Service Manual

Lexmark™ X5100 Series
All-In-One

4407-XXX

- ***Table of Contents***
- ***Start Diagnostics***
- ***Safety and Notices***
- ***Trademarks***
- ***Index***

LEXMARK™

4407-XXX

Edition: February 2003

This publication could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in later editions. Improvements or changes in the products or the programs described may be made at any time.

Comments may be addressed to Lexmark International, Inc., Department D22A/032-2, 740 West New Circle Road, Lexington, Kentucky 40550, U.S.A or e-mail at ServiceInfoAndTraining@Lexmark.com. Lexmark may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you. You can purchase additional copies of publications related to this product by calling 1-800-553-9727. In other countries, contact your point of purchase.

U.S.A. P/N: 12G9219 **Japanese P/N: 12G9220**

Table of Contents

Safety Information

- The safety of this product is based on testing and approvals of the original design and specific components. The manufacturer is not responsible for safety in the event of use of unauthorized replacement parts.
- The maintenance information for this product has been prepared for use by a professional service person and is not intended to be used by others.
- There may be an increased risk of electric shock and personal injury during disassembly and servicing of this product. Professional service personnel should understand this and take necessary precautions.

Consignes de Sécurité

- La sécurité de ce produit repose sur des tests et des agréations portant sur sa conception d'origine et sur des composants particuliers. Le fabricant n'assume aucune responsabilité concernant la sécurité en cas d'utilisation de pièces de rechange non agréées.
- Les consignes d'entretien et de réparation de ce produit s'adressent uniquement à un personnel de maintenance qualifié.
- Le démontage et l'entretien de ce produit pouvant présenter certains risques électriques, le personnel d'entretien qualifié devra prendre toutes les précautions nécessaires.

Norme di sicurezza

- La sicurezza del prodotto si basa sui test e sull'approvazione del progetto originale e dei componenti specifici. Il produttore non è responsabile per la sicurezza in caso di sostituzione non autorizzata delle parti.
- Le informazioni riguardanti la manutenzione di questo prodotto sono indirizzate soltanto al personale di assistenza autorizzato.
- Durante lo smontaggio e la manutenzione di questo prodotto, il rischio di subire scosse elettriche e danni alla persona è più elevato. Il personale di assistenza autorizzato, deve, quindi, adottare le precauzioni necessarie.

Sicherheitshinweise

- Die Sicherheit dieses Produkts basiert auf Tests und Zulassungen des ursprünglichen Modells und bestimmter Bauteile. Bei Verwendung nicht genehmigter Ersatzteile wird vom Hersteller keine Verantwortung oder Haftung für die Sicherheit übernommen.
- Die Wartungsinformationen für dieses Produkt sind ausschließlich für die Verwendung durch einen Wartungsfachmann bestimmt.
- Während des Auseinandernehmens und der Wartung des Geräts besteht ein zusätzliches Risiko eines elektrischen Schlags und körperlicher Verletzung. Das zuständige Fachpersonal sollte entsprechende Vorsichtsmaßnahmen treffen.

Pautas de Seguridad

- La seguridad de este producto se basa en pruebas y aprobaciones del diseño original y componentes específicos. El fabricante no es responsable de la seguridad en caso de uso de piezas de repuesto no autorizadas.
- La información sobre el mantenimiento de este producto está dirigida exclusivamente al personal cualificado de mantenimiento.
- Existe mayor riesgo de descarga eléctrica y de daños personales durante el desmontaje y la reparación de la máquina. El personal cualificado debe ser consciente de este peligro y tomar las precauciones necesarias.

Informações de Segurança

- A segurança deste produto baseia-se em testes e aprovações do modelo original e de componentes específicos. O fabricante não é responsável pela segunrança, no caso de uso de peças de substituição não autorizadas.
- As informações de segurança relativas a este produto destinam-se a profissionais destes serviços e não devem ser utilizadas por outras pessoas.
- Risco de choques eléctricos e ferimentos graves durante a desmontagem e manutenção deste produto. Os profissionais destes serviços devem estar avisados deste facto e tomar os cuidados necessários.

Informació de Seguretat

- La seguretat d'aquest producte es basa en l'avaluació i aprovació del disseny original i els components específics. El fabricant no es fa responsable de les qüestions de seguretat si s'utilitzen peces de recanvi no autoritzades.
- La informació pel manteniment d'aquest producte està orientada exclusivament a professionals i no està destinada a ningú que no ho sigui.
- El risc de xoc elèctric i de danys personals pot augmentar durant el procés de desmuntatge i de servei d'aquest producte. El personal professional ha d'estar-ne assabentat i prendre les mesures convenients.

안전 사항

- 본 제품은 원래 설계 및 특정 구성품에 대한 테스트 결과 안전성이 입증된 것입니다. 따라서 무허가 교체 부품을 사용하는 경우에는 제조업체에서 안전에 대한 책임을 지지 않습니다.

- 본 제품에 관한 유지 보수 설명서는 전문 서비스 기술자 용으로 작성된 것이므로 비 전문가는 사용할 수 없습니다.

- 본 제품을 해체하거나 정비할 경우 전기적인 충격을 받거나 상처를 입을 위험이 커집니다. 전문 서비스 기술자는 이 사실을 숙지하고 필요한 예방 조치를 취하도록 하십시오.

安全资讯

- 本产品的维护资讯仅供专业服务人员使用，而非针对一般使用者。
- 本产品在拆卸、维修的时候，遭受电击或人员受伤的危险性会增高，专业服务人员对这点必须有所了解，并采取必要的预防措施。
- 有些零件的安全功能可能不明显。因此，所替换零件的性能一定要与原有的零件一致。

Preface

This manual contains maintenance procedures for service personnel. It is divided into the following chapters:

1. **General Information** contains a general description of the printer and the maintenance approach used to repair it. Special tools and test equipment are listed in this chapter, as well as general environmental and safety instructions.
2. **Diagnostic Information** contains an error indicator table, symptom tables, and service checks used to isolate failing field replaceable units (FRUs).
3. **Diagnostic Aids** contains tests and checks used to locate or repeat symptoms of printer problems.
4. **Repair Information** provides instructions for making printer adjustments and removing and installing FRUs.
5. **Connector Locations** uses illustrations to identify the connector locations and test points on the printer.
6. **Preventive Maintenance** contains the lubrication specifications and recommendations to prevent problems.
7. **Parts Catalog** contains illustrations and part numbers for individual FRUs.

1. General Information

The Lexmark™ X5150 (4407-XXX) machine features an electro-mechanical scanner, printer, and copier that creates characters and graphics by composing programmed patterns of ink dots using a printhead and liquid ink. The printhead uses small heater plates and nozzles to control ink flow and the formation of characters on the print media. The printhead assembly and ink supply are combined into a single-unit, print cartridge available as a customer replaceable supply item. Dual printheads provide color and true black printing without changing printheads. The number and size of inkjets or nozzles, in the printhead, determines the overall quality and capability of the printer. The black cartridge has a total of 640 nozzles and installs on the right. The color cartridge has a total of 480 nozzles and installs on the left. The printer is capable of printing in two directions from either cartridge.

