

WorkCentre® 3210/3220  
Multifunction Printer



# WorkCentre® 3210/3220 Service Manual



# **WorkCentre<sup>®</sup> 3210 / 3220**

## **Multifunction Printer**



**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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## Service Terms

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### Manual Terms

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

#### Note

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

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



#### Caution

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



#### Warning

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

### Product Terms

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**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.

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## Symbols Marked on the Product

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



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



Warning. Use caution to avoid personal injury.



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



Do not touch the OPC Drum.



Do not expose the item to sunlight.



Do not tilt the Print Cartridge.



Do not expose item to high temperature.



Recycle the item.

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## Power Safety Precautions

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### Power Source

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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

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#### Warning

Turning the power Off using the power switch does not completely de-energize the printer. Disconnect the power cord from the printer. Disconnect the power cord by pulling the plug, not the cord.

Disconnect the Power Cord in the following cases:

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

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## Electrostatic Discharge Precautions

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

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

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

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# Service Safety Summary

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## General Guidelines

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

**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.

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

## Warning Labels

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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

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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

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The WorkCentre 3210/3220 is certified to comply with Laser Product Performance Standards set by the U.S. Department of Health and Human Services as a Class 1 Laser Product. This means that this product does not emit hazardous laser radiation; which is possible only because the laser beam is totally enclosed during all modes of customer operation. When servicing the printer or laser unit, follow the procedures specified in this manual and there will be no hazards from the laser.

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## Maintenance

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### Cleaning

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

### Print Cartridge

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

### Fuses

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#### Warning

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

### Part Replacement

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

### Assembly Precautions

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

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## Servicing Electrical Components

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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.



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## Servicing Mechanical Components

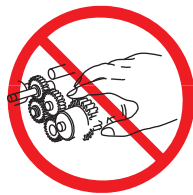
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When servicing mechanical components within the printer, manually rotate the drive assemblies, rollers, and gears.



### Warning

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



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## Servicing Fuser Components

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### Warning

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

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## Moving the Printer

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### Warning

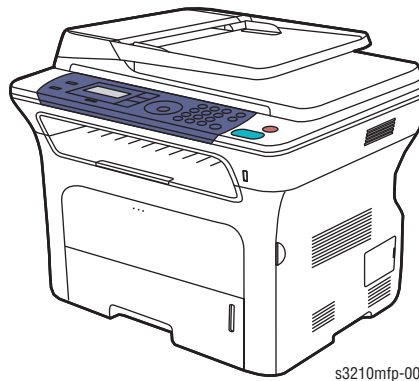
Parts of the printer are hot. Wait at least 30 minutes for the printer to cool before moving or packing the printer.



### Warning

Back injury could result if you do not lift the printer properly.

- The printer can be lifted by one person. Use safety lifting and handling techniques when moving the printer.
- Always move the printer separately from Tray 2.



s3210mfp-008

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



### Caution

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



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## Regulatory Information

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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)

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This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the Federal Communications Commission (FCC) Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If it is not installed and used in accordance with these instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment Off and On, the user is encouraged to try to correct the interference by one or more of the following measures:

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

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

### Canada (Regulations)

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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.

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## European Union

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

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

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

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

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

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## Copy Regulations

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### United States

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Congress, by statute, has forbidden the reproduction of the following subjects under certain circumstances. Penalties of fine or imprisonment may be imposed on those guilty of making such reproductions.

**1. Obligations or Securities of the United States Government, such as:**

<b>Certificates of Indebtedness</b>	<b>National Bank Currency</b>
Coupons from Bonds	Federal Reserve Bank Notes
Silver Certificates	Gold Certificates
United States Bonds	Treasure Notes
Federal Reserve Notes	Fractional Notes
Certificates of Deposit	Paper Money
Bonds and Obligations of certain agencies of the government, such as FHA, etc.	
Bonds (U.S. Saving Bonds may be photocopied only for publicity purposes in connection with the campaign for the sale of such bonds.)	
Internal Revenue Stamps. If it is necessary to reproduce a legal document on which there is a canceled revenue stamp, this may be done provided the reproduction of the document is performed for lawful purposes.	
Postage Stamps, canceled or uncanceled. For philatelic purposes, Postage Stamps may be photocopied, provided the reproduction is in black and white and is less than 75% or more than 150% of the linear dimensions of the original.	
Postal Money Orders	
Bills, Checks, or Draft of money drawn by or upon authorized officers of the United States.	
Stamps and other representatives of value, of whatever denomination, which have been or may be issued under any Act of Congress.	

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2. Adjusted Compensation Certificates for Veterans of the World Wars.
  3. Obligations or Securities of any Foreign Government, Bank, or Corporation.
  4. Copyrighted materials, unless permission of the copyright owner has been obtained or the reproduction falls within the “fair use” or library reproduction rights provisions of the copyright law. Further information of these provisions may be obtained from the Copyright Office, Library of Congress, Washington, D.C. 20559. Ask for Circular R21.
  5. Certificate of Citizenship or Naturalization. Foreign Naturalization Certificates may be photocopied.
  6. Passports. Foreign Passports may be photocopied.
  7. Immigration papers.
  8. Draft Registration Cards.
  9. Selective Service Induction papers that bear any of the following Registrant’s information:
    - Earnings or Income
    - Court Record
    - Physical or mental condition
    - Dependency Status
    - Previous military service

Exception: United States military discharge certificates may be photocopied.

10. Badges, Identification Cards, Passes, or Insignia carried by military personnel, or by members of the various Federal Departments, such as FBI, Treasury, etc. (Unless photograph is ordered by the head of such department or bureau.)

Reproducing the following is also prohibited in certain states:

- Automobile Licenses
- Driver’s Licenses
- Automobile Certificates of Title

The above list is not all inclusive, and no liability is assumed for its completeness or accuracy. In case of doubt, consult your attorney.

## Canada

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Parliament, by statute, has forbidden the reproduction of the following subjects under certain circumstances. Penalties of fine or imprisonment may be imposed on those guilty of making such reproduction.

1. Current bank notes or current paper money.
2. Obligations or securities of a government or bank.
3. Exchequer bill paper or revenue paper.
4. The public seal of Canada or of a province, or the seal of a public body or authority in Canada, or of a court of law.
5. Proclamations, orders, regulations or appointments, or notices thereof (with intent to falsely cause same to purport to have been printed by the Queens Printer for Canada, or the equivalent printer for a province).

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6. Marks, brands, seals, wrappers or designs used by or on behalf of the Government of Canada or of a province, the government of a state other than Canada or a department, board, Commission or agency established by the Government of Canada or of a province or of a government of a state other than Canada.
  7. Impressed or adhesive stamps used for the purpose of revenue by the Government of Canada or of a province or by the government of a state other than Canada.
  8. Documents, registers or record kept by public officials charged with the duty of making or issuing certified copies thereof, where the copy falsely purports to be a certified copy thereof.
  9. Copyrighted material or trademarks of any manner or kind without the consent of the copyright or trademark owner.

The above list is provided for your convenience and assistance, but it is not all-inclusive, and no liability is assumed for its completeness or accuracy. In case of doubt, consult your solicitor.

## Other Countries

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Copying certain documents may be illegal in your country. Penalties of fine or imprisonment may be imposed on those found guilty of making such reproductions.

- Currency notes
- Bank notes and cheques
- Bank and government bonds and securities
- Passports and identification cards
- Copyright material or trademarks without the consent of the owner
- Postage stamps and other negotiable instruments

This list is not inclusive and no liability is assumed for either its completeness or accuracy. In case doubts, contact your legal counsel.

## Fax Regulations

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### United States

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#### Fax Send Header Requirements

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The Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device, including a fax machine, to send any message unless such message clearly contains in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business or other entity, or other individual sending the message and the telephone number of the sending machine or such business, other entity or individual. The telephone number provided may not be a 900 number or any other number for which charges exceed local or long distance transmission charges.

In order to program this information into your machine, refer to customer documentation and follow the steps provided.

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## Data Coupler Information

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This equipment complies with Part 68 of the FCC rules and the requirements adopted by the Administrative Council for Terminal Attachments (ACTA). On the cover of this equipment is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant telephone cord and modular plug is provided with this product. It is designed to be connected to a compatible modular jack that is also compliant. See installation instructions for details.

You may safely connect the machine to the following standard modular jack: USOC RJ-11C using the compliant telephone line cord (with modular plugs) provided with the installation kit. See installation instructions for details.

The Ringer Equivalence Number (REN) is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. For products approved after July 23, 2001, the REN for this product is part of the product identifier that has the format US:AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point (e.g, 03 is a REN of 0.3). For earlier products, the REN is separately shown on the label.

To order the correct service from the local telephone company, please provide the Facility Interface Code (FIC) and Service Order Code (SOC) listed below:

FIC: 02LS2

SOC: 9.0F

You may also have to provide the USOC Jack code and the Ringer Equivalence Number (REN).

If this Xerox equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your rights to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

Repairs to the machine should be made only by a Xerox Service Representative or an authorized Xerox Service Provider. This applies at any time during or after the service warranty period. If unauthorized repair is performed, the remainder of the warranty period is null and void. The equipment must not be used on party lines. Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

If your office has specially wired alarm equipment connected to the telephone line, make sure that the installation of the Xerox equipment does not disable your alarm equipment. If you have any question about what will disable alarm equipment, consult your telephone company or a qualified installer.

## Canada

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### Note

The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users must make sure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should make sure their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe systems, if present, are connected together. This precaution may be particularly important in rural areas.



### Caution

User should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirements that the sum of the Ringer Equivalent Numbers of all of the devices does not exceed 5. For the Canadian REN value, please see the label on the equipment.

## Europe

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### Radio Equipment & Telecommunications Terminal Equipment Directive

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The Facsimile has been approved in accordance with the Council Decision 1999/5/EC for pan-European single terminal connection to the public switched telephone network (PSTN). However, due to differences between the individual PSTNs provided in different countries, the approval does not, of itself, give an unconditional assurance of successful operation on every PSTN network terminal point.

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In the event of a problem you should contact your authorized local dealer in the first instance.

This product has been tested to and is compliant with TBR21, a specification for terminal equipment for use on analogue-switched telephone networks in the European Economic Area. This product provides an user-adjustable setting of the country code. Refer to the customer documentation for this procedure. Country codes should be set prior to connecting this product to the network.

**Note**

Although this product can use either loop disconnect (pulse) or DTMF (tone) signaling, it is recommended that it is set to use DTMF signaling. DTMF signaling provides reliable and faster call setup. Modification of this product, connection to external control software or to external control apparatus not authorized by Xerox, will invalidate its certification.

## **New Zealand Telecom Warning Notice**

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1. The grant of a Telepermit for any item of terminal equipment indicates only that Telecom has accepted that the item complies with minimum conditions for connection to its network. It indicates no endorsement of the product by Telecom, nor does it provide any sort of warranty. Above all, it provides no assurance that any item will work correctly in all respects with another item of Telepermitted equipment of a different make or model, nor does it imply that any product is compatible with all of Telecom's network services.

The equipment may not be capable of correct operation at the higher data speeds designated. 33.6 kbps and 56 kbps connections are likely to be restricted to lower bit rates when connected to some PSTN implementations. Telecom will accept no responsibility should difficulties arise in such circumstances.

2. Immediately disconnect this equipment should it become physical damaged, and arrange for its disposal or repair.
3. This modem shall not be used in any manner which could constitute a nuisance to other Telecom customers.
4. This device is equipped with pulse dialing, while the Telecom standard is DTMF tone dialing. There is no guarantee that Telecom lines will always continue to support pulse dialing.
5. Use of pulse dialing, when this equipment is connected to the same line other equipment, may give rise to 'bell tinkle' or noise and may also cause a false answer condition. Should such problems occur, the user should NOT contact the Telecom Fault Service.
6. The preferred method of dialing is to use DTMF tones, as this is faster than pulse (decadic) dialing and is readily available on almost all New Zealand telephone exchanges.
7. Warning Notice: No '111' or other calls can be made from this device during a main power failure.
8. This equipment may not provide for the effective hand-over of a call to another device connected to the same line.

9. Some parameters required for compliance with Telecom's Telepermit requirements are dependent on the equipment (PC) associated with this device. The associated shall be set to operate within the following limits for compliance with Telecom's Specifications:

For repeat calls to the same number:

- There shall be no more than 10 call attempts to the same number within any 30 minute period for any single manual call initiation, and
- The equipment shall go on-hook for a period of not less than 30 seconds between the end of one attempt and the beginning of the next attempt.

For automatic calls to different numbers:

- The equipment shall be set to ensure that automatic calls to different numbers are spaced such that there is no less than 5 seconds between the end of one call attempt and the beginning of another.

10. For correct operation, total of the RN's of all devices connected to a single line at any time should not exceed 5.



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## Manual Organization

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The WorkCentre 3210/3220 Multifunction Printer Service Manual is the primary document used for repairing, maintaining, and troubleshooting the printer. Use this manual as your primary resource for understanding the operational characteristics of the printer and all available options. This manual describes specifications, theory, and the diagnosis and repair of problems occurring in the print engine and attached options. Also included are detailed replacement procedures, parts lists, and wiring diagrams.

The WorkCentre 3210/3220 Multifunction Printer Service Manual contains these chapters:

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

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

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

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

**Chapter 4 - General Troubleshooting:** This section describes the operation of Tech mode and Embedded Diagnostic Control (EDC) diagnostic utilities. In addition, this section includes troubleshooting methods for situations where error indicator is not available.

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

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

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

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

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

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

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



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# General Information

## In this chapter...

- Printer Introduction and Overview
- Printer Configurations
- Parts of the Printer
- Printer Options
- Maintenance Items
- Consumables
- Specifications
- Print Cartridge Life
- Diagnostics
- CentreWare IS
- Power Save Mode
- Reports

## Chapter 1

## Printer Introduction and Overview

---

The Xerox WorkCentre 3210/3220 Multifunction Printer has a single-pass laser design architecture, which offers mono print speed up to 24 or 28 pages per minute (ppm), and resolution up to 1200 x 1200 dots-per-inch (dpi) image quality. The printer supports PostScript 3 and PCL 6 for Base and Network configurations.

The WorkCentre 3210/3220 provides a standard 250-Sheet, input tray. The manual feeder holds 1 sheet. The manual feeder supports specialty media, card stock, and envelopes. The output tray holds 50 sheets facedown.

Available options add memory, media capacity, and functionality:

- Memory upgrades are available to increase from 128 MB standard RAM up to 384 MB maximum.
- An Optional Tray Assembly adds 250 sheets of input storage.

## Technical Support Information

---

The Xerox WorkCentre 3210/3220 Multifunction 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 WorkCentre 3210/3220 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.xrsgsn.com/secure/main.pl>
- Service Partners: <http://www.office.xerox.com/partners>

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

## Printer Configurations

The WorkCentre 3210/3220 printer is available in two configurations.

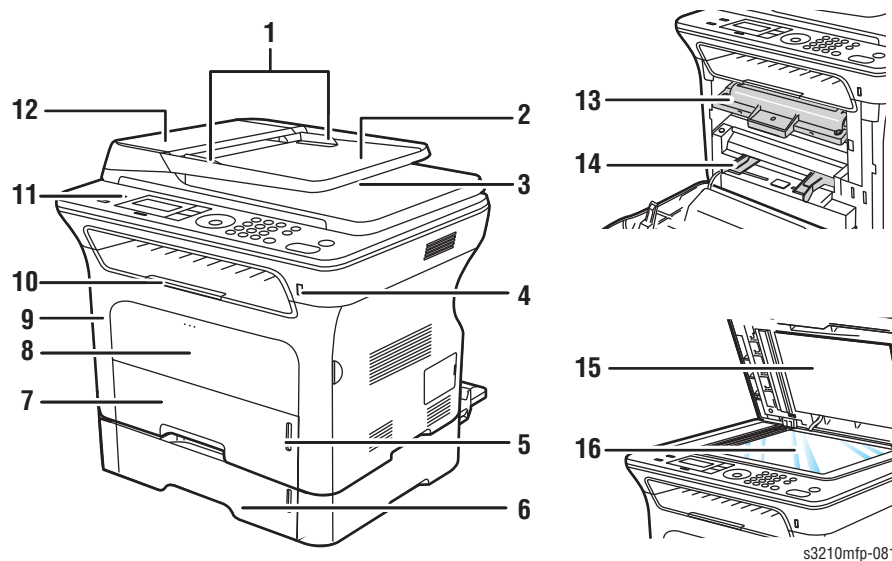
### WorkCentre 3210/3220 Configurations

Features	Printer Configurations	
	WorkCentre 3210	WorkCentre 3220
Processor and Clock Speed	360 MHz	360 MHz
Memory Configuration*	128 MB	128 MB
Duplex Unit	No	Standard
<b>Fonts</b>		
PCL5e	Standard	Standard
PCL6	Standard	Standard
EPSON/IBM	Standard	Standard
PDF1.4	Standard	Standard
PostScript 3	No	Standard
SPL	No	Standard
<b>Interface</b>		
USB 2.0 Hi-Speed	Standard	Standard
Ethernet Interface	10/100 Base-TX	10/100 Base-TX
Network Protocols (IPv4)	IPP, Secure IPP, HTTP, Port9100, LPD, DDNS, mDNS, Bonjour, SLP, DHCP, Auto-IP, WINS, SNMPv3, SSDP	SMTP, IPP, Secure IPP, HTTP, Port9100, LPD, DDNS, mDNS, Bonjour, SLP, DHCP, Auto-IP, WINS, SNMPv3, SSDP
Network Protocols (IPv6)	DHCPv6, HTTP, Port9100, LPD, IIP, Secure IIP, MLDv2, ICMPv6	DHCPv6, HTTP, Port9100, LPD, IIP, Secure IIP, MLDv2, ICMPv6
Network Protocols (Security)	IPPs, IPFiltering, SNMPv3	IPPs, IPFiltering, SNMPv3, SMTP Auth, POP3 Auth, User Email Authentication
Wireless	Optional	Optional
Apple Talk	Standard	Standard
<b>Tray</b>		
Manual Feeder	Standard	Standard
Tray 1 (250 Sheet)	Standard	Standard
Optional Tray Assembly	Optional	Optional
CentreWare IS / CW Web	Standard	Standard

\* All configurations have one memory slot supporting 256 MB DDR2 DIMM to a maximum of 384 MB.

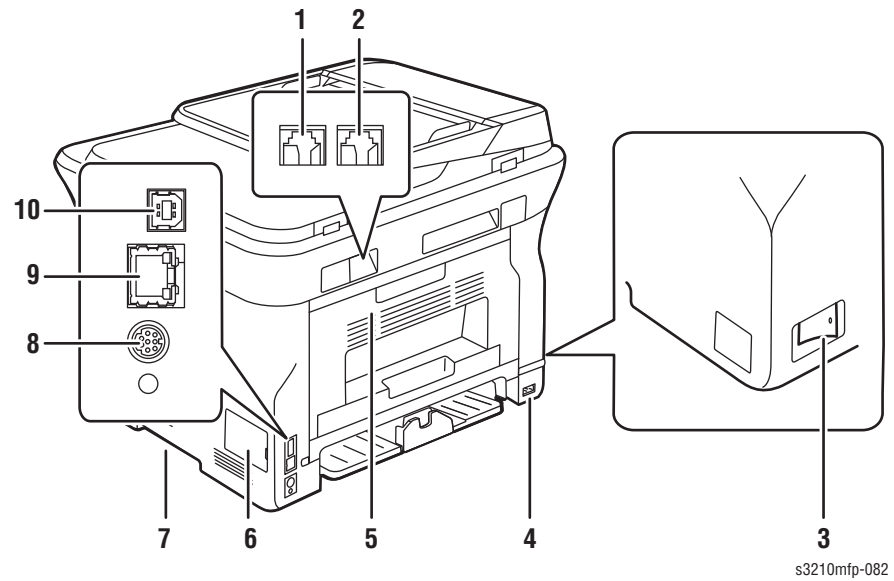
## Parts of the Printer

### Front View



1.	ADF Guides	9.	Front Cover
2.	ADF Input Tray	10.	Output Support
3.	ADF Output Tray	11.	Control Panel
4.	USB Port	12.	ADF Cover
5.	Paper Level Indicator	13.	Print Cartridge
6.	Optional Tray Assembly	14.	Manual Feeder with Guides
7.	Tray 1	15.	Scanner Lid
8.	Manual Tray	16.	Document Glass

## Rear View

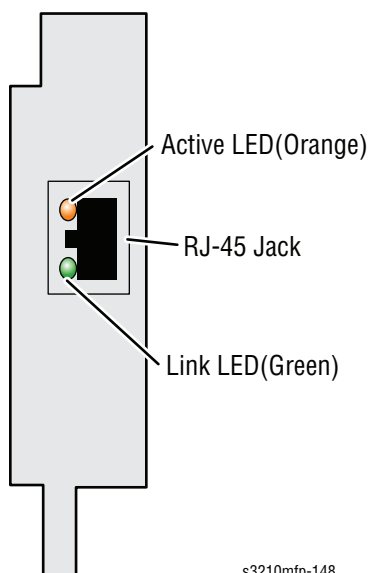


1.	Telephone Line Connector	6.	DIMM Cover
2.	Extension Connector	7.	Handle
3.	Power Switch	8.	15-pin Optional Tray Connection
4.	Power Receptacle	9.	Ethernet Port
5.	Rear Cover	10.	USB Port

## Network Connection

The WorkCentre 3210/3220 supports Ethernet networks.

LED State	Printer State
Active LED Random Blink	Normal NPC & Normal packet receive
Active LED Regular Blink	Normal NPC & No Packet
Active LED Off/On Maintenance	NPC Initial Error
Link LED On	Link LED On, Normally linked
Link LED Off	Link LED Off, Link Error

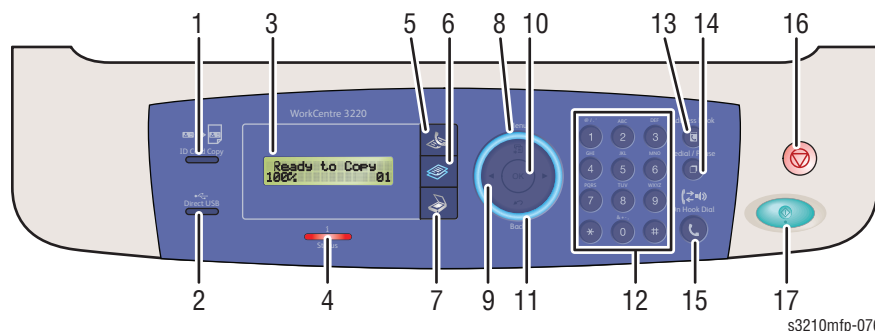


s3210mp-148



## Control Panel

The Control Panel consists of 1 LED and 27 function buttons.



s3210mfp-076

### Control Panel Description

Feature	Description
1. ID Card Copy	Copies both sides of the ID Card like a driver's license to a single side of paper.
2. Direct USB	Allows the user to prints files stored on a USB Memory device when it is inserted into the USB memory port on the front of the machine.
3. Display	Displays the current status and prompts during an operation.
4. Status LED	Displays the status of your machine.
5. Fax	Activates Fax mode.
6. Copy	Activates Copy mode.
7. Scan/Email	Activates Scan mode.
8. Menu	Enters Menu mode and scrolls through the available menus.
9. Left/Right Arrow	Scroll through the options available in the selected menu, and increase or decrease values.
10. OK	Confirms the selection on the screen.
11. Back	Returns to the upper menu level.
12. Number Keypad	Dials a number or enters alphanumeric characters.
13. Address Book	Allows the user to store frequently used fax numbers in memory or search for stored fax numbers or email addresses.
14. Redial/Pause	In Ready mode, redials the last number, or in Edit mode, inserts a pause into a fax number.
15. On Hook Dial	Engages the telephone line.
16. Stop/Clear	Stops an operation at any time. In Ready mode, clears/cancels the copy options, such as darkness, document type setting, copy size, and number of copies.
17. Start	Starts a job.

## Control Panel Menu

The Control Panel Menu lists all the available functions of the printer.

### Control Panel Menu Information

General Description	Detail Description
Copy Feature	Contains copy functionality for the printer.
Copy Setup	Contains copy setup functionality.
System Setup	Contains printer setup functionality.
Network	Contains network setup functionality.

## Status LED

LED State	Printer State
Green	The printer is powered on and can be used.
Flashing Green	<ul style="list-style-type: none"> <li>■ When the green LED slowly blinks, the printer is receiving data from the computer.</li> <li>■ When the green LED rapidly blinks, the printer is printing data.</li> </ul>
Red	<ul style="list-style-type: none"> <li>■ The Print Cartridge is empty, or needs to be replaced.</li> <li>■ A problem has occurred such as a paper jam, cover opened or no paper in the tray. The printer cannot continue the job.</li> </ul>
Flashing Red	<ul style="list-style-type: none"> <li>■ A minor error has occurred and the printer is waiting for the error to be cleared.</li> <li>■ The Print Cartridge toner is low.</li> </ul>

### Note

Refer to Chapter 4, General Information for additional information.

## Printer Options

The WorkCentre 3210/3220 printer options include:

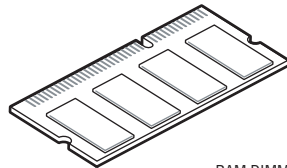
- Additional RAM (256 MB)
- Optional Tray Assembly (Tray 2)

### Additional RAM

The standard 128 MB memory is soldered on board. The printer features one memory slot that supports an additional 256 MB for a maximum of 384 MB. Memory modules must meet the following characteristics:

- 200 Pin DDR2 DIMM (8 chip type)
- Unbuffered, Non-parity

The printer's Configuration page lists the amount of installed RAM.



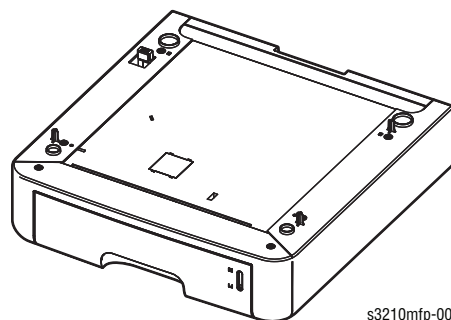
RAM DIMM

### Optional Tray Assembly

The Optional Tray increases the input capacity by 250 sheets and attaches underneath Tray 1 using a single connector cable.

**Note**

Only one Optional Tray is supported.



s3210mfp-002

## Maintenance Items

A maintenance item is a part or assembly that requires periodic replacement. Routine maintenance items are typically customer replaceable.

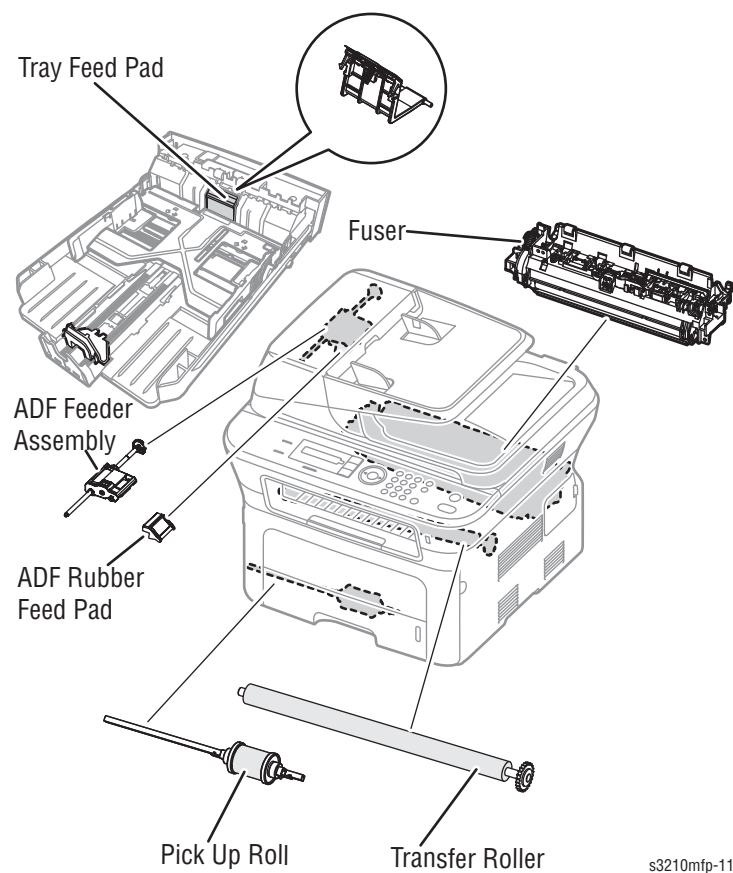
### WorkCentre 3210/3220 Maintenance Items

Item	Print Life
Fuser	50,000 pages
Pick Up Roll (*)	50,000 pages
Transfer Roller (*)	50,000 pages
Tray Feed Pad	50,000 pages
ADF Feeder Assy (*)	50,000 pages
ADF Rubber Feed Pad (*)	20,000 pages

(\*) Customer replaceable

### Note

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

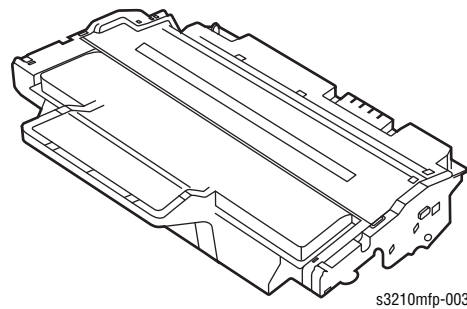


s3210mfp-114

## Consumables

The Print Cartridge is the only consumable. The Print Cartridge CRUM (Customer Replaceable Unit Meter) records toner usage data. When the toner count nears empty, Life End status is displayed to indicate toner empty.

Print Cartridge	Print Life
Standard Capacity	2,000 pages
High Capacity	4,000 pages



s3210mfp-003

## Specifications

### Printer Specifications

Characteristic	Specifications	
	WorkCentre 3210	WorkCentre 3220
Printing Technology	<b>Printing System:</b> Laser Diode Unit and Electro-photographic system <b>Developing System:</b> Non-magnetic Contacting Development System <b>Fusing System:</b> Heat Roller by 750W Halogen Lamp.	
Resolution (dpi)		
Print - Standard	600 x 600	600 x 600
Print - Enhanced	1,200 x 1,200	1,200 x 1,200
Copy	600 x 600	600 x 600
Scan - Optical	600 x 600	600 x 600
Scan - Enhanced	4,800 x 4,800	4,800 x 4,800
Halftone (Gray Scale)	256 Levels	256 Levels
Warm Up Time		
Power On (UI Ready)	54 sec.	54 sec.
Power On (first page print)	Less than 17 sec.	Less than 17 sec.
Power Save (UI ready)	2 sec.	2 sec.
Power Save (first print)	Less than 17 sec.	Less than 17 sec.
Power Save Settings	1~120 minutes	1~120 minutes
Printer Life	100,000 pages or 5 years	100,000 pages or 5 years
Average Monthly Print Volume (average)	800 PV/month**	800 PV/month**
Maximum Duty Cycle	30,000 pages/month*	50,000 pages/month*
Average Image Coverage	5%	5%
Operating System		
Mac	Mac OS X 10.3-10.5	Mac OS X 10.3-10.5
Windows	Windows 2000/XP (32/64bit)/ VISTA/2003 Server (32/64bit)/ 2008 Server	
Linux	Red Hat 8~9, Fedora Core 1~4, Mandrake 9.2~10.1, and SuSE 8.2~9.2, Mandriva 2005, 2006, 2007 (32bit/64bit), Ubuntu 6.06-7.04, Debian 3.1~4.0	

\* Assumes a 30 day month of printing.

\*\*For Duplex prints, the front and back sides are counted as 2 PV.

## Print Speed

Media	WorkCentre 3210 (ppm)	WorkCentre 3220 (ppm)
Letter	24	30
A4	24	28
Legal	20	24
<b>Duplex</b>		
Letter	N/A	15
A4	N/A	14
Legal	N/A	12

## First Print Output Time

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

Model	FPOT (sec.)
WorkCentre 3210	Less than 9.5 sec.
WorkCentre 3220	Less than 8.5 sec.

## Memory Specifications

Characteristic	Specifications
Minimum	128 MB on-board
Maximum	384 MB
Supported RAM	Supports up to 384 MB of DDR2 DIMM with one slot for 256 MB.

## Scanning Specifications

Characteristic	Specifications	
	WorkCentre 3210	WorkCentre 3220
Scanning Mode	<ul style="list-style-type: none"><li>■ Platen Mode: Scans document using the document glass</li><li>■ ADF: Scans document using the ADF</li></ul>	
Scanning Speed		
Standard	20 sec.	20 sec.
Text and Photo	30 sec.	30 sec.
Color	60 sec.	60 sec.
Resolution (dpi)		
Document Glass	Up to 1200 x 1200 dpi	Up to 1200 x 1200 dpi
ADF	Up to 600 x 600 dpi	Up to 600 x 600 dpi
Enhanced	Up to 4800 x 4800 dpi	Up to 4800 x 4800 dpi
Scan to USB	100, 200, 300 dpi	100, 200, 300 dpi
Scan to Application	75, 150, 200, 300, 600 dpi	75, 150, 200, 300, 600 dpi
Scan to Email	N/A	N/A
Maximum Scanning Area		
Width	<ul style="list-style-type: none"><li>■ Max Document: 216 mm (8.5 in.)</li><li>■ Effective Scan Width: 208 mm (8.2 in.)</li></ul>	
Length	<ul style="list-style-type: none"><li>■ Document Glass: 297 mm (11.7 in.)</li><li>■ ADF: 348 mm (13.7 in.)</li></ul>	
Scan Interface	TWAIN/ WIA	TWAIN/ WIA
File Formats	JPG, TIFF, BMP, PDF	JPG, TIFF, BMP, PDF
Network Scan to PC	Standard	Standard
Scan to USB	Standard	Standard
Scan to Application	Standard	Standard
Scan to E-mail	No	Standard
Scan to E-mail Protocol	No	SMTP
Scan to E-mail Directories	No	Local
E-mail Address Book	Up to 200 entry address book. Maximum message size up to 10MB.	



## Copy Specifications

Characteristic	Specifications	
	WorkCentre 3210	WorkCentre 3220
Copy Speed	<ul style="list-style-type: none"> <li>■ Letter: 24 cpm</li> <li>■ A4: 24 cpm</li> </ul>	<ul style="list-style-type: none"> <li>■ Letter: 30 cpm</li> <li>■ A4: 28 cpm</li> </ul>
FCOT	11 sec. from Document Glass	11 sec. from Document Glass
Quantity	1 to 99	1 to 99
Collation	Yes (ADF only)	Yes (ADF only)
Duplex Copy	No	Manual
Manual Duplex	Yes	Automatic Standard
Automatic Background Suppression	Standard	Standard
ID Card Copy	Standard	Standard
Darkness Control	Standard	Standard
Photo Mode	Standard	Standard
Cloning	Document Glass Only	Document Glass Only
Poster	Document Glass Only	Document Glass Only
<b>Copy Resolution (dpi)</b>		
Text	600 x 600	600 x 600
Text, Photo	600 x 600	600 x 600
Photo	600 x 600	600 x 600
<b>Reduce/Enlarge</b>		
Document Glass	25%-400%	25%-400%
ADF	25%-100%	25%-100%
<b>Maximum Copy Size</b>		
Document Glass	8.5 x 11 inches / A4	8.5 x 11 inches / A4
ADF	8.5 x 14 inches (Legal)	8.5 x 14 inches (Legal)

## First Copy Output Time

First Copy Output Time (FCOT) is defined as the time slot when the Start button is pressed until the trailing edge of the first copy is ejected.

Mode	FCOT (sec.)
From Document Glass	Less than 11.0 sec.

## Fax Specifications

Characteristic	Specifications
Compatibility	ITU-T, G3, ECM
Modem Speed	33.6 Kbps
Fax Memory	3.2 MB (260 pages)
Transmission Speed	Up to 3 seconds/page
Scan Speed at ADF	3 sec./Letter @ 203 x 98 dpi
Maximum Document Length	356 mm (14 in.)
Compression	MH, MMR, JBIG, JPEG
Resolution (dpi)	<ul style="list-style-type: none"> <li>■ Standard: Up to 203 x 98 dpi</li> <li>■ Fine: Up to 203 x 196 dpi</li> <li>■ Super Fine: Up to 300 X 300</li> </ul>
# of Auto Redial Attempts	Up to 13 attempts
Broadcast/Group Dialing (Number)	Up to 200
Speed Dialing (Number)	209 locations
Max Phone # Stored	200
Fax Forward to Fax	Standard
Auto Reduction	Standard
Last Number Redial	Standard
PC Fax (send only)	Standard
Secure Fax	Standard
Distinctive Ring	Standard
Send Confirmation	Standard
Auto Dial List Report/Printout	Standard
Send Receive Reporting Journal/Printout	Standard
System Data List Print Out	Standard
2 sided Faxing (Duplex)	No
Fax Forward to E-mail	No
LAN Fax	No
Internet Fax	No
Cover Page	No

## Environmental Specifications

Characteristic	Specifications
<b>Temperature</b>	
Operating	10° to 32° C (50° to 90° F)
Storage (Max 1 month)	-20° to 40° C (-4° to 104° F)
Storage (Max 18 months)	0° to 35° C (32° to 95° F)
<b>Humidity</b>	
Min/Max	20% to 80% RH
Optimal	30% to 70% RH
Altitude - Operating	2,500 meters (8,200 feet)
<b>Acoustic Noise Level</b>	
Printing	Less than 49.0 dBA
Standby	Less than 26.0 dBA
Copying	Less than 53.0 dBA

## Electrical Specifications

Characteristic	Specifications	
Power Supply Voltage/Frequency		
Line Voltages	<div><div></div> 100-127 VAC (-10%~6%)</div> <div><div></div> 220-240 VAC (-10%~6%)</div>	
Frequency Range	<div><div></div> 50/60 Hz ± 3 Hz</div>	
Current Capacity	<div><div></div> 110 V: 9.0A</div> <div><div></div> 220 V: 4.5A</div>	
Power Consumption	AC 110 V	AC 220 V
Standby	Less than 60 W	Less than 60 W
Sleep Mode	Less than 12 W	Less than 12 W
Average Operation	Less than 450 W	Less than 450 W
In-Rush Current		
At 25° Cold Start	Less than 40 Amp	
Other Conditions	Less than 50 Amp	
Leakage Current	Less than 3.5 mA (UL)	

## Warm-Up Time

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

- From Power On (UI Ready): Less than 54 seconds
- From Power On (First Page Print): Less than 17 seconds

## Image Specifications

### Note

The printer produces a 4 mm margin on all sides. Edge-to-edge printing is not available.

### Print Margins

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

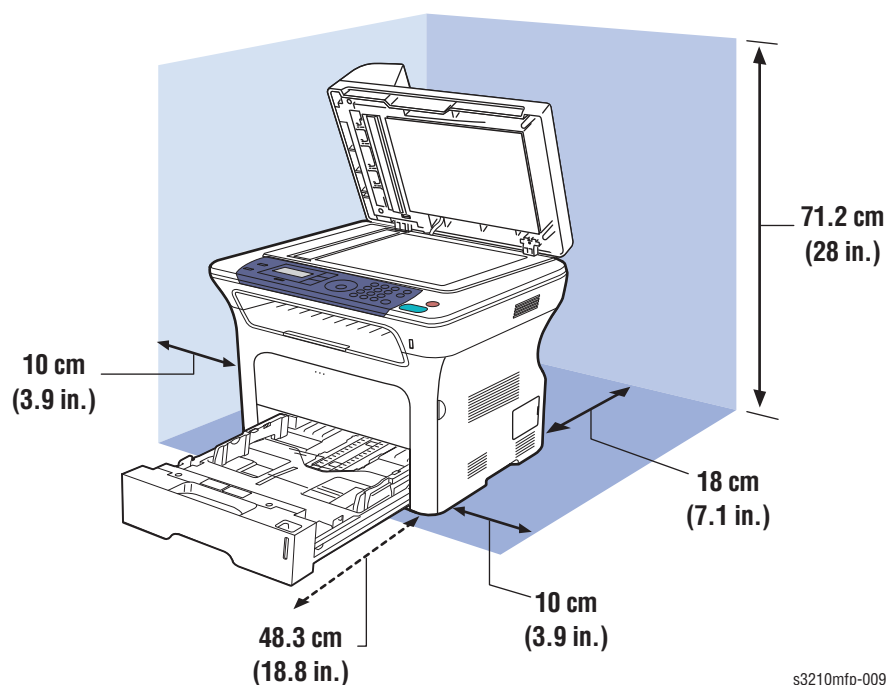
Characteristic	Specifications
<b>Skew</b>	
Vertical	<ul style="list-style-type: none"> <li>■ <math>\pm 2.0</math> mm (Tray 1) / 241.3 mm (Based on 0.0082 mm/mm)</li> <li>■ <math>\pm 2.5</math> mm (Duplex, SCF) / 241.3 mm (Based on 0.0103 mm/mm)</li> <li>■ <math>\pm 3.5</math> mm (ADF) / 241.3 mm (Based on 0.0103 mm/mm)</li> </ul>
Horizontal	<ul style="list-style-type: none"> <li>■ <math>\pm 1.5</math> mm (Tray 1: <math>\pm 2.0</math> mm) / 177.8 mm (Based on 0.0084mm/mm)</li> <li>■ <math>\pm 2.0</math> mm (Duplex, SCF) / 177.8 mm (Based on 0.0112mm/mm)</li> <li>■ <math>\pm 2.5</math> mm (ADF) / 177.8 mm (Based on 0.0112mm/mm)</li> </ul>
<b>Registration</b>	
Left Print Position (scanning direction)	$\pm 2.5$ mm ( $\pm 3.0$ mm, Duplex)
Top Print Position (feeding direction)	$\pm 3.0$ mm ( $\pm 3.0$ mm, Duplex)

## Physical Dimensions and Clearances

### Printer Dimensions

Print Engine	WorkCentre 3210	WorkCentre 3220
Height	421.6 mm (16.6 in.)	421.6 mm (16.6 in.)
Width	444.5 mm (17.5 in.)	444.5 mm (17.5 in.)
Depth	393.7 mm (15.5 in.)	393.7 mm (15.5 in.)
Weight (base printer with standard fill print cartridge)	17.8 kg (39.0 lb.)	17.8 kg (39.0 lb.)
<b>Optional Tray Assembly</b>		
Height	91.4 mm (3.6 in.)	91.4 mm (3.6 in.)
Width	363.0 mm (14.3 in.)	363.0 mm (14.3 in.)
Depth	401.3 mm (15.8 in.)	401.3 mm (15.8 in.)
Weight	2.6 kg (5.7 lb.)	2.6 kg (5.7 lb.)

### Minimum Clearances

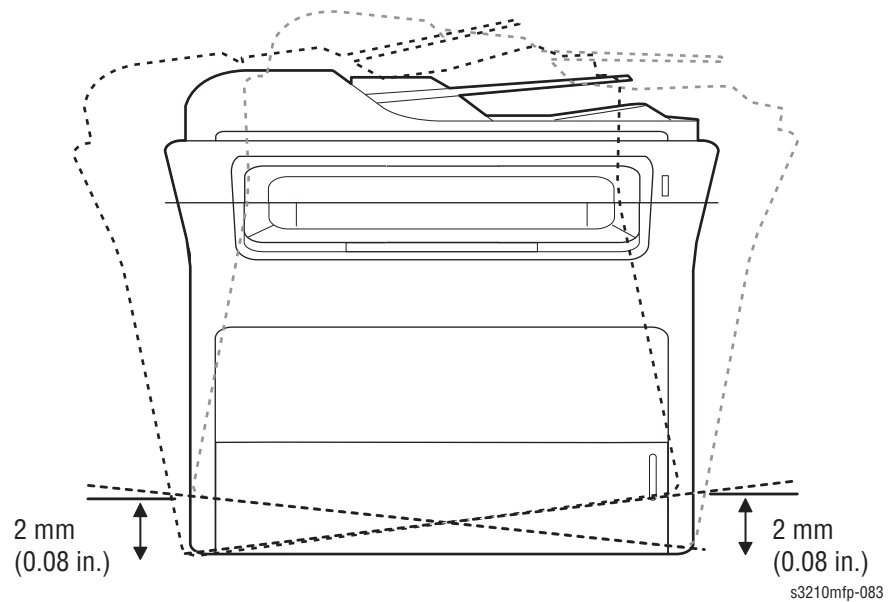


## Mounting Surface Specifications

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

1. In order to function properly, the printer must be placed on a surface with the following minimum dimensions.
2. Mounting surface flatness must be within the specified range. The printer must not be tipped or tilted more than 2 mm (0.08 inch).

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



## Media and Tray Specifications

These tables list supported media for the WorkCentre 3210/3220.

### Supported Paper Type and Size

Paper Type	Paper Size	Dimension	Manual Feeder	Tray 1, 2	Duplex (**)
Plain Paper	Letter	8.5 x 11 in. (216 x 279 mm)	Yes	Yes	Yes
	Legal	8.5 x 14 in. (216 x 356 mm)	Yes	Yes	Yes
	US Folio	8.5 x 13 in. (216 x 330.2 mm)	Yes	Yes	Yes
	Oficio	8.5 x 13.5 in. (216 x 343 mm)	Yes	Yes	Yes
	Executive	7.25 x 10.5 in. (184 x 267 mm)	Yes	Yes	No
	A4	8.26 x 11.69 in. (210 x 297 mm)	Yes	Yes	Yes
	A5	5.82 x 8.26 in. (148 x 210 mm)	Yes	Yes	No
	B5 ISO	6.93 x 9.84 in. (176 x 250 mm)	Yes	Yes	No
	B5 JIS	7.18 x 10.12 in.) (182 x 257 mm)	Yes	Yes	No
	Custom Page Size*		Yes	Yes	No
Transparency	Letter, A4	Refer to Plain Paper	Yes	Yes	Yes
Labels	Letter, Legal, Folio, Oficio, A4, JIS B5, ISO B5, Executive, A5, A6	Refer to Plain Paper	Yes	No	No
Card Stock	Letter, Legal, Folio, Oficio, A4, JIS B5, ISO B5, Executive, A5	Refer to Plain Paper	Yes	No	No
Custom (minimum size)		3.86 x 5.83 in. (76 x 127 mm)	Yes	No	No
Custom (maximum size)		8.5 x 14 in. (215.9 x 356 mm)	Yes	No	No

\* All trays support Custom sizes. The Manual Feeder supports a wider range of custom size dimensions than Trays 1 and 2.

\*\* Duplex is only available on the WorkCentre 3220.

## Supported Paper Type and Weight

Paper Type	Paper Weight	Manual Feeder	Tray 1, 2	Duplex
Plain Paper	60-105 g/m <sup>2</sup> (16-28 lb. Bond) 60-163 g/m <sup>2</sup> (16-43 lb. Bond)	Yes	Yes	Yes
Labels	120-150 g/m <sup>2</sup> (32-40 lb.)	Yes	No	No
Card Stock	60-163 g/m <sup>2</sup> (16-43 lb.)	Yes	No	No
Transparency	138-146 g/m <sup>2</sup> Xerox Premium Transparency	Yes	No	No
Envelope	75-90g/m <sup>2</sup> (20-24 lb.)	Yes	No	No
Custom	60-163 g/m <sup>2</sup> (16-43 lb.)	Yes	No	No

## Supported Envelopes

Type	Dimension	Manual Feeder	Tray 1, 2	Duplex
#10 Commercial Envelope	4.12 x 9.5 in. (105 x 241 mm)	Yes	No	No
Monarch Envelope	3.88 x 7.5 in. (98.4 x 190.5 mm)	Yes	No	No
B5 Envelope	6.93 x 9.84 in. (176 x 250 mm)	Yes	No	No
C5 Envelope	6.38 x 9.02 in. (162 x 229 mm)	Yes	No	No
C6 Envelope	4.49 x 6.38 in. (114 x 162 mm)	Yes	No	No
DL Envelope	4.33 x 8.66 in. (110 x 220 mm)	Yes	No	No

**Note:** Do not use envelopes with hot melt glue, windows, or metal clasps.



## Print Cartridge Life

When the Print Cartridge life has ended, the printer stops accepting print request (life of the Print Cartridge is counted by the counter in the CRUM). Print the Supplies Information page to check Print Cartridge life status.

### Print Cartridge Error Information

Print Cartridge	Status	Functionality
Xerox	Toner Low	Continues to print.
Xerox	Toner Empty	Continues to print until hard stop.

## Firmware Update

The Main Controller Board firmware can be updated by customers and service technicians. Firmware updates are available at [www.xerox.com/office/support](http://www.xerox.com/office/support).

Updated Firmware	Windows - via Network (port 9100)
Main Controller Board	Available

## Diagnostics

Two types of diagnostic functions are available:

1. Auto Diagnostics: The printer performs several self-tests. When turned On, a routine of power up tests (POST) check key operational characteristics. During operation, the printer monitors system performance.
2. Manual Diagnostics: EDC, Tech mode, and test prints are all tools for the diagnosis and repair of printer problems. These tools are only available to qualified service personnel.

## CentreWare IS

The CentreWare IS enables the user to monitor the printer's status. Users can access the CentreWare IS menu to add and/or update the printer's information as needed.

## Power Save Mode

The Power Save mode is controlled by system firmware. In order to switch the Ready state to the Power Save mode after a specified time, the main system sends a sleep command to the engine. When the engine receives a sleep command, it stops Fuser and Fan operation. The main system then sets the engine to a sleep state.

The Power Save mode setting is accessed through the Control Panel. The Power Save can be set from 1 to 120 minutes.

## Reports

The following reports are available in the WorkCentre 3210/3220 printer. The reports can be printed using the printer's Control Menu or CentreWare IS.

Report	Print Method	
	Control Panel	CentreWare IS (Network)
Printer Configuration Page	Yes	Yes
Network Configuration Page	Yes	Yes
Supplies Information Report	Yes	No
Fax Phone Book	Yes	No
Email Address Book	Yes	No
Email Group Address Book	Yes	No
Fax Send Report	Yes	No
Fax Sent Report	Yes	No
Email Sent Report	Yes	No
Fax Receive Report	Yes	No
Schedule Jobs Report	Yes	No
Junk Fax Report	Yes	No
User Authentication Report	Yes	No
Print Cleaning Page	Yes	No

## Configuration Report

Two types of Configuration report are available: Printer Configuration report and Network Configuration report.

## Supplies Information Report

The Supplies Information report is available in Tech mode and lists a percentage of remaining toner, print and scan page counts, and Print Cartridge capacity.

## Page Count

Page Count information is listed on the Configuration Report.

## Clean Drum Page

The Print Cleaning page is printed when a Cleaning procedure is performed. Refer to “Cleaning the Print Cartridge” on page 7-3 for detailed information.





# Theory of Operation

## In this chapter...

- Operational Overview
- Paper Path
- Image Input Terminal
- Image Output Terminal

## Chapter 2

## Operational Overview

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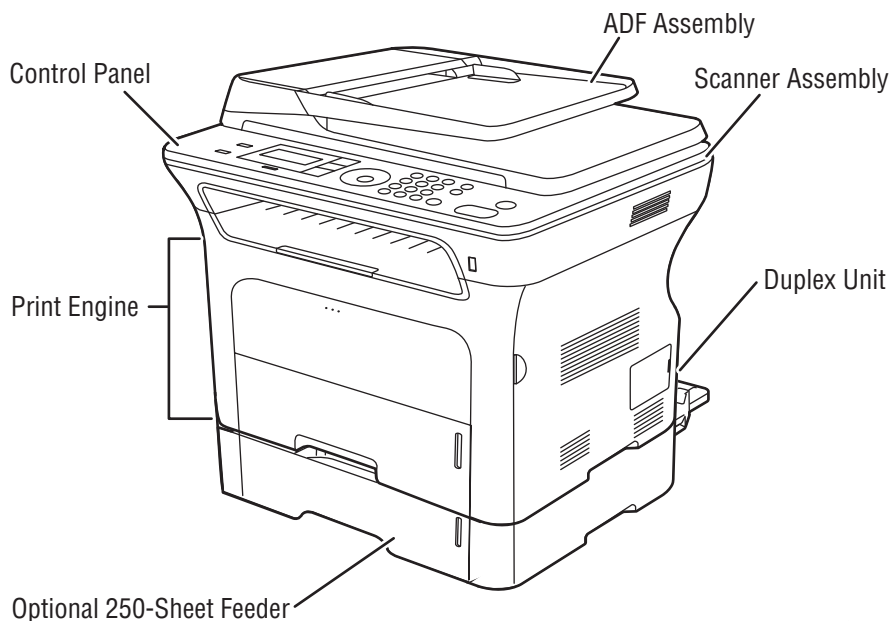
The WorkCentre 3210/3220 is a monochrome multifunction printer that uses Laser Unit (LSU) with an electrophotographic process. The printer system consists of one print cartridge which creates the toner image.

### System Overview

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The WorkCentre 3210/3220 Multifunction Printer is divided into two main components: the Image Input Terminal (IIT - ADF and Scanner) and the Image Output Terminal (IOT - Print Engine).

The WorkCentre 3210/3220 Multifunction Printer consists of the Automatic Document Feeder (ADF) Assembly, Scanner Assembly, Control Panel, Print Engine, Duplex Unit (3220 only), and Optional Tray Assembly.



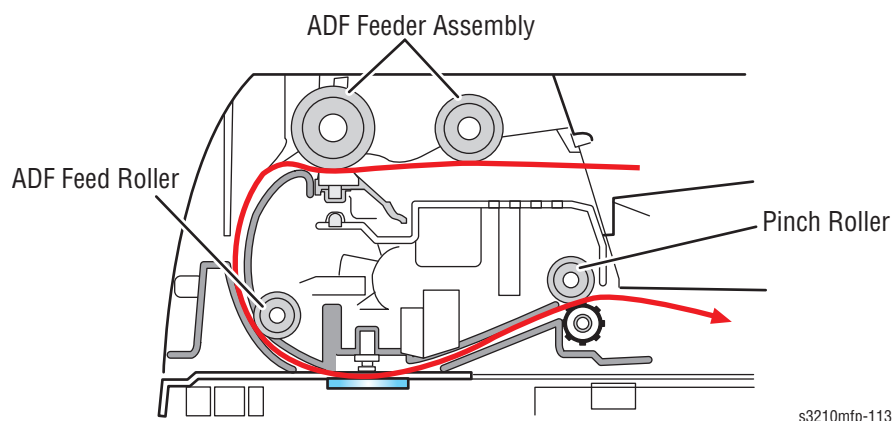
s3210mfp-243

## Paper Path

The following describes how media is transported through the printer.

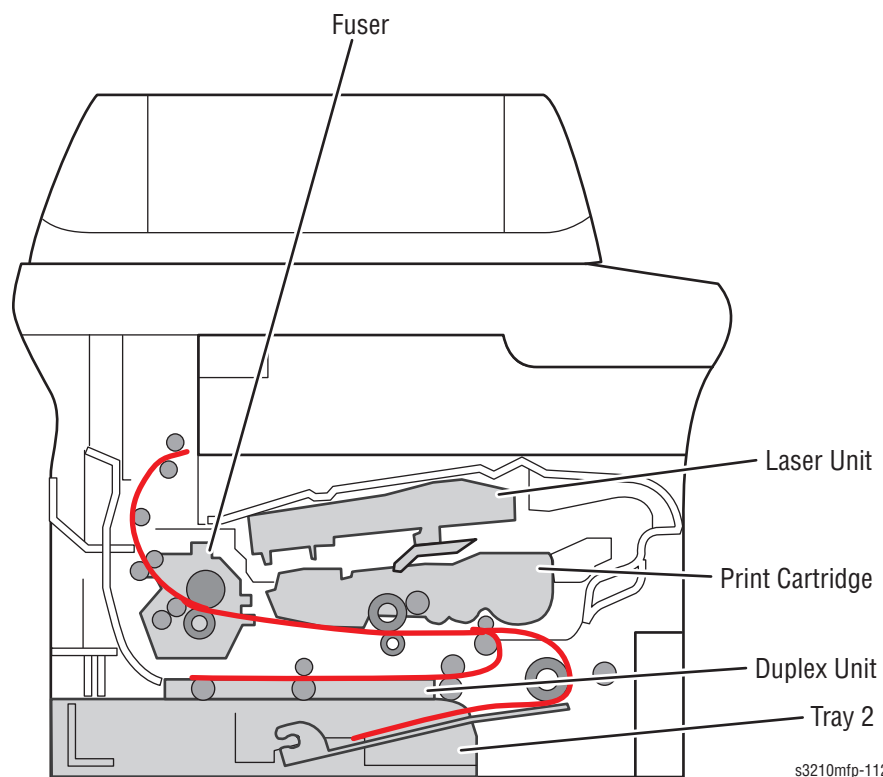
### ADF

Media is transported through the ADF by these components.



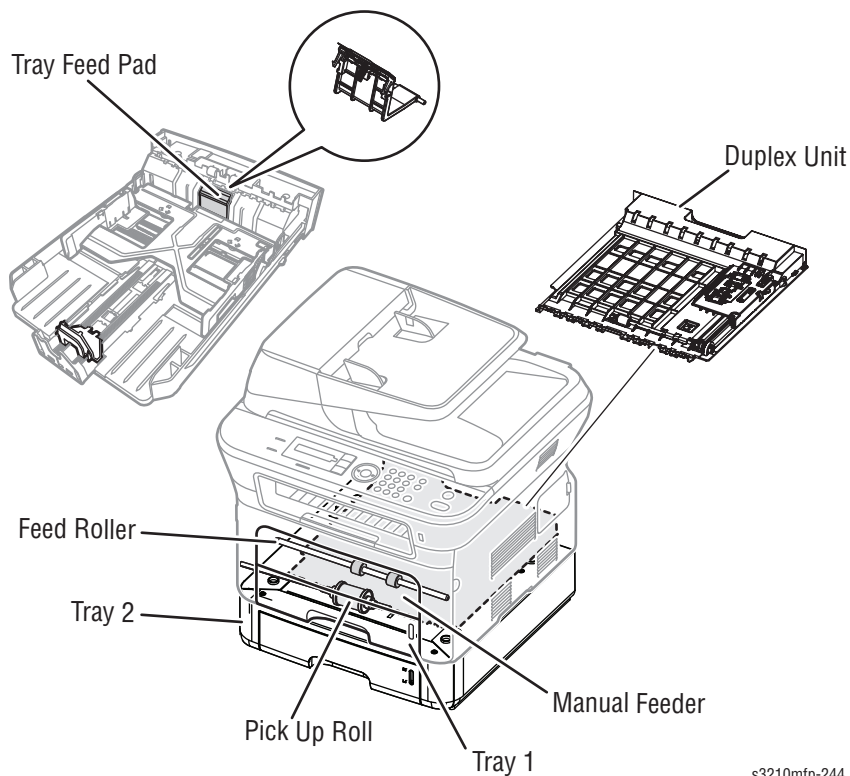
### Printer

The media supplied from the Tray 1, or Tray 2, is transported through the printer as shown in the illustrations below. Media fed from the manual feed slot enters the media path at the registration roller.



## Paper Feeding

The feeding mechanism consists of the Manual Feeder, Tray 1, Tray 2, Pick Up Roller, Feed Rollers, Duplex Unit, and Tray Feed Pad. The rollers and sensors in the paper feed path control paper registration and guide the paper through the image transfer, image development, image fusing, and exit assemblies. The paper path has an anti-static connection to ground to eliminate problems due to static charge on the paper.

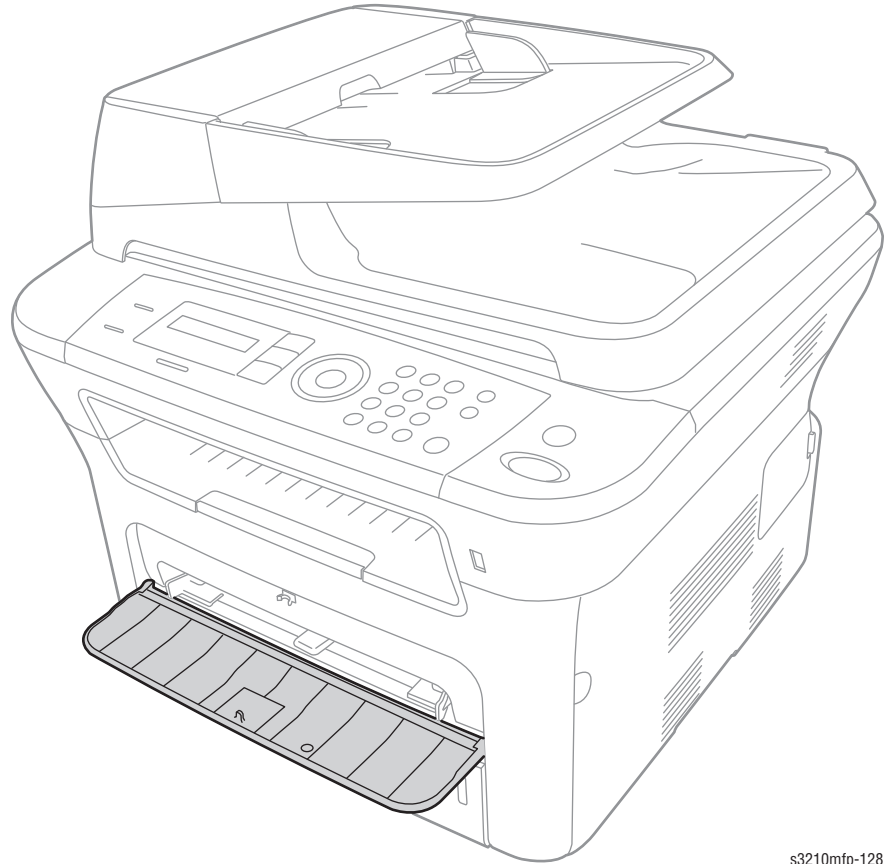


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## Manual Feeder

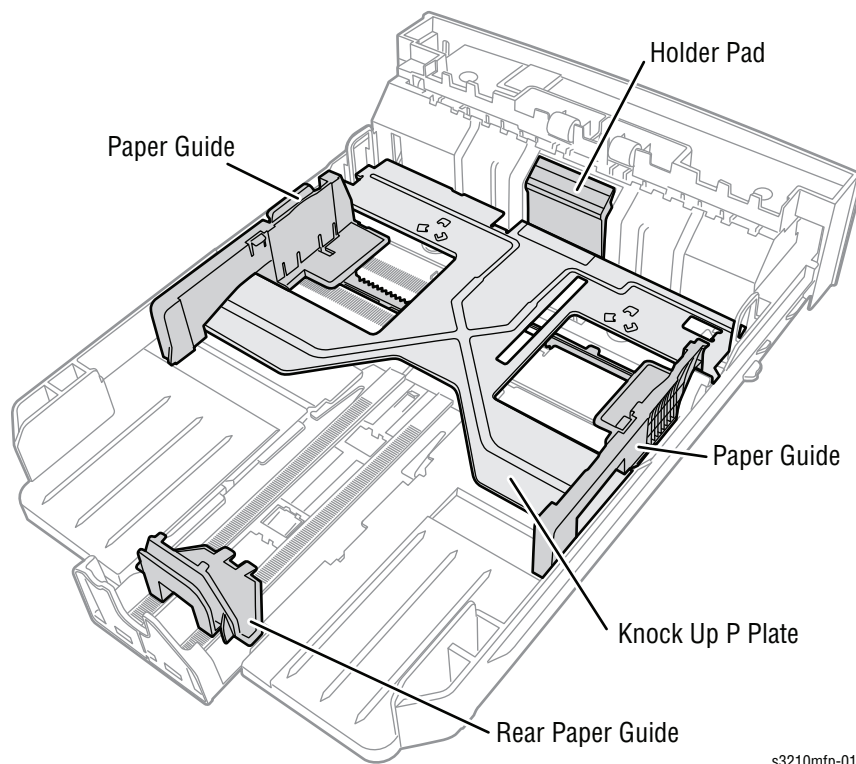
The manual feeder is used to hold non-standard or custom paper sizes and special media (envelopes, transparencies, etc.). The manual feeder uses a friction pad method to ensure paper is separated and can only hold 1 sheet of paper.



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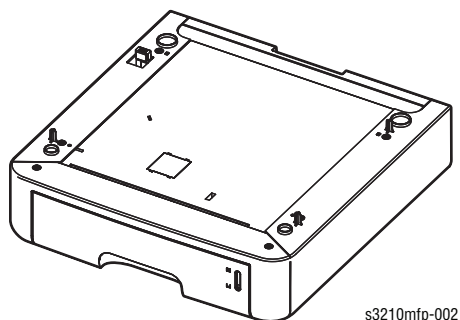
## Tray

The Tray uses a “center loading” method. The Tray has side and rear guides which can be adjusted for various paper sizes. A paper level indicator, located in front of the Tray indicates the amount of remaining paper.



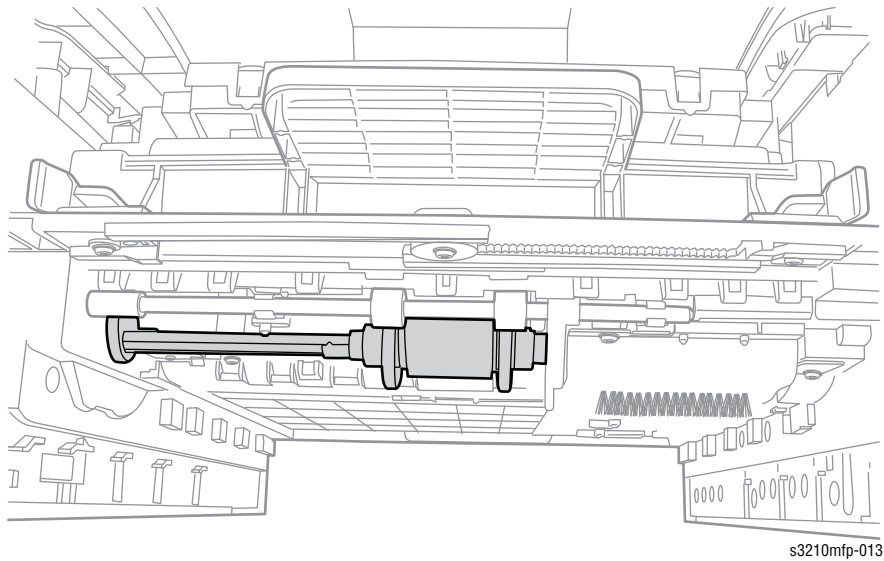
## Optional Tray Assembly

The Optional Tray Assembly (Tray 2) add a second 250-sheet input tray. Tray 2 has a separate feed mechanism.



## Pick Up Roller

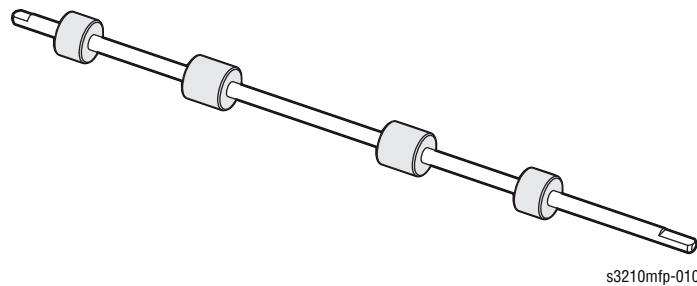
The Pick Up Roller is used to pick up and feed paper into the printer and remove static charge on the paper.



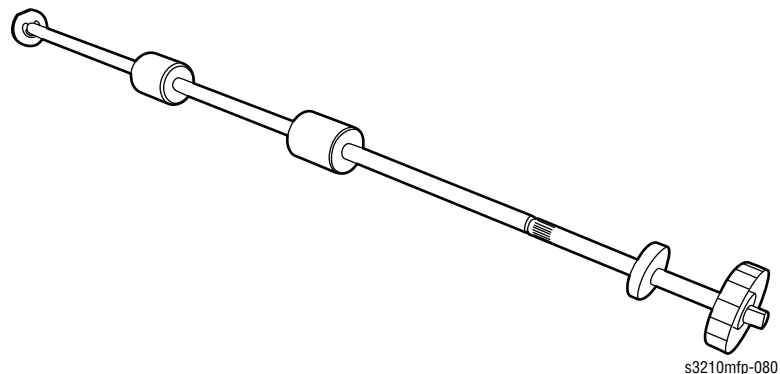
## Feed Roller (Registration)

The Feed Roller arranges paper, transfers paper, detects paper, and removes jam.

### Feed Roller (top area of the printer)



### Feed Roller (bottom area of the printer)



## Separation Method

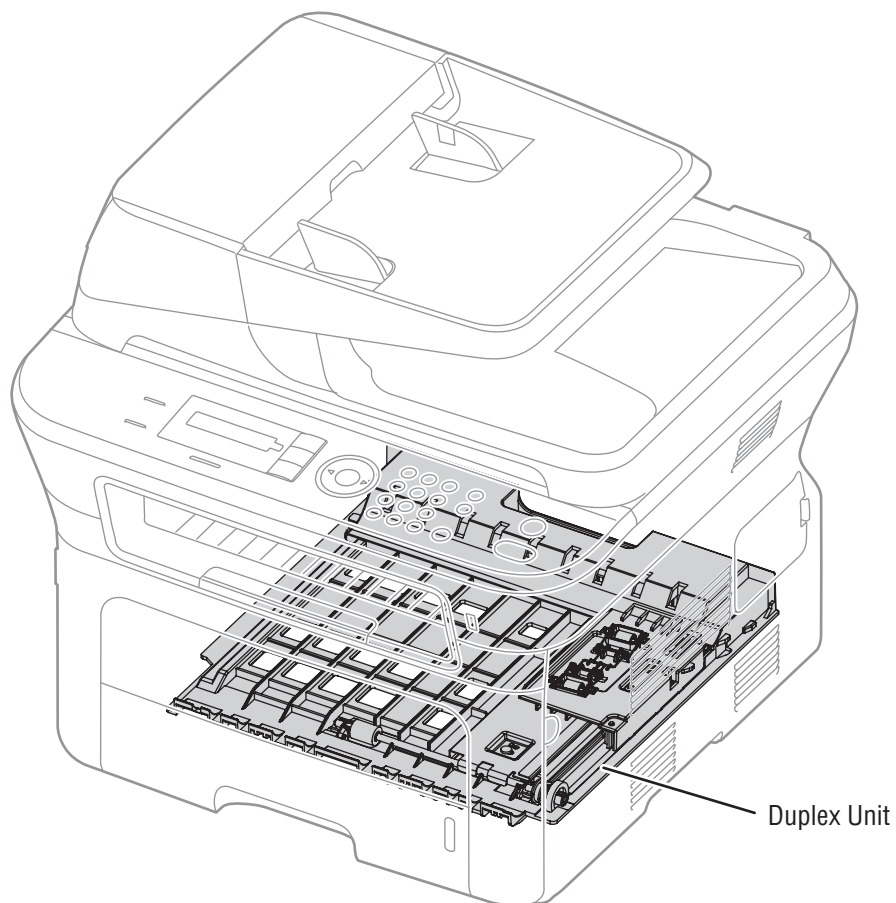
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Individual sheets are separated from the friction pad in the tray. When paper feeds into the printer, it passes over the Feed Pad Assembly that uses a spring loaded friction pad to separate the sheets of paper.

## Duplex Unit

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The Duplex Unit, available on the WorkCentre 3220 only, uses a side feeding method. When a jam occurs in the front or rear part of the printer, the Duplex Unit can be removed to access the jam area.



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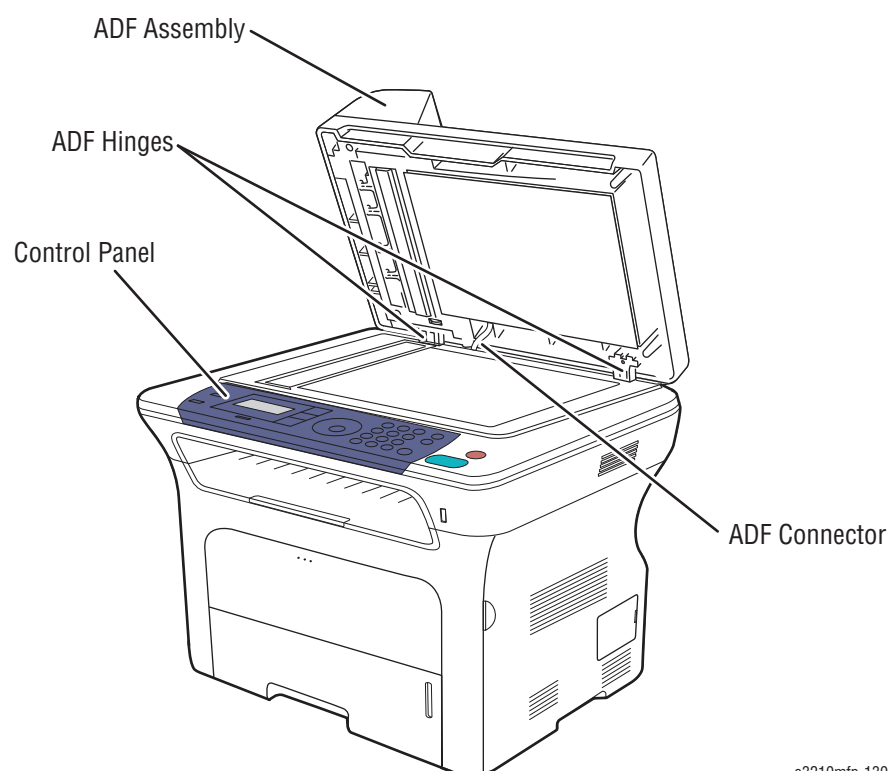
## Image Input Terminal

The Image Input Terminal (IIT) generates the image data for copies and scans and is made up of two major subsystems:

- Automatic Document Feeder (ADF)
- Scanner Assembly with the Control Panel

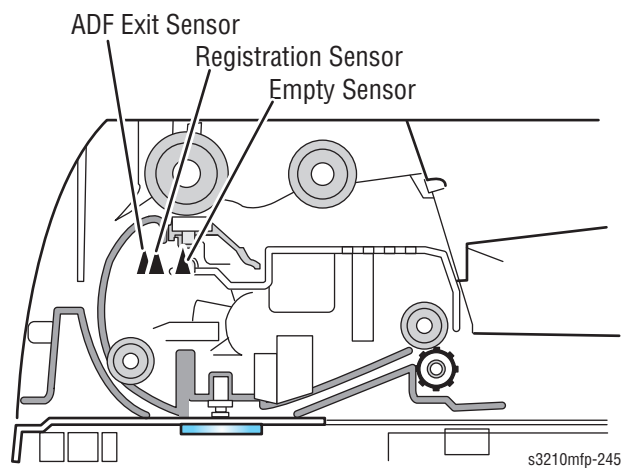
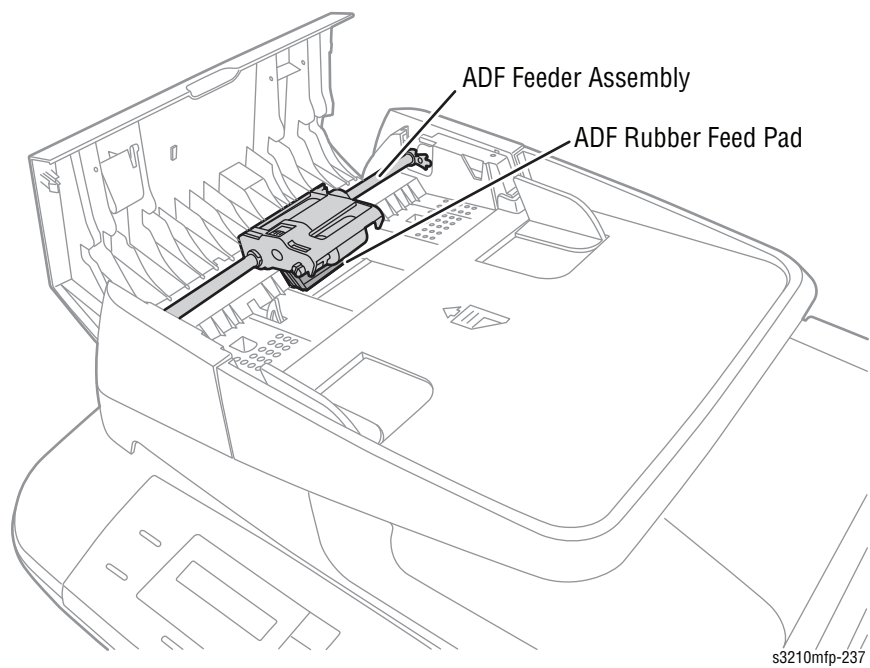
### Automatic Document Feeder

The ADF automatically feeds original documents from the ADF input tray.



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## ADF Feeder, Feed Pad, and Sensors



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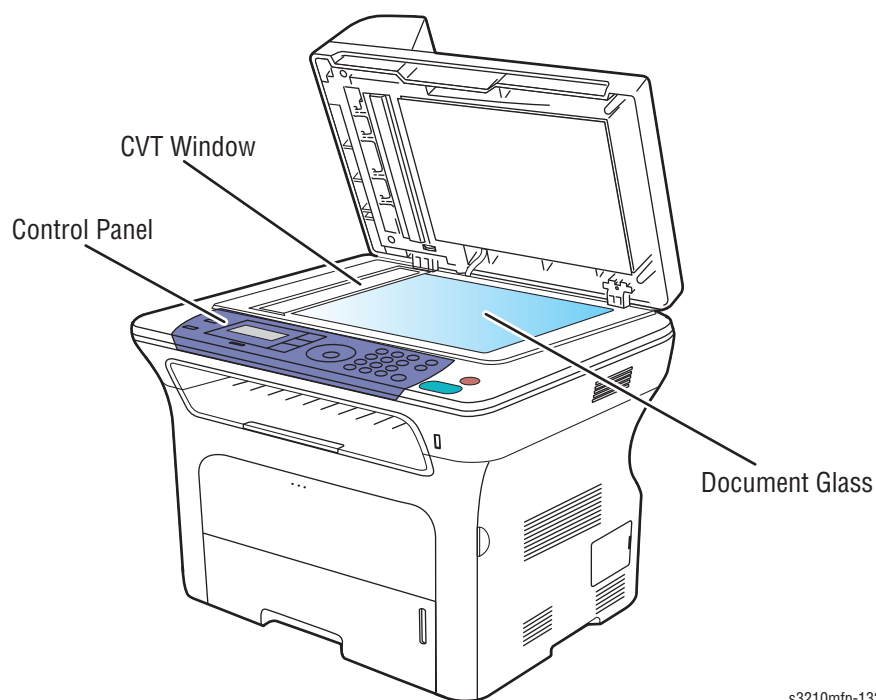
## Document Feeder Functions

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### ADF Components

Components	Description
Input Tray	The input tray feeds documents into the ADF for simplex (single-sided) scanning. Tray capacity is 50 sheets of paper (20 lb. bond).
Output Tray	Documents fed through the ADF exit to the output tray.
ADF Feeder Assembly, ADF Rubber Feed Pad	The ADF Feeder is designed to work with the ADF Rubber Feed Pad to ensure that only one sheet of paper is fed at a time.
ADF Motor	The ADF motor drives the pick and feed roller.
ADF Connector	An electrical connector on the rear of the ADF connects to a receptacle on the rear of the flatbed portion of the IIT. The ADF connector communicates with the scanner board and that communication is passed to the IOT.
ADF Hinges	Mechanical connection between the ADF and the scanner portion of the IIT consists of a set of hinges. These hinges allow for the ADF to lift from the document glass to facilitate book copying.

## Scanner Assembly



s3210mfp-132

### Scanner Assembly Components

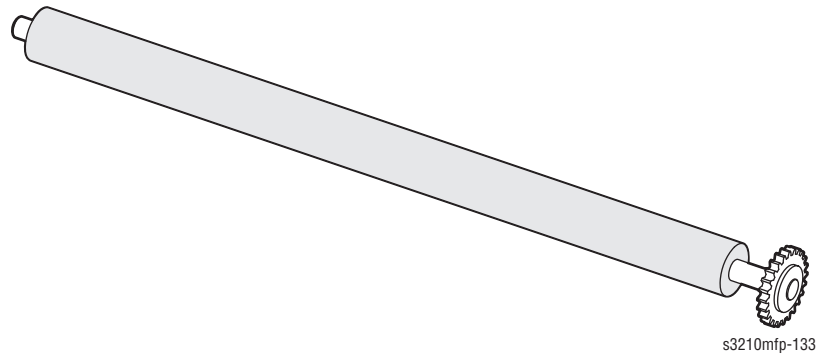
Components	Description
Platen Glass	The document glass is used for copying or scanning original documents and images.
Contact Image Sensor	Scans the original converting the image in data.
CVT Window	This portion of the document glass is a part of the ADF paper path. The function of this window is to allow the scan head to image an original being fed through the ADF.
Control Panel	The Control Panel is the user interface with the printer.



## Image Output Terminal

### Transfer Roller

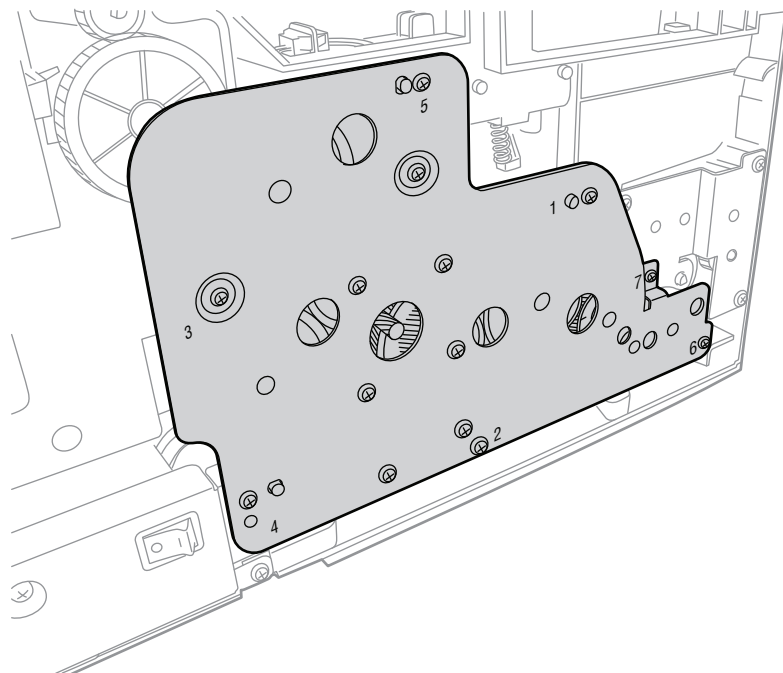
The Transfer Roller transfers toner on an Organic Photo Conductor (OPC) to the paper.



### Drive Unit Assembly

The Drive Unit Assembly receives power from the Main Controller Board, The Main Motor provides drive energy to the paper feed, Print Cartridge, Fuser, Pick Up Roller, Feed Rollers, and Duplex Unit. The Drive Unit Assembly consists of the Main Motor and gear set mounted to a support plate.

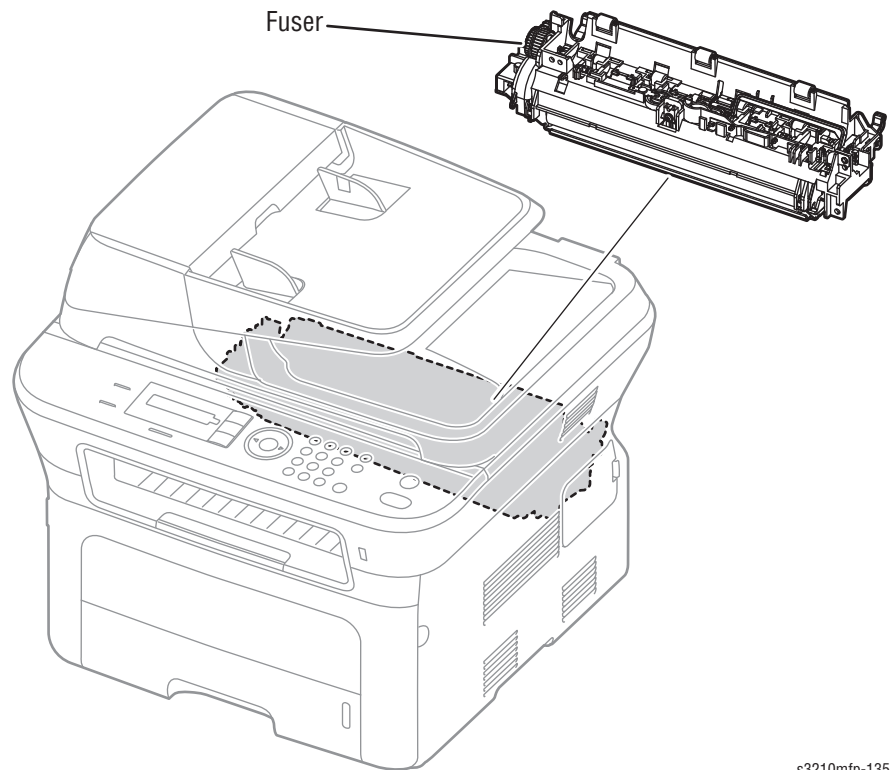
- Main Motor: DC 24V
- Rated RPM: 2170 rpm



## Fuser

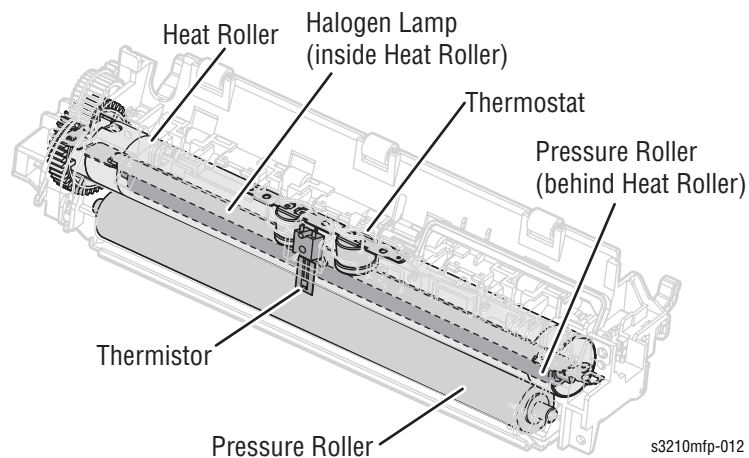
The Fuser consists of one Halogen Lamp, one Heat Roller, two Pressure Rollers, one Thermistor, one Thermostat and the Exit Sensor. The Halogen Lamp heats the Heat Roller melting the toner. The large and Small Pressure Rollers adhere the melted toner to the media surface. The thermistor and Thermostat monitor Fuser operating temperature.

Fuser power = 750 Watt  $\pm$  5%



s3210mfp-135

## Fuser Components



s3210mfp-012

## Halogen Lamp

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

## Thermistor

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

## Thermostat

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

## Heat Roller

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

## Pressure Rollers

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

## Safety Features

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Several protection devices are used to prevent Fuser overheating:

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

Interlocks disable the Fuser, motors and Laser Unit.

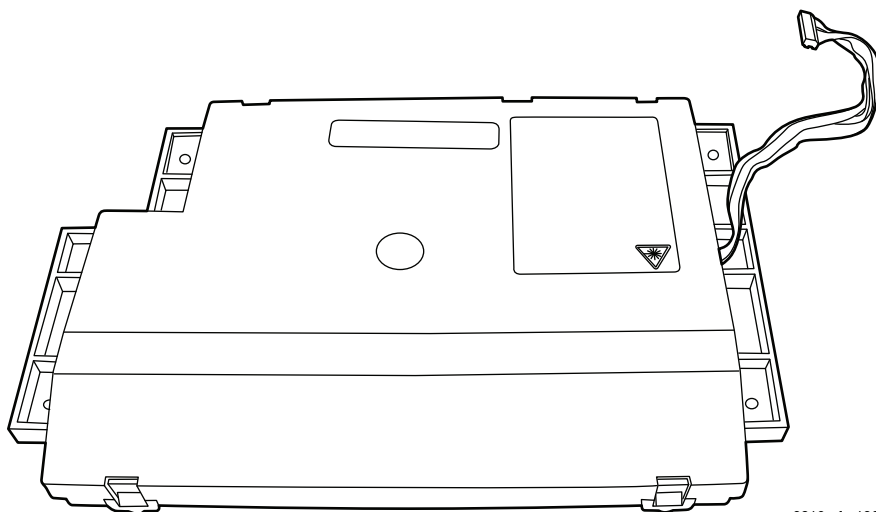
- Fuser power is cut off when the front cover is opened.
- Fuser cover temperature is maintained at less than 80° F.

## Laser Unit

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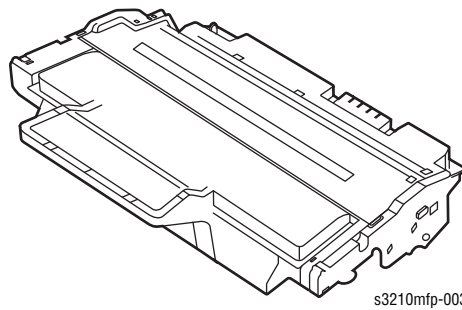
The Laser Unit is the core part of the WorkCentre 3210/3220 and is controlled by a video controller. The Laser Unit converts video data received from the computer into an electrostatic latent image on the surface of the OPC drum. This is achieved by controlling the laser beam and exposing the surface of the OPC drum to the laser light. A rotating polygon mirror reflects the laser light onto the OPC drum. Each face of the mirror produces one scan line. The OPC drum rotates at the same speed as the paper feeding speed. As the OPC drum turns, the laser scans, which creates the full page image.

