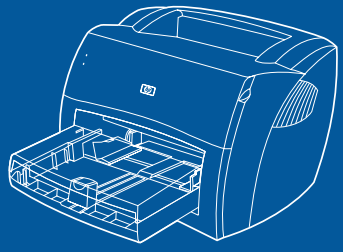

hp LaserJet 1000 series

invent

service

hp LaserJet 1000 series printer

service

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Part number Q1342-90901
First edition, August 2001
Printed in USA

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Safety Information

WARNING!

Potential Shock Hazard

Always follow basic safety precautions when using this product to reduce risk of injury from fire or electric shock.

1. Read and understand all instructions in the user guide.
2. Observe all warnings and instructions marked on the product.
3. Use only a grounded electrical outlet when connecting the HP LaserJet 1000 printer to a power source. If you don’t know whether the outlet is grounded, check with a qualified electrician.
4. Do not touch the contacts on the end of any of the sockets on the HP LaserJet 1000 printer. Replace damaged cords immediately.
5. Unplug this product from wall outlets before cleaning.
6. Do not install or use this product near water or when you are wet.
7. Install the product securely on a stable surface.
8. Install the product in a protected location where no one can step on or trip over the power cord and the power cord will not be damaged.
9. If the product does not operate normally, see the online user guide.
10. Refer all servicing questions to qualified personnel.

Information regarding FCC Class B, Parts 15 and 68 requirements can be found in the user guide.

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1 Product information

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Introduction

This manual contains the necessary information to service the HP LaserJet 1000 Series printer. Service topics include printer features, product specifications, location of model and serial numbers, warranty information, toner cartridge information, part removal procedures, troubleshooting procedures, and an illustrated parts chapter.

Hint See the HP LaserJet 1000 Series printer user guide for information about printer installation, use, and operation.

Printer features

Table 1. HP LaserJet 1000 Series printer features

Speed	• 10 pages per minute (ppm) letter-size media
Resolution	• 600 dot-per-inch (dpi) printing
Connectivity	• 1.1 universal serial bus (USB) port • External cable pod (formatter) • The HP LaserJet 1000 Series printer is designed for use *only* with an IBM-compatible computer
Media handling	• 250-sheet input tray • 125-sheet output bin
Toner	• 2500 page toner cartridge life
Duty cycle	• 1000 page-per-month average
Memory	• 1 MB SDRAM
Microsoft® operating systems supported	• Windows® 98 • Windows 2000 • Windows Millennium Edition (Me) • Windows XP
PCL printer language	• Enhanced PCL 5e (with MS-DOS® emulation)

Identification

The model number and serial numbers are listed on an identification label located on the bottom of the printer. The serial number contains information about the country of origin and the revision level, production code, and production number of the printer. The label also identifies power rating and regulatory information.

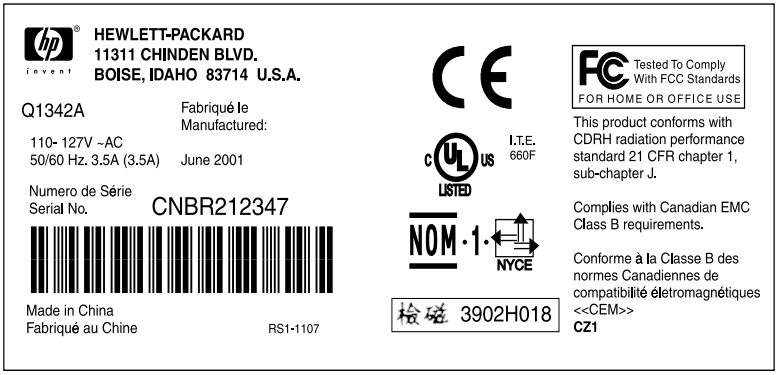

Figure 1. **Model and serial number label**

Specification tables

Table 2. Physical specifications

Category	Specification
Height	253 mm (10 inches)
Depth	486 mm (19.1 inches)
Width	415 mm (16.3 inches)
Weight (toner cartridge installed)	7.3 kg (16.1 lb)

Table 3. Environmental specifications

Category	Specification
Operating environment (printer plugged into an ac outlet)	• Temperature: 15° to 32.5° C (59° to 90.5° F) • Humidity: 10 to 80 percent relative humidity (no condensation)
Printer storage environment (printer not plugged into an ac outlet)	• Temperature: -20° to 60° C (-4° to 140° F) • Humidity: 10 to 90 percent relative humidity (no condensation)
Toner cartridge storage environment (printer not plugged into an ac outlet)	• Temperature: -20° to 40° C (-4° to 104° F) • Humidity: 10 to 90 percent relative humidity (no condensation)

Table 4. Power specifications

Category	Specification
Power requirements	• 110 Vac (± 12 percent), 60 (± 3) Hz; 127 Vac (± 12 percent), 60 (± 3) Hz -Or- • 220 Vac (± 12 percent), 50/60 (± 3) Hz • 240 Vac (± 12 percent), 50 (± 3) Hz **WARNING!** Power sources are not interchangeable. **CAUTION** To prevent damage to the printer, always connect it to a surge-protected power source.

Table 4. Power specifications (continued)

Category	Specification
Power consumption (in continuous copy mode)	285 W
Power consumption (idle)	7 W
Power consumption (off)	0 W
Minimum recommended circuit capacity	4.5 A at 115 V 2.3 A at 230 V

Table 5. Print operating acoustical emissions specifications

Category	Specification
Sound power level, L_{WAd} (1 bel = 10 decibels)	6.1 dB(A)
Sound pressure level, L_{pAm} (operator position)	56 dB(A)
Sound pressure level, L_{pAm} (bystander position)	48 dB(A)

Table 6. Skew specifications

Category	Specification
Print skew—left	0.8 percent (2 mm on media 250 mm in length) for cut-sheet media 1.5 percent (3.3 mm on media 220 mm in length) for cut-sheet media 0.87 percent (1.65 mm on media190 mm in width) for cut-sheet media
Print skew—right	1.5 percent (3.3 mm on media 220 mm in width) for envelopes, postcards, A5, and cut-sheet media
Cut-sheet leading edge skew	0.87 percent (1.6 mm on media 190 mm in width)

Front and side view

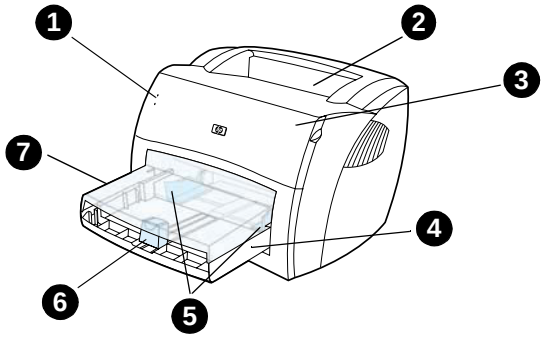

Figure 2. **Front and side view**

1 LED status lights

2 Output bin

3 Toner cartridge door

4 Input tray

5 Sliding side media guides

6 Long media support for the input tray

7 Input tray cover

Back and side view

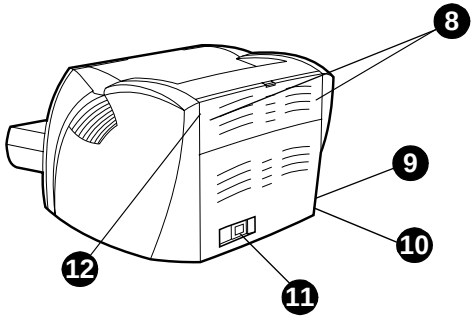

Figure 3. **Back and side view**

8 Media jam release levers

9 Port for the USB cable pod

10 Engine test button

11 Power receptacle

12 Straight-through output door

Warranty statement

DURATION OF WARRANTY: One year from date of purchase

1 HP warrants to you, the end-user customer, that HP hardware, accessories, and supplies, will be free from defects in materials and workmanship after the date of purchase, for the period specified above. The customer is responsible for maintaining proof of date of purchase. If HP receives notice of such defects during the warranty period, HP will, at its option, either repair or replace products which prove to be defective. Any replacement products may be either new or like-new, provided that it has functionality at least equal to that of the product being replaced.

2 HP warrants to you that HP software will not fail to execute its programming instructions after the date of purchase, for the period specified above, due to defects in material and workmanship when properly installed and used. If HP receives notice of such defects during the warranty period, HP will replace software media which does not execute its programming instructions due to such defects.

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4 HP products may contain remanufactured parts equivalent to a new in performance or may have been subject to incidental use.

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Extended warranty

HP SupportPack provides coverage for the HP hardware product and all HP-supplied internal components. The hardware maintenance warranty covers a three-year period from the date of the HP product purchase. The customer must purchase the HP SupportPack (document number is 9036) within 180 days of the HP product purchase. Customers can contact the nearest HP-authorized dealer about this service.

Toner cartridge information

The toner cartridge is designed to simplify replacement of the major consumable parts. The toner cartridge contains the printing mechanism and a supply of toner.

At five percent page coverage, a toner cartridge prints approximately 2500 pages. However, a toner cartridge should print more pages if it regularly prints pages with less coverage, such as short memos. The cartridge might print fewer pages if heavy or bold print is used.

For best results, always use a toner cartridge before the expiration date stamped on the toner cartridge box.

Refilled toner cartridges

Although Hewlett-Packard does not prohibit the use of refilled toner cartridges during the warranty period or while the printer is under a maintenance contract, it is not recommended for the following reasons:

- Repairs resulting from the use of refilled toner cartridges are not covered under Hewlett-Packard warranty or maintenance contracts.
- Hewlett-Packard has no control or process to ensure that a refilled toner cartridge functions at the high level of reliability of a new HP LaserJet toner cartridge. Hewlett-Packard also cannot predict the long-term reliability effect on the printer from using different toner formulations found in refilled cartridges.
- The print quality of HP LaserJet toner cartridges influences the customer's perception of the printer. Hewlett-Packard has no control over the actual print quality of a refilled toner cartridge.

Recycling of toner cartridges

In order to reduce waste, Hewlett-Packard offers a recycling program. Cartridge components that do not wear out are recycled. Plastics and other materials are recycled. Hewlett-Packard pays the shipping costs from the user to the recycling plant (within the United States). To join this recycling effort, follow the instructions inside the toner cartridge box.

2 Removal and replacement

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Removal and replacement strategy

This chapter documents the removal and replacement of field replaceable units (FRUs) only. Replacement is generally the reverse of removal. Occasionally, notes and hints are included to provide directions for difficult or critical replacement procedures.

WARNING! Unplug the power cord from the power source before servicing the printer. Failure to follow this warning can result in personal injury or damage to the printer. Certain functional checks during troubleshooting require power supplied to the printer. However, power should be disconnected when removing assemblies.

Never operate the printer with the laser/scanner assembly exposed. The reflected beam, although invisible, can damage your eyes. When servicing the printer, replace the top cover *before* operating the printer.

CAUTION

The printer contains electrostatic discharge (ESD) sensitive components. Always perform service work at an ESD-protected workstation. If an ESD-protected workstation is not available, discharge body static and ground the printer chassis *before* servicing the printer.

Required tools

- #2 Phillips screwdriver with magnetic tip
- Small flat-blade screwdriver
- Needle-nose pliers
- penlight (optional)

Note Use of a Posidrive screwdriver damages screw-heads on the printer. Use a #2 Phillips screwdriver.

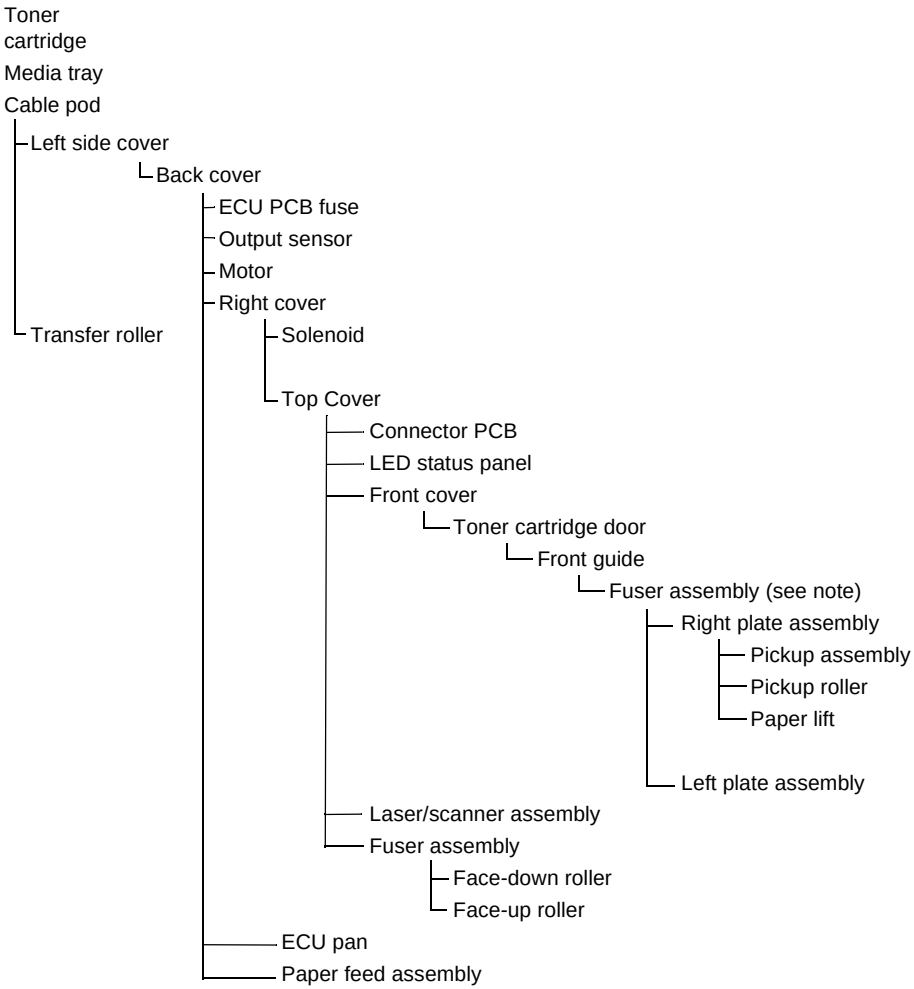
Hint To install a self-tapping screw, first turn it counterclockwise to align it with the existing thread pattern, then carefully turn it clockwise to tighten. Do not overtighten.

Before performing service

- Unplug the power cable and remove all media from the printer.
- Place the printer on an ESD mat or discharge body static and ground the printer chassis.
- Remove the toner cartridge and media tray. See “Toner cartridge” on page 15 and “Media tray” on page 16.

Parts removal order

Use the following diagram to determine the order in which parts must be removed.



Note The fuser assembly is intentionally listed twice.

Toner cartridge

CAUTION To prevent damage, do not expose the toner cartridge to light. Cover it with a piece of paper.

Note You will feel resistance when you open the toner cartridge door.

1. Open the toner cartridge door.
2. Remove the toner cartridge.

Figure 4. **Remove the toner cartridge**

Media tray

1. Lift off the media tray cover (callout 1).
2. Slightly tilt up the media tray and pull it away from the printer.

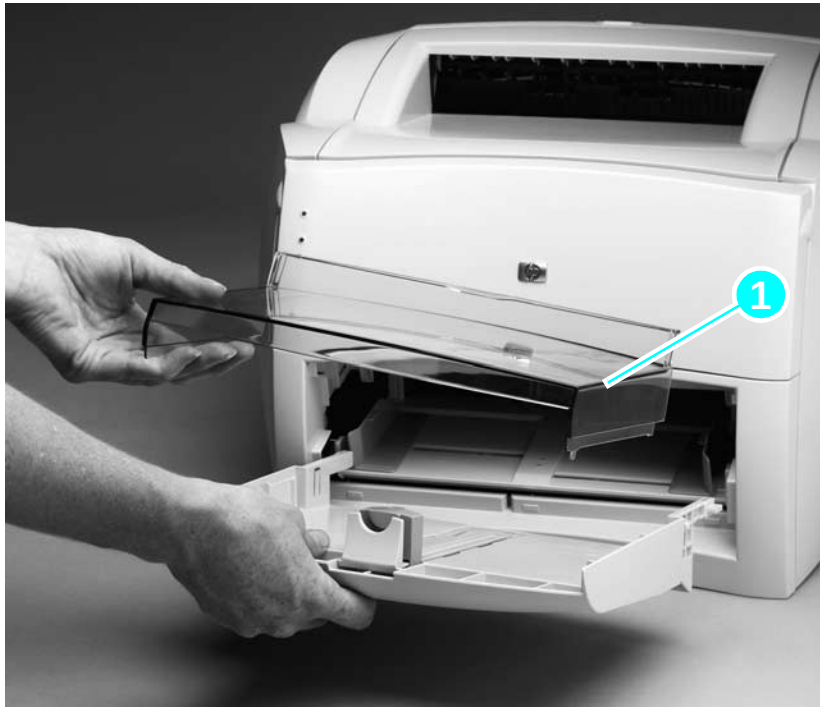


Figure 5. **Remove the media tray**

Cable pod

1 Turn the two pod thumbscrews counterclockwise until they turn freely.

2 Grasp the pod, and gently pull it away from the printer.

Figure 6. **Remove the cable pod**

Hint

For easier installation, start tightening the top thumbscrew (do not fully tighten) and then tighten the bottom thumbscrew when replacing the cable pod. Make sure to fully tighten both thumbscrews.

Left side cover

1 Remove the following assemblies:

- Toner cartridge, media tray, and cable pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17.

2 Open the toner cartridge door.

3 Remove the single left-cover retaining screw (callout 1).

4 Pull out on the rear of the cover and rotate it away from the printer.

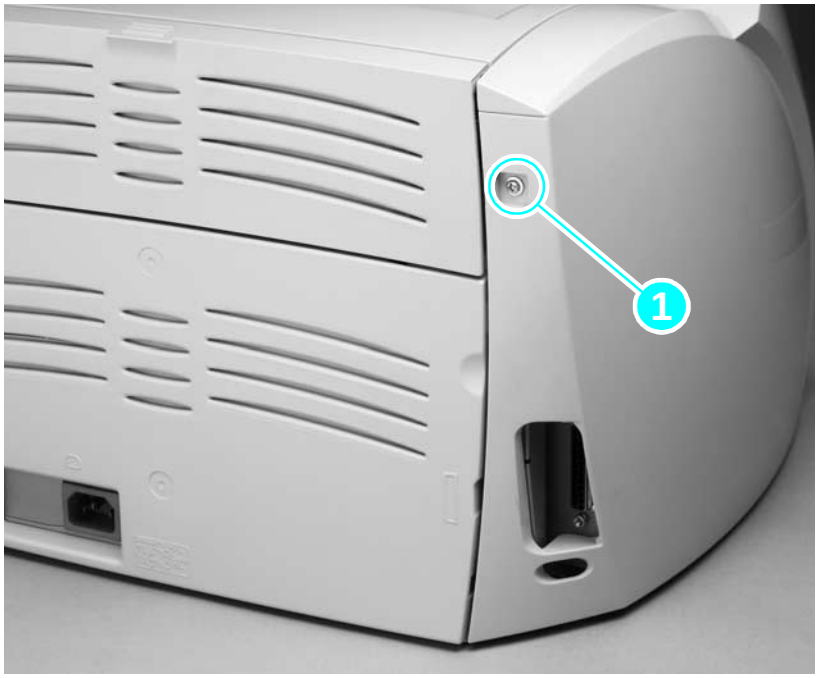


Figure 7. **Remove the left side cover**

Hint It might be necessary to release the left side cover-locking tab found under the printer.

Hint The left-side retaining screw is slightly longer than similar screws used in the printer. Keep this screw separated from other screws while servicing the printer to avoid misplacing it.

Back cover

1 Remove the following assemblies:

- Toner cartridge, media tray, cable pod, and left side cover. See “Toner cartridge” on page 15 through “Left side cover” on page 18.

2 Open the straight-through output door (callout 1).

3 Remove the single screw (callout 2) from the back of the printer.

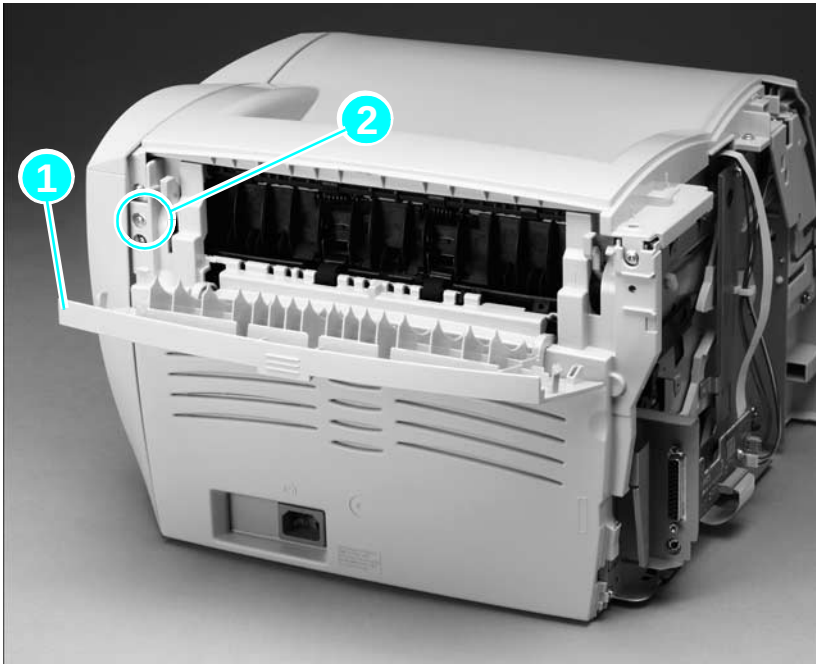


Figure 8. **Open the straight-through output door**

4 Release the two locking tabs (not shown). The left tab is located under the printer and the right tab is located on the right side of the printer, near the cable pod port.

5 Press down and hold the two green jam-release levers (callout 3) and pull the cover off of the printer.

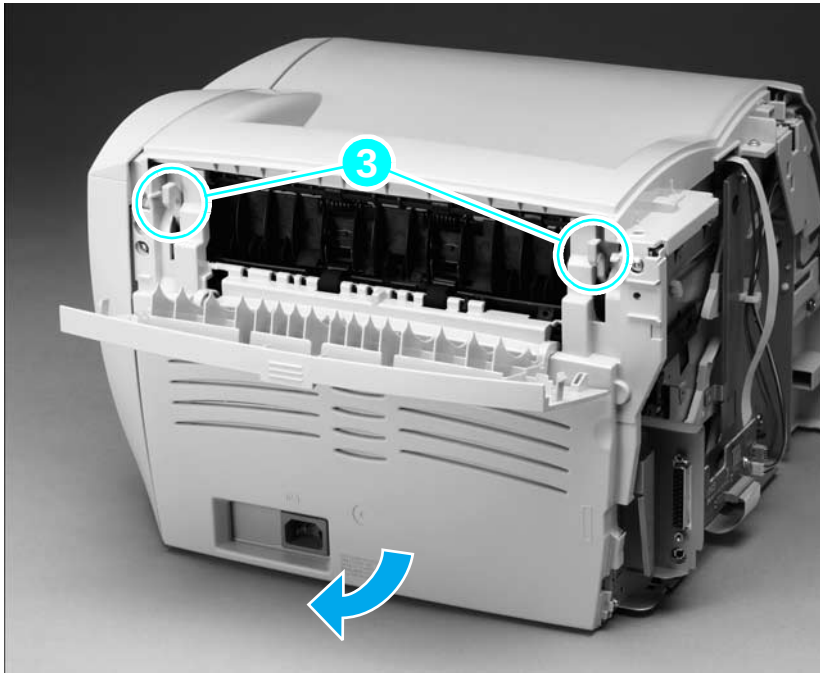


Figure 9. Remove the back cover

CAUTION When replacing the back cover, verify that the bottom left retainer tab (under the printer) is inside the printer chassis. This tab can be broken if not properly inserted into the printer chassis.

ECU PCB fuse

1 Remove the following assemblies:

- Toner cartridge, media tray, and cable pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17.
- Left side and back covers. See “Left side cover” on page 18 through “Back cover” on page 19.