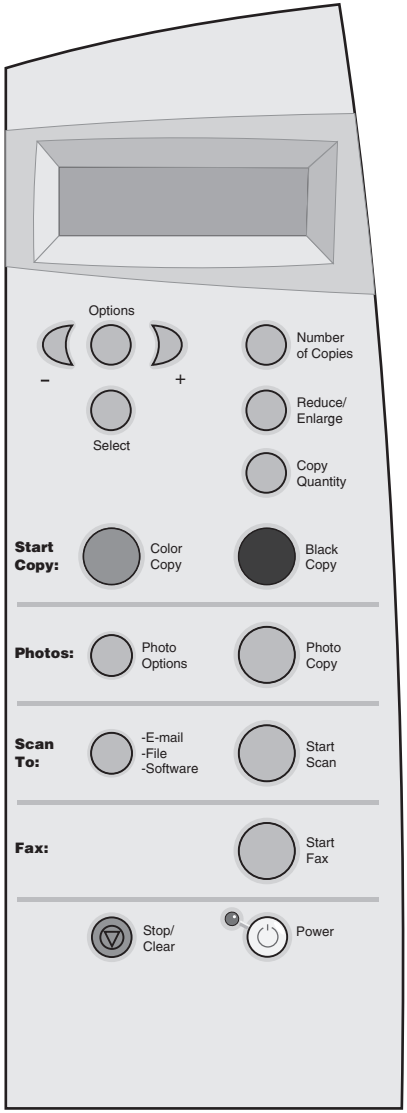
Power Consumption

- 0.6 Watts - Power “Off”
- 9 Watts - Idle Mode (power on - not printing)
- 23 Watts - Printing (average)
- 21 Watts - Continuous Copying (average)
- 18 Watts - Continuous Scanning (average)

Scanner Specifications

Scanner Type	Flatbed, CCD
Scan Modes	**True Color:** 48 Bit Internal (68.7 Billion Colors) 24 Bit External (16.7 Million Colors) **Gray Mode:** 12 Bits Internal (4,096 Shades of Gray) 8 Bits External (256 Shades of Gray) **Text/Line Art:** 1 Bit Per Pixel
Scan Method	One Pass Scanning
Scan Area	8.5 X 11.7 inches 216 X 292 mm
Scan Resolution	Optical: 600 dpi (H) X 2400 dpi (V) Interpolated: 19,200 X 19,200

Operator Panel



Press this button:	When you want to:
Number of Copies	Select the number of copies.
Lighter/Darker	Make the document lighter or darker than the original.
Reduce/Enlarge	Make the document smaller or larger than the original.
Paper Type	Select glossy, photo, transparency, or plain paper type.
- or +	Scroll through menu sub-categories.
Menu	Change settings using the menus.
Select	Choose the displayed selection.
Quality	Choose photo, quick, or normal copy setting.
Color Copy	Make a color copy.
Black Copy	Make a black and white copy.
Scan To	Select a scan destination, such as To copy, To an e-mail, To an application, To a file, or To fax.
Scan	Press the scan button after selecting a Scan To destination.
Cancel	Cancel a scan, print, or copy job, or return to a menu category from a menu sub-category.
Power	Turn the printer on or off.

Maintenance Approach

The diagnostic information in this manual leads you to the correct field replaceable unit (FRU) or part. Use the symptom index, service checks, and diagnostic aids to determine the symptom and repair the failure.

After you complete the repair, perform tests as needed to verify the repair.

Abbreviations

B/M	Bill of Material
CCD	Charge-Coupled Device
EOF	End of Form
ESD	Electrostatic Discharge
FPC	Flat Printhead Cable
FRU	Field Replaceable Unit
HVPS	High Voltage Power Supply
LCD	Liquid Crystal Display
LVPS	Low Voltage Power Supply
OEM	Original Equipment Manufacturer
V ac	Volts alternating current
V dc	Volts direct current
ZIF	Zero Insertion Force

2. Diagnostic Information

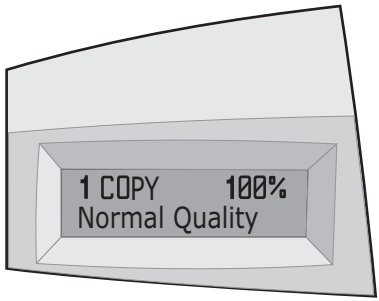
Start

Use the symptom tables, service checks, and diagnostic aids in chapter three, to determine the printer failure.

Power-On Self Test (POST) Sequence

Press the power button to turn machine on.

- The Power indicator light turns on.
- The Charge-Coupled Device (CCD) lamp turns on and the scanner moves to the left, then returns to the right.
- The paper feed motor runs then stops.
- The carrier moves to the right then returns to the left stopping at the maintenance station.
- Power light stays on.
- The message below is displayed on the LCD.



If your printer completes POST with no errors, go to the **“Symptom Tables” on page 2-3**, locate the symptom and take the indicated action.

If your printer does not complete POST, locate the symptom in the following table and take the indicated action.

POST Symptom Table

Symptom	Action
No power light No motors run	Go to the **“Power Service Check” on page 2-12**. If okay, go to the **“Operator Panel Problems” on page 2-3**.
Paper feed gears do not turn	Go to the **“Paper Feed Service Check” on page 2-10**.
Carrier does not move	Go to the **“Carrier Transport Service Check” on page 2-6**.
Carrier slams side frame	Go to the **“Carrier Transport Service Check” on page 2-6**.
CCD lamp does not turn on	Go to the **“CCD Module Assembly Service Check” on page 2-8**.
LCD displays “Unlock Scanner Clear Paper Jam”	Go to the **“CCD Module Assembly Service Check” on page 2-8**.

Symptom Tables

Locate the symptom in the following tables and take the appropriate action.

Carrier Transport Problems

Symptom	Action
• No carrier movement • Slow carrier movement • Carrier stops • Carrier slams side frame	Go to the **"Carrier Transport Service Check" on page 2-6**.

Maintenance Station Problems

Symptom	Action
Maintenance station: • Fails to cap the printheads • Fails to clean the printheads	Go to the **"Maintenance Station Service Check" on page 2-9**.

Operator Panel Problems

Symptom	Action
• Buttons do not work • LCD does not display	Check operator panel cable connection at JP6 on the system board. Then run the **"Power-On Self Test (POST) Sequence" on page 2-1**. If the LED buttons or any lights fail, check connection JP6. If the problem remains, replace the scanner module assembly. Go to the **"Scanner Module Assembly" on page 4-3**. If the problem still exists, replace the system board. Go to the **"System Board" on page 4-15**.

Printer Communication Table

Symptom	Action
• Not able to print Test Page	Check the USB cable and system board cable connections. If okay, replace system board. Go to the **“System Board” on page 4-15**.

Scanner Problems

Symptom	Action
• CCD does not move • Lamp does not light	Go to the **“CCD Module Assembly Service Check” on page 2-8**.
• The operator panel displays “Unlock Scanner Clear Paper Jam”	Press the Power button. Turn off the printer. Press the red lever to unlock scanner and try again.
• Scanned images are: faded, or colors are dull, blurry or fuzzy. Images are slanted or crooked and the strait lines in the image appear to be jagged or uneven. • Blank copies	Go to the **“Scan/Copy Quality Service Check” on page 2-15**.

Paper Feed Problems

Symptom	Action
• Fails to pick paper • Picks more than one sheet of paper • Picks paper but fails to feed • Paper jams • Paper fails to exit • Noisy paper feed	Go to the **"Paper Feed Service Check" on page 2-10**.
Envelopes fail to feed	Go to the **"Paper Feed Service Check" on page 2-10**.
Paper skews	Go to the **"Paper Path Service Check" on page 2-12**.

Power Problems

Symptom	Action
No power in machine, motors do not operate	Go to the **"Power Service Check" on page 2-12**.

Print Quality Problems

Symptom	Action
• Voids in characters • Light print • Prints off the page • Fuzzy print • Carrier moves but no print • Printhead dries prematurely • Colors print incorrectly • Vertical alignment off	Go to the **"Print Quality Service Check" on page 2-13**.
• Ink smearing • Vertical streaks on paper • Print lines crowded	Go to the **"Paper Feed Service Check" on page 2-10**.

Service Checks

Carrier Transport Service Check

	FRU	Action
1	System Board Carrier Transport Motor	Check the carrier transport motor connector JP12. If connected, check for approximately 30 volts on pins 1 and 2 or at the wire connections located on the rear of the carrier transport motor. If voltage is incorrect, replace the system board. If voltage is correct, check the motor for shorts.
2	Carrier Transport Motor	Check the motor for binds, or loose motor pulley. A noisy or chattering motor or a motor that fails to turn can be caused by: • An open or short in the motor. • An open or short in the motor driver on the system board. • A bind in the carrier transport mechanism. With the carrier transport motor cable (JP12) disconnected from the system board, check for 0 to 10 ohms between the following pins on the motor: JP12-1 and JP12-2 If the readings are incorrect, replace the print engine. Go to the **“Print Engine” on page 4-9**.
3	Carrier Guide Rod	Clean the carrier rod. **Note**: Lubricate the rod and the carrier rod bearing surfaces with grease P/N 99A0394.

