Fuser-motor assembly (M299)

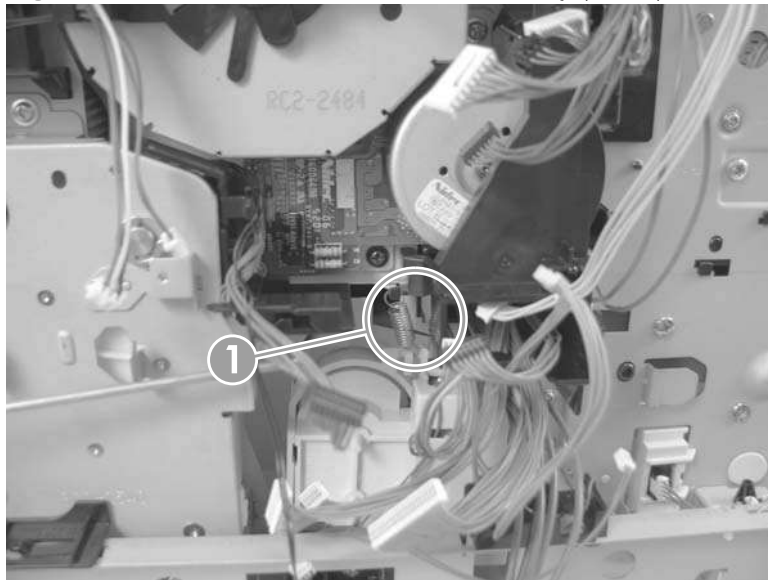1. Remove the following components:

    *   Top accessory cover. See Top-accessory cover on page 146.

    *   Formatter cover and cage. See Formatter cover, formatter cage, and formatter PCA on page 152.

    *   Top cover. See Top cover on page 161.

    *   Right-side cover. See Right-side cover on page 163.

    *   DC controller. See DC controller PCA on page 188.

2. Release one spring (callout 1).

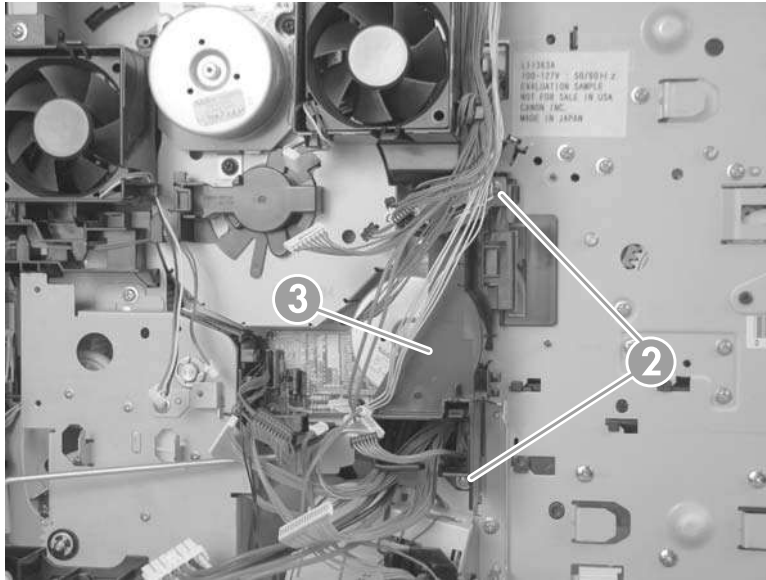△ **CAUTION:** The spring is not captive. Do not lose the spring.

Figure 6-87 Remove the fuser-motor assembly (1 of 3)

**3.** Remove two screws (callout 2) and then remove the guide (callout 3).

Figure 6-88 Remove the fuser-motor assembly (2 of 3)

4. Disconnect one wire-harness connector (callout 4), and then remove three screws (callout 5). Remove the fuser-motor assembly.

📝 NOTE: You must install the fuser-motor wire harness on the replacement fuser-motor assembly.

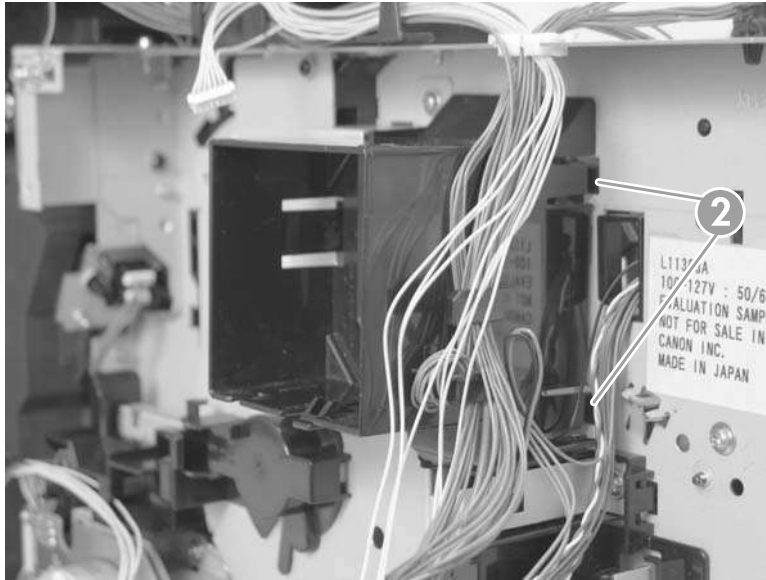Figure 6-89 Remove the fuser-motor assembly (3 of 3)
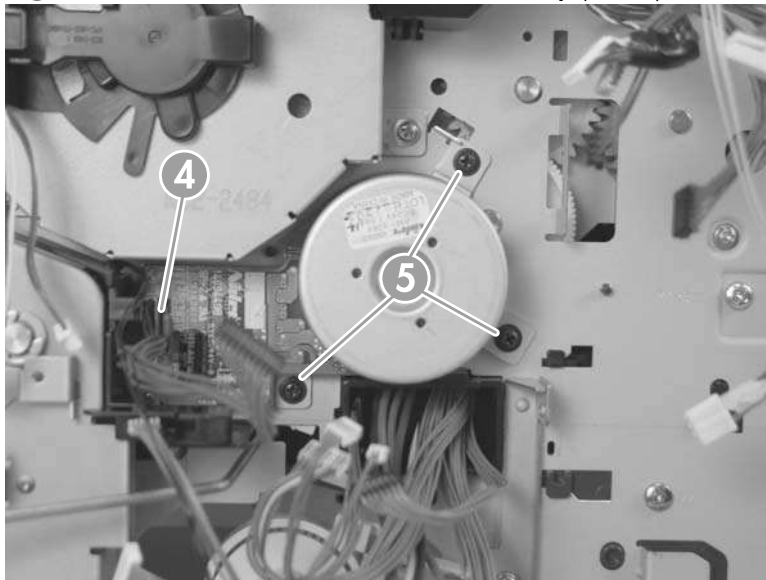
Drum-drive assembly

1. Remove the following components:

   - Top accessory cover. See Top-accessory cover on page 146.