2 Grasp the ECU PCB fuse (callout 1) and pull it out of the mounting clips.

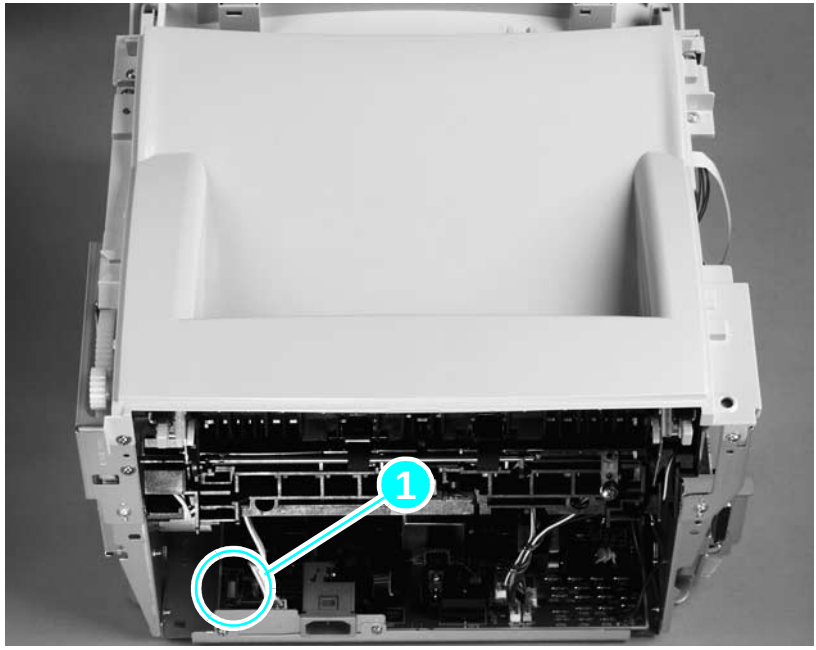


Figure 10. **Remove the ECU PCB fuse**

WARNING! To protect against the risk of fire, always replace the ECU PCB fuse with the same type and rating fuse. Fuse type and rating is printed on the ECU PCB next to the fuse.

Note Purchase this fuse at a local hardware store or from an electrical component supplier.

Output sensor

1 Remove the following assemblies:

- Toner cartridge, media tray, and cable pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17.
- Left side and back covers. See “Left side cover” on page 18 through “Back cover” on page 19.

2 Disconnect the output sensor (callout 1) wire harness (at the ECU end). Unlace the harness from the harness lance points.

3 Remove the single output sensor mounting screw and remove the sensor.

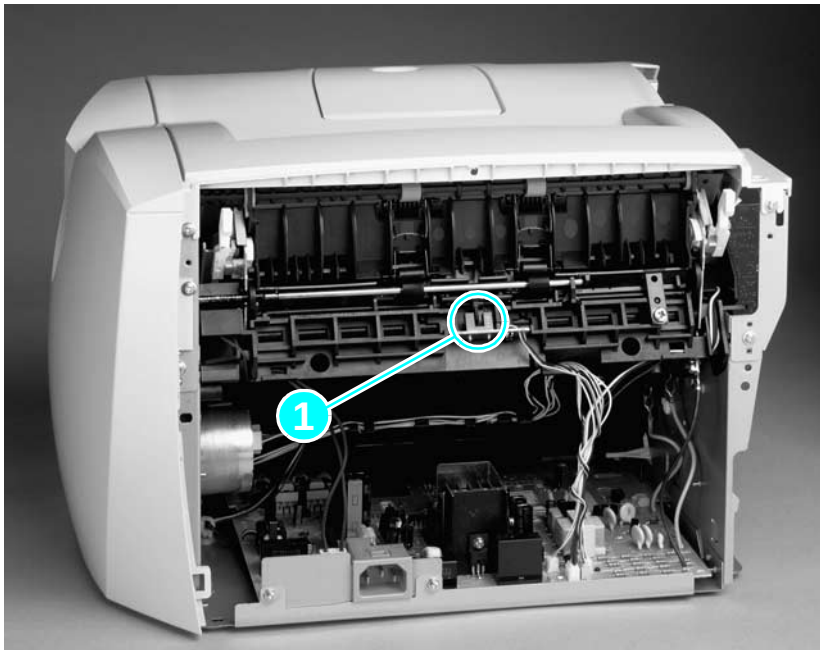


Figure 11. **Remove the output sensor**

Motor

1 Remove the following assemblies:

- Toner cartridge, media tray, and cable pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17.
- Left side and back covers. See “Left side cover” on page 18 through “Back cover” on page 19.

Hint

Removing the fuser is not necessary, but doing so will make replacing the motor easier. See “Fuser assembly” on page 42.

2 Disconnect the motor cable connector (callout 1) on the side of the motor.

3 Remove the two screws (callout 2) from the motor and lift the motor out of the printer.

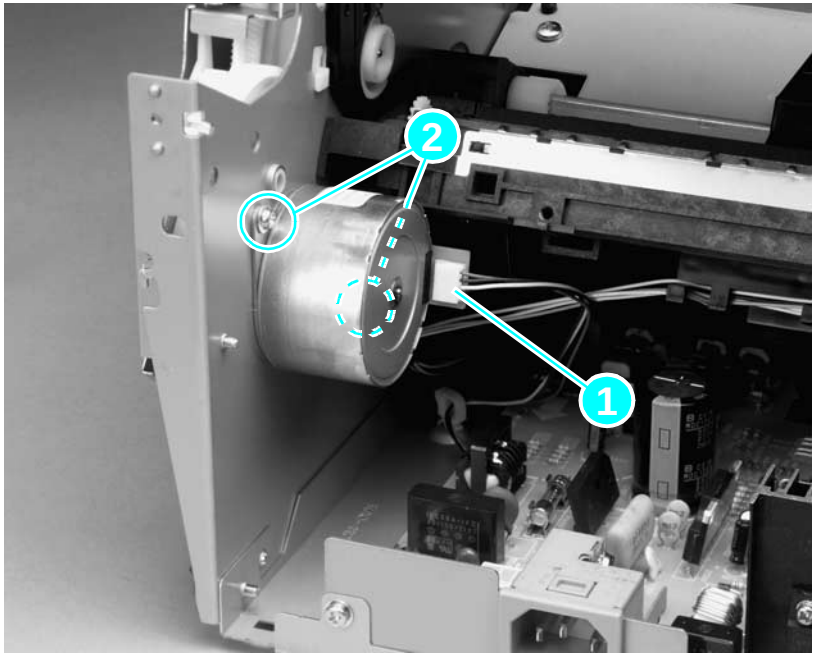


Figure 12. **Remove the motor (fuser removed for clarity)**

Note

When replacing the motor, verify that the connector (callout 1) is located toward the front of the printer.

Right side cover

1 Remove the following assemblies:

- Toner cartridge, media tray, and cable pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17.
- Left side and back covers. See “Left side cover” on page 18 through “Back cover” on page 19.

2 Open the toner cartridge door.

3 Remove one screw (callout 1) on the back of the printer.

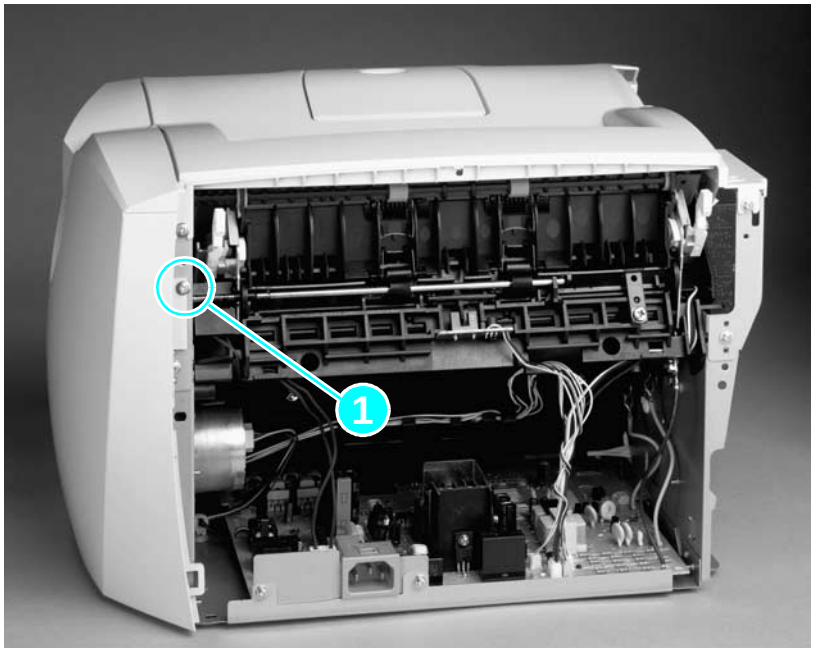


Figure 13. **Remove the right side cover mounting screw**

4 Lift the right side of the printer and release the tab (callout 2) on the bottom of the cover.

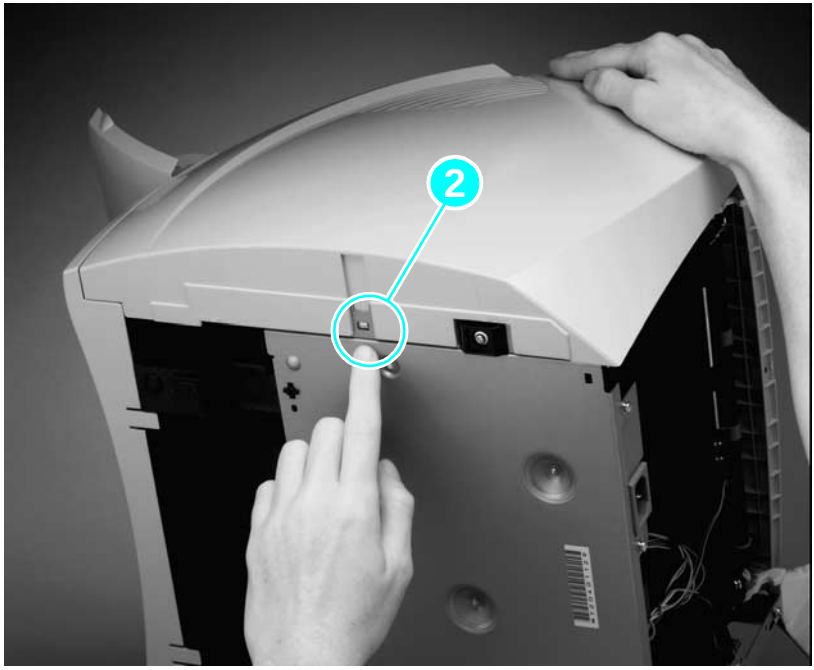


Figure 14. **Release the right side cover tab**

5 While continuing to press the release tab, grasp the top of the cover and rotate it away from the printer.

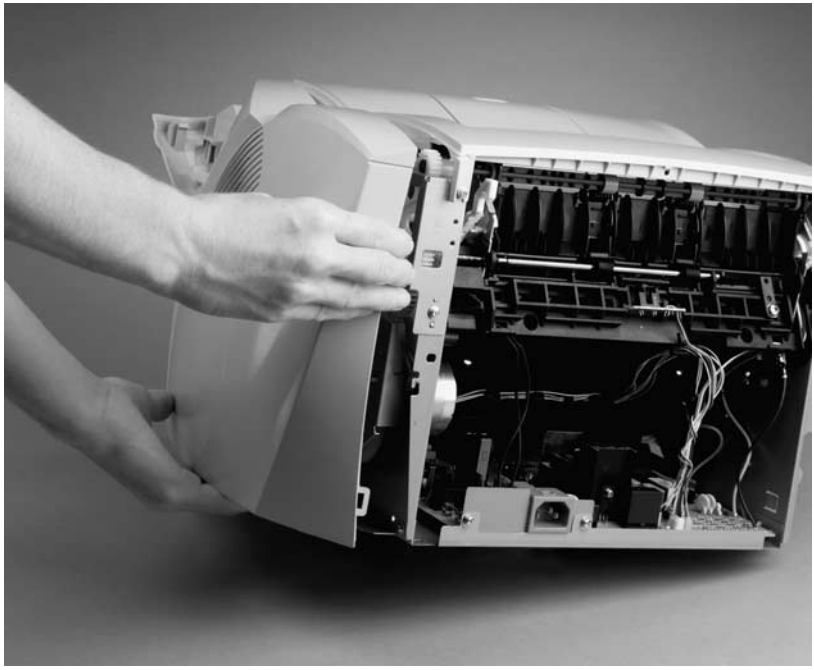


Figure 15. **Remove the right side cover**

Solenoid

1 Remove the following assemblies:

- Toner cartridge, media tray and formatter pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17.
- Left side, back, and right side covers. See “Left side cover” on page 18 through “Right side cover” on page 24.

2 Unplug the brown solenoid wire connector (callout 1) from the ECU and carefully unwind the solenoid harness from the harness lance points (callout 2).

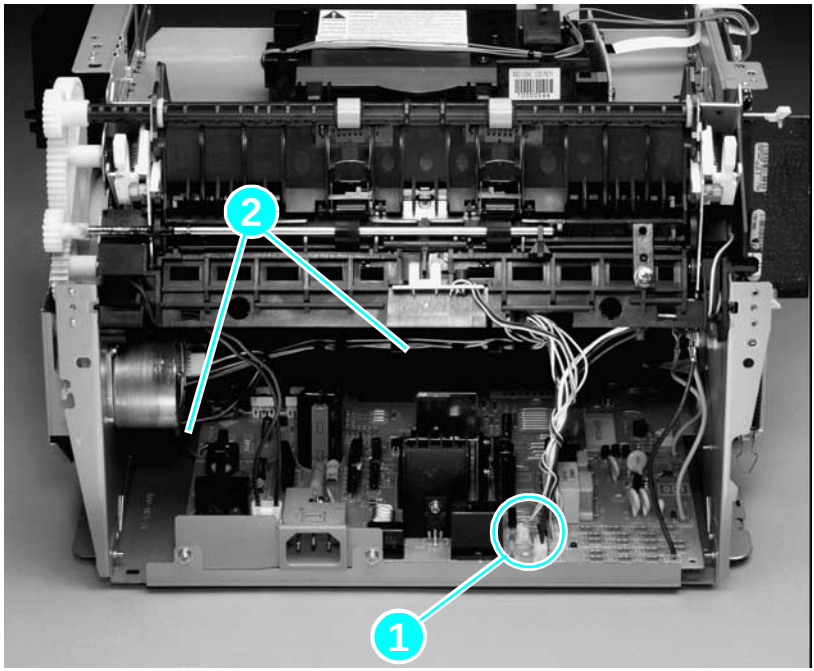


Figure 16. **Disconnect the solenoid wire harness**

3 Remove the screw (callout 3) on the solenoid.

4 Gently thread the solenoid cable through the hole (callout 4) in the right side plate.

5 Lift the solenoid off of the printer.

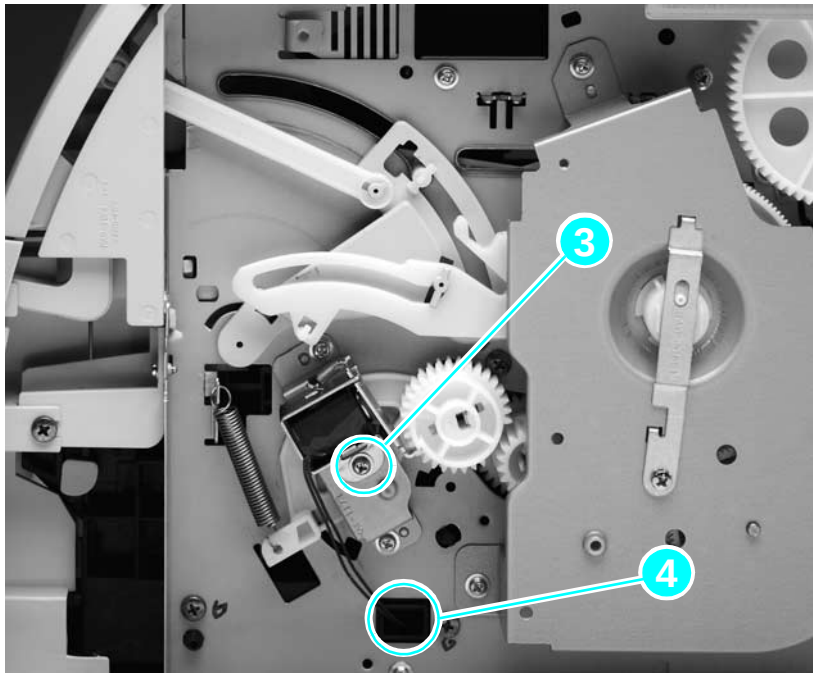


Figure 17. Remove the solenoid

Top cover

1 Remove the following assemblies:

- Toner cartridge, media tray, and cable pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17
- Left side, back, and right side covers. See “Left side cover” on page 18 through “Right side cover” on page 24.

2 Open the toner cartridge door.

3 Loosen, but do not remove, the two screws (callout 1) on the back of the printer.

4 Remove the two screws (callout 2) on the top of the printer.

5 Lift the cover off of the printer.

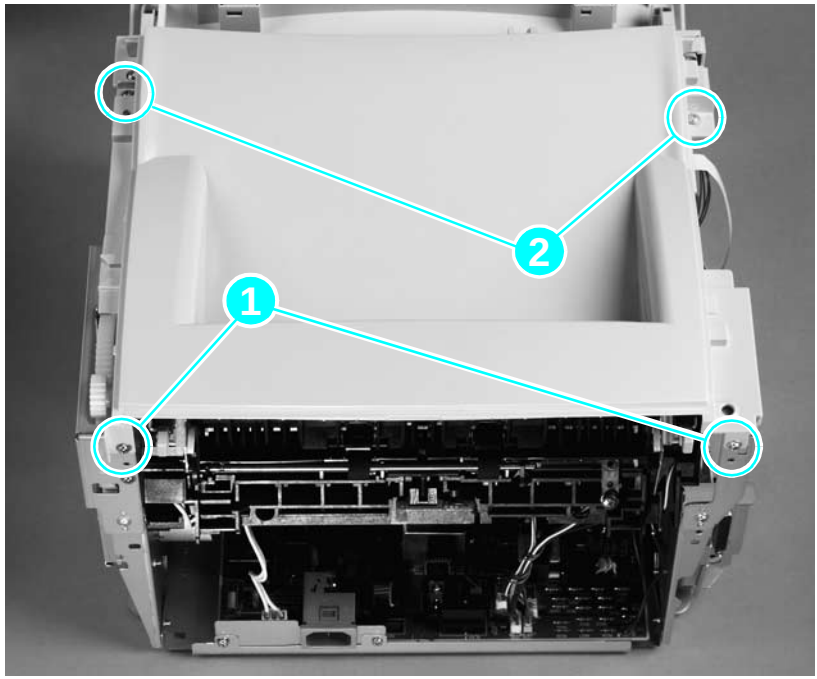


Figure 18. **Remove the top cover**

Connector PCB Assembly

1 Remove the following assemblies:

- Toner cartridge, media tray, and cable pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17.
- Left side, back, right side, and top covers. See “Left side cover” on page 18 through “Top cover” on page 29.

2 Open the toner cartridge door.

3 Disconnect the laser scanner ribbon cable (at the laser/scanner end), laser scanner wire harness, LED status panel wire harness, and ECU ribbon cable.

4 Remove the three connector PCB assembly mounting screws (callout 1), and remove the assembly.

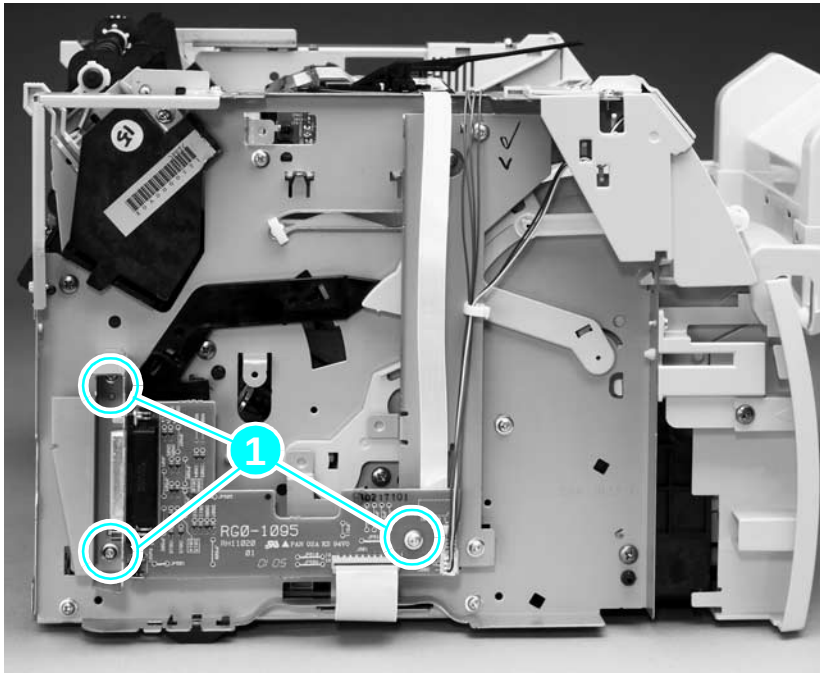


Figure 19. **Remove the connector assembly**

LED status panel

1 Remove the following assemblies:

- Toner cartridge, media tray, and cable pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17.
- Left side, back, right side, and top covers. See “Left side cover” on page 18 through “Top cover” on page 29.

2 Open the toner cartridge door.

3 Disconnect the status panel cable (callout 1) from the connector assembly. Unlace the harness from the harness clip.

4 Remove two screws (callout 2) from the top of the control panel assembly.

5 Lift and remove the panel assembly.

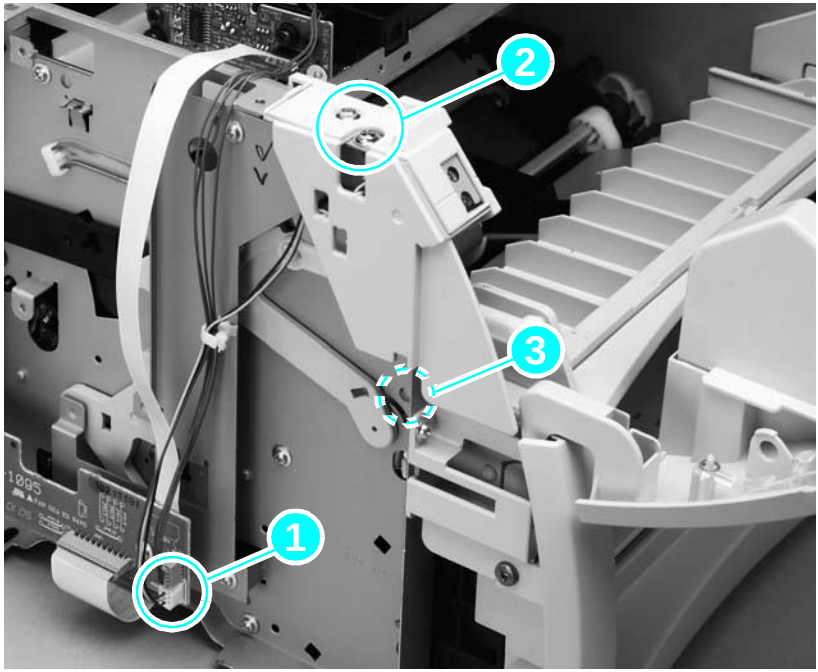


Figure 20. **Remove the LED status panel**

Hint

When replacing the LED status panel assembly, verify that the locator tab (callout 3) is correctly positioned in the provided hole.

Front cover

1 Remove the following assemblies:

- Toner cartridge, media tray, and cable pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17.
- Left side, back, right side, and top covers. See “Left side cover” on page 18 through “Top cover” on page 29.

2 Close the toner cartridge door.

3 Loosen two screws (one shown in callout 1), one on each side of the cover.

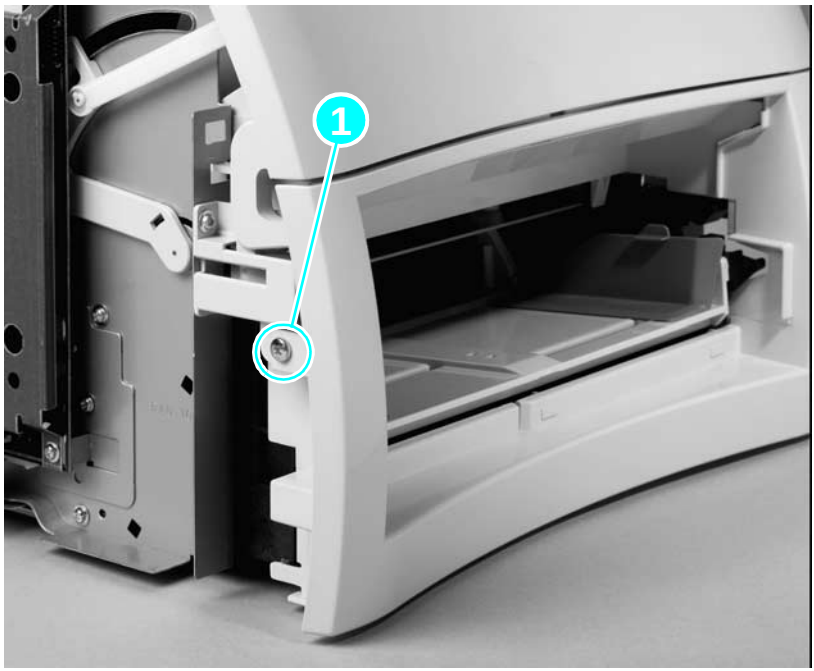


Figure 21. **Remove the front cover mounting screws**

4 Pull forward on the top of the front cover to release the three front cover tabs (callout 2).

5 Slightly raise the front of the printer and rotate the top of the cover toward you to release the tabs on the bottom of the front cover. Remove the front cover.