	FRU	Action
4	Encoder Strip Carrier Assembly	Check the encoder strip for proper installation. Also, check it for wear, dirt, and grease. Be sure all printhead connectors and carrier cables are fully seated. Check the cables for damage. If the encoder strip and all connections are okay, but the carrier still slams the side frame, replace the system board. Go to the **"System Board" on page 4-15**.
5	Carrier Transport Belt Idler Pulley Parts Carrier Frame	Check for worn, loose, or broken parts. Check for obstructions blocking carrier movement. Check the carrier belt idler pulley mounting screw. Loosen the screw and allow the tension spring to take up any slack in the belt. Tighten the screw. If the pulley mounting bracket has reached the stop, replace the carrier assembly. Go to the **"Carrier Assembly" on page 4-10**. Lubricate carrier to carrier frame engagement with grease P/N 99A0394.
6	Maintenance Station	A problem with the maintenance station can cause carrier movement problems at the right margin. Go to the **"Maintenance Station" on page 4-12**.
7	Scanner Assembly Sensor	If the carrier does not move toward the cartridge load position when the scanner assembly is opened, verify that power is on. Check connector JP12 for approximately 28 volts on pins 1 and 2. If the voltage is correct, replace the system board. If voltage is incorrect, replace the printing engine. Go to the **"System Board" on page 4-15**.

CCD Module Assembly Service Check

The CCD (charge-coupled device) Module does not move during POST Test.

The CCD lamp does not come on.

The CCD LCD displays “Unlock Scanner Clear Paper Jam.”

	FRU	Action
1	CCD Module Assembly	If lamp does not come on as CCD module assembly is scanning or moving, check connector (JP4) on the system board. If connected and the lamp still does not work, replace the scanner module assembly. If the problem still persists, replace the system board. Go to **“System Board” on page 4-15** for more information. To unlock scanner, press the red lever. **Note**: Unlock scanner before use.

Maintenance Station Service Check

The maintenance station has three functions:

1. Wipes the printhead nozzles to clean them of dirt.
2. Provides a place for printheads to fire all nozzles, keeping them clear prior to printing.
3. Seals the printhead when it is not being used to prevent the nozzles from drying.

	FRU	Action
1	Maintenance Station Assembly	As the carrier moves to the left over the maintenance station, a slot on the bottom of the carrier engages a tab on the sled of the maintenance station causing the cap to rise and seal the printhead. Carrier movement to the right uncaps the printhead. The wiper cleans the printhead nozzles as the carrier leaves the maintenance station. The wiper cleans the printhead only when the carrier is moving to the left. There should be no wiping action of the printhead nozzles when the carrier is moving to the right. After the cleaning operation is complete, a tab on the maintenance station engages a tab on the carrier, causing the wiper to lower. Check the maintenance station for worn or broken parts. Replace if needed. Go to the **“Maintenance Station” on page 4-12**. Worn wipers cause degraded print quality just after a maintenance cleaning. Check for loose or worn wipers. Worn caps cause the printhead nozzles to dry and clog. Check for loose or worn caps.

Paper Feed Service Check

If your machine does not have paper jam problems, continue with the service check. If your machine does have a paper jam problem, examine it for the following before you begin the service check:

- Check the entire paper path for obstructions.
- Be sure there is not too much paper in the sheet feeder.
- Be sure the correct type of paper is being used.
- Check for static in the paper.

	FRU	Action
1	System Board	Run the **"Power-On Self Test (POST) Sequence" on page 2-1**. Replace parts as needed. To check the paper feed motor, disconnect the paper feed connector JP10 and check for approximately 5 ohms between the following pins: Pin 1 to Pin 2 Pin 3 to Pin 4 If the reading is incorrect, replace the print engine. Go to the **"Print Engine" on page 4-9**. If the reading is correct, check for approximately 28 volts on pin 1. If voltage is incorrect, replace the system board. Go to the **"System Board" on page 4-15**.

	FRU	Action
2	Paper Feed Motor	A noisy or chattering motor or a motor that fails to turn, can be caused by: • An open or short in the motor • An open or short in the motor driver on the system board • A bind in the paper feed mechanism With the paper feed motor cable JP10 disconnected from the system board, check for approximately 5 ohms between the following pins on the motor: Pin 1 to Pin 2 Pin 3 to Pin 4 If the readings are incorrect, replace the print engine. Go to the **"Print Engine" on page 4-9**. Although the paper feeds in a forward direction only, the paper feed motor turns in two directions. If the paper feed motor turns in one direction only, replace the system board. Go to the **"System Board" on page 4-15**. Binds in the paper feed motor or gear train can cause intermittent false paper jam errors. Remove the paper feed motor and check the shaft for binds. Also check for a loose or worn motor gear.
3	Auto Sheet Feeder Assembly	Check the pick roller for wear.
4	End-of-Forms Flag and Spring	Check for binds or damage.

Paper Path Service Check

Examine the machine for the following before you begin this service check:

- Check the entire paper path for obstructions.
- Be sure the correct type of paper is being used.
- Be sure the printer is installed on a flat surface.

	FRU	Action
1	Large and Small Feed Rollers	Check for wear and binds.
2	Small Feed Roller Springs	Check for damage.
3	Auto Sheet Feeder Assembly	Check the pick roller for wear.
4	Mid Frame Asm	Check the following for wear: • Exit roller • Star rollers
5	End-of-Forms Flag	Check for binds or damage.

Power Service Check

	FRU	Action
1	External Power Supply	Plug the external power supply into an outlet. Check for + 30 V dc. If voltage is incorrect, replace the power supply.
2	Printhead Cable Paper Feed Motor Carrier Transport Motor Operator Panel System Board	Unplug the printer. Check all connections for correct seating. If the symptom has not changed, replace the system board. Go to the **“System Board” on page 4-15**.

Print Quality Service Check

	FRU / Function	Action
1	Printhead Cartridge	Be sure the machine contains good print cartridges.
2	Color Printhead Cartridge Cross Contamination	Cross contamination of color inks results in incorrect colors printed, as when green prints for yellow, (when yellow and blue are mixed in the printhead cartridge). This problem resolves quickly as the printhead cartridge is used. If cross contamination occurs, check the following: • The maintenance station wiper for damage. • The printhead nozzle plate was resealed with tape.
3	Printhead Carrier Assembly	Reseat the printhead cable in the system board and check the following parts for wear or damage: • Printhead Cartridge Latch • Latch Spring • Carrier
4	System Board Printhead Carrier Assembly	Perform the **"Test Page" on page 3-1**. Look for a break in the diagonal line of the nozzle test pattern. A broken line indicates one or more print nozzles are not working. Run the test again to verify the failure. Check the gold-plated contacts on the end of the printhead carrier cable for dirt, wear and damage. Use only a clean dry cloth to clean the contacts. If the symptom remains, replace the system board. Go to the **"System Board" on page 4-15**.
5	Maintenance Station	Intermittent nozzle failures can be caused by worn parts in the maintenance station. Go to the **"Maintenance Station" on page 4-12**, and then return to this check.

