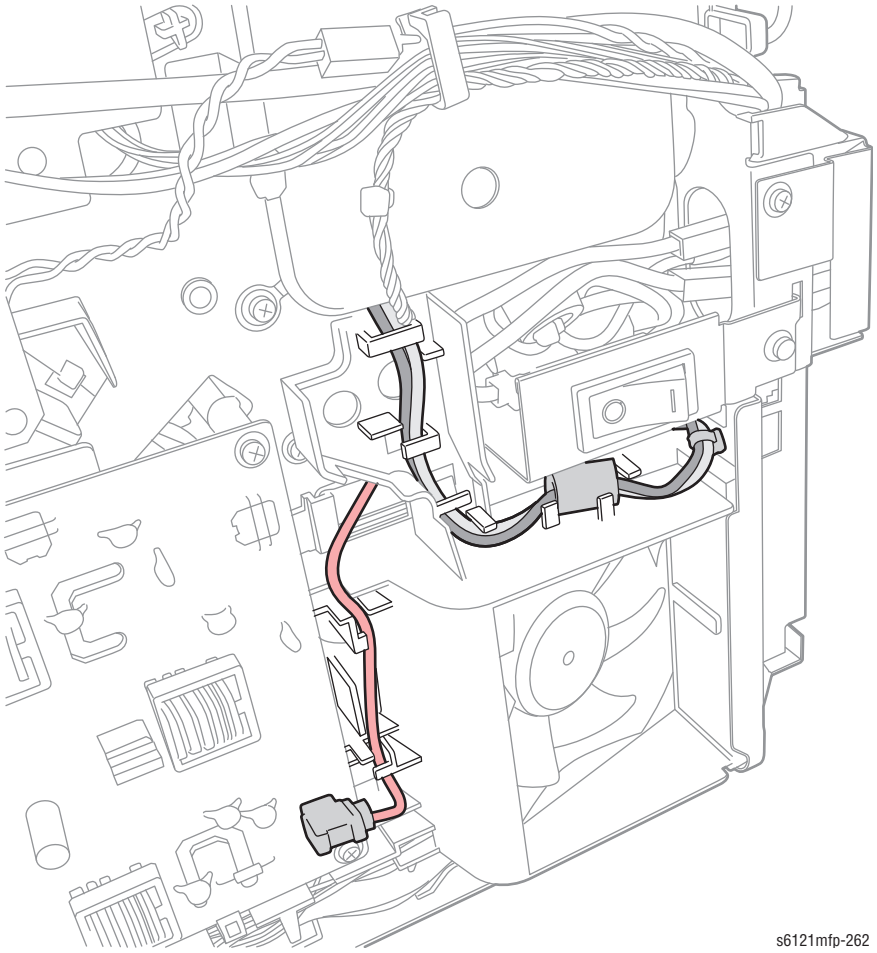
5. Disconnect connectors CN9 and CN10 from the power switch.



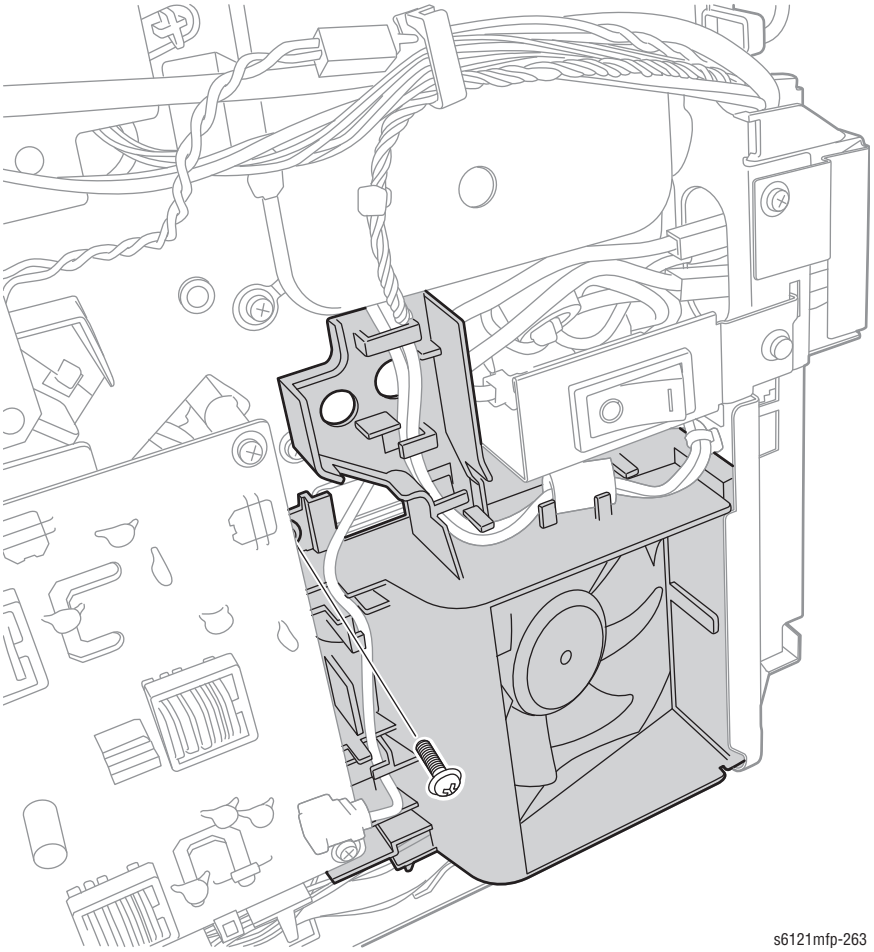
6. Disconnect connector CN13.



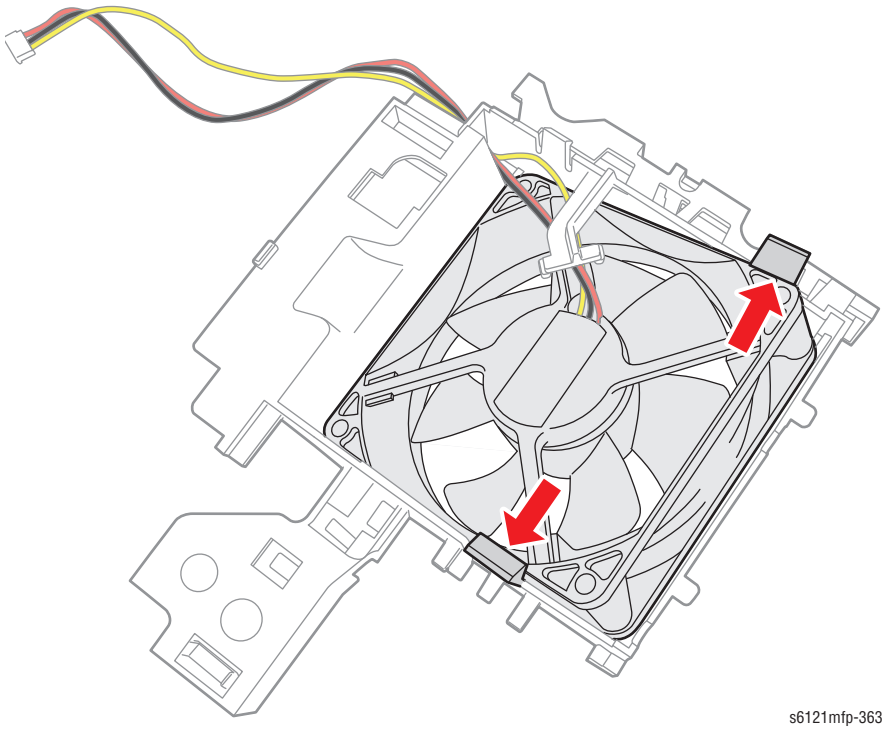
7. Remove the harness from the wire saddle.



8. Remove the screw (metal, 6mm) and take out the motor assembly.



9. Unhook the 2 tabs and remove the fan motor.

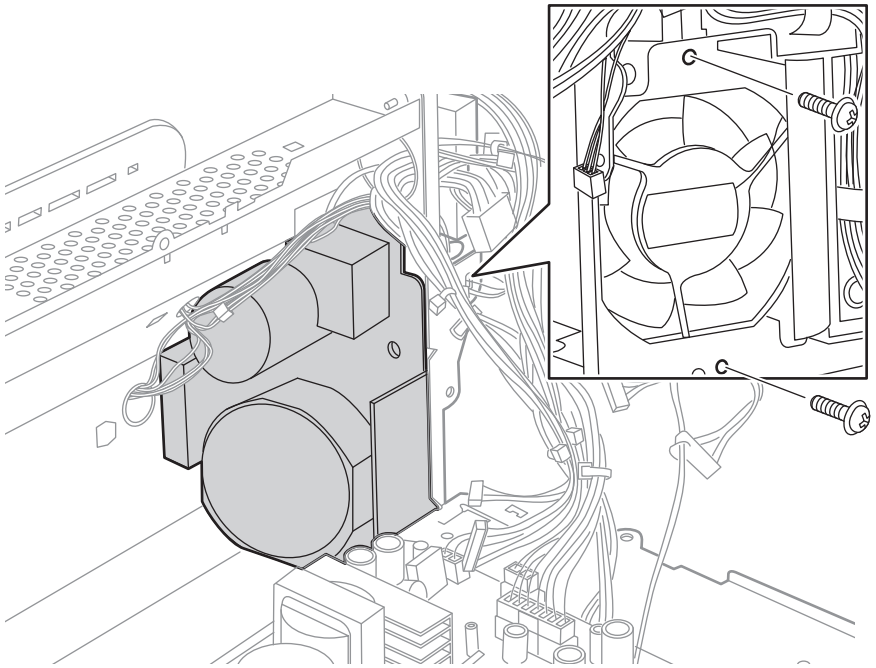


s6121mfp-363

Fan Duct Guide Assembly/Ventilation Fan Motor

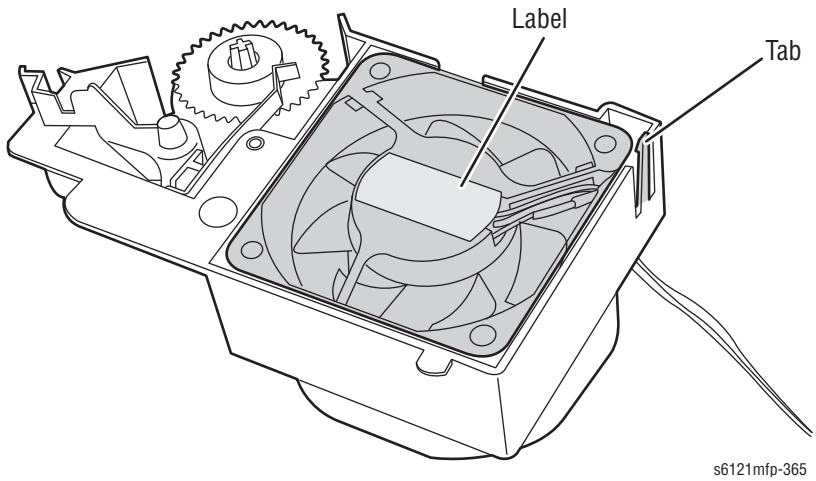
PL7.2.21 and PL7.2.20

1. Slide out the Power Supply assembly (steps 1 through 11 on page 8-72).
2. Remove 2 screws and remove the Ventilation Fan Motor Assembly.



s6121mfp-364

3. Unhook the tab and remove the motor.

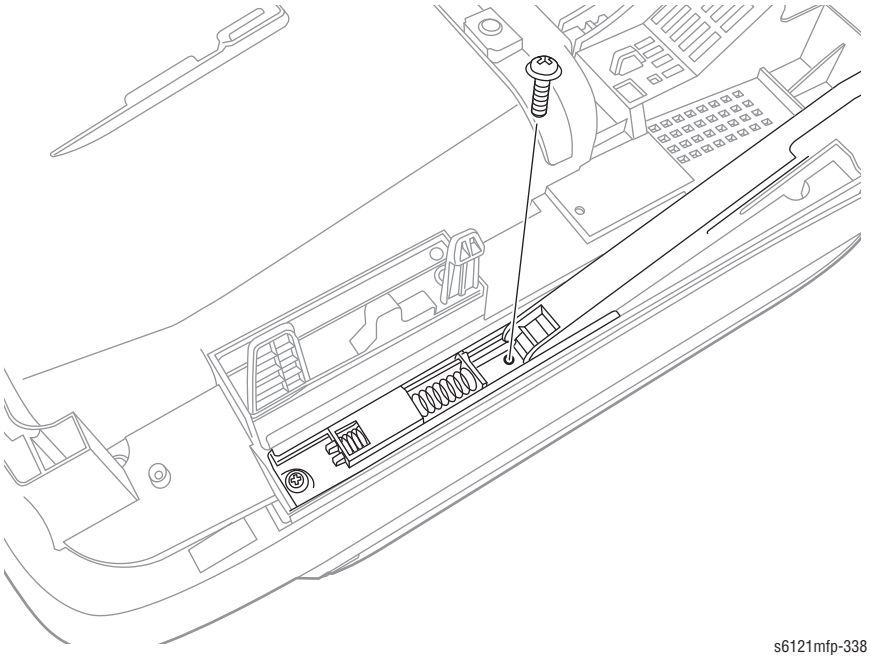


s6121mfp-365

Exit Tray Cooling Fan

PL8.0.22

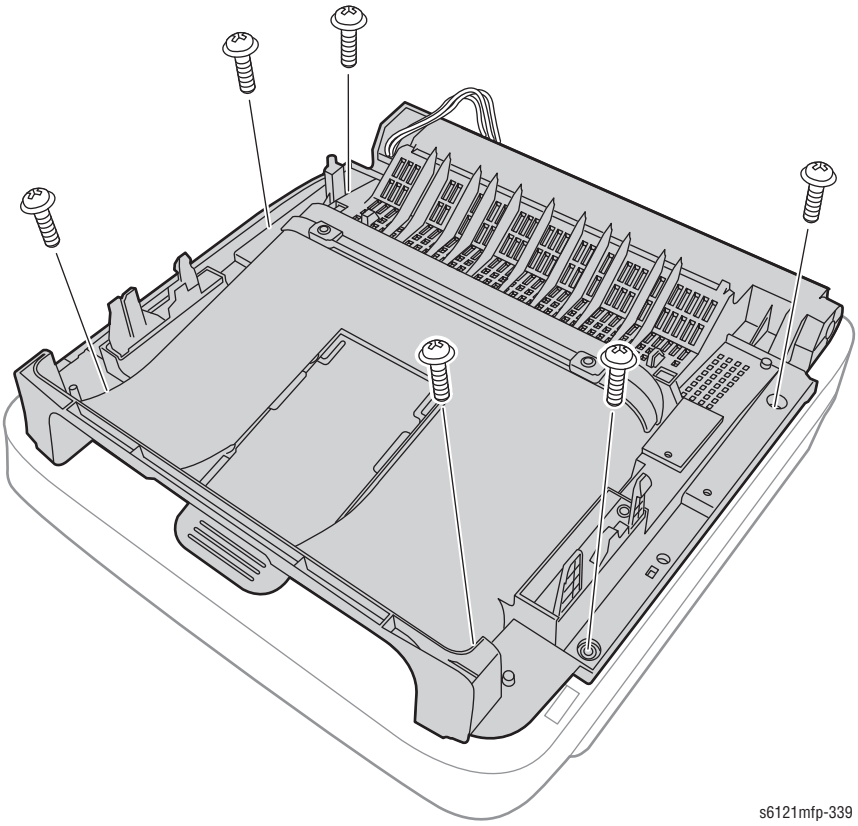
1. Remove the Scanner Unit (page 8-31).
2. Remove the ADF Unit (page 8-39).
3. Remove the screw (metal, 8mm) and remove the arm unit.



s6121mfp-338

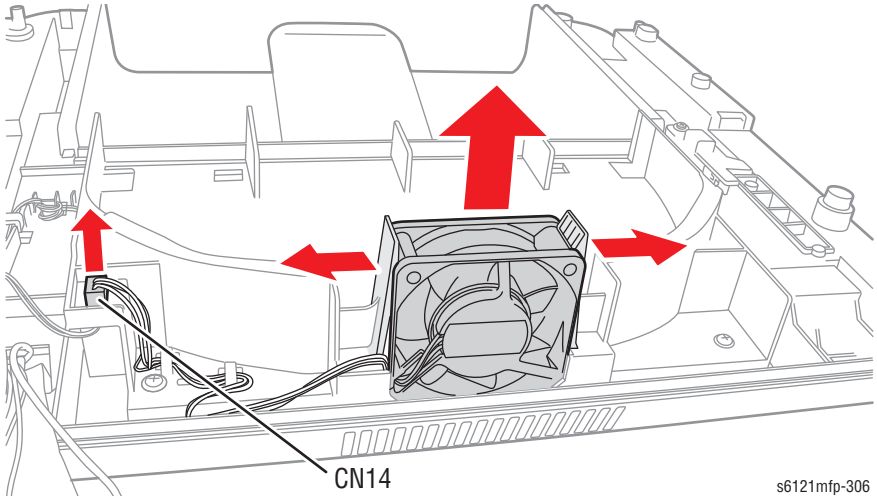
4. Repeat step 3 and remove the arm unit on the opposite side.

5. Remove 6 screws (metal, 8mm) and remove the Scanner Unit Lower Cover Assembly.



s6121mfp-339

6. Remove the connector and move the fixing members in the direction of the arrows to remove the Exit Tray Cooling Fan motor.

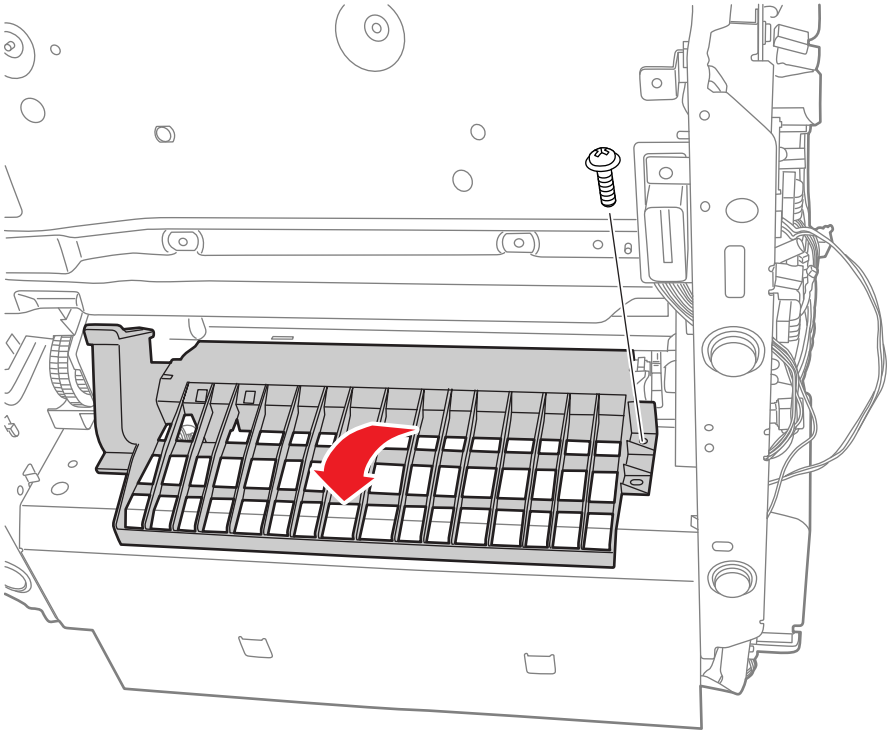


s6121mfp-306

Paper Path Guide Assembly

PL7.2.22

1. Remove the Feeder (page 8-46).
2. Remove the screw (metal, 6mm) and unhook the guide.

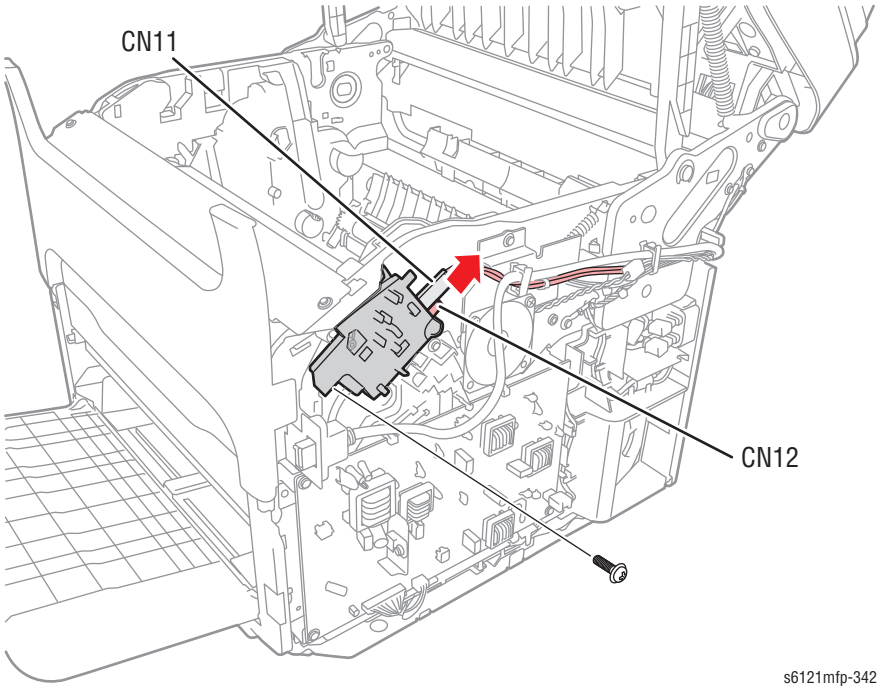


s6121mfp-341

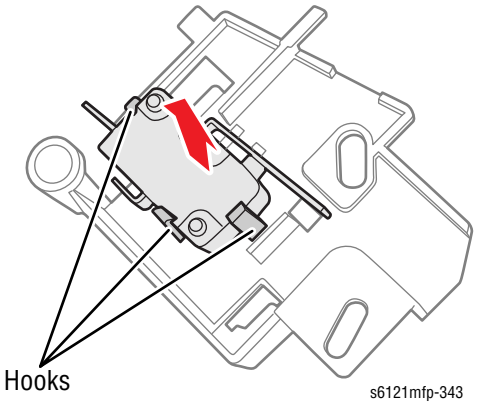
Front Door Switch

PL12.0.2

1. Remove the Rear cover (page 8-28).
2. Remove the Right Side cover (page 8-29).
3. Unlace the USB cable from the guide.



4. Remove the screw (metal, 6mm) from the guide.
5. Disconnect the 2 Front Door Switch wires from the switch and remove the switch from the guide.

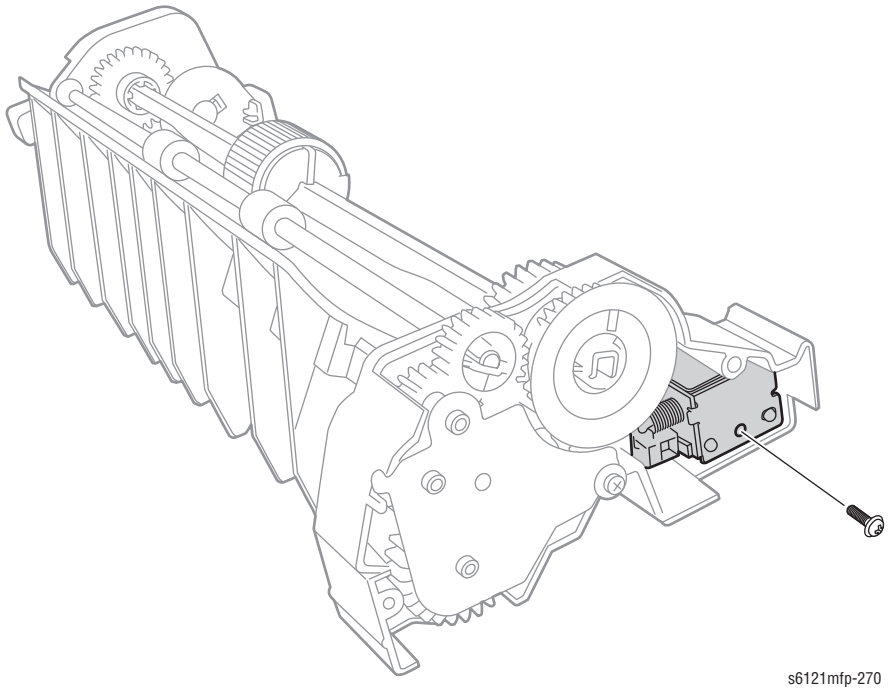


Solenoids and Sensors

Tray 1 Feed Solenoid

PL6.0.19

1. Remove the Feeder (page 8-46).
2. Remove the screw (metal, 8mm) and remove the Tray 1 Feed Solenoid.

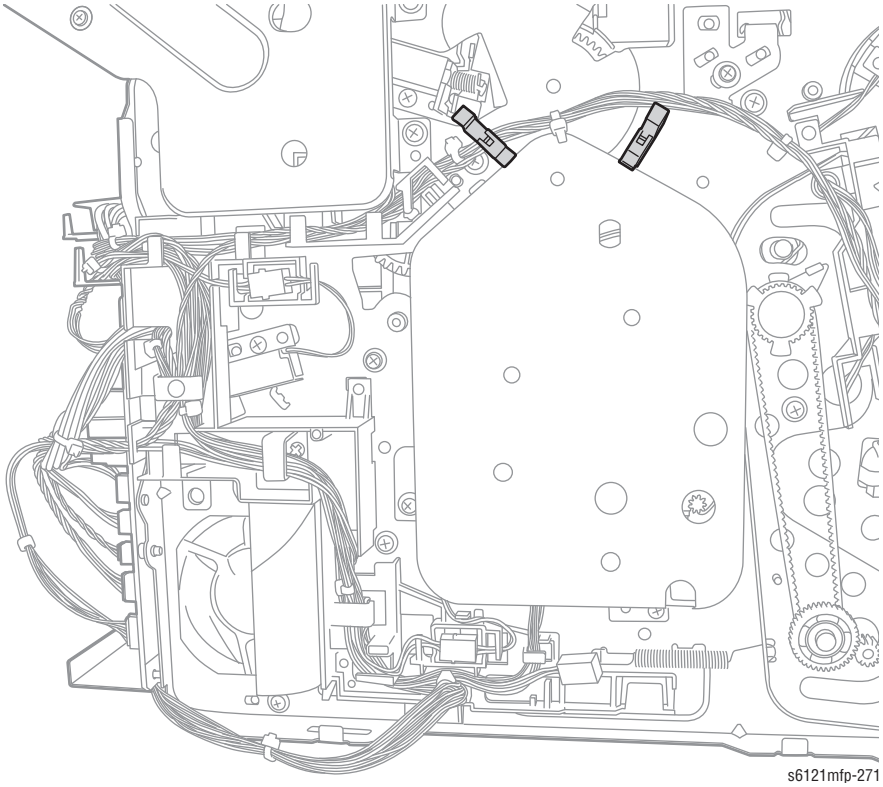


s6121mfp-270

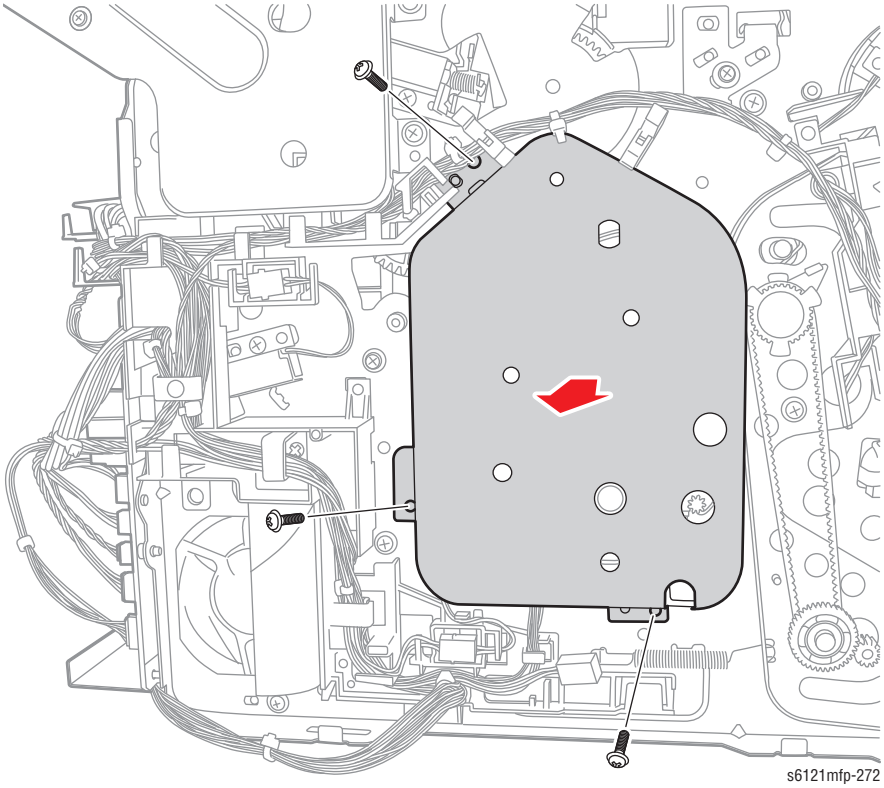
Registration Roller Solenoid

PL6.0.19

1. Remove the Left Side Cover (page 8-28).
2. Remove the harness from the 2 wire saddles.



3. Remove 3 screws (metal, 6mm, with washer and lock washer) and remove the covering plate.



4. Remove the screw (metal, 6mm) and disconnect connector CN3 to remove the Registration Roller Solenoid.

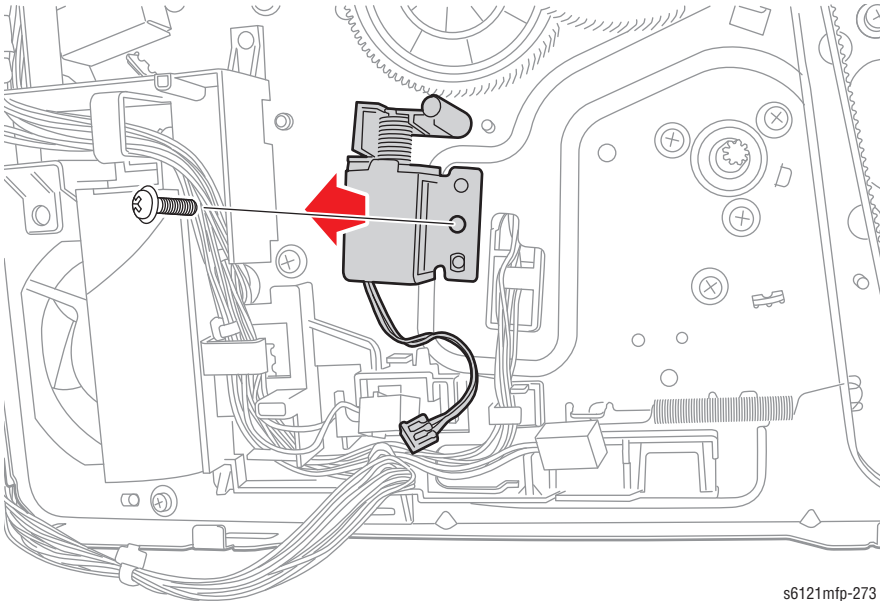
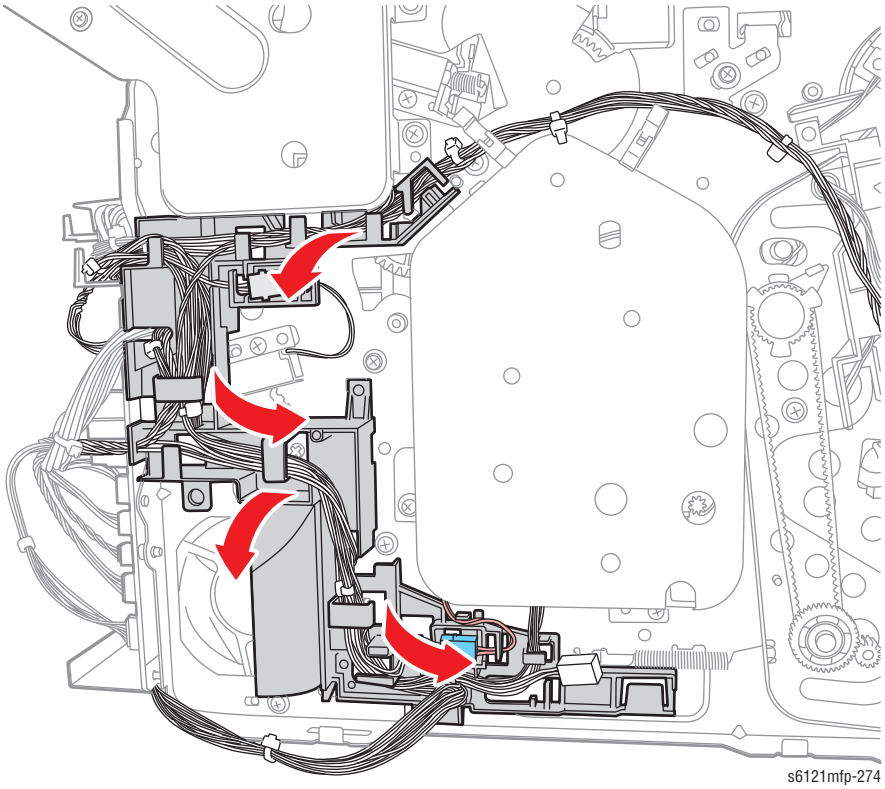


