LaserWriter Select

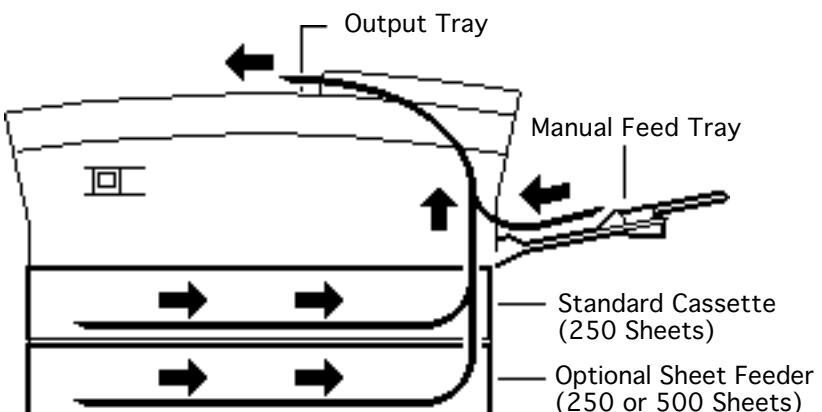
LaserWriter Select 300, LaserWriter Select 310,
LaserWriter Select 360

Basics

LaserWriter Select

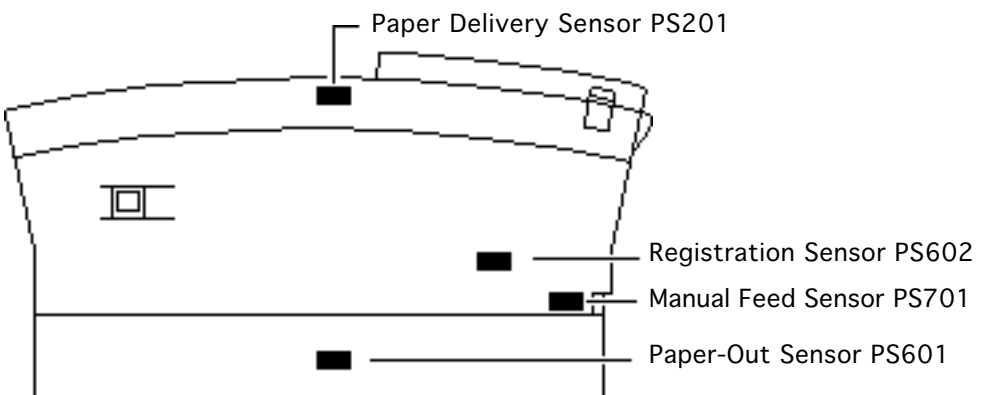
Paper Path

There are three paper sources and one output tray in a complete system.



Sensing System

There are four paper sensors in the LaserWriter Select printer. Each sensor consists of an actuator, a U-shaped photo interrupter, and circuitry that communicates back to the DC controller.

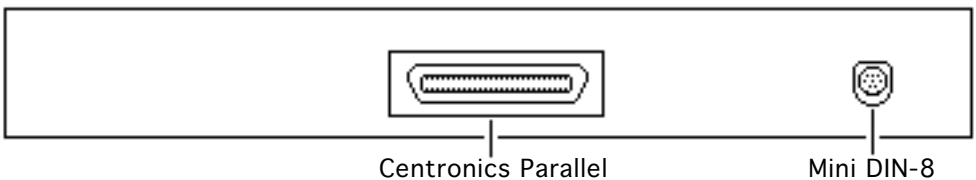


Interface Connectors

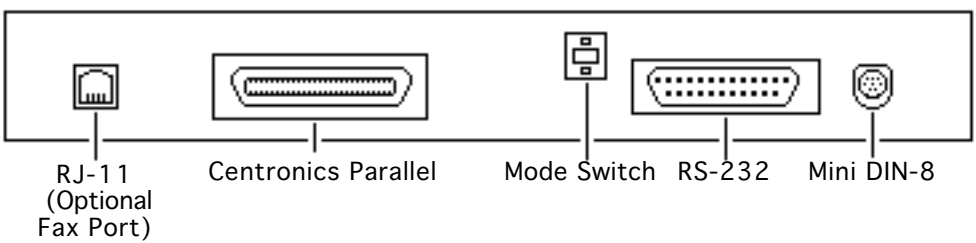
Interface connector diagrams for each of three LaserWriter Select models are located on the following pages.

LaserWriter Select 300

LaserWriter Select 310



LaserWriter Select 360



LaserWriter Safety

Unplug Printer

LaserWriter printers operate at high voltages. To prevent serious injury, always switch off the printer and unplug the AC power cord before servicing the printer.

Laser Beam Safety

Never remove the cover of the laser/optic assembly or disconnect the beam-detect cabling when the printer is switched on. Although the reflected laser beam is invisible, direct exposure to it can permanently damage your eyes.

Never disassemble the laser/optical assembly, whether the printer is powered on or not. The laser diode and focusing lenses are factory-aligned.

Fuser Heat

The fuser assembly rollers become very hot during printer operation. Before servicing the fuser assembly, switch off the printer for at least 5 minutes to allow the fuser assembly rollers to cool.

Toner Safety

Toner is a nontoxic substance composed of plastic, iron, and a small amount of pigment. Clean skin and clothing by removing as much toner as possible with a dry tissue and then washing with cold water. Hot water causes toner to jell and permanently fuse into clothing. Toner attacks vinyl materials, so don't allow toner to contact vinyl.

Motor Stops When Cassette is Removed

For safety purposes, the main motor on the LaserWriter

Select 360 stops when the paper cassette is removed.

Weight

LaserWriter printers are heavy. When lifting or moving the printer, be careful not to strain your back.

Specifications

LaserWriter Select

General

Engine	Select 300/310: Fuji Xerox P0 engine Select 360: Fuji Xerox P1 engine
Printing Method	Electrophotography using single-component dry toner
Optical System	Semiconductor laser
Resolution	Select 300/310: 300 dots per inch (dpi) Select 360: 600 dpi (300 dpi in PCL mode)
Imaging Languages Supported	Select 300: QuickDraw Select 310: PostScript Select 360: PostScript and HP PCL

Intro Dates

Select 300/310	February 1993
500-Sheet Feeder	August 1993
Select 360	October 1993

Logic Board

CPU

Select 300: N/A
Select 310: AMD Am29205; 16 MHz
Select 360: AMD Am29200; 15 MHz

DRAM

Select 300: 512K, expandable to 1.5 MB or 4.5 MB
Select 310: 1.5 MB, expandable to 5.5 MB
Select 360: 7 MB (3 MB soldered on board), expandable to 16 MB

Note: If you install a 16 MB RAM SIMM, the 3 MB of soldered RAM is not used.

ROM

Select 300: 32K
Select 310: 1 MB, expandable to 2 MB
Select 360: 4 MB

I/O

Select 300: RS-422
Select 310: RS-232; Centronics parallel connector
Select 360: RS-232; Centronics parallel connector; AppleTalk DIN-8

Performance

Print Delivery Face-down

Life Expectancy Select 300/310: 150,000 pages
Select 360: 300,000 pages

Printing Speed Select 300/310: 5 pages-per-minute maximum; actual performance depends on the application.
Select 360: 10 pages-per-minute maximum; actual performance depends on the application.

Built-In-Fonts

LaserWriter Select 300

39 fonts from the following font families: Avant Garde, Bookman, Chicago, Courier, Geneva, Helvetica, Helvetica Narrow, Monaco, New Century Schoolbook, New York, Palatino, Symbol, Times, Zapf Chancery, and Zapf Dingbats.

LaserWriter Select 310

13 fonts from the following font families: Courier, Helvetica, Times, and Symbol. Additional PostScript fonts can be downloaded to printer memory.

LaserWriter Select 360

Fonts from the following font families: Avant Garde, Bookman, Courier, Helvetica, Helvetica Narrow, New Century Schoolbook, Palatino, Symbol, Times, Zapf Chancery, and Zapf Dingbats.

Electrical

Line Voltage	US/Japan:100-115 VAC, 50-60 Hz Europe/Australia:220-240 VAC, 50 Hz
Power Consumption	450 W maximum at115 V or 220V

Physical

Dimensions

Height: 8.0 in. (25.3 cm)
Width: 15 in. (38 cm)
Depth: 18.3 in. (45 cm)

Weight

26.4 lbs. (12 kg)

Environmental

Temperature	50° - 90.5°F (10° - 32.5°C)
Humidity	20% - 80% relative humidity

Paper

Paper Weights

Cassette feed: 20 lb., single-sheet, photocopy bond
Manual feed: 20-28 lb., letterhead and colored stock, medium-weight transparency material, envelopes, and labels

Cassette Size

250-sheet universal cassette: US letter, A4, B5, executive
250-sheet legal cassette (optional)
500-sheet cassette (optional): US letter, A4, and B5
Envelope cassette (optional)

Capacity In

Cassette: 250 or 500 sheets
Manual: Single sheet
Envelope: 30 envelopes

Capacity Out

Face-down tray: 150 sheets

Troubleshooting

LaserWriter Select

General

Troubleshooting contains quick-reference troubleshooting information for the LaserWriter Select. We encourage you to review and print out this chapter before troubleshooting a printer.

At the end of this chapter are troubleshooting flowcharts and tables. If a table name clearly addresses your problem, you can go directly to that table. If not, you should go to the flowchart associated with the version of the printer you are working on.

Troubleshooting Tips

Multimeter Probes

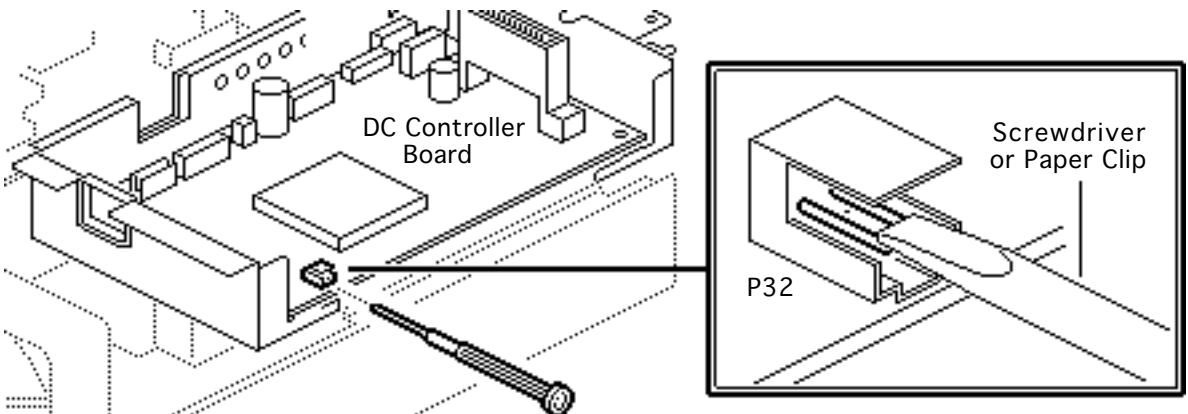
When taking voltage and resistance readings, you will need to use special multimeter probes. The connectors within the LaserWriter Select are very small and require sharp needle-point probes to make good contact. Do not use probes that do not make proper contact.

Printer Overheating

To prevent possible overheating, do not run the LaserWriter Select 360 printer for longer than 10 minutes with the covers removed, and be sure to keep all vents clear.

Service Test Page

The LaserWriter Select service test page consists of a line matrix. The LaserWriter Select printers produce a service test page when you jumper the two pins at connector P32 on the DC controller board. The test page confirms print engine operation.

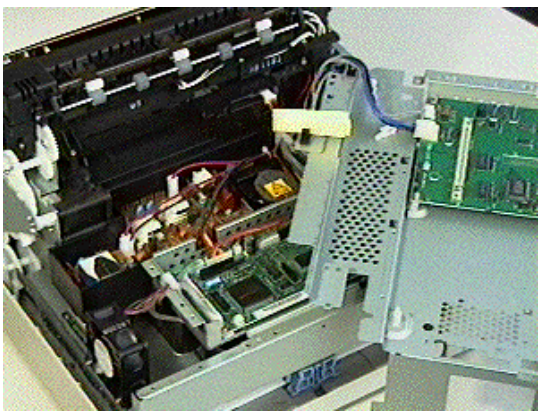


If the I/O controller mount is installed, you can access P32 by inserting the straightened end of a paper clip through the small access hole in the rear face of the I/O controller mount.

Caution: If you want to run a service test page while the printer is in an open test-ready state, you must manually actuate the delivery sensor, otherwise a paper jam will occur. See "Test-Ready Configuration" in this chapter.

Test-Ready Configuration

Paper delivery sensor PS201 is connected to the I/O controller mount. When you remove the mount to troubleshoot inside the printer or to run a service test page, you must reconfigure the sensing system to simulate an operational printer.



To reconfigure the sensing system, remove the I/O controller mount and set it at an angle on top of the power supply. Position the mount so that connector P32 on the DC controller board is accessible.

Insert a folded piece of paper into the U of sensor PS201, and make sure that the two cables are securely attached to the I/O board. If you need to communicate with a Macintosh, you can do so by reconnecting the serial connector.

Caution: Jumpering connector P32 initiates a service test page. If the printer is in a test-ready configuration, you must manually actuate this sensor as paper hits the delivery sensor actuator within the fuser assembly.

310/360 Power-On Self Test

The LaserWriter Select 310 and 360 go through a self diagnostic each time that you switch the printer on. This diagnostic is called the Power-On Self Test (POST). POST does not occur on the LaserWriter Select 300 printer.

Note: This test is not the same as the engine diagnostic (see next topic). Unlike the engine diagnostic test, POST does not require the placement of any loopback cable.

Observing how the LEDs extinguish from that point can help isolate certain failure areas.

- The Ready LED extinguishes when no errors are found on the I/O controller board.
- The Paper-Out LED then extinguishes when no errors are found on the RAM card.

- Finally the Jam LED extinguishes when no errors are found in the engine.

In a functional printer, control will be passed on to the PostScript interpreter at the end of this sequence.

360 Printer Diagnostic

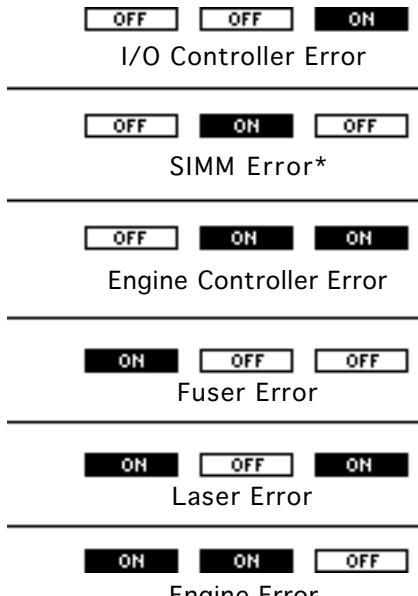
Note: Only the LaserWriter Select 360 offers diagnostic LEDs.

Switch off the LaserWriter Select 360 printer, and remove the jumper from JMP1 on the I/O controller if a jumper is present. Set the mode switch on the printer's back panel to 9.

The reporting sequence (which repeats continuously) is as follows:

- All LEDs are on for 1 second.
- All LEDs are off for 1 second.
- The LED(s) that indicates the error is on for 1 second.
- All LEDs are off for 1 second.

Error configurations are shown on the next page.



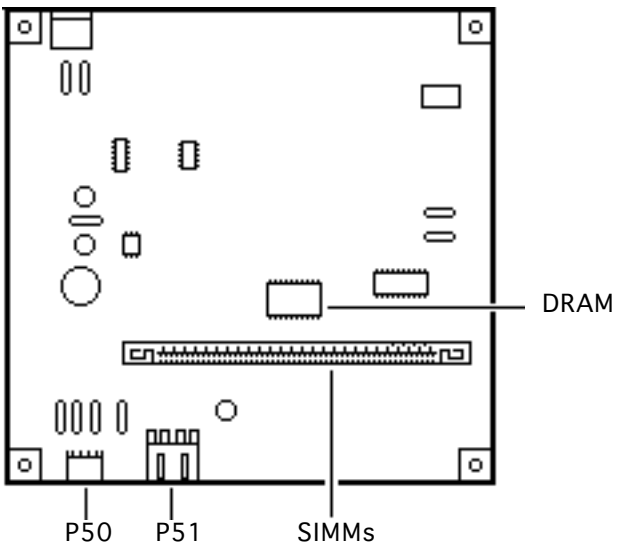
* A SIMM error can result from insufficient memory. You must have a minimum of 7 MB of RAM installed.

Circuit Board Diagrams

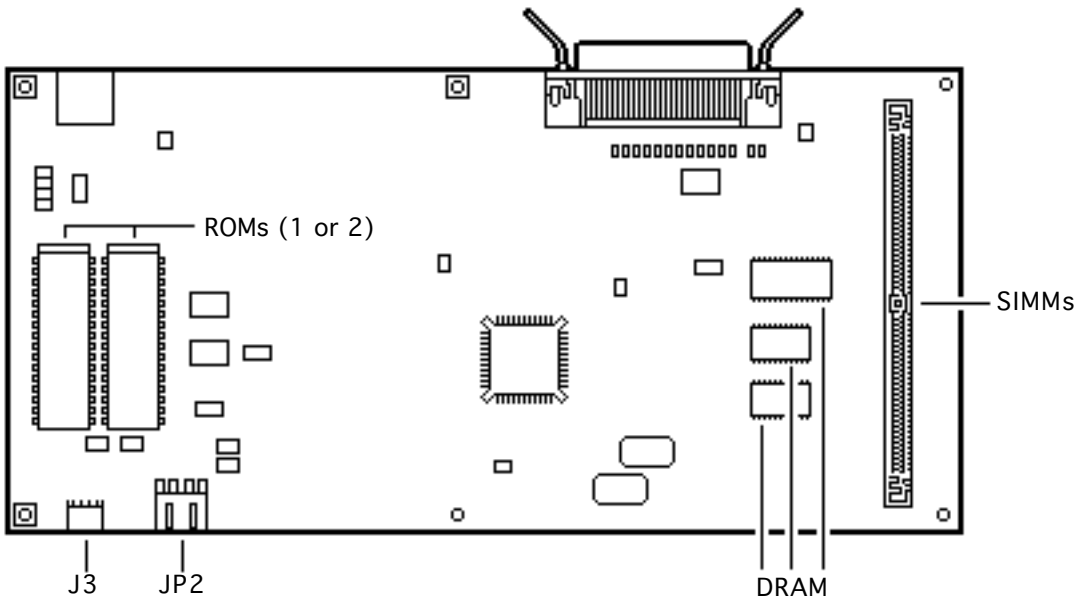
Illustrations for the printed circuit boards below are located on the following pages.

- LaserWriter Select 300 I/O Controller Board
- LaserWriter Select 310 I/O Controller Board
- LaserWriter Select 360 I/O Controller Board
- LaserWriter Select 300/310 DC Controller Board
- LaserWriter Select 360 DC Controller Board
- Cassette Feeder Board Diagram
- LaserWriter Select 300/310 High-Voltage Power Supply
- LaserWriter Select 360 High-Voltage Power Supply
- LaserWriter Select 360 Fax Card

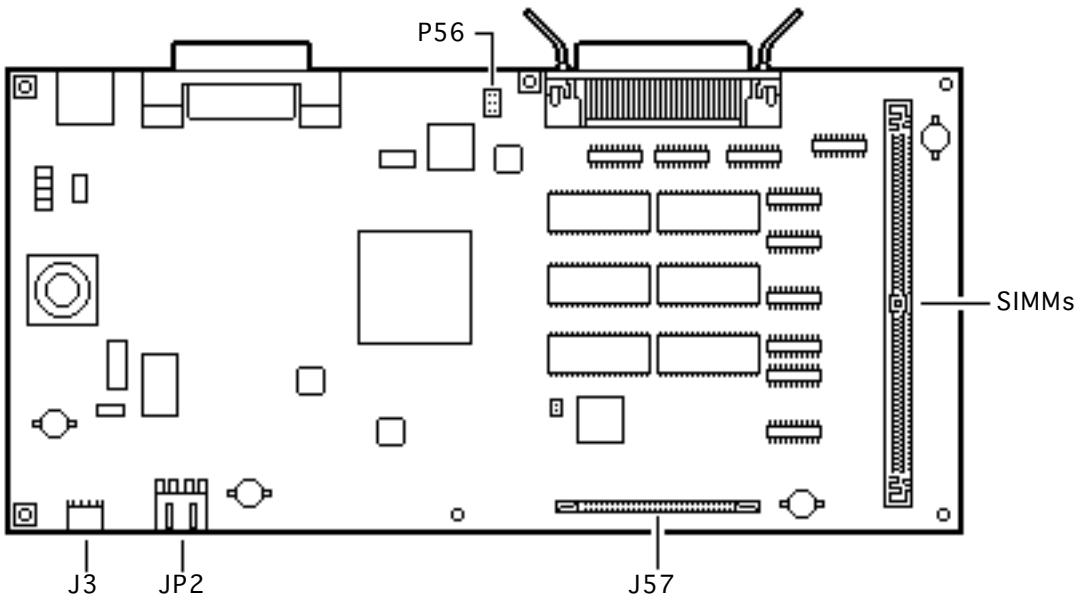
Select 300 I/O Controller Board



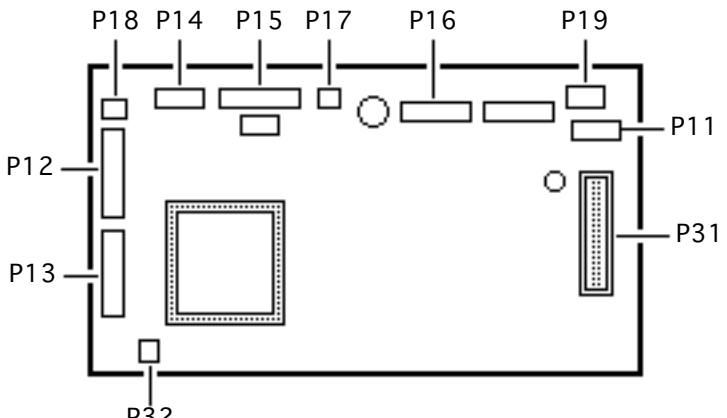
Select 310 I/O Controller Board



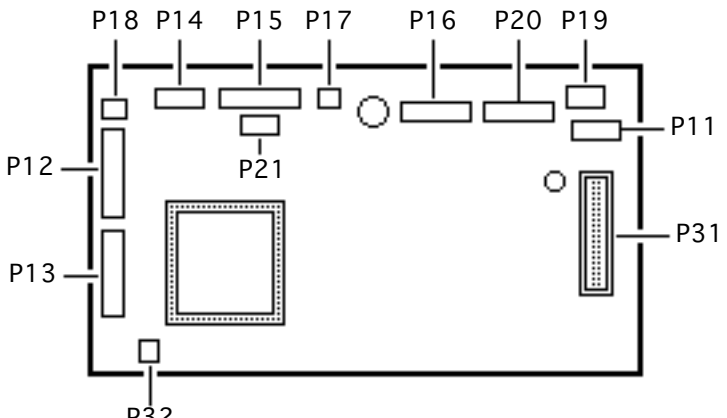
Select 360 I/O Controller Board



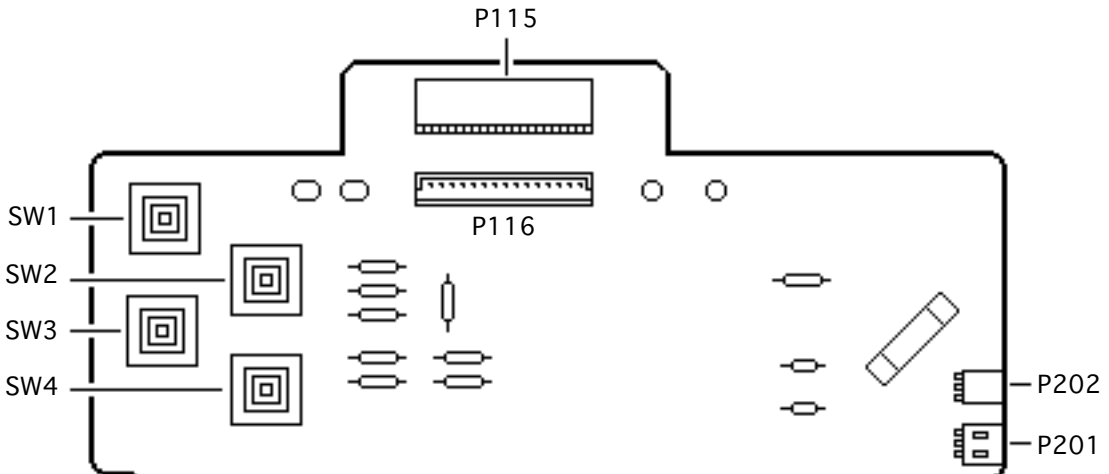
Select 300/310 DC Controller Board



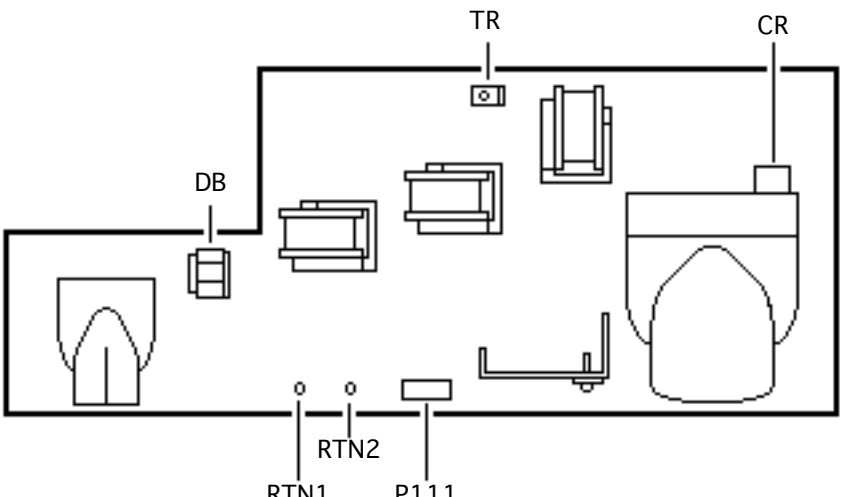
Select 360 DC Controller Board



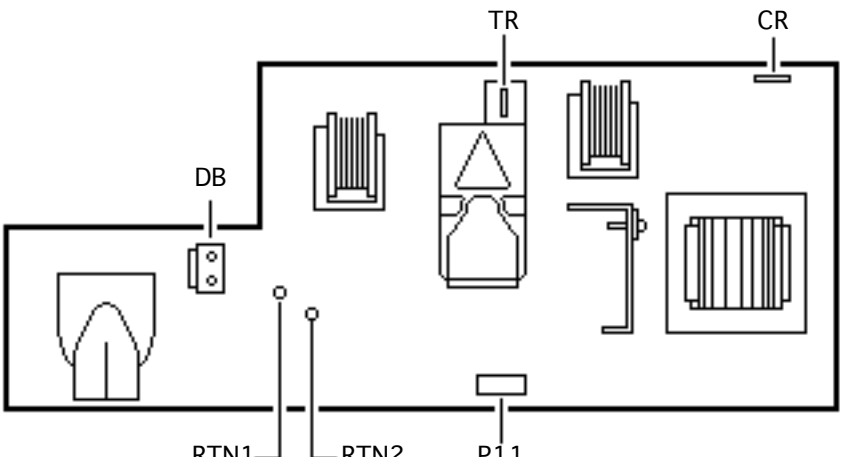
Cassette Feeder Board Diagram



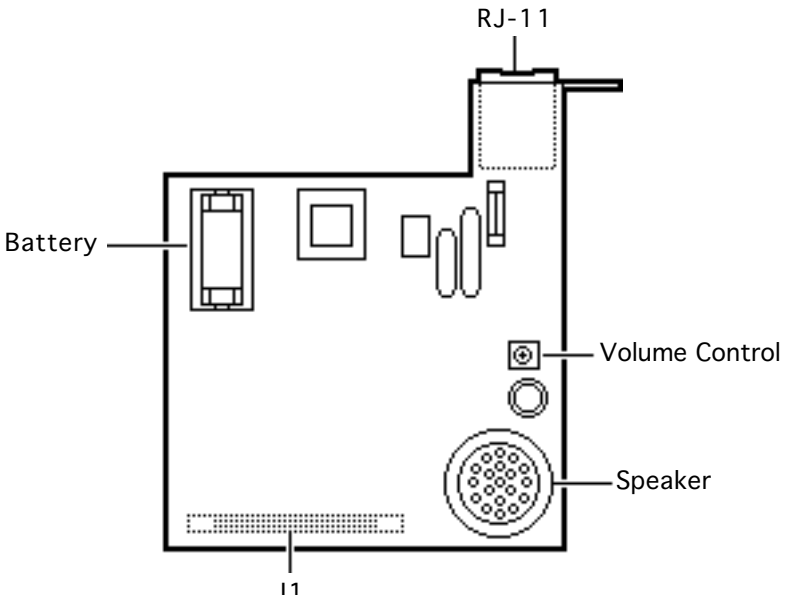
Select 300/310 High Voltage Power Supply



Select 360 High Voltage Power Supply

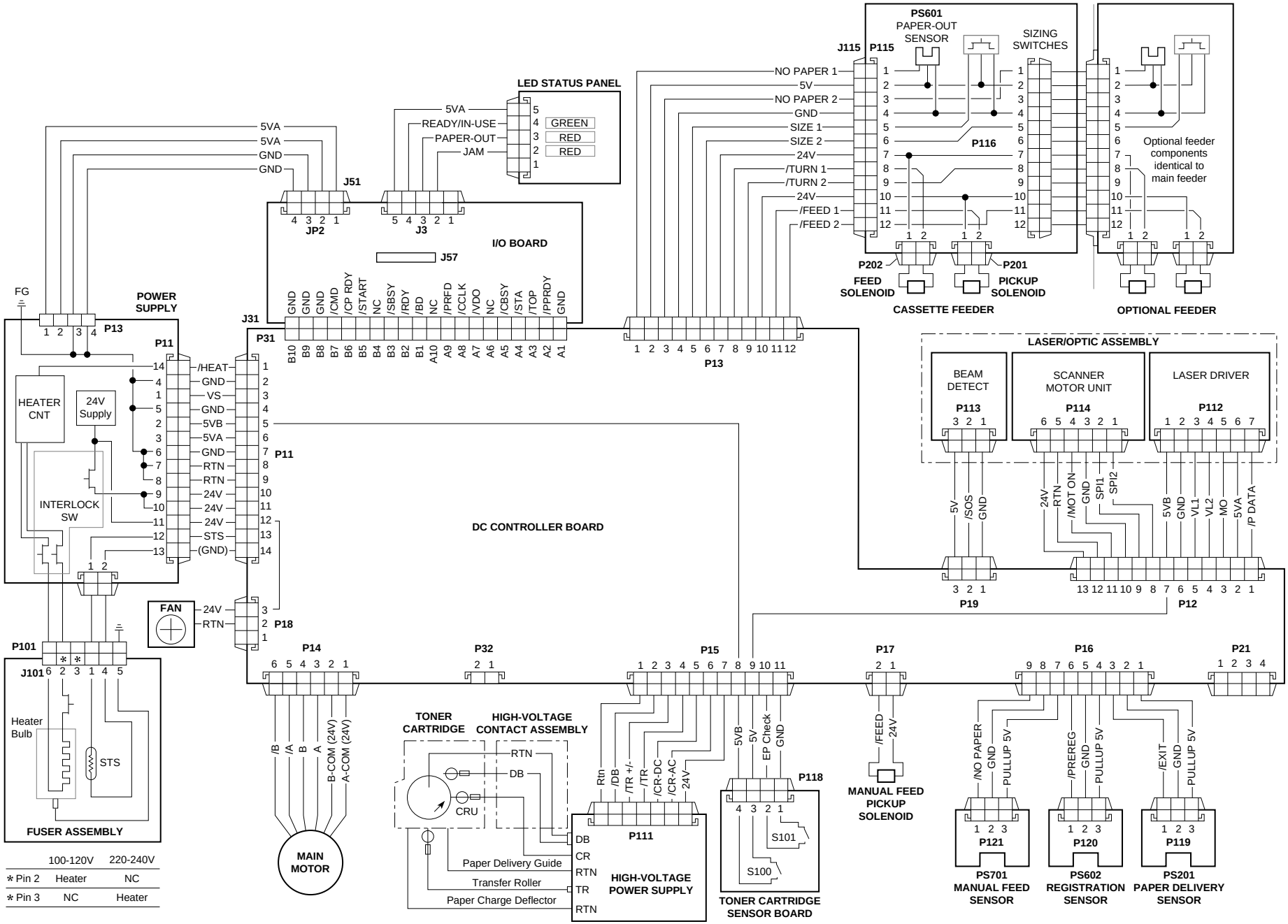


Select 360 Fax Card



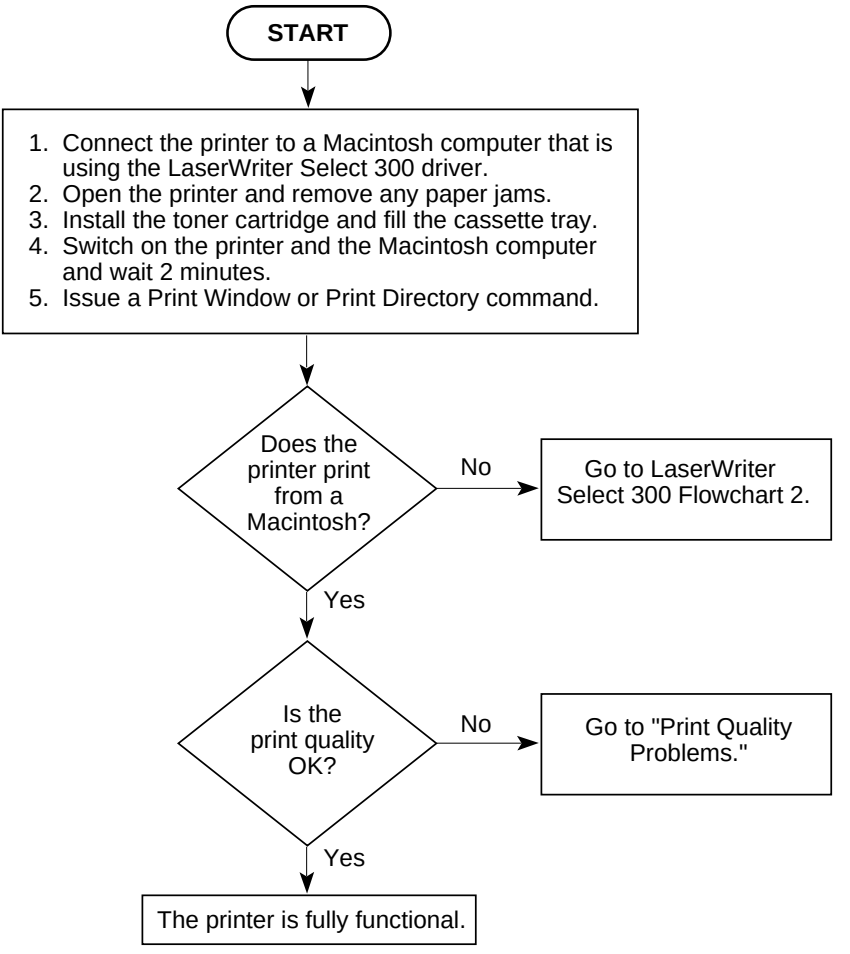
Wiring Diagram

The LaserWriter Select wiring diagram can be found on the next page. The detail in this document is too small to read easily at 100% view. You should either zoom into the diagram using the zoom tool above, or print the diagram on a laser printer with a resolution of 300 dpi (600 dpi preferred).