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



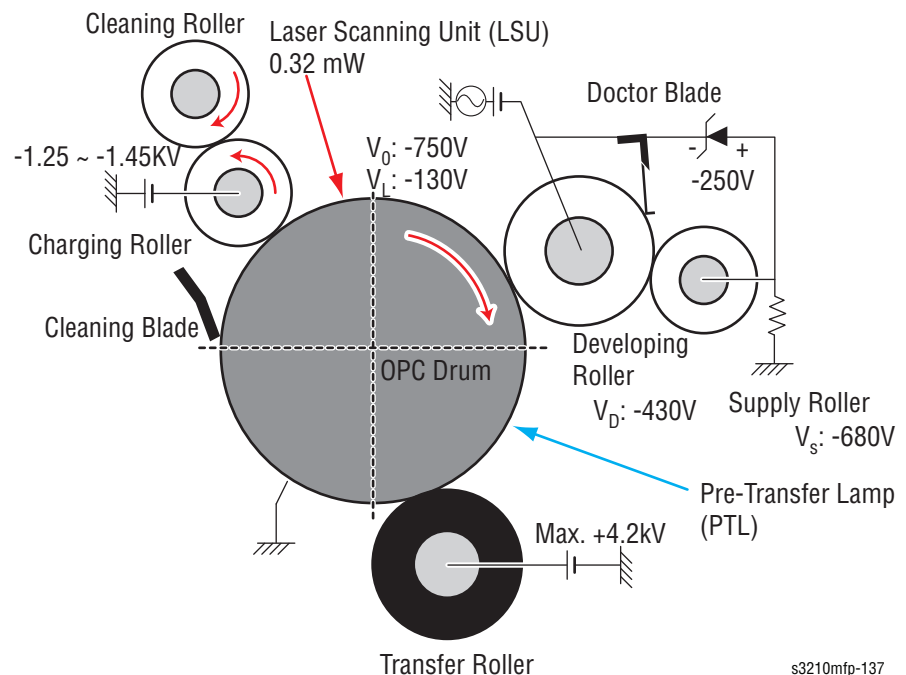
s3210mfp-136

## Print Cartridge



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

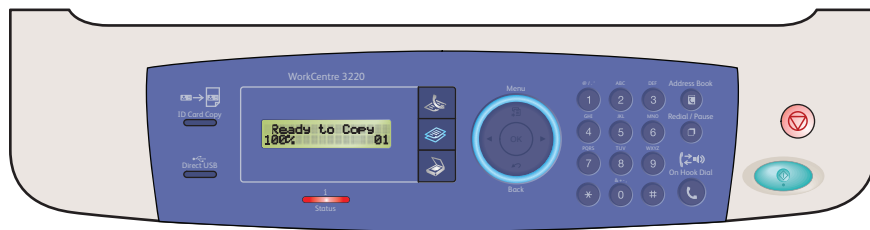
- Developing method: Non-contacting method
- Toner: non-magnetic 1 component pulverized type toner
- Toner Life: 2,000 pages/ 4,000 pages (LSA Pattern/A4 Standard)
- Toner remaining amount detection: Yes
- OPC cleaning blade
- Management of waste toner: Collects toner using the cleaning blade.
- OPC drum protecting shutter: No
- Toner CRUM reader: Identifies whether toner is Xerox branded toner or whether a non-Xerox Print Cartridge is installed.



s3210mfp-137

## Control Panel

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

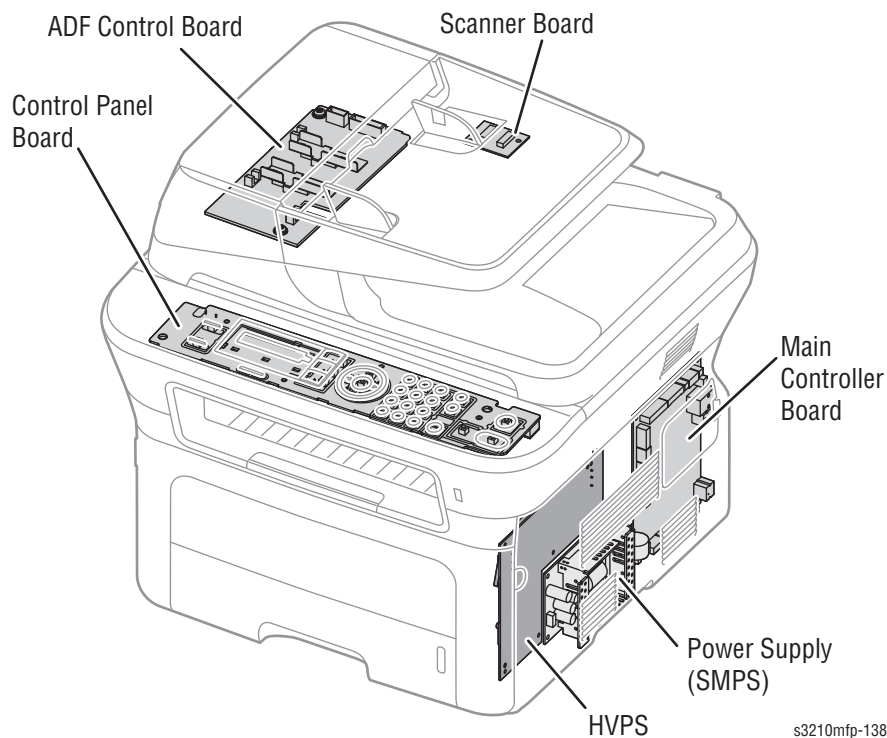


s3210mfp-248

## Electrical Components

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

- ADF Control Board
- Scanner Board
- Control Panel Board
- Main Controller Board
- Power Supply (SMPS)
- HVPS

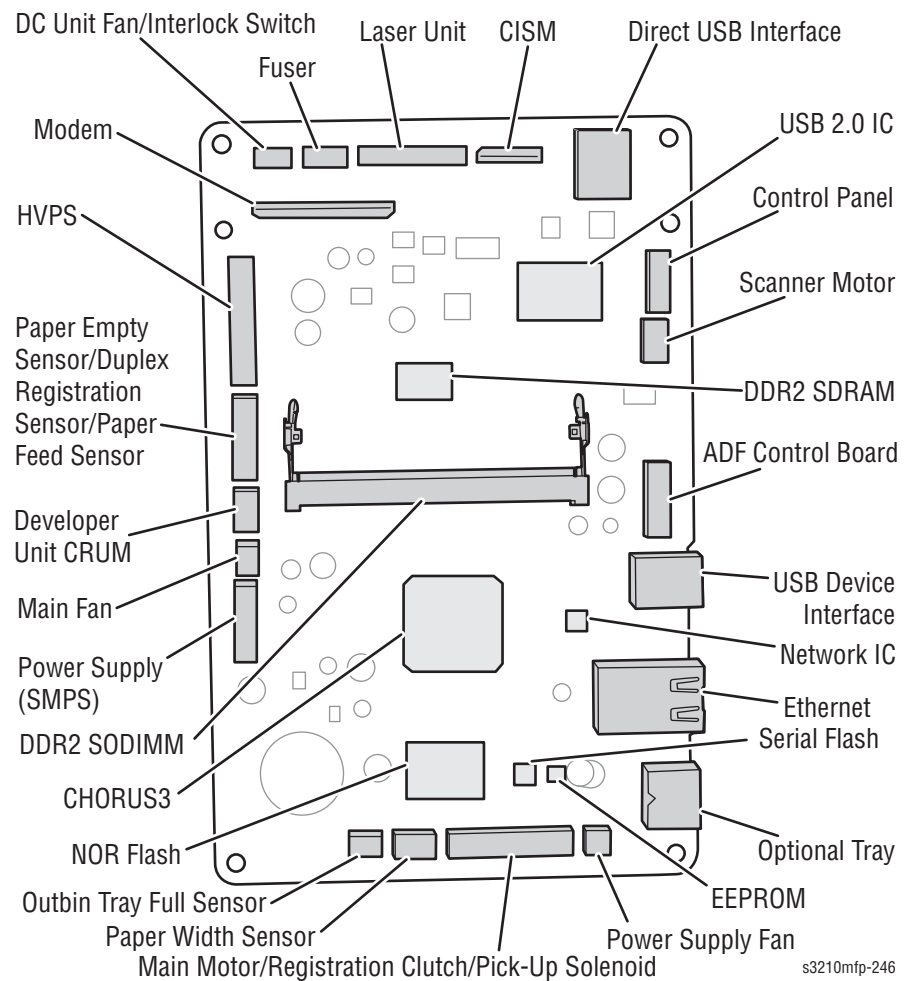


s3210mfp-138

## Main Controller Board

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

The signals from the Paper Feed Sensor and Paper Empty Sensor are input to the Main Controller Board.



## Controller Part

- Performs electro-photography
- Memory control (DDR2 SDRAM, NOR FLASH, Serial FLASH, EEPROM)
- Handles signal between each driver and PC interface
- Clock generation

## Engine Part

- Motor Control (BDLC, Stepping)
- ADF Motor Interface (ADF reserved)
- LSU (2 beam LVDS Type) control
- Fuser control (On/Off)
- I/O signal handling (Sensor/Clutch signal)
- OPE/ CIS / MODEM / SCF control
- CRUM control
- Fan control

## Asic (CHRUS3)

Description	Specifications
Package	■ 412 PBGA (Total pad number: 412 [each])
Voltage	<ul style="list-style-type: none"> <li>■ Core Voltage: 1.0 V</li> <li>■ I/O Pad Voltage: 3.3 V</li> </ul>
CPU Core	■ ARM926EJS (16KB I-cache, 16 KB D-cache)
Operating Frequency	■ 400 MHz
DDRC	<ul style="list-style-type: none"> <li>■ DDR 1, 2 Combo</li> <li>■ 32 Bits Data Width (internal), 16 Bits Data Width (external)</li> <li>■ 133 MHz DRAM interface</li> <li>■ 16 to 128 MB Array (up to 512 MB total)</li> <li>■ Supports 4 AHB Slave Ports for individual memory access</li> <li>■ Supports 4 bank DDR1 SDRAM and 4 &amp; 8 bank DDR2 SDRAM</li> <li>■ Supports up to 4 DRAM ranks (chip select output)</li> </ul>
ROMC	■ 2 channel NOR Flash Controller
IOC	■ Supports 4 channel external I/O device, 2 channel DMA I/O
DMAC	■ Contains 3 channels
HPVC	<ul style="list-style-type: none"> <li>■ Supports 32 bits AHB Master I/F</li> <li>■ A4 2400 dpi, A3 1200 dpi addressable</li> <li>■ Supports 200, 300, 400, 600 dpi</li> <li>■ Supports 4 channels single/dual beam</li> </ul>

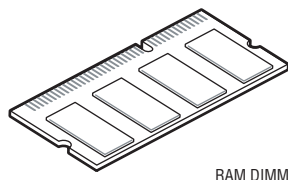


**Asic (CHRUS3) (continued)**

<b>Description</b>	<b>Specifications</b>
UART	■ 4 channels
Interrupt	■ Supports up to 4 dedicated external interrupts ■ Supports 64 internal interrupts
Timer	■ 6 system timers for general purpose ■ 1 watchdog timer ■ Supports RTC
MAC	■ 10 Mbps/ 100 Mbps ■ Full IEEE 802.3, 802.3u compatibility
PPI	■ IEEE 1284 Compliant Parallel Port Interface
SPI	■ 1 Slave Select
USB	■ USB 2.0, 1 channel (Host & Device Selectable) ■ Supports 1.5/12/480 Mbps
GEU	■ Graphic Execution Unit
RSH	■ Supports Fully Hardware Rotator/ Scaler/ Halftone
SCAN/ IF	■ 1200 dpi CCD Sensor I/F ■ 1/2 channels AFE input (1 dedicated, 1 mixed) ■ Sensor MCLK Half Clock Control
LSU	■ 2 channels for dual beam ■ Test pattern generation ■ FSYNC generation
JPEG	■ Encoder 1 channel, decoder 1 channel
JBIG	■ 2 JBIG Compressor & 4 JBIG De-Compressor
Codec	■ 5 Halftone Compression/ Decompression Unit ■ Supports 32 bits AHF Master I/F ■ MH/ MR/ MMR encoder 1 channel ■ MH/ MR/ MMR decoder 1 channel
HCT	■ 1 channel encoder, 1 channel decoder
Engine Controller	■ PWM: 12 channel (dedicated 8 channels, mixed 4 channels) ■ Step Motor Controller
I2C Controller	■ 2 channels ■ I2C bus (SM bus) Slave Device Support (I2C version 2.1)
PLL	■ 3 PLLs (for Main/ PVC/ DDR)
DAC	■ 1 channel, 10 bits, 2 MSPS
ADC	■ 8 channel, 10 bits, 500 KSPS

## Memory

The Main Controller Board has Flash ROM and DRAM memory units.



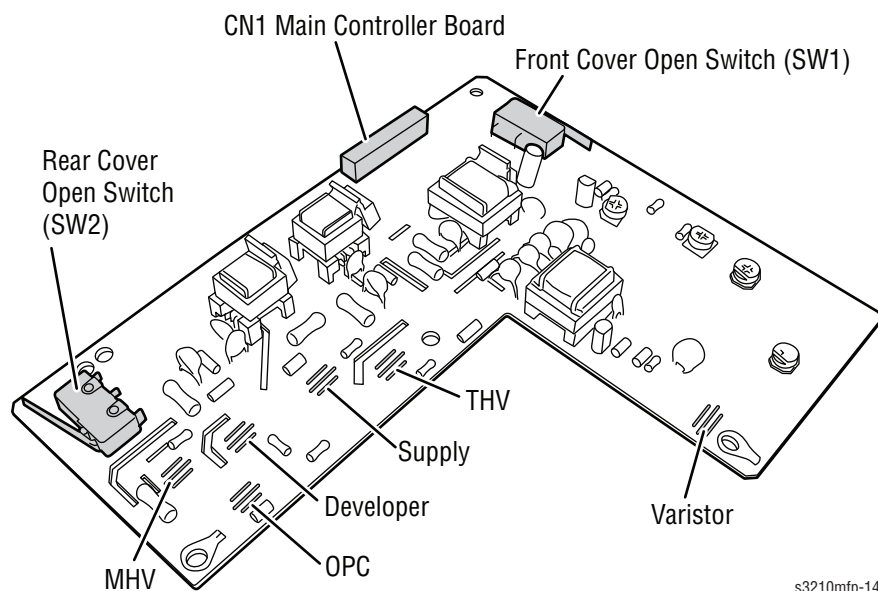
RAM DIMM

- **Program Memory:** Stores System Program and can be updated via USB interface.
  - Capacity: 16 MB (NOR Flash)
  - Maximum Access Time: 90 ns
- **Working Memory:** It is used as Swath Buffer in printing, Scan Buffer in scanning, ECM Buffer in FAX receiving, and System Working Memory Area.
  - Capacity: 128 MB (standard), up to 384 MB
  - Type: DDR2 SDRAM 667 MHz, 16 Bit

## High-Voltage Power Supply

The High-Voltage Power Supply (HVPS) takes 110/ 220 V and outputs +5 V, +24 V to supply power to the Main Controller Board and other boards.

The HVPS generates high voltage for the THV/MHV/BIAS and the outputted high voltage is supplied to the toner, Print Cartridge, and Transfer Roller.



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### Transfer High Voltage (THV+)

---

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

- Input Voltage: 24 VDC  $\pm$  15%
- Output Voltage: MAX +5.0KV  $\pm$  5% (duty variable)
- Line Regulation: under  $\pm$  3% (fluctuation input 21.6 V~27.6 V)
- Output Voltage Rising Time: 50 ms Max
- Output Voltage Falling Time: 100 ms Max
- Fluctuating Transfer Voltage with Environmental Various: 0 V~5 KV
- Environment Recognition Control Method: The THV-PWM ACTIVE is transfer active signal. It detects the resistance by recognizing the voltage value, F/B, while permits the environmental recognition voltage.
- Output Voltage Control Method: Transfer Output Voltage is outputted and controlled by changing duty cycle of THV/PWM signal.

### Charge Voltage (MHV)

---

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

- Input voltage: 24 VDC  $\pm$  15%
- Output voltage: -1.2 KV ~ -1.8 VDC  $\pm$  3%
- Output voltage rising time: 50 ms Max
- Output voltage failing time: 50 ms Max
- Output control signal (MHV-PWM): CPU is HV output when PWM is Low.

### Cleaning Voltage (THV-)

---

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

## Developing Voltage (DEV)

---

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

- Input voltage: 24 VDC  $\pm$  15%
- Output voltage: -200 V ~ 600 V DC  $\pm$  3%
- Output voltage fluctuation method: PWM control
- Line regulation: under  $\pm$  3% (fluctuation input 21.6 V~27.6 V)
- Load regulation: under  $\pm$  3%
- Output voltage rising time: 50 ms Max
- Output voltage falling time: 50 ms Max
- Output Control Signal (BIAS-PWM): The CPU output is HV output when PWM is low.

## Supply

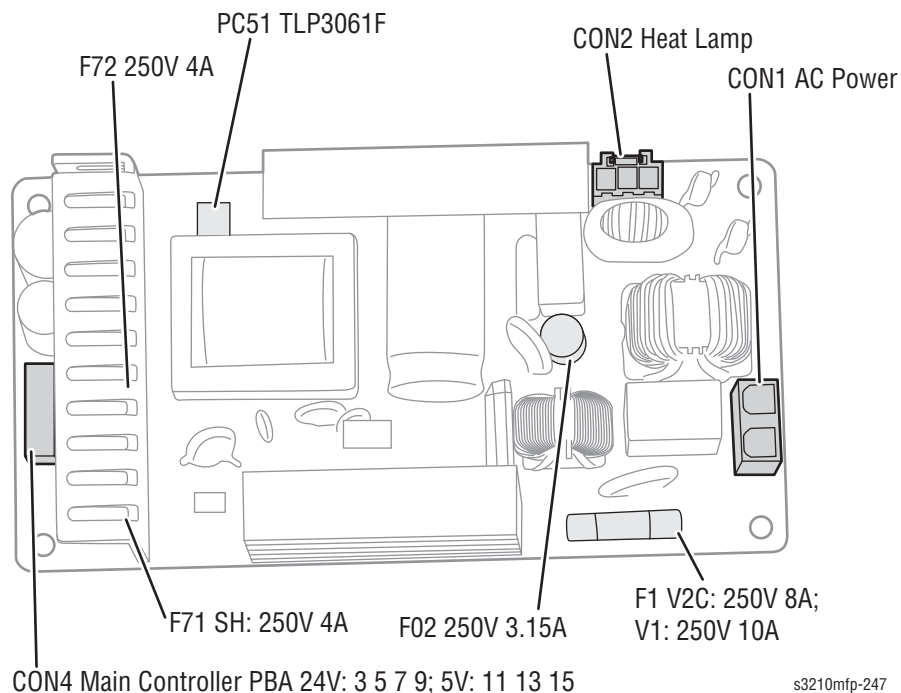
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- Output voltage: -300 V~800 VDC  $\pm$  50 V (ZENER using, DEV)
- Line regulation: under  $\pm$  3% (fluctuation input 21.6 V~27.6 V)
- Load regulation: under  $\pm$  3%
- Output voltage rising time: 50 ms Max
- Output voltage falling time: 50 ms Max
- Output control signal (BIAS-PWM): The CPU is HV output when PWM is Low.

## Power Supply

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

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



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## AC Input

- Input rated voltage:
  - AC 110 V~127 V
  - AC 220 V~240 V
- Input voltage fluctuation range:
  - AC 90 V~135 V
  - AC 180 V~270 V
- Rated frequency: 50/60 Hz
- Rated frequency fluctuating range: 47~63 Hz
- Input current: under 4.0 A/ 2.0 A (when the lamp is Off or under rated load)

## Rated Output Power

No.	Item	CH1	CH2	Remark
1	Channel Name	+5.0 V	+24.0 V	
2	Connector Pin	CON 4 5V PIN: 11, 13, 15 GND PIN: 12, 14, 16	CON 4 24 V PIN: 3, 5, 7, 9 GND PIN: 4, 6, 8, 10	CON4 24 VS PIN: 2
3	Rated Output	+5.1 V $\pm$ 2% (5.0~5.2 V)	+24 V - 10% $\pm$ 10% (21.6~26.4 V)	
4	NOR Output Current	1.6 A	1.8 A	
5	Max. Output Current	2.0 A	2.5 A	
6	Ripple & Noise Voltage	Under 100mVp-p	Under 500mVp-p	
7	Normal Output	8.6 W	43.2 W	
8	Maximum Output	10.2 W	60.0 W	
9	Protection for Loading Shortage and Overflowing Current	Shut down (2.5~5.0 A) or Fuse Protection	Shut down (2.8 A~5.5 A) or Output Voltage Drop (tip - 10%)	

## Fuser AC Power Control

The Fuser receives heat from AC power, which controls the switch with the Triac, a semiconductor switch. The On/Off control is operated when the gate of the triac is turned On/Off by photo triac. In other words, the AC control part is passive circuit, so it turns the heater On/Off while retrieving signal from the engine controller.

When the heater On signal is turned On at the print engine, the LED of PC51 (photo triac) measures the voltage and flashes. From the flashing light, the triac part (light receiving part) measures the voltage, and the voltage is supplied to the gate of triac and flows into the triac. As the result, the AC current flows in the heat lamp, and heat is generated.

When the signal is Off, the PC51 is Off as the voltage is cut off at the gate of Triac. When the triac turns Off, the lamp is turned Off.

- Triac (Q51) feature: 16A-LV model/12A-HV model, 600 V switching
- Phototriac coupler (PC51)
  - Turn On if current: 15 mA~50 mA (Design: 16 mA)
  - High repetitive peak off state voltage: Min 600 V

## Sensor Input Circuit

### Paper Empty Sensing

The Paper Empty Sensor on the HVPS provides the state of paper to the CPU whether the tray is empty or not when the actuator is in operation. When the tray is empty, an error message is displayed on the Control Panel.

### Registration and Duplex Sensing

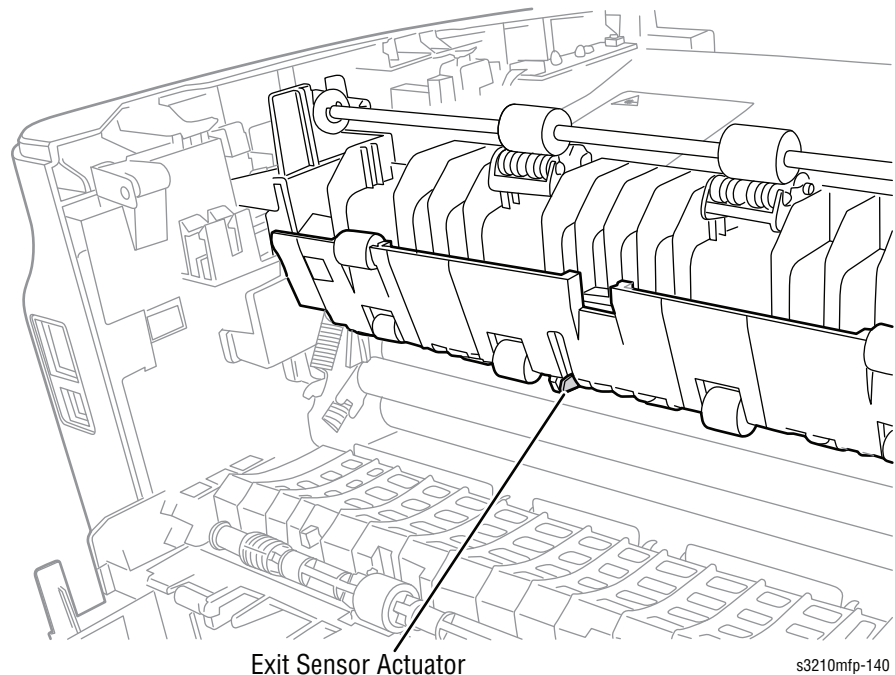
The WorkCentre 3210/3220 uses a single sensor to detect leading-edge registration and duplex transport. The Regi/ Duplex Sensor detects the registration timing and the existence of paper. In ready mode, the sensor is used as an MP sensor. In printing mode, the sensor is used as a Regi sensor.

### Feed Sensor

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

### Exit Sensor

The Exit Sensor, located on the Fuser, detects the media as it exits the Fuser.



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## Out Bin Full Sensor

---

The Out Bin Full Sensor detects the paper stacking state and checks the output tray whether the tray is full or not. If the sensor detects the output tray is full, a status message appears on the display.

## Paper Width Sensor

---

When the paper does not touch the Width Sensor during printing, the printer prints at a lower speed to prevent overheat.

## Front Cover Interlock

---

The Front Cover interlock switch is located on the HVPS. When the Front Cover is open, +24 V that is supplied to the motors, solenoids, Fans, Laser Unit, and HVPS is cut off. When the Front Cover is open, the Status LED changes to red.

## Developer Sensing

---

When the Developer is pulled out from the printer, the +5 V power for the Laser Diode in the Laser Unit is cut off.

## Driving Circuit

---

### DC Fan Driving

---

There are three fans that are used to lower the printer's temperature: Main Fan, Laser Unit Fan, and Power Supply Fan. The fans are driven by using transistor and controlled by the CPU. The On/Off time of the fan is managed as the status of the printer.

### Solenoid and Clutch Driving

---

The Pick Up Solenoid and Registration Clutch are driven by signals from the Main Controller Board. The diode protects the driving transistor from the noise pulse, which is created when the solenoid is de-energizing.

### Main Motor Driving

---

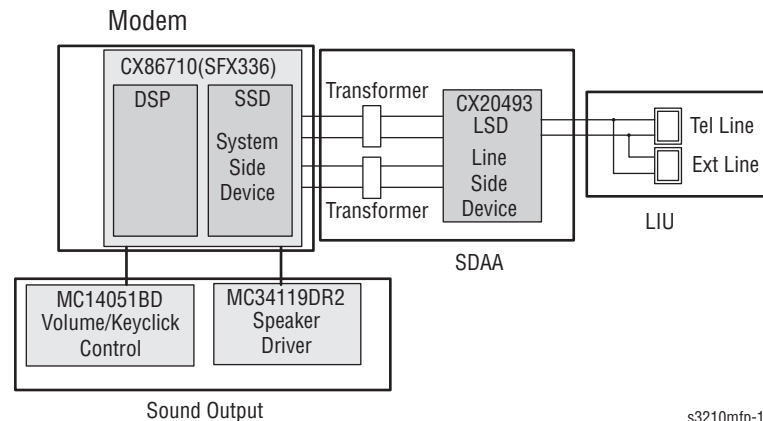
The Drive Unit Assembly driving circuitry is located on the assembly control board containing a driver IC.



## Fax

Fax is implemented by a conexant DAA (Data Access Arrangement) solution and is roughly composed of two kinds:

- CX86710 (SFX336): A modem chip which adds SSD (System Side Device) for interfacing between LSD and DIB of FM336Plus Core.
- CX20493 (LSD): LIU (Line Interface Unit) chip controlled by SSD and satisfies each PSTN requirements by modulating internal configuration with connecting telephone line.



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### Modem (SFX336) Specification

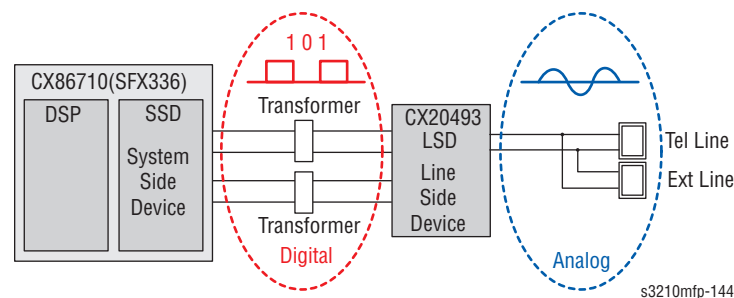
- 2-wire half-duplex fax modem modes with send and receive data rates up to 33,600 bps
  - V.17, V.34, V.29, V.27 ter, and V.21 Channel 2
  - Short train option in V.17 and V.27 ter
- PSTN Session Starting: V.8 and V.8b is signaling
- HDLC support at all speeds
  - Flag generation, 0-bit stuffing, ITU CRC-16 or CRC-32 calculation and generation
  - Flag detection, 0-bit deletion, ITU CRC-16 or CRC-32 check sum error detection
  - FSK flag pattern detection during high-speed receiving
- Tone modes and features
  - Programmable single or dual tone generation
  - DTMF receiver
  - Tone detection with three programmable tone detectors
- Receive dynamic range
  - 0 dBm to -43 dBm for V.17, V.29, V.27 ter and V.21 Channel 2
  - 9 dBm to -43 dBm for V.34 half-duplex
- Digital speaker output to monitor received signal

- Two 16-byte FIFO data buffers for burst data transfer with extension up to 255 bytes
- V.21 Channel 1 Flag detect
- V.21 Channel 1 Flag detect
- +3.3 V only operation
- Power Consumption: -264 mW (normal mode)

## Signal Transition of DAA Solution

Line Interface Signal of Tel Line and LSD is Analog Signal.

There is A/D, D/A Converter in LSD, so analog signal from Tel Line is converted in digital through A/D converter in DAA and transfer to SSD by DIB capacitor. The digital signal from SSD is converted to analog by D/A converter in the DAA and transfer to Tel Line.



The Transformer transfers the Clock signal from SSD to LSD. The clock frequency is 4.032MHz. The LSD full wave rectifies Clock to use as inner power supply and Main Clock for DIB Protocol Sync between LSD and SSD. The Transformer transfers Clock by separating primary and secondary, and amplifies Clock Level to LSD by Coil Turns Ratio 1:1.16.

Clock is supplied by transformer from SSD to LSD, and there is PWROUT to adjust output impedance of Clock. Out Driver is inside SSD and CLKSHIGH resistor to adjust duty of HLPWR resistor and Clock. Clock from SSD to LSD has differential structure of 180 phase difference for noise robustness.

DIB Data transfers data from SSD to LSD by the transformer, and also transfers specific data from LSD to SSD.

After transferring data from SSD, RSP is transferred and LSD recognizes RSP and changes LSD to output driver transfer data to SSD. DIB Data forms SSD to LSD by the transformer has differential structure of 180 phase difference between DIBP and DIBN for noise robustness.

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## Line Interface

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Line Interface is connection part between system and PSTN (Public Switched Telephone Network), and primary circuit is usually located. The main functions are Line Interface, Telephone Connection, and Line Condition Monitoring.

### Telephone Line Connection

---

1. Modular Plug: RJ-11C
2. LIU PBA Modular Type: 623 PCB4-4
3. Line Code Length: 2500 mm  $\pm$  50 mm
4. Line Code Color: Black

### On HOOK State Characteristic

---

1. DC Resistance
  - DP Dial Mode (Direct Current 30 mA): 50~300 Ohm
  - DTMF Dial Mode (Direct Current 20 mA): 50~540 Ohm
2. Ring Sensitivity
  - a. Ring Detection Voltage: 40 Vrms~150 Vrms  
(condition: Current = 25 mA, Frequency = 15 Hz)  
product Margin: 30 Vrms~150 Vrms
  - b. Ring Detection Frequency: 15.3 Hz~68 Hz  
(condition: Voltage = 45 Vrms, Current = 25 mA)  
product Margin: 15 Hz~70 Hz
  - c. Ring Detection Current: 20 mA ~ 100 mA  
(condition: Voltage = 40 Vrms, Frequency = 20 Hz)  
product Margin: over 15 mA
3. False Ring Sound
  - a. Ring Frequency: 750 Hz + 1020 Hz
  - b. Ring Interrupt Cycle: On/Off depending on input Ring Signal Cycle.

## Engine F/W

### Control Algorithm

#### Feeding

When feeding from a paper tray, the drive of the pick up roller is controlled by the solenoid.

The printer feeds the paper from the manual feeder according to information provided by the manual feed sensor, and by driving the main motor, insert the paper in front of the feed sensor.

The jam errors are described in the following table:

#### Jam Errors

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

## Driver

The Main Motor drives the Feed Roller, Developing Roller, Fuser Roller, and Exit Roller. The BLDC Motor controls acceleration and steadiness of the rollers. The BLDC Motor is operated by the BLDC Clock and the enable signal.

## Transfer

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

## Fusing

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

### Fuser Thermal Errors

Error	Description	LED Display
Open Heat Error	<p>When the engine operates at the warm-up state, the temperature of the fixing unit is not higher than a specified temperature. When the error occurs, the engine stops all functions and keeps it at error state.</p> <ul style="list-style-type: none"> <li>■ Lower than 90° C for more than 20 seconds while warming up.</li> </ul>	LED blinking.

## Fuser Thermal Errors (continued)

Error	Description	LED Display
Low Heat Error	<p>When the engine is at Standby, Printing, or Warm-Up mode, if the temperature of the fixing unit is lower than the specified temperature at each state and the lower temperature state is maintaining during a specified time.</p> <p>When error occurs, the engine stops all functions and keeps it at error state.</p> <p><b>Standby</b></p> <ul style="list-style-type: none"> <li>■ Lower than -20° C for more than 10 seconds.</li> </ul> <p><b>Printing</b></p> <ul style="list-style-type: none"> <li>■ Lower than -20° C for more than 10 seconds.</li> </ul> <p><b>Warm-Up</b></p> <ul style="list-style-type: none"> <li>■ Lower than -10° C for more than 10 seconds.</li> </ul>	LED blinking.
Over Heat Error	<p>For overall engine state, if the temperature of the fixing unit is higher than the specified temperature and the temperature state is kept during a specified time.</p> <p>When error occurs, the engine stops all functions and keeps it at error state.</p> <ul style="list-style-type: none"> <li>■ It has been higher than 220° C for more than 20 seconds.</li> <li>■ It has been higher than 230° C for more than 30 seconds.</li> <li>■ It has been higher than 10° C for more than 180 seconds.</li> </ul>	LED blinking.

## Recovering from Heat Error

Heat error is automatically recovered when the error is only caused by low heat error, and not the heat errors in Warm-Up state and the over heat error.

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

In case of low heat error, the maximum heat is supplied to the fixing unit.

When a specified time is elapsed, the engine detects the temperature again. If the present temperature is higher than the memorized temperature, the error is recovered.

In case of over heat error, no heat is supplied to the fixing unit. When a specified time is elapsed, the engine detects a present temperature again. If the present temperature is a specified degree lower than the memorized temperature, the error is recovered.

## Laser Unit

The Laser Unit (LSU) receives image data from the PVC or HPVC and make latent image on the OPC surface. The LSU uses dual beam system, LD1 and LD2. The control method of the two beams are the same. In comparison with a single beam system, dual beam contains half of the LSU's frequency.

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

Error	Description
Polygon Motor Error	When the polygon motor speed is not steady.
H-SYNC Error	The Polygon Motor speed is steady, but the H-SYNC is not generated.





# Error Messages and Codes

## In this chapter...

- Introduction
- Servicing Instructions
- Error Messages and Procedures
- Jam Errors
- Tray and Media Errors
- Print Cartridge Errors
- Laser Unit Errors
- USB Read/Write Errors
- Network Configuration Errors
- System Errors
- Status Messages

## Chapter 3

# Introduction

This section describes error messages displayed on the Control Panel or listed on the Error Information Report. These error indications serve as the entry point into the troubleshooting process. Printer problems not directly indicated by, or associated with an error message are covered in Chapter 4, “General Troubleshooting.” Print-quality problems are covered in Chapter 5, “Print-Quality Troubleshooting.”

The printer tracks and reports errors in a number of ways. Two types of error reporting are discussed in this Section:

- Error messages displayed on the Control Panel.
- Error messages or codes listed on the Error Information Report page.

Messages indicating the occurrence of either a fatal or jam error appear on the Control Panel. Warning messages also appear, but in most cases do not have a corresponding code.

## Error Information Report

The Error Information Report provides general information about the printer, the consumables, the status of routine maintenance items, registration and color test patterns. To print the Error Information Report, go to “Entering Tech Mode” on page 4-3.

Error Information Report		
Date & Time	:	FEB-18-2009 01:21PM WED
Fax Number	:	
Fax Name	:	
Model Name	:	WorkCentre 3210
<hr/>		
Service Date	:	2009. 1. 30
Total Error Counts	:	0
Total Image Count	:	103
CRUM SERIAL NUMBER	:	CRUM-INIT___TONER
<hr/>		
ADC1 5	:	0
ADC1 10	:	2
ADC1 20	:	0
ADC1 30	:	0
<hr/>		
ENGINE ERROR	:	0
Memory Full	:	0
Document Jam	:	0
BYPASS JAM	:	0
PAPER JAM-0	:	0
PAPER JAM-1	:	0
PAPER JAM-2	:	0
NO CARTRIDGE	:	0
LSU ERROR	:	0
OPEN HEAT ERR	:	0
HEATING ERR	:	0
OVER HEAT	:	0
<hr/>		
Date	Error Status	Code
<hr/>		

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

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

1. Use the Error Messages and Codes and troubleshooting procedures to find the cause of the problem.
2. Use 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

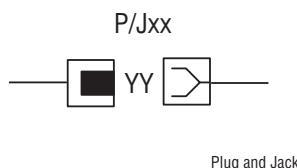
1. Use the Parts List to locate a part number.
2. Use the Disassembly procedures to replace the part.

### Step 5: Final Checkout

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

## 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



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" for the location of all wiring harnesses and pins.
5. When you are instructed to run a test, run the diagnostic 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 consumables 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 may be nothing more than a pulse, resulting in a momentary drop in voltage that may be difficult or impossible to read on the average multi-meter.
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.
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 "Wiring" section for more information.

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

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

## Error Messages and Procedures

The error messages generated by the printer's operating system are the lead-in to the troubleshooting procedures that follow in subsequent pages. This section correlates the output of the printer's diagnostic aids and provides the troubleshooting procedures to locate and correct the reported errors.

### Error Message Abbreviations

Due to limited display space, some error messages include abbreviations. The most common abbreviations used throughout this chapter are listed here.

Term	Definition
DEV	Developer
EDC	Embedded Diagnostic Control
F/W	Firmware
HSYNC	Horizontal Sync Signal
HVPS	High Voltage Power Supply
H/W	Hardware
LD	Laser Diode
LSU	Laser Scanner Unit
MHV	Main High Voltage (Charge Voltage)
OPC	Optical Photo Conductor
SCF	Second Cassette Feeder (Tray 2)
THV	Transfer High Voltage

## Error Message Summary

The Error Message Summary table lists possible errors and page references for the corrective procedure.

- The Message column provides the message relating to the error.
- The Cause column lists the probable cause of the error.
- The Initial Action column provides the first step to correct the error.
- The Go To column references the page number for the procedure.

Use this table to identify the proper procedure to correct the reported error.

### Error Message Summary

Message	Cause	Initial Action	Go To
<b>Jam Errors</b>			
Paper Jam 0 Open/Close Door	Jam in the Tray feed area.	Clear the jam.	3-9
Paper Jam 1 Open/Close Door	Jam inside the media path.	Clear the jam.	3-10
Paper Jam 2 Check Inside	Jam in the exit area.	Clear the jam.	3-12
Document Jam	Jam in the ADF.	Clear the jam.	3-13
Duplex Jam 0 Check Inside	Jam during duplex printing.	Clear the jam.	3-15
Duplex Jam 1 Open/Close Door	Jam during duplex printing.	Clear the jam.	3-15
<b>Tray and Media Errors</b>			
Tray 1 or 2 Paper Empty	There is no media in the indicated Tray.	Load the Tray.	3-16
Tray 1 or 2 Paper Mismatch	The media size settings do not match the loaded media.	Correct the size mismatch.	
Out-Bin Full	The output tray is full.	Remove paper.	3-18
<b>Print Cartridge Errors</b>			
Install Toner	Print Cartridge is not installed.	Install a Print Cartridge.	3-20
Invalid Toner	Installed Print Cartridge is not compatible.	Install a genuine Print Cartridge.	3-21
Toner Empty	Print Cartridge near end of life.	Replace the cartridge.	3-22
Toner Exhausted	Print Cartridge end of life.	Replace the cartridge.	3-22

## Error Message Summary (continued)

Message	Cause	Initial Action	Go To
<b>Fuser Errors</b>			
Low Heat Error	The Fuser did not reach Standby temperature within 10 seconds.	Plug the printer directly into the wall outlet.	3-23
Over Heat Error	The Fuser exceeded temperature set points.	Check the Fuser and Fan vents for debris.	3-23
Open Heat Error	The Fuser did not reach Ready temperature within 20 seconds.	Plug the printer directly into the wall outlet.	3-23
<b>Laser Unit Errors</b>			
Polygon Motor	The Laser unit motor failed.	Check the Laser Unit connection.	3-24
Hsync Error	Laser Unit control error.	Check the Laser Unit connection.	3-24
<b>Fax Communication and Configuration Errors</b>			
[COMM. Error]	A Fax communication error.	Check NVM settings.	3-26
Memory Full	The memory is full.	Delete unnecessary Fax jobs or split the Fax into more than one transmission.	3-27
[Line Error]	Cannot connect with the receiving Fax or contact lost.	Try again. If the error persists, turn ECM mode on.	3-29
Line Busy	The receiving Fax did not answer or the line is already engaged.	Try again after a few minutes.	3-29
[No Answer]	The receiving Fax has not answered after several attempts.	Check the receiving machine.	3-28
<b>Network Configuration Errors</b>			
Connection Error	Connection to SMTP server failed.	Check server settings and network cable.	3-35
Send Error (AUTH)	An SMTP authentication error.	Check authentication settings.	3-35
Send Error (DNS)	There is a problem in DNS.	Check DNS settings.	3-35
Send Error (POP3)	There is a problem in POP3.	Check POP3 settings.	3-35
Send Error (SMTP)	There is a problem in SMTP.	Change to the available server.	3-35
Send Error — Wrong Config	There is a problem on the network interface card.	Check network settings.	3-35
IP conflict	The IP address is being used by another device.	Check the IP address and reset it if necessary.	3-36

## Error Message Summary (continued)

Message	Cause	Initial Action	Go To
<b>USB Read/Write Errors</b>			
Data Read Fail Check USB Mem.	Time expired while reading data.	Try again.	3-30
Data Write Fail Check USB Mem.	Storing to the USB memory failed.	Check the available USB memory space.	3-30
<b>System Errors</b>			
Main Motor Locked	Main motor error.	Open and close the Front Cover.	3-31
Fuser Fan Locked	The cooling fan has failed.	Open and then close the front cover.	3-33
Door Open	The Front Cover is not latched.	Close the cover.	3-34

## Jam Errors

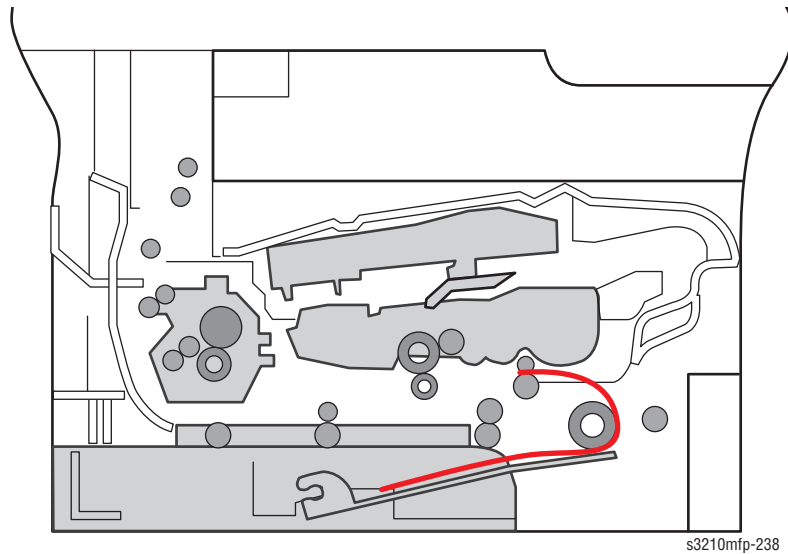
Some initial steps to take when evaluating repeated jams:

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



## Paper Jam 0

After a pick operation, the leading edge of the media does not reach the Feed Sensor on time, or the Feed Sensor failed to indicated the leading edge.



### Applicable Error Message

- Paper Jam 0

### Initial Actions

- Clean the Pick Up Roller and Holder Pad.
- Try feeding media from a different location.
- Check the paper path for obstructions or debris.
- Cycle printer power.
- If the problem persists, refer to the following procedure.

### Troubleshooting Reference Table

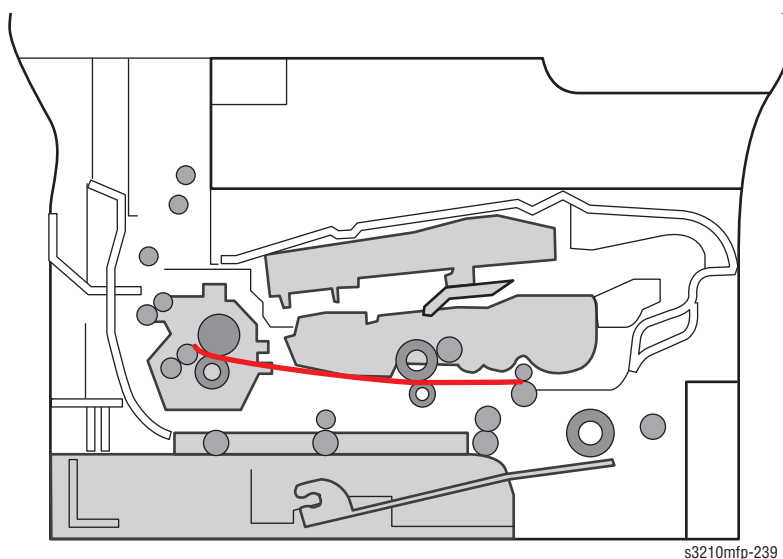
Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL1.0.2</li> <li>■ Pick Up Roller, PL4.0.26</li> <li>■ Pick Up Solenoid, PL4.0.37</li> <li>■ Feed Sensor, PL4.0.75</li> <li>■ Holder Pad, PL7.0.14</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 2 - Drive Locator</li> <li>■ Map 5 - Main Controller Board</li> <li>■ Main Controller Board</li> </ul>

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Pick-Up Solenoid for damage or obstructions. Is the Pick-Up Solenoid damaged?	Replace the Pick Up Solenoid (page 8-79).	Go to step 2.
2	Check the Holder Pad. Is the Holder Pad loose due bad sealing of the side-pad?	Replace the Holder Pad (page 8-11).	Go to step 3.
3	Check the Pick Up Roller for damage or debris. Is the Pick Up Roller damaged?	Replace the Pick Up Roller (page 8-9).	Go to step 4.
4	Check the Feed Sensor for damage. Is the Feed Sensor damaged?	Replace the Feed Sensor (page 8-86).	Replace the Main Controller Board (page 8-100).

## Paper Jam 1

A jam located between the Feed and Exit Sensors inside the printer.



## Applicable Error Message

- Paper Jam 1

## Initial Actions

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

### Troubleshooting Reference Table

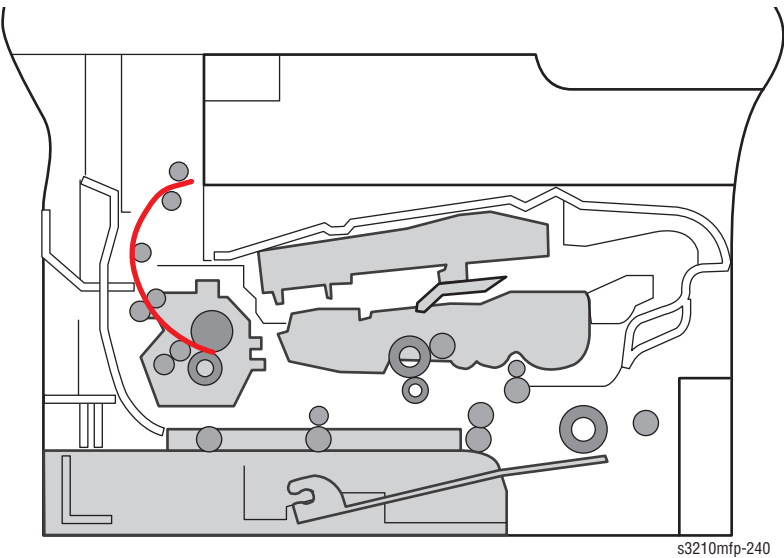
Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL1.0.2</li> <li>■ Power Supply, PL1.0.4</li> <li>■ Feed Actuator, PL4.0.72</li> <li>■ Fuser, PL8.0.0</li> <li>■ Exit Sensor, PL8.0.37</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 5 - Main Controller Board</li> <li>■ Map 7 - Power Supply</li> <li>■ Power and Fuser</li> </ul>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
<b>1</b>	Check the Feed Actuator installation. Reseat the Feed Actuator. Does the error still occur?	Replace the Feed Actuator (page 8-82). Go to step 2.	Complete.
<b>2</b>	Does the error still occur?	Go to step 3.	Complete.
<b>3</b>	Check the Exit Sensor for damage. Is the Exit Sensor damaged?	Replace the Exit Sensor (page 8-93).	Go to step 4.
<b>4</b>	Check the Power Supply installation. Reseat Power Supply connections. Does the error still occur?	Replace the Power Supply (page 8-104). Go to step 5.	Complete.
<b>5</b>	Check the Main Controller Board for correct installation. Reseat the Main Controller Board. Does the error still occur?	Replace the Main Controller Board (page 8-100).	Complete.

## Paper Jam 2

There is a jam in front of or inside of the Fuser. The media did not reach the Exit Sensor on time.



### Applicable Error Message

- Paper Jam 2

### Initial Actions

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

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"><li>■ Fuser, PL8.0.0</li><li>■ Guide Claw, PL8.0.16</li><li>■ Exit Actuator, PL8.0.19</li><li>■ Exit Sensor, PL8.0.37</li></ul>	<ul style="list-style-type: none"><li>■ Map 3 - Sensor Locator</li><li>■ Power and Fuser</li></ul>

### Troubleshooting Procedure Table

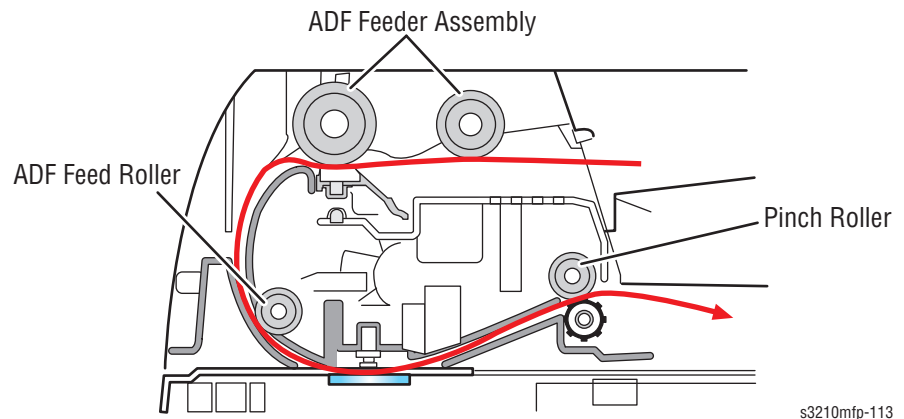
Step	Actions and Questions	Yes	No
1	Check for media inside the Fuser. Is there media in the Fuser?	Remove the media and clean the Fuser rollers.	Go to step 2.

**Troubleshooting Procedure Table (continued)**

Step	Actions and Questions	Yes	No
2	Check the Exit Sensor for damage. Is the Exit Sensor damaged?	Replace the Exit Sensor (page 8-93).	Go to step 3.
3	Check the Exit Actuator for damage. Is the Exit Actuator damaged?	Replace the Exit Actuator (page 8-92).	Go to step 4.
4	Check the Guide Claws for damage. Are the Guide Claws damaged?	Replace the Fuser (page 8-13).	Complete.

**Document Jam**

Media is jammed in the ADF.

**Applicable Error Messages**

- Document Jam

**Initial Actions**

- Check the ADF media path for obstructions or debris.
- Clean the rollers.
- If the problem persists, refer to the following procedure.

### Troubleshooting Reference Table

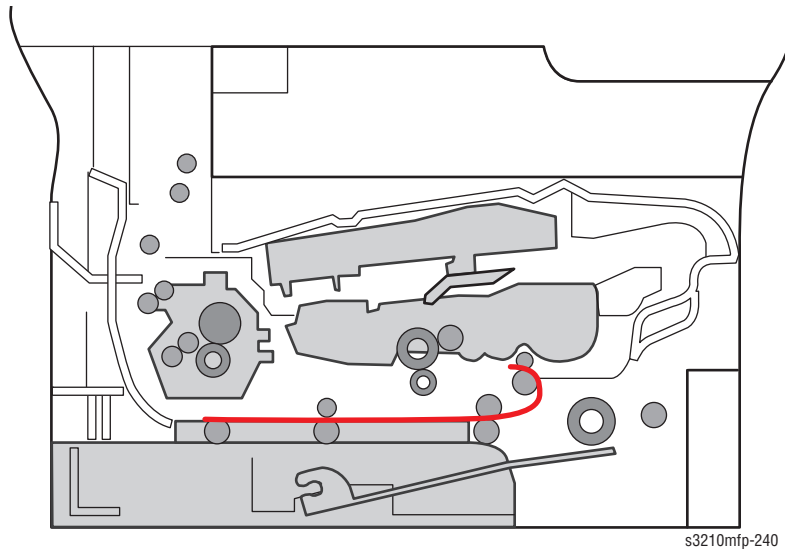
Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ ADF Motor, PL6.1.4</li> <li>■ Lower ADF, PL6.1.5</li> <li>■ ADF Feeder Assembly, PL 6.1.6</li> <li>■ ADF Feed Pad Assembly, PL 6.1.11</li> <li>■ ADF Rubber Feed Pad, PL6.1.12</li> <li>■ ADF Feed Roller, PL6.2.4</li> <li>■ Pinch Roll, PL6.2.5</li> <li>■ Sponge Sheet, PL6.2.7</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 2 - Drive Locator</li> <li>■ ADF and Scanner</li> </ul>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the original document. Does the original meet ADF specifications?	Go to step 2.	Use the Platen or change the media type.
2	Check the ADF Cover and guides. Is the ADF Cover completely closed and guides adjusted properly?	Go to step 3.	Close the ADF.
3	Clean the ADF media path. Is there debris in the media path?	Remove the debris.	Go to step 4.
4	Check the condition of all ADF rollers. Are the ADF rollers damaged or dirty?	Clean or replace the rollers.	Go to step 6.
5	Check the ADF Feeder Assembly. Is the ADF Feeder Assembly seated in the Upper ADF properly?	Go to step 6.	Reseat or replace the ADF Feeder (page 8-39).
6	Check the Sponge Sheet. Is the Sponge Sheet properly installed?	Go to step 7.	Trim or replace the Sponge Sheet.
7	Reseat the wiring harness connectors on the Lower ADF. Does the error persist?	Replace the ADF Assembly (page 8-31).	Complete.

## Duplex Jam

Media is jammed in front of or inside the Duplex Unit.



### Applicable Error Messages

- Duplex Jam 0
- Duplex Jam 1

### Initial Actions

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

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Duplex Unit, PL9.0.0</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 5 - Main Controller Board</li> <li>■ Main Controller Board</li> </ul>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Reseat the Duplex Unit. Does the error still occur?	Go to step 2.	Complete.
2	Remove the Duplex Unit and clean the the rollers and timing belts. Does the problem persist?	Replace the Duplex Unit (page 8-69).	Complete.

## Tray and Media Errors

### Paper Empty

The Paper Empty Sensor indicates the Tray is missing or empty.

#### Applicable Error Message

- Tray 1 or Tray 2 Paper Empty

#### Initial Actions

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

#### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL1.0.2</li> <li>■ Paper Empty Sensor, PL4.0.75</li> <li>■ Empty Actuator, PL4.0.84</li> <li>■ Empty Actuator, PL10.0.11.6</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 3 - Sensor Locator</li> <li>■ Main Controller Board</li> <li>■ Fax Board and Optional Tray</li> </ul>

#### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Empty Actuator for damage. Is the Empty Actuator damaged?	Replace the Empty Actuator (page 8-91).	Go to step 2.
2	Check the connection between the Main Controller Board CN13 and the Paper Empty Sensor. Is the connection secure?	Go to step 3.	Secure the connections.
3	Check for +3.3 V at CN13-1. Is +3.3 V present at CN13-1?	Go to step 4.	Replace the Main Controller Board (page 8-100).
4	Check the continuity of the connection between the Main Controller Board and the Paper Empty Sensor. Is the harness damaged?	Repair the harness.	Replace the Bin Full Sensor (page 8-70).



## Paper Mismatch

The Width Sensor indicates the media fed does not match the media size settings for the Tray.

### Applicable Error Message

- Tray 1 or Tray 2 Paper Mismatch

### Initial Actions

- Check the NVM settings for media size.
- Cycle printer power.
- If the problem persists, refer to the following procedure.

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL1.0.2</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 3 - Sensor Locator</li> <li>■ Main Controller Board</li> <li>■ Fax Board and Optional Tray</li> </ul>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1			Go to step 2.
2			Go to step 3.
3			Complete.

## Out Bin Full

The Bin Full Sensor indicates the output tray is full.

### Applicable Error Message

- Out Bin Full

### Initial Actions

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

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL1.0.2</li> <li>■ Bin Full Actuator Holder, PL3.0.8</li> <li>■ Bin Full Actuator, PL3.0.9</li> <li>■ Bin Full Sensor, PL3.0.10</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 3 - Sensor Locator</li> <li>■ Main Controller Board</li> </ul>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the bin full actuator for damage. Is the actuator damaged?	Repair the actuator.	Go to step 2.
2	Check the connection between the Main Controller Board CN12 and the Bin Full Sensor. Is the connection secure?	Go to step 3.	Secure the connections.
3	Check for +3.3 V at CN12-1. Is +3.3 V present at CN12-1?	Go to step 4.	Replace the Main Controller Board (page 8-100).
4	Check the continuity of the bin full harness connecting the Main Controller Board and Bin Full Sensor. Is the harness damaged?	Repair the harness.	Replace the Bin Full Sensor (page 8-70).

## Print Cartridge Errors



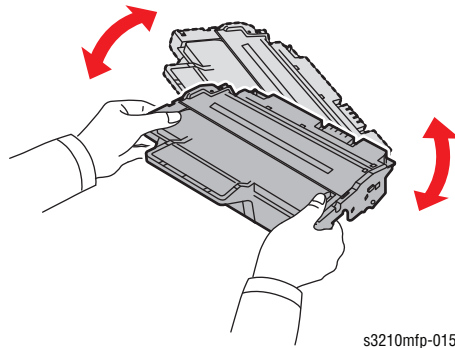
### Caution

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

## Replace Toner or Toner Low

These two status messages appear as the Print Cartridge nears end of life. If the printed image is light due to limited toner life remaining, redistribute the toner to temporarily improve image quality.

1. Open the Front Cover.
2. Remove the Print Cartridge.
3. Gently shake the Print Cartridge from side to side five or six times to redistribute toner.



s3210mfp-015

4. Install the Print Cartridge.
5. Close the Front Cover.
6. Cycle system power to clear the message.

If the messages persists, replace the Print Cartridge.

## Install Toner

The Print Cartridge is not installed.

### Applicable Error Message

- Install Toner

### Initial Actions

- Clean the HVPS contacts on the Print Cartridge
- Cycle printer power.
- If problem persists, refer to the following procedure.

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Print Cartridge, PL1.0.21</li> <li>■ HV ICT Shaft, PL4.0.6.1</li> <li>■ HV Spring ETC, PL4.0.6.2</li> <li>■ HVPS, PL1.0.3</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 6 - HVPS</li> <li>■ Power and Fuser</li> </ul>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Reseat the Print Cartridge. Does the error persist?	Go to step 2.	Complete.
2	Clean the HVPS contacts on the Print Cartridge and frame. Does the error persist?	Go to step 3.	Complete.
3	Replace the Print Cartridge. Does the error persist?	Go to step 4.	Complete.
4	Check the HV contacts located in the frame behind the HVPS. Are the contacts installed correctly and is spring tension adequate?	Replace the HVPS (page 8-101).	Repair the contacts.

## Invalid Toner

The Print Cartridge is not a genuine Xerox cartridge. Non-Xerox or Third Party Print Cartridges can cause malfunctions, print-quality problems, and jam errors. An option is listed in the menu for “Ignore Toner”.

### Applicable Error Message

- Invalid Toner

### Initial Actions

- Reseat the Print Cartridge.
- Cycle system power.
- If problem persists, refer to the following procedure.

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL 1.0.2</li> <li>■ Print Cartridge, PL1.0.21</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 5 - Main Controller Board</li> <li>■ Power and Fuser</li> </ul>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Is the Print Cartridge a genuine Xerox cartridge?	Go to step 2.	Replace with a genuine cartridge.
2	Reseat the Print Cartridge and cycle system power. Does the error persist?	Go to step 3.	Complete.
3	Reseat CN20 on the Main Controller Board and cycle system power. Does the error persist?	Go to step 4.	Complete.
4	Check for +3.3V at CN20-4. Is +3.3V available at CN20-4?	Go to step 5.	Replace the Main Controller Board (page 8-100).
5	Replace the Print Cartridge. Does the error persist?	Replace the Main Controller Board (page 8-100).	Complete.

## Toner Empty or Exhausted

The Print Cartridge has reached the end of life count. Selecting Continue on the Control Panel restore print operation temporarily.

### Applicable Error Message

- Toner Empty
- Toner Exhausted

### Initial Actions

- Replace the Print Cartridge.
- Cycle system power.
- If problem persists, refer to the following procedure.

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL 1.0.2</li> <li>■ Print Cartridge, PL1.0.21</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 5 - Main Controller Board</li> <li>■ Power and Fuser</li> </ul>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Toner Remaining count. Is the cartridge at or near end of life?	Replace the cartridge.	Go to step 2.
2	Reseat the Print Cartridge and cycle system power. Does the error persist?	Go to step 3.	Complete.
3	Reseat CN20 on the Main Controller Board and cycle system power. Does the error persist?	Go to step 4.	Complete.
4	Check for +3.3V at CN20-4. Is +3.3V available at CN20-4?	Go to step 5.	Replace the Main Controller Board (page 8-100).
5	Replace the Print Cartridge. Does the error persist?	Replace the Main Controller Board (page 8-100).	Complete.

## Fuser Errors



### Warning

Hazardous voltage is connected to the Fuser. Remove the Power Cord from the printer before starting the procedure.

## Fuser Heat Errors

There is a Fuser thermal error.



### Warning

Allow the Fuser to cool before starting the procedure.

## Applicable Error Messages

- Open Heat Error
- Low Heat Error
- Over Heat Error

## Initial Actions

- Check the Fuser for damage or debris.
- Cycle printer power.
- If the problem persists, refer to the following procedure.

## Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map Reference
<ul style="list-style-type: none"> <li>■ Fuser, PL8.0.0</li> <li>■ Thermistor, PL8.0.5</li> <li>■ Thermostat, PL8.0.7</li> <li>■ Halogen Lamp, PL8.0.30</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 5 - Main Controller Board</li> <li>■ Map 7 - Power Supply</li> <li>■ Map 8 - Left Side Harness</li> <li>■ Power and Fuser</li> </ul>

## Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Reseat the Fuser connections. Does the error still occur?	Go to step 2.	Complete.
2	Run the Fuser Temp test from EDC. Does the Thermostat operate correctly?	Go to step 3.	Replace the Thermostat (page 8-16).

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
3	Run the Fuser Control test from EDC. Does the Thermistor operate correctly?	Go to step 4.	Replace the Thermistor (page 8-15).
4	Check the Halogen Lamp for damage or overheating. Is the Halogen Lamp damaged or show signs of overheating?	Replace the Halogen Lamp (page 8-27).	Replace the Fuser (page 8-13).

## Laser Unit Errors

An error was detected in the Laser Unit.

### Applicable Error Messages

- Polygon Motor Error
- Hsync Error

### Initial Actions

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

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL1.1.2</li> <li>■ Laser Unit, PL1.1.12</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 5 - Main Controller Board</li> <li>■ Laser Unit and I/O</li> </ul>

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the wiring harness connections between the Laser Unit and the Main Controller Board. Are the connectors secure?	Go to step 2.	Reconnect the connectors.
2	Check the Laser Unit installation. Reseat the Laser Unit. Does the error still occur?	Replace the Laser Unit (page 8-95).	Replace the Main Controller Board (page 8-100).



## Fax Errors

---

The following provides procedures and suggestions for correcting some common Fax problems.

- **Disable Junk Fax Prevention.** This may prevent a Fax being received because the machine does not recognize the sending phone number as an acceptable source. Junk Fax Prevention compares the incoming caller Fax Machine ID with ones listed in the Dial Directory. When not finding a match, the Fax refuses the transmission.
- **Check the phone line.** Especially if problems occur during receive and transmit. Does the provider support Fax protocol? Is there noise on the phone line? Is the phone line connected correctly? Is call forwarding on? Is 'Secure Send or Receive' on? All these effect Fax transmission.
- **In the case of DSL,** most DSL configurations share the same phone line with analog signals used by standard phones and dial-up (analog) modems. Typically a filter is installed between the DSL equipment and the analog equipment attached to that line. DSL Performance varies based on the quality and configuration of the specific site and equipment.
- **Reduce transmission speed.** The WorkCentre 3210/3220 uses 33.6 kbps by default. Some phone lines and older Fax machines do not support these speeds.

## Fax Communication Error

During a Fax operation a communication error occurred.

### Applicable Error Message

- Fax Communication Error [*error\_type*]

### Initial Actions

- Call the target Fax number from a telephone to confirm a Fax tone response.
- Check Fax line condition and connection.
- Cycle printer power.
- If the problem persists, follow the procedure below.

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL1.0.2</li> <li>■ Fax Board, PL1.0.24</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 5 - Main Controller Board</li> <li>■ Fax Board and Optional Tray</li> </ul>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Cycle system power. Does the error still occur?	Go to step 2.	Complete.
2	Check the Country setting. Is the Country setting correct?	Go to step 3.	Correct the Country setting.
3	Check Fax communications to a different machine. Does the error persist?	Go to step 4.	Complete.
4	Print the Protocol Report to determine where the error occurred. Is the target Fax causing the error?	Check target Fax configuration.	Go to step 5.
5	Check the Fax Send settings. Are the settings at their defaults?	Go to step 6.	Correct Fax settings.
6	Reseat the Fax Board. Does the error persist?	Replace the Fax Board (page 8-106).	Complete.
7	Check the connection (CN8) between the Fax and Main Controller Boards. Are connections secure?	Replace the Main Controller Board (page 8-100).	Reseat the connections.

## Memory Full

Memory Full indicates insufficient room for Fax images in system memory. Reduce the amount of data being scanned for the Fax or add memory to accommodate larger Faxes.

### Applicable Error

- Memory Full

### Initial Actions

- Divide large faxes into smaller jobs, or add memory.
- Cycle printer power.
- If the problem persists, follow the procedure below.

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL1.0.2</li> <li>■ Fax Board, PL1.0.24</li> <li>■ DIMM Module</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 5 - Main Controller Board</li> <li>■ Fax Board and Optional Tray</li> </ul>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Cycle system power. Does the error persist?	Go to step 2.	Complete.
2	Remove any installed DIMM memory and run the DRAM test from Tech mode to test system memory. Is DRAM OK?	Go to step 3.	Replace the Main Controller Board (page 8-100).
3	Install the DIMM, if removed in step 2 and retest. Does the DIMM test OK?	Send the Fax. If the error persists, go to step 4.	Replace the DIMM.
4	Check the ADF connection CN5 to the Main Controller Board. Is the connection secure?	Go to step 5.	Connect the harness.
5	Replace the Main Controller Board (page 8-100). Does the error persist?	Replace the Platen Assy (page 8-48).	Complete.

## No Answer

The receiving Fax failed to answer after the specified retries. This is usually a ring detection problem, or an unusual or low-quality ring signal.

### Applicable Error Message

- No Answer

### Initial Actions

- Check that the Fax is enabled and configured properly for the phone line.
- Check the target Fax number.
- Call the target Fax number from a telephone to confirm a response.
- Check the Fax line condition and connections.
- If the problem persists, follow the procedure below.

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL1.0.2</li> <li>■ Fax Board, PL1.0.24</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 5 - Main Controller Board</li> <li>■ Fax Board and Optional Tray</li> </ul>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Is the telephone line damaged or disconnected?	Go to step 2.	Connect or replace the line.
2	Check for a dial tone. Press the On-Hook Dial button. Is there a dial tone?	Go to Step 3.	Go to step 4.
3	Call the Fax from a different line to check response. Does the target fax respond?	Go to step 4.	Complete. Use a different Fax.
4	Run the MODEM test from Tech mode. Are Fax tones audible?	Go to step 6.	Go to step 5.
5	Reseat the Fax Board. Does the error persist?	Replace the Fax Board (page 8-106).	Complete.
6	Check the connection (CN8) between the Fax and Main Controller Boards. Are connections secure?	Go to step 7.	Reseat the connections.
7	Check the speaker connection on the Fax Board. Is the connection secure?	Replace the Main Controller Board (page 8-100).	Reseat the connection.

## Line Busy

The Fax has detected busy tone after dialing.

### Applicable Error Message

- Line Busy
- Line Error

### Initial Actions

- Check the target Fax number. If the number is in memory, is it saved correctly?
- Call the target Fax number from a telephone to confirm a Fax tone response.
- Cycle printer power.
- If the problem persists, follow the procedure below.

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL1.0.2</li> <li>■ Fax Board, 1.0.24</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 5 - Main Controller Board</li> <li>■ Fax Board and Optional Tray</li> </ul>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Is the target Fax number correct?	Go to step 2.	Enter the correct number.
2	Is the target Fax line busy?	Complete.	Go to step 3.
3	Check for a dial tone. Press the On-Hook Dial button. Is there a dial tone?	Go to step 3.	Go to step 4.
4	Call the Fax from a different line to check response. Does the target fax respond?	Go to step 4.	Complete. Use a different Fax.
5	Run the MODEM test from Tech mode. Are Fax tones audible?	Go to step 6.	Go to step 5.
6	Check the connection (CN8) between the Fax and Main Controller Boards. Are connections secure?	Go to step 7.	Reseat the connections.
7	Check the speaker connection on the Fax Board. Is the connection secure?	Replace the Main Controller Board (page 8-100).	Reseat the speaker connection.

## USB Read/Write Errors

---

The printer was unable to communicate with the USB memory device.

The A type, USB Port on the front of the printer is designed for USB V1.1 and USB V2.0 memory devices. The printer supports USB memory devices with a FAT16/FAT32 format and sector size of 512 bytes.

These functions are supported for a USB memory device:

- Saved scanned documents on the USB memory device
- Print from the USB memory device
- Back up address, phone book, and system settings
- Restore backup files to printer memory
- Format the USB memory device
- Check available space on the USB memory device

### Applicable Error Messages

---

- Data Read Fail, Check USB Mem.
- Data Write Fail, Check USB Mem.

### Supported File Types

---

USB supported file types are:

- PRN: PCL 6 compatible. PRN files created by selecting the Print to File check box available as an printing option on most applications.
- BMP Uncompressed
- TIFF 6.0 Baseline
- JPEG Baseline
- PDF 1.4 and below

### Initial Actions

---

- Check the USB memory device in a different system.
- Check the file format of the stored data.
- Cycle system power.
- If the problem persists, follow the procedure below.

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"><li>■ Main Controller Board, PL1.0.2</li><li>■ USB Host Board, PL6.3.1.11</li><li>■ UI Assembly, PL 6.4.1</li></ul>	<ul style="list-style-type: none"><li>■ Map 5 - Main Controller Board</li><li>■ Laser Unit and I/O</li></ul>

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the USB memory device, Press the Direct USB button. Does the printer detect the device?	Go to step 2.	Go to step 3.
2	Check the USB memory device in a different machine. Is the device readable?	Go to step 3.	The device is damaged or formatted incorrectly
3	Check for +5V at the USB Host Board connection to the Main Controller Board CN15-1. Is +5V present at CN15-1?	Go to step 4.	Replace the Main Controller Board (page 8-100).
4	Check the wiring harness between the USB Host Board and the Main Controller Board. Is the harness damaged or disconnected?	Repair or connect the USB host harness.	Replace the USB Host PBA (page 8-56).

## System Errors

### Main Motor Locked

The Drive Unit Assembly has stopped rotating.

#### Applicable Error Message

- Main Motor Locked

#### Initial Actions

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

Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL1.0.2</li> <li>■ Drive Unit Assy, PL5.0.0</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 2 - Drive Locator</li> <li>■ Map 5 - Main Controller Board</li> <li>■ Main Controller Board</li> </ul>

Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the assembly for damage or debris. Is the Drive Unit damaged or obstructed by debris?	Clean or replace the Drive Unit (page 8-98).	Go to step 2.
2	Run the Motor tests from EDC mode. Did the motor rotate?	Go to step 6.	Go to step 3.
3	Check the wiring harness connections between the Main Controller Board (CN21) and the Drive Unit. Are the connections secure?	Go to step 4.	Reseat the connections.
4	Check continuity for each pin of the motor and solenoid wiring harness. Is the harness damaged?	Repair the damaged wiring.	Go to step 4.
5	Check for +24V at CN21-9, and 10. Is +24V present at CN21-9 and 10?	Go to step 6.	Go to step 7.
6	Replace the Drive Unit Assembly. Does the error persist?	Replace the Main Controller Board (page 8-100).	Complete.
7	Check for +24V at CN16-1. Is +24V present at CN16-1?	Replace the Main Controller Board (page 8-100).	Replace the Power Supply (page 8-104).



## Fuser Fan Locked

The Main fan has stopped rotating.

### Applicable Error Message

- Fuser Fan Locked

### Initial Actions

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

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL1.0.2</li> <li>■ Main Fan, PL4.0.39</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 5 - Main Controller Board</li> <li>■ Main Controller Board</li> </ul>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Fan for damage or debris. Is the Fan damaged or obstructed by debris?	Clean or replace the Fan (page 8-110).	Go to step 2.
2	Run the Fuser Fan test from EDC mode. Did the Fan rotate?	Go to step 6.	Go to step 3.
3	Check the wiring harness connections between the Main Controller Board (CN2) and the Fan. Are the connections secure?	Go to step 4.	Reseat the connections.
4	Check for +5V at CN2-3. Is +5V present at CN2-3?	Go to step 5.	Go to step 6.
5	Replace the Fan. Does the error persist?	Replace the Main Controller Board (page 8-100).	Complete.
6	Check for +5V at CN16-14. Is +5V present at CN16-14?	Replace the Main Controller Board (page 8-100).	Replace the Power Supply (page 8-104).

## Door Open

The interlock switch on the HVPS indicates a cover is open.

### Applicable Error Message

- Door Open

### Initial Actions

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

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL1.0.2</li> <li>■ HVPS, PL1.0.3</li> <li>■ Front Cover, PL2.0.1</li> <li>■ Rear Cover, PL2.0.3</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 1 - Circuit Board Locator</li> <li>■ Map 6 - HVPS</li> <li>■ Power and Fuser</li> </ul>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check for damage to the interlock switch actuator on the cover. Is the cover damaged?	Replace the cover.	Go to step 2.
2	Check for debris obstructing switch movement. Is switch motion blocked?	Clean the area around the switch.	Go to step 3.
3	Run the Cover Status test from EDC mode. Does the display change from Open to Close when the cover is closed?	Go to step 2.	Replace the HVPS (page 8-101).
4	Reseat the Main Controller Board connection to the HVPS CN10. Does the error persist?	Replace the Main Controller Board (page 8-100).	Complete.

## Network Configuration Errors

### Send Error

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

#### Applicable Error Messages

- Send Error (AUTH)
- Send Error (DNS)
- Send Error (POP3)
- Send Error (SMTP)
- Send Error Wrong Config
- Connection Error

#### Initial Actions

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

#### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL1.0.2</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 5 - Main Controller Board</li> <li>■ Laser Unit and I/O</li> </ul>

#### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the network connection to the printer using the ping command. Does the printer respond?	Go to step 4.	Go to step 2.
2	Check the LAN connections. Is the connection secure?	Go to step 3.	Reseat the LAN connector.
3	Print a Network Configuration report. Are the TCP/IP settings correct?	Go to step 4.	Correct printer settings.
4	Check server configuration. Is the server configured to accept incoming data?	Go to step 5.	Correct server settings.

**Troubleshooting Procedure Table (continued)**

Step	Actions and Questions	Yes	No
5	Cycle printer power. Does the error persist?	Replace the Main Controller Board (page 8-100)	Complete.

**IP Conflict**

Another device on the network is using the IP address assigned to this printer.

**Troubleshooting Reference Table**

Applicable Parts	Wiring and Plug/Jack References
■ Main Controller Board, PL1.0.2	

**Troubleshooting Procedure Table**

Step	Actions and Questions	Yes	No
1	Check the TCP/IP Address stored in the printer's NVM. Is the address correct for the printer?	Advise the customer of the address conflict.	Enter the correct IP address.

## Status Messages

Status messages are informational and do not stop printer operation.

### Status Message Summary

Message	Cause	Initial Action
Replace Toner	This message appears between Toner Low and Toner Empty.	Replace the cartridge.
[Incompatible]	A Fax from a registered junk Fax number was received.	The received Fax is deleted. Check junk Fax settings.
Group Not Available	A group location number was entered when only a single location number is used, such as when adding locations for Multiple Send operations.	Use a speed dial number or dial the number using the keypad.
Cancel? <Yes>	Scan of original has filled available memory.	Press OK to cancel. To send pages successfully stored, select No and press OK.
Retry Redial?	Wait interval to redial a previously busy number.	Press OK to redial, or Stop/Clear to cancel.
Low Power	The printer is in power save mode.	When data is received, the printer should exit power save mode.
Not Assigned	The speed button or speed dial number you tried to use has no number assigned to it.	Enter the number manually using the keypad or store the number or address.
[Stop Pressed]	Stop/Clear has been pressed during an operation.	Try again.
Authentication Failure	The ID or password entered is incorrect.	Enter the correct ID or password.
Mail Exceeds Server Support	The mail size is larger than the supported size by SMTP server.	Divide your mail or reduce the resolution.
Enter Again	An invalid entry	Enter the correct item.
File Format Not Supported	The selected file format is not supported.	Use the correct format.
Not Available Try Again Later	Can not perform the task immediately because too many tasks are running at once.	Try again when current task is completed.
One Page is Too Large	Single page data exceeds the mail size configuration.	Reduce the resolution and try again.
Operation Not Assigned	In the Add Page/Cancel Job operation, but there are no jobs stored.	Check for any scheduled jobs.
Scanner locked	The scanner module is locked	Unlock the scanner and press Stop/ Clear.

**Status Message Summary (continued)**

<b>Message</b>	<b>Cause</b>	<b>Initial Action</b>
Self Diagnostics Temperature	Self diagnostics is checking thermal operation.	Wait a few minutes.
Self Diagnostics LSU	Self diagnostics is checking Laser Unit operation.	Wait a few minutes.
Toner Low	Print Cartridge is near empty.	Agitate the cartridge.
Updating Data Please Wait...	This message appears when there is a change in the system setting or during back up.	Do not turn power Off.

# General Troubleshooting

## In this chapter...

- Introduction
- Embedded Diagnostic Control Mode
- Tech Mode
- Status LED
- Inoperable Printer Troubleshooting
- Power Supply Troubleshooting
- USB Port Testing
- Operating System and Application Problems

## Chapter 4

## Introduction

---

This chapter covers the diagnostic tools available in Embedded Diagnostic Control (EDC) and Tech modes. Also covered are the Status LED and troubleshooting procedures for problems not associated with a specific error message.

For troubleshooting error messages, refer to Chapter 3, Error Messages and Codes. Print-quality problems are covered in Chapter 5, Print-Quality Troubleshooting.

## Embedded Diagnostic Control Mode

---

Embedded Diagnostic Control (EDC) provides a suite of tests to check operation of individual printer components. These tests are the best method for determining the condition of the component being tested.

### Entering EDC Mode

---

Enter EDC mode to run diagnostic tests on individual components. To enter EDC mode, quickly press these buttons in sequence Menu > Stop > Left Arrow > Back > OK > Right Arrow. COMPONENT TEST Press Menu Key appears on the display when EDC mode is active. Press Stop to exit EDC mode.

### EDC Mode Tests

---

#### EDC Tests

Component	Test	Description
Cover Status	■ Front Cover	Test the interlock switch. Reports Open or Closed
Sensor Status	■ Registration ■ Feed ■ Exit ■ Paper Empty	Select which sensor to test. Actuator movement toggles the display between With or Without Paper. The Paper Empty test reports Present or Empty.
Motor Test	■ Main Mtr Nor ■ Slow	Press the OK button after On appears on the display. The Motor runs for 60 seconds the is turned Off. Slow runs the motor for 60 seconds at a slower speed.
Fan Test	■ Fuser Fan ■ SMPS fan ■ LSU Fan	Press OK after On appears on the display to run the selected Fan for 10 seconds.
Clutch Test	■ Pick Up Clutch ■ Regi Clutch	Press OK after On appears on the display to activate the selected clutch for 3 seconds.



**EDC Tests (continued)**

Component	Test	Description
Fuser Ctrl	<ul style="list-style-type: none"> <li>■ Temp Control</li> <li>■ Fuser Temp</li> </ul>	Select On to switch the Fuser on and view the temperature. Off turns the Fuser Off and displays 0. Fuser Temp displays the current Fuser temperature.
LSU Control	<ul style="list-style-type: none"> <li>■ LD Power</li> <li>■ LSU Motor</li> <li>■ LSU Ready</li> <li>■ Hsync</li> </ul>	Press OK after On appears on the display to run the test for 10 seconds. For LSU Ready and the Hsync, the test reports "1" if successful.
DEV Control	<ul style="list-style-type: none"> <li>■ THV +</li> <li>■ THV -</li> <li>■ Dev Bias</li> <li>■ MHV Bias</li> </ul>	Press OK after On appears on the display to turn the selected control signal On.

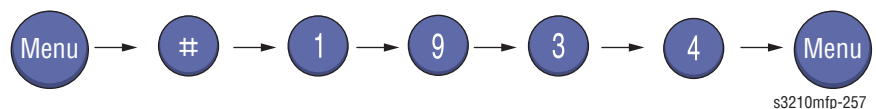
## Tech Mode

Tech mode provides an interface to set or adjust various communication parameters, perform system-level tests, print test prints, or generate reports of system activity. While in Tech mode, the printer continues to perform all normal operations.

What follows are descriptions of each Tech mode option available under the three main functional categories; Data Setup, Machine Test, and Report.

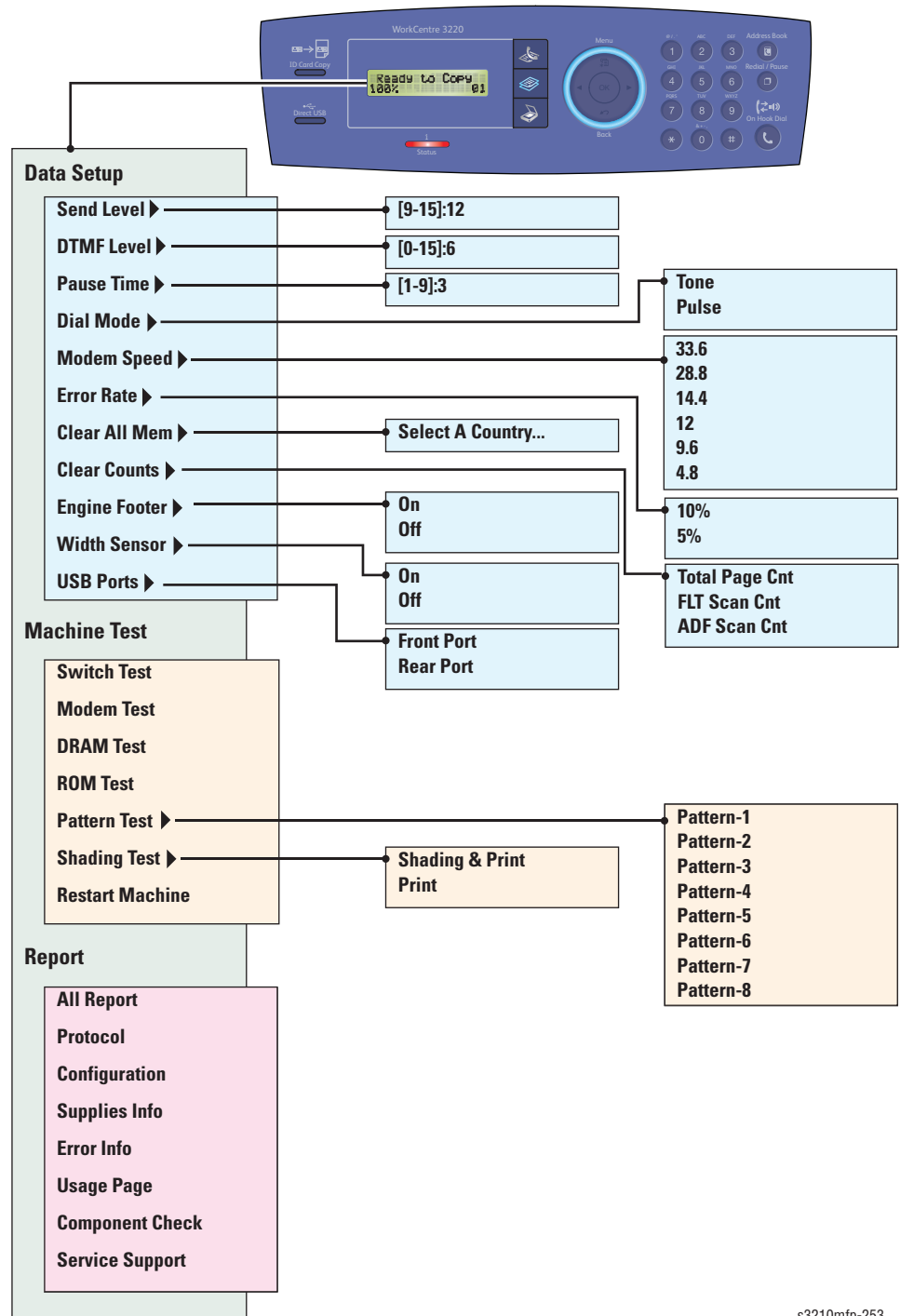
### Entering Tech Mode

To enter Tech mode, press these keys in sequence



The LCD displays **Tech Mode, Tech Menu**, indicating the machine has entered service (tech) mode.

## Tech Mode Menu



s3210mfp-253

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## Data Setup

---

### Send Level

---

You can set the level of the Fax transmission signal. Typically, the Tx level should be under -12 dBm.



#### Caution

The Send Level default setting is best for most installations. Never change settings arbitrarily.

### DTMF Level

---

This functions sets the level of the Dual Tone Multi-Frequency (DTMF) tones. Values of 0 to 15 are available with the default being 6.

### Pause Time

---

This functions sets the duration of inserted pauses between 1 and 9. The default is 3.

### Dial Mode

---

This function sets the dial method.  
\*Default: Dial (Dial/Pulse)

### MODEM Speed

---

Sets the maximum modem speed. Communication is done with speed automatically set at lower speeds when communicating with a slower speed modem since communication is done on the standard of the side where modem speed is low for transmission/reception. It is best set at the default setting of 33.6 Kbps.

### Error Rate

---

When the error rate exceeds the set value, the Baud rate automatically adjusts to 2400 bps. This ensures that the error rate remains below the set value. You can select rates between 5% and 10%.

## Clear All Memory

This function is used to reset the system to the factory default values when the product is functioning abnormally. All the values are returned to the default values, and all the information, which was set by the user, is erased.

1. Select Memory Clear.
2. Push the OK button.
3. Select the country. (There are four country groups. Refer to the table below.)
4. Push the OK button to clear memory.

### Note

Always clear memory after replacing the Main Controller Board. Otherwise, the system may not operate properly.

Country Group	USA/Canada	UK	Russia	South Africa
Country	USA/Canada Mexico Brazil	UK Germany France Italy Spain Austria Netherlands Belgium Portugal Sweden Norway Denmark Finland Switzerland Greece Ireland Turkey	Russia India Oman Poland Bangladesh Kuwait Morocco Algeria Pakistan UAE Bahrain Sri Lanka Saudi Arabia Chile Peru Argentina Hungary Romania Bulgaria Czech	South Africa

## Clear All Counts

This function resets all counts to zero.

## Engine Footer

---

The engine footer is used by Engineering for product testing. When On, the engine footer prints at the bottom of each page and includes these values:

**DC:** is the current dot (pixel) count.

**TI:** is the Temperature Index. Values range from 0 to 50. A comparatively low number indicates operation in a high temperature, high humidity environment.

**TADC:** is the A/D converter temperature used to determine the TI value.

**TV:** is an index of charge voltage (MHV) present at the charge and developer rollers.

**TP:** indicates the current transfer voltage charge (THV+).

**DP:** indicates the current developing bias voltage (DEV).

**TEMP:** indicates the current fusing temperature.

These values have not been characterized for use by Service to troubleshooting system performance issues.

### Note

When On, the engine footer prints on every page output.

## Width Sensor

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Set the default as On or Off for the width sensor.

## USB Ports

---

Set the default as On or Off for the front and rear USB ports.

## Machine Test

---

### Switch Test

---

This tests the function of each Control Panel button when pressed. The result is appears on the display each time you press a button. Press the Stop button to exit the test.

### Modem Test

---

This test emits various transmission signals to the telephone line from the modem to check modem function. If no transmission signal sounds are heard, the modem part of the Main Board has malfunctioned.

### DRAM Test

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This tests the printer's DRAM. The result appears in the LCD display. If all memory is working normally, the LCD shows DRAM Test OK and amount of installed DRAM.

## ROM Test

---

This tests the printer's ROM. If successful, the software version appears on the display.

## Pattern Test

---

This test prints one or all of the test patterns stored in ROM. These are used to evaluate printer performance and operation. Refer to "Test Prints" on page 5-35 for test print descriptions.

## Shading Test

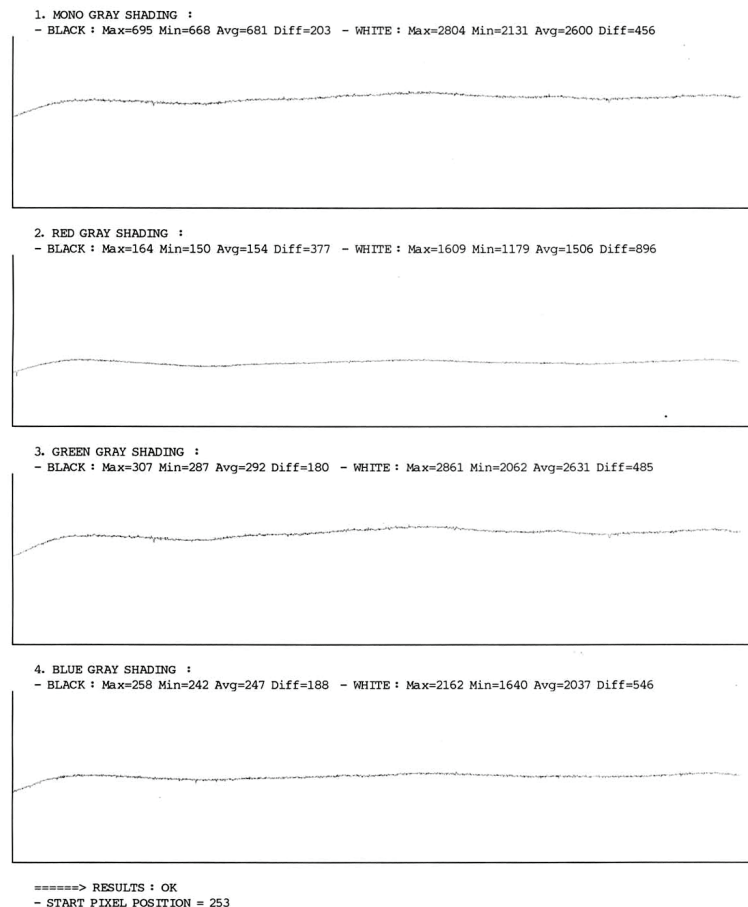
This test is used to optimize scan quality. If the copy image quality is poor, perform this test to check the condition CCD unit. When the scan unit becomes dirty, it can alter the shading value. If copies have black lines or are blurred, adjust the shading setting.

### Note

Close the ADF completely before testing.

1. Enter Tech mode.
2. Scroll to Machine Test and press **Enter**.
3. Scroll to Shading Test and press **Enter**.
4. Shading & Print appears on the bottom line; press **Enter**.
5. Print? appears in the top line, and Yes in the bottom line. Press **Enter** to start the test. If you select No, the machine returns to Shading & Print.
6. The machine adjusts the shading value, then prints the result.

