Service Manual

Lexmark™ 3300 Series All-In-One

4479-XXX

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LEXMARK™

4479-XXX

Edition: April 2005

U.S.A. P/N 12G9463 Japanese P/N 12G9464

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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 제품에 관한 유지 보수 설명서는 전문 서비스 기술자 용으로 작성된 것이므로 비 전문가는 사용할 수 없습니다.
- 본제품을 해체하거나 정비할 경우 전기적인 충격을 받거나 상처를 입을 위험이 커집니다. 전문 서비스 기술자는 이 사실을 숙지하고 필요한 예방 조치를 취하도록 하십시오.
- 일부 부품의 안전성은 항상 보장되지 않습니다. 따라서, 교체 부품은 원래 부품과 같거나 동등한 특성을 가진 제품을 사용하여야합니다.

安全资讯

- 本产品的安全性以原来设计和特定产品的测试结果和认证为基础。万一使用未经许可的替换部件，制造商不对安全性负责。
- 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 All-In-One and the maintenance approach used to repair it. Special tools and test equipment are listed, 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 All-In-One problems.
4. **Repair information** provides instructions for making All-In-One adjustments and removing and installing FRUs.
5. **Locations and connections** uses illustrations to identify the connector locations and test points on the All-In-One.
6. **Preventive maintenance** contains the lubrication specifications and recommendations to prevent problems.
7. **Parts catalog** contains illustrations and part numbers for individual FRUs.

Definitions

Note: A note provides additional information.

Warning: A warning identifies something that could damage the product hardware or software.

CAUTION: A caution identifies something that could cause you harm.

1. General information

The Lexmark™ 3300 Series (4479-XXX) All-In-One features an electro-mechanical color scanner, copier, and printer 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 print cartridge has a total of 640 nozzles and installs on the left. The color cartridge has a total of 480 nozzles installs on the right. The photo cartridge has a total of 480 nozzles and installs on the left. The All-In-One is capable of printing in two directions from either cartridge.

Specifications

Scanner

Scanner Type	Flatbed, CIS
Scan Modes	**True Color:** • 48 bit internal • 24 bit external **Gray Mode:** • 16 bit internal • 8 bit external **Text/Line Art:** • 1 bit per pixel
Scan Method	One-pass scanning
Scan Area	• 8.5 x 11.7 inches • 216 x 297 mm
Scan Resolution	**Flatbed Scanning:** • Horizontal: 600 ppi (optical) • Vertical: 2400 ppi • Interpolated: 19,200 x 19,200

Resolutions

Mode	Scan resolution	Print resolution
Quick	150 x 150 ppi grayscale	300 x 600 dpi
Normal	300 x 300 ppi grayscale	600 x 600 dpi
Photo	600 x 600 ppi grayscale	2400 x 1200 dpi
Quick	150 x 150 ppi color	300 x 600 dpi
Normal	200 x 200 ppi color	600 x 600 dpi
Photo	300 x 300 ppi color	2400 x 1200 dpi

Control panel

The control panel is set up to function in scan and copy mode. The LCD offers different options depending upon the mode.

Buttons	Functions
Power 	The Power button turns the power on and off when the All-In-One is idle. When the All-In-One is on and performing a standalone or computer based print job, pressing the Power button cancels the print job and sends a printer initiated “cancel print” alert to the computer. The All-In-One will power off after the page has been ejected. During a computer scan job, this button cancels the job by sending a “scan abort” command to the computer. During a computer copy job, this button performs a combination command, to cancel the print and scan job. During a standalone copy job, this button cancels the copy job and ejects the page.

Buttons	Functions
Cancel 	During a computer print job, the Cancel button cancels the job by sending the “cancel print” alert to the computer, and the ejects the page. During a computer scan job, this button cancels the job by sending a “scan abort” command to the computer. During a computer copy job, this button performs a combination command to cancel the print and scan job. During a standalone copy job, this button cancels the copy job and ejects the page. The All-In-One stays on after a job has been canceled.
+/- 	When the LCD is on the default page, the **+/-** buttons are used to increase or decrease the number of copies. When in other menus, the **+/-** buttons are used to scroll through the available settings.
Arrow 	The Arrow button is used to scroll through the available menus. For this reason, the Arrow button is also referred to as the menu button. Each time the Arrow button is pressed, the next menu item on the LCD is selected. If a setting in a menu is changed, pressing the Arrow button will save the setting and proceed to the next menu item. The Arrow button is also used during special conditions when the user needs to make a selection. In all cases where a selection is necessary, the **+/-** buttons are used to scroll through the choices and the Arrow button is used to make the selection.
Color Copy 	The All-In-One is equipped with a green Color Copy button. The primary function of the Color Copy button is to initiate color copies when the All-In-One is idle.
Black Copy 	The All-In-One is equipped with a Black Copy button. The primary function of the Black Copy button is to initiate grayscale copies when the All-In-One is idle.
Scan 	Pressing the Scan button sends a message to the host computer causing the All-In-One Center to open and perform a preview. The Scan button has no function defined for non-host attached operation.

Maintenance approach

The diagnostic information in this manual leads you to the correct field replaceable unit (FRU) or part. Use the error codes, symptom tables, 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.

Tools required for service

- Flat-blade screwdriver
- #1 Phillips screwdriver
- #2 Phillips screwdriver
- Spring hook
- Analog or digital multimeter

Acronyms

ADF	Automatic Document Feeder
B/M	Bill of Material
CCD	Charge Coupled Device
CIS	Contact Image Sensor
DBCS	Double Byte Character Set
EOF	End of Form
ESD	Electrostatic Discharge
FFC	Flexible Flat Cable
FPC	Flat Printhead Cable
FRU	Field Replaceable Unit
HVPS	High Voltage Power Supply
LCD	Liquid Crystal Display
LED	Light-Emitting Diode
LVPS	Low Voltage Power Supply
MPF	Multipurpose Feeder
NVRAM	Nonvolatile Random Access Memory
OEM	Original Equipment Manufacturer
POST	Power-On Self Test
ROM	Read Only Memory
SBCS	Single Byte Character Set
USB	Universal Serial Bus
V ac	Volts alternating current
V dc	Volts direct current
ZIF	Zero Insertion Force

2. Diagnostic information

Use the error code tables, post symptom table, symptom tables, and service checks in this chapter to determine the All-In-One failure.

Start

Power-On Self Test (POST) sequence

Press the **Power** button to turn on the All-In-One.

1. The Power button indicator light comes on.
2. `Lexmark 3300 Series` appears on the LCD.
3. The carrier moves off the maintenance station, and then returns.
4. The paper feed motor runs, and then stops.
5. The Contact Image Sensor (CIS) moves to the left, and then returns.
6. `Copies:1` appears on the LCD.

If the printer completes POST with no errors, go to **"Symptom tables" on page 2-10**, locate the symptom, and take the appropriate action.

If the printer does not complete POST, go to **"POST symptom table" on page 2-9**, locate the symptom, and take the appropriate action.

Error codes

POST errors

Code	Name	Description	Action
0300	NVRAM R/W	An error was detected in reading or writing NVRAM.	Replace the system board.
0301	Memory Failure	Unable to initialize memory	Replace the system board.

Code	Name	Description	Action
0302	Hardware Failure	General hardware failure (unable to localize failure to a specific system)	Replace the system board.
0303	ROM Checksum Failure	Corrupted ROM	Replace the system board.

Catastrophic errors

In this state, the All-In-One is in an error mode such that operation cannot continue. These errors affect the entire All-In-One. The LCD is on and operating. An error message appears on the LCD. The power LED blinks continuously and all button presses are ignored except for the power button which resets the machine. The All-In-One accepts data, but discards it and does not respond.

Code	Name	Description	Action
1202	Data Error	Incorrect data has been sent from the host computer to the All-In-One.	Unplug the All-In-One; wait a few seconds, then plug the All-In-One back in and turn the power on. If the error remains, replace the USB cable. If the error continues, replace the system board.
1204	Printhead Programming	Unable to program pseudo-random printhead ID	Replace print cartridge(s).

Code	Name	Description	Action
1207	Paper System Error	A paper system error control failure was detected.	Clear the paper path. Unplug the All-In-One; wait a few seconds, then plug the All-In-One back in and turn the power on. If the error remains, clean the NVRAM by pressing the **Black Copy** button and **Power** button simultaneously until the **`Mfg Menu Enabled`** message appears. Select **Clean NVRAM**. If the error continues, replace the system board.
1209	FLASH Programming Error	Cannot program FLASH memory	Unplug the All-In-One; wait a few seconds, then plug the All-In-One back in and turn the power on. If the error remains, replace the USB cable. If the error continues, replace the system board.
1211	USB Error	An error was detected in USB hardware, or invalid results occurred in USB code.	Unplug the All-In-One; wait a few seconds, then plug the All-In-One back in and turn the power on. If the error remains, replace the USB cable. If the error continues, replace the system board.
1212	Watchdog Error	Indicates printer system was reset by Watchdog timer; Subsystem stall failure	Unplug the All-In-One; wait 5 minutes, then plug the All-In-One back in and turn the power on. If the error remains, replace the system board.