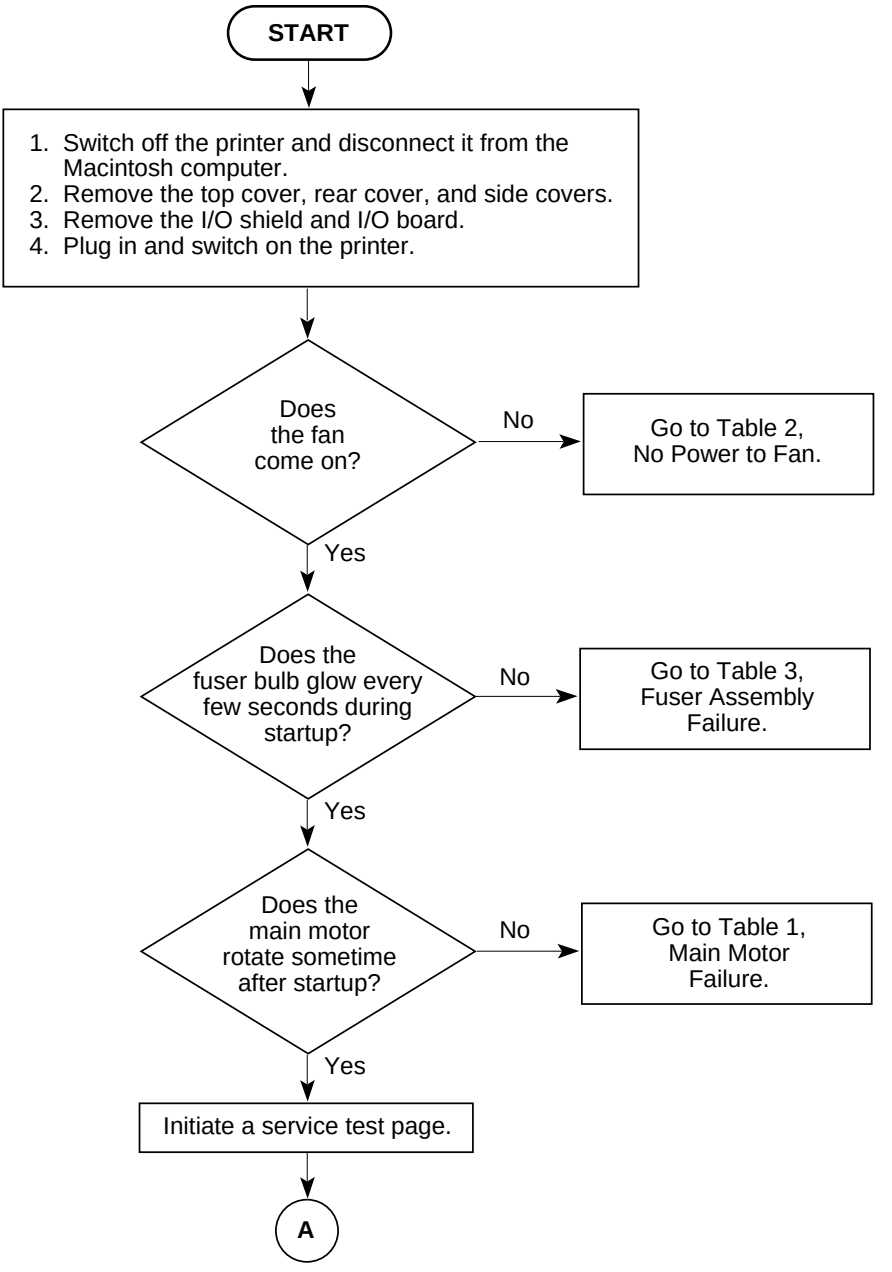


	100-120V	220-240V
* Pin 2	Heater	NC
* Pin 3	NC	Heater

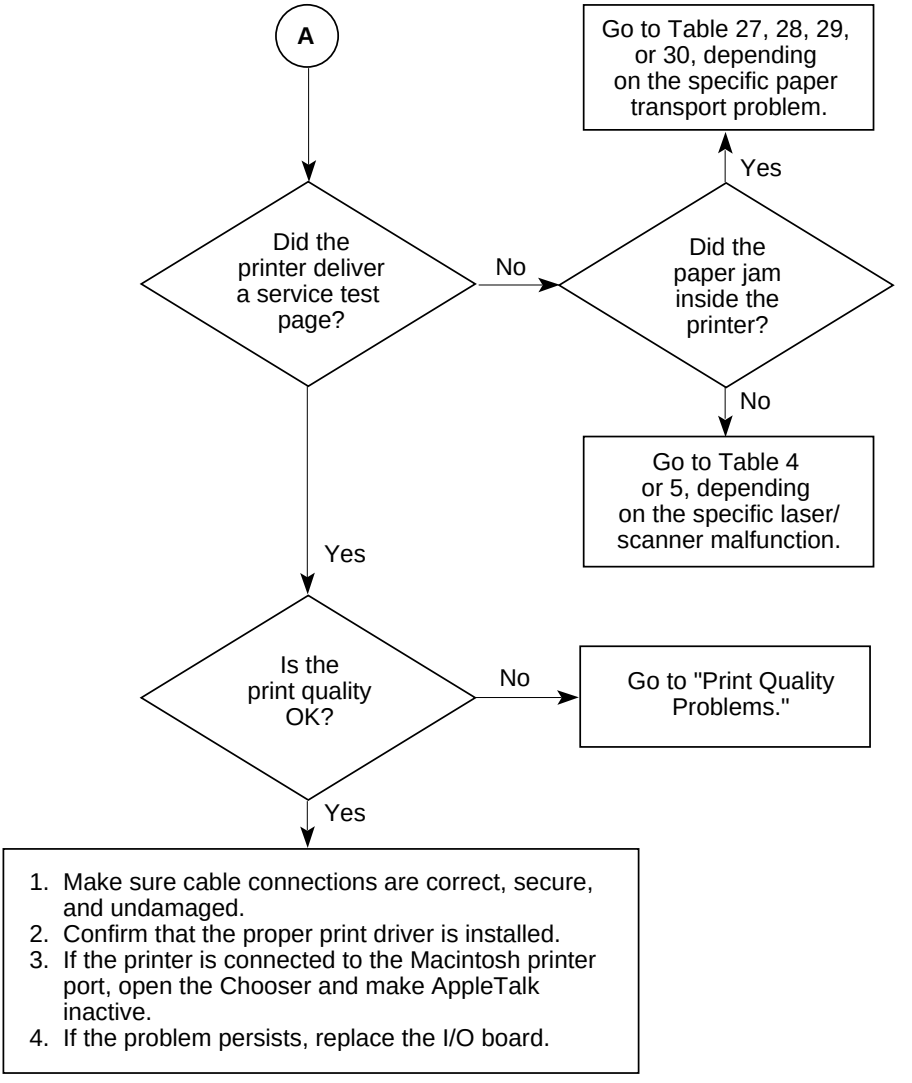
LaserWriter Select 300 Flowchart 1



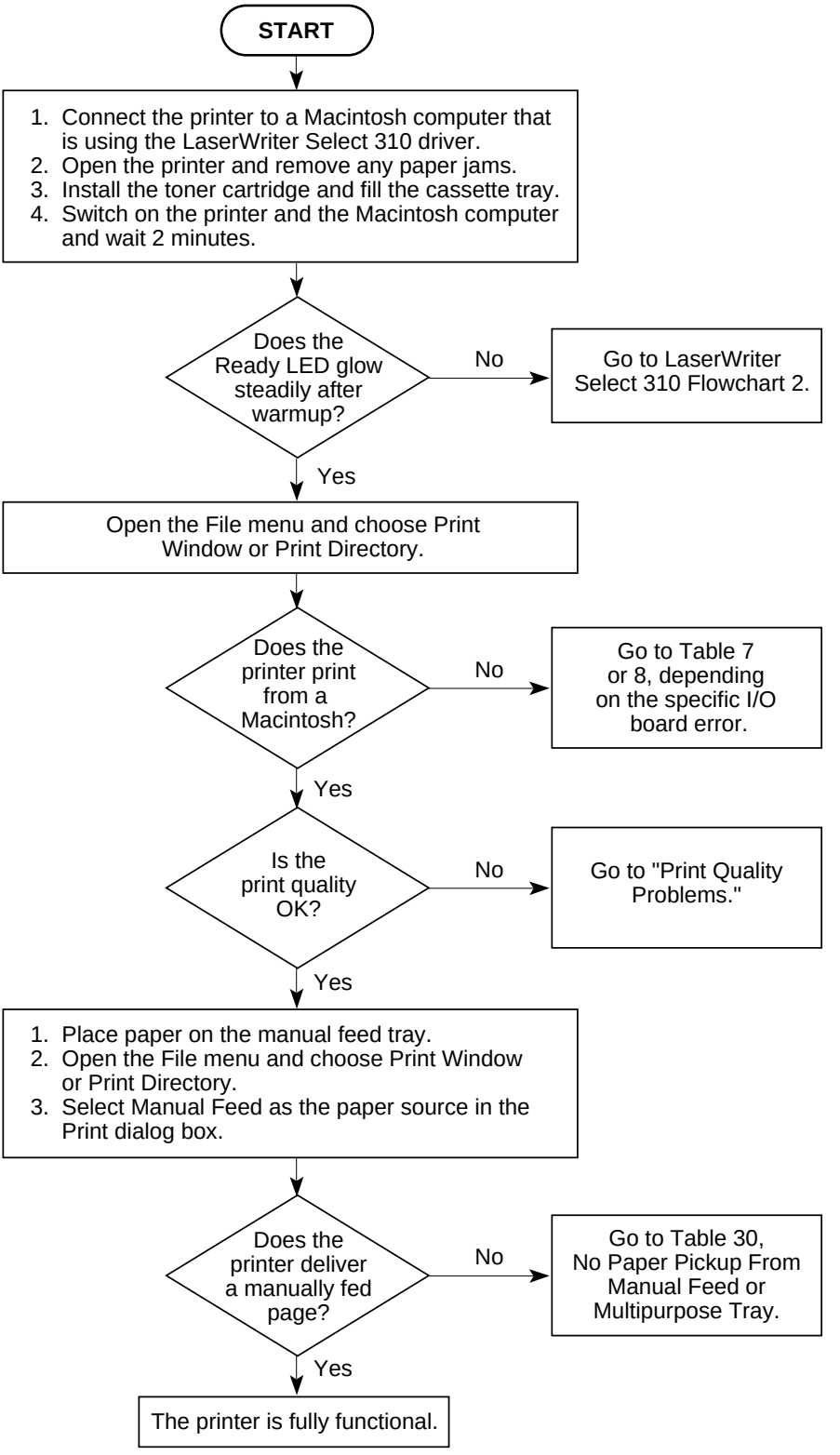
LaserWriter Select 300 Flowchart 2



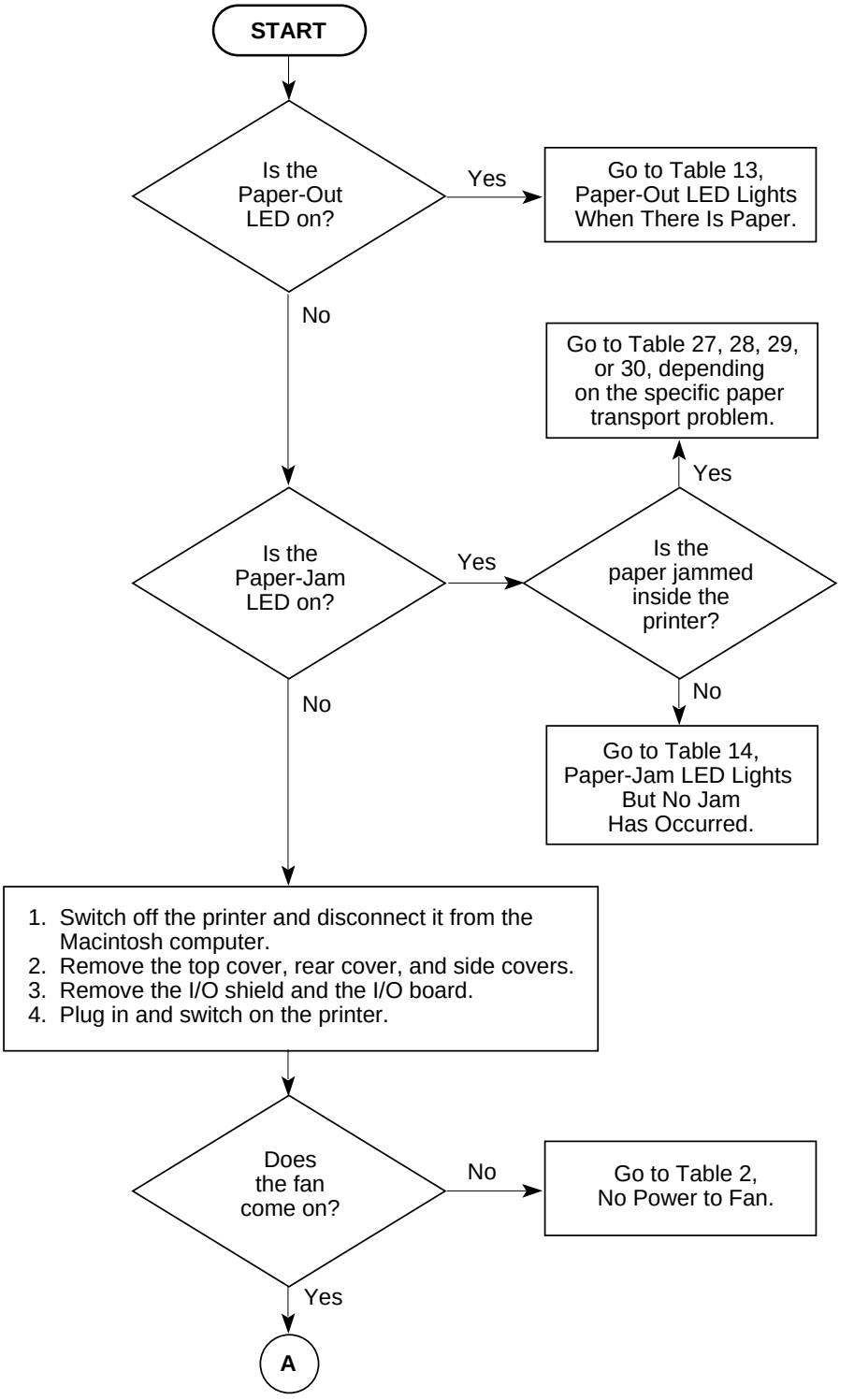
LaserWriter Select 300 Flowchart 2 (Continued)



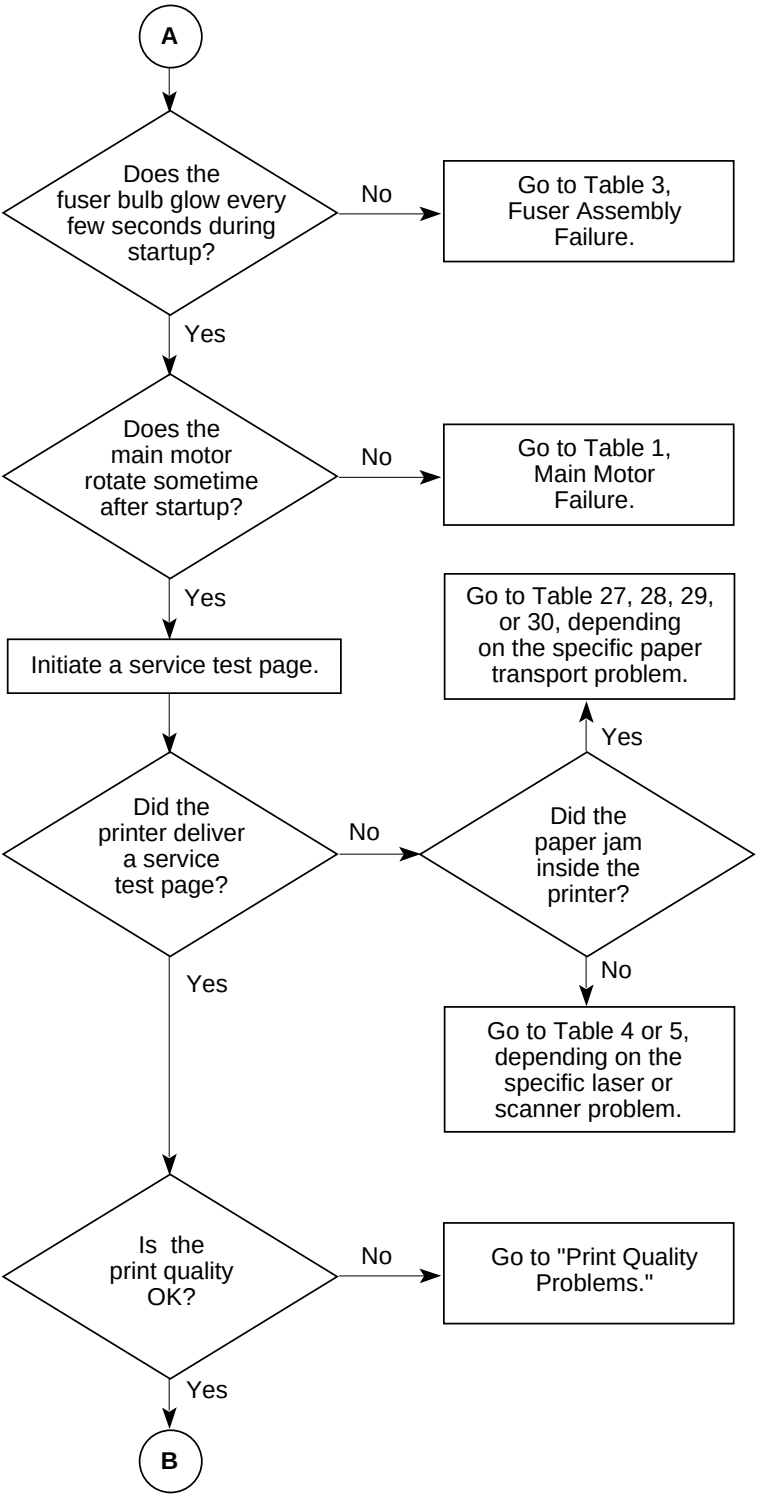
LaserWriter Select 310 Flowchart 1



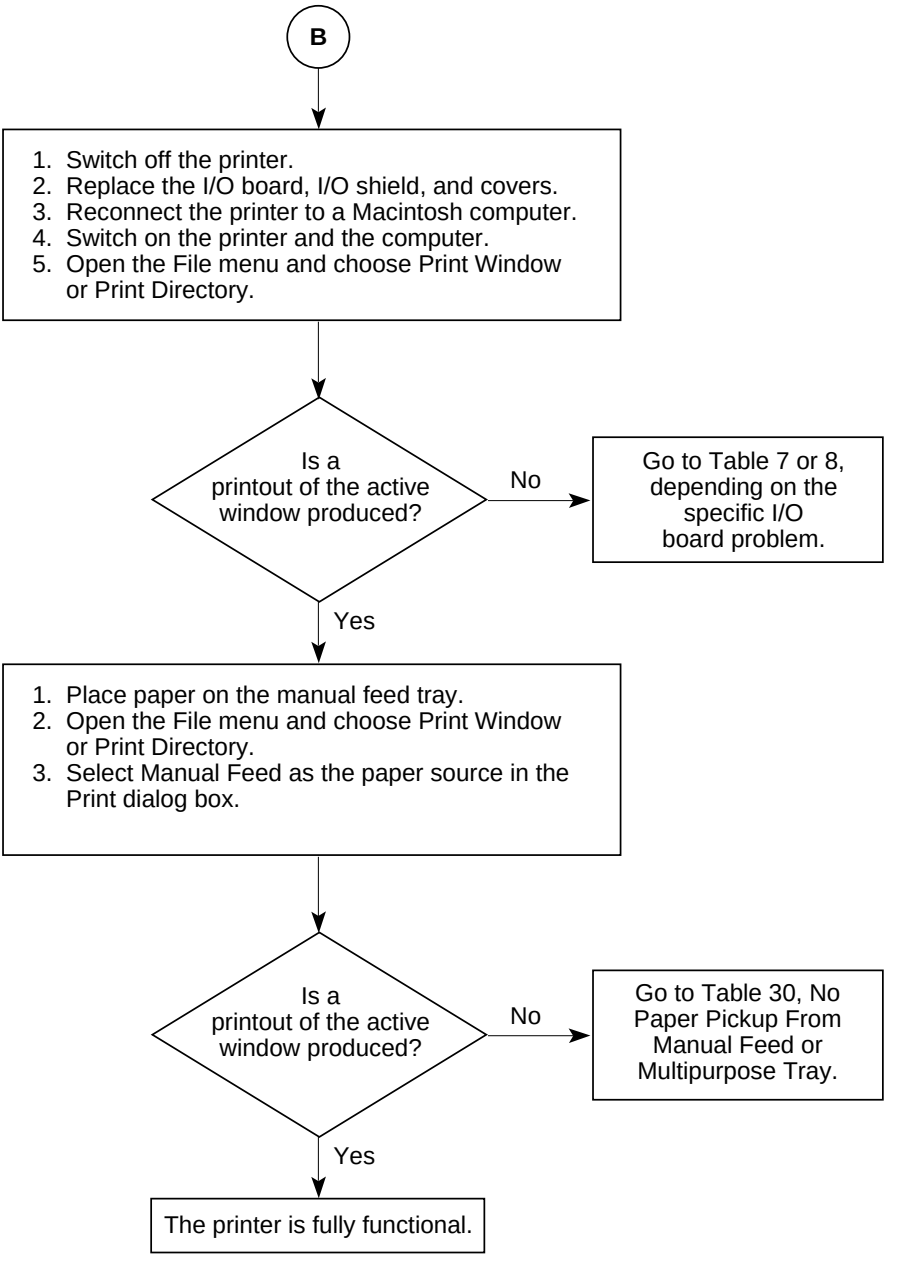
LaserWriter Select 310 Flowchart 2



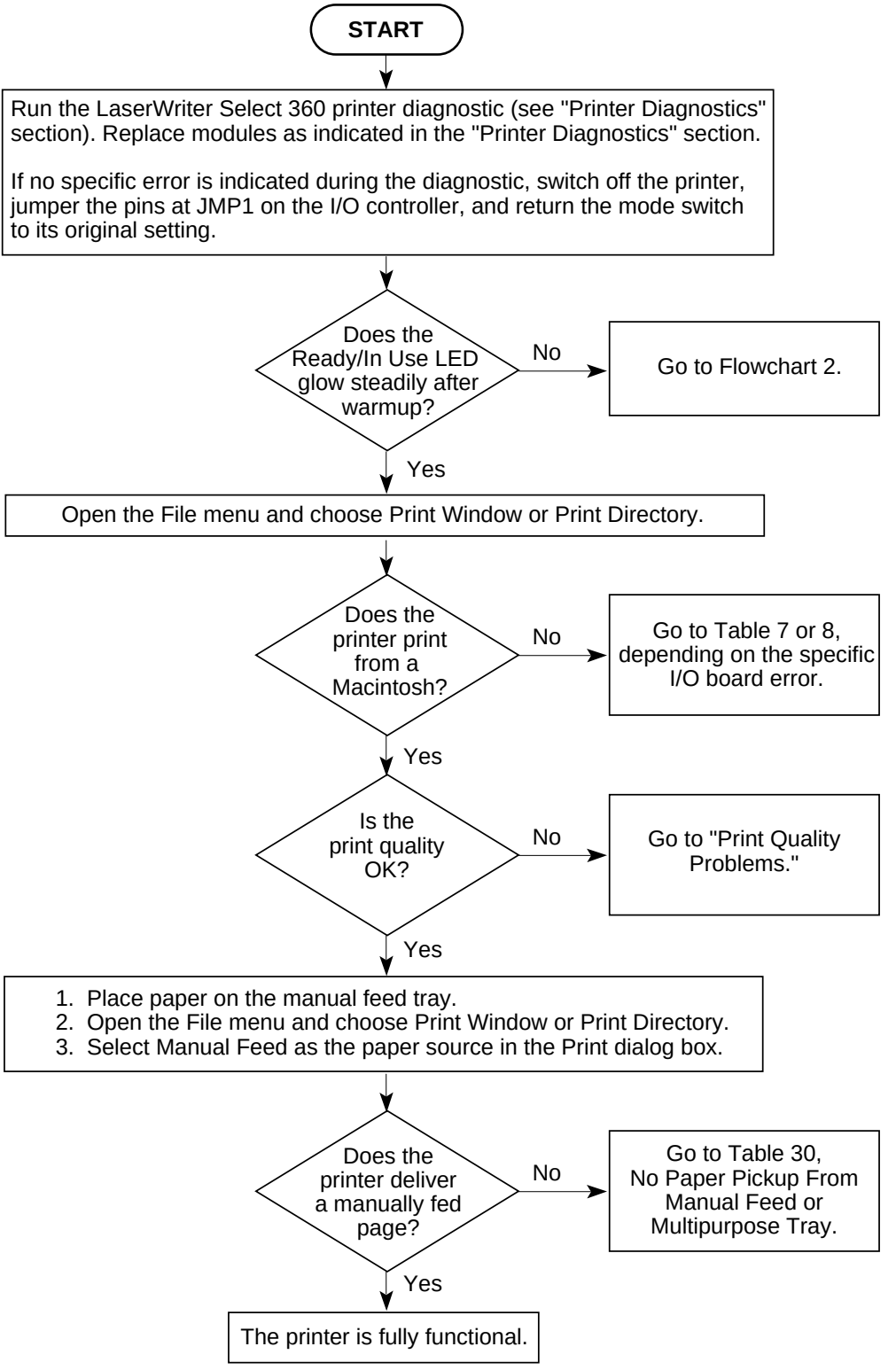
LaserWriter Select 310 Flowchart 2 (Continued)



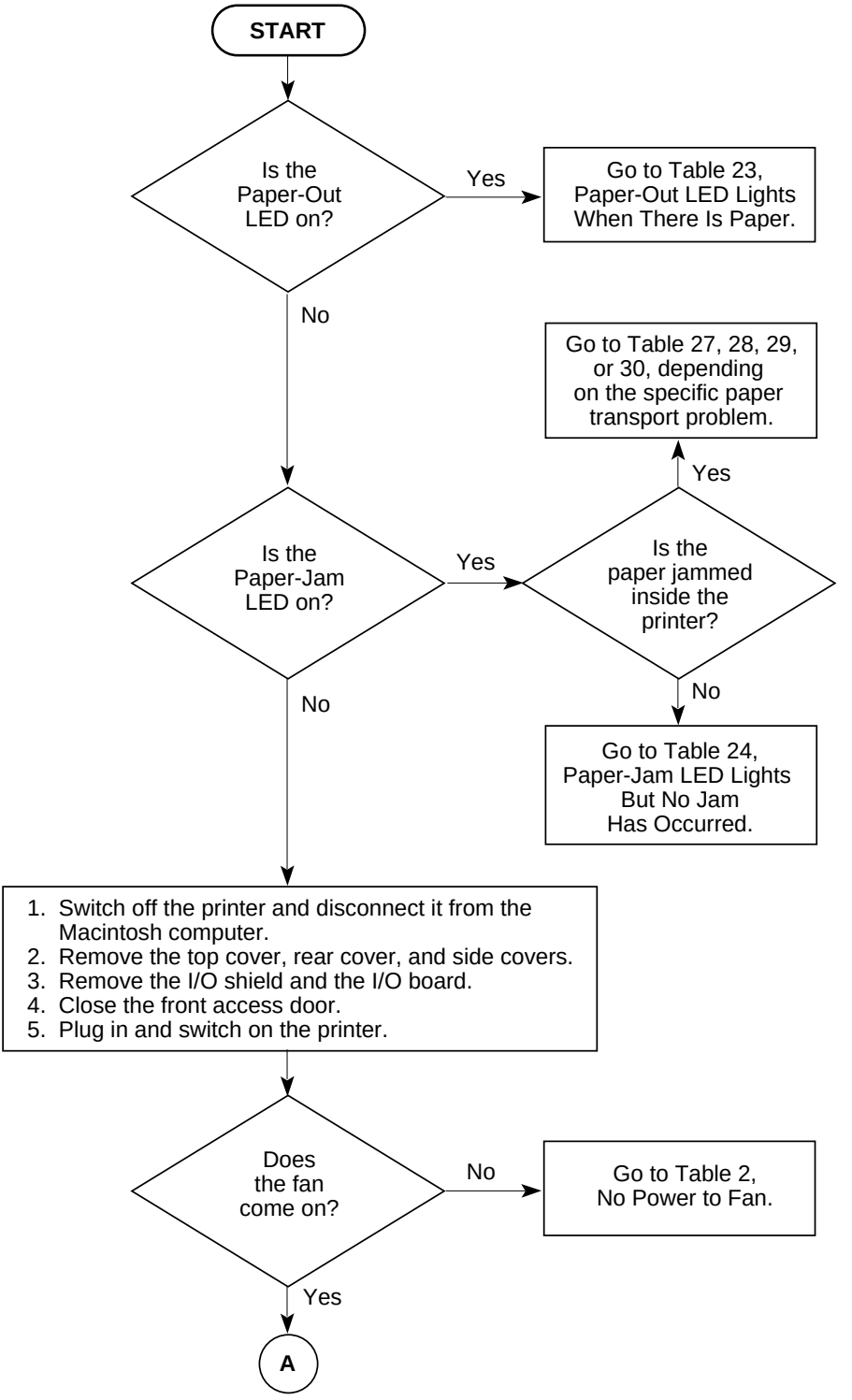
LaserWriter Select 310 Flowchart 2 (Continued)



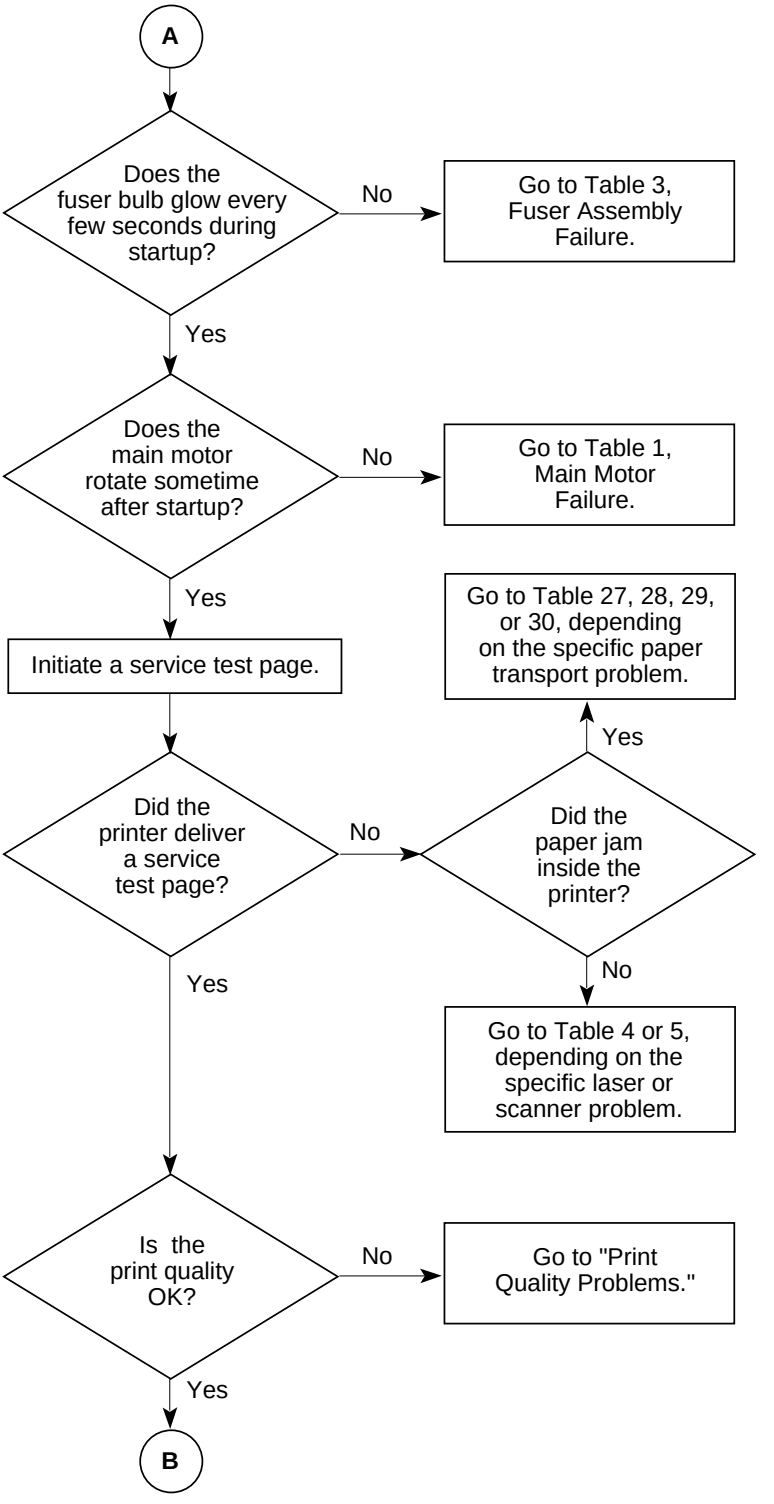
LaserWriter Select 360 Flowchart 1



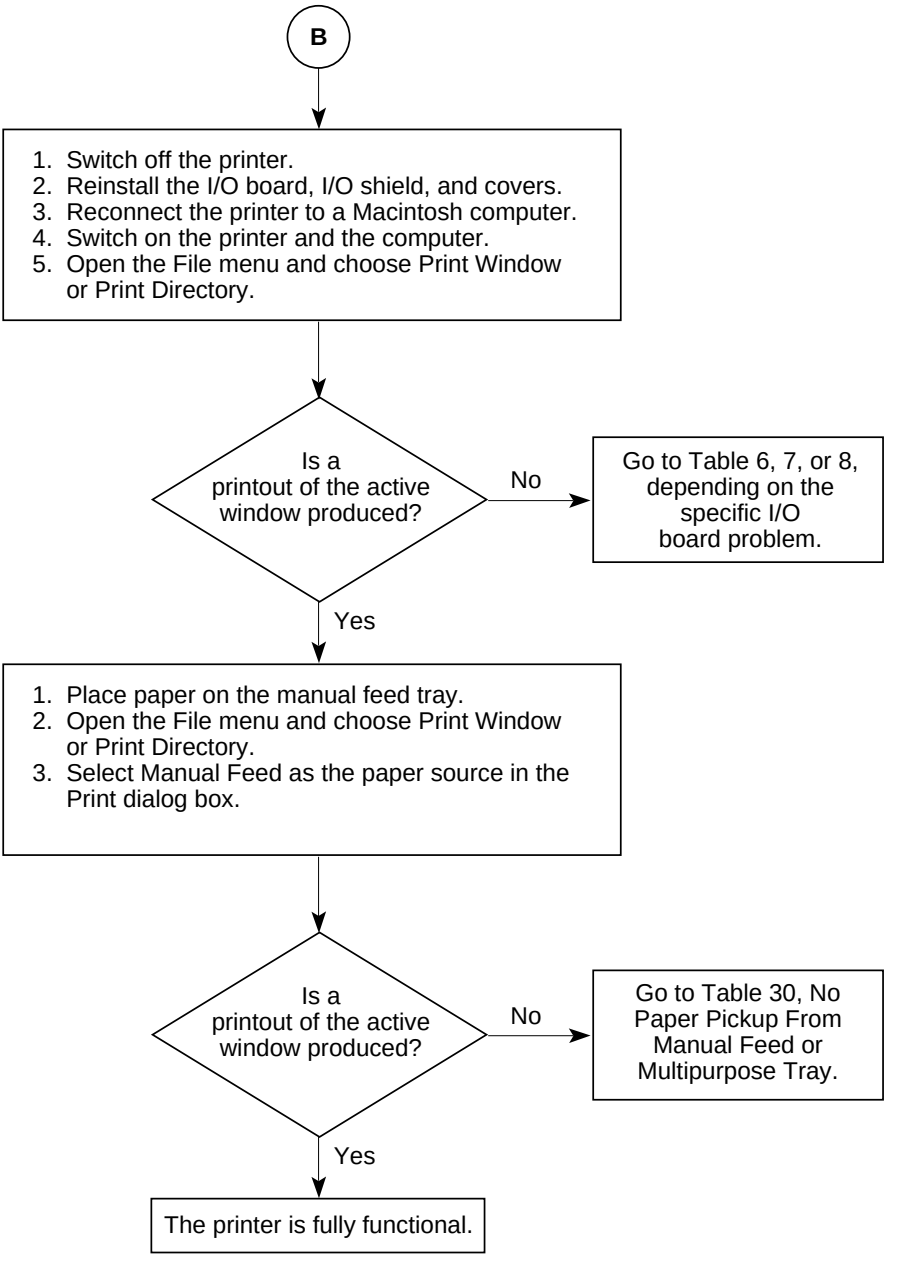
LaserWriter Select 360 Flowchart 2



LaserWriter Select 360 Flowchart 2 (Continued)



LaserWriter Select 360 Flowchart 2 (Continued)



Important As you proceed through the steps in a table, remember to retry the printer each time you change its physical state–for example, when you replace a module. If the problem remains, reinstall the original module before proceeding to the next step in the table. Refer as necessary to the wiring diagram that follows the tables.

Table 1. Main Motor Failure

Step	Check	Result	Action
1	Is connector P14 on the DC controller board making good contact?	No	Reconnect P14 to the DC controller board.
2	Are there any obstructions in the drive assembly gear train or paper path?	Yes	Remove the obstructions.
3	Inspect the drive assembly gear train and replace any damaged gears. (Check the gears on the drive assembly, the paper feed roller, and the cassette feeder assembly.) Does the problem persist?	No	Problem solved.
4	Switch off the printer and connect a multimeter between each of the following pairs of pins: • P14-1 (A-COM 24V) and P11-2 (GND) • P14-2 (B-COM 24V) and P11-2 (GND) Does the voltage measure approximately +24 VDC when you switch on the printer?	No	Go to Table 11, Power Supply Failure (+24 VDC).

Main Motor Failure (Continued)			
Step	**Check**	**Result**	**Action**
5	Switch off the printer and connect a multimeter between each of the following pairs of pins: • P14-1 (A-COM 24V) and P14-3 (A) • P14-1 (A-COM 24V) and P14-5 (/A) • P14-2 (B-COM 24V) and P14-4 (B) • P14-2 (B-COM 24V) and P14-6 (/B) Is the resistance approximately 5 ohms?	No Yes	Replace the main motor. Replace the DC controller board. If the problem persists, replace the main motor.

Table 2. No Power to Fan			
Step	**Check**	**Result**	**Action**
1	Is a toner cartridge installed in the printer?	No	Install a toner cartridge.
2	Is the AC outlet providing the correct voltage?	No	Try another AC outlet.
3	Is connector P119 making good contact with the paper delivery sensor?	No	Reconnect connector P119 to the paper delivery sensor.
4	Inspect the paper delivery sensor. Does the lever on the fuser assembly cover the paper delivery sensor when no paper is present and uncover the sensor when paper passes through the fuser assembly?	No	Install the paper delivery sensor so that it makes contact with the delivery sensor lever. If the problem persists, replace the delivery sensor lever.

No Power to Fan (Continued)			
Step	**Check**	**Result**	**Action**
5	Connect a multimeter between each of the following sets of pins and check for the following voltages: P11-10 (+24 V, brown wire) and P11-2 (GND, black wire) +24 VDC P11-11 (+24 V, brown wire) and P11-2 (GND, black wire) +24 VDC P11-12 (+24 V, orange wire) and P11-2 (GND, black wire) +24 VDC P11-5 (+5 VB, yellow wire) and P11-2 (GND, black wire) +5 VDC P11-6 (+5 VA, blue wire) and P11-2 (GND, black wire) +5 VDC Are the voltages present when you switch the printer back on?	No	Replace the power supply.
6	Switch off the printer, connect a multimeter between connectors P18-3 (+24V) and P18-2 (RTN) on the DC controller, and switch the printer back on. Is the voltage approximately +24 VDC?	Yes	Replace the fan.

No Power to Fan (Continued)			
Step	**Check**	**Result**	**Action**
7	Switch off the printer and disconnect connector P119 from the paper delivery sensor. Connect the multimeter between P119-2 (GND) and P119-3 (+5 VDC) and switch on the printer. Does the voltage measure approximately +5 VDC when you switch on the printer?	No Yes	Check the cable connections between P119 and P16 on the DC controller board. If the connections are secure, replace the DC controller board. Replace the paper delivery sensor.

Table 3. Fuser Assembly Failure			
Step	**Check**	**Result**	**Action**
1	Is a toner cartridge installed in the printer?	No	Install a toner cartridge.
2	Switch off the printer, connect a multimeter between pins J101-2 and J101-6 on the fuser assembly, and switch on the printer. Does the voltage measure between +90 and +132 VAC when you switch on the printer?	No	Replace the power supply.
3	Switch off the printer, disconnect connector P11 from the DC controller board. Measure the resistance between connector pins P11-13 (STS) and P11-14 (GND). Is the resistance between 200 kΩ and 350 kΩ at room temperature?	No	Replace the power supply.

Fuser Assembly Failure (Continued)			
Step	**Check**	**Result**	**Action**
4	Measure the resistance between pins J101-2 and J101-6 on the fuser assembly. Is the resistance less than 10 Ω?	No	Replace the fuser heater bulb and the thermoprotector.
5	Connect a multimeter between pins P11-1 (HEAT, red wire) and P11-2 (GND, black wire). Does the voltage measure about +4.2 VDC when you switch on the printer?	No	Replace the power supply.
6	Connect a multimeter between connector pins P11-1 (HEAT, red wire) and P11-2 (GND, black wire) on the DC controller board. When you open and close the front access door, does the voltage measure about +3.7 VDC with the door open and briefly drop to 0 VDC about five seconds after you close the door?	No	Go to Table 9, Temperature Sensor Assembly Failure.
7	Switch off the printer and disconnect P111 from the high-voltage power supply. Connect a multimeter between connector pins P11-5 (5 VB, yellow wire) and P11-2 (GND, black wire) on the DC controller board. Does the voltage measure about +5 VDC when you switch on the printer?	No	Replace the power supply.

Fuser Assembly Failure (Continued)			
Step	**Check**	**Result**	**Action**
8	Switch off the printer and disconnect connector P12 from the DC controller board. Does the fuser heater bulb light when you switch on the printer?	No	Replace the laser/optic assembly.
9	Switch off the printer and disconnect connector P15 from the DC controller board. Does the fuser heater bulb light when you switch on the printer?	Yes	Replace the DC controller board.
10	Connect the multimeter between pins P15-8 (5 VB, yellow wire) and P15-9 (5 V, orange wire) on the DC controller board. When you remove and insert the toner cartridge does the resistance change from 0 Ω (cartridge inserted) to infinity Ω (cartridge removed)?	No	Replace the toner cartridge sensor assembly.
11	Connect the multimeter between pins P15-10 (EP CHECK, red wire) and P15-11 (GND, brown wire) on the DC controller board. When you remove and insert the toner cartridge, does the resistance change from 0 Ω (cartridge inserted) to infinity Ω (cartridge removed)?	No	Replace the toner cartridge sensor assembly.

Table 4. Laser Scanner Failure			
Step	**Check**	**Result**	**Action**
1	Are connectors P12 and P19 on the DC controller board properly seated?	No	Reconnect connectors P12 and P19 to the DC controller board.
2	Switch on the printer, wait until the main motor stops rotating, and connect a multimeter between connector P12-11 (/MOT ON) on the DC controller board and chassis ground. Can you hear the scanner motor start to spin?	No	Go to Table 5, Scanner Assembly Failure.
3	Switch off the printer, connect a multimeter between connectors P11-4 (GND, black wire) and P11-5 (5 VB, yellow wire) on the DC controller board, and switch on the printer. Is the voltage approximately +5VDC?	No	Replace the power supply.
4	Switch off the printer and connect a multimeter between connectors P11-5 (5 VB, yellow wire) and P12-7 (5 VB, black wire) on the DC controller board. Is the resistance less than 5 Ω?	No	Go to Table 9, Toner Cartridge Sensor Failure.
5	Switch off the printer and connect a multimeter between connectors P12-7 (5 VB) and P12-6 (GND) on the DC controller board. Does the voltage measure +5 VDC when you switch on the printer?	Yes No	Replace the laser/optic assembly. Replace the DC controller board.

Table 5. Scanner Assembly Failure			
Step	**Check**	**Result**	**Action**
1	Switch off the printer and connect a multimeter between connectors P12-13 (24 V) and P12-12 (RTN) on the DC controller board. Does the voltage measure about +24 VDC when you switch on the printer?	No	Go to Table 11, Power Supply Failure (+24 VDC).
2	Connect a multimeter between connectors P12-11 (/MOT ON) and P12-10 (GND) on the DC controller board and initiate a service test page. Does the voltage drop to less than +1 VDC during printing and rise to about +4 VDC when the printing stops?	Yes No	Replace the scanner assembly. If the problem persists, replace the laser and scanner motor cable. Replace the DC controller board.

Table 6. Select 360 I/O Board Error			
Step	**Check**	**Result**	**Action**
1	Are the serial and/or parallel cables secure?	No	Tighten the cable connections.
2	If you are using a Macintosh, is the LaserWriter Select 360 driver installed in the System Folder?	No	Use the installation disk to install the appropriate driver in the System folder.
3	If you are using an IBM PC or compatible computer, check that the correct printer driver is installed. Has it been installed?	No	Install the correct Windows printer driver. Refer to the user's guide for more information.

Select 360 I/O Board Error (Continued)			
Step	**Check**	**Result**	**Action**
4	If you are using a Macintosh, are the LaserWriter 8.0 driver (icon) and correct serial port selected?	No	Use the Chooser to select the LaserWriter 8.0 driver.
5	If you are using an IBM PC or compatible computer, is the Windows program open and active?	No	Make sure the window is open and the document window is active. Choose Print from the File menu, select the options you want, and click Print.
6	If you are using a Macintosh, is background printing disabled?	No Yes	Disable background printing (so that error messages display on the screen). Switch the printer off and on again. Install a different LaserWriter Select 360 I/O board.

Table 7. Select 310 or 360 I/O Board Error – Serial Connection			
Step	**Check**	**Result**	**Action**
1	Is the serial cable connection secure?	No	Tighten cable connections.
2	Is the serial cable good?	No	Replace cable.
3	Is the LaserWriter Select 360 driver installed in the System Folder?	No	Use the Installer to install the LaserWriter Select 360 driver in the System Folder.
4	Are the correct LaserWriter Select driver and serial port selected?	No	Use the Chooser to select the LaserWriter Select 310 or 360 driver and the port (printer or modem) to which the printer is connected.
5	Is the printer connected to the printer port on the Macintosh?	Yes	Make sure AppleTalk is inactive.
6	Is background printing disabled?	No	Disable background printing. If the problem persists, install a different LaserWriter Select 360 I/O board.

Table 8. Select 310 or 360 I/O Board Error – Parallel Connection			
Step	**Check**	**Result**	**Action**
1	Are the parallel cable connections correct and secure?	No	Tighten cable connections.
2	Are the parallel cables and connectors good?	No	Replace the defective cables and connectors.
3	Are the software and hardware properly configured to communicate with the parallel port on the printer?	No	Refer to the printer's owner's guide and the computer documentation for proper configuration. Switch the printer off and on again. If the problem persists, install a different I/O board.

Table 9. Temperature Sensor Assembly Failure			
Step	**Check**	**Result**	**Action**
1	After allowing the fuser assembly to cool to room temperature, remove the fuser assembly from the printer. Measure the resistance between J101-1 and J101-4 on the fuser assembly. Is the resistance between 200 kΩ and 350 kΩ?	No	Replace the sensor assembly.

Table 10. Toner Cartridge Sensor Failure			
Step	**Check**	**Result**	**Action**
1	Switch off the printer. Connect a multimeter between P15-8 (5 VB) and P11-2 (GND) on the DC controller board. Does the voltage measure +5 VDC when you switch on the printer?	No	Go to Table 12, Power Supply Failure (+5 VDC).

Toner Cartridge Sensor Failure (Continued)			
Step	**Check**	**Result**	**Action**
2	Connect a multimeter between pins P15-8 (5 VB, yellow wire) and P15-9 (5 V, orange wire) on the DC controller board. When you remove and insert the toner cartridge, does the resistance change from 0 Ω (cartridge inserted) to infinity Ω (cartridge removed)?	No	Replace the toner cartridge sensor assembly.
3	Connect a multimeter between pins P15-10 (EP CHECK, red wire) and P15-11 (GND, brown wire) on the DC controller board. When you remove and insert the toner cartridge, does the resistance change from 0 Ω (cartridge inserted) to infinity Ω (cartridge removed)?	No	Replace the toner cartridge sensor assembly.
4	Remove the toner cartridge sensor cover and observe the toner cartridge sensor PCB and actuator. Does the actuator turn on switches S101 and S100 when you install a toner cartridge and turn off the switches when you remove the toner cartridge?	No	Install a new toner cartridge. If switches S101 and S100 still do not turn on when you install the cartridge, replace the toner cartridge sensor assembly.
5	Is there continuity between connectors P15 on the DC controller board and P118 on the toner cartridge sensor board.	Yes No	Replace the DC controller board. Replace the high-voltage/toner cartridge sensor cable.

Table 11. Power Supply Failure (+24 VDC)			
Step	**Check**	**Result**	**Action**
1	Switch off the printer. Connect a multimeter between P11-12 (+24 VDC, orange wire) and P11-2 (GND, black wire) on the DC controller board. Switch on the printer. Is the voltage approximately +24 VDC?	No	Replace the power supply.
2	Switch off the printer. Connect a multimeter between P11-10 (+24 VDC, brown wire) and P11-2 (GND, black wire) on the DC controller board. Switch the printer back on. When you open and close the front access door, does the voltage measure 0 VDC with the door open and +24 VDC with the door closed?	Yes	Replace the DC controller board.
3	Switch off the printer. Connect a multimeter between P11-11 (+24 VDC, brown wire) and P11-2 (GND, black wire) on the DC controller board. Switch the printer back on. When you open and close the front access door, does the voltage measure 0 VDC with the door open and +24 VDC with the door closed?	Yes No	Replace the DC controller board. Replace the power supply.