### SHADING VALUE



s3210mfp-258

## Restart Machine

Select Yes to restart the printer immediately.

## Report

### Protocol Report

This list shows the sequence of the CCITT group 3 T.30 protocol during the most recent sending or receiving operation. Use this list to check for send and receive errors. If a communication error occurs while the machine is in Tech mode, the protocol list prints automatically.

### Configuration Report

The Configuration Report lists the status and settings of counters, NVM settings, network parameters, and firmware version information.

Configuration Report		
Date/Time	: FEB-14-2004 06:14PM SAT	
Fax Number	:	
Fax Name	:	
Model Name	: WorkCentre 3210	
Options	Item	Status
Copy Tray	[Tray1/Tray2...]	Auto
Fax Tray	[Tray 1/Auto]	Auto
Paper type	[Plain Paper/Bond...]	Plain Paper
Tray Paper	[Letter/A4...]	Letter
MP Tray Size	[Letter/A4...]	Letter
Clock Mode	[12 Hour/24 Hour]	24 Hour
Language	[English/French...]	English
Power Save	[5/10/15/30/45]	30 Min
Scan PWR Save	[0.5/1/4/8/12 Hours]	0.5 Hours
Ignore Toner	[On/Off]	Off
Default Darkness	[Light/Normal/Dark]	Normal
Default Image	[Text/ Mixed /Photo]	Text
Default Reduce/Enlarge	[Original/Lgl->Ltr...]	100%
Default Number of Copy	[1-99]	1
Timeout	[15/30/60/180/Off]	[30 sec]
Receive Mode	[Fax/Tel...]	Fax
Ring To Answer	[1-7]	1
Darkness	[Light/Normal/Dark]	Normal
Redial Term	[0-15]	3
Redials	[0-13]	2
MSG Confirm	[On/Off/OnErr]	On-Err
Auto Report	[On/Off]	On
Auto Reduction	[On/Off]	On
Discard Size	[0-30 MM]	[20 MM]
RCV Start Code	[0-9]	[*9*]
DRPD Mode	[On/Off]	Off
Send Forward	[On/Off]	Off
RCV Forward	[On/Off]	Off
Security Mode	[On/Off]	Off
Prefix Dial	[Fax Number]	[]
Stamp RCV Name	[On/Off]	Off
ECM Mode	[On/Off]	On
Speaker	[On/Off/Comm]	Comm
Ringer	[Off/Low/Med/High]	Med
Key Sound	[On/Off]	Off
Alarm Sound	[On/Off]	On
Set Tx Level	[09-15]	-12 dB
Dial Mode	[Tone/Pulse]	Tone
Modem Speed	[33.6/28.8...Kbps]	33.6 kbps
Error Rate	[5%/10%]	[10%]
Silence Time	[12 Sec/Unlimit/Off]	Off
Firmware/Engine Version	: OS 1.00.86.07 11-31-2005	0.8.00
Emulation Version	: PCL5e 5.21 11-10-2005	PCL6 5.14 11-03-2005
	: PS3 V0.96.16 11-25-2005	QPD 5.16 11-09-2005
	: PDF V1.00.15 11-22-2005	
PDF Version		
Total Page Counts	: 4294967295	
CRU Prints	: 4294967295 (74310)	
Replaced Toner Counts	: 4294901760	
ADF/Platen Scan Page Counts	: 0	0
CRUM Vendor/Serial	:	
IP Address/Memory Size	: 192.0.0.192	96 Mbytes

s3210mp-256



## Supplies Information

The Supplies Information Report lists Print Cartridge status and several page counts.

## Error Information Report

The Error Information Report lists error counts for several media handling and Fuser errors.

## Usage Page

The Usage page lists counts for media type used in the printer. Also listed is the number of simplex and duplex prints.

## Component Check

The Component Check report provides procedures to run test procedures from the Machine Test menu of Tech mode.

## Service Support

This option prints the Customer Assistance Report that includes procedures for setting the country, upgrading the firmware, and printing a test pattern from the pattern test menu.

## Status LED

The Status LED indicates the status of the printer. The following table lists the different types of status indicated by the Status LED.

Status		Description
Off		<ul style="list-style-type: none"> <li>■ The printer is powered Off.</li> <li>■ The printer is in power save mode.</li> </ul> <p><b>NOTE</b> When data is received, or any button is pressed, the printer switches to Ready automatically</p>
Green	On	<ul style="list-style-type: none"> <li>■ The printer is Ready.</li> </ul>
	Blinking	<ul style="list-style-type: none"> <li>■ When the green LED slowly blinks, the printer is receiving data.</li> <li>■ When the green LED rapidly blinks, the printer is printing.</li> </ul>
Red	On	<ul style="list-style-type: none"> <li>■ An fatal error has occurred.</li> <li>■ The Print Cartridge is empty, or requires replacement.</li> </ul>
	Blinking	<ul style="list-style-type: none"> <li>■ A non-fatal error has occurred and the printer is waiting for the error to be cleared.</li> <li>■ The Print Cartridge is low. Order a new Print Cartridge.</li> </ul>

## Paper Empty With No Indication

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

### Applicable Error Message

- Paper Empty without Indication

### Initial Actions

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

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL1.0.2</li> <li>■ Paper Empty Sensor, PL4.0.75</li> <li>■ Empty Actuator, PL4.0.84</li> <li>■ Empty Actuator, PL10.0.11.6</li> <li>■ UI PWB, PL6.4.13</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 3 - Sensor Locator</li> <li>■ Main Controller Board</li> <li>■ Fax Board and Optional Tray</li> </ul>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Empty actuator for damage. Is the actuator damaged?	Repair or replace the actuator (page 8-91).	Go to step 2.
2	Run the Empty Sensor Status test from EDC. Does the sensor operate correctly?	Go to step 3.	Replace the Paper Empty Sensor (page 8-88).
3	Check the connection between the Main Controller Board CN8 and the Control Panel. Is the connection secure?	Go to step 4.	Secure the connections.
4	Check for +5 V at CN1 of the UI PWB. Is +5 V present at CN1.	Go to step 4.	Replace the Main Controller Board (page 8-100).
5	Check the continuity of the harness connecting the Main Controller Board and Control Panel. Is the harness damaged?	Repair the harness.	Replace the UI PWB (page 8-115).

## No Status LED Error Indication for Front Cover

The Status LED does not indicate an error when the Front Cover is opened.

### Initial Actions

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

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL1.0.2</li> <li>■ Power Supply, PL1.0.4</li> <li>■ Front Cover, PL2.0.1</li> <li>■ UI PWB, PL6.4.13</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 5 - Main Controller Board</li> <li>■ Power and Fuser</li> <li>■ ADF and Scanner</li> </ul>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Front Cover actuator for damage. Is the actuator damaged?	Replace the Front Cover (page 8-58).	Go to step 2.
2	Check the wiring harness connectors between the UI PWB and the Main Controller Board. Are the connectors securely connected?	Replace the UI PBA (page 8-115).	Reseat the connectors. Go to step 2.
3	Check the Power Supply signal. Is there +24 V across: CN3-16, CN3-13, CN3-11, CN3-9, and CN3-7 pins Is there +5 V across: CN3-5, CN3-3, and CN3-1 pins	Go to step 3.	Replace the Power Supply (page 8-104).
4	Reseat the Control panel connections on the Main Control Board. Does the error still occur?	Go to step 4.	Complete.
5	Check the Main Controller Board signal. Is there +24 V across: CN10-1, CN10-4, CN10-6, CN10-8, and CN10-10 pins Is there +5 V across: CN10-12, CN10-14, and CN10-16 pins	Complete.	Replace the Main Controller Board (page 8-100).

## Paper Rolled in the Fuser

There are repeated media jams in the Fuser.



### Warning

Allow the Fuser to cool before beginning the repair.

### Initial Actions

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

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map Reference
<ul style="list-style-type: none"> <li>■ Fuser, PL8.0.0</li> <li>■ Heat Roller, PL8.010</li> <li>■ Guide Claw, PL8.0.16</li> <li>■ Large Pressure Roller, PL8.0.21</li> <li>■ Small Pressure Roller, PL8.0.23</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 5 - Main Controller Board</li> <li>■ Map 7 - Power Supply</li> <li>■ Map 8 - Left Side Harness</li> <li>■ Power and Fuser</li> </ul>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Reseat the Fuser connections. Does the error still occur?	Go to step 2.	Complete.
2	Check the Fuser for contamination. Is the Fuser dirty?	Remove, disassemble, and clean the Fuser.	Go to step 3.
3	Check the Guide Claws for damage? Are the Guide Claws damaged?	Replace the Fuser (page 8-13).	Go to step 4.
4	Check the Fuser gear. Is the gear damaged?	Replace the Fuser (page 8-13).	Go to Step 5.
5	Run the Main Mtr tests from EDC. Does the main motor operate correctly?	Replace the Fuser (page 8-13).	Replace the Drive Unit (page 8-98).

## Fuser Gear Damaged from Overheating

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



### Warning

Allow the Fuser to cool before beginning the procedure.

### Initial Actions

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

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map Reference
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL1.0.2</li> <li>■ Power Supply, PL1.0.4</li> <li>■ Fuser, PL8.0.0</li> <li>■ Halogen Lamp, PL8.0.30</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 1 - Circuit Board Locator</li> <li>■ Map 5 - Main Controller Board</li> <li>■ Power and Fuser</li> </ul>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Halogen Lamp for damage or overheating. Is the Halogen Lamp damaged?	Replace the Halogen Lamp (page 8-27).	Go to step 2.
2	Replace the Fuser (page 8-13). Does the error still occur?	Replace the Power Supply (page 8-104).	Go to step 3.
3	Reseat connections on the Main Controller Board. Does the error still occur?	Replace the Main Controller Board (page 8-100).	Complete.

## Paper Rolled on the OPC Drum

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



### Caution

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

### Initial Actions

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

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map Reference
■ Print Cartridge, PL1.0.21	

### Troubleshooting Procedure Table

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

## Multi Sheet Picks

Multiple sheets are picked from the tray at the same time.

### Initial Actions

- Inspect the tray to ensure that it is free of obstructions, is loaded with supported paper, and the guides are adjusted correctly.
- Try picking paper from a different tray.
- Check the paper path for obstructions or debris.
- Cycle printer power.
- If the problem persists, refer to the following procedure.

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Pick Up Solenoid, PL4.0.37</li> <li>■ Feed Actuator, PL4.0.72</li> <li>■ Holder Pad, PL7.0.14</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 2 - Drive Locator</li> <li>■ Main Controller Board</li> </ul>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the left and right Guides of the tray to ensure they are set correctly. Are the Guides set correctly?	Go to step 2.	Adjust the left and right Guides.
2	Check the Friction Pad for contamination or damage. Is the Friction Pad contaminated or damaged?	Clean the Friction Pad. Replace the Tray Pad Holder (page 8-11), if damaged.	Go to step 3.
3	Check the Pick Up Solenoid for correct installation and damage. Reseat the Pick Up Solenoid. Does the error still occur?	Replace the Pick Up Solenoid (page 8-79).	Complete.

## Inoperable Printer Troubleshooting

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### The Printer is Not Responding to the Print Command

---

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

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

### The Printer is Not Responding to a Print Command due to Incorrect Setup

---

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

1. Ensure there is sufficient host hard disk space for the spool files created during printing.
  - a. The message “insufficient printer memory” means there is a hard disk space problem on the host, rather than a printer RAM problem. Free up disk space on the host hard disk.
2. The error occurs even though there is plenty of hard disk space.
  - a. The connection or communication between the printer port and the computer is incorrect.
  - b. Verify the cable is properly connected and configured for printing. Make sure the CMOS settings are correctly set for the printer port. Select:
    - ECP which supports 12-bit data transfer or
    - SPP which supports 8-bit data transfer.
3. Reboot the printer.
  - a. If the regular fonts are not printing, the cable or the printer driver could be defective.
  - b. Turn the computer and printer Off and back On.
  - c. Send a print job. If the regular fonts are not printed again, replace the cable.



## Scanner Malfunction

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### Scanner Lamp Does Not Turn On

---

1. Is there power at the IIT? Place media in the ADF input tray. If the paper feeds, the ADF has power.
2. Is there power at the scanner? Lift the ADF and observe the scanner lamp and scanhead motion. If the lamp is Off and the scanhead moves, the Platen has power. Replace the Platen Assembly, PL6.0.3.
3. If no power is present at the Scan Assembly, check the Power Supply and Scan Assembly connections to the Main Controller Board.
4. Replace the Platen Assembly.

### Scanhead Does Not Move

---

1. Check the scanhead lock is in the “unlocked” position. Reboot the system.
2. Is there power to the Scanner Assembly? Lift the DADF and verify the lamp is on. If so, the Power Supply is operating correctly.
3. Verify the Power Supply operation.
4. Replace the Scan Assembly.

### Scanhead Motion Erratic

---

1. Verify the scanhead shipping lock is in the “unlocked” position. Reboot the system.
2. Run the Service Diagnostics Exercise Axis Motion test and observe Scanhead motion, paying special attention to anything that could obstruct scanhead motion.
3. Replace the Scan Assembly.

## ADF Does Not Feed Media

---

1. Is there power at the ADF? Insert media into the ADF input tray. Listen for a beep as the media actuates the sensor. If a beep is heard, power is available to the ADF. See step 3.
2. If no power is present at the Scan Assembly, check the Power Supply and Scan Assembly connections to the Main Controller Board.
3. If the ADF drive operates, but the media does not feed correctly, clean or replace the ADF Feeder Assembly, ADF Feed Pad, and ADF Rubber Feed Pad.
4. Check the ADF Front and Upper Cover for obstructions or damage.
5. Replace the ADF.

## Fax Troubleshooting

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This section provides troubleshooting procedures for Fax problems not reported to the Control Panel as an error message. The printer provides several built-in tools for troubleshooting Fax problems. As a first step, perform these initial checks to isolate the problem.

### Initial Fax Checks

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Check these items first. Use a desk telephone and a second, known-good phone line to test Fax line function.

- Check that Fax is enabled and configured properly for the phone line.
- Check the target Fax number. If the number is in memory, is it correct?
- Call the target Fax number from a desk phone to confirm a Fax tone response.
- Use a desk phone to confirm a dial tone on the Fax line.
- Check Fax line condition and connections.
- Print a Protocol Report if reports aren't being printed.
- If the Fax line, Fax number, and cabling are all functional, use these tools to isolate the problem.

### Fax Troubleshooting Tools

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The primary tools for troubleshooting Fax problems are Tech mode tests and the Protocol Report. Tech mode test results and the Protocol Report provide valuable clues to the root cause of Fax errors.

#### Tech Mode Fax Troubleshooting

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Tech mode includes access to Fax transmission parameters and tests of the system's Fax subsystem. Use the Data Setup menu to adjust Fax parameters to match line capabilities. Use the Machine Test menu to test operation of the system's Fax modem and system memory.

Clear All Memory resets all Fax parameters to factory-default values and cancels or deletes all incoming and outgoing faxes. All customer programmed data, such as the Individual and Group Speed Dial directories, are lost when a Clear All Memory command is issued.

#### Protocol Report

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The Protocol Report provides a detailed log of the communications activity between devices. Use this report to diagnose possible communications errors between machines.

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

## Common Fax Communication Commands

Command	Definition	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)
(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

## No Dial Tone

With the On-hook button pressed, no dial tone is present. The Fax does not detect dial tone before dialing.

### Initial Actions

- Check Fax line connections.
- Cycle printer power.
- If the problem persists, follow the procedure below.

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Fax Board, PL1.0.24</li> <li>■ Middle Cover Assembly, PL3.0.0</li> <li>■ UI Assembly, PL 6.4.1</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 5 - Main Controller Board</li> <li>■ Fax Board and Optional Tray</li> </ul>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Is the telephone line damaged or disconnected?	Go to step 2.	Connect or replace the line.
2	Check the UI Assy. Is there a click when the On hook Dial button is pressed?	Go to step 4.	Go to step 3.
3	Run the Switch Test from Tech mode to test the UI buttons. Do the buttons function?	Go to Step 4.	Replace the UI Assembly (page 67).
4	Check the connection between the Scan Assembly and the Main Controller Board. Are the connections secure?	Go to step 5.	Reseat the connections.
5	Reseat the Fax Board. Does the error persist?	Replace the Fax Board (page 106).	Complete.
6	Check the speaker connection on the Fax Board. Is the connection secure?	Replace the Main Controller Board (page 100).	Reseat the speaker connection.

## Power Supply Troubleshooting



### Warning

Hazardous voltage is connected to the wall outlet.

## AC Power Troubleshooting

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack References
■ Power Supply, PL1.0.4	■ Map 7 - Power Supply ■ Power and Fuser

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the voltage at the AC wall outlet. Is there approximately 110 VAC (or 220 VAC if the printer is a 220 V configuration) at the AC wall outlet?	Go to step 2.	Notify the customer of improper AC output from the outlet.
2	Check the power cord for defects or loose connection. Is the Power Cord loose or defective?	Replace or reconnect the Power Cord.	Replace the Power Supply (page 8-104).

## No Power

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



### Warning

Hazardous voltage is connected to the Power Supply.

### Initial Actions

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

### Troubleshooting Reference Table

Applicable Parts	Wiring and Plug/Jack Map References
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL1.0.2</li> <li>■ Power Supply, PL1.0.4</li> <li>■ Power Cord, PL1.0.25</li> <li>■ UI PBA, PL6.4.13</li> </ul>	<ul style="list-style-type: none"> <li>■ Map 5 - Main Controller Board</li> <li>■ Power and Fuser</li> </ul>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the connection to the wall outlet. Is the printer connected to the outlet?	Go to step 2.	Connect to the wall outlet.
2	Check the condition of the Power Cord. Is the Power Cord damaged?	Replace the Power Cord	Go to step 3.
3	Check the wall outlet. Is the proper supply voltage present?	Go to step 4.	Use a different outlet.
4	Check power switch resistance. Does the power switch operate correctly?	Go to step 5.	Repair the switch.
5	Check the Power Supply output. Is there +24 V across each of the following: <ul style="list-style-type: none"> <li>■ CON3-16, 13, 11, 9 and 7</li> </ul> Is there +5 V across: <ul style="list-style-type: none"> <li>■ CON3-5, 3, and 1</li> </ul> Is the correct voltage present at each pin?	Go to step 6.	Replace the Power Supply (page 104).
6	Reseat CN16 to the Main Control Board. Does the error still occur?	Go to step 7.	Complete.
7	Check the wiring harness between the Power Supply CON3 and Main Controller Board CN16. Is the wiring harness damaged?	Repair the harness.	Go to step 8.

Troubleshooting Procedure Table (continued)

Step	Actions and Questions	Yes	No
8	Check for +5 V between CN8-2 and CN8-1. Is +5V present at CN8-2?	Go to step 9.	Replace the Main Controller Board (page 8-100).
9	Is the Status LED and display On?	Complete.	Replace the UI PBA (page 8-115).

## USB Port Testing

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

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

### Note

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

## USB Port Verification

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

### Note

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

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

## Operating System and Application Problems

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### Common Windows Problems

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The following messages may appear under various conditions.

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

### SPOOL Error

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

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

### How to Delete the Data in the SPOOL Manager

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

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



## Common Macintosh Problems

The following messages may appear under various conditions.

Condition	Possible Cause	Solutions
The printer does not print PDF file correctly. Some parts of graphics, text, or illustrations are missing.	Incompatibility between the PDF file and Acrobat products.	<p>Print the PDF file as an image may solve this problem.</p> <ul style="list-style-type: none"> <li>From the Acrobat printing options, turn On Print As Image.</li> </ul> <p><b>NOTE</b> It takes longer to print when using a PDF file as an image.</p>
The document has printed, but the print job has not disappeared from the spooler in Mac OS 10.3.2.		Update your Mac OS to OS 10.3.3 or higher.
Some letters do not display normally during cover sheet printing.	Mac OS cannot find the font during cover page printing.	Only alphanumeric characters are allowed on the cover page.

## Common Linux Problems

The following messages may appear under various conditions.

Condition	Solutions
The printer does not print.	<ul style="list-style-type: none"> <li>Check if the printer driver is installed on the computer.</li> <li>Open Unified Driver Configurator and switch to the Printers tab in the Printers Configuration window to check the list of available printers.</li> <li>Make sure that the printer is displayed on the list. If not, add a printer.</li> <li>Check if the printer is started. Open the Printers Configuration window and select your printer from the printers list. Check the description in the Selected printer pane. If the printer status contains “stopped” string, press the <b>Stop</b> button. Normal operation should restore. The “stopped” status might be activated when some problems in printing occurred.</li> <li>Check if your application has special print option such as “=oras.” If “-oraw” is specified in the command line parameter, then remove it to print properly. For Gimp front-end, select “print” --&gt; “Setup printer” and edit command line parameter in the command item.</li> </ul>

Condition	Solutions
“Unable to open mfp port device file” when printing a document.	Avoid changing print job parameters (via LPR GUI, for example) while a print job is in progress. Known versions of CUPS server break the print job whenever print options are changed and then try to restart the job from the beginning. Since Unified Linux driver locks mfp port while printing, the abrupt termination of the driver keeps the port locked and therefore unavailable for subsequent print jobs. If this situation occurred, try to release the mfp port.
When printing a document over the network in SuSE 9.2, the printer does not print.	The CUPS (Common Unix Printing System) version distributed with SuSE Linux 9.2 (cups-1.1.21) has a problem with IPP (Internet Printing Protocol) printing. Use the socket printing instead of IPP or install the later version of CUPS (cups-1.1.22 or higher).

## Common PostScript Problems

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

### Note

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

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

# Print-Quality Troubleshooting

## In this chapter...

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

## Chapter 5

## Print-Quality Troubleshooting Overview

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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 1-18 for supported and specialty media that have been tested and approved for use in the WorkCentre 3210/3220. Use paper from a fresh ream that is acclimated to room temperature and humidity.

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

Check the temperature and humidity under which the printer is operating. Compare this to the “Environmental Specifications” on page 1-12. Extreme temperature and humidity can adversely affect the xerographic and fusing characteristics of the printer.

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

### Defects Associated with Specific Components

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

#### Laser Unit

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- Black Print (5-12)
- Vertical White Line (5-18)
- Vertical Lines are Curved (5-19).

#### Transfer Roller

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- Uneven Density (5-13)
- Background Contamination (5-14)
- Ghosting (2) (5-16)
- Vertical White Line (5-18)
- Vertical Black Line or Band (5-20)
- Stains on the Front of the Page (5-25)
- Stains on the Back of the Page (5-26)

## Fuser

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- Ghosting (3) (5-17)
- Stains on the Back of the Page (5-26)

## Print Cartridge

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- Light or Undertone Print (5-11)
- Black Print (5-12)
- Uneven Density (5-13)
- Background Contamination (5-14)
- Ghosting (2) (5-16)
- Vertical White Line (5-18)
- Vertical Black Line or Band (5-20)
- Horizontal Black Line and Band (5-21)
- Black/White Spot (5-22)
- Stains on the Front of the Page (5-25)
- Blank Page (1) (5-27)
- Blank Page (2) (5-28)

## ADF

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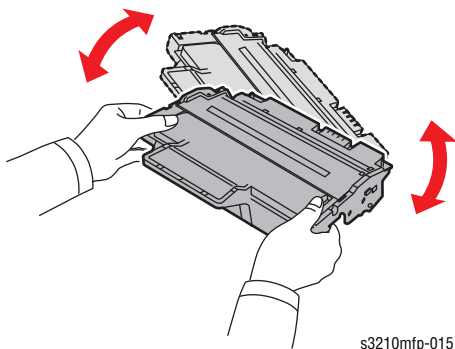
Print quality problems related to the ADF generally come from two sources, skew and banding. If image skew occurs when using the ADF, try using the platen and repeat the copy. If the image is fine from the platen, but skews from the ADF, examine the ADF rollers and ADF media path. Clean, and if necessary replace the ADF Feeder Assembly and Feed Pad. Banding is often the result of erratic ADF feed motion. In this case, clean the feed rollers and validate the thickness of the original document. Any media out of specification should be copied from the platen. If cleaning does not solve the problem, replace the ADF feed components.

## Troubleshooting Print-Quality Checklist

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

### Check the Print Cartridge

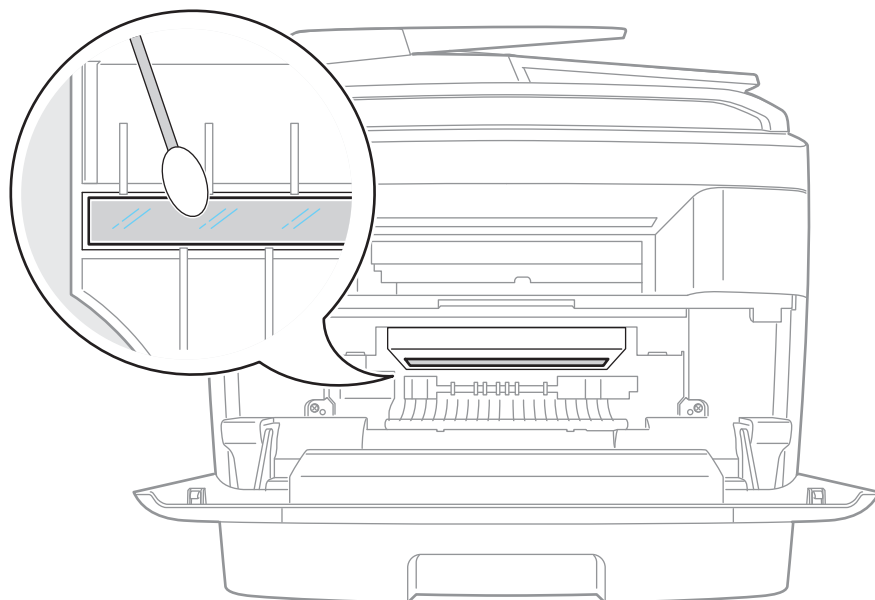
Check the amount of toner remaining. Low toner causes print-quality problems such as fading, streaking, white lines, or dropouts. If toner is low, remove the Print Cartridge and gently agitate the cartridge from side-to-side to distribute toner and temporarily extend cartridge life. Replace the cartridge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



s3210mfp-015

### Check the Laser Unit

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



s3210mfp-085

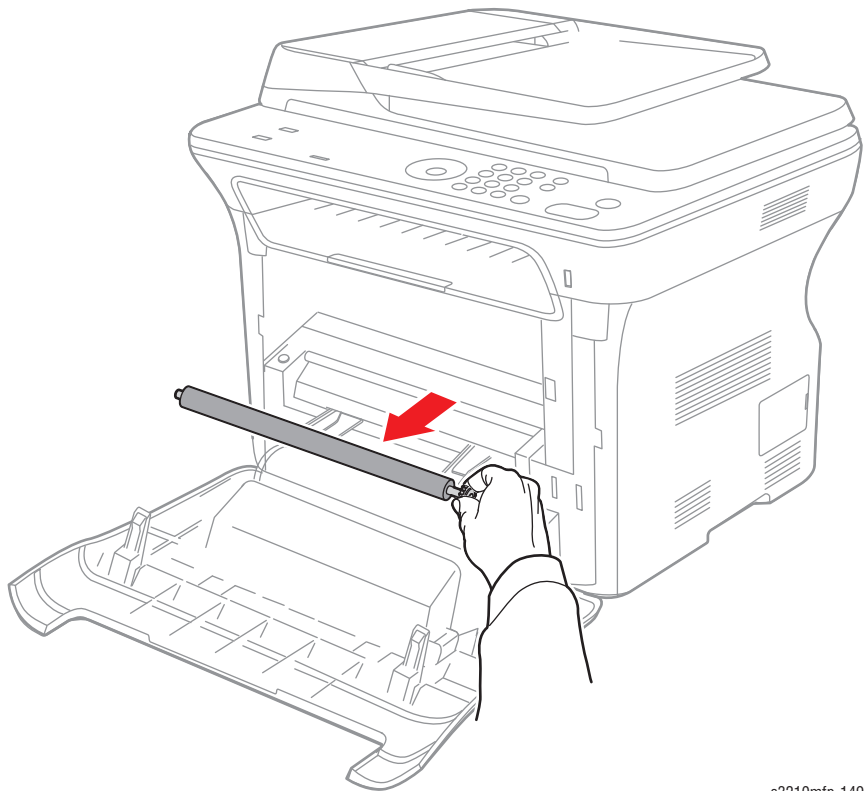
## Check the Transfer Roller

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



### Caution

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



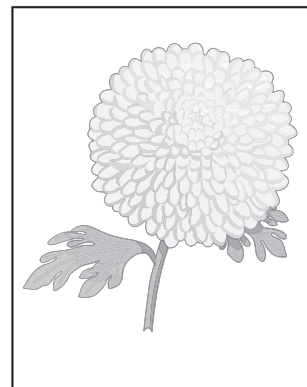
s3210mfp-149

## Check the Image

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

**1. Print is too light.**

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



Light or Undertone Print

**2. Toner smears or print comes off the page.**

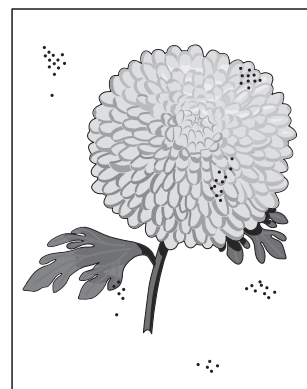
- a.** If you are printing on a thick or an uneven media, change the media type settings to a heavier type.
- b.** Check that the media meets specifications (refer to "Media and Tray Specifications" on page 1-18).



Smudges or Smears

**3. Toner spots appear on the page and printing is blurred.**

- a.** Run the Clean Drum procedure from the Maintenance menu.
- b.** Check the Print Cartridge to make sure that it is installed correctly.
- c.** Replace the Print Cartridge.

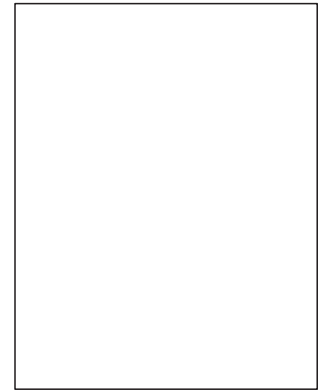


Random Spots



4. Entire page is white.

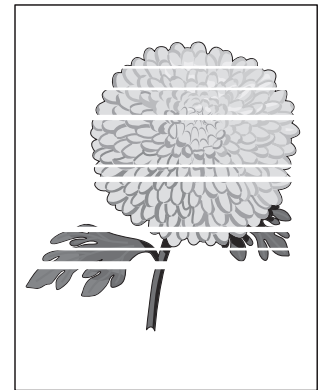
- a. Ensure the packaging material is removed from the Print Cartridge.
- b. Check the Print Cartridge to make sure that it is installed correctly.
- c. Toner may be low. Change the Print Cartridge.
- d. Check the Laser windows for obstructions.



Blank Print

5. Streaks appear on the page.

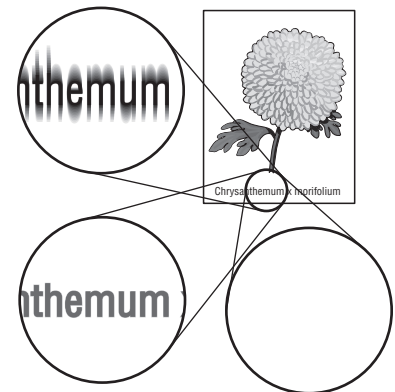
- a. Toner may be low. Change the Print Cartridge.



Horizontal Band, Void, or Streaks

6. Characters have jagged or uneven edges.

- a. If you are using downloaded fonts, verify that the fonts are supported by the printer, the host computer, and software application.
- b. From the **Start** menu, go to **Settings > Printers and Faxes**.
- c. Select WorkCentre 3210/3220. Right click on the printer icon and select **Printing Preferences**.
- d. Click the **Graphic** tab. Under **Image Mode**, select **Text Enhancement**. Click **OK**.



Fuzzy Text

7. Part or all the page prints.

- a. Check the Print Cartridge to make sure it is installed correctly.



Partial Band

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

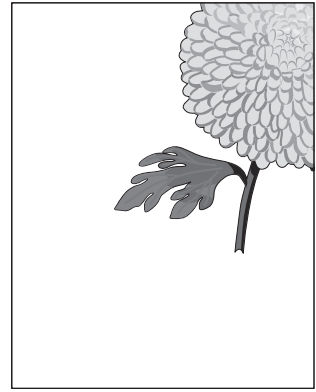
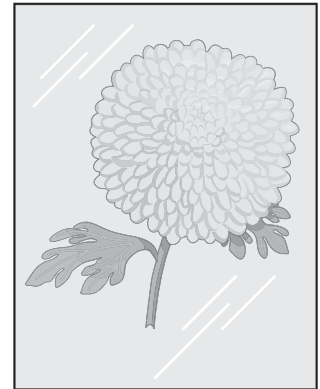


Image Not Centered

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

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

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



Light Print on Transparency

## Print-Quality Troubleshooting Procedures

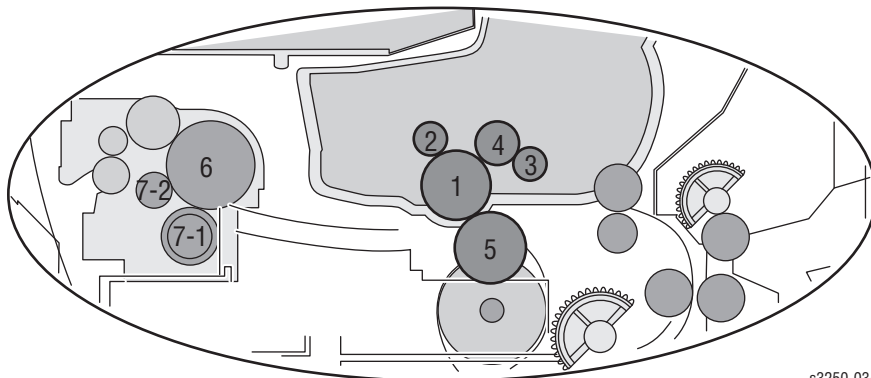
### Print-Quality Defect Definitions

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

Defect	Definition	Go to
Repeating Defects	A pattern of horizontal lines or spots.	5-9
Light or Undertone Print	The overall image density is too light.	5-11
Black Print	The entire image area is black.	5-12
Uneven Density	Density is uneven between left and right sides.	5-13
Background Contamination	A light or gray contamination appears on all or most of the page.	5-14
Ghosting (1)	There is ghosting at 75.5 mm intervals on the entire print.	5-15
Ghosting (2)	Ghosting appears at 75.5 mm intervals.	5-16
Ghosting (3)	Ghosting appears at 62.8 mm and 77.6 mm intervals.	5-17
Vertical White Lines	There are faded or white lines from the leading edge to the trailing edge.	5-18
Vertical Lines are Curved	The vertical components of the image are curved.	5-19
Vertical Black Line or Band	There are faded or black lines from the leading edge to the trailing edge.	5-20
Horizontal Black Line or Band	There are black lines running parallel with the leading edge of the print.	5-21
Black or White Spots	The toner image is not completely fused to the paper. The image easily rubs off.	5-22
Skew	The printed image is not parallel with the media.	5-23
Stains on the Front of the Page	The background of the front of the page is stained.	5-25
Stains on the Back of the Page	The background of the back of the page is stained.	5-26
Blank Page (1)	The entire image area is blank.	5-27
Blank Page (2)	The entire print is blank. One or several blank pages are printed.	5-28
Incorrect Magnification	Incorrect magnification when copying with the ADF feeding.	5-30
Lines or Streaks from ADF	There are lines or streaks on copies from the ADF.	5-31
Spots from ADF	There are spots on copies from the ADF.	5-32

## Repeating Defects

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



s3250-034

### Roller Dimensions

No.	Roller	Circumference	Abnormal Image	Part	Part Number
1	OPC Drum	75.5 mm (2.98 in)	White spots, Black spots	Print Cartridge	PL1.0.21
2	Charge Roller	26.7 mm (1.01 in)	Black spot and Periodic band	Print Cartridge	PL1.0.21
3	Supply Roller	47.1 mm (1.85 in)	Periodic bands of different density	Print Cartridge	PL1.0.21
4	Developing Roller	35.2 mm (1.39 in)	White spots, Black bands	Print Cartridge	PL1.0.21
5	Transfer Roller	47.0 mm (1.85 in)	Ghosting or poor fusing	Transfer Roller	PL1.0.11
6	Heat Roller	77.8 mm (3.05 in)	Black spots or bands	Fuser	PL8.0.0
7-1	Large Pressure Roller	62.8 mm (2.47 in)	Background	Fuser	PL8.0.0
7-2	Small Pressure Roller	37.7 mm (1.48 in)	Background	Fuser	PL8.0.0

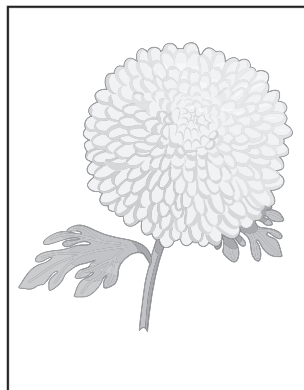
## Light or Undertone Print

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

### Initial Actions

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

### Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> <li>■ HVPS, PL1.0.3</li> <li>■ Print Cartridge, PL1.0.21</li> </ul>	 <p>Light or Undertone Print</p>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridge. Is the Print Cartridge empty?	Replace the Print Cartridge (8-7).	Go to step 2.
2	Check Toner Save mode. Is Toner Save mode enabled?	Go to step 3.	Disable Toner Save mode.
3	Check the ambient temperature. Is the ambient temperature below 10° C?	Relocate the printer.	Go to step 4.
4	Check the interior for toner spills. Is there toner spilled inside?	Clean the inside of the printer.	Go to step 5.
5	Check the HVPS installation. Reseat the HVPS if necessary (8-64). Does the image quality improve?	Complete.	Replace the HVPS (8-64).


## Black Print

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

### Initial Actions

- Check the connection between the Main Controller Board and HVPS.
- Check the connection between the HVPS and Print Cartridge.

### Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL1.0.2</li> <li>■ HPVS, PL1.0.3</li> <li>■ Laser Unit, PL1.0.12</li> </ul>	 <p>Black Print</p>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the connectors between the Main Controller Board and HVPS. Are the connectors secure?	Go to step 3.	Reconnect the connectors. Go to step 2.
2	Does the error still occur?	Go to step 3.	Complete.
3	Reseat the HVPS (8-64). Does the error still occur?	Replace the HVPS (8-64). Go to step 4.	Complete.
4	Does the error still occur?	Replace the Laser Unit (8-57). Go to step 5.	Complete.
5	Does the error still occur?	Replace the Main Controller Board (8-62).	Complete.

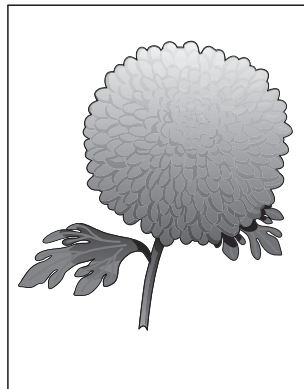
## Uneven Density

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

### Initial Actions

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

### Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> <li>■ Transfer Roller, PL1.0.11</li> <li>■ Print Cartridge, PL1.0.21</li> </ul>	 <p>Color Uneven or Wrong (Process Direction)</p>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Transfer Roller installation. Reseat the Transfer Roller if necessary (8-10). Does the image quality improve?	Complete.	Go to step 2.
2	Check the Print Cartridge. Is the Print Cartridge empty?	Replace the Print Cartridge (8-7).	Go to step 3.
3	Check the Print Cartridge for damage. Is the Print Cartridge damaged?	Replace the Print Cartridge (8-7).	Complete.


## Background Contamination

There is toner contamination on all or most of the page. The contamination appears as a very light gray dusting. The Print Cartridge is designed to print 7,000 sheets at 5% coverage. If prints typically are below 5% coverage and the counter is greater than 8,000, background contamination can occur.

### Initial Actions

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

### Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> <li>■ HVPS, PL1.0.3</li> <li>■ Transfer Roller, PL1.0.11</li> <li>■ Print Cartridge, PL1.1.21</li> </ul>	 <p style="text-align: center;">Background Contamination</p>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the paper condition. Is the paper dry, recommended type, and loaded in the correct position?	Go to step 2.	Replace the paper.
2	Check usage patterns. Is the typical print have less than 5% coverage?	Go to step 3.	Go to step 4.
3	Check the Print Cartridge. Is the Print Cartridge at or near end of life?	Replace the Print Cartridge (8-7).	Go to step 4.
4	Check the Transfer Roller movement. Does the Transfer Roller rotate smoothly?	Go to step 5.	Clean the Transfer Roller bushings.
5	Check the HVPS installation. Reseat the HVPS if necessary (8-64). Does the image quality improve?	Complete.	Replace the HVPS (8-64).




## Ghosting (1)

There is ghosting at 75.5 mm intervals of the OPC Drum on the whole print. Charge voltage from the HVPS to the Print Cartridge is not available due to damaged or dirty contacts.

### Initial Actions

- Check the connection between the HVPS and Print Cartridge.
- Check the Print Cartridge and Transfer Roller life.

### Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> <li>■ HVPS, PL1.1.3</li> <li>■ Transfer Roller, PL1.1.11</li> <li>■ Print Cartridge, PL1.1.20</li> </ul>	

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridge life counter. Is the Print Cartridge near end of life?	Replace the Print Cartridge (8-7).	Go to step 2.
2	Check the Print Cartridge for damage. Is the Print Cartridge damaged?	Replace the Print Cartridge (8-7).	Go to step 3.
3	Check the Transfer Roller life counter. Is the Transfer Roller at or near end of life?	Replace the Transfer Roller (8-10).	Go to step 4.
4	Check the ambient temperature. Is the ambient temperature below 10° C?	Relocate the printer.	Go to step 4.
5	Clean the HVPS contacts. Does the image quality improve?	Complete.	Go to step 6.
6	Replace the HVPS (8-64). Does the image quality improve?	Complete.	Go to step 7.
7	Check the Main Controller Board installation. Reseat the Main Controller Board (8-62). Does the image quality improve?	Complete.	Replace the Main Controller Board (8-62).

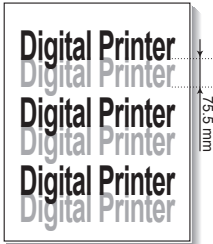
## Ghosting (2)

There is ghosting at 75.5 mm intervals from the OPC drum while printing on card stock or transparencies using the manual feeder. When printing on thicker media or transparencies, a higher transfer voltage is required. Thick Mode provides a higher voltage level to the Print Cartridge.

### Initial Actions

- Check that Thick Mode is selected.
- Verify the paper is within the printer specifications (refer to “Media and Tray Specifications” on page 1-18).

### Troubleshooting Reference Table

Applicable Parts	Example Print
	

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check that Thick mode is selected Is the printer set to thick mode?	Clean HVPS contacts. If problem persists, go to Ghosting (1).	Set to Thick Mode on Paper Type menu.

## Ghosting (3)

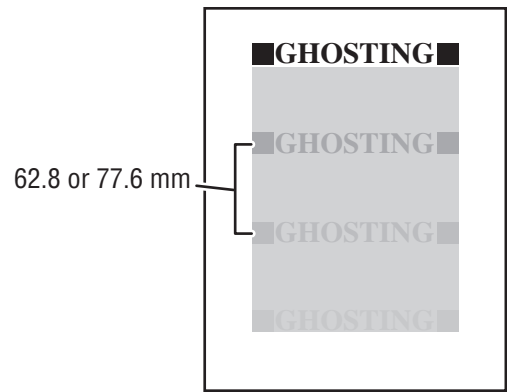
There is ghosting at 62.8 mm or 77.6 mm intervals. Fuser operating temperature is too high.

### Initial Actions

- Ensure there are no debris in the Fuser.
- Verify the paper is within the printer specifications (refer to “Media and Tray Specifications” on page 1-18).

### Troubleshooting Reference Table

Applicable Parts	Example Print
------------------	---------------

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>■ Fuser, PL8.0.0</li> </ul> |  <p>s3210mfp-205</p> |
|--|---|

62.8 or 77.6 mm



### Warning

Allow the Fuser to cool before starting the procedure.

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Fuser. Is there any contamination on the Fuser?	Clean the Fuser.	Replace the Fuser (8-13).


## Vertical White Line

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

### Initial Actions

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

### Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> <li>■ Transfer Roller, PL1.0.11</li> <li>■ Laser Unit, PL1.0.12</li> <li>■ Print Cartridge, PL1.0.21</li> </ul>	 <p style="text-align: center;">Vertical Blank Lines</p>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridge life usage. Is the Print Cartridge empty?	Replace the Print Cartridge (8-7).	Go to step 2.
2	Check the Laser Unit window. Is there contamination on the Laser Unit window?	Clean the Laser Unit window.	Go to step 3.
3	Check the Print Cartridge for debris. Is there any debris on the OPC drum?	Clean the drum.	Go to step 4.
4	Check the OPC Drum on the Print Cartridge for damage. Is the OPC Drum damaged?	Replace the Print Cartridge (8-7).	Go to step 5.
5	Check the Transfer Roller surface for damage. Is the Transfer Roller surface damaged?	Replace the Transfer Roller (8-10).	Complete.

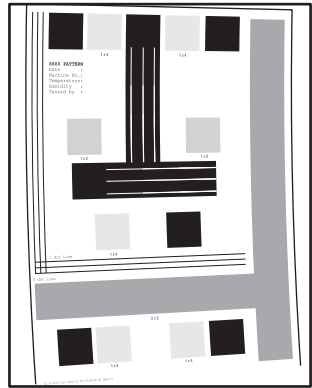
## Vertical Lines are Curved

When printing, vertical lines are not straight.

### Initial Actions

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

### Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL1.0.2</li> <li>■ Laser Unit, PL1.0.12</li> <li>■ Print Cartridge, PL1.0.21</li> </ul>	 <p>s3210mfp-206</p>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Power Supply for the correct voltage. Does the voltage show +24V?	Go to step 2.	Replace the Power Supply ().
2	Replace the Laser Unit (). Does the error still occur?	Replace the Main Controller Board ().	Complete.

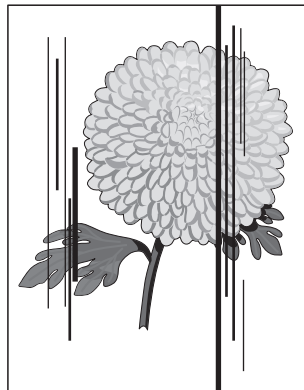
## Vertical Black Line or Band

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

### Initial Actions

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

### Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> <li>■ Transfer Roller, PL1.0.11</li> <li>■ Print Cartridge, PL1.0.21</li> </ul>	 <p style="text-align: center;">Vertical Stripes</p>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Print Cartridge for damage. Is the Print Cartridge damaged?	Replace the Print Cartridge (8-7).	Go to step 2.
2	Check the Transfer Roller surface for damage. Is the Transfer Roller surface damaged?	Replace the Transfer Roller (8-10).	Complete.

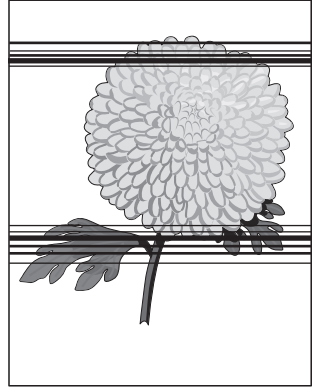
## Horizontal Black Line and Band

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

### Initial Actions

- Check the connection between the HVPS and Print Cartridge.
- Check Print Cartridge life.

### Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> <li>■ Print Cartridge, PL1.0.21</li> </ul>	 <p>Horizontal Stripes</p>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Clean all Print Cartridge contacts. Does the image quality improve?	Complete.	Go to step 2.
2	Does the defect occur at a regular interval? <ul style="list-style-type: none"> <li>■ Charge roller = 26.7mm</li> <li>■ Supply roller = 47.1mm</li> <li>■ Develop roller = 35.2mm</li> <li>■ Transfer roller = 47mm</li> </ul>	Clean the right side OPC Drum gear.	Go to step 3.
3	Check the right side OPC Drum gear for damage. Is the Gear damaged?	Replace the Print Cartridge (8-7).	Complete.


## Black/White Spot

Dark or blurry spots appear on the page. If black spots occur periodically, the rollers in the Print Cartridge may be contaminated with dust or debris. If faded areas or voids occur in a black image at intervals of 75.5 mm, or black spots occur elsewhere, check the OPC drum surface.

### Initial Actions

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

### Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> <li>■ Transfer Roller, PL1.0.11</li> <li>■ Print Cartridge, PL1.0.21</li> </ul>	 <p style="text-align: right;">Random Spots</p>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the paper path. Are there any debris or toner contamination on the paper path?	Clean the paper path.	Go to step 2.
2	Run the OPC cleaning procedure. Does the error still occur?	Go to step 3.	Complete.
3	Check for spot's at regular intervals. <ul style="list-style-type: none"> <li>■ Charge roller: 26.7 mm interval</li> <li>■ OPC drum: 75.5 mm interval</li> </ul> Is there repeating spots on the page?	Replace the Print Cartridge (8-7).	Go to step 4.
4	Check the Print Cartridge for damage. Is the Print Cartridge damaged?	Replace the Print Cartridge (8-7).	Go to step 5.
5	Check the Transfer Roller life usage. Is the Transfer Roller life expired?	Replace the Transfer Roller (8-10).	Complete.



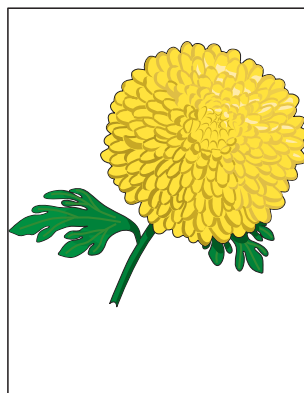
## Skew

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

### Initial Actions

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

### Troubleshooting Reference Table

Applicable Notes	Example Print
<ul style="list-style-type: none"> <li>■ Transfer Roller, 1.0.11</li> <li>■ Registration Roller, PL4.0.20</li> <li>■ Pick Up Roller, PL4.0.26</li> <li>■ Exit Rollers, PL4.0.54</li> <li>■ Exit Roller, PL4.0.59</li> <li>■ ADF Scan Assembly, PL11.1.1</li> <li>■ ADF Feed Roller, PL6.1.6</li> <li>■ Holder Pad, PL7.0.14</li> <li>■ Fuser, PL8.0.0</li> <li>■ Duplex Unit, PL9.0.0</li> <li>■ Tray 2 Pick Up Roller, PL10.0.10</li> </ul>	 <p style="text-align: right;">Skew 2</p>

### Troubleshooting Procedure Table

Step	Action and Questions	Yes	No
1	Print several test prints in both simplex and duplex to determine where in the media path skew is introduced. Does the error persist?	Go to step 9.	Go to step 2.
2	Copy the test print. Does the error still occur when copying?	Go to step 3.	Complete.
3	Is the original document damaged?	Use the platen.	Go to step 4.
4	Does the paper feed through the ADF?	Go to step 5.	Go to step 7.
5	Check the document. Does the document meet the ADF specifications?	Adjust the ADF side guides. Go to step 6.	Use the platen or change the media type.
6	Does the image quality improve?	Complete.	Go to step 7.
7	Check the document placement. Is the document placed on the platen correctly?	Replace the ADF Scan Assembly (8-103).	Reseat the document.

Troubleshooting Procedure Table (continued)

Step	Action and Questions	Yes	No
<b>8</b>	Check the ADF Feed Roller and Holder Pad. Is there damage or debris on the Feed Roller or Holder Pad?	Clean or replace the ADF Feed Roller & Pad (8-110).	Replace the ADF Scan Assembly (8-103).
<b>9</b>	Check media condition. Is the media dry, recommended type, and loaded correctly?	Go to step 10.	Replace the media.
<b>10</b>	Open and close the Rear Cover. Does the error still occur?	Go to step 11.	Complete.
<b>11</b>	Check the Transfer Roller. Is the surface clean and smooth?	Go to step 12.	Clean or replace the Transfer Roller ().
<b>12</b>	Reseat the Print Cartridge. Does the error still occur?	Go to step 13.	Complete.
<b>13</b>	Reseat Tray 1. Does the error still occur?	Go to step 14.	Go to step 18.
<b>14</b>	Reload the media in Tray 1 Does the error still occur?	Go to step 15.	Complete.
<b>15</b>	Reset the Paper Guides in Tray 1. Does the error still occur?	Go to step 16.	Complete.
<b>16</b>	Check the media path. Is there any debris in the media path?	Remove the debris.	Go to step 17.
<b>17</b>	Replace the Tray 1 Feed Roller (8-13). Does the error still occur?	Replace the Tray 1 Holder Pad (8-38).	Complete.
<b>18</b>	Check skew through the Duplex Unit. Is the skew from the Duplex Unit?	Go to step 19.	Go to step 21.
<b>19</b>	Reseat the Duplex Unit. Does the error still occur?	Go to step 20.	Complete.
<b>20</b>	Check the paper path. Is there any debris in the media path?	Remove the debris.	Replace the Duplex Unit (8-103).
<b>21</b>	Reseat Tray 2. Does the error still occur?	Go to step 22.	Complete.
<b>22</b>	Reload the media in Tray 2 Does the error still occur?	Go to step 23.	Complete.
<b>23</b>	Reset the Paper Guides in Tray 2. Does the error still occur?	Go to step 24.	Complete.
<b>24</b>	Check the media path. Is there any debris in the media path?	Remove the debris.	Go to step 25.
<b>25</b>	Replace the Tray 2 Feed Roller (). Does the error still occur?	Replace the Tray 2 Holder Pad.	Complete.


## Stains on the Front of the Page

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

### Initial Actions

- Check for toner leakage from the Print Cartridge.
- Run the Clean Drum procedure from the Maintenance menu.

### Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> <li>■ Transfer Roller, PL1.0.11</li> <li>■ Print Cartridge, PL1.0.21</li> </ul>	 <p>Repeating Defects</p>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the Transfer Roller for contamination. Is the Transfer Roller surface dirty?	Perform Clean Drum procedure.	Go to step 2.
2	Check the Print Cartridge for damage or leakage. Is the Print Cartridge damaged?	Replace the Print Cartridge (8-7).	Complete.


## Stains on the Back of the Page

The background of the back of the page is stained at 47.0 mm (Transfer Roller) or 62.8 mm (Fuser pressure roller).

### Initial Actions

- If indicated, run the OPC Cleaning routine and Transfer Roller self-test.
- Check for damage or debris in the Fuser.

### Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"><li>■ Transfer Roller, PL1.0.11</li><li>■ Fuser, PL8.0.0</li></ul>	 <p>Residual Image/Ghosting</p>



### Warning

Allow the Fuser to cool before starting the procedure.

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Run the Clean Drum procedure to clean the roller surface. Does the error persist?	Go to step 2.	Complete.
2	Replace the Transfer Roller (8-10). Does the error still occur?	Go to Step 3.	Complete.
3	Disassemble the Fuser and clean the pressure roller and thermistor. Does the error still occur?	Replace the Fuser (8-13)	Complete.

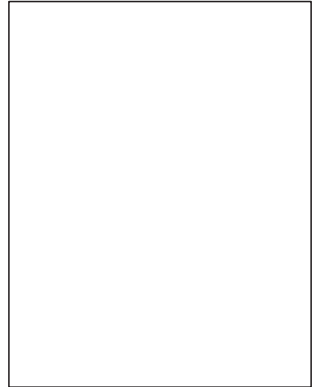
## Blank Page (1)

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

### Initial Actions

- Check the connection between the HVPS and Print Cartridge.
- Ensure there are no debris on the transfer path.
- Check to ensure that there is nothing blocking the Laser windows.

### Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL1.0.2</li> <li>■ Print Cartridge, PL1.0.21</li> </ul>	 <p style="text-align: center;">Blank Print</p>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Clean the contacts on the Print Cartridge and inside of the printer. Does the error still occur?	Go to step 2.	Complete.
2	Reseat the Main Controller Board connections (8-62). Does the error still occur?	Replace the Main Controller Board (8-62).	Complete.

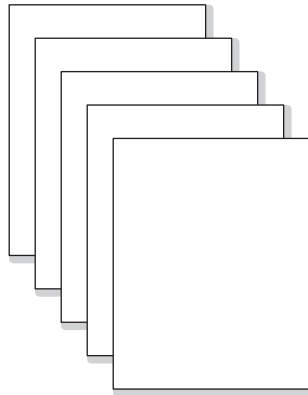
## Blank Page (2)

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

### Initial Actions

- Check the connection between main Control Board, the HVPS, and Print Cartridge.
- Ensure there are no debris on the transfer path.

### Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> <li>■ Main Controller Board, PL1.0.2</li> <li>■ Print Cartridge, PL1.0.21</li> <li>■ Pick-Up Solenoid, PL4.0.37</li> </ul>	 <p>Multiple Blank Prints</p>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Clean the contacts on the Print Cartridge and inside of the printer. Does the error still occur?	Go to step 2.	Complete.
2	Check the Pick-Up Solenoid operation. Does the solenoid operate correctly?	Go to Step 3.	Replace the Pick-Up Solenoid (8-39).
3	Reseat the Main Controller Board connections (8-62). Does the error still occur?	Replace the Main Controller Board (8-62).	Complete.

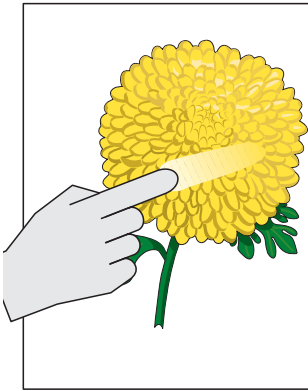
## Incomplete Fusing

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

### Initial Actions:

- Verify the correct media type is set.

### Troubleshooting Reference Table

Applicable Parts	Example Prints
<ul style="list-style-type: none"> <li>■ Fuser, PL8.0.0</li> <li>■ Print Cartridge, PL1.0.21</li> <li>■ Power Supply, PL1.0.4</li> </ul>	 <p>Unfused Image</p>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Run the Clean Drum procedure from the Maintenance menu. Does the problem persist?	Go to Step 2	Complete.
2	Check the media. Is the media dry, recommended type, and loaded correctly?	Go to step 3.	Replace the media.
3	Check the media settings. Does the loaded media type/size match the setting displayed on the Control Panel?	Go to Step 4.	Adjust the setting to a heavier type.
4	Check the Print Cartridge. Is the Print Cartridge damaged?	Go to step 5.	Replace the Print Cartridge (8-11).
5	Reseat the Fuser. Does the problem persist?	Go to step 6.	Complete.
6	Replace the Fuser (8-7). Does the problem persist?	Replace the Power Supply (8-100).	Complete.

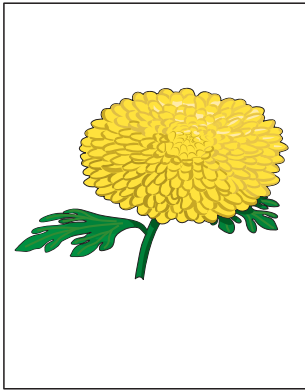
# Incorrect Magnification

Incorrect magnification when copying with the ADF feeding.

## Initial Actions

- Check the paper feed path.
- Cycle system power.

## Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"><li>■ ADF Scan Assembly, PL6.0.0</li></ul>	<div></div> <p>Magnification Incorrect</p>

## Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check media condition. Is the media dry, recommended, loaded correctly, and meet ADF feed specifications?	Go to step 2.	Replace the media or use the platen.
2	Is the ADF closed against the document glass completely?	Go to step 3.	Close the ADF.
3	Cycle system power. Does the error still occur?	Replace the ADF Scan Assembly (8-129).	Complete.



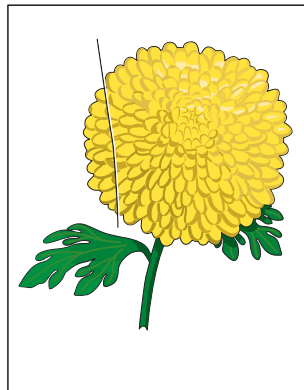
## Lines or Streaks from ADF

There are lines or streaks on copies from the ADF.

### Initial Actions

- Clean and check the platen glass.
- Inspect the original.

### Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> <li>■ ADF Scan Assembly, PL6.0.0</li> </ul>	 <p>Scratch on Glass</p>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the original document. Are there lines or streaks on the original?	Replace the original document.	Go to step 2.
2	Is the platen glass clean?	Go to step 3.	Clean the platen glass using a lint-free cloth.
3	Does the image quality improve?	Complete.	Go to step 4.
4	Are there scratches on the platen glass?	Replace the ADF Scanner Assembly (8-129).	Complete.

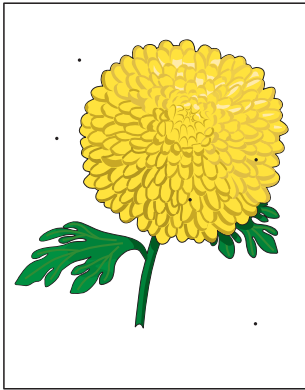
## Spots from ADF

There are spots on copies from the ADF.

### Initial Actions

- Check the document glass.
- Ensure there are no debris on the document glass.

### Troubleshooting Reference Table

Applicable Parts	Example Print
■ ADF Scan Assembly, PL6.0.0	 <p>Spots on Glass</p>

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Check the original document. Are there spots on the original document?	Replace the original document.	Go to step 2.
2	Check for any debris on the platen glass. Is there any debris?	Remove clean the platen glass using a lint-free cloth.	Go to step 3.
3	Does the image quality improve?	Complete.	Replace the ADF Scan Assembly (8-103).

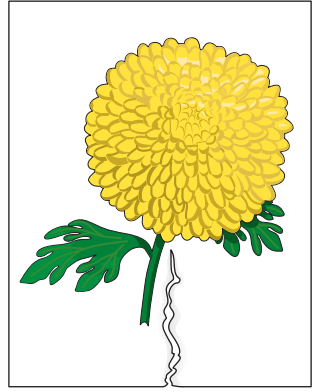
## Media Damage

Media is damaged during transport in the ADF or print engine.

### Initial Actions

- Check the paper transfer path.
- Ensure there are no debris on the transfer path.

### Troubleshooting Reference Table

Applicable Parts	Example Print
<ul style="list-style-type: none"> <li>■ Transfer Roller, PL1.0.11</li> <li>■ Registration Roller, PL4.0.20</li> <li>■ Pick Up Roller, PL4.0.26</li> <li>■ Exit Rollers, PL4.0.54</li> <li>■ Exit Roller, PL4.0.59</li> <li>■ ADF Scan Assembly, PL11.1.1</li> <li>■ ADF Feed Roller, PL6.1.6</li> <li>■ Holder Pad, PL7.0.14</li> <li>■ Fuser, PL8.0.0</li> <li>■ Duplex Unit, PL9.0.0</li> <li>■ Tray 2 Pick Up Roller, PL10.0.10</li> </ul>	 <p>Damaged Print Media</p>

### Note

Steps 2-5 apply only to documents fed through the ADF.



### Warning

Allow the Fuser to cool before starting the procedure.

### Troubleshooting Procedure Table

Step	Actions and Questions	Yes	No
1	Does the error occur when printing?	Go to step 6.	Go to step 2.
2	Check the error. Does the document meet ADF feed specifications?	Go to step 3.	Change the media or use the platen.
3	Check the side guide setting. Reset the side guide setting to fit the sheet. Does the document feed correctly?	Complete.	Go to step 4.
4	Replace the ADF Feed Roller and Holder Pad (8-110). Does the document feed correctly?	Complete.	Go to step 5.

Troubleshooting Procedure Table (continued)

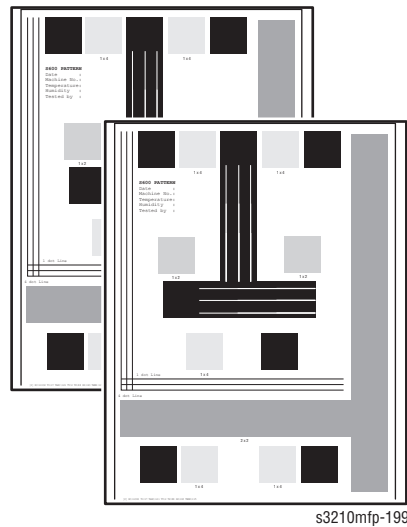
Step	Actions and Questions	Yes	No
5	Replace the ADF Scan Assembly (8-103). Does the document feed correctly?	Complete.	Go to step 6.
6	Check the media. Is the media dry, recommended type, and loaded correctly?	Go to step 7.	Replace the paper.
7	Open and close the Rear Cover. Does the error still occur?	Go to step 8.	Complete.
8	Check the media guides. Are all guides set correctly?	Go to step 9.	Correct the guides.
9	Reseat the Fuser (8-12). Does the error still occur?	Go to step 10.	Complete.
10	Check the Tray. Did the media feed from Tray 1?	Go to step 11.	Go to step 15.
11	Reload Tray 1. Does the error still occur?	Go to step 12.	Complete.
12	Adjust the Tray 1 side guides. Does the error still occur?	Go to step 13.	Complete.
13	Check the media path. Is there any debris in the media path?	Remove the debris.	Go to step 14.
14	Replace the Tray 1 Holder Pad (8-13). Does the error still occur?	Go to step 15.	Complete.
15	Did the damaged media feed through the Duplex Unit?	Go to step 16.	Go to step 18.
16	Reseat the Duplex Unit. Does the error still occur?	Go to step 17.	Complete.
17	Check the media path. Is there any debris in the media path?	Remove the debris.	Replace the Duplex Unit (8-103).
18	Reseat Tray 2. Does the error still occur?	Go to step 19.	Complete.
19	Reload media in Tray 2. Does the error still occur?	Go to step 20.	Complete.
20	Adjust Tray 2 media guides. Does the error still occur?	Go to step 21.	Complete.
21	Check the media path from Tray 2. Is there any debris in the media path?	Remove the debris.	Go to step 22.
22	Replace the Tray 2 Feed Roller (8-14). Does the error still occur?	Replace the Holder Pad (8-17).	Complete.

## Test Prints

This section provides a sample of the test patterns available from the Tech mode menu. These test prints highlight possible performance problems and can help isolate the location of print problems.

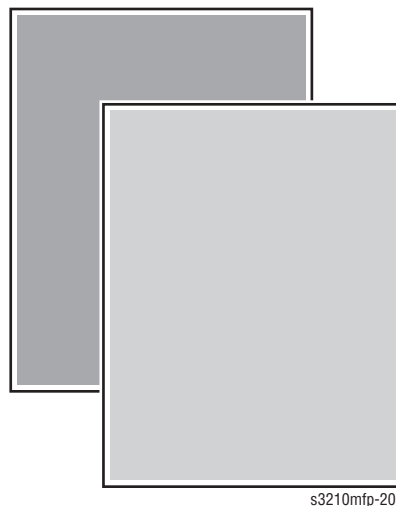
### TP 1 and 2 Lines

TP 1 and 2 provides a variety of different line styles in both process and cross-process directions. The pattern is used to check registration, dot size and image density.



### TP 3 and 4 Halftones

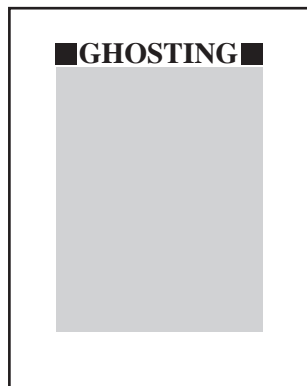
TP 3 and TP 4 are halftones used to check for dropout (white spot) performance, banding, fixing (fusing) and image density. TP 4 includes a margin line.



## TP 5 Ghosting

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TP 5 is used to check ghosting effects in the grey portion of the print. Refer to “Repeating Defects” on page 5-10 to determine the component.



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## TP 6 Black Solid Fill

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TP 6 is used to check for dropout (white spot) performance, banding, and image fixing (fusing).



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## TP 7 Skew

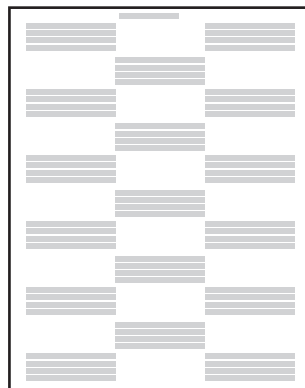
TP 7 is used to check image skew on the media. The print provides instructions for calculating skew performance.



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## TP 8 Text

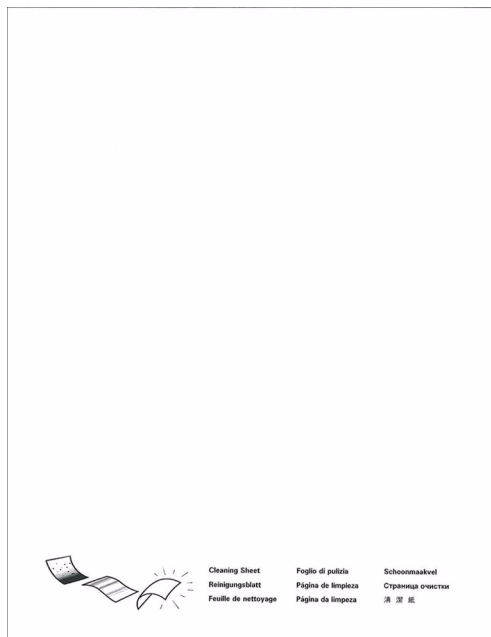
TP 8 is used to check text uniformity.



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## Drum Cleaning Page

The Drum Cleaning page is printed as part of the Drum Clean procedure. The Drum Cleaning page is a chase page that captures toner from the OPC drum and Transfer Roller. When smudges, spots, or streaks appear in the output, run this procedure first. If the print defect persists after several attempts, check the status of the indicated components. Access the Clean Drum procedure from the System Setup > Maintenance menu.





## Print-Quality Specifications

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The Print-Quality specifications are as follows.

### Skew

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#### Vertical Skew

- $\pm 2.0$  mm (Tray 1) / 241.3 mm
- $\pm 2.5$  mm (Duplex, SCF) / 241.3 mm
- $\pm 3.5$  mm (ADF) / 241.3 mm

#### Horizontal Skew

- $\pm 1.5$  mm (Tray 1:  $\pm 2.0$  mm) / 177.8 mm
- $\pm 2.0$  mm (Duplex, SCF) / 177.8 mm
- $\pm 2.5$  mm (ADF) / 177.8 mm

### Curl

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#### For 20lb paper

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

#### For 24lb paper

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

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

### Registration

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Left print position (scanning direction):  $\pm 2.5$ mm ( $\pm 3.0$ mm, Duplex)

Top print position (feeding direction):  $\pm 3.0$ mm ( $\pm 3.0$ mm, Duplex)

### Noise

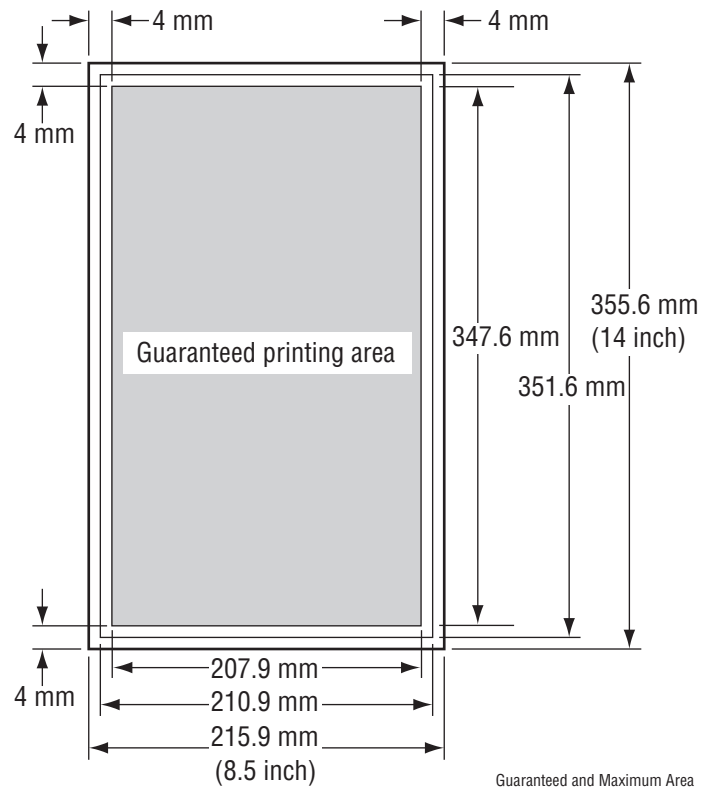
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System noise specifications from different feed locations.

- Printing (Tray 1): 50dB
- Printing (Tray 2): 55dB
- ADF: 53dB
- Platen: 52dB

## Image Area

Image area specifications are illustrated below.



## Environmental Condition

- Temperature: 10° C - 32° C (50° F - 90.0° F)
- Humidity: 80% RH at 32° C (90.0° F)

### Note

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

## Quality Paper

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

- Color Print Quality: Xerox-brand Color XPressions paper
- Black and White Quality: Xerox-brand 4200 paper

## **Paper Condition**

---

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

## **Printer Condition**

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



# Adjustments and Calibrations

## In this chapter...

- Adjustments

## Chapter 6

## Adjustments

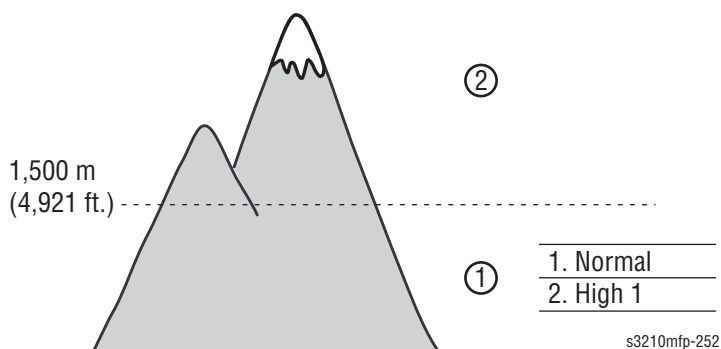
### Altitude Specifications

Print quality is affected by atmospheric pressure, which varies by altitude. The following information contains instructions and specifications for adjusting altitude information for the WorkCentre 3210/3220.

**Note**

Verify the WorkCentre 3210/3220 printer driver has been installed.

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



---

## Adjusting Altitude

---

### Control Panel Menu Method

---

1. On the printer's Control Panel, press the **Menu** button.
2. Browse through the menu to find **System Setup**. Press the **OK** button.
3. Browse through the menu to find **Machine Setup**. Press the **OK** button.
4. Browse through the menu to find **Altitude Adj.** Press the **OK** button.
5. Select **Normal** or **High 1**. Press the **OK** button.
6. The **Saved** message is displayed on the Control Panel.
7. Press the **Back** button to return to the previous menu.

### Printer Settings Utility Method (USB Connection)

---

1. From the **Start Menu**, select **Programs > Xerox WorkCentre 3210/3220 > Printer Settings Utility**.
2. The **Printer Settings Utility** window is displayed.
3. On the left column, select **Setting**.
4. On the right column, select **Altitude Adjustment**.
5. Under **Altitude Adjustment** window, from the pull-down menu, select the appropriate altitude information for the printer.
6. Click the **Apply** button to change the altitude information.
7. Click the **Exit** button to close the **Printer Settings Utility** window.





# Cleaning and Maintenance

## In this chapter...

- Service Maintenance Procedure
- Cleaning
- Maintenance

## Chapter 7

## Service Maintenance Procedure

---

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

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

### Recommended Tools

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

## Cleaning

---

Perform these cleaning steps as indicated by the operating environment.



### Warning

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



### Caution

Never use a damp cloth to clean up toner. Be sure to place the Print Cartridge in a light-protective bag as exposure to light can quickly degrade performance and result in early failure.

1. Record number of sheets printed.
2. Print several sheets of paper to check for problems or defects.
3. Turn the printer Off and disconnect the power cord.
4. Remove the Print Cartridge, Transfer Roller, Fuser, Duplex Unit (if present), side covers, and Rear Cover before cleaning each part and the printer's interior.
5. Clean the Fans.
6. Ensure that all cover vents are clean and free of obstructions.
7. Remove and clean the paper trays.
8. Clean all rubber rollers with a lint-free cloth slightly dampened with cold water.

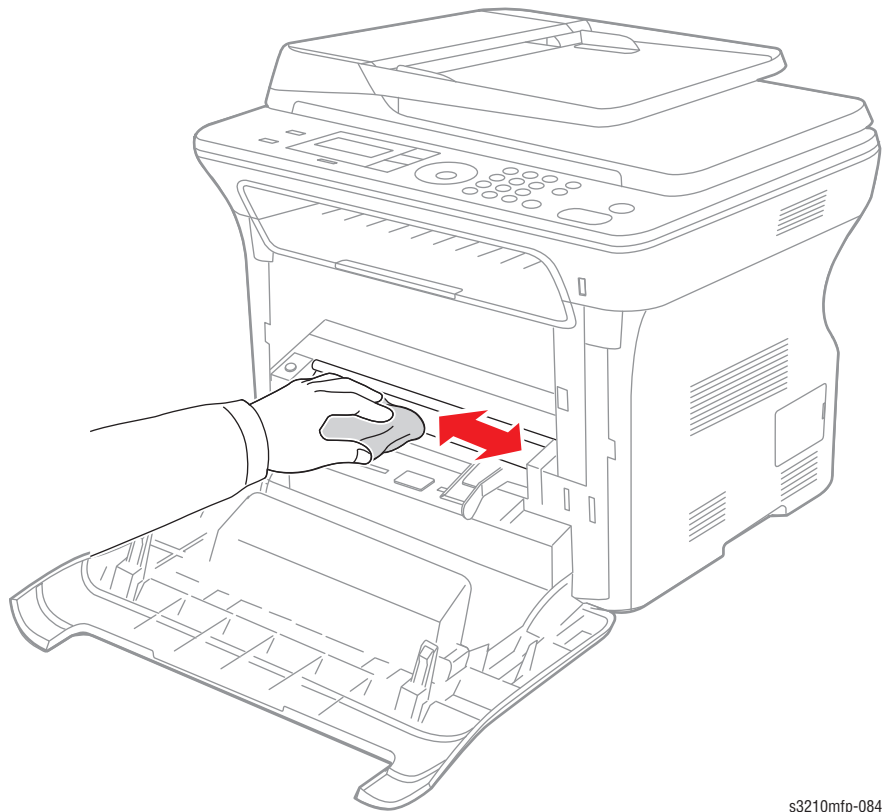
## Cleaning the Print Cartridge



### Caution

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

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

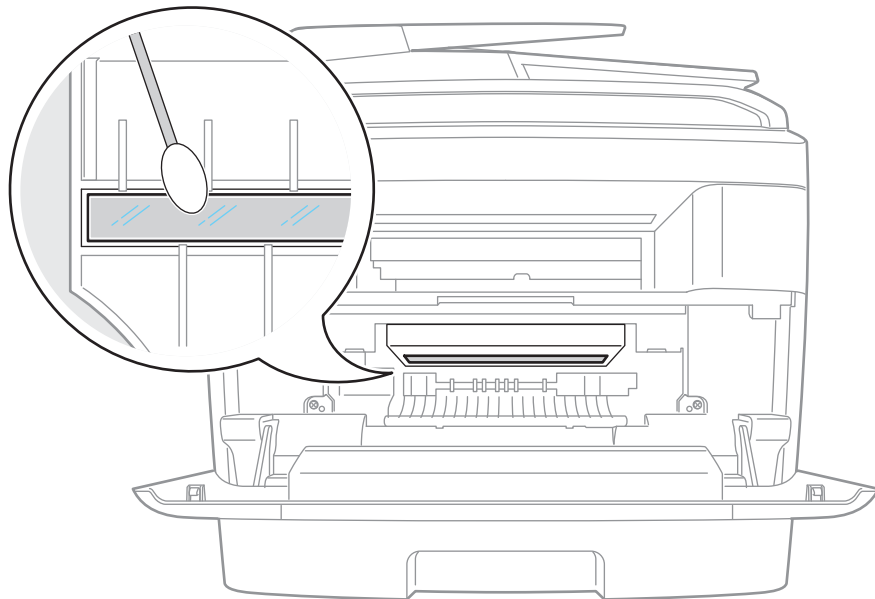


s3210mfp-084

## Cleaning the Laser Unit

---

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



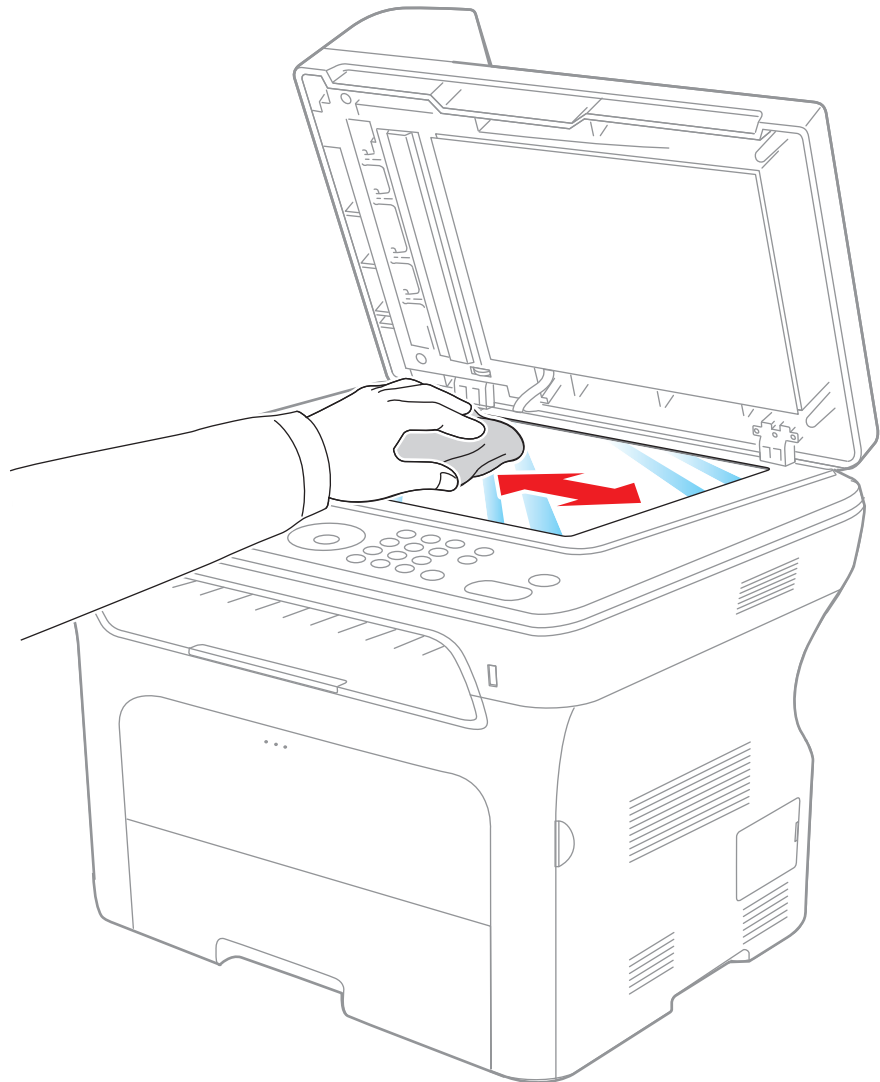
s3210mfp-085

## Cleaning the Document Glass

**Note**

Use only a moistened lint-free cloth to clean the document glass. Do not use any kind of cleaning agent to clean the glass.

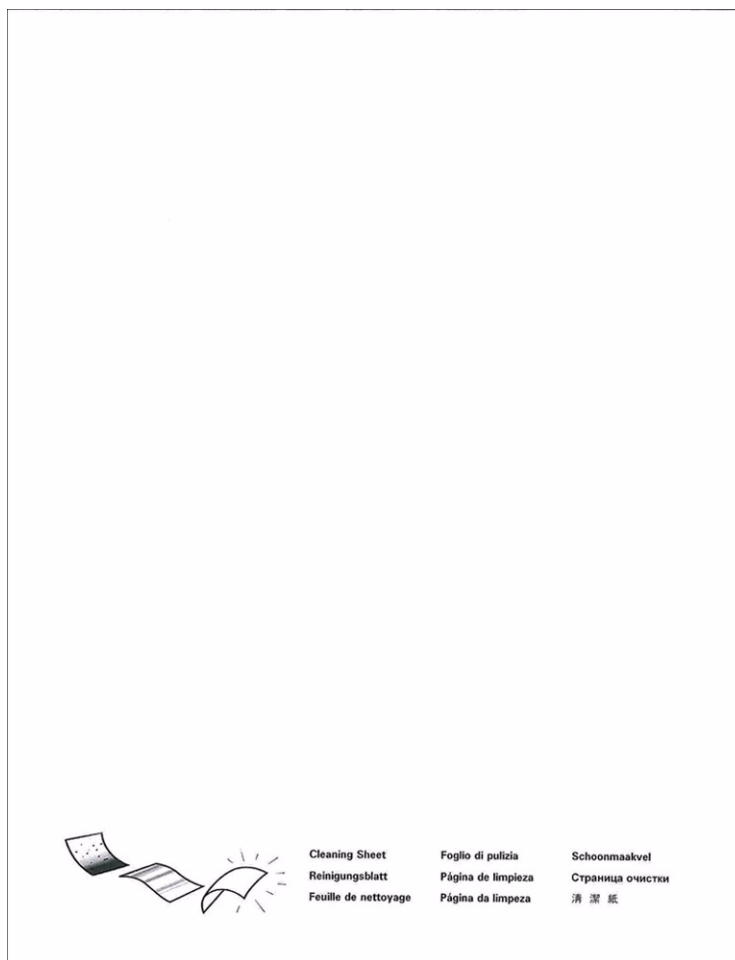
1. Open the scanner lid.
2. Wipe the document glass using a moistened lint-free cloth. Be sure there are no scratches on the document glass surface.



s3210mfp-086

## Printing the Clean Drum Page

1. On the printer's Control Panel, press the **Menu** button.
2. Browse through the menu to find **System Setup**. Press the **OK** button.
3. Browse through the menu to find **Maintenance**. Press the **OK** button.
4. Verify that **Clean Drum** is displayed. Press the **OK** button.
5. A **Printing...** message is displayed.
2. A Cleaning Drum page is printed.



## Maintenance

### RIP Procedures

Perform these maintenance procedures while servicing the printer.

- Clean the Feed Rollers, Exit Rollers, and Guides; replace if necessary.
- Remove and clean the paper 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 may be using.
- Review with the customer all work performed and discuss proper printer care.

### Firmware Upgrade Procedures

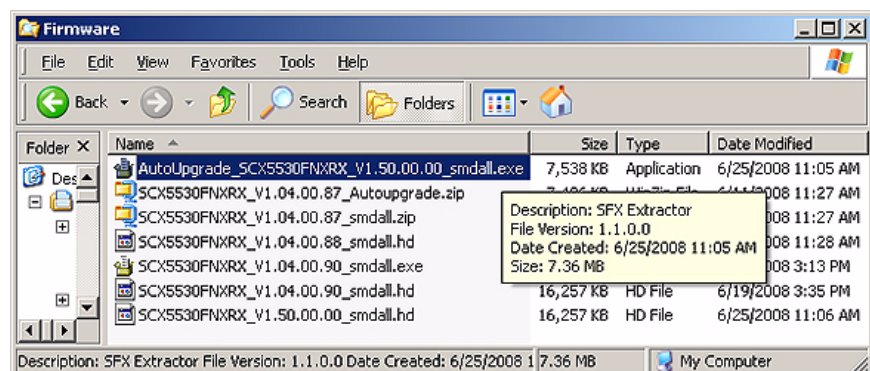
There are two methods for upgrading firmware, USB and Network.

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

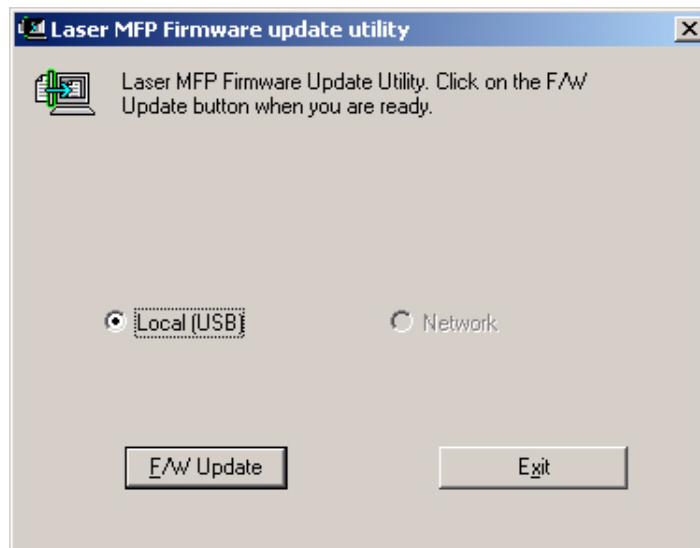
#### Using a USB Connection

This method uses the *Laser MFP Firmware Utility* to upgrade the firmware over a USB connection.

1. Connect PC and printer with a USB Cable.
2. Start the Laser MFP Firmware Update Utility executable file.



3. Verify that Local (USB) is selected, then click the **F/W Update** button.

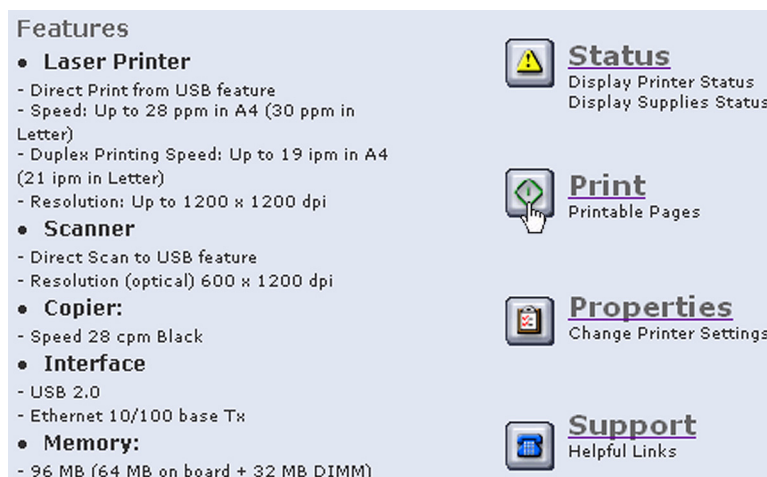


4. Check the Control Panel display to verify that it reads “Flash Upgrade...” The messages on the display change as the update progresses.
5. The firmware file is transmitted to printer automatically and printer initializes when finished. The process can take several minutes to complete.
6. Print a Configuration page and verify the firmware information.