   - Formatter cover and cage. See Formatter cover, formatter cage, and formatter PCA on page 152.

   - Top cover. See Top cover on page 161.

   - Right-side cover. See Right-side cover on page 163.

   - Fan FN102. See Fan FN102 on page 176.

   - Fan FN103. See Fan FN103 on page 178.

   - Drum-motor assembly. See Drum-motor assembly (M102) on page 182.

   - DC controller PCA. See DC controller PCA on page 188.

2. Remove one screw (callout 1) and the fan FN103 duct.

   Figure 6-90 Remove the drum-drive assembly (1 of 4)
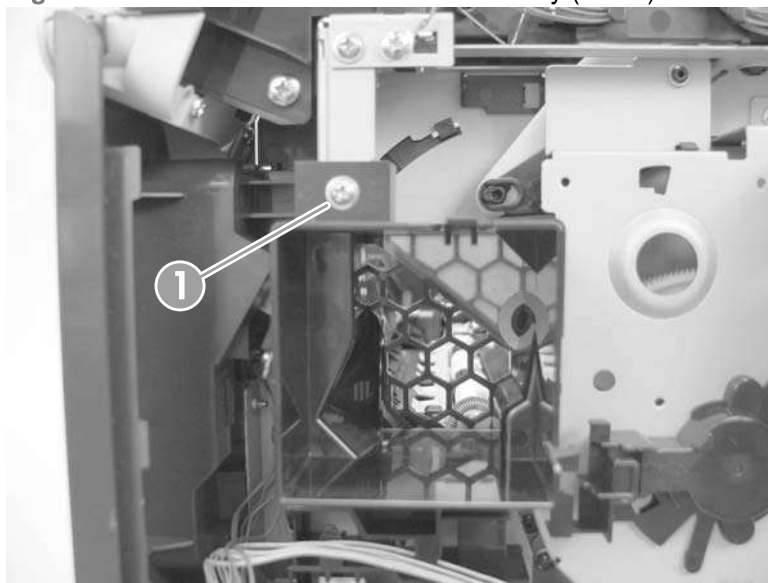
3. Release the wire-harnesses from the retainer on the fan FN102 duct (callout 2) .

Figure 6-91 Remove the drum-drive assembly (2 of 4)

4. Remove three screws (callout 3).

Figure 6-92 Remove the drum-drive assembly (3 of 4)
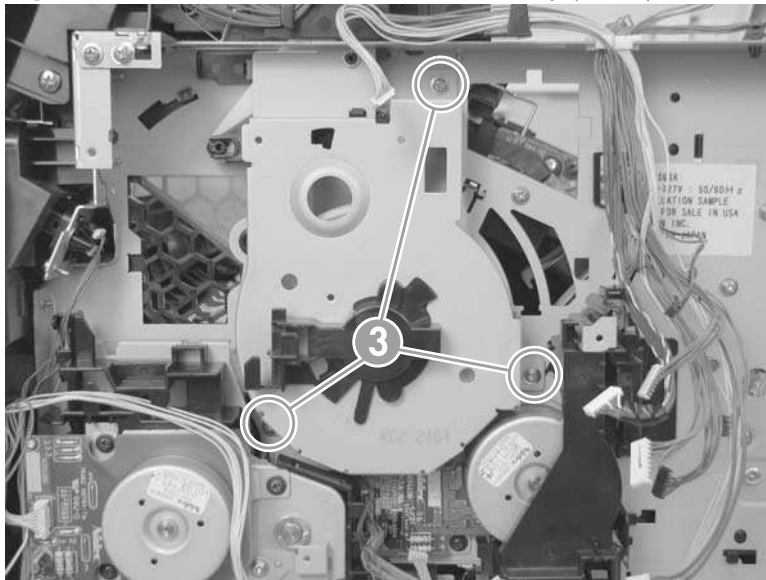
5. Carefully remove the drum-drive assembly.

Figure 6-93 Remove the drum-drive assembly (4 of 4)

Reinstall the drum-drive assembly

When the drum-drive assembly is reinstalled, make sure that the spring is correctly positioned in the assembly.

Figure 6-94 Reinstall the drum-drive assembly
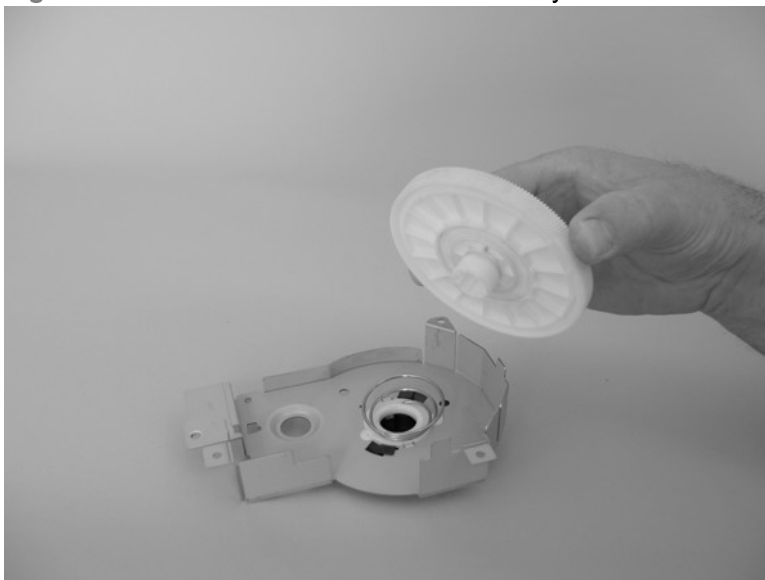
Fan FN101