Table 12. Power Supply Failure (+5 VDC)			
Step	**Check**	**Result**	**Action**
1	Connect a multimeter between the following pairs of pins on the DC controller board: P11-5 (yellow wire) and P11-2 (black wire) P11-6 (blue wire) and P11-2 (black wire) Does the voltage measure +5 VDC when you switch on the printer?	No Yes	Replace the power supply. Replace the DC controller board.

Table 13. Paper-Out LED Lights When There Is Paper			
Step	**Check**	**Result**	**Action**
1	Is the paper cassette installed and does it contain paper?	No	Remove the paper cassette tray and fill it with paper. Reinstall the paper cassette tray and make sure it is seated properly.
2	Remove the paper cassette tray and inspect the paper sensing arm. Does the paper sensing arm appear to be damaged?	Yes	Replace the paper sensing arm.
3	While the paper cassette tray is out, inspect the paper cassette size actuators. Do any of the actuators appear to be bent or damaged?	Yes	Replace the cassette feeder board.
4	While the paper cassette tray is out, switch on the printer. Insert the paper cassette tray. Does the main motor rotate when you insert the paper cassette tray?	No	Replace the cassette feeder board.

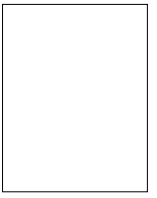
Paper-Out LED Lights When There Is Paper (Continued)			
Step	**Check**	**Result**	**Action**
5	Prepare the printer for troubleshooting as described in the “Troubleshooting Preparation” section. Disconnect P111 from the high-voltage power supply. Connect a multimeter between connector pins P13-1 (NOPAPER1) and P13-4 (GND) on the DC controller board. Remove and insert the paper cassette tray filled with paper. Does the voltage toggle from +5 VDC (tray removed) to 0 VDC (tray inserted)?	No Yes	Replace the cassette feeder board. If the problem persists, replace the cassette feeder tray cable. Replace the DC controller board.
6	If an optional paper cassette is installed, connect a multimeter between connector pins p13-3 (NOPAPER2) and P13-4 (GND) on the DC controller board. Remove and insert the paper cassette tray filled with paper. Does the voltage toggle from +5 VDC (tray removed) to 0 VDC (tray inserted)?	No Yes	Replace the cassette feeder board. If the problem persists, replace the expansion feeder cable. Replace the DC controller board.

Table 14. Paper-Jam LED Lights But No Jam Has Occurred			
Step	**Check**	**Result**	**Action**
1	Is the paper cassette installed and does it contain paper?	No	Remove the paper cassette tray and fill it with paper. Reinstall the paper cassette tray and make sure it is seated properly.
2	Check the fuser/delivery area or paper registration area for paper fragments. Are there any paper fragments or other obstructions?	Yes	Remove the fragments or obstructions.
3	Is the cable that runs to the paper delivery sensor securely connected?	No	Reconnect the cable to the paper delivery sensor.
4	Initiate a service test page and observe the action of the delivery lever on the fuser assembly. Does the delivery lever swing freely when it passes through the fuser assembly?	No	Replace the delivery sensor lever.
5	Open the front access door and locate the paper registration on the paper charge deflector. Is the paper sensing arm damaged or broken.	Yes	Replace the paper sensing arm.

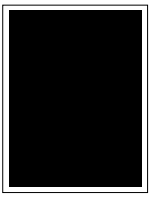
Paper-Jam LED Lights But No Jam Has Occurred (Continued)			
Step	**Check**	**Result**	**Action**
6	Prepare the printer for troubleshooting as described in "Troubleshooting Preparation." Disconnect connector P111 from the high-voltage power supply and connector P16 from the DC controller board. Connect a multimeter between P16-4 (PULLUP 5 V) and P16-5 (GND) on the DC controller board. Does the voltage measure +5 VDC when you switch on the power?	No	Go to Step 9.
7	Switch off the printer and reconnect connector P16 to the DC controller board. Connect a multimeter between connector P16-6 (PregReg) and P16-5 (GND) on the DC controller board. Initiate a service test page. Does the voltage drop from +5 VDC to 0 VDC when the paper passes the paper registration sensor?	No	Go to Step 9.
8	Switch off the printer. Connect a multimeter between connector P16-3 (EXIT) and P16-2 (GND). Switch on the printer and manually actuate the paper delivery sensor by inserting a sheet of paper between the sensor arms. Does the voltage drop from +5 VDC to 0 VDC when you remove the paper from the sensor?	No	Replace the paper delivery sensor. If the problem persists, replace the delivery sensor cable.

Paper-Jam LED Lights But No Jam Has Occurred (Continued)			
Step	**Check**	**Result**	**Action**
9	Switch off the printer and connect a multimeter between the following pairs of pins on the DC controller board: P11-5 (yellow wire) and P11-2 (black wire) P11-6 (blue wire) and P11-2 (black wire) Does the voltage measure +5 VDC when you switch on the printer?	No Yes	Replace the power supply Replace the DC controller board.

The following graphic shows examples of image quality defects. Refer to the appropriate troubleshooting table to correct the quality of the image.

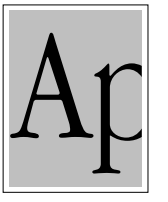


All-Blank Page
See Table 15

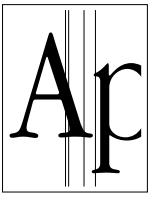


All-Black Page
See Table 16

Light/Faded Image
See Table 17

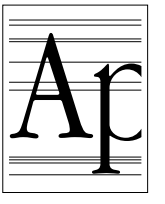


Dark Image
See Table 18

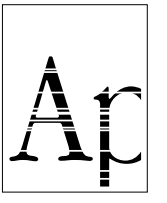


Black Vertical Line(s)
See Table 19

White Vertical Line(s)
See Table 20

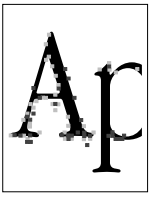


Black Horizontal Lines
See Table 21

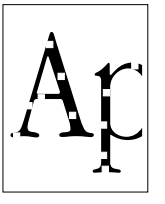


White Horizontal Lines
See Table 22

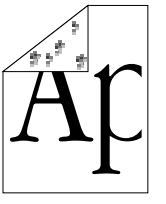
Ghosting
See Table 23



Bad Fusing
See Table 24



Blank Spots
See Table 25



Toner on Back
See Table 26

Figure 31. Print Quality Problems

Table 15. All-Blank Page			
Step	**Check**	**Result**	**Action**
1	Remove the toner cartridge from the printer. Is the toner cartridge sealing tape removed?	No	Remove the sealing tape.
2	Replace the toner cartridge. Does the print quality improve?	Yes	Problem solved.
3	Are the high-voltage contacts making good contact with the toner cartridge?	No	Clean the contacts or replace the high-voltage contact assembly.
4	Remove the toner cartridge from the printer. Is any foreign material blocking the laser beam outlet on the inside of the printer chassis? Is any foreign material adhering to the laser beam access slot on the toner cartridge?	Yes	Remove the foreign material.
5	Inspect the drive assembly gear train. Are any gears damaged?	Yes	Replace the drive assembly.
6	Replace the transfer roller. Does the print quality improve?	Yes	Problem solved.
7	Connect the multimeter between connectors P15-7 and P15-1 on the DC controller board. Does the voltage measure +24 VDC when you switch on the printer?	No	Go to Table 11, Power Supply Failure (+24 VDC).

All-Blank Page (Continued)			
Step	**Check**	**Result**	**Action**
8	For Steps 8 and 9, remove the top covers, side covers, rear cover, I/O board mount, and the power switch lever. Remove the high-voltage contact assembly and check the continuity on all the high-voltage contacts. Do you find continuity on all the high-voltage contacts?	No	Replace the high-voltage contact assembly.
9	Is there continuity between connector RTN (red wire) on the high-voltage power supply and the red spade connector on the paper delivery guide?	No	Replace the paper delivery guide.
10	Replace the DC controller board. Does the print quality improve?	Yes No	Problem solved. Replace the toner cartridge sensor and high-voltage power supply cable. If the problem persists, replace the high-voltage power supply.

Table 16. All-Black Page			
Step	**Check**	**Result**	**Action**
1	Replace the toner cartridge. Does the print quality improve?	Yes	Problem solved.
2	Are the high-voltage contacts making good contact with the toner cartridge?	No	Clean the contacts or replace the high-voltage contact assembly.

All-Black Page (Continued)			
Step	**Check**	**Result**	**Action**
3	Connect the multimeter between connectors P15-7 and P15-1 on the DC controller board. Does the voltage measure +24 VDC when you switch on the printer?	No	Go to Table 11, Power Supply Failure (+24 VDC).
4	Is there continuity between CRU (spring plate) on the high-voltage contact assembly and jack CR on the high-voltage power supply?	No	Replace the high-voltage contact assembly.
5	Is there continuity between P15 on the DC controller board and P111 on the high-voltage power supply?	Yes	Replace the toner cartridge sensor and high-voltage power supply cable.
6	Replace the DC controller board. Does the print quality improve?	Yes No	Problem solved. Replace the high-voltage power supply.

Table 17. Light/Faded Image			
Step	**Check**	**Result**	**Action**
1	Replace the toner cartridge. Does the print quality improve?	Yes	Problem solved.
2	Reload the paper cassette tray with known-good paper. Does the print quality improve?	Yes	Problem solved.

Light/Faded Image (Continued)			
Step	**Check**	**Result**	**Action**
3	Remove the toner cartridge from the printer. Is any foreign material blocking the laser beam outlet on the inside of the printer chassis? Is any foreign material adhering to the laser beam access slot on the toner cartridge?	Yes	Remove the foreign material.
4	Are the high-voltage contacts making good contact with the toner cartridge?	No	Clean the contacts or replace the high-voltage contact assembly.
5	Replace the transfer roller. Does the print quality improve?	No	Problem solved.
6	Connect the multimeter between connectors P15-7 and P15-1 on the DC controller board. Does the voltage measure +24 VDC when you switch on the printer?	No	Go to Table 11, Power Supply Failure (+24 VDC).
7	For Steps 7 and 8, remove the top cover, side covers, I/O board mount, and the power switch lever. Remove the high-voltage contact assembly and check the continuity on all the high-voltage contacts. Did you find continuity on all the high-voltage contacts?	No	Replace the high-voltage contact assembly.
8	Is there continuity between connector RTN (red wire) on the high-voltage power supply and the red spade connector on the paper delivery guide?	No	Replace the paper delivery guide.

Light/Faded Image (Continued)			
Step	**Check**	**Result**	**Action**
9	Replace the DC controller board. Does the print quality improve?	Yes No	Problem solved. Replace the toner cartridge sensor and high-voltage power supply cable. If the problem persists, replace the high-voltage power supply.

Table 18. Dark Image Over Entire Page			
Step	**Check**	**Result**	**Action**
1	Replace the toner cartridge. Does the print quality improve?	Yes	Problem solved.
2	Is the transfer roller dirty?	Yes	Replace the transfer roller.
3	Connect the multimeter between connectors P15-7 and P15-1 on the DC controller board. Does the voltage measure +24 VDC when you switch on the printer.	No	Go to Table 11, Power Supply Failure (+24 VDC).
4	Remove the top cover, side covers, rear cover, I/O board mount, and the power switch lever. Remove the high-voltage contact assembly and check the continuity on all the high-voltage contacts. Do you find continuity on all the high-voltage contacts?	No	Replace the high-voltage contact assembly.
5	Replace the DC controller board. Does the print quality improve?	Yes No	Problem solved. Replace the toner cartridge sensor and high-voltage power supply cable. If the problem persists, replace the high-voltage power supply.

Table 19. Black Vertical Lines			
Step	**Check**	**Result**	**Action**
1	Replace the toner cartridge. Does the print quality improve?	Yes	Problem solved.
2	Replace the transfer roller. Does the print quality improve?	No	Connect the grounding contact to the static eliminator.
3	Remove the paper delivery guide. Is the static eliminator on the paper delivery guide properly grounded?	No	Connect the grounding contact to the static eliminator.
4	Remove the fuser assembly and inspect the fuser heater roller. Are there scratches on the fuser heater roller?	Yes	Replace the fuser heater roller or the fuser assembly.

Table 20. White Vertical Lines			
Step	**Check**	**Result**	**Action**
1	Remove the toner cartridge from the printer. Is any foreign material blocking the laser beam outlet on the inside of the printer chassis?	Yes	Remove the foreign material.
2	Inspect the paper path. Is any foreign material blocking the paper path?	Yes	Remove the foreign material.
3	Replace the toner cartridge. Does the print quality improve?	Yes	Problem solved.
4	Replace the transfer roller. Does the print quality improve?	Yes	Problem solved.

White Vertical Lines (Continued)			
Step	**Check**	**Result**	**Action**
5	Remove the fuser assembly and heater roller. Are there scratches on the fuser heater roller?	Yes	Replace the fuser heater roller or the fuser assembly.
6	Replace the I/O board. Does the print quality improve?	Yes	Problem solved.

Table 21. Black Horizontal Lines			
Step	**Check**	**Result**	**Action**
1	Replace the toner cartridge. Does the print quality improve?	Yes	Problem solved.
2	Are the high-voltage contacts making good contact with the toner cartridge?	No	Clean the contacts or replace the high-voltage contact assembly.
3	Replace the transfer roller. Does the print quality improve?	Yes	Problem solved.
4	Remove the fuser assembly and inspect the fuser heater roller. Are there scratches on the fuser heater roller?	Yes	Replace the fuser heater roller or the fuser assembly.
5	Connect the multimeter between connectors P15-7 and 15-1 on the DC controller board. Does the voltage measure +24 VDC when you switch on the printer?	No	Go to Table 11, Power Supply Failure (+24 VDC).

Black Horizontal Lines (Continued)			
Step	**Check**	**Result**	**Action**
6	Remove the top cover, side covers, rear cover, I/O board mount, and the power switch lever. Remove the high-voltage contact assembly and check the continuity on all the high-voltage contacts. Do you find continuity on all the high-voltage contacts?	No	Replace the high-voltage contact assembly.
7	Replace the DC controller board. Does the print quality improve?	Yes	Problem solved.
8	Replace the toner cartridge sensor and high-voltage power supply cable. Does the print quality improve?	Yes	Problem solved.
9	Replace the high-voltage power supply. Does the print quality improve?	Yes	Problem solved.
10	Replace the I/O board. Does the print quality improve?	Yes	Problem solved.

Table 22. White Horizontal Lines			
Step	**Check**	**Result**	**Action**
1	Check the paper in the paper cassette tray for dampness. Is the paper damp?	Yes	Replace the paper.
2	Replace the toner cartridge. Does the print quality improve?	Yes	Problem solved.

White Horizontal Lines (Continued)			
Step	**Check**	**Result**	**Action**
3	Are the high-voltage contacts making good contact with the toner cartridge?	No	Clean the contacts or replace the high-voltage contact assembly.
4	Remove the toner cartridge from the printer. Is any foreign material blocking the laser beam outlet on the inside of the printer chassis? Is any foreign material adhering to the laser beam access slot on the toner cartridge?	Yes	Remove the foreign material.
5	Replace the transfer roller. Does the print quality improve?	Yes	Problem solved.
6	Connect the multimeter between connectors P15-7 and P15-1 on the DC controller board. Does the voltage measure +24 VDC when you switch on the printer?	No	Go to Table 11, Power Supply Failure (+24 VDC).
7	For Steps 7 and 8, remove the top covers, rear cover, I/O board mount, and power supply switch lever. Remove the high-voltage contact assembly and check the continuity on all the high-voltage contacts. Do you find continuity on all the high-voltage contacts?	No	Replace the high-voltage contact assembly.
8	Is there continuity between connector RTN (red wire) on the high-voltage power supply and the red spade connector on the paper delivery guide?	No	Replace the paper delivery guide.
White Horizontal Lines (Continued)			

Step	Check	Result	Action
9	Replace the DC controller board. Does the print quality improve?	Yes No	Problem solved. Replace the toner cartridge sensor and high-voltage power supply cable. If the problem persists, replace the high-voltage power supply.
10	Replace the toner cartridge sensor and high-voltage power supply. Does the print quality improve?	Yes	Problem solved.
11	Replace the high-voltage power supply. Does the print quality improve?	Yes	Problem solved.
12	Replace the I/O board. Does the print quality improve?	Yes	Problem solved.

Table 23. Ghosting

Step	Check	Result	Action
1	Replace the toner cartridge. Does the print quality improve?	Yes	Problem solved.
2	Is the transfer roller dirty?	Yes	Replace the transfer roller.
3	Remove the fuser assembly and inspect the fuser heater roller and the fuser pressure roller. Are there scratches on either roller?	Yes	Replace the fuser heater roller, the fuser pressure roller, or the fuser assembly.
4	Connect the multimeter between connectors P15-7 and P15-1 on the DC controller board. Does the voltage measure +24 VDC when you switch on the printer?	No	Go to Table 11, Power Supply Failure (+24VDC).

Ghosting (Continued)			
Step	**Check**	**Result**	**Action**
5	Remove the top cover, side covers, rear cover, I/O board mount, and power supply switch lever. Remove the high-voltage contact assembly and check the continuity on all the high-voltage contacts. Do you find continuity on all the high-voltage contacts?	No	Replace the high-voltage contact assembly.
6	Replace the DC controller board. Does the print quality improve?	Yes No	Problem solved. Replace the toner cartridge sensor and high-voltage power supply cable. If the problem persists, replace the high-voltage power supply.

Table 24. Bad Fusing			
Step	**Check**	**Result**	**Action**
1	Check the paper in the paper cassette tray for dampness. Is the paper damp?	Yes	Replace the paper.
2	Is the fuser assembly properly installed and secure?	No	Reinstall the fuser assembly.
3	Install a known-good fuser assembly. Does the print quality improve?	Yes	Problem solved.
4	Install a known-good power supply. Does the print quality improve?	Yes	Problem solved.
5	Install a known-good DC controller. Does the print quality improve?	Yes	Problem solved.

Table 25. Blank Spots/Random Pattern or Location			
Step	**Check**	**Result**	**Action**
1	Replace the toner cartridge. Does the print quality improve?	Yes	Problem solved.
2	Check the paper in the paper cassette tray for dampness. Is the paper damp?	Yes	Replace the paper.
3	Is the transfer roller dirty?	Yes	Replace the transfer roller.
4	Remove the fuser assembly and inspect the fuser heater roller and the fuser pressure roller. Are there scratches on either of the rollers?	Yes	Replace the fuser heater roller, the fuser pressure roller, or the fuser assembly.

Table 26. Toner on Back of Page			
Step	**Check**	**Result**	**Action**
1	Replace the toner cartridge. Does the print quality improve?	Yes	Problem solved.
2	Does the printer operating environment meet recommended setup and operating conditions?	No	Make recommended changes to printer operating environment or setup. See the Pre-Power-On Checklist section under “Troubleshooting the LaserWriter Select 360” for recommended setup and operating instructions.
3	Is the transfer roller dirty?	Yes	Replace the transfer roller.
4	Remove the fuser assembly and inspect the fuser heater roller and the fuser pressure roller. Are there scratches on either of the rollers?	Yes	Replace the fuser heater roller, the fuser pressure roller, or the fuser assembly.

Table 27. Paper Jams in Fuser/Delivery Area			
Step	**Check**	**Result**	**Action**
1	Initiate a service test page. Does the test page jam as it leaves the fuser assembly?	No	Problem solved.
2	Is the cable that runs to the paper delivery sensor securely connected?	No	Reconnect the cable to the paper delivery sensor.
3	Initiate another test page and observe the action of the delivery lever on the fuser assembly. Does the lever swing freely when paper passes through the fuser assembly?	No	Replace the delivery sensor lever.
4	Allow the fuser rollers to cool and then remove the fuser assembly. Inspect the fuser rollers. Are the fuser rollers worn or damaged?	Yes	Replace the fuser assembly.
5	Do the fuser rollers rotate without binding?	Yes	Replace the fuser assembly.
6	Remove the I/O shield, the I/O board, and the I/O board mount. Replace the fuser assembly and disconnect P111 from the high-voltage power supply. Connect a multimeter between connector pins P16-1 (PULLUP +5 V) and P16-2 (GND) on the DC controller board. Does the voltage measure +5 VDC when you switch on the printer?	No	Go to Table 12, Power Supply Failure (+5 V).

Paper Jams in Fuser/Delivery Area (Continued)			
Step	**Check**	**Result**	**Action**
7	Verify that the cable that runs to the paper delivery sensor is still securely connected. Connect a multimeter across connector pins P16-3 (EXIT) and P16-2 (GND) on the DC controller board. Manually actuate the paper delivery sensor by inserting a sheet of paper between the sensor arms. Does the voltage drop from +5 VDC to 0 VDC when you remove the paper from the sensor?	Yes No	Replace the DC controller board. Replace the paper delivery sensor. If the problem persists, replace the delivery sensor cable.

Table 28. Paper Jams in Paper Pickup Area			
Step	**Check**	**Result**	**Action**
1	Reload the paper cassette tray with known-good paper. Does the problem still occur?	No	Problem solved.
2	Does the jam occur when the manual feed or optional multipurpose tray is being used?	Yes	Go to Step 17.
3	Is the paper cassette installed properly in the printer?	No	Reinstall the paper cassette properly.
4	Is the paper cassette loaded with too much paper?	Yes	Remove the excess paper.
5	Are the cassette feed rollers damaged or worn?	Yes	Replace the cassette pickup rollers.
6	Are the cassette feed rollers damaged or worn?	Yes	Replace the cassette feed roller shaft.

Paper Jams in Paper Pickup Area (Continued)			
Step	**Check**	**Result**	**Action**
7	Is connector P13 on the DC controller board making good contact?	No	Reconnect P13 to the DC controller board.
8	Is connector P115 on the cassette feeder board making good contact?	No	Reconnect P115 to the cassette feeder board.
9	Are the cassette pickup and cassette feed solenoids securely connected to the cassette feeder board?	No	Reconnect P201 and P202 to the cassette feeder board.
10	Switch off the printer. Connect the multimeter between P13-7 (+24 V) and P13-8 (TURN1). Does the resistance measure between 220 and 240 Ω?	No	Replace the cassette feed solenoid.
11	Connect the multimeter between P13-10 (+24 V) and P13-11 (FEED1). Does the resistance measure between 110 and 130 Ω?	No	Replace the cassette pickup solenoid.
12	Open the front access door and locate the paper registration arm on the paper charge deflector. Is the paper registration arm damaged or broken?	Yes	Replace the paper registration arm.
13	Close the front access door and disconnect connector P16 from the DC controller board. Connect a multimeter between connector pins P16-4 (PULLUP 5 V) and P16-5 (GND) on the DC controller board. Does the voltage measure +5 VDC when you switch on the power?	No	Go to Table 12, Power Supply Failure (+5 VDC).

Paper Jams in Paper Pickup Area (Continued)			
Step	**Check**	**Result**	**Action**
14	Replace the DC controller board. Does the problem still occur?	No	Problem solved.
15	Reconnect connector P16 to the DC controller board. Connect a multimeter between pins P16-6 (/PREREG) and P16-5 (GND) on the DC controller board. Initiate a service test page. Does the voltage drop from +5 VDC to 0 VDC when the paper passes the paper registration sensor?	No	Replace the paper registration sensor located on the paper charge deflector.
16	Does the manual feed or multipurpose tray have too much paper? (The manual feed tray holds one sheet of paper at a time and the multipurpose tray holds 50 sheets of paper.)	Yes	Remove excess paper.
17	Is connector P17 on the DC controller board making good contact?	No	Reconnect connector P17 to the DC controller board.
18	Open the front access door and observe the rollers on the pickup roller assembly. Are the pickup rollers worn or deformed?	Yes	Replace the pickup rollers.
19	Using a paper clip or screw-driver, manually activate the manual feed solenoid. Manually rotate the large black gear on the pickup roller assembly toward the manual feed solenoid. Does the pickup roller rotate without binding?	No	Replace the pickup roller assembly.

Paper Jams in Paper Pickup Area (Continued)			
Step	**Check**	**Result**	**Action**
20	Disconnect P111 from the high-voltage power supply. Connect the multimeter between connector pins P17-1 (+24 V) and P11-2 (GND) on the DC controller board. Does the voltage measure +24 VDC when you switch on the printer?	No	Go to Table 11, Power Supply Failure (+24 VDC).
21	Connect the printer to a computer and place a sheet of paper on the manual feed or multipurpose tray. Connect the multimeter between connector pins P17-2 (+24 V) and P11-2 (GND) on the DC controller board. Select Manual Feed and print a page. Does the voltage drop from +24 VDC to 0 VDC when the manual feed pickup solenoid is actuated?	No Yes	Replace the manual feed pickup solenoid. Replace the DC controller board.

Table 29. No Paper Pickup From Cassette			
Step	**Check**	**Result**	**Action**
1	Is connector P13 on the DC controller board making good contact?	No	Reconnect P13 to the DC controller board.
2	Is connector P115 on the cassette feeder board making good contact?	No	Reconnect P115 to the cassette feeder board.
3	Is cassette feed solenoid connector P202 securely connected to the cassette feeder board?	No	Reconnect P202 to the cassette feeder board.

No Paper Pickup From Cassette (Continued)			
Step	**Check**	**Result**	**Action**
4	Is cassette pickup solenoid connector P201 securely connected to the cassette feeder board?	No	Reconnect P201 to the cassette feeder board.
5	Remove the paper cassette tray. Visually inspect the paper sensing arm. Does the paper sensing arm appear to be damaged?	Yes	Replace the paper sensing arm.
6	Prepare the printer for troubleshooting as described in the “Troubleshooting Preparation” section. Switch off the printer. Connect the multimeter between P13-7 (+24 V) and P13-8 (/TURN1). Does the resistance measure between 220 and 240 Ω?	No	Replace the cassette pickup solenoid.
7	Connect the multimeter between P13010 (+24 V) and P13-11 (/FEED1). Does the resistance measure between 110 and 130 Ω?	No	Replace the cassette feed solenoid.
8	If only one paper cassette is installed, connect a multimeter between connector pins P13-1 (NO PAPER1) and P13-4 (GND) on the DC controller board. While you remove and insert a paper cassette tray filled with paper, does the voltage toggle from 0 VDC (inserted) to +5 VDC (removed)?	No	Replace the cassette feeder board. If the problem persists, replace the cassette feeder tray.

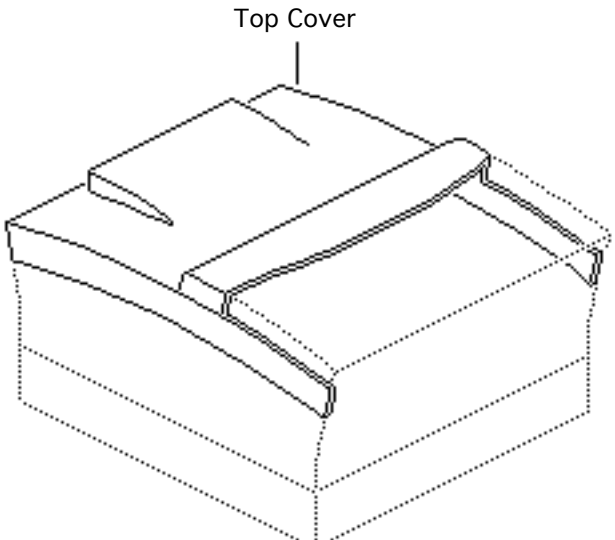
No Paper Pickup From Cassette (Continued)			
Step	**Check**	**Result**	**Action**
9	Replace the DC controller board. Does the problem still occur?	No	Problem solved.
10	If an optional paper cassette is installed, connect a multimeter between connector pins P13-3 (NO PAPER2) and P13-4 (GND) on the DC controller board. While you remove and insert a paper cassette tray filled with paper, does the voltage toggle from 0 VDC (inserted) to +5 VDC (removed)?	No	Replace the cassette feeder board. If the problem persists, replace the expansion feeder cable.

Table 30. No Paper Pickup From Manual Feed or Multipurpose Tray			
Step	**Check**	**Result**	**Action**
1	Is connector P17 on the DC controller board making good contact?	No	Reconnect P17 to the DC controller board.
2	Is connector P16 on the DC controller board making good contact?	No	Reconnect P16 to the DC controller board.
3	Disconnect connector P111 from the high-voltage power supply. Disconnect connector P16 from the DC controller board. Connect the multimeter between connector pins p16-7 (PULLUP 5 V) and P16-8 (GND). Does the voltage measure +5 VDC when you switch on the power?	No	Go to Table 12, Power Supply Failure (+5 VDC).

No Paper Pickup From Manual Feed or Multipurpose Tray (Continued)			
Step	**Check**	**Result**	**Action**
4	Connect the multimeter between connector pins P16-9 (No Paper) and P16-8 (GND). Does the voltage measure +5 VDC when you switch on the power?	No	Replace the DC controller board.
5	Connect the multimeter between connector pins p16-9 (No Paper) and P16-8 (GND). Does the voltage drop from +5 VDC to 0 VDC when you place a sheet of paper on the manual feed tray?	No	Replace the manual feed sensor. If the problem persists, replace the manual feed sensor cable.
6	Connect the multimeter between connector pins P17-1 (24 V) and P11-2 (GND) on the DC controller board. Does the voltage measure +24 VDC when you switch on the printer?	No	Go to Table 11, Power Supply Failure (+24 VDC).
7	Switch off the printer. Connect a multimeter between pins P17-1 (24 V) and P17-2 (/FEED). Does the resistance measure between 210 and 230 Ω?	No Yes	Replace the manual feed pickup solenoid. Replace the DC controller board.

Take Apart

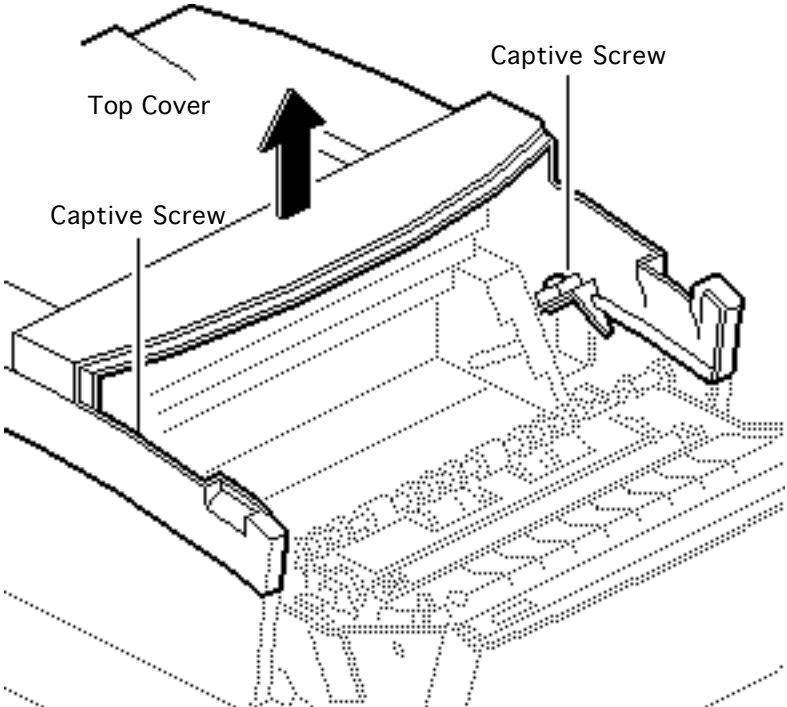
LaserWriter Select



Top Cover

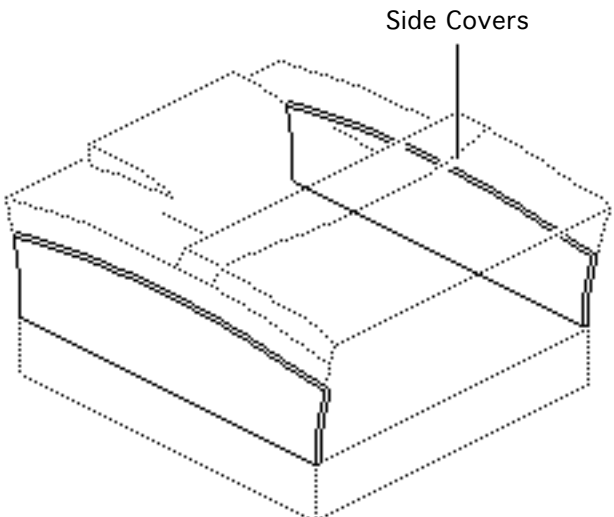
No preliminary steps are required before you begin this procedure.

1 Open the front access door.

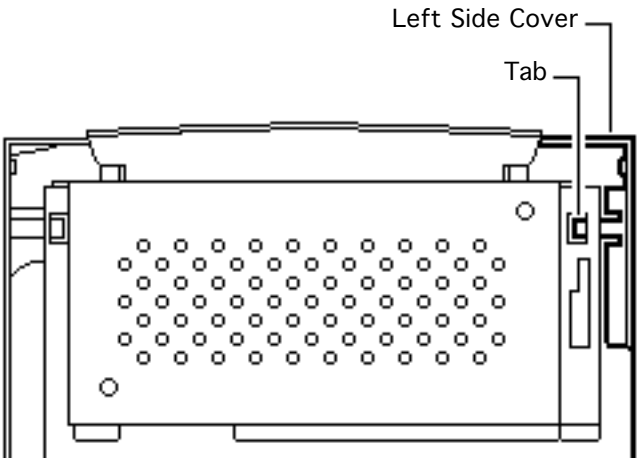


2 Loosen the two captive screws and lift off the top cover.

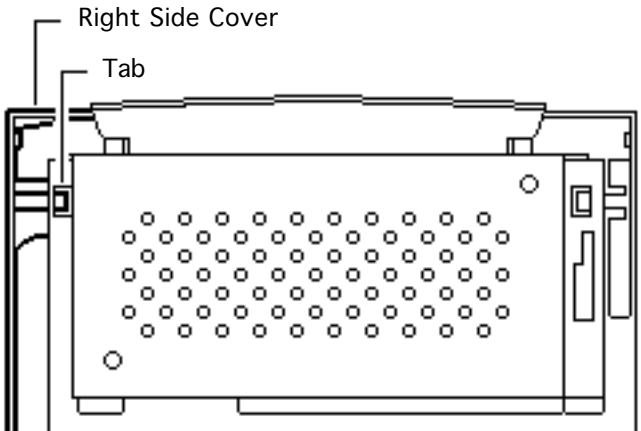
Side Covers



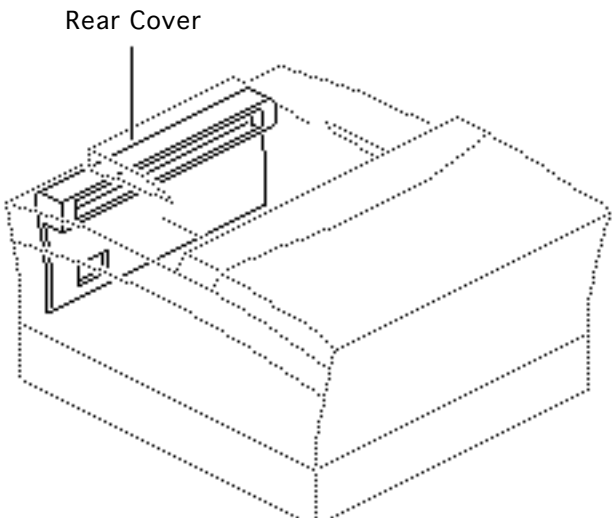
Before you begin, remove the top cover.



1 Release the tab that secures the left side cover and lift off the cover.



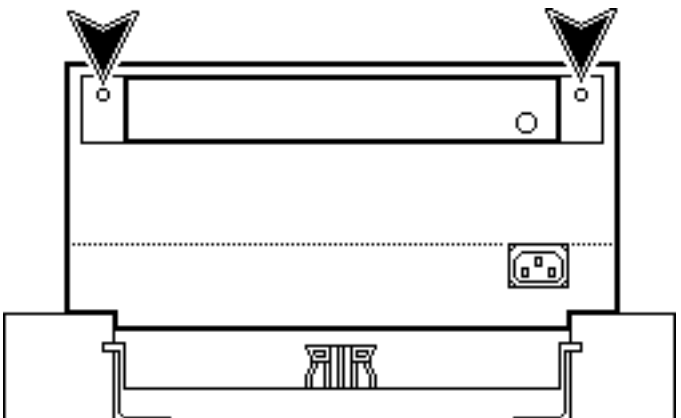
2 Release the tab that secures the right side cover and lift off the cover.



Rear Cover

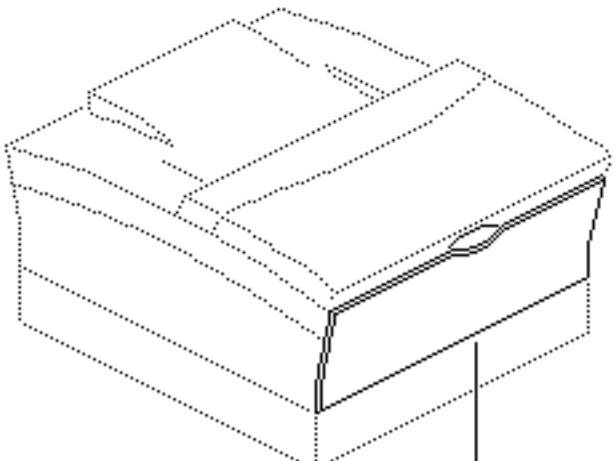
No preliminary steps are required before you begin this procedure.

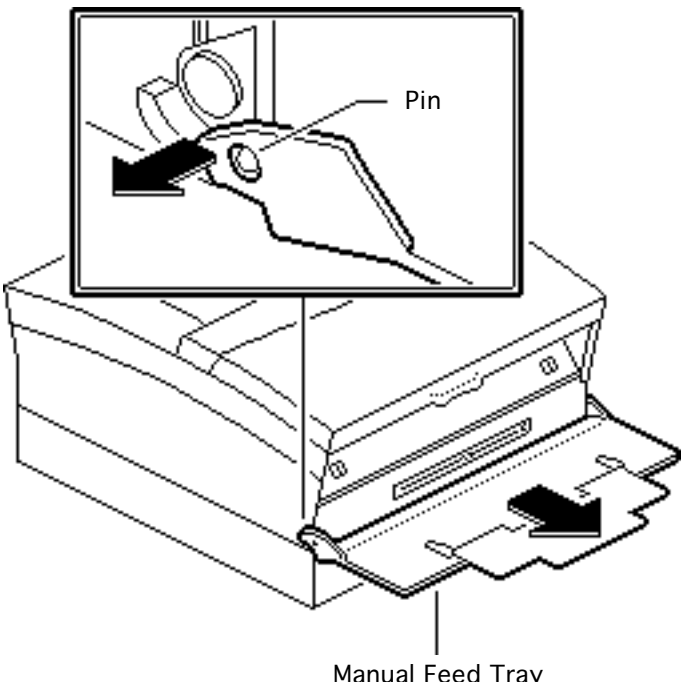
1 Remove the two mounting screws and lift off the rear cover.



Manual Feed Tray

No preliminary steps are required before you begin this procedure.



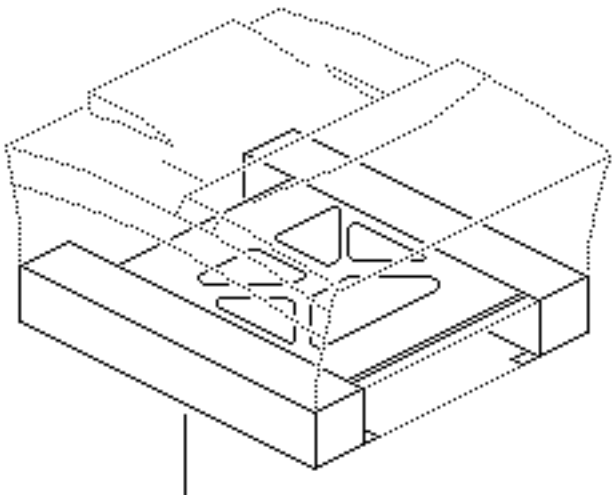


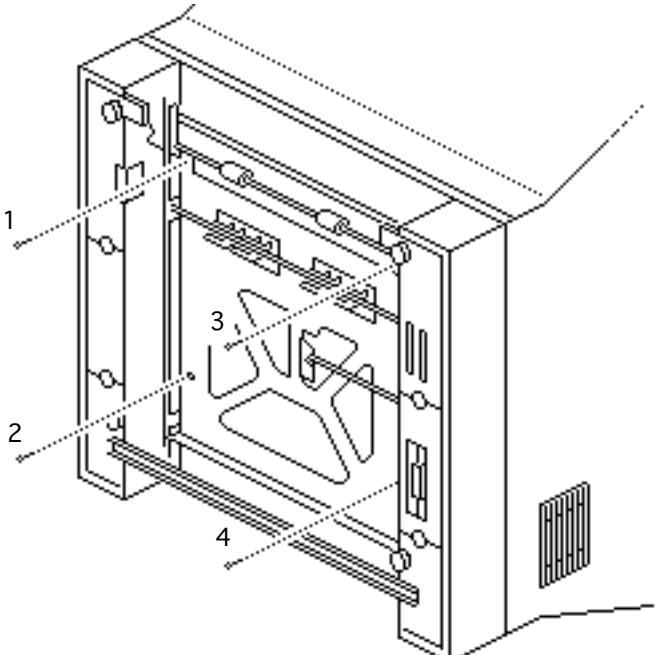
1 Open the manual feed tray.

2 Pull out each side and release the tray from the pins on the front access door.

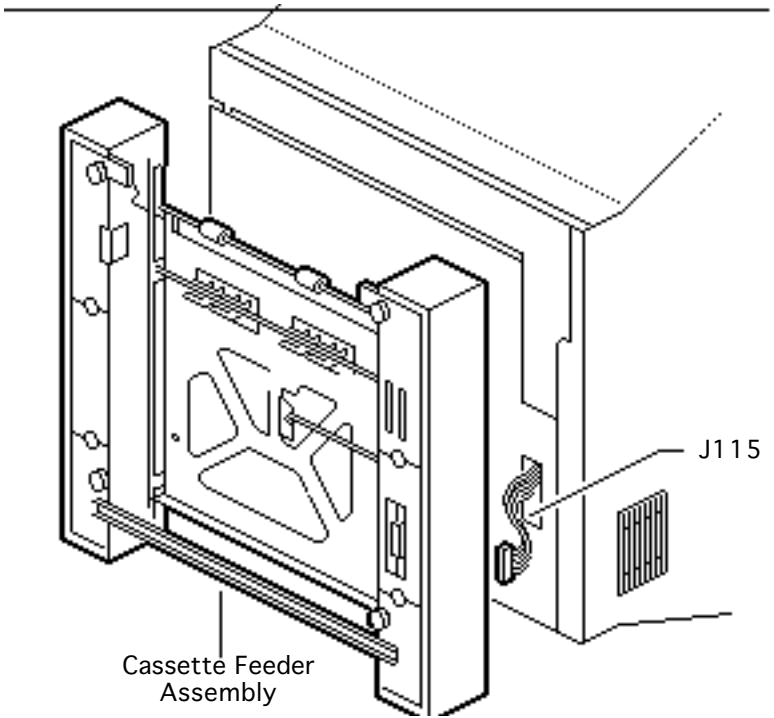
Cassette Feeder Assembly

No preliminary steps are required before you begin this procedure.