## Using a Network Connection

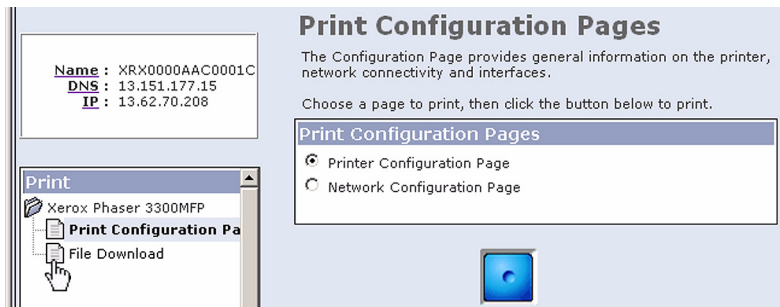
This method uses CentreWare IS to upgrade the firmware over the network connection.

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



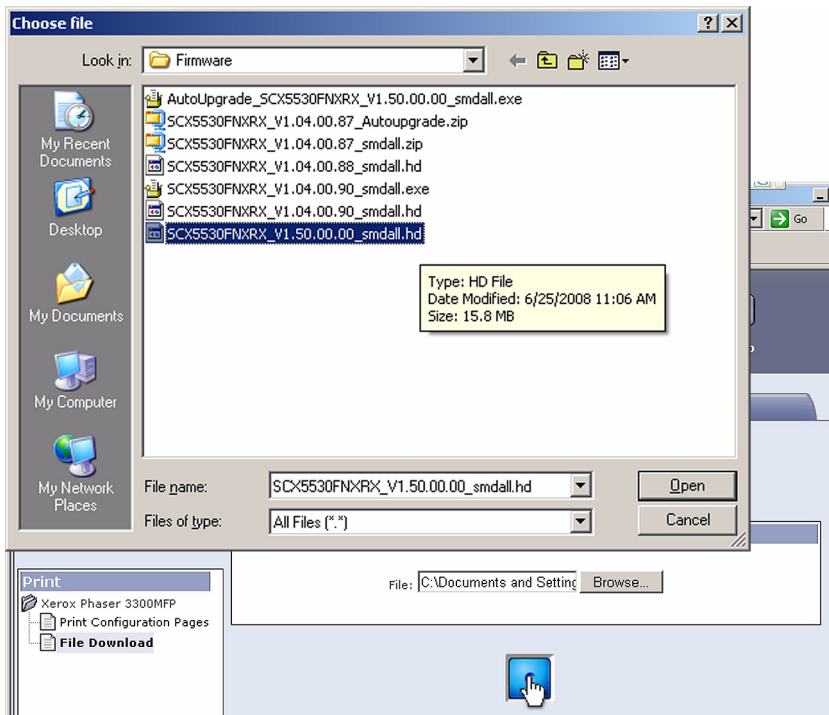


7. On the left side, click **File Download**.

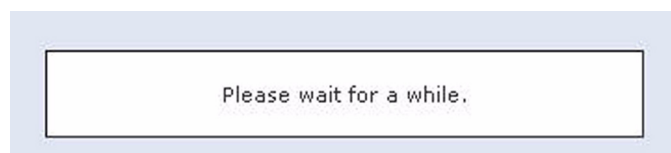


8. Click the **Browse** button and locate the “\*.hd” file on your computer. Select the “\*.hd” file and click **Open**.

9. Click the **Blue** button to start the firmware update process.



10. A status window is displayed.



11. Messages on the Control Panel display follow the progress of the update as the printer proceeds through the firmware update. The update is complete when the printer initializes and returns to “Ready.”
12. Click **OK** to close the status window when the firmware upgrade is complete.
13. Print a Configuration page and verify the firmware information.



# Service Parts Disassembly

## In this chapter...

- Overview
- Maintenance Items and Consumables
- Automatic Document Feeder
- Scanner Assembly
- Covers
- Duplex
- Paper Feeder
- Xerographics
- Exit Guide
- Drive
- Electrical
- Options

## Chapter 8

## Overview

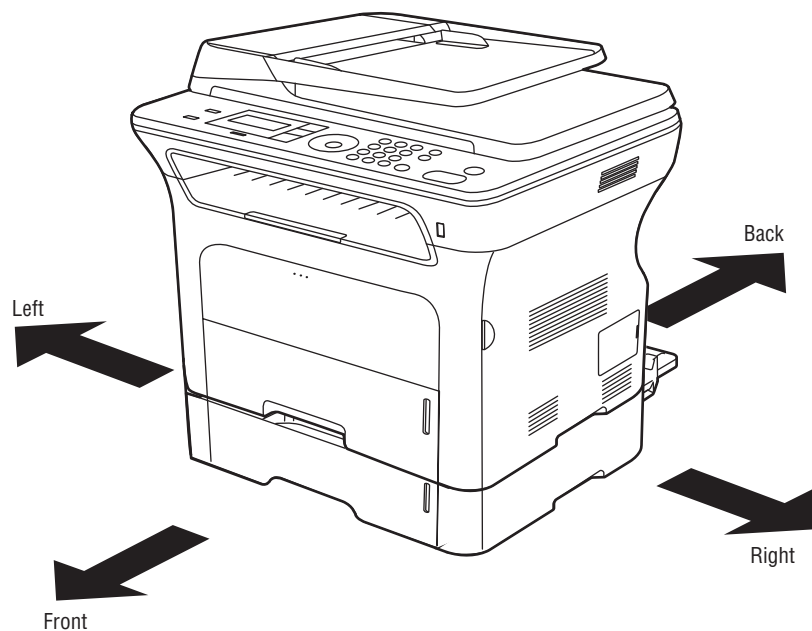
This section contains the removal procedures for field-replaceable parts of the printer listed in the Parts List. In most cases, the replacement procedure is simply the reverse of the removal procedure. In some instances, additional steps are necessary and are provided for replacement of the parts. For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

### Note

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

## Standard Orientation of the Printer

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



s3210mfp-090

## Preparation

Before you begin any removal and replacement procedure:

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



### Caution

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

### Note

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



### Caution

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



### Warning

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

## Notations in the Disassembly Text

---

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

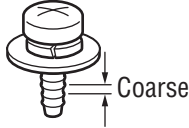
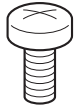


### Note

Provides information specific to the replacement of parts or assemblies.

## Fastener Types

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

### Posi-Drive Screw Types used in the Printer

Type	Shape	Characteristics
Sheet Metal with flange, gold		<ol style="list-style-type: none"> <li>1. Gold colored.</li> <li>2. Includes a round washer.</li> <li>3. Screw has a flange.</li> <li>4. Diameter is uniform.</li> </ol>
Sheet Metal, silver		<ol style="list-style-type: none"> <li>1. Silver colored.</li> <li>2. Diameter is uniform.</li> </ol>
Sheet Metal with flange, silver		<ol style="list-style-type: none"> <li>1. Silver colored.</li> <li>2. Screw has a flange.</li> <li>3. Diameter is uniform.</li> </ol>
Sheet Metal with flange, black		<ol style="list-style-type: none"> <li>1. Black colored.</li> <li>2. Screw has a flange.</li> <li>3. Diameter is uniform.</li> </ol>



### Caution

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

## Maintenance Items and Consumables

Maintenance items include the Transfer Roller, Fuser, Pick-Up Roller, and Tray Feeder Pad. Consumable item includes the Print Cartridge.

### Transfer Roller

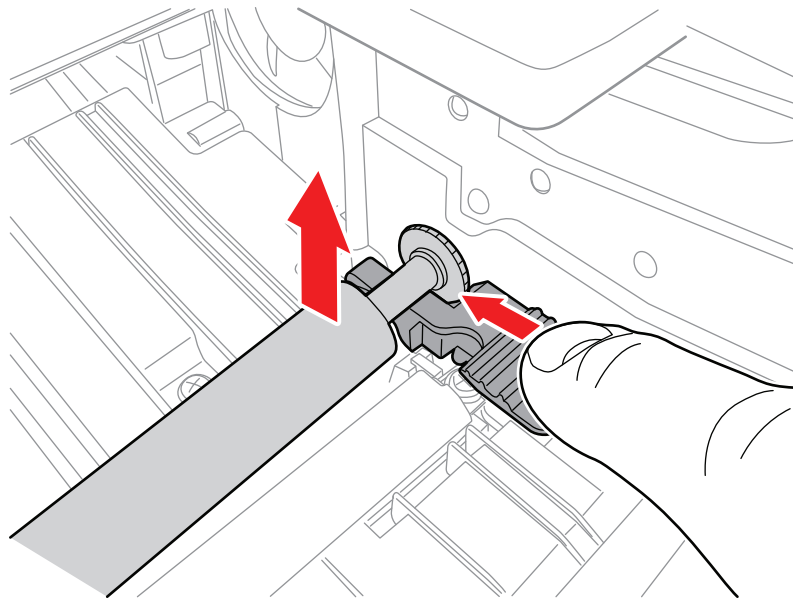
#### PL1.0.11



#### Caution

Do not touch the surface of the Transfer Roller.

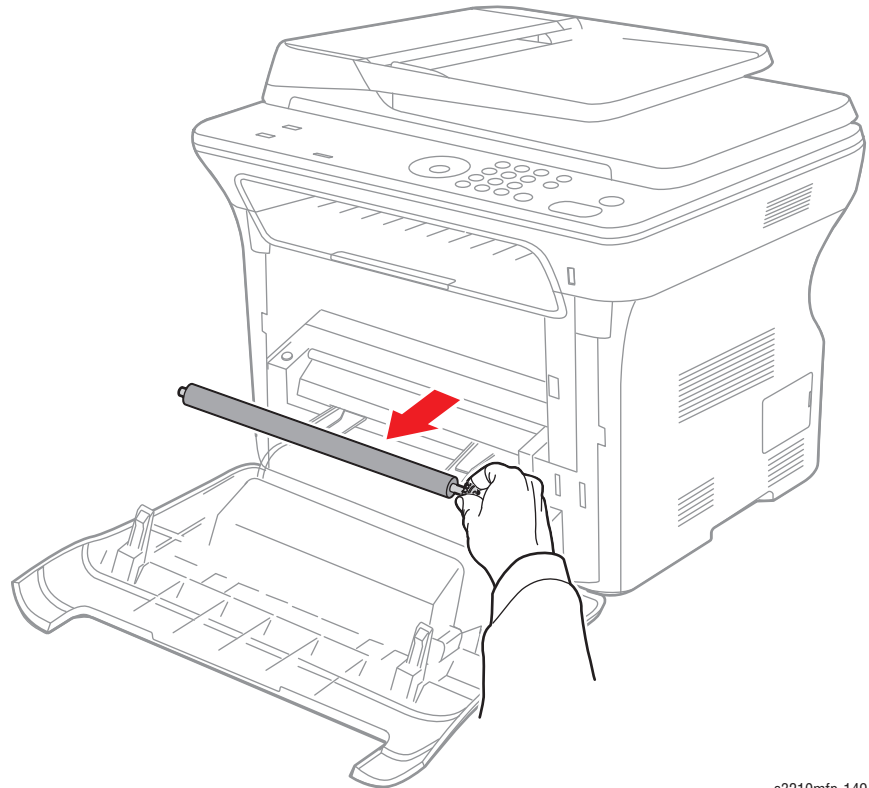
1. Remove the Print Cartridge (page 8-8).
2. Push the Transfer Roller holder forward to release the Transfer Roller.



s3210mfp-020



3. Slide the Transfer Roller toward the right side to release the Roller from the left holder and carefully lift the Transfer Roller up.
4. Remove the Transfer Roller.



s3210mfp-149

#### Replacement Note

Do not touch the sponge area of the Transfer Roller during installation.

## Print Cartridge

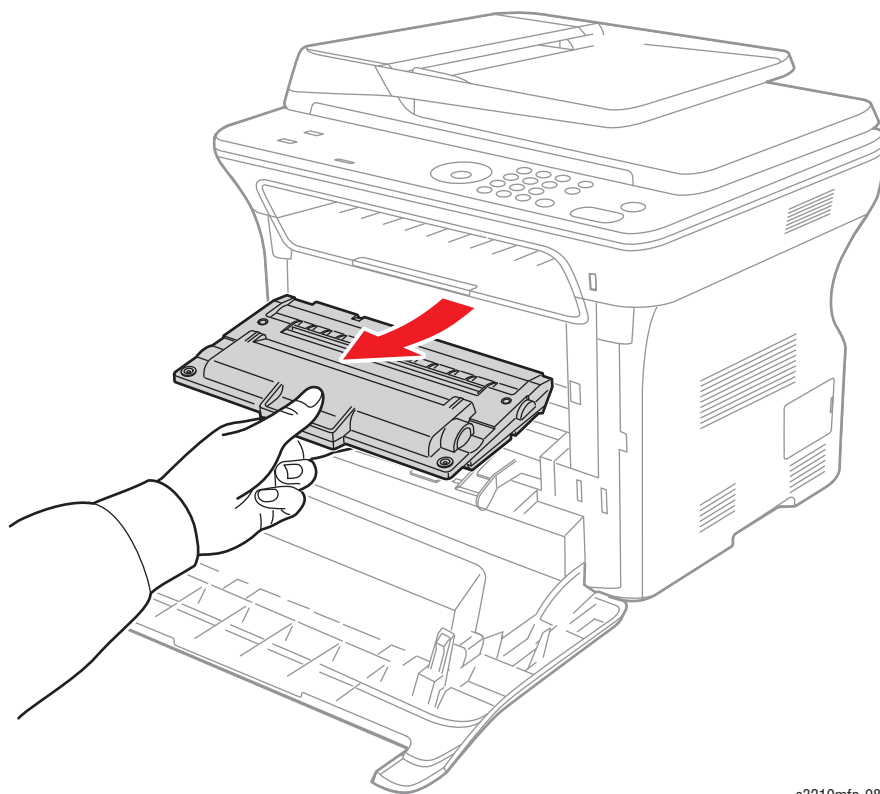
### PL1.0.21



#### Caution

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

1. Open the front cover.
2. Push the Print Cartridge handle upward and pull the Print Cartridge out from the printer.



s3210mfp-087

## Pick Up Roll

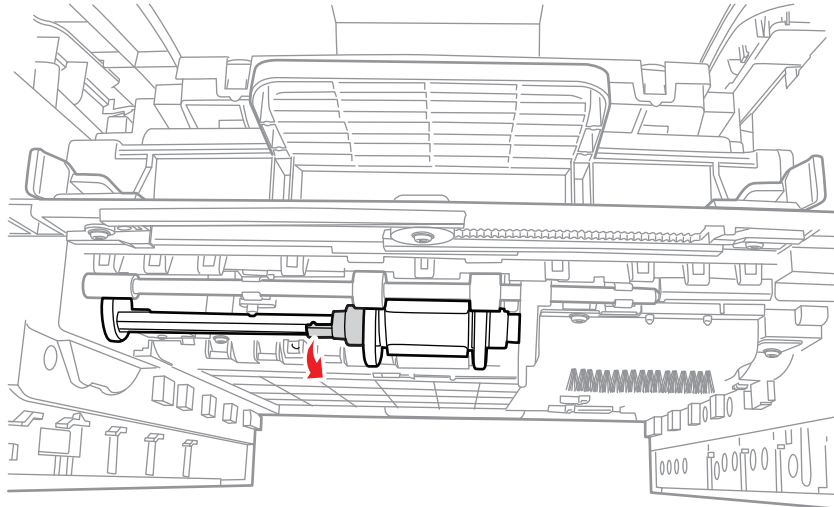
### PL4.0.26

1. Remove tray 1.

**Note**

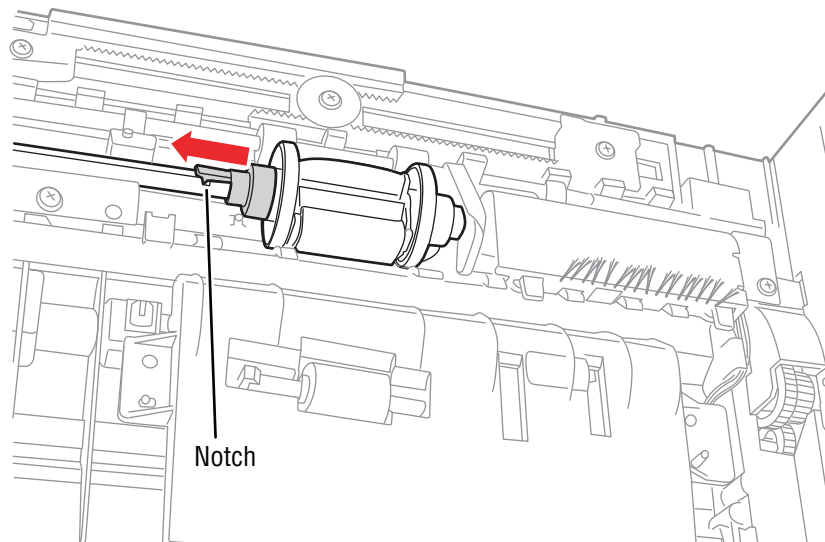
Do not over flex the tab. This will prevent the pick up idle from resting securely after installation.

2. Release the pick up idle latch from the pick up shaft.



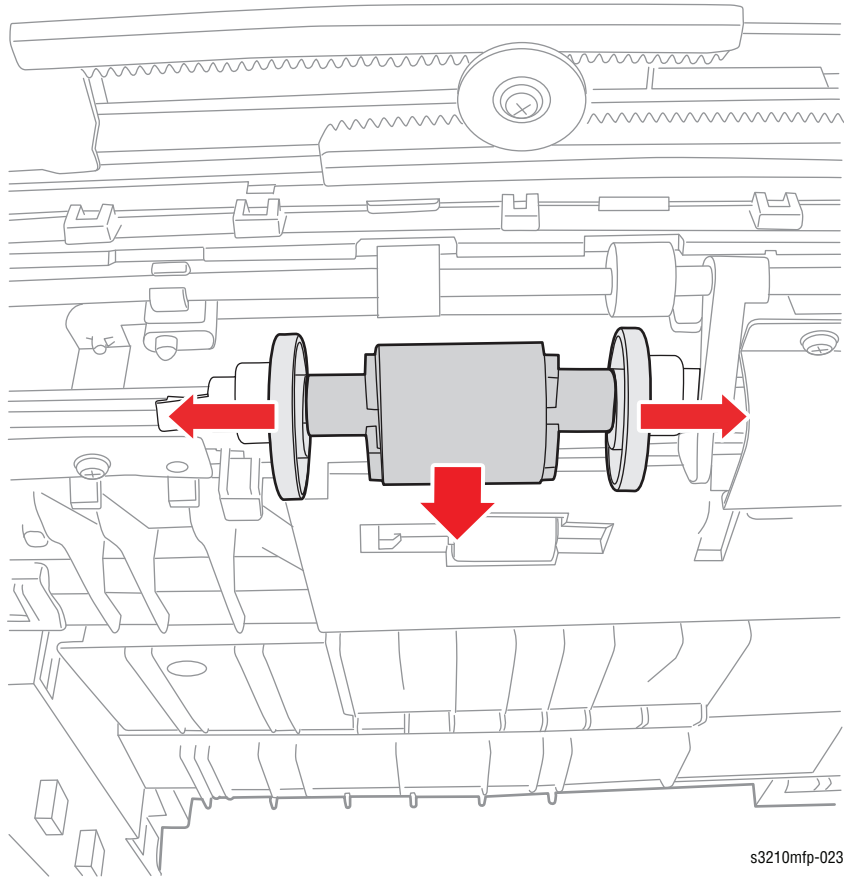
s3210mfp-021

3. Slide the pick up idle toward the left side pass the groove on the shaft.



s3210mfp-022

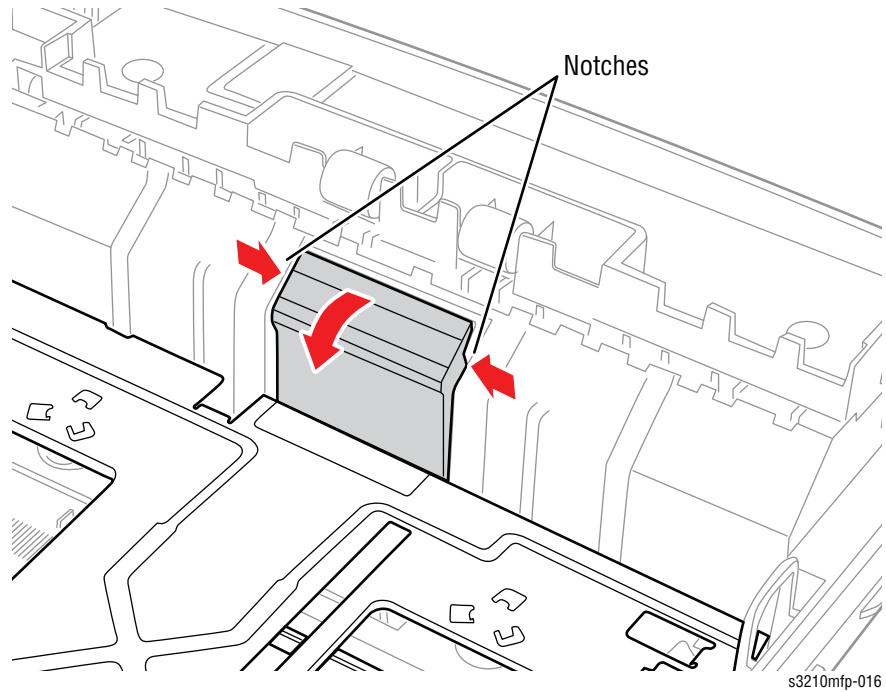
4. Slide the pick up stopper toward the left side away from the pick up housing.
5. Rotate the pick up rubber and slide it out away from the shaft.
6. Remove the Pick Up Roll.



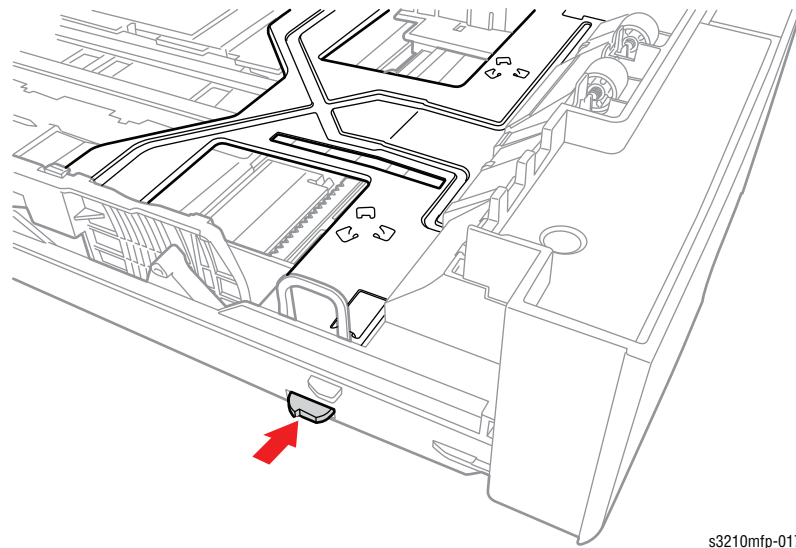
## Tray Feed Pad Assembly

### PL7.0.14

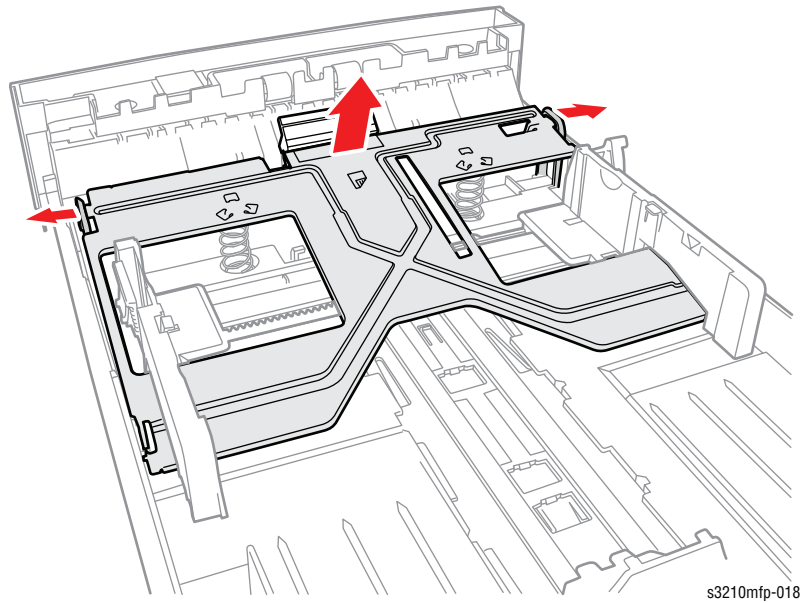
1. Remove tray 1.
2. Remove paper from tray 1.
3. Press the Tray Feed Pad to the left and right to release the notches on the left and right sides.



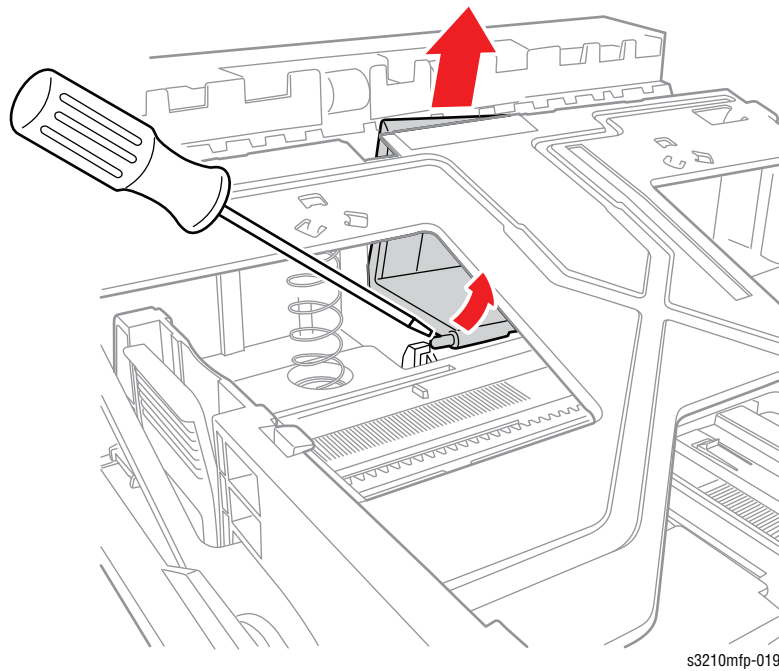
4. Apply pressure on the lift plate while pressing the white tab to release the lift plate.



5. Unhook the left and right latches from the left and right hooks on the tray to release the lift plate from the hooks.



6. While holding the Tray Feed Pad, use a flat tip screwdriver to pry the Tray Feed Pad notch up from the tray.
7. Remove the Tray Feed Pad from the tray.



## Fuser

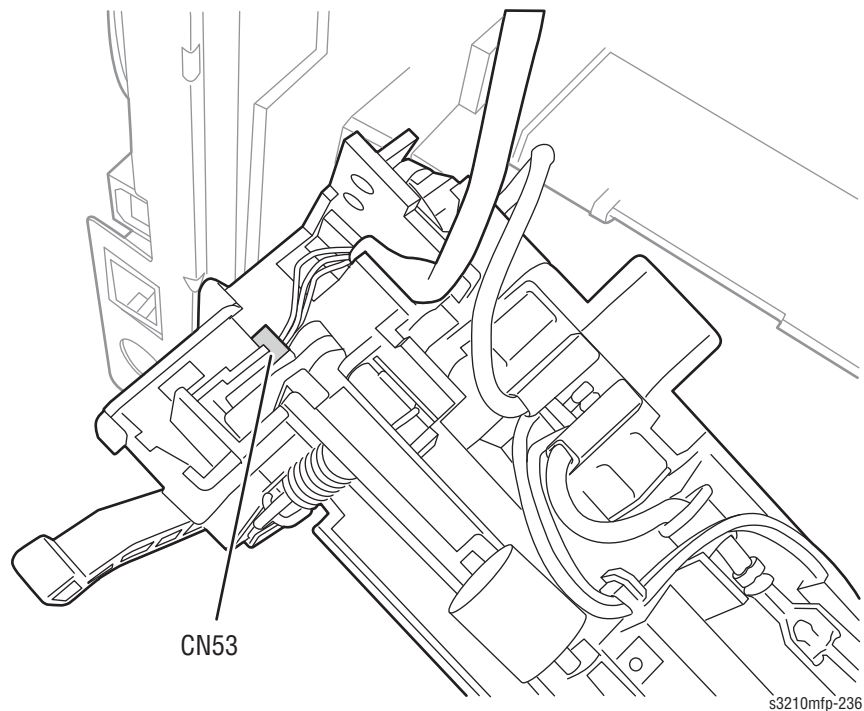
### PL8.0.0



#### Warning

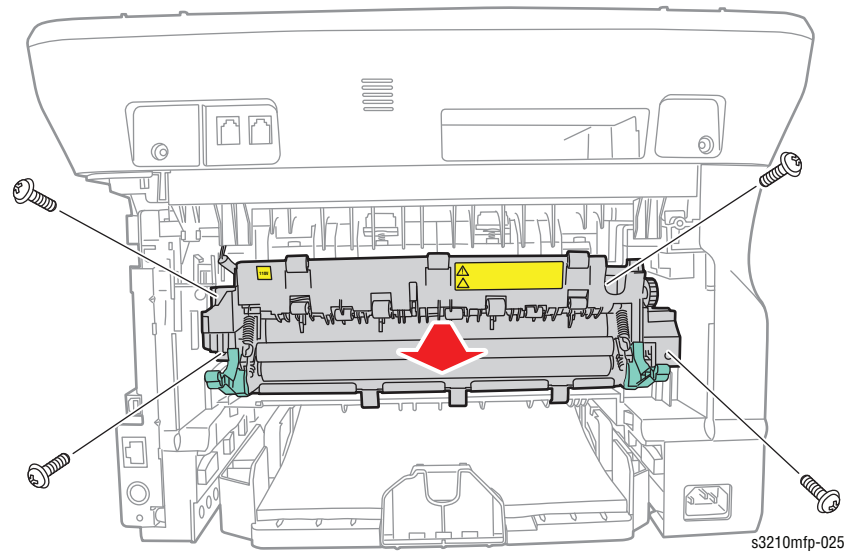
Allow the Fuser to cool before performing this procedure.

1. Remove the Duplex Unit (page 8-69).
2. Remove the Rear Cover (page 8-61).
3. Remove the Rear Guide Unit (page 8-97).
4. Disconnect the wiring harness connector CN53.



s3210mfp-236

5. Remove 4 screws (12 mm, silver) that secure the Fuser.
6. Pull the Fuser out from the printer.





## Thermistor

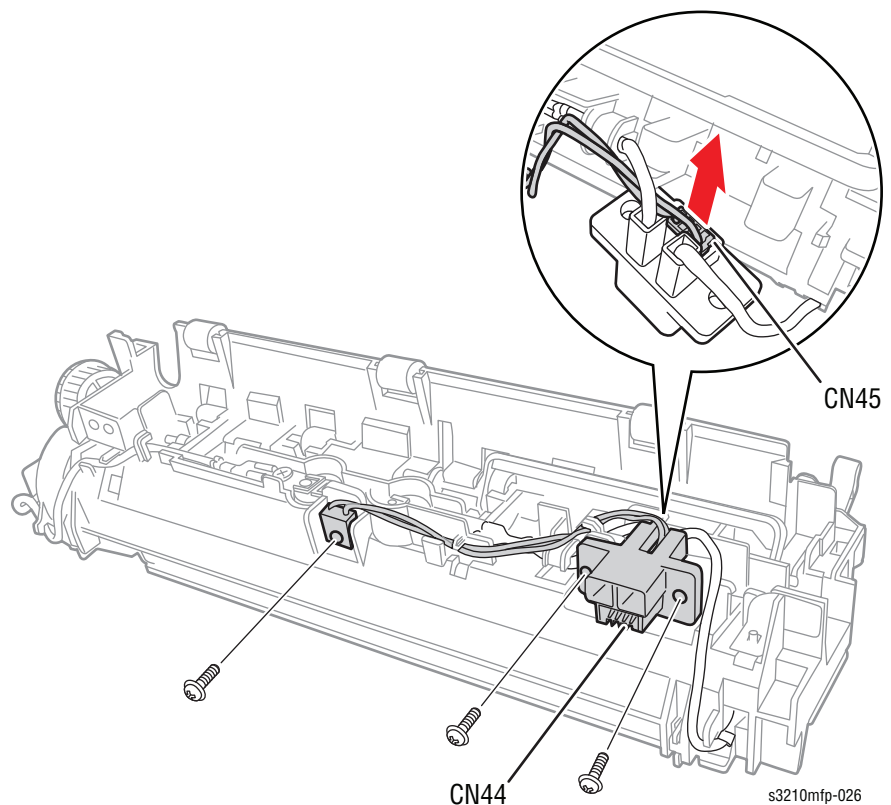
### PL8.0.5



#### Warning

Allow the Fuser to cool before performing this procedure.

1. Remove the Fuser (page 8-13).
2. Remove 1 screw (12 mm, silver) that secures the Thermistor.
3. Remove 2 screws (12 mm, silver) that secure the junction block.
4. Release the wiring harness from the retainer.
5. Pull the junction block forward and disconnect the wiring harness connector CN45.
6. Remove the Thermistor.



## Thermostat

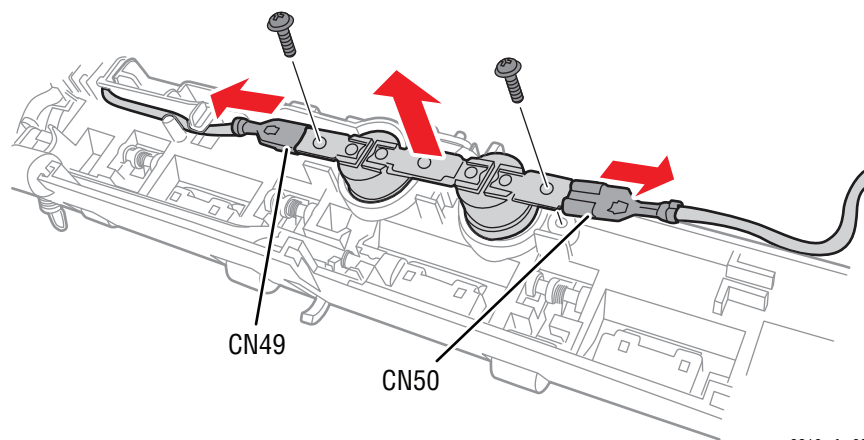
### PL8.0.7



#### Warning

Allow the Fuser to cool before performing this procedure.

1. Remove the Fuser (page 8-13).
2. Remove 2 screws (10 mm, black) that secure the Thermostat.
3. Lift the Thermostat away from the fuser cover.
4. Disconnect the wiring harness connectors CN49 & CN50 from the Thermostat.
5. Remove the Thermostat.



s3210mfp-027

## Heat Roller

### PL8.0.10



#### Warning

Allow the Fuser to cool before performing this procedure.

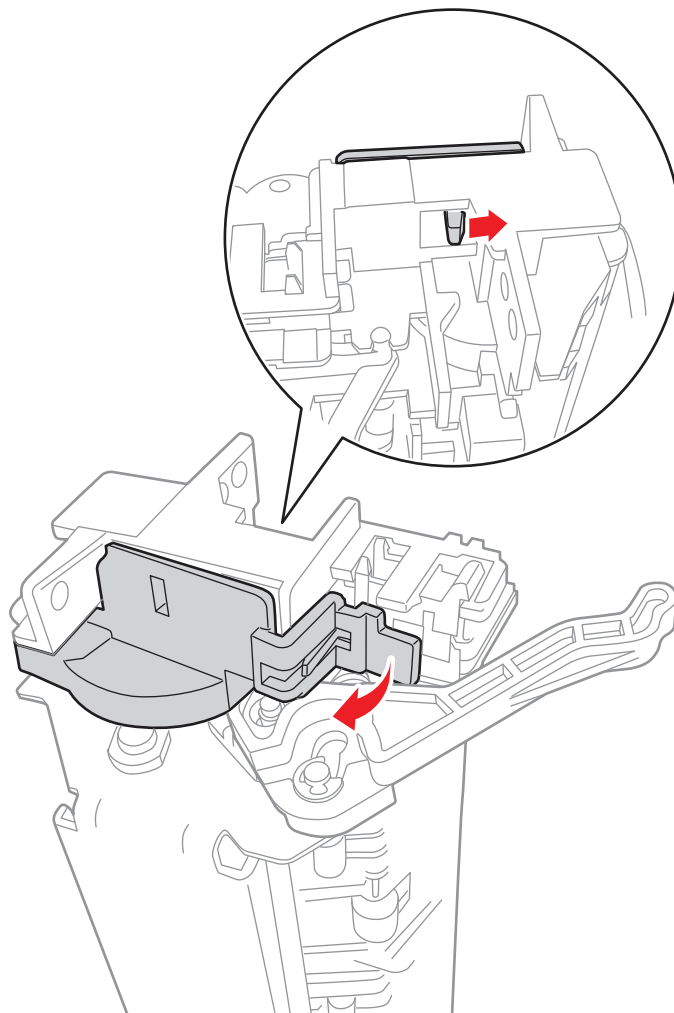
1. Remove the Fuser (page 8-13).



#### Caution

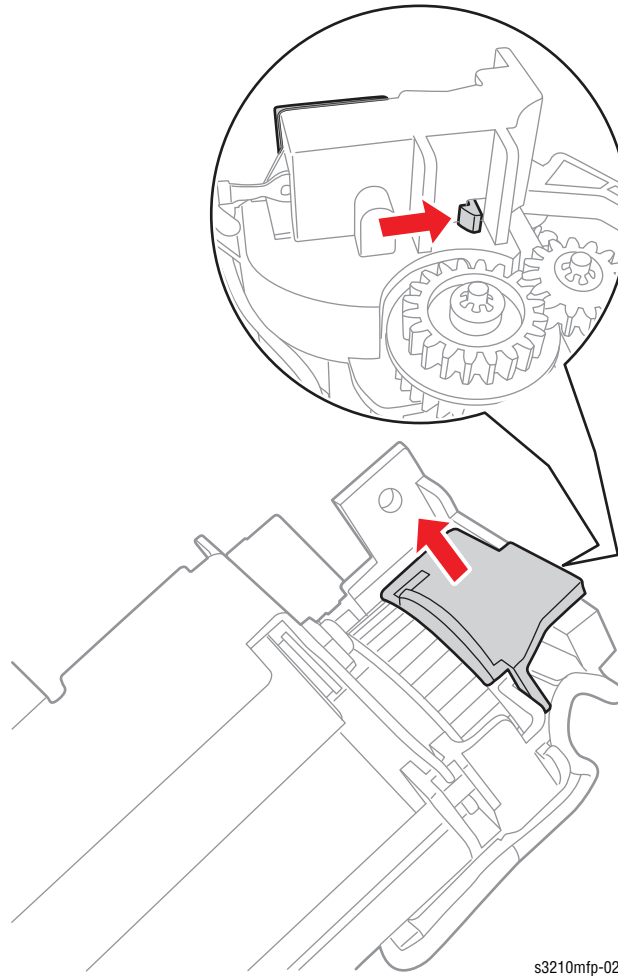
Do not apply too much pressure while releasing the tab in the following step to prevent damaging the lamp cap.

2. Release the tab and remove the right lamp cap.

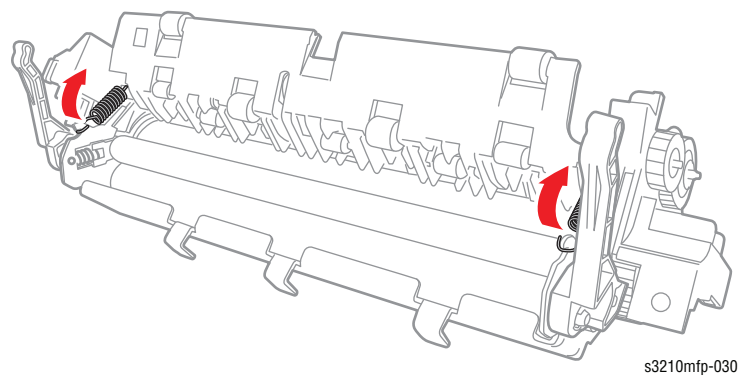


s3210mfp-028

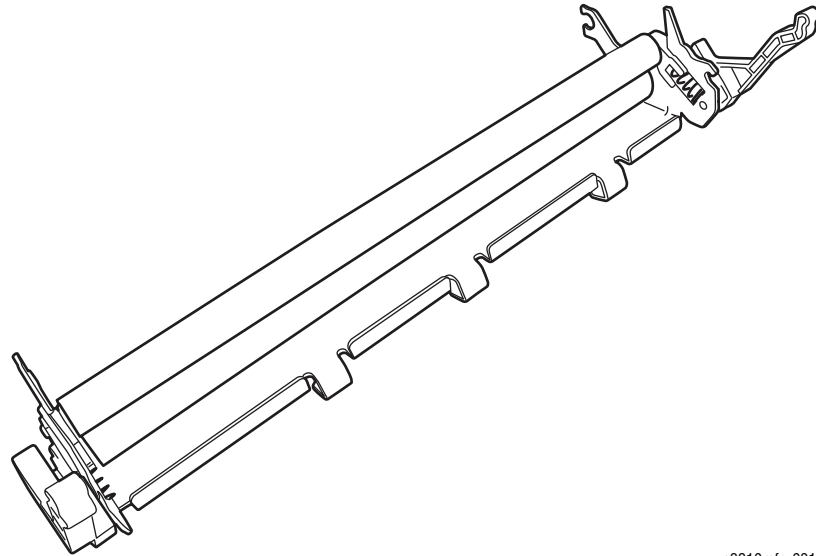
3. Release the tab and remove the left lamp cap.



4. Unhook the left and right springs that secure the fuser frame and the fuser cover.

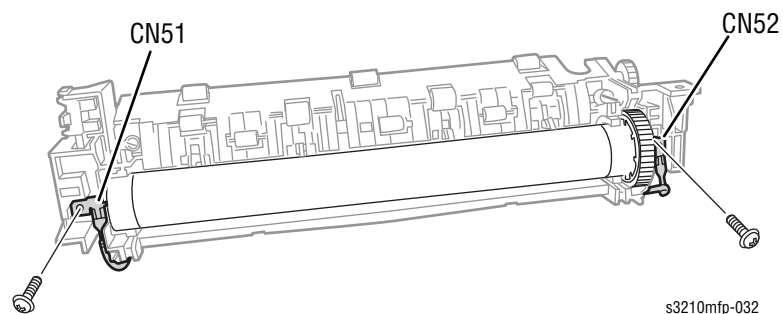


5. Remove the fuser frame with the pressure rollers from the fuser cover.



s3210mfp-031

6. Disconnect the 2 lamp connectors CN51 & CN52.  
7. Remove 2 screws (10 mm, black without washer) that secure the halogen lamp to the fuser cover.

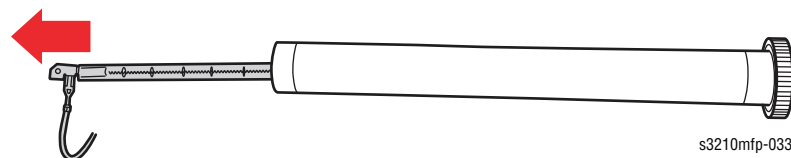


s3210mfp-032

**Note**

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

8. Slide the halogen lamp out away from the Heat Roller.

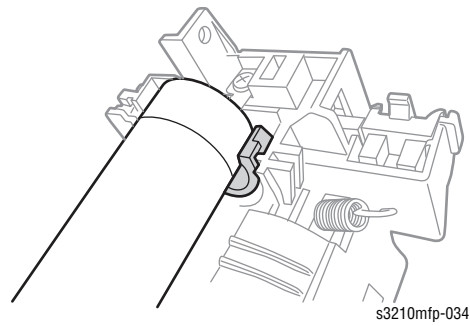


s3210mfp-033

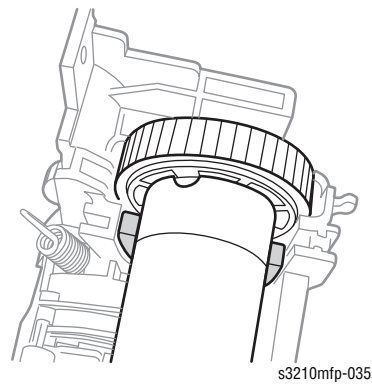
### Replacement Note

Be sure the bushings are placed in the correct position.

#### Right Bushing



#### Left Bushing



## Large Pressure Roller

### PL8.0.21



#### Warning

Allow the Fuser to cool before performing this procedure.

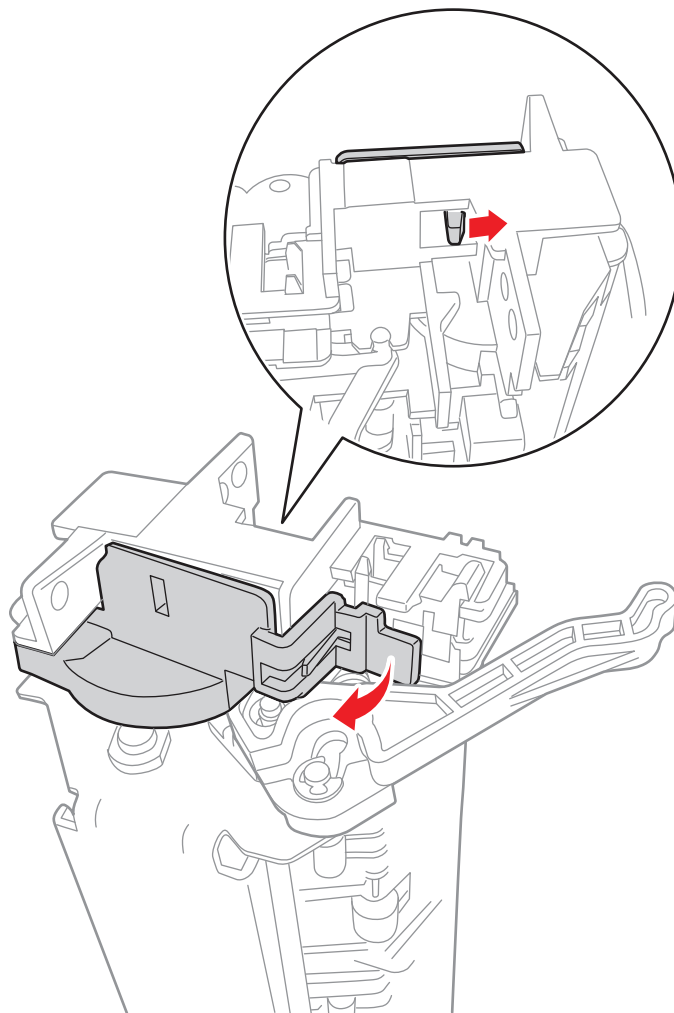
1. Remove the Fuser (page 8-13).



#### Caution

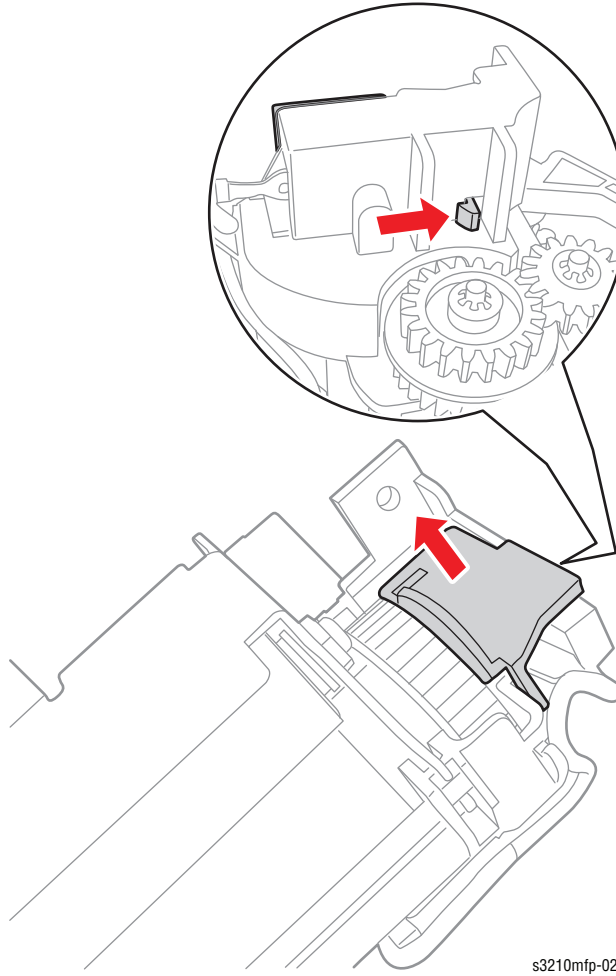
Do not apply too much pressure while releasing the tab to prevent damaging the lamp cap.

2. Release the tab and remove the right lamp cap.

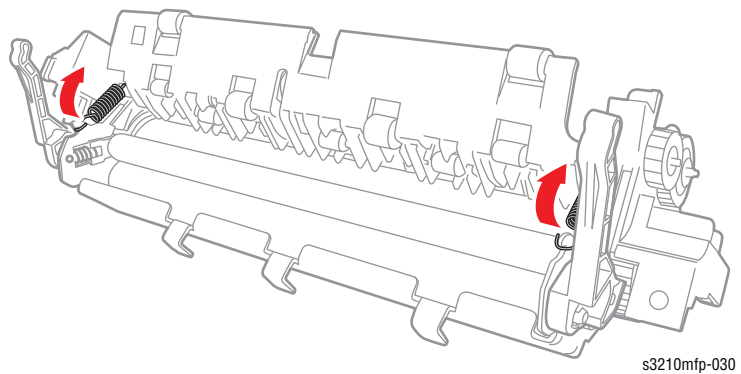


s3210mfp-028

3. Release the tab and remove the left lamp cap.

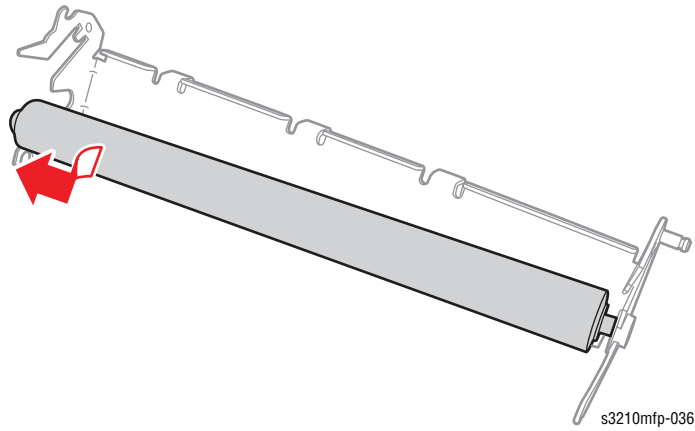


4. Unhook the left and right springs that secure the fuser frame and the fuser cover.





5. Remove the Small Pressure Roller (page 8-24).
6. On the wide open side of the fuser frame, slide the Large Pressure Roller out from the fuser frame. On the small open side of the fuser frame, slide the Large Pressure Roller out from the bushing.



## Small Pressure Roller

### PL8.0.23



#### Warning

Allow the Fuser to cool before performing this procedure.

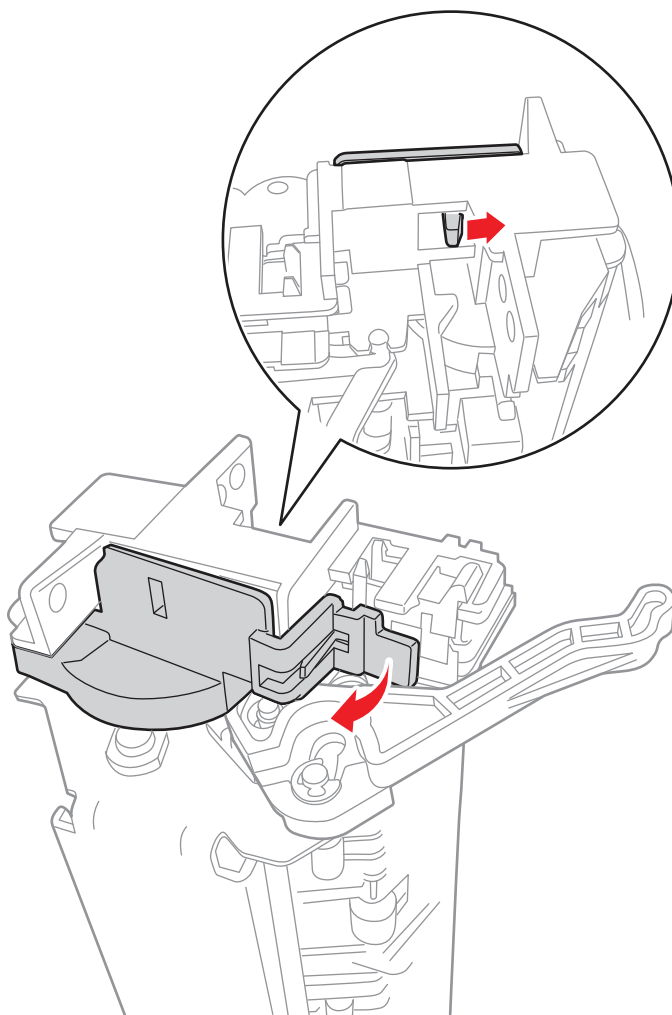
1. Remove the Fuser (page 8-13).



#### Caution

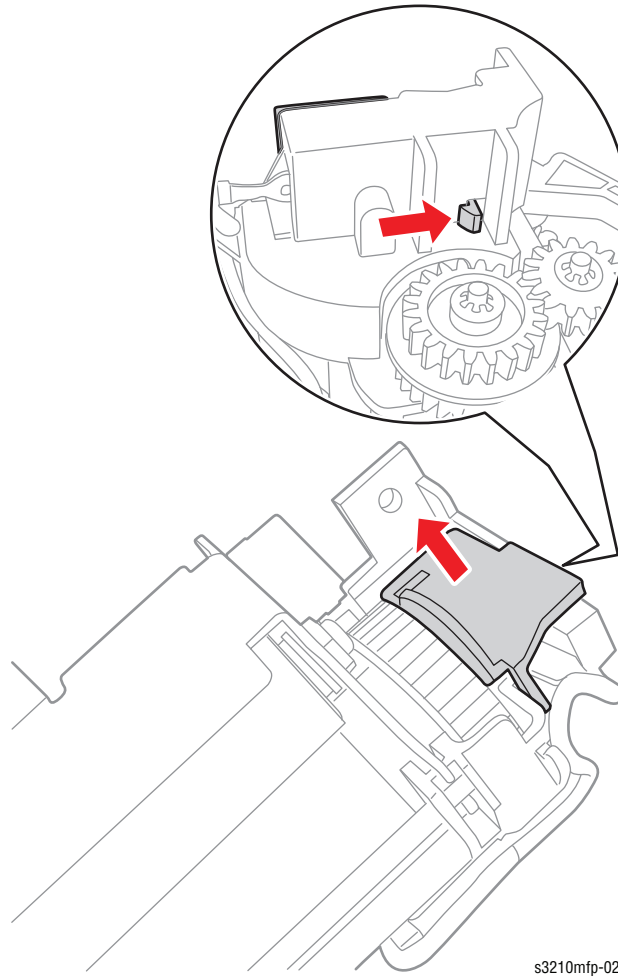
Do not apply too much pressure while releasing the tab to prevent damaging the lamp cap.

2. Release the tab and remove the right lamp cap.

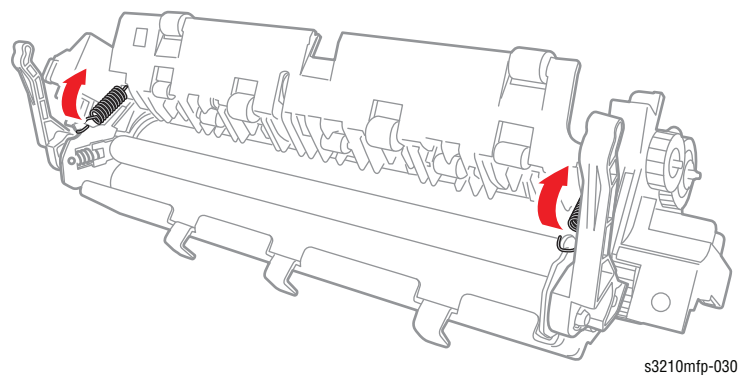


s3210mfp-028

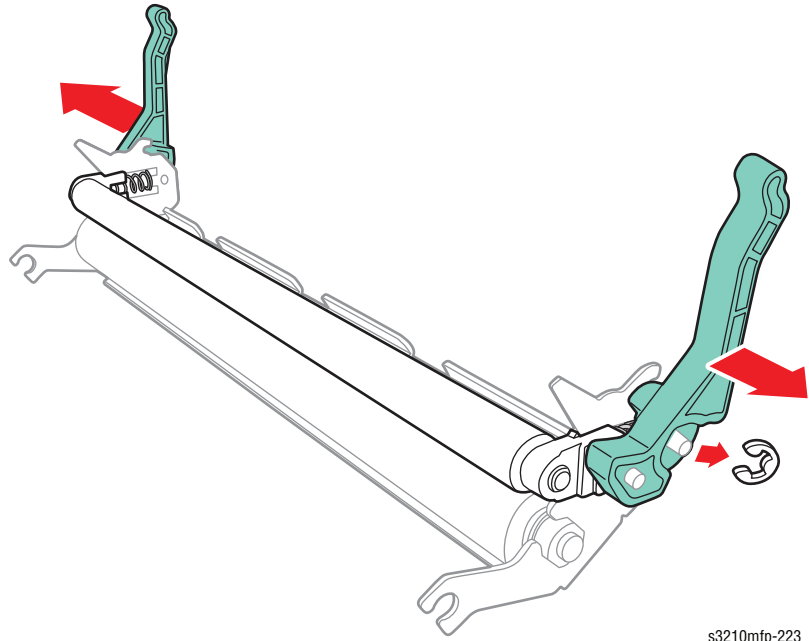
3. Release the tab and remove the left lamp cap.



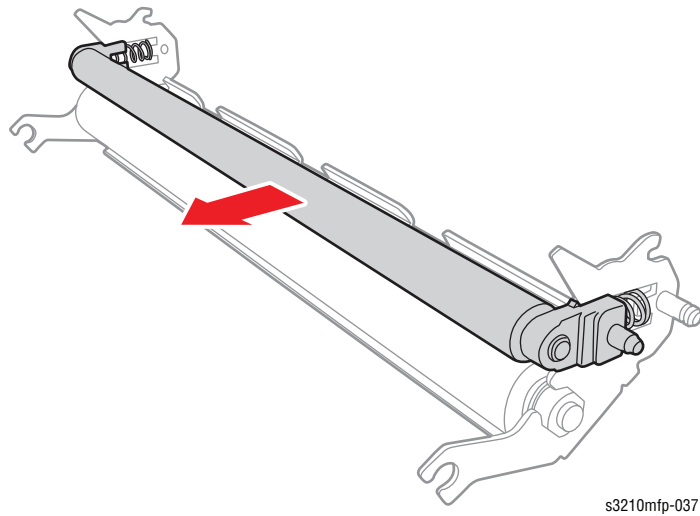
4. Unhook the left and right springs that secure the fuser frame and the fuser cover.



5. Release the e-ring that the secures the jam link lever.
6. Remove the jam link lever.
7. Repeat steps 5-6 for the other jam link lever.



8. Slide the Small Pressure Roller together with the bushings and the springs away from the fuser frame.
9. Remove the Small Pressure Roller.



## Halogen Lamp

### PL8.0.30



#### Warning

Allow the Fuser to cool before performing this procedure.

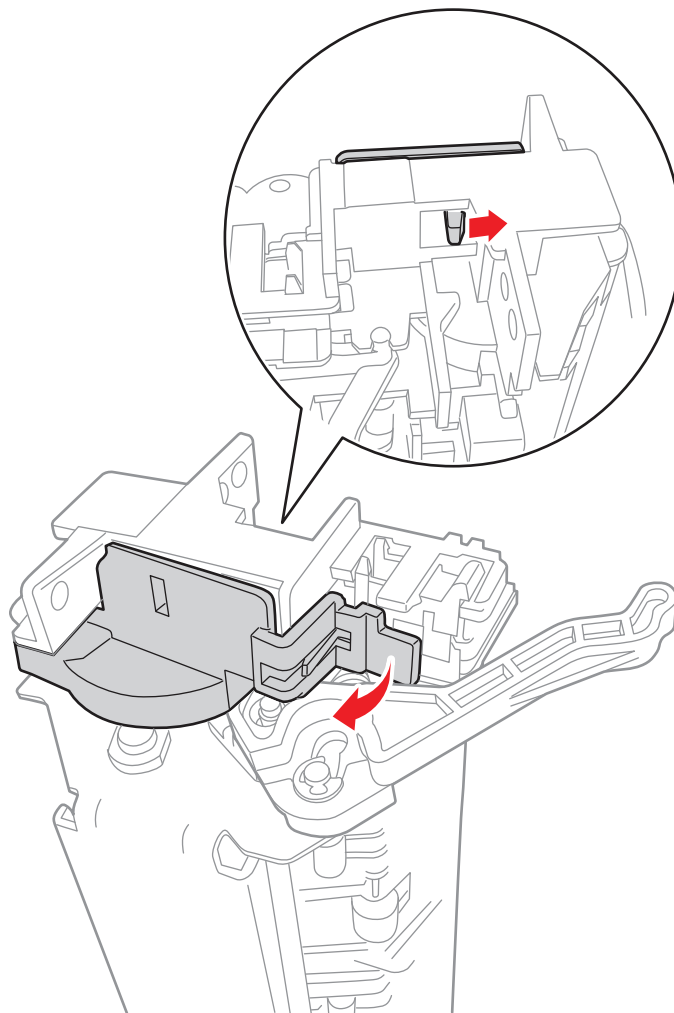
1. Remove the Fuser (page 8-13).



#### Caution

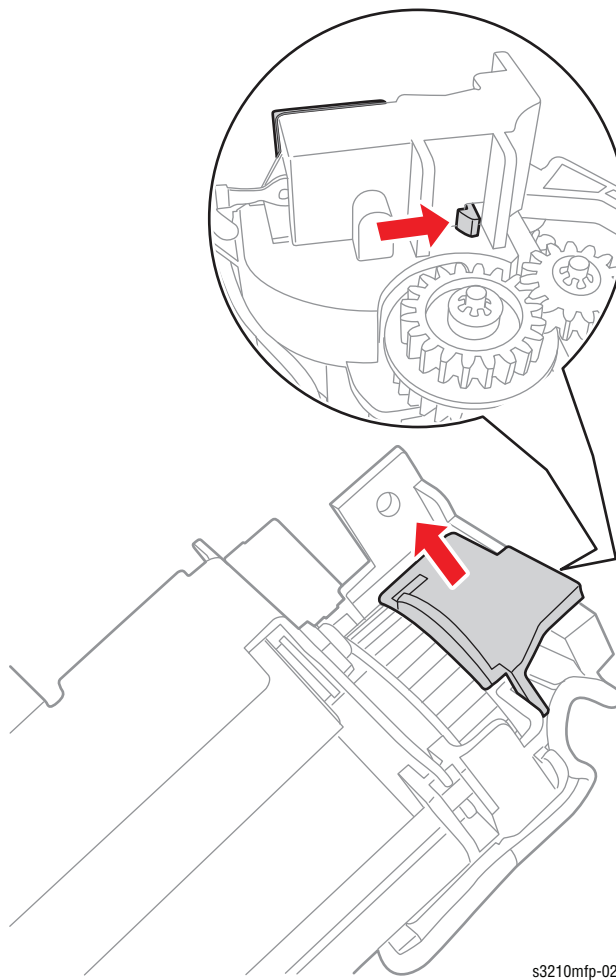
Do not apply too much pressure while releasing the tab to prevent damaging the lamp cap.

2. Release the tab and remove the right lamp cap.

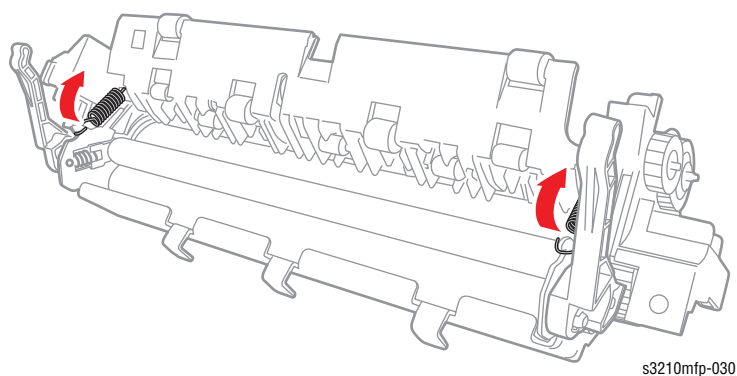


s3210mfp-028

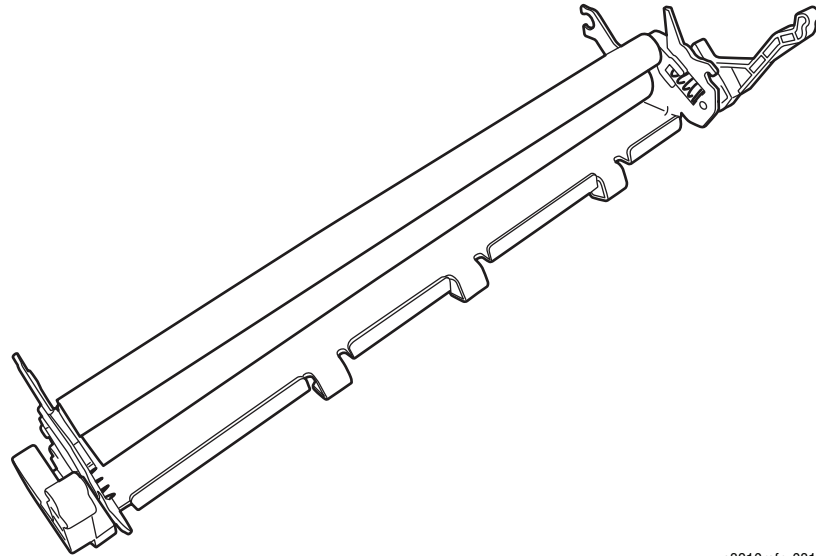
3. Release the tab and remove the left lamp cap.



4. Unhook the left and right springs that secure the fuser frame and the fuser cover.

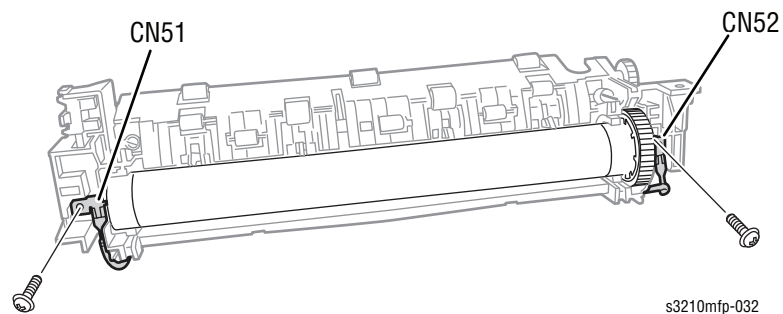


5. Remove the fuser frame with the pressure rollers from the fuser cover.



s3210mfp-031

6. Disconnect the 2 lamp connectors CN51 & CN52.  
7. Remove 2 screws (10 mm, black without washer) that secure the halogen lamp to the fuser cover.

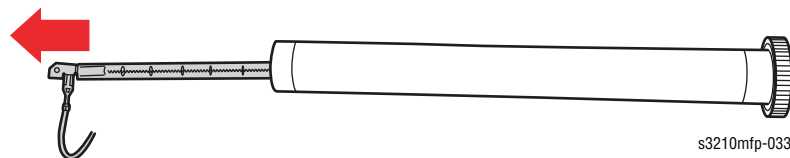


s3210mfp-032

**Note**

Hold the Halogen Lamp by the ends so there is no transfer of oil from the hands onto the lamp, which could damage the Lamp.

8. Slide the Halogen Lamp out away from the heat roller.

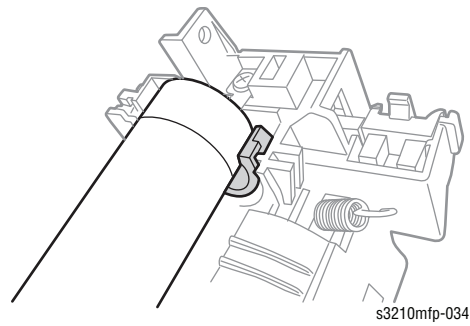


s3210mfp-033

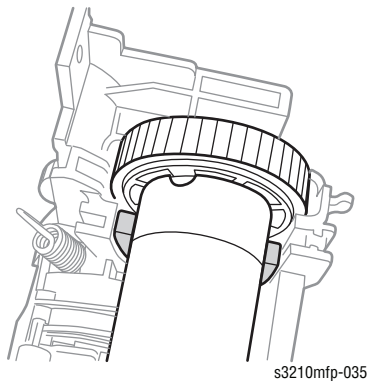
### Replacement Note

Be sure the Bushings are placed in the correct position.

#### Right Bushing



#### Left Bushing



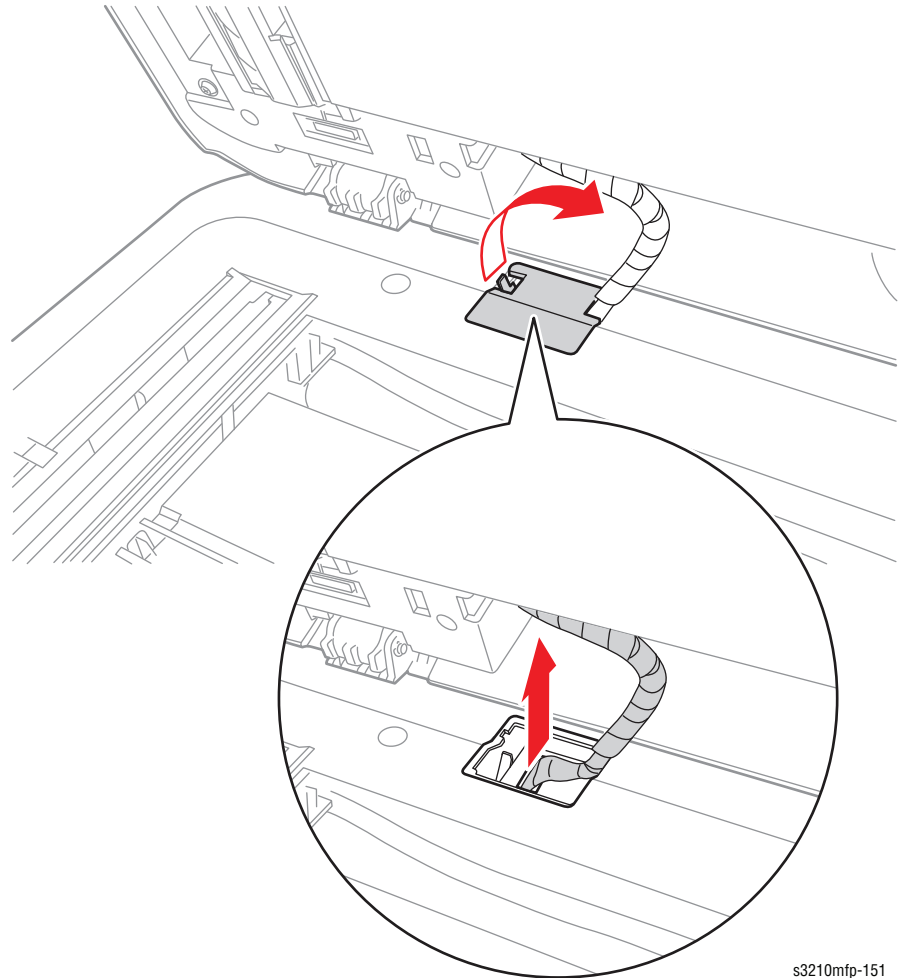


## Automatic Document Feeder

### Automatic Document Feeder

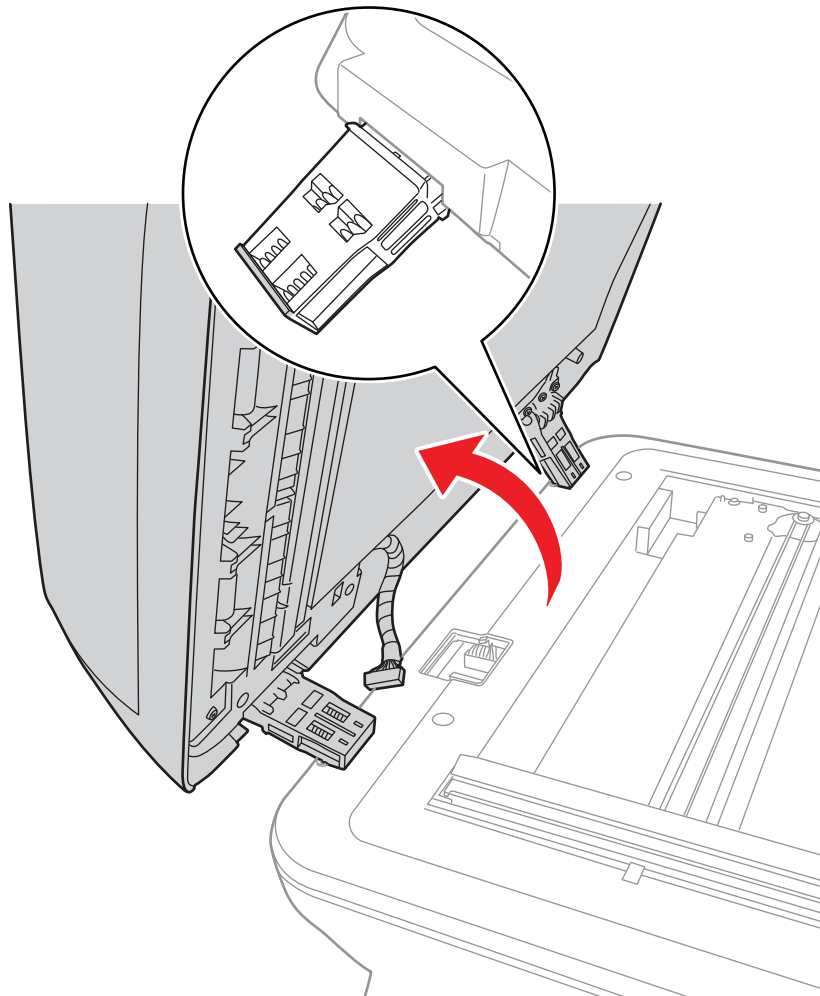
#### PL6.1.0

1. Open the Automatic Document Feeder (ADF).
2. Remove the ADF cable cover.
3. Disconnect the ADF cable.



s3210mfp-151

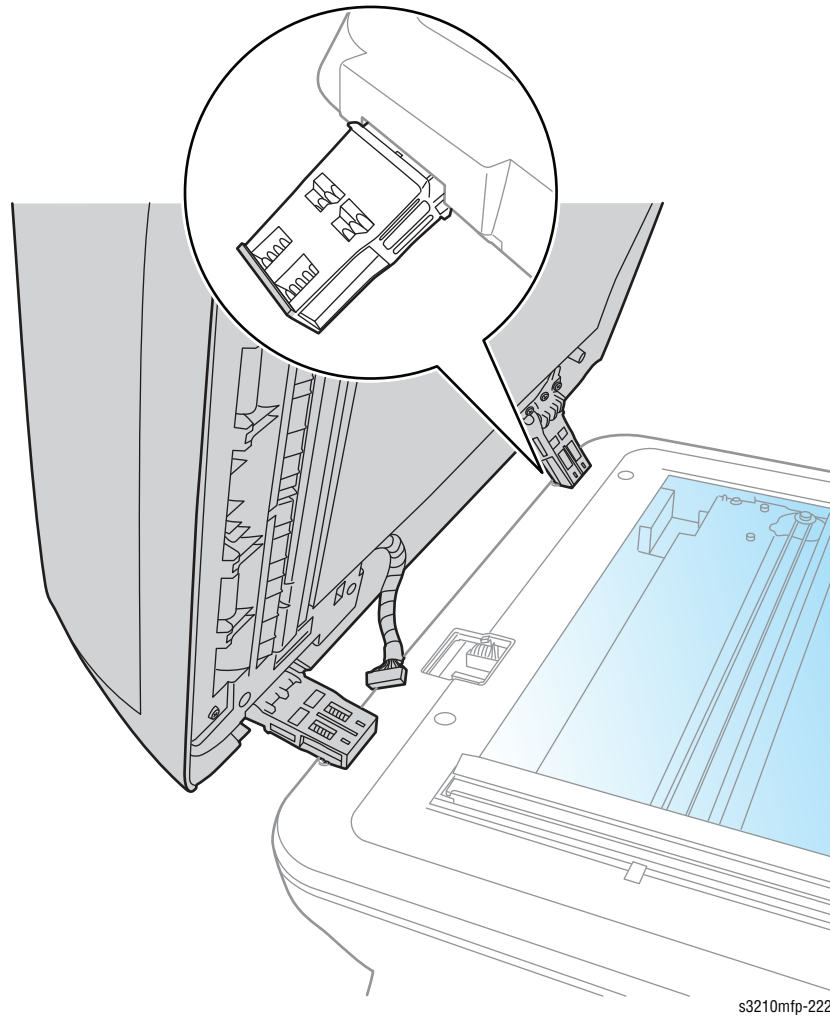
4. Open, then lift the ADF while tilting it toward the rear and releasing the latches.
5. Remove ADF from the printer.



s3210mfp-153

**Replacement Note**

Be sure to tilt the ADF toward the rear of the printer in order to insert the latches into the slots on the Scanner.

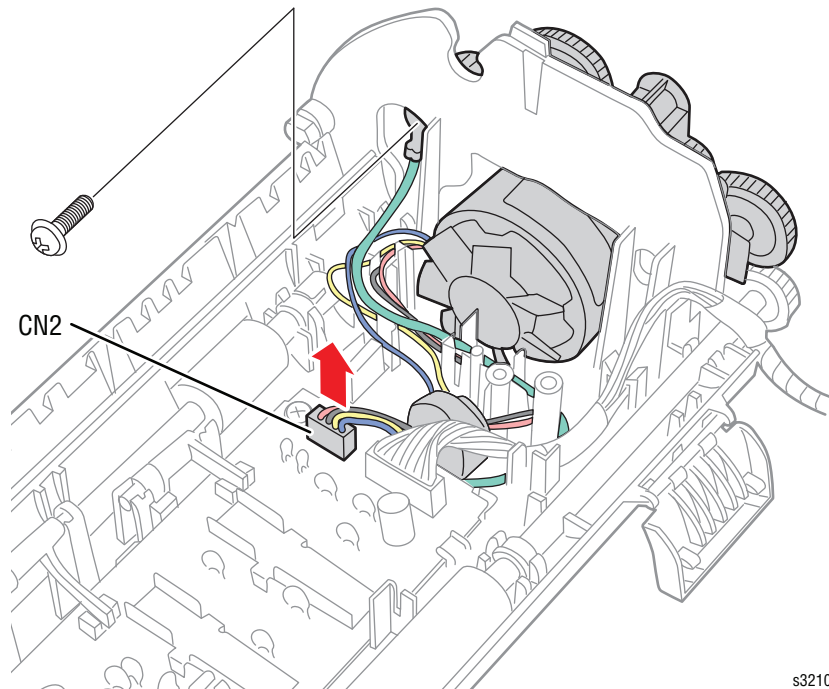


s3210mfp-222

## ADF Motor

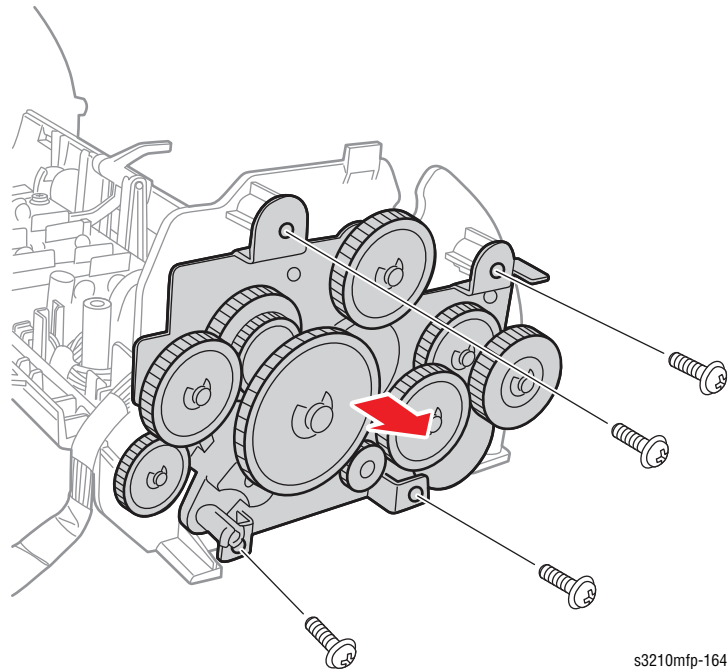
### PL6.1.4

1. Remove the ADF Feeder Assembly (page 8-39).
2. Remove the ADF Stacker (page 8-43).
3. Remove the Upper ADF (page 8-40).
4. Remove the Lower ADF (page 8-36).
5. Disconnect the wiring harness connector CN2.
6. Remove 1 screw (12 mm, silver) that secures the ground wire.



s3210mfp-167

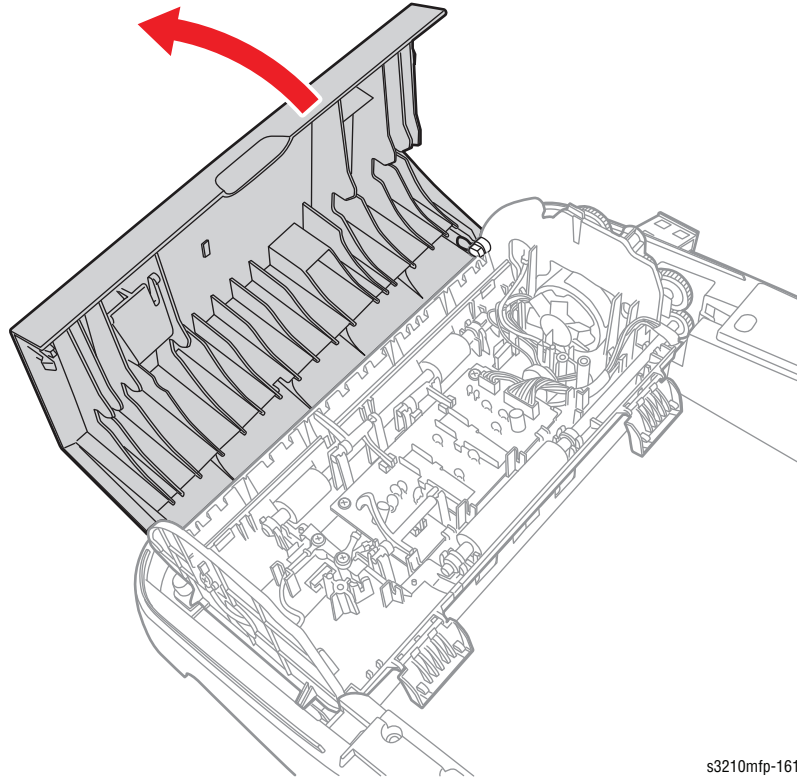
7. Remove 4 screws (12 mm, silver) that secure the ADF Motor.
8. Remove the ADF Motor.



## Lower ADF

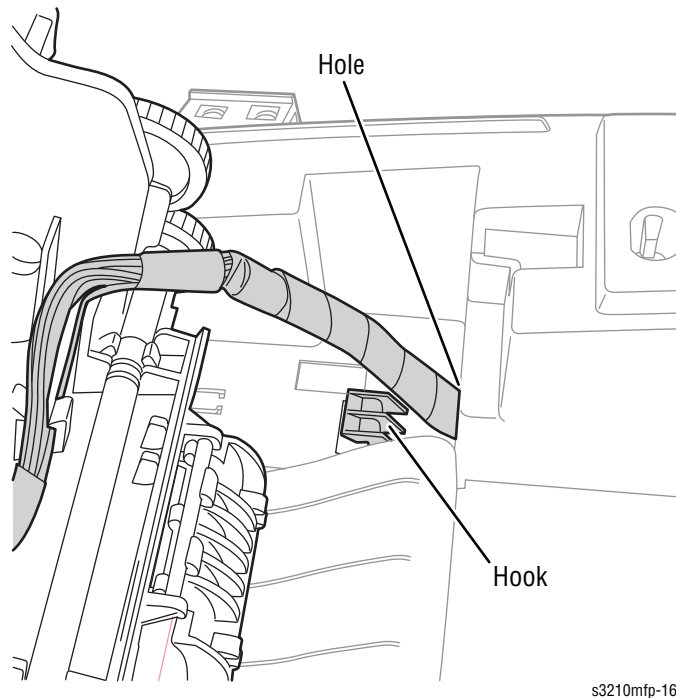
### PL6.1.5

1. Remove the Upper ADF (page 8-40).
2. Turn the ADF over with the top side facing upward.
3. Open the ADF cover.
4. Pull the ADF cover toward the rear to release the notch from the ADF and slide the ADF cover toward the right side to release the notch on the left side.

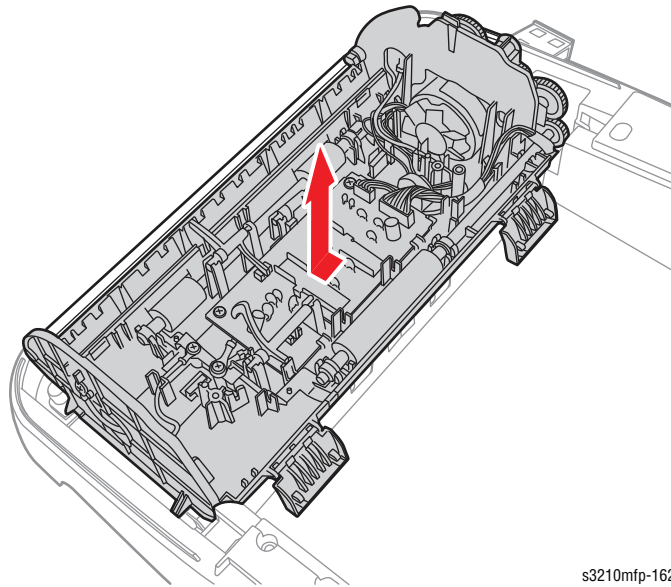


s3210mfp-161

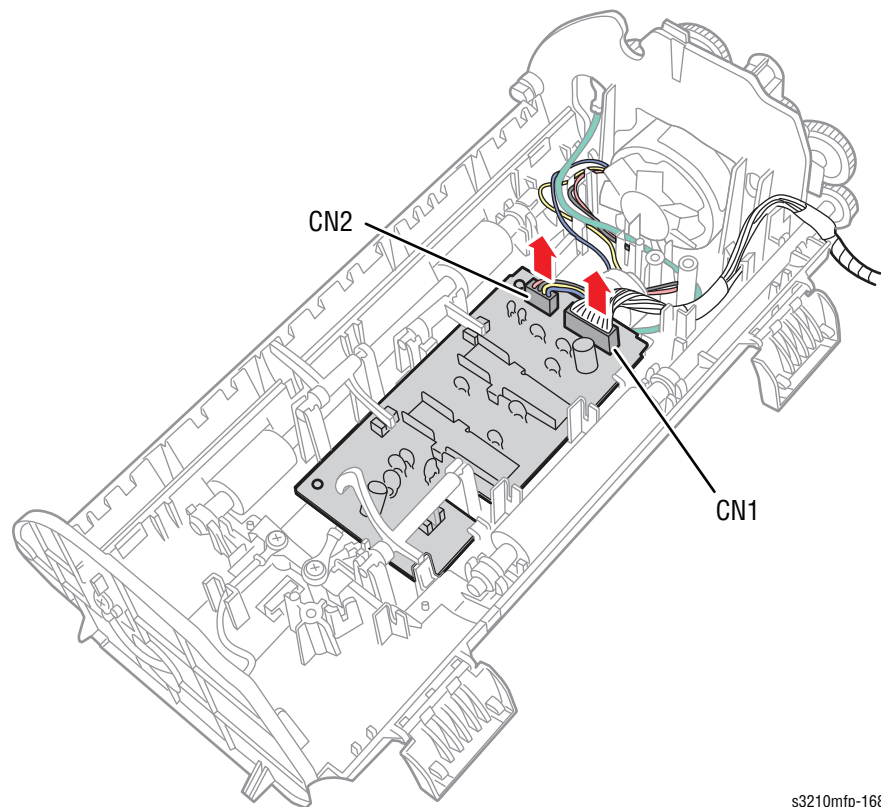
5. Push the upper ADF toward the left to release the Lower ADF from the hook and lift the Lower ADF while routing the cable through the hole on the platen cover.



6. Lift the Lower ADF from the platen cover.



7. Disconnect the 2 wiring harness connectors CN1 and CN2 from the ADF board.



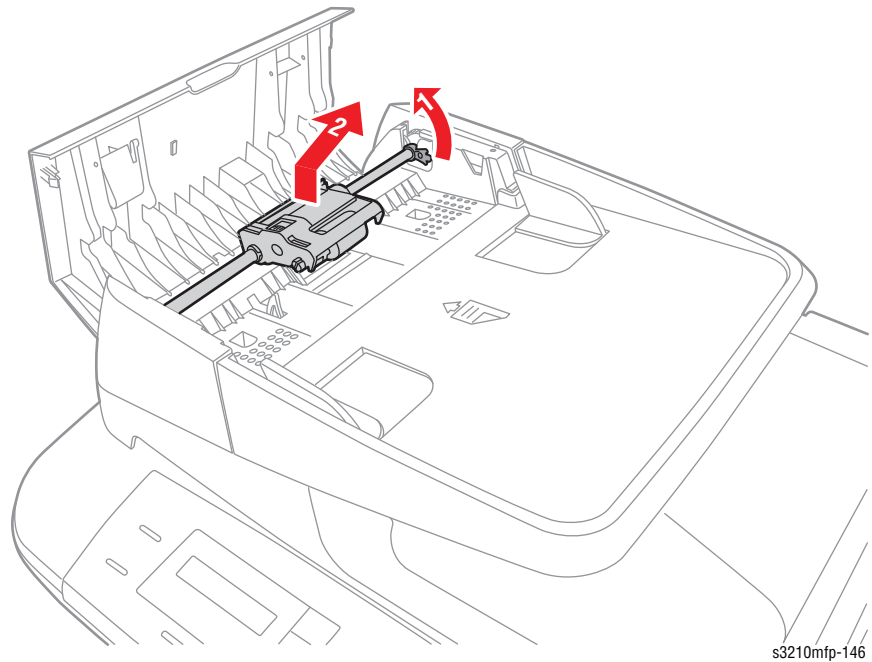
s3210mfp-168



## ADF Feeder Assembly

### PL6.1.6

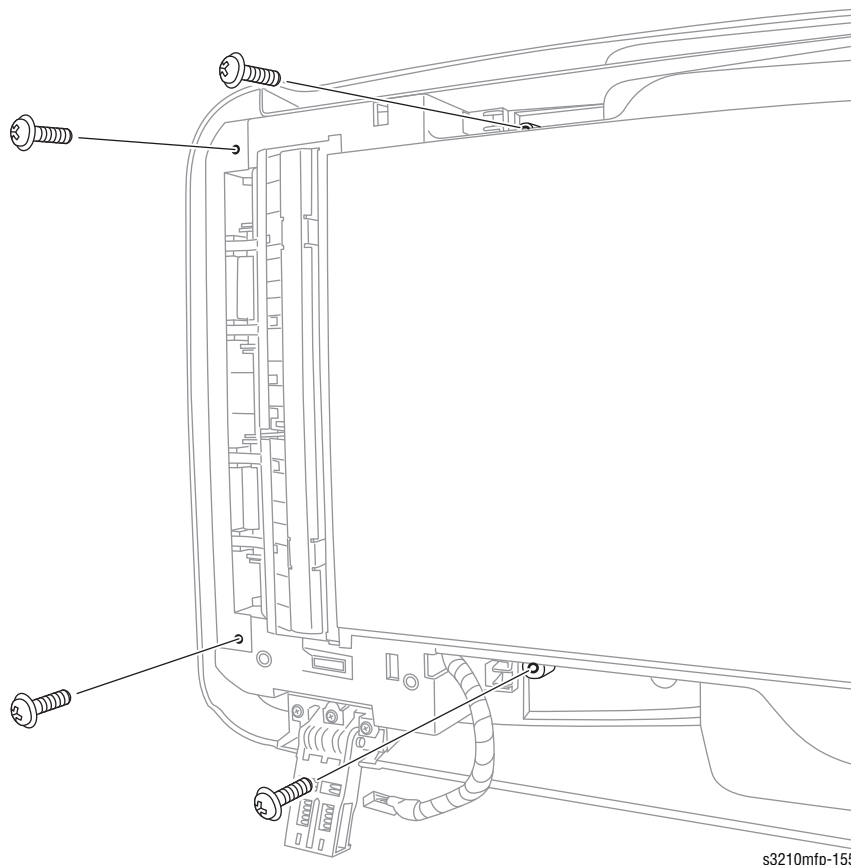
1. Open the ADF cover.
2. Turn the bushing upward to release the ADF Feeder Assembly from the Upper ADF.
3. Lift and slide the ADF Feeder Assembly toward the right side.
4. Remove the ADF Feeder Assembly.