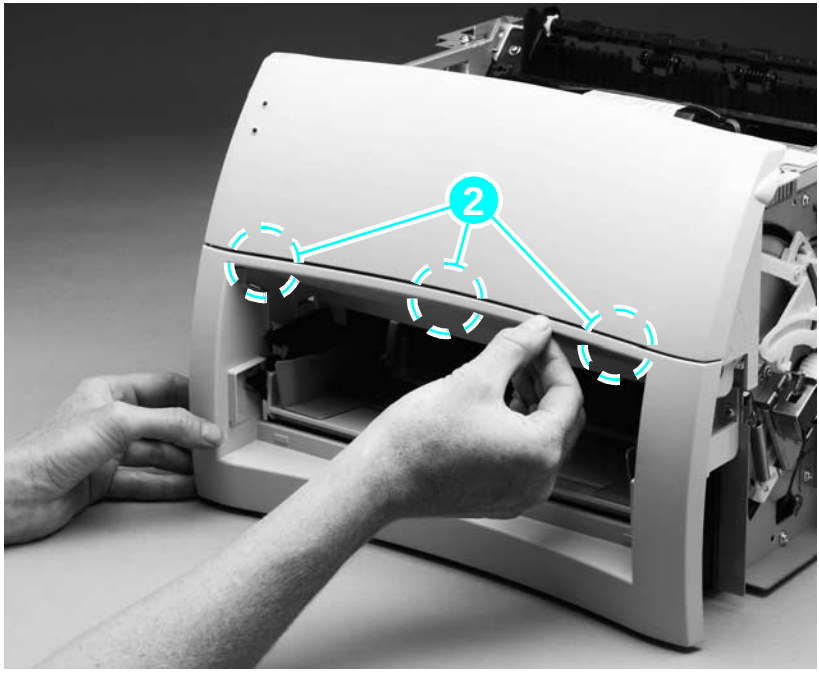


Figure 22. **Remove the front cover**

Toner cartridge door

1 Remove the following assemblies:

- Toner cartridge, media tray, and cable pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17.
- Left side, back, right side, and top covers. See “Left side cover” on page 18 through “Top cover” on page 29.
- Front cover. See “Front cover” on page 32.

2 Open the toner cartridge door.

3 Press the two small tabs (callout 1) on the inside of the right connecting link to release it.

4 Repeat on the left side.

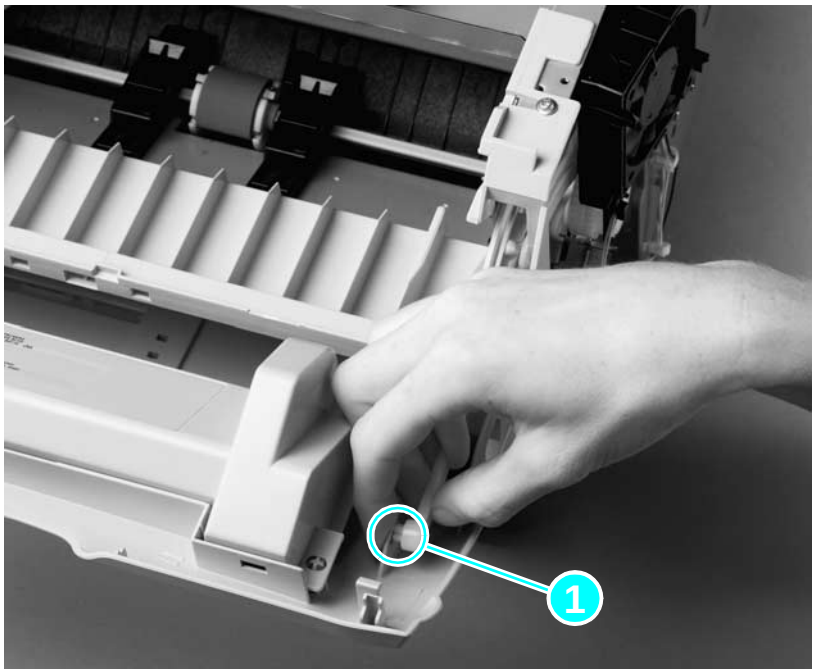


Figure 23. **Release the toner cartridge door connecting links**

5 Unhook the right side toner cartridge door hinge and slide the toner cartridge door toward the left to remove it.

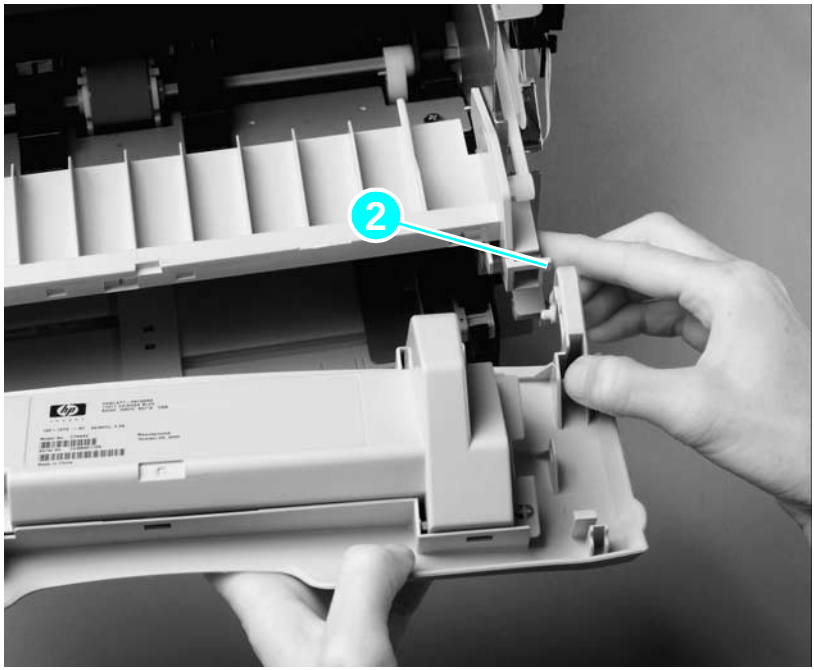


Figure 24. **Remove the toner cartridge door**

CAUTION When the cartridge door is replaced, the hinge must be behind the door stop (callout 2). The door will not close if the door is installed with the hinge in front of or on top of the door stop.

Hint After the toner cartridge door is removed, it is easy to remove the two connecting links.

Front guide

1 Remove the following assemblies:

- Toner cartridge, media tray, and cable pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17.
- Left side, back, right side, and top covers. See “Left side cover” on page 18 through “Top cover” on page 29.
- Front cover and toner cartridge door. See “Front cover” on page 32 through “Toner cartridge door” on page 34.

2 Remove the two front guide mounting screws (callout 1).

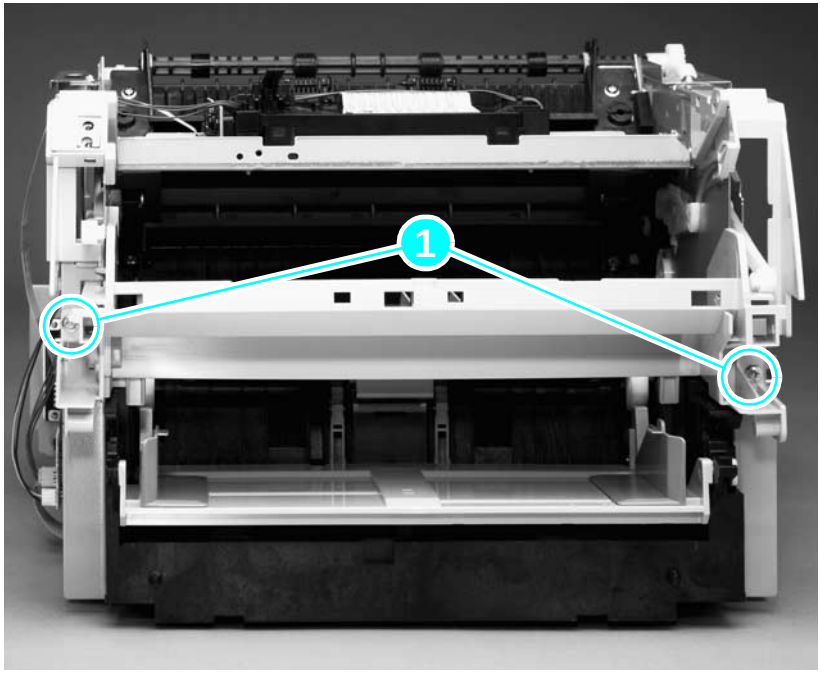


Figure 25. **Remove the front guide assembly**

3 Release the two right side front guide tabs (callout 2).

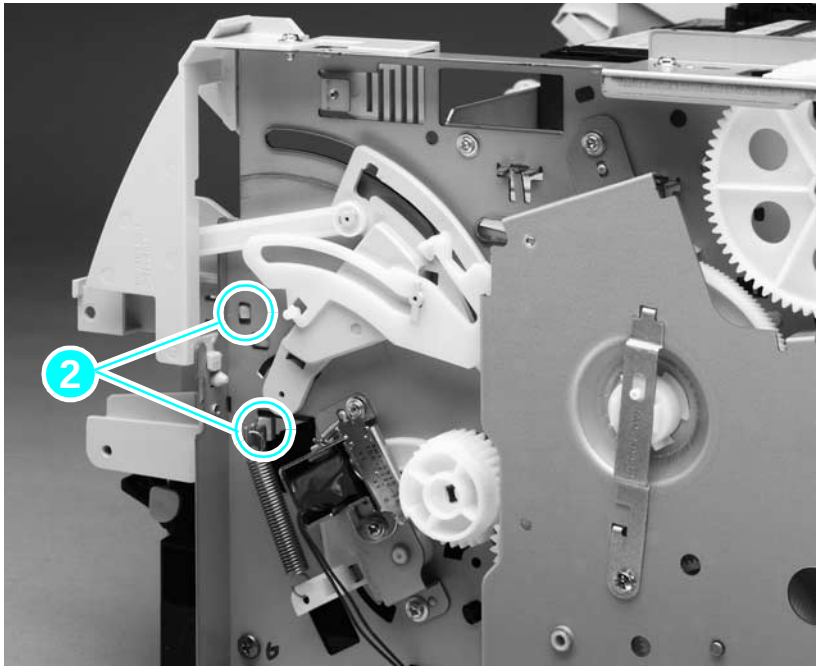


Figure 26. **Release the front guide assembly tabs (right side)**

4 Release the two front guide tabs on the left side (callout 3).

5 Remove the front guide assembly.

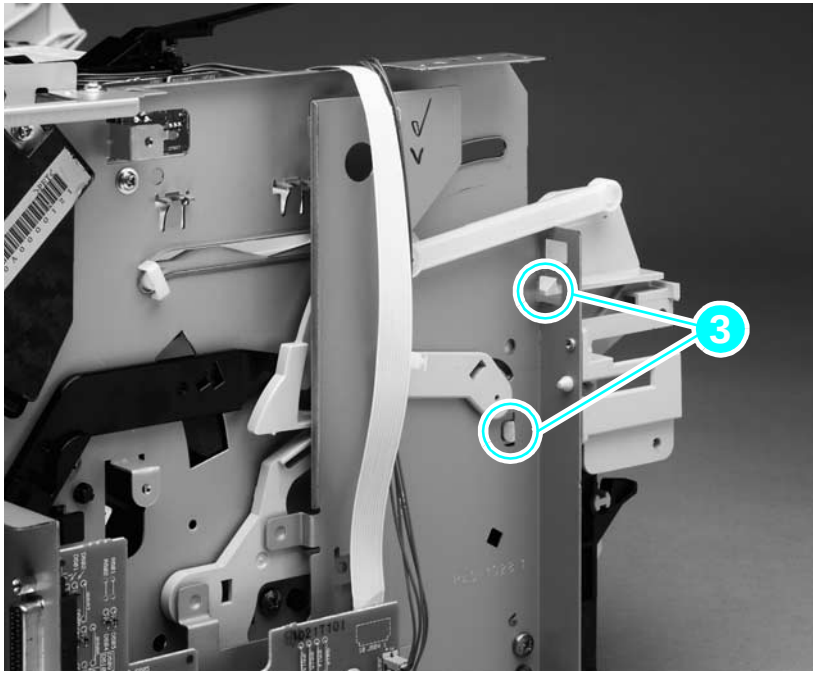


Figure 27. **Release the front guide assembly tabs (left side)**

Transfer roller

1 Remove the following assemblies:

- Toner cartridge and media tray. See “Toner cartridge” on page 15 through “Media tray” on page 16.

2 Use needle-nose pliers to gently squeeze the two small tabs on the transfer roller.

3 Lift the transfer roller up, slide it to the right, and lift it out of the printer.

CAUTION Skin oils can damage the transfer roller sponge. Do not touch the black transfer roller sponge.

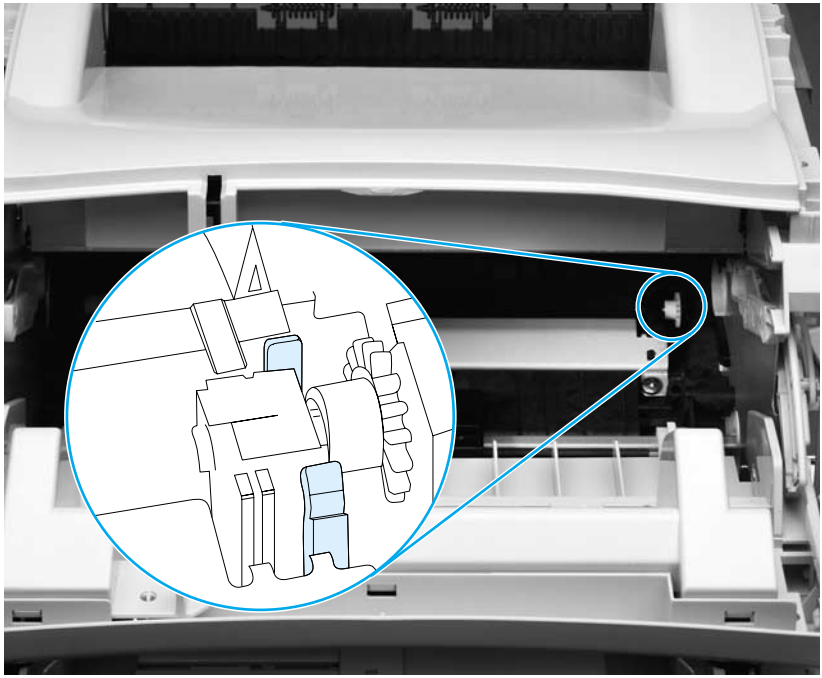


Figure 28. **Remove the transfer roller**

Hint Do not misplace the small grounding spring that is underneath the right side of the transfer roller.

Laser/scanner assembly

1 Remove the following assemblies:

- Toner cartridge, media tray, and cable pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17.
- Left side, back, right side, and top covers. See “Left side cover” on page 18 through “Top cover” on page 29.

CAUTION Never operate the printer with the laser/scanner assembly exposed. The reflected beam, although invisible, can damage your eyes. When servicing the printer, replace the top cover *before* operating the printer.

2 Disconnect the ribbon cable from its socket (callout 1) on the laser/scanner.

3 Disconnect the wire harness cable connector (callout 2) from the connector assembly and unlace the harness from the cable lance.

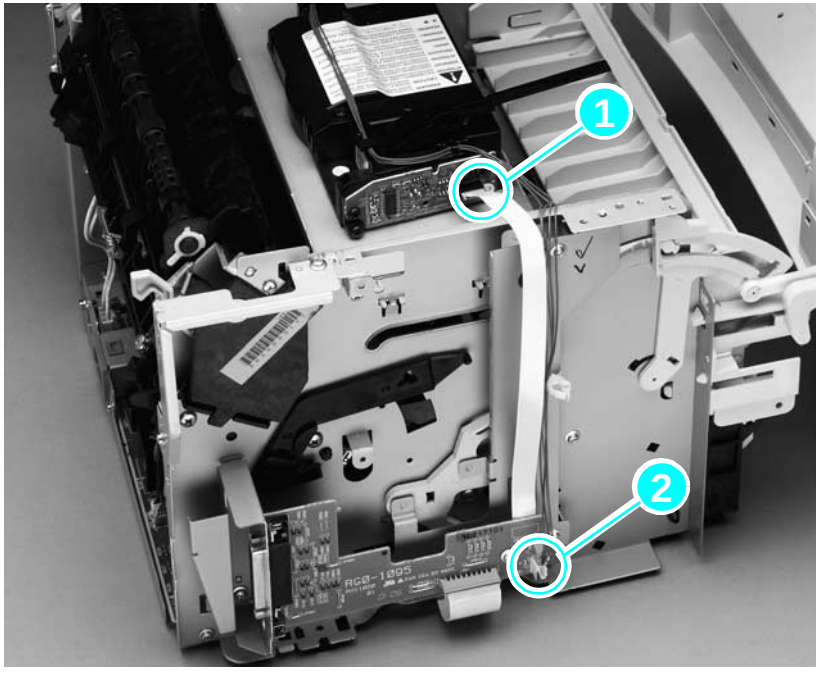


Figure 29. **Disconnect the laser/scanner harnessing**

4 Release the two shutter-retaining tabs (callout 3) and remove the shutter and shutter spring.

CAUTION Use care when releasing the shutter-retaining tabs. The tabs are plastic and can be broken. Only bend the tabs enough to release the shutter lever.

5 Remove the four screws (callout 4) that fasten the scanner to the printer chassis and remove the laser/scanner.

Figure 30. **Remove the laser/scanner**

CAUTION When replacing the laser/scanner, verify that it is fully seated on the printer chassis. The laser/scanner can be damaged when the mounting screws are tightened if it is not fully seated.

Hint Insert the spring into the hole on the laser/scanner before you snap the shutter lever back into place.

Fuser assembly

1 Remove the following assemblies:

- Toner cartridge, media tray, and cable pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17.
- Left side, back, right side, and top covers. See “Left side cover” on page 18 through “Top cover” on page 29.

2 Remove two screws (callout 1) from the right fuser bracket.

3 Remove a third screw (callout 2) from behind the large gear on the right fuser plate. Rotate the gear counter clockwise to align a hole in the gear with the screw-head.

4 Remove the bracket.

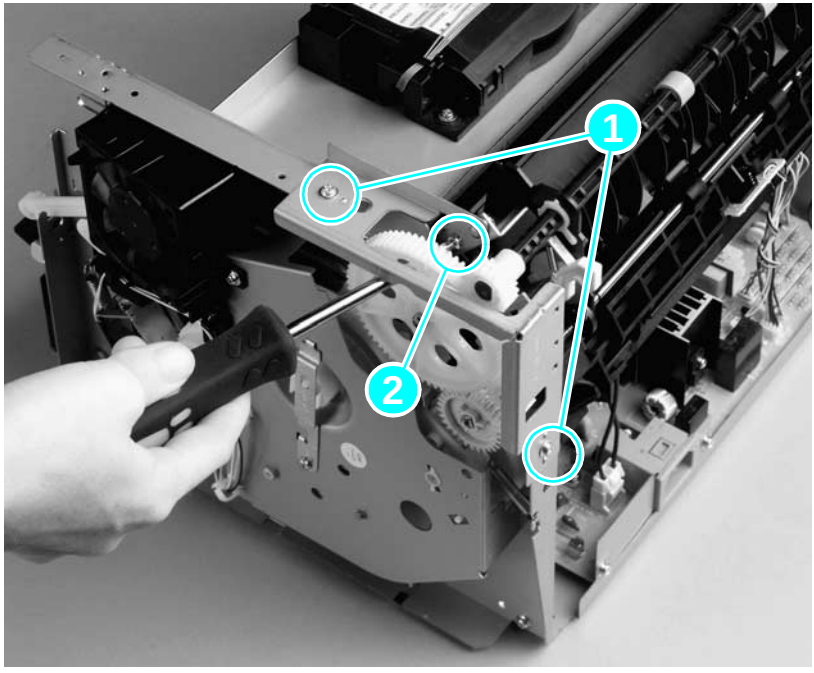


Figure 31. **Remove the right fuser bracket**

5 Remove three screws (callout 3) from the left fuser bracket.

6 Remove the bracket.

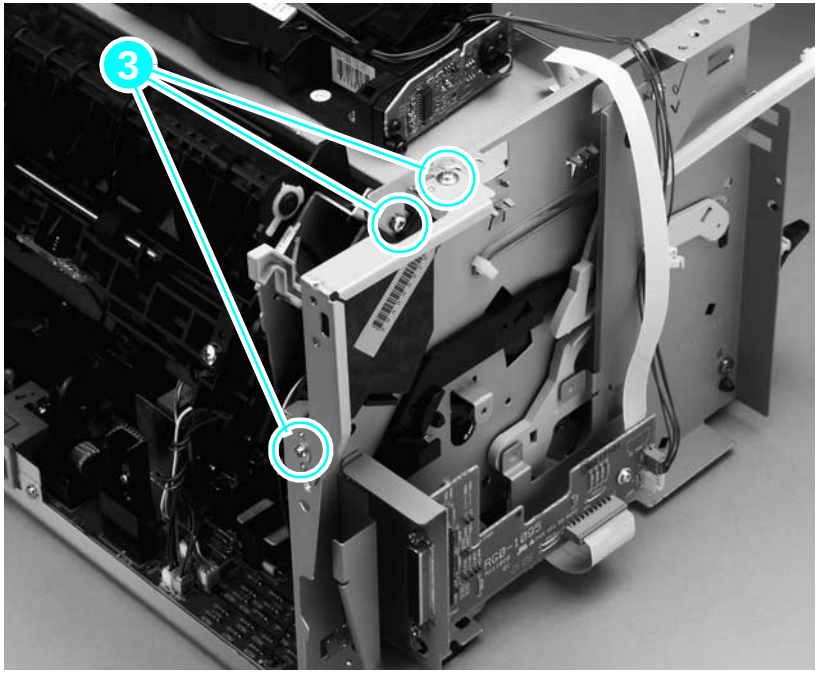


Figure 32. **Remove the left fuser bracket**

7 Remove two screws (one shown in callout 4), one from each side of the printer (right side shown).

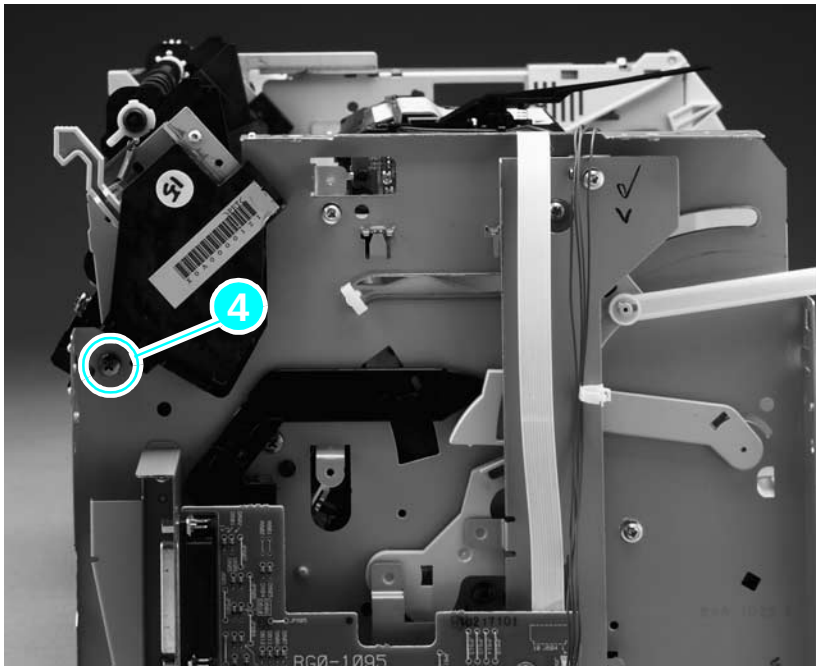


Figure 33. **Remove the fuser mounting screws**

8 Unplug the fuser cable connector (callout 5) by pressing and releasing the clip on the back of the connector.

9 Unplug four smaller cable connectors (callout 6) from the ECU and remove the harnesses from the fuser harness lance points.