1. Remove the following components:
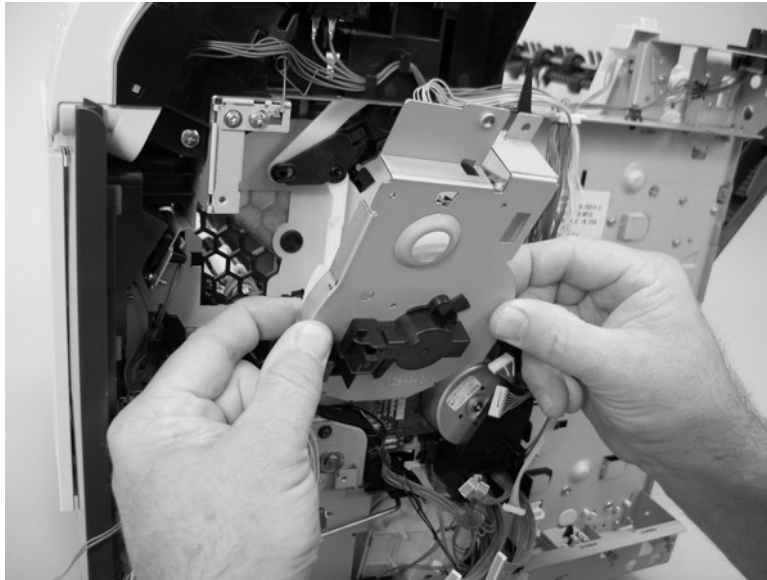
   ● Top accessory cover. See Top-accessory cover on page 146.

   ● Formatter cover and cage. See Formatter cover, formatter cage, and formatter PCA on page 152.

   ● Top cover. See Top cover on page 161.

   ● Left-side cover. See Left-side cover on page 166.

2. Remove two screws (callout 1), and then remove the sheet-metal plate (callout 2).

   Figure 6-95 Remove fan FN101 (1 of 3)
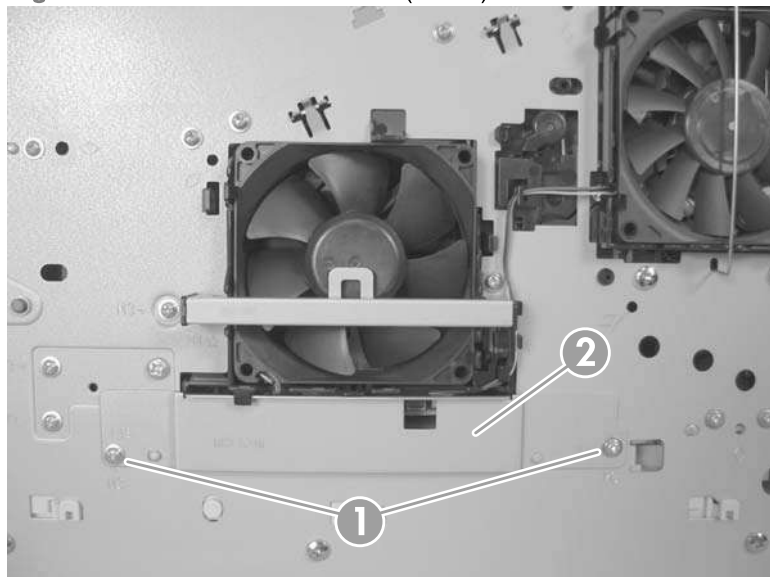
3. Disconnect two connectors (callout 3), and then remove one screw (callout 4). Slide the thermistor sensor bar (callout 5) to the right to release it, and then lift the thermistor sensor bar away from the product.

Figure 6-96 Remove fan FN101 (2 of 3)

4. Release the two fan-locking tabs (callout 6), and then remove the fan.

△ CAUTION: When you reinstall the fan, do not apply too much pressure to the wire-harness connectors when they are connected to the power supply. Applying too much pressure might snap off the soldered connectors on the power supply.

☼ Reinstallation tip When you reinstall the fan, the air must flow into the product. Verify that the airflow arrows that are embossed on the fan body point *into* the product.

Figure 6-97 Remove fan FN101 (3 of 3)
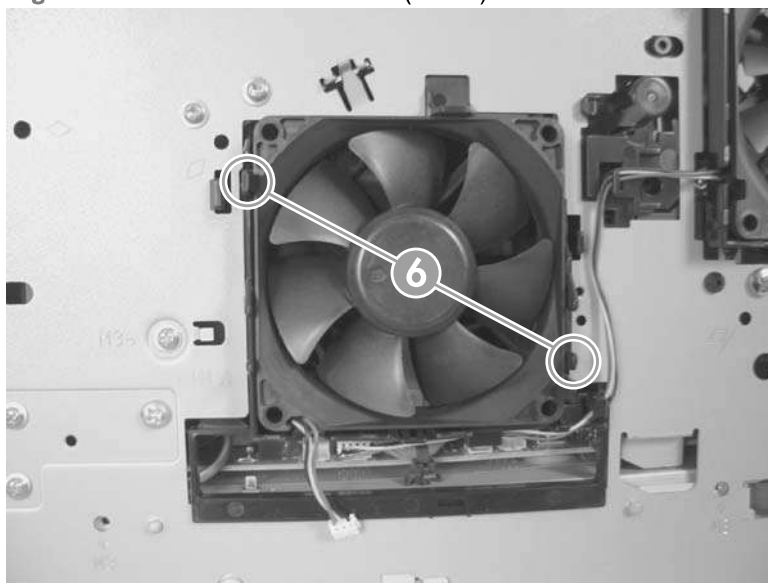
Fan FN301
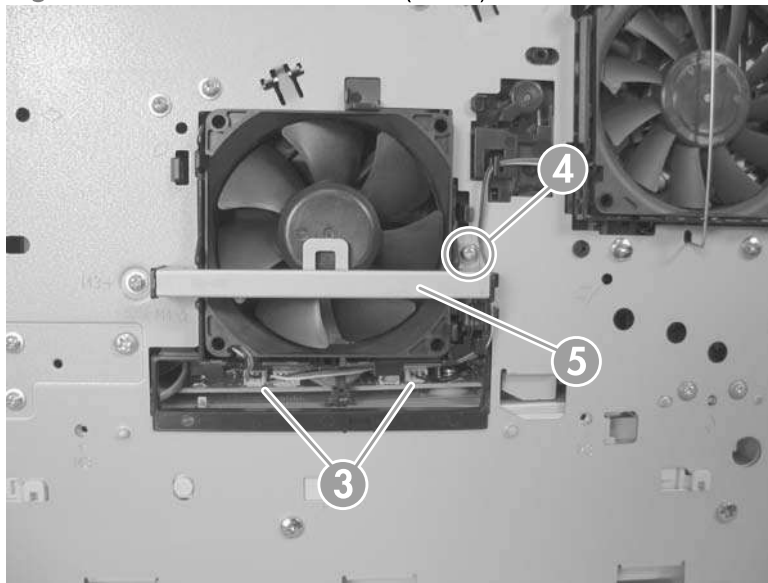
1. Remove the following components:

   ● Top accessory cover. See Top-accessory cover on page 146.