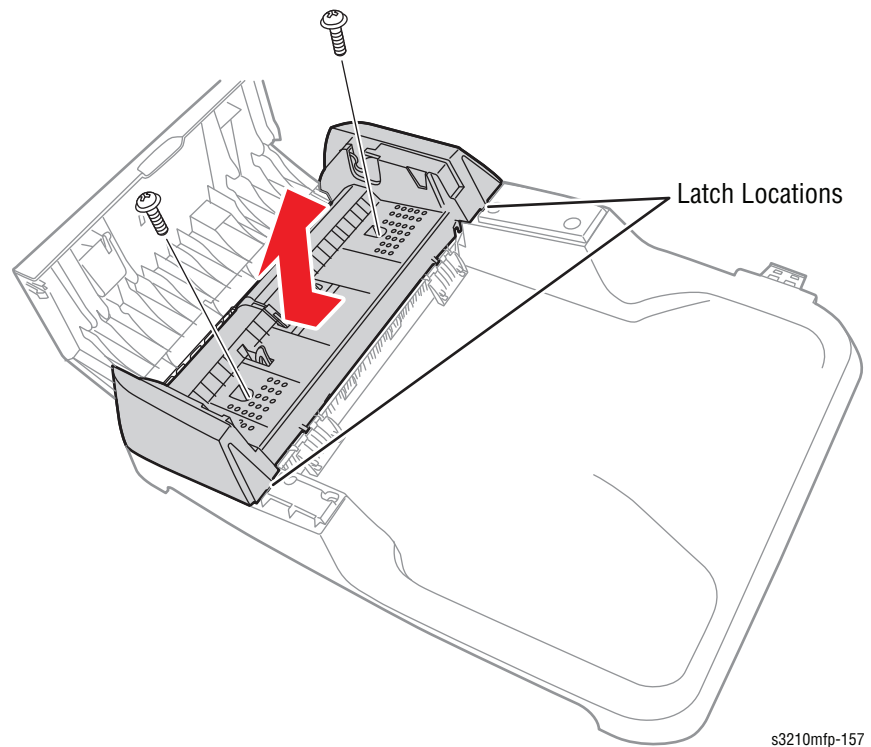
## Upper ADF

### PL6.1.7

1. Remove the ADF (page 8-31).
2. Turn the ADF over with the bottom side facing upward.
3. Remove 4 screws (12 mm, silver) that secure the ADF stacker and lower ADF.



4. Turn the ADF over with the top side facing upward.
5. Open the ADF cover.
6. Remove 2 screws (12 mm, silver) that secure the Upper ADF.
7. Push the Upper ADF toward the left to release the 2 latches.
8. Lift and remove the Upper ADF.

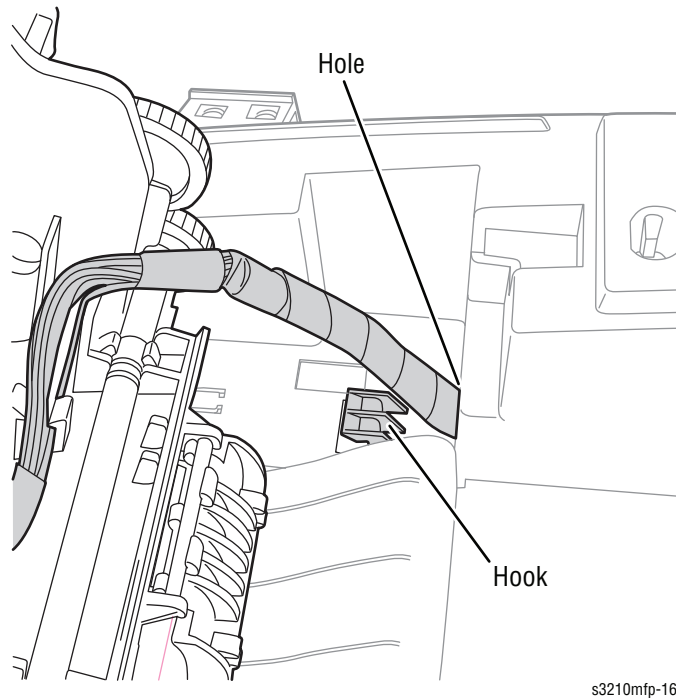


s3210mfp-157

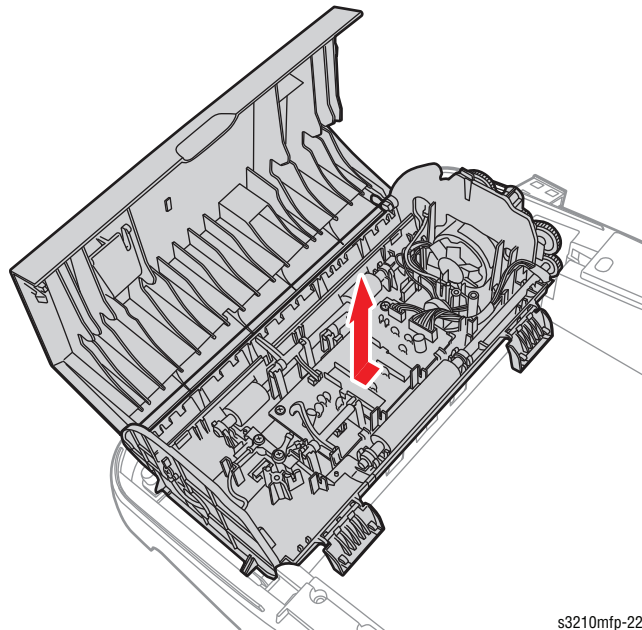
## Platen Cover

### PL6.1.9

1. Remove the Upper ADF (page 8-40).
2. Remove the Lower ADF (page 8-36), steps 1-2.
3. Push the lower ADF toward the left to release the lower ADF from the hook and lift the lower ADF while routing the cable through the hole on the Platen Cover.



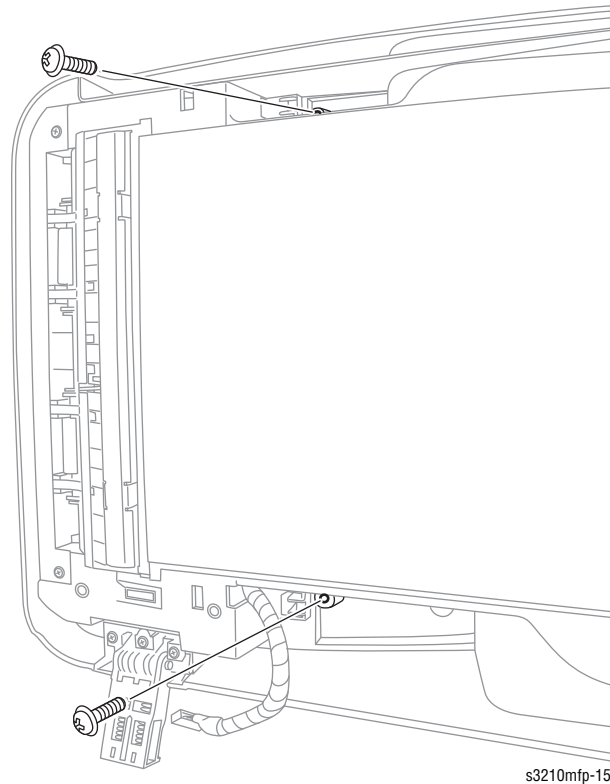
4. Remove the lower ADF from the Platen Cover.



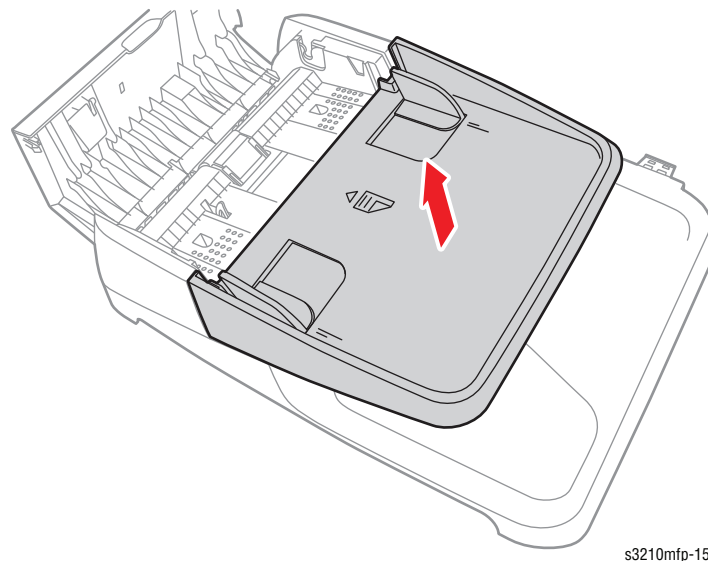
## ADF Stacker

### PL6.1.10

1. Remove the ADF (page 8-31).
2. Turn the ADF over with the bottom side facing up.
3. Remove 2 screws (12 mm, silver) that secure the ADF Stacker.



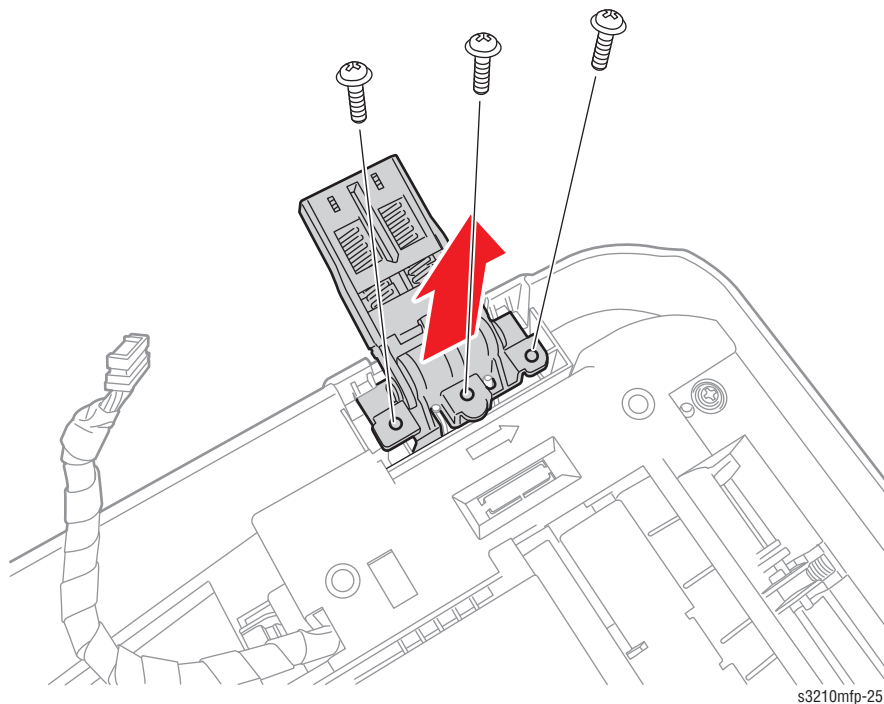
4. Turn the ADF over with the top side facing upward.
5. Open the ADF cover.
6. Lift and remove the ADF Stacker.



## Platen Cover Hinge

### PL6.2.2

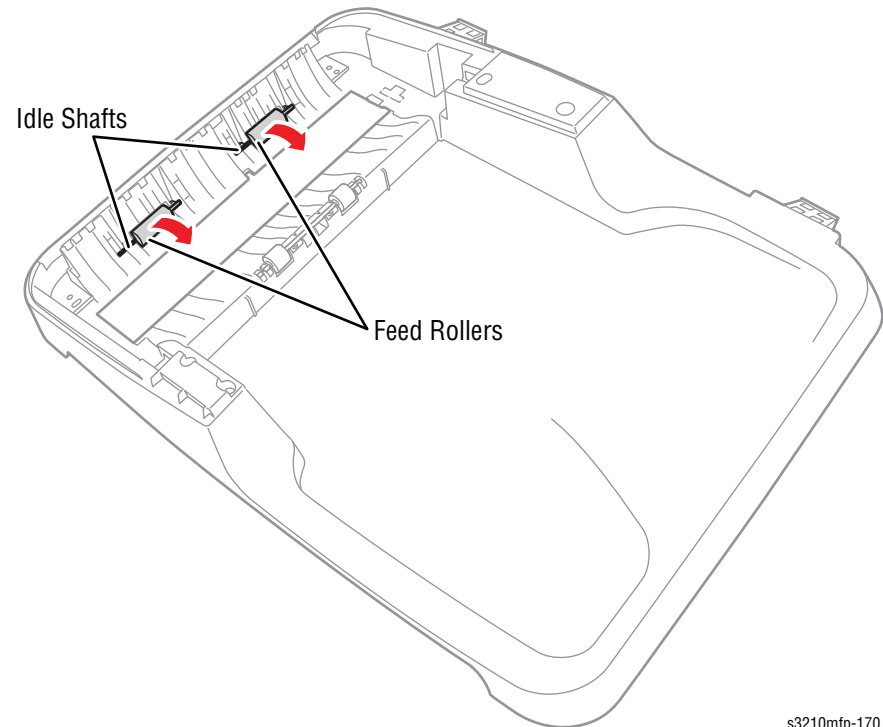
1. Remove the ADF (page 8-31).
2. Turn the ADF over with the bottom facing upward.
3. Remove 3 screws (12 mm, silver) that secure the Platen Cover Hinge.
4. Remove the Platen Cover Hinge.



## ADF Idle Shaft/ ADF Feed Roller

### PL6.2.3/ PL6.2.4

1. Remove the ADF (page 8-31).
2. Remove the ADF Platen Cover (page 8-42).
3. Pry the Shaft out from the ADF platen cover.
4. Remove the ADF Feed Roller.

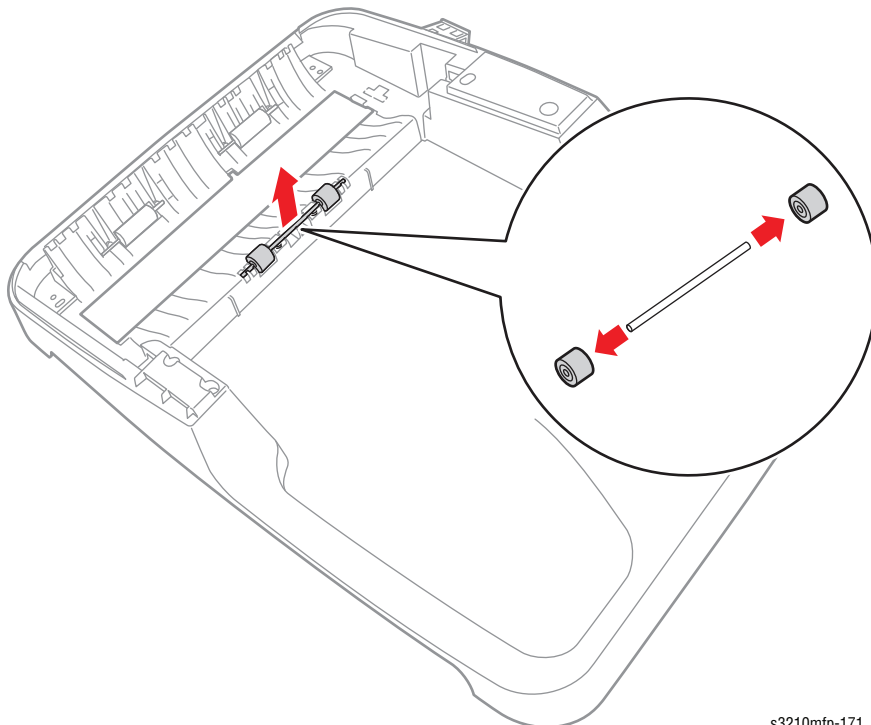


s3210mfp-170

## ADF Pinch Roll

### PL6.1.5

1. Remove the ADF (page 8-31).
2. Remove the Platen Cover (page 8-42).
3. Pry the roller shaft out from the platen cover.
4. Remove the ADF Pinch Roll.



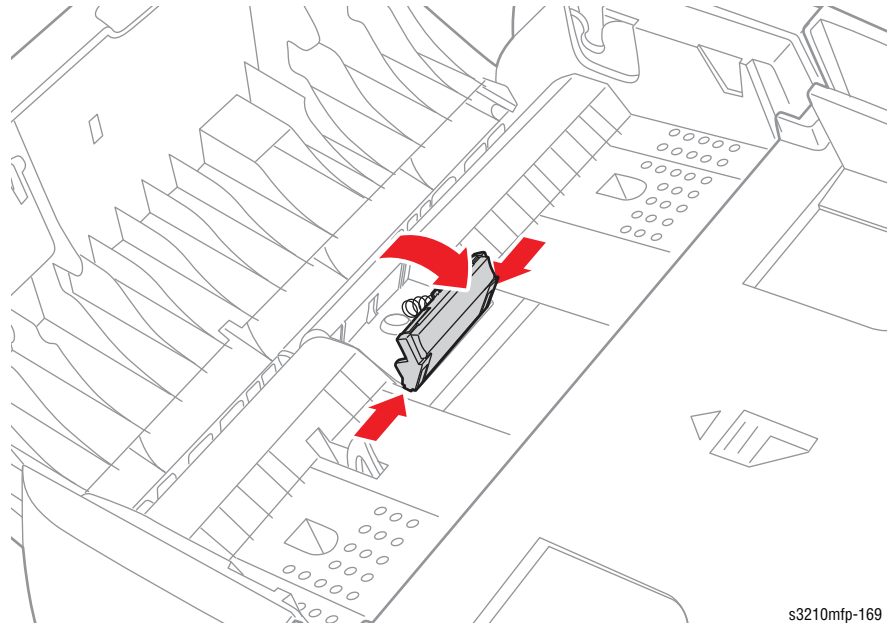
s3210mfp-171



## ADF Feed Pad Assembly

### PL6.1.11

1. Remove the ADF Feeder Assembly (page 8-39).
2. Pry the ADF Feed Pad Assembly upward toward the right side.
3. Press the left and right sides of the ADF Feed Pad Assembly inward to release it from the upper ADF.
4. Remove the ADF Feed Pad Assembly.



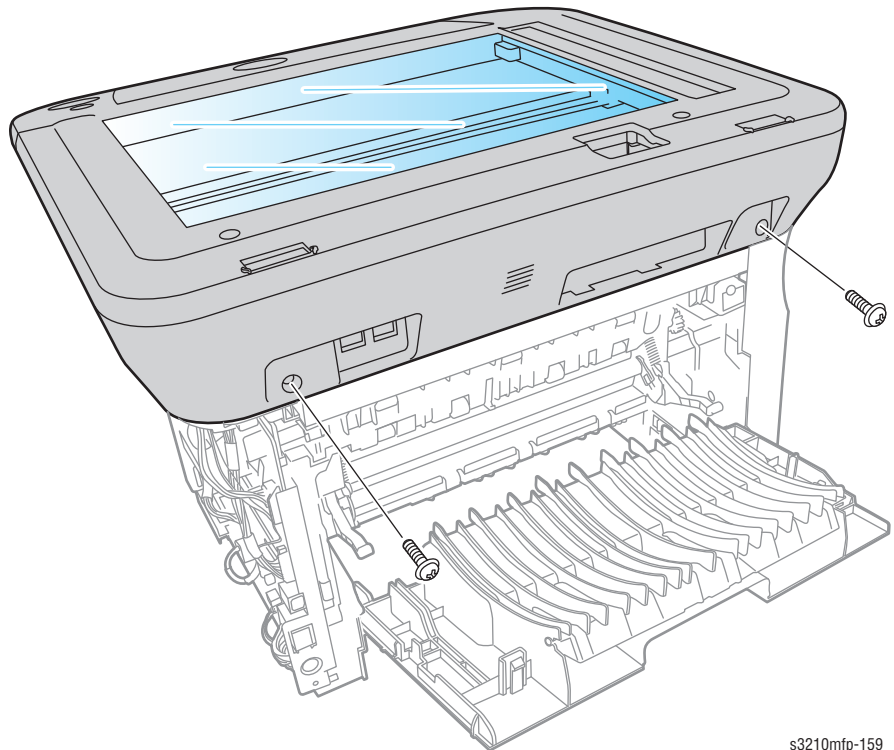
s3210mfp-169

## Scanner Assembly

### Platen Assembly

#### PL6.0.3

1. Remove the ADF (page 8-31).
2. Remove the Right Cover (page 8-62).
3. Remove 2 screws (12 mm, silver) that secure the Platen Assembly.

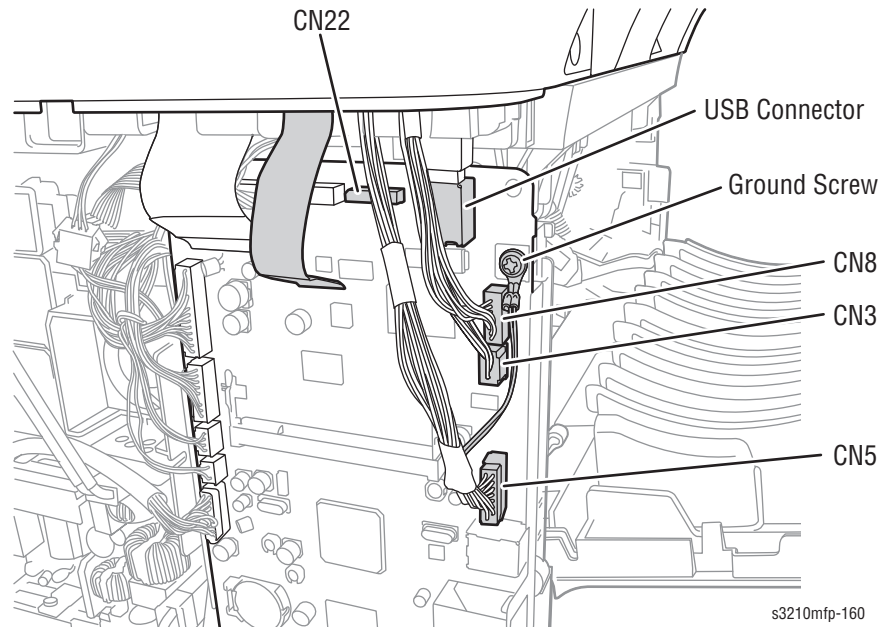


s3210mfp-159

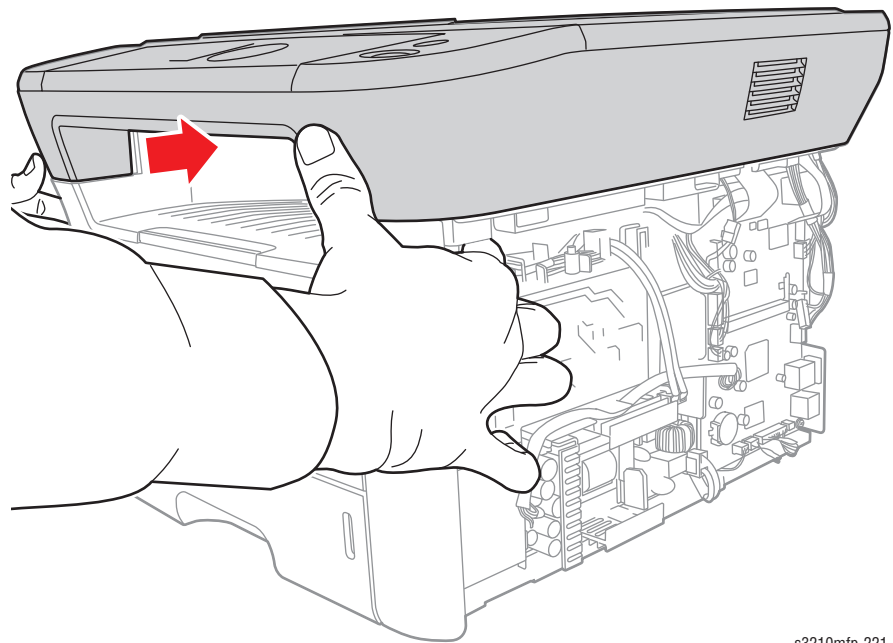
**Note**

The middle cover remains with the printer.

4. Disconnect the wiring harness connectors CN3, CN4, CN5, CN8, CN22, and USB connector from the Main Controller Board.
5. Remove 1 screw (12 mm, silver) that secures the ground wire.



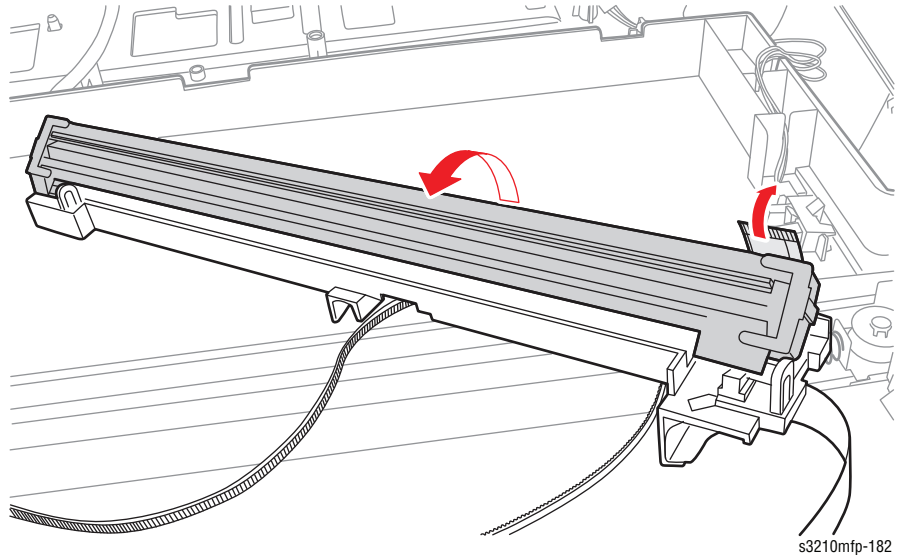
6. Push the Platen Assembly toward the rear to release the 2 tabs.
7. Lift and remove the Platen Assembly.



## Contact Image Sensor

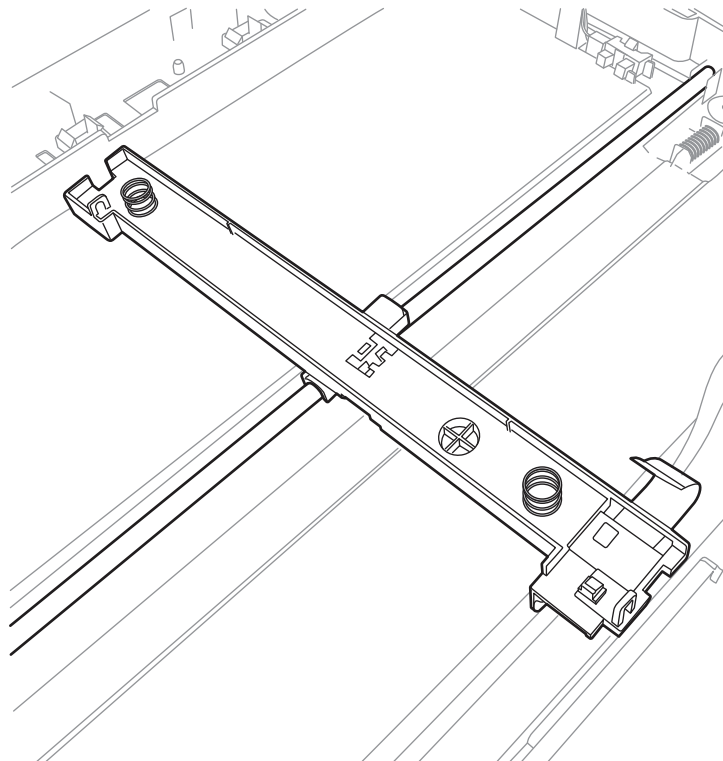
### PL6.3.1-10-3

1. Remove the Upper Platen (page 8-57).
2. Disconnect the ribbon cable.
3. Tilt the sensor bracket to release the Contact Image Sensor from the bracket.



#### Note

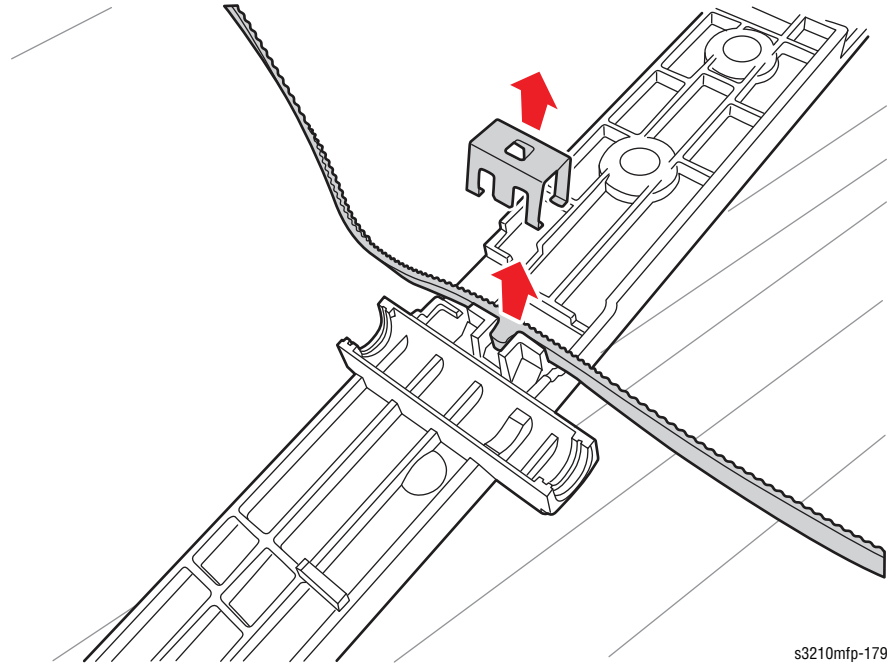
Be careful not to lose the springs.



## Timing Belt

### PL6.3.1-10-7

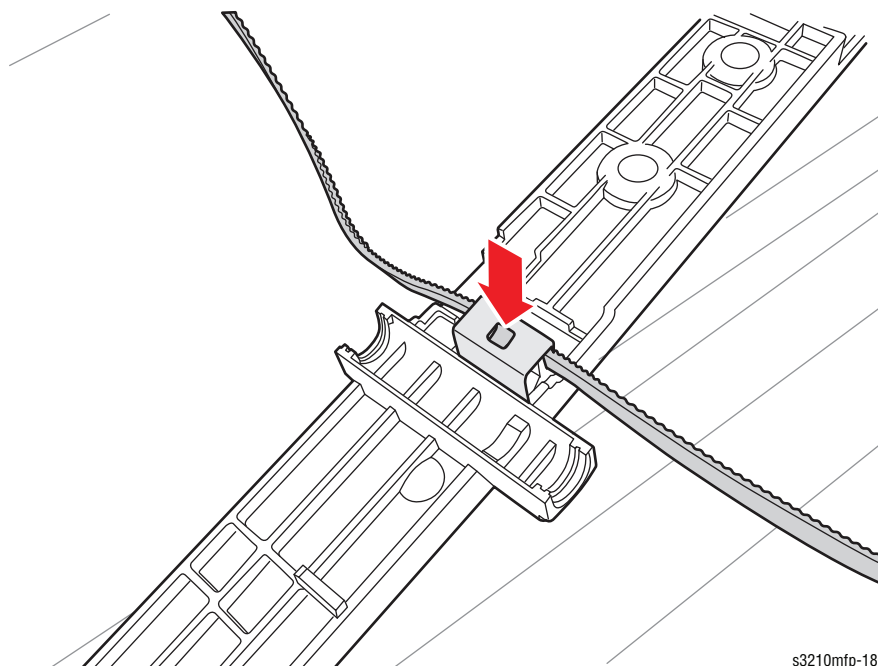
1. Remove the Upper Platen (page 8-57).
2. Release the sensor and bracket from the scan unit.
3. Turn the sensor and bracket over with the Belt on the top side.
4. Release the clip that secures the Belt.
5. Remove the clip.
6. Remove the Belt from the bracket.



s3210mfp-179

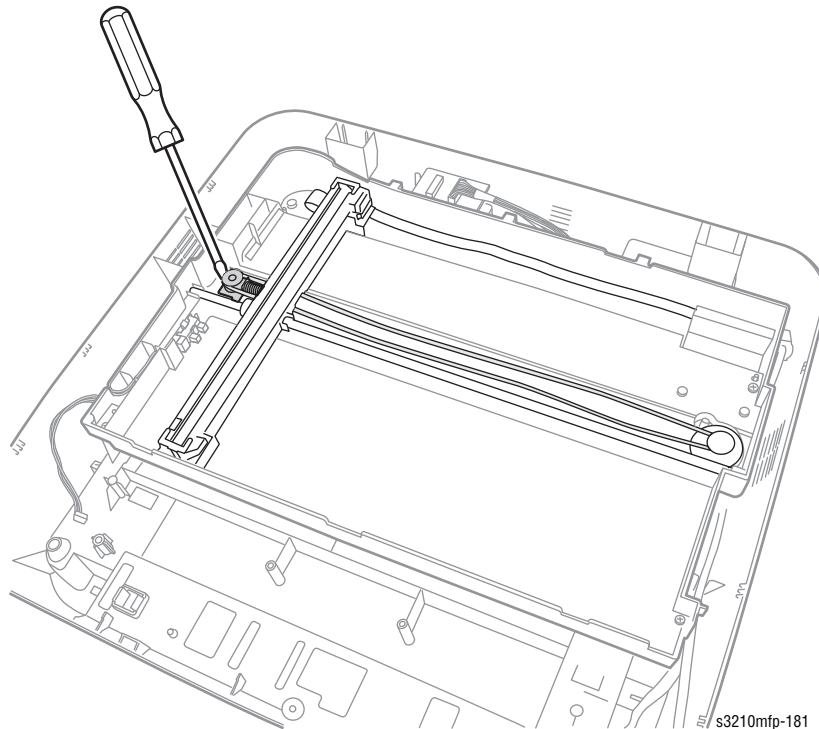
### Replacement Note

Be sure to secure the Belt with the clip.



s3210mfp-180

Be sure to secure the Belt to the rollers.

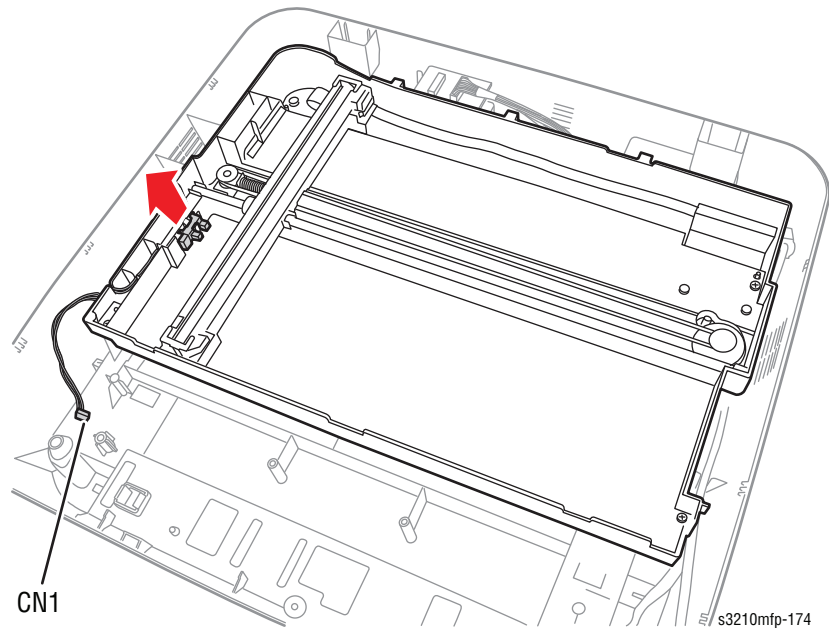


s3210mfp-181

## Sensor

### PL6.3.1-10-9

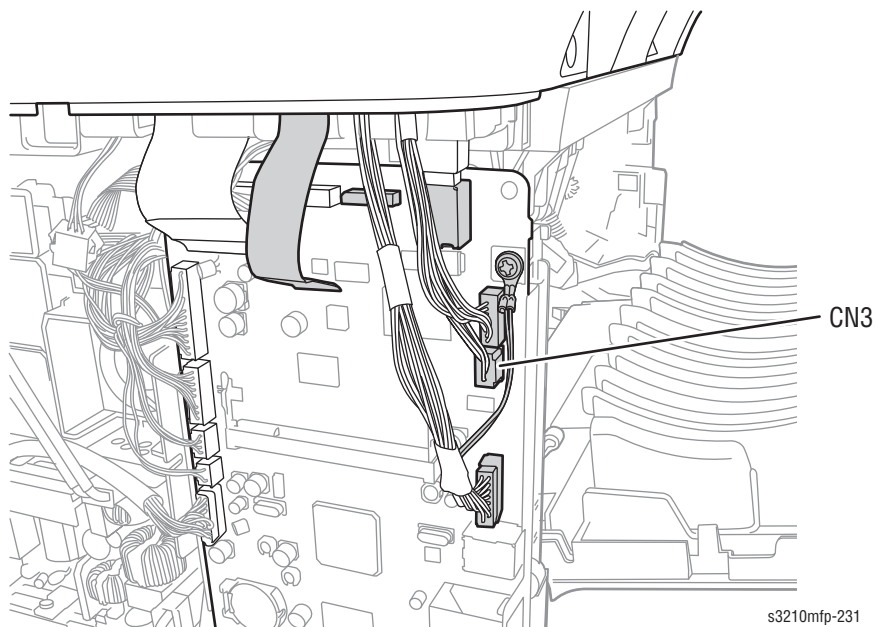
1. Remove the Upper Platen (page 8-57).
2. Disconnect the wiring harness connector CN1.
3. Release the Sensor from the lower scan frame and remove the Sensor.



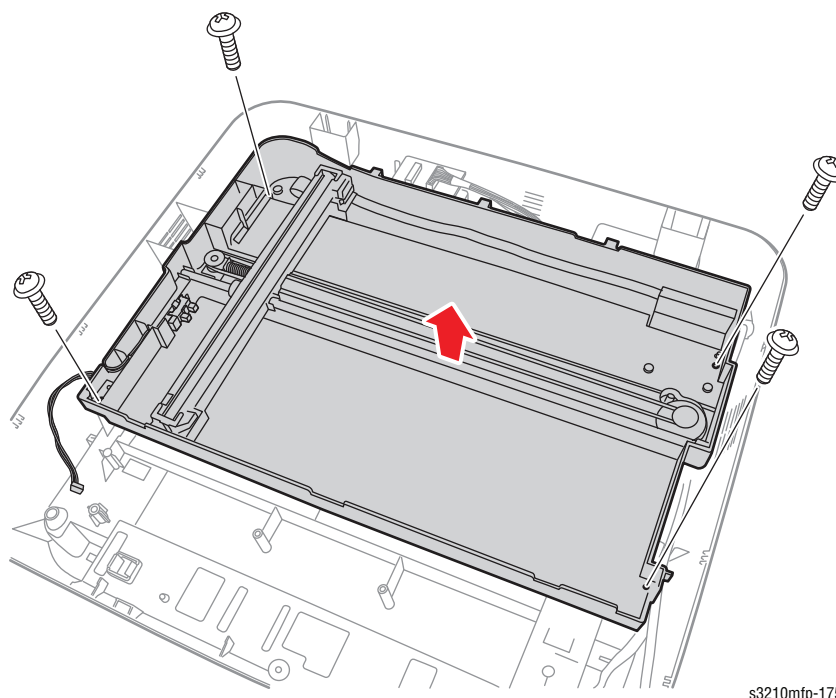
## Scan Drive Unit

### PL6.3.1-10-15

1. Remove the Right Cover (page 8-62).
2. Disconnect the wiring harness connector CN3 from the Main Controller Board.

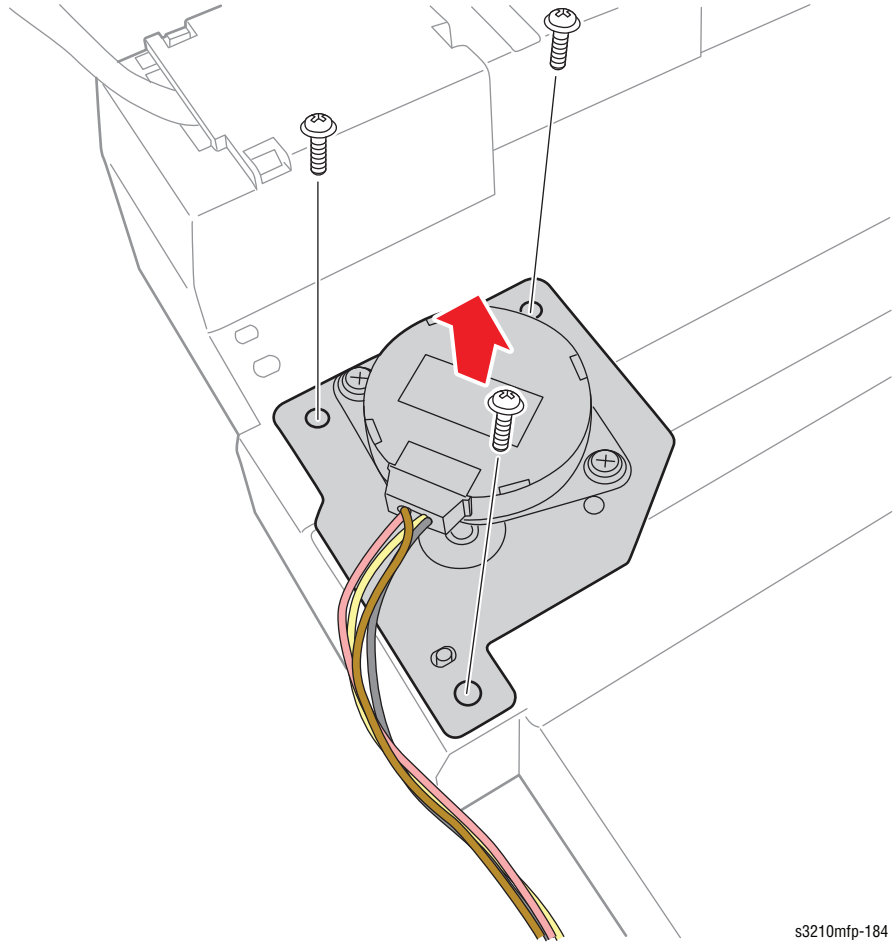


3. Remove the Control Panel (page 8-67).
4. Remove the Upper Platen (page 8-57).
5. Remove 4 screws (12 mm, silver) that secure the lower scan frame.





6. Turn the lower scan frame over.
7. Remove 3 screws (12 mm, silver) that secure the Motor.
8. Remove the Motor.

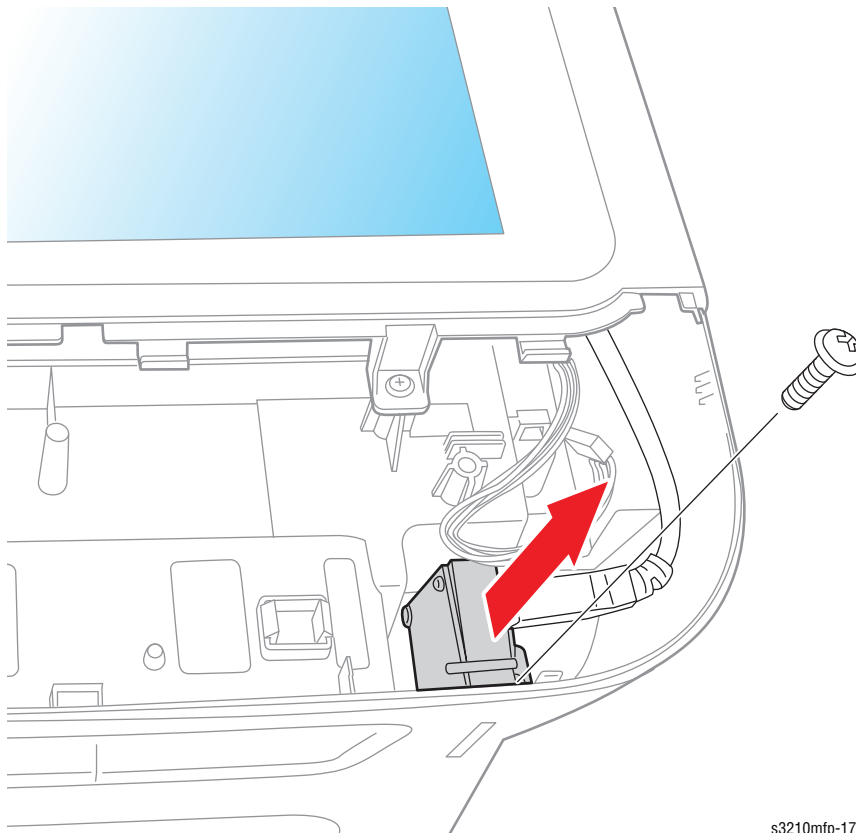


s3210mfp-184

## USB Host PBA

### PL6.3.1-11

1. Remove the Control Panel (page 8-67).
2. Disconnect the USB Host PBA Cable.
3. Remove 1 screw (12 mm, silver) that secures the USB Host PBA.
4. Remove the USB Host PBA.

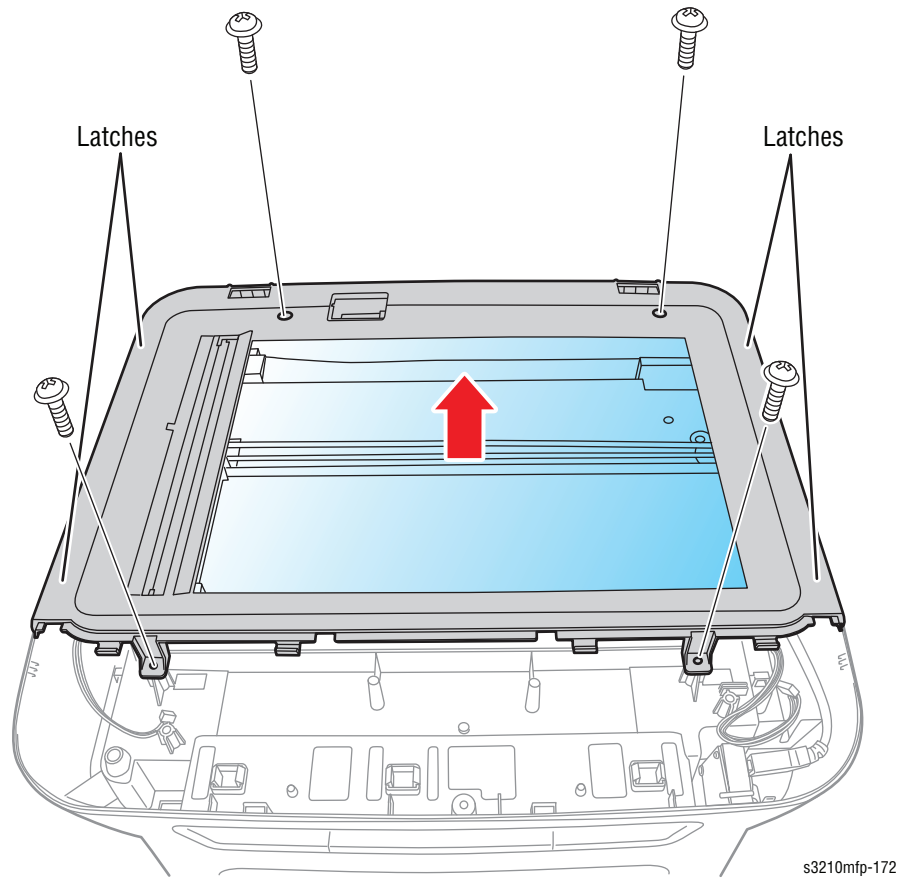


s3210mfp-173

## Upper Platen

### PL6.3.2

1. Remove the Control Panel (page 8-114).
2. Remove 4 screws (12 mm, silver) that secure the Upper Platen.
3. Pry the Upper Platen to release the 4 latches.
4. Lift and remove the Upper Platen.

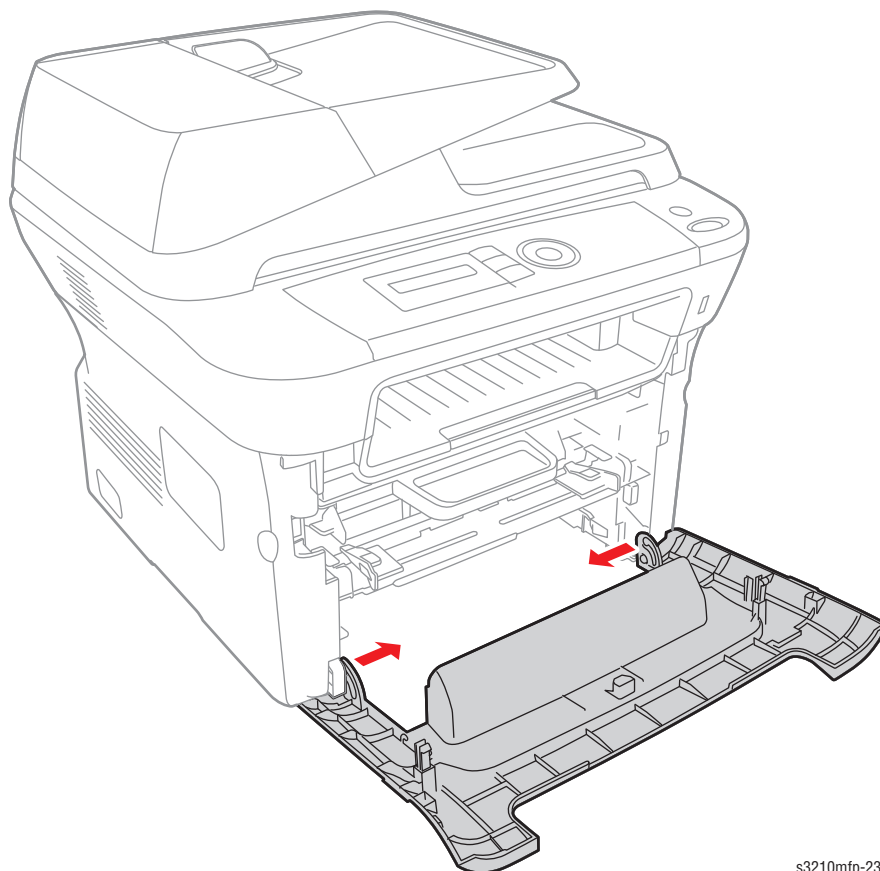


## Covers

### Front Cover

#### PL2.0.1

1. Remove tray 1.
2. Open the Front Cover.
3. Carefully press the left or right latch toward the center to release the Front Cover from the notch.
4. Slide the Front Cover out at angle and remove the Front Cover.

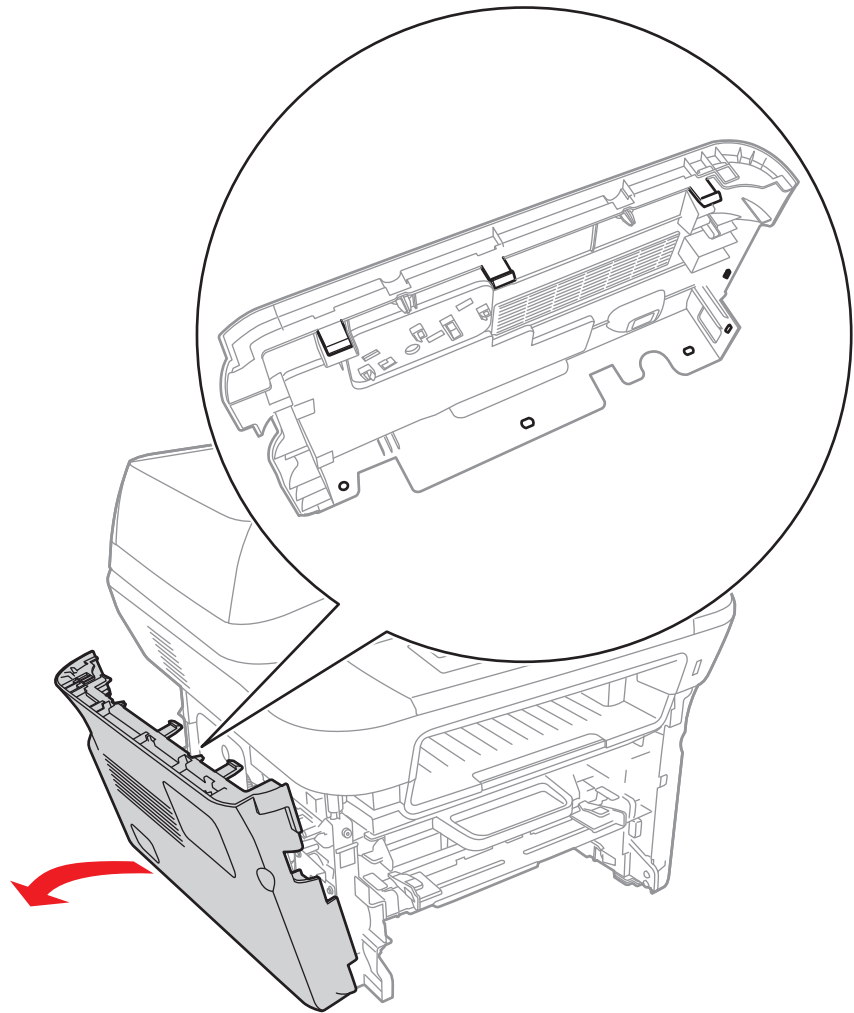


s3210mfp-234

## Left Cover

### PL2.0.2

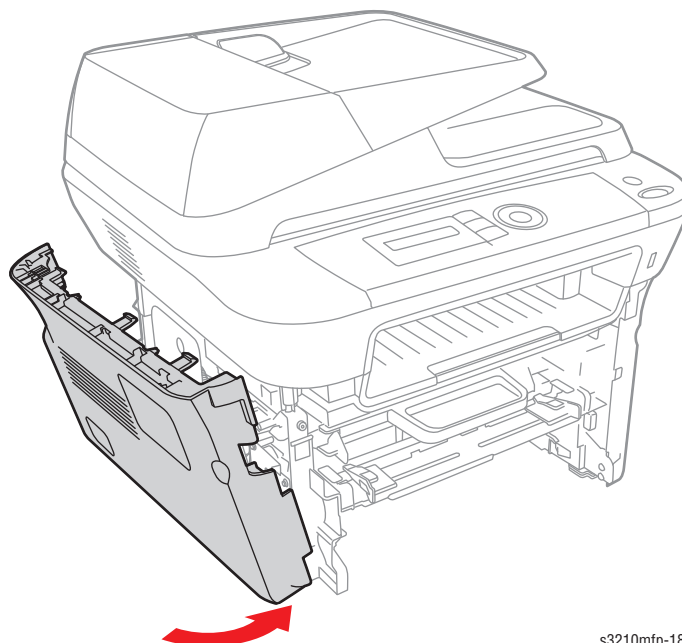
1. Disconnect the Optional Feeder cable from the printer (if the Optional Feeder is connected).
2. Remove the Front Cover (page 8-58).
3. Remove the Duplex Unit (page 8-69).
4. Remove the Rear Cover (page 8-61).
5. Pry the bottom rear of the Left Cover to release the 3 bosses on the bottom of the cover.
6. Slide the Left Cover out and remove the Left Cover.



s3210mfp-121

### Replacement Note

Place the front side of the Left Cover at an angle to secure the latch of the Left Cover to the notch on the printer frame while sliding the Left Cover toward the printer.

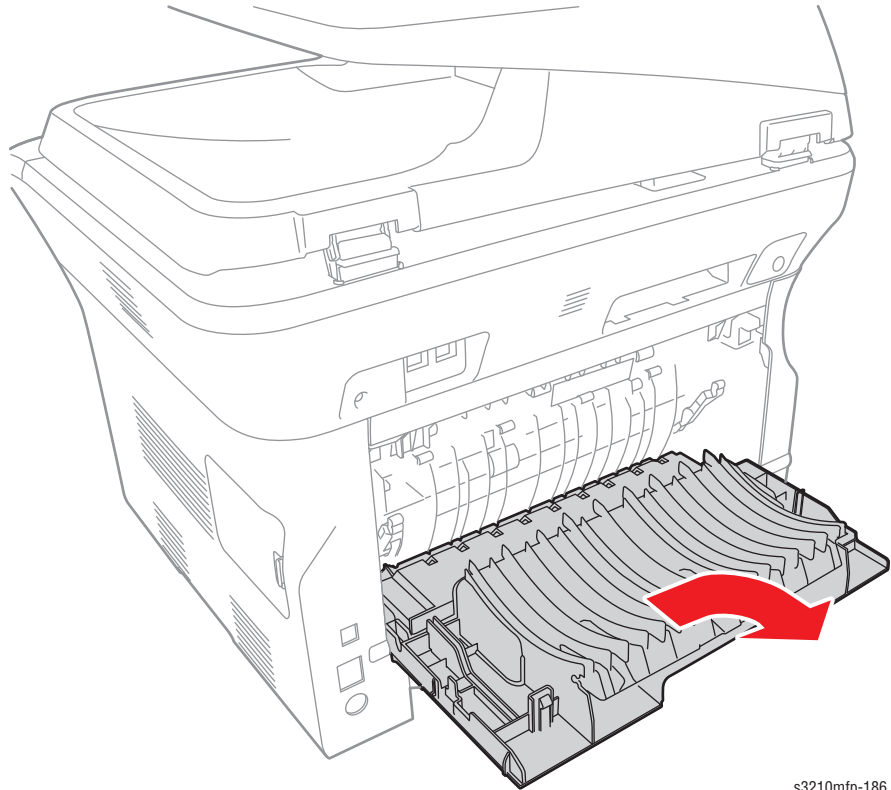


s3210mfp-185

## Rear Cover

### PL2.0.3

1. Remove the Duplex Unit (page 8-69).
2. Open the Rear Cover.
3. Press the Rear Cover toward one side to release the notch from the printer frame.
4. Slide the Rear Cover out and remove the Rear Cover.



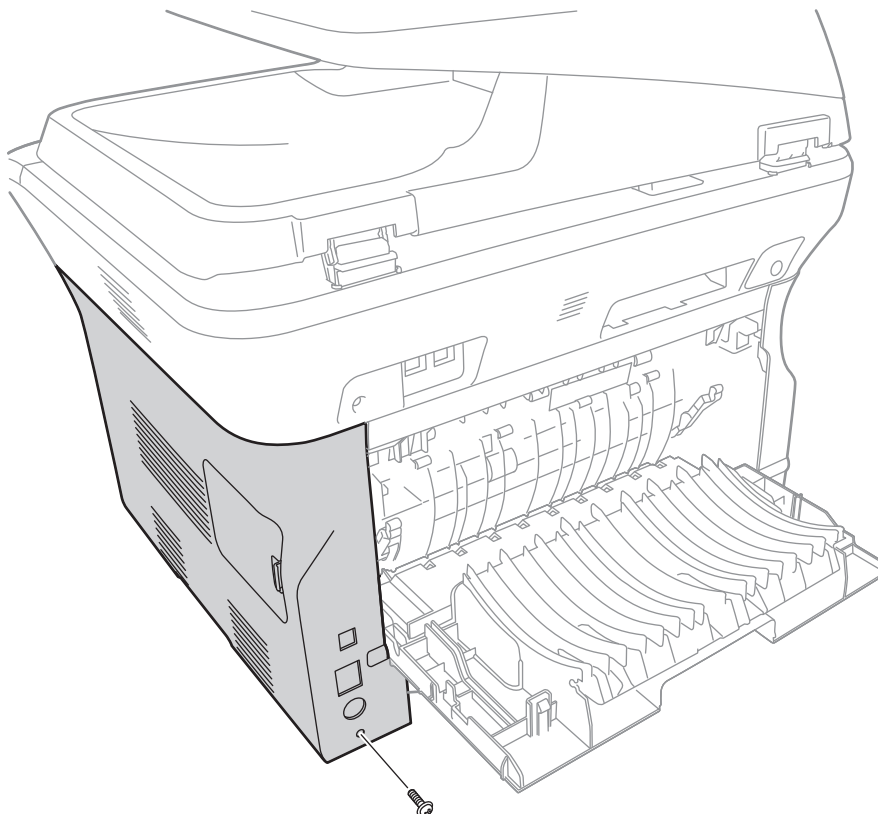
s3210mfp-186

## Right Cover

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### PL2.0.4

1. Remove the Front Cover (page 8-58).
2. Remove the Duplex Unit (page 8-69).
3. Remove the Rear Cover (page 8-61).
4. Remove 1 screw (12 mm, silver) that secures the Right Cover.



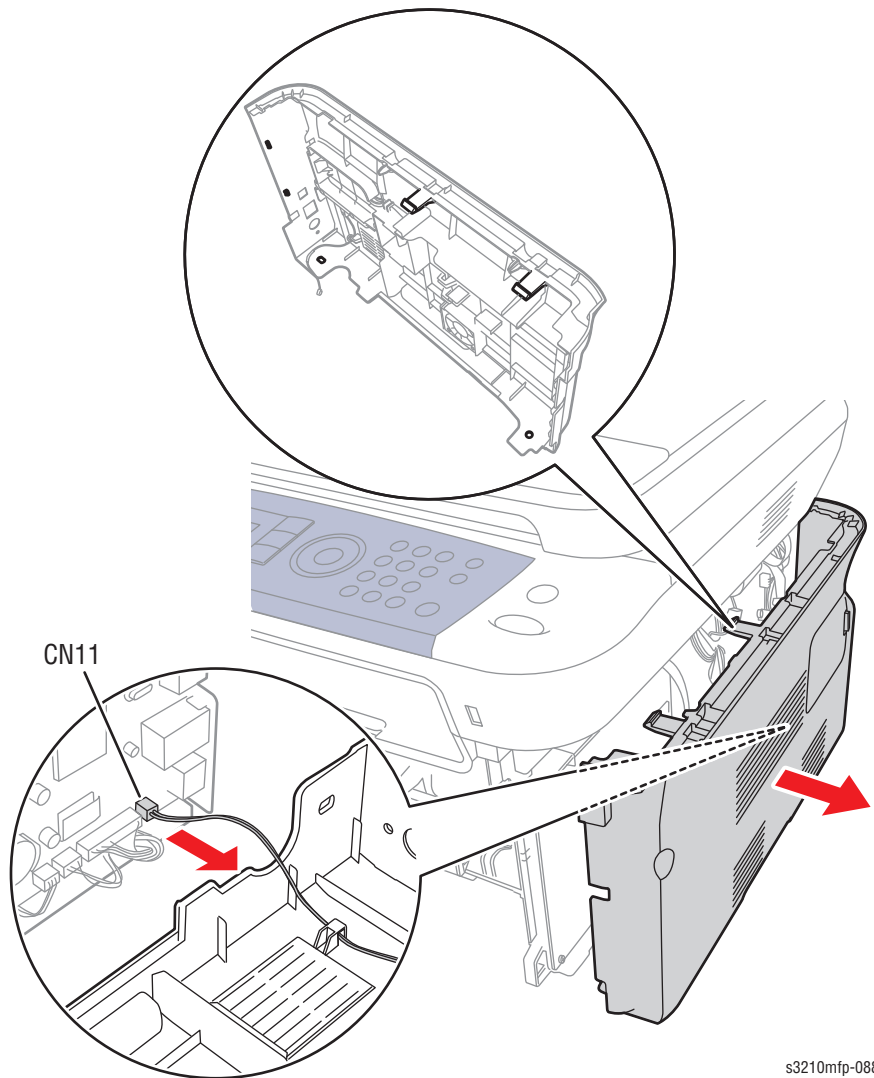
s3210mfp-235



**Caution**

Use care when removing the Right Cover. The Power Supply Fan and wiring are secured to the Right Cover.

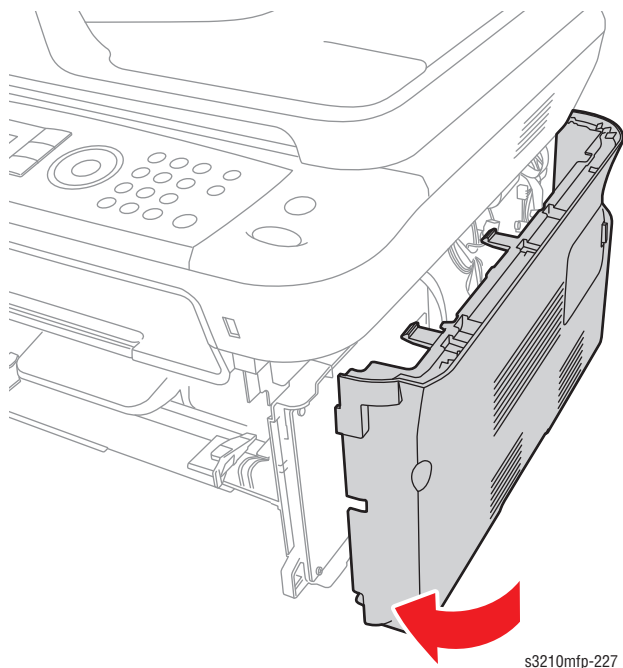
5. Pry the rear bottom of the Right Cover to release the 2 bosses on the bottom of the printer while releasing the two locking tabs on the top side of the Right Cover.
6. Disconnect the wiring harness connector CN11.
7. Slide the Right Cover outward at angle and remove the Right Cover.



s3210mfp-088

### Replacement Note

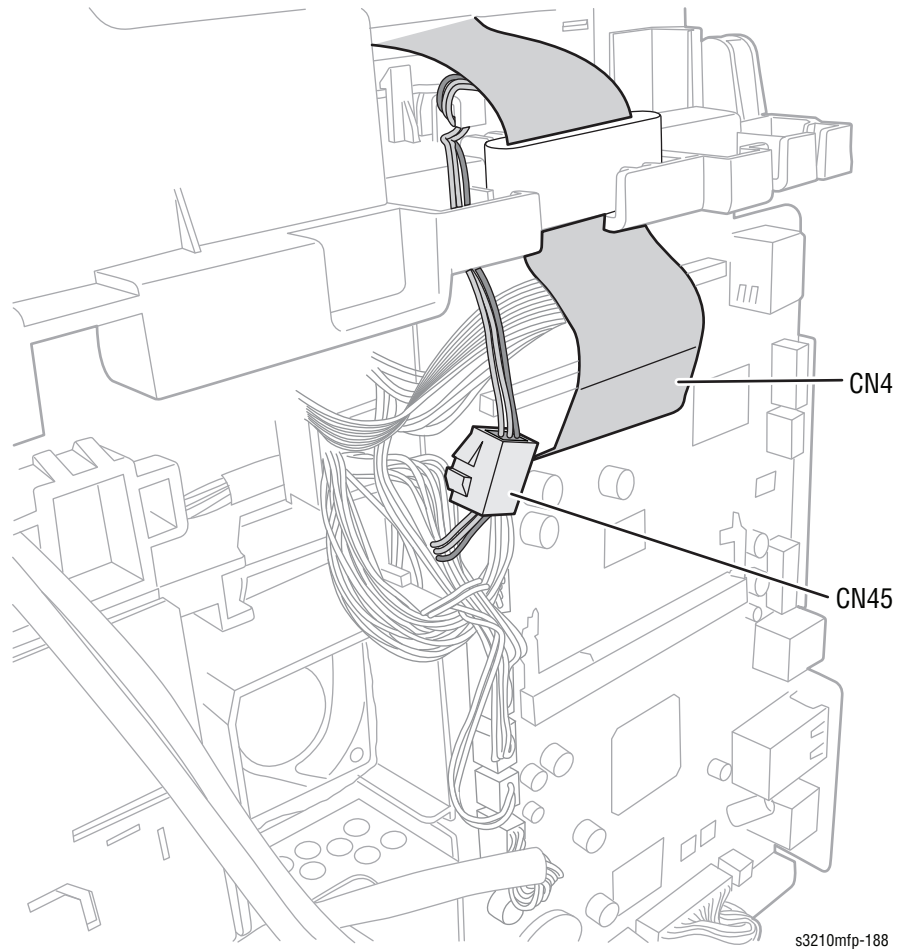
Connect the fan wiring harness to the Main Controller Board. Place the front side of the Right Cover at an angle to secure the latch of the Right Cover to the notch on the printer frame while sliding the Right Cover toward the printer.



## Middle Cover

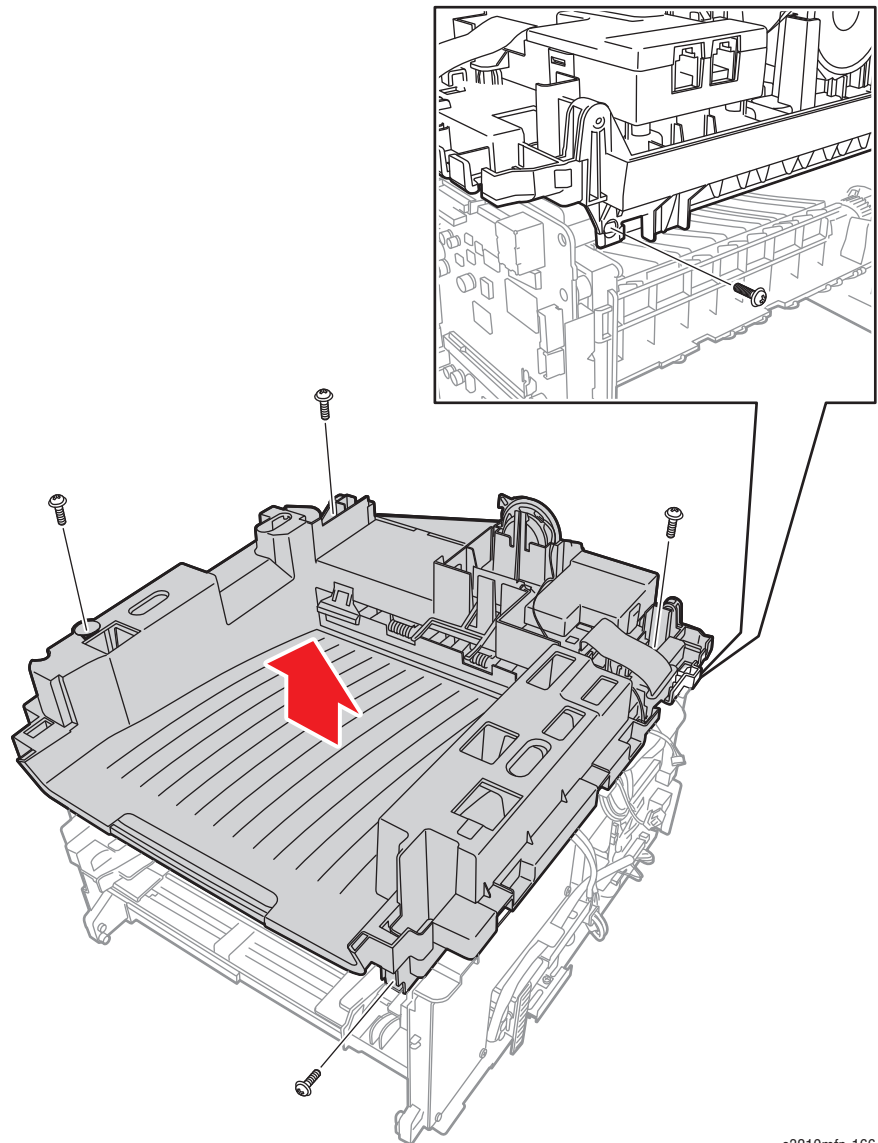
### PL3.0

1. Remove the Print Cartridge (page 8-8).
2. Remove the Left Cover (page 8-59).
3. Remove the Scanner Assembly (page 8-48).
4. Disconnect the wiring harness connectors CN4 and CN45.



s3210mfp-188

5. Remove 5 screws (12 mm, silver) that secure the Middle Cover.
6. Lift and remove the Middle Cover.

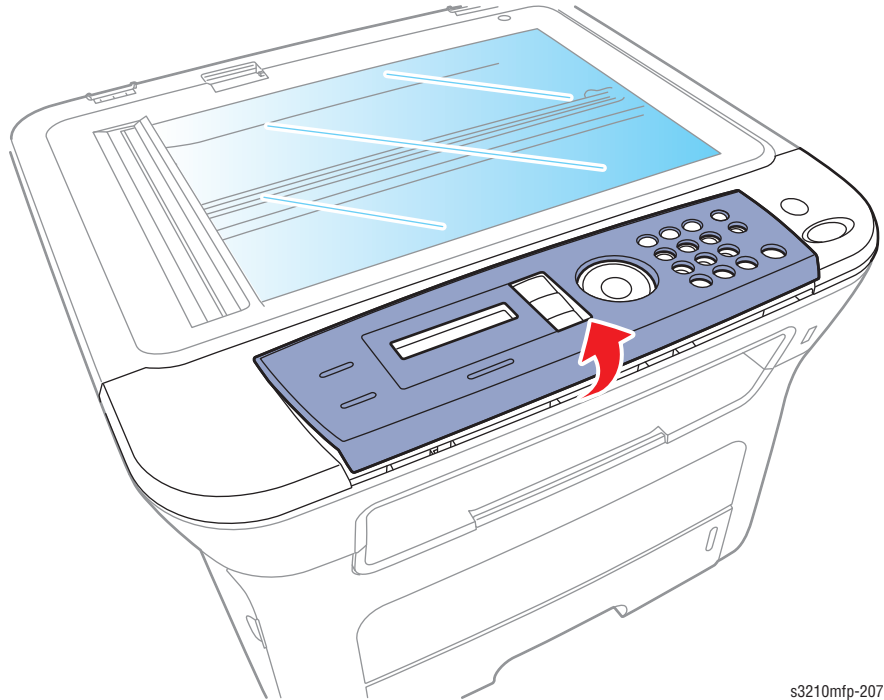


s3210mfp-166

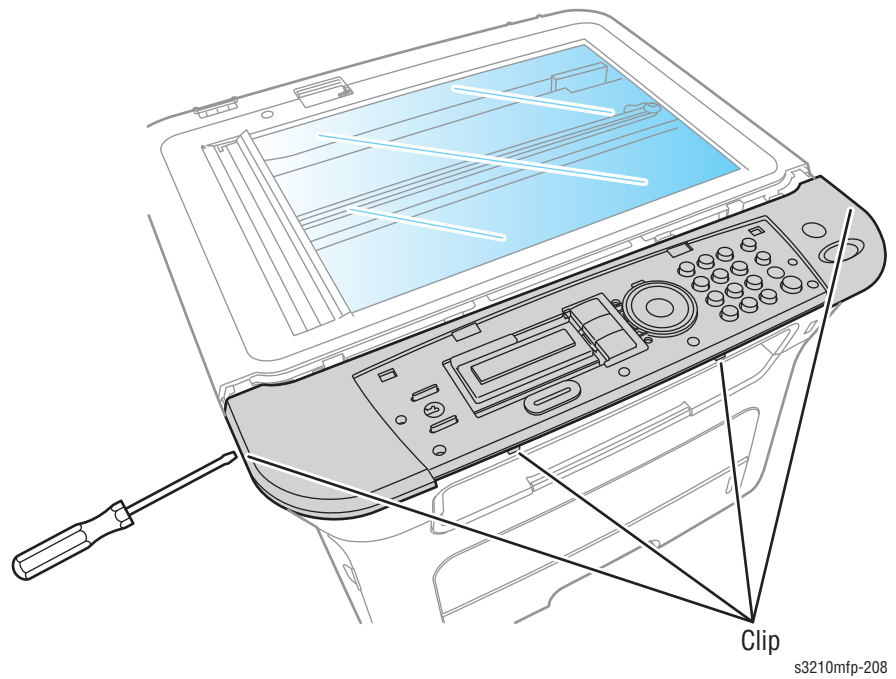
## Control Panel

### PL6.3.1

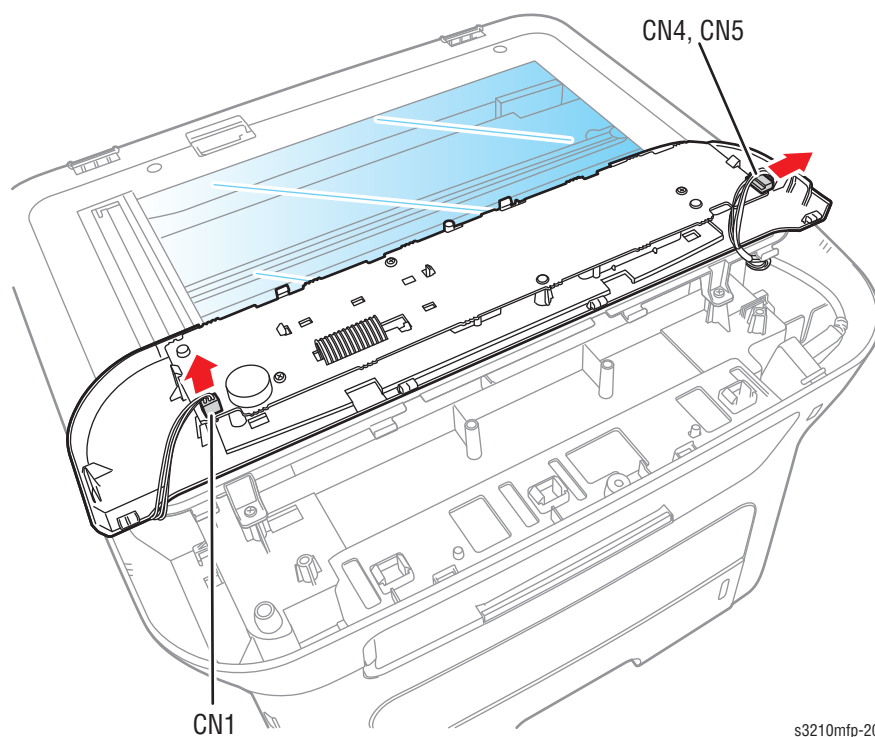
1. Remove the ADF (page 8-31).
2. Pry the Control Panel bezel and remove the Control Panel bezel.



3. Use a flat tip screwdriver to pry the Control Panel to release the 4 clips.



4. Turn the Control Panel over and disconnect the wiring harness connectors CN1, CN4, and CN5.
5. Remove the Control Panel.



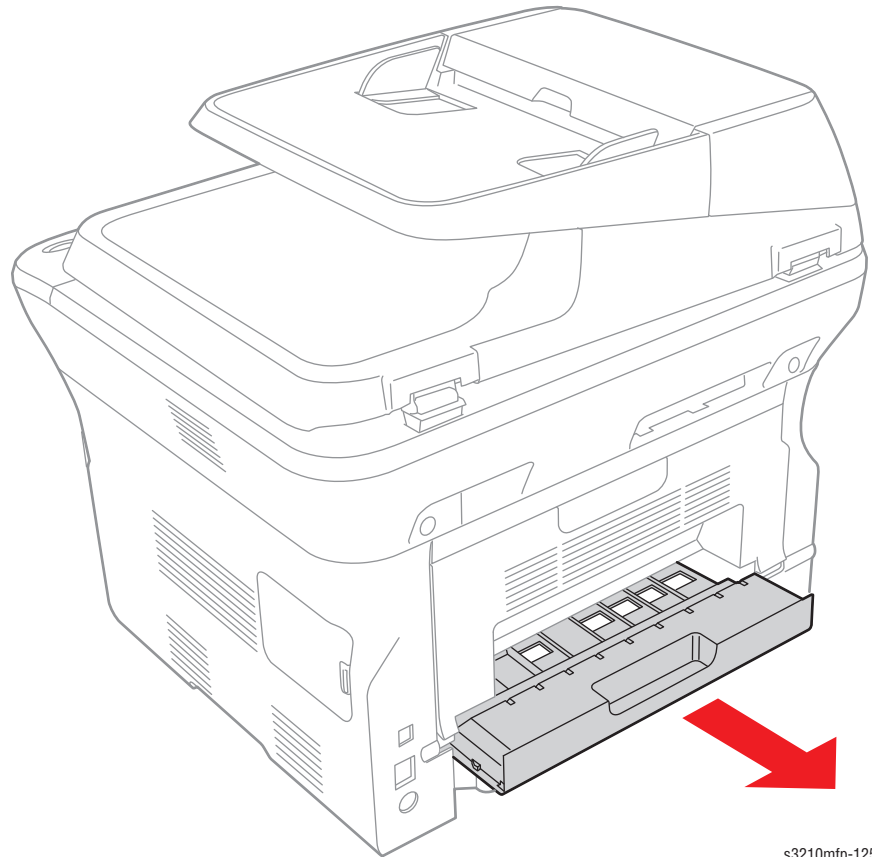
s3210mfp-209

## Duplex

### Duplex Unit

#### PL1.0.13

1. Pull the Duplex Unit out of the printer.



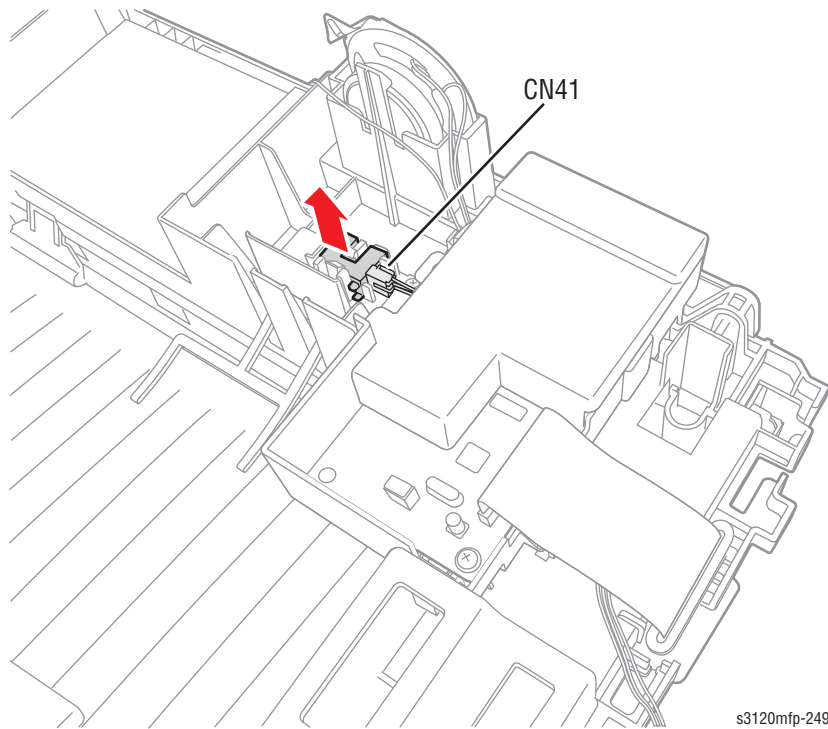
s3210mfp-125

## Paper Feeder

### Out Bin Full Sensor

#### PL3.0.10

1. Remove the Scanner Assembly (page 8-48).
2. Disconnect the wiring harness CN41.
3. Release the Bin Full Sensor from the middle cover.
4. Remove the Bin Full Sensor.

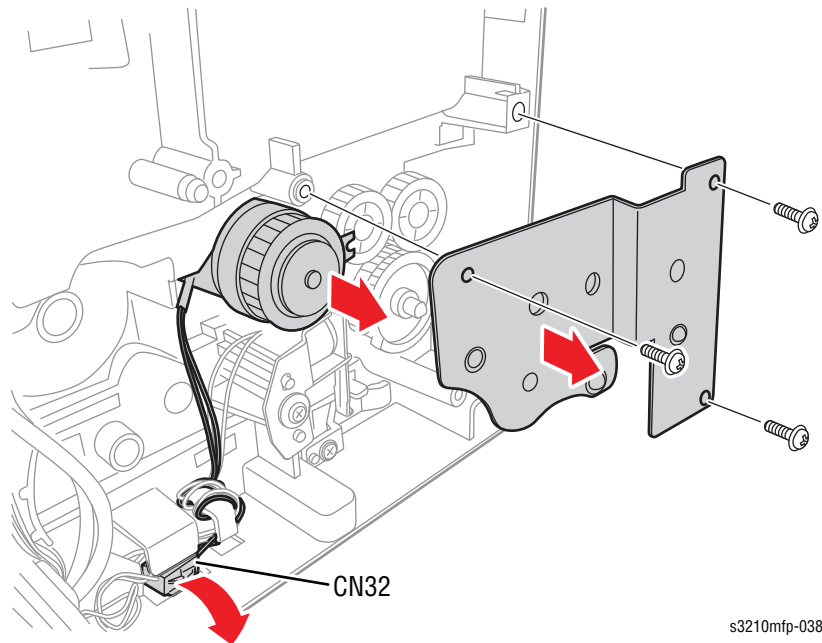




## Registration Clutch

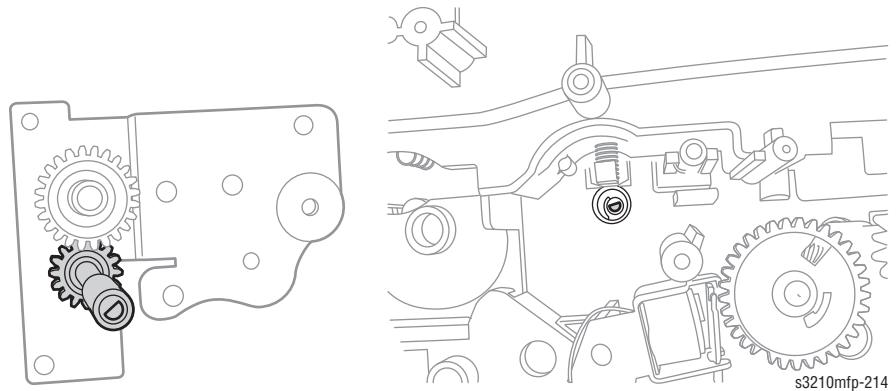
### PL4.0.18

1. Remove the Drive Unit Assembly (page 8-98).
2. Remove 3 screws (12 mm, silver) that secure the Feed Bracket.
3. Remove the feed bracket.
4. Disconnect the black and gray wiring harness connector CN32.
5. Remove the Registration Clutch.



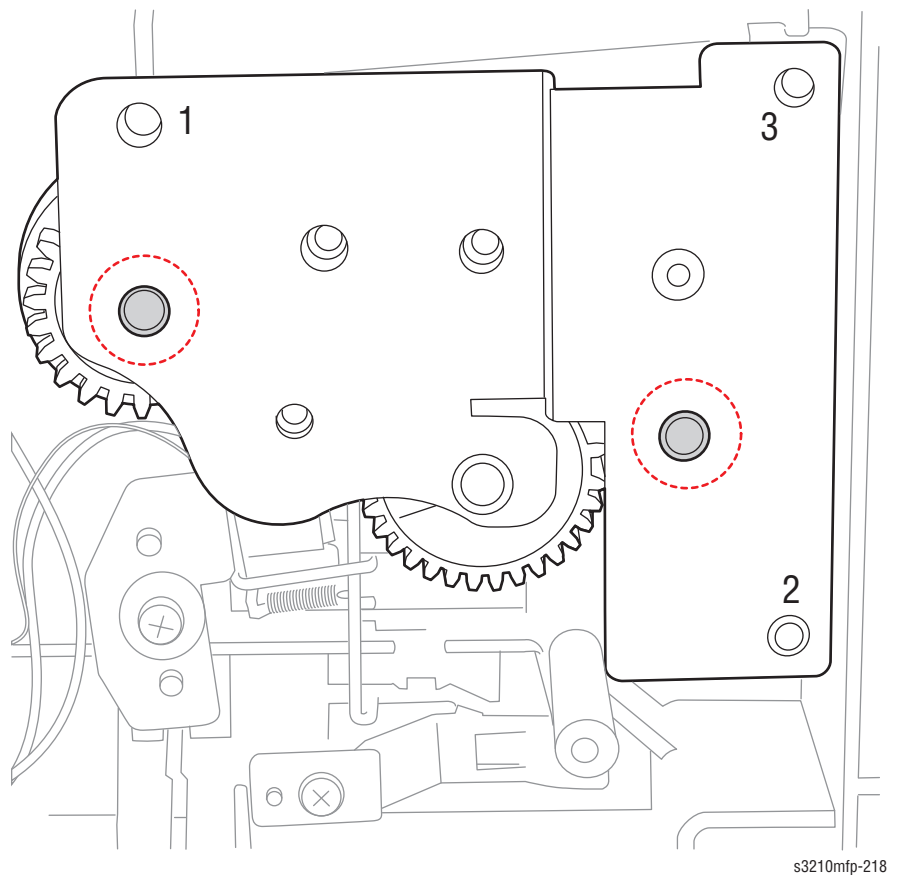
### Replacement Note

Be sure the D-shaped roller fits properly with the idle feed shaft.



Make sure the 2 mounting bosses are seated properly when installing the Bracket. If the Bracket is not correctly installed, paper jam and grinding noise will occur.