10 Unplug the spade connector (callout 7).

11 Slightly spread the chassis to release the fuser locator pins and then lift the fuser assembly out of the printer.

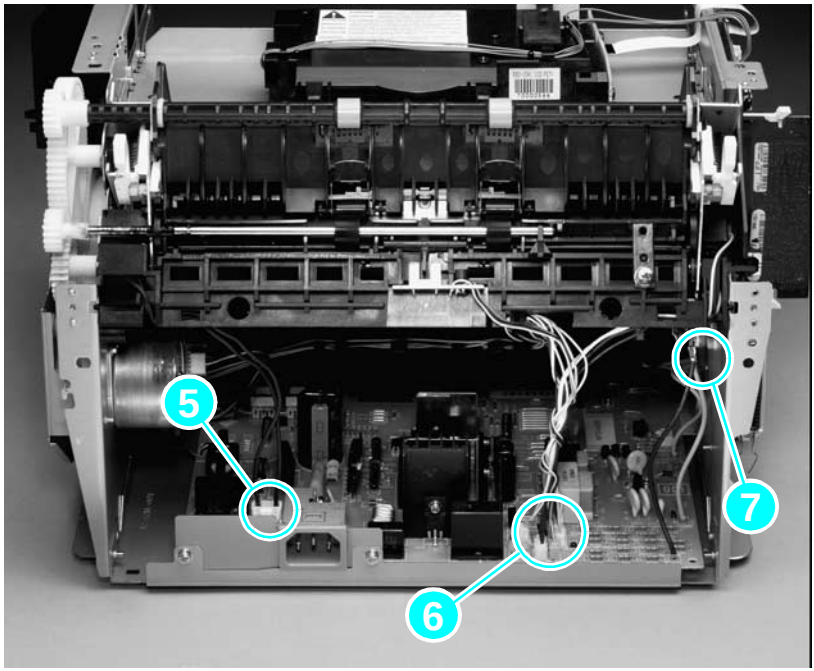


Figure 34. **Remove the fuser assembly**

Output rollers

Face-down delivery assembly

1 Remove the following assemblies:

- Toner cartridge, media tray, and cable pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17.
- Left side, back, right side, and top covers. See “Left side cover” on page 18 through “Top cover” on page 29.
- Fuser assembly. See “Fuser assembly” on page 42.

2 Remove two screws (callout 1) and lift the face-down delivery assembly away from the fuser assembly.

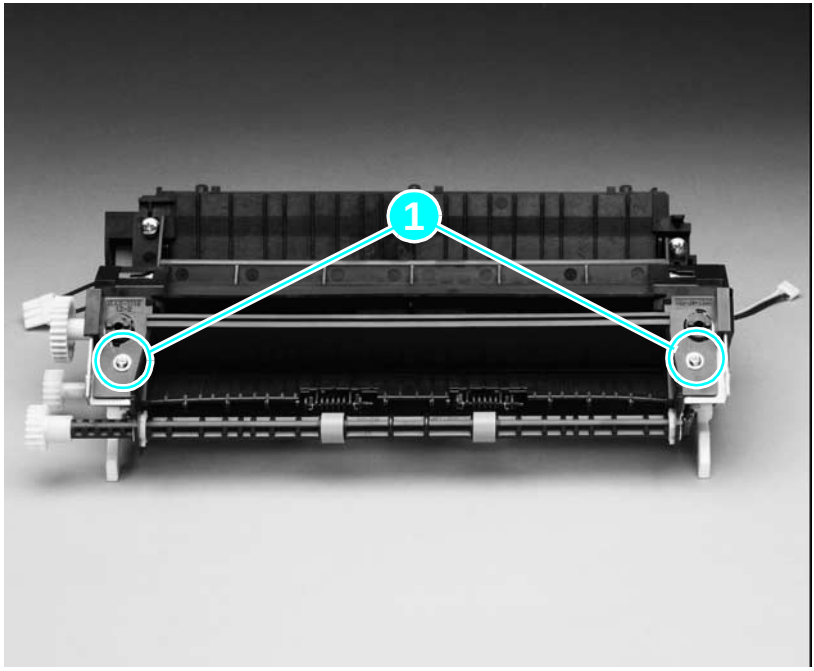


Figure 35. **Remove the output rollers**

Face-up roller

1 Remove the following assemblies:

- Toner cartridge, media tray, and cable pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17.
- Left side, back, right side, and top covers. See “Left side cover” on page 18 through “Top cover” on page 29.
- Fuser assembly. See “Fuser assembly” on page 42.

2 Turn the fuser assembly over and remove the gear (callout 1) from the face-up roller

3 Release the tab (callout 2) on the face-up roller bushing and rotate the bushing forward until the pin releases. Remove the bushing.

4 Slide the face-up roller toward the gear end until the roller clears the roller retainer (opposite the gear end), and lift it out of the fuser assembly.

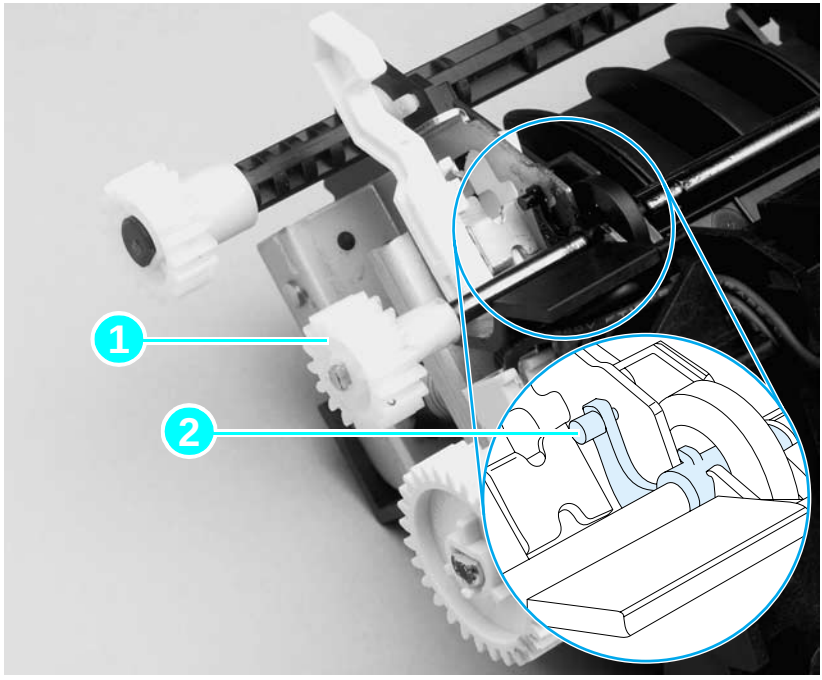


Figure 36. **Remove the face-up rollers**

Note

When replacing the face-up roller bushing, verify that the locking pin is seated correctly to prevent the roller from slipping out of the roller retainer.

Right plate assembly

1 Remove the following assemblies:

- Toner cartridge, media tray, and cable pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17.
- Left side, back, right side, and top covers. See “Left side cover” on page 18 through “Top cover” on page 29.
- Unlace the solenoid wire harness. See “Solenoid” on page 27.
- Front cover, toner cartridge door, and front guide. See “Front cover” on page 32 through “Front guide” on page 36.
- Fuser assembly. See “Fuser assembly” on page 42.

2 Lift the small white tab to release the clutch, and slide the clutch to the left (toward the pickup roller).

Hint

Keep the two halves of the clutch gear together to avoid losing the internal clutch spring.

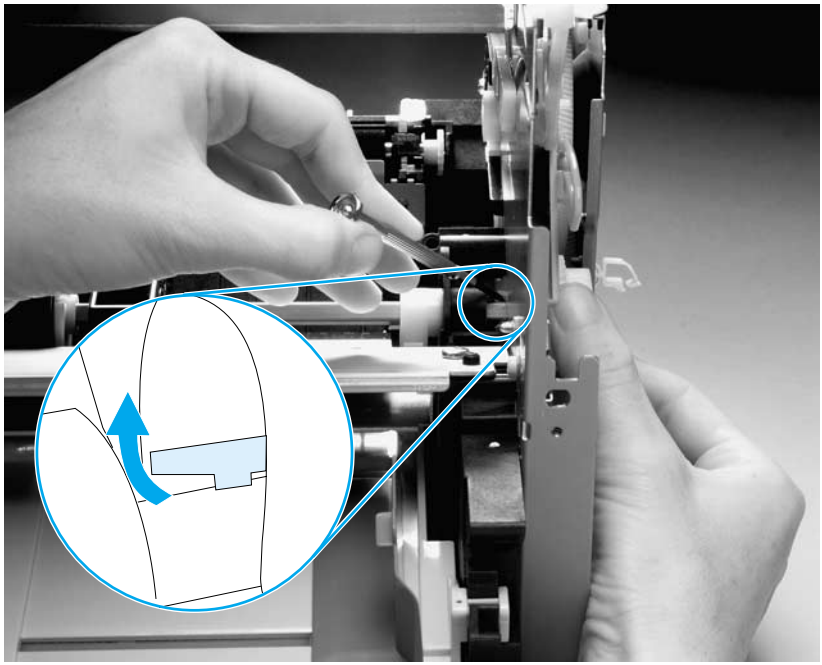


Figure 37. **Remove the gear-clutch assembly**

3 Remove seven mounting screws (callout 2). if the motor is installed, disconnect the motor wire harness.

4 Apply slight pressure and pull the right plate assembly off of the printer.

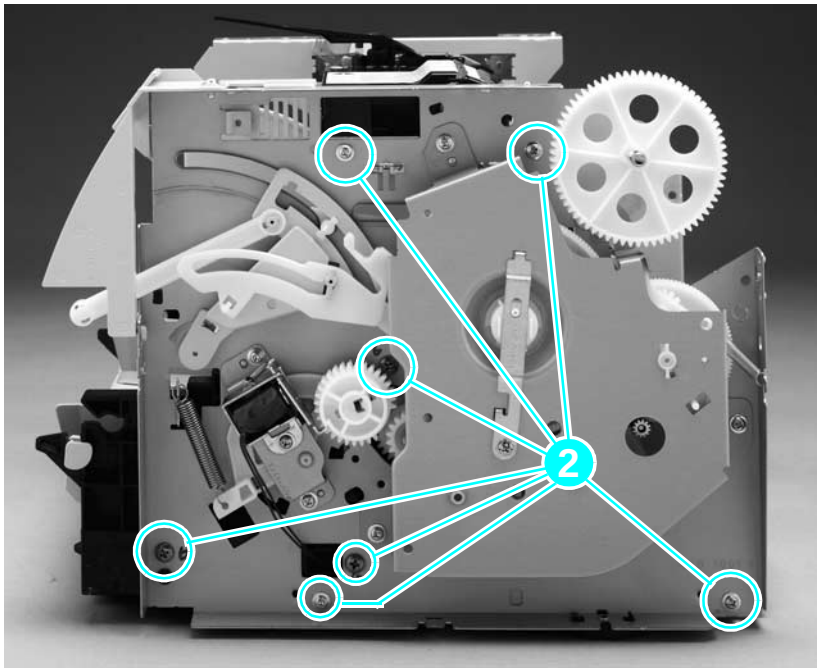


Figure 38. **Remove the right plate assembly mounting screws**

Pickup assembly

1 Remove the following assemblies:

- Toner cartridge, media tray, and cable pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17.
- Left side, back, right side, and top covers. See “Left side cover” on page 18 through “Top cover” on page 29.
- Front cover, toner cartridge door, and front guide. See “Front cover” on page 32 through “Front guide” on page 36.
- Fuser assembly. See “Fuser assembly” on page 42.
- Right plate assembly. See “Right plate assembly” on page 48.

2 Remove the side pickup assembly mounting screw (callout 1).

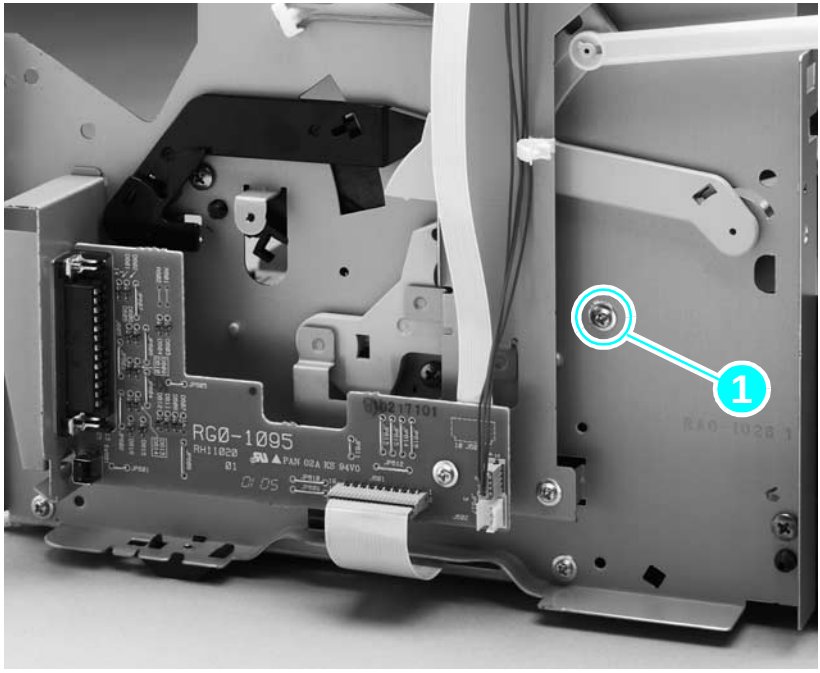


Figure 39. **Remove the pickup assembly mounting screw**

3 Remove the two top mounting screws (callout 2).

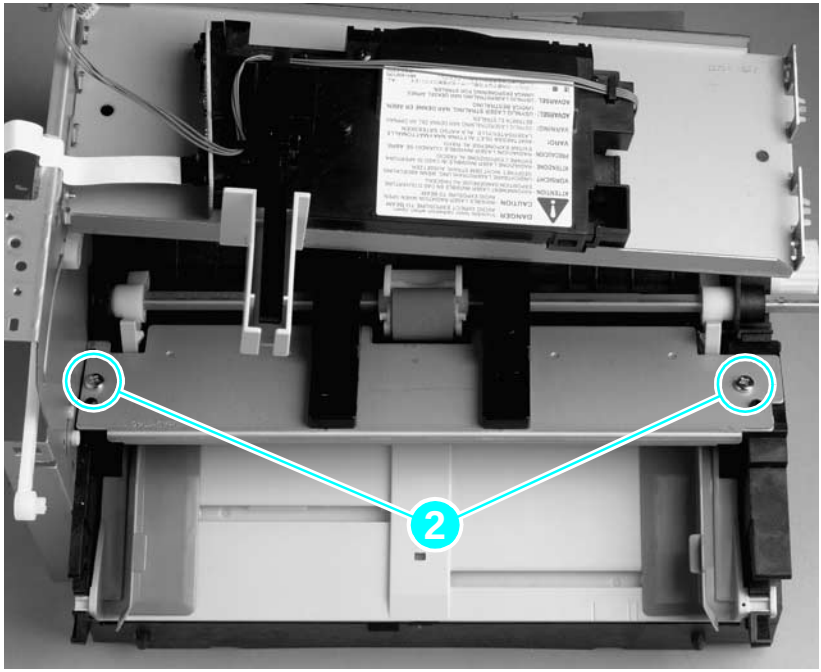


Figure 40. **Remove the top pickup assembly mounting screws**

4 Lift the metal shield (callout 3) straight up and remove it from the printer.

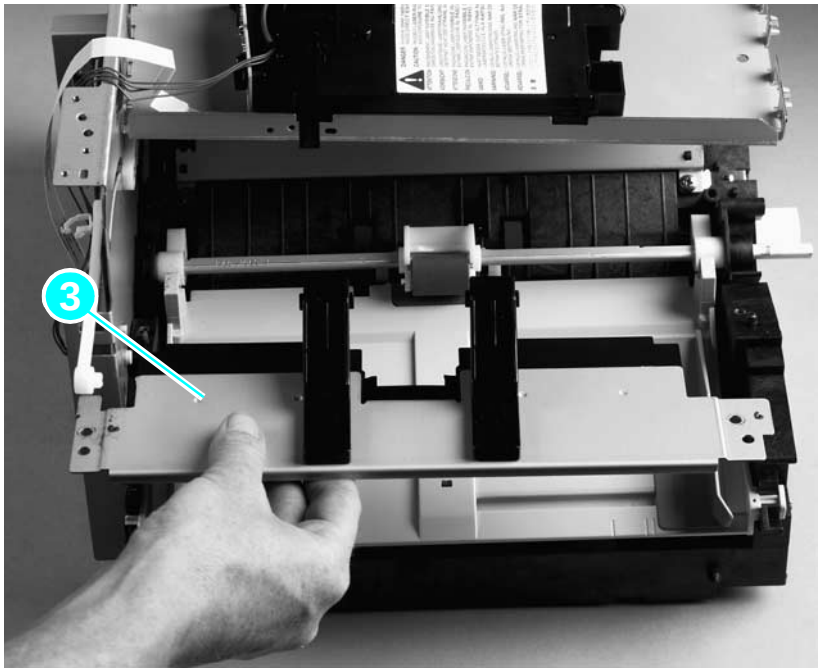


Figure 41. **Remove the metal shield**

Pickup roller assembly

1 Remove the following assemblies:

- Toner cartridge, media tray, and cable pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17.
- Left side, back, right side, and top covers. See “Left side cover” on page 18 through “Top cover” on page 29.
- Front cover, toner cartridge door, and front guide. See “Front cover” on page 32 through “Front guide” on page 36.
- Fuser assembly. See “Fuser assembly” on page 42.
- Right plate assembly, and pickup assembly. See “Right plate assembly” on page 48 through “Pickup assembly” on page 50.

2 Release the locking tab on the right side pickup roller cam (callout 1) and slide the cam to the left about one inch.

3 Slide the roller shaft toward the right until the left end releases.

4 Carefully pull the left end of the shaft toward you until it clears the left side of the chassis. Remove the pickup roller assembly.

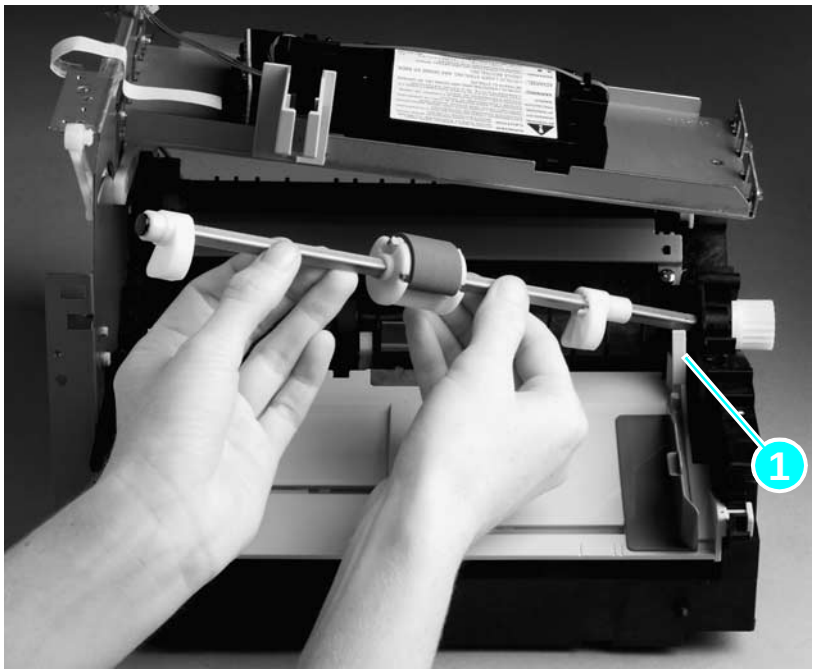


Figure 42. **Remove the pickup roller assembly**

Paper lift plate assembly

1 Remove the following assemblies:

- Toner cartridge, media tray, and cable pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17.
- Left side, back, right side, and top covers. See “Left side cover” on page 18 through “Top cover” on page 29.
- Front cover, toner cartridge door, and front guide. See “Front cover” on page 32 through “Front guide” on page 36.
- Fuser assembly. See “Fuser assembly” on page 42.
- Right plate assembly and pickup assembly. See “Right plate assembly” on page 48 through “Pickup assembly” on page 50.

2 Grasp the large plastic tabs (callout 1) on each side of the paper lift plate and rotate it forward.

CAUTION To avoid damaging them, do not pull on the paper guides.

3 Lift the paper lift plate up and out of the bushings (callout 2).

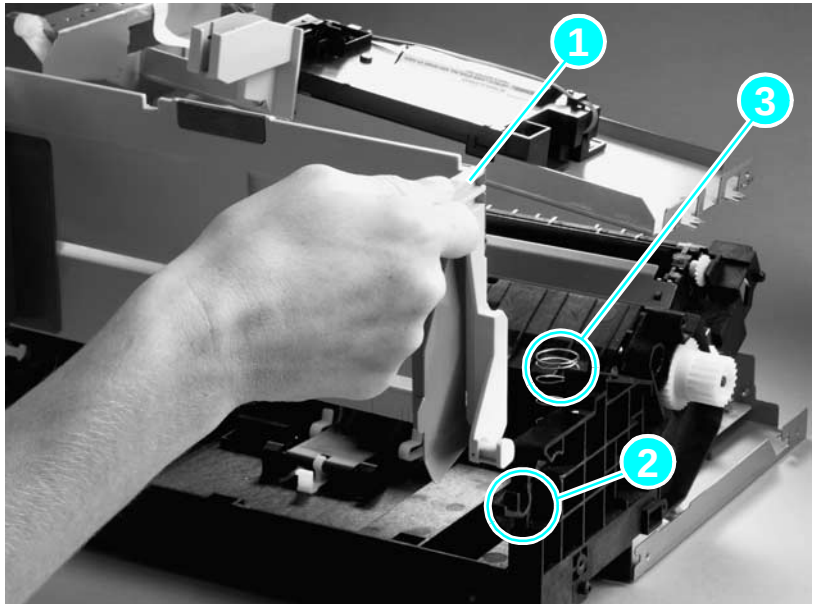


Figure 43. **Remove the paper lift plate assembly**

Hint When replacing the paper lift plate, verify that the lift plate springs (callout 3) are fully seated onto the circular spring positioning pedestals.

Left plate assembly

1 Remove the following assemblies:

- Toner cartridge, media tray, and cable pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17.
- Left side, back, right side, and top covers. See “Left side cover” on page 18 through “Top cover” on page 29.
- Front cover, toner cartridge door, and front guide. See “Front cover” on page 32 through “Front guide” on page 36.
- Fuser assembly. See “Fuser assembly” on page 42.

2 Disconnect the laser/scanner ribbon cable (at the laser/scanner end). Disconnect the laser/scanner wire harness and the ECU ribbon cable from the connector PCB. Remove the laser/scanner harness from the wire clip.

3 Remove the eight mounting screws (callout 1) and lift the left plate assembly off of the printer.

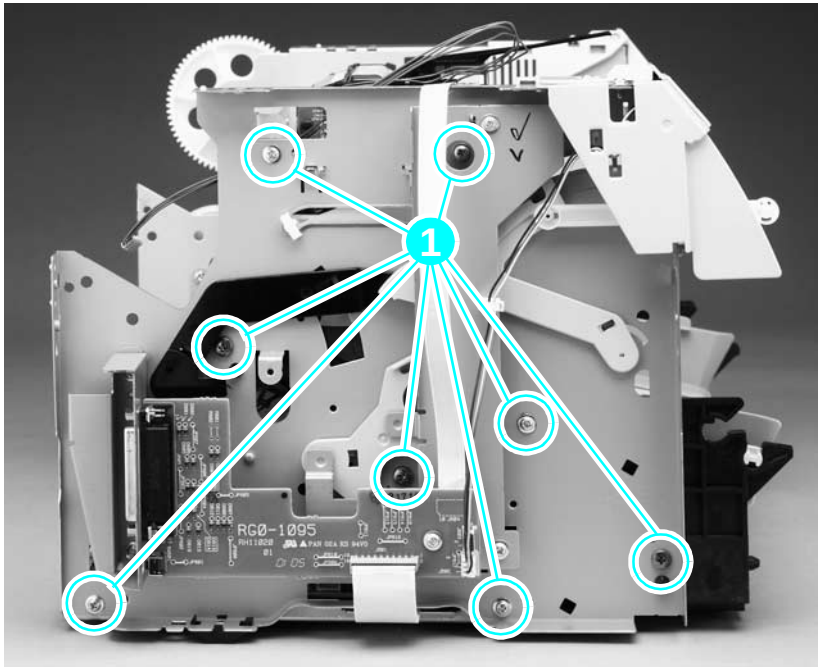


Figure 44. **Remove the left plate assembly**

ECU pan

1 Remove the following assemblies:

- Toner cartridge, media tray, and cable pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17.
- Left side, back, and right side covers. See “Left side cover” on page 18 through “Right side cover” on page 24.