Code	Name	Description	Action
1213	Data Abort Error	Firmware attempted to load or store to an invalid address.	Unplug the All-In-One; wait a few seconds, then plug the All-In-One back in and turn the power on. If the error remains, replace the system board.
1214	Invalid Processor Mode Error	Indicates the ARM processor was in an incorrect mode to perform the requested operation	Unplug the All-In-One; wait a few seconds, then plug the All-In-One back in and turn the power on. If the error remains, replace the system board.
1215	Math Error	There is a problem doing math, such as dividing by zero.	Unplug the All-In-One; wait a few seconds, then plug the All-In-One back in and turn the power on. If the error remains, replace the system board.
1216	Mailbox Error	There is a problem with the internal mailbox messaging system.	Unplug the All-In-One; wait a few seconds, then plug the All-In-One back in and turn the power on. If the error remains, replace the system board.
1217	Temperature Error	There is a problem determining temperature.	Replace print cartridge(s).

Code	Name	Description	Action
1218	Serial Flash Error	Invalid parameters have been passed to ReadFlashPage.	Unplug the All-In-One; wait a few seconds, then plug the All-In-One back in and turn the power on. If the error remains, clean the NVRAM by pressing the **Black Copy** button and **Power** button simultaneously until the **`Mfg Menu Enabled`** message appears. Select **Clean NVRAM**. If the error continues, replace the system board.
1219	Undefined Signal Error	Microprocessor has encountered a bad signal (other than an abort, illegal instruction, or arithmetic exception).	Unplug the All-In-One; wait a few seconds, then plug the All-In-One back in and turn the power on. If the error remains, replace the system board.
2200	Scan Carrier Stall	The scan carrier has stalled.	Unplug the All-In-One; wait a few seconds, then plug the All-In-One back in and turn the power on. If the error remains, replace the system board.
120A	Undefined Error	Microprocessor has encountered an abort or undefined instruction.	Unplug the All-In-One; wait a few seconds, then plug the All-In-One back in and turn the power on. If the error remains, replace the system board.

Code	Name	Description	Action
120B	Address Error	Firmware attempted to access invalid address space.	Unplug the All-In-One; wait a few seconds, then plug the All-In-One back in and turn the power on. If the error remains, replace the system board.
120C	NVRAM Error	An error was detected in reading or writing NVRAM.	Clear the paper path. Unplug the All-In-One; wait a few seconds, then plug the All-In-One back in and turn the power on. If the error remains, clean the NVRAM by pressing the **Black Copy** button and **Power** button simultaneously until the **`Mfg Menu Enabled`** message appears. Select **Clean NVRAM**. If the error continues, replace the system board.
120D	Never Error	Stack over and under flow error; Code error	Unplug the All-In-One; wait a few seconds, then plug the All-In-One back in and turn the power on. If the error remains, replace the system board.
120E	Software Detected Error	An error condition was detected in the software control code.	Unplug the All-In-One; wait a few seconds, then plug the All-In-One back in and turn the power on. If the error remains, replace the system board.

Code	Name	Description	Action
121A	Loop Timeout Error	Error detected that a while loop or similar loop timed out before the event it was waiting on finished.	Unplug the All-In-One; wait a few seconds, then plug the All-In-One back in and turn the power on. If the error remains, replace the system board.
121B	NVRAM Control Section Corrupted	Indicates that the Control Section of NVRAM is corrupted	Unplug the All-In-One; wait a few seconds, then plug the All-In-One back in and turn the power on. If the error remains, clean the NVRAM by pressing the **Black Copy** button and **Power** button simultaneously until the **`Mfg Menu Enabled`** message appears. Select **Clean NVRAM**. If the error continues, replace the system board.
121C	Image Pipe Error	Indicates an error in the image pipeline	Unplug the All-In-One; wait a few seconds, then plug the All-In-One back in and turn the power on. If the error remains, replace the system board.

User intervention errors

Code	Name	Description	Action
1100	Paper Jam	There is paper jammed in the All-In-One.	Clear the paper jam and press the **Arrow** button.
1101	Paper Out	The All-In-One is out of paper.	Load paper and press the **Arrow** button.
1102	Incorrect Printhead	Printhead ID is not valid.	Replace the print cartridge(s).
1103	Missing Printhead	Printhead is missing.	Install print cartridge(s).
1104	Printhead Order	Unsupported order of printheads	Install the print cartridges in the correct slots.
1105	Automatic Alignment Failed	Automatic alignment has failed. May be due to the following: • A bad sensor • Performed alignment on reused paper • Cartridge low on ink or out of ink • Tape was left on cartridge	Follow the instruction on the LCD to recover and align the cartridges.
1200	Print Carrier Stall	The All-In-One print carrier has stalled. Print is incomplete and there is an incorrect home position.	Remove mechanical jam and press the **Arrow** or **Cancel** button.
1201	Print Incomplete	The print carrier stopped before all the data was used.	This error is reported as Print Carrier Stall (1200).
1203	Printhead Short	Short test detected short-circuit in printhead.	Replace print cartridge(s).
1204	Printhead Programming	Unable to program pseudo-random printhead ID	Replace print cartridge(s).

Code	Name	Description	Action
1205	Mono TSR Error	Problem in mono TSR circuit; cannot determine printhead temperature. Printing will be slow if printer is unable to heat or cool.	Replace print cartridge(s).
1206	Color TSR Error	Problem in color TSR circuit; cannot determine printhead temperature. Printing will be slow if printer is unable to heat or cool.	Replace print cartridge(s).
1208	Incorrect Home Position	Printhead is unable to find home position.	This error is reported as Print Carrier Stall (1200).

POST symptom table

Symptom	Action
Power light does not come on. The LCD does not work and motors do not run.	Go to the **"Power service check" on page 2-17**. If okay, go to **"Control panel problems" on page 2-10**.
The paper feed gears do not turn.	Go to the **"Paper feed service check" on page 2-16**.
• The carrier does not move. • The carrier slams the side frame.	Go to the **"Carrier transport service check" on page 2-13**.
• The CIS does not move. • The CIS lamp does not come on.	Go to the **"CIS module assembly service check" on page 2-14**.

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 the side frame	Go to the **"Carrier transport service check" on page 2-13**.

Maintenance station problems

Symptom	Action
• Fails to cap the printheads • Fails to clean the printheads	Go to the **"Maintenance station service check" on page 2-15**.

Control panel problems

Symptom	Action
• Buttons do not work. • LCD does not display.	If the LCD, buttons, or power light fails, check the control panel cable connection J8 on the system board, and then run the **"Power-On Self Test (POST) sequence" on page 2-1**. If the problem remains, replace the scanner module assembly. Go to **"Scanner module assembly removal" on page 4-10**. If the problem continues, replace the system board. Go to **"System board removal" on page 4-17**.

Printer communication problems

Symptom	Action
Not able to print Test Page	Check the USB cable and system board cable connections. If connections are okay, replace system board. Go to **"System board removal" on page 4-17**.

Scanner problems

Symptom	Action
• CIS does not move. • Lamp does not come on.	Go to the **"CIS module assembly service check" on page 2-14**.
• Scanned images are faded, or colors are dull, blurry, or fuzzy. Images are slanted or crooked and the straight lines in the image appear to be jagged or uneven. • Blank copies	Go to the **"Scan and copy quality service check" on page 2-20**.

PictBridge problems

Symptom	Action
The camera does not communicate with the printer.	Check USB cable connections. If connections are okay, go to the **"PictBridge service check" on page 2-15**.

Paper feed problems

Symptom	Action
• Fails to pick up paper • Picks up more than one sheet of paper • Picks paper but fails to feed • Paper jams • Paper fails to exit • Noisy paper feed • Envelopes fail to feed • Paper skews	Go to the **"Paper feed service check" on page 2-16**.

Power problems

Symptom	Action
There is no power in the All-In-One; motors do not operate.	Go to the **"Power service check" on page 2-17**.

Print quality problems

Symptom	Action
• Voids in characters • Light print • Prints off the page • Fuzzy print • Carrier moves but nothing prints • Printhead dries prematurely • Colors print incorrectly • Vertical alignment off	Go to the **"Print quality service check" on page 2-18**.

Service checks

Carrier transport service check

FRU	Action
• System Board • Carrier Transport Motor	Check the carrier transport motor connector J1 on the system board. If it is connected, check for approximately 29 V dc 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. Go to **"System board removal" on page 4-17**. If voltage is correct, check the motor for binds, or a loose motor pulley. A noisy or chattering motor or a motor that fails to turn can be caused by: • A broken circuit or short-circuit in the motor • A bind in the carrier transport mechanism Disconnect the carrier transport motor cable J1 from the system board and check for 0 to 10 ohms between the two wires on the carrier transport motor. If the reading is incorrect, replace the print engine. Go to **"Print engine removal" on page 4-13**.
Carrier Guide Rod	Clean and lubricate the carrier rod. Lubricate the carrier rod and the carrier rod bearing surfaces with grease P/N 99A0394.
Encoder Strip	Verify that the encoder strip is installed correctly and is free of grease or dirt. If the encoder strip is not installed correctly, it can cause the carrier to slam against the side frame. If the encoder strip is damaged, replace it. Go to **"Carrier assembly and encoder strip removal" on page 4-15**. If the encoder strip and all connections are okay, but the carrier slams the side frame, replace the system board. Go to **"System board removal" on page 4-17**.