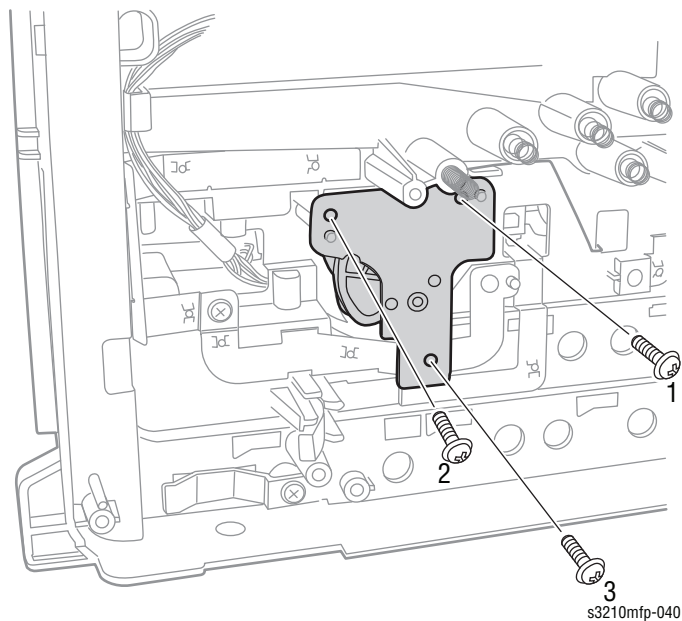
Be sure to secure the 3 screws in the order (1-3).



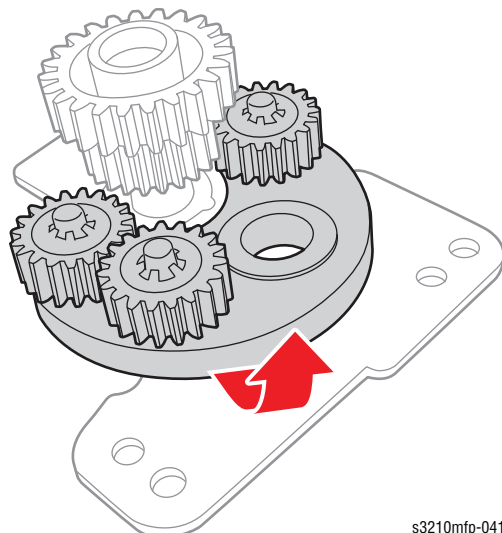
## Feed Roller (Registration Roller)

### PL4.0.20

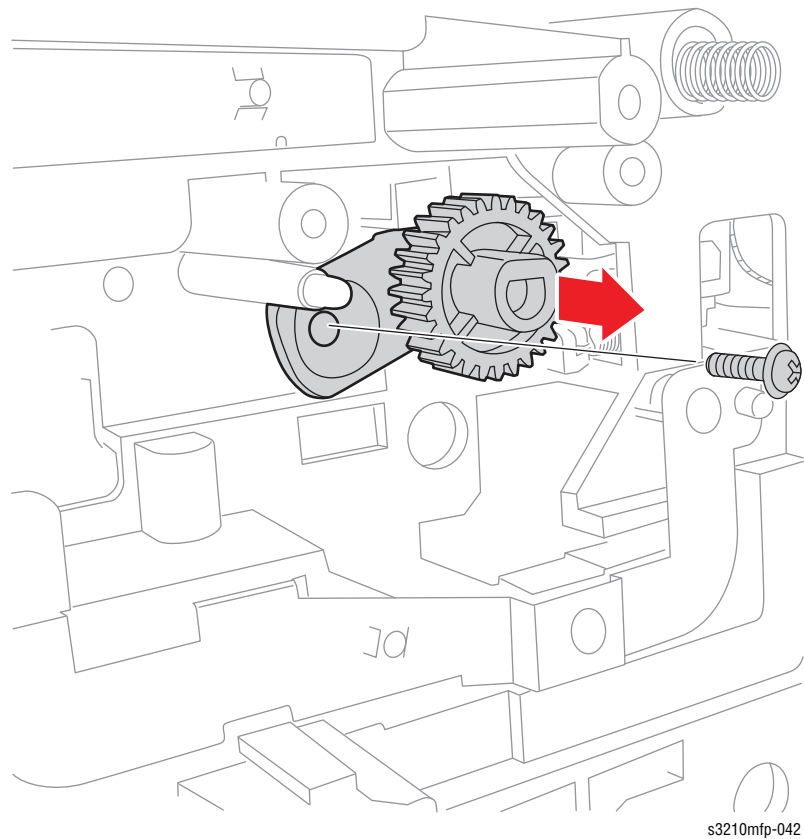
1. Remove the Middle Cover (page 8-65).
2. Remove the Registration Clutch (page 8-71).
3. Remove the exit idle gear and the feed gear.
4. Remove the Pick Up Solenoid (page 8-79).
5. Remove the HVPS (page 8-101).
6. Remove the Power Supply (page 8-104).
7. Remove the Power Supply Shield (page 8-113).
8. Remove 3 screws that secure the swing bracket.
9. Remove the swing bracket.



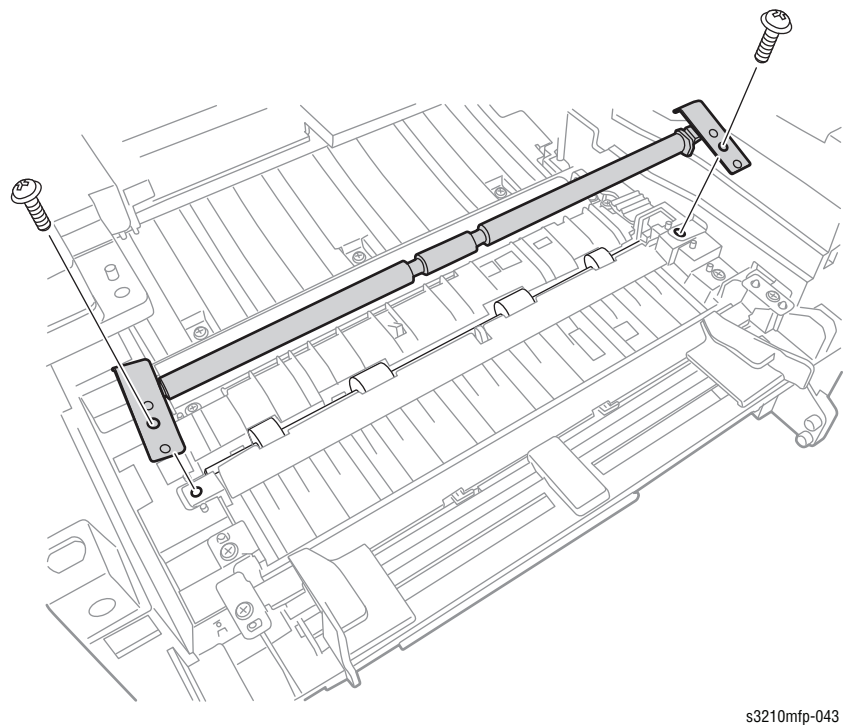
10. Remove the swing collar, the duplex gear, and the swing unit.



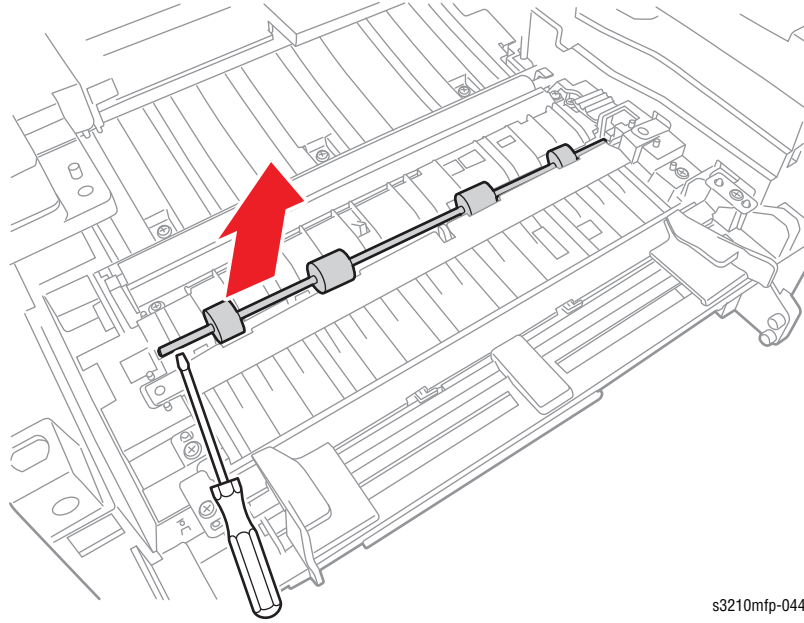
11. Remove the gear and 1 screw (12 mm, silver) that secures the regi holder.
12. Remove the regi holder.



13. Remove 2 screws (12 mm, silver) that secure the idle feed shaft.
14. Remove the feed shaft together with the springs and bushings.



15. Use a flat tip screwdriver to release the Feed Roller.



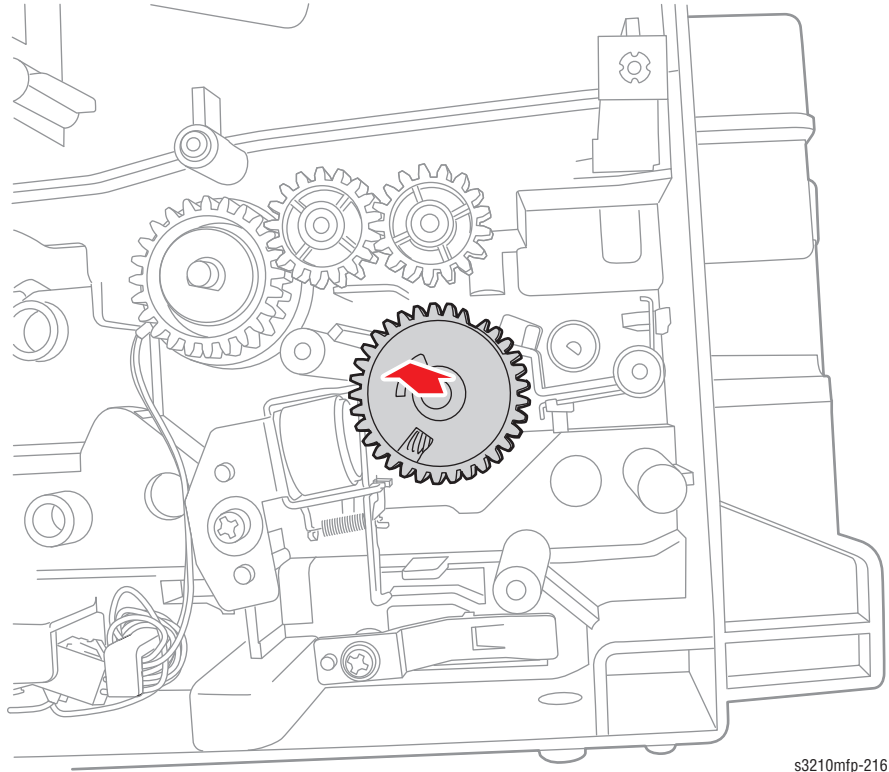
s3210mfp-044

## Pick Up Gear

---

### PL4.0.21

1. Remove the Registration Clutch (page 8-71).
2. Remove the Pick Up Gear.

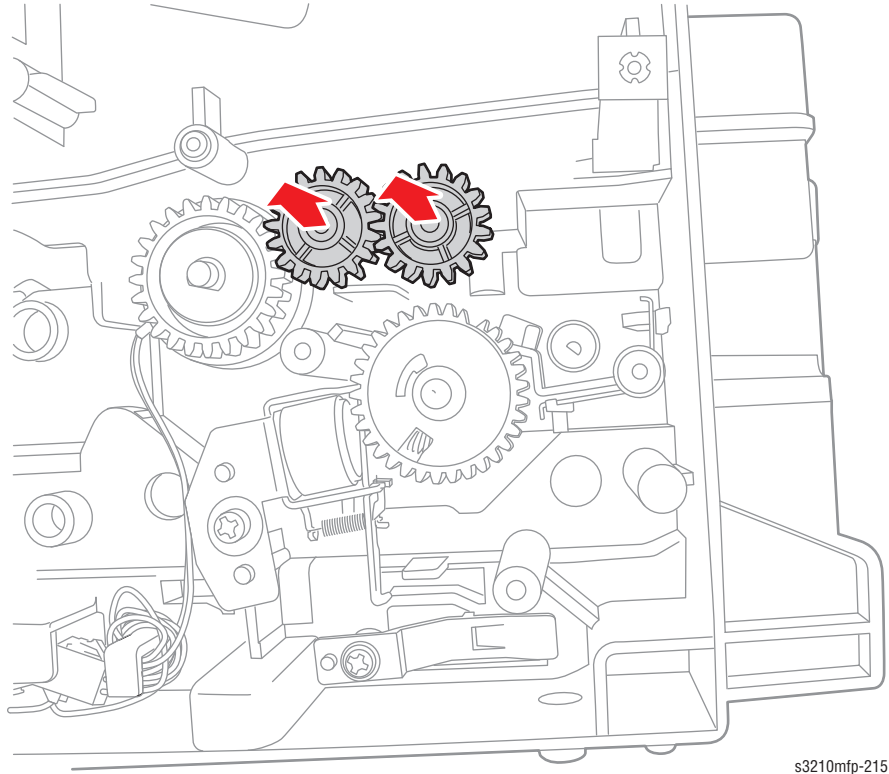


s3210mfp-216

## Exit Idle Gear

### PL4.0.34

1. Remove the Registration Clutch (page 8-71).
2. Remove the Exit Idle Gears.



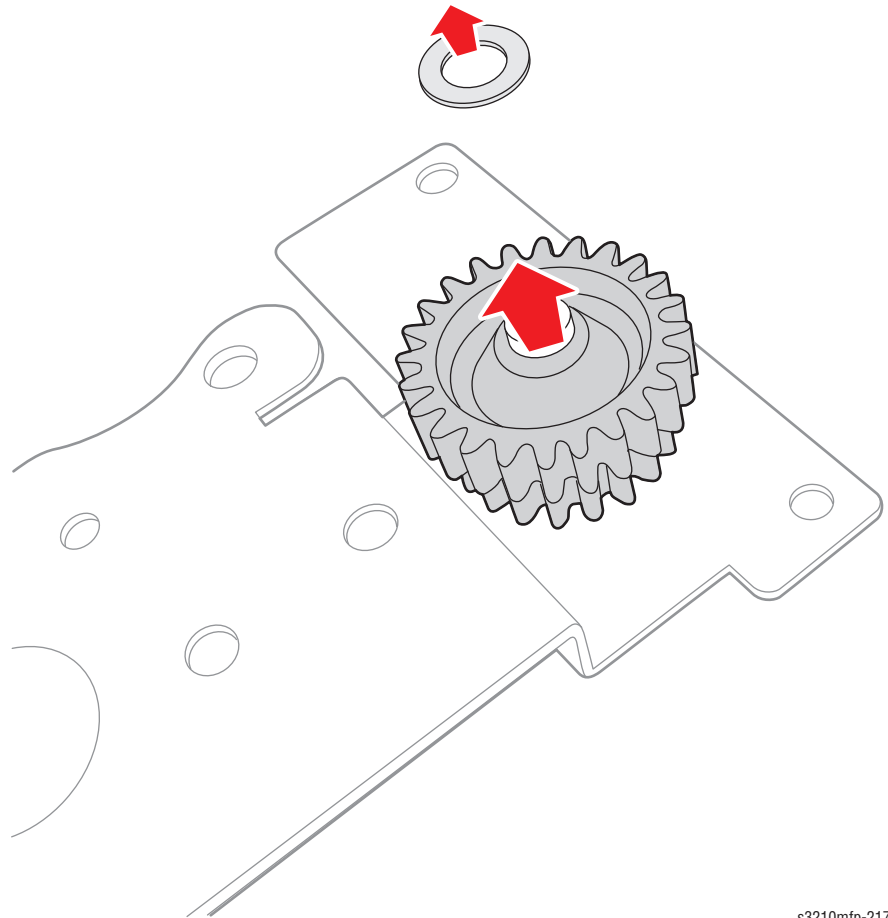
s3210mfp-215

## Feed Gear

---

### PL4.0.35

1. Remove the Registration Clutch (page 8-71).
2. Remove the Retaining Ring and Feed Gear.



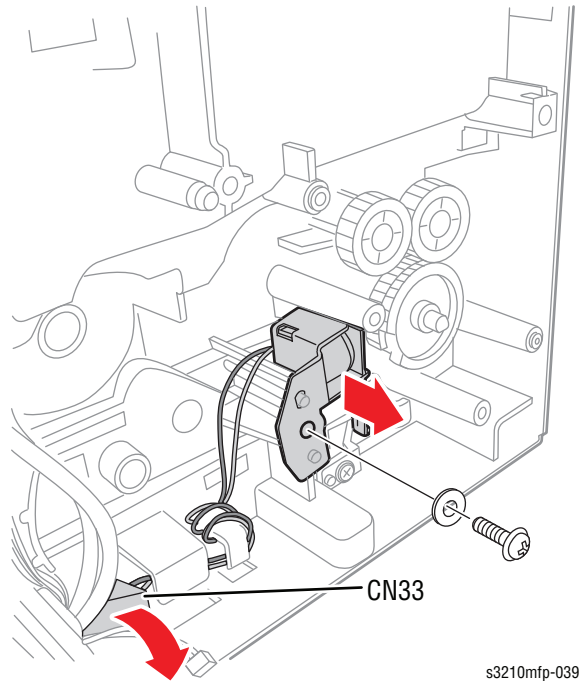
s3210mfp-217



## Pick Up Solenoid

### PL4.0.37

1. Remove the Drive Unit Assembly (page 8-98).
2. Disconnect the black and gray wiring harness connector CN33.
3. Remove 1 screw (12 mm, silver) that secures the Pick Up Solenoid.
4. Remove the Pick Up Solenoid.



## Upper Exit Frame

### PL4.0.47

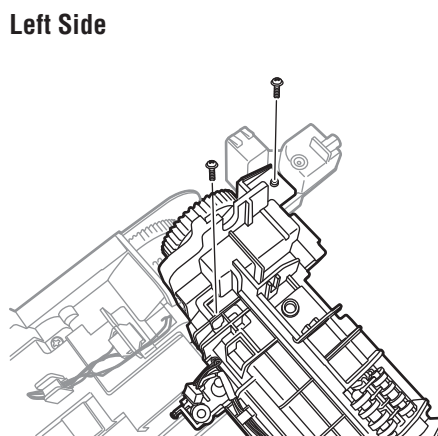


#### Warning

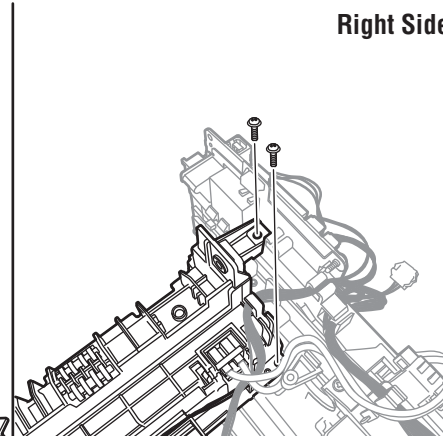
Allow the Fuser to cool before performing this procedure.

1. Remove the Fuser (page 8-13).
2. Remove the Main Controller Board (page 8-100).
3. Remove the Laser Unit (page 8-95).
4. Remove the Controller Shield (page 8-100).
5. Remove the CRUM Board (page 8-96).
5. Remove the Exit Roller (page 8-81).
6. Remove 4 screws (12 mm, silver) that secure the Upper Exit Frame.

Left Side

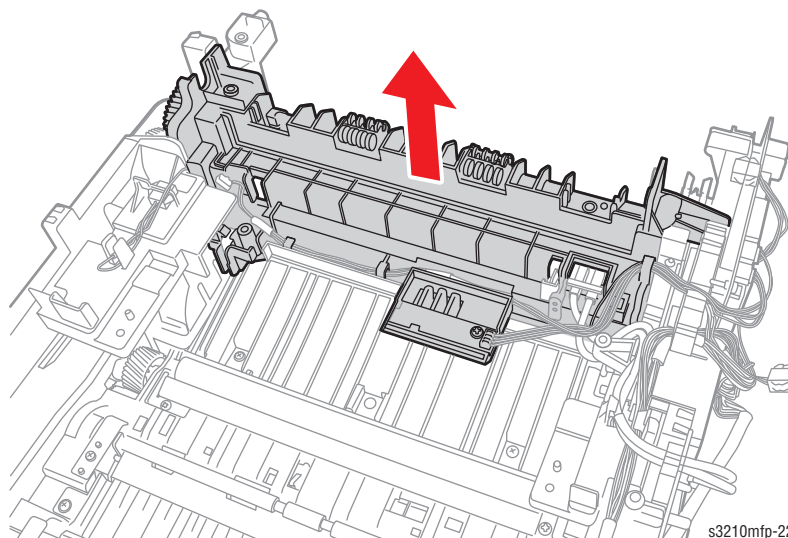


Right Side



s3210mfp-224

7. Lift and remove the Upper Exit Frame.



s3210mfp-225

## Exit Roller

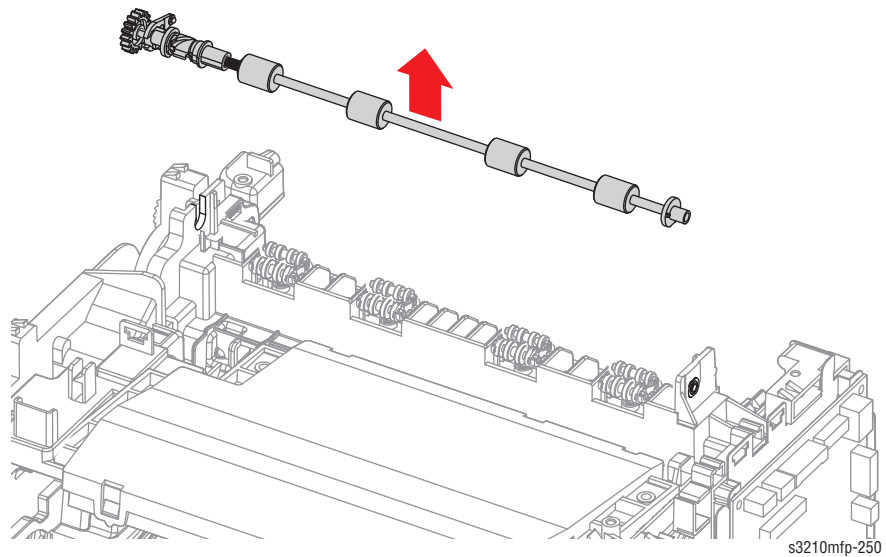
### PL4.0.59



#### Warning

Allow the Fuser to cool before performing this procedure.

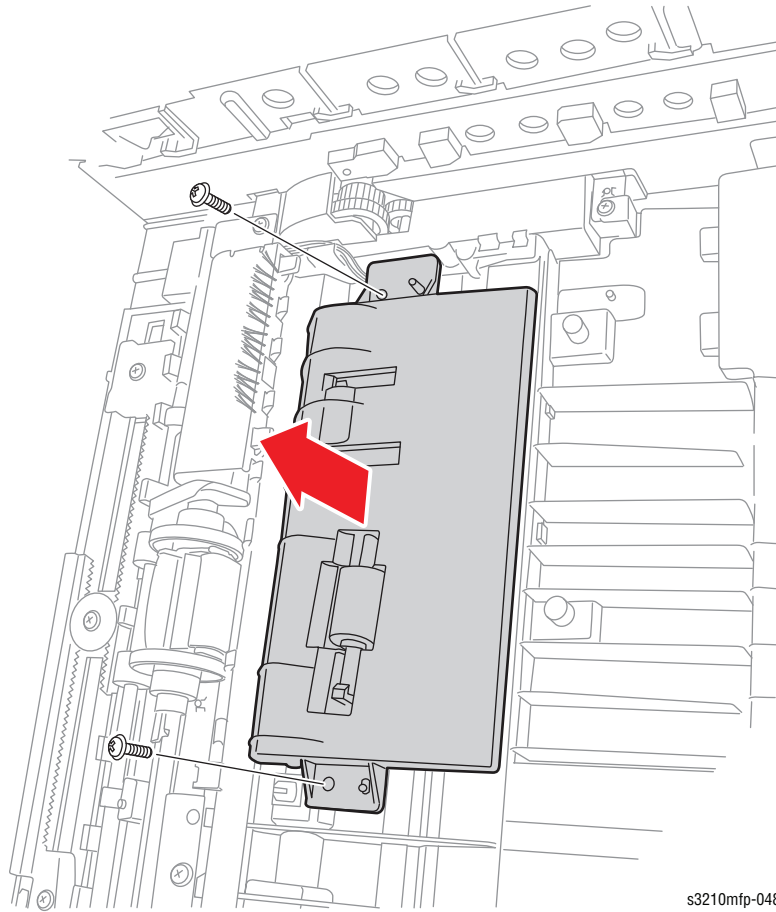
1. Remove the Fuser (page 8-13).
2. Remove the Middle Cover (page 8-65).
3. Release the clip on the Exit Roller from the upper exit frame.
4. Remove the Exit Roller.



## Feed Actuator

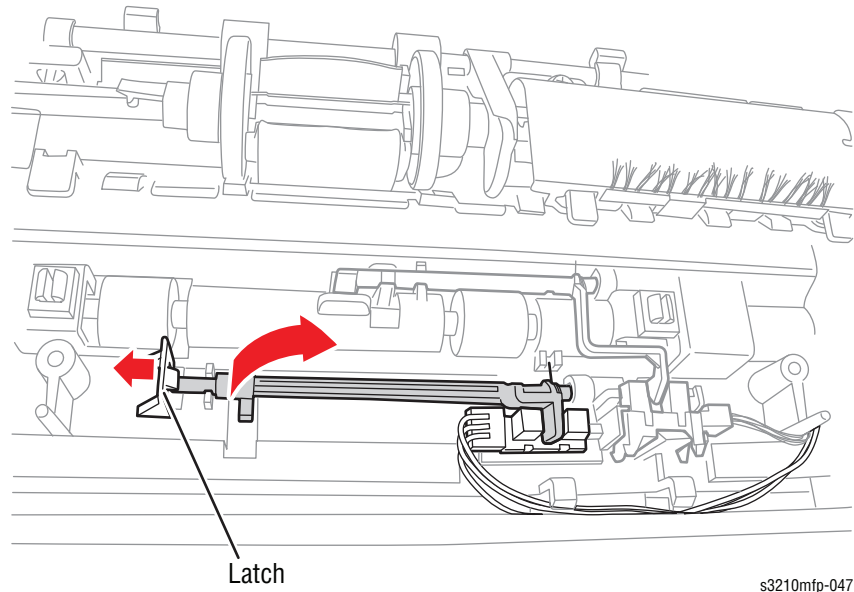
### PL4.0.72

1. Remove Tray 1.
2. Remove the Print Cartridge (page 8-8).
3. Remove the Duplex Unit (page 8-69).
4. Place the printer on its right side.
5. Remove 2 screws (12 mm, silver) that secure the duplex path frame.



s3210mfp-048

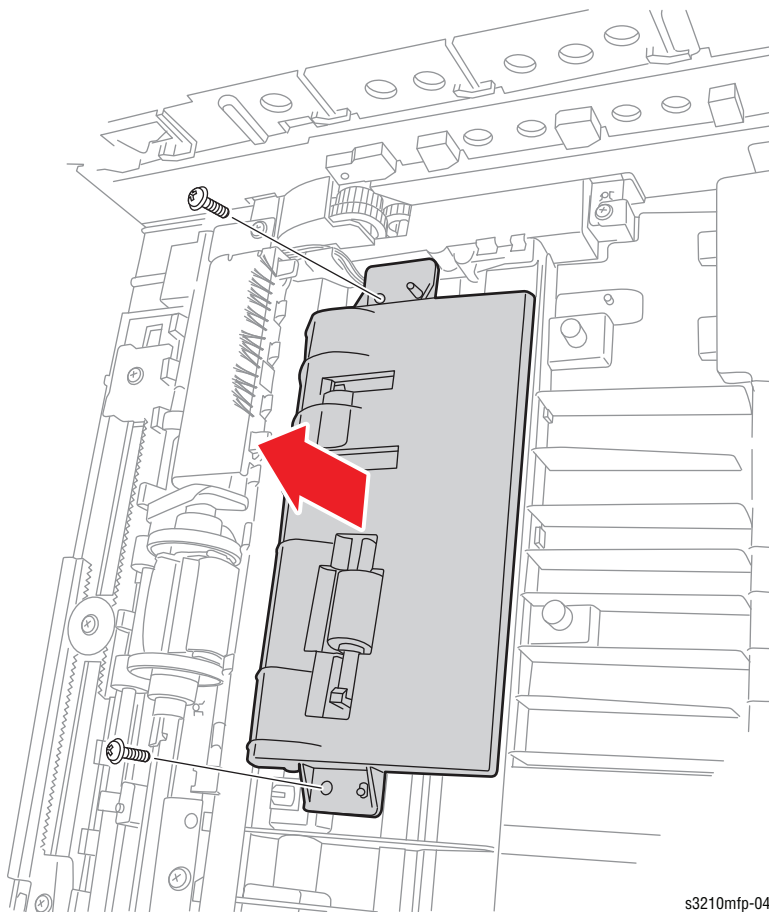
6. Press the latch to release the Feed Actuator from the printer frame.



## Duplex Actuator

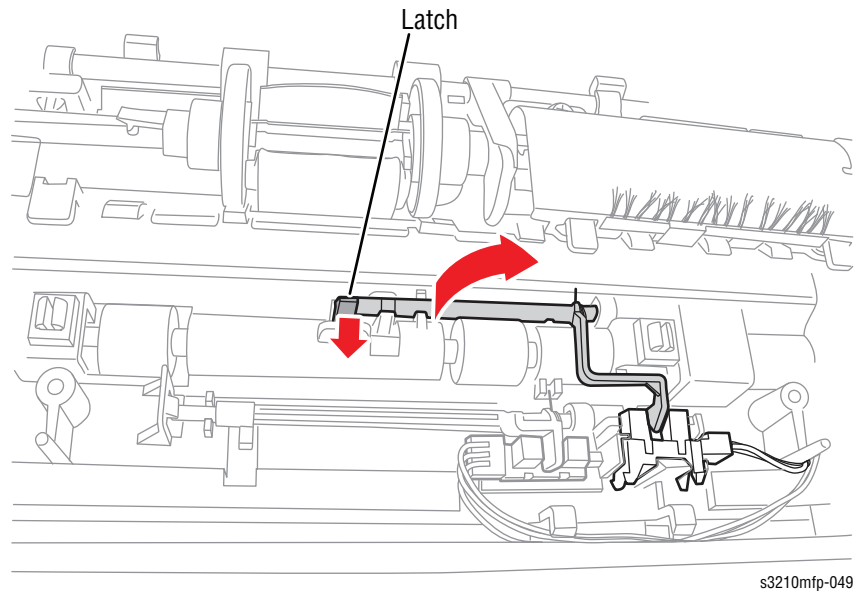
### PL4.0.73

1. Remove Tray 1.
2. Remove the Print Cartridge (page 8-8).
3. Remove the Duplex Unit (page 8-69).
4. Place the printer on its right side.
5. Remove 2 screws (12 mm, silver) that secure the duplex path frame.



s3210mfp-048

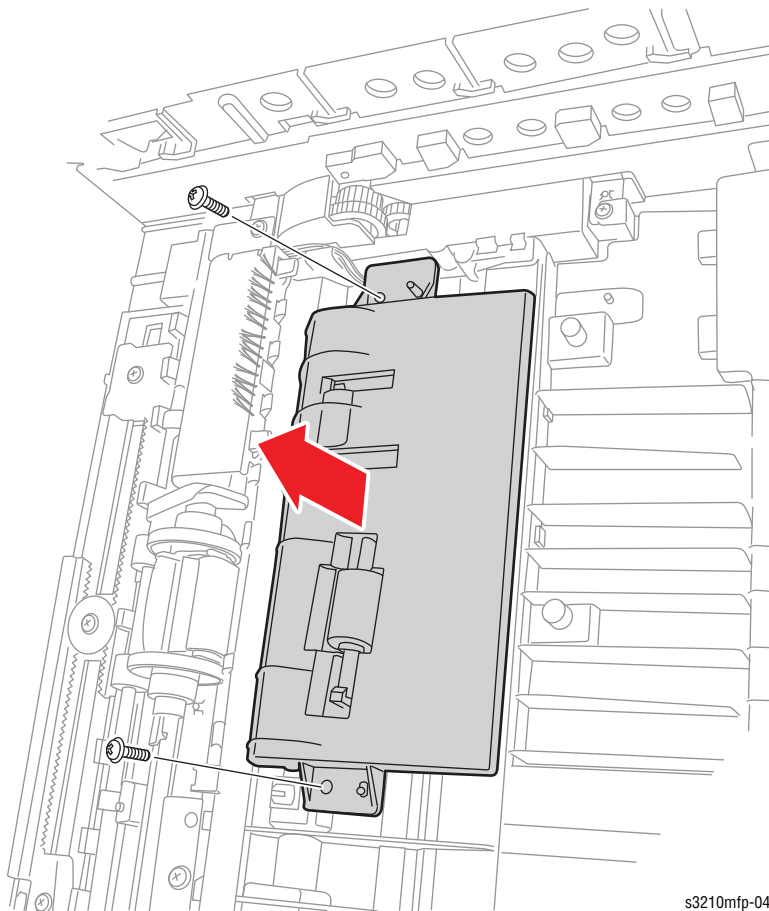
6. Press the latch to release the Duplex Actuator from the printer frame.



## Feed Sensor

### PL4.0.75

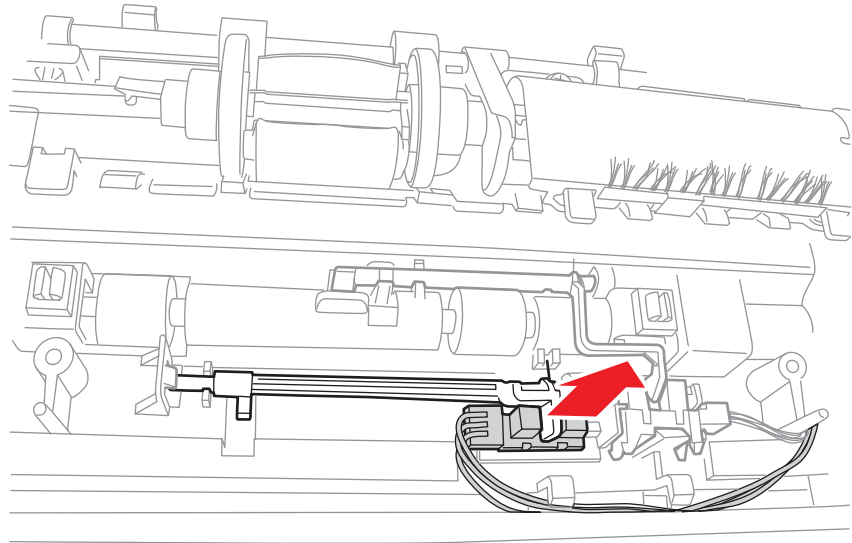
1. Remove tray 1.
2. Open the front cover.
3. Remove the Print Cartridge (page 8-8).
4. Remove the Duplex Unit (page 8-69).
5. Place the printer on its right side.
6. Remove 2 screws (12 mm, silver) that secure the duplex path frame.



s3210mfp-048



7. Remove the Feed Actuator (page 8-82).
8. Disconnect the Feed Sensor wiring harness connector.
9. Remove the Feed Sensor.

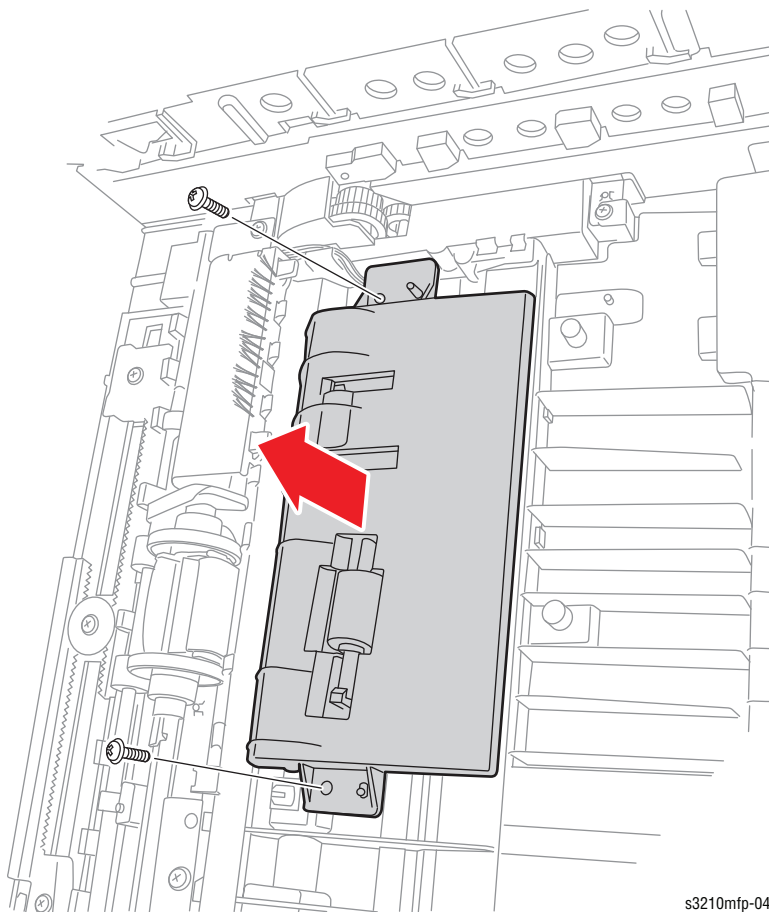


s3210mfp-050

## Paper Empty Sensor

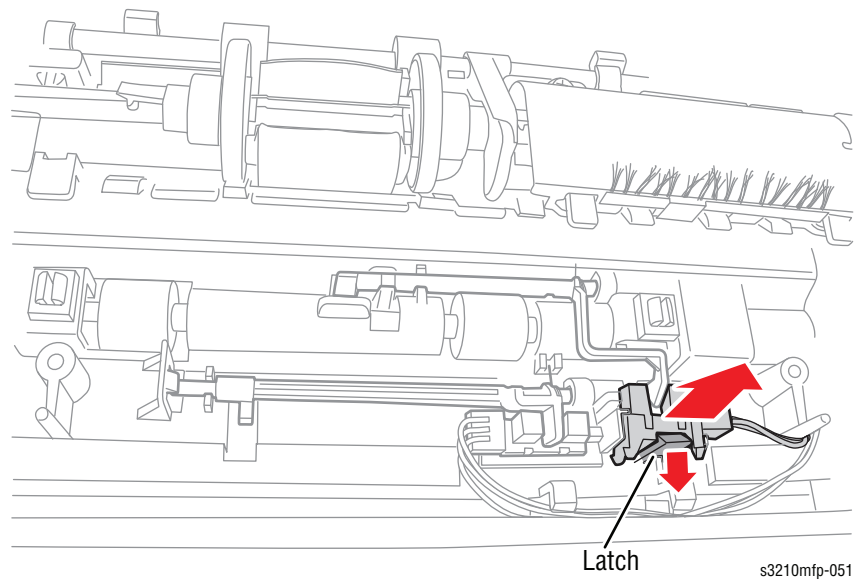
### PL4.0.75

1. Remove tray 1.
2. Remove the Print Cartridge (page 8-8).
3. Remove the Duplex Unit (page 8-69).
4. Place the printer on its right side.
5. Remove 2 screws (12 mm, silver) that secure the duplex path frame.



s3210mfp-048

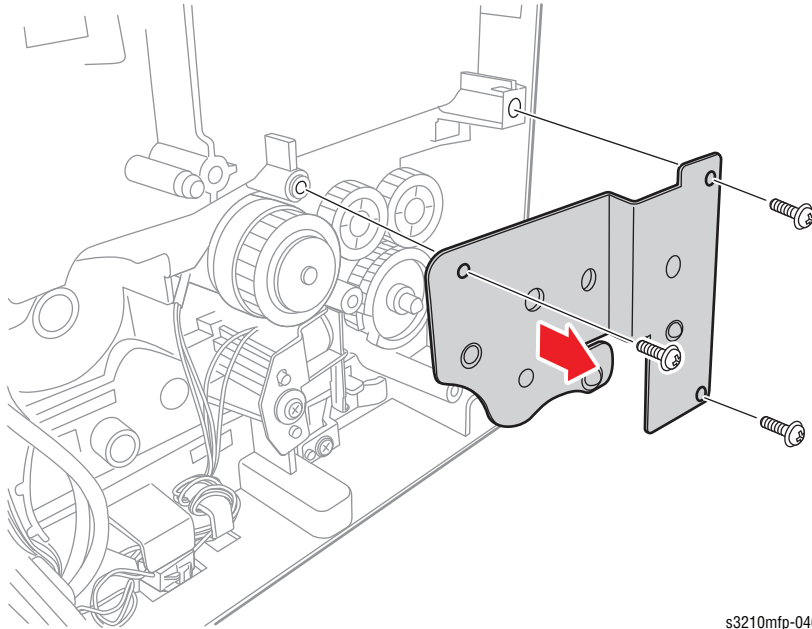
6. Remove the Duplex Actuator (page 8-84).
7. Disconnect the Paper Empty Sensor wiring harness connector.
8. Remove the Paper Empty Sensor.



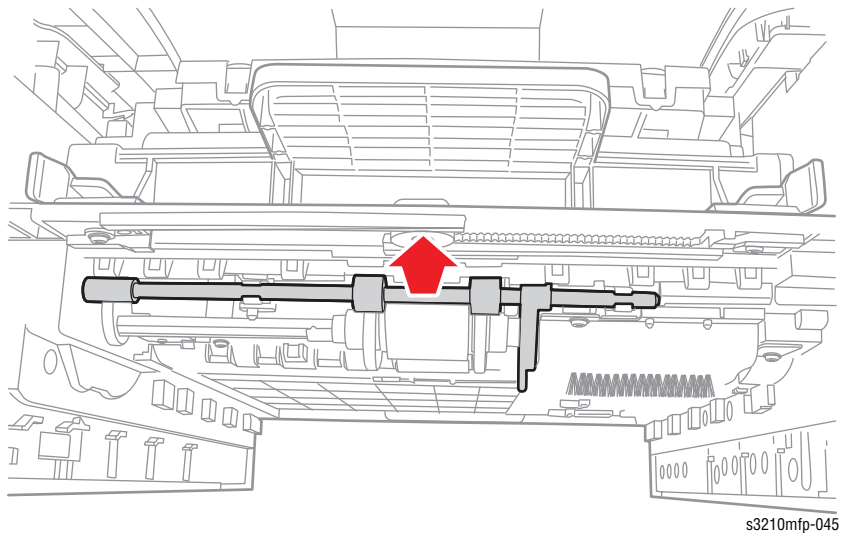
## Feed Roller

### PL4.0.83

1. Remove the Drive Assembly (page 8-98).
2. Remove 3 screws (12 mm, silver) that secure the feed bracket.
3. Remove the feed bracket.

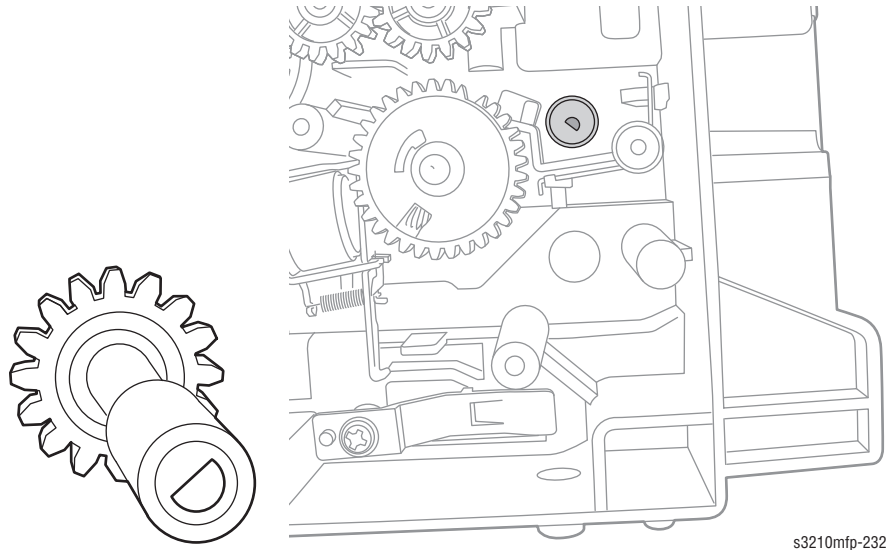


4. Remove the exit idle gear and the feed gear.
5. Release the Feed Roller from the clips and remove the Feed Roller.

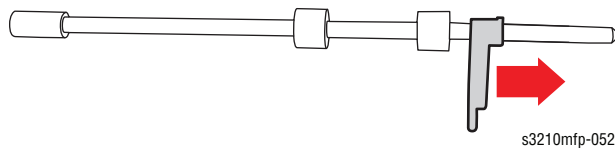


**Replacement Note**

Align the D-shaped feed roller with the D-shaped shaft.

**Empty Actuator****PL4.0.84**

1. Remove Tray 1.
2. Remove the Print Cartridge (page 8-8).
3. Remove the Scanner Assembly (page 8-48).
4. Remove the Feed Roller (page 8-81).
5. Slide the Empty Actuator out from the feed roller.



## Exit Actuator

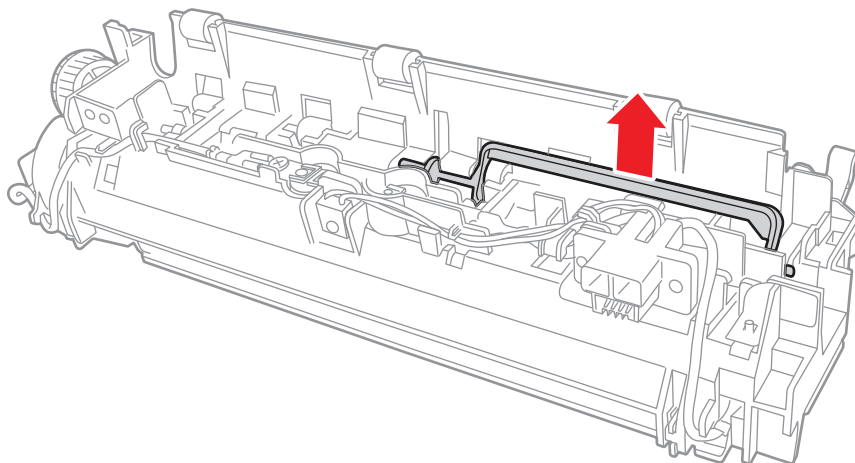
### PL8.0.19



#### Warning

Allow the Fuser to cool before performing this procedure.

1. Remove tray 1.
2. Remove the Print Cartridge (page 8-8).
3. Remove the Front Cover (page 8-58).
4. Remove the Fuser (page 8-13).
5. Release the Exit Actuator from the fuser.



s3210mfp-053

## Exit Sensor

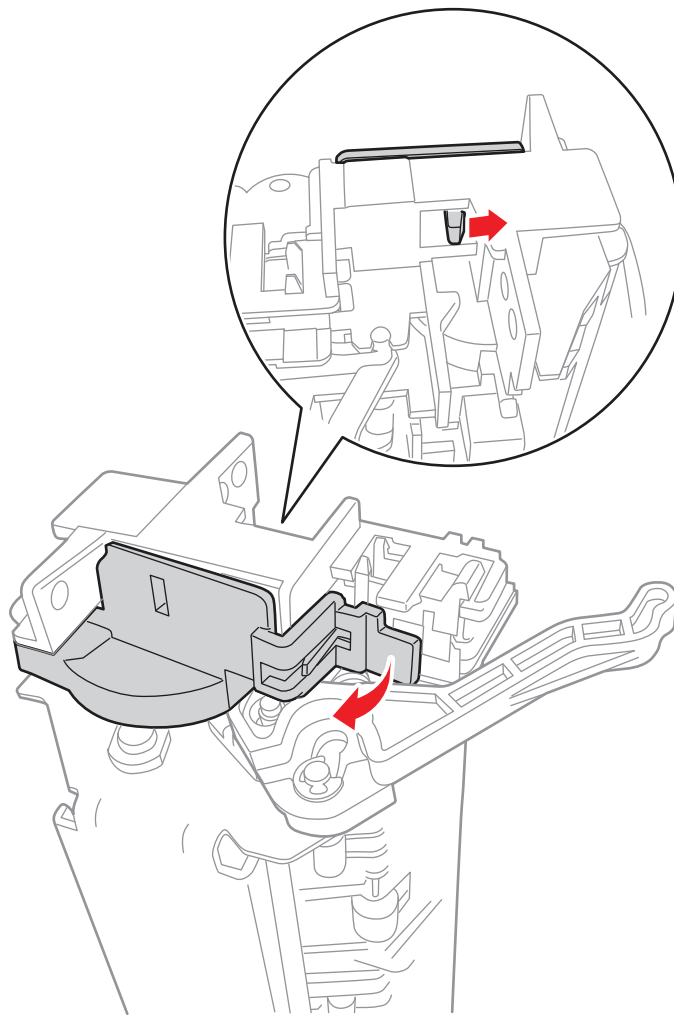
### PL8.0.37



#### Warning

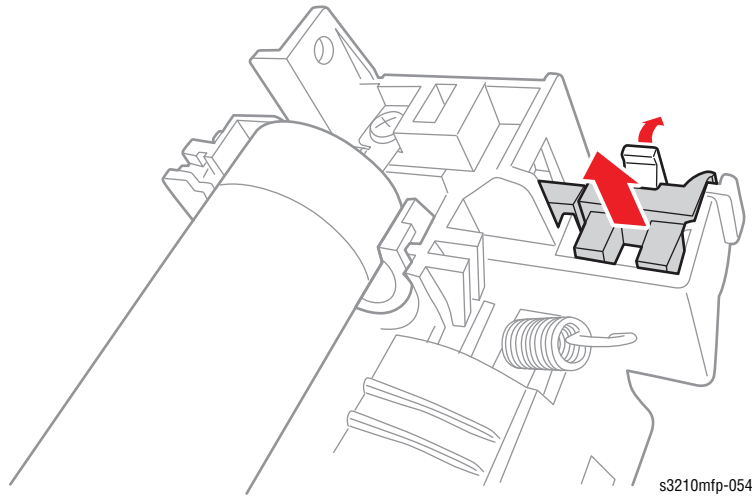
Allow the Fuser to cool before performing this procedure.

1. Remove the Print Cartridge (page 8-8).
2. Remove the Front Cover (page 8-58).
3. Remove the Fuser (page 8-13).
4. Release the tab to remove the right lamp cap.



s3210mfp-028

5. Release the latch that secures the Exit Sensor and remove the Exit Sensor.



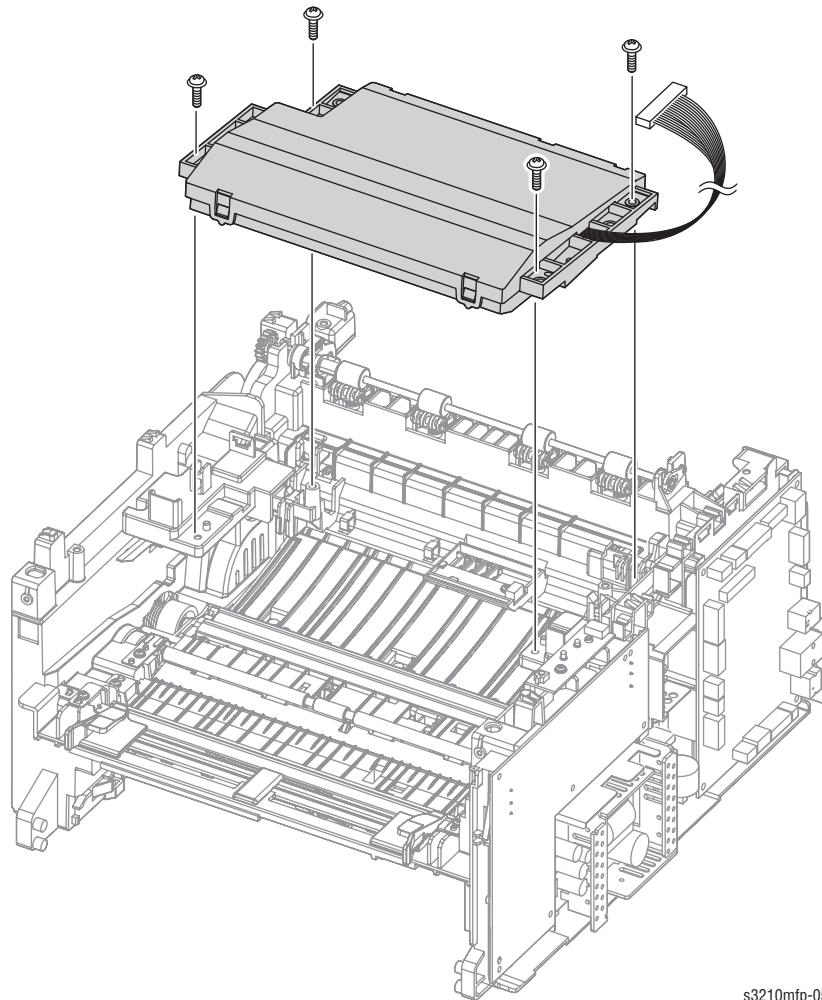


# Xerographics

## Laser Unit

### PL1.0.12

1. Remove the Middle Cover (page 8-65).
2. Disconnect the Laser Unit wiring harness CN7 connector.
3. Remove 4 screws (10 mm, silver) that secure the Laser Unit.
4. Remove the Laser Unit.

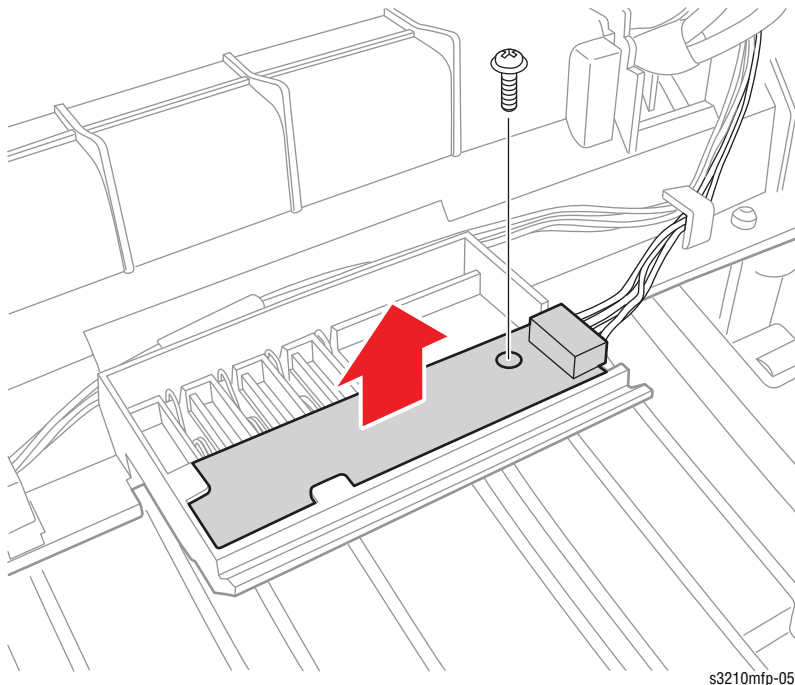


s3210mfp-055

## CRUM Terminal

### PL4.0.53

1. Remove the Laser Unit (page 8-95).
2. Disconnect the CRUM Terminal wiring harness connector.
3. Remove 1 screw (12 mm, silver) that secures the CRUM Terminal.
4. Remove the CRUM Terminal.



s3210mfp-056

## Exit Guide

### Rear Guide Unit

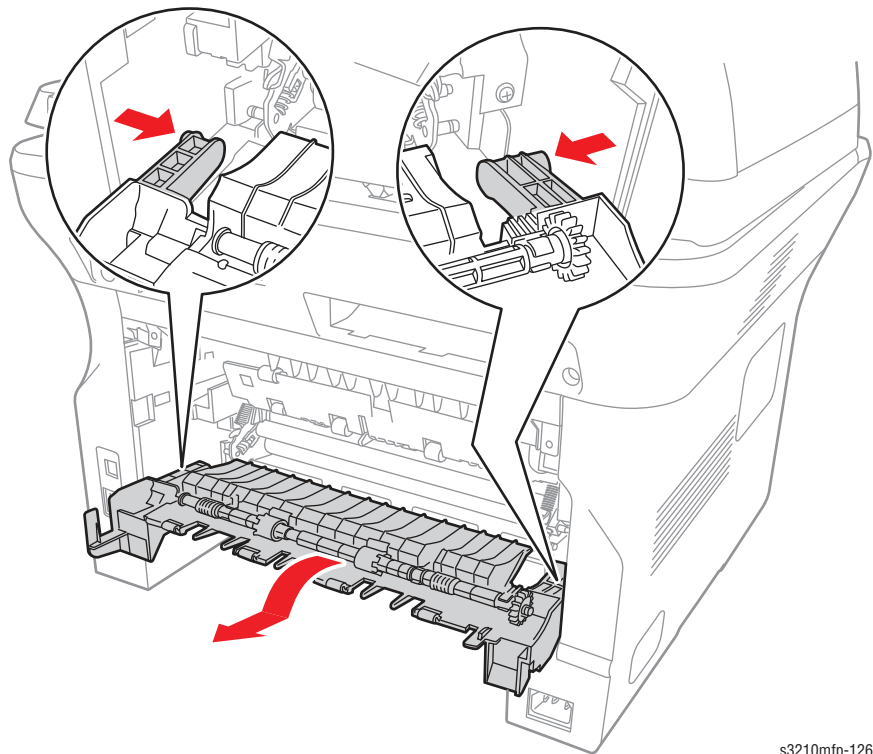
#### PL4.0.114



#### Warning

Allow the Fuser to cool before performing this procedure.

1. Remove the Duplex Unit (page 8-69).
2. Open the Rear Cover.
3. Open the Rear Guide Unit.
4. Push the Rear Guide Unit toward one side to release the notch from the printer frame.
5. Slide the Rear Guide Unit out and remove the Guide Unit.



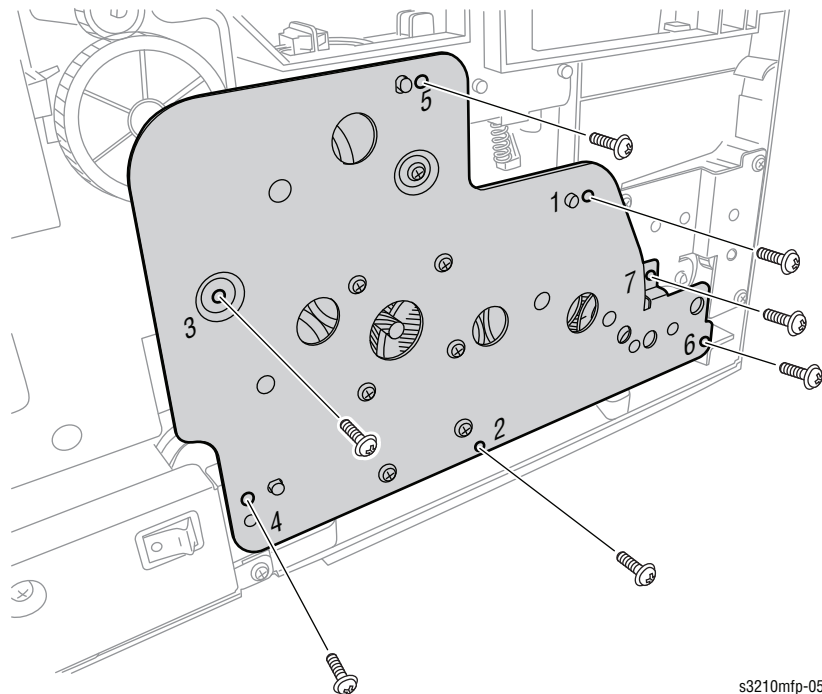
s3210mfp-126

## Drive

### Drive Unit Assembly

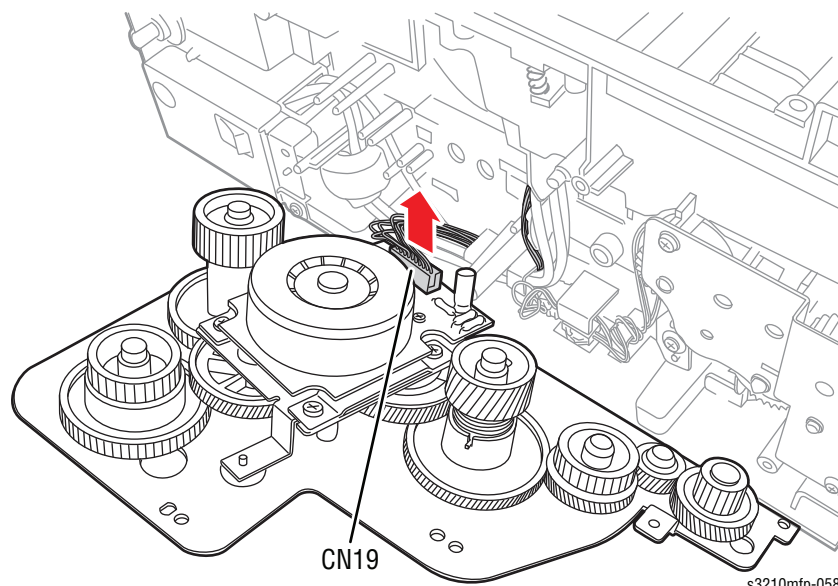
#### PL1.0.8

1. Remove the Left Cover (page 8-59).
2. Remove 7 screws (12 mm, silver) that secure the Drive Unit Assembly.



s3210mfp-057

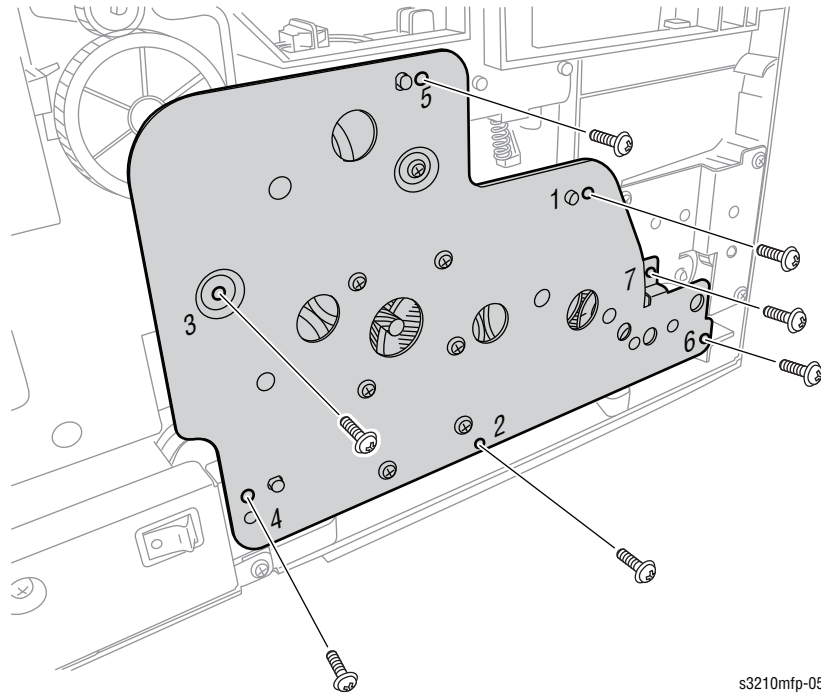
3. Disconnect the Drive Unit Assembly wiring harness connector and remove the Drive Unit Assembly.



s3210mfp-058

**Replacement Note**

Be sure to secure the 7 screws in the order (1-7).



s3210mfp-057

## Electrical

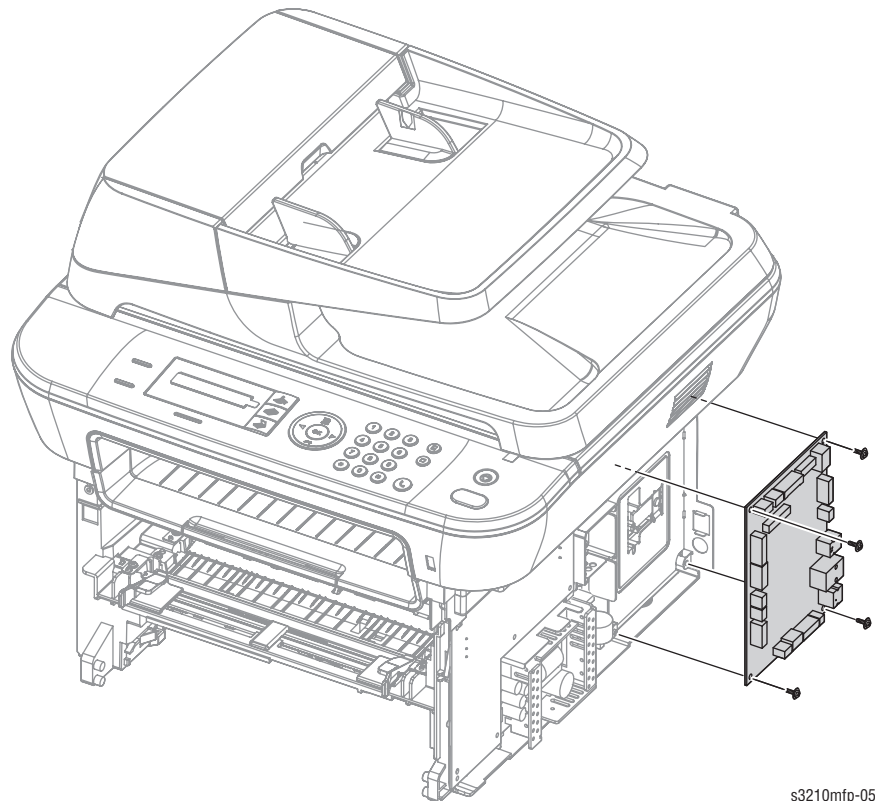
### Main Controller Board

#### PL1.0.2

**Note**

The Main Controller Board cannot be interchanged between the WorkCentre 3210 and WorkCentre 3220.

1. Remove the Right Cover (page 8-62).
2. Disconnect all the wiring harness connectors.
3. Remove 4 screws that secure the Main Controller PBA.
4. Remove the Main Controller PBA.



s3210mfp-059

**Replacement Note**

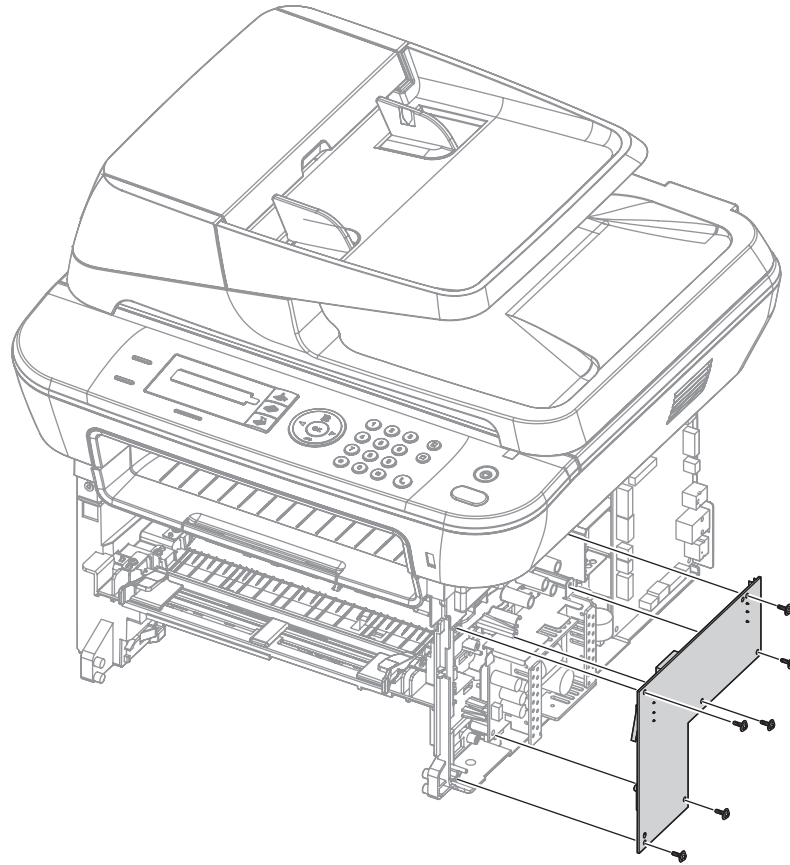
Be sure to transfer the memory DIMM from the old Main Controller Board to the new PBA.

When installing the Main Controller Board, use pliers to guide the USB cable into the Main Controller Board.

## High Voltage Power Supply

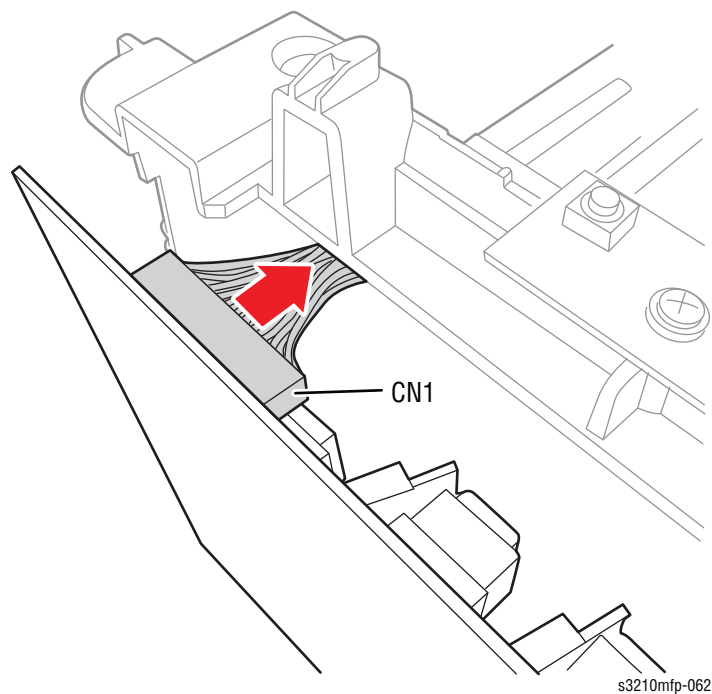
### PL1.0.3

1. Remove the Right Cover (page 8-62).
2. Remove 6 screws (12 mm, silver) that secure the HVPS.



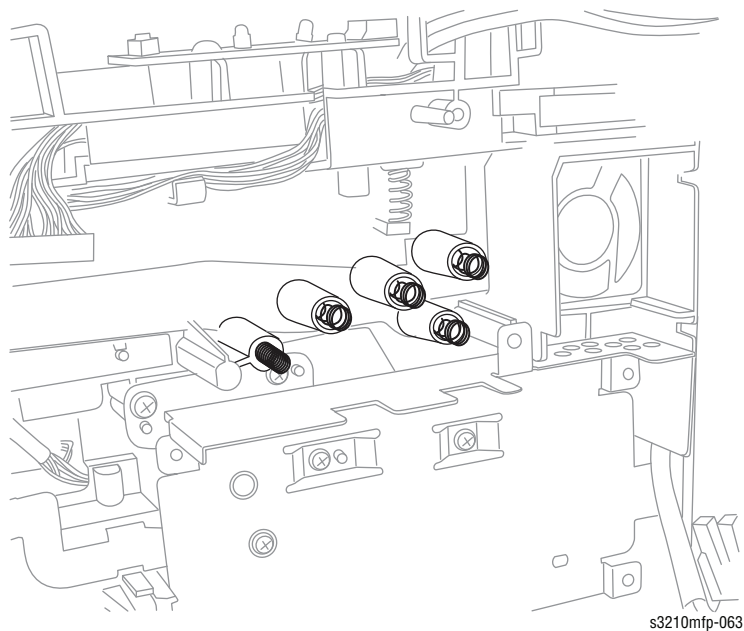
s3210mfp-061

3. Disconnect the wiring harness connector CN1.
4. Remove the HVPS.



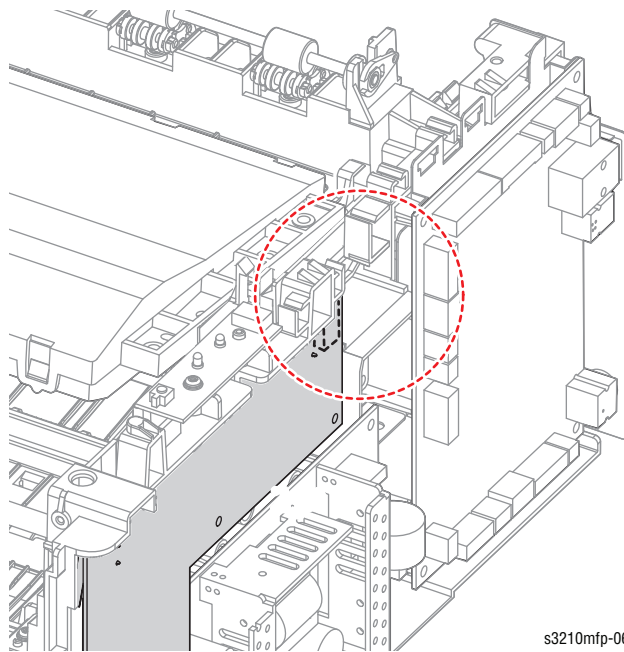
#### Replacement Note

Secure the 6 screws in order (1-6). Be careful not to drop the 4 Contact Springs.

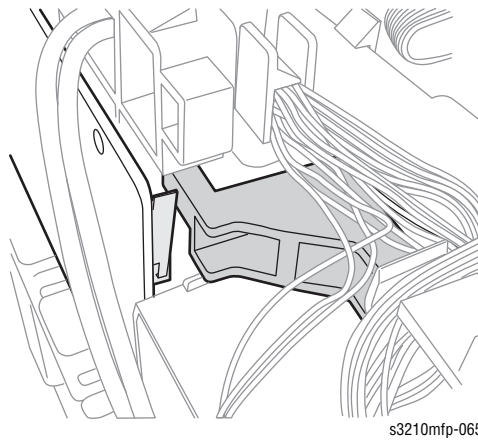




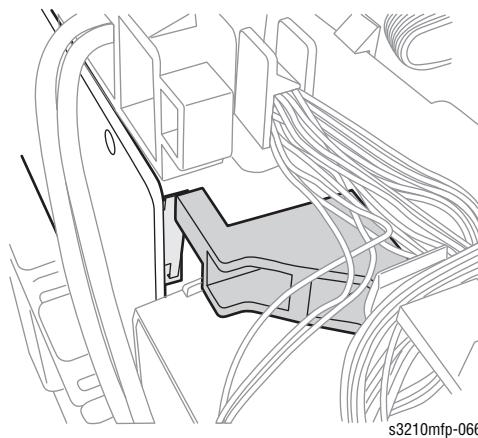
Open the Rear Cover to allow the actuator to move freely.  
Make sure the Switch Actuator does not interfere with the Link Cover Rear.



**Rear Link Cover with MEA Unit Guide Rear in Down Position (Correct)**



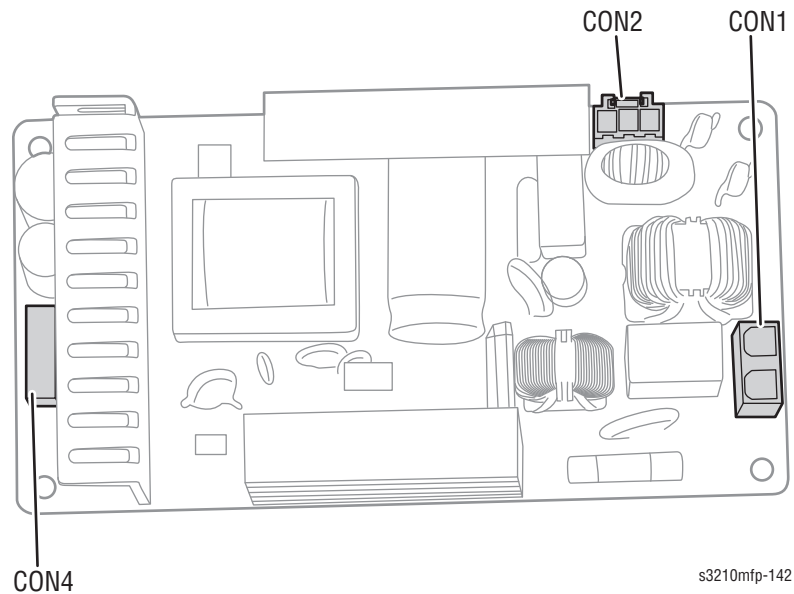
**Rear Link Cover with MEA Unit Guide Rear in Up Position (Incorrect)**



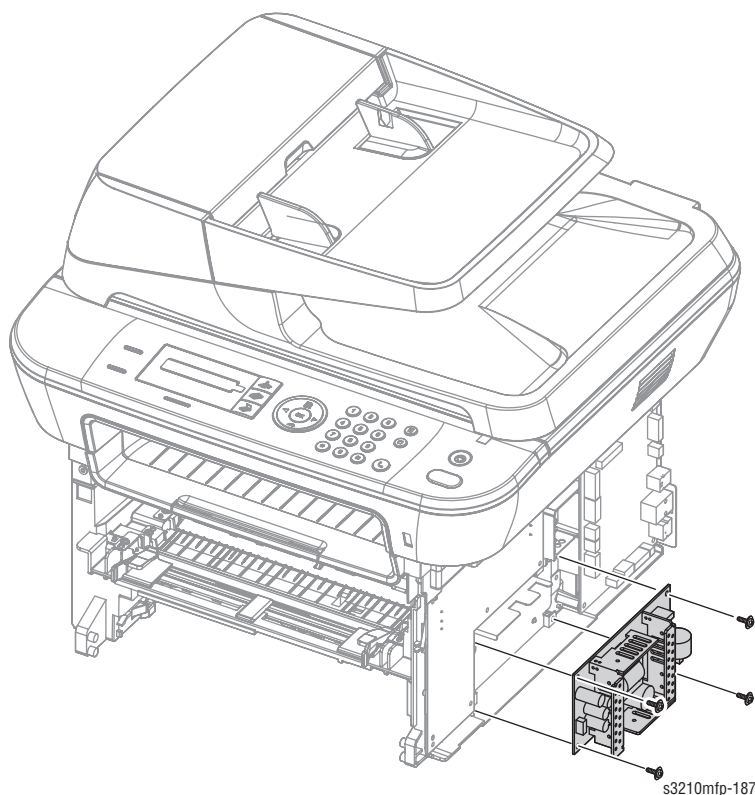
## Power Supply

### PL1.0.4

1. Remove the Right Cover (page 8-62).
2. Disconnect the 3 wiring harness connectors CON1, CON2, and CON4.

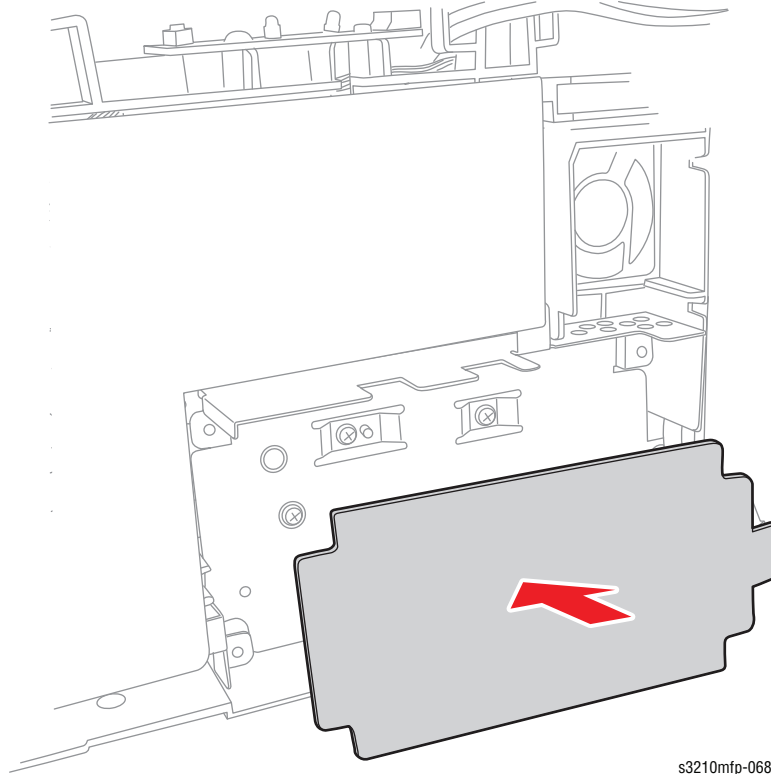


3. Remove 4 screws (12 mm, silver) that secure the Power Supply.
4. Remove the Power Supply.



**Replacement Note**

Be sure to attach the Power Supply Insulation to the Power Supply Shield prior to installing the Power Supply.



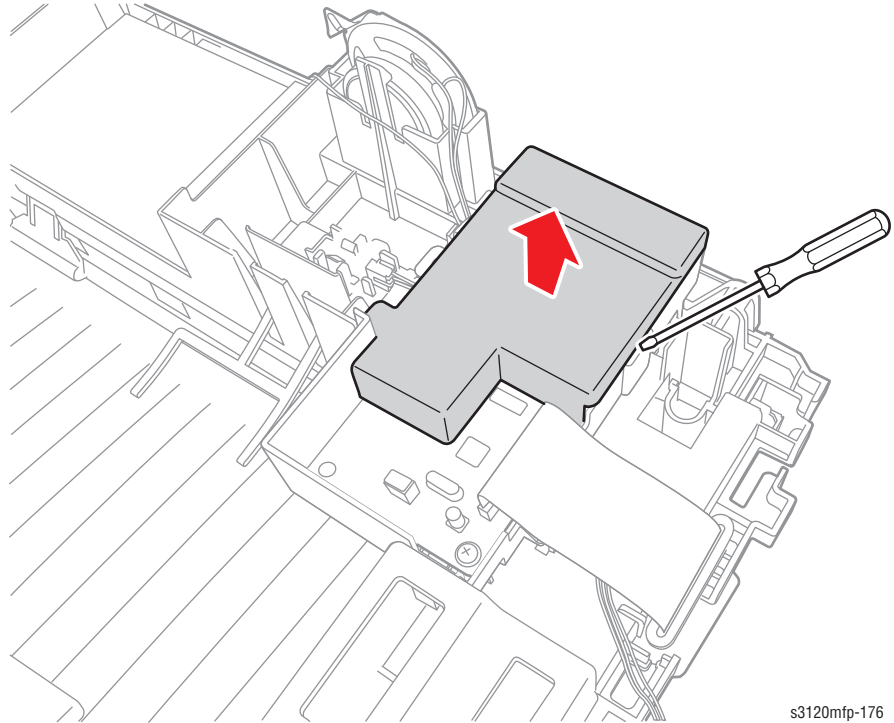
s3210mfp-068

## Fax Board

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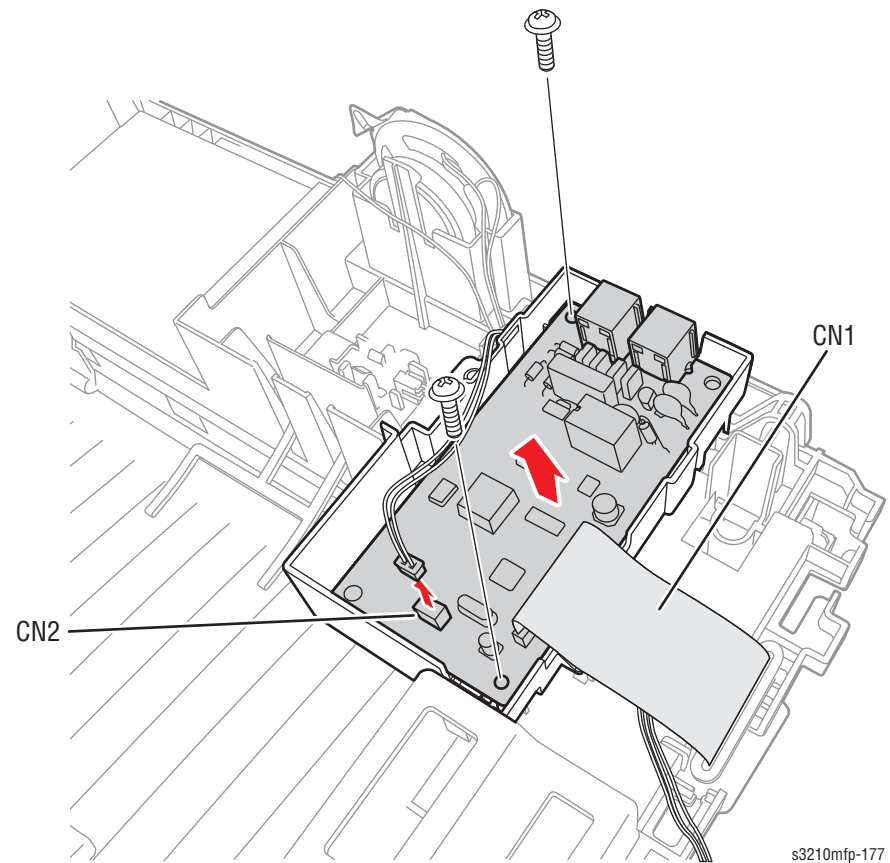
### PL1.0.24

1. Remove the Scanner Assembly (page 8-48).
2. Use a flat tip screwdriver to remove the fax board cover.



s3120mfp-176

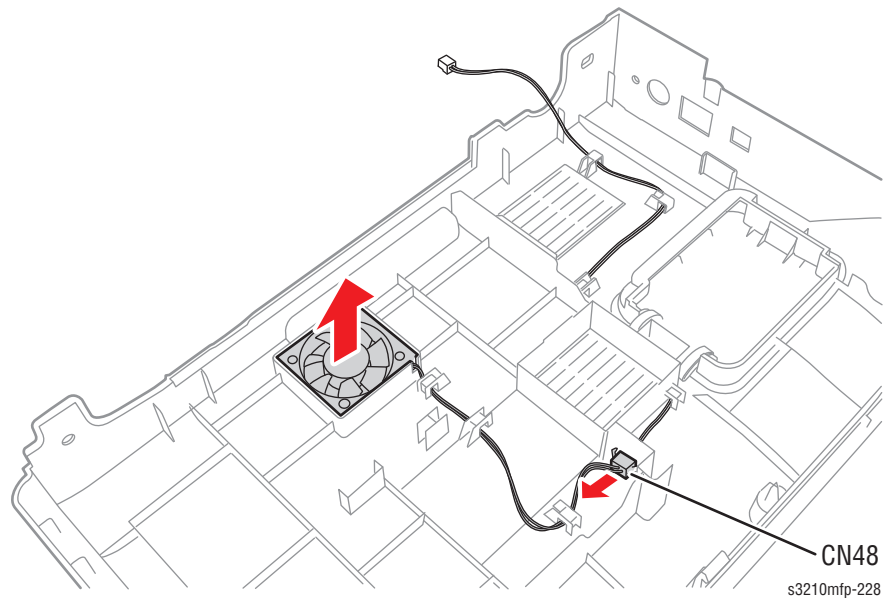
3. Disconnect the wiring harness connector CN2 and the ribbon cable connector CN1 on the Fax Board.
4. Remove 2 screws that secure the Fax Board.



## Power Supply Fan

### PL2.0.4-5

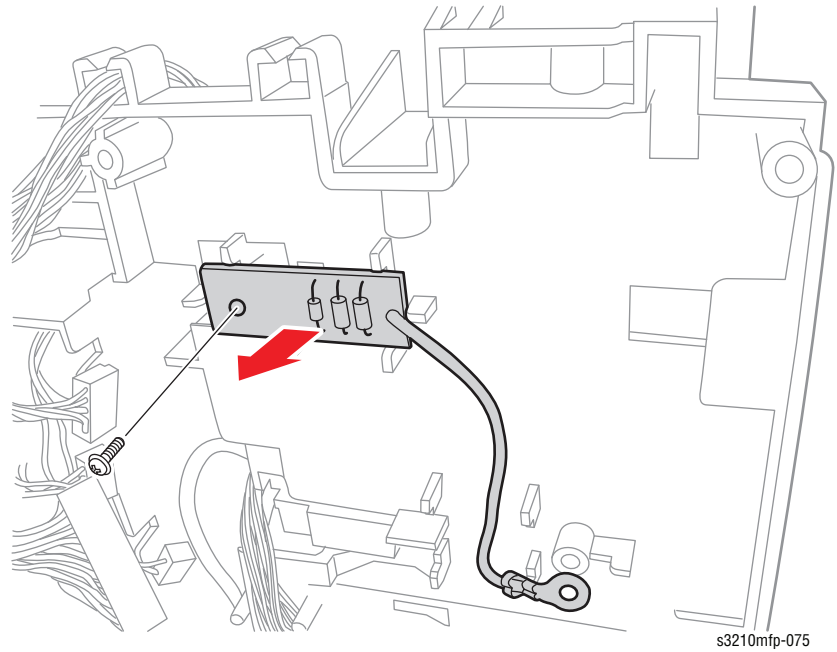
1. Remove the Right Cover (page 8-62).
2. Disconnect the wiring harness connector CN48.
3. Release the wiring harness from the retainers.
4. Release the Power Supply Fan from the Right Cover.



## Zenor PBA

### PL4.0.3

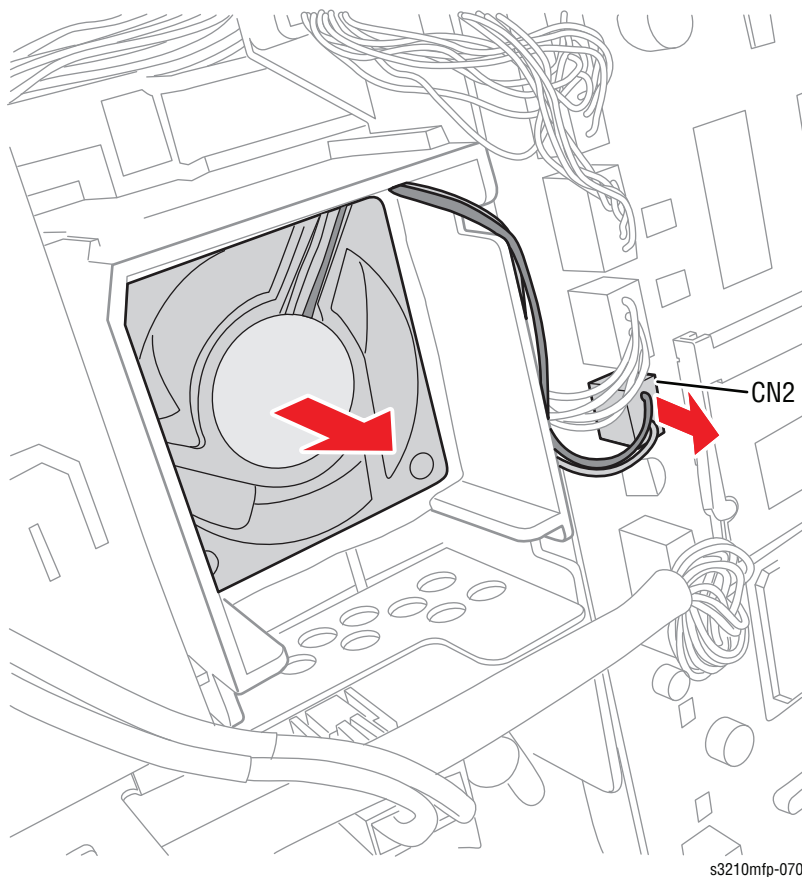
1. Remove the Middle Cover (page 8-65).
2. Remove the Controller Shield (page 8-112).
3. Remove 1 screw (12 mm, silver) that secures the Zenor PBA.
4. Remove the Zenor PBA.