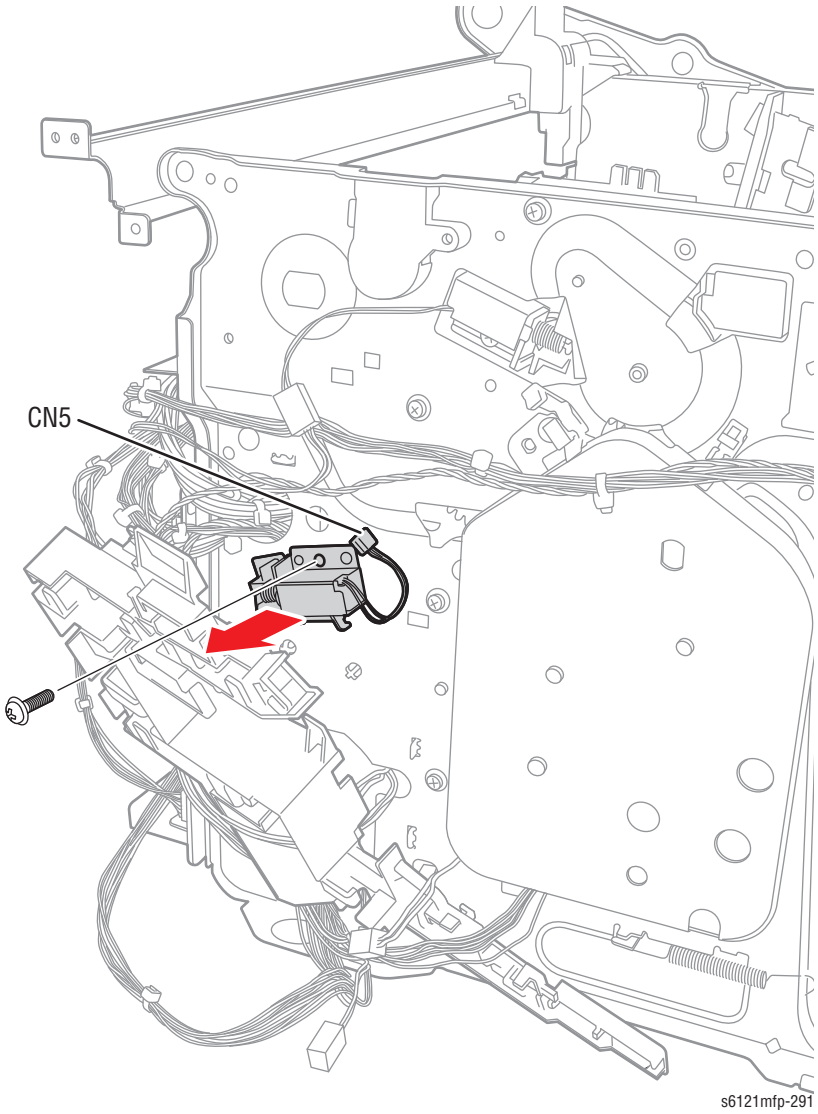
Image Transfer Solenoid

PL9.1.9

1. Remove the Rear Cover (page 8-28).
2. Remove the Right Side Cover (page 8-29).
3. Remove the Left Side Cover (page 8-28).
4. Remove the Scanner (page 8-31).
5. Disconnect all harnesses from the Engine Control Board.
6. Remove the harnesses from the harness guide.



7. Disconnect connector CN5, and remove the screw (metal 6mm, flangeless) that secures the Image Transfer Solenoid to the chassis.

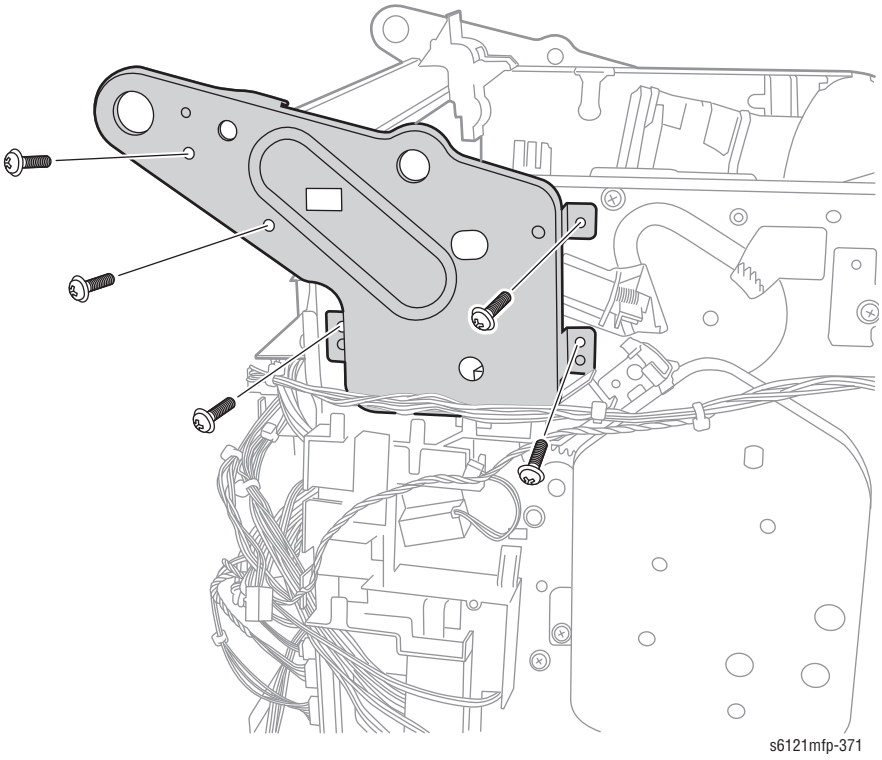


Cleaning Blade Solenoid (SD5)

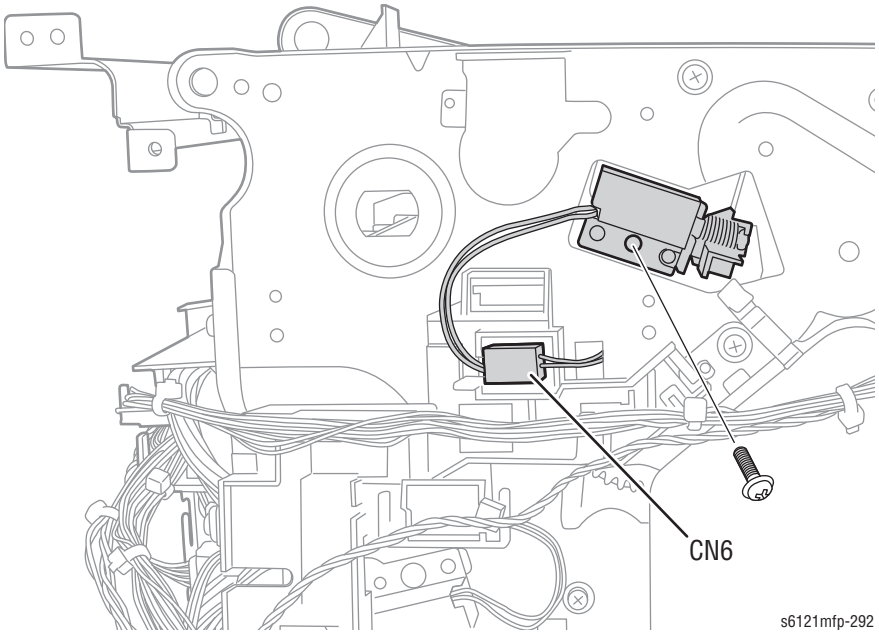
PL9.2.24

1. Remove the Rear Cover (page 8-28).
2. Remove the Right Side Cover (page 8-29).
3. Remove the Left Side Cover (page 8-28).
4. Remove the Scanner (page 8-31).

5. Remove 5 screws (metal, 6mm) from the left side hinge plate.



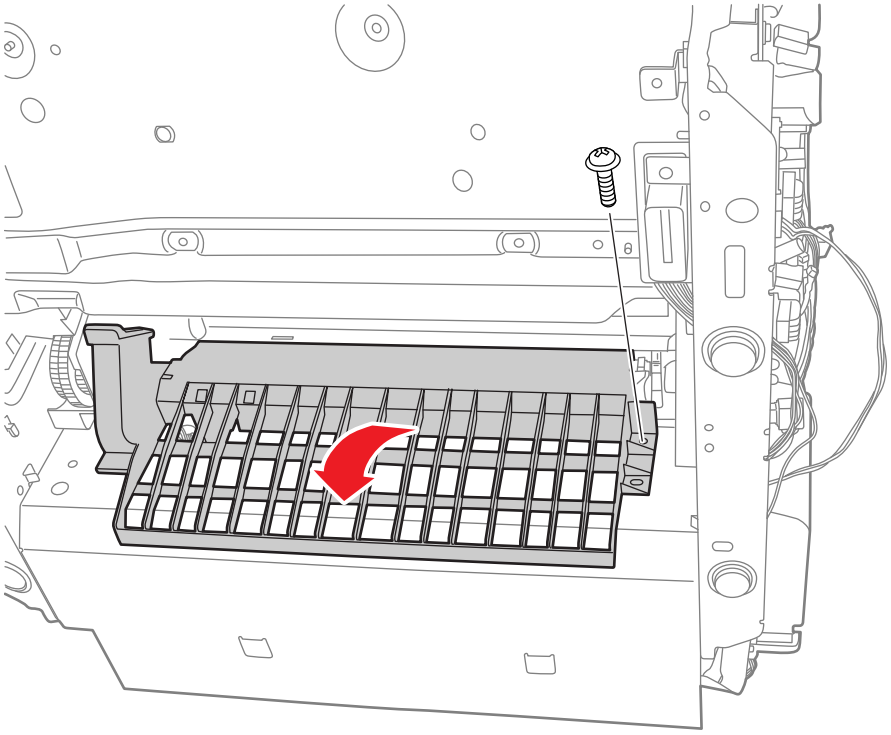
6. Disconnect connector CN6, and remove the screw (metal 8mm) that secures the Cleaning Blade Solenoid to the chassis.



Humidity Sensor/Registration Sensor

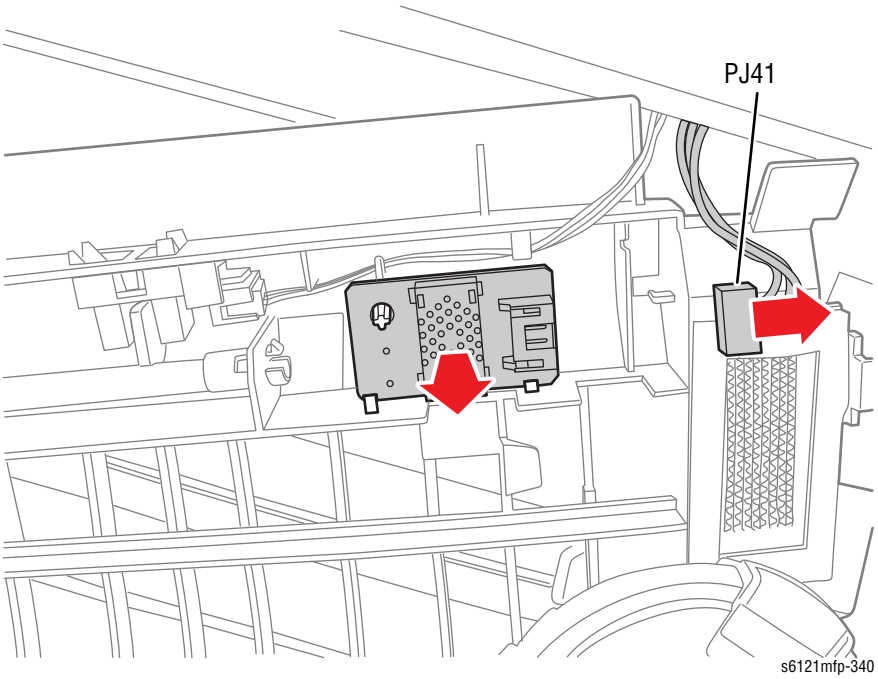
PL7.2.9/PL7.2.3

1. Remove the Feeder (page 8-46).
2. Remove the screw (metal, 6mm) and unhook the guide.

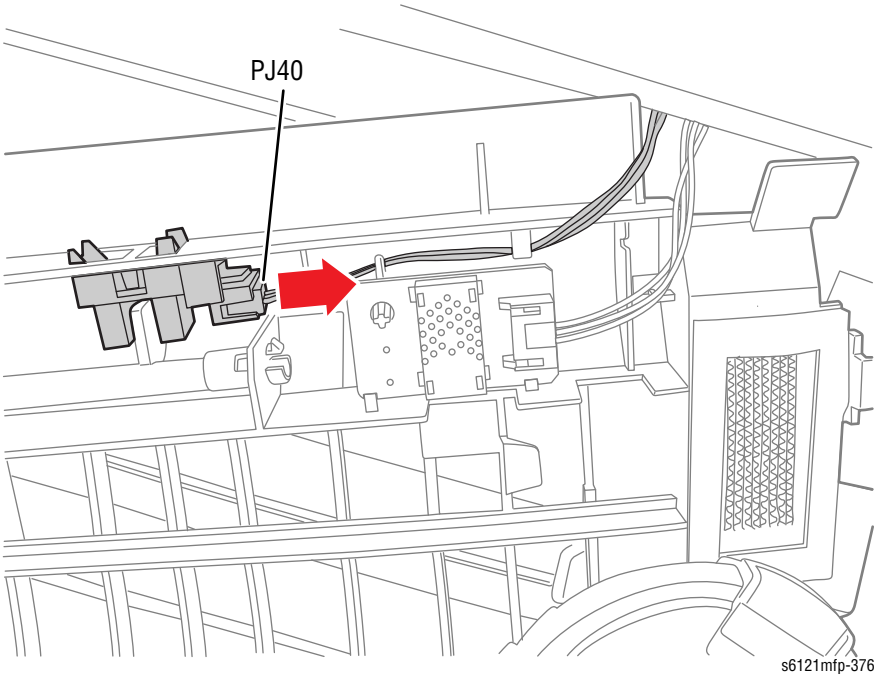


s6121mfp-341

3. To remove the Humidity Sensor:
   a. Disconnect P/J41 from the Humidity Sensor.



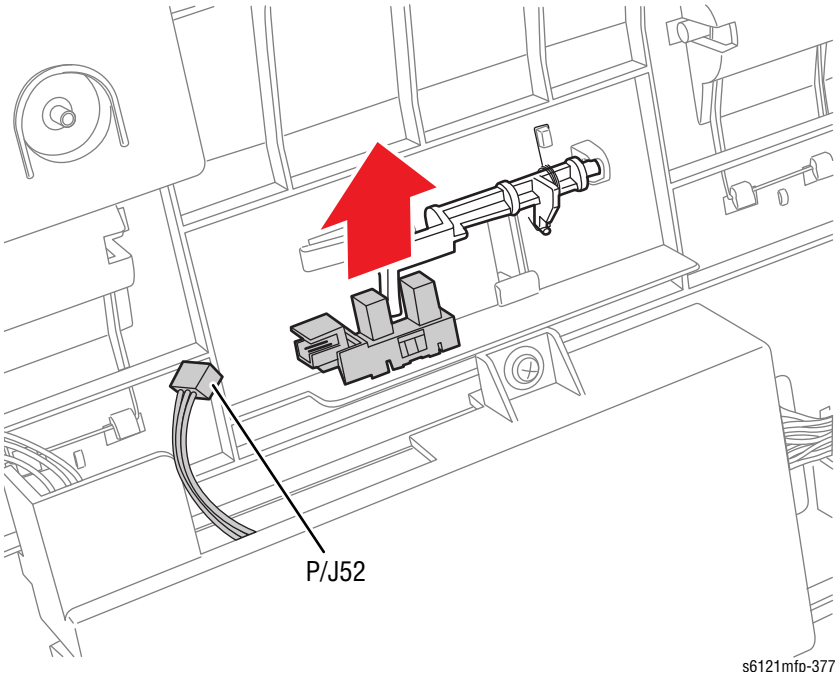
   b. Push the hook away from the sensor, lift the sensor off of the boss and away from the tabs to remove it.
4. To remove the Registration Sensor, disconnect PJ40 and then remove the sensor.



Duplex Unit Transport Sensor

PL14.1.7

1. Remove the Duplex Unit (page 8-110).
2. Disconnect P/J52, and then remove the Transport Sensor.



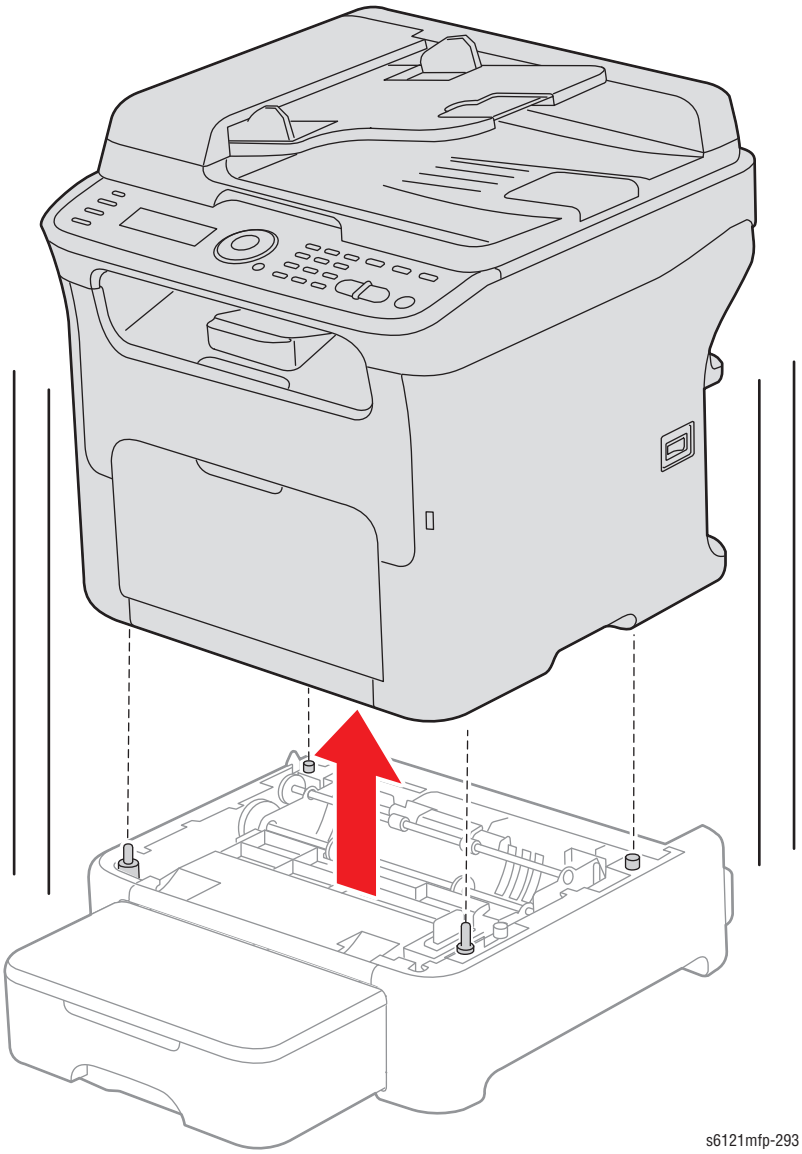
500-Sheet Feeder Tray

500-Sheet Feeder Tray (PL15.0)

Caution

Whenever removing or reinstalling the feeder, unplug the power cord of the printer from the power outlet first.

1. Lift the printer main body and then remove the 500-Sheet Feeder Unit from the printer.

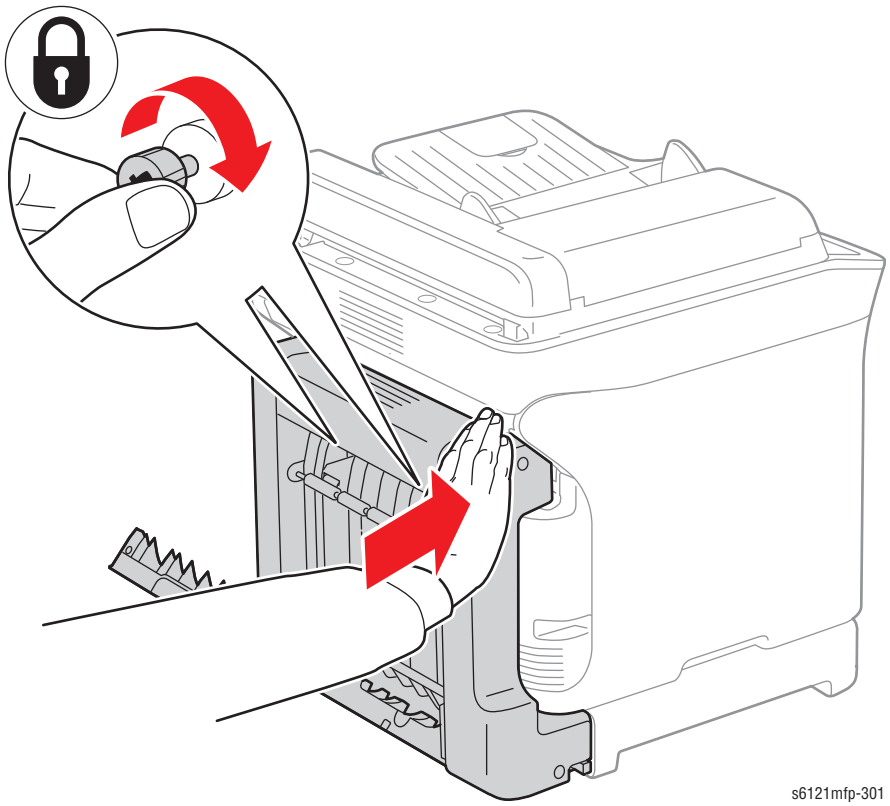


s6121mfp-293

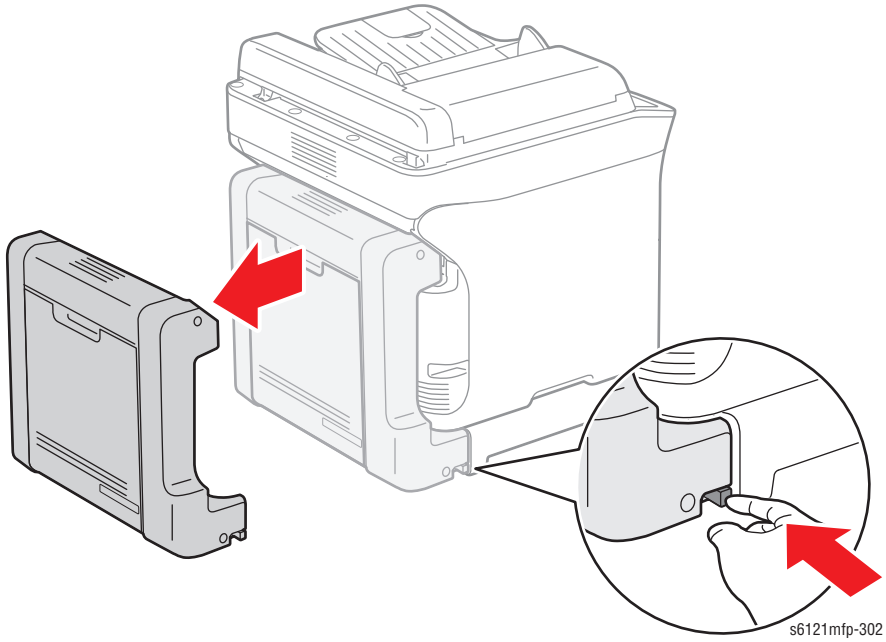
Duplex Unit

Duplex Unit (PL14.1)

1. Open the Duplex Cover.
2. Turn 2 locking screws to unlock the Duplex Unit.



3. Push the lever and remove the Duplex Unit.



Parts List

In this chapter...

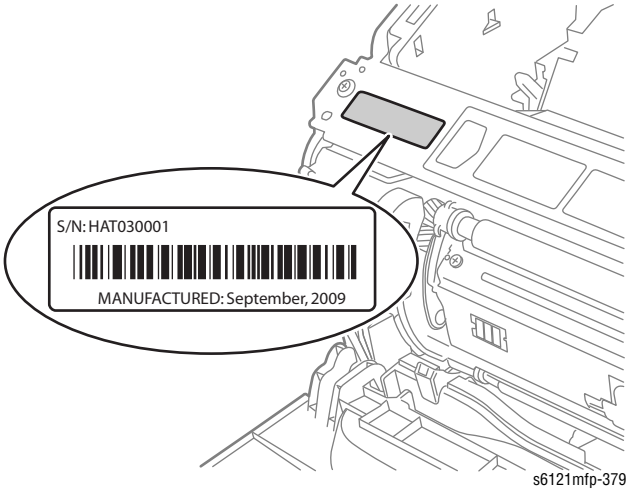
Chapter 9

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 left-side of the front cross member. Open the Front Cover to locate the Serial Number.



The nine-digit serial number uses the format **PPPRSSSSS**.

- **PPP** = Three digit alphanumeric product code

Product Code	Product
UAT	6121MFP, 110 V Engine
UAU	6121MFPV, 220 V Engine

- **R** = Single digit numeric revision digit, 0-9. This is changed when the ending serial number is reached or when a major product change occurs.
- **SSSSS** = Five digit numeric serial number based on the following table. The serial numbers are reset only when the ending number is reached or when the revision number is rolled.

Product	Starting Serial Number	Ending Serial Number
6121MFP_S, 110V Engine	10001	30000
6121MFP_N, 110V Engine	30001	99999
6121MFPV_S, 220V Engine	10001	30000
6121MFPV_N, 220V Engine	30001	99999

Example

UAT253072: Xerox Serial Number
UAT: Product Code for the Phaser 6121MFP, 110V printer
2 = Revision Level
53072 = Serial Number for 6121 N

Part Lists

Using the Parts List

- **ID No.:** The callout number from the exploded part diagram.
- **Name/Description:** The name of the part order 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.