FRU	Action
Carrier Assembly	Check the following parts for wear or damage: • Printhead cartridge latch • Latch spring • Carrier • Printhead cables Ensure that all printhead cables are fully seated. If any of these parts are defective, replace the carrier assembly. Go to **"Carrier assembly and encoder strip removal" on page 4-15**. Check the gold-plated contacts located on the inside (rear) of the printhead carrier for dirt, wear, and damage. Use a clean, dry cloth to clean the contacts. If the gold contacts are damaged, replace the carrier assembly. Go to **"Carrier assembly and encoder strip removal" on page 4-15**. If the symptom remains, replace the system board. Go to **"System board removal" on page 4-17**.

CIS module assembly service check

FRU	Action
CIS Module Assembly	If the CIS module does not move, ensure that the belt is installed and is not binding. If the CIS module still does not move, replace the system board. Go to **"System board removal" on page 4-17**. If the lamp does not come on as the CIS module assembly is scanning, check connector J10 on the system board. If connection is okay and the problem remains, replace the scanner module assembly. Go to **"Scanner module assembly removal" on page 4-10**.

PictBridge service check

FRU	Action
PictBridge Card	Check system board connector J11 for approximately 9 V dc on pin 1. If the voltage is incorrect, replace the system board. Go to **"System board removal" on page 4-17**. If the voltage is correct but the problem remains, replace the scanner module assembly. Go to **"Scanner module assembly removal" on page 4-10**.

Maintenance station service check

The maintenance station has three functions:

1. Wipes (cleans) the printhead nozzle plates
2. Provides a place for printheads to fire all nozzles, keeping them clear for printing
3. Seals the printheads when they are not being used to prevent the nozzles from drying

FRU	Action
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 printheads. When the carrier moves to the right, it uncaps the printheads. The wipers clean the printhead nozzle plates as the carrier leaves the maintenance station. The wipers clean the printheads only 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 wipers to lower. Worn wipers can cause poor print quality after printhead cleaning. Check for loose or worn wipers. Worn caps cause the printhead nozzles to dry and clog. Check for loose or worn caps. If any worn or broken parts are found, replace the maintenance station. Go to **"Maintenance station removal" on page 4-18**.

Paper feed service check

If the All-In-One does not have paper jam problems, continue with this service check. If the All-In-One has a paper jam problem, examine the printer for the following before you begin the service check:

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

FRU	Action
• Paper Feed Motor • System Board	Run the **"Power-On Self Test (POST) sequence" on page 2-1**. A noisy or chattering motor or a motor that fails to turn can be caused by: • A broken circuit or short-circuit in the motor • A bind in the paper feed mechanism Disconnect paper feed motor cable J2 from the system board and check for approximately 5 ohms between the two wires on the paper feed motor. If the reading is incorrect, replace the print engine. Go to **"Print engine removal" on page 4-13**. If the reading is correct, check for approximately 29 V dc at connector J2 on pins 1 and 2. If the voltage is incorrect, replace the system board. Go to **"System board removal" on page 4-17**. Although the paper feeds in one direction, the paper feed motor turns in two directions. If the paper feed motor turns in one direction only, replace the system board. Go to **"System board removal" on page 4-17**. 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. If the gear is defective, replace the print engine. Go to **"Print engine removal" on page 4-13**.
Automatic Sheet Feeder Assembly	Check the pick roller for wear. If the pick roller is worn and causing a paper feed problem, replace the print engine. Go to **"Print engine removal" on page 4-13**.

FRU	Action
Midframe Assembly	Check the following for wear: • Small feed rollers • Large feed roller • Exit roller • Star rollers If any of the rollers are worn and causing a paper feed problem, replace the print engine. Go to **"Print engine removal" on page 4-13**.
End-of-Forms Flag and Spring	Check for binds or damage. If the flag or spring are defective, replace the print engine. Go to **"Print engine removal" on page 4-13**.

Power service check

FRU	Action
External Power Supply	Plug the external power supply into an outlet. Check for 29 V dc. If the voltage is incorrect, replace the power supply.
• Printhead Cables • Paper Feed Motor • Carrier Transport Motor • Control Panel	Unplug the All-In-One. Check all connections on the system board and plug the All-In-One back in. Look for a symptom change. If the printhead cables are defective, replace the carrier assembly. Go to **"Carrier assembly and encoder strip removal" on page 4-15**. Check for broken circuits or short-circuits in the paper feed and carrier transport motors. If either motor is defective, replace the print engine. Go to **"Print engine removal" on page 4-13**. If the control panel LCD, buttons, or power light fails, check cable connection J8 on the system board, and then run the **"Power-On Self Test (POST) sequence" on page 2-1**. If the problem remains, replace the scanner module assembly. Go to **"Scanner module assembly removal" on page 4-10**. If the problem continues, replace the system board. Go to **"System board removal" on page 4-17**.

Print quality service check

FRU/Problems	Action
Print Cartridge	Ensure that the All-In-One contains good print cartridges. Run the **"Single test page" on page 3-1**. Look for a break in the diagonal line in the nozzle test pattern. A broken line indicates one or more print nozzles are not working. Run the test again to verify the failure. If failure remains, replace the print cartridge(s).
Color print cartridge cross contamination	Be sure the print cartridge nozzle plate is clean. Clean with a soft cloth. If cross contamination occurs, check for: • Maintenance station wiper damage • Used tape on the printhead nozzle plate If the wiper is damaged, replace the maintenance station. Go to **"Maintenance station removal" on page 4-18**. **Note:** Do not retape the printhead nozzle plate.
Maintenance Station	Intermittent nozzle failures can be caused by worn parts in the maintenance station. If you find worn parts, replace the maintenance station. Go to **"Maintenance station removal" on page 4-18**.
Paper Feed	Ink smudging and smearing can be caused by paper problems or problems in the paper feed area. Check for: • Correct type of paper • Curled or wrinkled paper • Paper path obstructions • Feed roller wear or looseness • Worn gears or binds If the paper feed roller or gears are defective, replace the print engine. Go to **"Print engine removal" on page 4-13**.

FRU/Problems	Action
Carrier Transport	Blurred print and voids can be caused by problems in the carrier transport area. Check the following: • Carrier transport belt for wear • Idler pulley parts for wear, damage, or looseness • Carrier guide rod for wear or dirt. If the rod is dirty, clean and lubricate it. The carrier to carrier frame engagement should be lubricated with grease P/N 99A0394. If the carrier transport belt is worn, replace the carrier assembly. Go to **"Carrier assembly and encoder strip removal" on page 4-15**. If the idler pulley parts are defective, replace the print engine. Go to **"Print engine removal" on page 4-13**.
Alignment	Uneven vertical lines, characters not properly formed (jagged or rough) or not aligned at the left margin can be adjusted by performing the printhead alignment. To align the print cartridges using the computer: 1. Load plain paper. 2. Open the **Lexmark Solution Center**. 3. From the Maintenance tab, click **Align to fix blurry edges**. 4. Click **Print** to print an alignment page and to automatically align the cartridges. The All-In-One will prompt you to align the print cartridges when they are installed or replaced. 1. Load plain paper. 2. Install new print cartridges and close the scanner module assembly. 3. An alignment page message appears on the LCD. Press the **Arrow** button to print the alignment page. During printing, `Printing alignment page` appears on the LCD. After the page prints, `Automatic alignment complete` appears. The print cartridges are now aligned for optimal print quality.

Scan and copy quality service check

FRU/Problems	Action
Scanned images are faded, or colors are dull, blurry, or fuzzy. Images are slanted or crooked, and the straight lines in the image appear to be jagged or uneven.	Check the lighter and darker settings. Pressing the **Arrow** button presents menus on the LCD. From the Dark menu: • Press the **Minus (-)** button to make a document lighter. • Press the **Plus (+)** button to make a document darker. The measurement is on a scale and the default setting is in the center of the range. Clean the scanner glass when ink smudges, fingerprints, or dirt are apparent. Use a damp cloth and gently wipe the scanner glass clean. **Note:** Make sure all ink or corrective fluid is dry before placing a document on the scanner glass.
Blank copies	If blank copies are found, ensure 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 quality and paper settings on the control panel. Pressing the **Arrow** button presents menus on the LCD. From the Quality menu, press the **Minus (-)** button or the **Plus (+)** button to select one of these quality settings: – Quick Print – Normal (the default setting) – Photo From the Paper menu, press the **Minus (-)** button or the **Plus (+)** button to select one of the paper size settings from the list. The default setting is Letter.

3. Diagnostic aids

Single test page

This test prints a test page.

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

To enter the test:

1. Turn on the All-In-One.
2. Lift the scanner unit.
3. Install a good black print cartridge in the left side of the carrier and a good color cartridge in the right.
4. Close the scanner unit.
5. Load paper in the paper support.
6. Turn off the All-In-One.
7. Press and hold the **Black Copy** button and the **Power** button simultaneously until **`Mfg Menu Enabled`** appears on the LCD.
8. Release both buttons.
9. Press the **Arrow** button until **`LCD Button Test`** appears.
10. Press the **Plus (+)** button until **`Single Test Page`** appears.
11. To perform the test, press the **Arrow** button.

The single test page consists of the following information:

- Build Date
- Code Level - Page Count
- Last Error
- Maint
- USB Serial Number
- MFG
- CMD
- Model
- Class
- USB Vendor ID
- Digital Logic Type
- Printer Engine
- Printhead Type
- Scanner

A black and color 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 that one or more nozzles are not working.