   ● Top cover. See Top cover on page 161.

   ● Left-side cover. See Left-side cover on page 166.

2. Remove two screws (callout 1), and then remove the fan-cover plate (callout 2).

   Figure 6-98 Remove fan FN301 (1 of 3)

3. Disconnect one connector (callout 3), and then release the wire harness from the retainer(callout 4). Unhook and remove the fan clip (callout 5).

   Figure 6-99 Remove fan FN301 (2 of 3)

4. Release two tabs (callout 6), and then remove the fan.

TIP: When you reinstall the fan, the air must flow into the product. Verify that the airflow arrows that are embossed on the fan body point *into* the product.
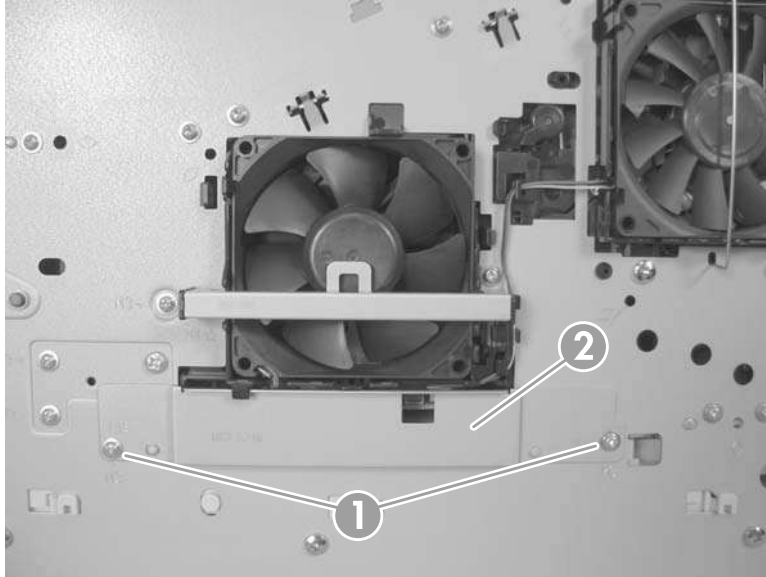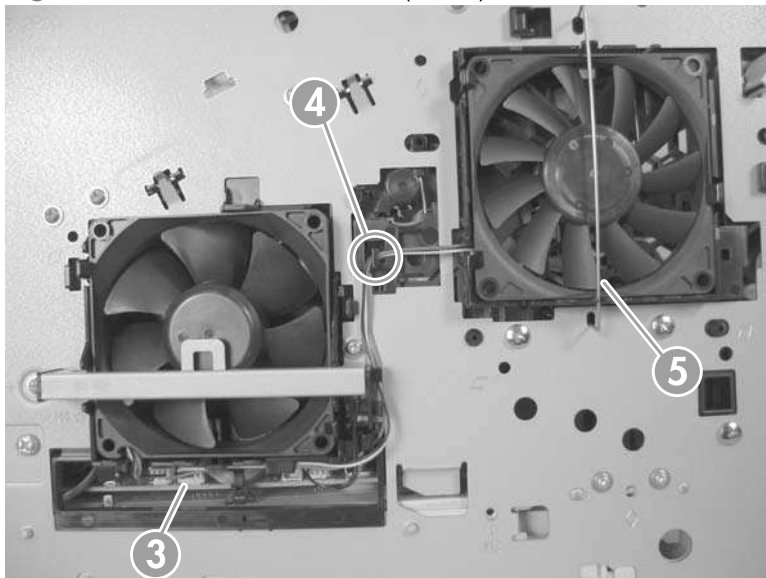
Figure 6-100 Remove fan FN301 (3 of 3)
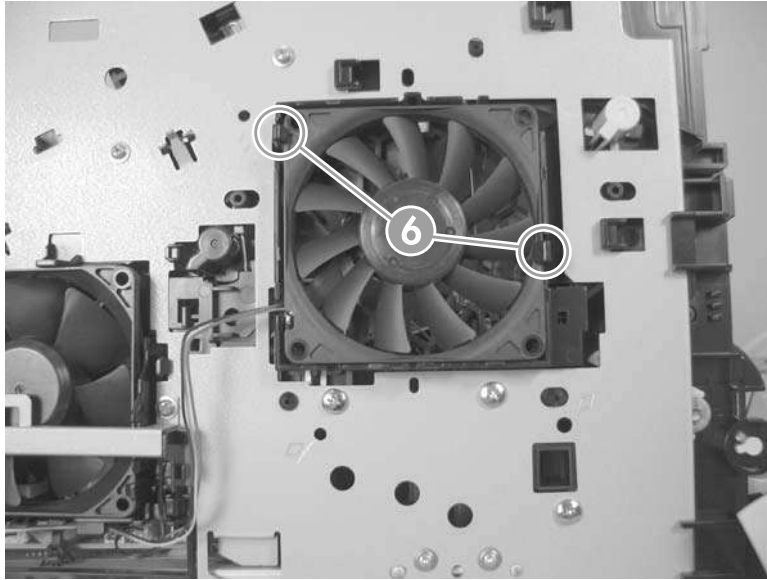
Environmental sensor (TH3)

1. Remove the following components:

    ●   Top accessory cover. See Top-accessory cover on page 146.

    ●   Duplex accessory or cover. See Duplex accessory or cover on page 148.

    ●   Tray 2 extension door. See Tray 2 extension door on page 149.

    ●   Top cover. See Top cover on page 161.