	FRU / Function	Action
6	Paper Feed	Ink smudging and smearing can be caused by paper problems or problems in the paper feed area. Check the following: • Correct type of paper is being used. Also check the paper for curl or wrinkles. • Feed rollers for wear, dirt, or looseness. • Gears for wear or binds. • Paper path for obstructions.
7	Carrier Transport	Blurred print and voids can be caused by problems in the carrier transport area. Check the following: • Encoder strip for dirt or grease. • Carrier transport belt for wear. • Carrier guide rod for wear or dirt. If dirty, clean and lubricate. • Carrier to carrier frame engagement should be lubricated with grease P/N 99A0394. • Idler pulley parts for wear, damage, or looseness.
8	Alignment	Uneven vertical lines can be adjusted by performing the printhead alignment adjustments. The user is directed, through the Printer Control program, to perform the printhead alignment adjustments, when replacing a printhead cartridge.

Scan/Copy Quality Service Check

	FRU / Function	Action
1	Scanned images are: faded, or colors are dull, blurry or fuzzy. Images are slanted or crooked and the strait lines in the image appear to be jagged or uneven.	Check the lighter/darker settings to see if it is correct. There are two ways to make the adjustment: • From the operator panel • From the Lexmark Scan and Copy program. Check to see if there is any dust, or debris on the glass. This may cause a poor image. Check the press plate on the scan lid for any dust or debris.
2	Blank copies.	If blank copies found, make sure that the original document is facing down on the scanner bed. Check the print cartridges to see if they need to be cleaned or replaced. Check the paper type and copy quality settings on the operator panel or Lexmark Scan and Copy Control program.

3. Diagnostic Aids

Test Page

This test prints the test page.

To run a complete test page of black and color patterns, be sure the printhead cartridges are in good condition.

To enter the test:

1. Turn the printer on.
2. Lift the scanner assembly.
3. Install a known good black print cartridge in the left carrier and a good color print cartridge in the right.
4. Close the access cover.
5. Install paper in the sheet feeder.
6. Press the **Options** button and go to the cartridge menu.
7. Press arrow to self test.
8. Press the **Select** button and the test runs.

The printer prints four lines of black and color printhead cartridge nozzle purge patterns followed by a black and color nozzle test pattern. The purge pattern is used to clear all printhead nozzles. The nozzle test pattern prints all nozzles on a diagonal line. There should be no breaks in the nozzle test pattern. A break in the pattern indicates one or more nozzles are not working.

If a print quality problem exists, see **“Print Quality Service Check” on page 2-13**.

4. Repair Information

This chapter explains how to make adjustments to the printer and how to remove defective parts.

Note: Read the following before handling electronic parts.

Handling ESD-Sensitive Parts

Many electronic products use parts that are known to be sensitive to electrostatic discharge (ESD). To prevent damage to ESD-sensitive parts, follow the instructions below in addition to all the usual precautions, such as turning off power before removing system board:

- Keep the ESD-sensitive part in its original shipping container (a special “ESD bag”) until you are ready to install the part into the machine.
- Make the least-possible movements with your body to prevent an increase of static electricity from clothing fibers, carpets, and furniture.
- Put the ESD wrist strap on your wrist. Connect the wrist band to the system ground point. This discharges any static electricity in your body to the machine.
- Hold the ESD-sensitive part by its edge connector shroud (cover); do not touch its pins. If you are removing a pluggable module, use the correct tool.
- Do not place the ESD-sensitive part on the machine cover or on a metal table; if you need to put down the ESD-sensitive part for any reason, first put it into its special bag.
- Machine covers and metal tables are electrical grounds. They increase the risk of damage because they make a discharge path from your body through the ESD-sensitive part. (Large metal objects can be discharge paths without being grounded.)
- Prevent ESD-sensitive parts from being accidentally touched by other personnel. Install machine covers when you are not working on the machine, and do not put unprotected ESD-sensitive parts on a table.
- If possible, keep all ESD-sensitive parts in a grounded metal cabinet (case).
- Be extra careful in working with ESD-sensitive parts when cold weather heating is used because low humidity increases static electricity.

Adjustments

The user is directed, in the Printer Control program, to perform the printhead alignment adjustments after replacing a print cartridge.

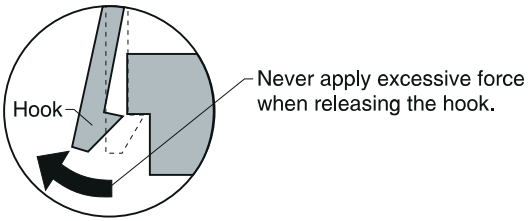
Removal Procedures

The following procedures are arranged according to the name of the printer part discussed.

CAUTION: Unplug the power cord before removing any parts.

Releasing Plastic Latches

Many of the parts are held in place with plastic latches. The latches break easily; release them carefully. To remove such parts, press the hook end of the latch away from the part to which it is latched.



Scanner Lid Assembly

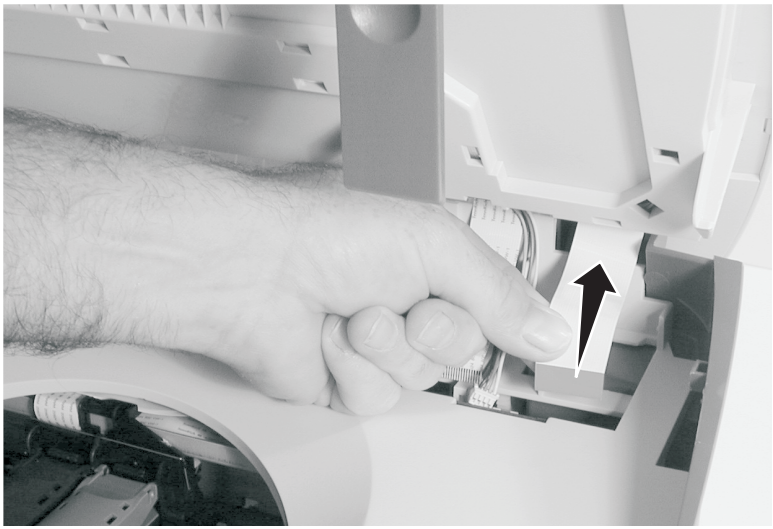
1. Open the lid.
2. Lift and remove.

Scanner Module Assembly

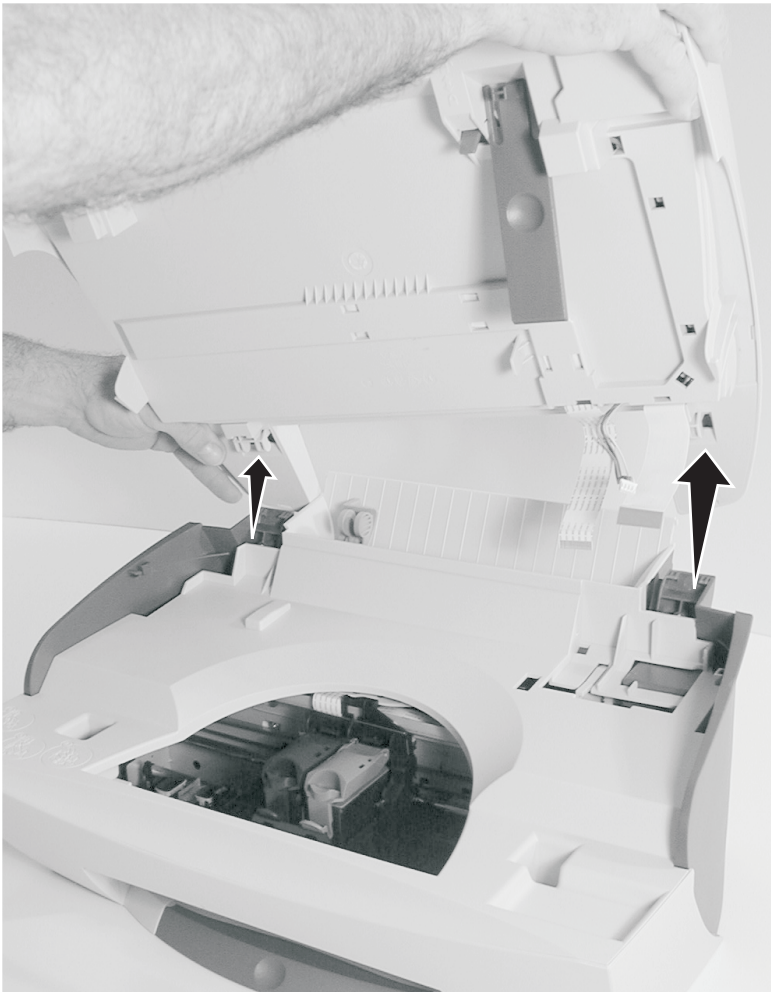
1. Lift and open scanner module.
2. Depress guide on one side and loosen, and then depress guide on the other side.