If a print quality problem exists, see **“Print quality service check” on page 2-18**.

Self Test menu

To enter the Self Test mode:

1. Turn on the All-In-One.
2. Press and hold the **Black Copy** button and the **Power** button simultaneously until **`Mfg Menu Enabled`** appears on the LCD.
3. Release both buttons.
4. Press the **Arrow** button until **`LCD Button Test`** appears on the LCD.

The following are common Self Test menu selections:

1. LCD Button Test—Verifies that the control panel buttons are functioning electrically and are being detected by the firmware. Pressing a button shows the button ID or number on the LCD.
2. Clean NVRAM—Does a clear of the non-protected area of the Flash-emulated NVRAM by restoring values to default or initializing the values to 0x00s or 0xFFs. A **`Clearing`** message appears on the LCD. If the function ends successfully, a **`Success`** message appears on the LCD. Press **Cancel** to return to the Self Test menu.
3. Single Test Page—Prints the following: firmware version information, page count, last error information, short test, thermal information, device ID, and build information. It performs several swaths that help debug the printheads.
4. Run In Test Copy B—The All-In-One runs standalone black copies. The copy quality, blank paper size, and resize will depend on previous settings that were present when this test mode was entered.
5. Run In Test Copy C—The All-In-One runs standalone color copies. The copy quality, blank paper size, and resize will depend on previous settings that were present when this test mode was entered.

6. Run In Test Scan—The All-In-One runs the Scanner Life Test through 75, 150, 300, and 600 dpi resolutions. No data is sent over USB and the test is only used in standalone to verify the mechanical system. Message screens report the current scan mode and the frequency during this test. Press **Cancel** to end the Scanner Life Test, return the scan bar to the home position, and return to the Self Test menu.
7. USB Serial Number—Displays the USB serial number for the All-In-One. Press the **Arrow** button to de-activate the USB serial number. Press **Cancel** to return to the Self Test menu.
8. NVRAM Dump—Prints the contents of the Flash-emulated NVRAM. After completion, the LCD returns to the Self Test menu. Press **Cancel** during printing to halt the job, eject the paper, and return to the Self Test menu.
9. Short Copy Black—Performs a black copy of the top 5cm of the scan area.
10. Short Copy Color—Performs a color copy of the top 5cm of the scan area.
11. Media Test—The media sensor reads the current paper type. The detected paper type appears on the LCD. If no paper is present, a **None** message appears on the LCD. Press **Cancel** to return to the Self Test menu.
12. Show Strings—Displays strings on the LCD (example **Lexmark 3300 Series**).
13. Scanner Life Test—This is not an option in the Self Test menu. To enter the Scanner Life Test, press the **Cancel** and **Power** buttons simultaneously. The following are characteristics of the Scanner Life Test:
    - To begin the test, press the **Minus (-)** and **Scan** buttons simultaneously.
    - Scans maximum area of glass.
    - After each scan, updates NVRAM with the total number of pages scanned.
    - Displays the current scan resolution, mode, and number of scans on the LCD.
    - Continuously cycles through the various resolutions and stops after 32,000 scans.
14. Last USB Speed—The status and/or connection speed of the USB connection appears on the LCD.

4. Repair information

This chapter explains how to make adjustments to the All-In-One and how to remove defective parts.

Warning: 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 as few movements as possible 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 All-In-One will prompt you to align the print cartridges when they are installed or replaced.

1. Load plain paper.
2. Install new print cartridges and close the scanner module assembly.
3. An alignment page message appears on the LCD. Press the **Arrow** button to print the alignment page. During printing, **`Printing alignment page`** appears on the LCD. After the page prints, **`Automatic alignment complete`** appears.

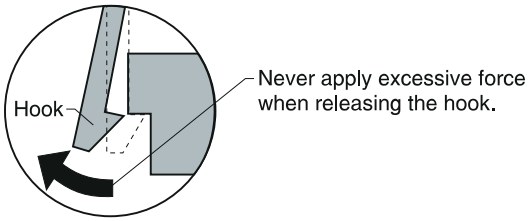
Removal procedures

The following procedures are arranged according to the name of the All-In-One 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.



Removals

General precautions on removals

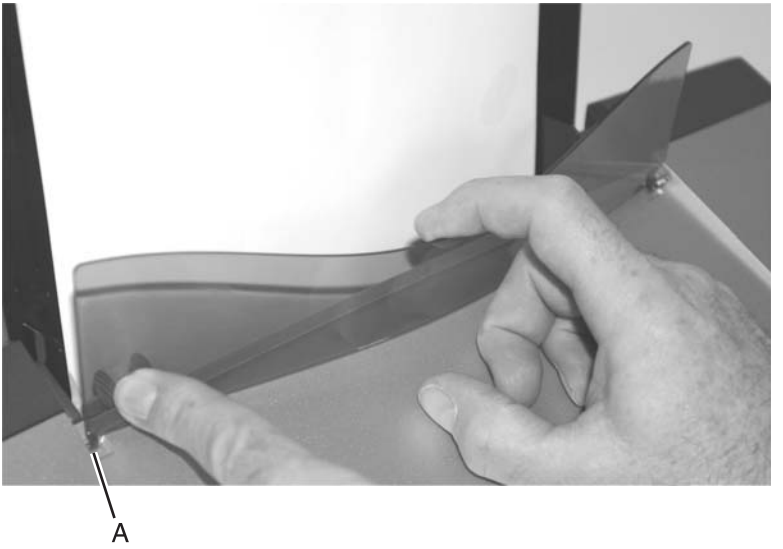
Use caution when disassembling and reassembling components. The close proximity of cables to moving parts makes proper routing a must. When components are removed or replaced, any cables disturbed must be replaced as closely as possible to their original positions. Before removing any component from the machine, be sure you note the cable routing.

When servicing the machine:

- Verify that documents are not stored in memory.
- Move the print cartridge to the far right to cap the nozzles.
- Unplug the power cord.
- Use a flat and clean surface.
- Use only authorized replacement parts.
- Do not force plastic parts.

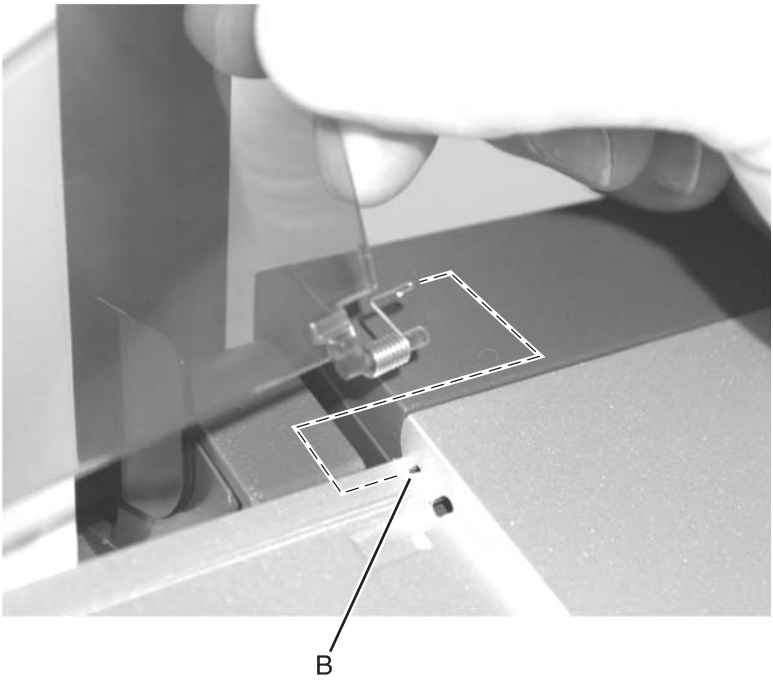
ASF guide with spring removal

1. Flex the ASF guide and remove tab (A) from the hole.



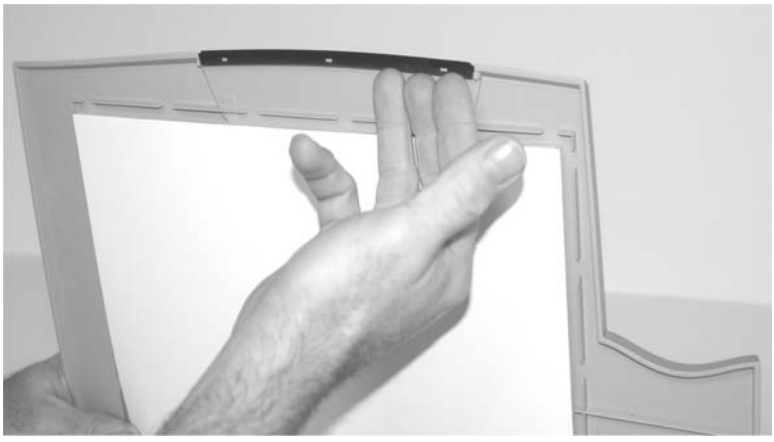
2. Remove the ASF guide and spring.

