Service Manual

Lexmark Z31 Color Jetprinter™

4099

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LEXMARK™

4099

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Preface

This manual describes the Lexmark Z31 Color Jetprinter™(4099) and 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.

Safety Information

- This product is designed, tested and approved to meet strict global safety standards with the use of specific Lexmark components. The safety features of some parts may not always be obvious. Lexmark is not responsible for the use of other 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

- Ce produit a été conçu, testé et approuvé pour respecter les normes strictes de sécurité globale lors de l'utilisation de composants Lexmark spécifiques. Les caractéristiques de sécurité de certains éléments ne sont pas toujours évidentes. Lexmark ne peut être tenu responsable de l'utilisation d'autres pièces de rechange.

- 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

- Il prodotto è stato progettato, testato e approvato in conformità a severi standard di sicurezza e per l'utilizzo con componenti Lexmark specifici. Le caratteristiche di sicurezza di alcune parti non sempre sono di immediata comprensione. Lexmark non è responsabile per l'utilizzo di parti di ricambio di altri produttori.

- 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

- Dieses Produkt und die zugehörigen Komponenten wurden entworfen und getestet, um beim Einsatz die weltweit gültigen Sicherheitsanforderungen zu erfüllen. Die sicherheitsrelevanten Funktionen der Bauteile und Optionen sind nicht immer offensichtlich. Sofern Teile eingesetzt werden, die nicht von Lexmark sind, wird von Lexmark keinerlei Verantwortung oder Haftung für dieses Produkt 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

- Este producto se ha diseñado, verificado y aprobado para cumplir los más estrictos estándares de seguridad global usando los componentes específicos de Lexmark. Puede que las características de seguridad de algunas piezas no sean siempre evidentes. Lexmark no se hace responsable del uso de otras piezas de recambio.
- 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

- Este produto foi concebido, testado e aprovado para satisfazer os padrões globais de segurança na utilização de componentes específicos da Lexmark. As funções de segurança de alguns dos componentes podem não ser sempre óbvias. A Lexmark não é responsável pela utilização de outros componentes de substituição.
- 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

- Aquest producte està dissenyat, comprovat i aprovat per tal d'acomplir les estrictes normes de seguretat globals amb la utililització de components específics de Lexmark. Les característiques de seguretat d'algunes peces pot ser que no sempre siguin òbvies. Lexmark no es responsabilitza de l'us d'altres peces de recanvi.

- 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。

1. General Information

The Lexmark Z31 Color Jetprinter (4099) is a personal, near laser-quality inkjet printer. The printer contains single-unit customer replaceable supply items. Dual printheads provide color and true black printing without changing printheads. The black cartridge has a total of 208 nozzles and installs on the right. The color cartridge has a total of 192 nozzles and installs on the left. The printer is capable of printing in two directions from either cartridge.
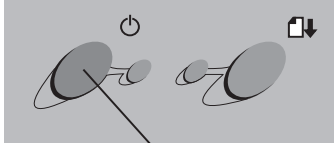
Power Consumption

- <8 Watts - power off and power to the printer
- 8 Watts - Idle Mode (power on - not printing)
- 15 Watts - Printing (average)
- 25 Watts - Printing (peak)

Operator Panel

Paper Feed button

Power button

Buttons	Application
Power button	Turns the printer on or off.
Paper Feed button	• Ejects paper from the printer. • Advances a sheet of paper into the automatic sheet feeder when the printer has run out of paper during a print job.

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.**"Use the indicator light table, the symptom tables, service checks, and diagnostic aids in chapter 3, to determine the printer failure," on page 2-1**.

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

Abbreviations

ESD   Electrostatic Discharge
FRU   Field Replaceable Unit
HVPS   High Voltage Power Supply
LVPS   Low Voltage Power Supply
OEM   Original Equipment Manufacturer
V ac   Volts alternating current
V dc   Volts direct current
ZIF   Zero Insertion Force
FPC   Flat Printhead Cable

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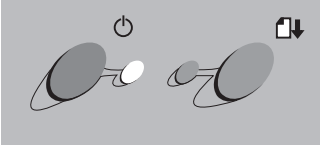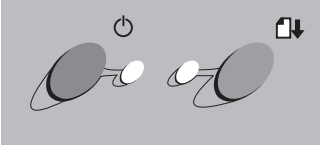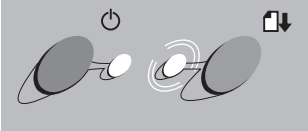
2. Diagnostic Information

Start

Use the indicator light table, the symptom tables, service checks, and diagnostic aids in chapter 3, to determine the printer failure.