3. Remove cable cover.

4. Disconnect cables.

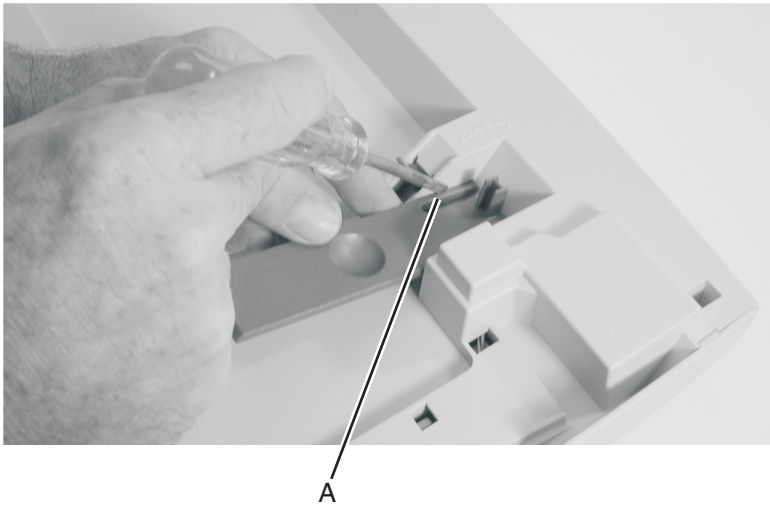


5. Lift and remove scanner module.



Scanner Support

1. Lift the scanner module assembly.
2. Insert screwdriver and depress tab (A) on either side.

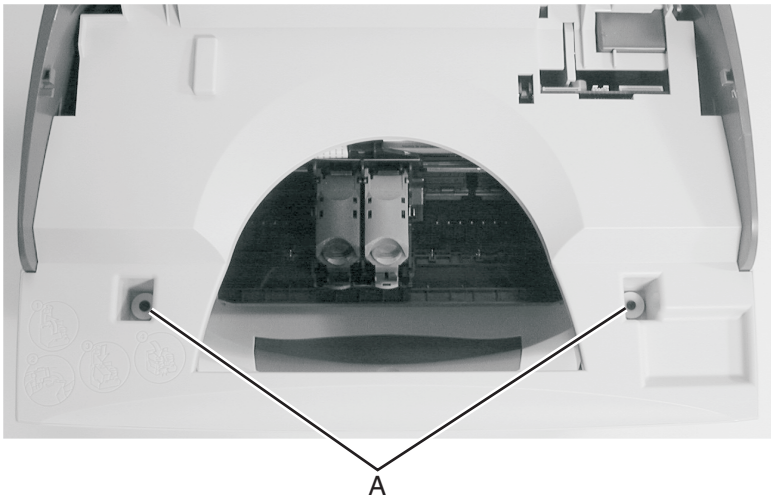


3. Remove scanner support.

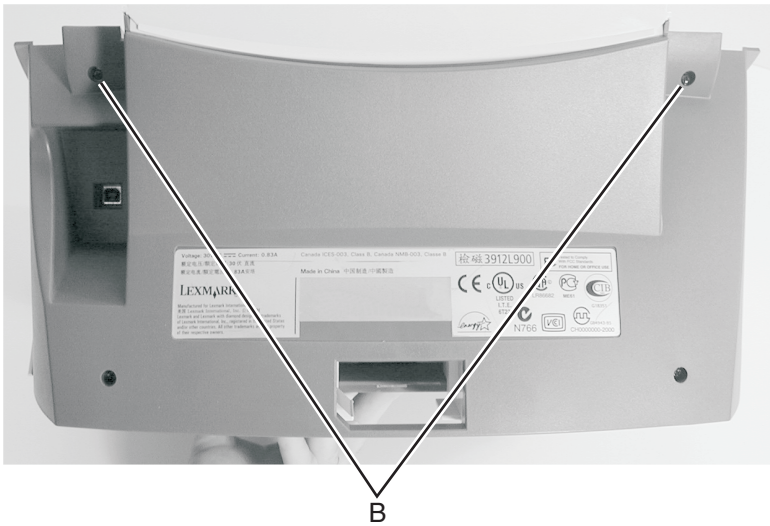
Mid-Frame Cover

1. Remove scanner lid assembly.
2. Remove scanner module assembly.

3. Remove two screws (A) from the top of the mid-frame.

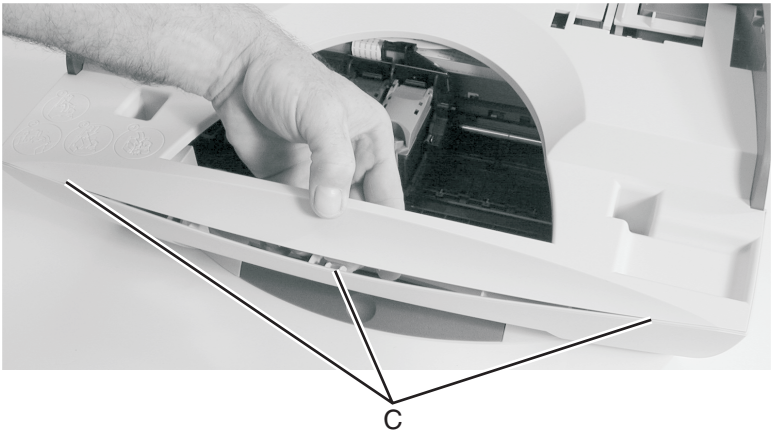


4. Remove two screws (B) from the rear.



5. Lift left rear mid-frame.

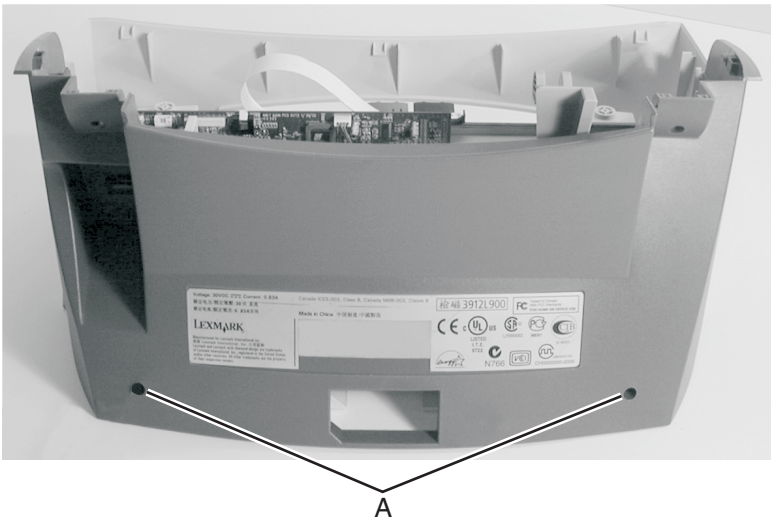
6. Depress tabs on front of mid-frame (C).