1. Rest the printer on the rear cover.
2. Remove the four mounting screws.

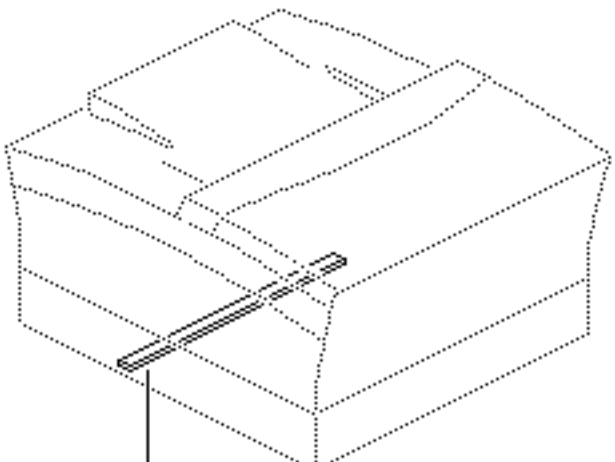


3 Tilt back the printer chassis slightly to separate it from the cassette feeder assembly.

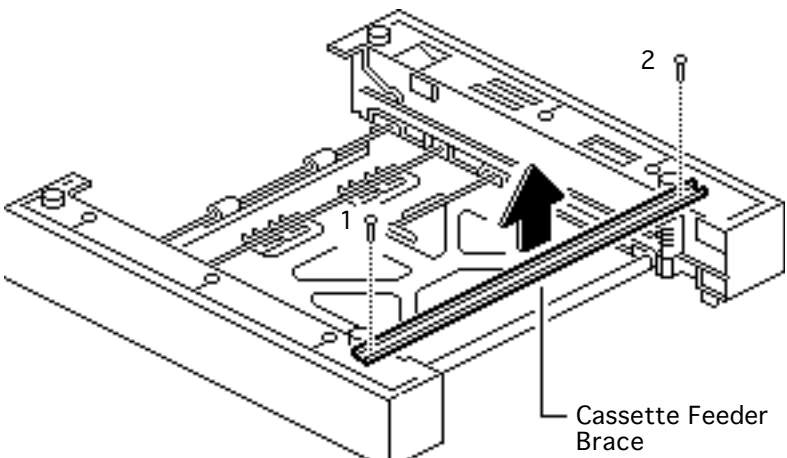
4 Disconnect connector J115 and lift off the cassette feeder assembly.

Cassette Feeder Brace

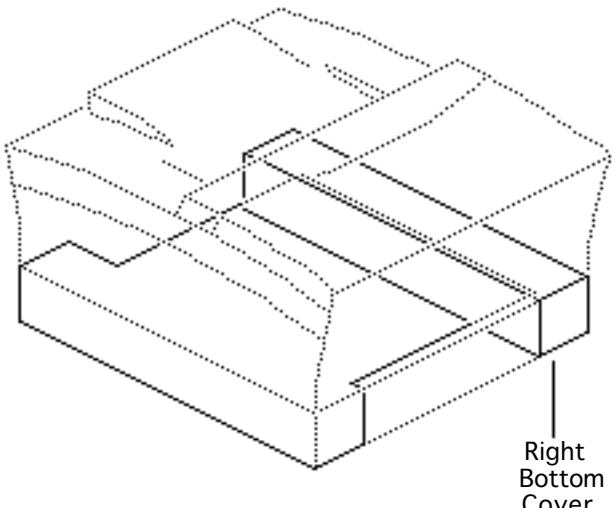
Before you begin, remove the cassette feeder assembly.



1 Remove the two screws and lift off the cassette feeder brace.



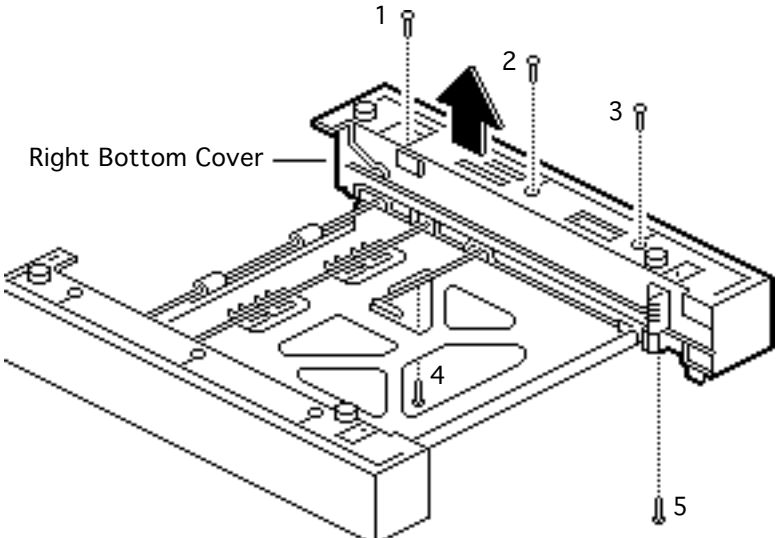
Right Bottom Cover

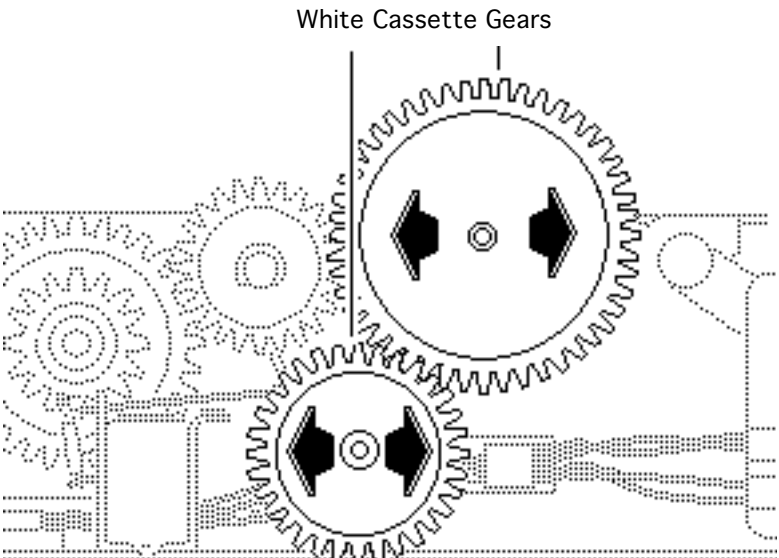


Before you begin, remove the following:

- Cassette feeder assembly
- Cassette feeder brace

1 Remove the five screws and lift off the right bottom cover.



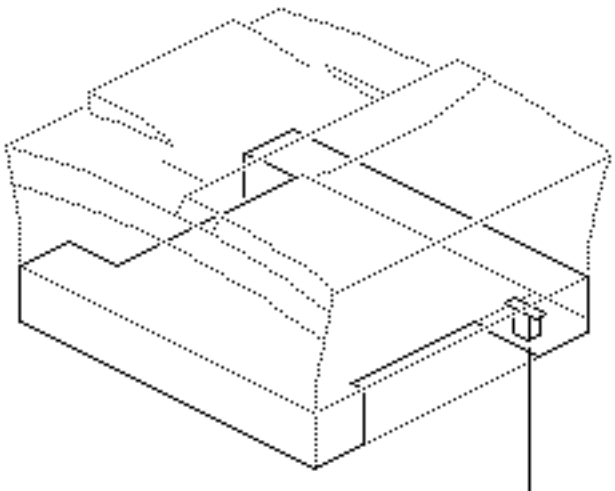


2 Slide the two white cassette gears off their shafts.

Replacement Note: Install the two cassette gears on their shafts before replacing the right bottom cover.

Replacement Note: Make sure that the two cassette gears mesh properly with the gear train.

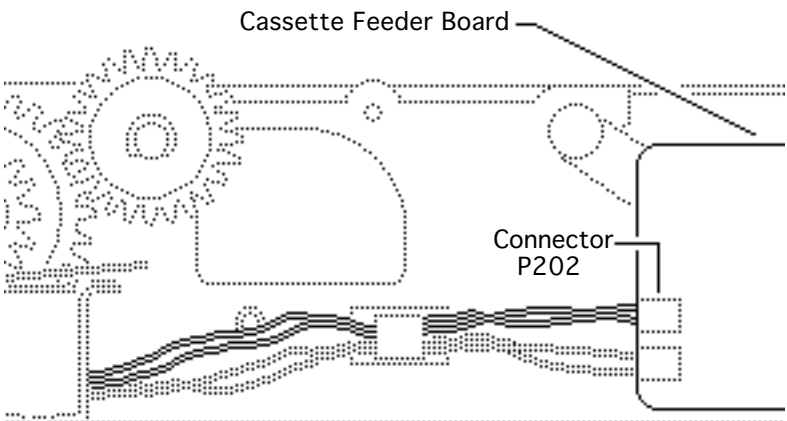
Cassette Feed Solenoid



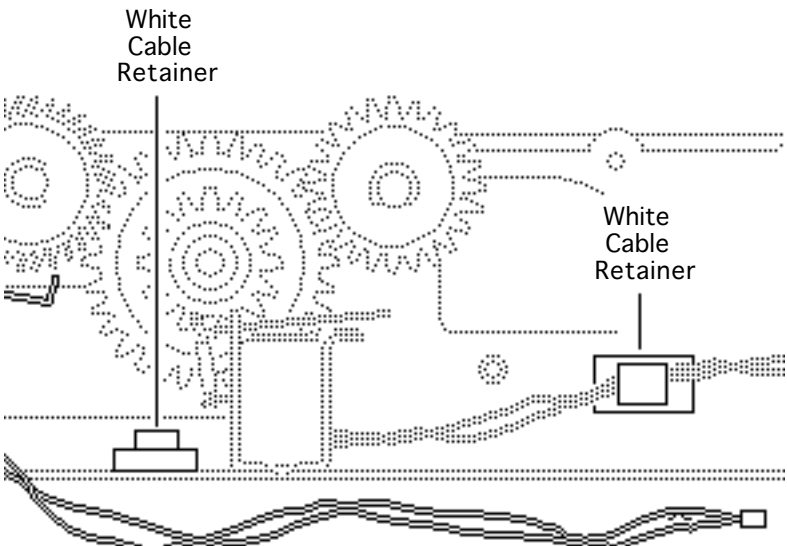
Before you begin, remove the following:

- Cassette feeder assembly
- Cassette feeder brace
- Right bottom cover

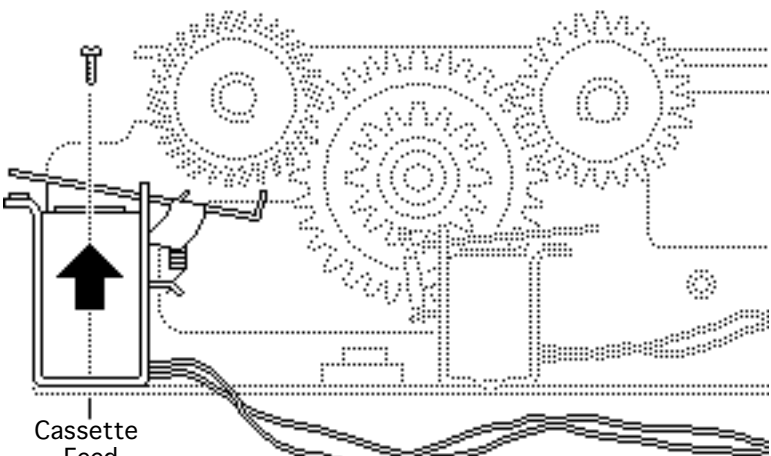
1 Disconnect connector P202 (the white connector).



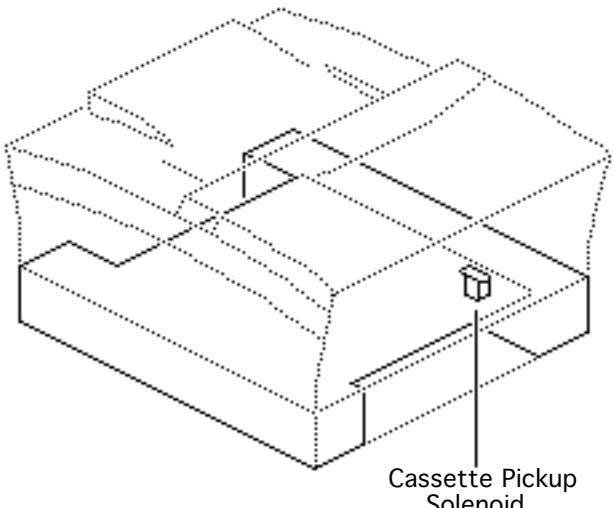
2 Remove the connector cable from the two white cable retainers.



3 Remove the screw and lift out the cassette feed solenoid.



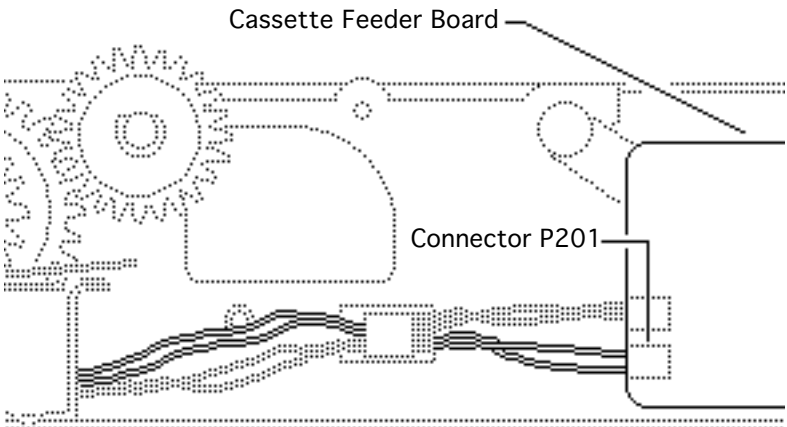
Cassette Pickup Solenoid



Before you begin, remove the following:

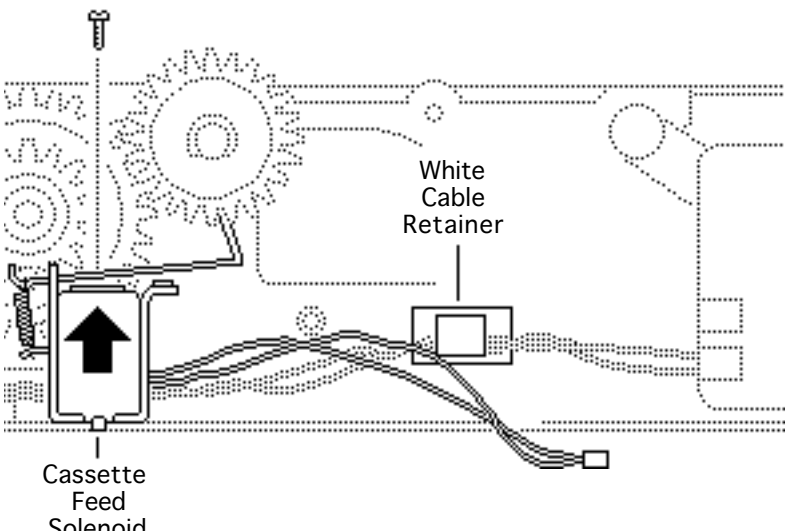
- Cassette feeder assembly
- Cassette feeder brace
- Right bottom cover

1 Disconnect connector P201 (the red connector).



2 Remove the connector cable from the white cable retainer.

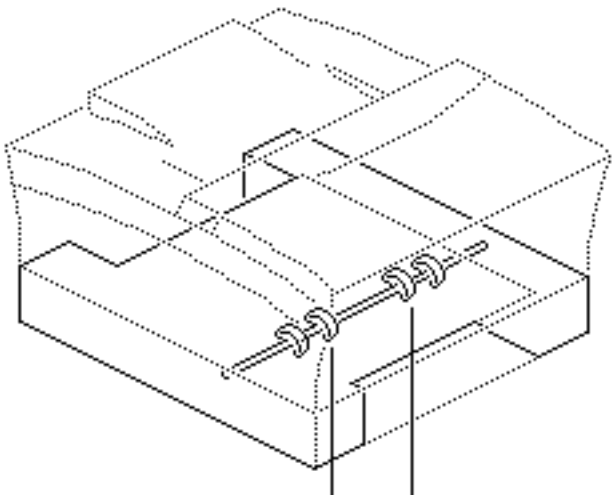
3 Remove the screw and lift out the cassette pickup solenoid.

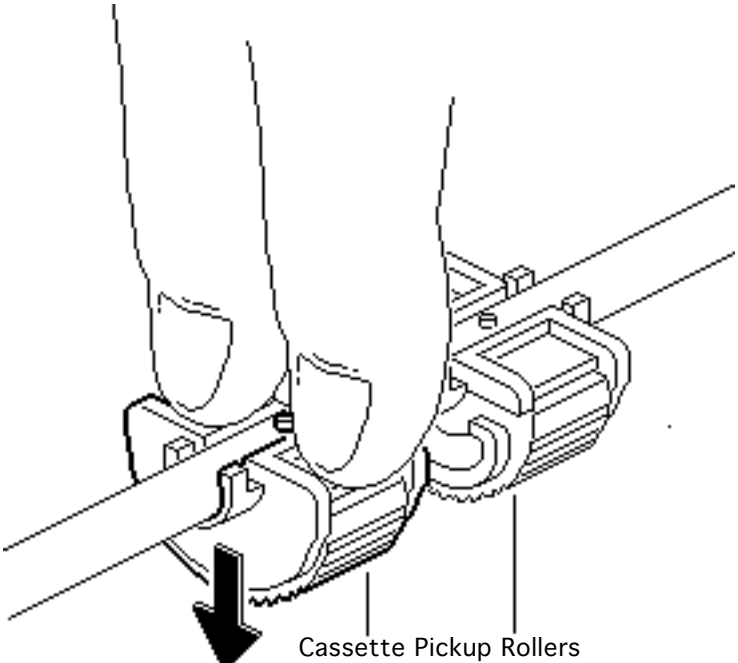


Cassette Pickup Rollers

Before you begin, remove the following:

- Cassette feeder assembly
- Cassette feeder brace



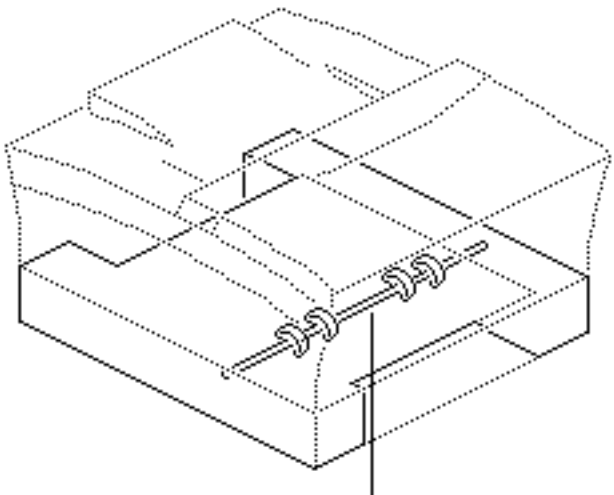


1 Secure the cassette pickup roller shaft with one hand.

2 Using your fingers, press down on the cassette pickup rollers and release them from the roller shaft.

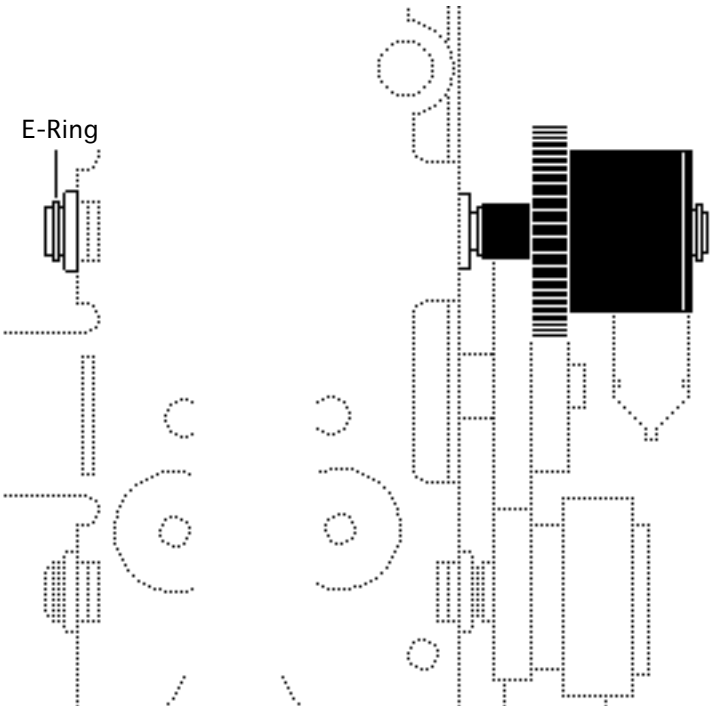
3 Lift out the cassette pickup rollers.

Cassette Pickup Roller Shaft



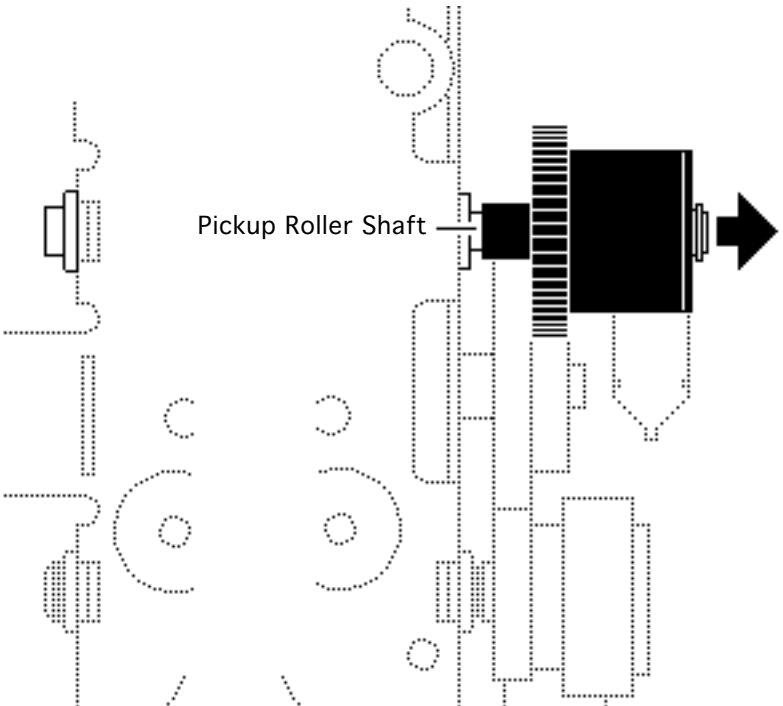
Before you begin, remove the following:

- Cassette feeder assembly
- Cassette feeder brace
- Right bottom cover



1 Remove the E-ring and bushing on the left side of the pickup roller shaft.

2 Slide the bushing on the right side of the shaft out of its slot.



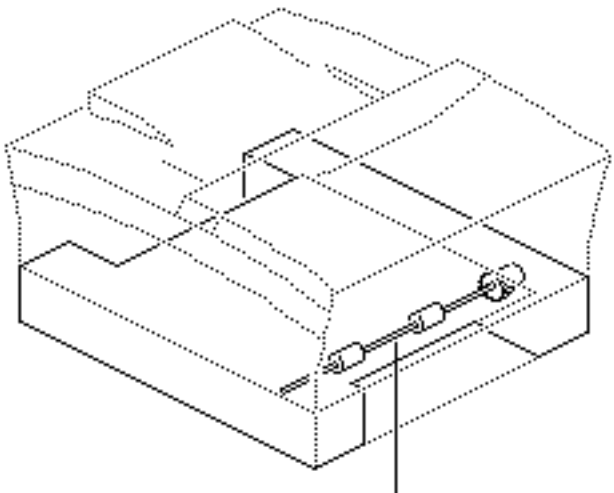
3 Slide the cassette pickup roller shaft out of the opening.

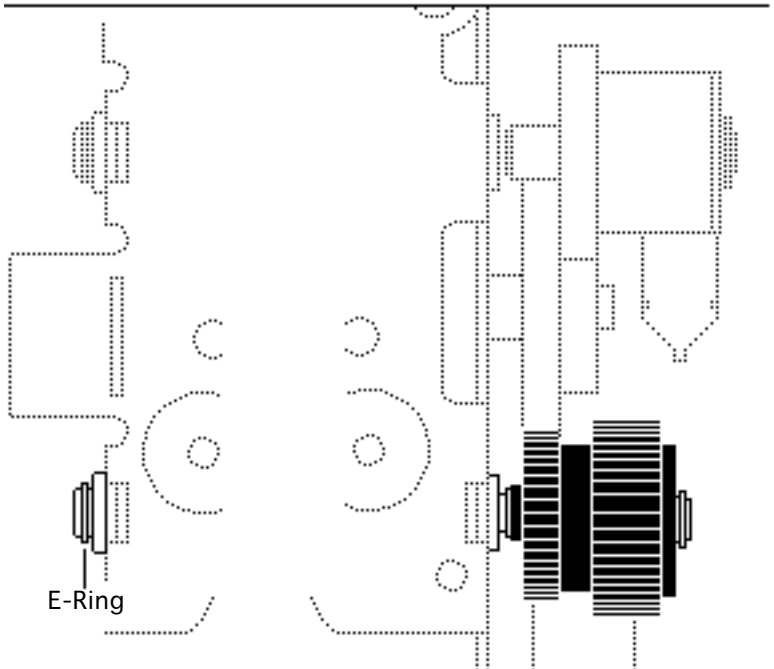
Replacement Note: Install the bushings in the slots at each end of the cassette feeder assembly.

Cassette Feed Roller Shaft

Before you begin, remove the following:

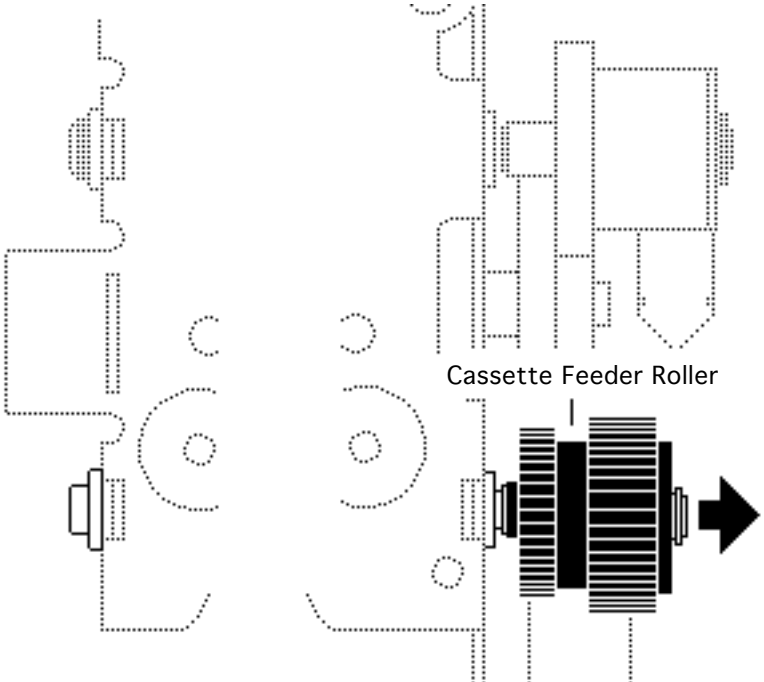
- Cassette feeder assembly
- Cassette feeder brace
- Right bottom cover





1 Remove the E-ring and bushing on the left side of the feed roller shaft.

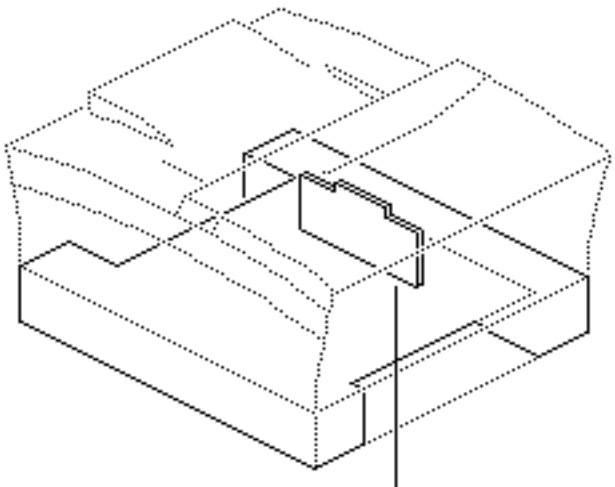
2 Slide the bushing on the right side of the shaft out of its slot.



3 Pull the cassette feed roller shaft out of the opening.

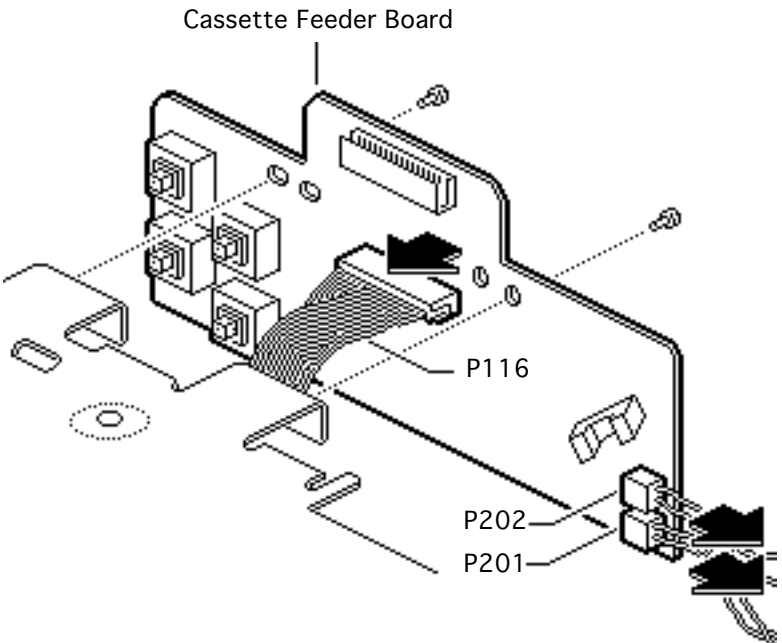
Replacement Note: Install the bushings in the slots at each end of the cassette feeder assembly.

Cassette Feeder Board



Before you begin, remove the following:

- Cassette feeder assembly
- Cassette feeder brace
- Right bottom cover

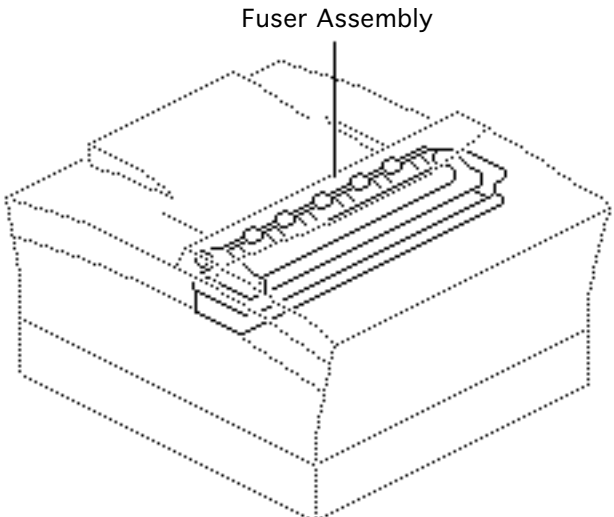


1 Remove the two screws that secure the cassette feeder board to the cassette feeder assembly.

2 Disconnect the following connectors:
- P116
- P201
- P202

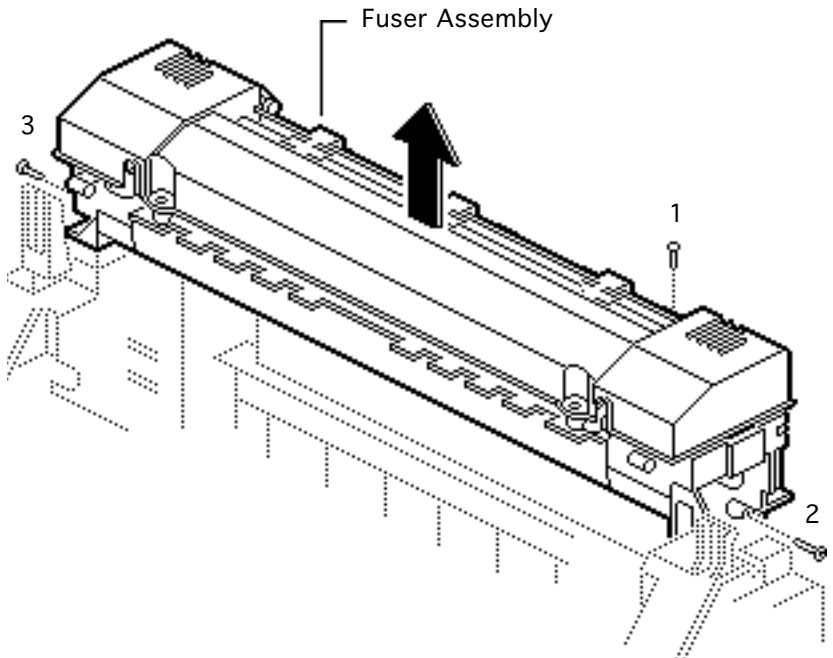
3 Lift out the cassette feeder board.

Fuser Assembly



Before you begin, remove the following:

- Top cover
- Side covers

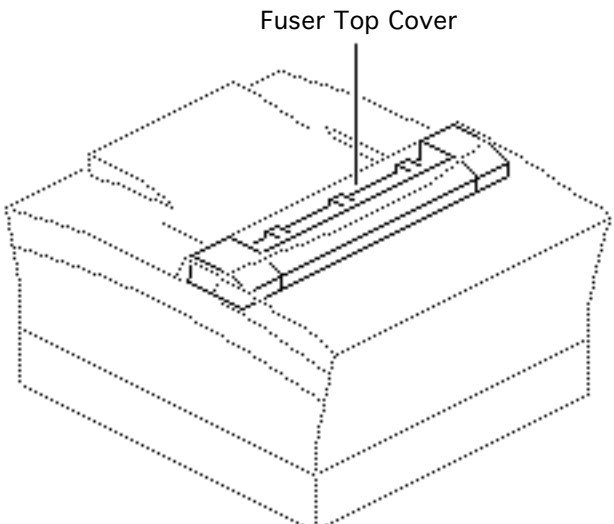


1 Remove the three screws that secure the fuser assembly to the printer chassis.

2 Lift out the fuser assembly.

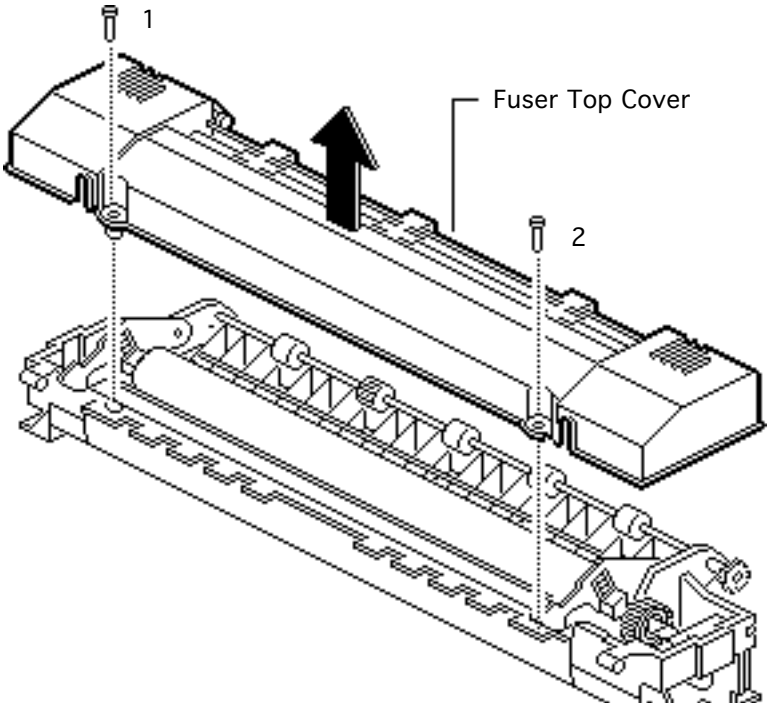
Replacement Note:
Make sure that connector J101 on the fuser assembly makes proper contact with the connector receptacle on the printer chassis.

Fuser Top Cover

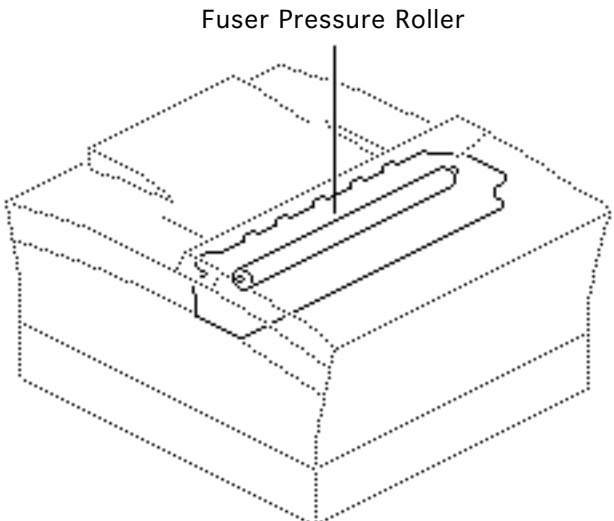


Before you begin, remove the following:

- Top cover
- Side covers
- Fuser assembly



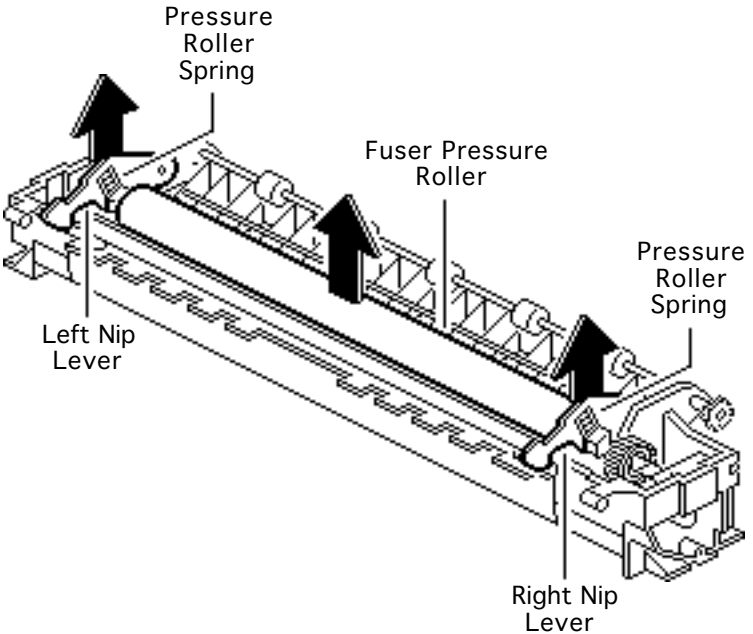
1 Remove the two screws and lift off the fuser top cover.



Fuser Pressure Roller

Before you begin, remove the following:

- Top cover
- Side covers
- Fuser assembly
- Fuser top cover



Note: The pressure roller springs and bearings easily fall off the nip levers.

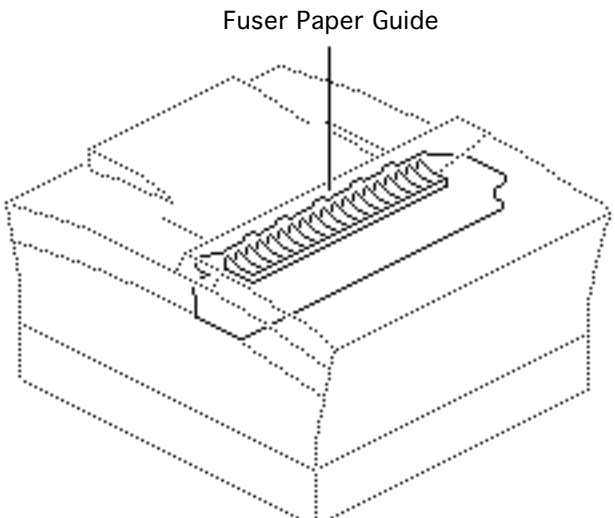
1 Lift up the left and right nip levers.

2 Remove the pressure roller springs and bearings and set them aside.

3 Lift out the fuser pressure roller.

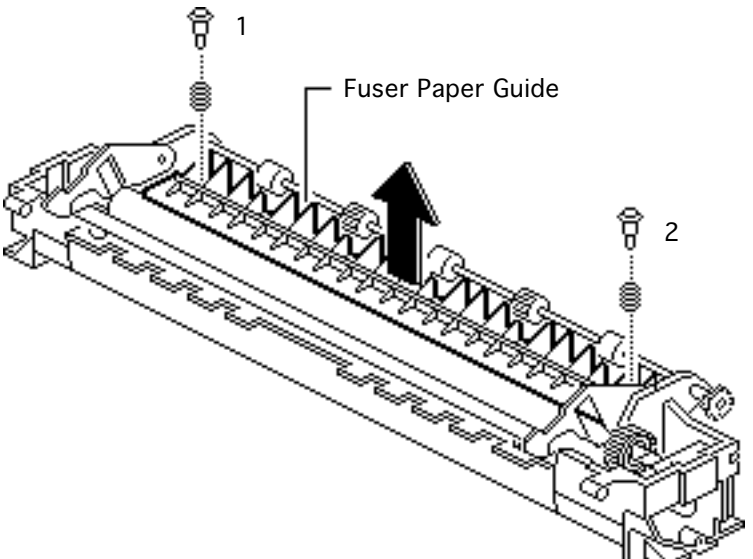
Replacement Note: Install the springs and bearings in the slots on the left and right nip levers.