3. When reinstalling, be sure the spring goes back into hole (B).

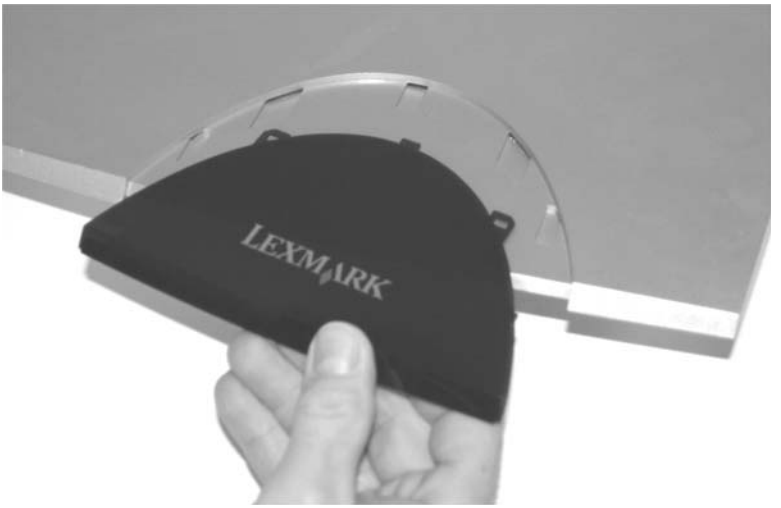


Bezel removal

1. Lift the scanner lid.
2. Use your fingers to loosen the bezel.



3. Pull the bezel forward and remove.



Control panel cover removal

1. Use a flat thin-blade screwdriver to separate the cover from the base of the control panel.

2. Lift and remove the control panel cover.

Exit tray with extender removal

1. Extend the exit tray.
2. Press down on the center of the exit tray.

3. Pull the exit tray out and remove.

Scanner lid removal

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

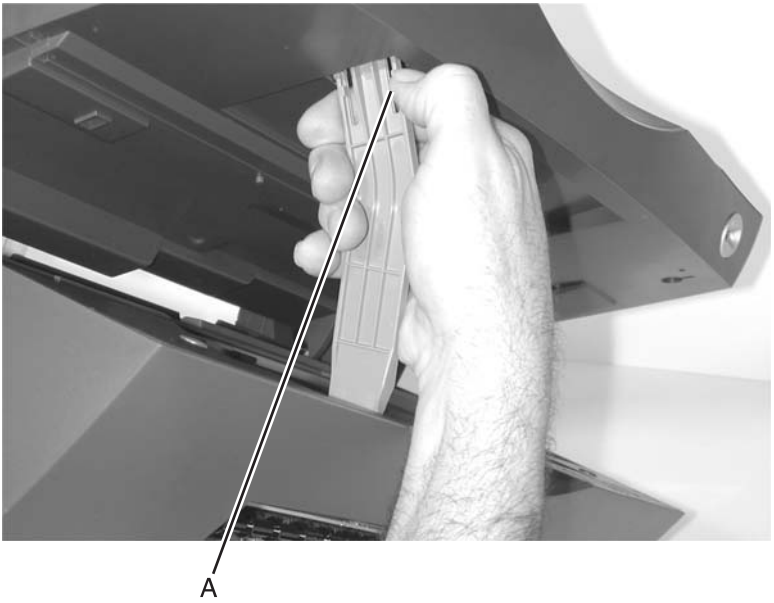
Paper support removal

1. Press in the left tab.

2. Lift and remove the paper support.

Scanner support removal

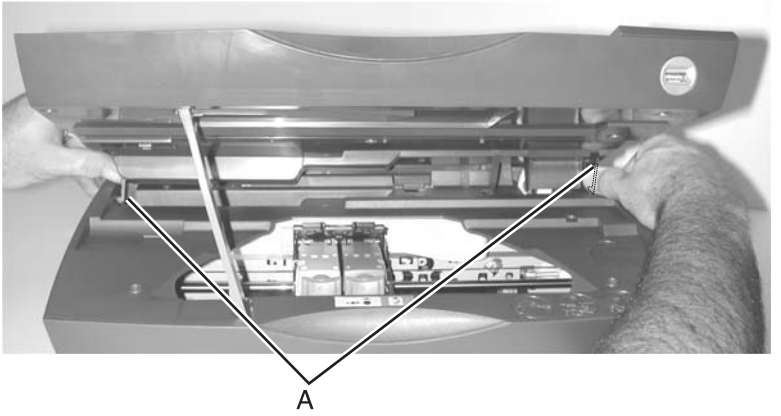
1. Lift the scanner module assembly.
2. Press in tab (A).



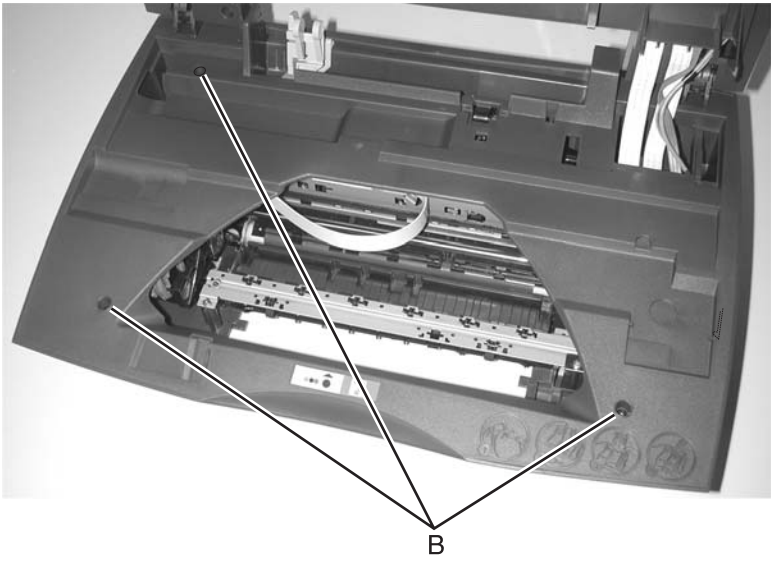
3. Remove the scanner support.

Scanner module assembly removal

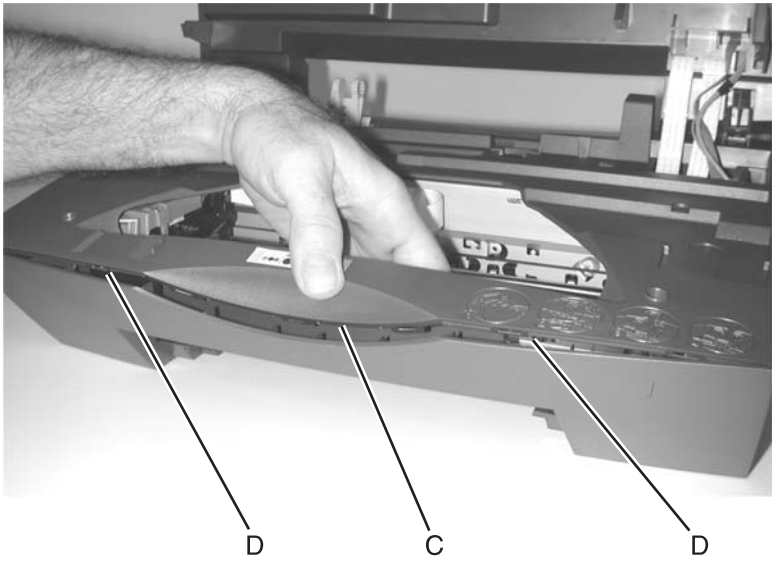
1. Press in the left and right latches (A).



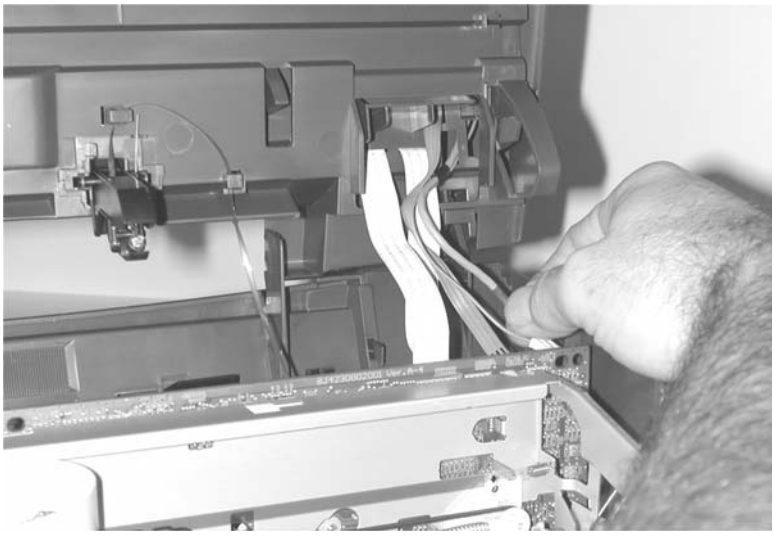
2. Lift the scanner module assembly into the upright position.
3. Remove three screws (B) from the midframe cover.