7. Lift the front left tab.
8. Remove the mid-frame cover.

Rear Cover

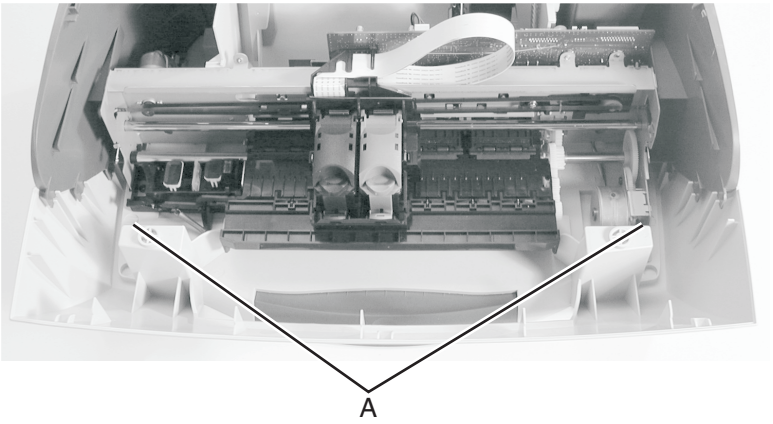
1. Remove scanner lid assembly.
2. Remove scanner module assembly.
3. Remove mid-frame cover.
4. Remove two screws (A).



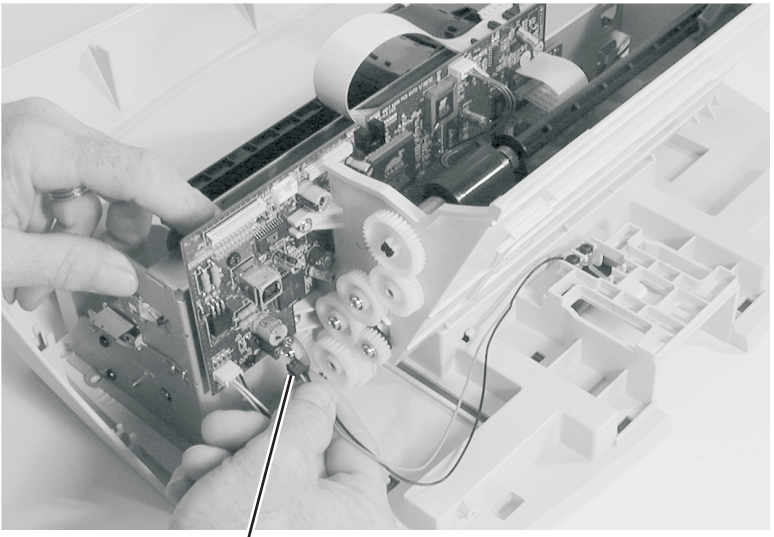
5. Lift the left side and then the right side.
6. Remove the rear cover.

Print Engine

1. Remove scanner lid assembly.
2. Remove scanner module assembly.
3. Remove mid-frame cover.
4. Remove two screws (A).



5. Disconnect the power supply connector (B).

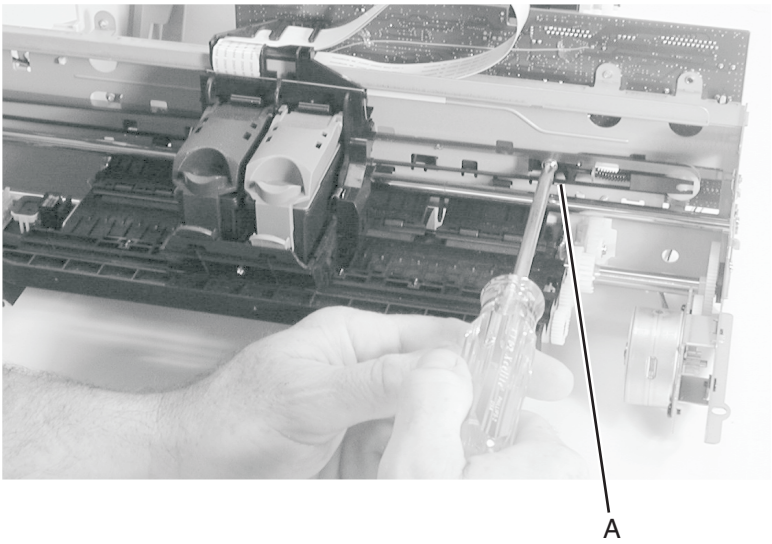


6. Slide print engine forward, lift and remove.

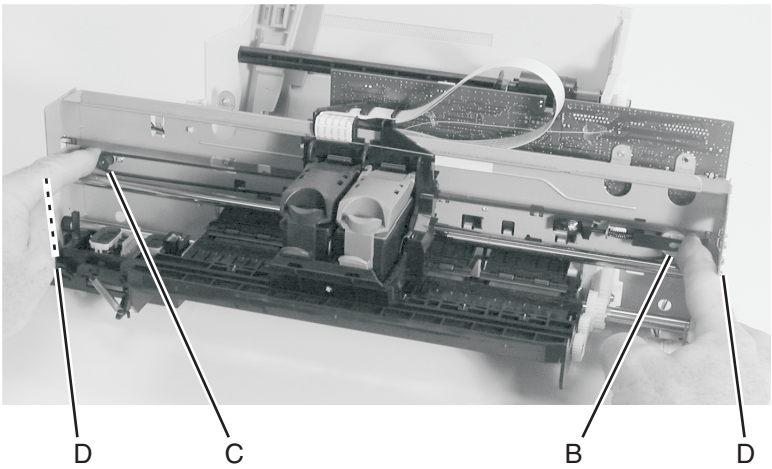
Carrier Assembly

1. Remove scanner lid assembly.
2. Remove scanner module assembly.
3. Remove mid-frame cover.
4. Remove the print engine.

5. Loosen the belt tensioner screw (A).

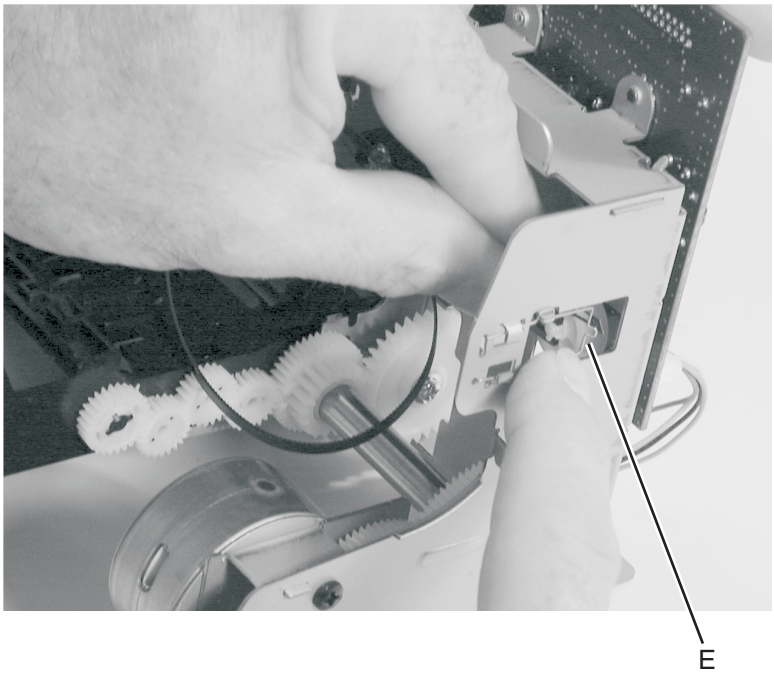


6. Depress the belt tensioner (B).
7. Remove belt from carrier motor gear (C).
8. Remove clips (D) from left and right side.