Indicator Light Table

Indicator Light	Indicates
Power light is On Paper Feed light is Off	Machine is on and ready to print.
Both lights are On	Machine is printing.
Power light is On Paper Feed light is blinking	May be out of paper or have a paper jam.
Power light is blinking Paper Feed light blinks two times	Go to the **"Carrier Transport Service Check" on page 2-5**.
Paper Feed light blinks three times	Go to the**"Power Service Check" on page 2-11**.

Power-On Self Test (POST) Sequence

Turn the printer on and check for a correct POST operation by observing the following:

1. The power light comes on.
2. The carrier moves over the maintenance station three times and seals the printheads.
3. The paper feed gears turn.
4. All motors stop and the power light stays on.

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 and no motors run	Go to the **"Power Service Check" on page 2-11**.
Paper feed gears do not turn	Go to the **"Paper Feed Service Check" on page 2-8**.
Carrier does not move	Go to the **"Carrier Transport Service Check" on page 2-5**.
Carrier slams side frame	Go to the **"Carrier Transport Service Check" on page 2-5**.

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 2-5**.

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 2-7**.

Operator Panel Problems

Symptom	Action
• Paper feed or power buttons do not operate • Power or paper feed lights do not come on	Unplug the printer and disconnect the operator panel connector (J3) from the system board. Plug in the printer and check for approximately + 5 V dc between pins: J3-2 and Ground J3-3 and Ground J3-4 and Ground J3-6 and Ground If voltage is incorrect, replace the system board. If voltage is correct replace the operator panel.

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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 2-8**.
Envelopes fail to feed	Go to the **"Paper Feed Service Check" on page 2-8**.
Paper skews	Go to the **"Paper Path Service Check" on page 2-10**.

Power Problems

Symptom	Action
No power in machine, motors do not operate	Go to the **"Power Service Check" on page 2-11**.

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 2-12**.
• Ink smearing • Vertical streaks on paper • Print lines crowded	Go to the **"Paper Feed Service Check" on page 2-8**.

Service Checks

Carrier Transport Service Check

	FRU	Action
1	System Board	Unplug the printer and disconnect the carrier transport motor connector (J8) from the system board. Plug in the printer and check for approximately 12 V dc between (J8-1) and ground as the printer goes through POST. If the voltage is incorrect, replace the system board. If the voltage is correct, check for carrier transport motor pins shorted to the housing. If a short is detected, replace the carrier transport motor.
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 disconnected from the system board, check for 0 to 10 ohms between the following pins on the motor: J8-1 and J8-2 J8-3 and J8-4 If the readings are incorrect, replace the motor.
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	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 belt. Carrier to carrier frame engagement should be lubricated with grease P/N 99A0394.
5	Printhead Carrier Assembly	Disconnect the printer and check the carrier printhead connector (J5). If the connection is good, remove the printhead carrier and check the cable connection to the home sensor board. If the problem remains, replace the system board.
6	Maintenance Station	A problem with the maintenance station can cause carrier movement problems at the right margin. Go to the **"Maintenance Station Service Check" on page 2-7**.
7	Access Cover Sensor	If the carrier does not move toward the cartridge load position when the access cover is opened, verify that power is on. If the carrier still does not move, check the actuator arm for binds. If the sensor actuator is working correctly, replace the system board.

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 right 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 left 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.
		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	Unplug the printer and disconnect the paper feed motor (J9) from the system board. Plug the printer in and check for approximately 9 to12 V dc between (J9-1) and ground and (J9-2) and ground on the system board, as the printer goes through POST. If the voltage is not present, check for motor pins shorted to the motor housing. If you find a shorted pin, replace the motor. If you still have a failure after replacing the motor, replace the system board.

	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 disconnected from the system board, check for approximately 10 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 motor. 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. 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	Gear Plate Assembly	Check for binds in the gear train and paper feed mechanism by removing the paper feed motor and rotating the large gear by hand. If you notice a bind, replace the gear plate assembly.
4	Auto Sheet Feeder Assembly	Check the pick roller for wear.
5	Mid Frame Assembly	Check the following for wear: • Small Feed rollers • Large Feed roller • Exit roller • Star rollers
6	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.
2	Power Connector	Check for continuity in the power connector cable.
3	Printhead Cable Carrier Home Sensor Parallel Cable Paper Feed Motor Carrier Transport Motor Operator Panel	Unplug the printer. Disconnect one of the printhead cables and plug in the printer. Look for a symptom change. Check the failing part for shorts and replace as necessary. Repeat this procedure for the carrier home sensor, parallel cable, carrier transport motor, paper feed motor and operator panel.
4	System Board	If the symptom has not changed, replace the system board.