    ●   Left-side cover. See Left-side cover on page 166.

2. Remove two screws (callout 1), and then remove the fan-cover plate (callout 2).

    Figure 6-101 Remove the environmental sensor (TH3) (1 of 2)
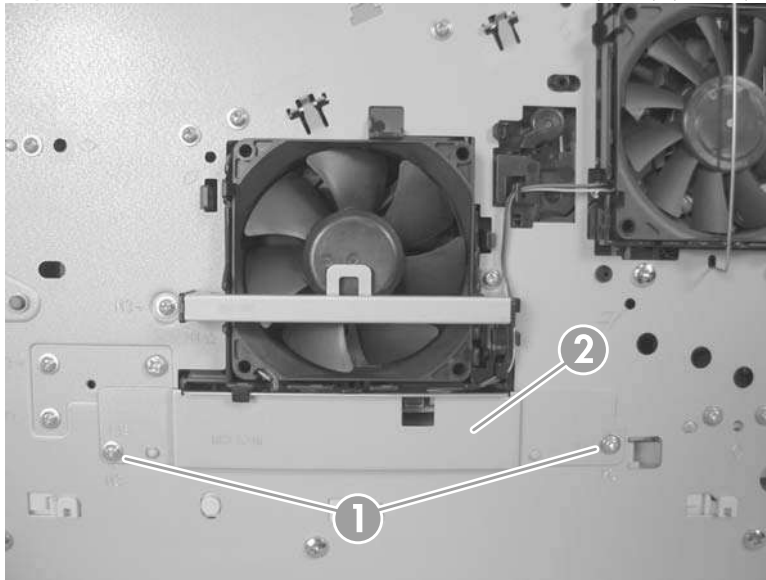
3. Disconnect one connector (callout 3), and then remove one screw (callout 4). Slide the thermistor sensor bar (callout 5) to the right to release it, and then lift the thermistor sensor bar away from the product.

Figure 6-102 Remove the environmental sensor (TH3) (2 of 2)

High voltage power supply

⚠ **CAUTION:** ⚡ The product contains components that are sensitive to electrostatic discharge (ESD). Always perform service work at an ESD-protected workstation. If an ESD-protected workstation is not available, discharge body static by grasping the product chassis before touching an ESD-sensitive component. Ground the product chassis before servicing the product.

1. Remove the following components:

   ● Top accessory cover. See <u>Top-accessory cover on page 146</u>.

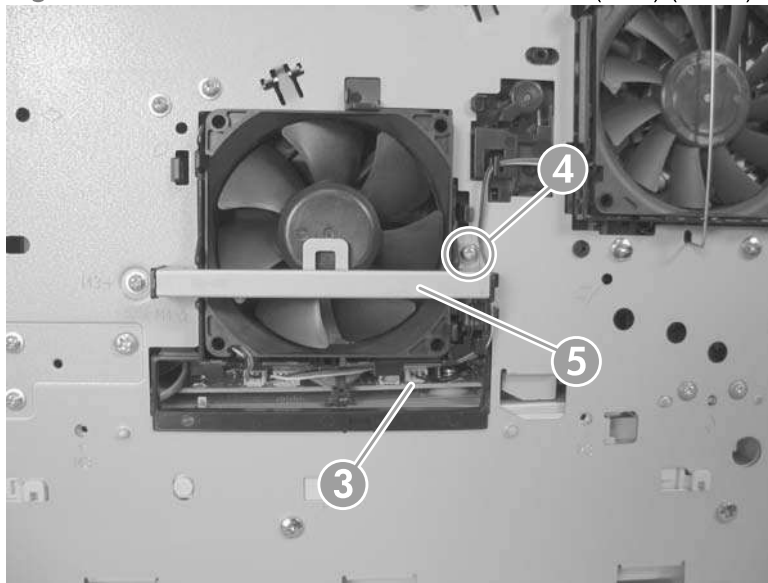   ● Duplex accessory or cover. See <u>Duplex accessory or cover on page 148</u>.

   ● Tray 2 extension door. See <u>Tray 2 extension door on page 149</u>.

   ● Rear output bin. See <u>Rear output bin on page 150</u>.

   ● Fuser. See <u>Fuser on page 151</u>.

   ● Formatter cover and cage. See <u>Formatter cover, formatter cage, and formatter PCA on page 152</u>.

   ● Top cover. See <u>Top cover on page 161</u> .

   ● Right-side cover. See <u>Right-side cover on page 163</u>.

   ● Left-side cover. See <u>Left-side cover on page 166</u>.

2. Remove two screws (callout 1), release one tab (callout 2) and slide the power-supply PCA guide towards the rear of the product to remove it.

Figure 6-103 Remove the high-voltage power-supply assembly (1 of 8)
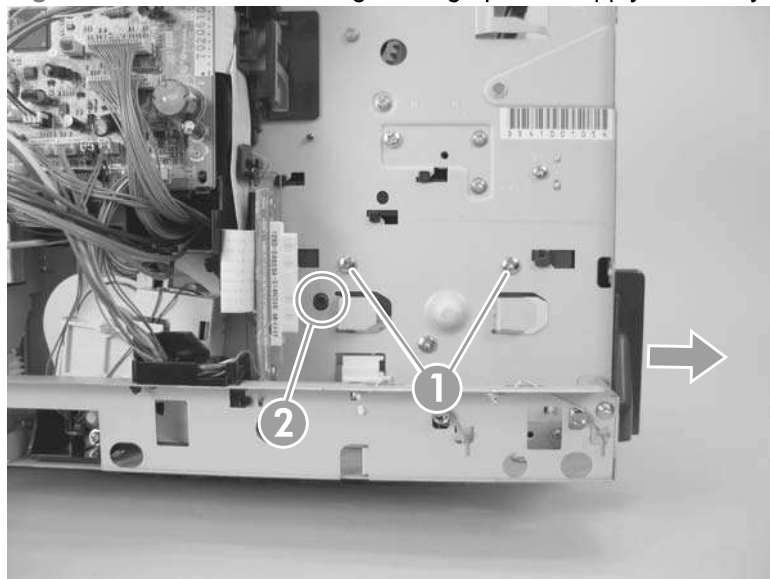
3. Remove four screws (callout 3) and one grounding screw (callout 4).

⚠ **WARNING!** When reinstalling the power supply, you must use a grounding screw to secure the AC outlet to the product chassis.