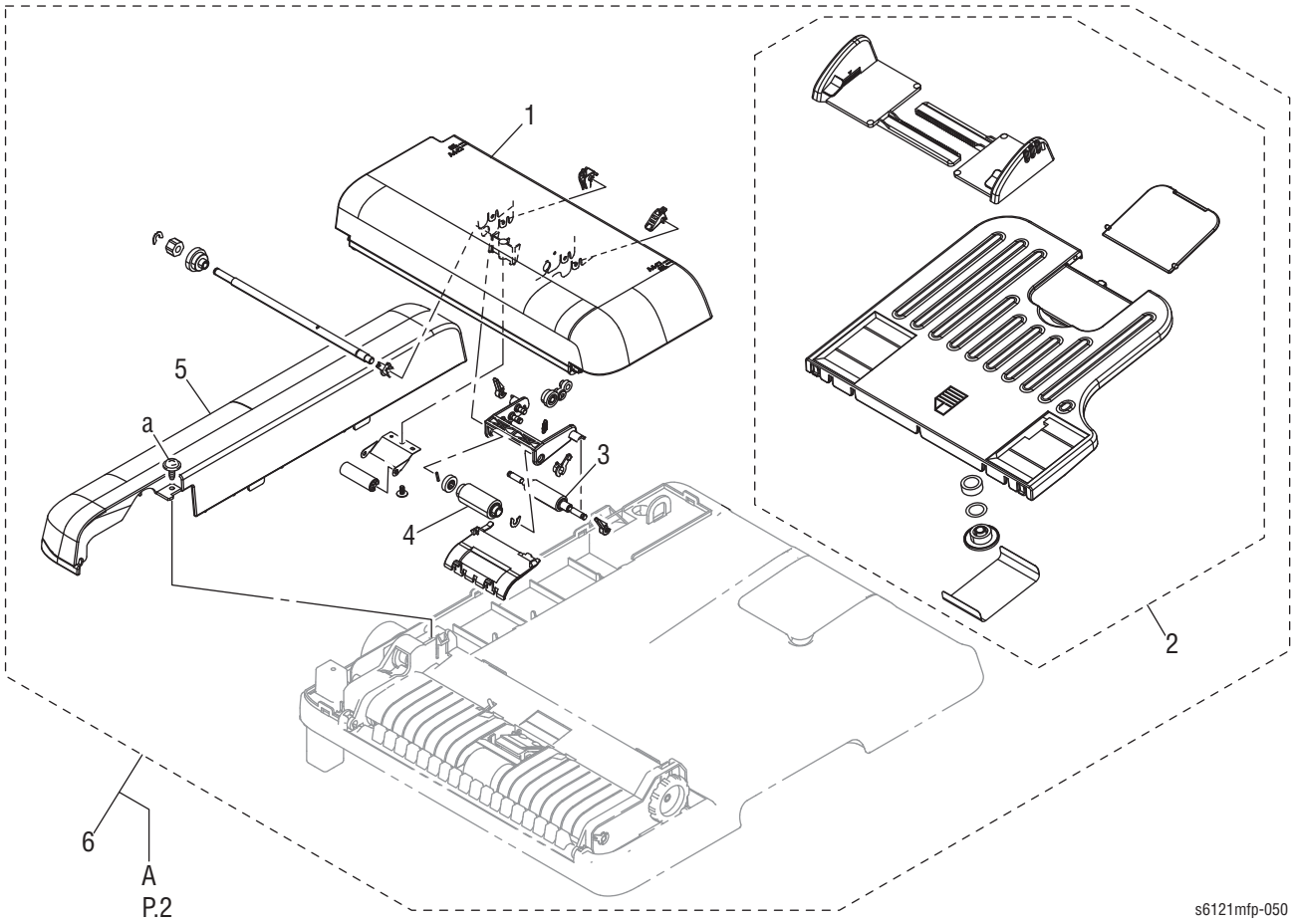
Abbreviations

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

Parts List Index

Part List 1.1 Automatic Document Feeder (1/2)

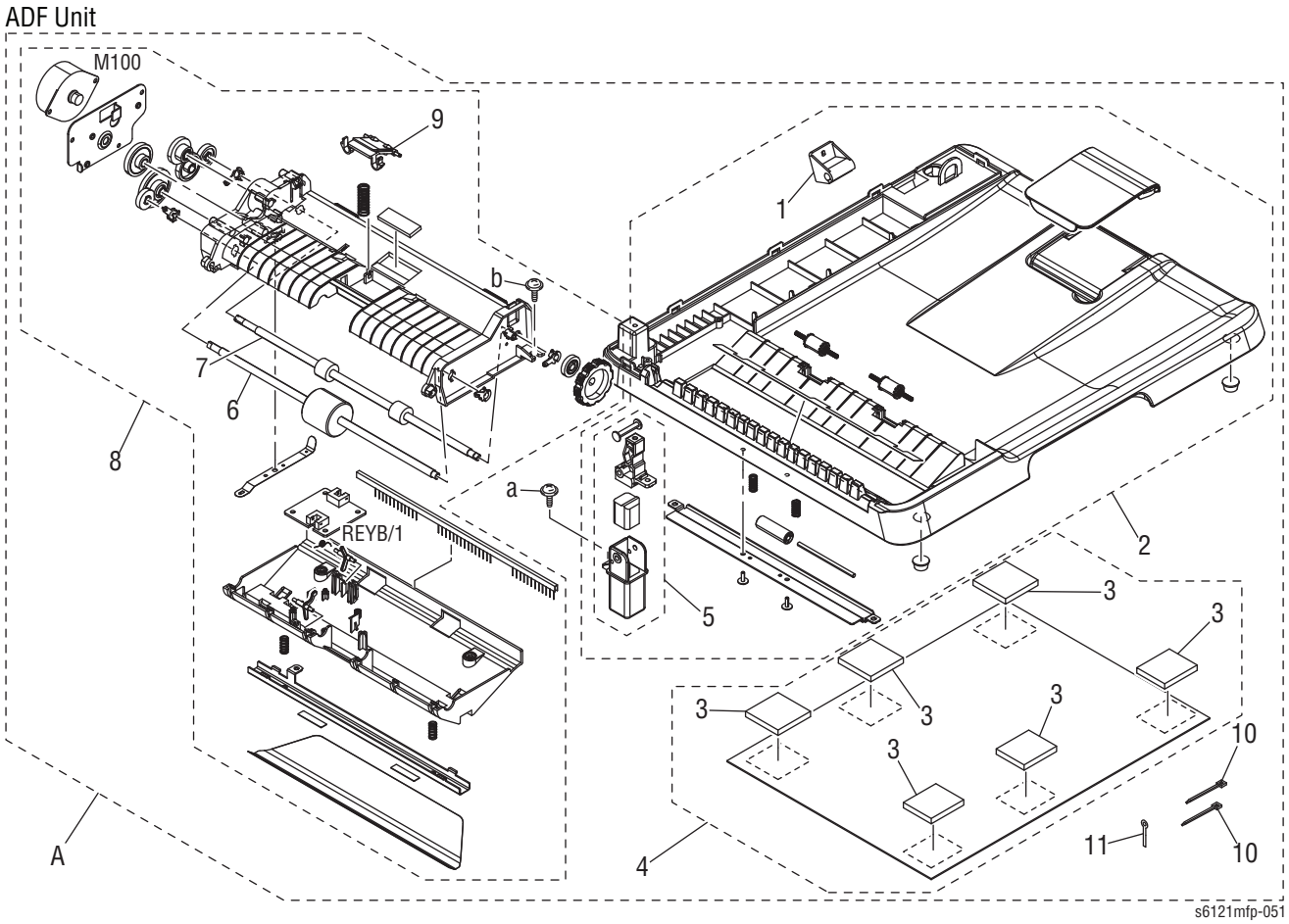
ADF Unit



Part List 1.1 Automatic Document Feeder (1/2)

Item	Part Name	Part Number
1	Top Cover	848E56890
2	Tray Assembly	—
3	Pick-up Roller	059E11000
4	Feed Roller	059E10990
5	Rear Cover	—
6	ADF Unit	017E17020

Part List 1.2 Automatic Document Feeder (2/2)

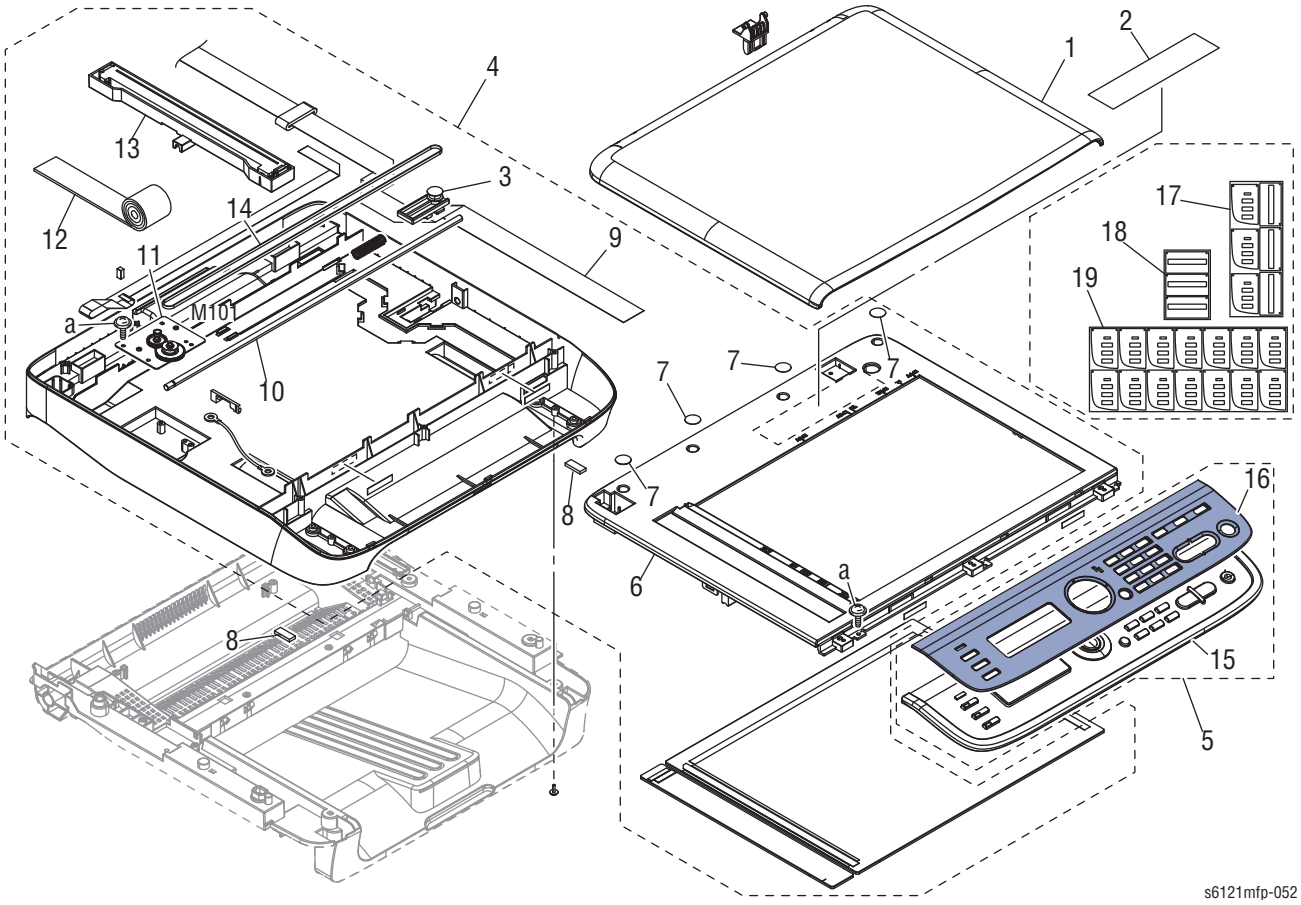


Part List 1.2 Automatic Document Feeder

Item	Part Name	Part Number
1	Hinge	—
2	Cover Assembly	—
3	Sponge	—
4	Pad	—
5	Hinge	—
6	Roller	—
7	Roller	—
8	Paper Take-Up Assembly	—
9	Pick Pad Assembly	019E81950
10	Cable Tie	—
11	Clamp	—

Part List 2.0 Scanner

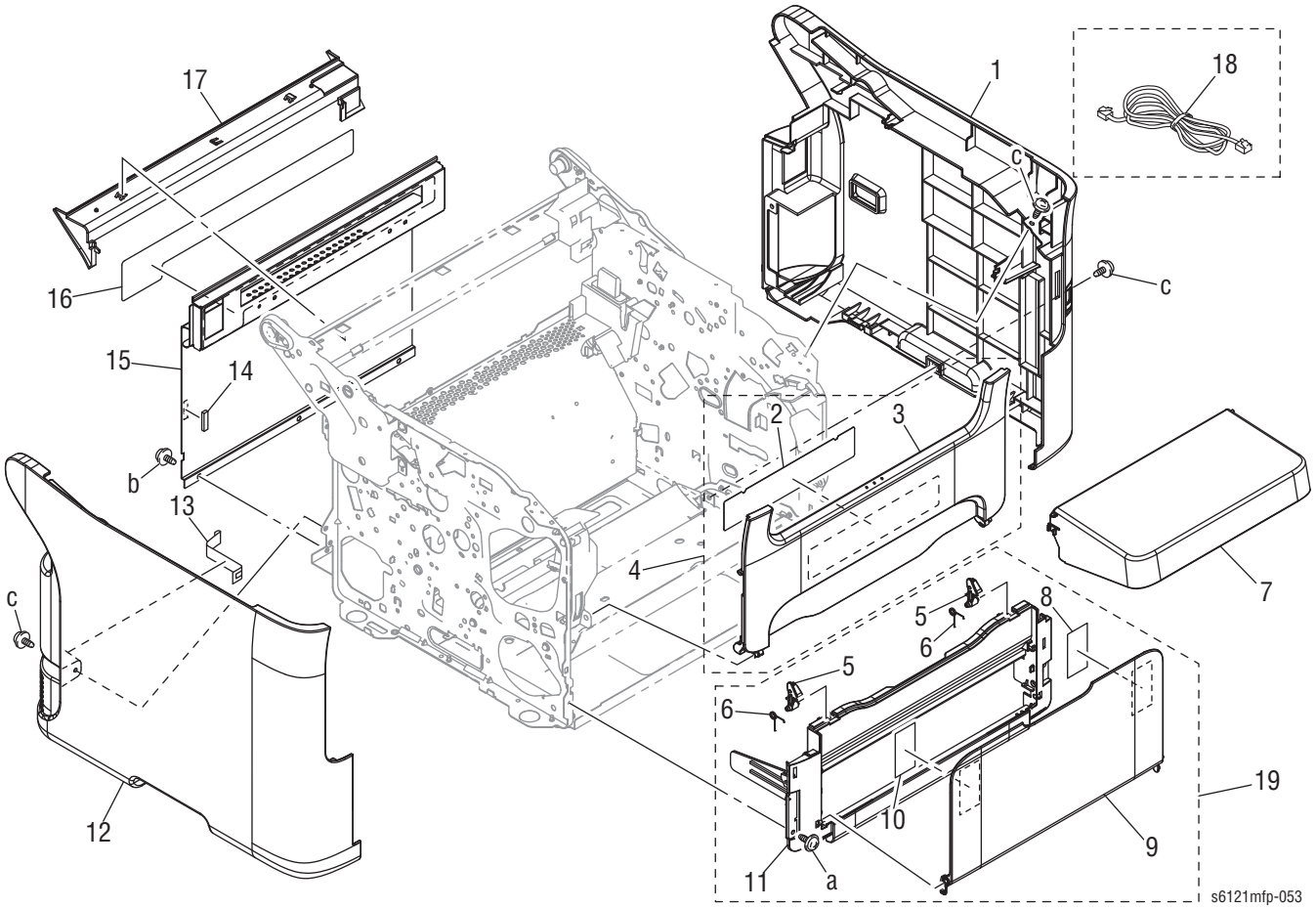
IR Section



Part List 2.0 Scanner

Item	Part Name	Part Number
1	Cover (Original) XC	—
2	Label Copy Prohibition	—
3	Pulley Assembly	—
4	Scanner Unit 4in1	109K02310
	Scanner Unit 3in1	109K02320
5	Control Panel (3in1) Assembly	848K42910
	Control Panel (4in1) Assembly	848K42920
6	Cover Assembly XC	—
	Cover Assembly XC	—
7	Sheet XC	—
8	Vibration Proof Part	—
9	Flat Cable	—
10	Shaft	—
11	Driving Assembly	—
12	Tape	—
13	CIS Assembly	—
14	Timing Belt	—
15	Control Panel (3in1)	—
	Control Panel (4in1)	—
16	4-in-1 Bezel	056E05460
	3-in-1 Bezel	056E05470
17	Phaser 6121MFP/N Bezel, 110V (4-in-1)	897E31830
18	Phaser 6121MFP/S Bezel, 110V (3-in-1)	897E31880
19	Phaser 6121MFP/N Bezel, 220V (4-in-1)	—

Part List 3.0 External Parts

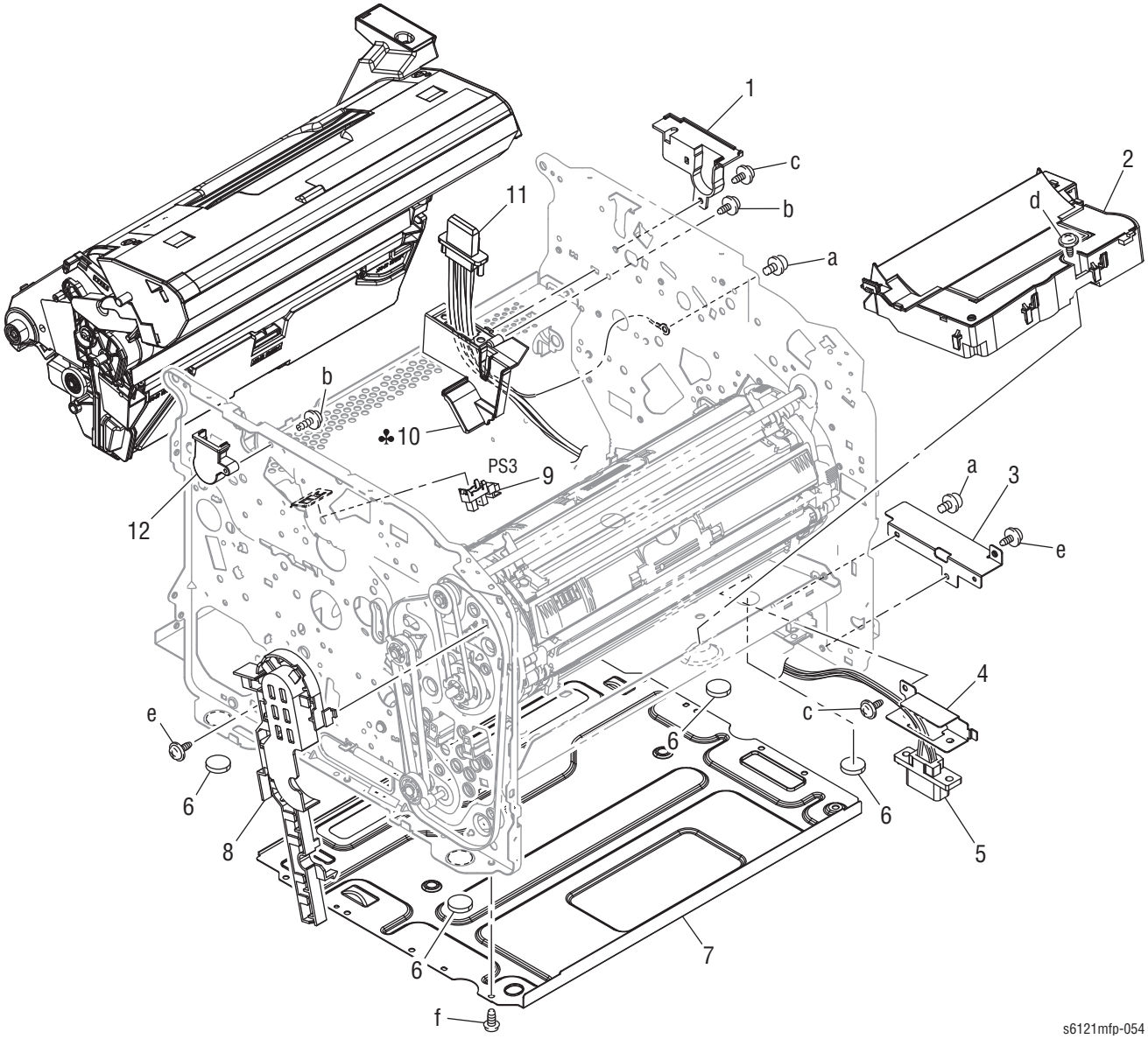


Part List 3.0 External Parts

Item	Part Name	Part Number
a	Screw[1] (silver, tap, 8 mm)	826E54950
b	Screw[1] (silver, tap, 6 mm)	826E54970
c	Screw[1] (metal, tap, 10 mm)	826E54980
1	Right Cover	848E56900
2	Sheet	—
3	Cover	—
4	Cover F Upper Assembly	—
5	Lever[1]	011E25460
6	Torsion Coil spring[1]	809E95490
7	Tray Cover	848E56940
8	Label	—
9	Tray	—
10	Label	—
11	Cover, Front	—
12	Left Cover	848E56930
13	Conductive Tape	—
14	Gasket	—
15	Cover Rear (Phaser 6121MFP/S)	—
	Cover Rear (Phaser 6121MFP/N/D	—
16	Seal	—
17	Cover Rear	—
18	Wire Harness Assembly	—
19	Cover F Lower Assembly	848E56920

1. Included in Hardware Kit, see page 9-54.

Part List 4.0 Main Frame Section

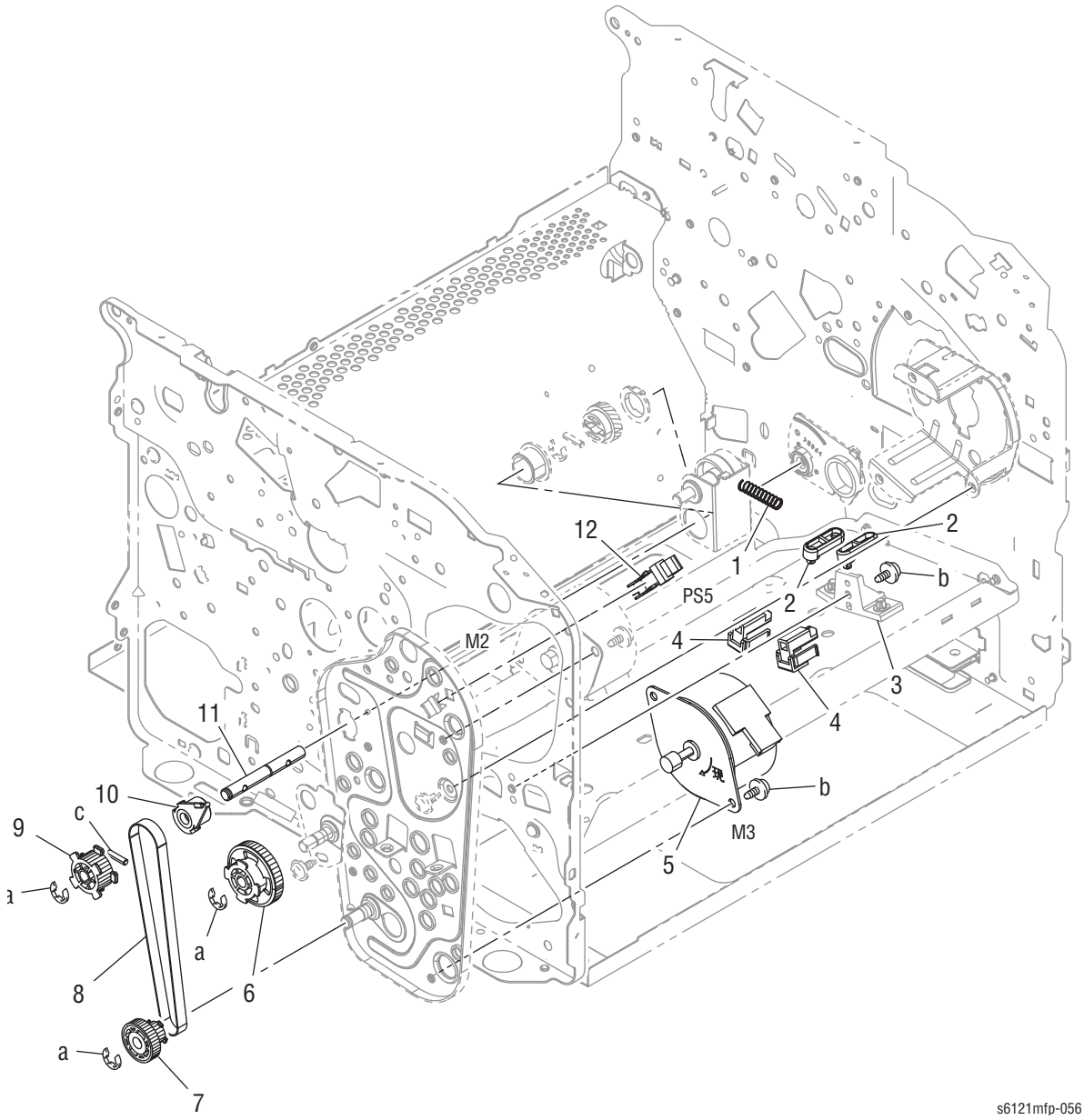


Part List 4.0 Main Frame Section

Item	Part Name	Part Number
a	Screw[1]	826E54960
c	Screw[1]	826E54970
e	Screw[1]	826E54980
1	Cover	—
2	Laser Unit	033K04760
3	Mounting Plate	—
4	Mounting Plate	—
5	Wiring[2]	—
6	Rubber Foot	—
7	Frame /Lower	—
8	Guide	—
9	2nd Image Transfer Retraction Sensor (PS3)[1]	130E18330
10	Holder	—
	Holder	—
11	Wiring[2]	—
12	Cover	—
13	Imaging Unit	108R00868

1. Included in Hardware Kit, see page 9-54.
2. Included in Wiring Kit, see page 9-55.

Part List 5.1 Rack/Rack Drive Section (1/2)

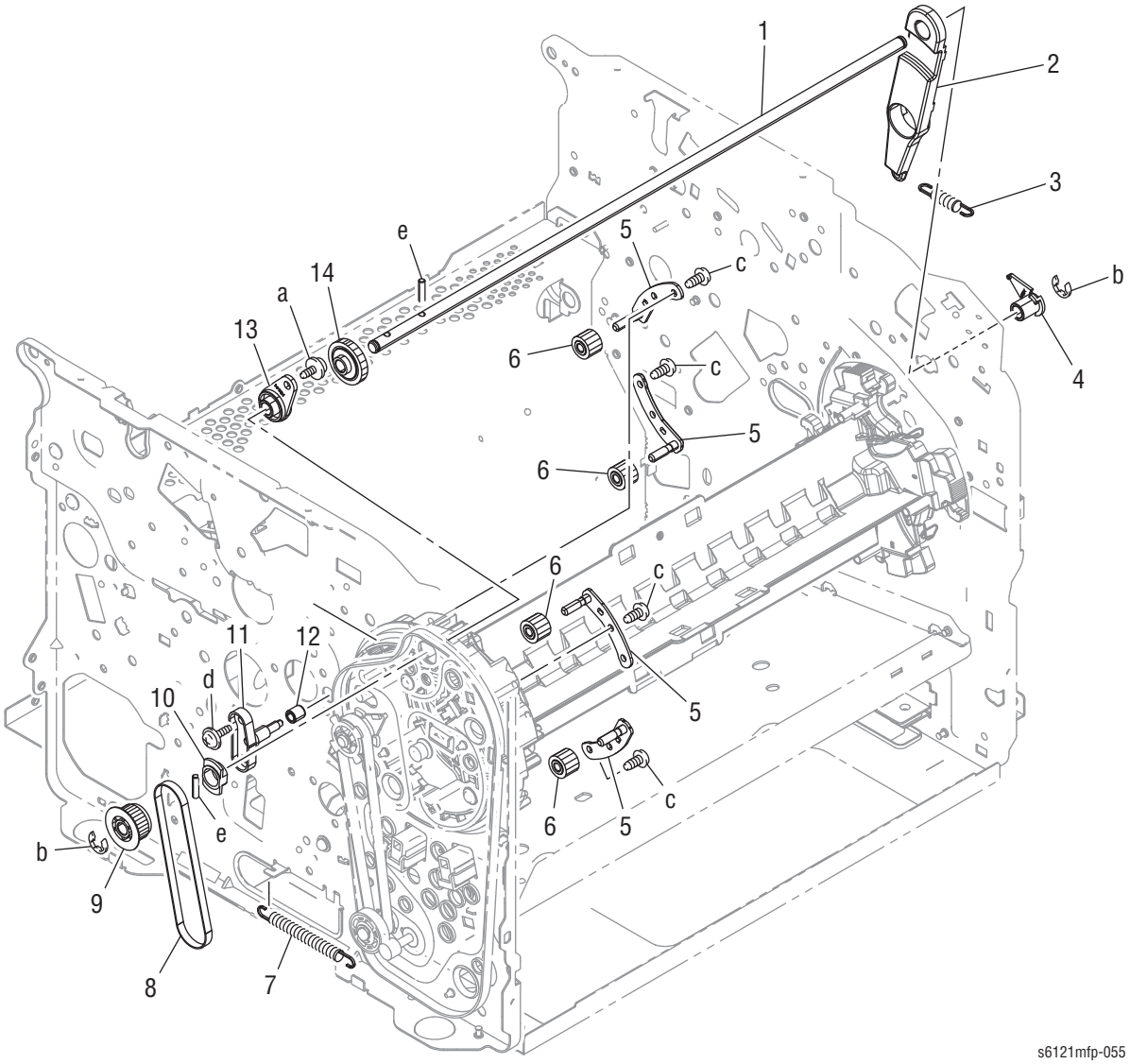


Part List 5.1 Rack/Rack Drive Section (1/2)

Item	Part Name	Part Number
b	Screw[1]	826E54980
c	Pin[1]	115E13100
1	Torsion Coil spring	—
2	Guide[1]	032E40590
3	Guide	—
4	Spacer[1]	014E68450
5	Developing Motor	127E16780
6	Gear 63T	—
7	Gear 40/18T	—
8	Timing belt 250L[1]	023E31780
9	Pulley 30T	—
10	Bushing	—
11	Shaft	—
12	Rack Position Sensor[1]	130E18330

1. Included in Hardware Kit, see page 9-54.

Part List 5.1 Rack/Rack Drive Section (2/2)