4. Press down on the front of the midframe cover (C) to release tabs (D).



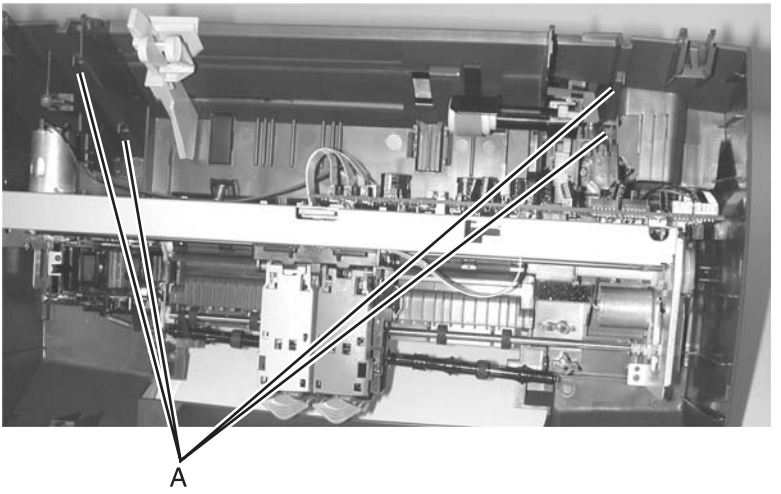
5. Lift the midframe cover and disconnect all scanner cables and the media sensor cable from the system board.



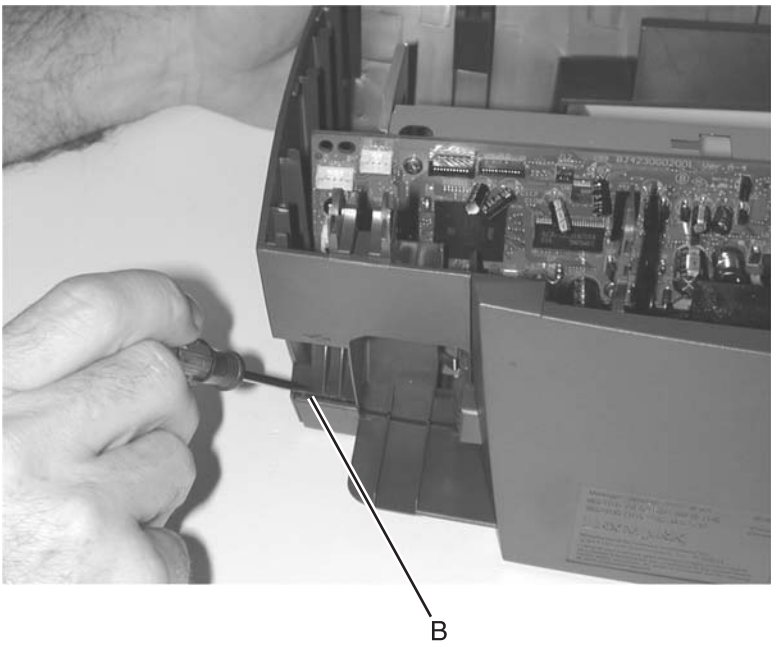
6. Lift and remove the scanner module assembly.

Rear cover removal

1. Remove the scanner module assembly.
2. Press four tabs (A) toward the center of the machine.



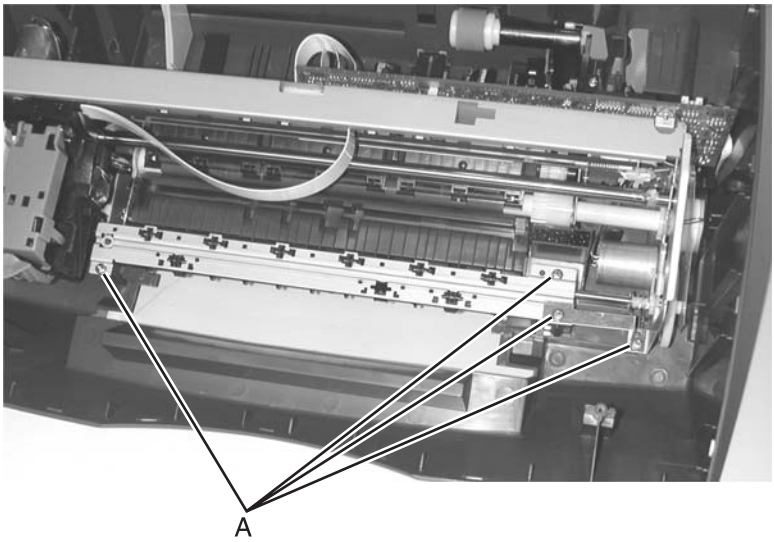
3. Release the fifth tab (B) with a screwdriver.



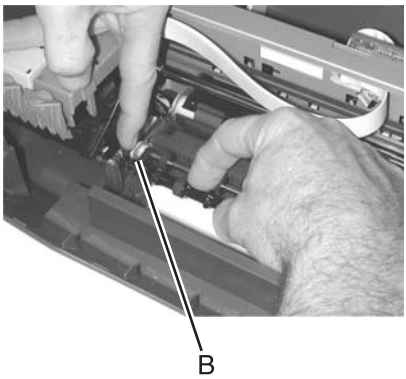
4. Remove the rear cover.

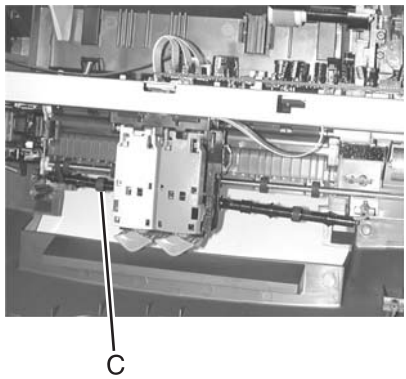
Print engine removal

1. Remove the scanner module assembly.
2. Remove four screws (A) from the star roller assembly and the ground bracket.



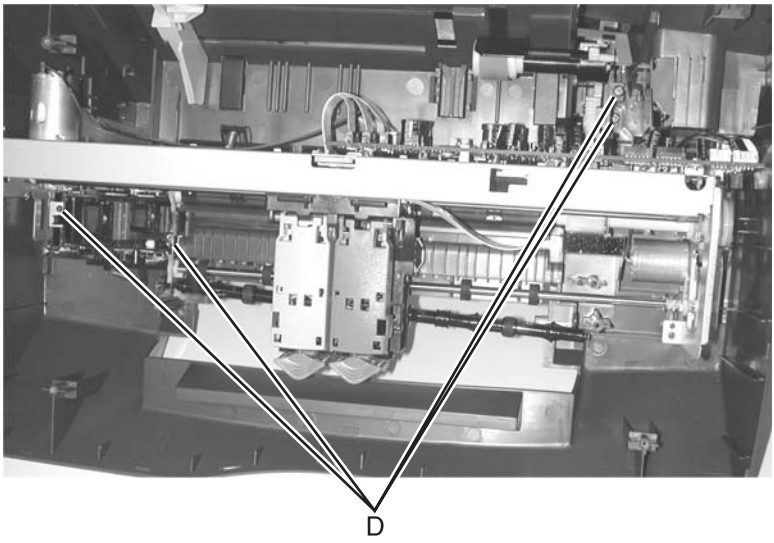
3. Remove the star roller assembly and the ground bracket.
4. Press down and disconnect the small exit roller (B).
5. Move the small exit roller to the location indicated (C).





6. Move the print carrier to the center of the machine.

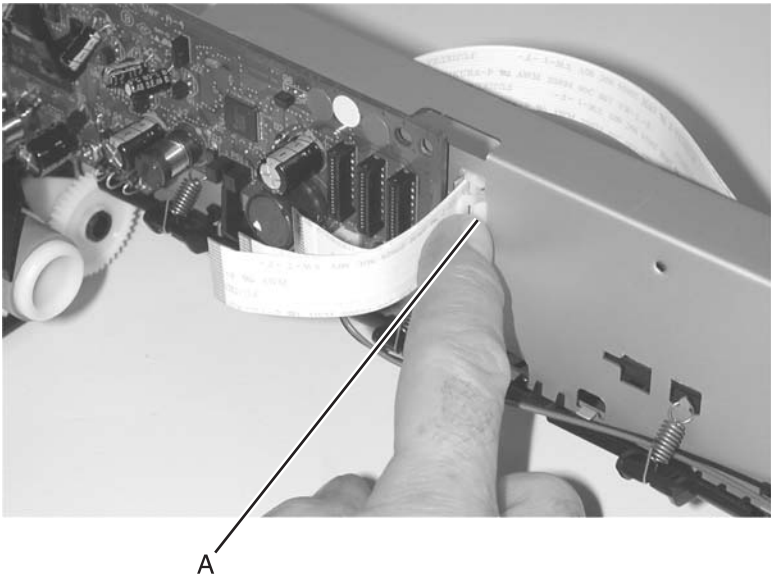
7. Remove four screws (D) from the print engine.



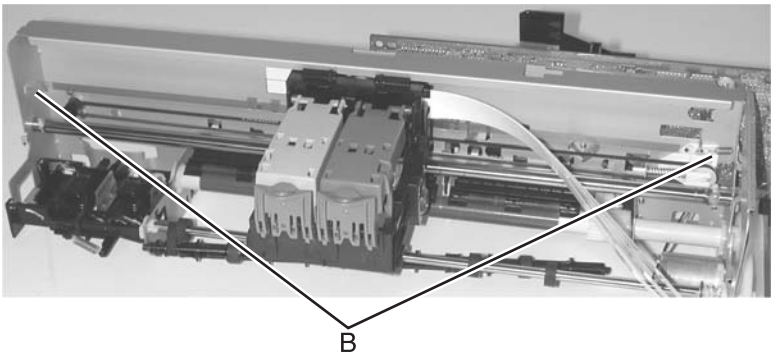
8. Lift and remove the print engine.