2 Unplug the three spade connectors (callout 1).

3 Disconnect the motor cable connector (callout 2).

4 Unplug the fuser cable connector (callout 3) by pressing and releasing the clip on the back of the connector.

5 Unplug the remaining four wire harness connectors (callout 4) from the ECU.

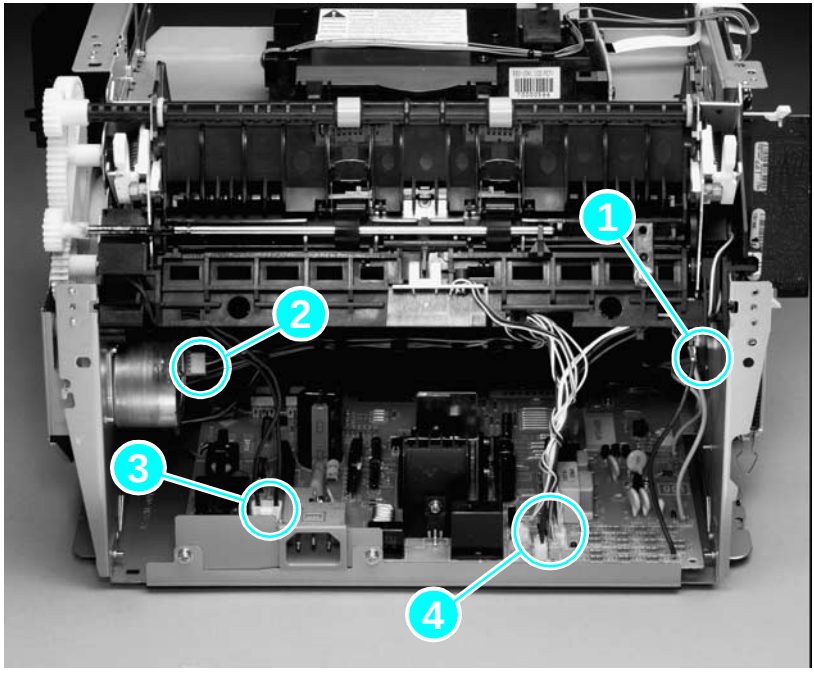


Figure 45. **Disconnect the ECU wire harnesses**

6 Unplug the ribbon cable from the ECU to the connector assembly PCB (callout 5).

7 Remove two screws (callout 6) on each side of the printer (left side shown).

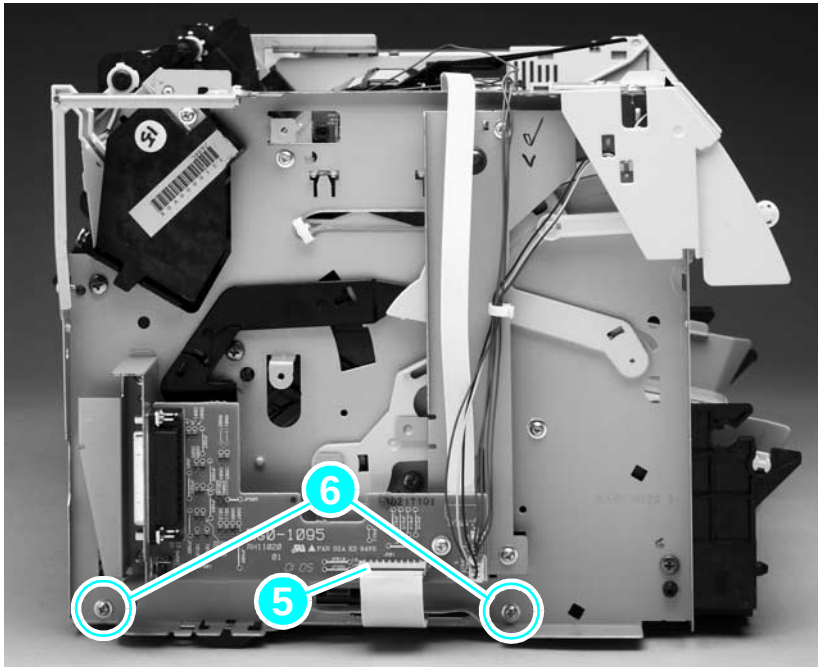


Figure 46. **Remove the ECU mounting screws**

8 Gently pull the two sides of the printer away from the ECU pan to release the ECU pan.

9 Slide the ECU pan out and away from the printer.

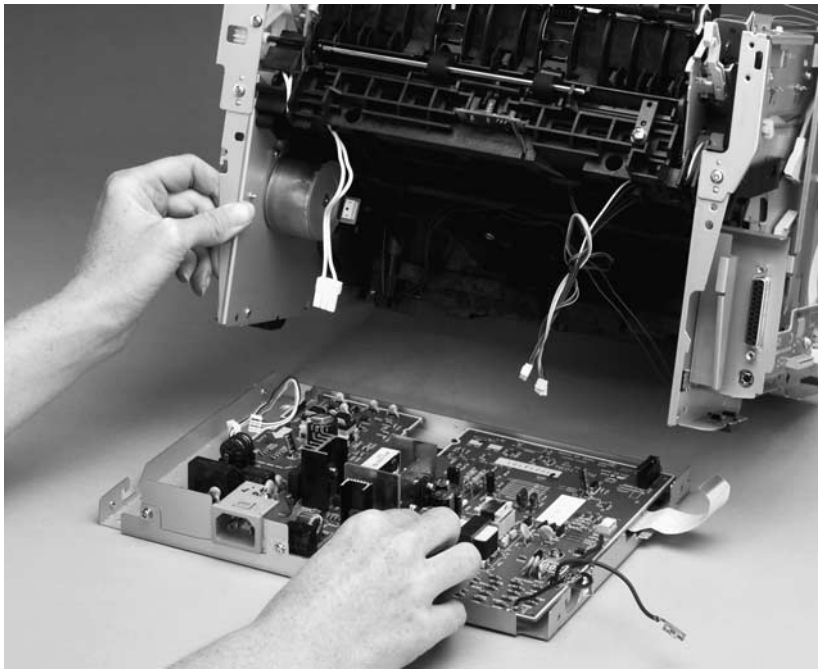


Figure 47. **Remove the ECU pan**

10 Remove the motor wire harness from the wire clip (callout 7).

11 Remove the three ECU PCB mounting screws (callout 8).

12 Remove the two power cord receptacle plate mounting screws (callout 9).

13 Lift the ECU PCB off of the ECU pan.

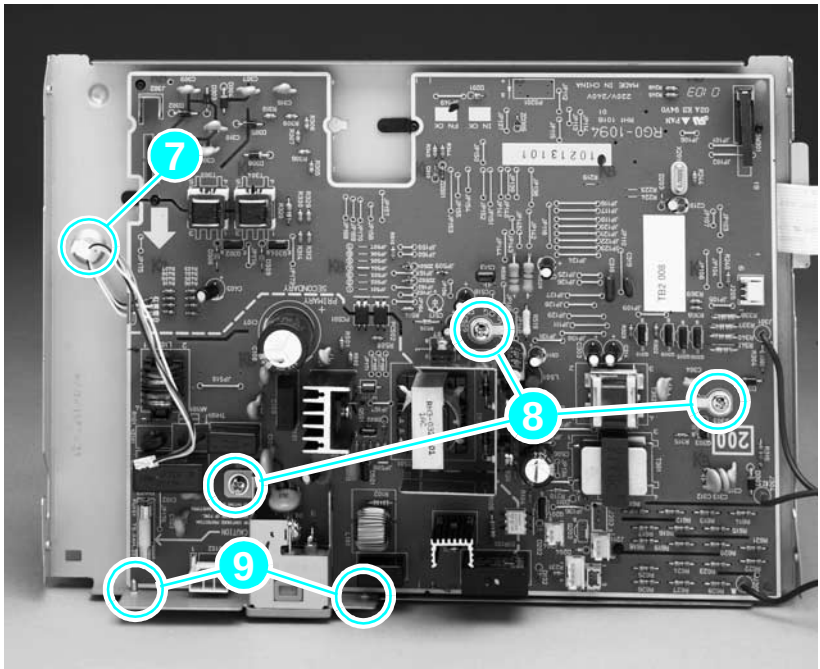


Figure 48. **Remove the ECU PCB from the pan**

Note

The ECU board is replaced as a single unit. Only soldered cables ship with the replacement board. If other cables are damaged during removal, you will have to order replacements.

Paper-feed assembly

1 Remove the following assemblies:

- Toner cartridge, media tray and formatter pod. See “Toner cartridge” on page 15 through “Cable pod” on page 17.
- Left side, back, and right side covers. See “Left side cover” on page 18 through “Right side cover” on page 24.
- Right plate assembly. See “Right plate assembly” on page 48.
- ECU pan. See “ECU pan” on page 56.

Note Do not remove the gear shield instead of the right plate assembly. The gear shield retains some of the gears. Removing the gear shield can cause loose gears and springs to be misplaced.

2 Unwind the optic paper sensor and solenoid cables from the cable guides (callout 1) on the paper-feed mechanism.

3 If necessary, remove one screw (callout 2) from the paper sensor PCB assembly and remove the sensor PCB.

4 Remove the two mounting screws (callout 3) from the paper-feed mechanism.

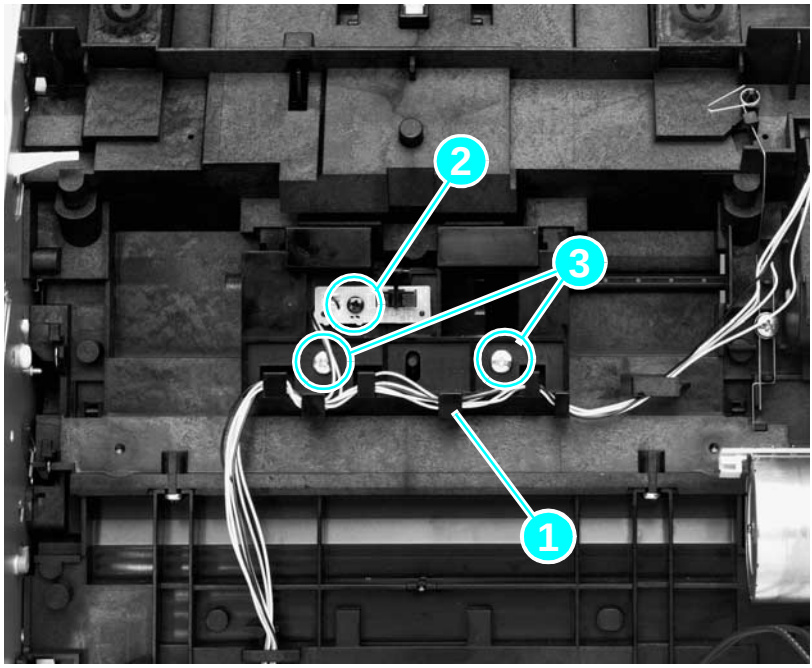


Figure 49. **Remove wire harnesses**

5 Apply slight pressure to disengage the paper-feed assembly bushings from the roller shaft (callout 4). Lift the paper-feed assembly up and out of the printer.

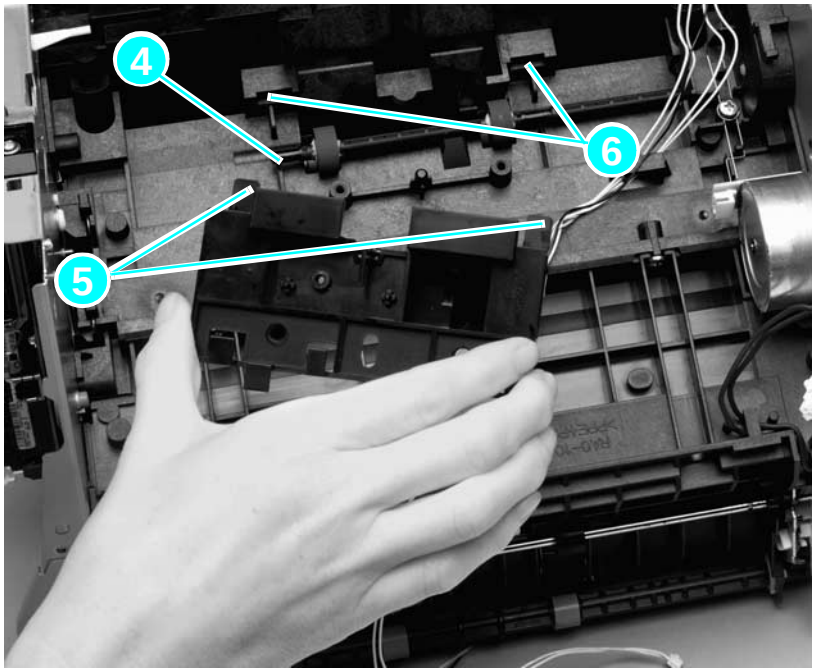


Figure 50. **Remove the paper-feed assembly**

Hint

When replacing the paper feed assembly, insert the two tabs (callout 5) on the paper-feed assembly into the provided recesses (callout 6) near the roller. Insert the bottom of the sensor flag into the hole in front of the paper-feed roller shaft and verify that the sensor flag moves freely.

6 Use needle-nose pliers to push the two tabs away from the end of the paper-feed roller shaft.

7 Pull the paper-feed roller shaft away from the gear end and remove it.

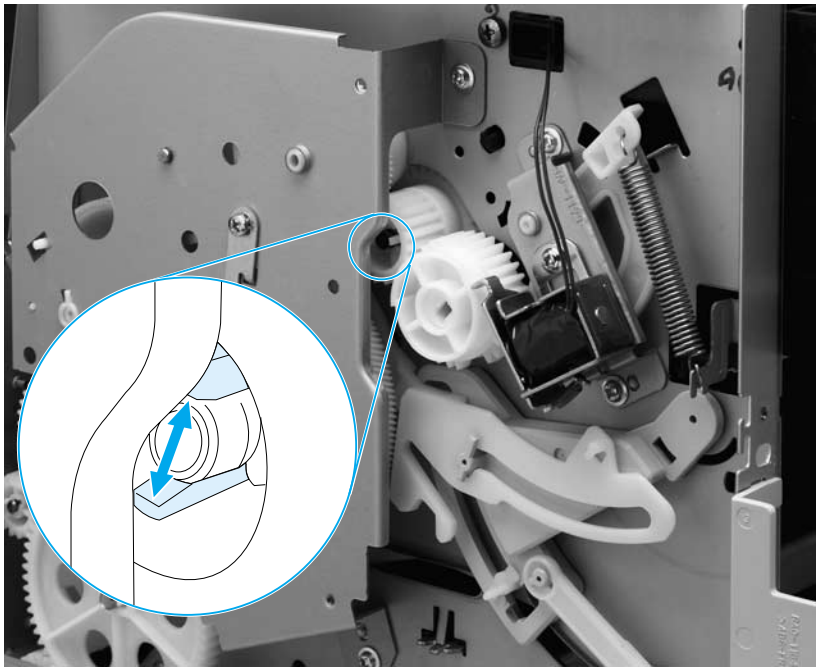


Figure 51. **Release the paper-feed roller**

3 Troubleshooting

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Basic troubleshooting

Table 7. Basic troubleshooting

#	Verification steps	Possible problems	Solutions
1	**Does the printer turn on successfully?** When the product is connected to a grounded power source, the printer motor should continuously rotate for about six seconds.	Power is not being supplied to the printer. There are open wire harness connectors. There are pinched or frayed wire harness wires. The motor or ECU has failed.	1. Verify that the product is plugged in. 2. Verify that the power cable is functional and the cable is plugged into the correct power source (110 V or 220 V ac). 3. Verify that FU102 (the ECU PCB fuse) on the ECU is not open. 4. Verify that the fuser levers are in the up position. 5. Verify that the printer door is closed. 6. Verify that the motor connector is seated into the ECU. 7. Verify that the motor is correctly mounted on the printer chassis. 8. Check for and replace pinched or frayed wire harness wires. 9. Replace the motor. 10. Replace the ECU.
2	**Do engine tests print?** Print an engine test. (See page 79.)The engine test should print without paper-feed problems or print-quality problems.	The printed page is filled with evenly spaced horizontal lines (approximately 1 mm apart).	The engine-test was successful.
		The engine test button is pressed, but nothing happens.	1. The toner cartridge is missing or the toner cartridge door is open. Install a toner cartridge and/or close the door. 2. A faulty toner-cartridge-to-ECU connection exists. Verify that all connectors to the ECU are firmly seated and contacts are clean. 3. A faulty connector-PCB-to-ECU connection exists. Replace the connector assembly.
		The motor rotates on and off (about 1 second), and then stops (no paper feed).	1. Verify that the laser/scanner connectors are fully seated. 2. Replace the laser/scanner.
		The motor rotates on, off, on, off in short cycles, and then stops (no paper feed).	1. Verify that the fuser wire connectors are fully seated. 2. Replace the fuser.

Table 7. Basic troubleshooting (continued)

#	Verification steps	Possible problems	Solutions
2	**Do engine tests print? (continued)**	The printer attempts to pick up paper three times and then the motor stops (no paper feed).	1. The media tray is empty. Place media in the tray. 2. The printer is dirty. Clean the printer. 3. Replace the pickup roller. 4. Replace the paper pickup assembly
		The printer attempts to pick up paper three times, and the paper feeds but comes out blank.	1. the paper-feed assembly connections are faulty. Verify that the all paper-feed assembly connectors to the ECU are firmly seated. 2. Replace the paper-feed assembly.
		The printer attempts to pick up paper three times and the laser/scanner emits a high-pitched whine, but the motor does not turn.	1. Verify that the motor connector is firmly seated. 2. Replace the motor
		The printed page is filled with evenly spaced horizontal lines, but the toner can be easily smeared.	1. Make sure that the media meets specifications detailed in the *Print Media Guide* for the HP LaserJet printer family. 2. A faulty fuser assembly power connection exists. Verify that the fuser power connectors are firmly seated. 3. Replace the fuser.
		The engine-test page begins to print, but the page stops just after tripping the output sensor flag.	1. Verify that the output sensor (on the back of the fuser) connector is firmly seated at the ECU end. 2. Replace the output sensor
	Hint When you attempt to troubleshoot engine-test page problems, it might be necessary to unplug the printer from the power source (power off), and then plug it back into the power source (power on) before printing a subsequent engine-test page. Verify that the printer was successfully turned on (see verification step 1).		
3	**The printer motor rotates for about six seconds and stops, but the LED status READY light does not illuminate.** When the printer is successfully turned on, the green Ready status light is illuminated and the printer is ready to process a job.	Wire harness connectors are open. Harness wires are pinched or frayed. The cable pod, connector assembly, or LED status panel has failed.	1. Verify that the LED status panel connector to the connector assembly is firmly seated. 2. Verify that the connector-assembly-to-ECU flat ribbon cable is firmly seated (at the connector assembly end). 3. Replace the cable pod 4. Replace the connector PCB assembly 5. Replace the LED status light panel.
	Note The LED lights will not operate if the cable pod is not connected to the printer.		

Table 7. Basic troubleshooting (continued)

#	Verification steps	Possible problems	Solutions
4	**Is the software installed correctly?**	The software is not installed, or an error occurred during software installation.	Uninstall and then reinstall the product software. Make sure you use the correct installation procedure and the correct port setting.
5	**Does the product print from the computer?** Connect the cable pod to the printer and the USB cable to the computer. Use a word-processing application to send a print job to the printer.	The cable is not connected correctly.	Reconnect the cable.
		An incorrect printer driver is selected.	Select the correct printer driver.
		Other devices are connected to the USB port.	Disconnect the other devices and try again to print.
		A USB port driver problem exists.	1. Reset the computer BIOS USB settings. See the computer user guide for instructions. 2. Try a different USB port.
		The cable pod has failed.	Replace the cable pod.
6	**Is the printed image of poor quality?**	Various print image-quality problems.	1. Make sure that the media meets specifications detailed in the *Print Media Guide* for the HP LaserJet printer family. 2. Identify the image quality problem. See “Solving image-quality problems” on page 72.
7	**Does the media jam in the printer paper path?**	Various printer paper-path problems.	Isolate the printer paper-path problem. See “Paper-path check” on page 86.

LED status lights

The status lights give the user information about the status of the printer. Until the cable pod initializes the firmware, only the ready and fatal-error light patterns can appear. If the cable pod is not connected when the printer power is turned on, the motor rotates (for about 6 seconds) but the status lights remain off (the firmware is not initialized). If the cable pod is connected while printer power is on, the printer turns off and then on, the motor rotates (for about 6 seconds) and the cable pod initializes the firmware.

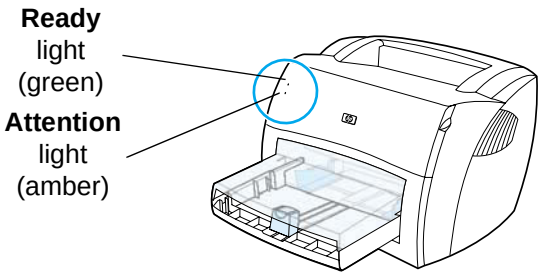


Figure 52. **LED status lights location**

Table 8. LED status lights legend

Light symbol	Meaning of symbol
	Light off
	Light on
	Light blinking

Table 9. Status lights messages

Message	Possible causes	Solutions
	The **Ready** and **Attention** lights are not illuminated.	1. Verify that the power cord is connected to the printer and the power is turned on. 2. The cable pod is not connected or has failed. Verify that the cable pod is connected and fully seated. 3. Replace the cable pod. 4. Replace the LED status panel assembly.
	The **Ready** and **Attention** lights blink. The cable pod is initializing the firmware or the unit is printing a cleaning page.	No action is needed.
	The **Ready** light illuminates. The printer is ready to print.	No action is needed. The **Ready** light indicates that the cable pod has initialized the firmware. The firmware is initialized each time the printer power is turned on or when the cable pod is connected to the printer (with the printer power turned on).
	The **Ready** light blinks. The printer is receiving and processing data.	Wait for the job to print.
	The **Attention** light blinks. The printer requires user intervention.	A User Intervention message appears on the computer screen. Follow the directions in the message to clear the error. Possible errors requiring user intervention are: • Out of paper • Media jam • Toner door open • Toner cartridge missing
	The **Ready** light illuminates and the **Attention** light blinks. The printer is in a continuable error state.	A User Intervention message appears on the computer screen. Follow the directions in this message to clear the error. "Out of memory" is the continuable error.

Table 9. Status lights messages (continued)

Message	Possible causes	Solutions
	The **Ready** and **Attention** lights are illuminated. The printer is in a fatal error state.	A fatal error message appears on the computer screen. Follow the directions in the message to clear the error. Possible fatal errors are: • Fuser error • Laser/scanner error • ECU communication error • Formatter RAM or ROM error • Scan buffer error • Dynamic RAM controller error • General fatal error • Miscellaneous hardware error

Note The cable pod downloads the firmware from the computer each time you turn on the printer. If the cable pod does not receive the firmware download from the computer, only the ready and fatal-error light patterns can appear.

Hint The status lights can only display information about one printer state at a time. The status lights display printer status information in the following order: fatal errors, intervention-required error, continuable error, and processing job.

Additional error messages

Error conditions can exist that do not generate status light patterns. Instead, an error message appears on the computer screen.

Table 10. Error messages (no LED status panel pattern)

Message	Solutions
Printer not responding	1. Verify that the power cord is connected to the printer and the power is turned on (the **Ready** light should be illuminated). 2. Disconnect the cable pod cable from the printer and the computer. Reconnect the cable pod cable at both ends. 3. Close all software applications and restart the computer.
Cannot access port (in use by another application)	1. Close all software applications and reboot the computer. 2. Try running only one software application at a time.
Illegal operation/ General protection fault/Spool 32 error	A computer system resource error (memory or hard-disk error) occurred in Windows. Reboot the computer.

Hint

To help prevent the "Illegal operation/General protection fault/Spool 32 error," try running fewer software programs at the same time. Close programs rather than minimizing them. Screen savers, virus checkers, fax software, and other memory-resident applications might be using computer resources needed by the printer.

When attempting to print, avoid memory-intensive tasks like sending a fax or using multi-media programs.

Delete all temp (file_name.tmp) files from Temp subdirectories, such as C:\Windows\Temp.

Try printing at a lower resolution (especially if your print job contains complex graphics).

Checking the toner cartridge

Image formation defects are many times the result of problems in the toner cartridge. If there is any doubt, always replace the toner cartridge before troubleshooting image defects.

Use the following checklist to make sure that the toner cartridge is still operable.

- ☐ Verify that the toner cartridge is seated properly.
- ☐ Verify that the cartridge has toner in it (see the hint below).
- ☐ Check the expiration date stamped on the toner cartridge box.
- ☐ Check the toner cartridge to see if it has been disassembled or refilled.
- ☐ Inspect the toner cartridge to see if toner is leaking through worn seals.
- ☐ Check the surface of the photosensitive drum in the cartridge to see if it has been damaged or scratched. Do not touch the drum. Skin oils transferred to the drum by touching it contaminate the photosensitive surface and can cause spotting and image defects.
- ☐ Blurred areas on printed pages indicate that the photosensitive drum in the cartridge has been overexposed to light. Overexposure to light causes permanent damage to the photosensitive drum. The toner cartridge should be replaced.