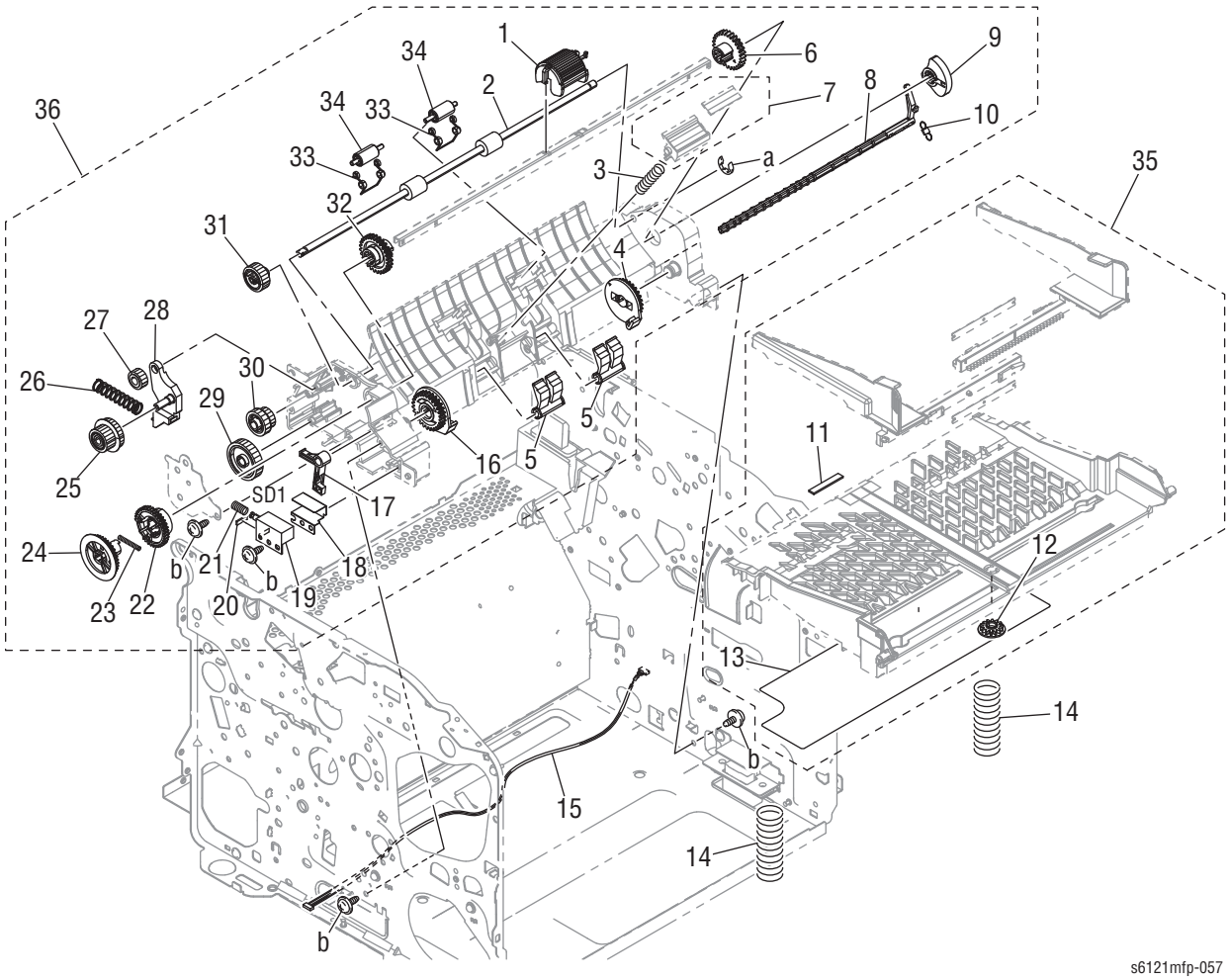


Part List 5.1 Rack/Rack Drive Section (2/2)

Item	Part Name	Part Number
a	Cup-head Tapping Screw SC tight 10 mm[1]	826E54980
b	E-ring[1]	115E13090
e	Pin[1]	115E13100
1	Shaft	—
2	Hold Part /HK	—
3	Pulling Coil Spring[1]	809E95500
4	Bushing[1]	013E42740
5	Fixing Plate Assembly	—
6	Gear 13T	—
7	Pulling Coil Spring[1]	809E95510
8	Timing Belt 192L[1]	023E31770
9	Pulley 28T	—
10	Bushing	—
11	Mounting Guide	—
12	Roll[1]	059E11010
13	Bushing[1]	016E20260
14	Gear 20T	—

1. Included in Hardware Kit, see page 9-54.

Part List 6.0 Paper Take-up Section

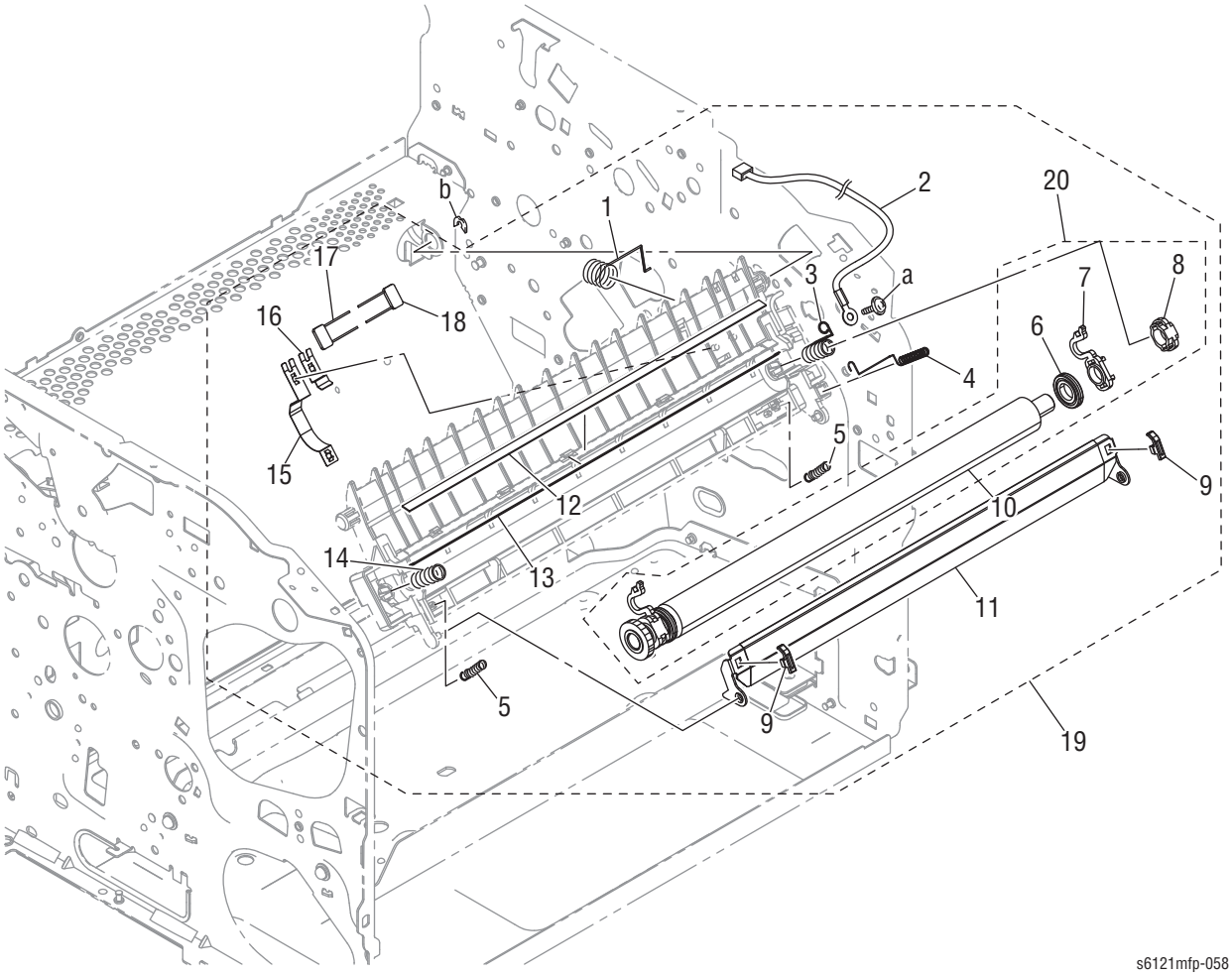


Part List 6.0 Paper Take-up Section

Item	Part Name	Part Number
1	Feed Roller	059E05460
2	Roller	—
3	Pressure Springs	—
4	Cam	—
5	Stopper	—
6	Gear 27T	—
7	Separation Pad	019E81920
8	Lever	—
9	Cam	—
10	Pulling Coil spring	—
11	Friction Sheet	—
12	Gear 14T	—
13	Seal	—
14	Compressing Spring[1]	809E95520
15	Wiring[2] (see “Wiring Kit” on page 9-55)	—
16	Cam	—
17	Lever	—
18	Protection Part	—
19	Tray 1 Paperfeed Solenoid (SD1)	604K61490
20	Seal	—
21	Compressing Spring	—
22	Gear 36T	—
23	Compressing Spring	—
24	Gear 36T	—
25	Gear 26/20T	—
26	Compressing Coil Spring	—
27	Gear 15T	—
28	Lever	—
29	Gear 27T	—
30	Gear 17/17T	—
31	Gear 22T	—
32	Gear 27T	—
33	Conveyance Spring	—
34	Conveyance Roll	—
35	Lifting Plate Assembly	815K12690
36	Feed Assembly	059K70800

1. Included in Hardware Kit, see page 9-54.
2. Included in Wiring Kit, see page 9-55.

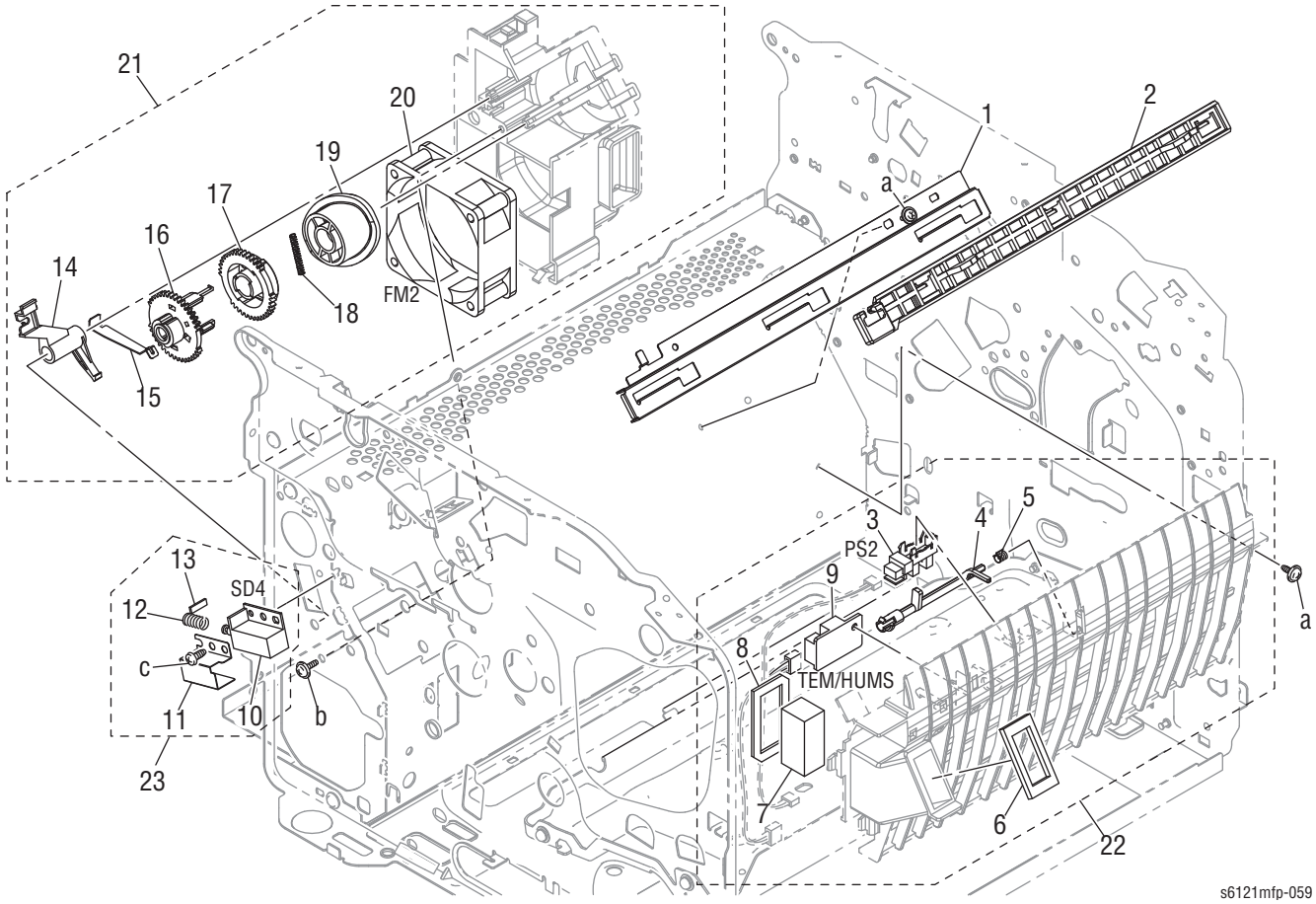
Part List 7.1 Transfer Section (1/2)



Part List 7.1 Transfer Section

Item	Part Name	Part Number
1	Contact	—
2	Wiring	—
3	Contact	—
4	Contact	—
5	Pressure Spring	—
6	Roll	—
7	Holder	—
8	Bushing	—
9	Spacer	—
10	Transfer Roller	—
11	Guide Plate	—
12	Neutralizing Member	—
13	Contact	—
14	Contact	—
15	Contact	—
16	Contact	—
17	Resistor	—
18	Fixed Power Resistors	—
19	2nd Transfer Assembly	—
20	Transfer Roller Assembly	604K61470

Part List 7.2 Transfer Section (2/2)

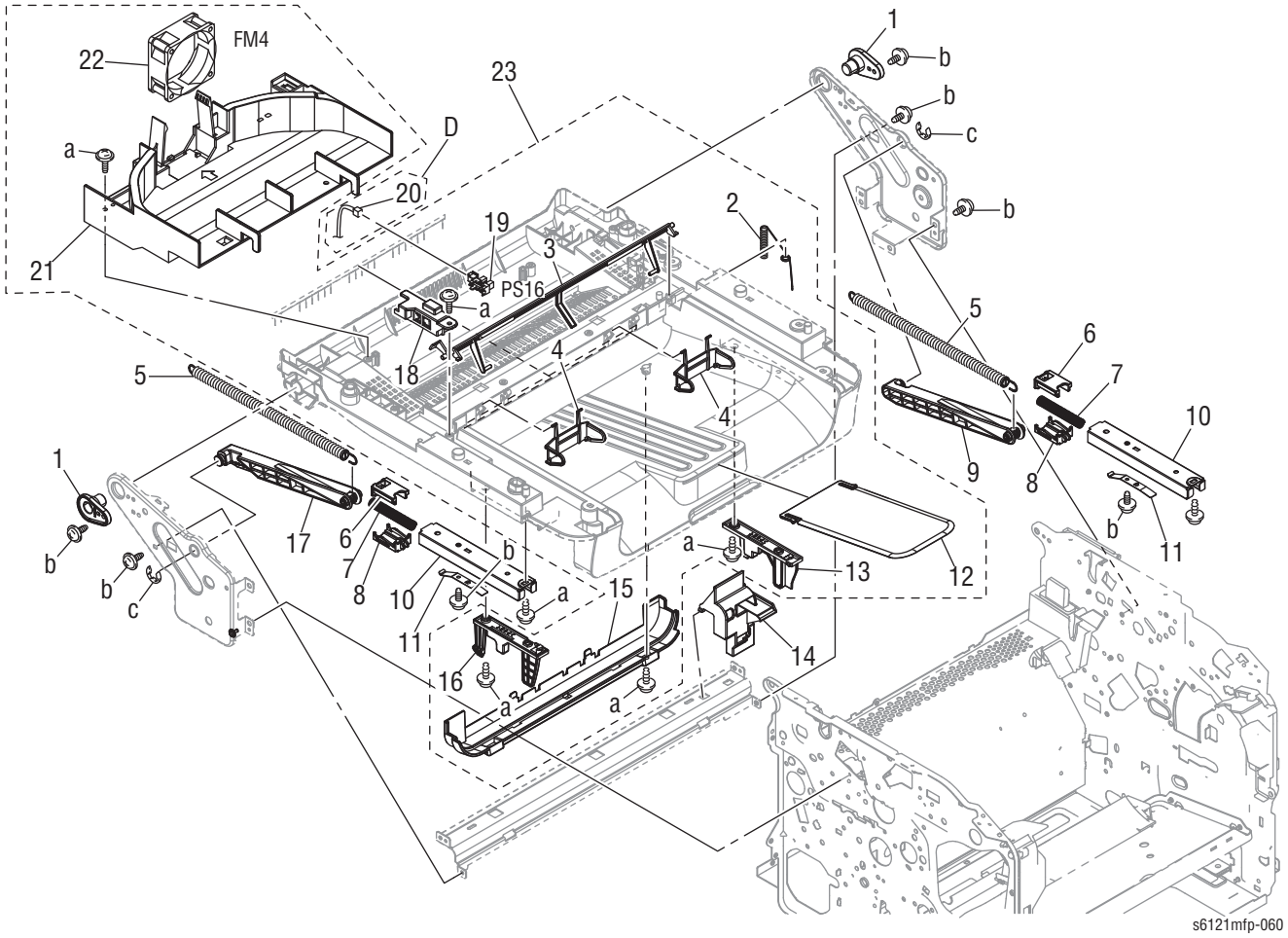


Part List 7.2 Transfer Section

Item	Part Name	Part Number
1	Mounting Plate	—
2	Slide Plate	—
3	Registration Sensor[1]	130E18330
4	Actuator	—
5	Torsion Coil Spring	—
6	Seal /Front	—
7	Filter	—
8	Seal /Rear	—
9	Humidity Sensor	130E18300
10	2nd Image Transfer Solenoid	See #23
11	Protection Part	—
12	Compressing Spring	—
13	Seal	—
14	Lever	—
15	Plate Spring	—
16	Gear 42T	—
17	Gear 42T	—
18	Compressing Spring	—
19	Cam	—
20	Ventilation Fan Motor	127E16790
21	Guide Assembly, Fan Duct	032K09830
22	Guide Assembly, Paper Path	032K09840
23	2nd Image Transfer Solenoid Assembly	604K61490

1. Included in Hardware Kit, see page 9-54.

Part List 8.0 Paper Exit Section

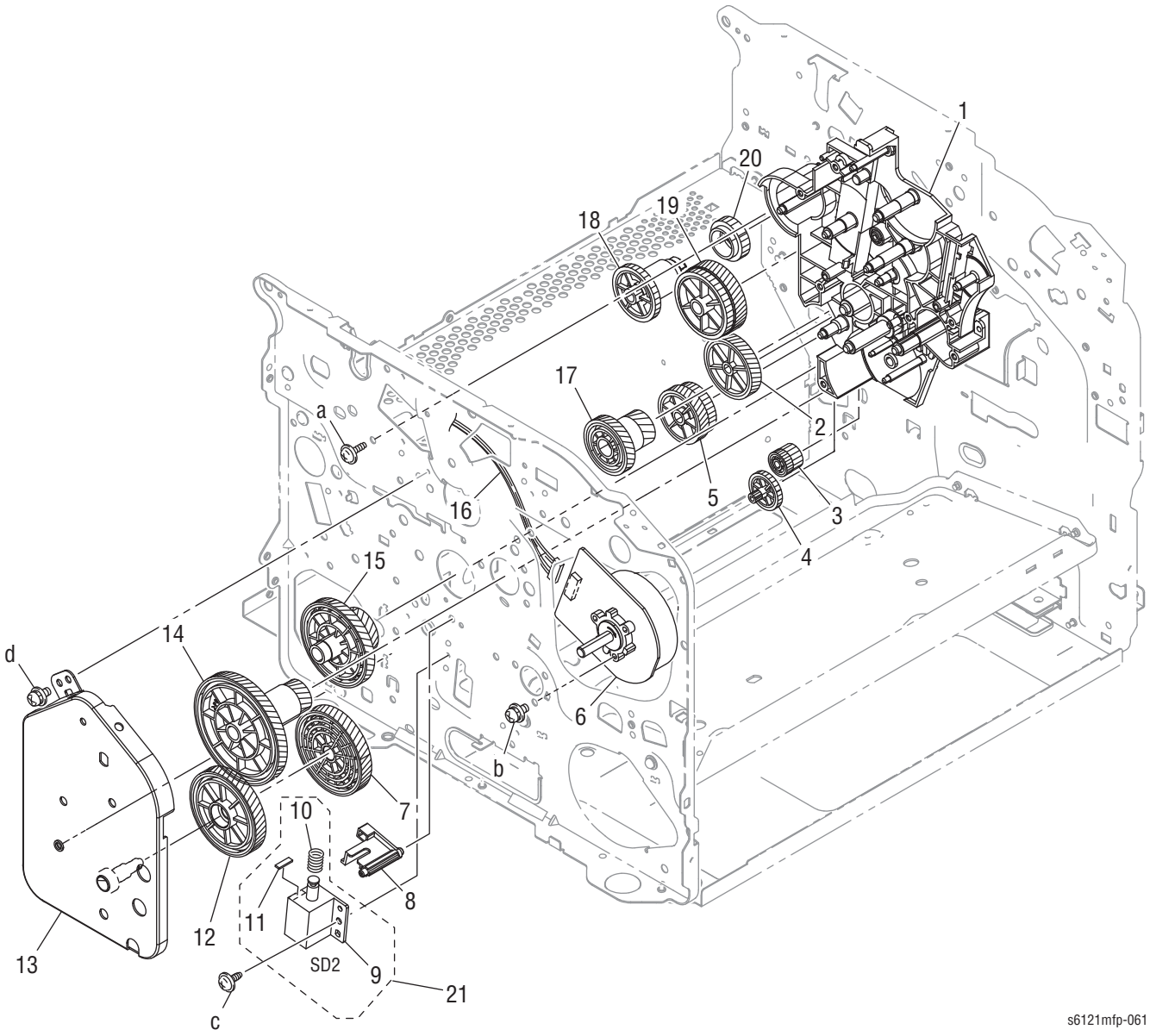


Part List 8.0 Paper Exit Section

Item	Part Name	Part Number
b	Screw[1]	826E54980
c	E-ring[1]	115E13110
1	Bushing /Right[1]	016E20270
2	Ground Spring	—
3	Actuator	—
4	Holding Guide	—
5	Pulling Coil spring	—
6	Holder	—
7	Compressing Coil Spring	—
8	Holder	—
9	Balancer /Right	—
10	Rail	—
11	Plate Spring	—
12	Paper Exit Tray	—
13	Lever /Right	—
14	Guide	—
15	Cover	—
16	Lever /Left	—
17	Balancer /Right	—
18	Cover	—
19	Media Full Sensor[2]	130E18330
20	Wiring[2] (see “Wiring Kit” on page 9-55)	—
21	Duct	—
22	Exit Tray Cooling Fan	—
23	Upper Cover	—

1. Included in Hardware Kit, see page 9-54.
2. Include in Wiring Kit, see page 9-55.

Part List 9.1 Drive Section (1/2)

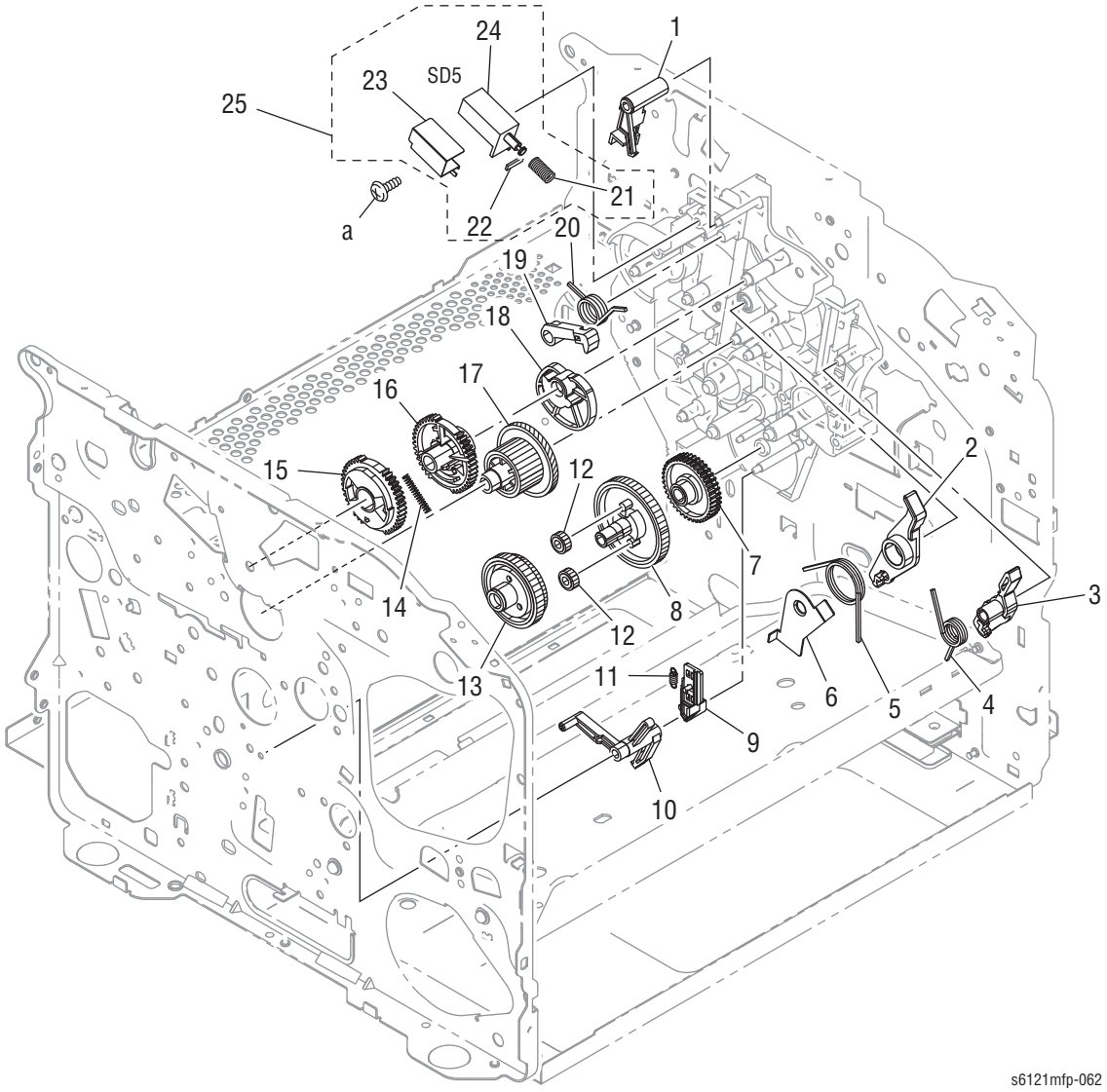


Part List 9.1 Drive Section (1/2)

Item	Part Name	Part Number
1	Holder	—
2	Gear 40T	—
3	Gear 15/26T	—
4	Gear 13/25T	—
5	Gear 34/35T	—
6	Main Motor	127E16800
7	Gear 91T	—
8	Lever	—
9	Registration Roller Solenoid	—
10	Compressing Coil spring	—
11	Seal	—
12	Gear 91T	—
13	Mounting Plate Assembly	—
14	Gear 20/117T	—
15	Gear 28/91T	—
16	Wiring[1]	—
17	Gear 36/20T	—
18	Gear 30T	—
19	Gear 37/45T	—
20	Gear 21T	—
21	Registration Roller Solenoid Assembly	604K61480

1. Include in Wiring Kit, see page 9-55.

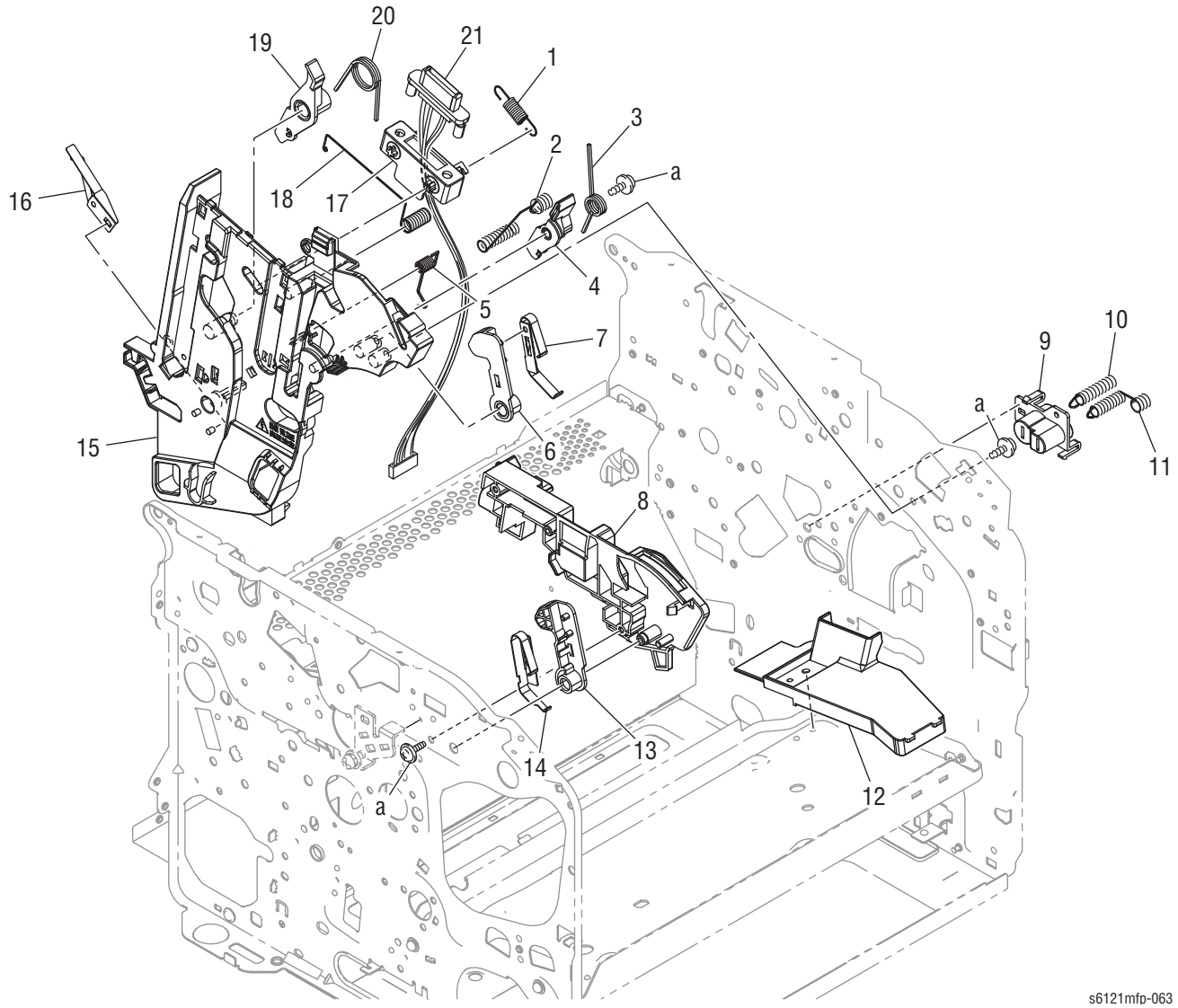
Part List 9.2 Drive Section (2/2)



Part List 9.2 Drive Section (2/2)