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 cables 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. If there are even breaks in the diagonal line similar to the pattern shown below, replace the system board. If there is a single break or random breaks in the diagonal line, remove the printhead cartridges and 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.
5	Maintenance Station	Intermittent nozzle failures can be caused by worn parts in the maintenance station. Perform the **"Maintenance Station Service Check" on page 2-7**, and then return to this check.

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	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: • 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.

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. Open the access cover.
3. Install a known good black printhead cartridge in the right side of the carrier and a good color printhead cartridge in the left side.
4. Close the access cover.
5. Install paper in the sheet feeder.
6. Turn the printer off.
7. Hold down the Paper Feed and Power buttons at the same time until both lights begin to flash.
8. Release both buttons. Test pages print until the Power button is pressed.

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 2-12**.

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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 logic boards:

- 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.

Hook

Never apply excessive force when releasing the hook.
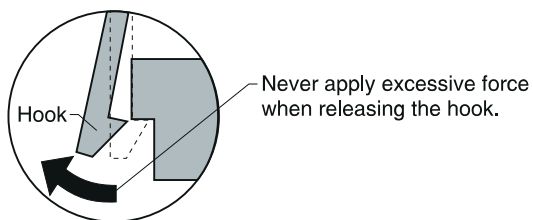
Access Cover Removal

1. Open the access cover.
2. Push the mounting tabs and remove the access cover.

Front Cover Removal

1. Remove the two cover mounting screws from the upper rear corners of the rear cover.

   Warning: When reassembling, do not overtighten these screws as they will damage the plastic threads.

2. Place the printer on its back. Lift up on the two cover latches located on each side of the base cover.
3. Place the printer on its base. Pull the cover forward and remove.

Base Cover Assembly Removal

1. Remove the front cover.
2. Remove the four screws holding the carrier frame assembly to the rear of the base cover.
3. Remove the two screws holding the front of the carrier frame assembly to the base cover.
4. Lift the carrier frame assembly out of the base cover assembly.

Ink Pad Removal

1. Remove the front cover.
2. Remove the base cover assembly.
3. Pry the ink pad off the base cover.

Buttons and Lenses Removal

1. Remove the front cover.
2. Pull up the button latches and slide the buttons off the front cover.
3. Lift and remove the lenses.

Sheet Feeder Assembly Removal

1. Remove the front cover.
2. Remove the base cover assembly. Note the position of the access cover sensor actuator in the sheet feeder assembly.
3. Remove the two screws holding the sheet feeder to the carrier frame assembly.
4. Remove the sheet feeder assembly mounting screw from the gear plate assembly.
5. Remove the sheet feeder assembly from the carrier frame assembly.

System Board Removal

1. Remove the front cover.
2. Remove the base cover assembly.
3. Remove the sheet feeder assembly.
4. Disconnect all connectors from the system board. Note the cable routings.
5. Remove the four mounting screws from the system board.
   Warning: When removing the system board, be careful not to damage the end-of-forms flag.

Printhead Carrier Assembly Removal

1. Remove the front cover.
2. Remove the base cover assembly.
3. Remove the sheet feeder assembly.
4. Disconnect the printhead carrier cables from the system board.
5. Remove the retainers from the ends of the carrier guide rod.
6. Slide the carrier guide rod out the right side of the carrier frame.
   Note: The carrier is attached to the carrier belt between two raised tabs on the belt. Be sure to note this location when reinstalling the printhead carrier assembly.

7. Remove the carrier belt from the rear of the carrier.
8. Remove the printhead carrier assembly.
9. Depress and remove the printhead carrier cable retainer latch located on the carrier frame. Pull the printhead carrier cable through the hole in the carrier frame. When reinstalling the cable retainer, ensure the two retainer tabs are through the carrier frame before latching the two retainer latches.
   Note: Before installing the carrier belt, loosen the carrier belt idler pulley mounting screw. Tighten the screw after installing the belt on the idler pulley.

Maintenance Station Removal

1. Remove the front cover.
2. Depress the two latches on the rear of the carrier frame and remove the maintenance station.

Small Feed Rollers Removal

1. Remove the front cover.
2. Remove the base cover assembly.
3. Remove the sheet feeder assembly.
4. Unhook the four small feed roller springs from the carrier frame.
5. Unlatch the small feed rollers from the carrier frame.