9. Disconnect carrier cable from system board.

10. Remove carrier shaft.
11. Depress clip (E) and disconnect encoder strip. Note routing of encoder strip and belt.

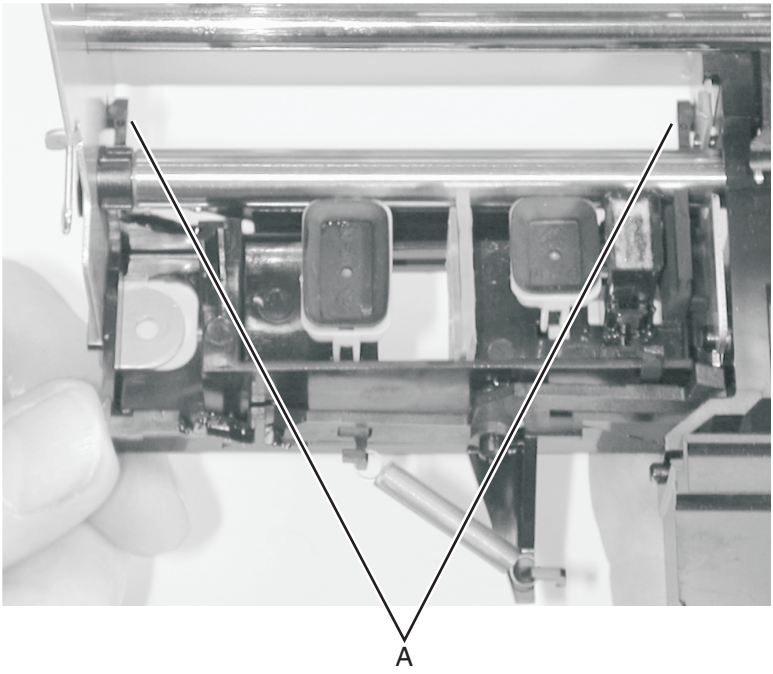


12. Disconnect the carrier cables. Note the routing of the carrier cables.
13. Lift and remove carrier.

Maintenance Station

1. Remove scanner lid assembly.
2. Remove scanner module assembly.
3. Remove mid-frame cover.
4. Remove the print engine.

5. Depress clips (A) on the rear of the maintenance station.

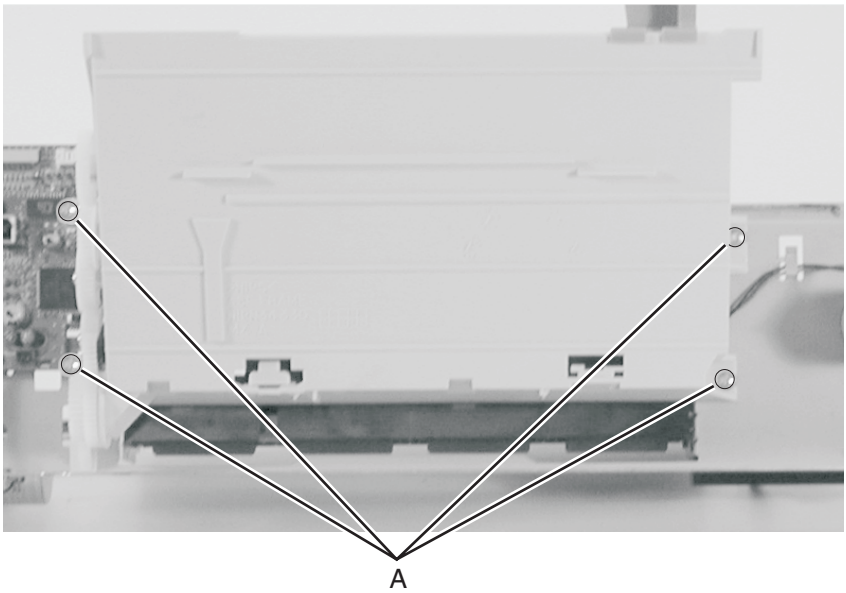


6. Pull maintenance station forward and remove.

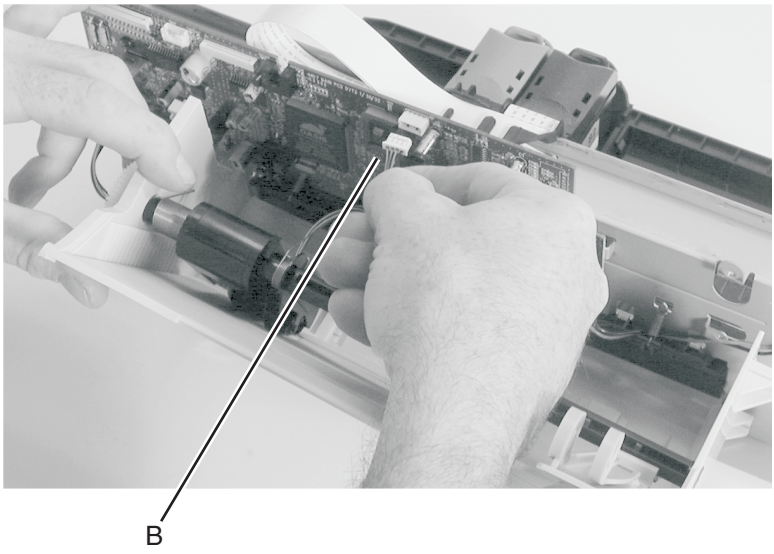
ASF Module

1. Remove scanner lid assembly.
2. Remove scanner module assembly.
3. Remove mid-frame cover.
4. Remove the print engine.

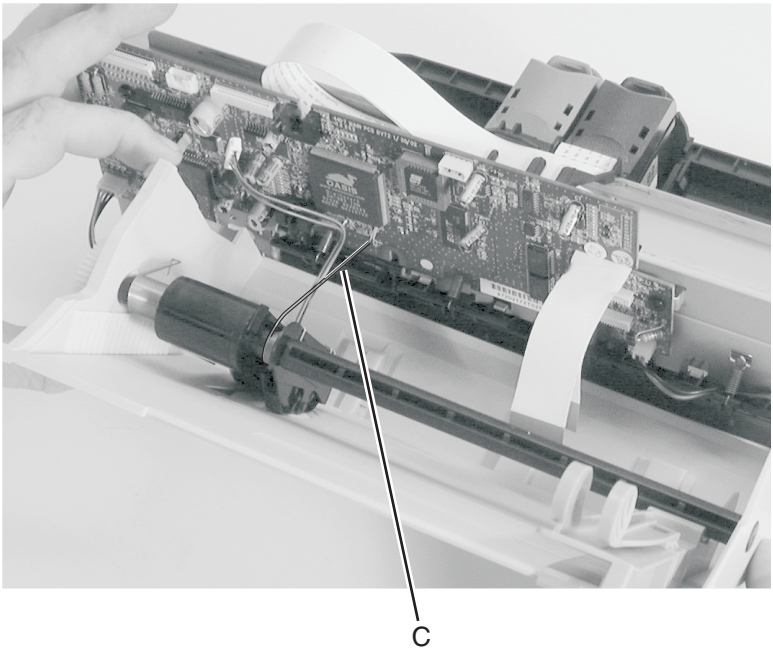
5. Remove four screws (A).



6. Unplug (JP11) media sensor connector (B).



7. Depress tension spring (C).

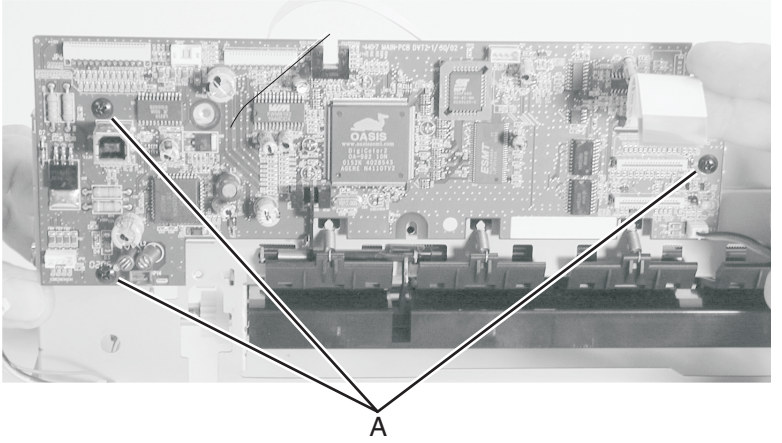


8. Lift up and remove ASF module.

System Board

1. Remove scanner lid assembly.
2. Remove scanner module assembly.
3. Remove mid-frame cover.
4. Remove the print engine.
5. Remove the ASF module.
6. Disconnect all cables from the system board.