Fuser Paper Guide

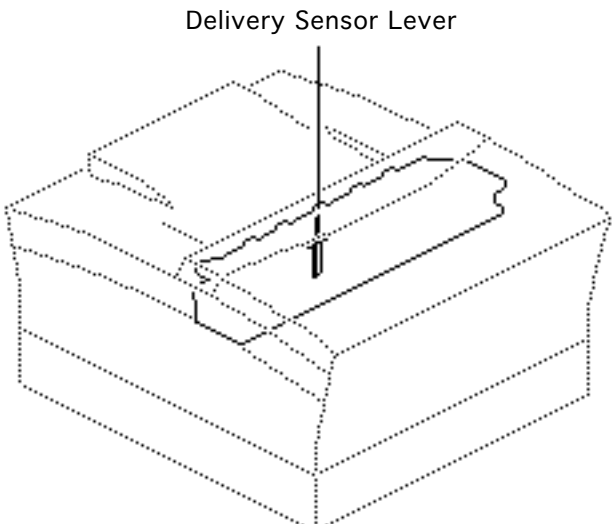


Before you begin, remove the following:

- Top cover
- Side covers
- Fuser assembly
- Fuser top cover
- Fuser pressure roller



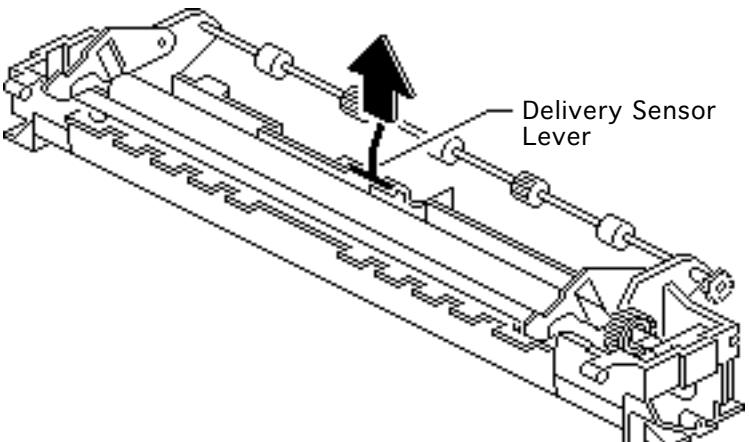
1 Remove the two screws and springs and lift out the fuser paper guide.



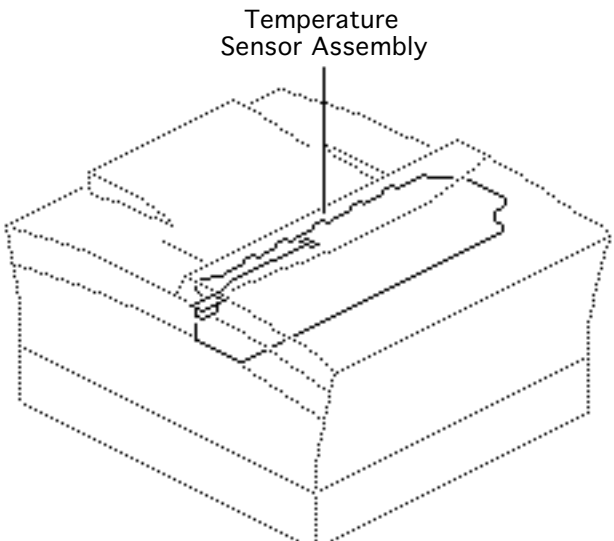
Delivery Sensor Lever

Before you begin, remove the following:

- Top cover
- Side covers
- Fuser assembly
- Fuser top cover
- Fuser pressure roller
- Fuser paper guide



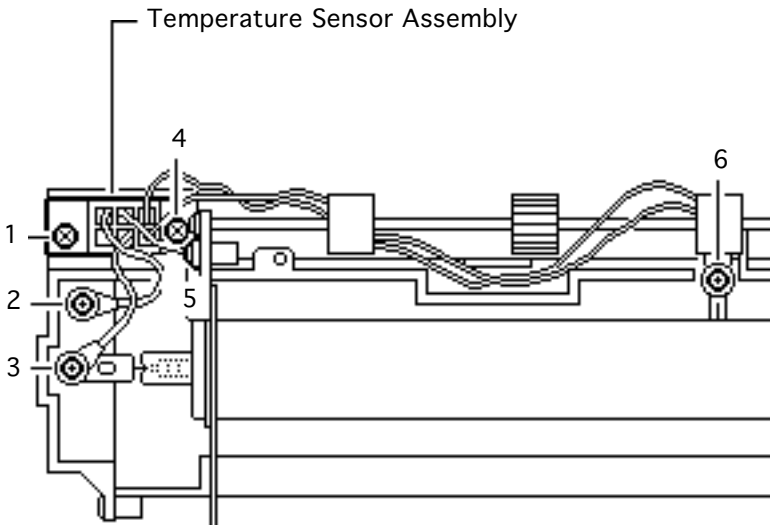
1 Lift the delivery sensor lever straight up, twist it slightly to the left or right, and remove it from the fuser assembly.



Temperature Sensor Assembly

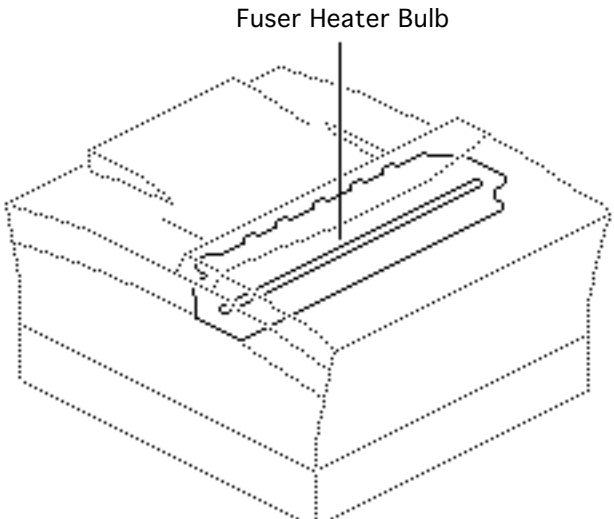
Before you begin, remove the following:

- Top cover
- Side covers
- Fuser assembly
- Fuser top cover
- Fuser pressure roller
- Fuser paper guide



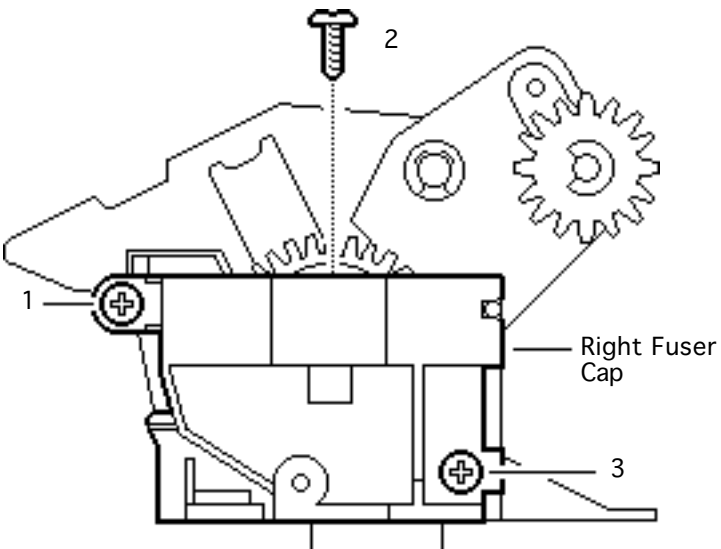
1 Remove the six screws and lift out the temperature sensor assembly.

Fuser Heater Bulb



Before you begin, remove the following:

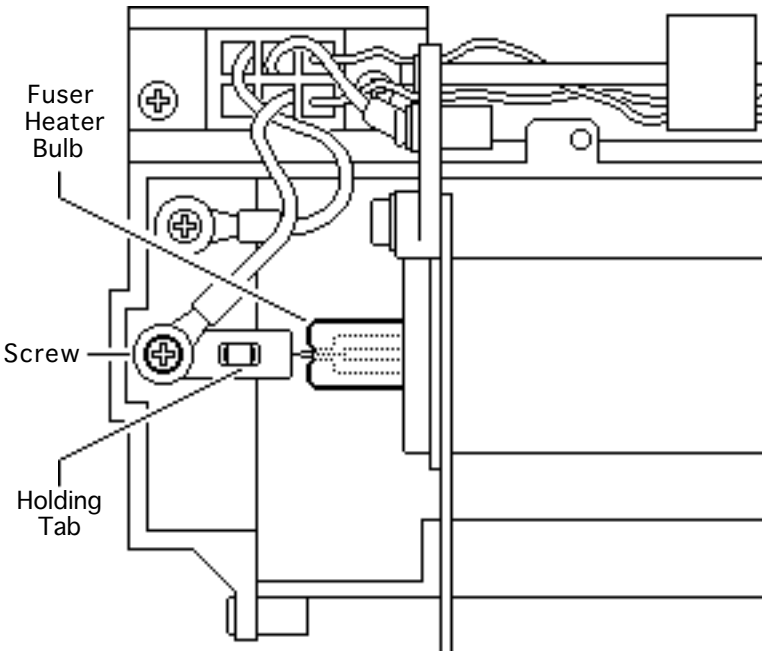
- Top cover
- Side covers
- Fuser assembly
- Fuser top cover
- Fuser pressure roller



1 Remove the three screws that secure the right fuser side cap to the fuser assembly.

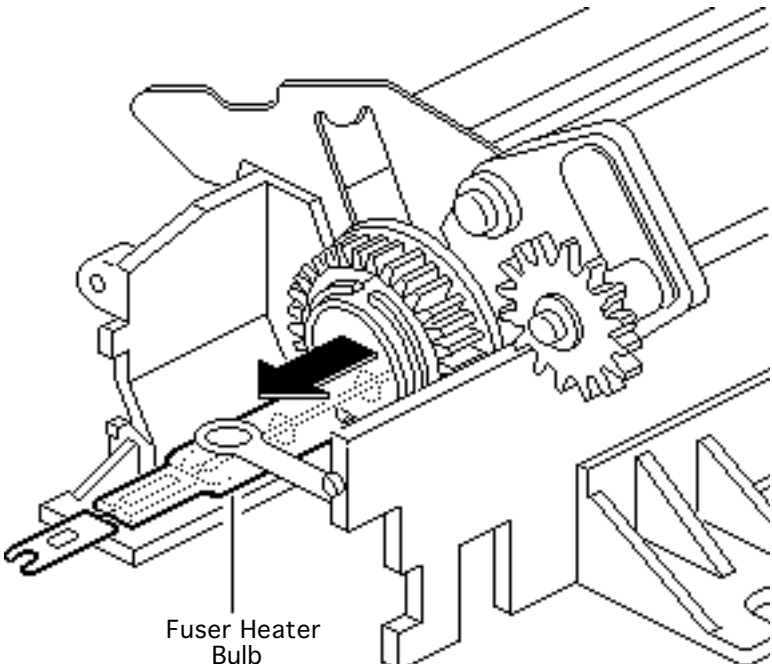
2 **Note:** In the next step, the gear and gear shaft may fall off. Keep these parts in a safe place. You will need them when you replace the right fuser side cap.

Pull the right fuser side cap away from the fuser frame.



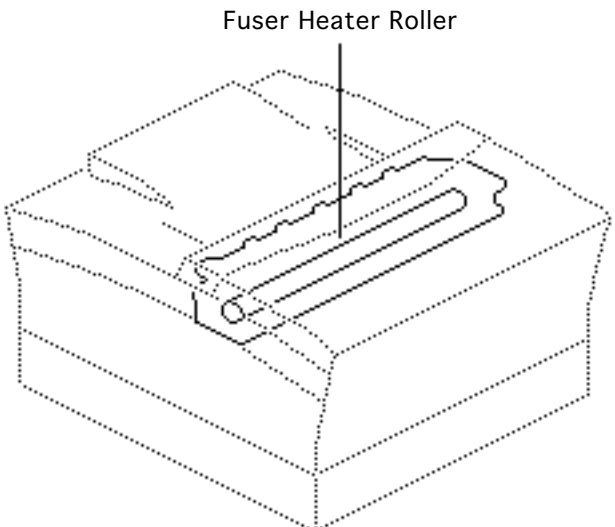
3 Remove the screw that secures the fuser heater bulb to the left fuser side cap.

4 Free the heater bulb from the holding tab.



5 **Caution:** Be careful not to touch the surface of the heater bulb. If you accidentally touch the bulb, clean it with isopropyl alcohol.

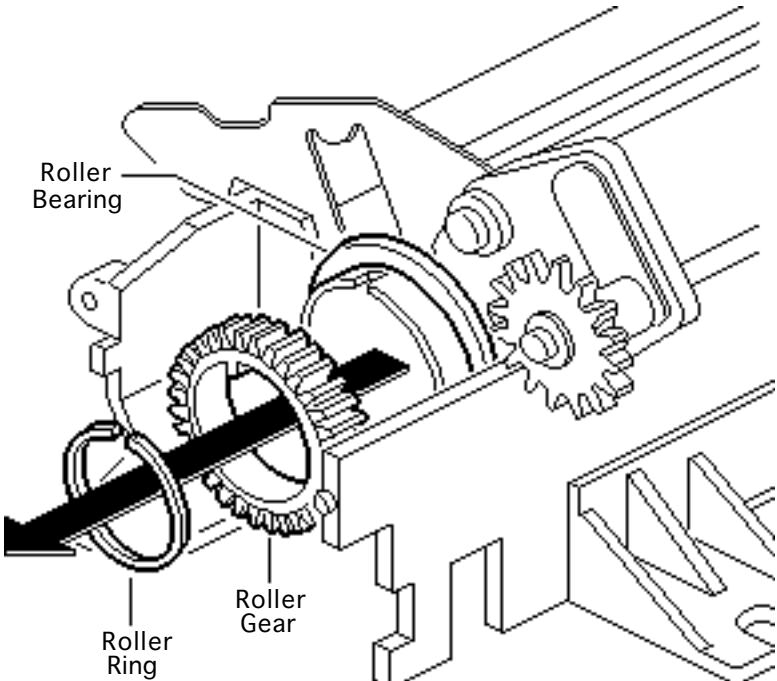
Carefully pull the fuser heater bulb out of the fuser heater roller.



Fuser Heater Roller

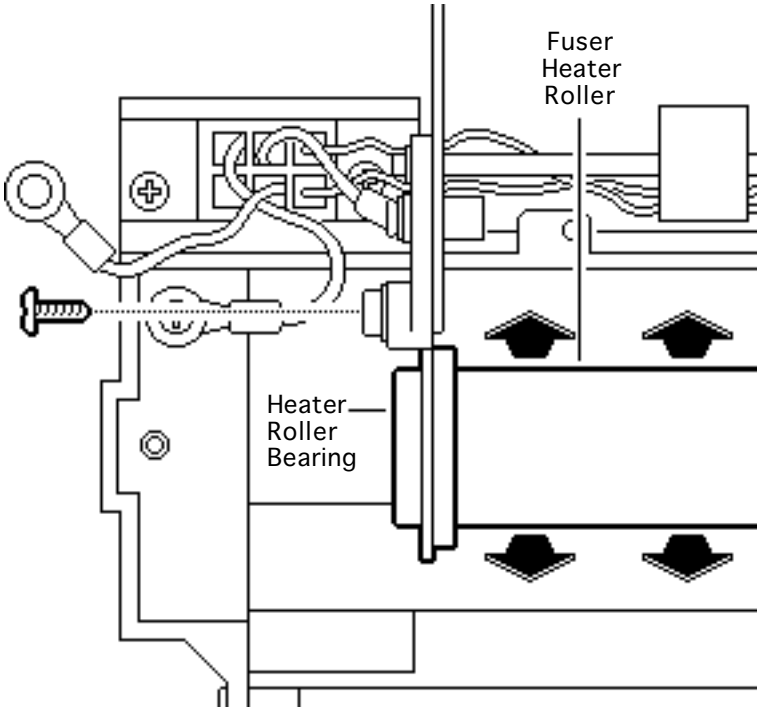
Before you begin, remove the following:

- Top cover
- Side covers
- Fuser assembly
- Fuser top cover
- Fuser pressure roller
- Fuser paper guide
- Fuser heater bulb

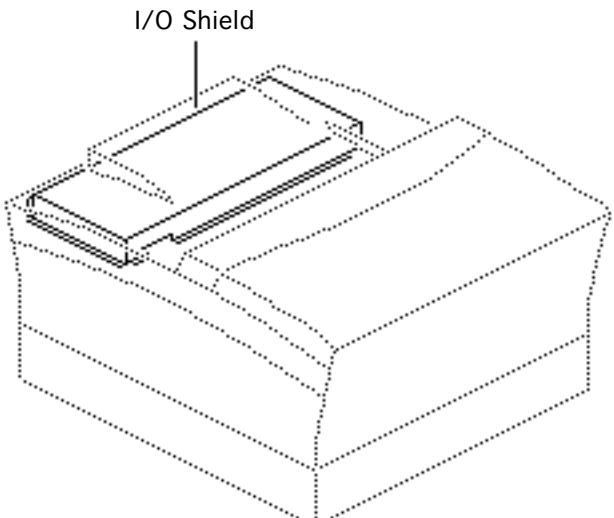


1 Using needlenose pliers, remove the right fuser heater roller ring.

2 Remove the right fuser heater roller gear and bearing.



3 Remove the screw and lift out the fuser heater roller.

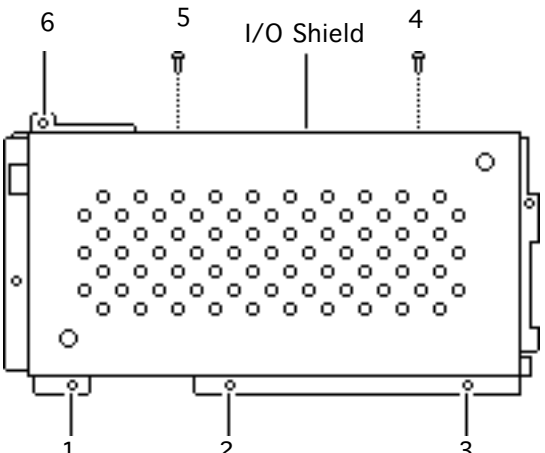


I/O Shield

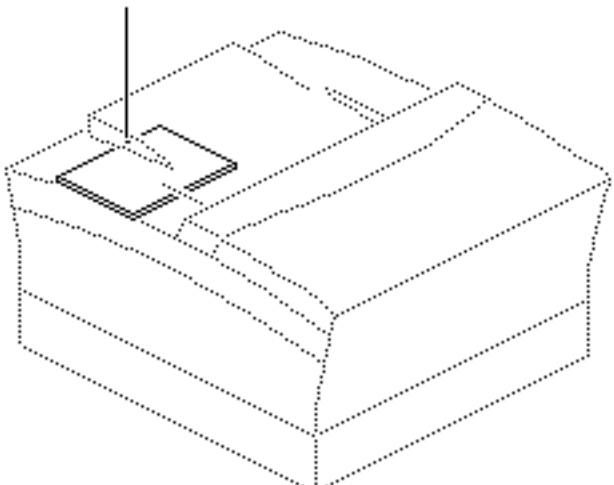
Before you begin, remove the following:

- Top cover
- Side covers
- Rear cover

1 Remove the six mounting screws and lift the I/O shield from the chassis.



I/O Controller (300)

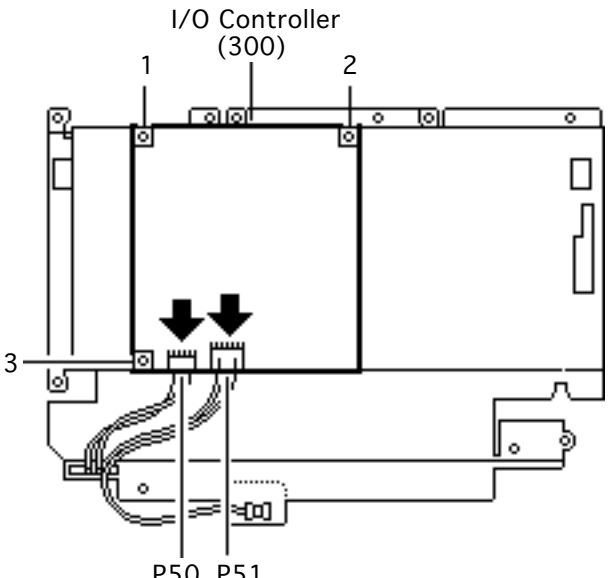


I/O Controller (300)

Before you begin, remove the following:

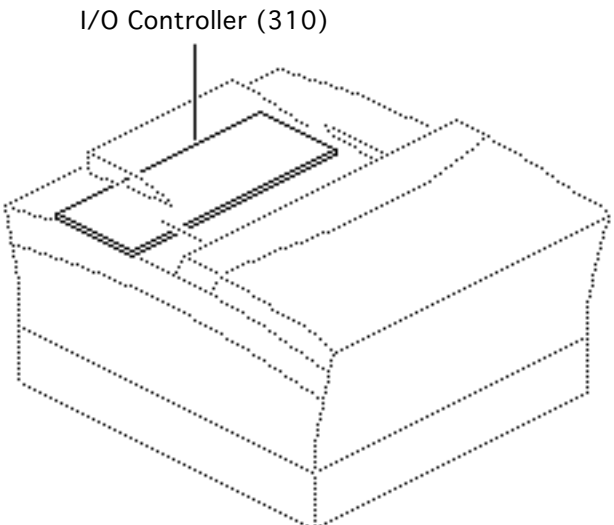
- Top cover
- Side covers
- Rear cover
- I/O shield

Note: If the I/O board is removed from the printer, the LEDs no longer function.



1 Disconnect connectors P50 and P51.

2 Remove the three mounting screws and lift out the I/O controller.

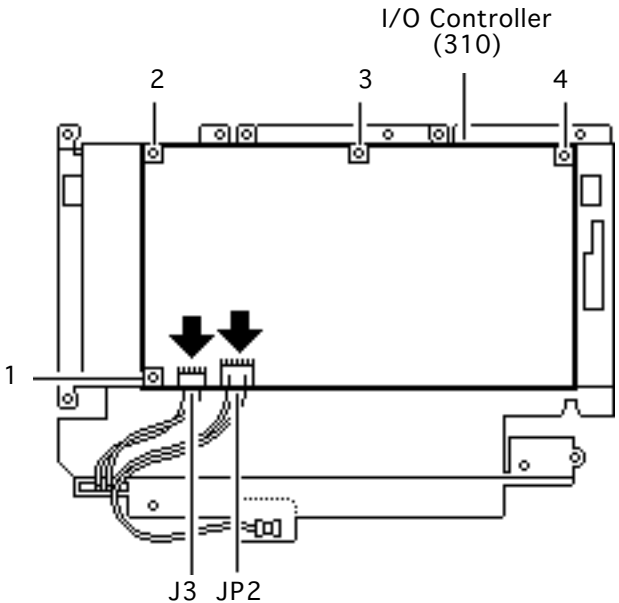


I/O Controller (310)

Before you begin, remove the following:

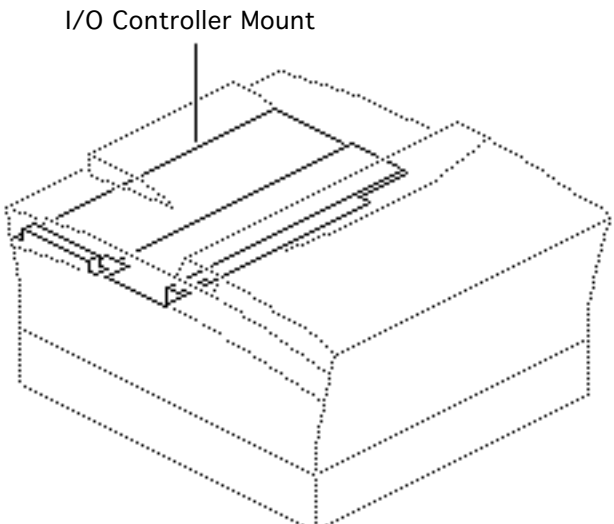
- Top cover
- Side covers
- Rear cover
- I/O shield

Note: If the I/O board is removed from the printer, the LEDs no longer function.



1 Disconnect connectors J3 and JP2.

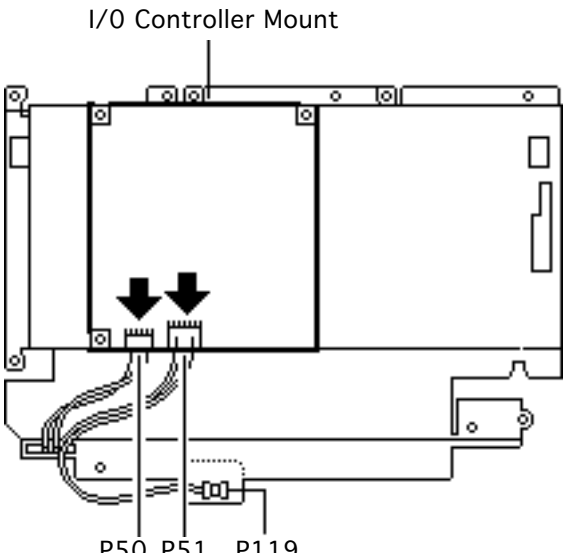
2 Remove the four mounting screws and lift the I/O controller from the chassis.



I/O Controller Mount

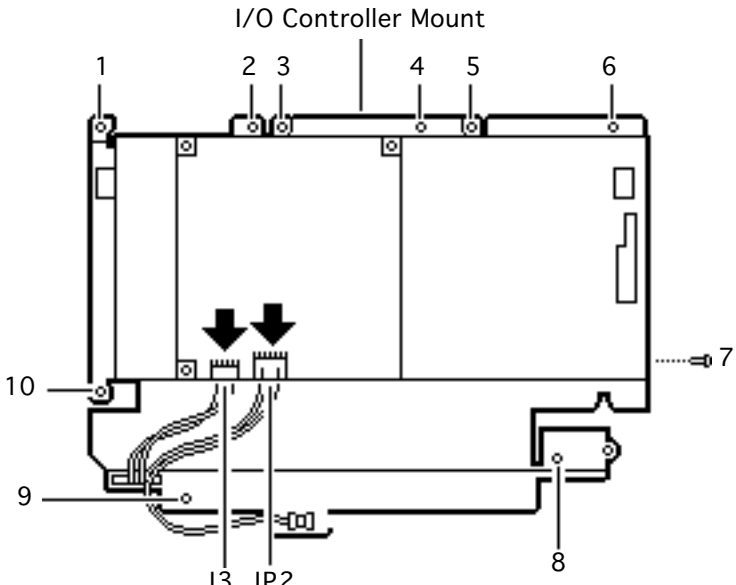
Before you begin, remove the following:

- Top cover
- Side covers
- Rear cover
- I/O shield



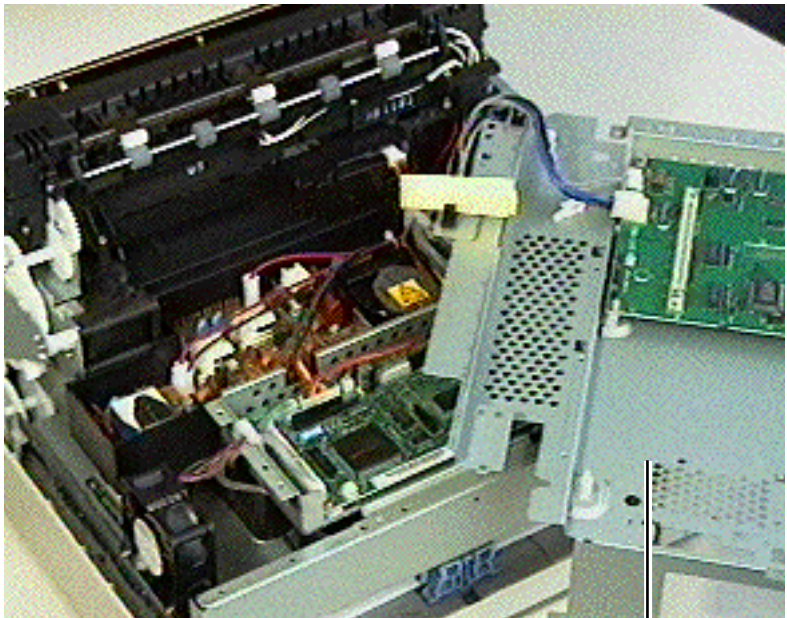
1 Disconnect connector P119.

2 If the I/O controller (300) is installed, disconnect connectors P50 and P51.

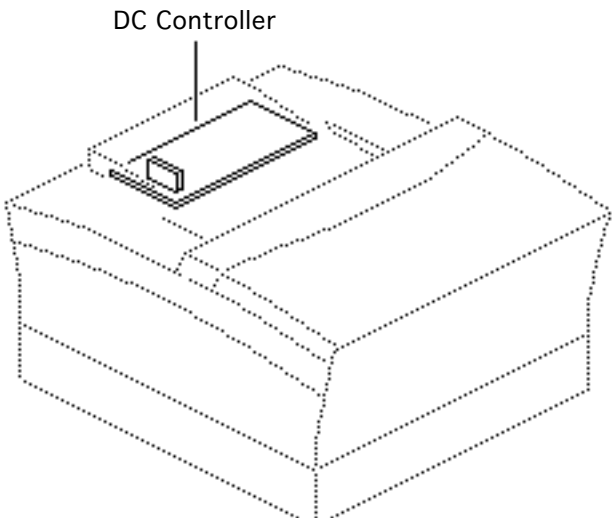


3 If the I/O controller (310) is installed, disconnect connectors J3 and JP2.

4 Remove the ten mounting screws and lift the I/O controller mount from the chassis.



Note: Refer to "Test-Ready Configuration" in Basics for information regarding special handling of the I/O controller mount during troubleshooting. The photo on the left shows how the mount is positioned when the printer is in a test-ready state.

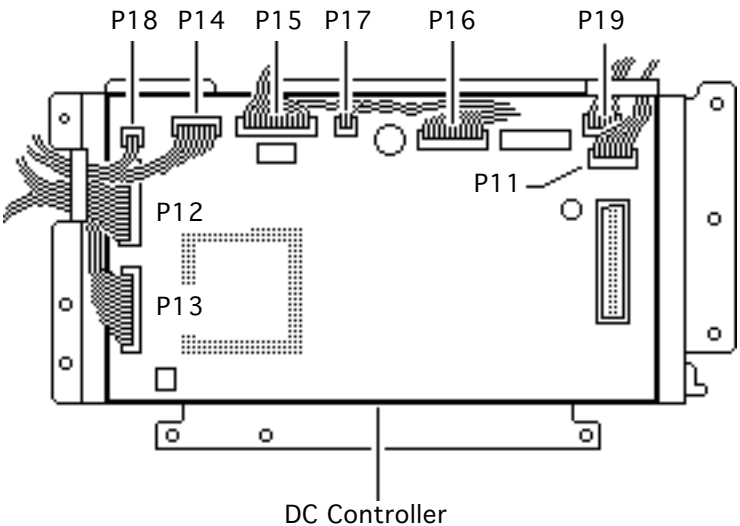


DC Controller

Before you begin, remove the following:

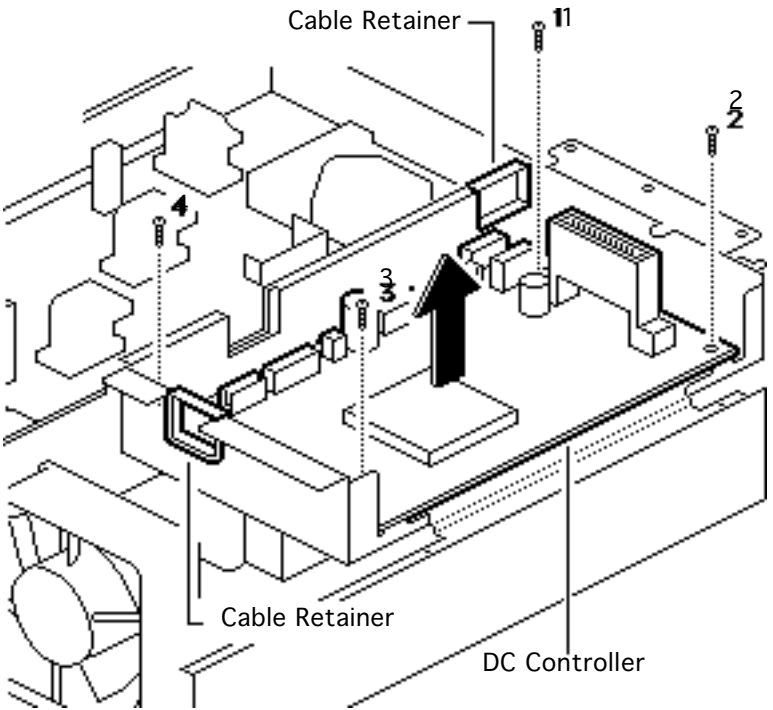
- Top cover
- Side covers
- Rear cover
- I/O controller mount

Note: Perform this procedure only when you're replacing the DC controller itself. If you're replacing a deeper module, perform the "DC Controller Mount" topic.



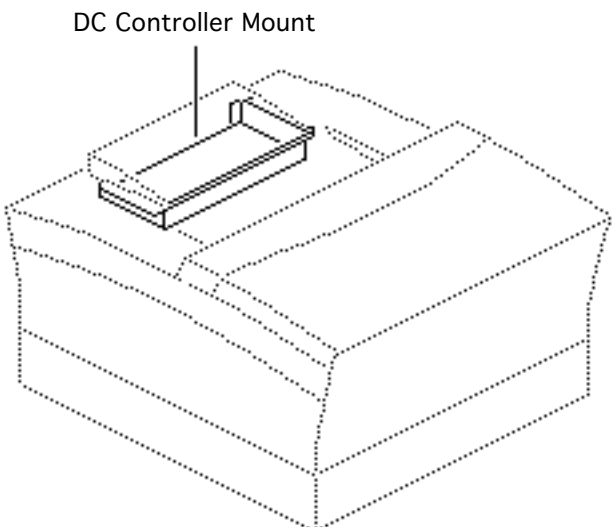
1 Disconnect the following cables:
   - High-voltage power supply cable from P11
   - Laser assembly/ scanner motor board cable from P12
   - Cassette feeder board cable from P13
   - Main motor cable from P14
   - High-voltage power supply/toner cartridge sensor board cable from P15
   - Paper registration/ manual feed sensor cable from P16

- Manual-feed pickup solenoid cable from P17
- Fan motor cable from P18
- Laser beam detection cable from P19



2 Remove all cables from the two cable retainers.

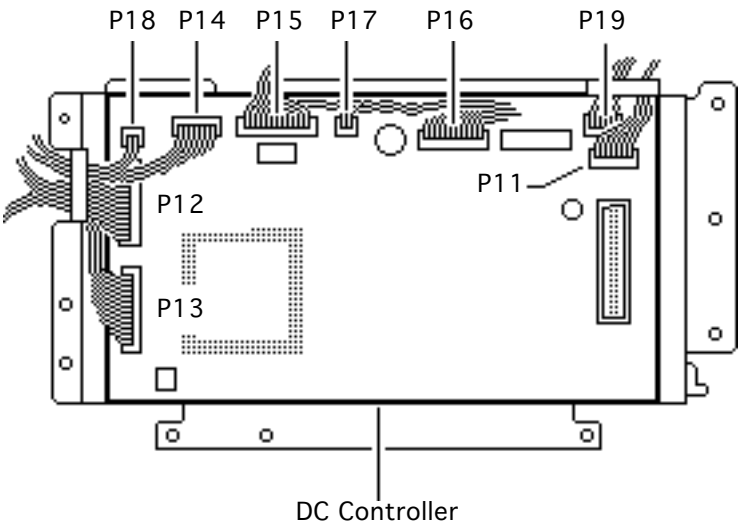
3 Remove the four mounting screws and lift the DC controller from its mount.



DC Controller Mount

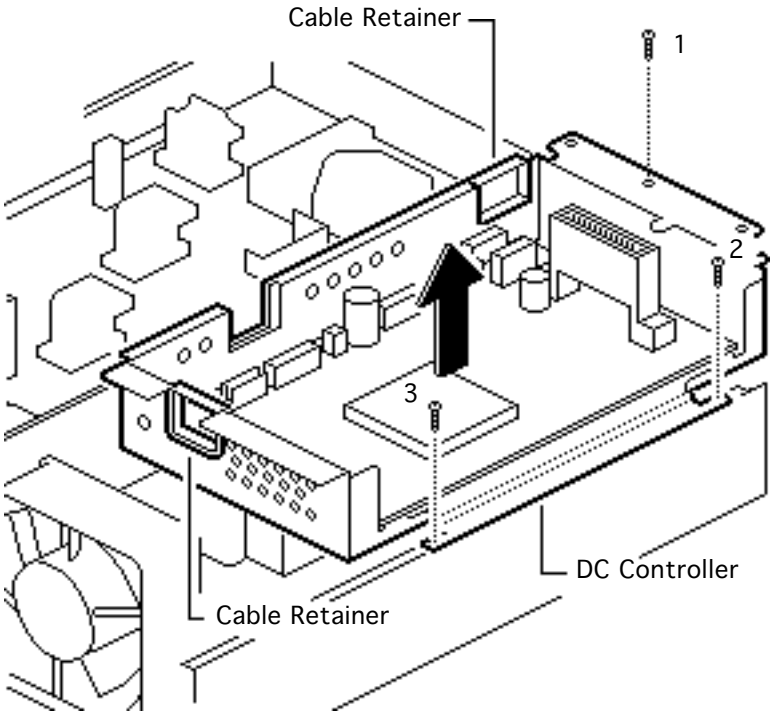
Before you begin, remove the following:

- Top cover
- Side covers
- Rear cover
- I/O controller mount



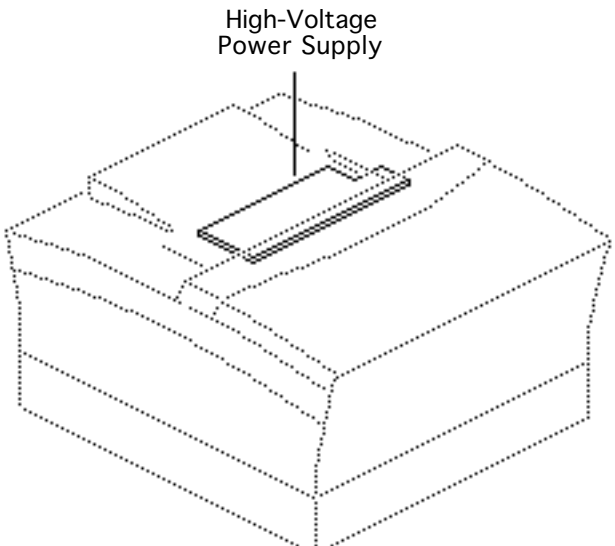
1 Disconnect the following cables:
- High-voltage power supply cable from P11
- Laser assembly/ scanner motor board cable from P12
- Cassette feeder board cable from P13
- Main motor cable from P14
- High-voltage power supply/toner cartridge sensor board cable from P15
- Paper registration/ manual feed sensor cable from P16

- Manual-feed pickup solenoid cable from P17
- Fan motor cable from P18
- Laser beam detection cable from P19



2 Remove all cables from the two cable retainers.

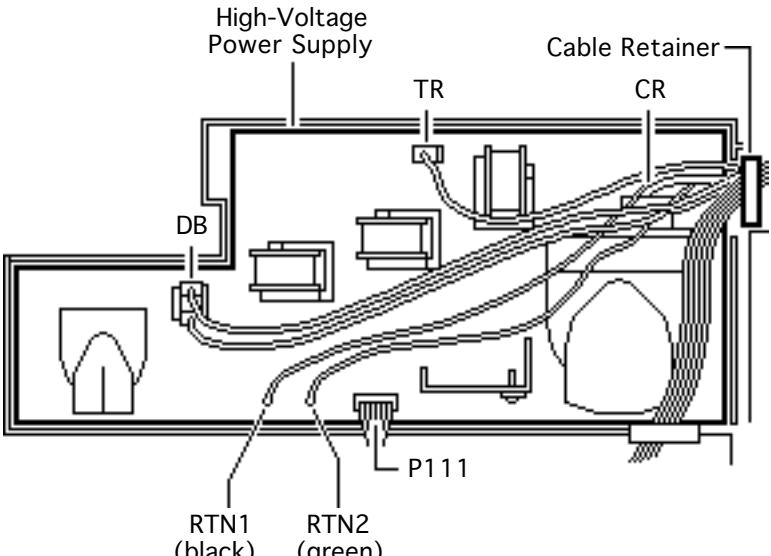
3 Remove the three mounting screws and lift out the DC controller mount.



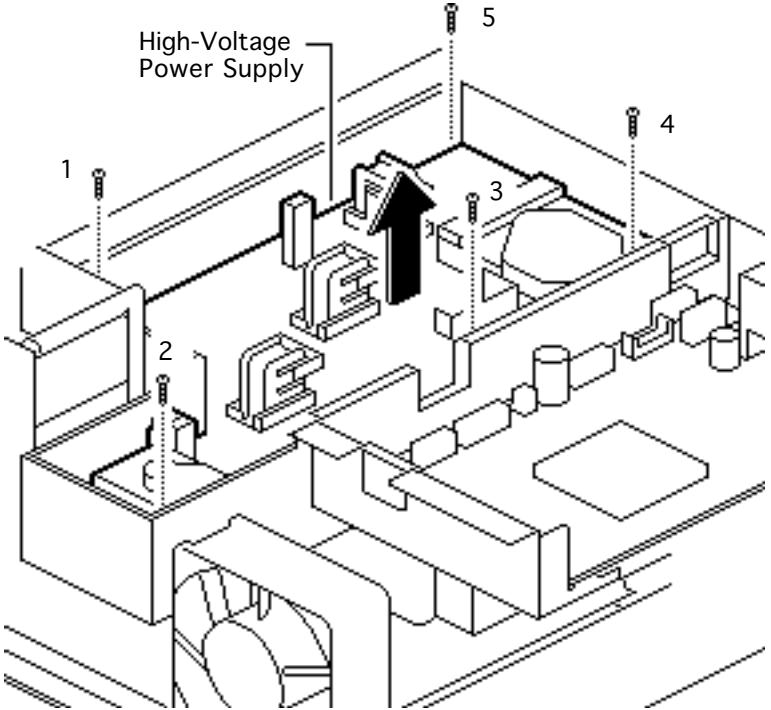
High-Voltage Power Supply

Before you begin, remove the following:

- Top cover
- Side covers
- Rear cover
- I/O controller mount

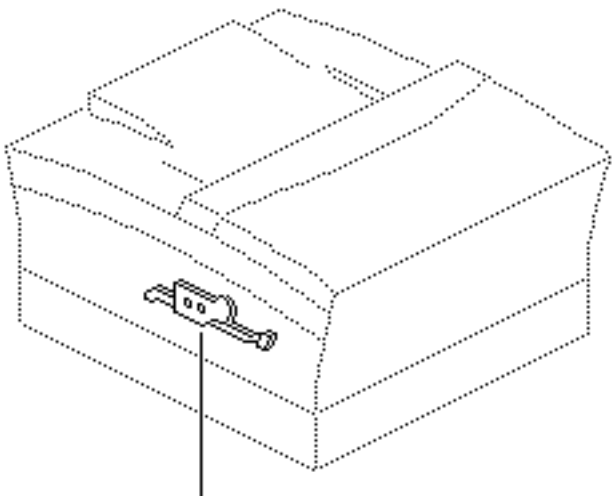


1. Disconnect the following cables:
   - DB
   - TR
   - CR
   - P111
   - RTN1
   - RTN2
2. Remove the cables from the cable retainer mounted on the power supply.