Item	Part Name	Part Number
1	Lever	—
2	Lever	—
3	Lever	—
4	Torsion Coil Spring /Left	—
5	Torsion Coil Spring	—
6	Mounting Plate	—
7	Ratchet	—
8	Gear 52T	—
9	Lever	—
10	Lever	—
11	Pulling Spring	—
12	Gear 17T	—
13	Gear 54/42T	—
14	Compressing Spring	—
15	Gear 45T	—
16	Gear 45T	—
17	Gear 27/40T	—
18	Cam	—
19	Lever	—
20	Torsion Coil Spring	—
21	Compressing Spring	—
22	Seal	—
23	Protection Part	—
24	Cleaning Blade Solenoid	—
25	Cleaning Blade Solenoid Assembly	604K61490

Part List 10.0 Right Guide Section

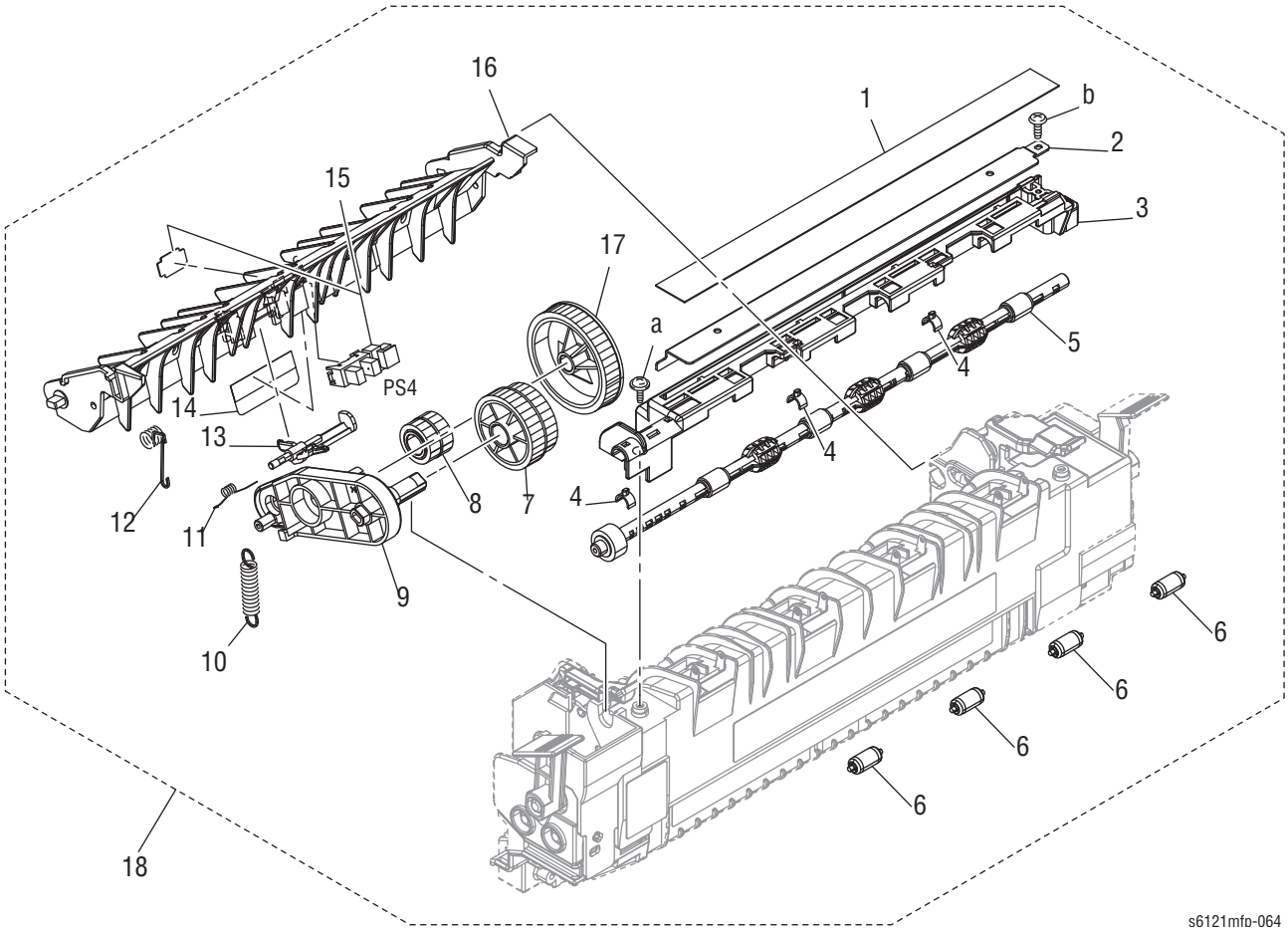


Part List 10.0 Right Guide Section

Item	Part Name	Part Number
1	Pulling Coil Spring	809E95470
2	Contact	—
3	Torsion Coil spring /Right	—
4	Lever	—
5	Contact	—
6	Fixing Lever /Right	—
7	Plate Spring /Right	—
8	Guide /Left	—
9	Holder	—
10	Contact[1]	115E13120
11	Contact	—
12	Guide	—
13	Fixing Lever /Left	—
14	Spring	—
15	Guide /Right	—
16	Spring	—
17	Mounting Plate	—
18	Contact	—
19	Lever	—
20	Torsion Coil Spring	—
21	Wiring[2]	—

1. Included in Hardware Kit, see page 9-54.
2. Included in Wiring Kit, see page 9-55.

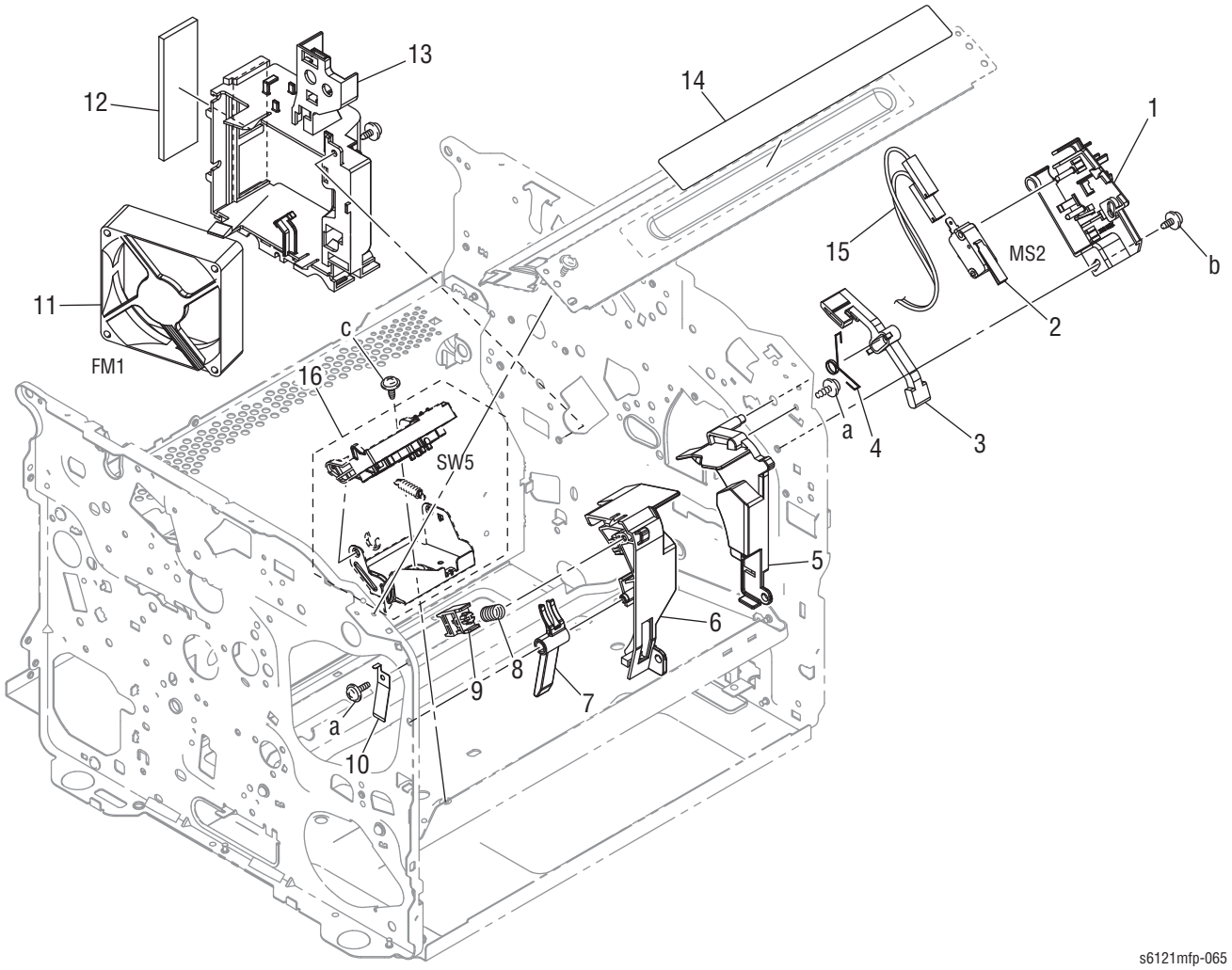
Part List 11.0 Fuser



Part List 11.0 Fuser Section

Item	Part Name	Part Number
1	Seal	—
2	Reinforce Plate	—
3	Holder	—
4	Bushing	—
5	Paper Exit Roller	—
6	Roll	—
7	Gear 32/29T	—
8	Gear 16/16T	—
9	Lever	—
10	Pulling Coil spring	—
11	Spring	—
12	Torsion Coil spring	—
13	Actuator	—
14	Seal	—
15	Exit Sensor	—
16	Guide Part	—
17	Gear 44T	—
18	Fuser, 110V	126E02770
	Fuser, 220V	126E02780

Part List 12.0 Cooling Section

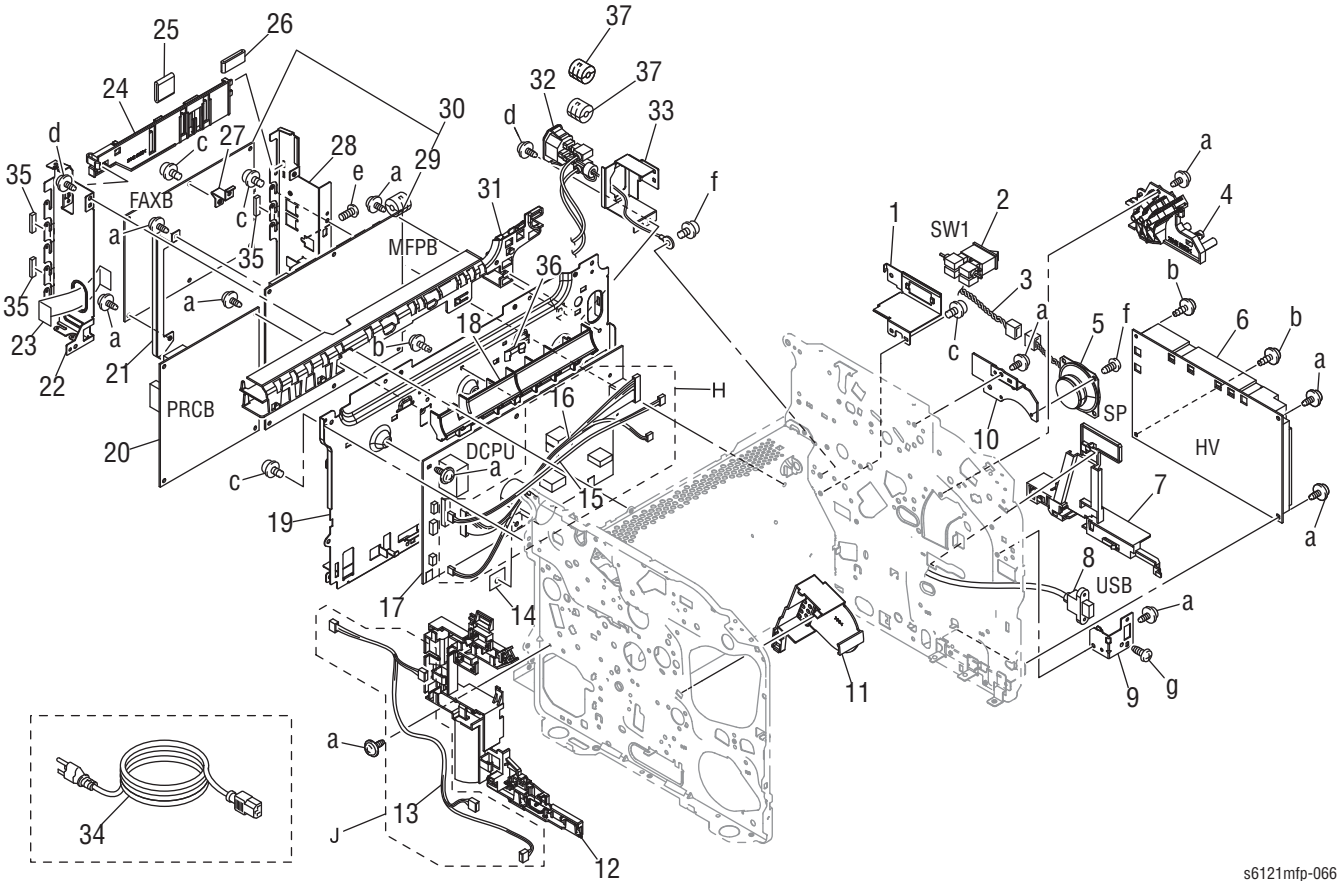


Part List 12.0 Cooling Section

Item	Part Name	Part Number
1	Mounting Plate	—
2	Front Door Switch	110E21120
3	Lever	—
4	Torsion Coil Spring	—
5	Guide	—
6	Guide	—
7	Lock Lever	—
8	Compressing Coil Spring	—
9	Lock Claw	—
10	Ground Plate	—
11	Power Supply Fan Motor	127E16810
12	Filter	—
13	Duct	—
14	Label Jam Remove	—
15	Wiring[1] (see “Wiring Kit” on page 9-55)	—
16	CSIC Contact Assembly	115K02550

1. Included in Wiring Kit, see page 9-55.

Part List 13.0 Electrical Components Section



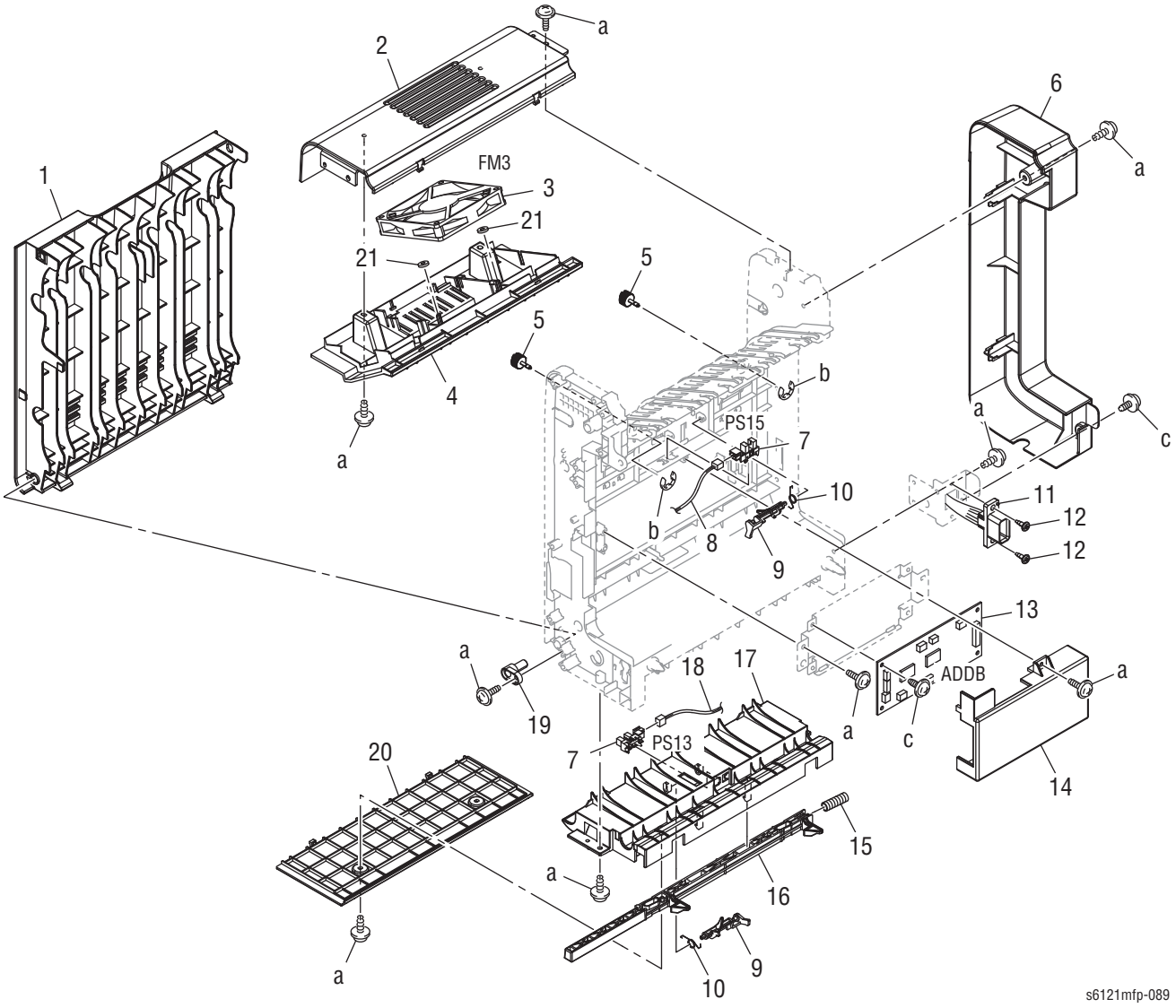
Part List 13.0 Electrical Components Section

Item	Part Name	Part Number
1	Mounting Plate	—
2	Rocker Switch	110E21130
3	Relay Harness	—
4	Rack Contact Assembly	—
5	Speaker	130E18310
6	High Voltage Board	105K36180
7	Guide	—
8	USB Cable	—
9	Mounting Plate	—
10	Mounting Plate	—
11	Cover	—
12	Guide	—
13	Wiring[1]	—
14	Insulating Seal	—
15	Wiring[1]	—
16	Wiring[1]	—
17	110V Power Supply	105E24470
	220V Power Supply	105E24480
18	Duct	—
19	Mounting Plate	—
20	Engine Control Board	960K58870
21	Mounting Plate	—
22	Shield Plate	—
23	Wiring	—
24	Guide	—
25	Ferrite Core	—
26	Ferrite Core	—
27	Mounting Plate	—
28	Mounting Plate	—
	Mounting Plate	—
29	Image/Fax Processor Board (Phaser 6121MFP/N/D) 4-in-1	960K58880
30	Image Processor Board (Phaser 6121MFP/S) 3-in-1	960K58890
31	Guide Plate	—
32	Wiring	—
33	Mounting Plate	—
34	Power Cord	—
	Power Cord	—
35	Gasket	—
36	Duct	—
37	Ferrite Core	—

1. Included in Wiring Kit, see page 9-55.

Duplex Unit

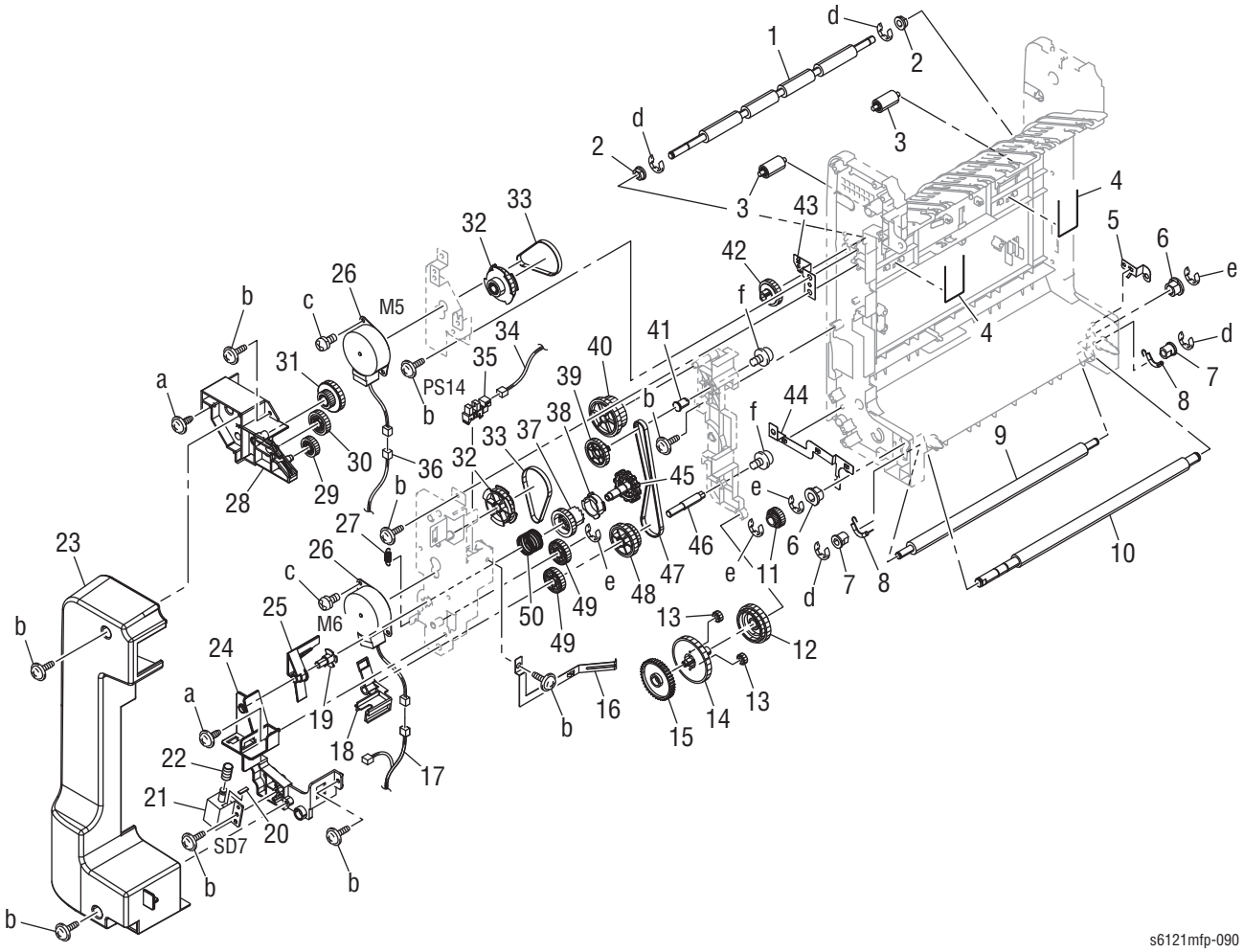
Part List 14.1 Duplex Unit (1/2)



Part List 14.1 Duplex Unit (1/2)

Item	Part Name	Part Number
	Duplex Unit	084K37140
1	Cover	—
2	Cover	—
3	Fan	—
4	Upper Cover	—
5	Screw	—
6	Left Cover	—
7	PS15 - Transport Sensor PS13 - Loop Sensor	130E18330
8	Wire Harness Assembly	—
9	Actuator	—
10	Torsion Spring	—
11	Wire Harness Assembly	—
12	Shoulder Screw	—
13	PWB Assembly(	—
14	Cover	—
15	Compressing Spring	—
16	Lever	—
17	Lower Cover	—
18	Wire Harness Assembly	—
19	Guide Part	—
20	Cover	—
21	Cushion	—

Part List 14.2 Duplex Unit (2/2)



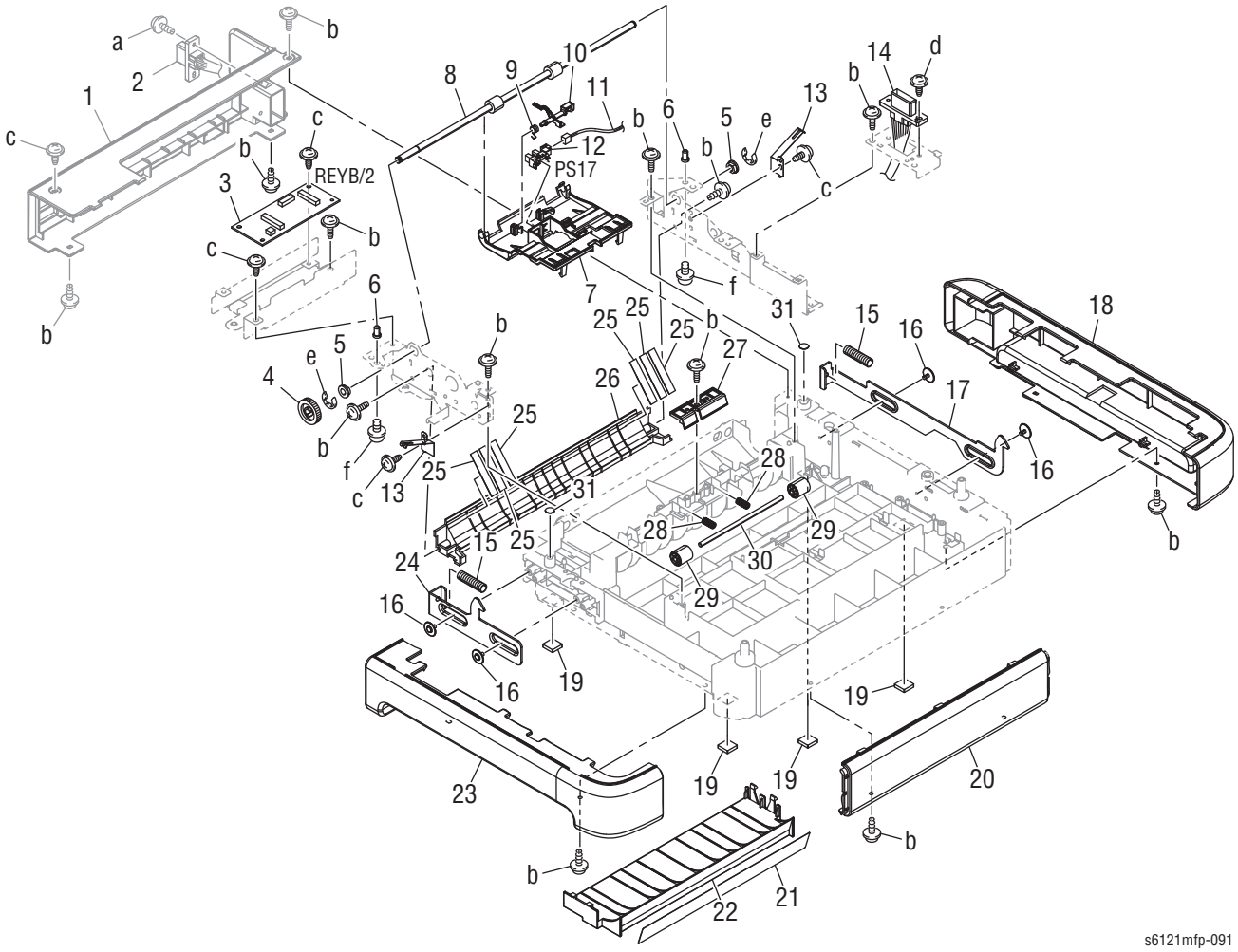
Part List 14.2 Duplex Unit (2/2)

Item	Part Name	Part Number
1	Roller	—
2	Bushing	—
3	Roll	—
4	Spring	—
5	Ground Plate, Right	—
6	Bushing	—
7	Bushing	—
8	Tension Spring	—
9	Roller	—
10	Roller	—
11	Gear 20T	—
12	Gear 54/42T	—
13	Gear 17T	—
14	Gear 52T	—
15	Ratchet	—
16	Ground Spring	—
17	Wire Harness Assembly	—
18	Lever	—
19	Shaft	—
20	Seal	—
21	Conveyance Solenoid	—
22	Compressing Coil Spring	—
23	Right Cover	—
24	Registration Holder	—
25	Lever	—
26	Motor	—
27	Pulling Coil	—
28	Holder	—
29	Gear 16T	—
30	Gear 20T	—
31	Gear14/26T	—
32	Pulley 14T	—
33	Timing Belt 138L	—
34	Wire Harness Assembly	—
35	Photo Interrupter	—
36	Wire Harness Assembly	—
37	Gear 30T	—
38	Pulley	—
39	Gear 20/24T	—

Part List 14.2 Duplex Unit (2/2) (continued)

Item	Part Name	Part Number
40	Gear 28/34T	—
41	Shaft	—
42	Gear 22T	—
43	Ground Plate	—
44	Ground Plate	—
45	Knob	—
46	Shaft	—
47	Timing Belt 254L	—
48	Gear 36/37T	—
49	Gear 26T	—
50	Compressing Coil Spring	—