Hint

Weigh the toner cartridge to approximate how much toner is left in it. A toner cartridge weighs approximately 746 grams (30.5 oz) when it is full, approximately 630 grams (27.0 oz) when the print first fades, and approximately 617 grams (26.2 oz) when the cartridge is empty.

To redistribute toner in the cartridge

Before installing a new cartridge or when toner is low in the installed cartridge, redistribute the toner by rotating the cartridge back and forth five or six times.

Solving image-quality problems

Use the following tables to help solve problems with printed pages.

If the problem occurs when printing, see table 11, “Solving print image-quality problems,” on page 72. Also, see table 12, “Solving paper-feed problems,” on page 77.

Solving print image-quality problems

Table 11. Solving print image-quality problems

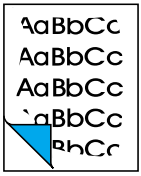
Problem	Cause	Solution
Pages do not print.	The printer is not plugged in.	Make sure that the printer is plugged into a live wall outlet or power strip. The **Ready** light illuminates when the printer is ready to print.
	The cable pod cable is loose.	Check that the cable between the printer and the computer is securely connected at both ends.
	The paper feed assembly is not functioning or incorrectly installed.	Verify that the pickup assembly, pickup roller, and paper lift plate assembly are installed correctly and working properly.
	The tape was not removed from the toner cartridge.	Remove the toner cartridge, remove the tape, and reinstalling the toner cartridge. See “Toner cartridge” on page 15.
	The toner cartridge is out of toner.	Replace the toner cartridge. (See “Toner cartridge” on page 15.)
	The media you are using does not meet HP’s specifications (for example, it is too moist or too rough).	Make sure that the media meets specifications detailed in the *Print Media Guide* for the HP LaserJet printer family.
Parts of the page around the edges are not printing. 	The printer cannot print to the edge of the paper. The printer has minimum margins on each edge of 4.23 mm (0.167 inch).	To get the image to fit into this printable area, slightly reduce the size of the image.
	The reduction setting is set incorrectly.	Check the reduction setting in the “Print” or “Setup” window from within the program you are using.

Table 11. Solving print image-quality problems (continued)

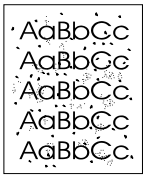
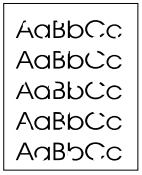
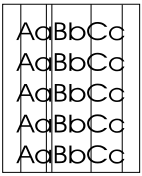
Problem	Cause	Solution
Toner specks appear on the printed page. 	The media you are using does not meet HP's specifications (for example, it is too moist or too rough).	Make sure that the media meets specifications detailed in the *Print Media Guide* for the HP LaserJet printer family.
	The printer needs to be cleaned.	Clean the printer. See the HP LaserJet 1000 Series user guide.
Characters are only partially printed (also referred to as dropouts). 	A single sheet of paper is defective.	Try reprinting the job.
	The print density needs to be adjusted.	Adjust the print density from the device configuration utility.
	The moisture content of the paper is inconsistent, or the paper has moist or wet spots on the surface.	Make sure that the media meets specifications, detailed in the *Print Media Guide* for the HP LaserJet printer family.
	The paper was damaged by inconsistent manufacturing processes.	Make sure that the media meets specifications detailed in the *Print Media Guide* for the HP LaserJet printer family.
	A draft mode or EconoMode is selected in the software.	Clear the printer software EconoMode check box.
	The toner cartridge is defective.	Replace the toner cartridge. See "Toner cartridge" on page 15.
Vertical lines appear on the printed page. 	The photosensitive drum inside the toner cartridge is scratched.	Replace the toner cartridge. See "Toner cartridge" on page 15.
	The fuser is damaged or has an obstruction.	Replace the fuser. See "Fuser assembly" on page 42.

Table 11. Solving print image-quality problems (continued)

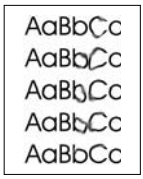
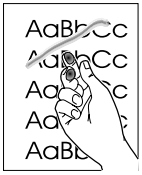
Problem	Cause	Solution
The printed page has a gray background. 	The print density setting is set too heavy.	Decrease the amount of background shading through the device configuration utility.
	The media basis weight is too heavy.	Change the media to a light basis weight.
	The humidity level is too low.	Very low humidity can increase the amount of background shading. Move the printer to a different location, or decrease the background shading through the device configuration utility.
	The toner cartridge needs to be replaced.	Replace the toner cartridge. See “Toner cartridge” on page 15.
Toner smears appear on the printed page. 	If the toner smears appear on the leading edge of the media, the media guides are dirty.	Wipe the media guides with a dry, lint-free cloth.
	The media you are using does not meet HP’s specifications (for example, it is too moist or too rough).	Make sure that the media meets specifications detailed in the *Print Media Guide* for the HP LaserJet printer family.
	The toner cartridge needs to be replaced.	Replace the toner cartridge.
	The fuser temperature is too low.	Select **Optimize for:** in the **Paper** tab of the printer driver. Make sure that it is set for the appropriate media.
The toner is loose, and it does not stay attached to the printed page. 	The inside of the printer is dirty.	Clean the printer. See your HP LaserJet 1000 Series user guide.
	The media you are using does not meet HP’s specifications (for example, it is too moist or too rough).	Make sure that the media meets specifications detailed in the *Print Media Guide* for the HP LaserJet printer family.
	The toner cartridge needs to be replaced.	Replace the toner cartridge.
	The high voltage contacts are dirty or damaged.	See see “High-voltage power supply check” on page 84.
	The high voltage contacts are are not in proper contact with the toner cartridge.	Verify the high voltage contacts are installed correctly and are properly contacting the toner cartridge.
	The printer driver is not set for the correct media.	1. Select **Optimize for:** in the **Paper** tab of the printer driver. Select the correct media. 2. Select the correct media through the device configuration utility.
	The power strip is not working correctly.	Plug the printer directly into an ac outlet.

Table 11. Solving print image-quality problems (continued)

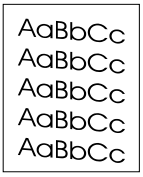
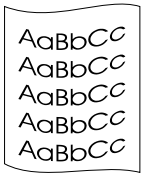
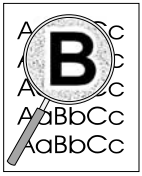
Problem	Cause	Solution
Repetitive vertical defects appear on the printed page. 	If the repetitive mark occurs at equal distance between occurrences, either the toner cartridge or a printer roller is damaged.	Use the defect ruler to identify the spacing. Check the appropriate component and replace if necessary. (see “Repetitive image defect ruler” on page 87.)
	The internal parts have toner on them.	If the defects occur on the back of the page, the problem will probably correct itself after a few more printed pages. Otherwise, clean the printer. See your HP LaserJet 1000 Series user guide.
	The printer driver is not set for the correct media.	1. Select **Optimize for:** in the **Paper** tab of the printer driver. Select the correct media. (This affects the current print job only.) 2. Select the correct media through the device configuration utility.
Characters are misformed and are producing hollow images. 	The media is too slick.	Try a different media. Make sure that the media meets specifications detailed in the *Print Media Guide* for the HP LaserJet printer family.
	The printer driver is not set for the correct media.	1. Select **Optimize for:** in the **Paper** tab of the printer driver. Select the correct media. (This affects the current print job only.) 2. Select the correct media through the device configuration utility.
Pages are skewed. 	The media is loaded incorrectly.	Reload the media, and make sure that the media guides are not adjusted too tightly in or too loosely against the media stack.
	The input tray is too full.	Remove some of the sheets. The input tray can hold up to 250 sheets of 20-lb (75-g/m^2) bond weight paper (less for heavier paper) or from 20 to 30 envelopes.
	The type and quality of media you are using does not meet HP’s specifications.	Make sure that the media meets specifications detailed in the *Print Media Guide* for the HP LaserJet printer family.

Table 11. Solving print image-quality problems (continued)

Problem	Cause	Solution
The printed page has curls or waves. 	The environment is too warm or too humid.	1. Both high temperatures and high humidity levels cause media to curl. Move the printer to a different environment. 2. Use a different media. Make sure that the media meets specifications detailed in the *Print Media Guide* for the HP LaserJet printer family.
	The media was in the input tray too long.	Turn the stack of media over and put it back in the tray. Rotate the media 180° and put it back in the tray.
	The standard paper path is not working correctly.	Open the straight-through output door on the back of the printer and use this paper path.
	The fuser temperature is too high.	Select **Optimize for:** in the **Paper** tab of the printer driver. Make sure that it is set for the appropriate media.
Large amounts of toner are scattered around the characters. 	The media is resisting the toner.	1. Use a different media. Make sure that the media meets specifications detailed in the *Print Media Guide* for the HP LaserJet printer family. 2. Turn the stack of media over and put it back in the tray. 3. Use media that is designed for laser printers.

Solving paper-feed problems

Use the following tables to solve problems related to moving print media or documents through the printer.

Table 12. Solving paper-feed problems

Problem	Cause	Solution
Pages are coming out curled or wrinkled.	Paper curl is inherent to the laser printing processes, and occurs when paper is subjected to heat. Paper curl tends to relax as the paper cools while resting on a flat surface.	Make sure that the media meets specifications detailed in the *Print Media Guide* for the HP LaserJet printer family.
	Paper is curled or wrinkled when using the paper output bin.	Open the straight-through output door on the back of the printer and use this paper path. Reset the fuser mode to the default.
	Paper is not stored properly.	Whenever possible, store paper in its sealed ream at room temperature.
	The fuser temperature is too high.	Select **Optimize for:** in the **Paper** tab of the printer driver. Make sure that it is set for the appropriate media.
Print is misaligned on the page (skewed pages).	The input tray is overfilled.	Remove some of the media.
	The media guides are not set correctly, are broken, or are missing.	Be sure to center the media by using the side media guides. Verify that the guides are not adjusted too tightly or too loosely against the media stack. Check for broken or missing guides and replace as necessary.
	The media weight or surface finish does not meet HP's specifications.	Make sure that the media meets specifications detailed in the *Print Media Guide* for the HP LaserJet printer family.

Table 12. Solving paper-feed problems (continued)

Problem	Cause	Solution
The printer feeds multiple sheets or jams frequently from the input tray.	Paper guides are not adjusted properly.	Slide the guides against the sides of the stack in the input tray to center the paper. Make sure the guides are not adjusted too tightly or to loosely against the media stack.
	Paper was not removed from the input tray before refilling the tray.	Always remove paper from the input tray before refilling it.
	The input tray is overfilled.	Remove some of the sheets. The input tray can hold up to 250 sheets of 20-lb (75-g/m^2) bond weight paper (less for heavier paper) or from 20 to 30 envelopes.
	The paper was poorly cut by the manufacturer and is sticking together.	“Break” the ream of paper by curving it into an upside-down u-shape; this can effectively decrease multifeeds. Also try turning the paper around to feed the opposite end first, or use a different type of paper.
	The paper does not meet HP’s specifications for print media.	Make sure that the media meets specifications detailed in the *Print Media Guide* for the HP LaserJet printer family.
	The output capacity was exceeded in the paper output bin.	Do not allow more than 125 sheets of 20-lb (75-g/m^2) bond-weight paper (less for heavier paper) to fill the paper output bin.
	The pickup roller is dirty.	Clean the pickup roller. See your HP LaserJet 1000 Series user guide.
	The pickup roller is damaged.	Replace the pickup roller. See “Pickup roller assembly” on page 53.
	The separation pad is dirty.	Clean the separation pad. See your HP LaserJet 1000 Series user guide.
	The separation pad is damaged or not installed correctly.	Replace or reinstall the separation pad. See your HP LaserJet 1000 Series user guide.
	The separation pad is not installed correctly.	Reinstall the separation pad. See your HP LaserJet 1000 Series user guide.
	A sensor is not operating properly.	Check the sensors to make sure that none of them are jammed. If a sensor cannot be adjusted to properly operate, replace the sensor.

Engine test

The engine test is used to verify that the print engine is functioning correctly. The cable pod is bypassed during an engine test, so the engine test is useful for isolating printer problems. The engine test prints horizontal lines in the printable area of a page. This page is also useful for checking and adjusting registration.

Printing an engine test

The engine test switch is below the cable pod connector assembly.

To print an engine-test page, depress the engine-test button (callout 1). A single test page prints (see “Engine test troubleshooting” on page 80).

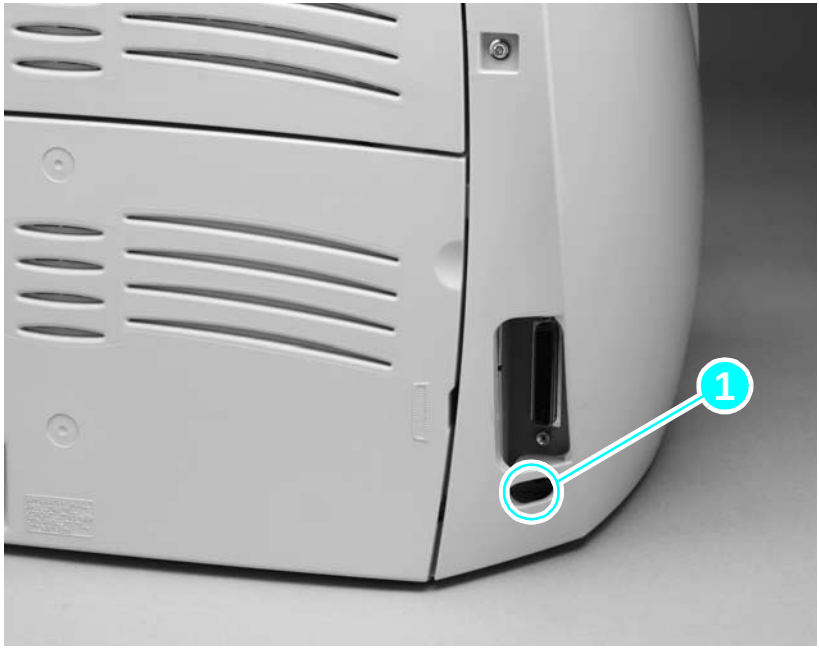


Figure 53. **Engine-test button**

Table 13. Engine test troubleshooting

Problem	Cause	Solution
Engine test print page is filled with evenly spaced horizontal lines.	Successful engine test.	No action required.
No engine test page prints.	Various possible causes.	See “Basic troubleshooting” on page 64, item 2.
Print page comes out curled or wrinkled.	Paper curl is inherent to the laser printing processes, and occurs when paper is subjected to heat. Paper curl tends to relax as the paper cools while resting on a flat surface.	Make sure that the media meets specifications detailed in the *Print Media Guide* for the HP LaserJet printer family.
	Paper is curled or wrinkled when using the paper output bin.	Open the straight-through output door on the back of the printer and use this paper path. Reset the fuser mode to the default.
	Paper is not stored properly.	Whenever possible, store paper in its sealed ream at room temperature.
	The fuser temperature is too high.	Select **Optimize for**: in the **Paper tab** of the printer driver (software). Make sure that it is set for the appropriate media.
Print is misaligned on the page (skewed pages).	The input tray is overfilled.	Remove some of the media.
	The paper guides are not set correctly, are broken, or are missing.	Be sure to center the paper with the side media guides. Verify that the guides are not adjusted too tightly or too loosely against the media stack. Check for broken or missing guides and replace as necessary.
	The media weight or surface finish does not meet HP’s specifications.	Make sure that the media meets specifications detailed in the *Print Media Guide* for the HP LaserJet printer family.

Half self-test functional check

The electrophotographic process can be subdivided into the following stages:

- Image formation stage (charges the drum and writes a latent image to the drum with the laser)
- Development stage (forms a toner image on the drum)
- Transfer stage (transfers the image to paper)
- Cleaning stage (removes excess toner from the drum)
- Fusing stage (applies heat and pressure to make the image on paper permanent)

To perform a half self-test check

The purpose of the half self-test check is to determine which process is malfunctioning.

1. Print a engine test page.
2. Open the printer door after the paper advances half-way through the printer (about five seconds after the motor begins rotation). The leading edge of the paper should have advanced past the toner cartridge.
3. Remove the toner cartridge.
4. Open the toner cartridge drum shield to view the drum surface. If a dark and distinct toner image is present on the drum surface, assume that the first two functions of the electrophotographic process are functioning (image formation and development). Troubleshoot the failure as a transfer or fusing problem.

To perform other checks

If no image appears on the photosensitive drum, perform these checks:

1. Make sure you removed the entire length of the sealing tape from the toner cartridge before you installed the cartridge.
2. Perform a drum rotation functional check. See “Drum rotation functional check” on page 82.
3. Perform a high-voltage power supply check. See “High-voltage power supply check” on page 84.

Drum rotation functional check

The photosensitive drum, located in the toner cartridge, must rotate for the print process to work. The photosensitive drum receives its drive from the main drive assembly.

Hint

This test is especially important if refilled toner cartridges have been used.

1. Open the printer door.
2. Remove the toner cartridge.
3. Mark the drive gear on the cartridge with a felt-tipped marker. Note the position of the mark.
4. Install the toner cartridge and close the printer door. The start-up sequence should rotate the drum enough to move the mark.
5. Open the printer and inspect the gear that was marked in step 3. Verify that the mark moved.

If the mark did not move, inspect the main drive assembly to make sure that it is meshing with the toner cartridge gears. If the drive gears appear functional and the drum does not move, replace the toner cartridge.

Heating-element check

Paper passes between the heating element and a soft pressure roller to fuse toner to the paper.

1. Unplug the printer for at least ten minutes.
2. Remove the heating element connector (callout 1) from the ECU. To measure the continuity of the heating element, measure the resistance between the two pins at the end of the cable.

Note Normal resistance is 25 ohms +/- 10 ohms for the 110 V printer and 80 ohms +/- 20 ohms for the 220 V printer.

If no resistance is measured, replace the fuser.

3. Remove the thermistor connector (callout 2), and measure the resistance between J206 pins one and two and between J206 pins three and four.

Note Normal resistance between both pairs of pins is 370 K ohms +/- 50 K ohms at 20° C (68° F).

4. If no resistance is measured, replace the fuser.
5. Reconnect the heating element and thermistor. Verify that the connectors are seated into both the printer chassis and the ECU.

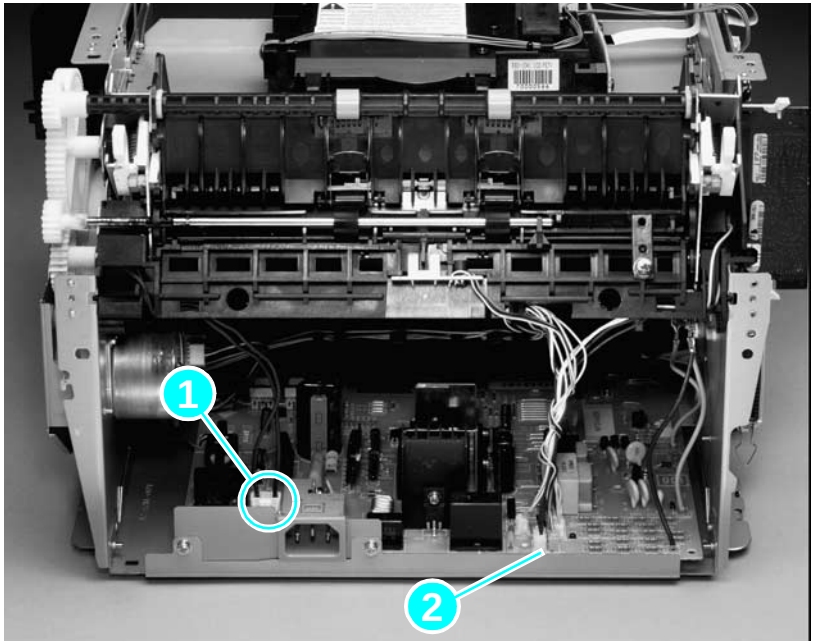


Figure 54. **Locate the connectors for the heating element check**

High-voltage power supply check

The high-voltage power supply PCA provides the necessary voltages for the electrophotographic processes.

To check the toner cartridge connection points

Turn the toner cartridge over and visually inspect the three connection points on the ends of the toner cartridge: drum ground (callout 1), charging (callout 2), and developing roller (callout 3). If any are dirty or corroded, clean the connection. If any are damaged, replace the toner cartridge.

Note Use only isopropyl alcohol to clean the connections.

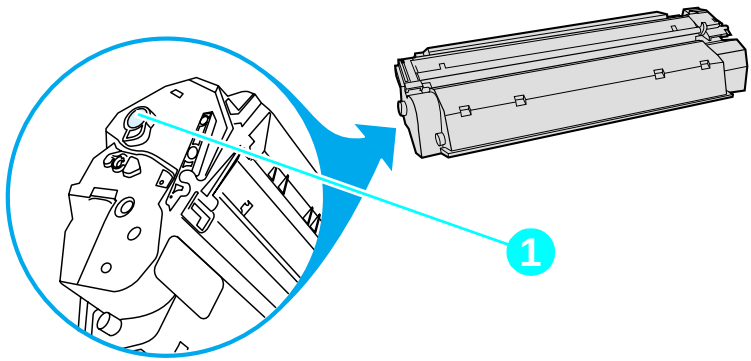


Figure 55. **Toner cartridge high-voltage connection points (right side)**

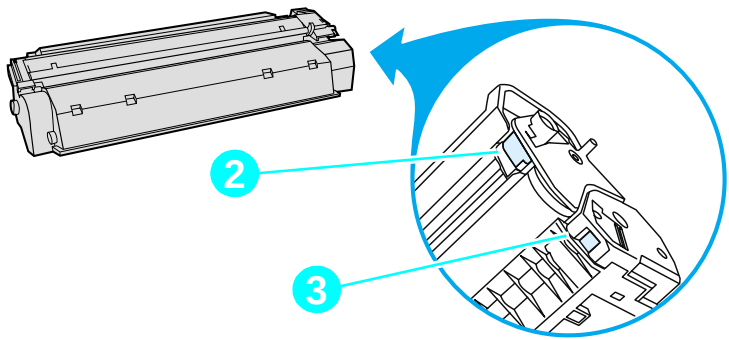


Figure 56. **Toner cartridge high-voltage connection points (left side)**

To check the high-voltage connector assembly

The assembly uses three spring-loaded pins to contact the toner cartridge: drum ground (callout 1), charging (callout 2), and developing roller (callout 3). Verify that the pins are not dirty or corroded and that the spring-loading action is functional. If any of the pins are dirty, clean them using isopropyl alcohol only. If any are damaged, replace the high-voltage connector assembly.

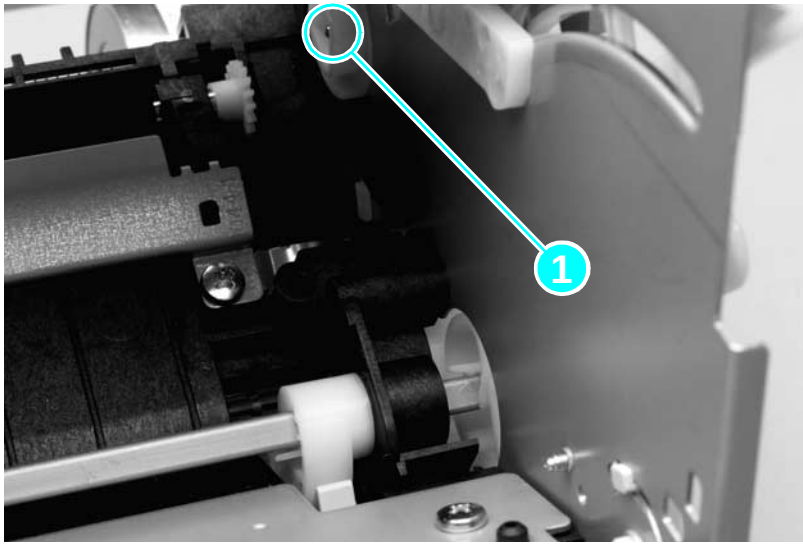


Figure 57. **High-voltage connector assembly (right side)**

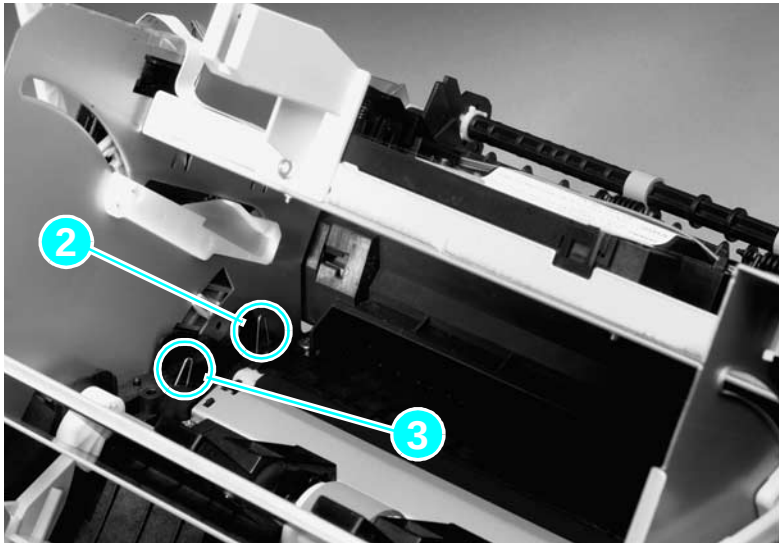


Figure 58. **High-voltage connector assembly (left side)**

Paper-path check

If paper is not being picked up or is not moving through the paper path, you might want to observe all of the paper motion activities. Overriding the door interlock (SW301) allows you to observe:

- motor rotation.
- solenoid action.
- kick plate motion.
- paper pickup roller motion.
- drive roller, transfer roller, fuser roller and gear, and delivery roller motion.