3 Remove the five screws and lift out the power supply.

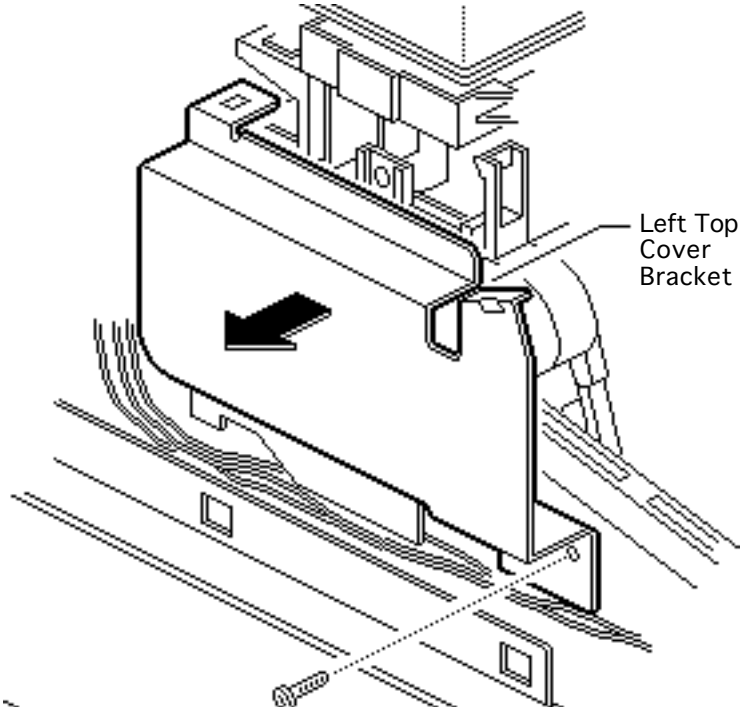
Power Switch Lever



Before you begin, remove the following:

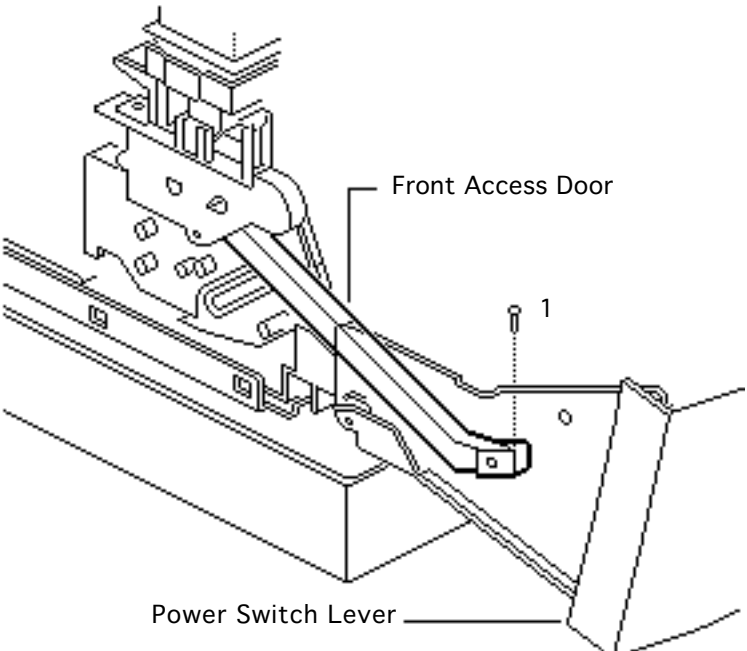
- Top cover
- Left side cover

Function: As you close the front door, the power switch lever depresses the fuser assembly power switch.



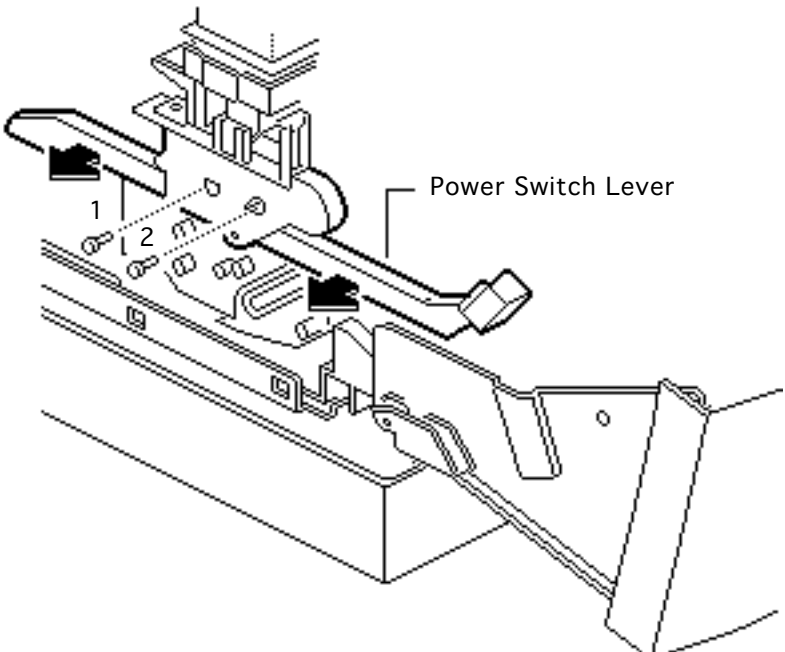
1 Remove the left top cover bracket mounting screw.

2 Lift off the left top cover bracket.



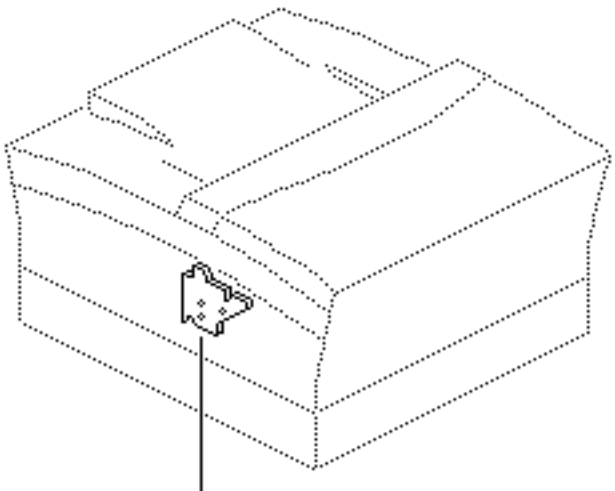
3 Using a jeweler's screwdriver, remove the screw that fastens the metal end of the power switch lever to the front access door.

4 Lift the power switch lever arm out of the front access door.



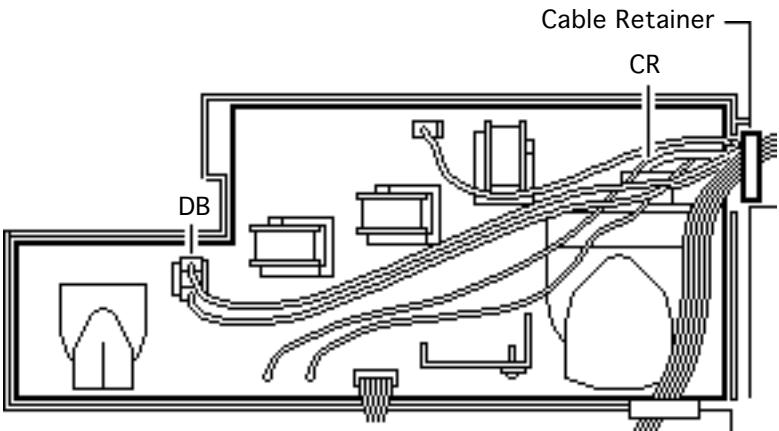
5 Remove the two screws and lift out the power switch lever.

High-Voltage Contact Assembly



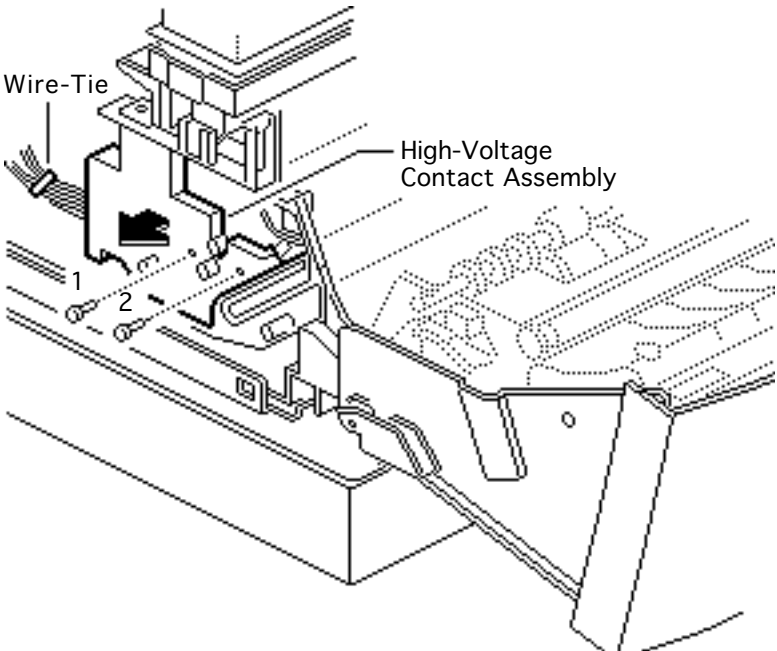
Before you begin, remove the following:

- Top cover
- Side covers
- Rear cover
- I/O shield
- Fuser assembly
- I/O controller mount
- Power switch lever



1 Disconnect connectors DB and CR from the high-voltage power supply.

2 Remove the cables from the cable retainer.

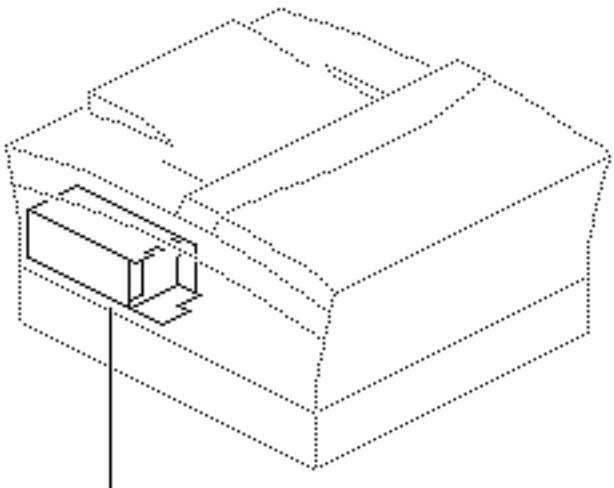


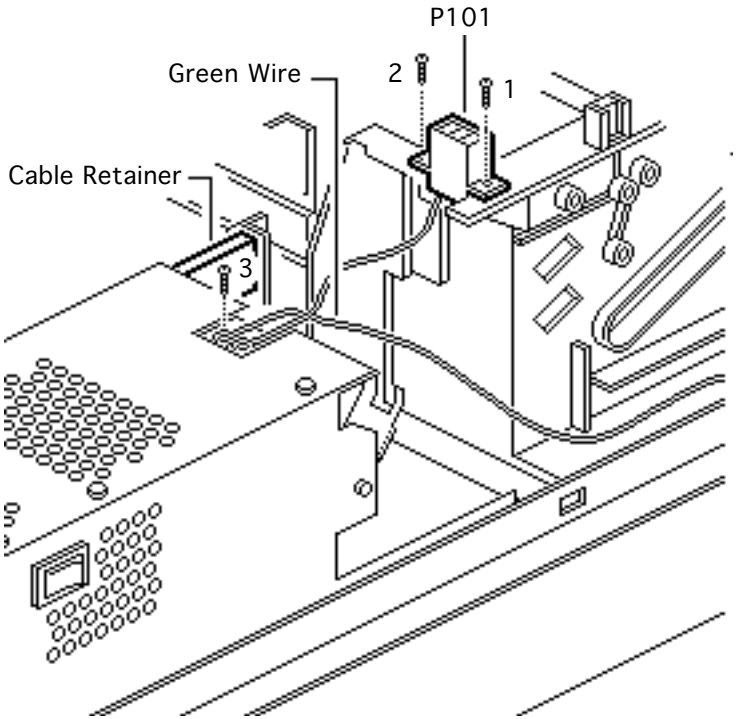
3 Cut the wire tie, remove the two screws and lift out the high-voltage contact assembly.

Power Supply

Before you begin, remove the following:

- Top cover
- Side covers
- Rear cover
- Fuser assembly
- I/O controller mount
- DC controller mount
- Power switch lever
- High-voltage contact assembly

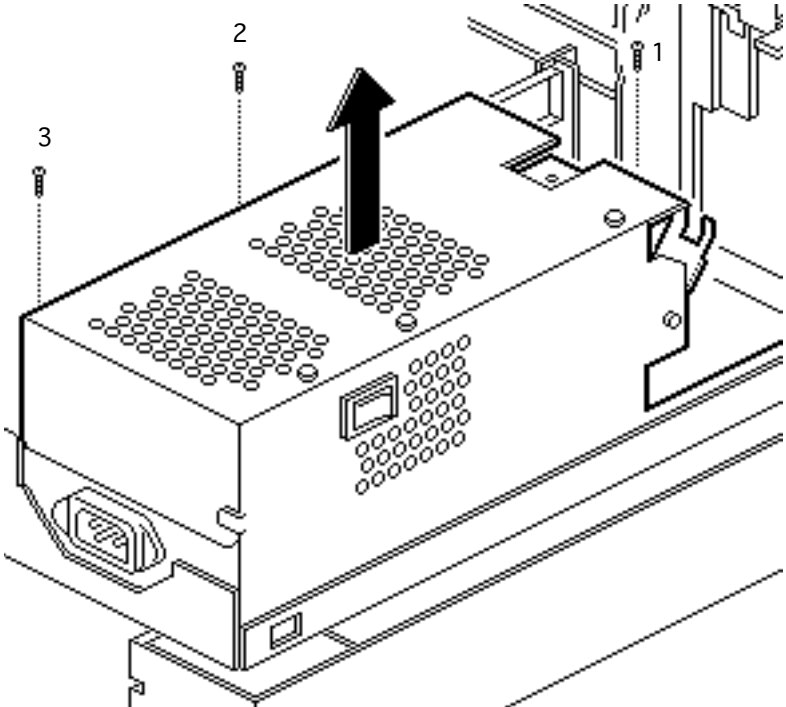




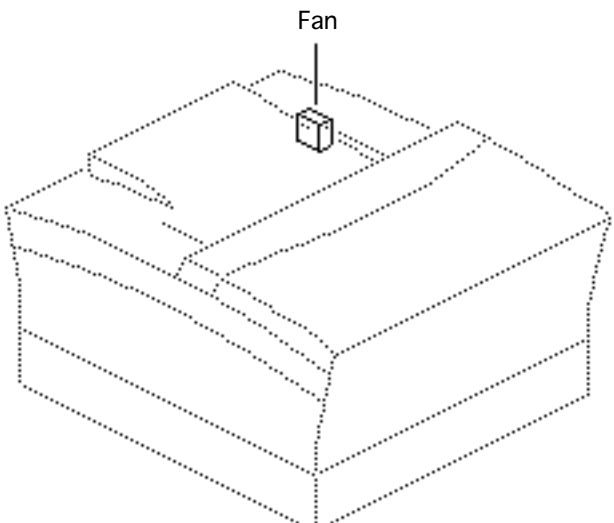
1 Remove the two screws that secure connector P101 to the printer chassis.

2 Remove the screw that holds the green ground wire to the power supply.

3 Remove all cables from the cable retainer.



4 Remove the three screws and lift out the power supply.

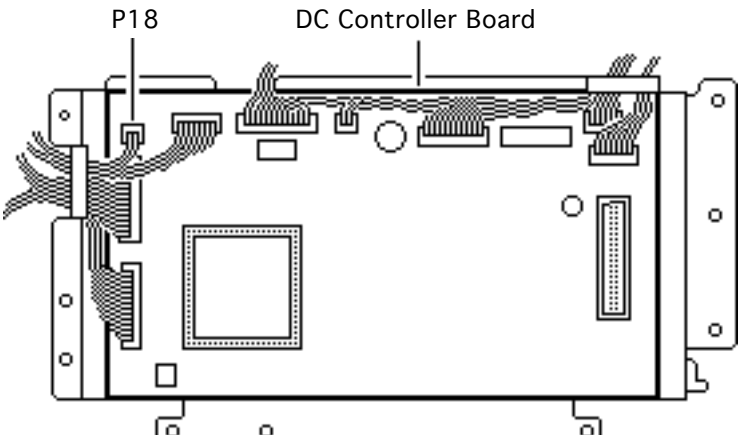


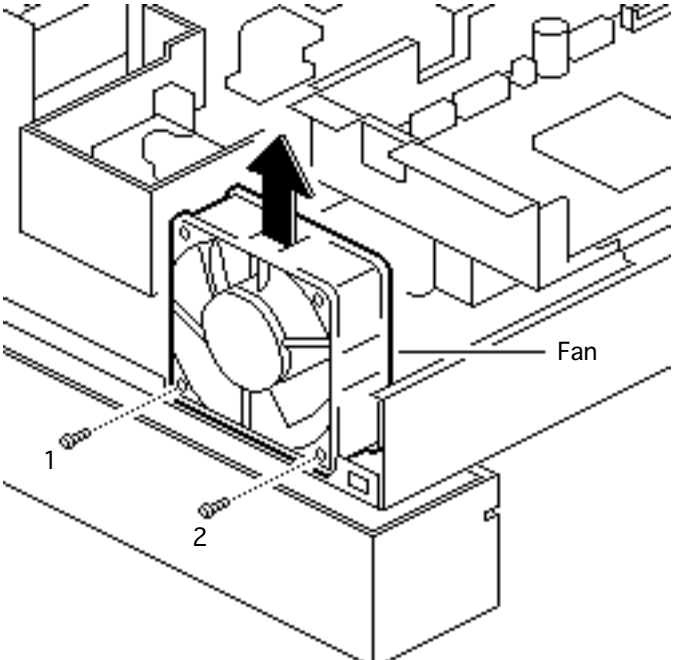
Fan

Before you begin, remove the following:

- Top cover
- Side covers
- Rear cover
- I/O controller mount

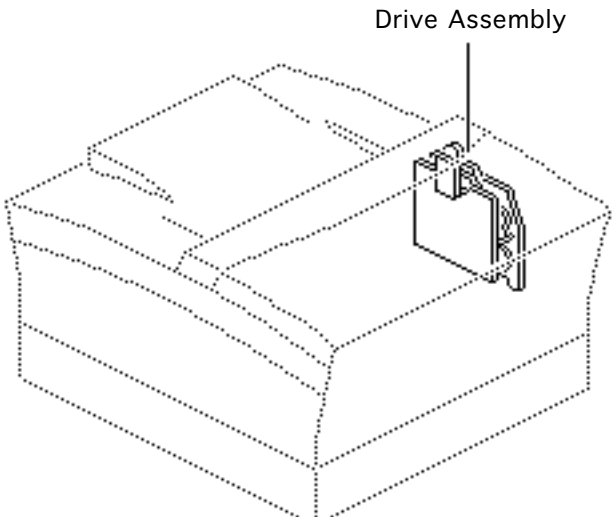
1 Disconnect connector P18 from the DC controller.





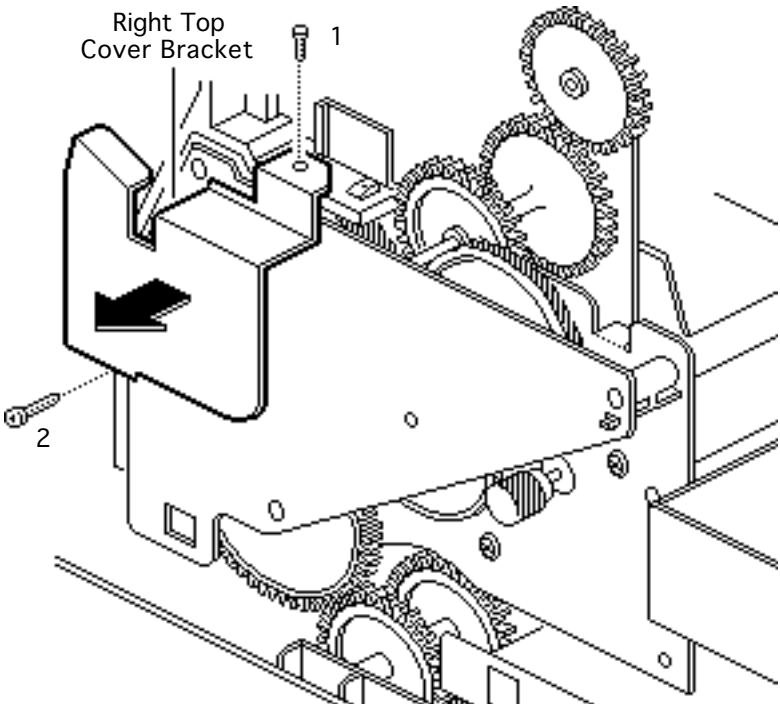
2 Remove the two screws and lift out the fan.

Drive Assembly



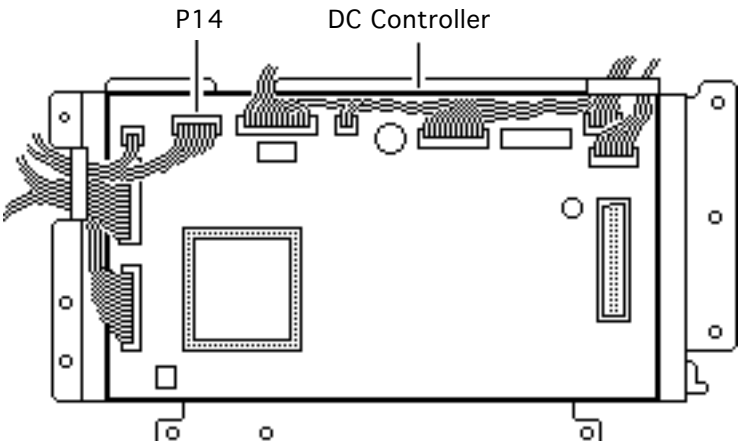
Before you begin, remove the following:

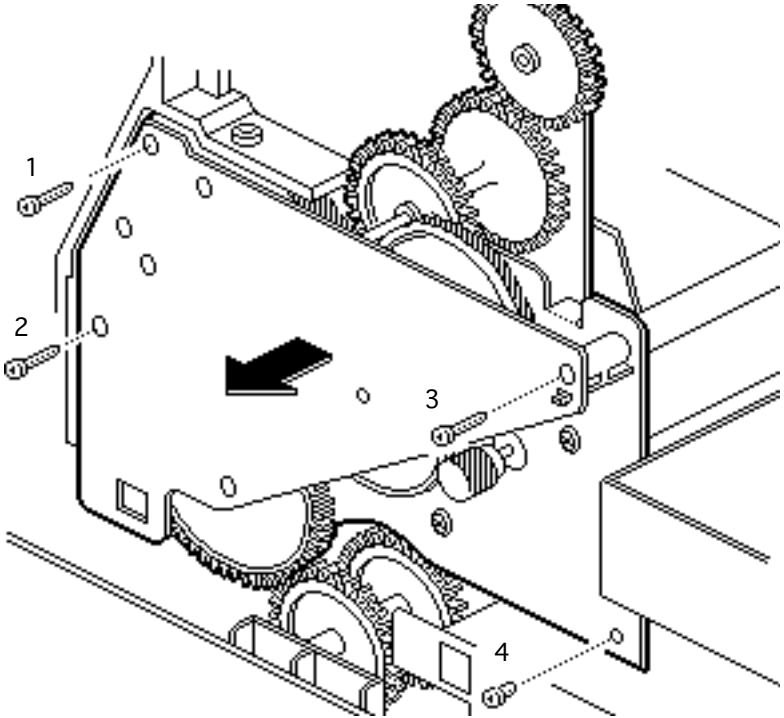
- Top cover
- Side covers
- Rear cover
- Fuser assembly
- I/O controller mount



1 Remove the two screws and lift off the right top cover bracket

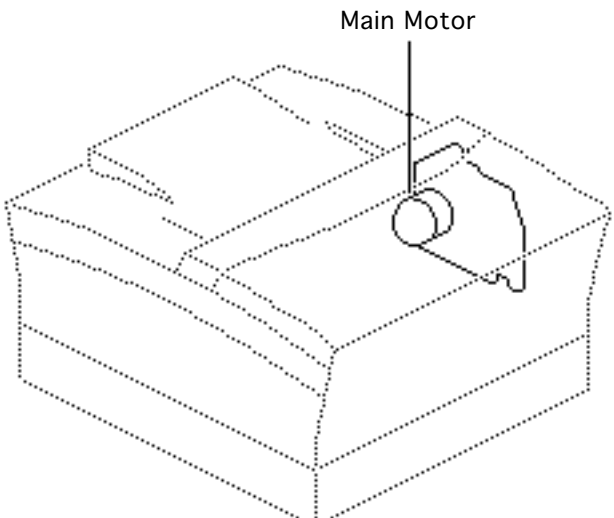
2 Disconnect connector P14 from the DC controller.





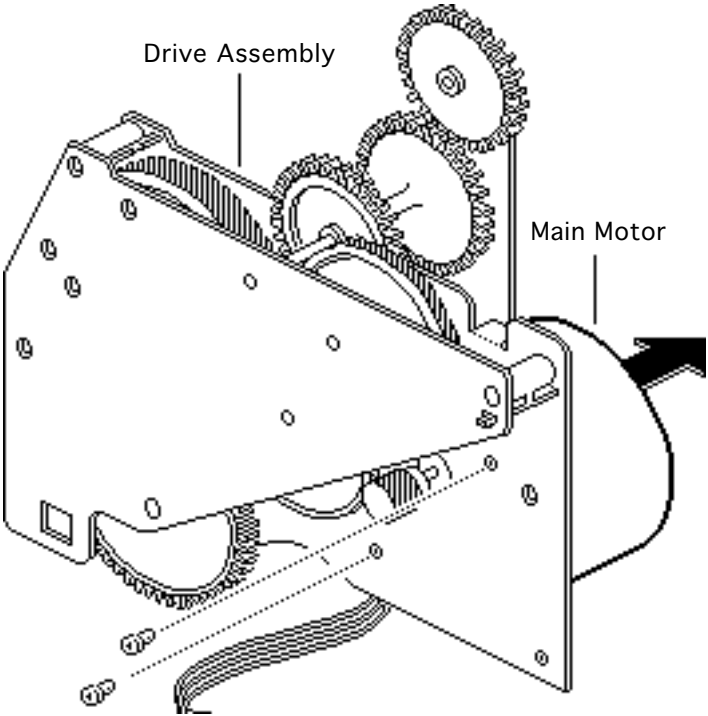
3 Remove the four mounting screws (three long and one short) and pull out the drive assembly.

Main Motor

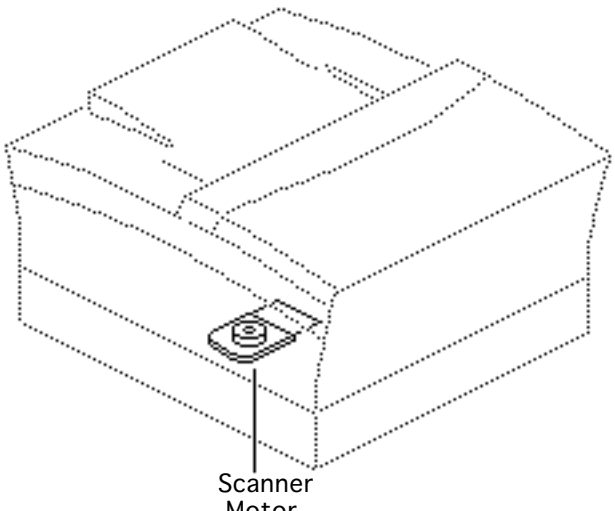


Before you begin, remove the following:

- Top cover
- Side covers
- Rear cover
- Fuser assembly
- I/O controller mount
- Drive assembly



1. Remove the two screws that secure the main motor to the drive assembly.
2. Pull away the main motor from the drive assembly.

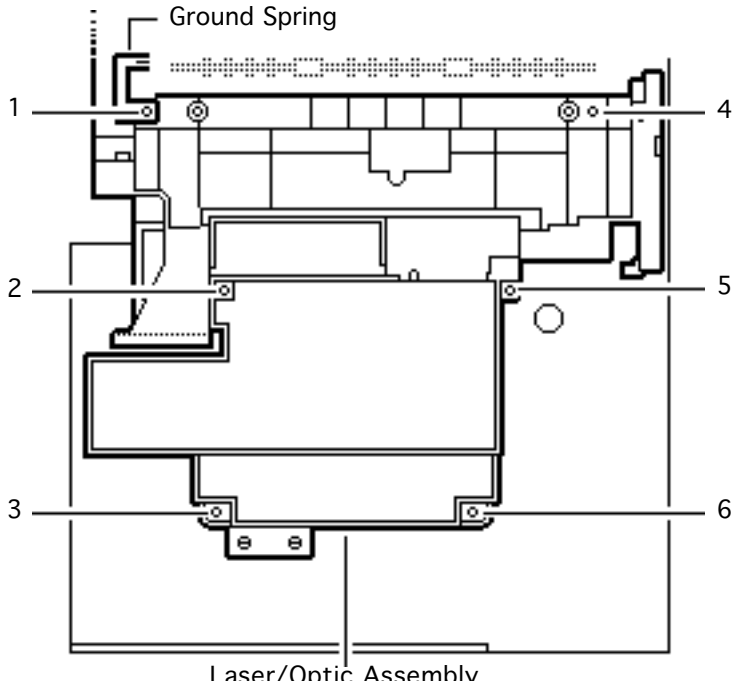


Scanner Motor

Before you begin, remove the following:

- Top cover
- Side covers
- Rear cover
- Fuser assembly
- I/O shield
- I/O controller mount
- DC controller mount

1 Open the front access door.

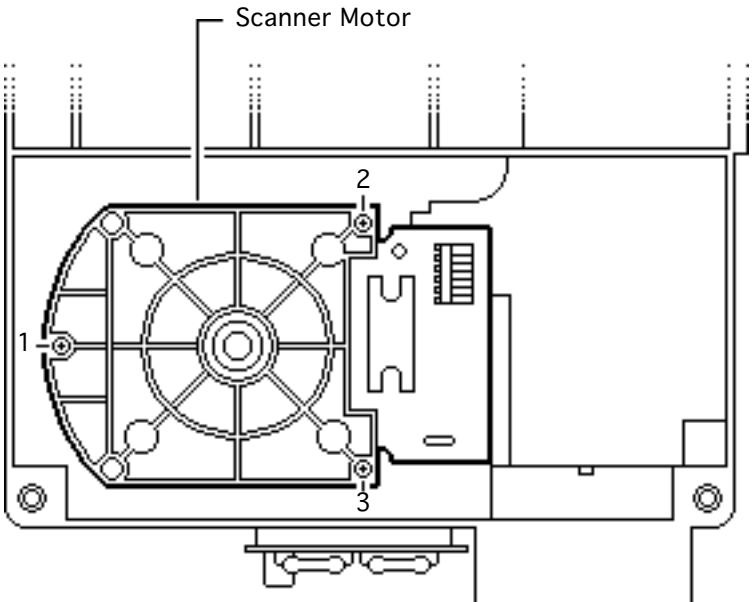


2 Remove the six screws that hold the laser/optic assembly to the printer base plate.

3 Lift out the feed roller ground spring.

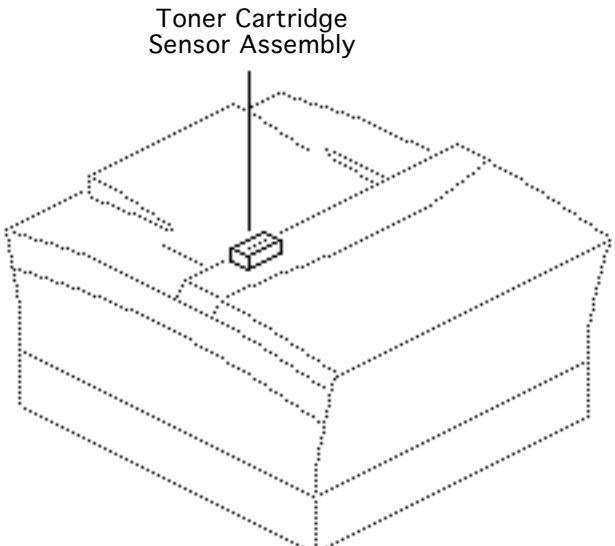
Replacement Note: You will need to reinstall the feed roller ground spring when you replace the laser/optic assembly.

4 Lift out the laser/optic assembly.



5 Turn the laser/optic assembly on its side.

6 Remove the three mounting screws and lift out the scanner motor.

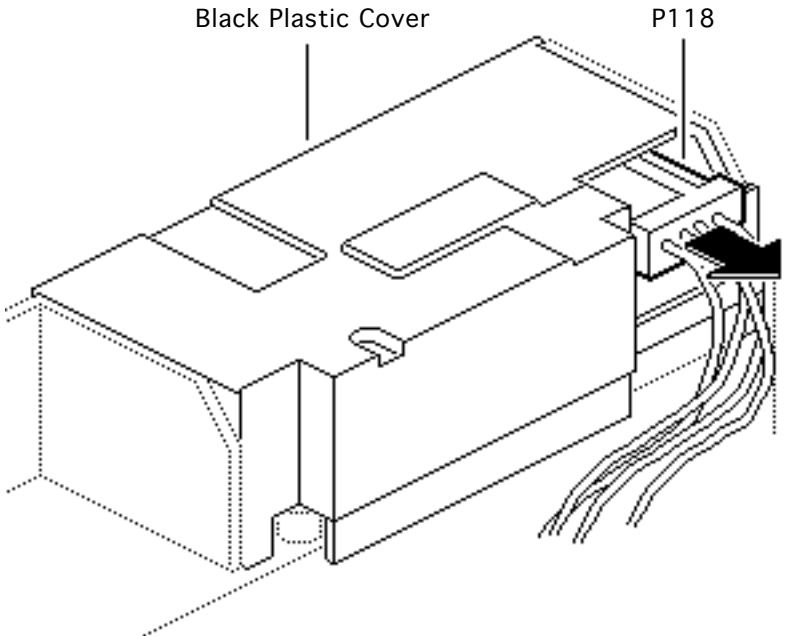


Toner Cartridge Sensor Assembly

Before you begin, remove the following:

- Top cover
- Side covers
- Rear cover
- Fuser assembly
- I/O shield
- I/O controller mount

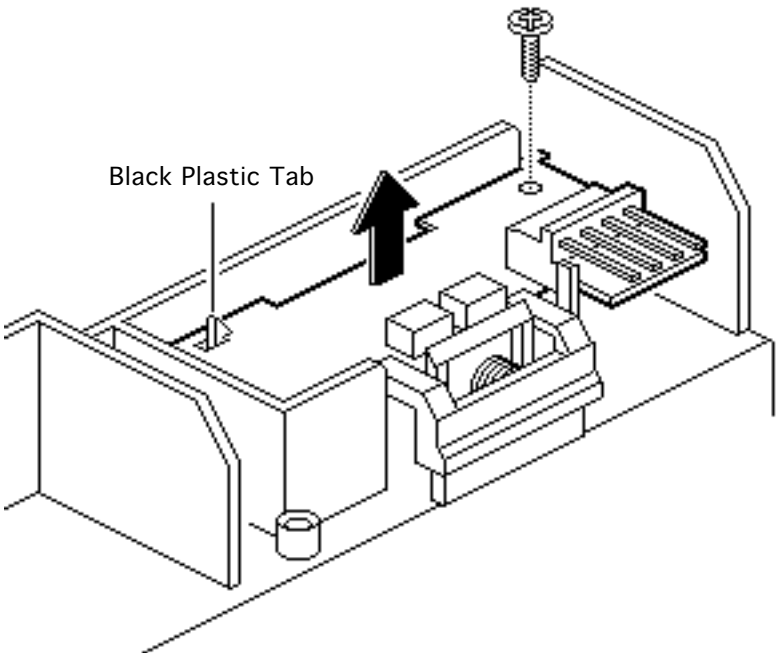
Note: When you install a toner cartridge, the toner cartridge sensor assembly activates switches S101 and S100 on the toner cartridge sensor board. When you



remove the toner cartridge, the sensor assembly deactivates switches S101 and S100.

1 Disconnect connector P118 from the toner cartridge sensor board.

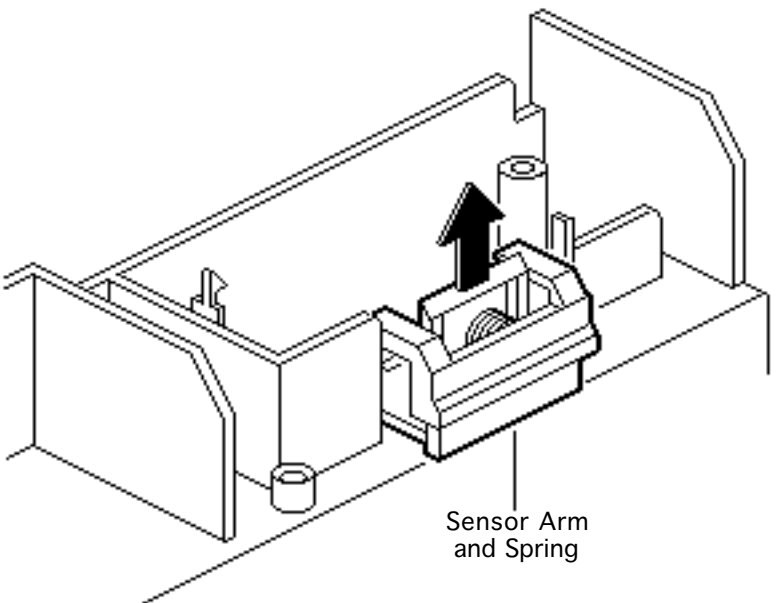
2 Lift off the black plastic cover.

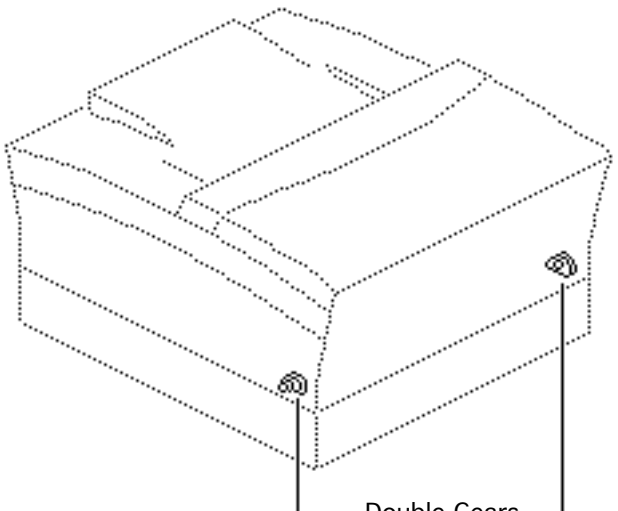


3 Remove the mounting screw and release the black plastic tab.

4 Lift out the toner cartridge sensor board.

5 Lift out the toner cartridge sensor arm and spring.

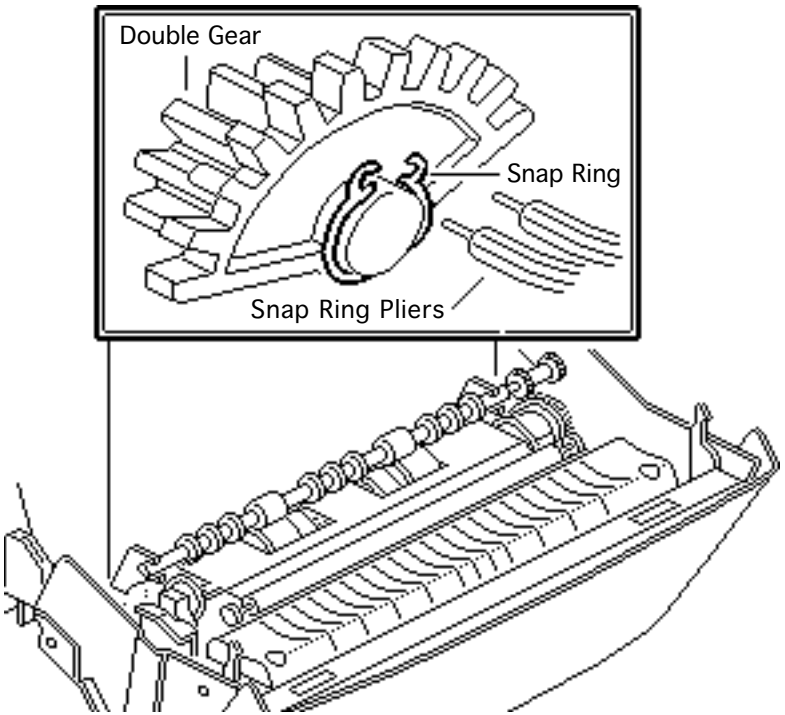




Double Gears

No preliminary steps are required before you begin this procedure.

1 Open the front access door.



2 Using snap-ring pliers, remove the snap rings that hold the left and right double gears to the printer chassis.

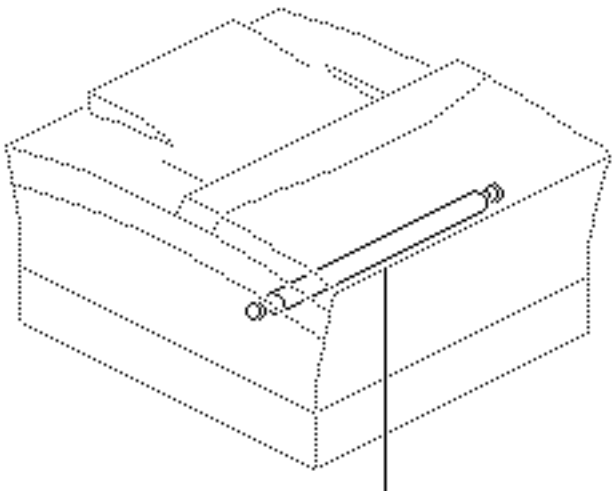
3 Lift out the double gears.

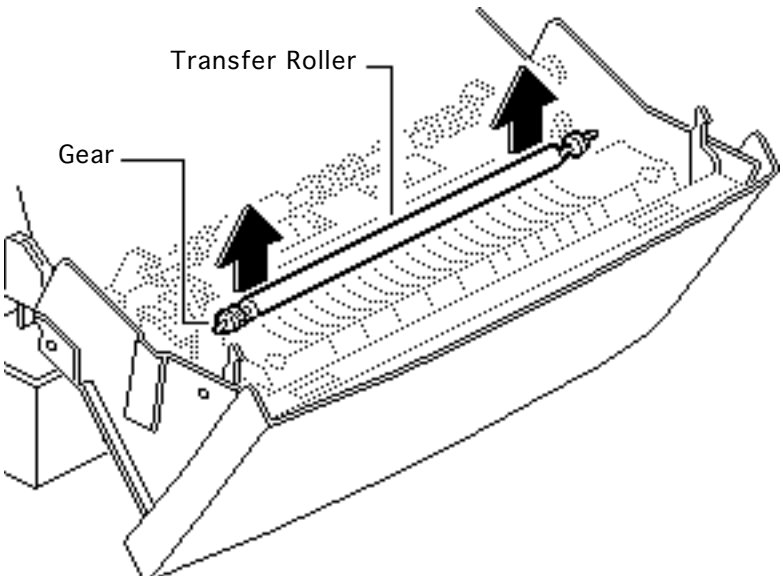
Replacement Note:
When replacing the double gears, hook the locating tabs on the flat surface of the laser/optic assembly.