End-of-Forms Flag Removal

1. Remove the front cover.
2. Remove the base cover assembly.
3. Remove the sheet feeder assembly.
4. Remove the two center small feed rollers.
5. Note the position of the end-of-forms flag spring. Unlatch the end-of-forms flag from the carrier frame and slide it to the right to remove.

Mid Frame / Star Roller Assembly Removal

1. Remove the front cover.
2. Remove the base cover assembly.
3. Remove the sheet feeder assembly.
4. Remove the small feed roller assemblies.
5. Release the two latches located at the rear corners of the mid frame and raise the mid frame at the rear and out of the carrier frame.

Large Feed Roller Assembly Removal

1. Remove the front cover.
2. Remove the base cover assembly.
3. Remove the sheet feeder assembly.
4. Remove the small feed roller assemblies.
5. Remove the maintenance station assembly.
6. Remove the bearing from the right end of the large feed roller. To remove the bearing, pull out the locking tab and rotate the bearing until the bearing fits through the slots in the carrier frame.
7. While lightly biasing the gear plate assembly to the left, push the large feed roller assembly to the far right and lift it out of the carrier frame.

Gear Plate Assembly Removal

1. Remove the front cover.
2. Remove the base cover assembly.
3. Remove the sheet feeder assembly.
4. Remove the small feed roller assemblies.
5. Remove the maintenance station assembly.
6. Remove the large feed roller assembly.
7. Disconnect the power connector from the system board.
8. Remove the two gear plate assembly mounting screws and remove the gear plate assembly from the carrier frame.

Carrier Belt / Idler Pulley Removal

1. Remove the front cover.
2. Remove the retainers from the ends of the carrier guide rod.
3. Slide the carrier guide rod out the right side of the carrier frame.
   Note: The carrier is attached to the carrier belt between two raised tabs on the belt. Be sure to note this location when reinstalling the printhead carrier assembly.
4. Remove the carrier belt from the rear of the carrier.
   Note: Before installing the carrier belt, loosen the carrier belt idler pulley mounting screw. Tighten the screw after installing the belt on the idler pulley.

Power Connector Removal

1. Remove the front cover.
2. Remove the base cover assembly.
3. It may be necessary to remove the gear plate assembly to access the power connector mounting screws.

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5. Connector Locations

Units	Description
J3	Operator Panel
J4	Parallel Port
J5	Printhead Cable 1
J6	Printhead Cable 2
J7	Printhead Cable 3
J8	Carrier Transport Motor
J9	Paper Feed Motor
J10	Power Connector
PS1	Access Door Sensor
PS2	End-of-Forms Sensor

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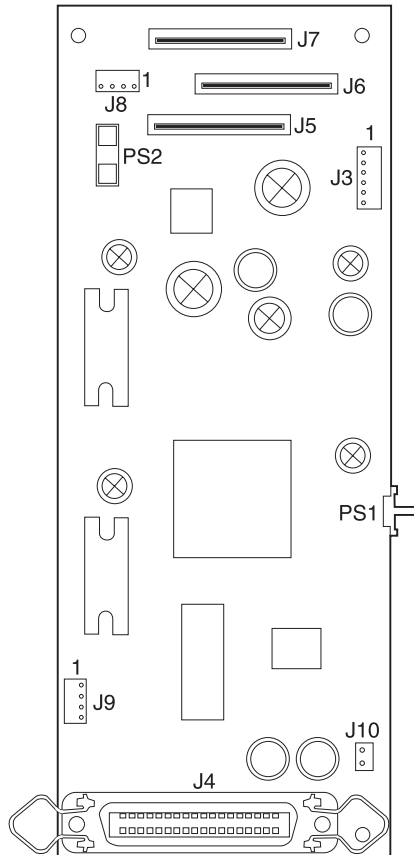
6. Preventive Maintenance

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.

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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.
- PP: in the parts description column indicates the part is available in the listed parts packet.
- NA: Not available as a FRU.