Figure 6-104 Remove the high-voltage power-supply assembly (2 of 8)
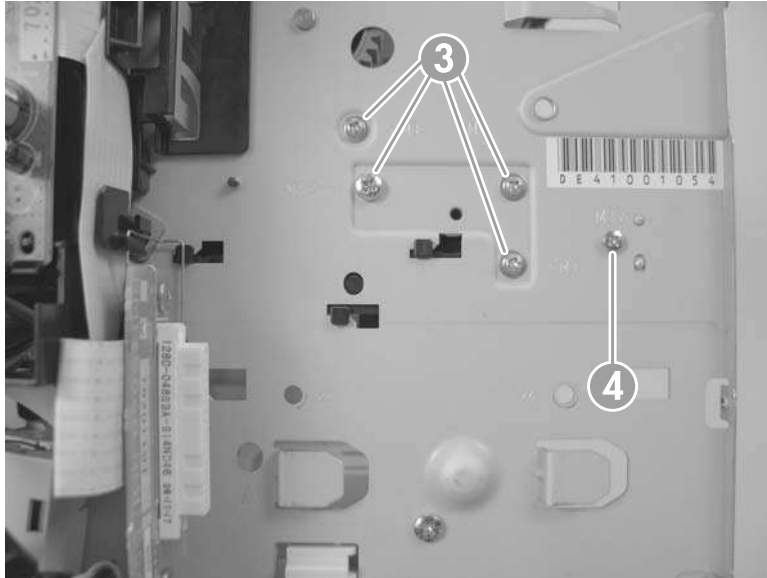
4. Unhook the power-switch arm (callout 5) from the chassis (the switch arm will still be attached to the power supply).

Figure 6-105 Remove the high-voltage power-supply assembly (3 of 8)

5. Disconnect five wire-harness connectors (callout 6; J82, J84, J85, J95, and J96).

Figure 6-106 Remove the high-voltage power-supply assembly (4 of 8)
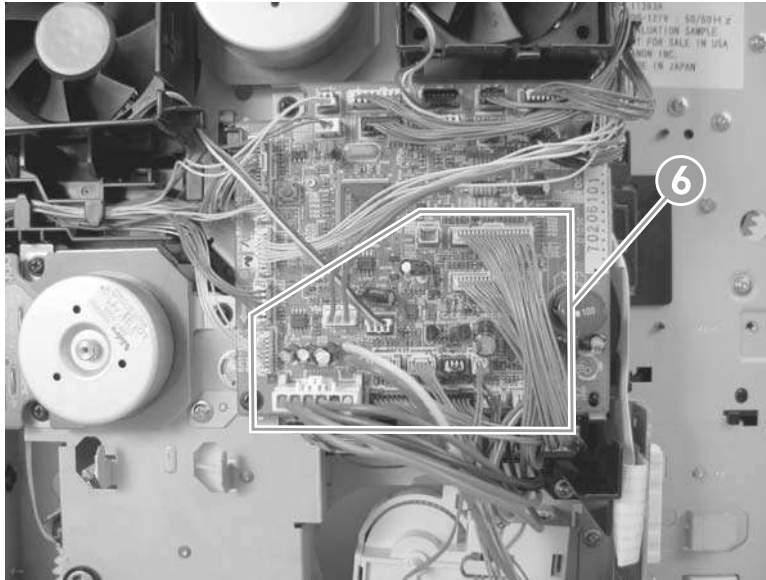
6. Remove two screws (callout 7) and then remove the fan-cover plate (callout 8).

Figure 6-107 Remove the high-voltage power-supply assembly (5 of 8)
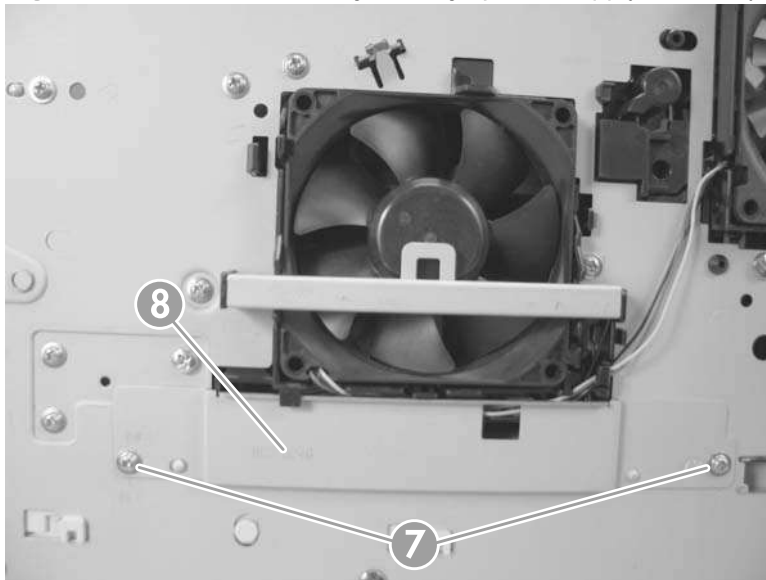
7. Disconnect three wire-harness connectors (callout 9) and then remove four screws (callout 10).

Figure 6-108 Remove the high-voltage power-supply assembly (6 of 8)
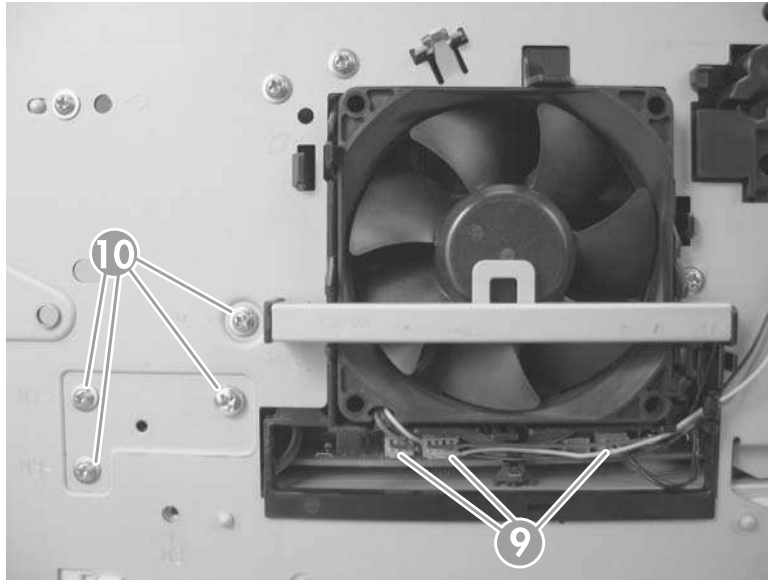
8. Feed the cables that were disconnected earlier through the hole in the right side of the chassis under the power-supply assembly. Pull down on the power-switch connector bar (callout 11) to slide it out of its mounting bracket, and remove it.