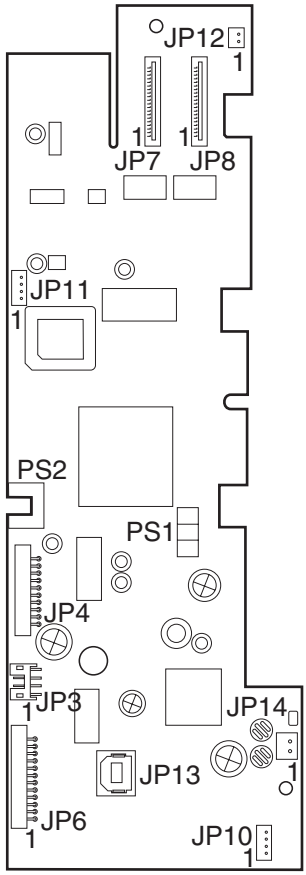
7. Remove three screws (A).



8. Remove the system board.

5. Connector Locations

Units	Description
JP3	Scanner Motor
JP4	CCD Scanner
JP6	Operator Panel
JP7	Carrier
JP8	Carrier
JP10	Paper Feed Motor
JP11	Media Sensor
JP12	Carrier Transport Motor
JP13	USB
JP14	Power Supply Terminals
PS1	EOF Sensor
PS2	Scanner Housing Sensor



6. Preventive Maintenance

This chapter contains the lubrication specifications. Follow these recommendations to prevent problems and maintain optimum performance.

Lubrication Specifications

Lubricate only when parts are replaced or as needed, not on a scheduled basis. Use grease P/N 99A0394 to lubricate the following:

- All gear mounting studs.
- The left and right ends of the large feed roller at the side frames.
- The carrier to carrier frame engagement.
- The carrier guide rod, and carrier guide rod bearings.

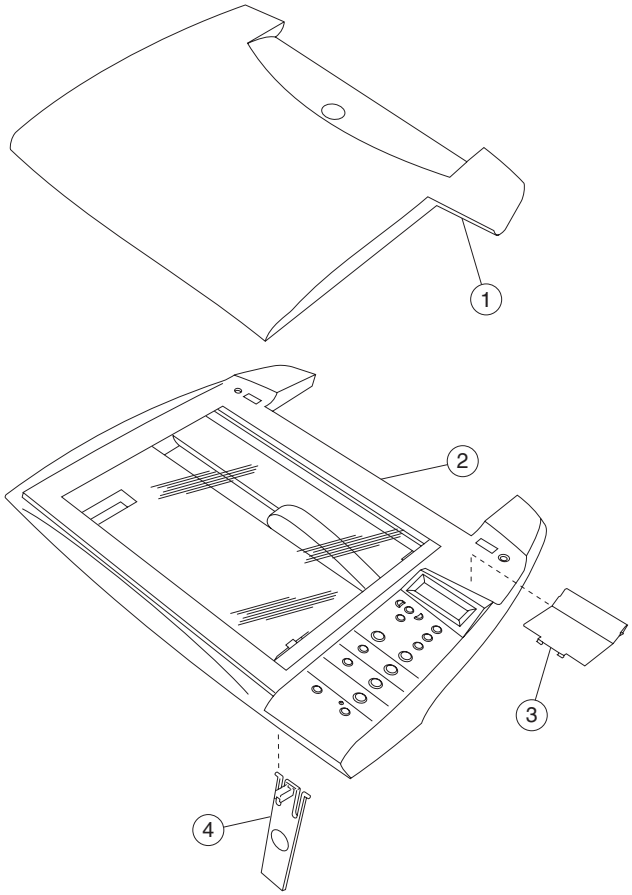
Warning: Keep grease from coming into contact with any electrical components, may cause printer damage or failure. Do not lubricate the scanner rod or bearing after replacing.

7. Parts Catalog

How to Use This Parts Catalog

- SIMILAR ASSEMBLIES: If two assemblies contain a majority of identical parts, they are shown on the same list. Common parts are shown by one index number. Parts peculiar to one or the other of the assemblies are listed separately and identified by description.
- NS: (Not Shown) in the Asm-Index column indicates that the part is procurable but is not pictured in the illustration.

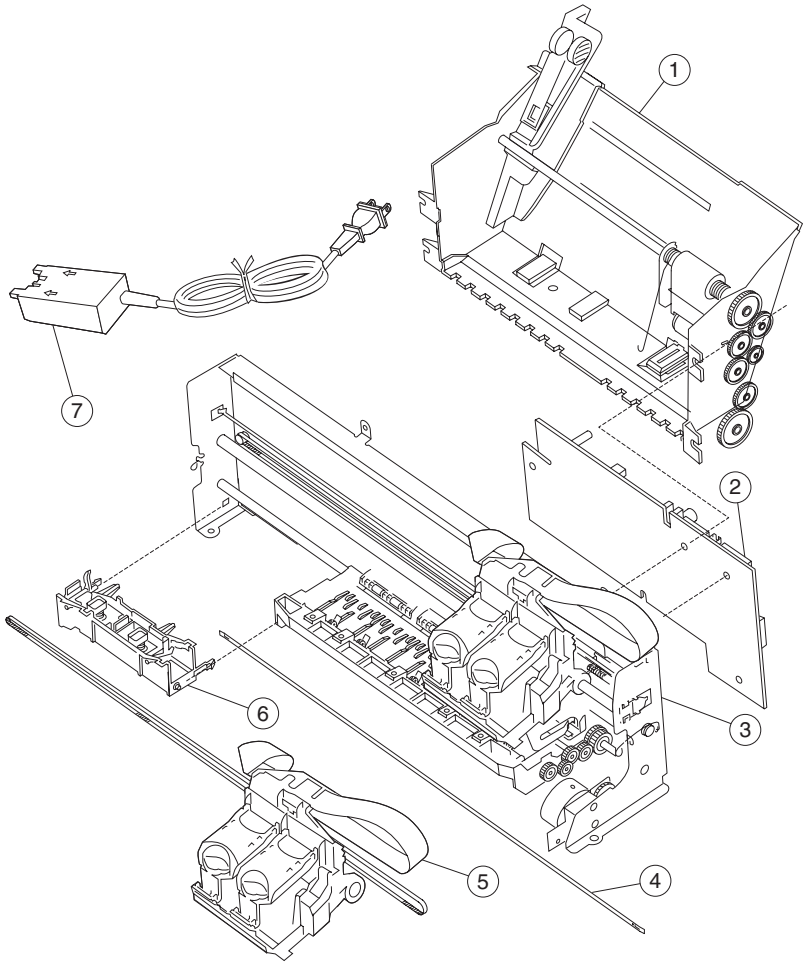
Assembly 1: Covers



Assembly 1: Covers

Asm-Index	Part Number	Units	Description
1–1	56P1485	1	Scanner Lid Assembly
–2	56P1483	1	Scanning Module Assembly
–2	56P1484	1	Scanning Module Assembly (Japan)
–3	56P1486	1	Cable Cover
–4	56P1487	1	Scanner Support
NS	56P1491	1	Operator Panel Overlays
NS	7370714	1	Plain Package B/M includes: Carton, Cushion Set, and Sealing Tape

Assembly 2: Print Engine and Carrier Transport



Assembly 2: Print Engine and Carrier Transport

Asm-Index	Part Number	Units	Description
2–1	56P1481	1	ASF Module
–2	56P1489	1	Board, System
–3	56P1480	1	Print Engine
–4	56P1488	1	Encoder Strip
–5	56P1482	1	Carrier w/Cable Assembly
–6	56P1490	1	Maintenance Station Assembly
–7	13D0400	1	Power Supply (LV) 100-127V
NS	13D0401	1	Power Supply (HV) 220-240V
NS	13D0402	1	Power Supply - Japan 100V
NS	13D0303	1	Power Supply - Brazil 110-127V

Index

S

T

Part Numbers