Part List 14.3 Duplex Base Unit



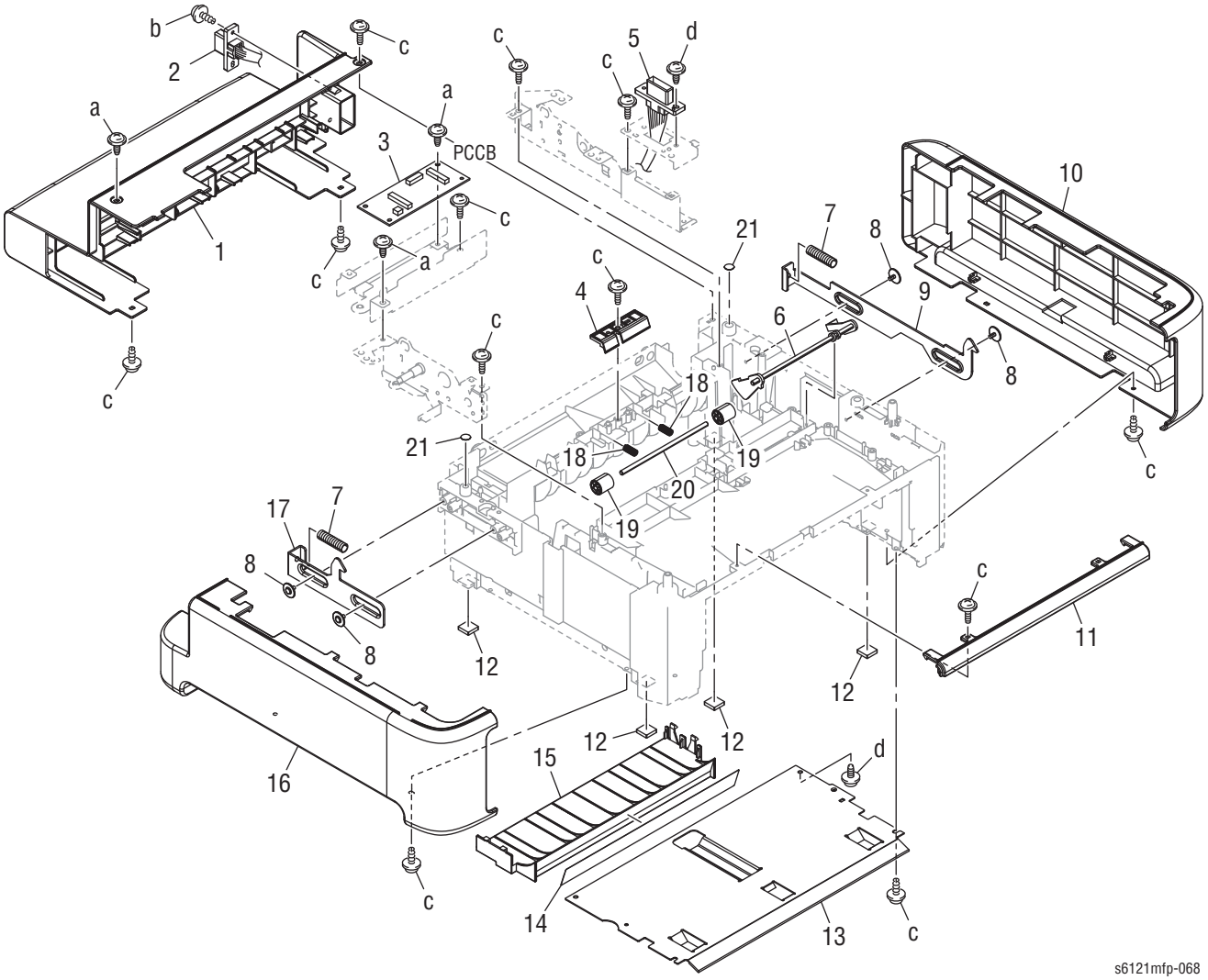
Part List 14.3 Duplex Base Unit

Item	Part Name	Part Number
1	Rear Cover	—
2	Wire Harness Assembly	—
3	PWB Assembly	—
4	Gear 22T	—
5	Bushing	—
6	Positioning Shaft	—
7	Guide Part	—
8	Roller	—
9	Torsion Spring	—
10	Actuator	—
11	Wire Harness Assembly	—
12	Photo Interrupter[1]	—
13	Earth Ground	—
14	Wire Harness Assembly	—
15	Compressing Spring	—
16	Screw	—
17	Lever	—
18	Right Cover	—
19	Rubber Foot	—
20	Front Cover	—
21	Guide	—
22	Guide Plate	—
23	Left Cover	—
24	Lever	—
25	Guide	—
26	Guide	—
27	Guide	—
28	Pressure Spring	—
29	Roll	—
30	Shaft	—
31	Spacer	—

1. Included in Hardware Kit, see page 9-54.

500-Sheet Tray Option

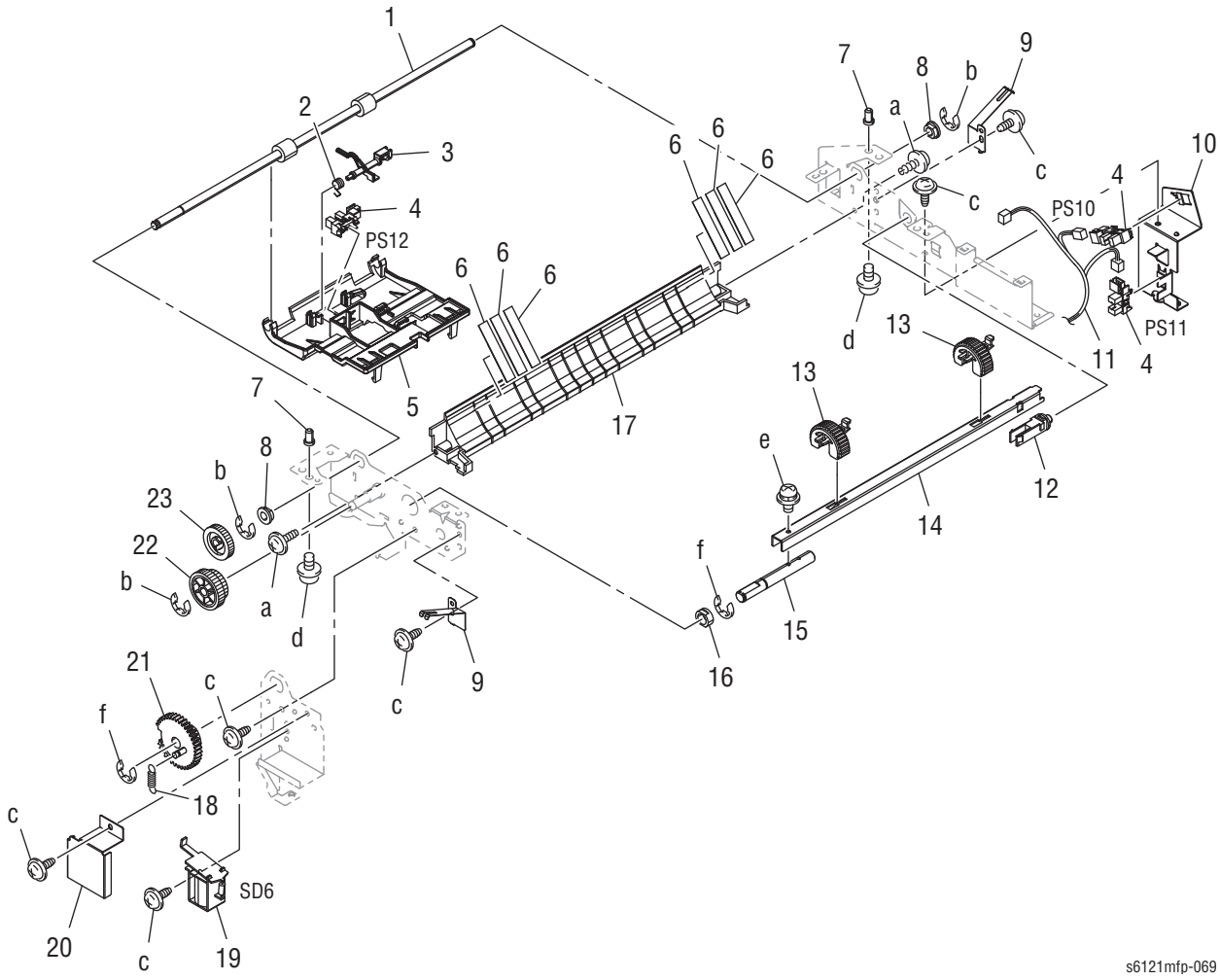
Part List 15.1 500-Sheet Tray (1/2)



Part List 15.1 500-Sheet Tray (1/2)

Item	Part Name	Part Number
	500 Sheet Tray (A4)	050E29010
	500 Sheet Tray (Letter)	050E29020
1	Rear Cover	—
2	Wire Harness Assembly	—
3	PWB Assembly	—
4	Guide	—
5	Wire Harness Assembly	—
6	Actuator	—
7	Compressing Spring	—
8	Screw	—
9	Lever	—
10	Right Cover	—
11	Front Cover	—
12	Rubber Foot	—
13	Reinforce Plate	—
14	Guide	—
15	Guide Plate	—
16	Left Cover	—
17	Lever	—
18	Pressure Spring	—
19	Roll	—
20	Shaft	—
21	Spacer	—

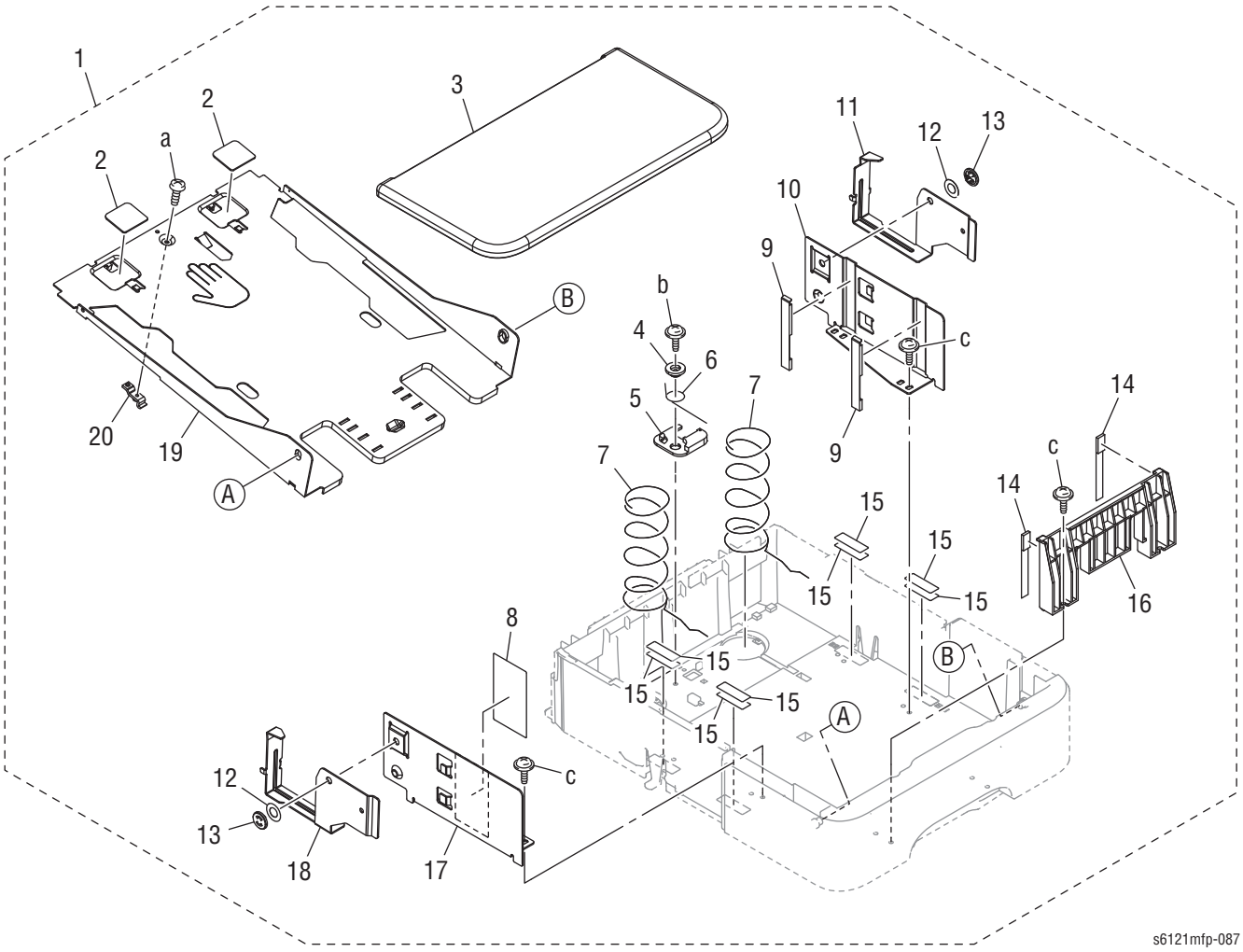
Part List 15.2 500-Sheet Tray (2/2)



Part List 15.2 500-Sheet Tray (2/2)

Item	Part Name	Part Number
1	Roller	—
2	Torsion Spring	—
3	Actuator	—
4	Transport Sensor	130E18330
5	Guide Part	—
6	Guide	—
7	Positioning Shaft	—
8	Bushing	—
9	Earth Ground	—
10	Mounting Plate	—
11	Wire Harness Assembly	—
12	Shaft	—
1	Roller	—
14	Bracket	—
15	Shaft	—
16	Bushing	—
17	Guide	—
18	Tension Spring	—
19	Solenoid	—
20	Cover	—
21	Gear 38T	—
22	Gear 20/26T	—
23	Gear 22T	—

Part List 15.3 500-Sheet Feeder Tray



Part List 15.3 500-Sheet Feeder Tray

Item	Part Name	Part Number
1	Cassette Assembly	—
2	Friction Plate	—
3	Cover	—
4	Collar	—
5	Cam	—
6	Torsion Spring	—
7	Pressure Spring	—
8	Label	—
9	Cushion	—
10	Regulating Plate	—
11	Separator	—
12	Washer	—
13	Pin	—
14	Cushion	—
15	Spacer	—
16	Regulating Plate, Rear	—
17	Regulating Spring	—
18	Separator	—
19	Lifting Plate	—
20	Lock Lever	—

Xerox Supplies and Accessories

Consumable and Maintenance Items

Description	Part Number
Toner Cartridge US/EU 2.5K (K)	106R01469
Toner Cartridge DMO 1.0K (K)	106R01476
Toner Cartridge US/EU 2.5K (C)	106R01466
Toner Cartridge DMO 2.5K (C)	106R01473
Toner Cartridge US/EU 2.5K (M)	106R01467
Toner Cartridge DMO 2.5K (M)	106R01474
Toner Cartridge US/EU 2.5K (Y)	106R01468
Toner Cartridge DMO 2.5K (Y)	106R01475

Customer-replaceable Service Items

Parts List Reference	Description	Part Number
PL11.0.18 PL11.0.18	Fuser 120V Fuser 220V	126E02770 126E02780
PL4.0.13	Imaging Unit	108R00868
604K61470	Transfer Roller Kit	604K61470

Service Kits

Service Kits provide spare parts normally associated with larger assemblies.

Hardware Kit

Hardware Kit

Description	Part Number
Hardware Kit	**604K61500**
Lever	011E25460
Torsion, Coil Spring	809E95490
Cup-head Tapping Screw SC tight, 8mm	826E54950
Pan-head Screw, 6mm	826E54960
Cup-head Tapping Screw SC tight round shape, 6mm	826E54970
Cup-head Tapping Screw SC tight, 10mm	826E54980
Pulling, Coil Spring	809E95500
Bearing	013E42740
Pulling, Coil Spring	809E95510

Hardware Kit (continued)

Description	Part Number
Time Belt	023E31770
Roll	059E11010
Bushing	016E20260
E-ring	115E13090
Pin	115E13100
Guide	032E40590
Spacer	014E68450
Time Belt	023E31780
Compression, Coil Spring	809E95520
Bushing	016E20270
E-ring	115E13110
Spring, Contact	115E13120
Photo Interrupt Sensor	130E18330

Wiring Kit

The wiring kit contains the following components.
Wiring Kit, Part Number 604K61510

Part List	Item Number(s)
PL4.0	13
PL6.0	15
PL8.0	20
PL9.1	16
PL10.0	21
PL12.0	15
PL13.0	13, 15, 16

Wiring

In this chapter...

Chapter 10

Plug/Jack Designations and Locator Diagrams

This chapter contains the plug/jack designators, locator diagrams, and wiring diagrams for the print engine, Scanner, and ADF.

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 following table.
2. With this information, go to the associated map.
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.

Print Engine Plug/Jack Designators

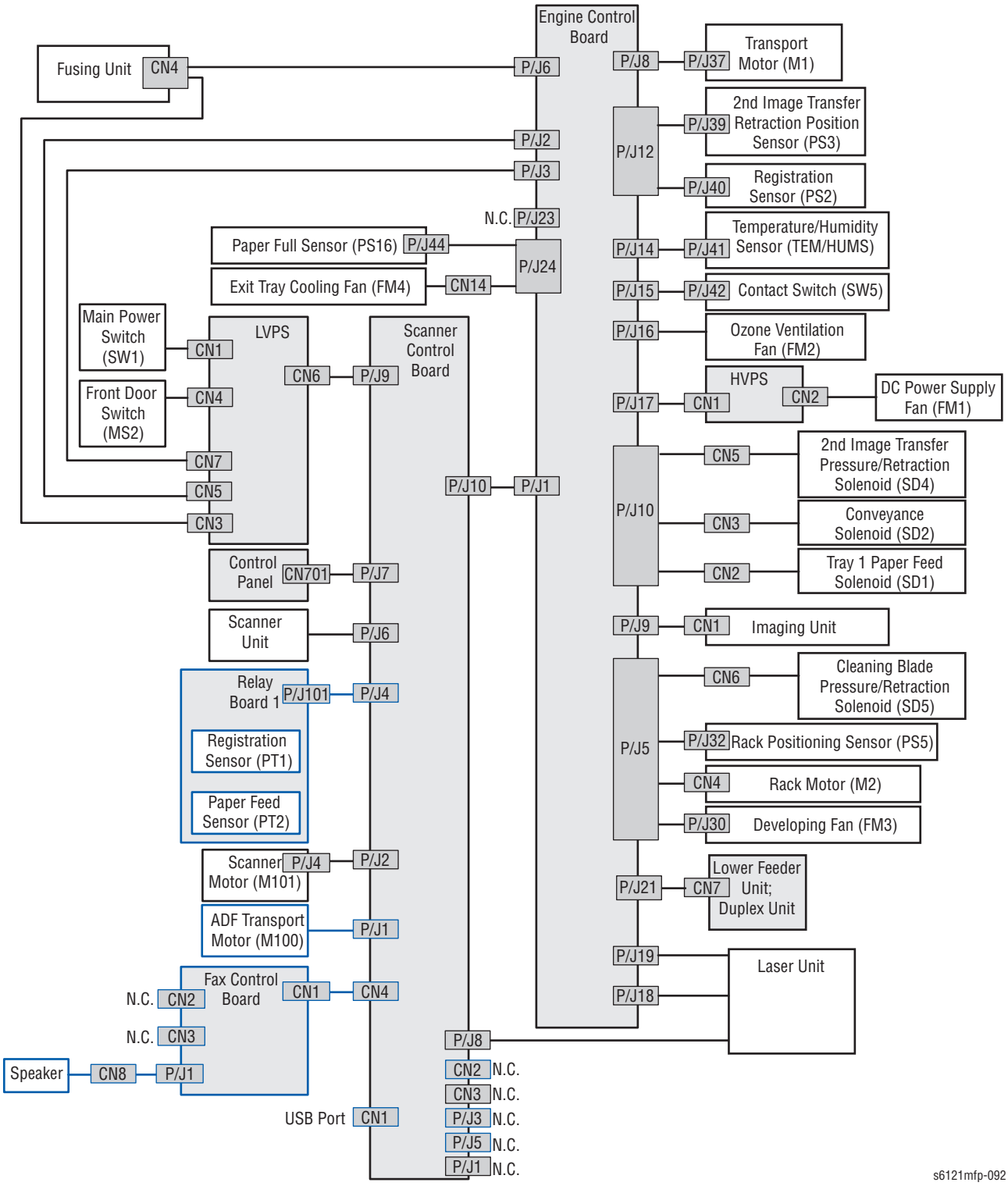
Print Engine Plug/Jack Designators

Map	P/J	Coordinates	Description
Engine Control Board			
1	P/J1	B-138	Connects Engine Control Board to P/J10 of the Image Processor Board
1	P/J2	J-137	Connects Engine Control Board to CN5 Power Supply
1	P/J3	J-138	Connects Engine Control Board to CN7 of the Power Supply
1	P/J5	H-135	Connects Engine Control Board to CN4 of the Rack Motor, CN6 of the Cleaning Blade Pressure/Retraction Solenoid, P/J30 of the Developing Motor, and P/J32 of the Rack Positioning Sensor
1	P/J6	K-136	Connects Engine Control Board to CN4 of the Fuser
1	P/J8	F-134	Connects Engine Control Board to PJ37 of the Main Motor
1	P/J9	J-135	Connects Engine Control Board to CN1 of the Imaging Unit
1	P/J10	G-135	Connects Engine Control Board to CN2 of the Tray 1 Feed Solenoid, CN3 of the Conveyance Solenoid, and CN5 of the 2nd Image Transfer Pressure/Retraction Solenoid
1	P/J12	H-139	Connects Engine Control Board to P/J40 of the Registration Sensor, and P/J39 of the 2nd Image Transfer Retraction Position Sensor (PS3)
1	P/J14	I-140	Connects Engine Control Board to P/J41 of the Temperature/Humidity Sensor
1	P/J15	I-139	Connects Engine Control Board to P/J42 of the Contact Switch (SW5)
1	P/J16	I-138	Connects Engine Control Board to the Ventilation Fan
1	P/J17	D-135	Connects Engine Control Board to CN1 of the High Voltage Board

Print Engine Plug/Jack Designators (continued)

Map	P/J	Coordinates	Description
1	P/J18	E-140	Connects Engine Control Board to the Laser Unit
1	P/J19	C-139	Connects Engine Control Board to the Laser Unit
1	P/J21	B-136	Connects Engine Control Board to
1	P/J23	G-141	Not connected
1	P/J24	C-137	Connects Engine Control Board to P/J44 of the Paper Full Sensor (PS16), and to CN14 which connects to the Defogger Fan Motor
Image Processor Board			
2	CN4	H-139	Connects the Image Processor Board to the Fax Board
2	P/J1	G-135	Connects the Image Processor Board to the ADF Transport Motor
2	P/J2	F-135	Connects the Image Processor Board to P/J 4 of the Scanner Motor
2	P/J4	G-135	Connects the Image Processor Board to P/J101 of Relay Board 1
2	P/J6	H-136	Connects the Image Processor Board to the Scanner
2	P/J7	I-136	Connects the Image Processor Board to CN701 of the Control Panel
2	P/J9	K-137	Connects the Image Processor Board to CN6 of the Power Supply
2	P/J10	I-139	Connects the Image Processor Board to P/J1 of the Engine Control Board
Fax Board			
3	P/J1	J-137	Connects the Fax Board to CN8 which connects to the Speaker
3	CN1	I-138	Connects the Fax Board to CN4 on the Image Processor Board
3	CN2	B-136	TEL (telephone jack)
3	CN3	B-136	LINE (telephone line) jack
High Voltage Board			
4	CN1	C-140	Connects the High Voltage Board to P/J17 of the Engine Control Board
4	CN2	D-140	Connects the High Voltage Board to the Power Supply Fan Motor
Power Supply			
5	CN1	K-137	Connects the Power Supply to the Main Power Switch (SW1)
5	CN3	I-138	Connects the Power Supply to CN4 of the Fuser
5	CN4	C-136	Connects the Power Supply to the Front Door Switch (SW1)
5	CN5	C-136	Connects the Power Supply to P/J2 of the Engine Control Board
5	CN6	C-136	Connects the Power Supply to P/9 of the Image Processor Board
5	CN7	B-137	Connects the Power Supply to P/3 of the Engine Control Board

System Connections

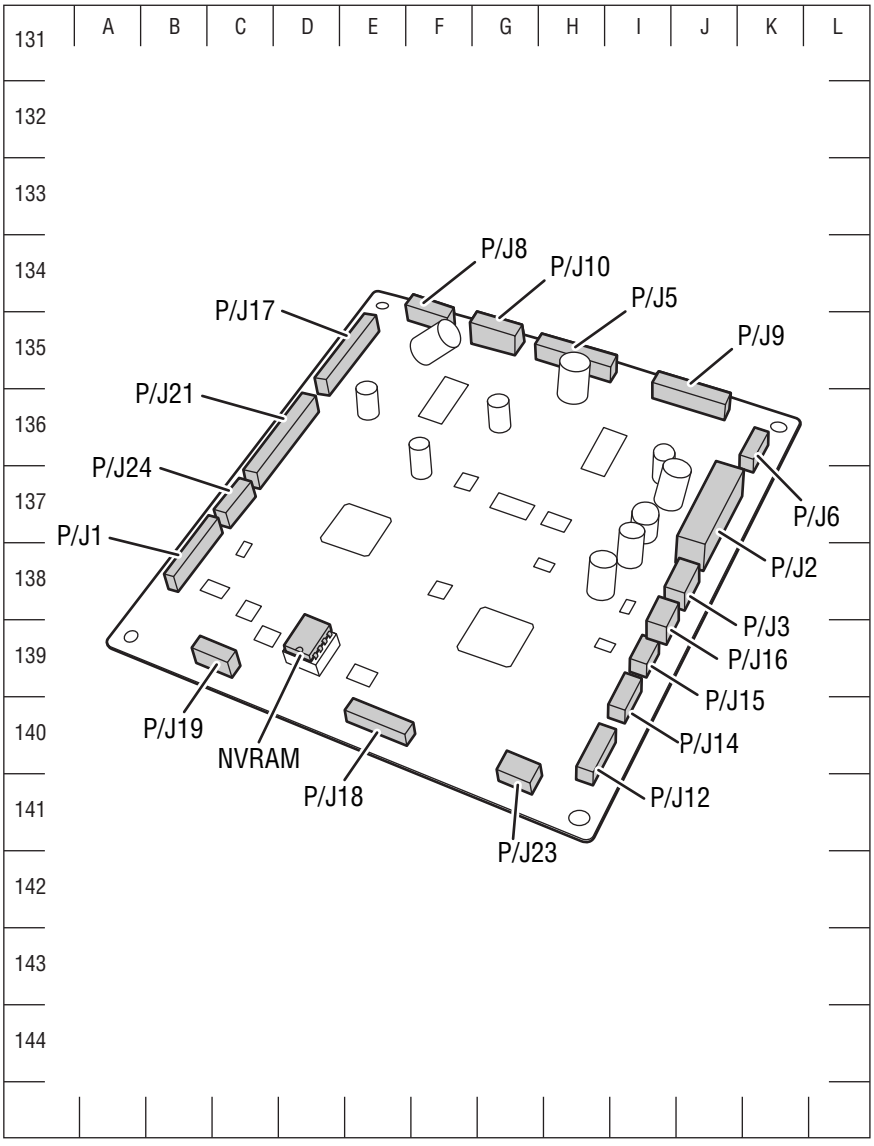


Plug/Jack Locators

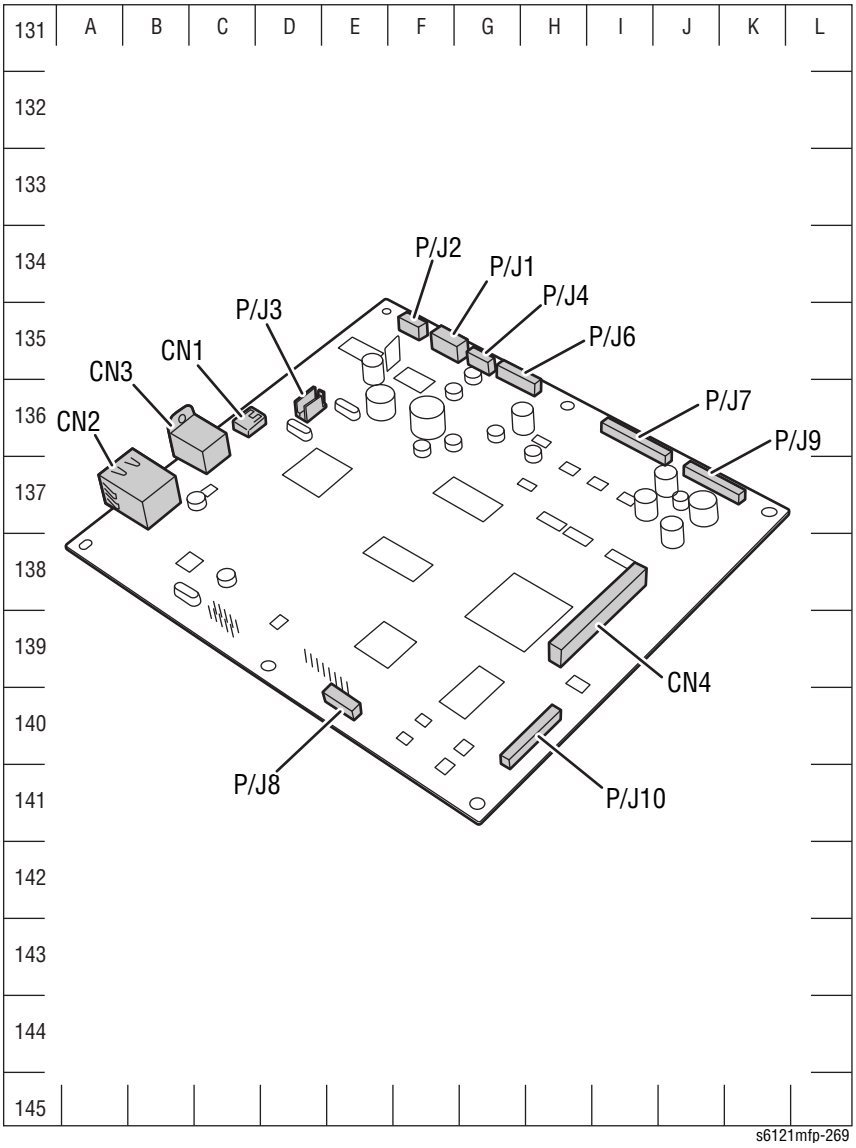
Maps 1 through 5 indicate the location of key connections within the printer. Connections are referenced by their P/J designation.