⚠ CAUTION: Make sure that the four rubber belts and plastic rollers on the feed-guide assembly (mounted to the top of the power supply) remain in place. These belts and rollers can easily become dislodged and you might lose them.

Figure 6-109 Remove the high-voltage power-supply assembly (7 of 8)
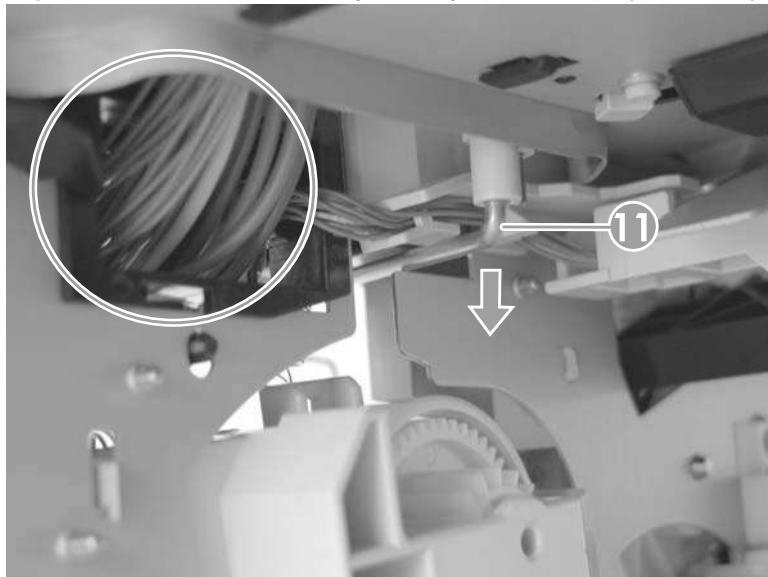
9. Grasp the power-supply assembly and lift it up slightly. Pull it straight out of the chassis.

☼ **Reinstallation tip** When you reinstall the power supply, thread the heavy-gauge wire-harness through the hole in the chassis first, and then thread the two ribbon cables through the hole. This prevents the harness and cables from crossing over each other when they are placed in the wire guide. Make sure that you install the power-switch connector bar when you install the power supply.

Figure 6-110 Remove the high-voltage power-supply assembly (8 of 8)

Feed-guide assembly

1. Remove the following components:

   ● Top accessory cover. See Top-accessory cover on page 146.

   ● Duplex accessory or cover. See Duplex accessory or cover on page 148.

   ● Tray 2 extension door. See Tray 2 extension door on page 149.

   ● Fuser. See Fuser on page 151.

   ● Formatter cover and cage. See Formatter cover, formatter cage, and formatter PCA on page 152.

   ● Top cover. See Top cover on page 161 .

   ● Right-side cover. See Right-side cover on page 163.

   ● Left-side cover. See Left-side cover on page 166.

   ● High-voltage power supply. See High voltage power supply on page 208.

2. Remove five screws (callout 1).

   Figure 6-111 Remove the feed-guide assembly (1 of 3)
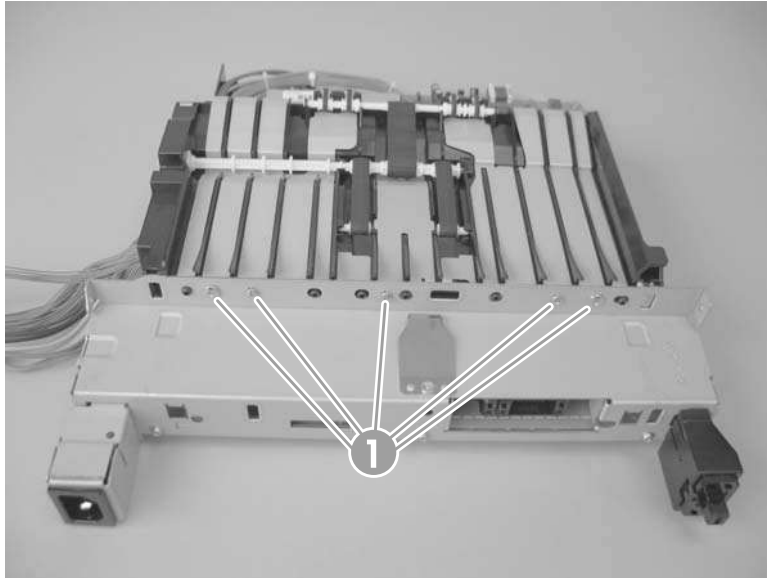
3.   Remove one screw (callout 2).

Figure 6-112 Remove the feed-guide assembly (2 of 3)
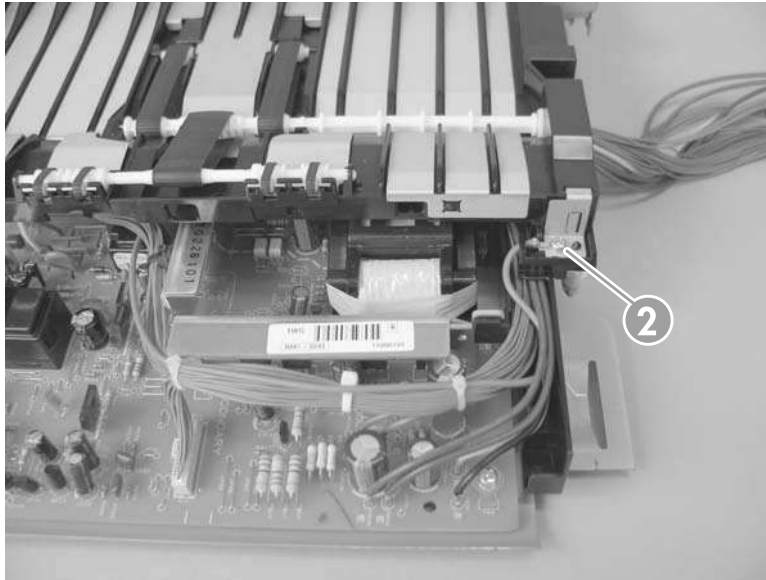
4.   Remove the feed-guide assembly.