Transfer Roller

No preliminary steps are required before you begin this procedure.

1 Open the front access door.



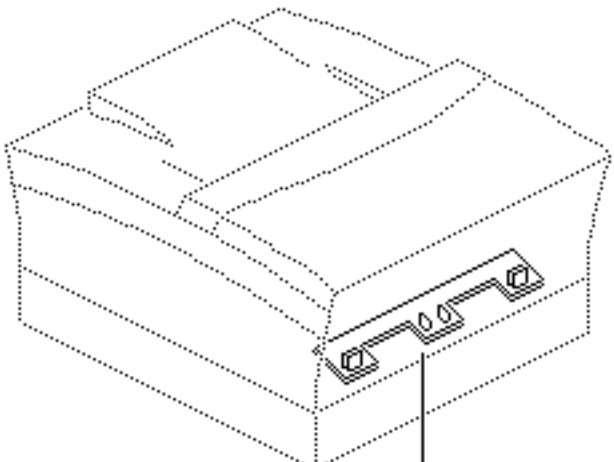


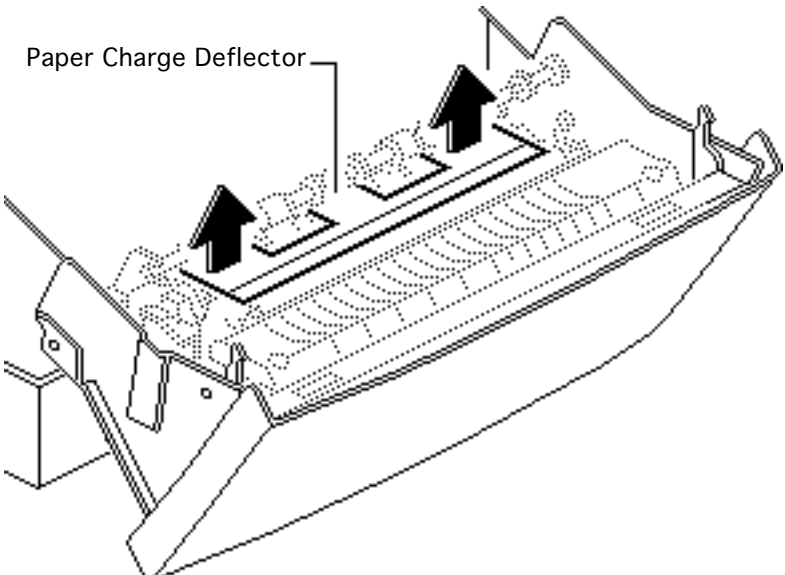
2 Grasp each end of the transfer roller and lift it out the printer.

Replacement Note: Be sure to install the transfer roller with the gear end on the left side.

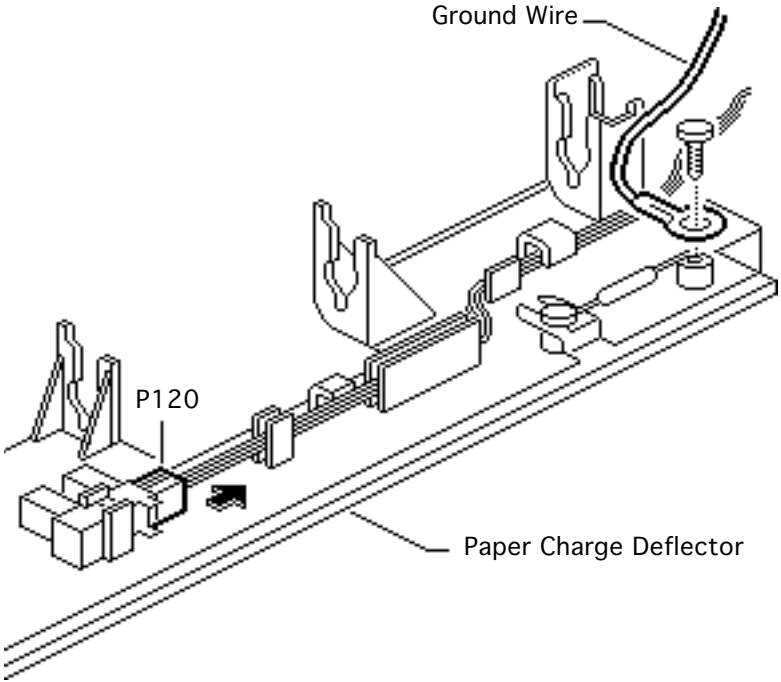
Paper Charge Deflector

Before you begin, remove the transfer roller.





1 Grasp each end of the paper charge deflector and pull it off the pickup roller assembly.



2 Disconnect connector P120 from the registration sensor.

3 Remove the screw that secures the ground wire to the paper charge deflector.

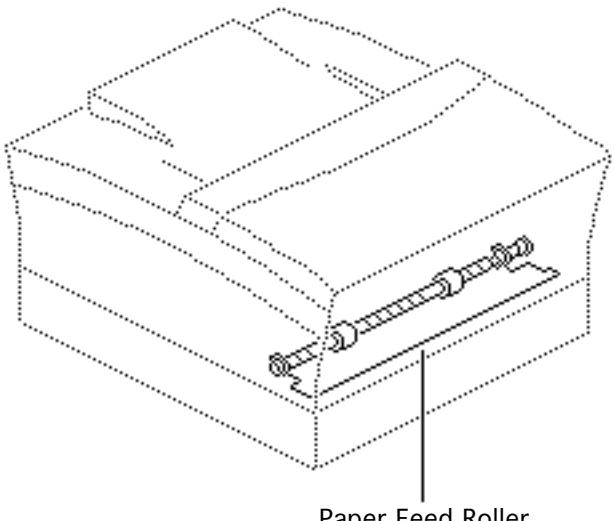
4 Lift out the paper charge deflector.

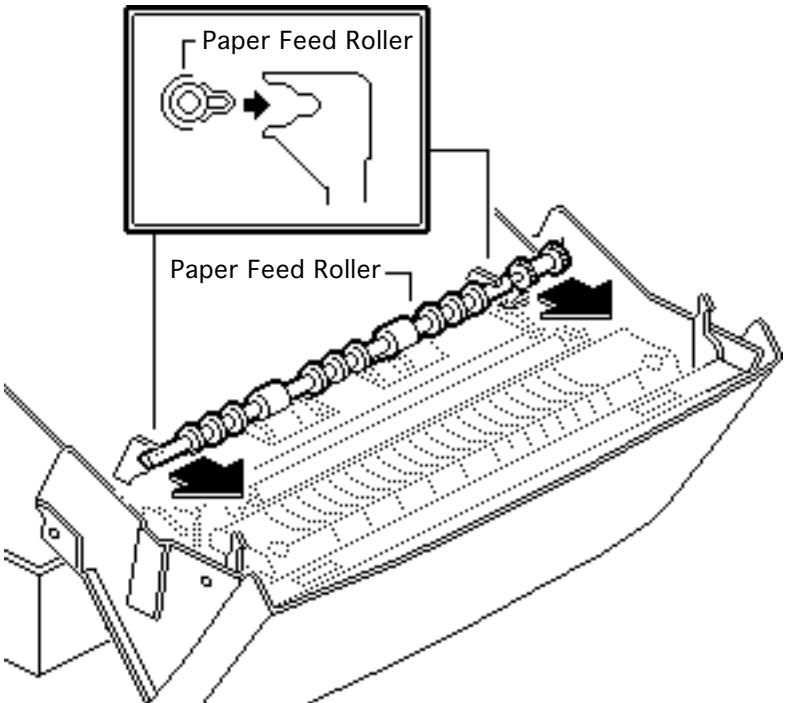
Replacement Note: Be sure to align the notches on each end of the paper charge deflector with the locating bosses on the pickup roller.

Paper Feed Roller

No preliminary steps are required before you begin this procedure.

1 Open the front access door.



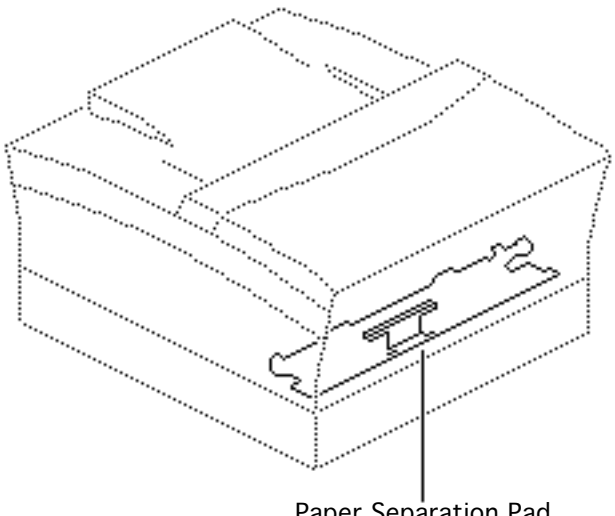


2 Pull the paper feed roller off the paper separation assembly.

Replacement Note:
Align the locating bosses on the paper feed roller with the notches on either side of the paper separation assembly.

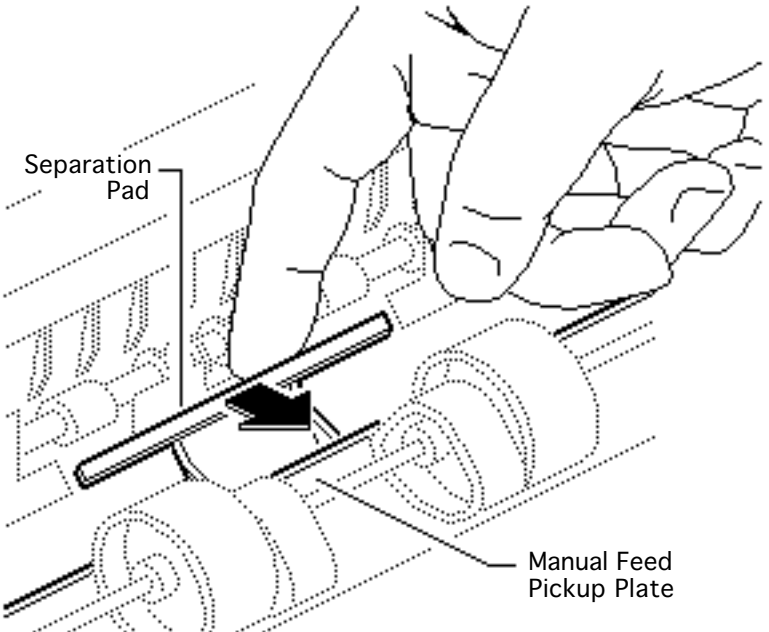
Replacement Note:
Make sure you install the paper feed roller above the mylar film strips.

Paper Separation Pad



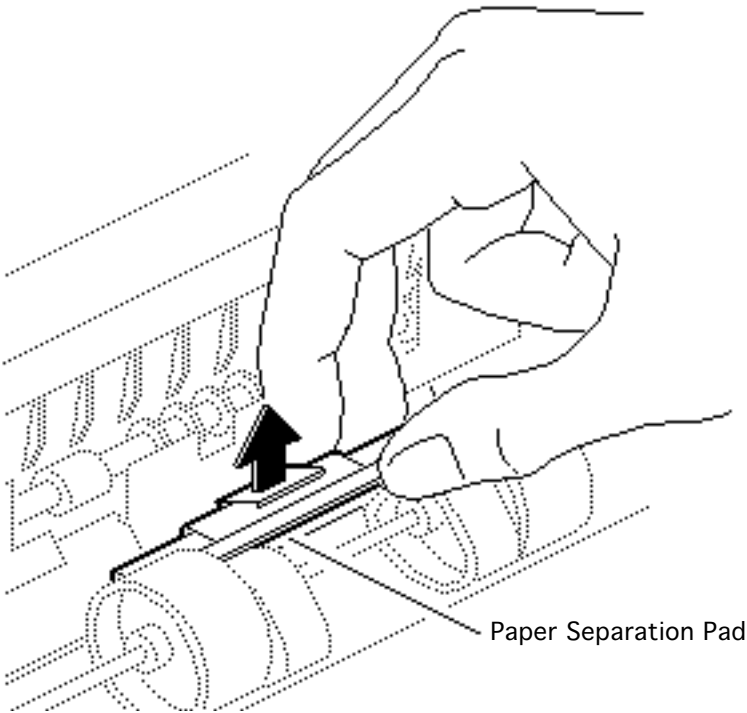
Before you begin, remove the following:

- Transfer roller
- Paper charge deflector



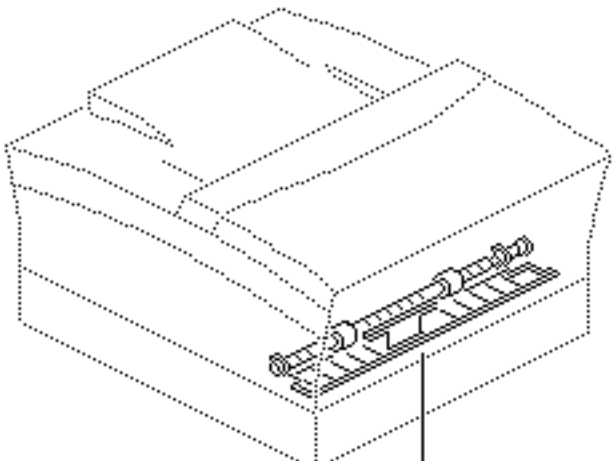
1 Close the front access door halfway.

2 Using your fingers, push the separation pad forward until it rests against the manual feed pickup plate.



3 Lift the paper separation pad straight up and release it from the paper separation assembly.

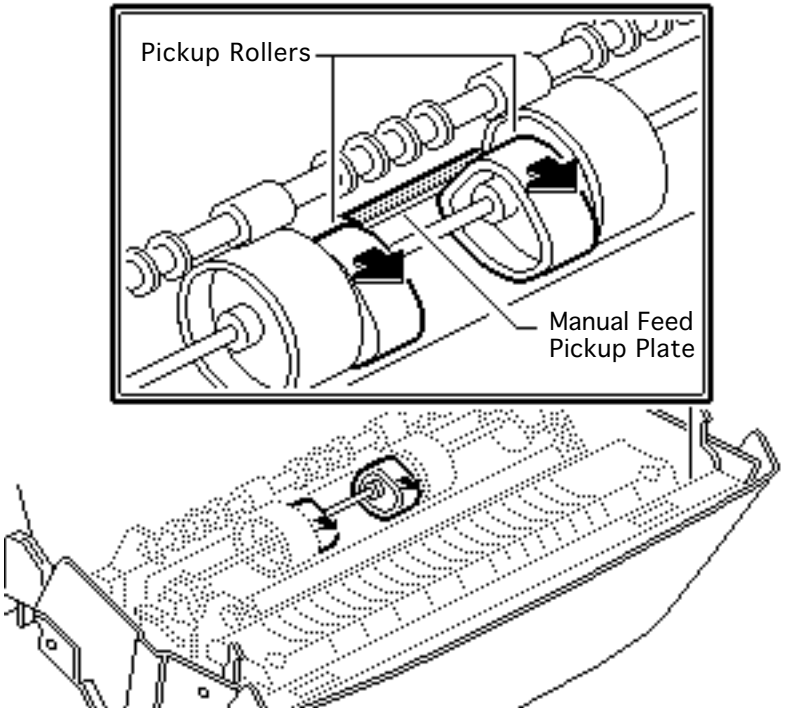
Paper Separation Assembly



Before you begin, remove the following:

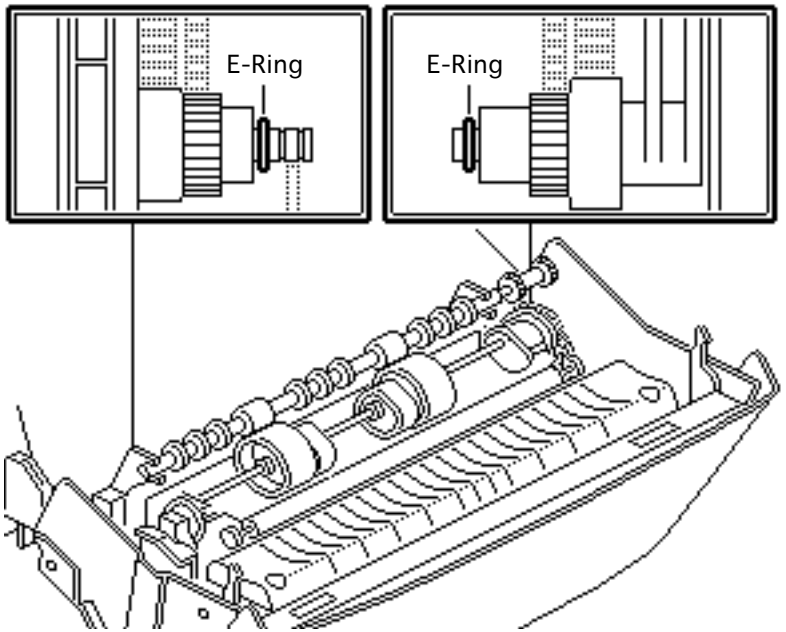
- Top cover
- Side covers
- Manual feed tray
- Transfer roller
- Paper charge deflector
- Double gears

1 Close the front access door halfway.

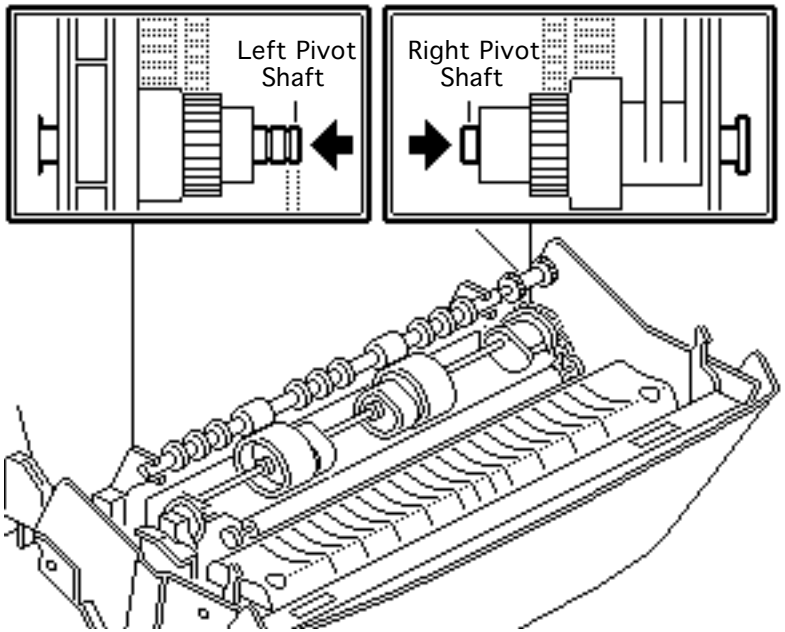


2 Rotate the pickup rollers until the manual feed pickup plate rests against the pickup roller assembly.

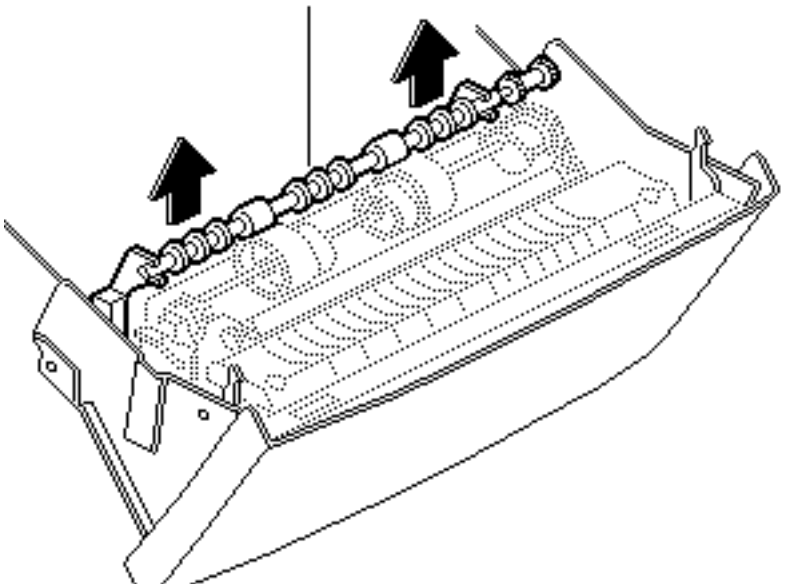
3 While supporting the front door with one hand, remove the E-rings that secure the left and right pivot shafts.



4 Slide the left and right pivot shafts out of the front access door approximately 1 inch.

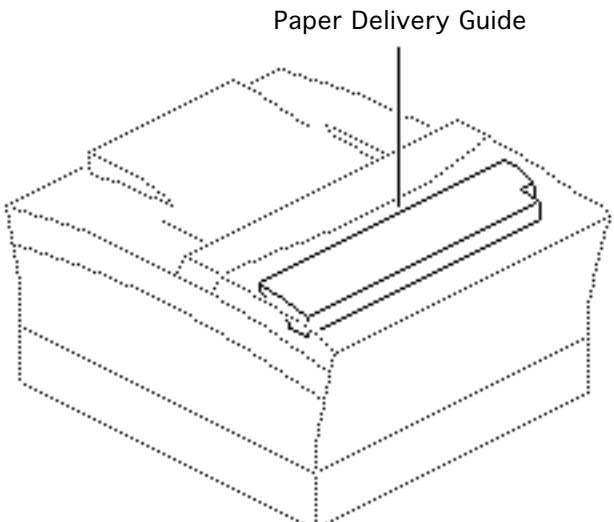


Paper Separation Assembly



5 Lift out the paper separation assembly.

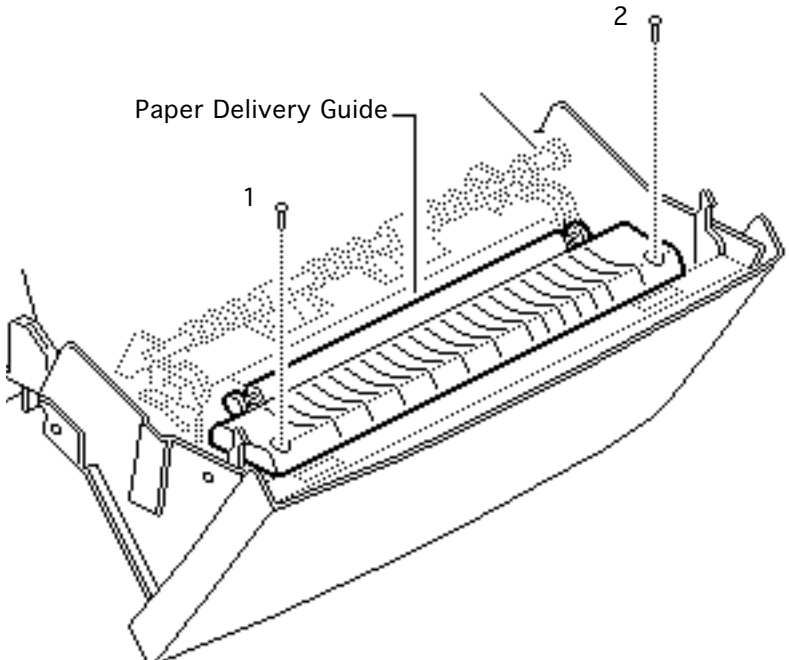
Replacement Note: When replacing the pivot shafts, be sure to install the E-ring on the inner notch on the left shaft and on the outer notch on the right shaft.



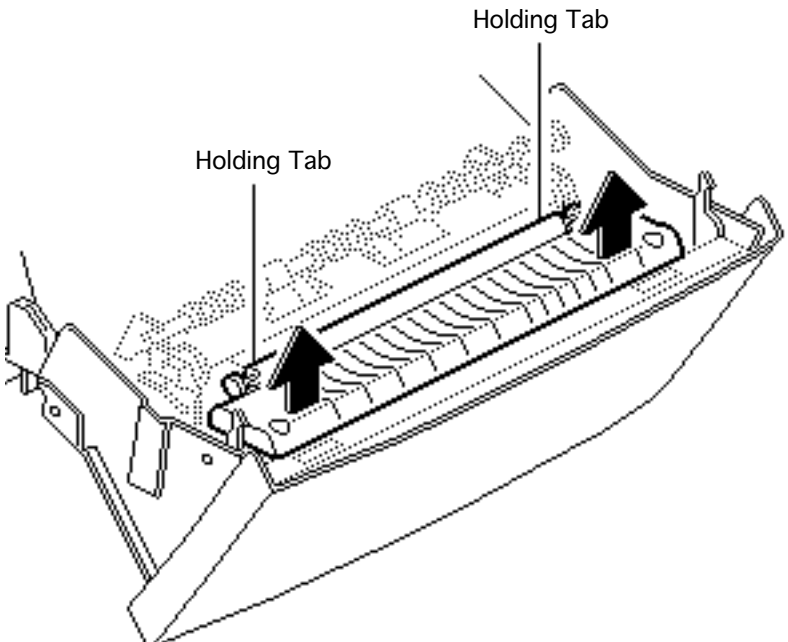
Paper Delivery Guide

Before you begin, remove the following:

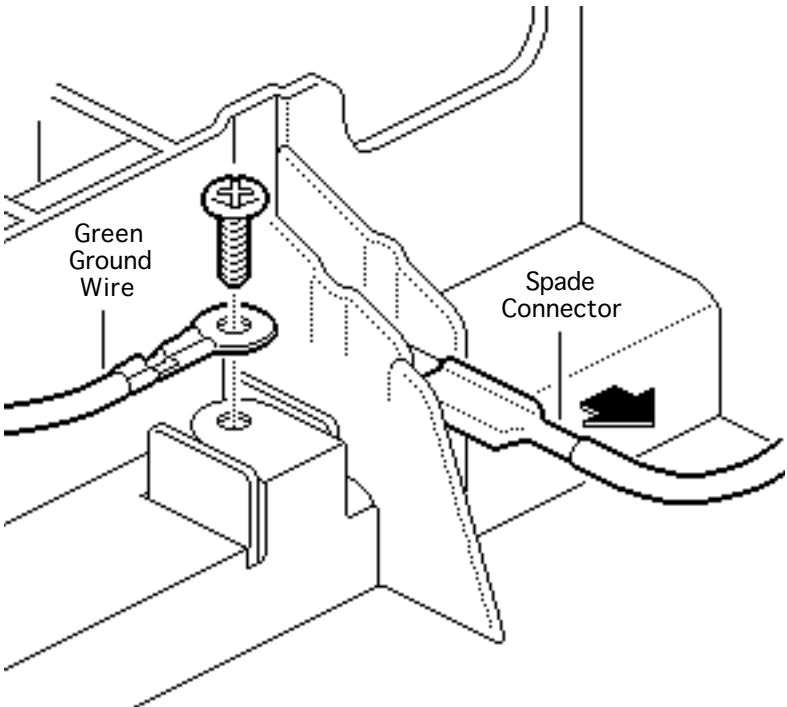
- Transfer roller
- Paper charge deflector



1 Remove the two screws that secure the paper delivery guide to the front access door.



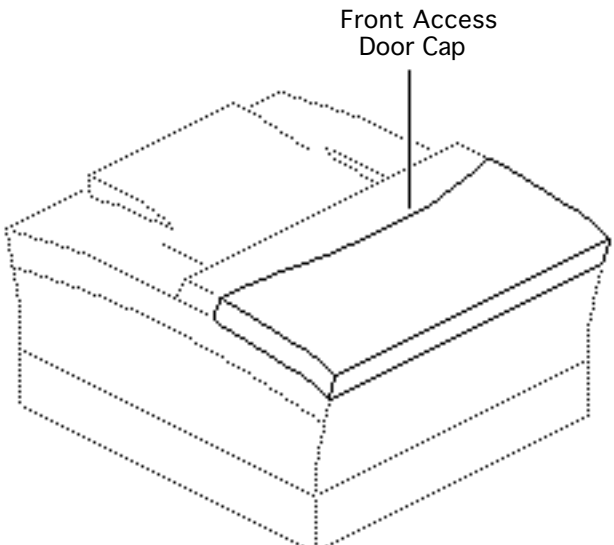
2 Pull up each side of the paper delivery guide to release it from the two holding tabs.



3 Remove the screw that holds the green ground wire to the paper delivery guide.

4 Disconnect the spade connector from connector TR-T.

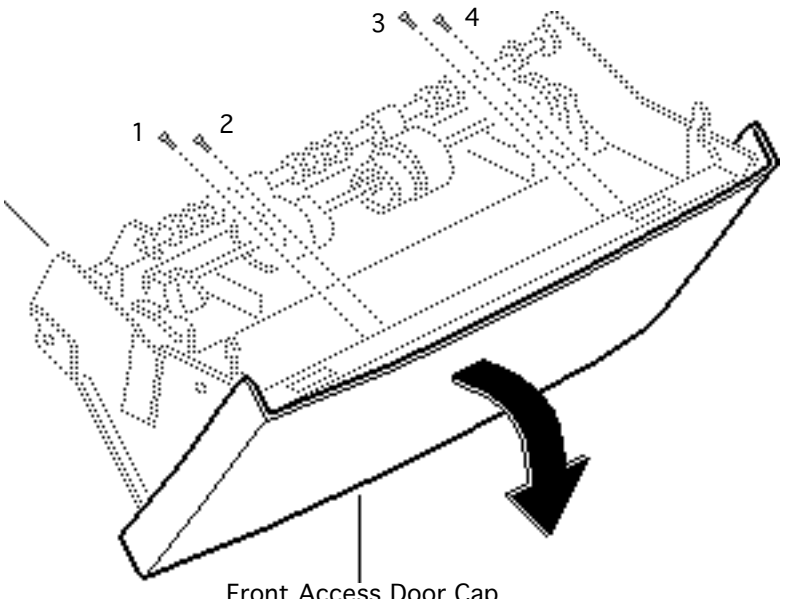
5 Lift out the paper delivery guide.



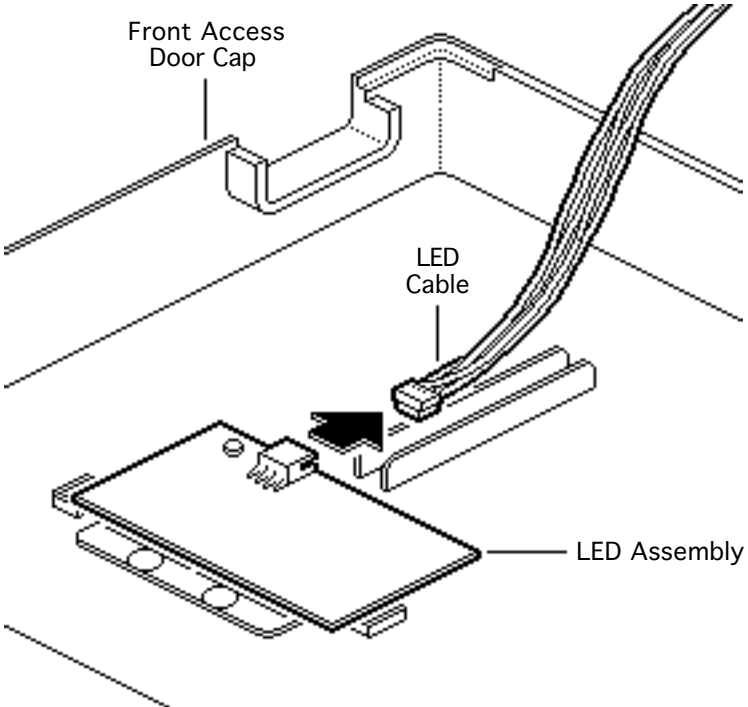
Front Access Door Cap

Before you begin, remove the following:

- Transfer roller
- Paper charge deflector
- Paper delivery guide



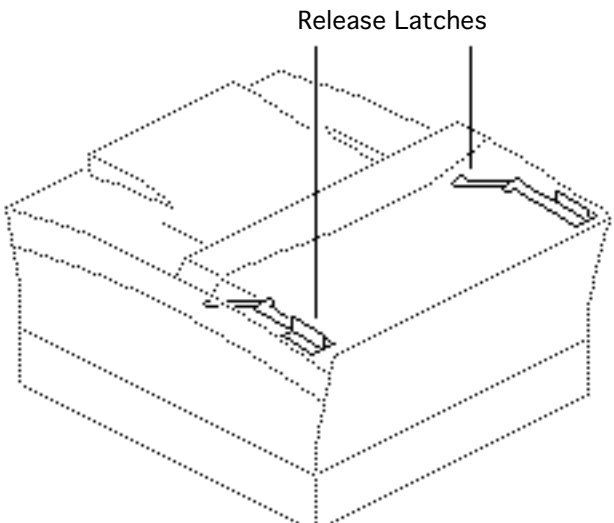
1 Remove the four screws that hold the front access door cap in place.



2 Disconnect the LED cable from the LED assembly.

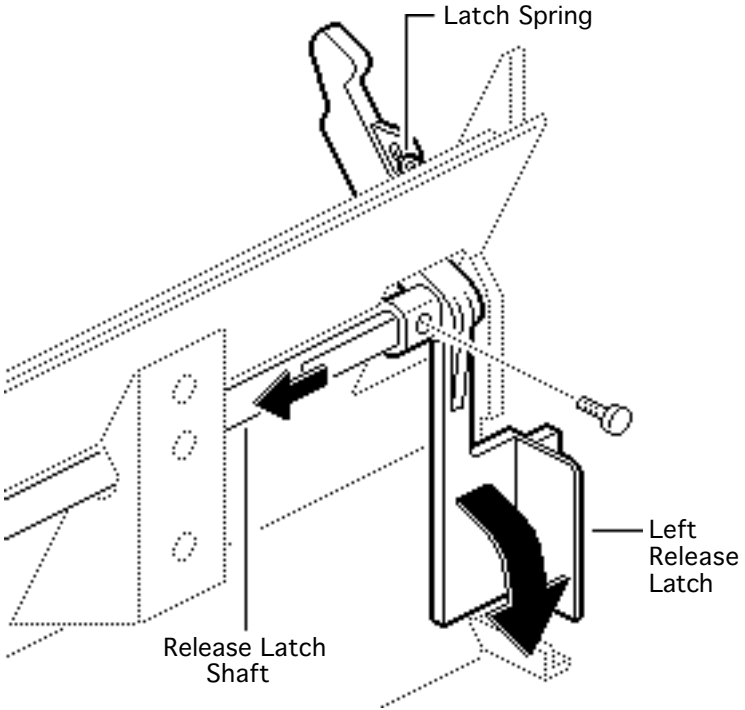
3 Lift off the front access door cap.

Release Latches



Before you begin, remove the following:

- Transfer roller
- Paper charge deflector
- Paper delivery guide
- Front access door cap



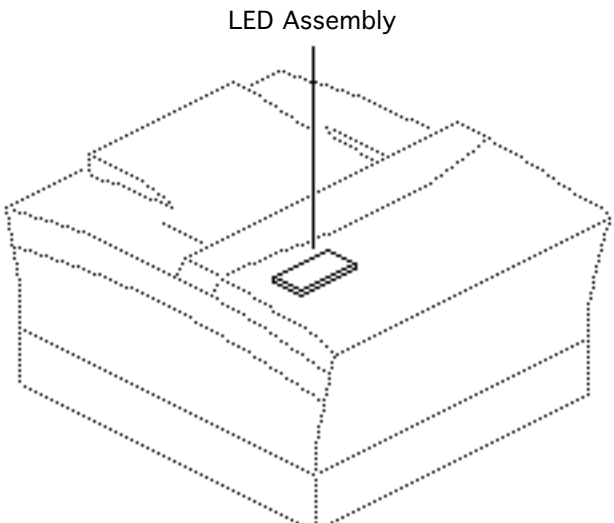
Note: Only the left side release latch is shown in this illustration.

1 Unhook and remove the release latch spring.

2 Remove the screws at each end of the release latch shaft.

3 Slide the shaft to the left and lift off the right release latch.

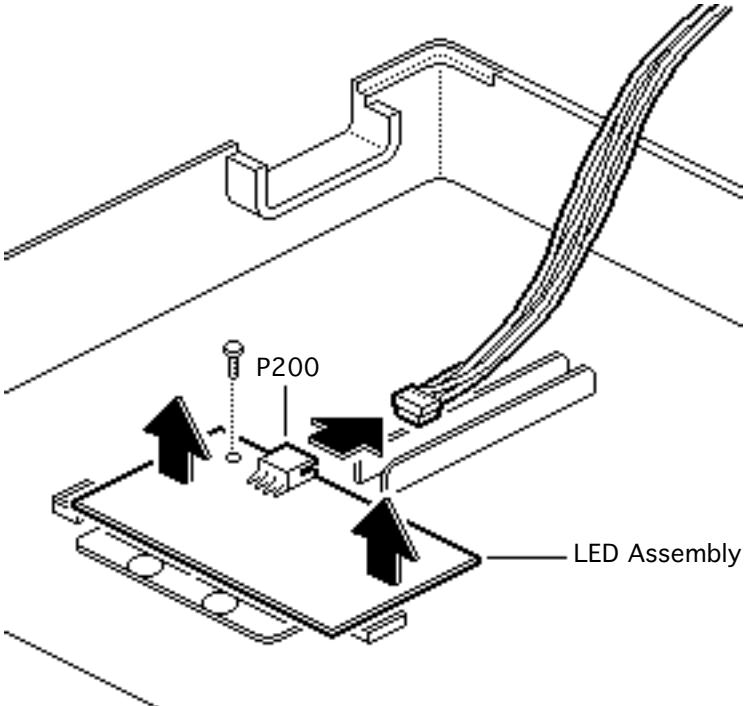
4 Slide the shaft to the right and lift off the left release latch.



LED Assembly

Before you begin, remove the following:

- Transfer roller
- Paper charge deflector
- Paper delivery guide
- Front access door cap



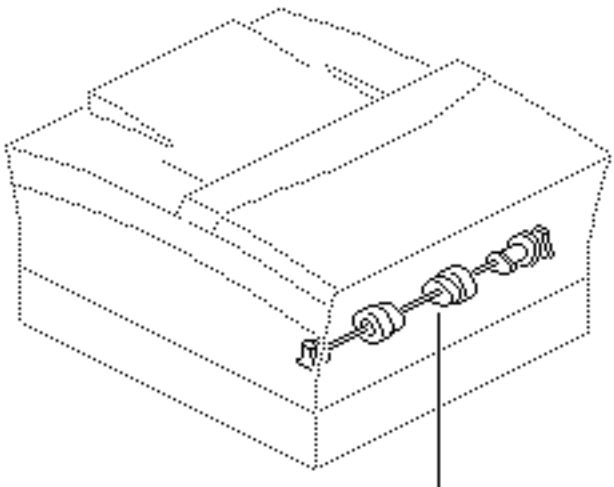
1 Disconnect the LED cable from connector P200.

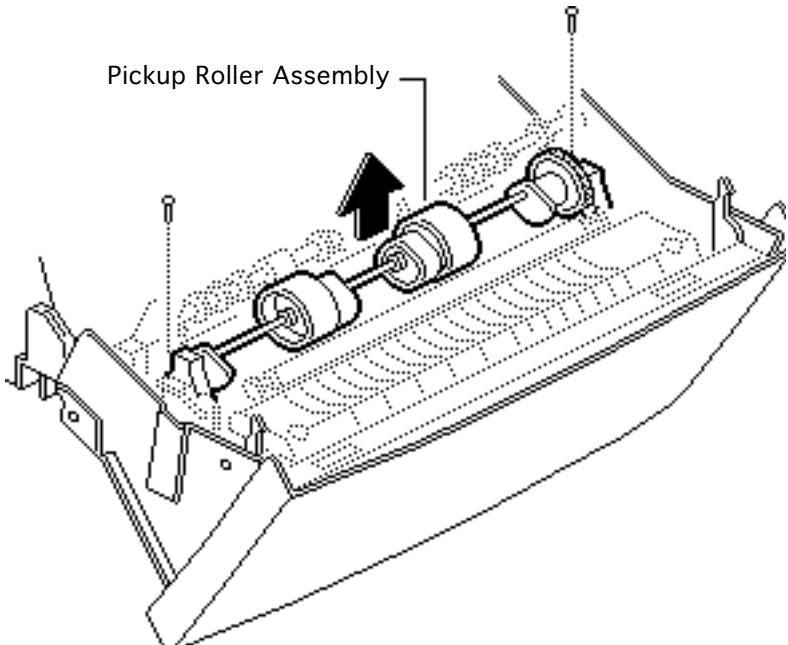
2 Remove the screw and lift out the LED assembly.

Pickup Roller Assembly

Before you begin, remove the following:

- Transfer roller
- Paper charge deflector



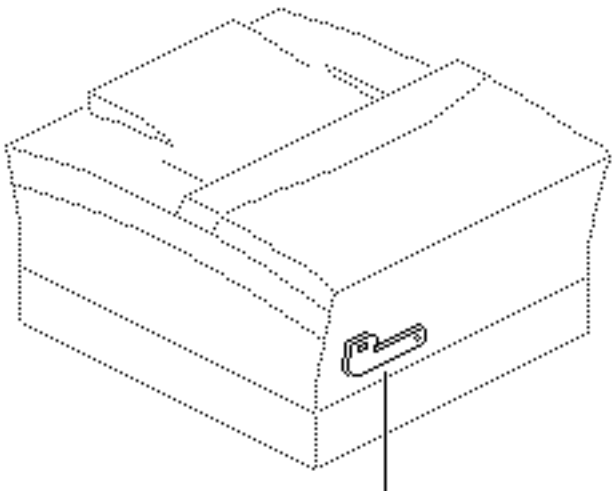


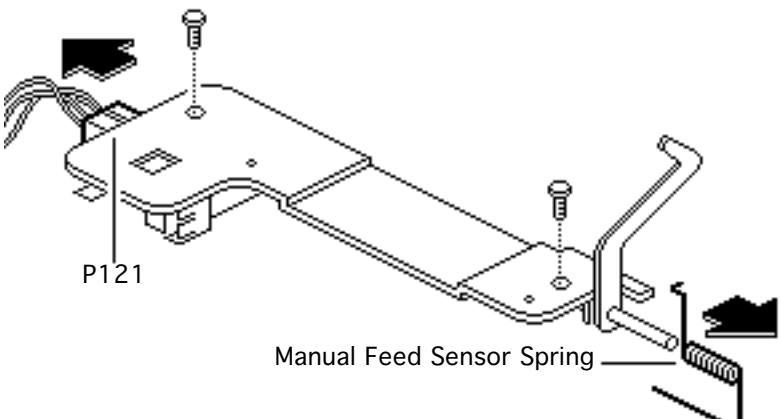
1 Remove the two mounting screws and lift out the pickup roller assembly.