To override SW301

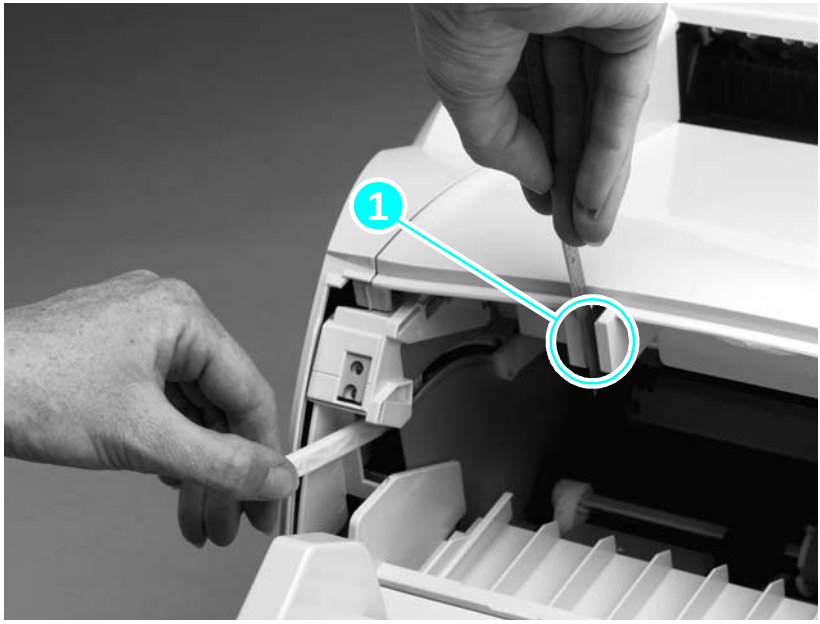


Figure 59. **Override SW301**

1 Remove the left side cover. (See “Left side cover” on page 18.) Disconnect the door swing arms.

2 Install the toner cartridge, which will press SW301.

3 Press the laser/scanner interlock switch (callout 1) on the laser/scanner.

4 While SW301 and the laser/scanner interlock are engaged, perform an engine test to observe paper motion. See “Engine test” on page 79.

Repetitive image defect ruler

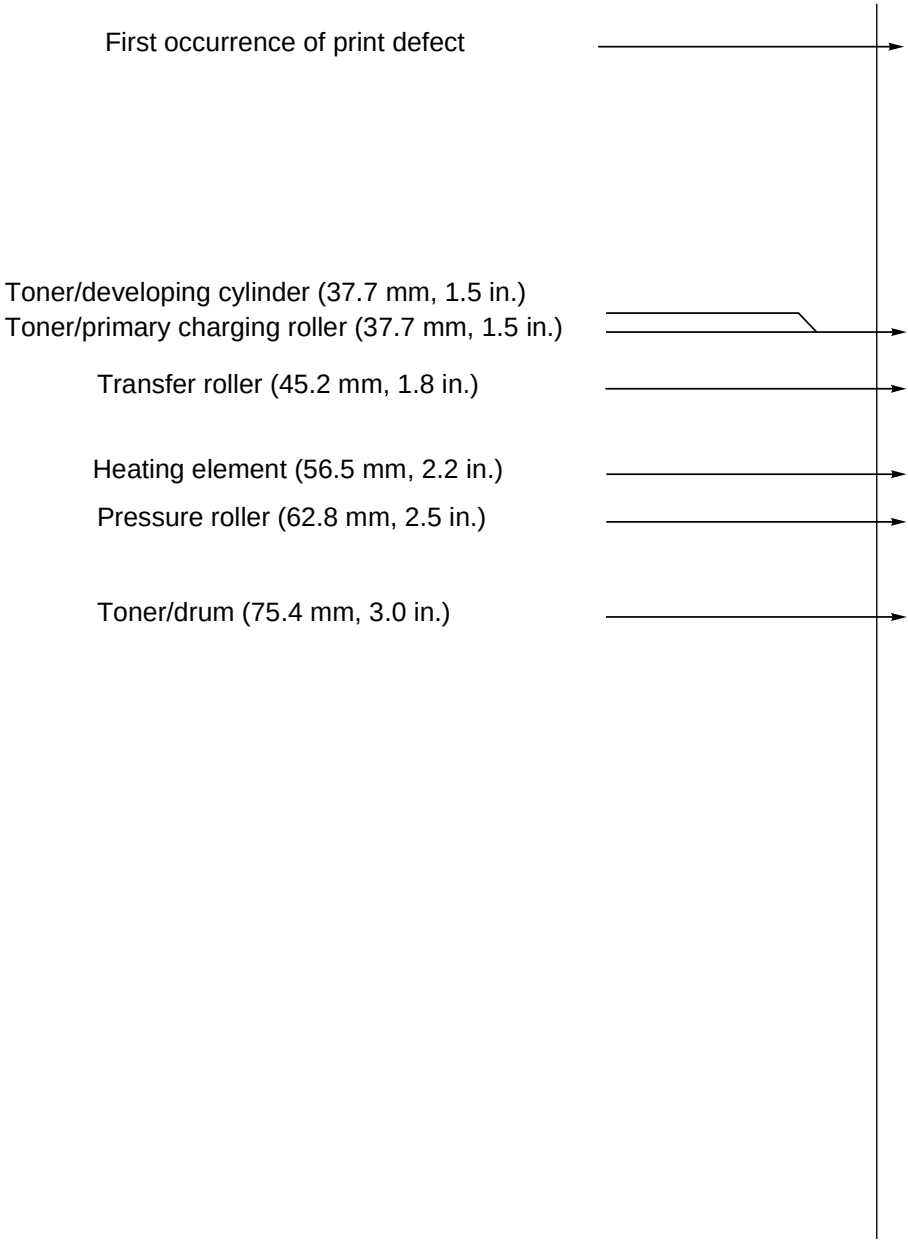


Figure 60. **Repetitive image defect ruler**

Location of ECU Connectors

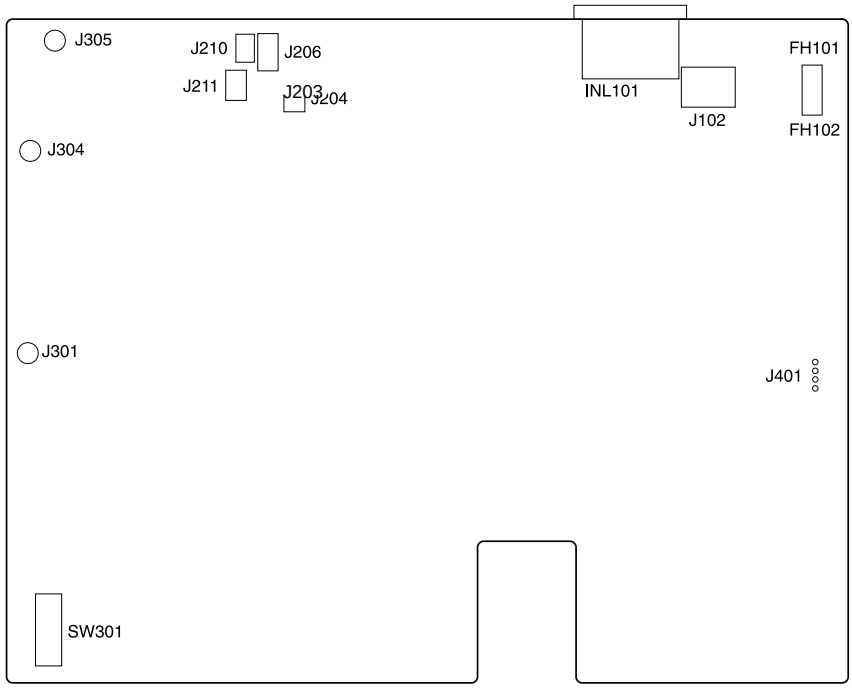


Figure 61. **HP LaserJet 1000 ECU PCB**

Table 14. ECU connectors

Ref.	Description	Remarks
SW301	Door-open detection switch	Microswitch
J301	Toner cartridge high-voltage connector	Connection to developing cylinder
J304	Toner cartridge high-voltage connector	Connection to primary charging roller
J305	Formater connector	Spade connector (black wire)
J210	Output sensor	3-pin connector
J211	Paper feed sensor	3-pin connector
J206	Fuser assembly I/F	4-pin connector
J203	Solenoid	2-pin connector
INL 101	Power cord	see “Accessories” on page 93.
J102	Fuser assembly power	3-pin connector
FH101 FH102	ECU PCB fuse	Use only the same type and rating when replacing the ECU PCB fuse.
J401	Motor	Harness is soldered to the PCB.

Location of printer connectors

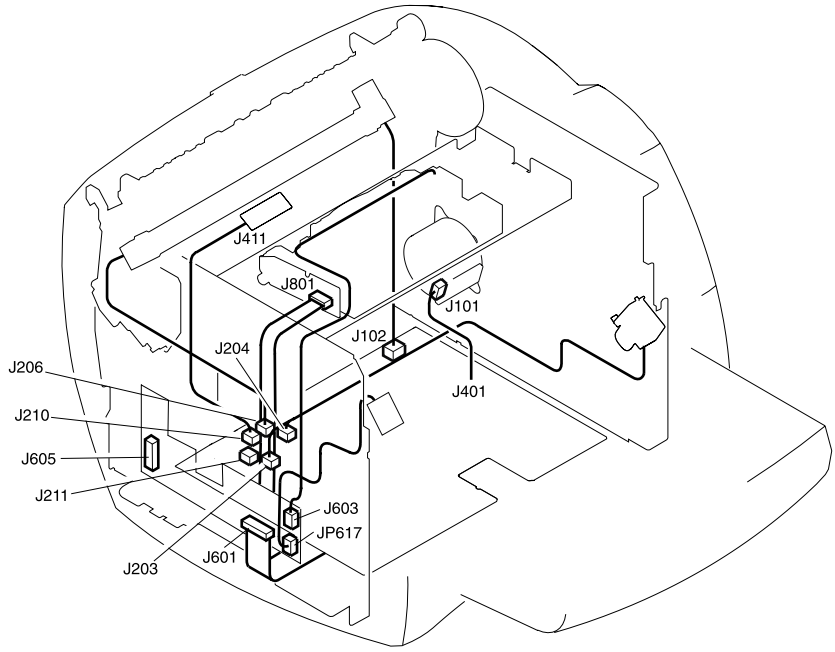


Figure 62. **Printer connectors**

Table 15. Printer connectors

Ref.	Description	Remarks
J603	Laser/scanner	4-pin connector
JP617	LED status panel	3-pin connector
J601	ECU ribbon cable	Harness is soldered to the PCB.
J605	Cable pod	24-pin serial connector
J411	Paper feed sensor	Harness is soldered to the sensor.
J801	Laser/scanner ribbon cable	Cable is soldered to the connector assembly PCB.
J101	Motor	4-pin connector

Note For connectors referenced in this illustration but not listed in this table, see “Location of ECU Connectors” on page 88.

4 Parts and diagrams

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Ordering parts and supplies

Parts

Order replacement parts from the following website:
http://www.hp.com/ssg/parts/direct_order.html

Related documentation and software

Order documentation and software from the companies listed in table 16; some documentation and software is available at the following websites.

Table 16. Technical support websites

HP Customer Care Online Software drivers, support documentation, and answers to frequently asked questions	http://www.hp.com/go/support
HP Technical Training (North America) Classes and schedules	http://www.hp.com/go/resellertraining
Parts Parts information	http://outfield.external.hp.com/spi/welcome.htm

Consumables

Printer consumables are listed in the HP LaserJet 1000 series printer user guide. Consumables are available directly from Hewlett-Packard at the following numbers:

- U.S.: (1) (800) 538-8787
- Canada: (1) (800) 387-3154
  in Toronto: (1) (416) 671-8383
- United Kingdom: 0734-441212
- Germany: 0130-3322

Contact your local HP Parts Coordinator for other local phone numbers.

Accessories

Table 17. Accessories

Item	Description	Part number
Toner cartridge	2500-page cartridge 2500-page cartridge service part	C7115A C7115A-60101
Toner cloth		5090-3379
Cables and interface accessories	Power cord, U.S./Canada	8120-8382
	Power cord, Europe	8121-0516
	Power cord, Switzerland	8121-0519
	Power cord, UK	8121-0517
	Power cord, Denmark	8121-0518
	Power cord, South Africa/India	8121-0520
	Power cord, Thailand	8120-8871
	Power cord, China	8120-8707
	Power cord, Australia	8121-0524
	Power cord, Brazil	8120-6869
	Power cord, Israel	8120-6800

How to use the parts lists and diagrams

The figures in this chapter show the major subassemblies in the printer and their component parts. A part number table follows each exploded assembly illustration. Each table lists the reference designator, the associated part number for the item, and a description of the part.

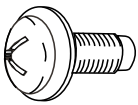
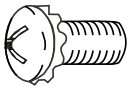
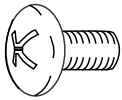
Parts that have no reference designator or part number are not field-replaceable units and cannot be ordered.

While looking for a part number, pay careful attention to the voltage listed in the description column to make sure that the part number selected is for the correct printer model.

Common hardware

The printer has three common fasteners. See table 18 for a description of these screw types.

Table 18. Common fasteners

Example	Description
	Screw, machine, truss head
	Screw, star
	Screw, self-tapping

Hint

The left-cover retaining screw is slightly longer than similar screws used in the printer. Keep this screw separated from other screws while servicing the printer to avoid misplacing it. Order part number RY7-5082-000CN for a screw kit containing a complete set of screws for the HP LaserJet 1000 and 1200 series printers.

Media tray and cable pod

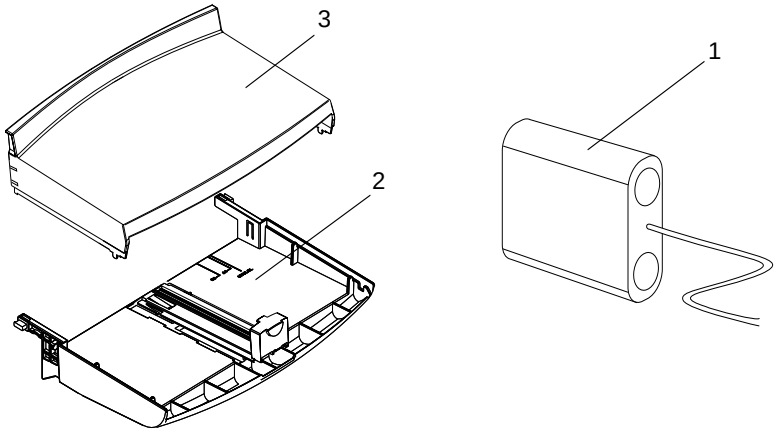


Figure 63. **Media tray and cable pod**

Part numbers

Table 19. Printer tray and cover

Ref.	Part number	Description	Qty.
1	Q1342-60001	Cable pod assembly	1
2	RG0-1013-000CN	Paper-pickup tray	1
3	RA0-1405-000CN	Paper-pickup tray cover	1

Covers

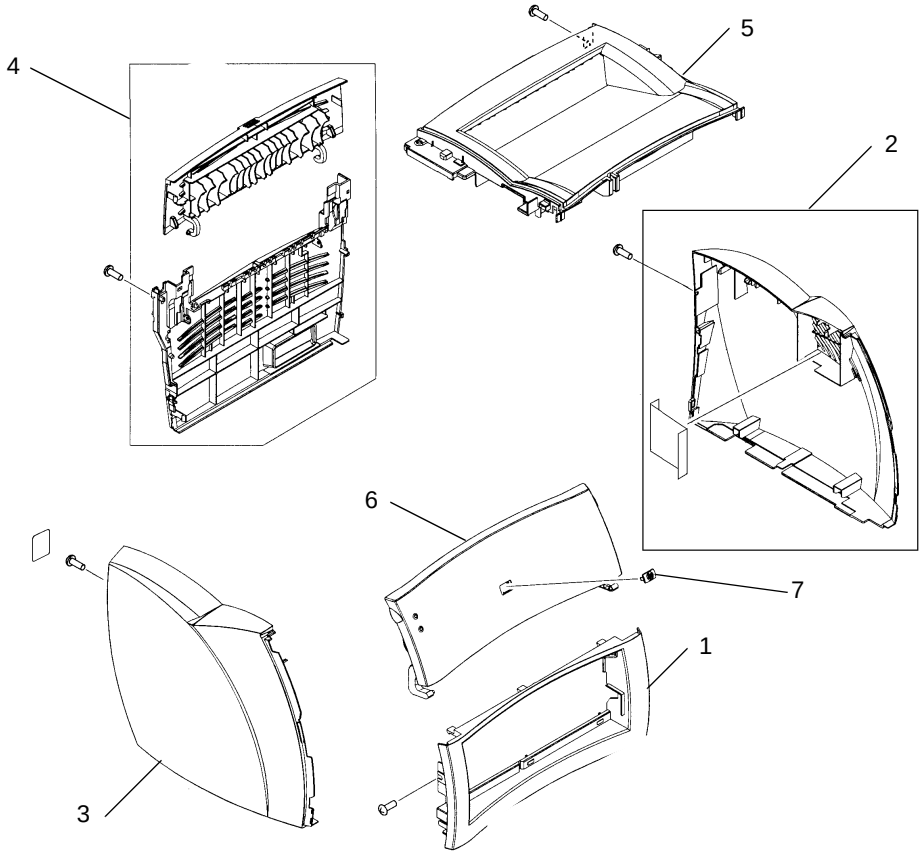


Figure 64. **HP LaserJet 1000 covers**

Part numbers

Table 20. Covers

Ref.	Part number	Description	Qty.
1	RA0-1177-000CN	Cover, front	1
2	RF0-1073-000CN	Cover, right side assembly	1
3	RA0-1403-000CN	Cover, left side	1
4	RG0-1016-000CN	Back cover assembly	1
5	RA0-1074-000CN	Top cover assembly	1
6	RG0-1091-000CN	Toner cartridge door assembly	1
7	7121-8042	HP jewel	1
	RY7-5082-000CN	This screw kit contains a full set of screws for the HP LaserJet 1000 and 1200 series printers.	1

Internal components (1 of 2)

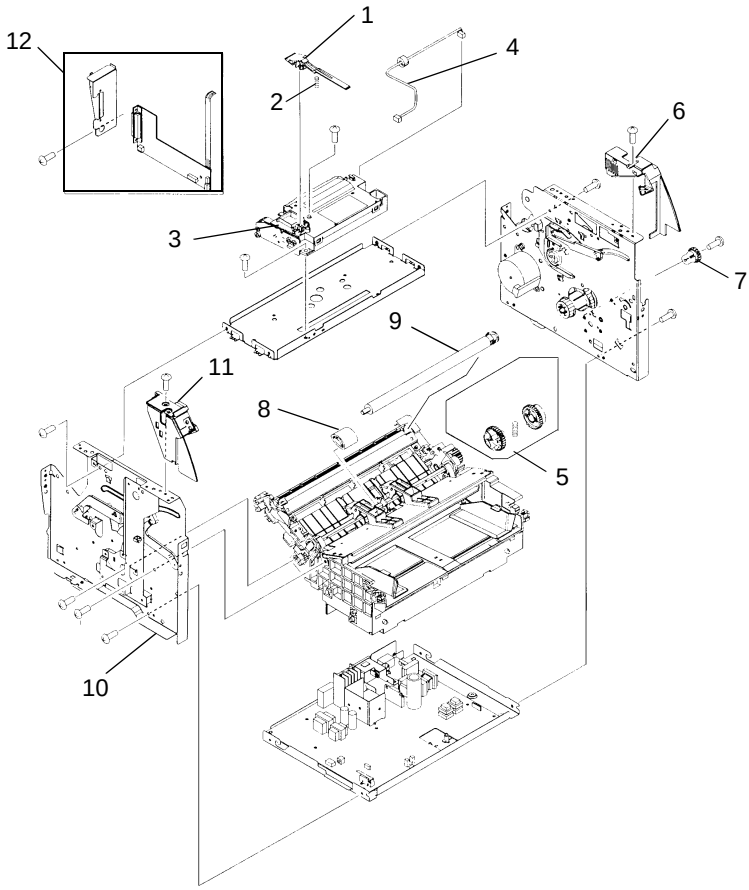


Figure 65. **Internal components (1 of 2)**

Note A and B in the illustration refer to assembly components that are connected together.