Carrier assembly and encoder strip removal

1. Remove the scanner module assembly.
2. Remove the print engine.
3. Disconnect the flat printhead cables and clip (A).



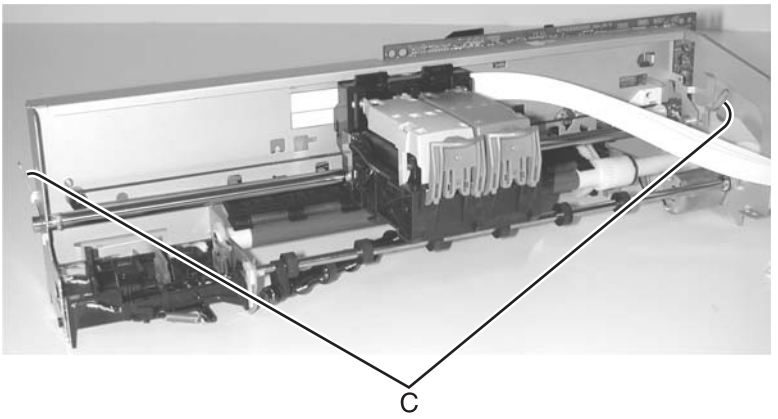
4. Disconnect both ends (B) of the encoder strip.



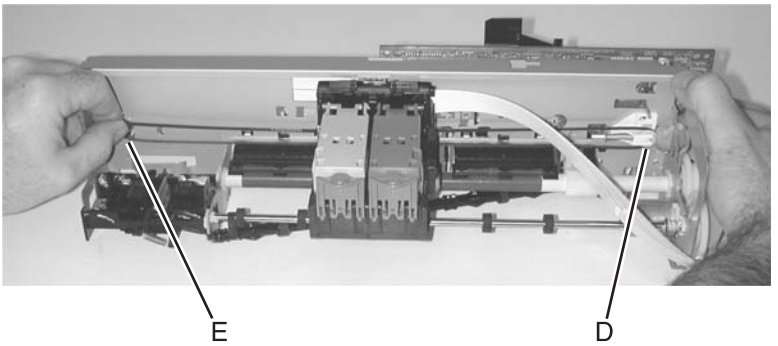
5. Remove the encoder strip.

Note: When installing an encoder strip, make sure that the arrow on right end is pointing down.

6. Remove the two carrier shaft retainer clips (C).



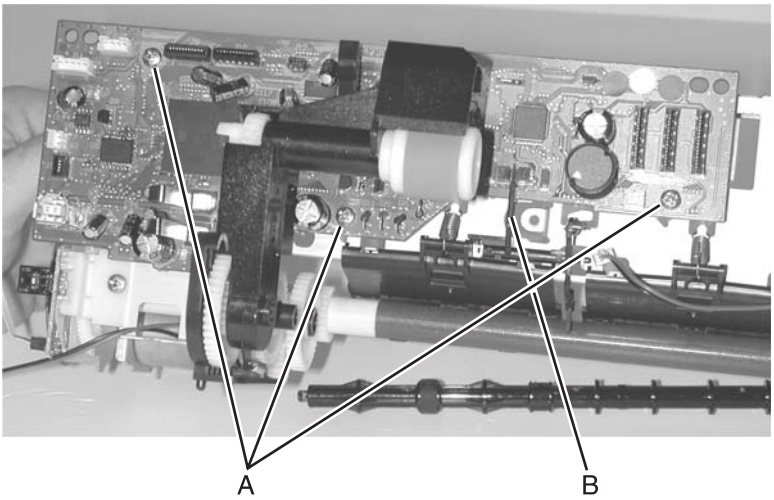
7. Slide the carrier shaft to the left and remove.
8. Press the belt tensioner (D) and remove the belt (E) from carrier transport motor pulley.



9. Remove the carrier assembly.

System board removal

1. Remove the scanner module assembly.
2. Remove the print engine.
3. Disconnect all system board cables.
4. Remove three screws (A).

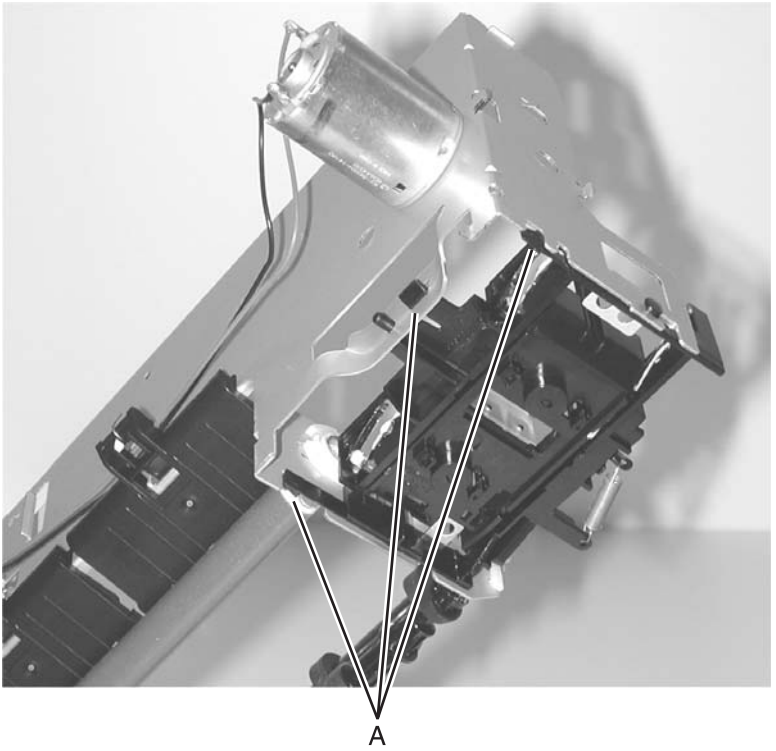


Note: Be careful not to damage the of End-Of-Forms flag (B).

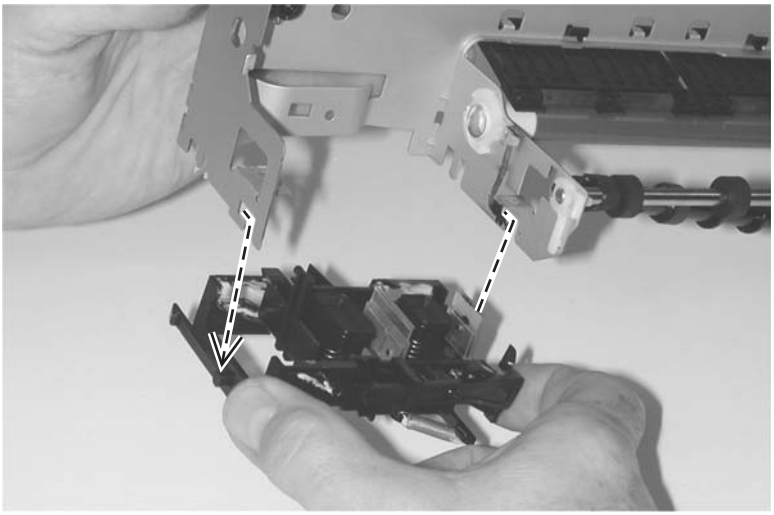
5. Remove the system board.

Maintenance station removal

1. Remove the scanner module assembly.
2. Remove the print engine.
3. Press three retainer tabs (A).



4. Slide the maintenance station forward and down to remove.



Base assembly

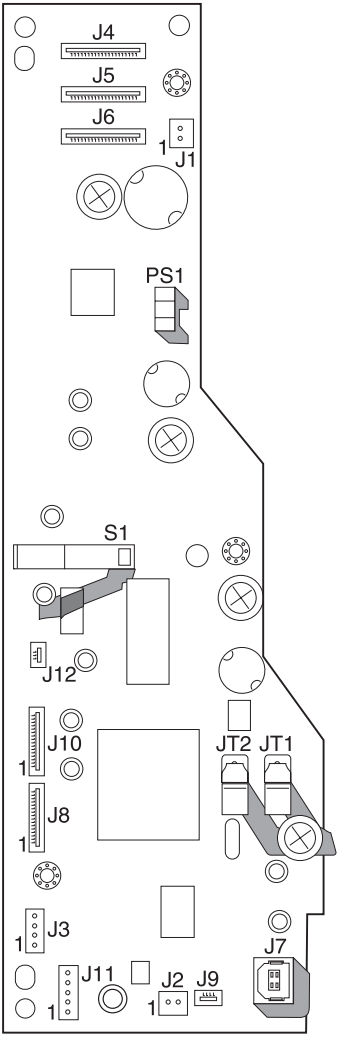
1. Remove the scanner module assembly.
2. Remove the print engine.
3. Remove the rear cover.
4. Remove the exit tray with extender.

The base assembly remains.