Assembly 1: Covers

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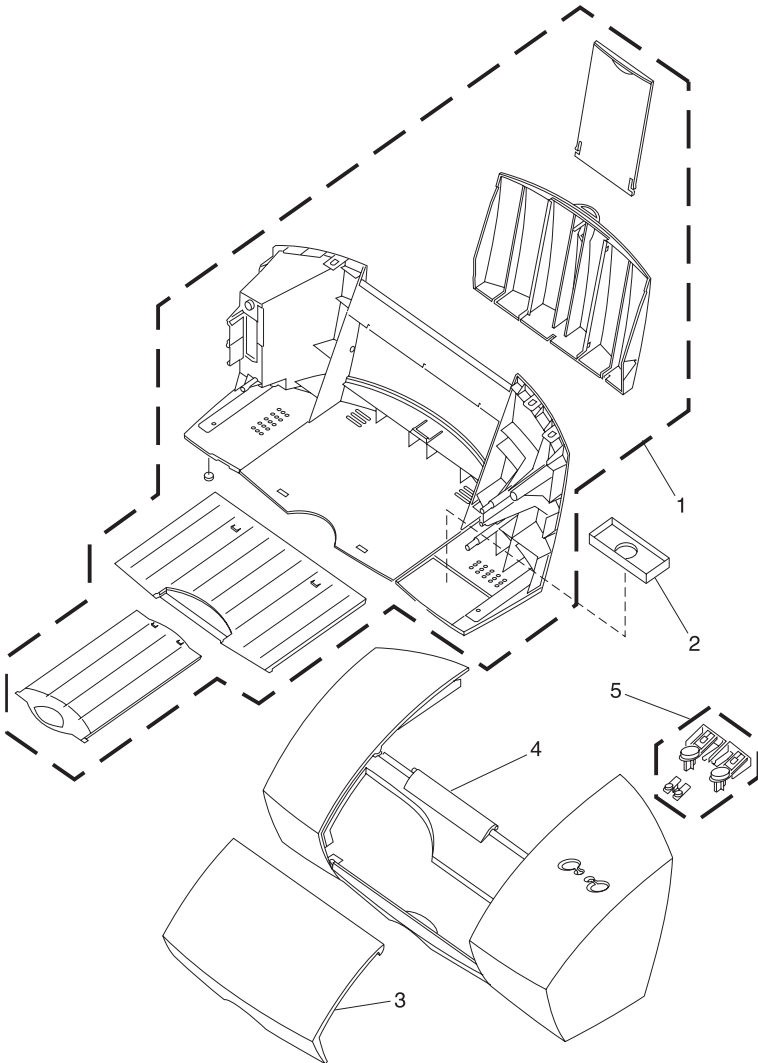
Asm-Index	Part Number	Units	Description
1 -1	12G0190	1	Base Cover with Feet, Exit Tray and Banner Support
2	12G0193	1	Felt Ink Pad
3	12G0192	1	Access Cover
4	12G0191	1	Front Cover
5	12G0195	1	Power Button and Lens
NS	7350512	1	Field Packaging B/M

Assembly 2: Paper Feed

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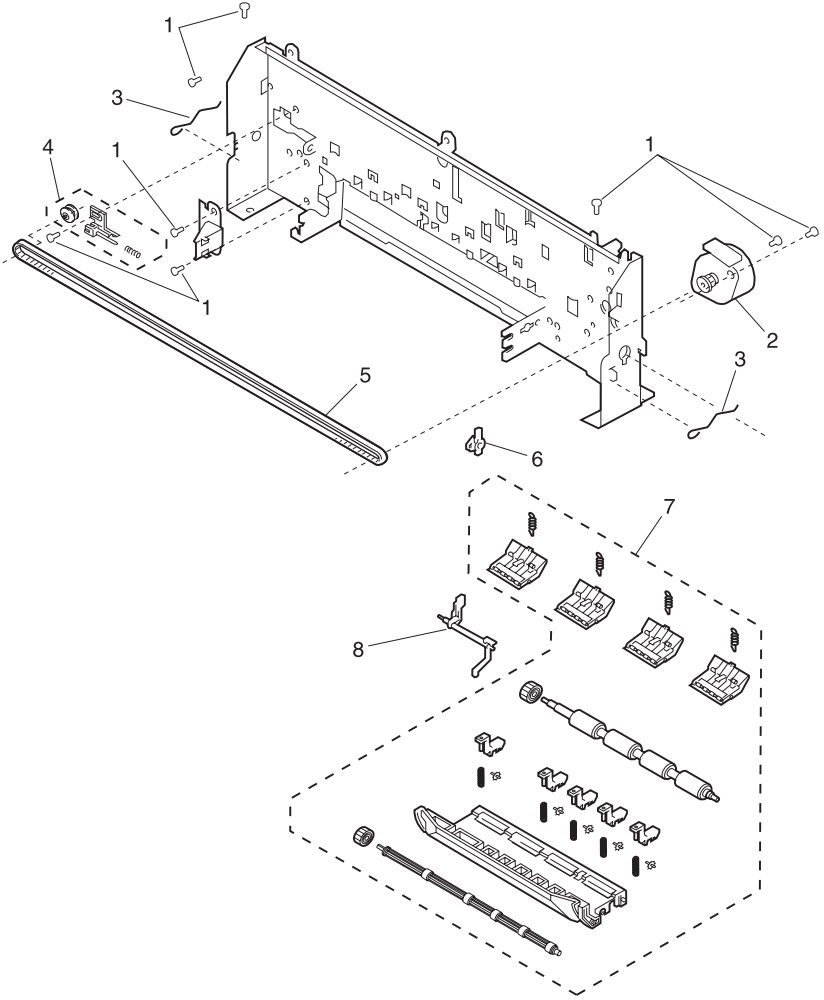
Asm-Index	Part Number	Units	Description
2 -1	12G0209	7	Screws (PP)
2	12G0197	1	Carrier Transport Motor
3	12G0209	2	Retainer, Carrier Guide Rod (PP)
4	12G0209	1	Carrier Belt Tensioner (PP)
5	12G0206	1	Carrier Belt
6	12G0209	2	Bushing, Feed Roller (PP)
7	12G0196	1	Mid Frame with Star Rollers, Large and Small Feed Rollers
8	12G0209	1	End of Forms Flag & Spring (PP)