## Main Fan

### PL4.0.5

1. Remove the Print Cartridge (page 8-8).
2. Remove the Right Cover (page 8-62).
3. Disconnect the gray and black wiring harness connector CN2.
4. Pull the Fan out away from the printer and remove the Fan.

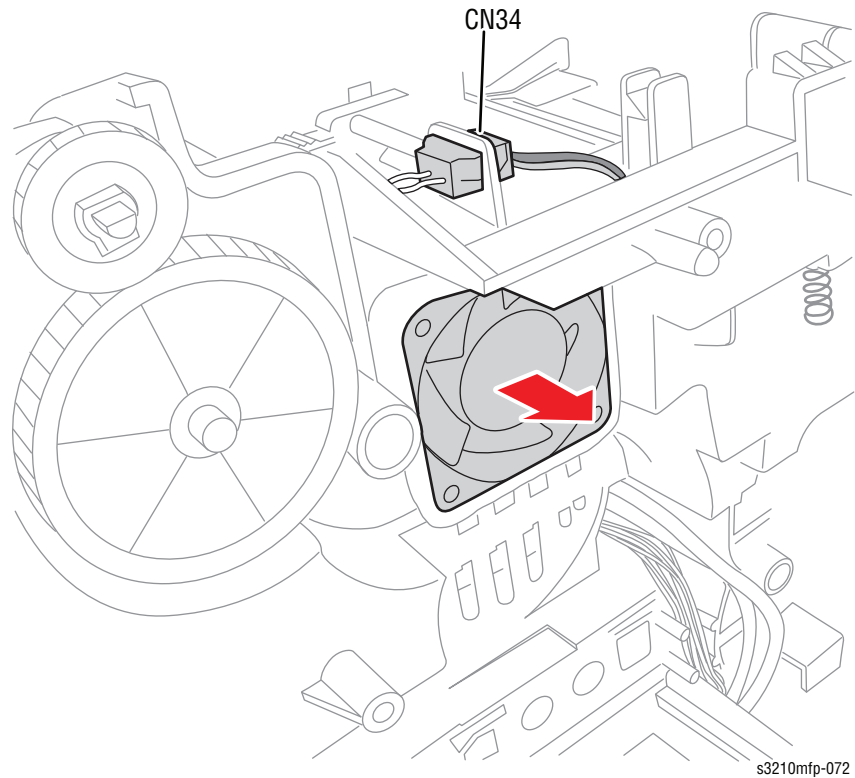




## Laser Unit Fan

### PL4.0.39

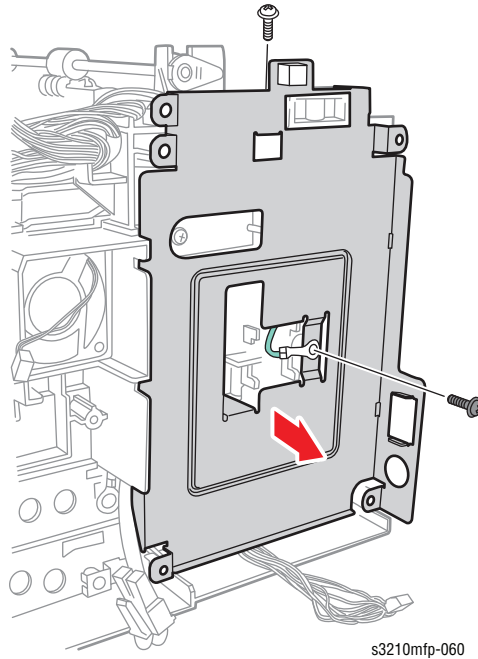
1. Remove the Drive Unit Assembly (page 8-98).
2. Disconnect the gray and black wiring harness connector CN34.
3. Pull the Fan out away from the printer and remove the Fan.



## Controller Shield

### PL4.0.63

1. Remove the Middle Cover (page 8-65).
2. Remove the Main Controller PBA (page 8-100).
3. Disconnect the 2 wiring harness connectors on the back of the Controller Shield.
4. Remove 1 screw (12 mm, silver) and 1 screw (12 mm, black) that secure the Controller Shield.



5. Release the Controller Shield from the frame.

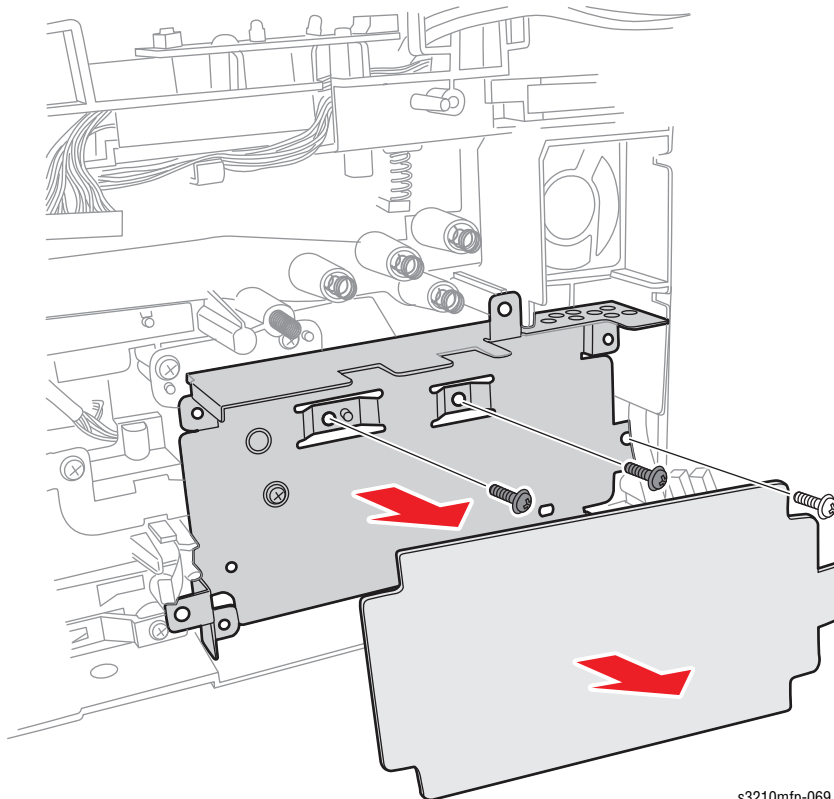
#### Replacement Note

Be sure to secure the ground wire between the Controller Shield and the screw.

## Power Supply Shield

### PL4.0.64

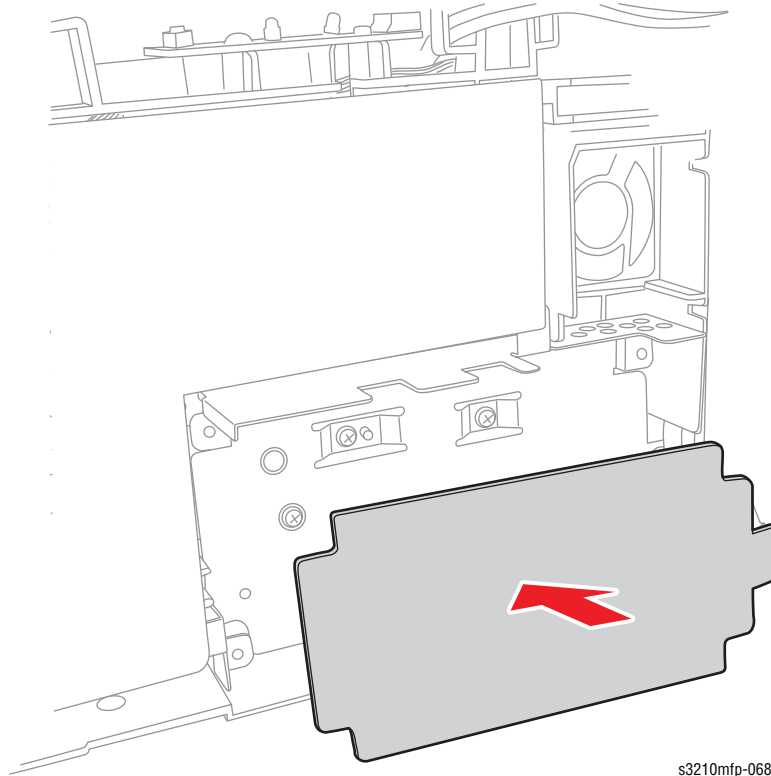
1. Remove the HVPS (page 8-101).
2. Remove the Power Supply (page 8-104).
3. Remove the power supply insulation.
4. Remove 1 screw (12 mm, silver) that secures the ground wire and 2 screws (12 mm, black) securing the Power Supply Shield.
5. Remove the Power Supply Shield.



s3210mfp-069

### Replacement Note

Be sure to attach the power supply insulation to the Power Supply Shield.

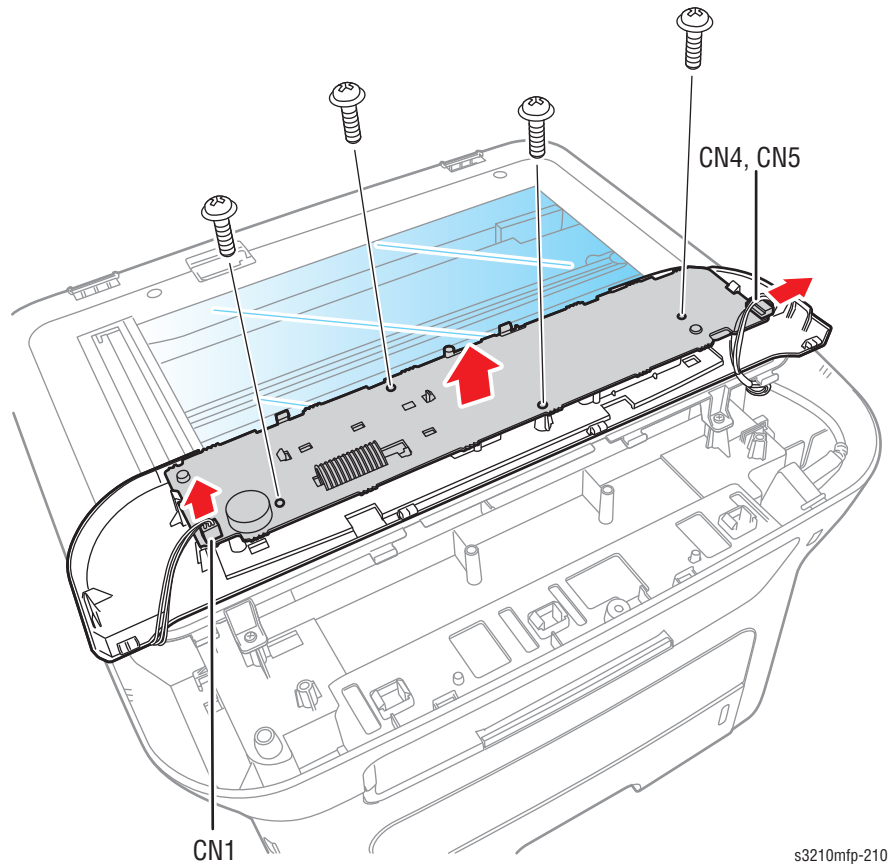


s3210mfp-068

## UI PBA

### PL6.4.13

1. Remove the Control Panel (page 8-67).
2. Remove 4 screws (12 mm, silver) that secure the Control Panel.



s3210mfp-210

## Options

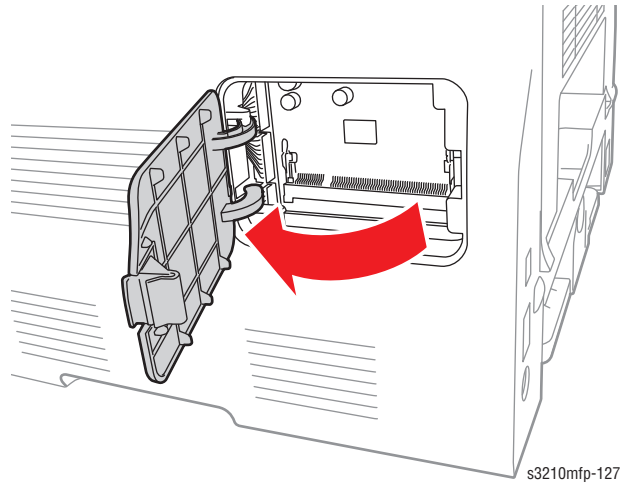
### DIMM



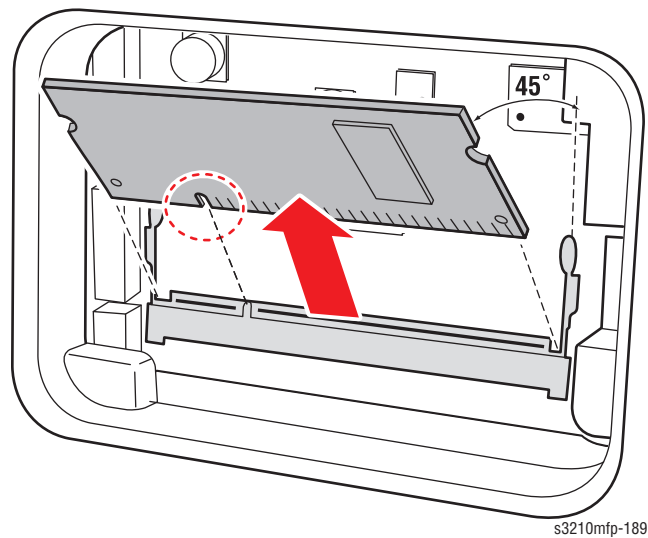
#### Caution

Be sure to wear proper ESD protection to prevent from damaging the DIMM.

1. Turn the printer power Off.
2. Unplug all cables from the printer.
3. Open the DIMM Cover.



4. Release the left and right latches that secure the DIMM and remove the DIMM.



## Optional Tray Assembly

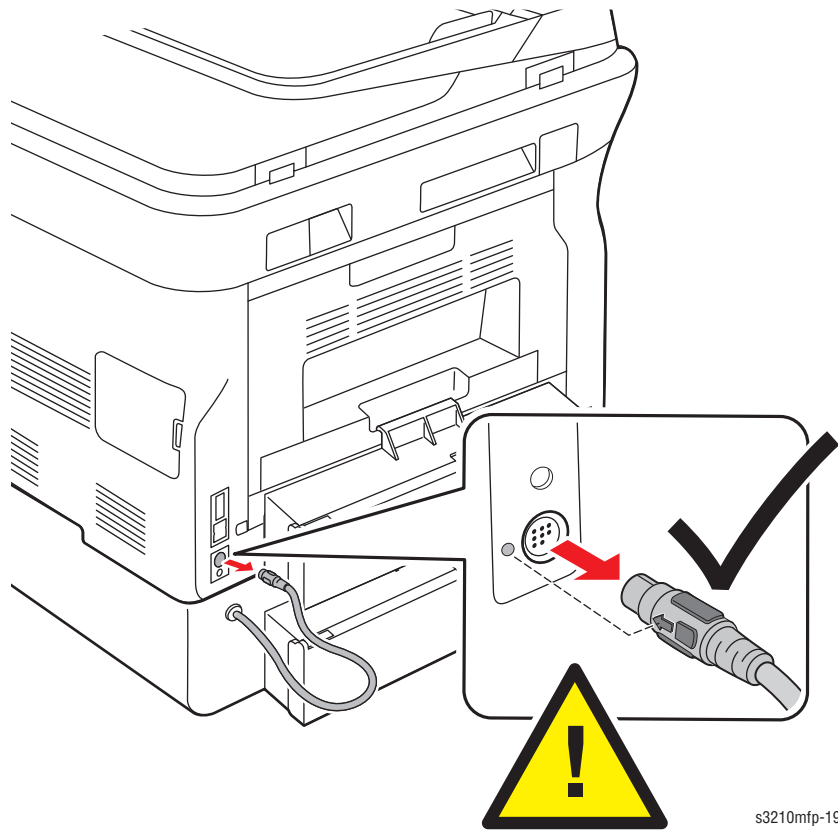
PL10.0.0



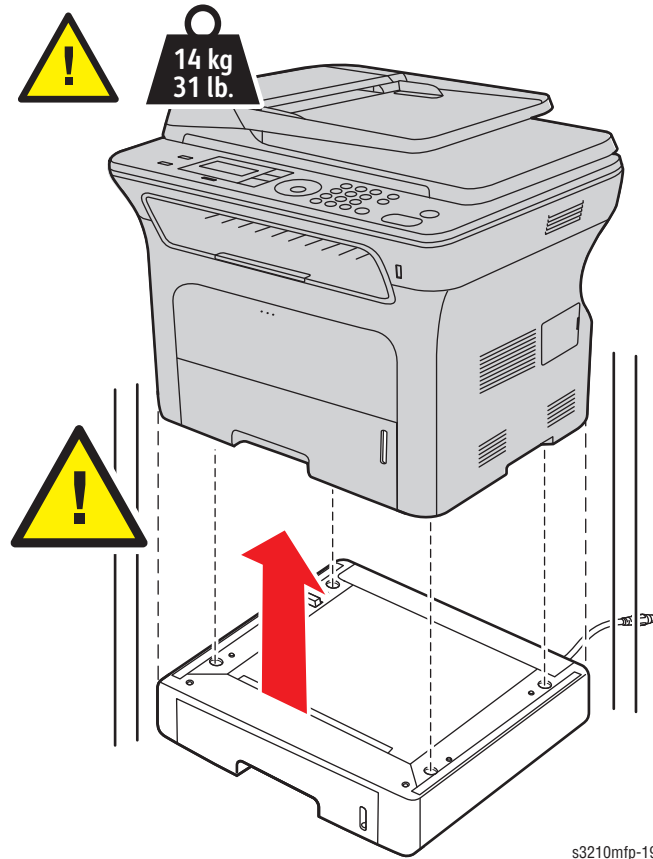
### Caution

Use care when removing the printer from the Optional Tray Assembly.

1. Disconnect the Optional Feeder cable.



2. Carefully lift the printer from the Optional Tray Assembly.

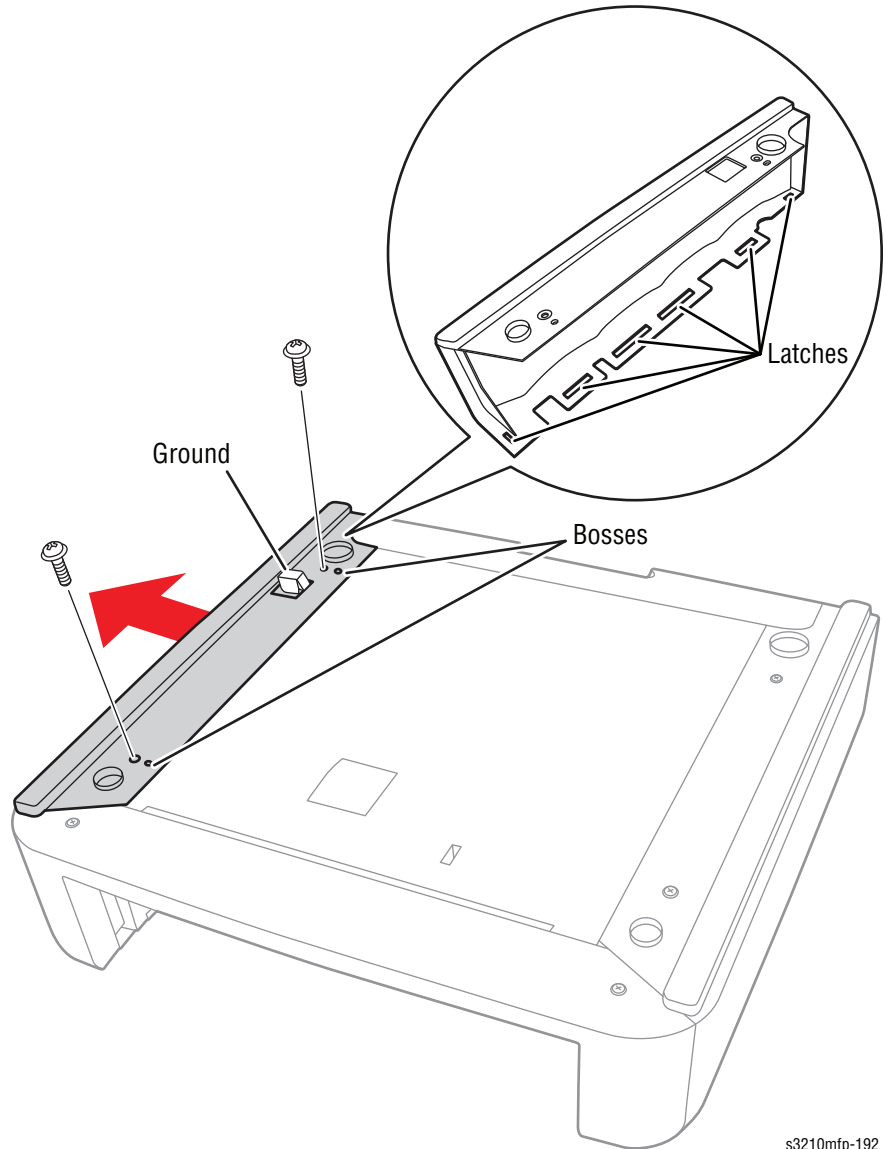




## Left Cover

### PL10.0.4

1. Remove the Optional Tray Assembly (page 8-117).
2. Remove 2 screws (12 mm, silver) that secure the Left Cover.
3. From the top side of the sheet feeder, pry the Left Cover to release the Cover from the 2 notches.
4. While pressing on the ground, slide the Left Cover out and remove the Left Cover.

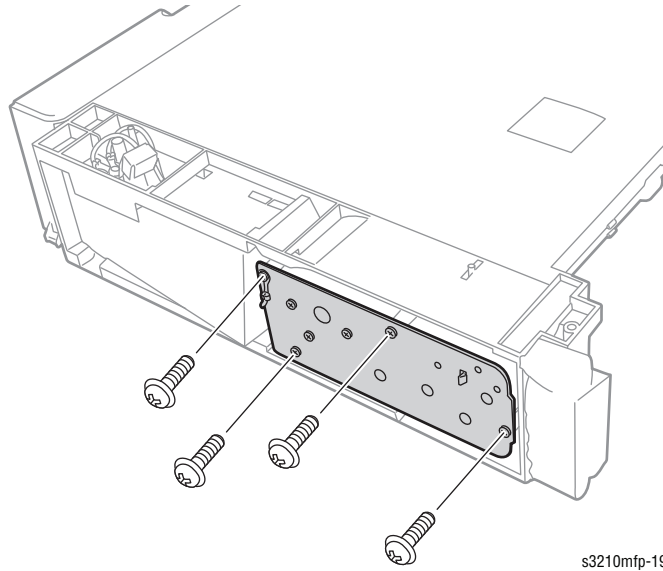


s3210mfp-192

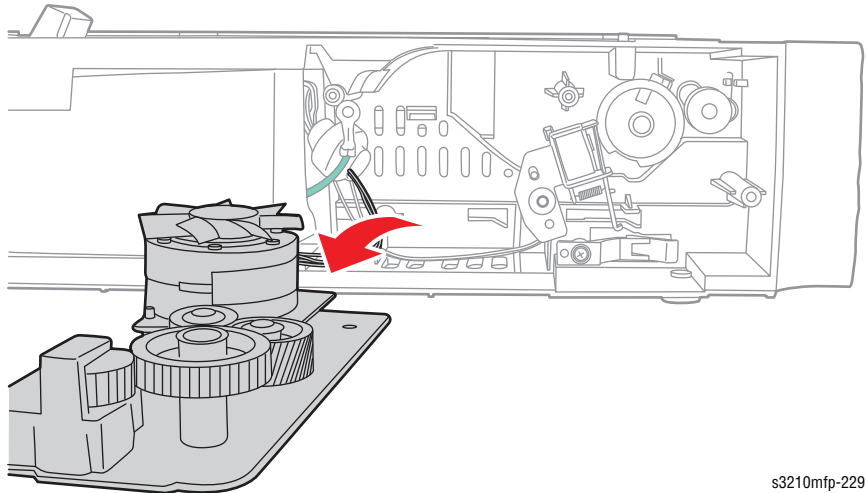
## Motor Housing

### PL10.0.9

1. Remove the Optional Tray Assembly (page 8-117).
2. Remove the Left Cover (page 8-119).
3. Remove 4 screws (12 mm, silver) that secure the Motor Housing.

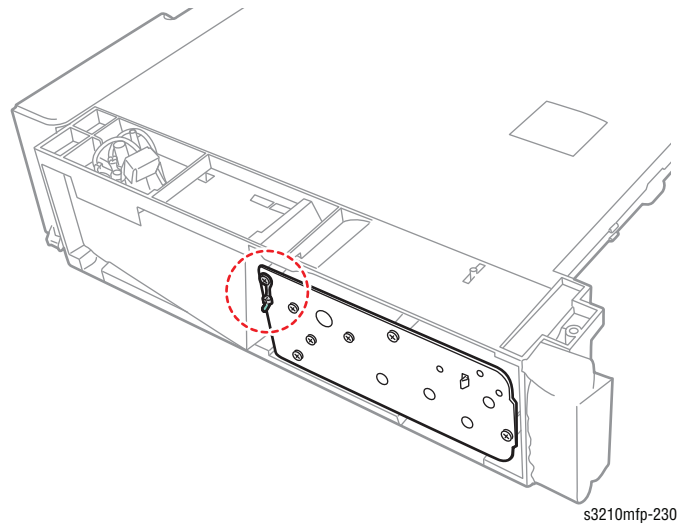


4. Slide the Motor Housing away from the Optional Tray Assembly.



**Replacement Note**

Be sure to secure the ground wire when installing the Motor Housing.



## Pick Up Unit

---

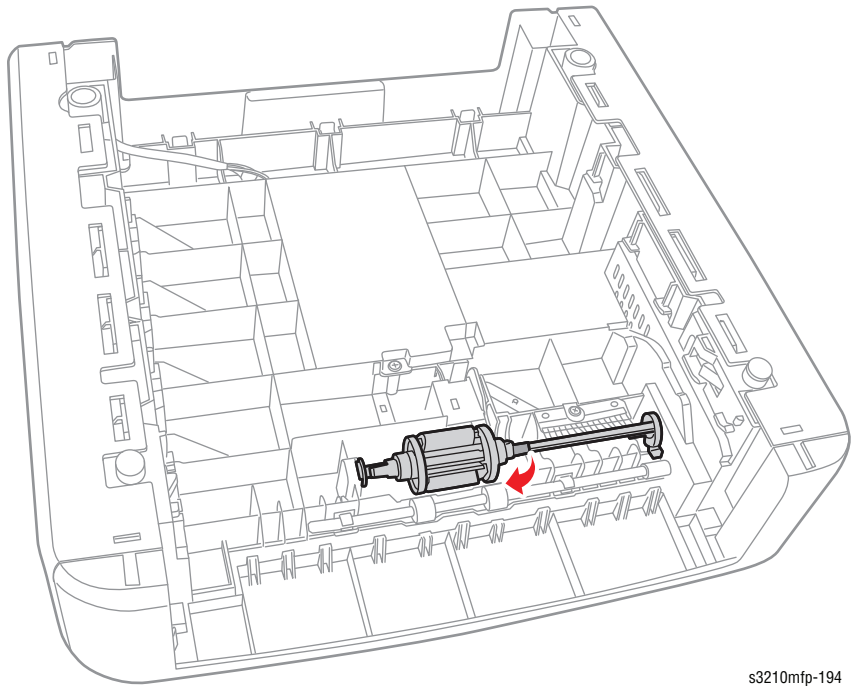
### PL10.0.10

1. Remove the Optional Tray Assembly (page 8-117).
2. Remove Tray 2.

**Note**

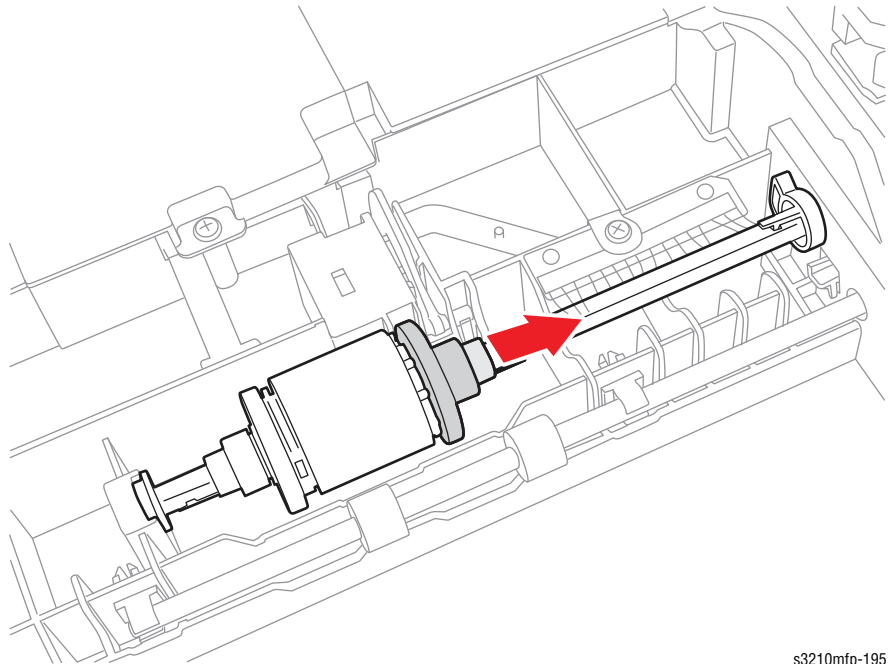
Do not flex the latch. This will prevent the pick up idle from resting securely after installation.

3. Release the pick up stopper latch from the pick up shaft.



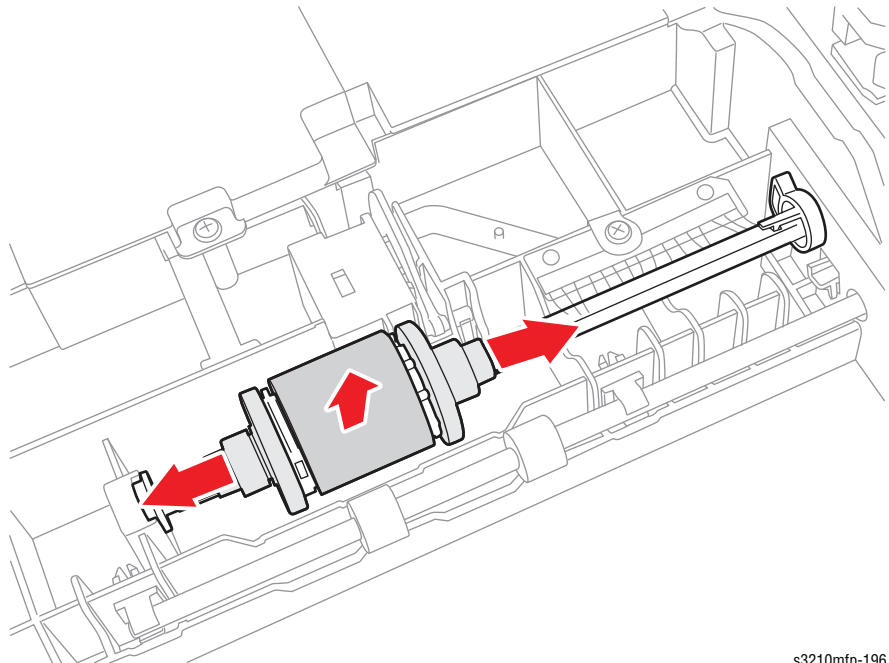
s3210mfp-194

4. Slide the pick up stopper away from the pick up idle pass the groove on the shaft.



s3210mfp-195

5. Slide the pick up idles away from the pick up rubber.
6. Rotate the pick up rubber, slide it out away from the shaft and remove the Pick Up Unit.



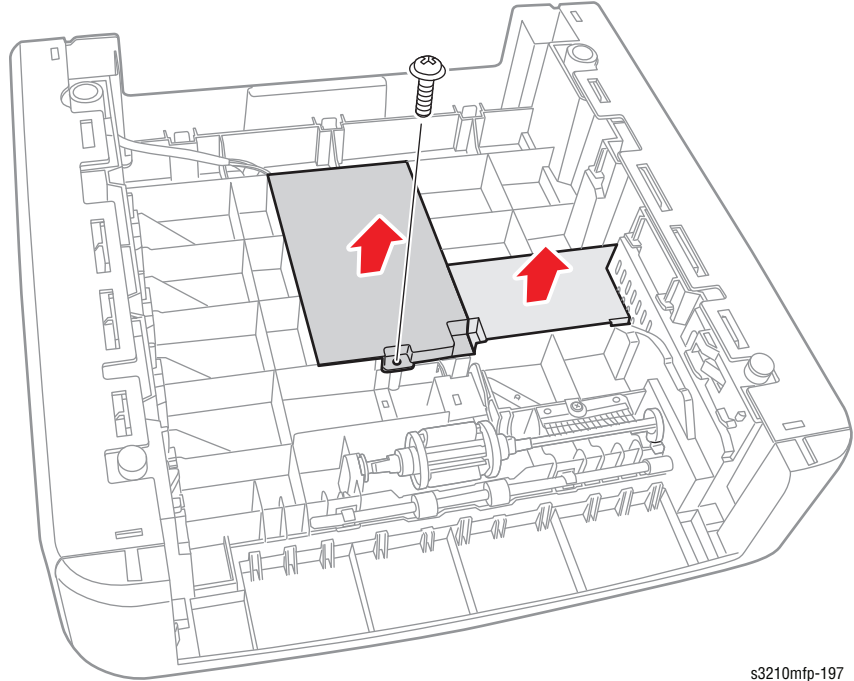
s3210mfp-196

## Pick Up Solenoid

---

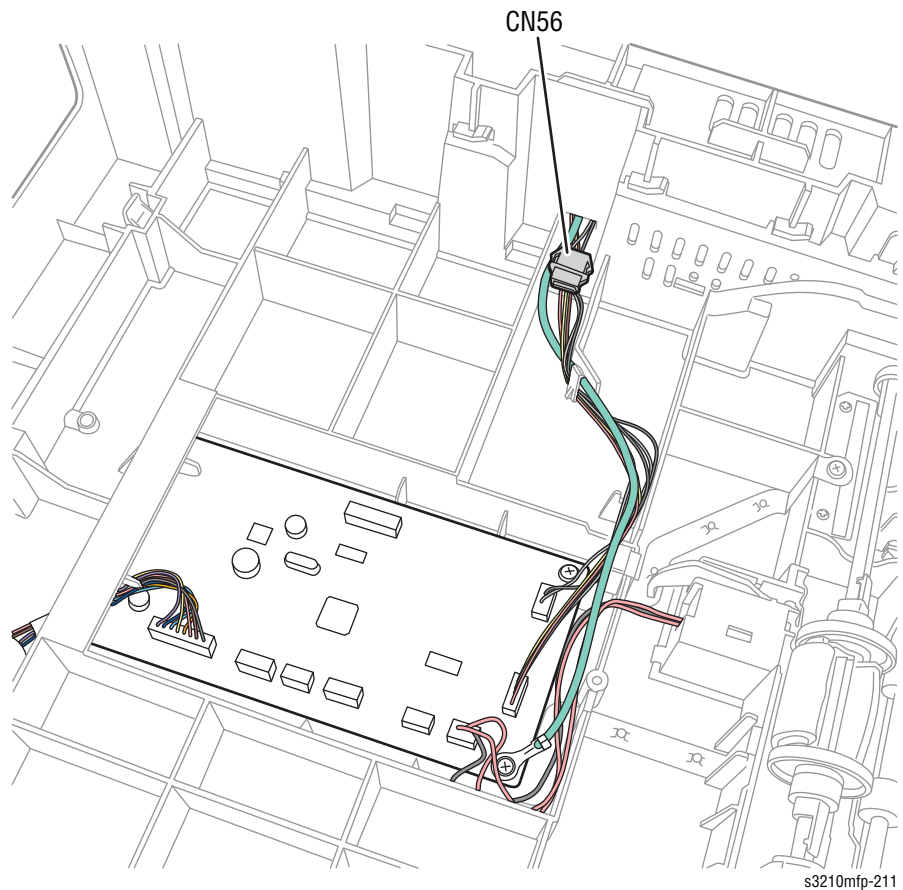
### PL10.0.11-16

1. Remove the Optional Tray Assembly (page 8-117).
2. Turn the Optional Tray Assembly over with the bottom side facing upward.
3. Remove 1 screw (12 mm, silver) that secures the SIMM Cover.
4. Remove the SIMM Cover and the Harness Cover.

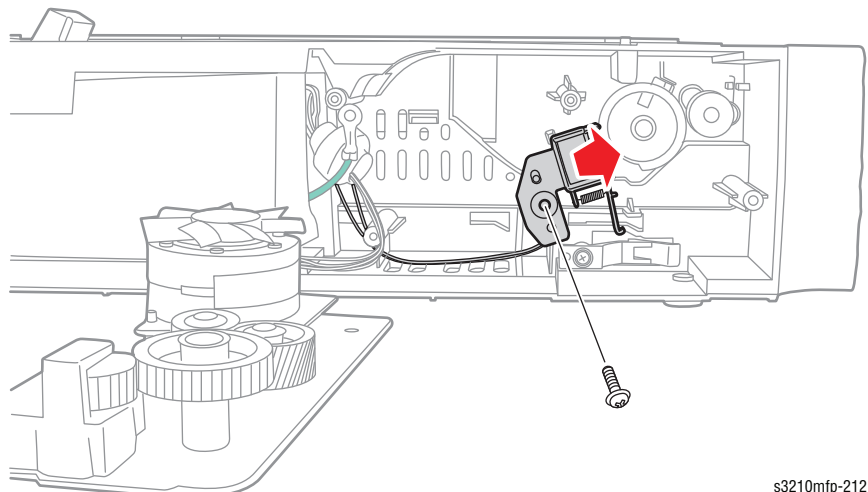


s3210mp-197

5. Turn the Optional Tray Assembly over.
6. Remove the Left Cover (page 8-119).
7. Remove the Motor Housing (page 8-120).
8. Disconnect the Solenoid wiring harness connector CN56.
9. Push the harness into the tray cavity.
10. Disconnect the wiring harness from the dual female connector.



11. Remove 1 screw (12 mm, silver) that secures the Solenoid.
12. Remove the Solenoid.

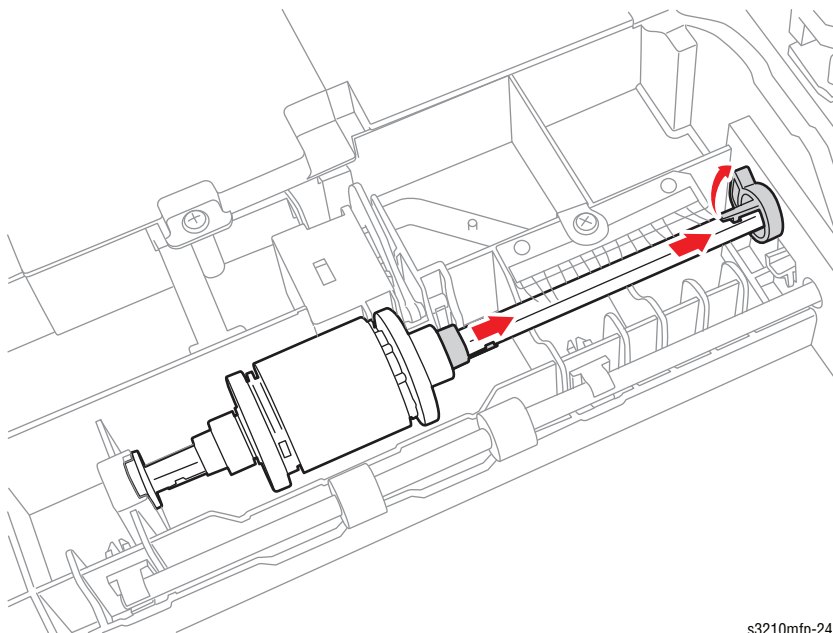


## Pick Up Roll Retainer

---

### PL10.0.11-18

1. Remove the Feed Roller (page 8-127).
2. Release the clip from the shaft while pushing the shaft toward the motor side.
3. Remove the Pick Up Roll Retainer.



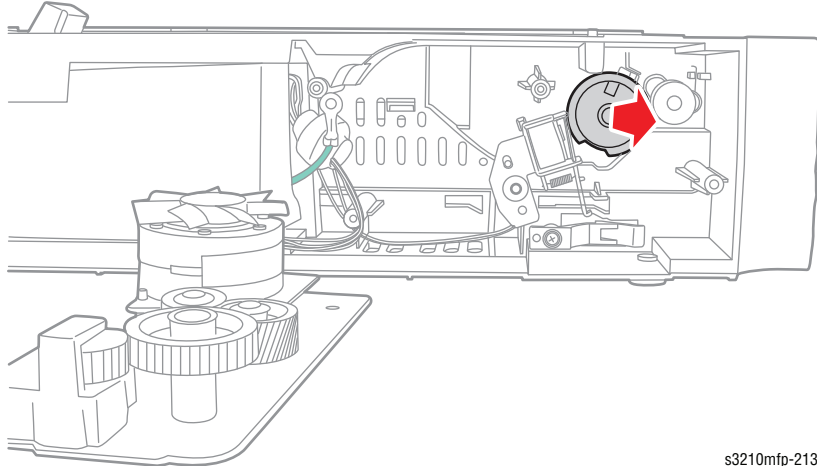
s3210mfp-242



## Feed Roller

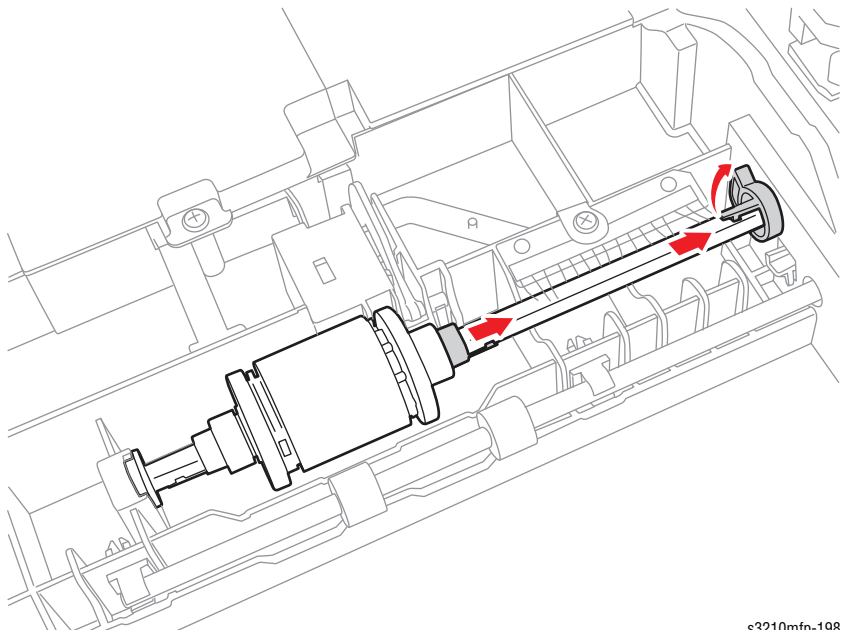
### PL10.0.11-23

1. Remove the Optional Tray Assembly (page 8-117).
2. Remove the Left Cover (page 8-119).
3. Remove the Motor Housing (page 8-120).
4. Remove the gears.



s3210mfp-213

5. Remove the following parts:
  - a. Pick Up Unit (page 8-122)
  - b. Pick Up Roll Retainer (page 8-126)
  - c. Pick Up Bushing
6. Release the clip from the shaft while pushing the shaft toward the motor side.
7. Slide the Feed Roller out from the Optional Tray Assembly and remove the Feed Roller.



s3210mfp-198



# Parts List

## In this chapter...

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

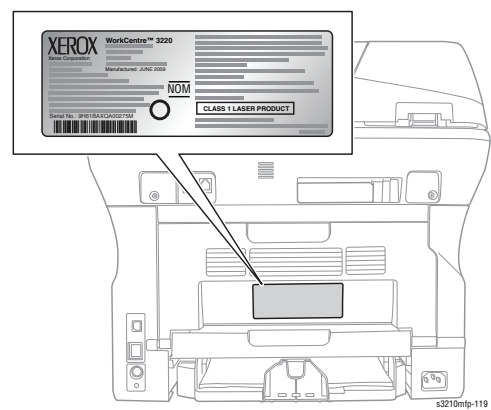
## Chapter 9

# Serial Number Format

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

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

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



The nine-digit serial number has the following format:

**PPPRSSSSSS**

**PPP** = Three digit alphanumeric product code

Product Code	Product
<b>UAG</b>	3210, 110 V Engine
<b>UAH</b>	3210, 220 V Engine
<b>UAK</b>	3220, 110 V Engine
<b>UAL</b>	3220, 220 V Engine

**R** = Single digit numeric revision digit, 0~9. To be rolled when a major product change occurs and initiated with a change request

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

Product	Starting Serial Number	Ending Serial Number
3210, 110V Engine	536501	558500
3220, 110V Engine	492501	536500
3210, 220V Engine	426501	470500
3220, 220V Engine	470501	492500

## Example

**UAK0492590:** Xerox Serial Number

**UAK:** Product Code for the WorkCentre 3220, 110V printer

**492590** = Serial Number for 3220

## Using the Parts List

- **ID No.:** The callout number from the exploded part diagram.
- **Name/Description:** The name of the part to be ordered and the number of parts supplied per order.
- **Part Number:** The material part number used to order that specific part.
- Parts identified throughout this manual are referenced **PL#.#. #**; For example, PL3.1.10 means the part is item 10 of Parts List 3.1.
- A black triangle preceding a number followed by a parenthetical statement in an illustrated parts list means the item is a parent assembly, made up of the individual parts called out in parentheses.
- The notation “**with X~Y**” following a part name indicates an assembly that is made up of components X through Y. For example, “1 (with 2~4)” means part 1 consists of part 2, part 3, and part 4.
- An asterisk (\*) following a part name indicates the page contains a note about this part.
- The notation (NS) next to a part indicates that particular part is not spared, but contained in a kit or major assembly.
- The notation “**J1<>J2 and P2**” is attached to a wire harness. It indicates that connector Jack 1 is attached to one end of the wire harness and connector J2 is attached to the other end that is plugged into P2.

### Note

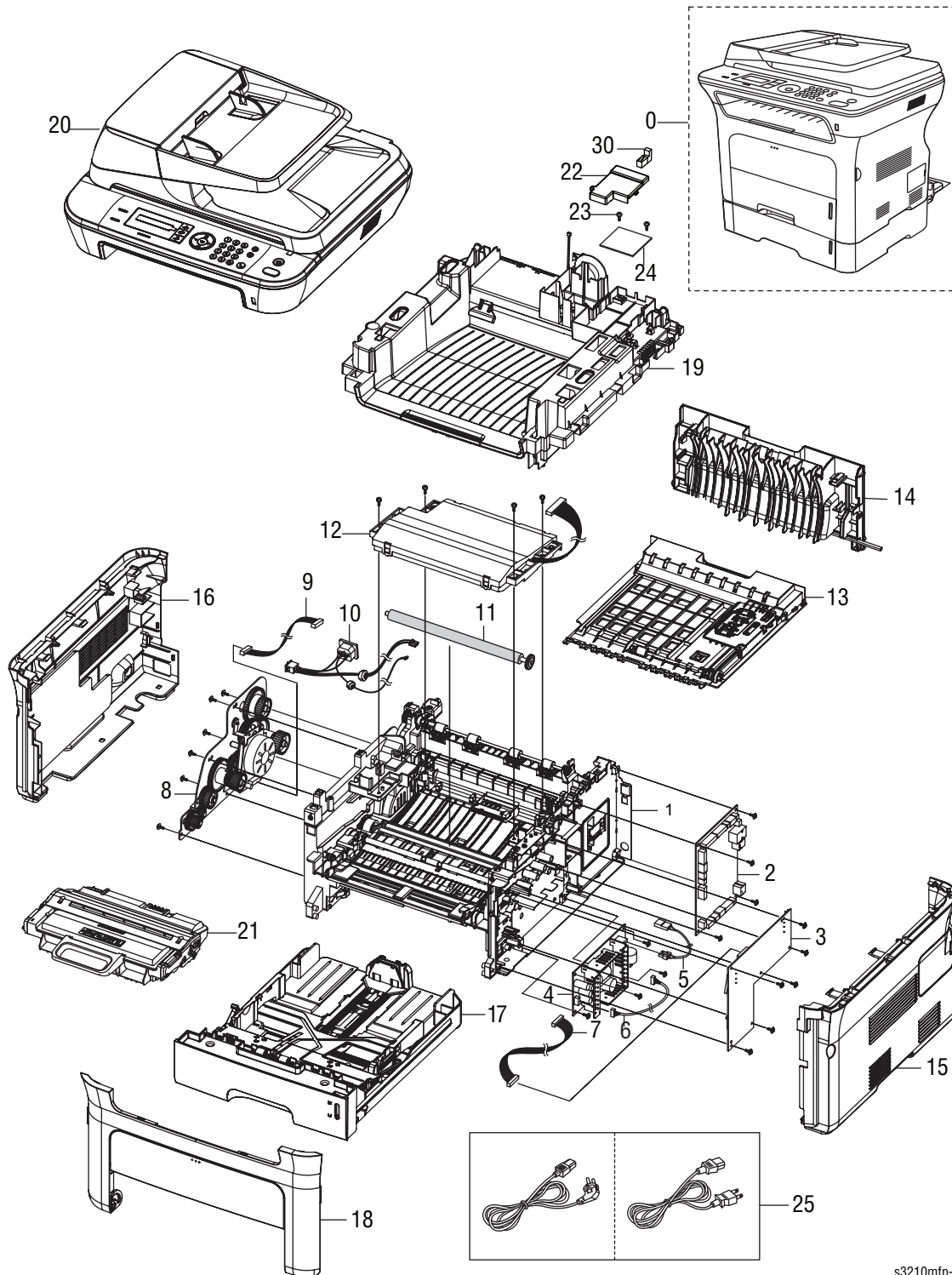
Only parts showing part numbers are available for ordering by support.  
Parts not showing part numbers are available on the parent assembly.

### Abbreviations

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

## Parts Lists

### Parts List 1.0 Main

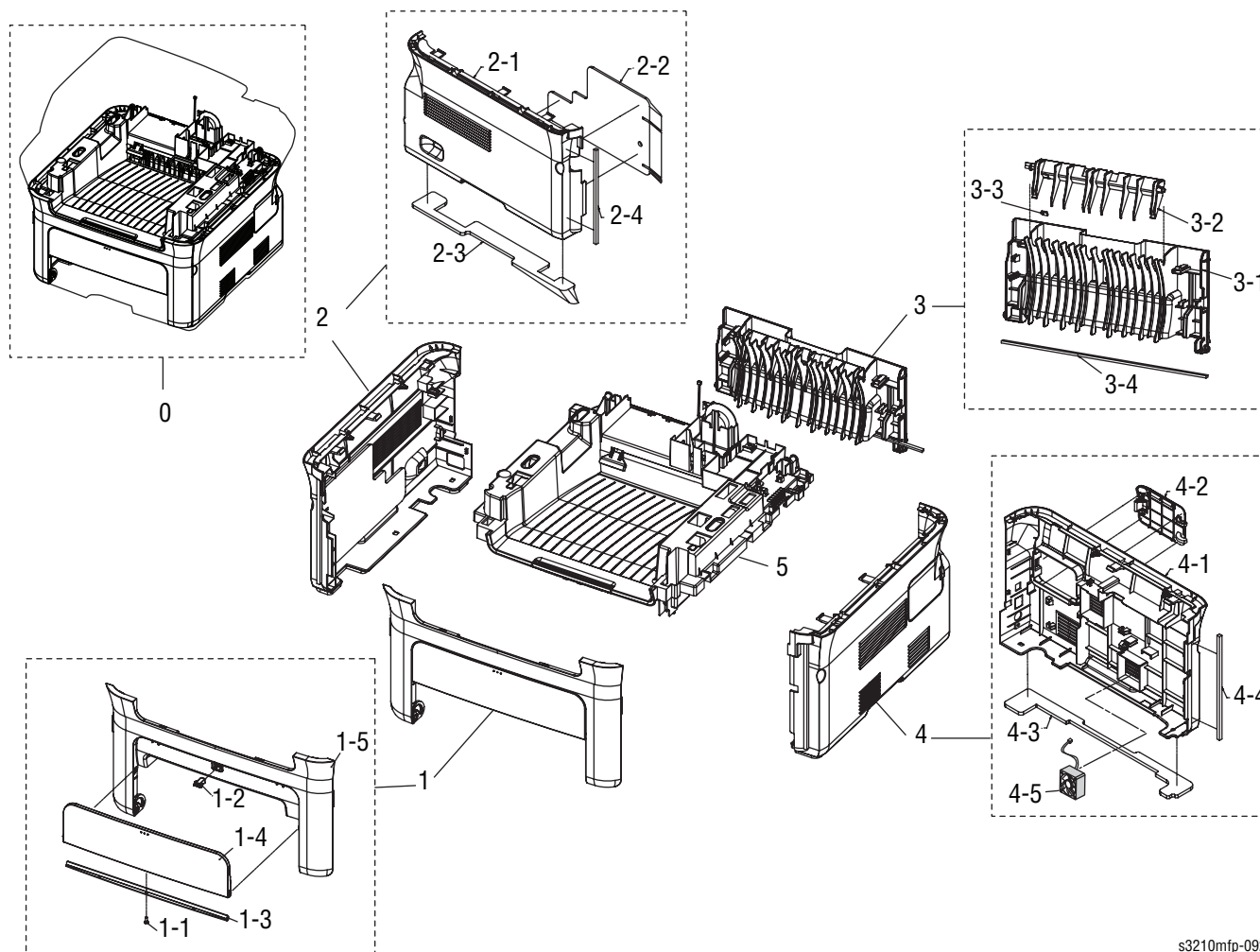


s3210mp-091

## Parts List 1.0 Main

ID No.	Name/Description	Part Number
0.	24 PPM, Mono Laser MFP (3210) 28 PPM, Mono Laser MFP (3220)	
1.	ELA HOU-Frame_220V ELA HOU-Frame_110V	
2.	Main Controller PBA (3210) Main Controller PBA (3220)	140N63400 140N63399
3.	HVPS	105N02147
4.	SMPS 110V (Power Supply) SMPS 220V (Power Supply)	105N02162 105N02163
5.	CBF Harness-Fuser AC	
6.	Harness-SMPS	
7.	CBF Harness-HVPS	
8.	Drive Unit Assembly	007N01601
9.	CBF Harness-Motor & Solenoid	
10.	CBF Harness-AC-Inlet	
11.	Transfer Roller	022N02354
12.	LSU Unit (Laser Unit)	122N00279
13.	Duplex Unit	022N02410
14.	Rear Cover Assembly	002N02734
15.	Right Cover Assembly	101N01442
16.	Left Cover Assembly	101N01443
17.	Cassette Assembly (Tray)	050N00542
18.	Front Cover Assembly	101N01440
19.	Middle Cover Assembly	101N01444
20.	ELA HOU-Scan_High ELA HOU-Scan_Low	
21.	Print Cartridge - 2K Print Cartridge - 4K Print Cartridge - 4K (DMO - only)	106R01485 106R01486 106R01487
22.	FAX_Board Cover	
23.	Screw-Taptite	
24.	FAX Board	140N63240
25.	Power Cord 110V Power Cord 220V	105N02072 117N01769
30	Terminator (220 V Only)	114N00078

## Parts List 2.0 Cover Assemblies



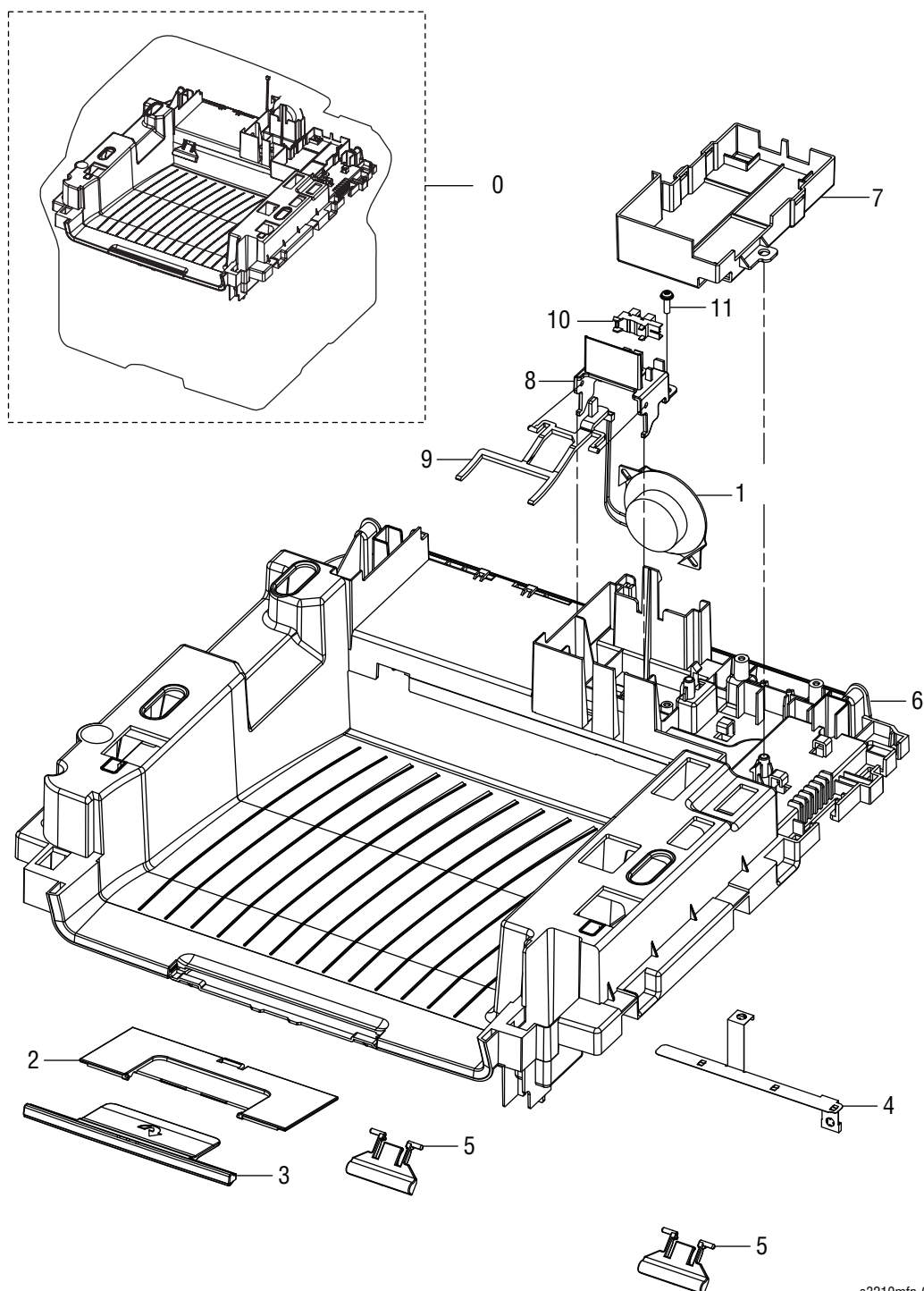
s3210mp-092



## Parts List 2.0 Cover Assemblies

ID No.	Name/Description	Part Number
0.	ELA HOU-Cover	
1.	Front Cover Assembly	101N01440
1-1.	Screw-Taptite	
1-2.	Locker-Latch Push	
1-3.	Bracket-Manual	
1-4.	Cover-Manual	
1-5.	Cover-Front	
2.	Left Cover Assembly	101N01443
2-1.	Cover-Left	
2-2.	Sponge-Cover Side L	
2-3.	Sponge-Side Bottom L	
2-4.	Sponge-Side Front	
3.	Rear Cover Assembly	002N02734
3-1.	Cover-Rear	
3-2.	Guide-Change_Dup	
3-3.	Sponge-Guide Change Dup	
3-4.	Sponge-Cover Rear	
4.	Right Cover Assembly	101N01442
4-1.	Cover-Right	
4-2.	Cover-Right DIMM	
4-3.	Sponge-Side Bottom R	
4-4.	Sponge-Side Front	
4-5.	Power Supply Fan	127N07354

## Parts List 3.0 Middle Cover Assembly

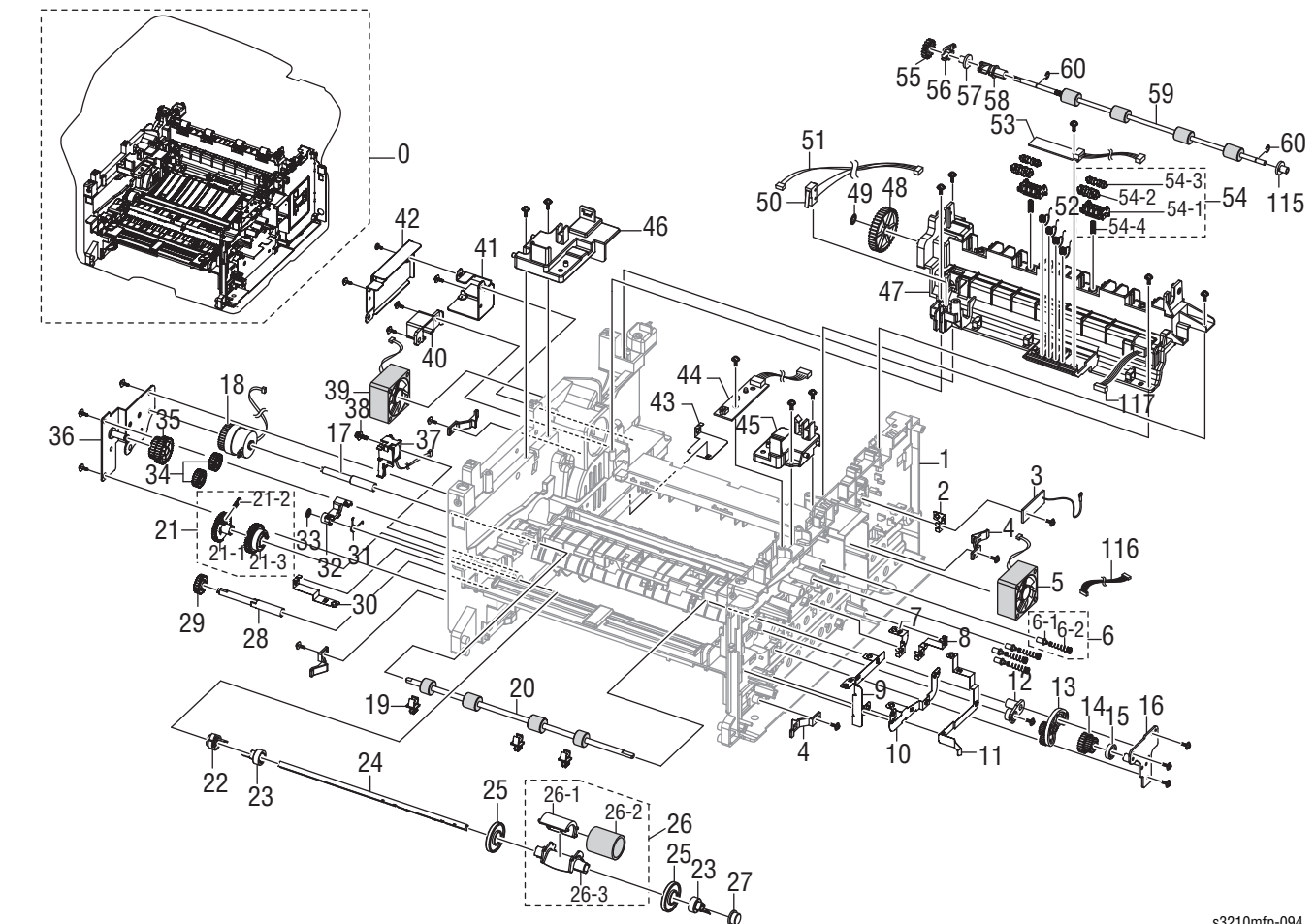


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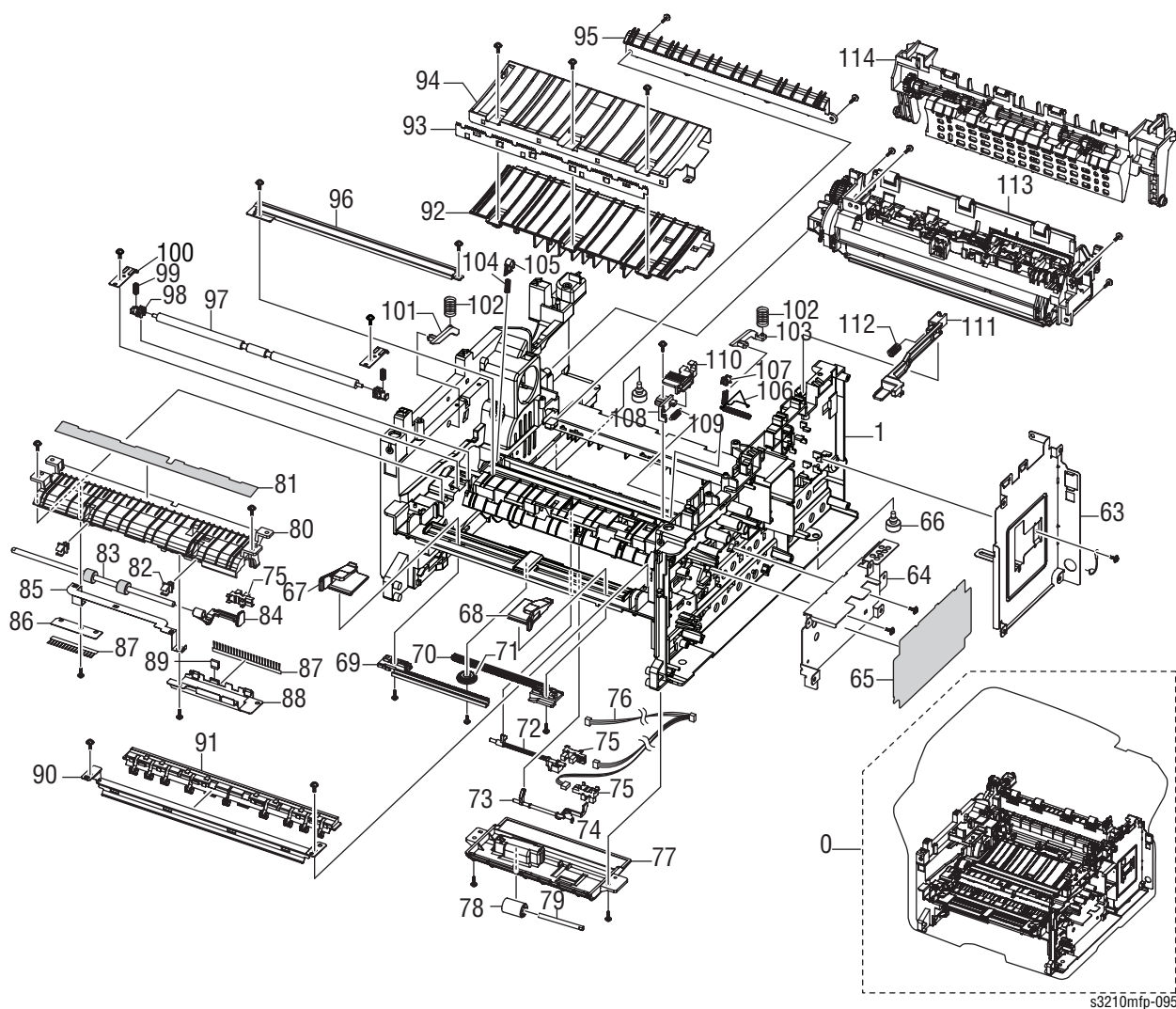
**Parts List 3.0 Middle Cover Assembly**

<b>ID No.</b>	<b>Name/Description</b>	<b>Part Number</b>
0.	Middle Cover Assembly	101N01444
1.	Speaker	
2.	Stacker-RX Large	
3.	Stacker-RX Small	
4.	Ground-Brush	
5.	PMO-SUB_M_Stacker	
6.	Cover-Middle	
7.	Cover-L_FAX_Board	
8.	Bin Full Actuator Holder	
9.	Bin Full Actuator	
10.	Bin Full Sensor	130N01274
11.	Screw-Taptite	

## Parts List 4.0 Frame



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## Parts List 4.0 Frame

ID No.	Name/Description	Part Number
0.	ELA HOU-Frame_110V ELA HOU-Frame_220V	
1.	Frame-Base	
2.	Ground-Zenor	
3.	Zenor PBA	140N63401
4.	PMO-Locker CST	
5.	Main Fan	127N07572
6.	HV Contact	
6-1.	ICT Shaft HV Large	
6-2.	Spring ETC-HV Large	
7.	Ground-Motor_Main	
8.	Ground-Controller	
9.	Ground-Paper	
10.	Ground-BRKT Front	
11.	Ground-Transfer	
12.	Holder-REGI	
13.	MEA Unit Swing	
14.	Gear Duplex RDCN	
15.	Collar Swing	
16.	BRKT Swing	
17.	Shaft-Feed REGI	
18.	Registration Clutch	121N01169
19.	PMO-Bushing Feed	
20.	Roller-Feed REGI	
21.	Pick Up Gear	130N01538
21-1.	Gear Pick Up A	
21-2.	Spring-CS	
21-3.	Gear Pick Up B	
22.	Cam-Pick Up	
23.	PMO-Idle Pick Up	
24.	Shaft-P-Pick Up	
25.	Stopper-M-Pick Up_R2	
26.	Pick Up Roll	130N01540
26-1.	Rubber Pick Up	
26-2.	Housing-M-Pick Up	
26-3.	Housing-M-Pick Up_R2	
27.	Bush-M-Pick Up R2	

## Parts List 4.0 Frame (continued)

ID No.	Name/Description	Part Number
28.	Shaft-Feed	
29.	Gear-Feed DR 16	
30.	Ground-Guide TR	
31.	Spring-TS	
32.	Cam-M-Pick Up	
33.	Ring-CS;ID3,OD3,T0.25,BLACK,SU	
34.	Exit Idle Gear	007N01630
35.	Feed Gear	007N01631
36.	Bracket-Feed	
37.	Pick Up Solenoid	121N01168
38.	Screw-Taptite	
39.	Laser Unit Fan	127N07572
40.	Holder Power	
41.	Shield-Power_SWITCH	
42.	Plate-Power CAP	
43.	Ground-SCF	
44.	PBA LED-Panel	
45.	Frame-LSU-Holder-R	
46.	Frame-LSU-Holder_L	
47.	Upper Exit Frame	001N00515
48.	Gear-M-Fuser Idle 1	
49.	Ring-CS	
50.	CBF Harness-LSU SW&Fan	
52.	Terminal-CRUM	
53.	SUB Terminal PBA	140N63398
54-1. 54-2. 54-3. 54-4.	Holder-Exit Roller Roller-Exit Main Roller-Exit FR Spring CS	
55.	Gear-M-Exit	
56.	PMO-Bearing Shaft	
57.	Support-Roller	
59.	Exit Roller	022N02409
63.	Shield-CONT Roller	
64.	Shield-SMPS	
65.	Insulation-SMPS	

## Parts List 4.0 Frame (continued)

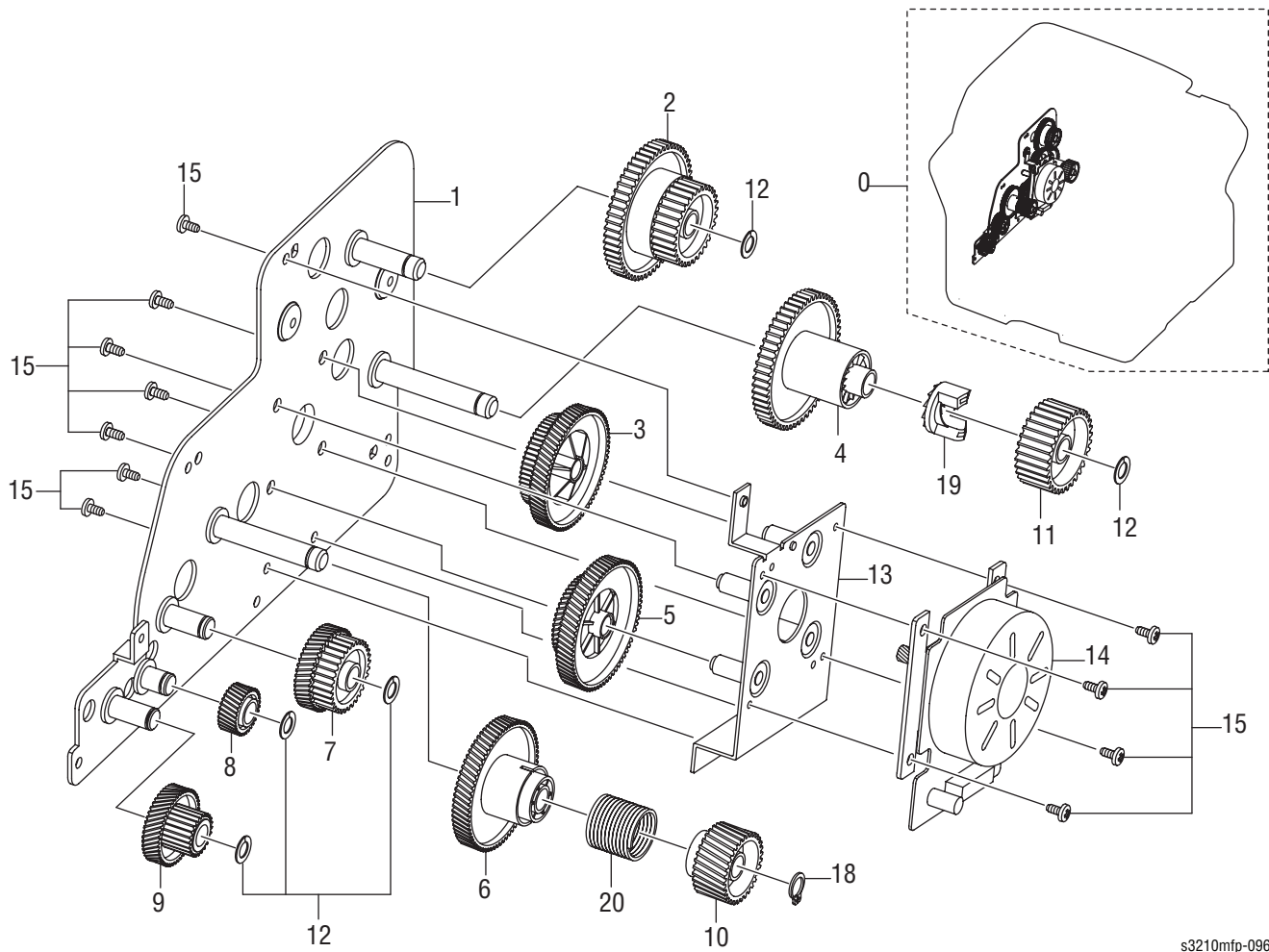
ID No.	Name/Description	Part Number
66.	Foot-ML80	
67.	Adjust-Manual L	
68.	Adjust-Manual R	
69.	Adjust Rack-M-Manual	
71.	Gear-Rack_Pinion	
72.	Feed Actuator	120N00522
73.	Duplex Actuator	120N00521
74.	Actuator Spring	009N01653
75.	Feed/Paper Empty Sensor	130N01274
76.	CBF Harness-HVPS	
77.	Frame-Duplex_PATH	
78.	Roller-M-Idle SCF	
79.	Shaft-DUP_Roller	
80.	Guide-Frame_Duplex	
81.	Sheet-Guide_DUP_Path	
82.	PMO-Bushing Feed	
83.	Feed Roller	022N02355
84.	Paper Empty Actuator	120N00523
85.	Ground-Pick Up	
86.	Sheet-Brush	
87.	MEC-Brush Pick Up	
88.	Bracket-Cover Front	
89.	Ground-Brush Pick Up	
90.	Guide-Paper	
91.	Guide Front Paper	
92.	Guide-TR_RIB	
93.	Plate-E_SAW	
94.	Guide-TR	
95.	Guide-Input	
96.	Plate Earth Transfer	
97.	Shaft-Feed Idle	
98.	Bush-M-Feed Idle	
99.	Spring ETC-TR	
100.	Plate-P-Push Bushing	
101.	PMO-Plate Guide DEVE_L	



**Parts List 4.0 Frame (continued)**

<b>ID No.</b>	<b>Name/Description</b>	<b>Part Number</b>
102.	Spring ETC-Guide DEVE	
103.	PMO-Plate Guide DEVE_R	
104.	Spring TR	
105.	Bush-TR_L	
106.	Terminal Spring TR	
107.	PMO-Bushing_TR(L)	
108.	Guide-Holder_TR	
109.	Spring ETC-ES (Guide holder TR)	
110.	Holder-Transfer	
111.	Link Cover_Rear	
112.	Spring-CS	
114.	Rear Guide Unit	032N00491
115.	Bush-4	
116.	Harness-CCD Home	
117.	Harness-Fuser SMPS	

## Parts List 5.0 Drive Unit Assembly

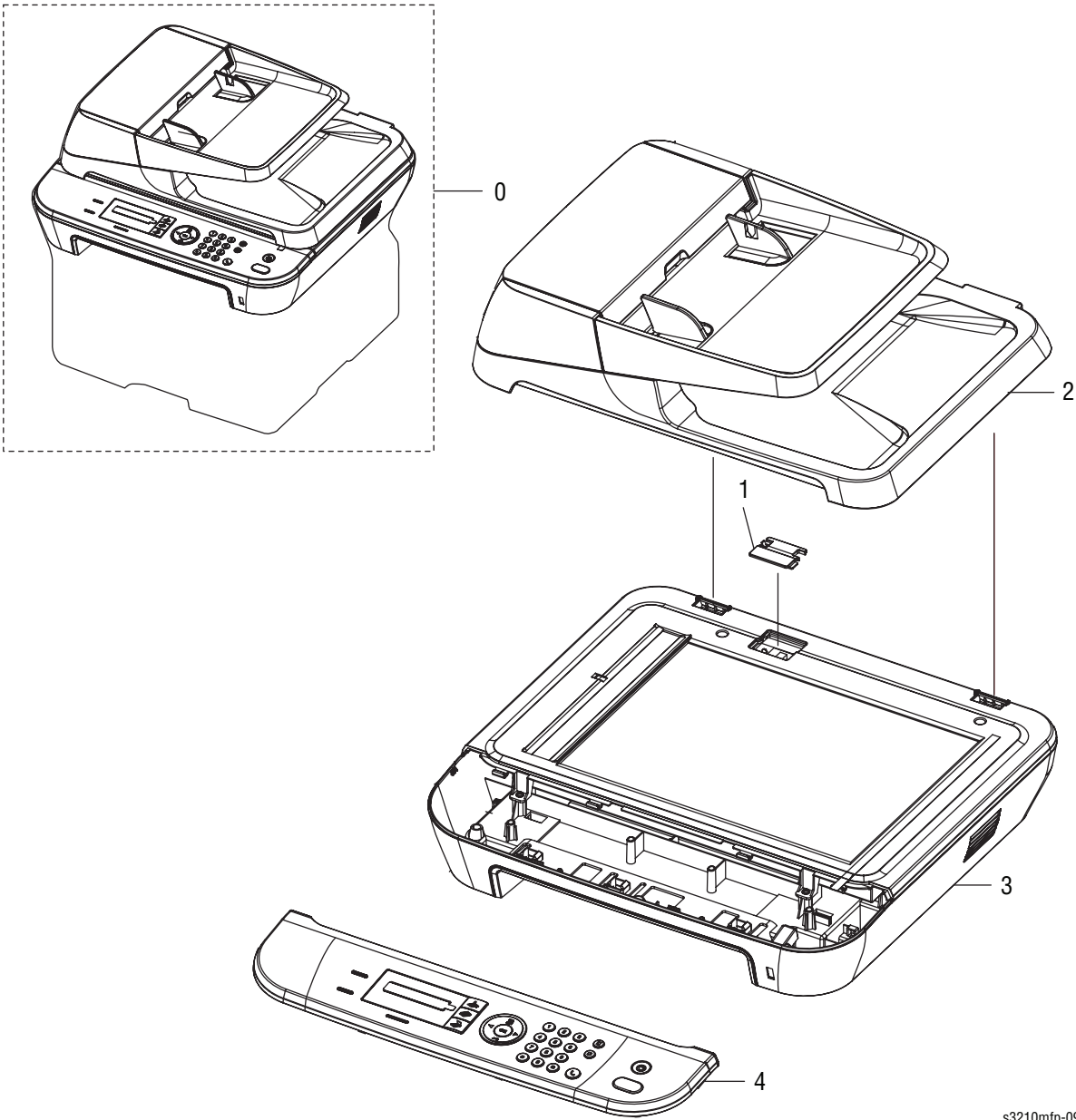


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## Parts List 5.0 Drive Unit Assembly

ID No.	Name/Description	Part Number
0.	Drive Unit Assembly	007N01601
1.	Bracket Gear	
2.	Gear Exit RDCN 61/28	
3.	Gear RDCN 83/40	
4.	Gear Fuser DR IN 61	
5.	Gear RDCN 89/55	
6.	Gear OPC DR IN 89	
7.	Gear Feed RDCN 56/25	
8.	Gear Pick Up Idle 31	
9.	Gear RDCN 52/18	
10.	Gear OPC Clutch 29	
11.	Gear Fuser DR OUT 37	
12.	Washer Plain	
13.	Bracket Motor	
14.	Motor BLDC	
15.	Screw Taptite	
16.	-----	
17.	-----	
18.	Ring C	
19.	Hub Clutch	
20.	Spring Clutch	

Parts List 6.0 Scan Assembly

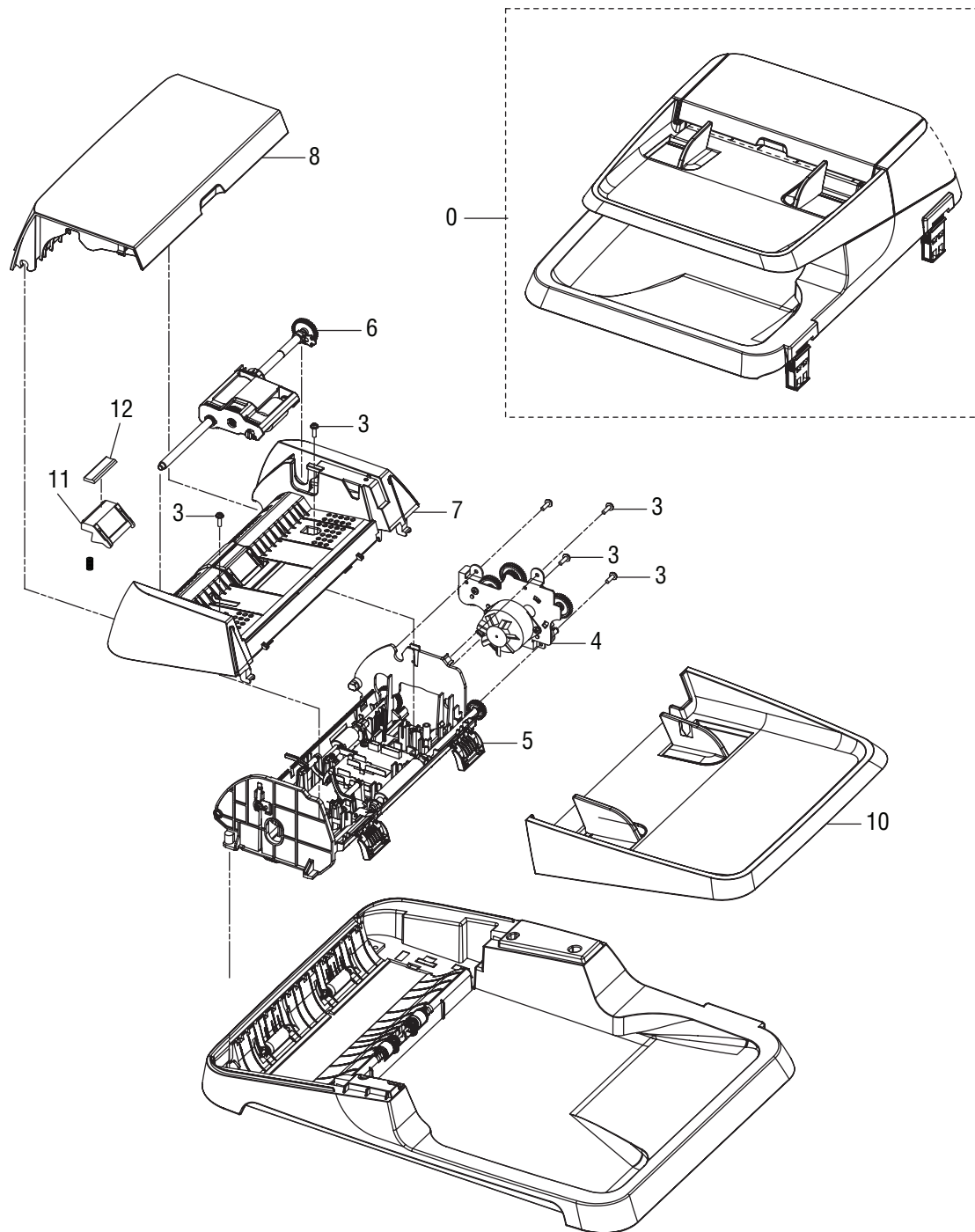


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**Parts List 6.0 Scan Assembly**

<b>ID No.</b>	<b>Description</b>	<b>Part Number</b>
0.	ELA HOU-SCAN_High (3220) ELA HOU-SCAN_Low (3210)	
1.	Cap-ADF Connector	
2.	ADF	022N02406
3.	Platen Assembly	090N00168
4.	UI Assy (3220) UI Assy (3210)	101N01438 101N01439

## Parts List 6.1 ADF Assembly

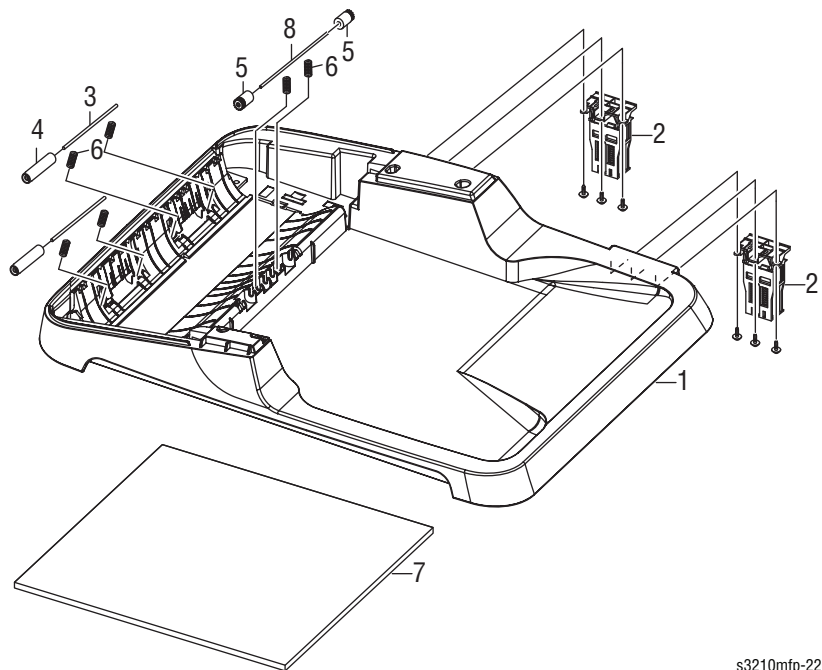


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**Parts List 6.1 ADF Assembly**

<b>ID No.</b>	<b>Description</b>	<b>Part Number</b>
0.	ADF Platen Cover Hinge	022N02406 003N01051
3.	Screw-Taptite	
4.	ADF Motor	127N07619
5.	Lower ADF	022N02407
6.	ADF Feeder Assembly	130N01500
7.	Upper ADF	022N02408
8.	MEA-Cover Open	
9.	Platen Cover	101N01441
10.	MEA-TX Stacker	
11.	ADF Feed Pad Assembly	019N00928
12.	ADF Rubber Feed Pad	019N00566