5. Locations and connections

System board

Connector	Description	Approximate voltage	Connector (total number of pins)
J1	Carrier Transport Motor	Pins 1 and 2 — 29 V dc	2
J2	Paper Feed Motor	Pins 1 and 2 — 29 V dc	2
J3	Scanner Motor	Pins 1,2,3,4 — 1 V dc	4
J4	Carrier		
J5	Carrier		
J6	Carrier		
J7	USB		
J8	Control Panel		
J9	Paper Feed Encoder Dial		
J10	CIS		
J11	PictBridge	Pin 1 — 9 V dc	5
J12	Media Sensor		
JT1	Power Supply	29 V dc	
JT2	Power Supply		
PS1	EOF Sensor		
S1	Cartridge Access Sensor		


J4
J5
J6
1
J1
PS1
S1
J12
J10
1
J8
1
JT2
JT1
1
J3
J7
1
J11
J2
1
J9

6. Preventive maintenance

This chapter contains 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, as this may cause All-In-One damage or failure. Do not lubricate the scanner rod or bearing after replacing.

7. Parts catalog

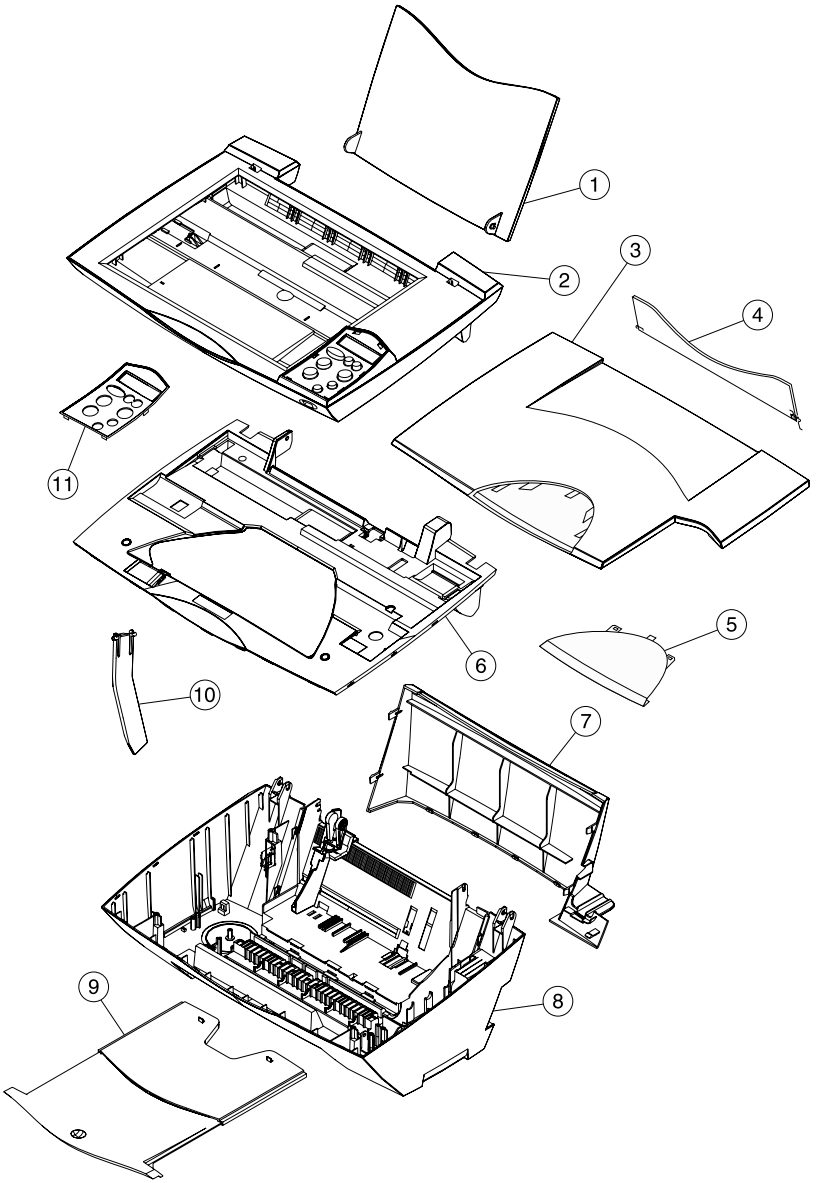
How to use this parts catalog

The following legend is used in the parts catalog:

Asm-Index	Part number	Units/mach	Units/FRU	Description

- **Asm-index**: Identifies the assembly and the item in the diagram. For example, 3-1 indicates assembly 3 and item number 1.
- **Part number**: Identifies the unique number that identifies this FRU.
- **Units/mach**: Refers to the number of units actually used in the machine or product.
- **Units/FRU**: Refers to the number of units packaged together and identified by the part number.
- **NS**: (Not shown) in the Asm-Index column indicates that the part is procurable but is not pictured in the illustration.
- **PP**: (Parts Packet) in the parts description column indicates the part is contained in a parts packet.

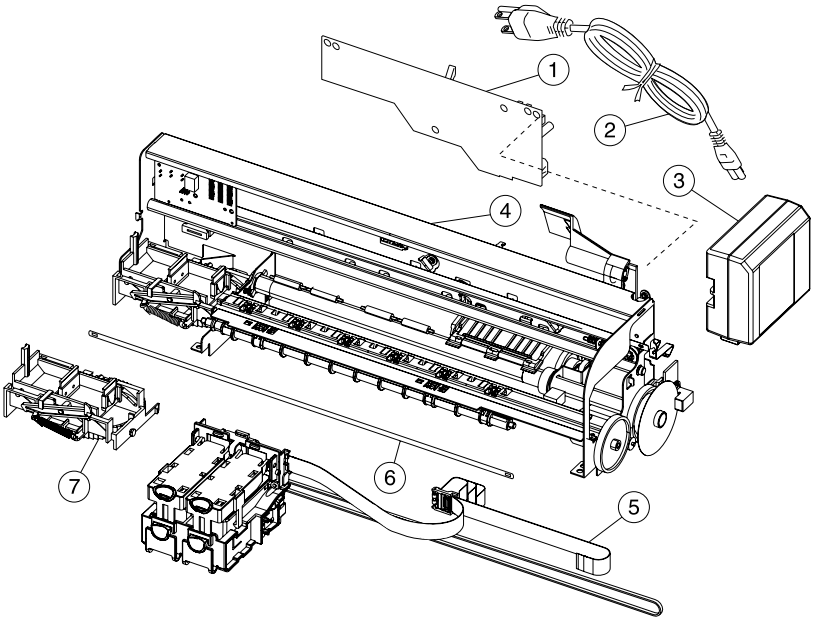
Assembly 1: Covers, scanner, and base



Assembly 1: Covers, scanner, and base

Asm-Index	Part number	Units/ mach	Units/ FRU	Description
1-1	56P3869	1	1	Support, paper - charcoal (001, A01)
2	56P3864	1	1	Module, scanner assembly - SBCS (001)
2	56P3865	1	1	Module, scanner assembly - DBCS (A01)
3	56P3863	1	1	Lid, scanner assembly (001, A01)
4	56P3882	1	1	Deflector, ASF guide with spring (001, A01)
5	56P3867	1	1	Bezel, scanner - clear 3350 (001, A01)
5	56P3868	1	1	Bezel, scanner - gray 3330 (001, A01)
6	56P3876	1	1	Cover, midframe assembly with media sensor (001, A01)
7	56P3877	1	1	Cover, rear (001, A01)
8	56P3871	1	1	Base, printer assembly (001, A01)
9	56P3878	1	1	Tray, exit with extender (001, A01)
10	56P3866	1	1	Support, scanner (001, A01)
11	56P3872	1	1	Cover, control panel - text 3350 (001)
11	56P3873	1	1	Cover, control panel - blank 3350 (001, A01)
11	56P3874	1	1	Cover, control panel - text 3330 (001)
11	56P3875	1	1	Cover, control panel - blank 3330 (001, A01)

Assembly 2: Engine, carrier, and electronics



Assembly 2: Engine, carrier, and electronics

Asm-Index	Part number	Units/ mach	Units/ FRU	Description
2-1	56P3861	1	1	Board, system (001, A01)
2	21B0106	1	1	Cord, power USA/Canada/Peru (001, A01)
3	21G0315	1	1	Supply, power 15W universal (001, A01)
4	56P3860	1	1	Engine, print assembly (001, A01)
5	56P2577	1	1	Carrier, assembly with cables and belt (001, A01)
6	56P3880	1	1	Strip, encoder (001, A01)
7	56P3881	1	1	Station, maintenance assembly (001, A01)
NS	21B0313	1	1	Cord, power Taiwan (001, A01)
NS	21B0316	1	1	Cord, power Japan (001, A01)
NS	21B0101	1	1	Cord, power UK/Hong Kong (001, A01)
NS	21B0102	1	1	Cord, power Europe/Singapore/ Chile (001, A01)
NS	21B0103	1	1	Cord, power Argentina (001, A01)
NS	21B0104	1	1	Cord, power Australia/New Zealand (001, A01)
NS	21B0105	1	1	Cord, power South Africa (001, A01)
NS	21B0107	1	1	Cord, power Peoples Republic of China (001, A01)
NS	21B0108	1	1	Cord, power Korea (001, A01)
NS	21B0109	1	1	Cord, power India (001, A01)
NS	21B0305	1	1	Cord, power Brazil (001, A01)
NS	7373414	1	1	FRU package B/M includes: carton, cushion set, and sealing tape USA/ Canada/LAD/EMEA (001)
NS	7374417	1	1	FRU package B/M includes: carton, cushion set, and sealing tape Asia Pacific (001, A01)

Index

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Part number index