Assembly 2: Paper Feed (Continued)

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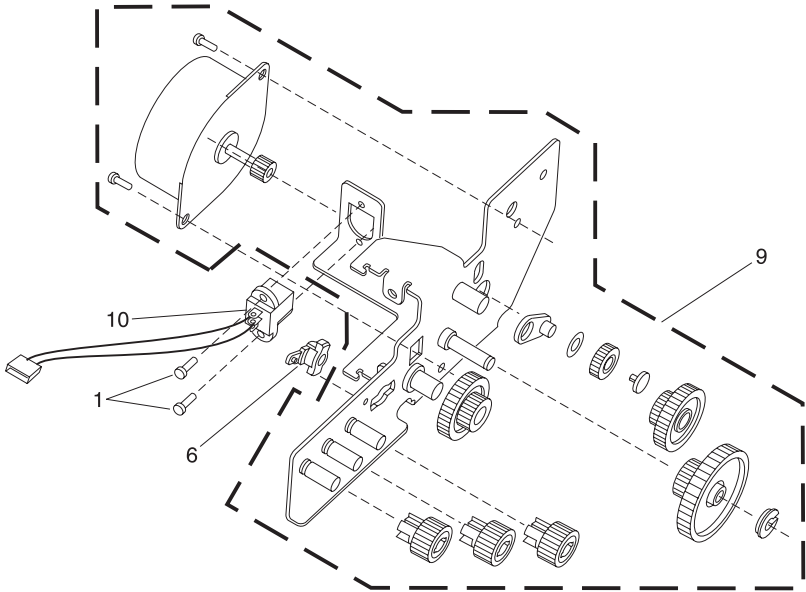
Asm-Index	Part Number	Units	Description
2 -1	12G0209	2	Screws (PP)
6	12G0209	2	Bushing, Feed Roller (PP)
9	12G0199	1	Gear Plate Asm with Motor
10	12G0194	1	Power Connector with Cable (Note: Includes Op Panel Asm)