## Parts List 6.2 Platen Cover



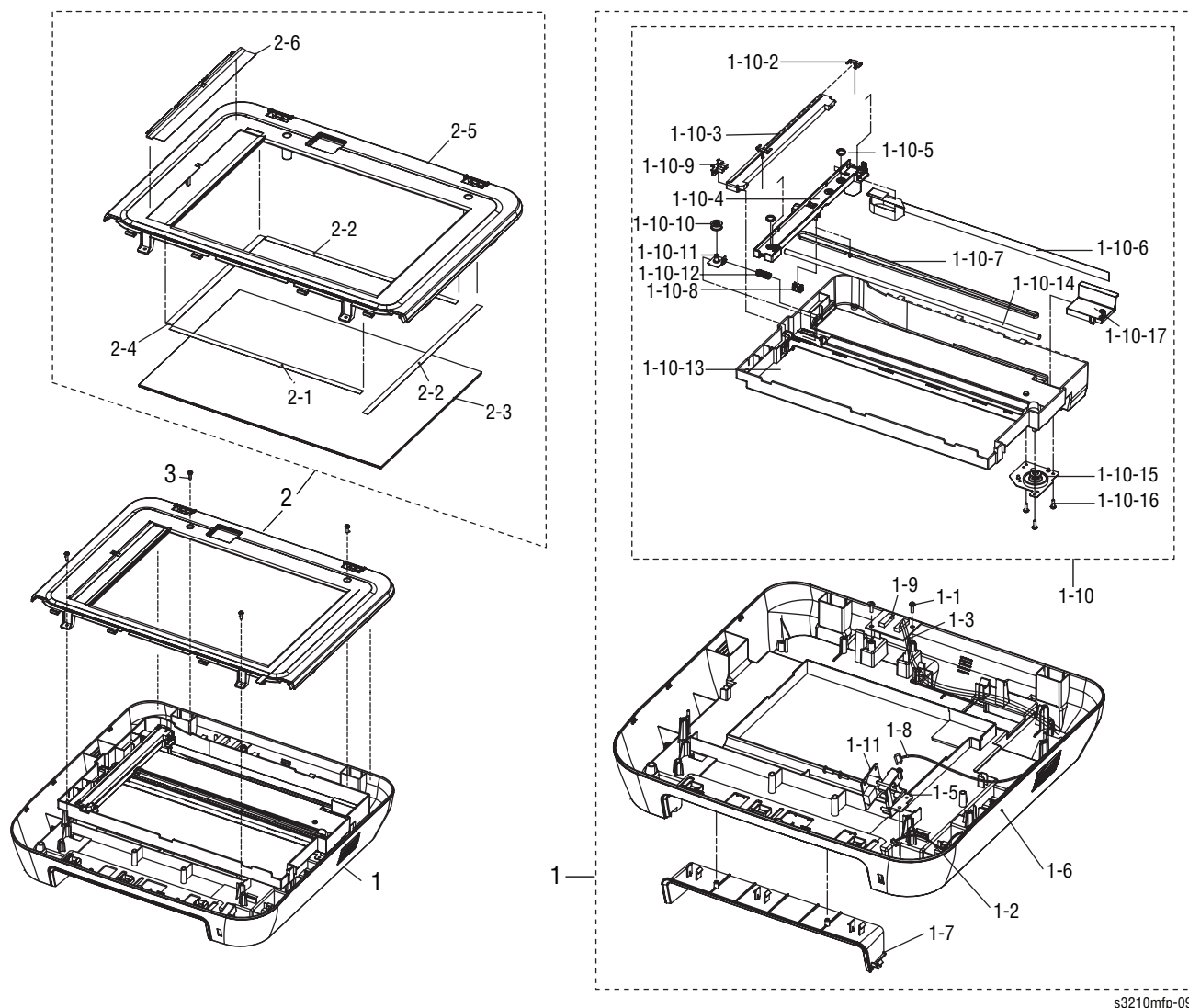
s3210mfp-220



**Parts List 6.2 Platen Cover**

<b>ID No.</b>	<b>Description</b>	<b>Part Number</b>
1.	Platen Cover	022N02408
2.	Platen Cover Hinge	003N01051
3.	Feed Idle Shaft	006N01302
4.	ADF Feed Roller	022N02312
5.	Pinch Roll	022N02014
6.	Feed Roll Spring	009N01489
7.	Sponge Sheet	

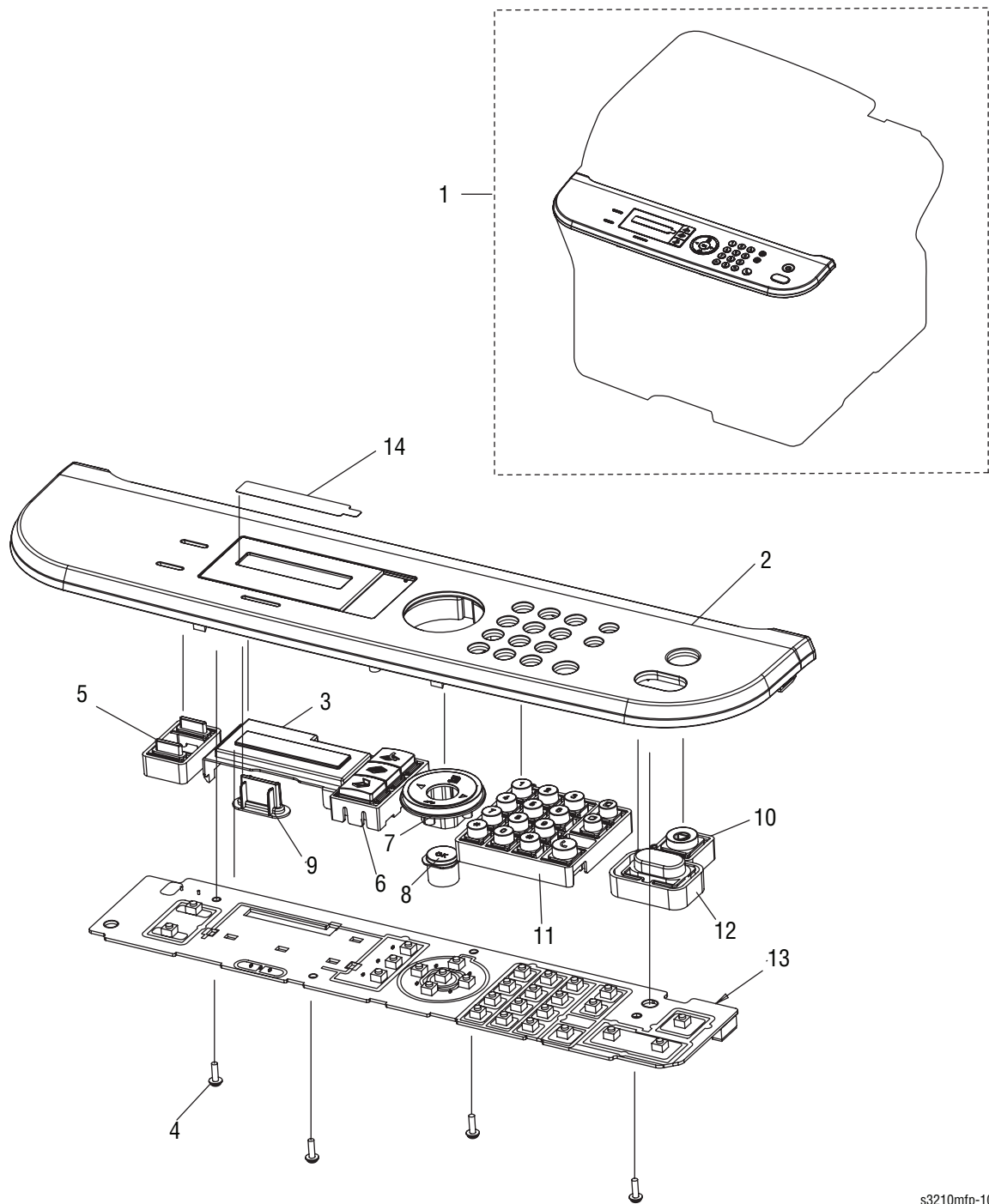
## Parts List 6.3 Platen Assembly



## Parts List 6.3 Platen Assembly

ID No.	Description	Part Number
1.	ELA HOU-Scan Lower_H	
1-1.	Screw-Taptite	
1-2.	Harness-OPE	
1-3.	Harness-ADF Lower	
1-4.	Flat Cable	
1-5.	Holder-USB	
1-6.	Cover-Scan Lower	
1-7.	Cover-Middle DECO	
1-8.	Harness-USB Host	
1-9.	PBA-Joint	
1-10.	ELA Unit-Standard Scan	
1-10-2.	Slider-CIS	
1-10-3.	Contact Image Sensor	130N01570
1-10-4.	Bracket-CIS	
1-10-5.	Spring-CS	
1-10-6.	Flat Cable	
1-10-7.	Timing Gear Belt	007N01549
1-10-8.	Clip-P-Belt	
1-10-9.	Sensor	130N01274
1-10-10.	Pulley-M_Idle	
1-10-11.	Bracket-P-Pulley	
1-10-12.	Spring-CS	
1-10-13.	Frame-Scan Lower	
1-10-14.	Shaft-CIS	
1-10-15.	Scan Drive Unit	007N01629
1-10-16.	Screw-Taptite	
1-10-17.	Cover-FFC	
1-11.	USB Host PBA	140N63397
2.	Platen Upper	090N00169
2-1.	Tape Double Face	
2-2.	Tape Double Face	
2-3.	Platen Glass	090N00161
2-4.	Sheet-Shading	
2-5.	Cover-Scan Upper	
2-6.	MEA HOU-ADF Sheet	

Parts List 6.4 UI Assembly

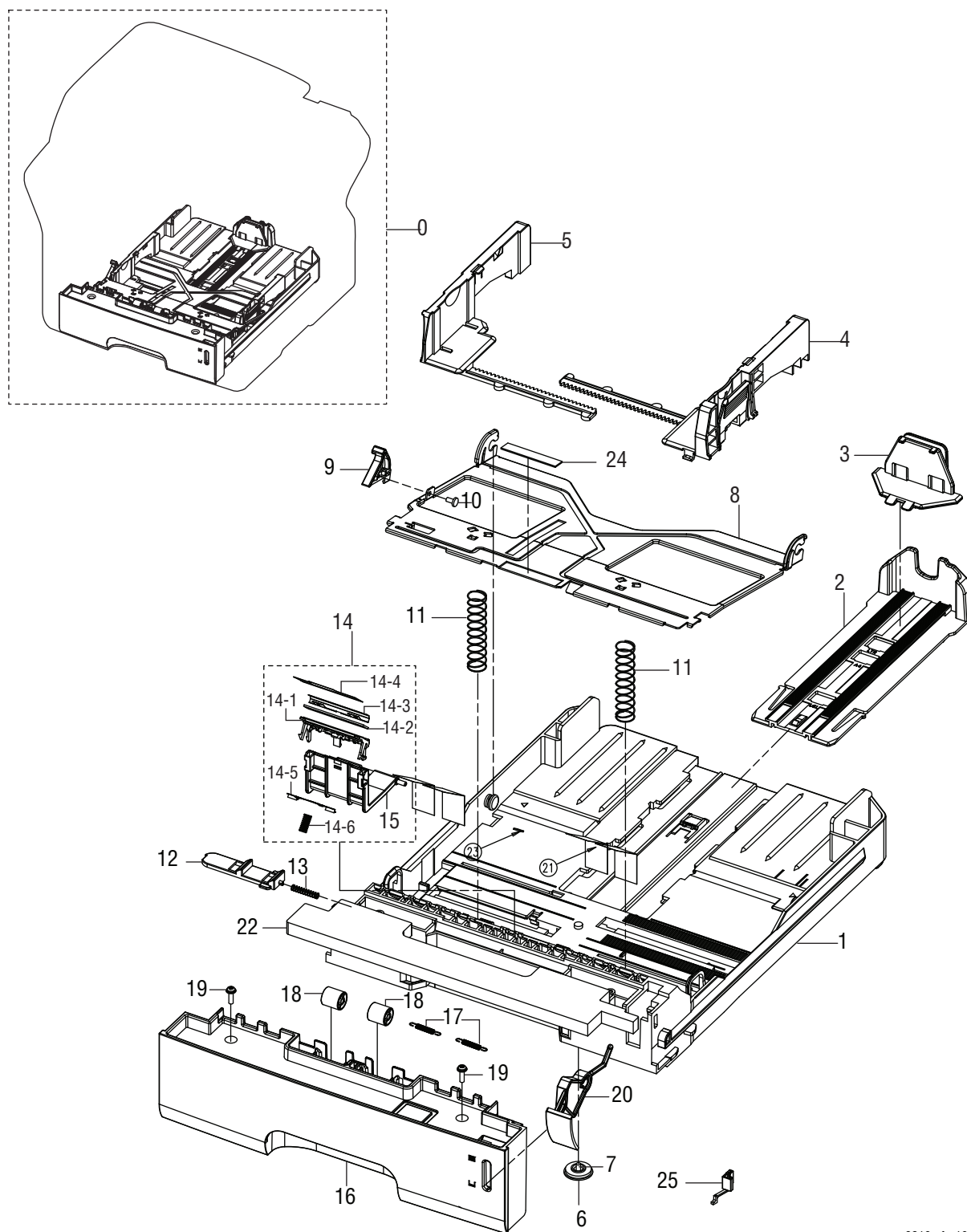


s3210mfp-100

## Parts List 6.4 UI Assembly

ID No.	Description	Part Number
1.	UI Assy (3220) UI Assy (3210)	101N01438 101N01439
2.	Cover-OPE (3220) Cover OPE (3210)	
3.	Cover-Window SF-530	
4.	Screw-Taptite	
5.	Key-Extra	
6.	Key-FAX	
7.	Key-Menu	
8.	Key-OK	
9.	Key-Status	
10.	Key-Stop	
11.	Key-Tel	
12.	Key-Start	
13.	UI PBA	140N63396
14.	Cover-LCD	

## Parts List 7.0 Cassette Assembly

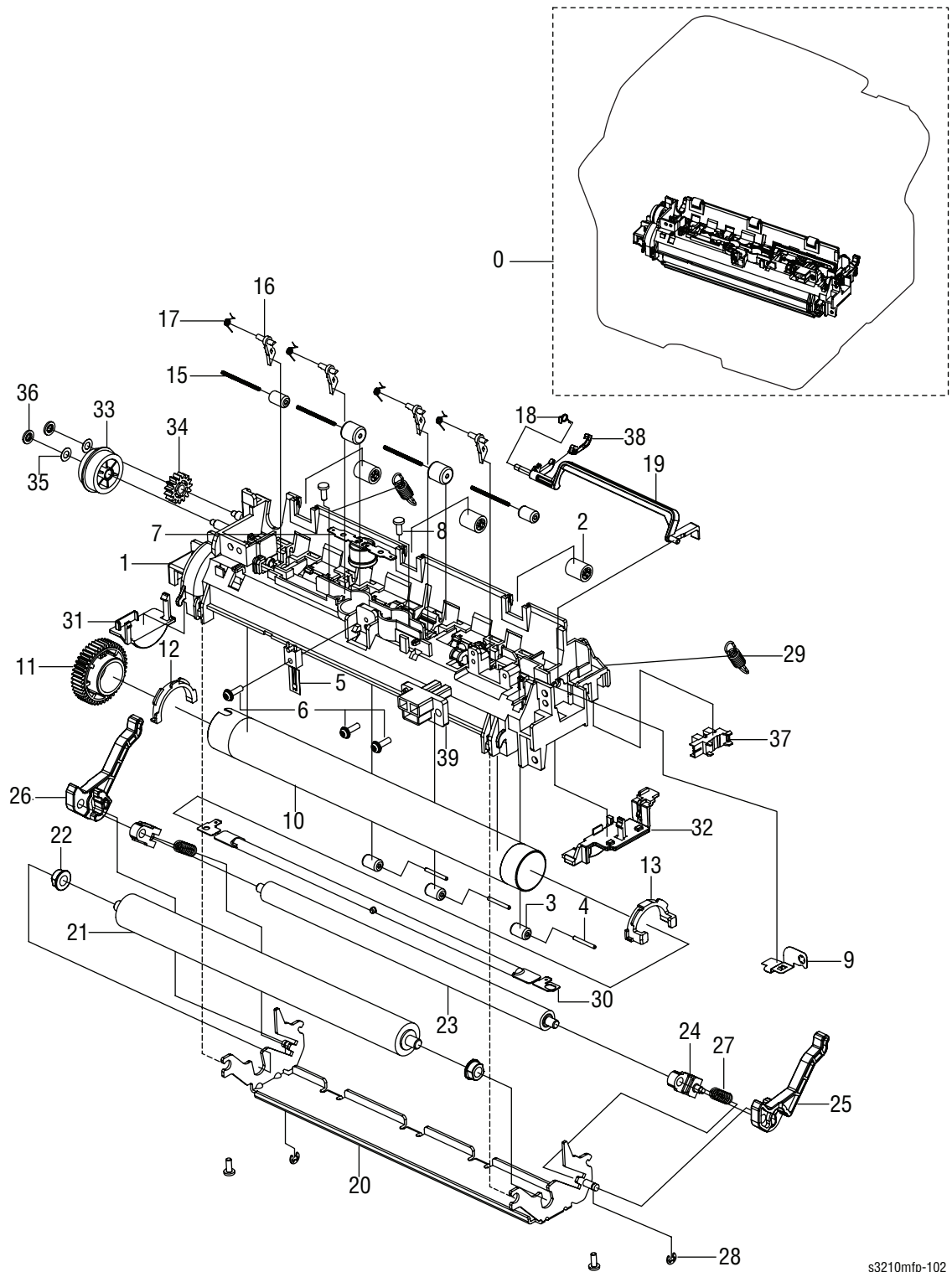


s3210mfp-103

## Parts List 7.0 Cassette Assembly

ID No.	Name/Description	Part Number
0.	Cassette Assembly	050N00542
1.	Frame-M Cassette	
2.	Guide-M Extension L2	
3.	PMO Extension Small	
4.	Adjust-M Cassette-R	
5.	Adjust-M Cassette-L	
6.	Gear Pinion	
7.	Screw Taptite	
8.	Plate-P Knock-Up (Lift Plate)	
9.	CAM-M Knock-Up	
10.	Screw Taptite	
11.	Spring-CS	
12.	PMO Plate-Locker	
13.	Spring ETC-Locker, Plate	
14.	Cassette Feed Pad Assembly	019N00957
14-1.	Holder Pad	
14-2.	RPR-Friction Pad	
14-3.	Plate Pad	
14-4.	Sheet Pad	
14-5.	Ground Pad	
14-6.	Spring ETC Exit Roll FD	
15.	Housing Holder Pad	
16.	Cover Handle-Cassette	
17.	Spring-ES	
18.	Roller-M Idle Feed	
19.	Screw Taptite	
20.	Indicator Paper	
21.	Sheet Guide-Side-Far	
22.	Sheet Guide-Side-Near	

## Parts List 8.0 Fuser



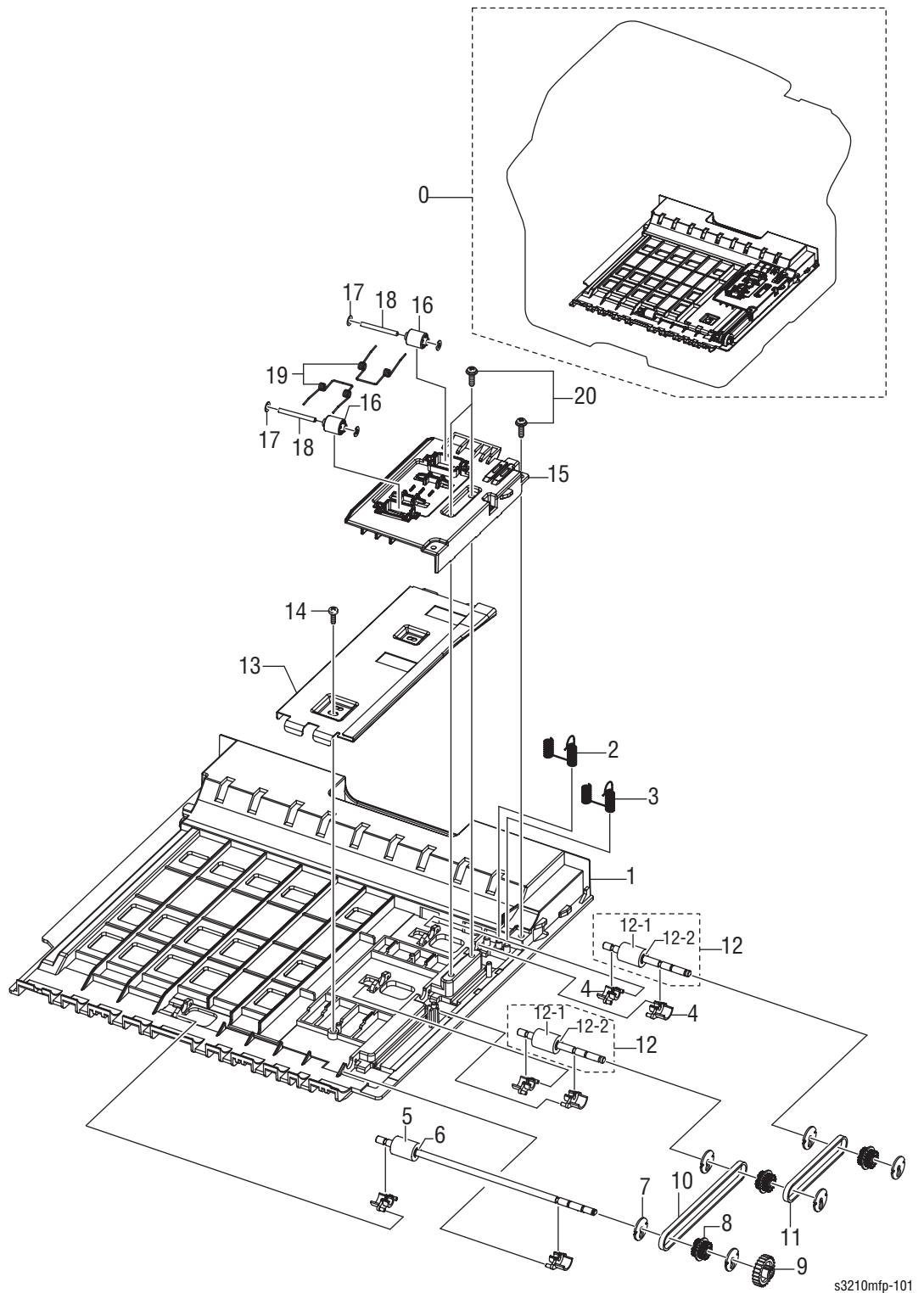
s3210mfp-102



## Parts List 8.0 Fuser

ID No.	Name/Description	Part Number
0.	Fuser (110V) Fuser (220V)	126N00330 126N00331
1.	Cover Fuser	
2.	PMO Roller Upper DP	
3.	Roller Idle	
4.	IEX Shaft Idle, F/Up	
5.	Thermistor	130N01489
6.	Screw Taptite	
7.	Thermostat	130N01490
8.	Screw Taptite	
9.	Ground Fuser	
10.	Heat Roller	022N02356
11.	Gear Fuser	
12.	Bush HR-L	
13.	Bush HR-R	
14.	PEX Roller F/Up (2)	
15.	Spring ETC	
16.	Guide Claw	
17.	Spring ETC Claw	
18.	Spring TS	
19.	Exit Actuator	120N00524
20.	Frame Fuser	
21.	Large Pressure Roller	022N02357
22.	Bush PR-1st	
23.	Small Pressure Roller	022N02358
24.	Bush PR-2nd	
25.	Lever Link Jam-R	
26.	Lever Link Jam-L	
27.	Spring CS	
28.	Ring-C	
29.	Spring ES	
30.	Halogen Lamp, 110V Halogen Lamp, 220V	122N00269 122N00270
31.	CAP Lamp-L	122N00286
32.	CAP Lamp-R	122N00287
33.	Gear Fuser RDCN 28-20	
34.	Gear MPF 5	
35.	Washer Plain	
36.	Ring CS	
37.	Exit Sensor	130N01274
38.	Exit Actuator Cover	
39.	Junction Block	

## Parts List 9.0 Duplex Unit



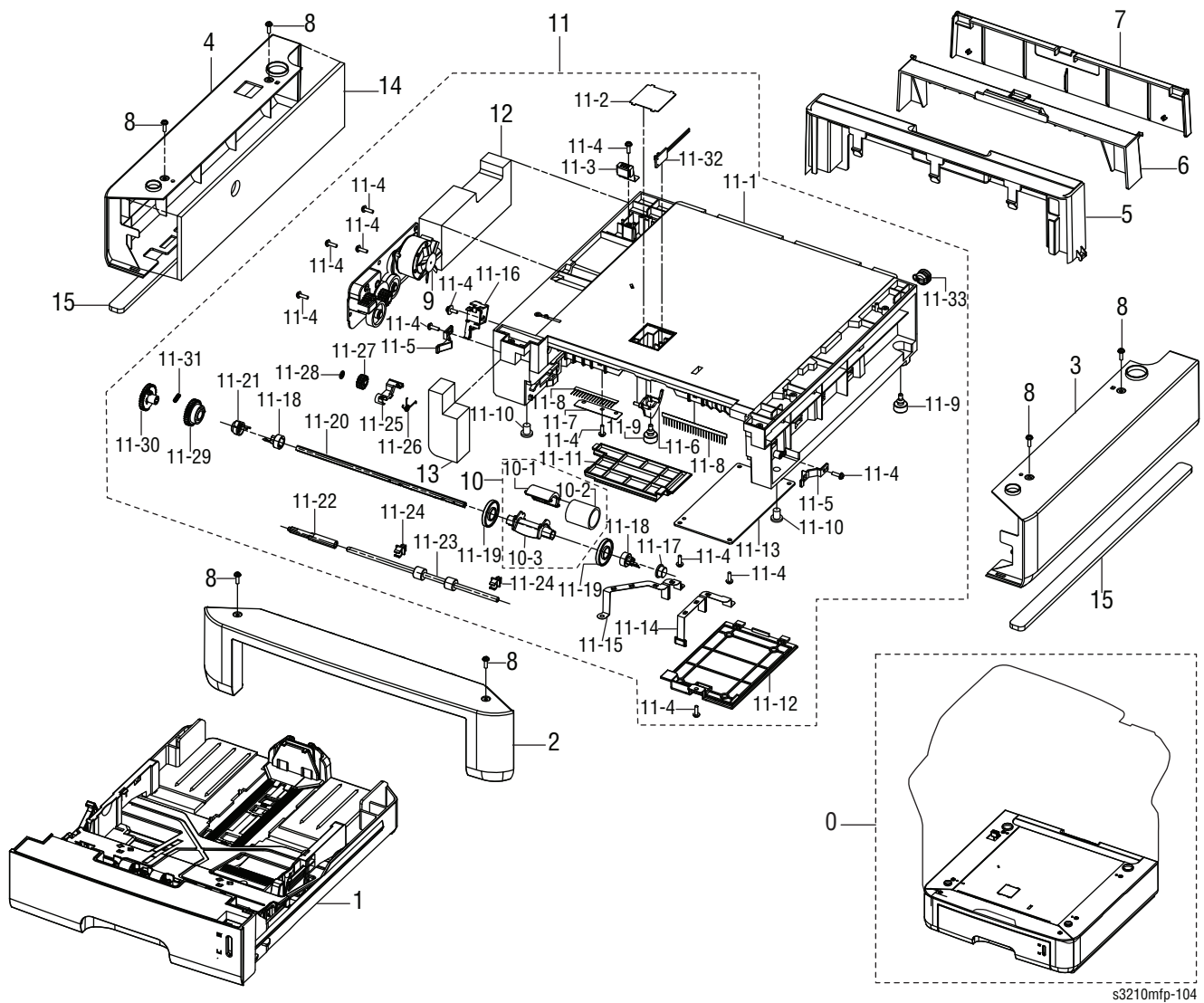
s3210mfp-101

## Parts List 9.0 Duplex Unit

ID No.	Name/Description	Part Number
0.	Duplex Unit	022N02410
1.	Frame Duplex Base	
2.	Terminal GND-DUP L	
3.	Terminal GND-DUP S	
4.	Bush M Feed, DUP	
5.	Roller Feed-DUP2	
6.	Ring-C	
7.	Pulley M-18 Dummy-DUP	
8.	Pulley 18-DUP	
9.	Gear Exit F/Down	
10.	Belt Timing Gear	
11.	Belt Timing Gear	
12.	ELA Unit Roller-DUP	
12-1.	Roller Feed-DUP	
12-2.	Ring-C	
13.	Bracket Duplex-Align	
14.	Screw Tapping	
15.	Guide Duplex-Upper	
16.	Roller M-Idle-DUP	
17.	PCT-SILP Washer	
18.	Shaft Idle Roll, DUP	
19.	Spring-TS	
20.	Screw Taptite	

## Options

### Parts List 10.0 Optional Feeder Assembly



## Parts List 10.0 Optional Tray Assembly

ID No.	Name/Description	Part Number
0.	Optional Tray Assembly	098N02204
1.	Cassette Assembly (Tray)	050N00542
2.	Cover Front-SCF	
3.	Cover Right-SCF	
4.	Cover Left-SCF	
5.	Cover Rear-SCF	
6.	Duplex Cover	002N02736
7.	Cover Rear Duplex	
8.	Screw Taptite	
9.	ELA HOU Motor-SCF	
9-1.	Bracket Motor-SCF	
9-2.	Support Feed-SCF	
9-3.	Gear Idle 59	
9-4.	Gear 61/47 Idle	
9-5.	Gear Idle 23	
9-6.	Gear-35 Idle	
9-7.	Gear RDCN 57/18	
9-8.	Bracket Gear-SCF	
9-9.	Motor Step	
9-10.	PMO Impeller-DRV	
9-11.	Screw Taptite	
9-12.	Washer Plain	
10.	Pick Up Roll	130N01540
10-1.	Housing-M Pick Up R2	
10-2.	Rubber Pick Up	
10-3.	Housing-M Pick Up UP2-R2	

## Parts List 10.0 Optional Tray Assembly (continued)

ID No.	Name/Description	Part Number
11.	ELA HOU Frame-SCF	121N01168
11-1.	Frame SCF	
11-2.	Sheet Cover Sensor	
11-3.	IPR Ground Top	
11-4.	Screw Taptite	
11-5.	PMO Locker CST	
11-6.	PMO Actuator Empty	
11-7.	Sheet Brush	
11-8.	MEC Brush Antistatic	
11-9.	Foot ML80	
11-10.	Foot Front	
11-11.	Cover Harness-SCF	
11-12.	Cover M-SIMM R2	
11-13.	PBA SCF	
11-14.	Ground Paper-SCF	
11-15.	Ground Brush-SCF	
11-16.	Pick Up Solenoid	
11-17.	Bush-M Pick Up R	
11-18.	Pick Up Roll Retainer	
11-19.	PMO Idle Pick Up	
11-20.	Shaft-P Pick Up	
11-21.	Bush-M Pick Up L	
11-22.	Shaft Feed-SCF	
11-23.	Feed Roller	
11-24.	PMO Bushing Feed	
11-25.	CAM M Pick Up	
11-26.	Spring-TS	
11-27.	Gear Feed 2	
11-28.	Ring CS; ID3, OD3, T0.25, Black, SU	
11-29.	PMO Gear Pick Up B	
11-30.	Gear Pick Up A	
11-31.	Spring-TS	

## Xerox Supplies and Accessories

### Consumables and Maintenance Items

Parts List Reference	Description	Part Number
PL1.0.11	Transfer Roller (50K)	022N02354
PL8.0.0	Fuser - 110V (50K)	126N00330
	Fuser - 220V (50K)	126N00331
PL1.0.21	Print Cartridge - 4K	106R01486
	Print Cartridge - 2K	106R01485

### Options

Parts List Reference	Description	Part Number
N/A	128 MB DDR2 Memory (1x 128 MB)	098N02189
PL10.0	Optional Tray Assembly	098N02204

### Power Cords

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

### Tools

Parts List Reference	Description	Part Number
N/A	Toner Vacuum	003-1496-00





# Wiring

- Component Locator Diagrams
- Plug/Jack Locators
- System Connections
- Wiring Diagrams

## Chapter 10



## Component Locator Diagrams

This chapter contains the plug/jack designators, component locator diagrams, and wiring diagrams for the print engine, scanner, and ADF.

### Component Locator

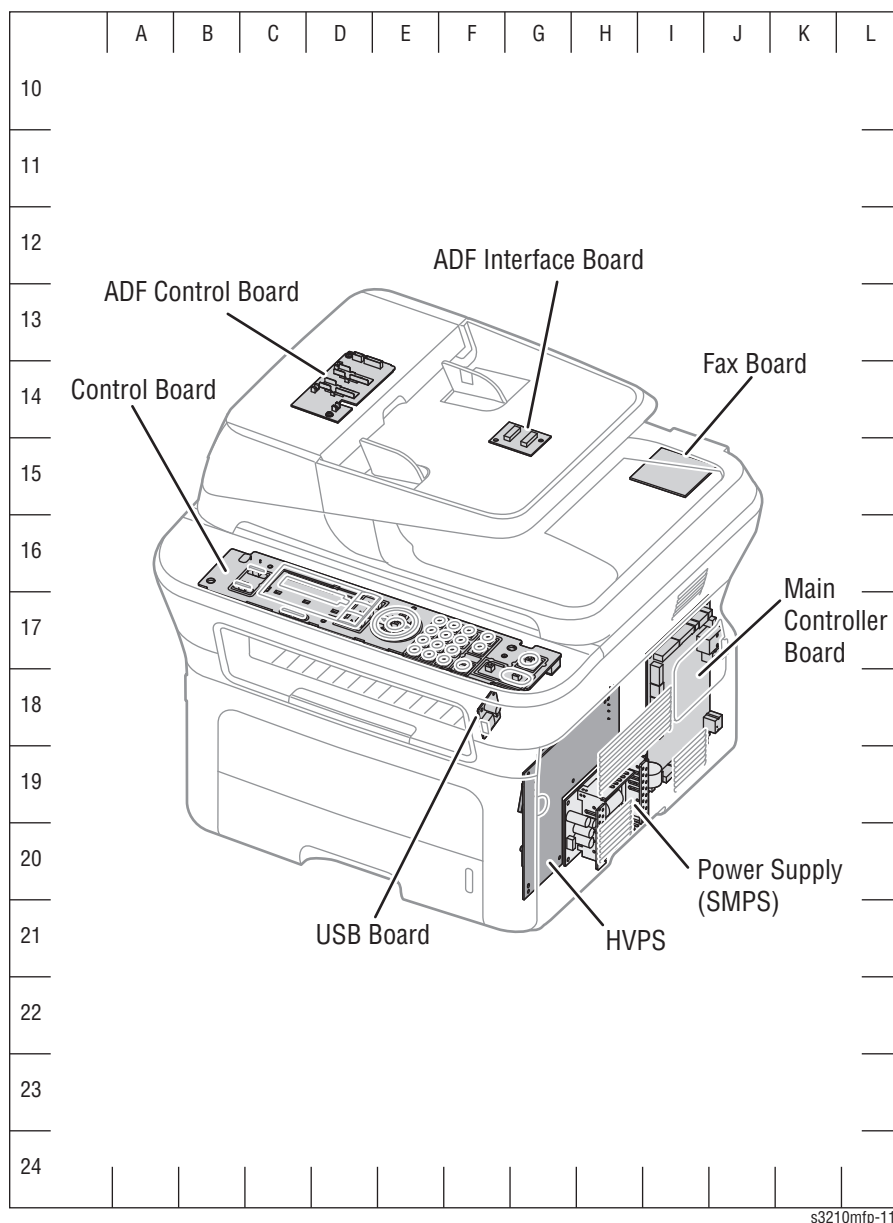
Maps 1 through 3 indicate the location of key components within the printer.

1. Map 1 - Circuit Board Locator
2. Map 2 - Drive Locator
3. Map 3 - Sensor Locator

#### Component Locator

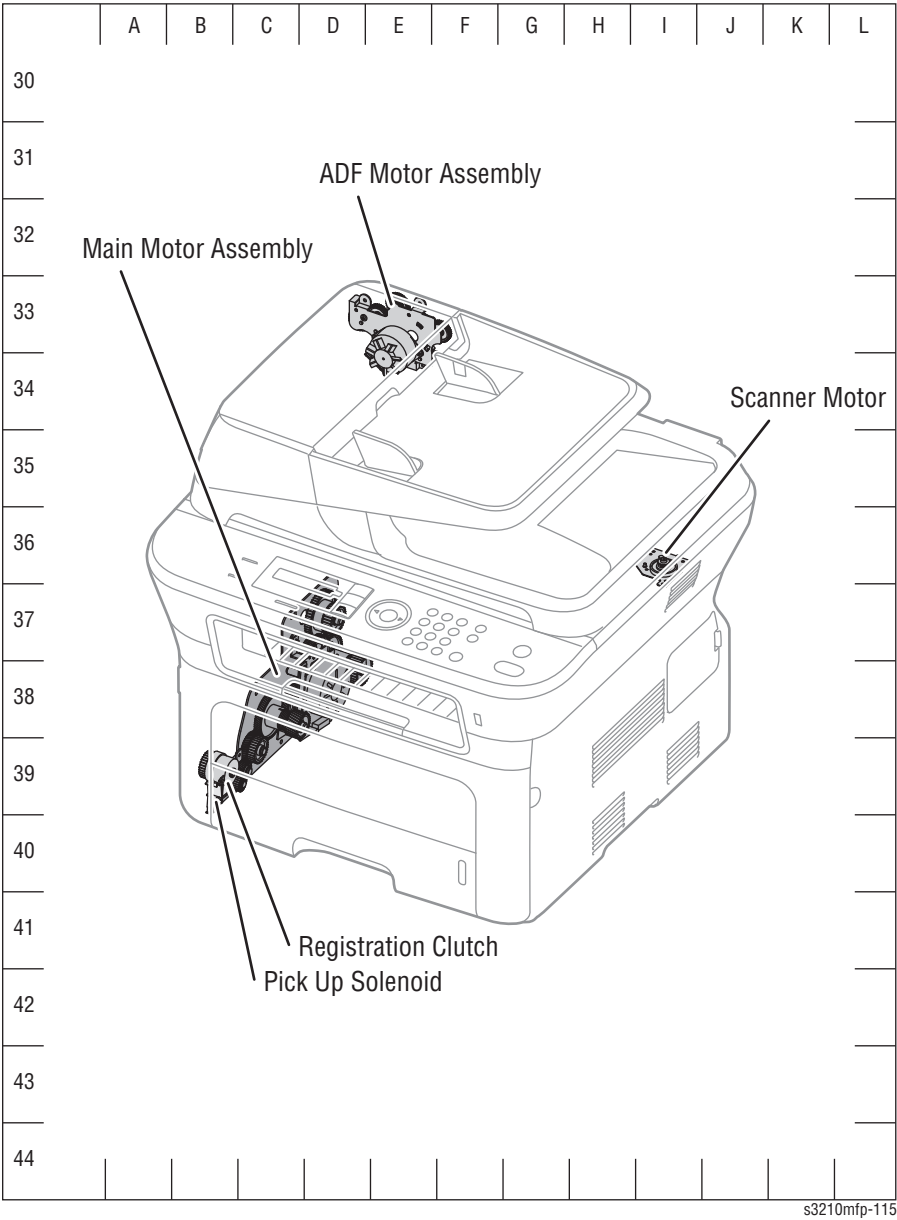
Component	Map	Coordinates
ADF Control Board	1	D-14
Control Panel	1	B-16
Main Controller Board	1	I-17
Power Supply (SMPS)	1	H-19
HVPS	1	G-19
ADF Motor Assembly	2	E-33
Main Motor Assembly	2	C-38
Registration Clutch	2	B-39
Pick Up Solenoid	2	B-39
Scanner Motor	2	I-36
ADF Registration Sensor	3	D-73
ADF Exit Sensor	3	D-73
ADF No Paper Sensor	3	D-74
Interlock Switch	3	F-74
Output Tray Full Sensor	3	H-74
Exit Sensor	3	I-77
Rear Cover Interlock Switch	3	H-78
Front Cover Interlock Switch	3	G-79
Duplex Registration Sensor	3	F-79
Tray Feed Sensor	3	F-79
Tray No Paper Sensor	3	E-79
Laser Unit Fan	4	D-57
Main Fan	4	I-58
Power Supply Fan	4	H-60

## Map 1 - Circuit Board Locator

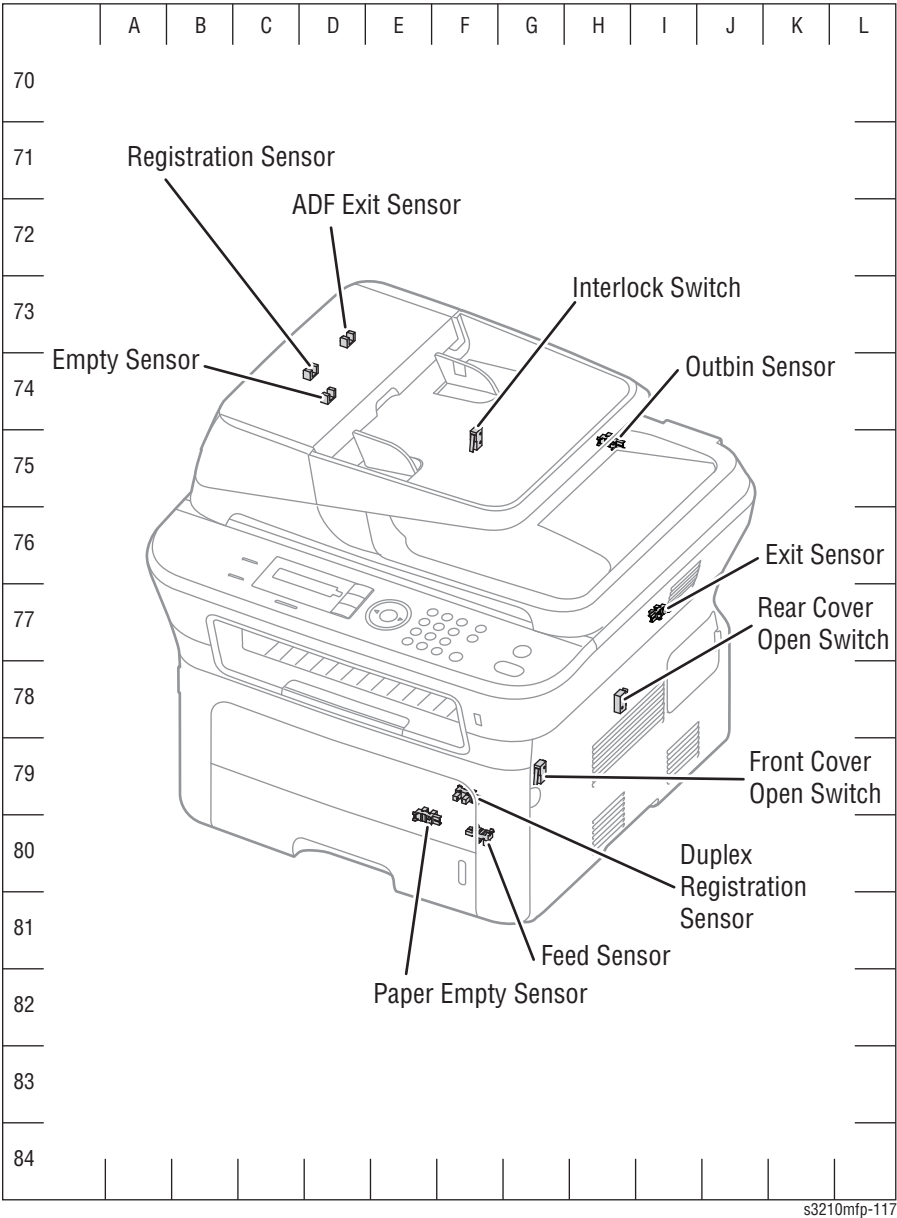


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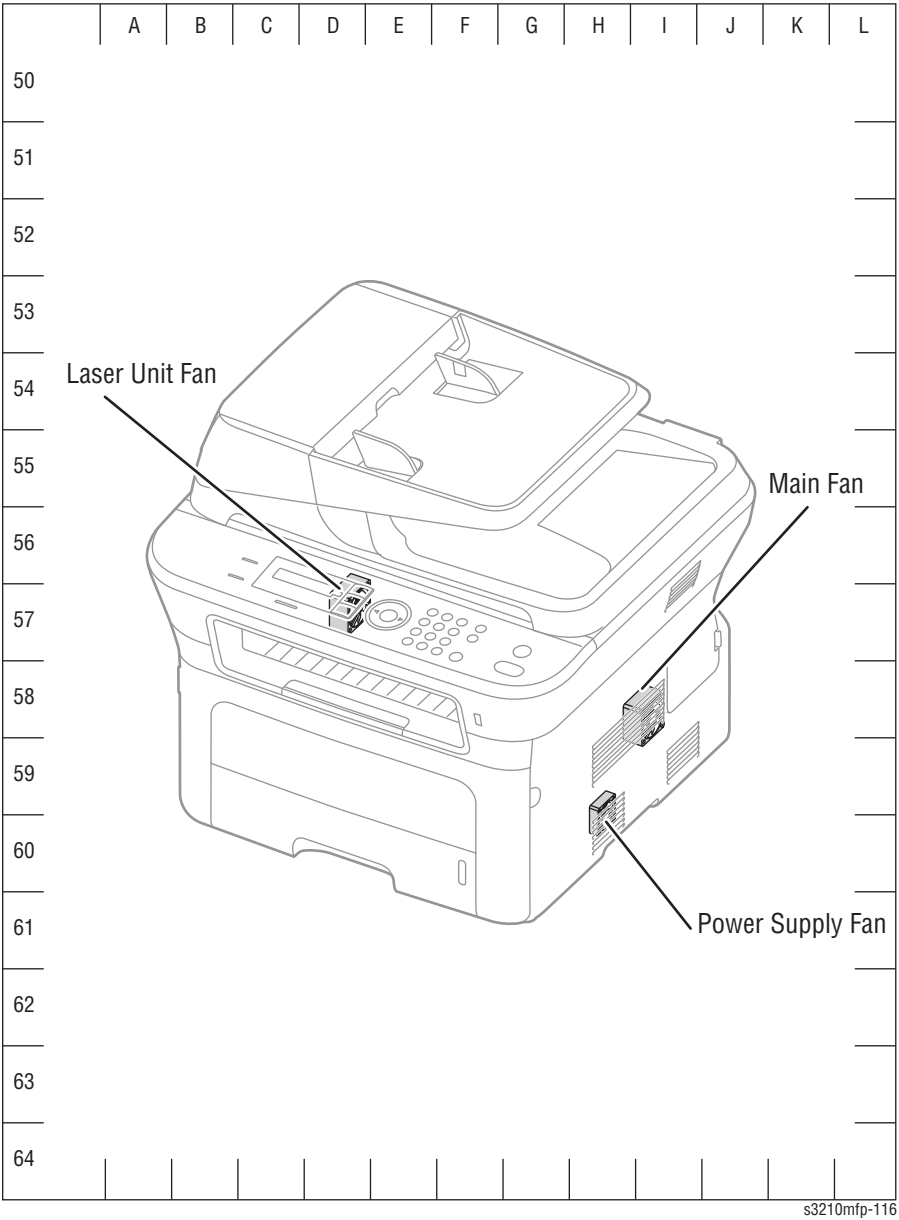
Map 2 - Drive Locator



Map 3 - Sensor Locator



Map 4 - Fan Locator



## Plug/Jack Locators

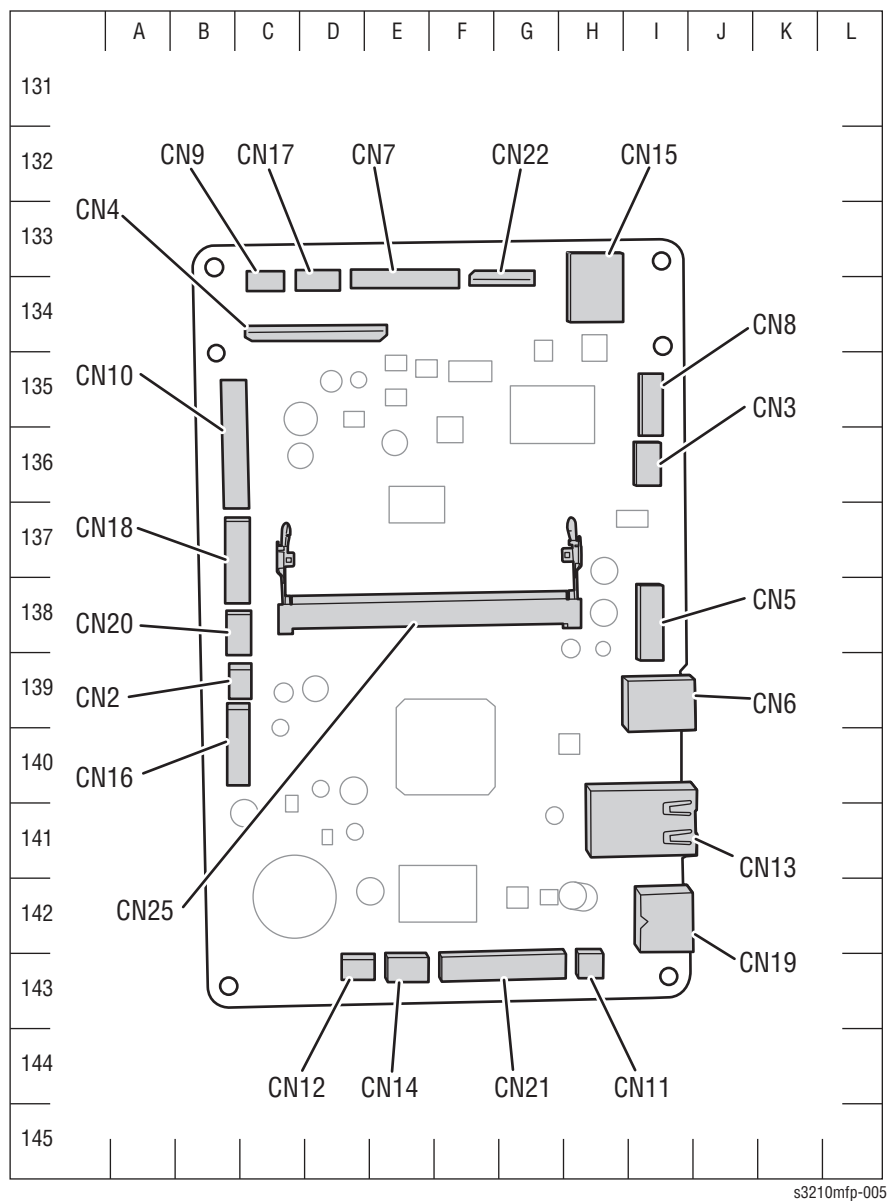
The Plug/Jack Locator diagrams show the P/J locations within the printer. Use these illustrations to locate connections called out in the Troubleshooting procedures presented in Sections 3, 4, and 5.

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

### Main Controller Board Plug/Jack Designators and Locator

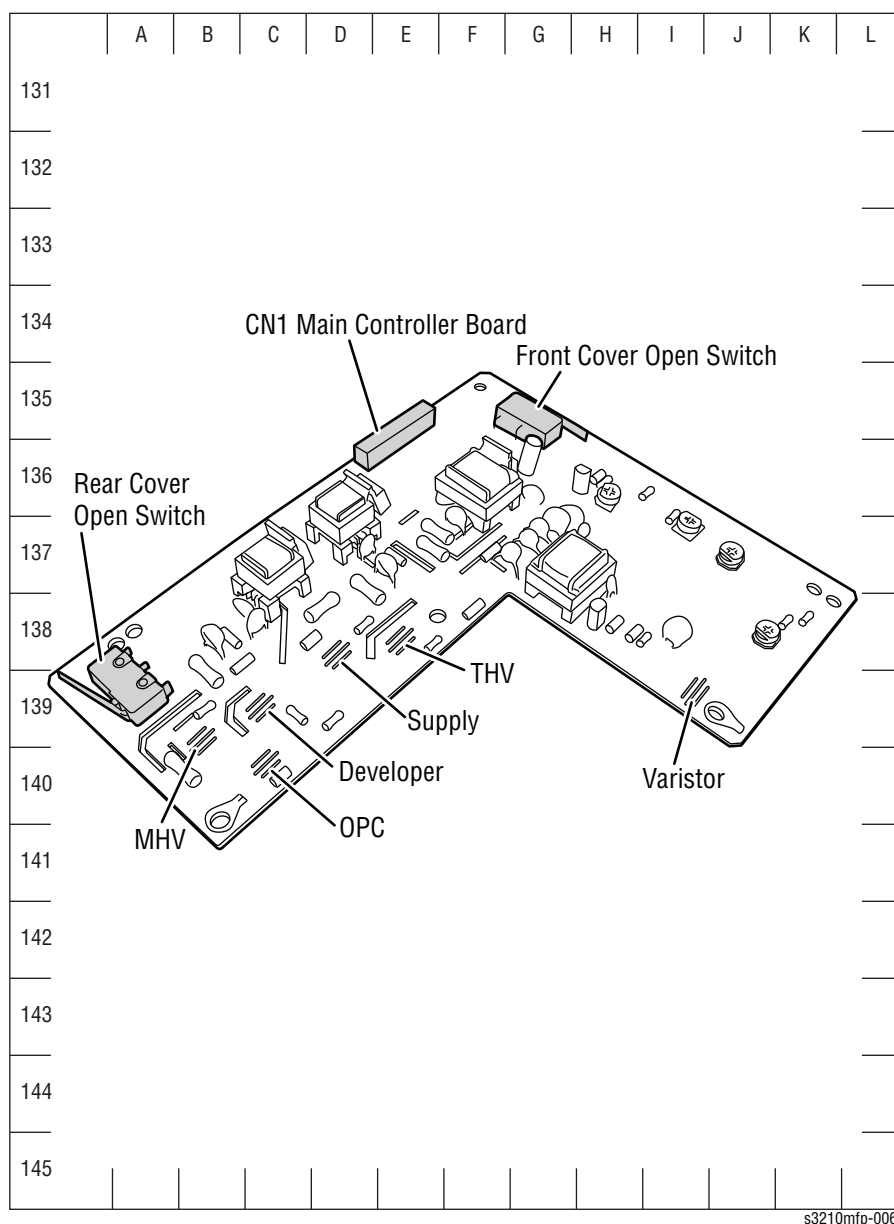
P/J	Map	Coordinates	Description
CN2	5	B-139	Main Fan
CN3	5	I-136	Platen Motor
CN4	5	G-135	Fax Board
CN5	5	I-138	ADF
CN6	5	J-137	USB Port
CN7	5	E-134	Laser Unit
CN8	5	I-135	UI Assembly (Control Panel)
CN9	5	C-133	Laser Unit Fan and Laser Unit interlock switch
CN10	5	B-136	HVPS
CN11	5	H-143	Power Supply Fan
CN12	5	D-143	Out Bin Full Sensor
CN13	5	I-141	Ethernet Port
CN15	5	H-134	Front USB Port
CN16	5	B-140	Power Supply
CN17	5	C-134	Fuser Thermistor, Exit Sensor
CN18	5	B-137	Paper Empty, Registration / Duplex, and Feed Sensor
CN19	5	I-142	Option Tray
CN20	5	B-138	Print Cartridge CRUM
CN21	5	F-143	Drive Unit, Pick Up Solenoid, Registration Clutch
CN22	5	G-133	Platen Assembly
CN25	5	E-138	DIMM

## Map 5 - Main Controller Board

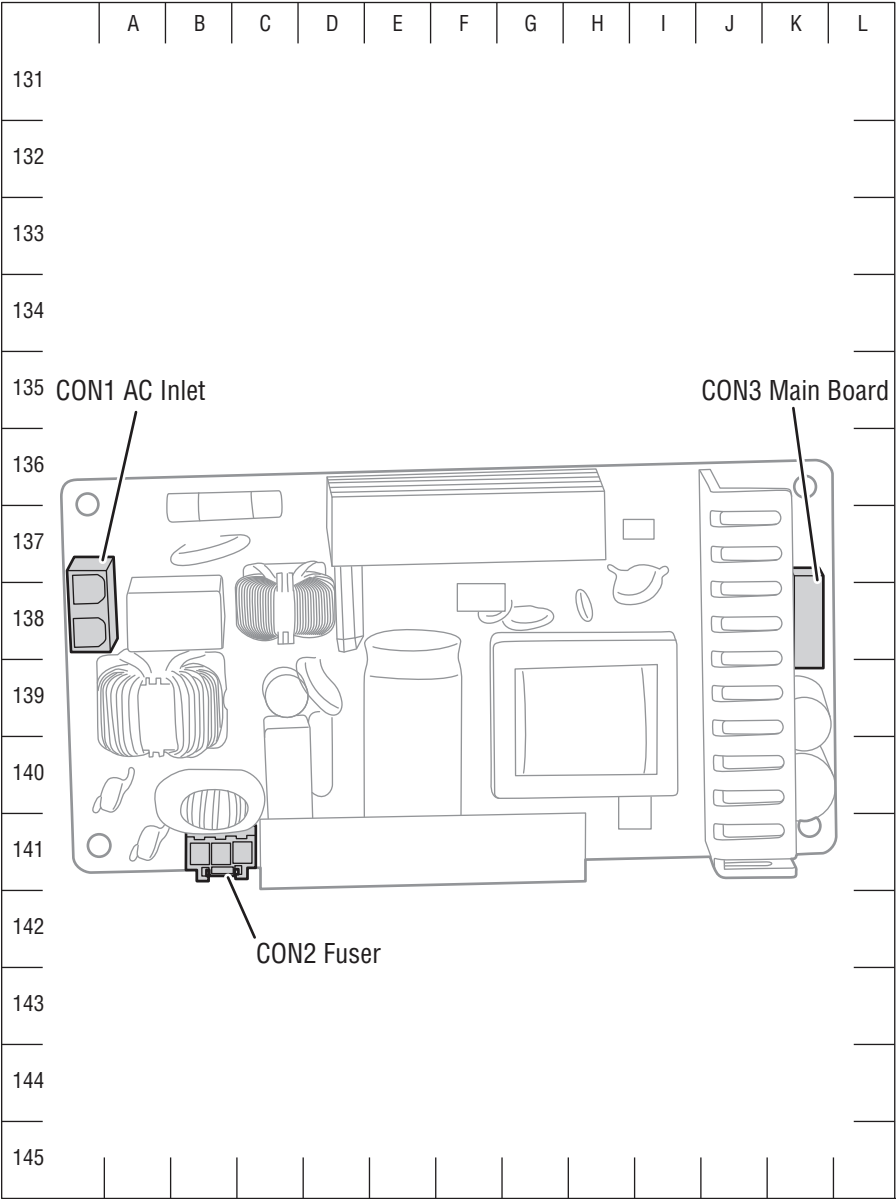




## Map 6 - HVPS

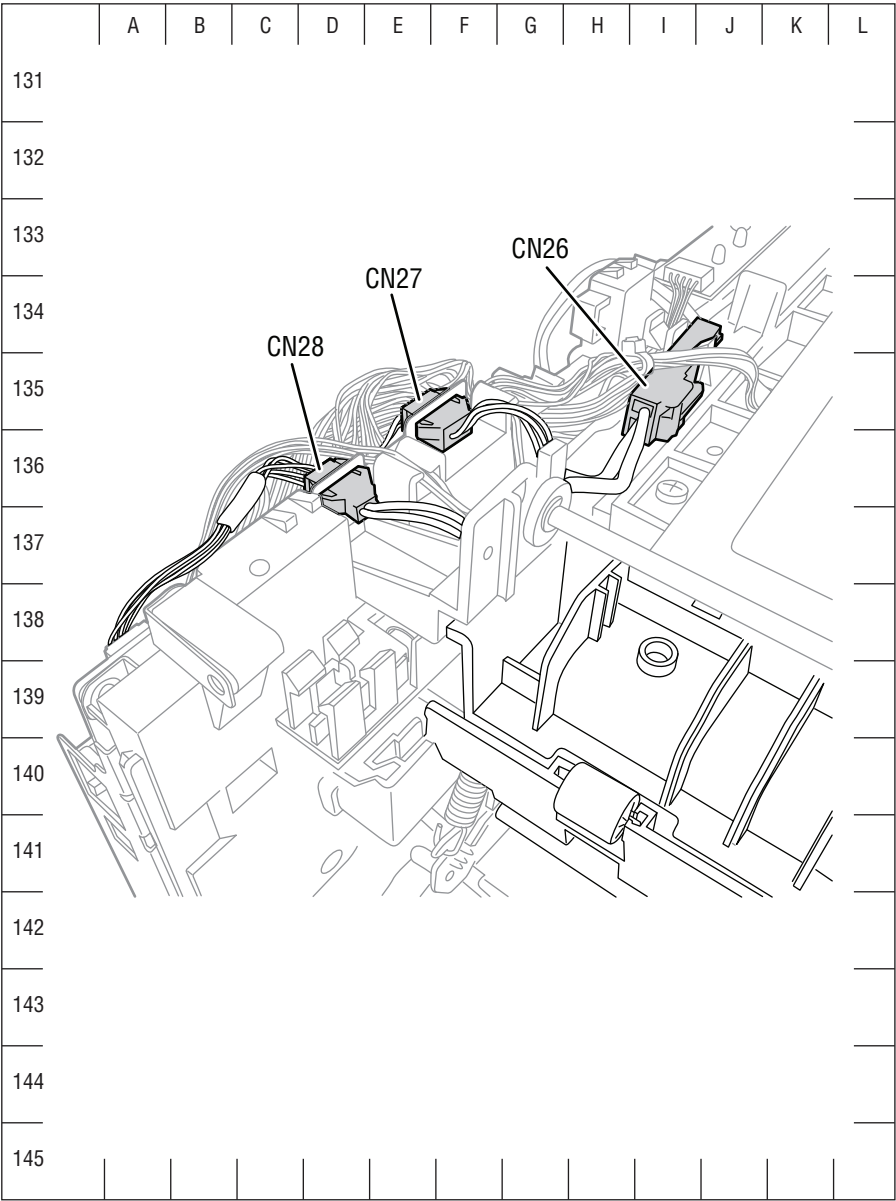


Map 7 - Power Supply



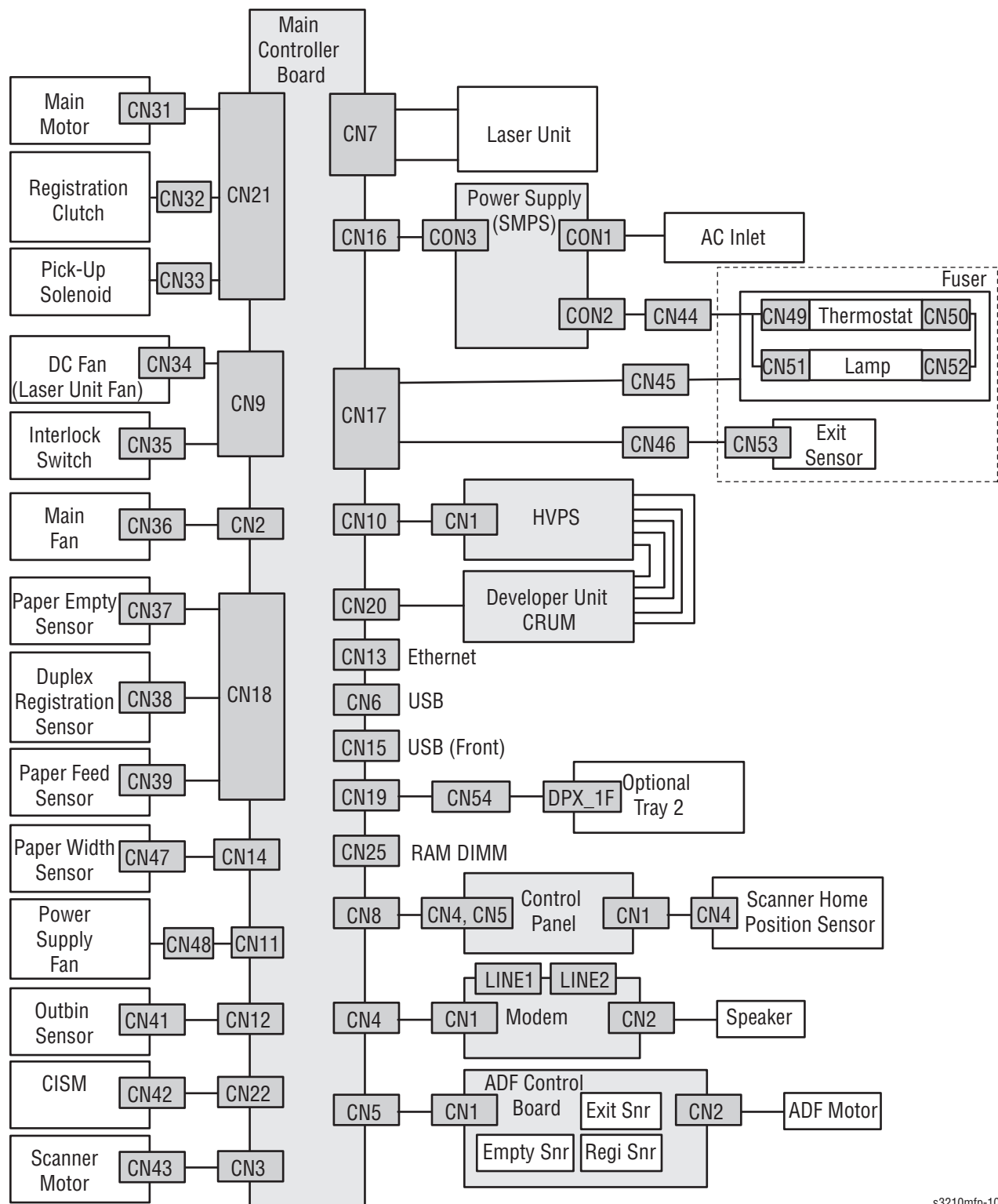
s3210mfp-007

Map 8 - Left Side Harness



s3210mfp-079

## System Connections


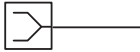








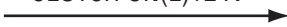


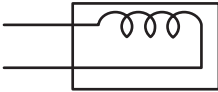

s3210mfp-105

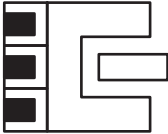
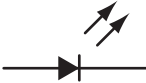




# Wiring Diagrams

## Notations Used in the Wiring Diagrams

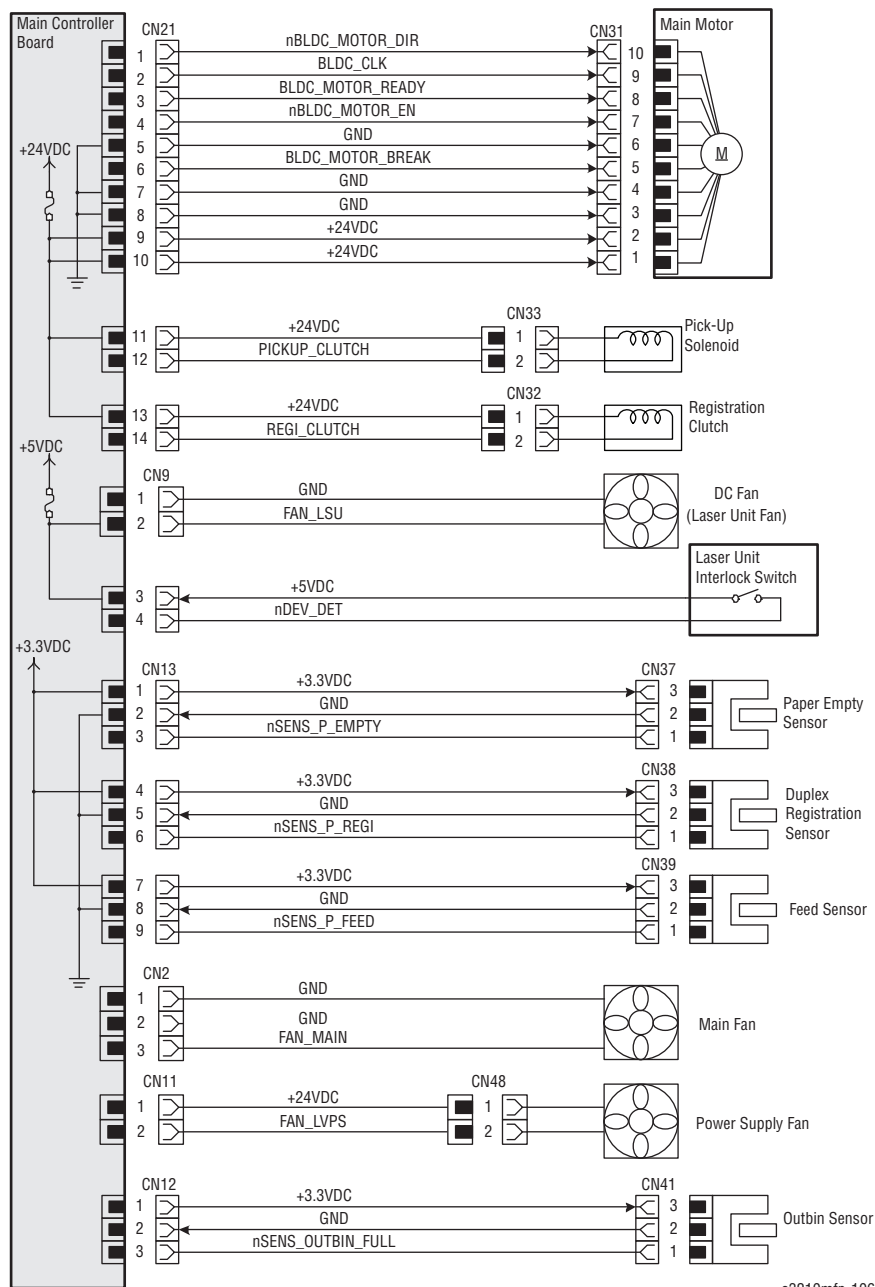
The following table lists the symbols used in the wiring diagrams.

Symbol	Description
 Plug	Denotes a Plug.
 Jack	Denotes a Jack.
 P/Jxx	Denotes Pin yy and Jack yy of the connector Pxx and Jxx.
 JPxxx	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
 <p>Subassembly 3</p>	Denotes the control and its outline in the Board.
 <p>s6128mfp-163</p>	Denotes a connection between parts with harness or wires, attached with signal name/ contents.
 <p>Function Logic 1</p>	Denotes the function, and logic value of the signal to operate the function (Low: L, High: H). The given voltage is for signal in high status. The arrow indicates the direction of signal.
 <p>Function Logic 2</p>	Denotes the function, and logic value of the signal when the function operated (Low: L, High: H). The given voltage is for signal in high status. The arrow indicates the direction of signal.
 <p>Connection of Wires</p>	Denotes a connection between wires.
 <p>Solenoid/Clutch</p>	Denotes a Clutch or Solenoid.
 <p>Motor</p>	Denotes a Motor.

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

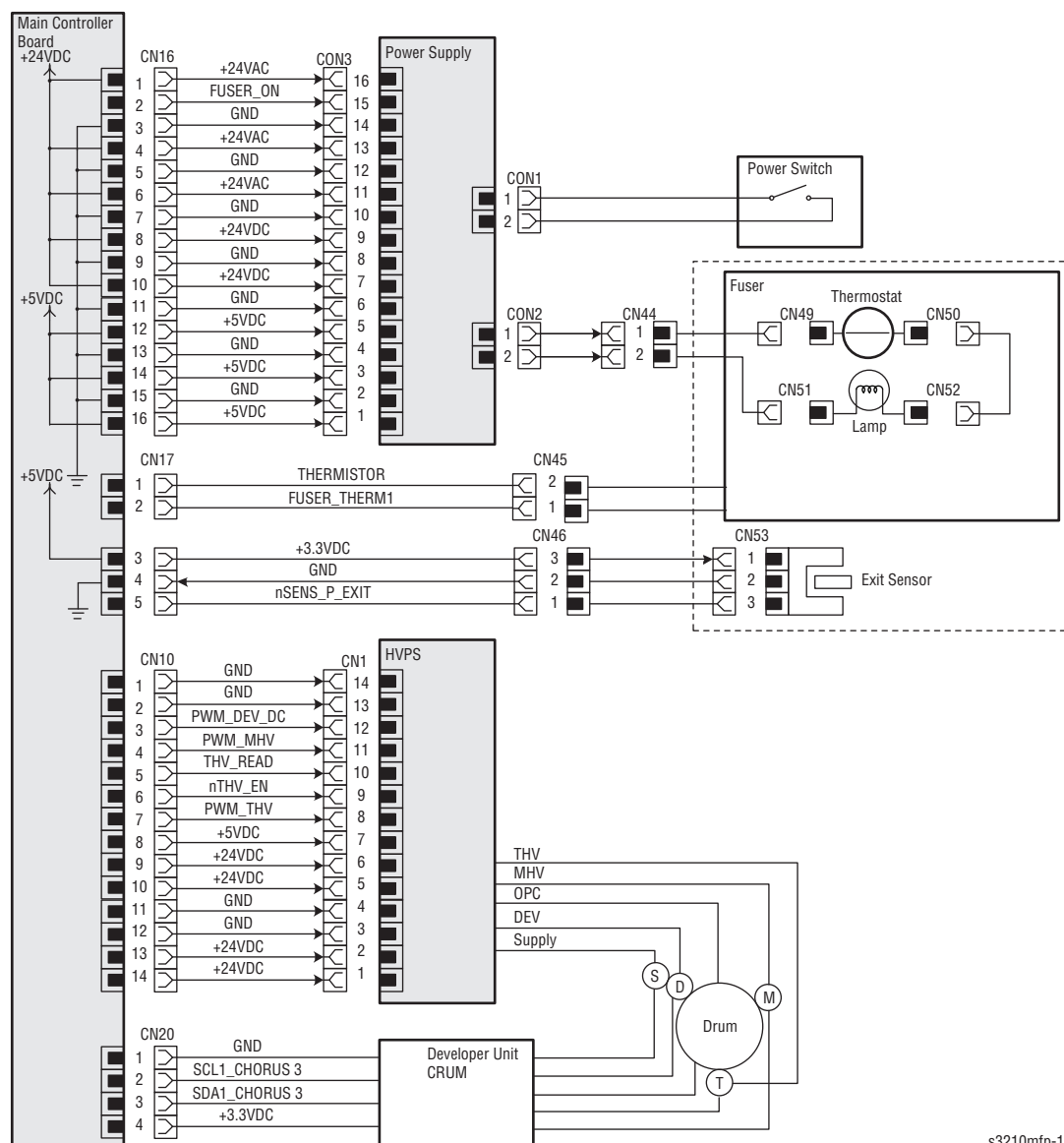
## Main Controller Board



s3210mfp-106

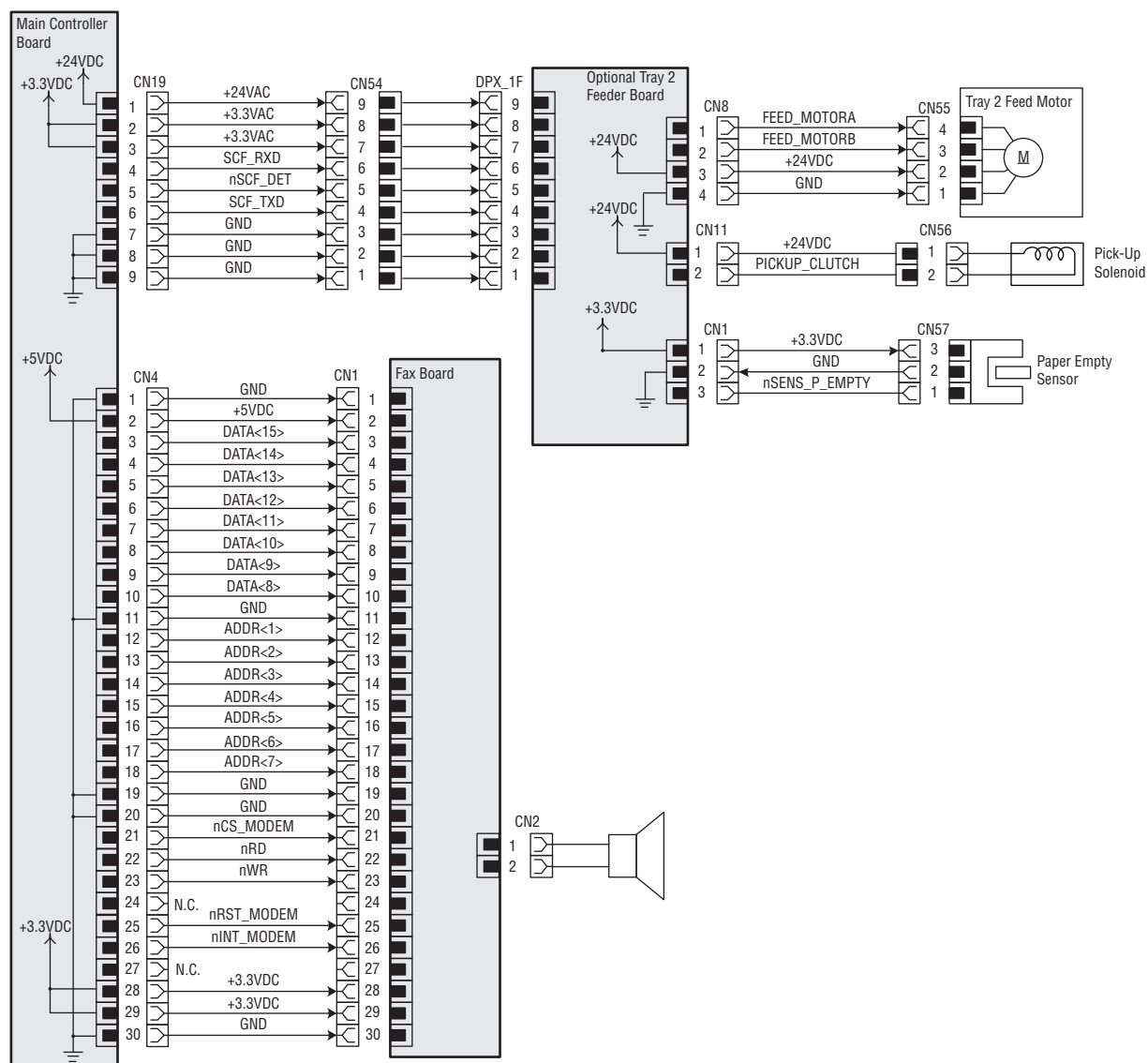


## Power and Fuser



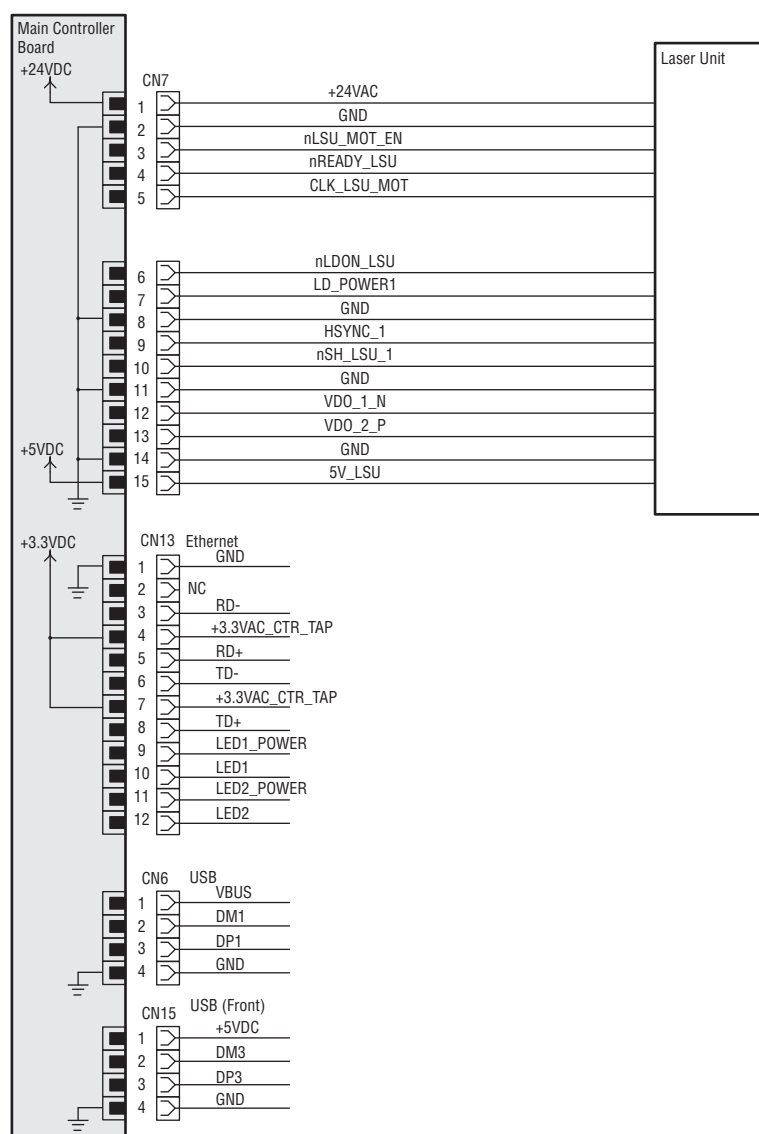
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## Fax Board and Optional Tray



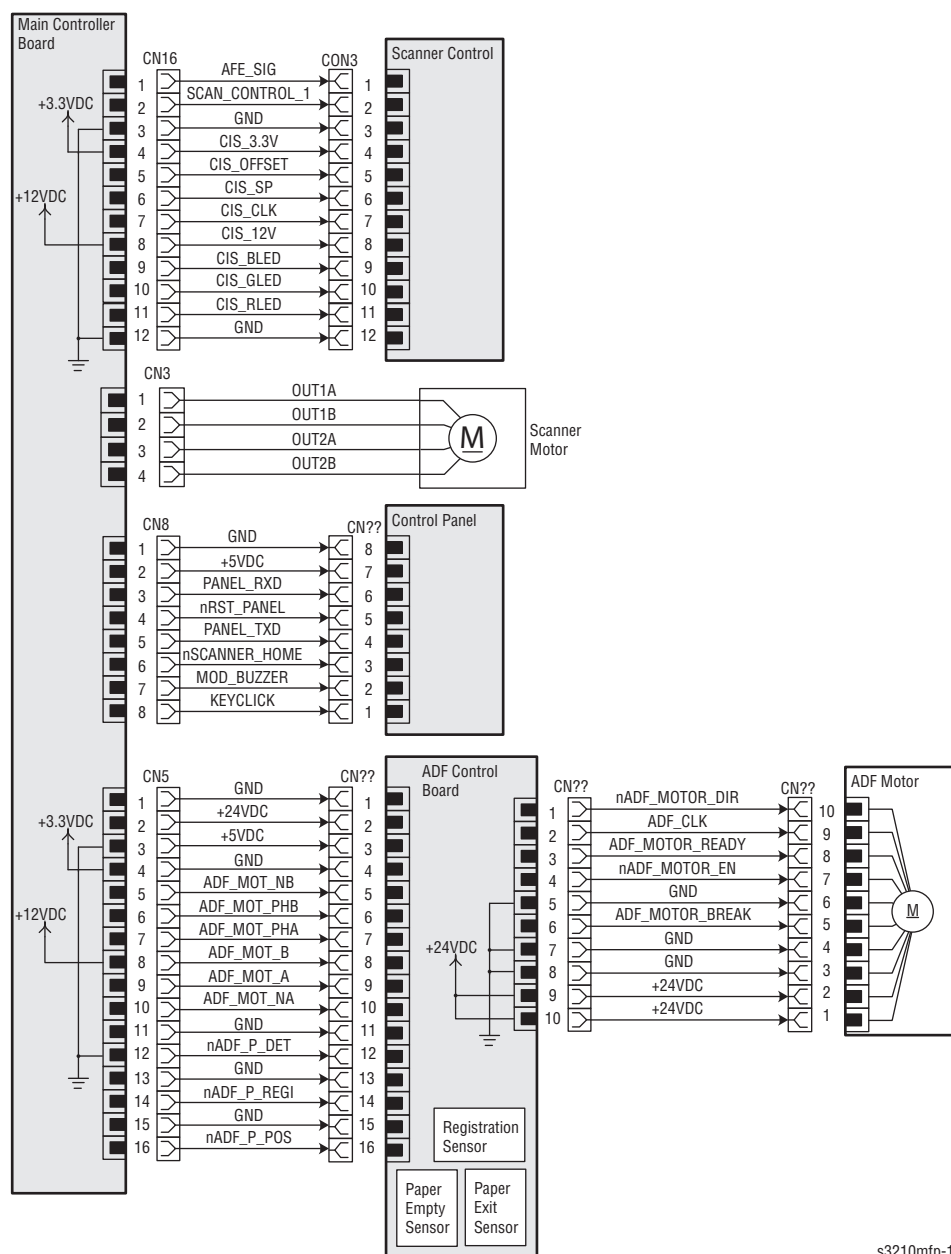
s3210mfp-108

## Laser Unit and I/O



s3210mfp-109

## ADF and Scanner



s3210mfp-110

# Reference

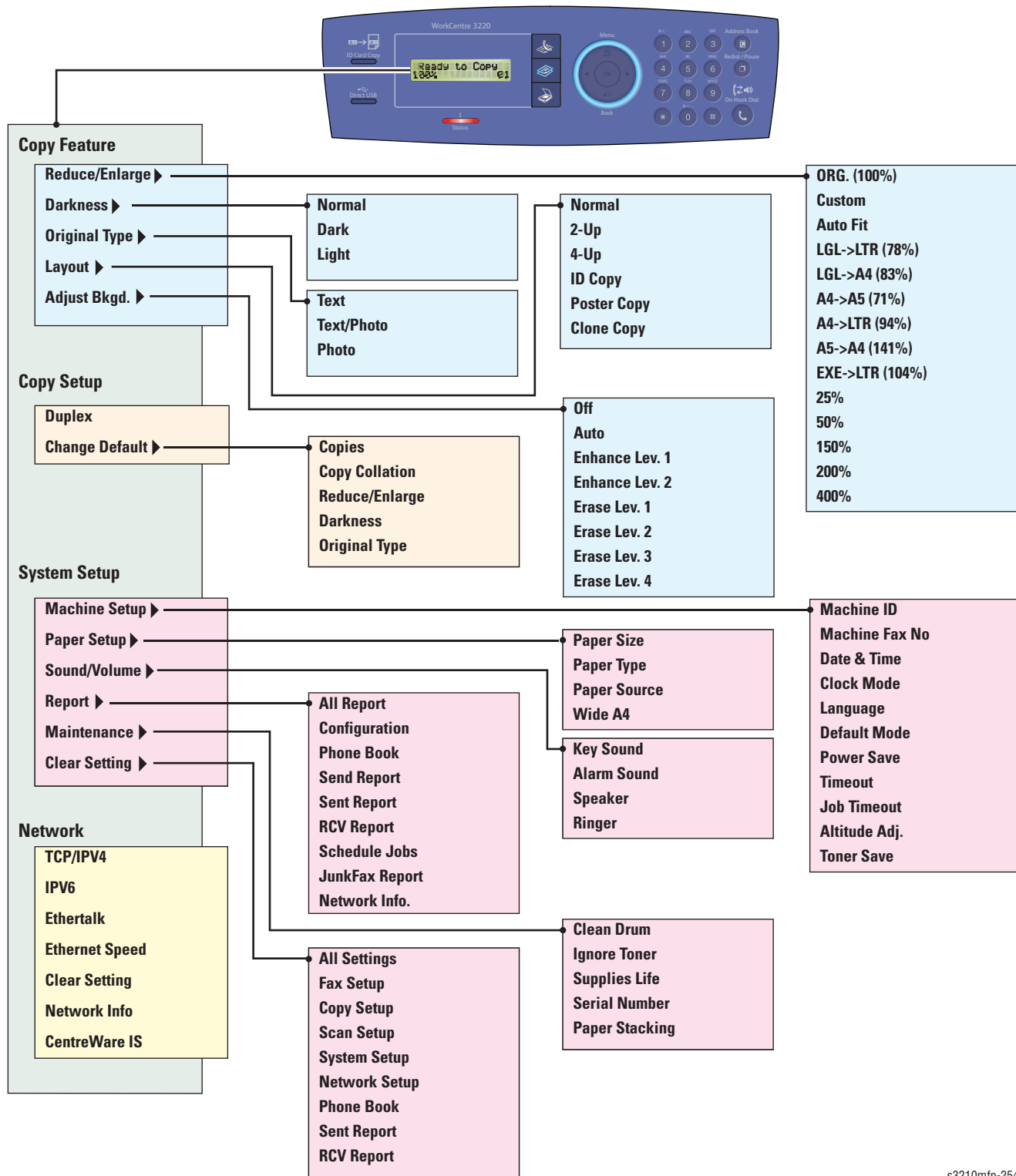
## Contents...

- WorkCentre 3210/3220 Menu Map
- Tech Mode Menu Map
- Acronyms and Abbreviations

# Appendix A

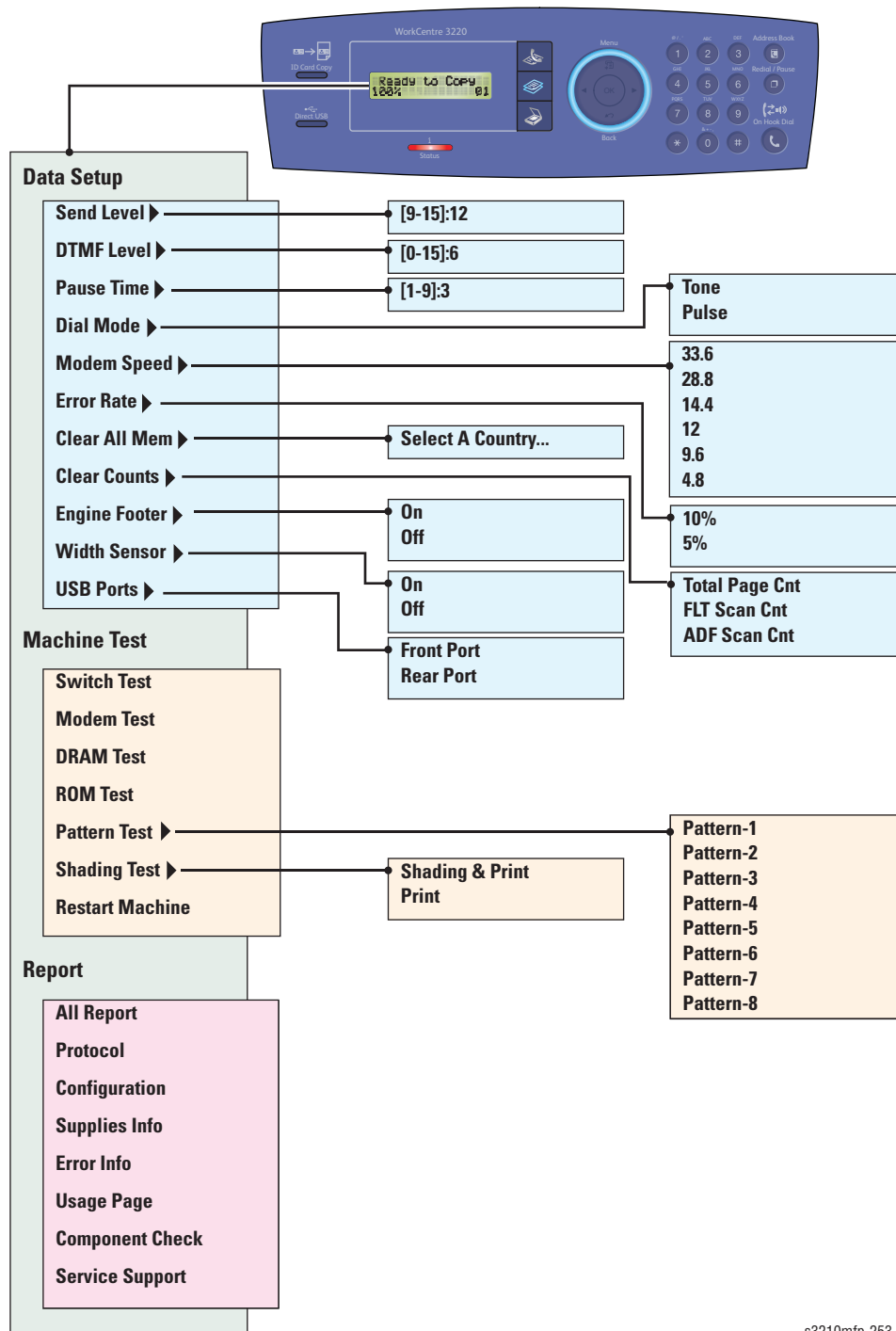


# WorkCentre 3210/3220 Menu Map



s3210mfp-254

# Tech Mode Menu Map



s3210mfp-253

## Acronyms and Abbreviations

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



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

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

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