1. Map 1 - Engine Control Board Plug/Jack Locator
2. Map 2 - Image Processor Board Plug/Jack Locator
3. Map 3 - Fax Board Plug/Jack Locator
4. Map 4 - High Voltage Board Plug/Jack Locator
5. Map 5 - Power Supply Plug/Jack Locator

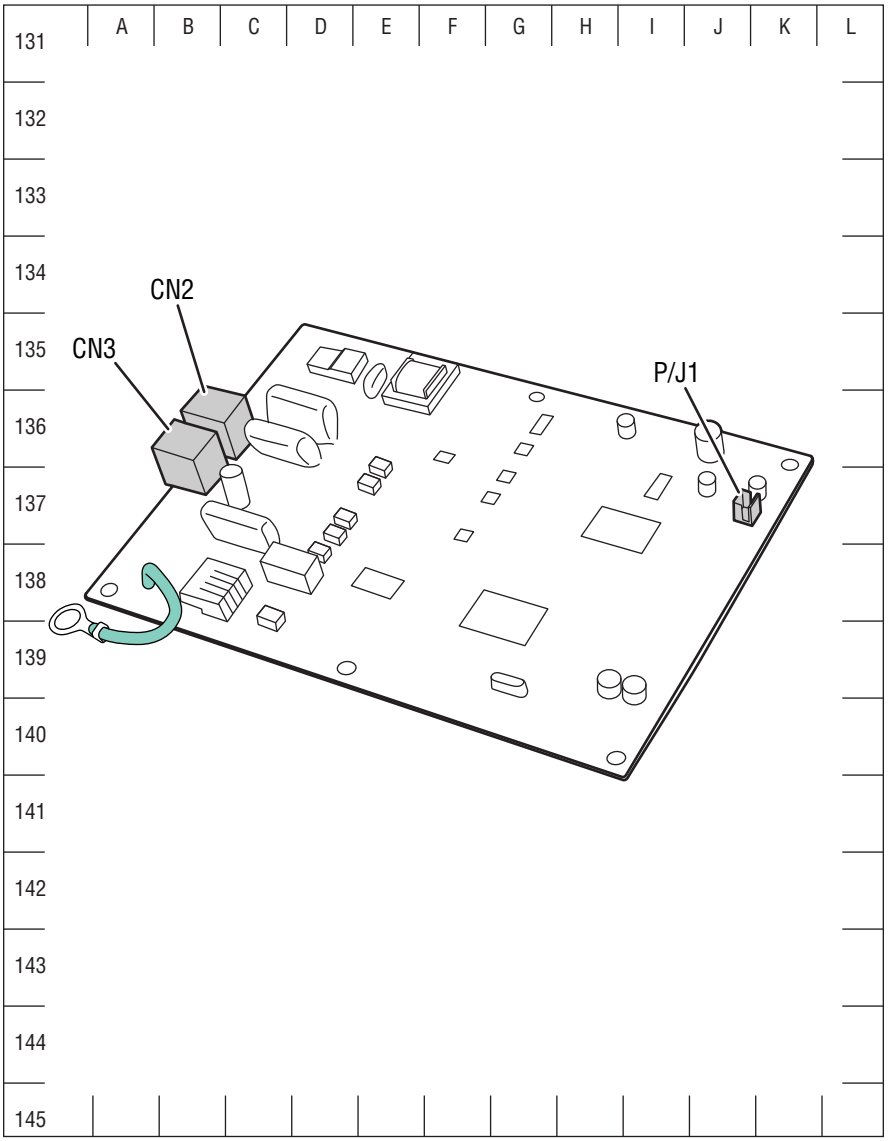
Map 1 - Engine Control Board Plug/Jack Locator



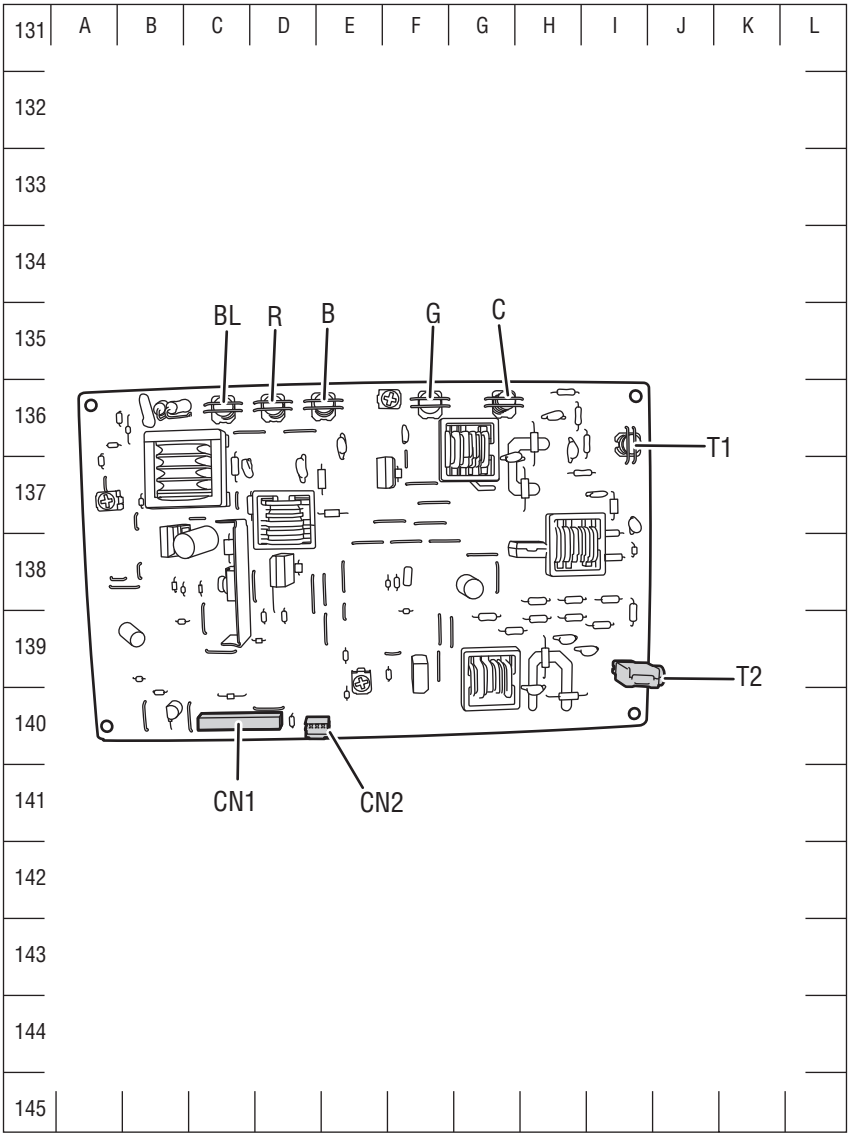
Map 2 - Image Processor Board Plug/Jack Locator



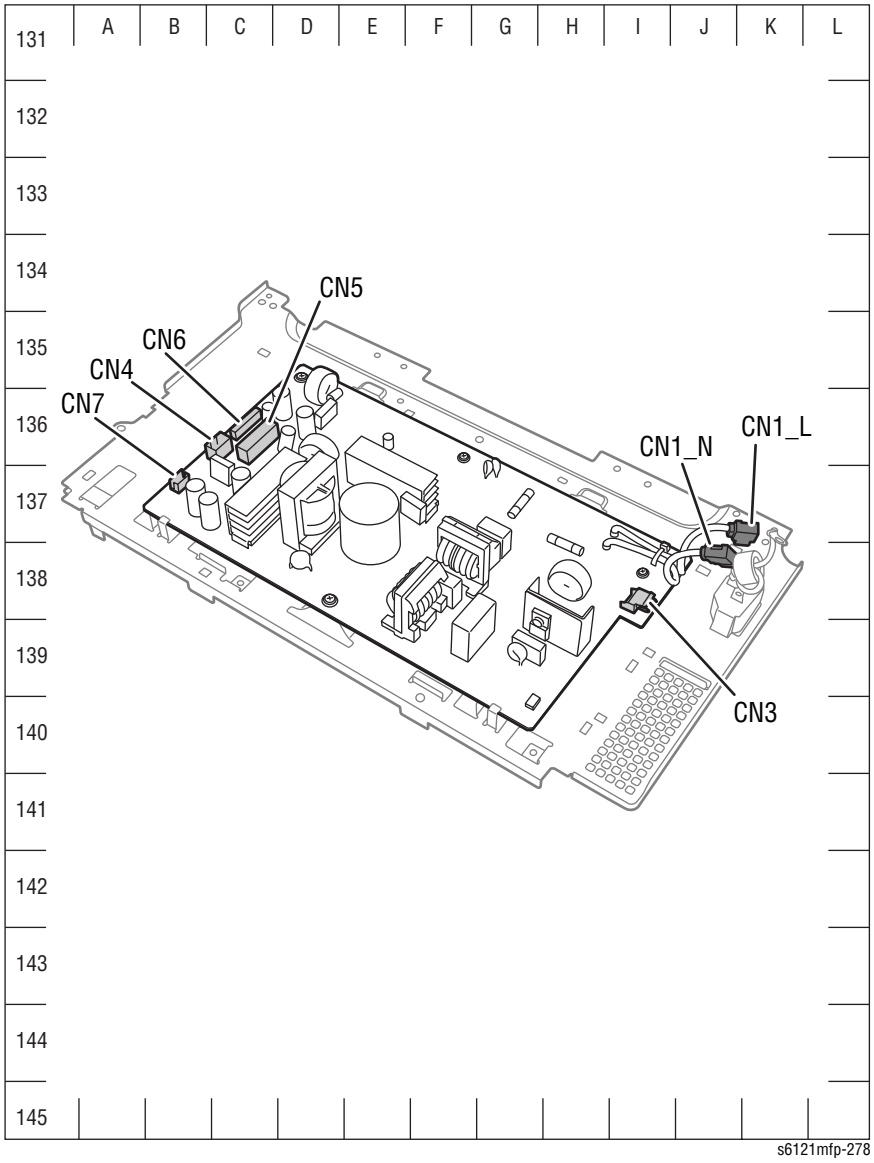
Map 3 - Fax Board Plug/Jack Locator



Map 4 - High Voltage Board Plug/Jack Locator



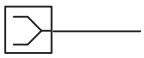
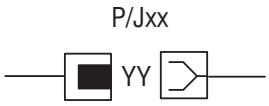
Map 5 - Power Supply Plug/Jack Locator

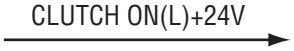
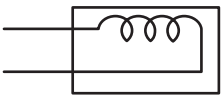
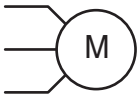


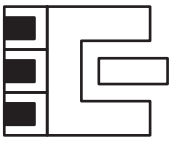
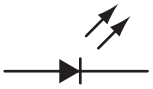
Wiring Diagrams

Notations Used in the Wiring Diagrams

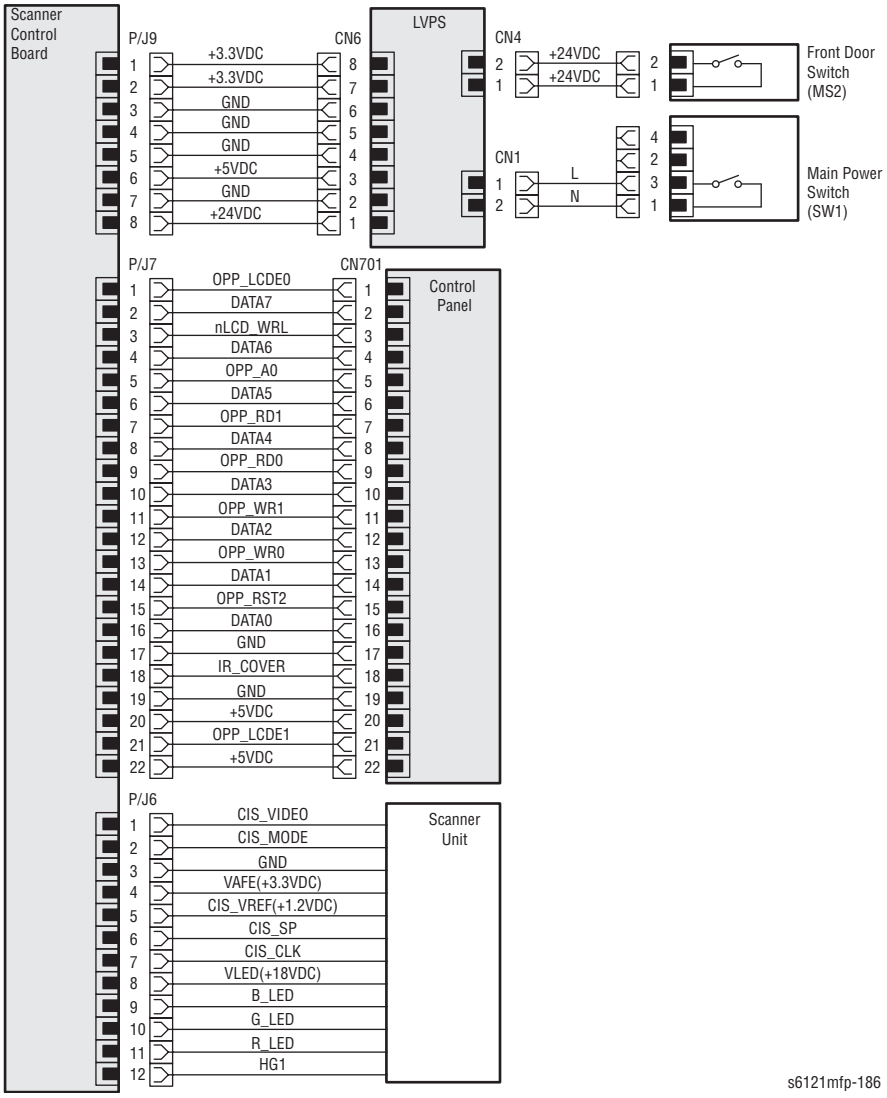
The following table lists the symbols used in the wiring diagrams.

Symbol	Description
 Plug	Denotes a Plug.
 Jack	Denotes a Jack.
 Plug and Jack	Denotes Pin yy and Jack yy of the connector Pxx and Jxx.
 Jumper	Denotes a Jumper Point (JPxxx/xxx). Each end of the Jumper connection has a numeric designation.
 Subassembly 1	Denotes the parts. PL X.Y.Z implies the item “Z” of plate (PL) “X.Y” in Parts List.
 Subassembly 2	Denotes functional parts attached with functional parts name.

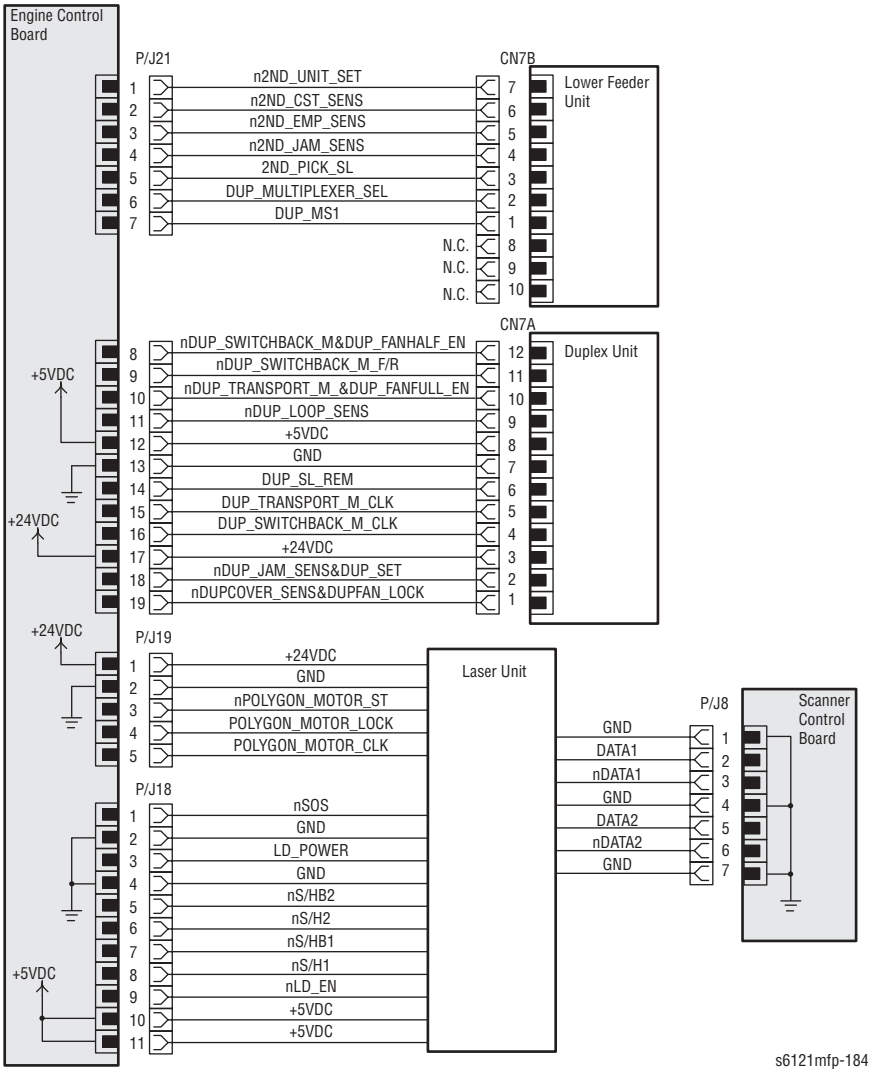
Symbol	Description
 Subassembly 3	Denotes the control and its outline in the Board.
 Connection Wire	Denotes a connection between parts with harness or wires, attached with signal name/contents.
 Function Logic 1	Denotes the function, and logic value of the signal to operate the function (Low: L, High: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

Symbol	Description
 Optic Sensor	Denotes a Photo Sensor.
 LED	Denotes an LED.
 Safety Interlock Switch	Denotes a Safety Interlock Switch.
 On Off Switch	Denotes an On-Off Switch (single-pole, single-throw switch).
 Temperature Switch	Denotes an On-Off Switch (Temperature - normally close).
 NPN Phototransistor	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.

Control Panel Wiring



Engine Control Board Wiring



Imaging Wiring

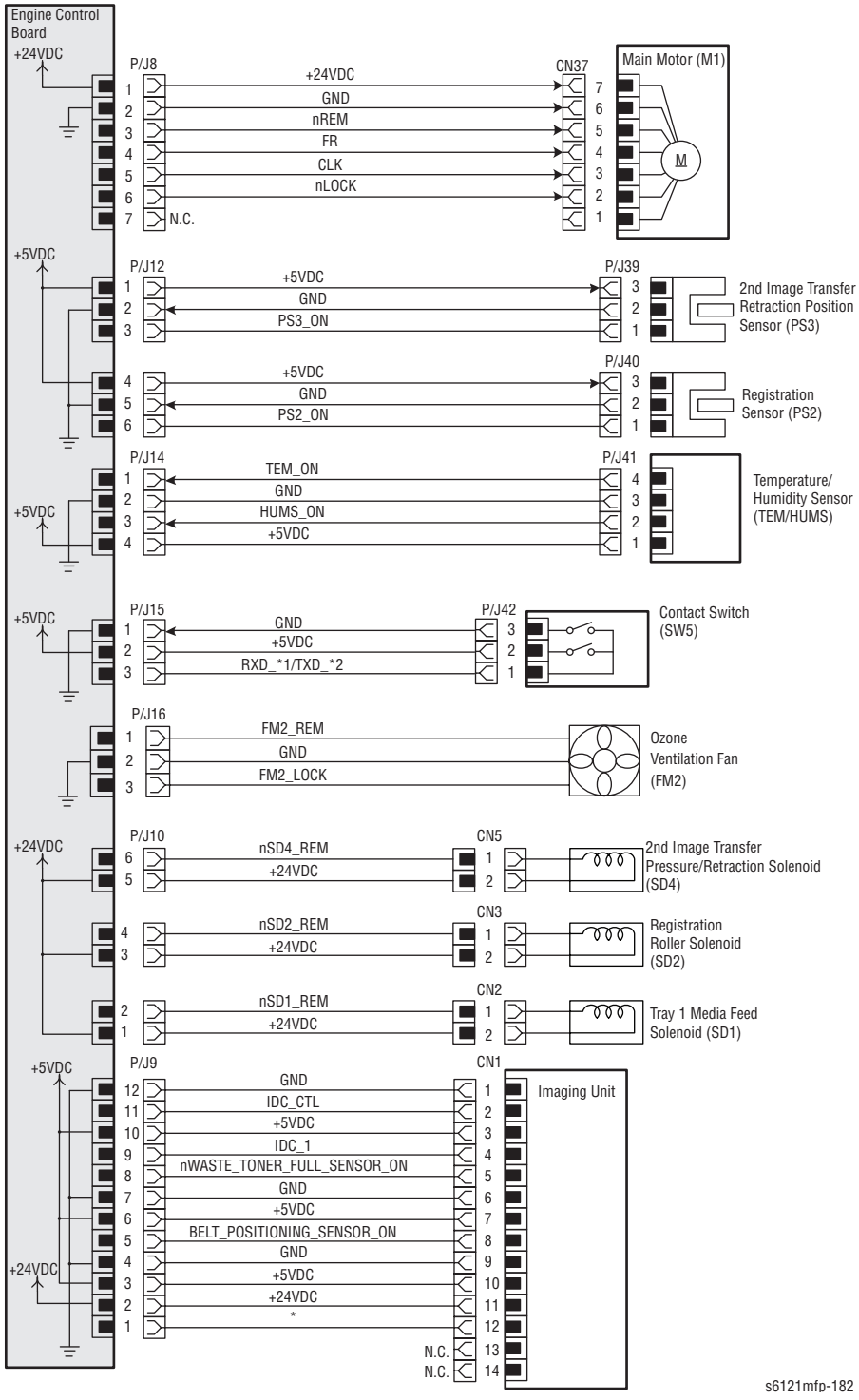
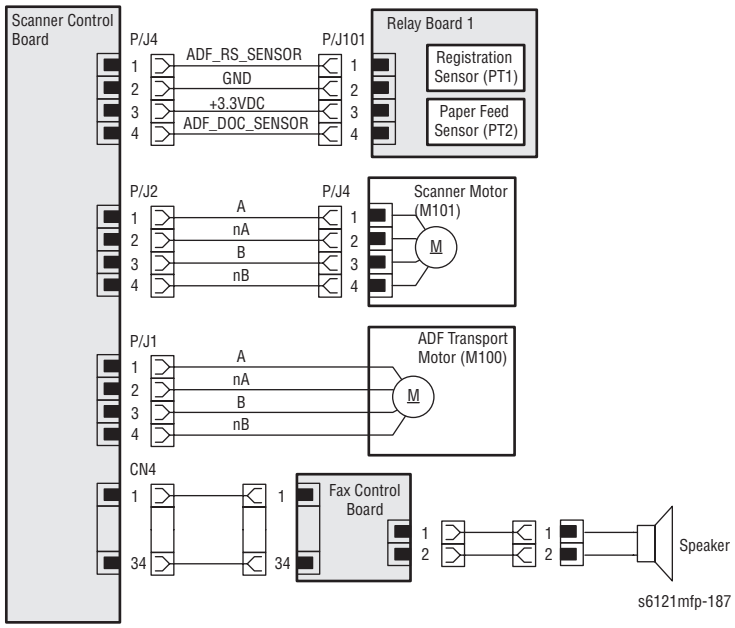
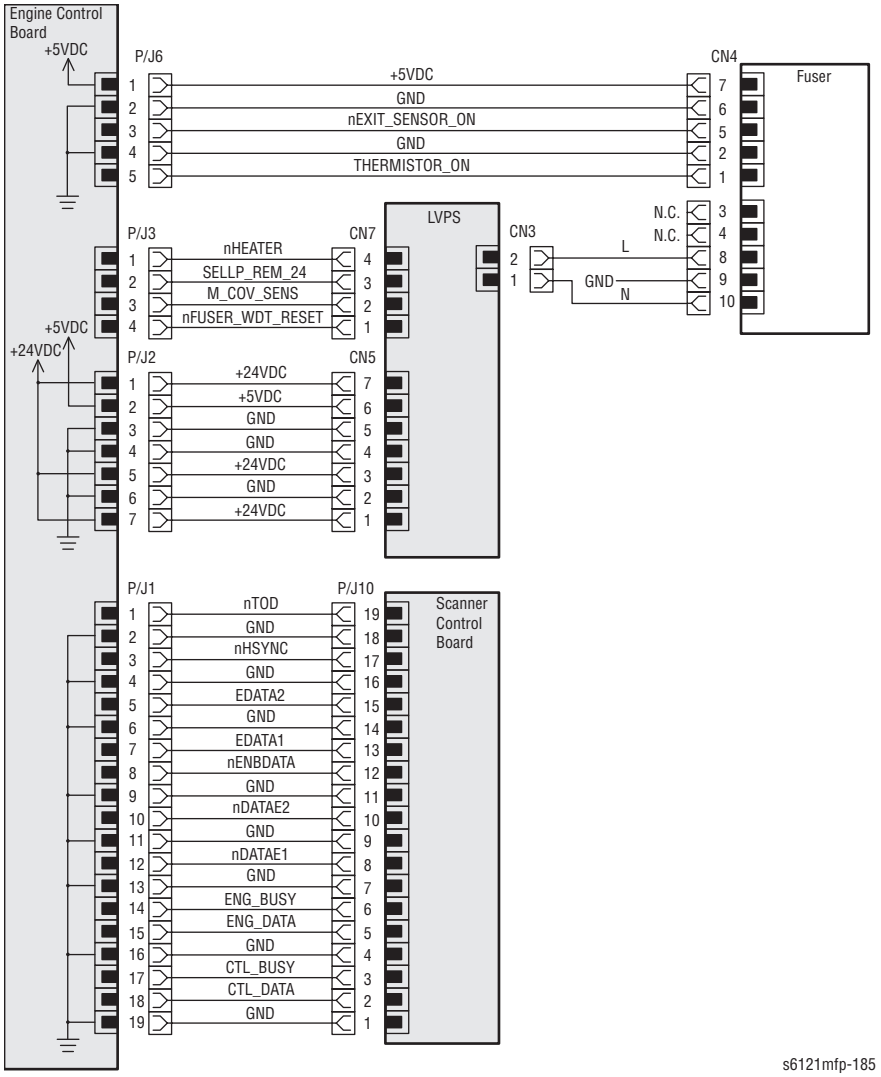


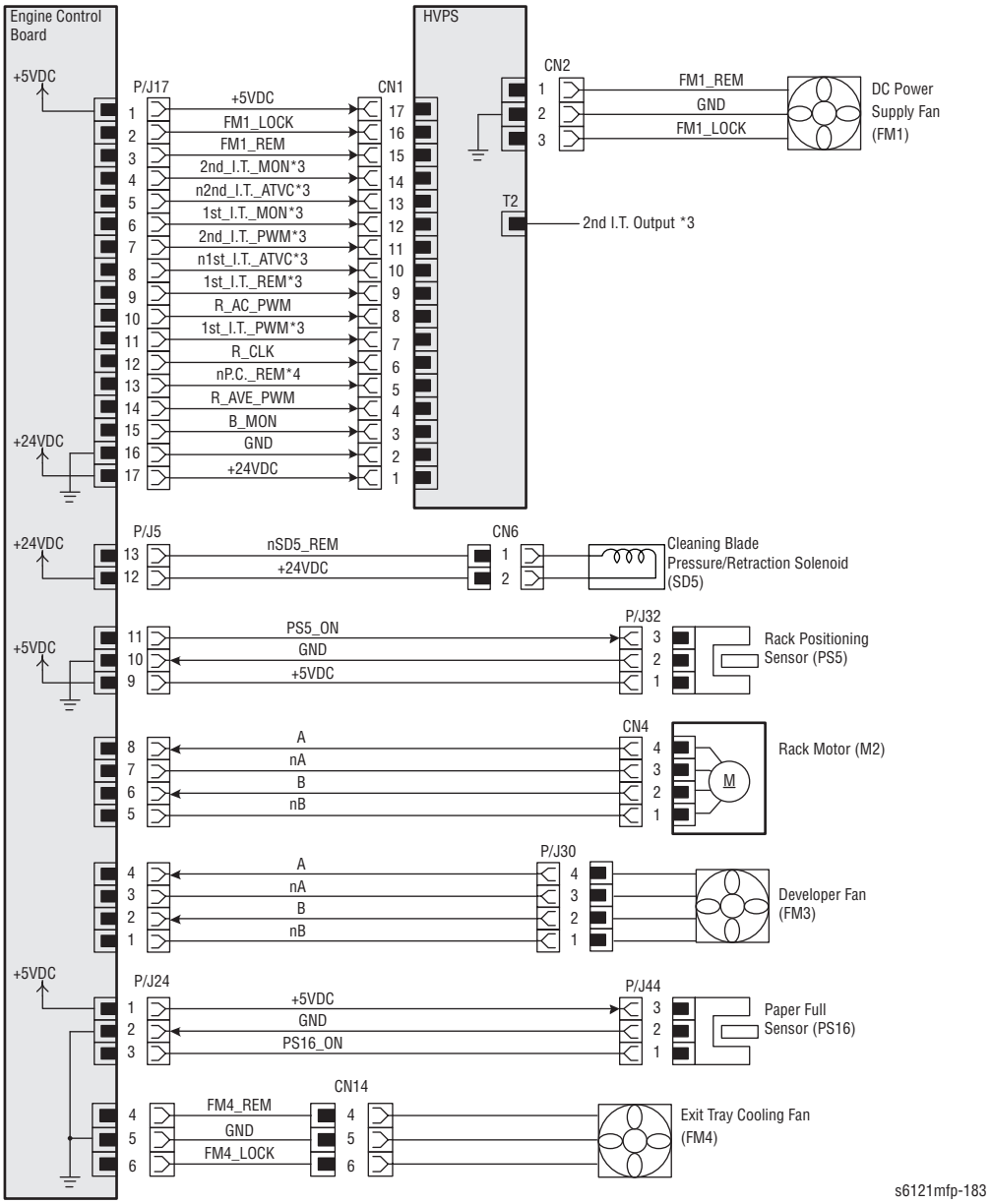
Image Processor Board Wiring



Power Supply Wiring



HVPS Wiring


Engine Control Board
HVPS
+5VDC
+24VDC
P/J17
CN1
+5VDC
FM1_LOCK
FM1_REM
2nd_I.T._MON*3
n2nd_I.T._ATVC*3
1st_I.T._MON*3
2nd_I.T._PWM*3
n1st_I.T._ATVC*3
1st_I.T._REM*3
R_AC_PWM
1st_I.T._PWM*3
R_CLK
nP.C._REM*4
R_AVE_PWM
B_MON
GND
+24VDC
CN2
FM1_REM
GND
FM1_LOCK
DC Power Supply Fan (FM1)
T2
2nd I.T. Output *3
P/J5
CN6
nSD5_REM
+24VDC
Cleaning Blade Pressure/Retraction Solenoid (SD5)
P/J32
PS5_ON
GND
+5VDC
Rack Positioning Sensor (PS5)
CN4
A
nA
B
nB
M
Rack Motor (M2)
P/J30
A
nA
B
nB
Developer Fan (FM3)
P/J24
+5VDC
GND
PS16_ON
P/J44
Paper Full Sensor (PS16)
CN14
FM4_REM
GND
FM4_LOCK
Exit Tray Cooling Fan (FM4)
s6121mfp-183