Assembly 3: Electronics

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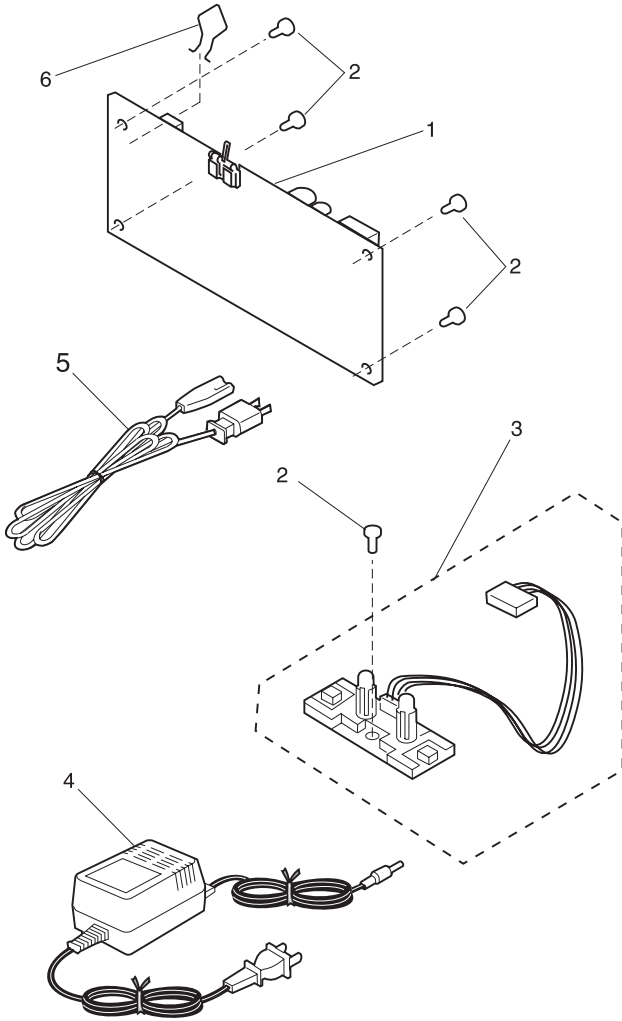
Asm-Index	Part Number	Units	Description
3 -1	12G1781	1	System Board
2	12G0209	5	Screws (PP)
3	12G0194	1	Op Panel Asm with Cable (Note: Includes Power Connector)
4	12G1826	1	P/S External (LV) 120 V
4	12G1827	1	P/S External (HV) 220 V
4	12G1825	1	P/S External (LV) 100 V Japan
5	11B6073	1	Power Cord, United Kingdom, Hong Kong, Ireland
5	11B6074	1	Power Cord, Europe, Chile
5	11B6076	1	Power Cord, Australia/New Zealand, Brazil
5	11B6077	1	Power Cord, South Africa
5	11B6078	1	Power Cord, Peru
5	11B6138	1	Power Cord, China
6	42F1814	2	Parallel Port Cable Clip

Assembly 4: Carrier
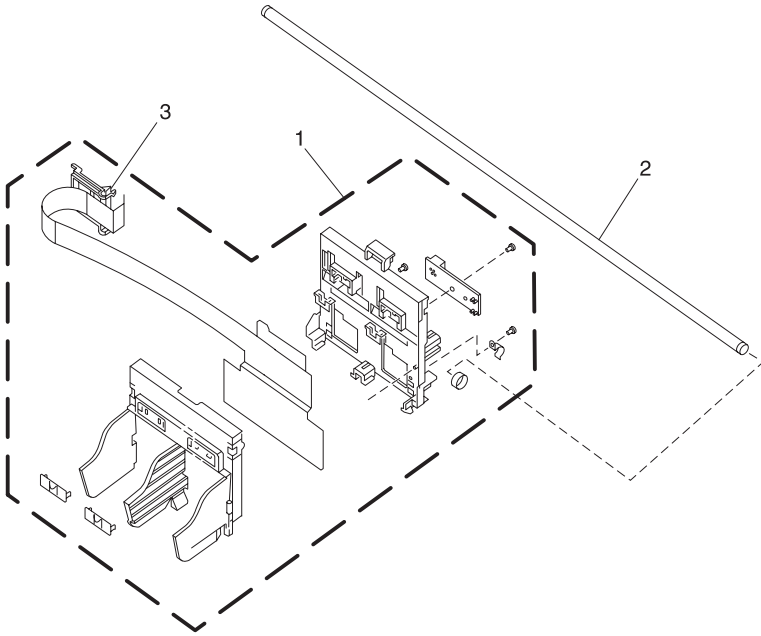
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Asm-Index	Part Number	Units	Description
4 -1	12G0204	1	Printhead Carrier Asm with Cable and Sensor
2	12G0205	1	Carrier Guide Rod
3	12g1868	1	Holder, FPC(FlatParallelCable)