Part numbers

Table 21. Internal components (1 of 2)

Ref.	Part number	Description	Qty.
1	RA0-1182-000CN	Shutter lever	1
2	RA0-1169-000CN	Compression spring	1
3	RG9-1498-000CN	Laser/scanner assembly	1
4	RG0-1097-000CN	Cable, laser/scanner	1
5	RG0-1020-000CN	Pickup gear assembly	1
6	RA0-1184-000CN	Cover, right support	1
7	RA0-1172-000CN	Gear 17T (drive train; left plate)	1
8	RF0-1008-000CN	Pickup roller	1
9	RG9-1483-000CN	Transfer roller	1
10	RG0-1084-000CN	Left plate assembly	1
11	RG0-1087-000CN	Control panel assembly	1
12	RG0-1090-000CN	Connector PCB assembly	1

Internal components (2 of 2)

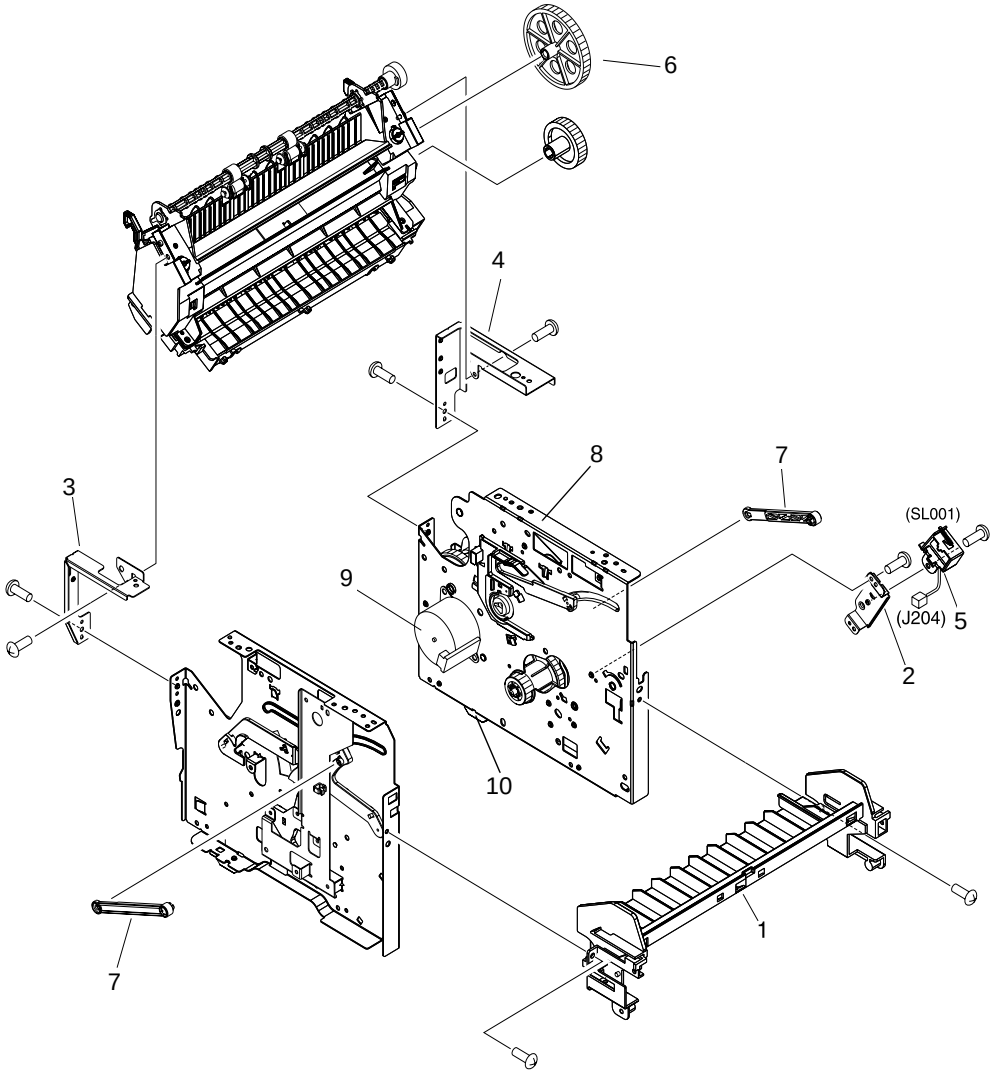


Figure 66. **Internal componentsm (2 of 2)**

Part numbers

Table 22. Internal components (2 of 2)

Ref.	Part number	Description	Qty.
1	RA0-1161-000CN	Front guide assembly	1
2	RA0-1173-000CN	Lever holder	
3	RA0-1185-000CN	Fuser plate, left	1
4	RA0-1186-000CN	Fuser plate, right	1
5	RH7-5315-000CN	Solenoid, dc 24 V	1
6	RA0-1176-000CN	Gear, 69T	1
7	RA0-1023-000CN	Connecting link	2
8	RG0-1083-000CN	Right plate assembly	1
9	RH7-1505-000CN	Motor	1
10	RA0-1197-000CN	Foot	2

Electrical components

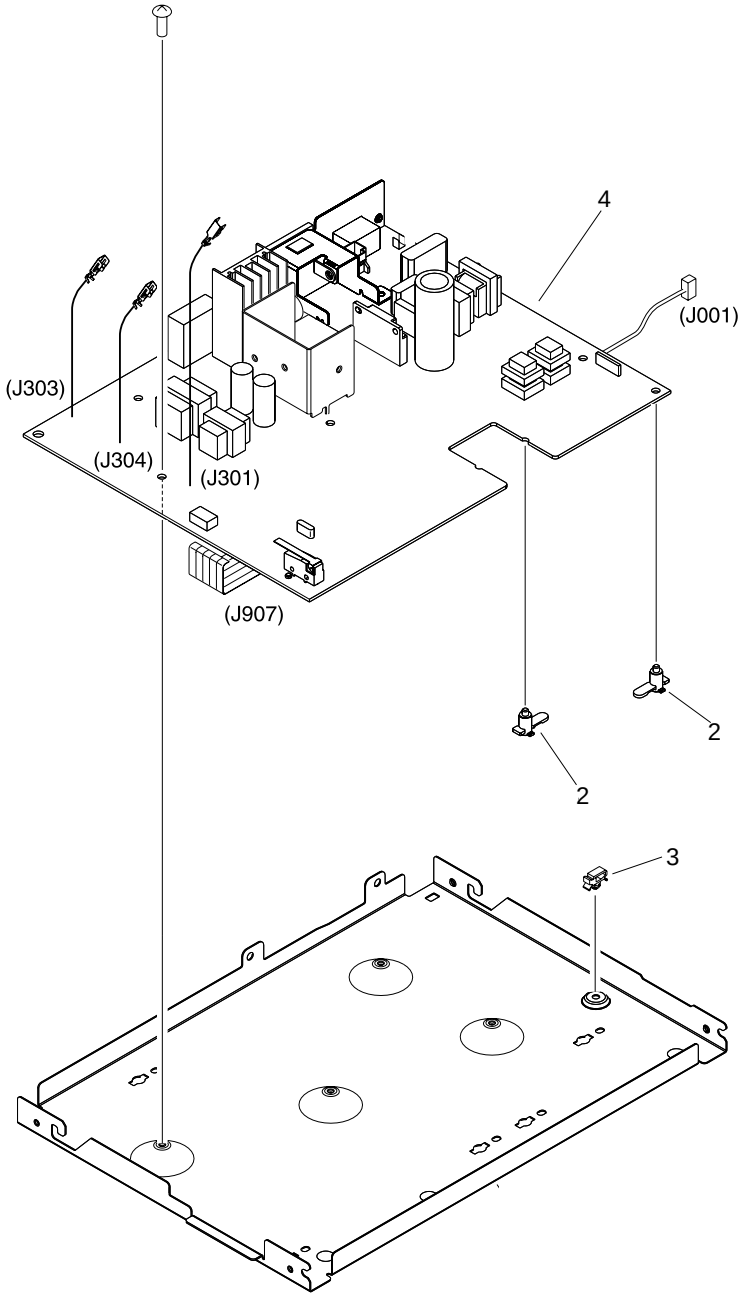


Figure 67. **Electrical components**

Part numbers

Table 23. Electrical components

Ref.	Part number	Description	Qty.
1	RA0-1127-000CN	Engine controller case	1
2	RA0-1128-000CN	PCB spacer	6
3	WT2-5694-000CN	Clamp, cable	1
4	RG0-1093-000CN	Engine controller PCB assembly, 110 to127 V	1
	RG0-1094-000CN	Engine controller PCB assembly, 220 to 240 V	1

Paper pickup assembly (1 of 2)

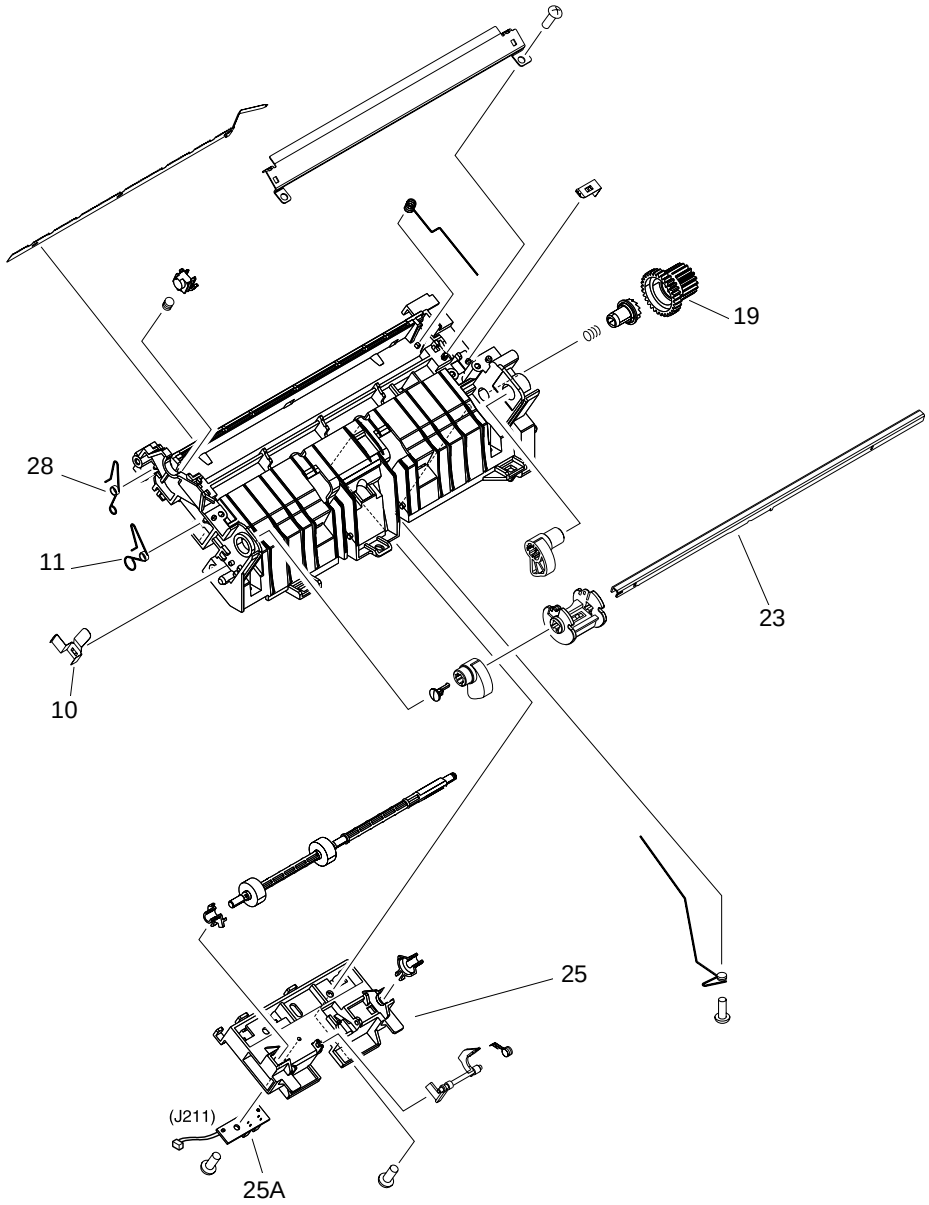


Figure 68. **Paper pickup assembly (1 of 2)**

Part numbers

Table 24. Paper pickup assembly (1 of 2)

Ref.	Part number	Description	Qty.
	RG0-1085-000CN	Paper pickup assembly	1
10	RA0-1072-000CN	Grounding plate	1
11	RA0-1035-000CN	Torsion spring	1
19	RY7-5081-000CN	Clutch kit	1
23	RG0-1007-000CN	Paper pickup shaft assembly	1
25	RG0-1005-000CN	Feed-roller holder assembly	1
25A	RG0-1072-000CN	Paper-sensor PCB assembly	1
28	RA0-1200-000CN	Torsion spring	1

Paper pickup assembly (2 of 2)

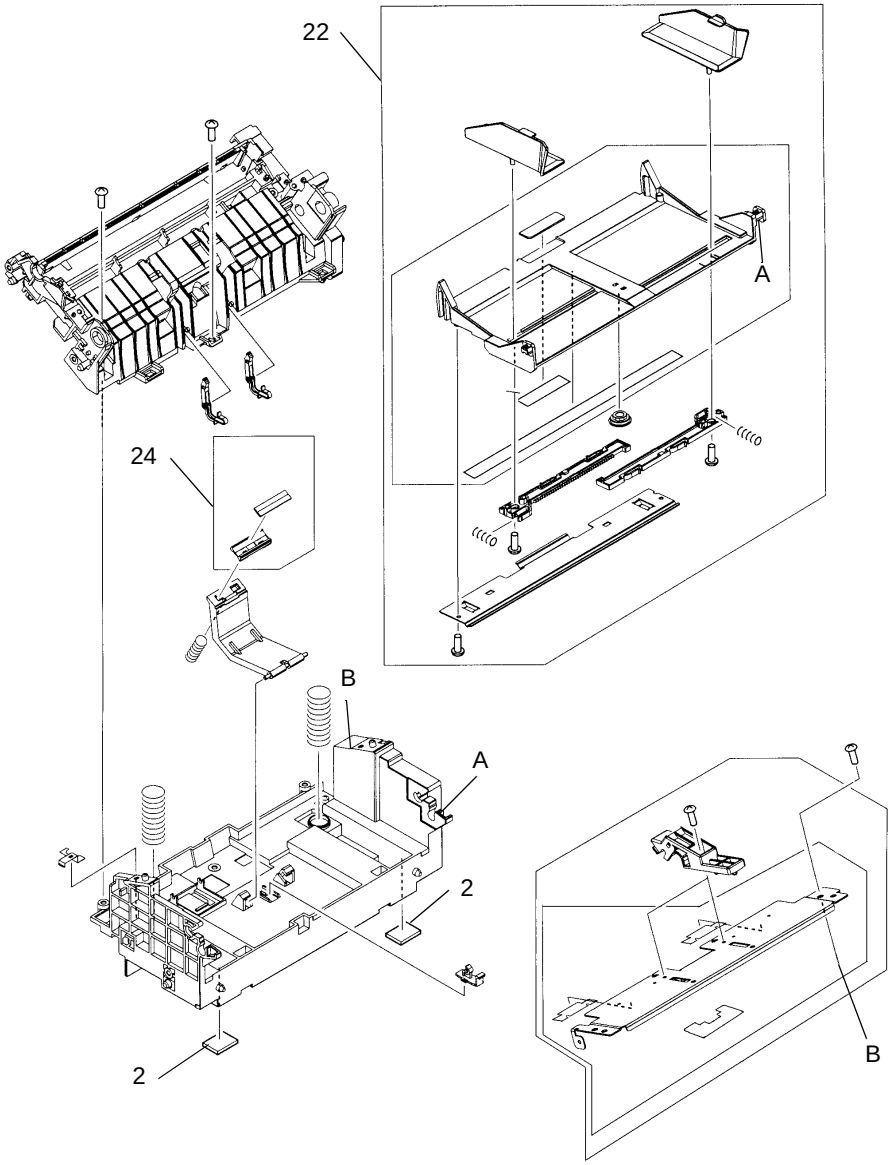


Figure 69. **Paper pickup assembly (2 of 2)**

Note A and B in the illustration refer to assembly components that are connected together.

Part numbers

Table 25. Paper pickup assembly (2 of 2)

Ref.	Part number	Description	Qty.
2	RA0-1003-000CN	Foot, rubber (paper pickup assembly)	2
22	RG0-1006-000CN	Paper lift plate assembly	1
24	RF0-1014-000CN	Separation pad	1

Fuser assembly

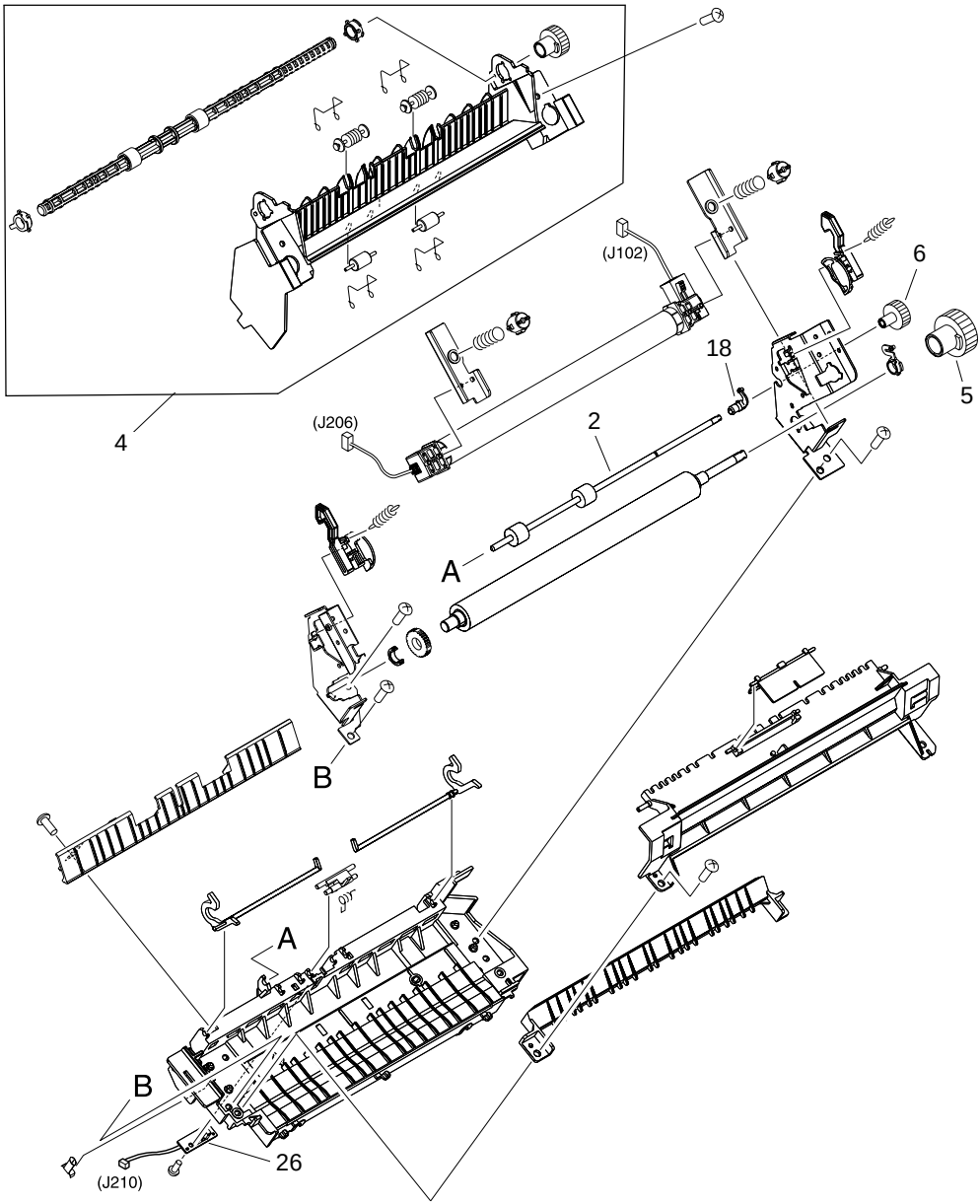


Figure 70. **Fuser assembly**

Note A and B in the illustration refer to assembly components that are connected together.

Part numbers

Table 26. Fuser assembly

Ref.	Part number	Description	
	RG9-1493-000CN	Fuser assembly, 110 V	1
	RG9-1494-000CN	Fuser assembly, 220 V	1
2	RF0-1003-000CN	Face-up roller	1
4	RG0-1010-000CN	Face-down delivery assembly	1
5	RA0-1088-000CN	Gear, 29T	1
6	RA0-1089-000CN	Gear, 17T (fuser assembly)	1
18	RA0-1104-000CN	Bushing	1
26	RG0-1082-000CN	Delivery sensor PCB assembly	1

Alphabetical parts list

Table 27. Alphabetical parts list

Description	Part number	Ref.	Figure
Back cover assembly	RG0-1016-000CN	4	64
Bushing	RA0-1104-000CN	18	70
Cable pod	Q1342-60001	1	63
Cable, laser/scanner	RG0-1097-000CN	4	65
Clamp, cable	WT2-5694-000CN	3	67
Clutch kit	RY7-5081-000CN	19	68
Compression spring	RA0-1169-000CN	2	65
Connecting link	RA0-1023-000CN	7	66
Connector, PCB assembly	RG0-1090-000CN	12	65
Control panel assembly	RG0-1087-000CN	11	65
Cover, front	RA0-1177-000CN	1	64
Cover, left side	RA0-1403-000CN	3	64
Cover, right side assembly	RF0-1073-000CN	2	64
Cover, right support	RA0-1184-000CN	6	65
Delivery sensor PCB assembly	RG0-1082-000CN	26	70
Engine controller case	RA0-1127-000CN	1	67
Engine controller PCB assembly, 110-127 V	RG0-1093-000CN	4	67
Engine controller PCB assembly, 220-240 V	RG0-1094-000CN	4	67
Face-down delivery assembly	RG0-1010-000CN	4	70
Face-down tray assembly	RG0-1070-000CN	5	63
Face-up roller	RF0-1003-000CN	2	70
Feed-roller holder assembly	RG0-1005-000CN	25	68
Foot (plate assemblies)	RA0-1197-000CN	10	66
Foot, rubber (paper pickup assembly)	RA0-1003-000CN	2	69
Fuser assembly, 110 V	RG9-1493-000CN		70
Fuser assembly, 220 V	RG9-1494-000CN		70
Fuser plate, left	RA0-1185-000CN	3	66
Fuser plate, right	RA0-1186-000CN	4	66
Gear, 17T (fuser assembly)	RA0-1089-000CN	6	70
Gear, 17T (drive train; left plate side)	RA0-1172-000CN	7	65

Table 27. Alphabetical parts list (continued)

Description	Part number	Ref.	Figure
Gear, 29T	RA0-1088-000CN	5	70
Gear, 69T	RA0-1176-000CN	6	66
Grounding plate	RA0-1072-000CN	10	68
Guide, front	RA0-1161-000CN	1	66
HP jewel	7121-8042	7	64
Laser/scanner assembly	RG9-1498-000CN	3	65
Left plate assembly	RG0-1084-000CN	10	65
Lever holder	RA0-1173-000CN	2	66
Motor	RH7-1505-000CN	9	66
Optional copier/scanner	R37-5020-000CN	3	63
Paper lift plate assembly	RG0-1006-000CN	22	69
Paper-pickup assembly	RG0-1085-000CN		68
Paper-pickup cover assembly	RA0-1405-000CN	3	63
Paper-pickup shaft assembly	RG0-1007-000CN	23	68
Paper sensor PCB assembly	RG0-1072-000CN	25A	68
PCB spacer	RA0-1128-000CN	2	67
Pickup gear assembly	RG0-1020-000CN	5	65
Pickup roller	RF0-1008-000CN	8	65
Printer pickup tray assembly	RG0-1013-000CN	2	63
Right plate assembly	RG0-1083-000CN	8	66
Screw kit (contains a full set of screws for the HP LaserJet 1000 series printers)	RY7-5082-000CN		
Separation pad	RF0-1014-000CN	24	69
Shutter lever	RA0-1182-000CN	1	65
Solenoid, dc 24 V	RH7-5315-000CN	5	66
Toner cartridge door assembly	RG0-1091-000CN	6	64
Top cover assembly	RF0-1074-000CN	5	64
Torsion spring	RA0-1035-000CN	11	68
Torsion spring	RA0-1200-000CN	28	68
Transfer roller	RG9-1483-000CN	9	65

Numerical parts list

Table 28. Numerical parts list

Part Number	Description	Ref.	Figure
7121-8042	HP jewel	7	64
Q1342-60001	Cable pod	1	63
RA0-1003-000CN	Foot, rubber (paper pickup assembly)	2	69
RA0-1003-000CN	Foot, rubber (plate assemblies)	10	66
RA0-1023-000CN	Connecting link	7	66
RA0-1035-000CN	Torsion spring	11	68
RA0-1072-000CN	Grounding plate	10	68
RA0-1088-000CN	Gear, 29T	5	70
RA0-1089-000CN	Gear, 17T (fuser assembly)	6	70
RA0-1104-000CN	Bushing	18	70
RA0-1127-000CN	Engine controller case	1	67
RA0-1128-000CN	PCB spacer	2	67
RA0-1161-000CN	Guide, front	1	66
RA0-1169-000CN	Compression spring	2	65
RA0-1172-000CN	Gear 17T (drive train; left plate side)	7	65
RA0-1173-000CN	Lever holder	2	66
RA0-1176-000CN	Gear, 69T	6	66
RA0-1177-000CN	Cover, front	1	64
RA0-1182-000CN	Shutter lever	1	65
RA0-1184-000CN	Cover, right support	67	65
RA0-1185-000CN	Fuser plate, left	3	66
RA0-1186-000CN	Fuser plate, right	4	66
RA0-1200-000CN	Torsion spring	28	68
RA0-1403-000CN	Cover, left side	3	64
RA0-1405-000CN	Paper-pickup cover assembly	32	63
RA0-1197RA0-1197	Foot (plate assemblies)	10	67
RF0-1003-000CN	Face-up roller	2	70
RF0-1008-000CN	Pickup roller	8	65
RF0-1014-000CN	Separation pad	24	69
RF0-1073-000CN	Cover, right side	2	64
RF0-1074-000CN	Top cover assembly	5	64
RG0-1003-000CN	Paper-pickup assembly		68

Table 28. Numerical parts list (continued)

Part Number	Description	Ref.	Figure
RG0-1005-000CN	Feed-roller holder assembly	25	68
RG0-1006-000CN	Paper lift plate assembly	22	69
RG0-1007-000CN	Paper-pickup shaft assembly	23	68
RG0-1008-000CN	Fuser assembly, 110 V		70
RG0-1010-000CN	Face-down delivery assembly	4	70
RG0-1013-000CN	Paper-pickup tray assembly	21	63
RG0-1016-000CN	Back cover assembly	4	64
RG0-1020-000CN	Pickup gear assembly	5	65
RG0-1026-000CN	Fuser assembly, 220 V		70
RG0-1070-000CN	Face-down tray assembly	5	63
RG0-1072-000CN	Paper sensor PCB assembly	25A	68
RG0-1082-000CN	Delivery sensor PCB assembly	26	70
RG0-1084-000CN	Left plate assembly	10	65
RG0-1087-000CN	Control panel assembly	11	65
RG0-1090-000CN	Connector PCB assembly	12	65
RG0-1091-000CN	Toner cartridge door assembly	6	64
RG0-1093-000CN	Engine controller PCB assembly, 110 to127 V	4	67
RG0-1094-000CN	Engine controller PCB assembly, 220 to 240 V	4	67
RG0-1097-000CN	Cable, laser/scanner	4	65
RG07-1083-000CN	Right plate assembly	8	66
RG9-1483-000CN	Transfer roller	9	65
RG9-1498-000CN	Laser/scanner assembly	3	65
RH7-1505-000CN	Motor	9	66
RH7-5315-000CN	Solenoid, dc 24 V	5	66
RY7-5081-000CN	Clutch kit	19	68
RY7-5082-000CN	Screw kit (contains a full set of screws for the HP LaserJet 1000 and 1200 series printers)		
WT2-5694-000CN	Clamp, cable	3	67

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