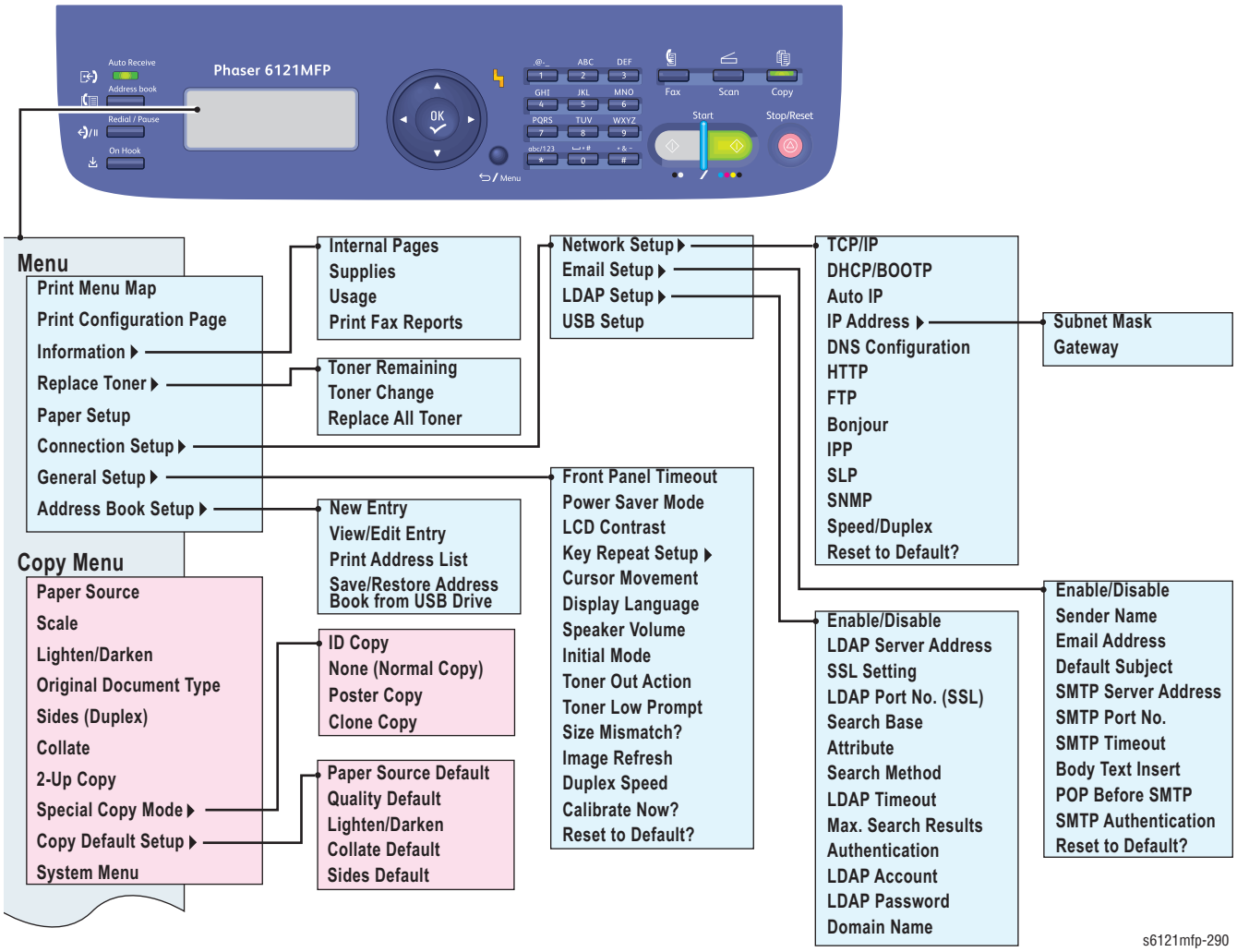
Reference

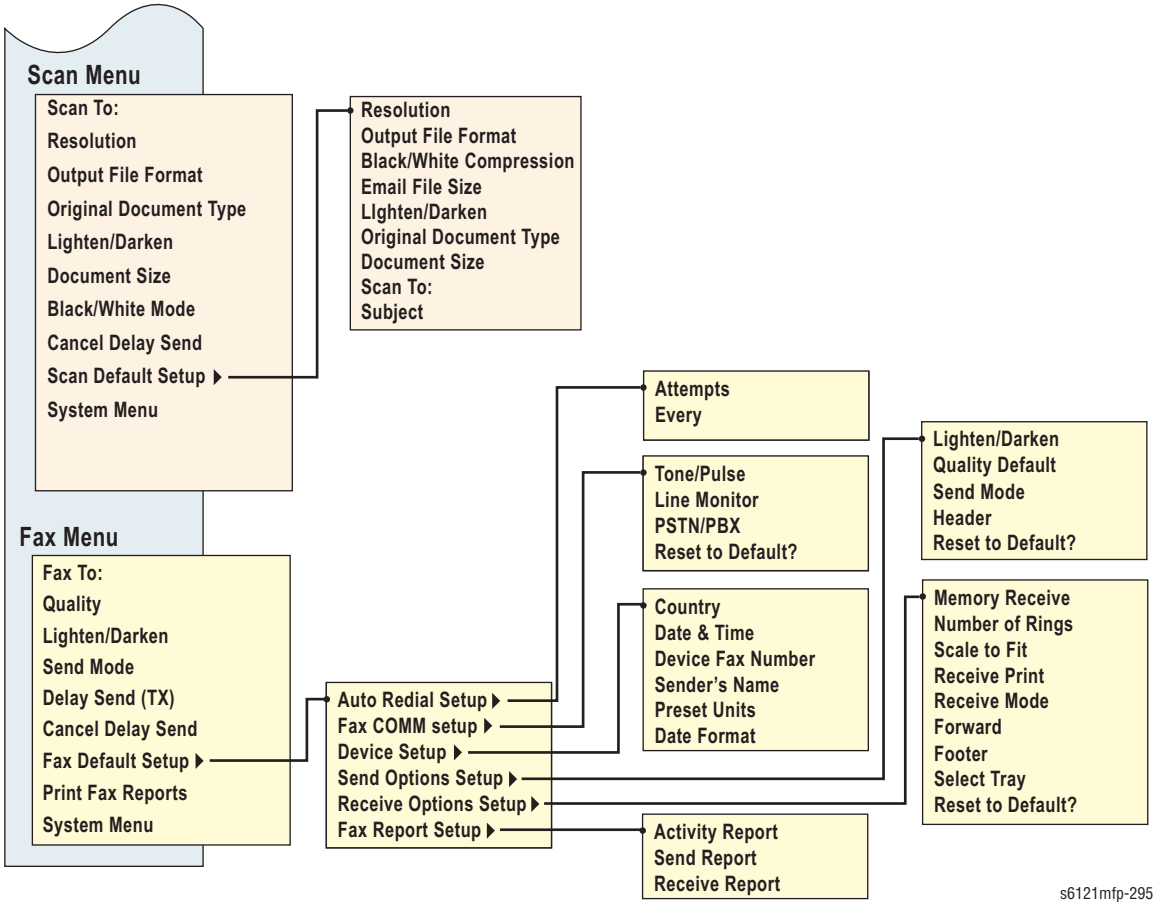
In this chapter...

- Phaser 6121MFP Menu Map
- Firmware Update
- Acronyms and Abbreviations

Appendix A

Phaser 6121MFP Menu Map




Scan Menu
Scan To:
Resolution
Output File Format
Original Document Type
Lighten/Darken
Document Size
Black/White Mode
Cancel Delay Send
Scan Default Setup
System Menu
Resolution
Output File Format
Black/White Compression
Email File Size
LIghten/Darken
Original Document Type
Document Size
Scan To:
Subject
Fax Menu
Fax To:
Quality
Lighten/Darken
Send Mode
Delay Send (TX)
Cancel Delay Send
Fax Default Setup
Print Fax Reports
System Menu
Auto Redial Setup
Fax COMM setup
Device Setup
Send Options Setup
Receive Options Setup
Fax Report Setup
Attempts
Every
Tone/Pulse
Line Monitor
PSTN/PBX
Reset to Default?
Country
Date & Time
Device Fax Number
Sender's Name
Preset Units
Date Format
Activity Report
Send Report
Receive Report
Lighten/Darken
Quality Default
Send Mode
Header
Reset to Default?
Memory Receive
Number of Rings
Scale to Fit
Receive Print
Receive Mode
Forward
Footer
Select Tray
Reset to Default?
s6121mfp-295

Menu Navigation

The Menu Map contains a list of all main and second-level menu headings that you can use to help you navigate the control panel menus.

To print the Menu Map:

1. On the control panel, press the **Back/Menu** button.
2. At **Print Menu Map**, press **OK** to print.

Print the Menu Map to see other information pages available for printing.

The following table describes the buttons used to navigate the menu options.

Button	Function
Back/Menu	Access the System Menu. Move back to a previous menu level when in a menu.
OK	Accept/Confirm selection.
Up Arrow (displays previous menu or item) **Down Arrow** (displays next menu or item)	Move between menu items in the same level.
Forward Arrow (moves cursor to the right) **Back arrow** (moves cursor to the left)	Move the cursor left or right when setting values for menu items.
Fax	Access Fax menu.
Scan	Access Scan menu.
Copy	Access Copy menu.

System Menu - Main

Use the System Menu to access a list of printer menus, information pages, and setup menus that contain printer configuration settings. The following table lists the major submenus contained within the System Menu. To access the System Menu from the control panel, press the Back/Menu button.

Menu/Item	Contents
Print Menu Map	Prints a list of main menus and their first-level sub menus: System Menu Copy Menu – See “Copy Menu” on page A-7. Scan Menu – See “Scan Menu” on page A-9. Fax Menu (Phaser 6121MFP/N or /D only) – See “Fax Menu” on page A-10.
Print Config Page	Prints the Configuration page showing printer configuration information such as current default settings, toner cartridge status, network settings (Phaser 6121MFP/N or /D only), etc.

Menu/Item	Contents
Information	This sub menu gives you access to various types of reports and information lists: **Internal Pages** – Print Menu Map, Print Config Page, Print Demo Page, Print Address Book, Print Test Page 1, Print Test Page 2, Print Test Page 3. **Supplies** – Displays percentage of remaining toner and remaining imaging unit life span. **Usage** – Displays total number of pages produced by all functions, then lists number used by each function (B/W copy, Color copy, B/W print, Color print, fax print, and scan). **Print Fax Reports** (Phaser 6121MFP/N or /D only) – Variety of fax usage information, such as number of faxes sent, received, general activity, speed dial and group dial lists and the address book contents.
Replace Toner	This sub menu accesses the toner maintenance features: **Toner Status** – Displays the percent of each toner cartridge remaining. **Toner Change** – Replace an individual toner cartridge. **Clean Laser Lens** – Clean the laser lens when certain print quality problems arise. **Replace ALL Toner** – Used for replacing all of the toner cartridges. The printer cycles through the toner cartridges, stopping at each so you can replace it.
Paper Setup	Set the size and type of paper used in each tray: **Tray 1** – Plain Paper, Letterhead, Thin Cardstock, Thick Cardstock, Labels, or Envelope. **Tray 2** (optional, Phaser 6121MFP/N or /D only) – Letter.
Connection Setup (Phaser 6121MFP /N and /D only)	This sub menu gives you access to connection type settings: **Network Setup** – Configure connection to network. **Email Setup** – Configure SMTP server, default sender name, email address. **LDAP Setup** – Configure connection to an LDAP server. **USB Setup** – Specify Windows or Macintosh environment.
General Setup	This sub menu accesses the printer's general settings: Panel Timeout Power Saver Mode LCD Contrast Key Repeat Setup Cursor Movement Display Language Speaker Volume Initial Mode Toner Out Action Toner Low Prompt Size Mismatch? Duplex Speed Calibrate Now? Reset to Default? For details, see "General Setup Menu" on page A-6.
Address Book Setup (Phaser 6121MFP /N or /D only)	Enter and edit Speed Dial and Group Dial fax numbers for faxing, and email addresses for scanning to email.

General Setup Menu

The General Setup Menu is a sub menu of the System Menu.

Menu/Item	Contents
Front Panel Timeout	Controls the length of time before the printer automatically returns to the default menu display when there has been no activity at the control panel: ■ **Off** – Menu does not return to the default after a specific period of no activity. ■ **30 Sec**, **1 Min**, (etc.) – After the selected period of time with no activity at the control panel, the control panel returns to its default menu.
Power Saver Mode	Determines the length of time the printer sits idle before it goes into sleep mode.
LCD Contrast	Controls the brightness of the LCD panel.
Key Repeat Setup	Controls key repeat delay used when pressing a key to input one of the letters associated with that key button on the alphanumeric keypad.
Cursor Movement (Phaser 6121MFP/N or /D only)	Controls the time the cursor takes to move to the next menu item column.
Display Language	Language used by the printer to display and print information.
Speaker Volume (Phaser 6121MFP/N or /D only)	Controls the volume of the key touch and alert sounds.
Initial Mode	Controls which is the default printer mode: ■ **Copy** ■ **Scan** ■ **Fax** (Phaser 6121MFP/N or /D only)
Toner Out Action	Controls the action when a toner cartridge is out of toner: ■ **Stop All** – Stops all printing. ■ **Continue** – Continue printing.
Toner Low Prompt	When enabled, the system displays a “Toner Low” message when the toner is low.
Size Mismatch?	Controls the action when a size difference exists between the original and the paper in the tray: ■ **Continue Print** ■ **Request Paper Size**
Image Refresh	Use when faint lines occur at a pitch of 24 mm in the main scanning direction? If one image refresh sequence does not make the faint lines less noticeable, run it a second time.
Duplex Speed (Phaser 6121MFP/N or /D printer configurations only)	Controls speed of 2-sided printing and copying functions.
Calibrate Now?	Calibrates the color curve once.
Reset to Default?	Resets all of the above settings to their factory defaults.

Copy Menu

This section contains:

To access the Copy Menu, press the **Copy** button on the control panel.

Copy Menu – Main

Menu Item	Contents
Paper Source	Specifies the tray to use and the type and size of the paper in the tray when making copies.
Scale	Specifies the image size of the copy in comparison to the original: ■ **Manual** – Enter the desired size. ■ **Preset Sizes** – Select from a list of preset sizes.
Lighten/Darken	Specifies how light or dark the resulting copied image is (also called "copy density").
Original Document Type	Specifies the type of content being copied: ■ **Mixed**, **Fine/Mixed** – Text with images/photos. ■ **Photo**, **Fine/Photo** – Photos only. ■ **Text**, **Fine/Text** – Text only.
Sides (Duplex) (Phaser 6121MFP/D printer configuration only)	Specifies the setting for double-sided copying: ■ **1 to 1** – Copying on one side only. ■ **1 to 2** – Copying on two sides: **Long Edge Flip** – Copied pages are printed so that they flip over at the side, along the long edge of the paper. **Short Edge Flip** – Copied pages are printed so that they flip over at the top, along the short edge of the paper.
Collate (Phaser 6121MFP/N and /D printer configurations only)	Specifies whether the copied pages of multi-page documents are printed in order and sorted by copy set.
2-Up Copy (Phaser 6121MFP/D printer configuration only)	When selected, two single-sided document pages are copied and then printed onto one side of a single sheet of paper. The copies are reduced to fit on the size of the selected output page.
Special Copy Mode	■ **ID Copy** – Used for copying ID cards. The back and front of a document are copied at full size onto one side of a single sheet of paper ■ **None** (Normal Copy) ■ **Poster Copy** – The length and width of the copied document are each enlarged 200 % and are printed on four pages. ■ **Clone Copy** – Repeat copying; used to copy small documents onto one piece of larger paper.

Menu Item	Contents
Copy Default Setup	■ Paper Default (Phaser 6121MFP/N and /D printer configurations only) ■ Original Document Type ■ Lighten/Darken ■ Collate Default (Phaser 6121MFP/N and /D printer configurations only) ■ Sides Default (Phaser 6121MFP/N and /D printer configurations only) ■ Preset Units (Phaser 6121MFP/S printer only) For details, see "Copy Default Setup Menu" on page A-8.
System Menu	Provides accesses to the System Menu (page A-4).

Copy Default Setup Menu

Menu Item	Function
Paper Default (Phaser 6121MFP/N and /D printer configurations with the optional 500-sheet feeder installed)	Specifies the default tray to use as the paper source for copies. If you do not have Tray 2 installed (optional only for Phaser 6121MFP/N and /D printer configurations), this setting is not available.
Original Document Type	Specifies the type of content being copied: ■ **Mixed**, **Fine/Mixed** – Text with images/photos. ■ **Photo**, **Fine/Photo** – Photos only. ■ **Text**, **Fine/Text** – Text only.
Lighten/Darken	Specifies how light or dark the resulting copied image is (also called "copy density").
Collate Default (Phaser 6121MFP/N and /D printer configurations only)	Specifies whether copy sorting is on or off.
Sides Default (Phaser 6121MFP/N and /D printer configurations only)	■ **Off** – Double-sided copying is off. ■ **Long Edge Flip** – Copied pages are printed so that they flip over at the side, along the long edge of the paper. ■ **Short Edge Flip** – Copied pages are printed so that they flip over at the top, along the short edge of the paper.
Preset Units (Phaser 6121MFP/S printer configuration only)	Specifies the unit of measurement used when setting paper and copy sizes: ■ **Inch** ■ **Metric**

Scan Menu

This section contains:

To access the Scan Menu, press the **Scan** button on the control panel.

Scan Menu – Main

Menu Item	Contents
Scan To:	Specifies the default scan destination: ■ **Email** (Phaser 6121MFP/N or /D printer configurations only) ■ **PC: Scan Dashboard** (Windows only) ■ **USB Memory** ■ **FTP** (Phaser 6121MFP/N or /D printer configurations only)
Resolution	Specifies the scan resolution in dpi (dots per inch).
Original Document Type	Specifies the type of content being scanned: ■ **Mixed** – Text with images/photos. ■ **Text** – Text only. ■ **Photo** – Photos only.
File Format	Specifies the output file type the scanned image is saved as: TIFF, PDF, JPEG.
Lighten/Darken	Specifies how light or dark the resulting scanned image are (also called "scan density").
Document Size	Specifies the size of the original document.
Black/White Mode	Gray (8 bit) or B/W (1 bit) if used for a B&W scan.
Subject (Phaser 6121MFP/N or /D printer configurations only)	Specifies subject used when sending scanned to an email address.
Scan Default Setup (for details, see "Scan Default Setup Menu" on page A-10)	■ Resolution ■ Output File Format ■ Black/White Compression ■ Email File Size ■ Lighten/Darken ■ Original Document Type ■ Scan To: ■ Subject
System Menu	Provides accesses to the System Menu.

Scan Default Setup Menu

Menu Item	Contents
Resolution	Specifies the dots per inch (dpi) used when scanning the document: ■ 150 dpi ■ 300 dpi
File Format	Specifies the default file type the scanned image is saved as: ■ TIFF ■ PDF ■ JPEG
B/W Compression	Specifies the default compression method for monochromatic images and text. ■ **MH** – Less compression, larger file size. ■ **MR** – More compression, smaller file size. ■ **MMR** – Maximum compression, smallest file size.
Email File Size (Phaser 6121MFP/N or /D printer configurations only)	Specifies the size (from 1 to 10 MB) that data is sent without being split into multiple attached files. Note that to receive multiple file attachments, the recipient's email application must support divided transmissions.
Lighten/Darken	Specifies how light or dark the resulting scanned image is (also called "scan density"). Range from -2 (lightest) to +2 (darkest).
Original Document Type	Specifies the type of content being scanned: ■ **Mixed** – Text with images/photos. ■ **Text** – Text only. ■ **Photo** – Photos only.
Scan To:	Specifies the default scan destination: ■ **Email** – Sends the scan to a specified email address (Phaser 6121MFP/N or/D printer configuration with network connection required). ■ **PC** – **Scan Dashboard** (Windows only) ■ **USB Memory** – Sends the scan to a USB flash drive attached to the printer. ■ **FTP** – Sends the scan to an FTP server address (Phaser 6121MFP/N or/D printer configuration with network connection required).

Fax Menu

This section contains:

Note

This section applies to Phaser 6121MFP/N or /D printer configurations only.

To access the Fax Menu, press the **Fax** button on the control panel.

Fax Menu – Main

Menu Item	Contents
Fax To:	Specifies whether you want to use the keypad, speed dial, or address book to enter the fax number.
Quality	Specifies the resolution of faxed image (dots per inch): Standard/Text, Fine/Text, and SuperFine/Text.
Lighten/Darken	Specifies the fax scanning density.
Send Mode	Scan then Dial (default) or Dial then Scan.
Delay Send (TX)	Specifies a specific time to send a fax.
Cancel Delay Send	Cancels a fax Delay Send job that has not been sent yet.
Fax Default Setup	■ Auto Redial Setup ■ Fax COMM Setup ■ Device Setup ■ Send Options Setup ■ Receive Options Setup ■ Fax Report Setup For details, see “Fax Default Setup Menu” on page A-12.
Print Fax Reports	Access fax activity reports for printing: ■ **Fax Send Report** – Contains information on sent faxes. ■ **Fax Receive Report** – Contains information on received faxes. ■ **Activity Report** – Contains information about all fax activity. ■ **Pending Fax List** – Contains list of stored fax jobs scheduled to run at a set time. ■ **Preview Pending** – Contains preview of selected pending fax. ■ **Last 60 Records** – Contains date/time, destination and conformation information on the last 60 faxes. ■ **Address Book** – Contains contents of address book. ■ **Speed Dial List** – Contains Speed Dial fax numbers and information. ■ **Group Dial List** – Contains Group Dial fax numbers and information.

Fax Default Setup Menu

The Fax Default Setup menu contains the following sub menus.

Sub Menu	Settings
Auto Redial Setup	■ **Attempts** – Specifies the number of redial attempts. ■ **Every** – Specifies the time between redial attempts.
Fax COMM Setup	■ **Tone/Pulse** – Specifies either a tone or a pulse for the fax line. The default is "0" which is tone. ■ **Line Monitor** – Specifies the volume (Off, Low, High) of the external phone (line monitor). Allows you to hear the fax dialing and connecting. ■ **PSTN/PBX** – Specifies the type of circuit used by the fax phone line, either PSTN (default) or PBX. Select whether the connected telephone wiring is a public switched telephone network (PSTN) or a private branch exchange (PBX). For a PBX system, the prefix number (outside line access number or extension number) can be specified. ■ **Reset to Default?** – When selected, resets the Fax COMM settings back to their original factory defaults.
Device Setup	■ **Country** – Specifies the country where the printer is located. ■ **Date & Time** – Specifies the current date and time where the printer is located. ■ **Date Format** – Specifies date format: MM/DD/YYYY, DD/MM/YYYY, or YYYY/MM/DD. ■ **Device Fax Number** – The printer's fax number. ■ **Sender's Name** – The name that prints on the fax transmission report as the person who sent the fax.
Send Options Setup	■ Lighten/Darken ■ Quality Default ■ Send Mode ■ Header ■ Reset to Default? For details, see "Fax Send Options Setup Menu" on page A-13.
Receive Options Setup	■ Memory Receive ■ Number of Rings ■ Scale to Fit ■ Receive Print ■ Receive Mode: ■ Forward ■ Footer ■ Select Tray ■ Reset to Default? For details, see "Fax Receive Options Setup Menu" on page A-13.
Fax Report Setup	■ **Activity Report** – Provides information about completed fax jobs. ■ **Send Report** – Provides information about fax jobs sent. ■ **Receive Report** – Provides information about received faxes.

Fax Send Options Setup Menu

Menu Item	Description
Lighten/Darken	Specifies the density level of the image or text.
Quality Default	Specifies the resolution of the scanned image being faxed: ■ **Standard/Text** – For documents containing large or easy-to-read text. ■ **Fine/Text** – For documents containing text that needs higher resolution, such as small print or handwritten text. ■ **SuperFine/Text** – For text that needs the highest resolution, or detailed illustrations (not photos). ■ **Standard/Photo** – For documents containing standard photos. ■ **Fine/Photo** – For photos needing higher resolution. ■ **Super Fine/Photo** – For photos needing the highest resolution.
Send Mode	■ **Scan then Dial** (default) – The printer scans the documents and then transmits the fax. ■ **Dial then Scan** – The printer dials and connects to the destination before scanning the documents to fax.
Header	■ **On** – Sender information is included in the fax transmission: date and time, transmitter's name and fax number, session number, page number, and total page number. ■ **Off** – Sender transmission information is not printed.
Reset to Default?	When selected, resets all Send options to their original factory defaults.

Fax Receive Options Setup Menu

Menu Item	Description
Memory Receive	■ **On** – Faxed data is stored in memory instead of being printed when received. ■ **Off** (default) – Faxes are printed at the time they are received.
Number of Rings	Specifies the number of rings (from 1 to 16) allowed before the printer connects to an incoming fax.
Scale to Fit	Used when the image being received is larger than the printable area of the paper. ■ **On** – The information is reduced to fit the page. ■ **Off** – The information is divided into the number of pages it takes to print it. ■ **Crop** – The information that is outside the printable area of the page is not included in the fax printout.

Menu Item	Description
Receive Print	■ **Memory Receive** (default) – The fax prints after the entire transmission has been received. Note that this setting is separate from the Memory Receive menu item at the beginning of the Receive Options Setup Menu. ■ **Print Receive** – The fax begins printing as soon as the first page has been received
Receive Mode	■ **Auto RX** (auto receive) – The printer always answers an incoming call as a fax. ■ **Manual Receive** – The line continues to ring until you start the receive fax function manually. ■ **DRPD** (Distinctive Ring Pattern1, Pattern2, Pattern3, Pattern4) – The printer determines from the ring pattern if the call is a voice phone call or a fax.
Forward	Specifies whether the printer should forward incoming faxes to a specified destination and whether to print before forwarding. ■ **On** – Faxes received are forwarded to the specified fax number or email address. ■ **On (Print)** – Faxes received print out and are then forwarded. ■ **Off** – Faxes received are not forwarded.
Footer	■ **On** – Fax reception information is printed in the bottom of the printable area (footer) of the fax. ■ **Off** – Fax reception information is not printed in the footer.
Select Tray	Specifies which paper tray the printer uses for printing faxes. (Selection is not possible if there is only one tray.) ■ **Tray 1** ■ **Tray 2** (available as an option for Phaser 6121MFP/N or /D printer configurations only)
Reset to Default?	When selected, resets the Receive options back to their original factory defaults.

Firmware Update

Note

The Phaser 6121MFP print driver must be installed on the PC that is used for the firmware upgrade. Use the *SW & Documentation CDROM* (Disk1) to install the scanner driver in your PC. (The scan driver needs to be installed by the Plug and Play New Hardware Found wizard - the CDROM only copies the files to the printer.)

1. Download the applicable files from the Xerox support web site.
2. Connect a USB cable between the PC and the printer.
3. Launch the firmware update tool (UpdateFW.exe).
4. In the update tool, select the upgrade AmberAIO4IN1_XC_VNNNF00.bin file, and then press Update.
5. Examine the printer control panel and wait for the firmware update process to complete. When complete, the control panel displays:
   Firmware Update
   Firmware Update OK
   Machine Power Off/On
6. In the update tool, select the AmberAIO4IN1_XC_VNNNDEMOPAGE.bin file, and press Update. Examine the printer control panel and wait for the firmware update process to complete. When complete, the control panel displays:
   Firmware Update
   Firmware Update OK
   Machine Power Off/On
7. Press the following keys in this order:
   OK -> **Stop/Reset** > **0** > **0** > **Stop/Reset** > **0** > **1**

   The control panel displays the following:

   Service Mode
   Service's Choice
   Adjustment
   Counter
8. Press the **Down** key to navigate to **Clear Data**, and then press **OK**.
9. Select **SRAM Clear**, and then press **OK**.
10. Select **Yes**, and then press **OK**.
    The control panel displays **Accepted SRAM Clear** and then returns to the menu.
11. Turn the printer off, and then back on.

Note

When the printer reboots, it prompts you for initial setup configuration.

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.
ADC	Automatic Density Control
AMPV	Average Monthly Print Volume
APC	Auto Power Control
ASSY	Assembly
ATM	Adobe Type Manager
BCR	Bias Charge Roller
BOOTP	Boot Parameter Protocol
BTR	Bias Transfer Roller
CCD	Charge Coupled Device (Photoelectric Converter)
CCW	Counter-Clock Wise
CMYK	Toner colors for the printer: Y=yellow, C=cyan, M=magenta, K=black
CRU	Customer Replaceable Unit
CRUM	Customer Replaceable Unit Meter/Memory
CST	Cassette
dB	Decibel
DC	Direct Current
DDNS	Dynamic Domain Name System
DDR2 DIMM	Double Data Rate Dual In-Line Memory Module
DEV	Developer
DHCP	Dynamic Host Configuration Protocol
DPI	Dots Per Inch
DRV	Drive
DUP	Duplex
Duplex	2-sided printing
EA	Emulsion Aggregation (Toner)
EEPROM	Electrically Erasable Programmable Read-Only Memory

Acronym	Description
ESD	Electrostatic Discharge. A transfer of charge between bodies at different electrostactic potential.
ESS	Image process controller
FCC	Federal Communications Commission
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
HDD	Hard Disk Drive
HUM	Humidity
HV	High Voltage
HVPS	High-Voltage Power Supply
Hz	Hertz (cycles per second)
IDT	Intermediate Drum Transfer
IEC	International Electrotechnical Commission
I/F	Interface
IIT	Image Input Terminal - ADF, Scanner
IOT	Image Output Terminal - the printer
IP	Image Processor
KB	Kilo Byte
LAN	Local Area Network
LCD	Liquid Crystal Display
LD	Laser Diode
LED	Light Emitting Diode
LEF	Long-Edge Feed
LPD	Line Printer Daemon
LPR	Line Printer Remote
LTR	Letter Size Paper (8.5 x 11 inches)
LVPS	Low-Voltage Power Supply
MB	Mega Byte
MCU	Machine Control Unit (Engine Control Board)
MHz	Mega Hertz
MIB	Management Information Base

Acronym	Description
MM	Millimeters
MOT	Motor
MPT	Multi-Purpose Tray
NCS	Non-Contact Sensor
NVM	Non-Volatile Memory
NVRAM	Non-Volatile Random Access Memory
OHP	Overhead Paper (Transparency)
OPT	Optional
OS	Operating System
PCB	Printed Circuit Board
PCL	Printer Command Language
PDL	Page Description Language
P/J	Plug Jack (electrical connections)
PJL	Printer Job Language
PL	Parts List
POP3	Post Office Protocol version 3
PPD	PostScript Printer Description
PPM	Pages Per Minute
PWBA	Printed Wiring Board Assembly
RAM	Random Access Memory
RH	Relative Humidity
RMS	Root Mean Square Voltage
ROM	Read-Only Memory
ROS	Raster Output Scanner - Laser Unit
SEF	Short-Edge Feed
SMB	Server Message Block
SNMP	Simple Network Management Protocol
SNR	Sensor
SOL	Solenoid
SOS	Start of Scan
TDC	Toner Density Control
TNR	Toner
UI	User Interface
USB	Universal Serial Bus
WINS	Wireless Integrated Network Sensor

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