Assembly 5: Automatic Sheet Feeder
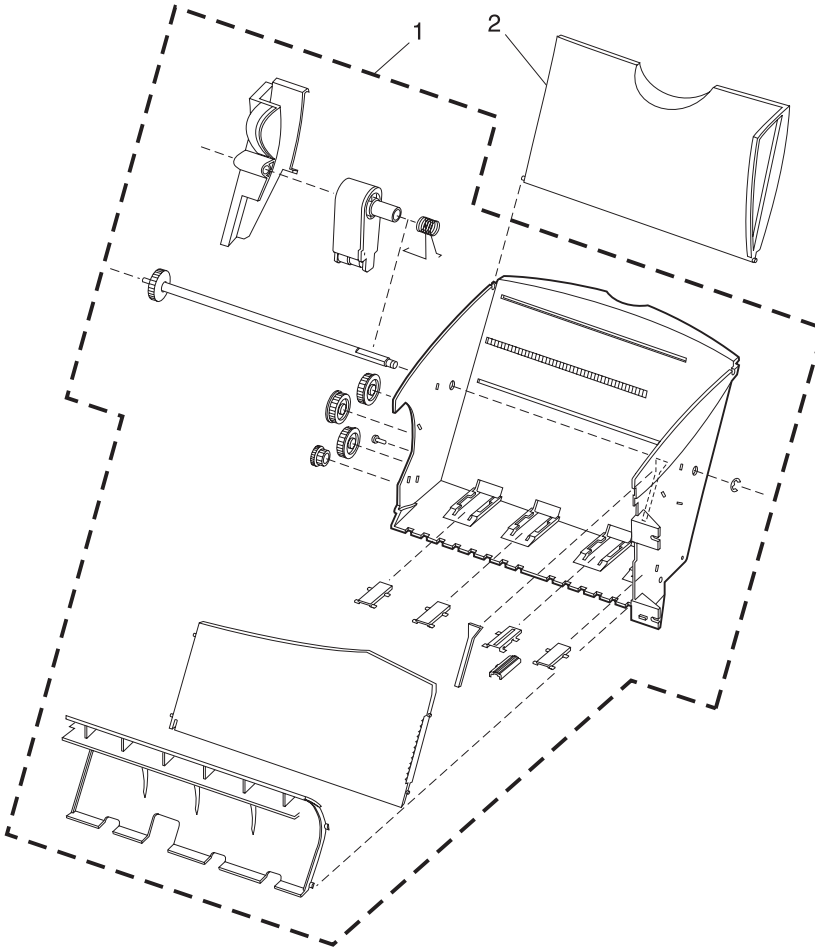
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Asm-Index	Part Number	Units	Description
5 -1	12G0207	1	Automatic Sheet Feeder Asm
2	12G3619	1	Paper Support

Assembly 6: Maintenance Station
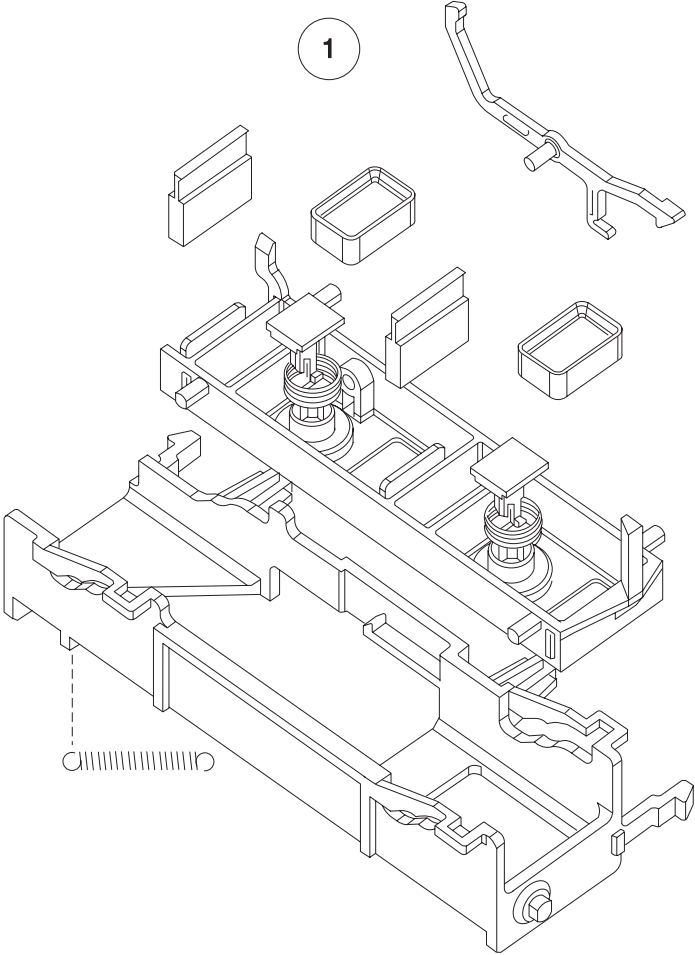
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Asm-Index	Part Number	Units	Description
6 -1	12G0208	1	Maintenance Station Assembly

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Index

Part Numbers

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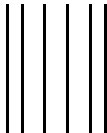4. What can we do to improve the book?

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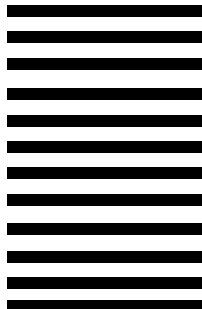
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