Manual Feed Sensor Assembly

Before you begin, remove the following:

- Transfer roller
- Paper charge deflector
- Pickup roller assembly

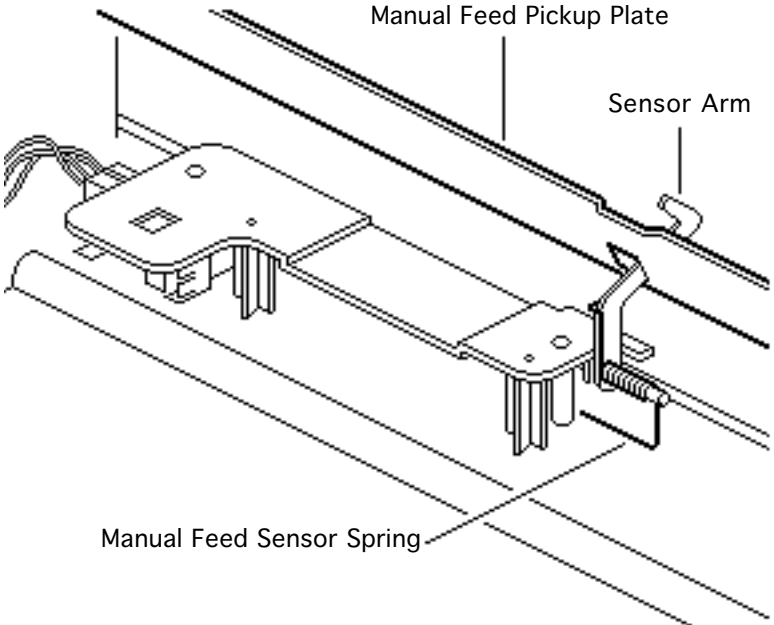




1 Remove the two mounting screws and lift out the assembly.

2 Slide the manual feed sensor spring off the sensor arm.

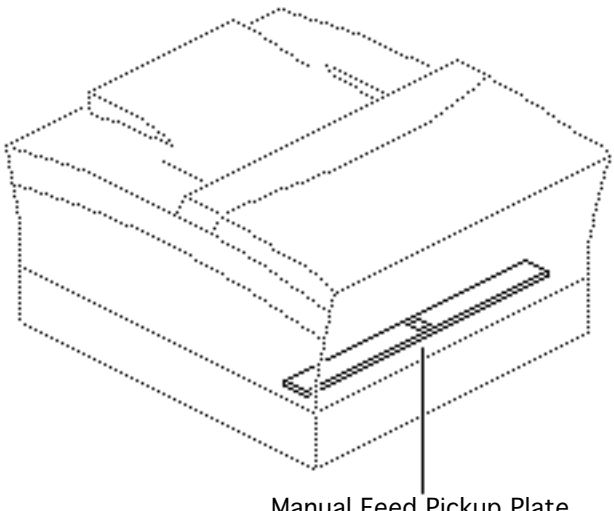
3 Disconnect connector P121 from the manual feed sensor board.



Replacement Note: Replace the sensor arm and spring as shown. The illustration shows the arm and sensor as they would look in a functional print-ready state.

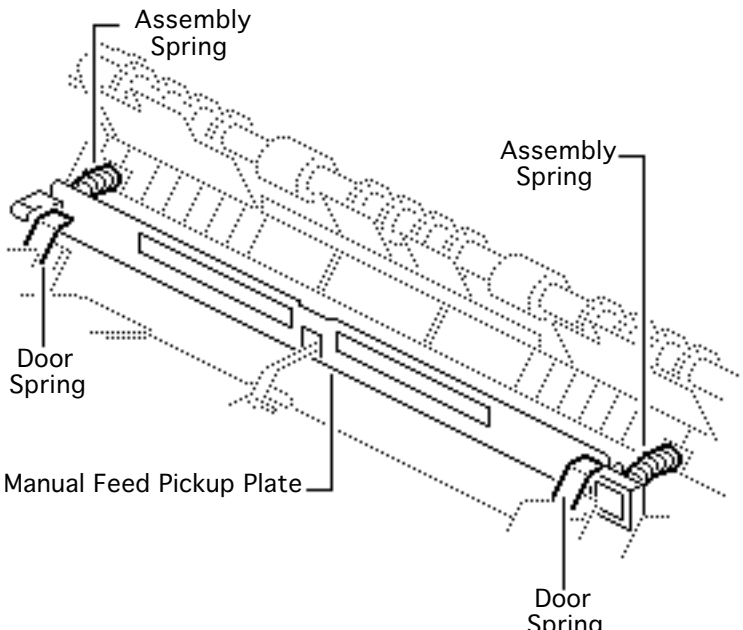
Replacement Note: Be sure to insert the manual feed sensor arm through the opening on the manual feed pickup plate.

Manual Feed Pickup Plate

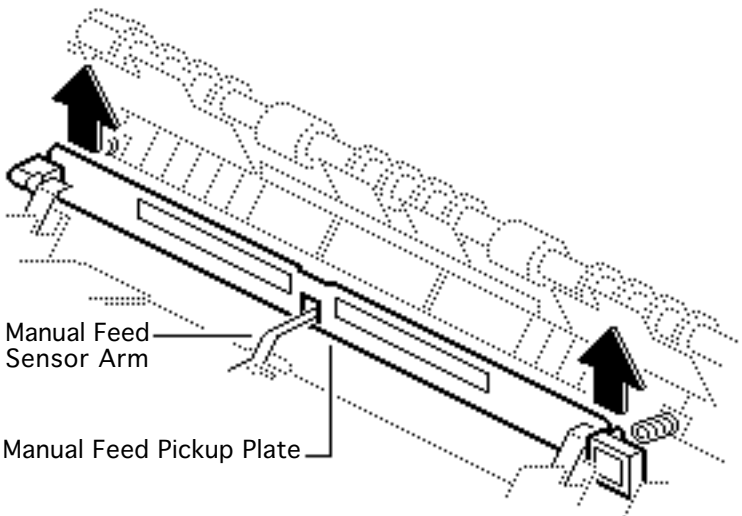


Before you begin, remove the following:

- Transfer roller
- Paper charge deflector
- Pickup roller assembly

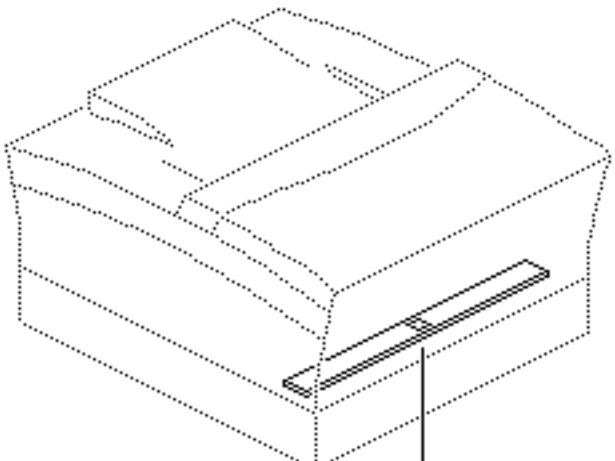


1. Remove the paper separation assembly springs from the manual feed pickup plate.
2. Rotate the manual feed pickup plate so that it is resting against the two front-door grounding springs.



3 Pull up and snap out each side of the manual feed pickup plate and release the plate from the front access door.

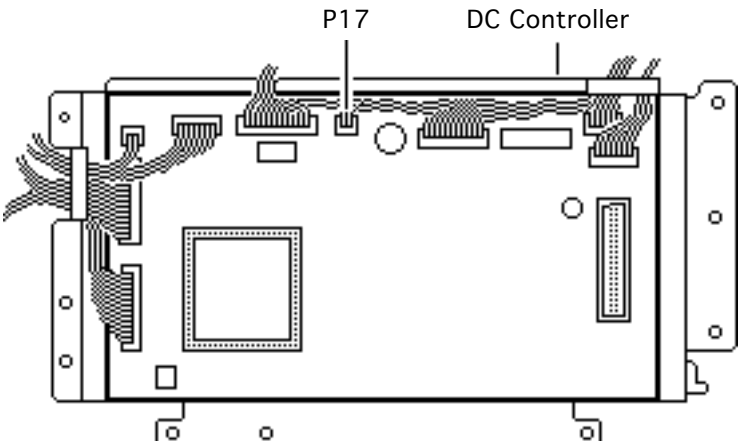
Replacement Note: Be sure to insert the manual feed sensor arm through the opening on the manual feed pickup plate.



Manual Feed Pickup Solenoid

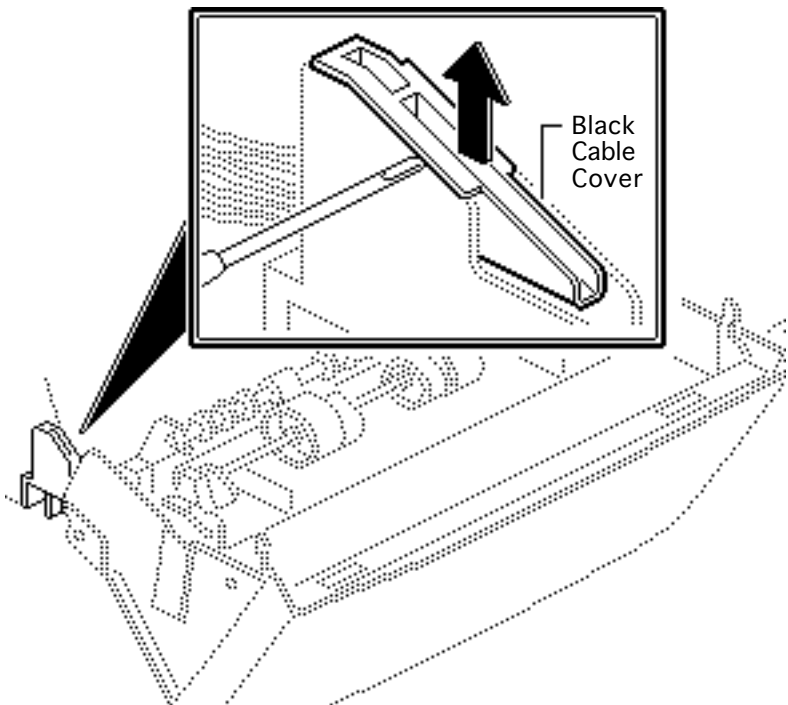
Before you begin, remove the following:

- Top cover
- Side covers
- Rear cover
- I/O controller mount
- Power switch lever
- Transfer roller
- Paper charge deflector
- Paper delivery guide
- Pickup roller assembly

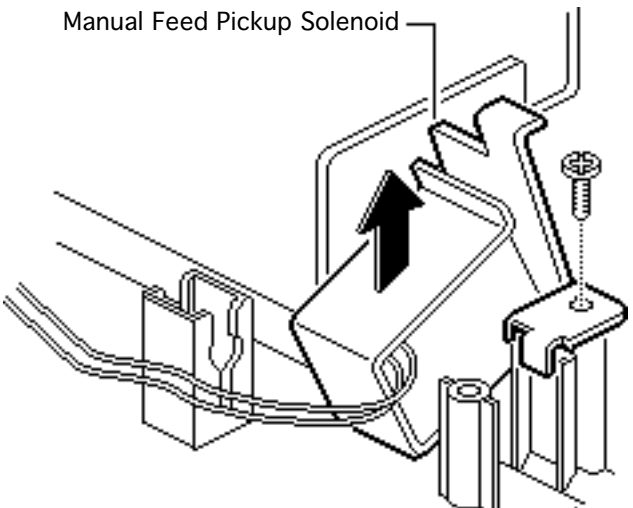


1 Disconnect connector P17 from the DC controller.

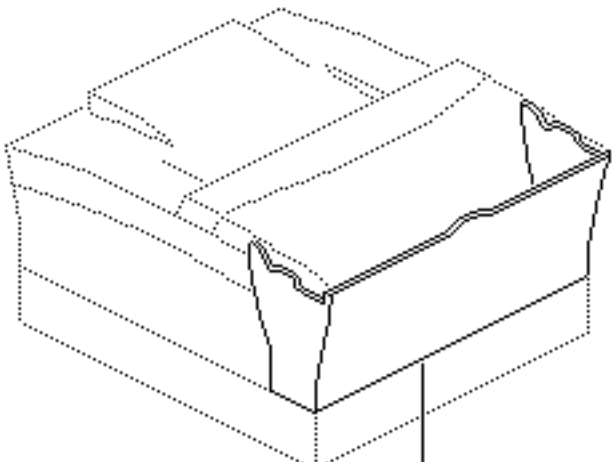
2 Remove the cable from the two cable retainers.



3 Using a jeweler's screwdriver, pry up the edge of the black cable cover and lift it out of the printer.



4 Remove the mounting screw and lift out the manual feed pickup solenoid.

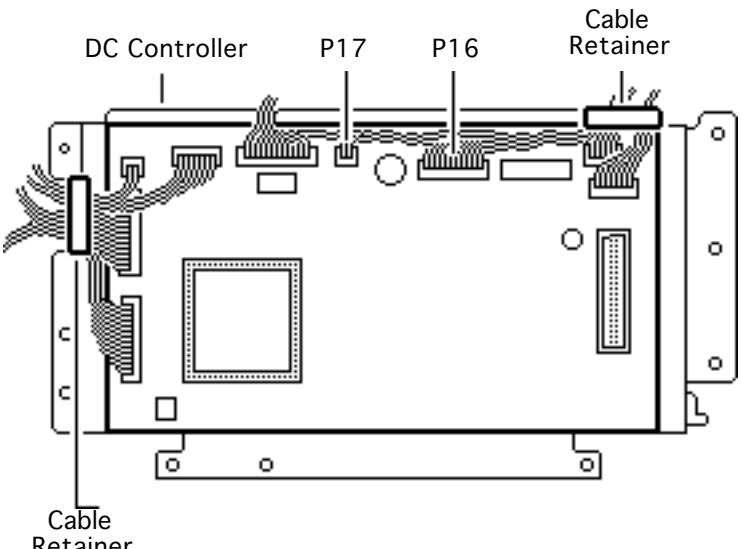


Front Access Door Assembly

Before you begin, remove the following:

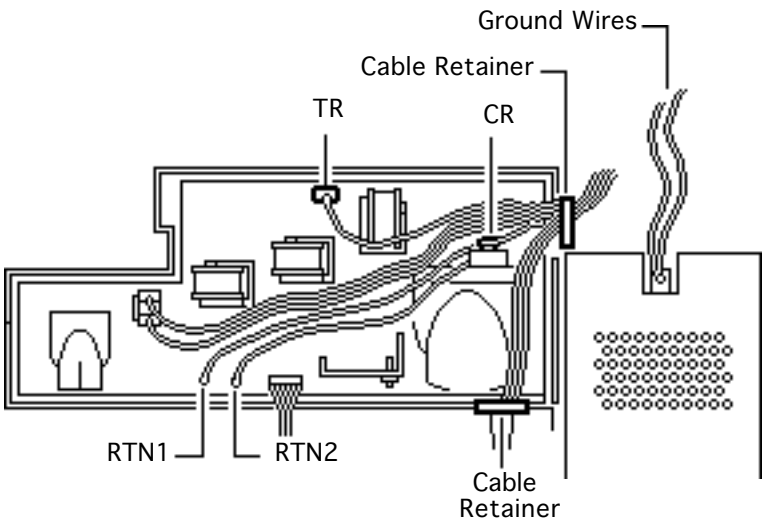
- Top cover
- Side covers
- Rear cover
- Manual feed tray
- Fuser assembly
- I/O shield
- I/O controller
- Power switch lever
- Double gears
- Paper separation assembly

Note: Perform this



procedure only if you are replacing the front access door itself.

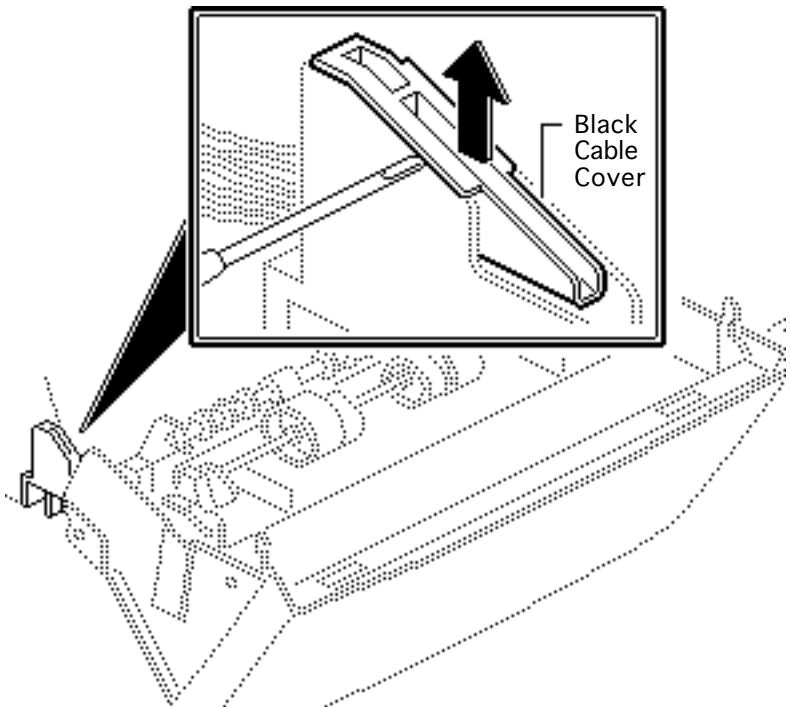
1. Disconnect connectors P16 and P17 from the DC controller.
2. Open the cable retainer and remove the cables.



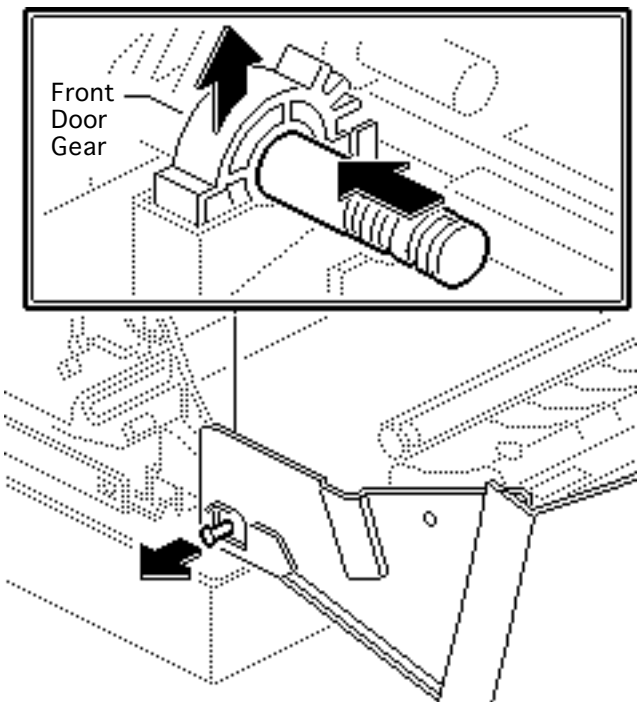
3 Disconnect the following connectors from the high-voltage power supply:
   - RTN1
   - RTN2
   - TR
   - CR

4 Open the cable retainer and remove the cables.

5 Remove the screw that fastens the black and green ground wires to the power supply.



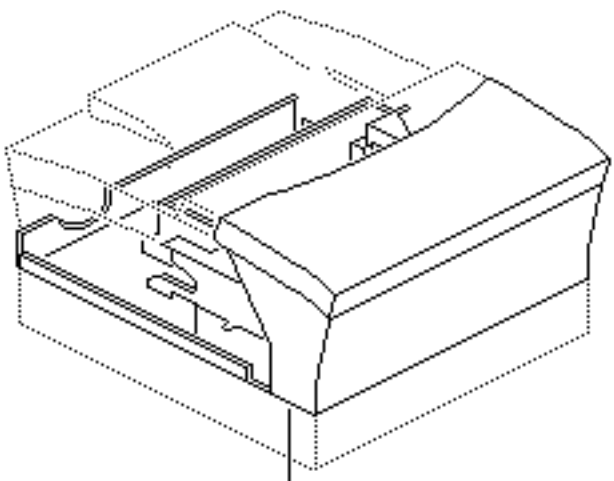
6 Using a jeweler's screwdriver, remove the small black cable cover.



7 Using a jeweler's screwdriver, remove the metal pivot shafts at each end of the front door assembly.

8 Lift out the front door gears.

9 Lift off the front access door assembly.



Laser/Optic Assembly

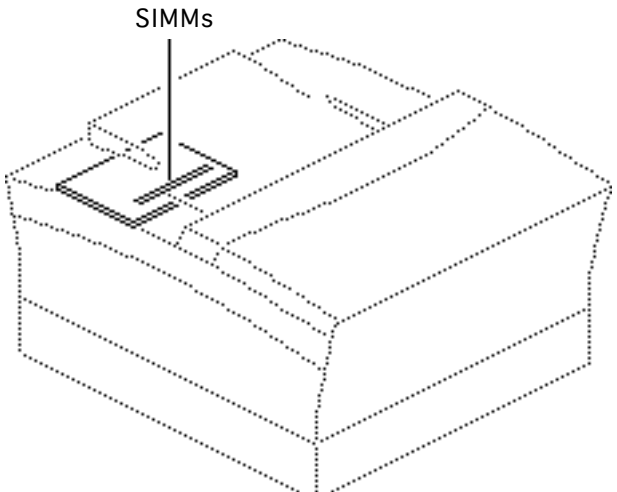
Laser/Optic Assy

The laser/optic assembly is what remains after you remove the following:

- Top cover
- Side covers
- Rear cover
- Cassette feeder assembly
- Fuser assembly
- I/O shield
- I/O controller mount
- DC controller mount
- High-voltage power supply
- Power supply
- Fan
- Drive assembly

Upgrades

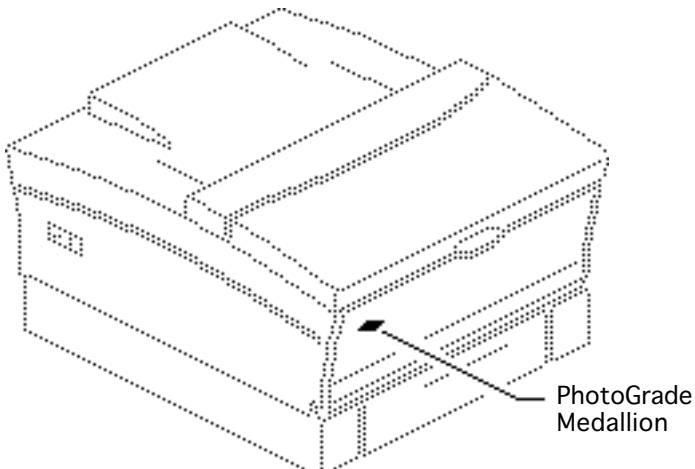
LaserWriter Select



Upgrading RAM

If you are upgrading the RAM in a LaserWriter Select 300 to 4 MB or more, perform the "Photograde Medallion" procedure in this chapter. The LaserWriter Select 300 requires a minimum of 4 MB of memory to print PhotoGrade images.

Note: Refer to the Memory manual for all configuration and illustrated parts information for SIMMs.

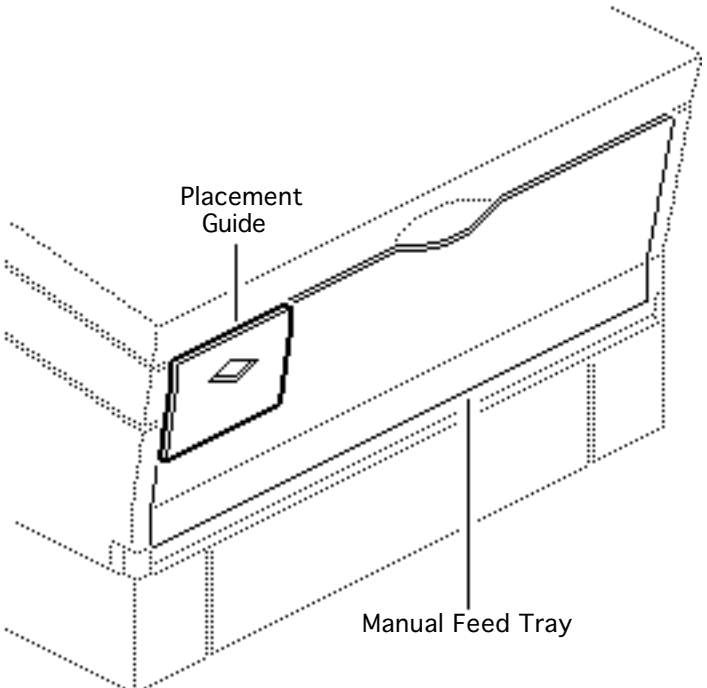


PhotoGrade Medallion

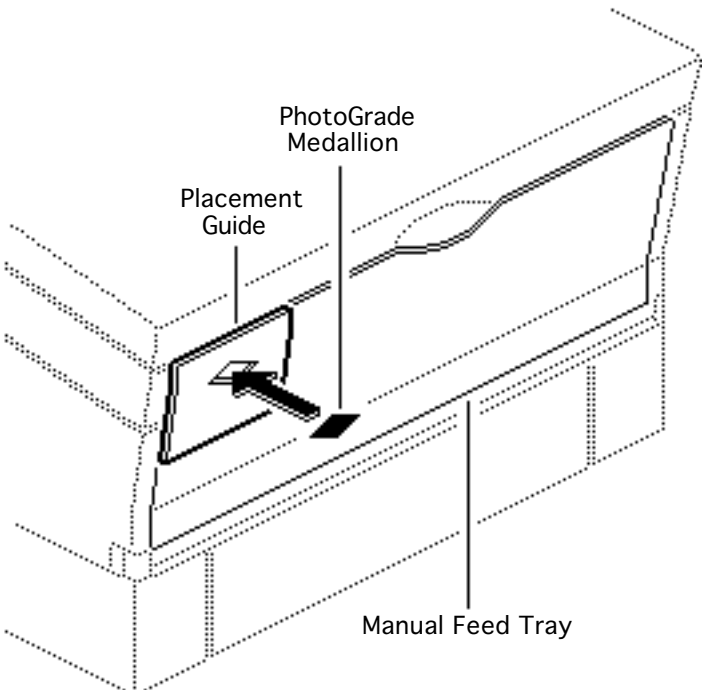
Before you begin, perform RAM upgrade.

You must affix the PhotoGrade Medallion to the left corner of the manual feed or multipurpose tray after you upgrade the RAM to 4 MB on a LaserWriter Select 300 I/O controller.

1 Remove the medallion and the placement guide from the upgrade package.



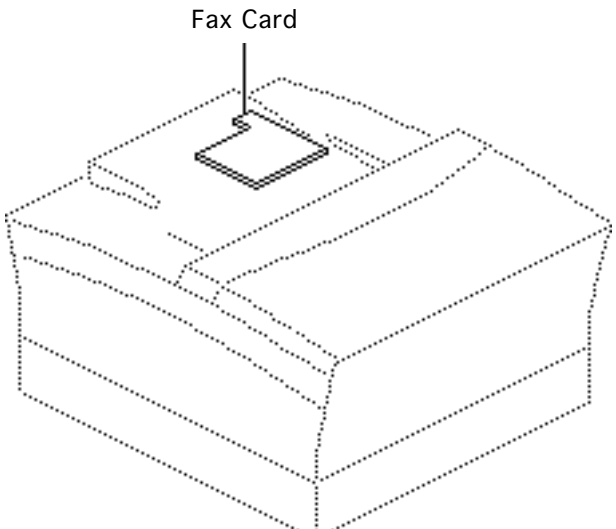
2 Position the placement guide on the manual feed tray with the top and left edges of the guide flush with the top and left sides of the manual feed or multipurpose tray.



3 Remove the liner from the back of the medallion.

4 Affix the medallion to the manual feed tray through the opening in the placement guide.

5 Remove the placement guide.



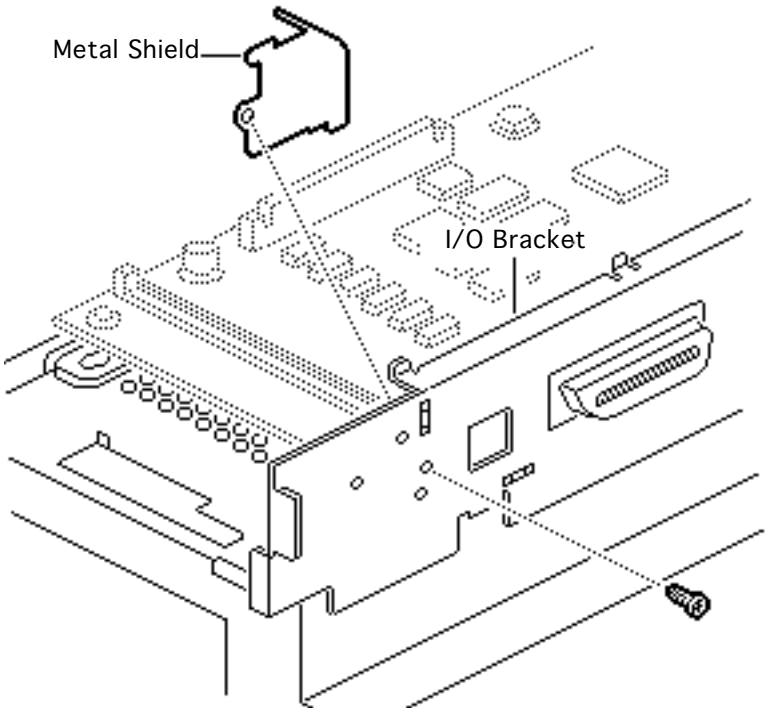
Fax Card Upgrade

Before you begin, remove the following:

- Covers
- I/O shield

Note: Only the LaserWriter Select 360 printer offers the fax card upgrade option.

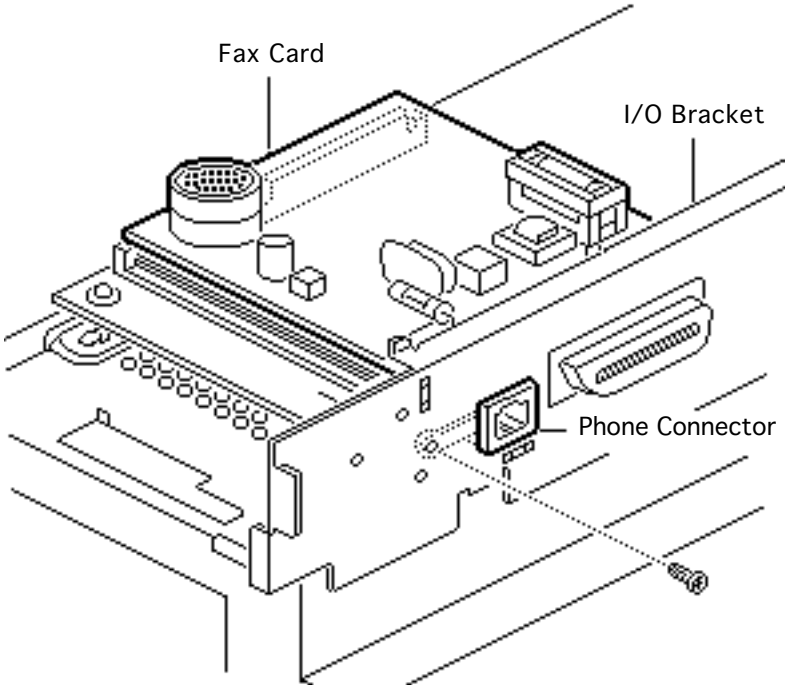
Important: End users have the option of turning the fax speaker on or off, but only Apple authorized service providers can adjust the volume. When installing the fax card, be sure to set the



volume at the mid-range level using a small Phillips screwdriver or a video adjustment tool. Be careful that you don't over rotate the dial or you could damage it.

1 Remove the screw that holds the metal shield that covers the fax port hole on the LaserWriter Select 360 I/O bracket.

2 Remove the metal shield from the I/O bracket.

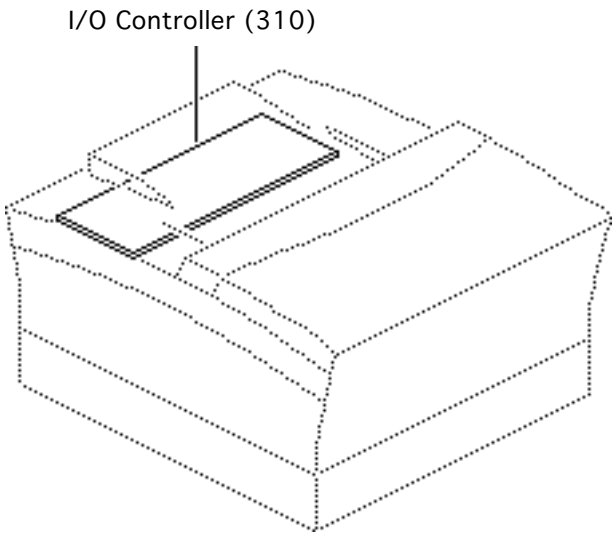


3 Insert the fax card (with the battery facing up) so that the phone connector is visible through the I/O bracket.

4 Press down gently on the fax card to secure connector J1 on the fax card to connector J57 on the I/O board.

5 Secure the fax card to the I/O bracket using the metal shield screw.

6 Affix the fax label on the back ledge beneath the fax port.



LW Select 310 Upgrade

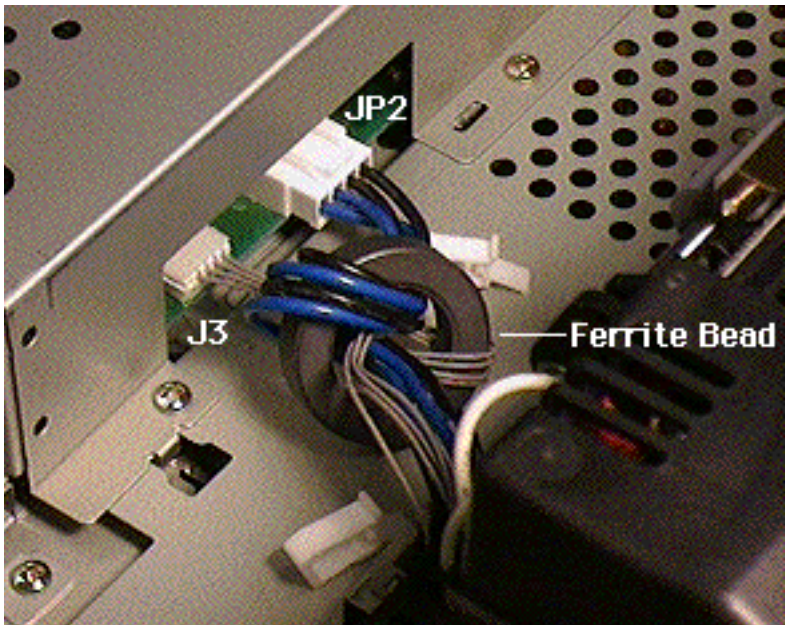
Before you begin, remove the following:

- Top cover
- Side covers
- Rear cover
- I/O shield
- LW Select 300 I/O Controller

This procedure describes the upgrade of a LaserWriter Select 300 to a 310. The LaserWriter Select 310 Upgrade Kit comes with a Select 310 I/O controller

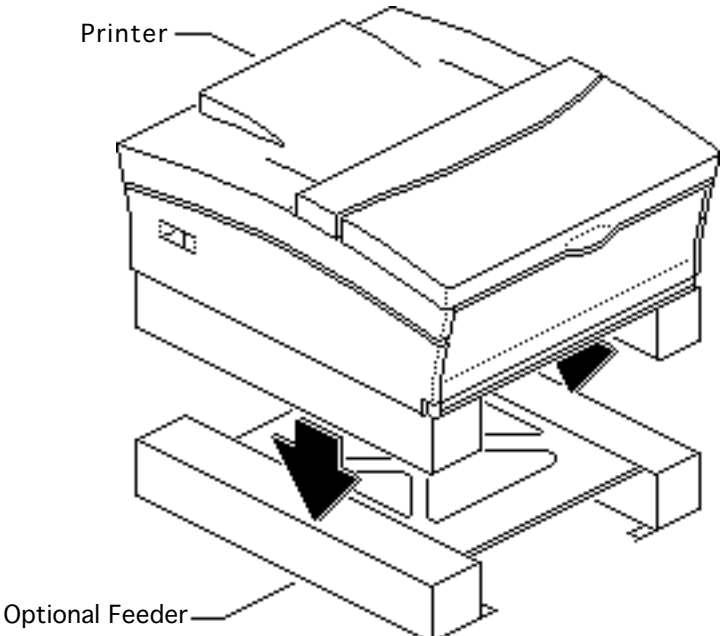
board and bracket, a ferrite bead, a product return form, and mailing label. For proper reimbursement, return the old I/O controller board to Apple as specified on the upgrade return form. Use the static bag and packaging from the upgrade kit and address the shipment using the mailing label provided.

1 Install the LaserWriter Select 310 I/O controller board and bracket (see "I/O Controller" in the Take Apart chapter of this manual.)



2 **Note:** There are two cables leading from the power supply to connectors J3 and JP2 on the I/O controller board. These cables must be double-looped through the ferrite bead.

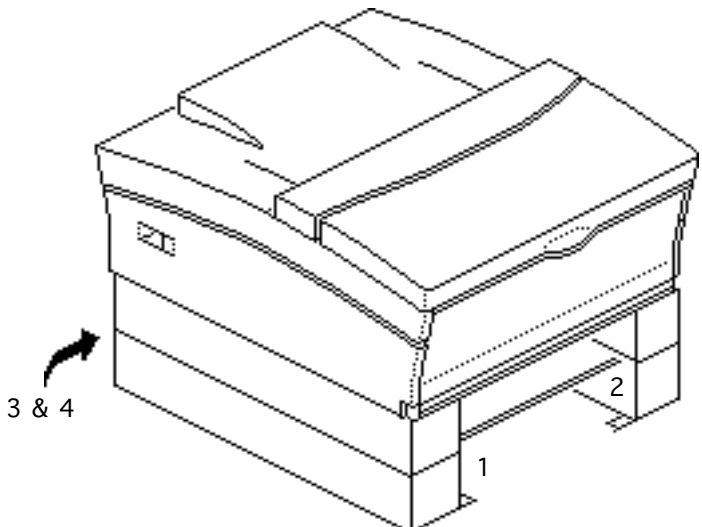
Loop the two cables through the ferrite bead and connect the cables to the I/O controller board.



Optional Feeder

The optional sheet feeder looks and works exactly like the built-in feeder that forms the lower portion of your printer. The illustration shows the 250-sheet feeder, but this procedure applies also to the 500-sheet size.

1 Lower the printer onto the sheet feeder so that the sides are exactly aligned.



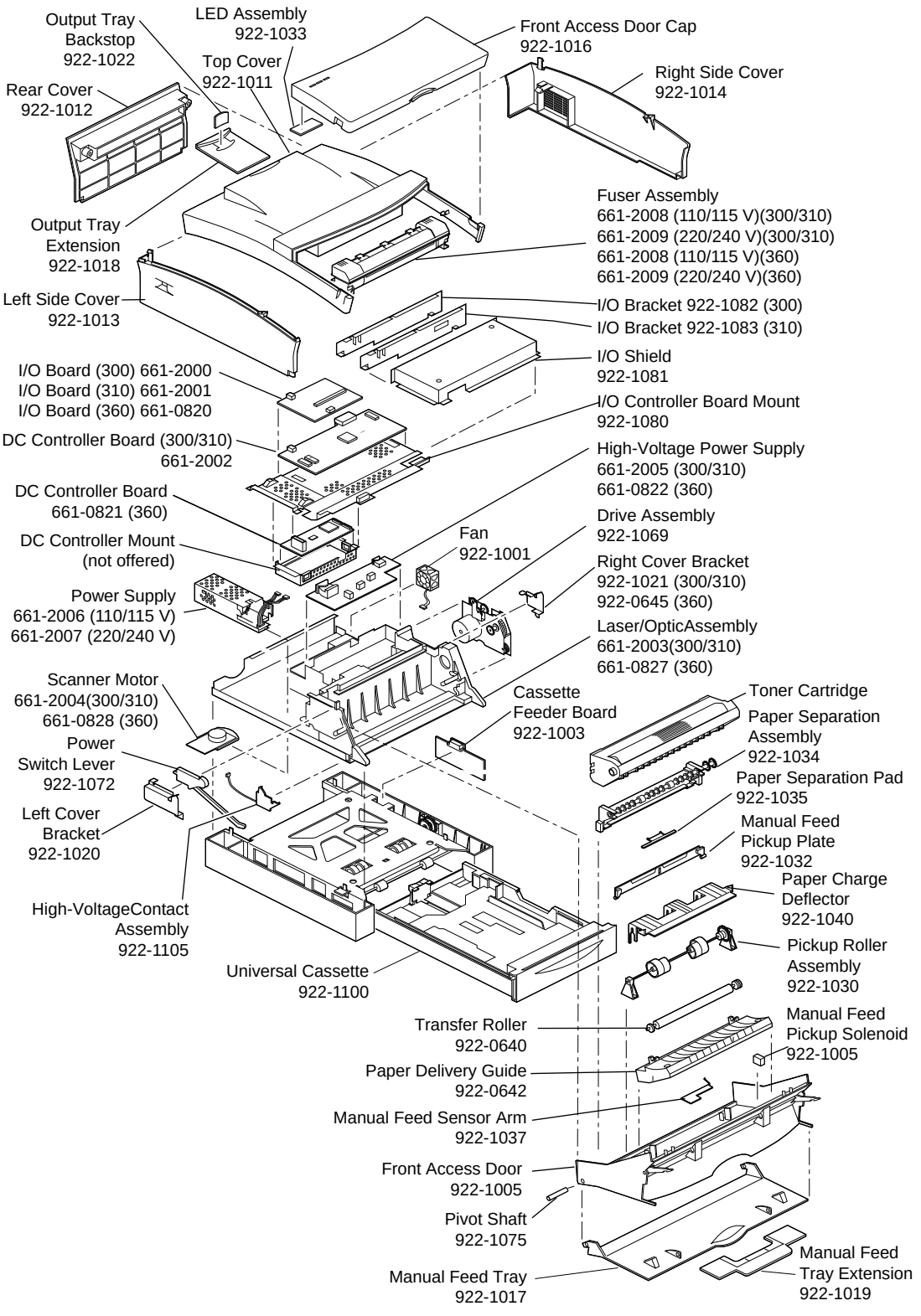
2 **Note:** The optional feeder comes with four plastic retainer clips. The clips must be installed to help hold the printer snugly to the sheet feeder. The slots are located at the four corners of the base of the printer, just above the upper cassette guides.

Snap a plastic retainer clip into each of four slots.

Exploded View

LaserWriter Select

LaserWriter Select 300/310/360 Exploded View



LaserWriter Select 300/310/360 Exploded View