Figure 6-113 Remove the feed-guide assembly (3 of 3)
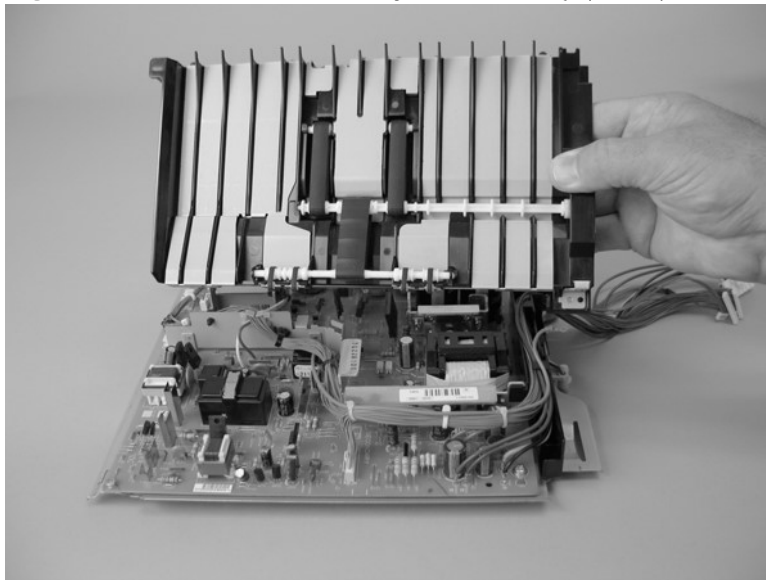
Reinstall the feed-guide assembly

When you reinstall the feed-guide assembly, make sure that the support foot is correctly positioned on the power supply.

△ CAUTION: Make sure that the four rubber belts and plastic rollers on the feed-guide assembly (mounted to the top of the power supply) remain in place. These belts and rollers can easily become dislodged and you might lose them.
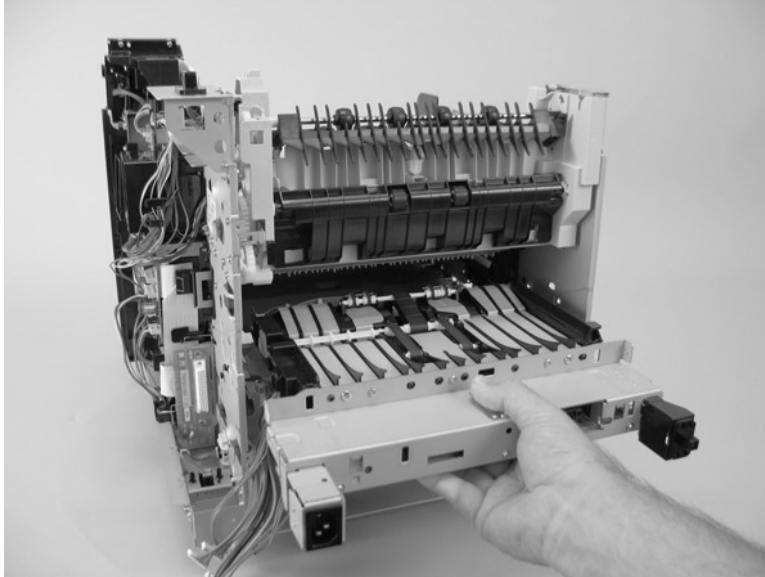
Figure 6-114 Reinstall the feed-guide assembly

Tray 1 paper-pickup assembly

1. Remove the following assemblies:

    - Top accessory cover. See Top-accessory cover on page 146.

    - Duplex accessory or cover. See Duplex accessory or cover on page 148.

    - Tray 2 extension door. See Tray 2 extension door on page 149.

    - Formatter cover and cage. See Formatter cover, formatter cage, and formatter PCA on page 152.

    - Top cover. See Top cover on page 161.

    - Right-side cover. See Right-side cover on page 163.

    - Left-side cover. See Left-side cover on page 166.

    - Right front cover. See Right-front cover on page 168.

    - Front cover. See Front cover on page 174.

2. Disconnect two wire-harness connectors (callout 1; J71, and J81), and then release the wire harnesses from the guide (callout 2).

    Figure 6-115 Remove the Tray 1 paper-pickup assembly (1 of 3)
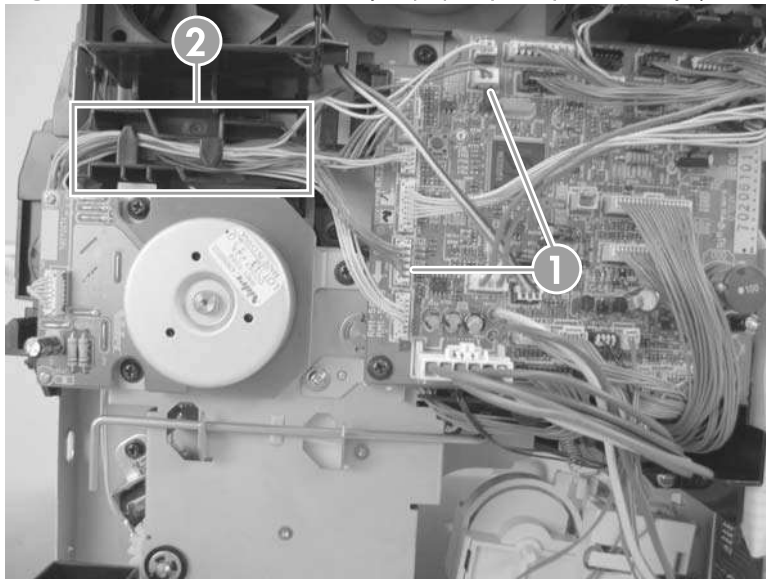
3. Remove eight screws (callout 3).

📝 NOTE: The four outside screws on the assembly are a different type than the others. Make sure that you replace the screws in the same position that they are removed from.

Figure 6-116 Remove the Tray 1 paper-pickup assembly (2 of 3)
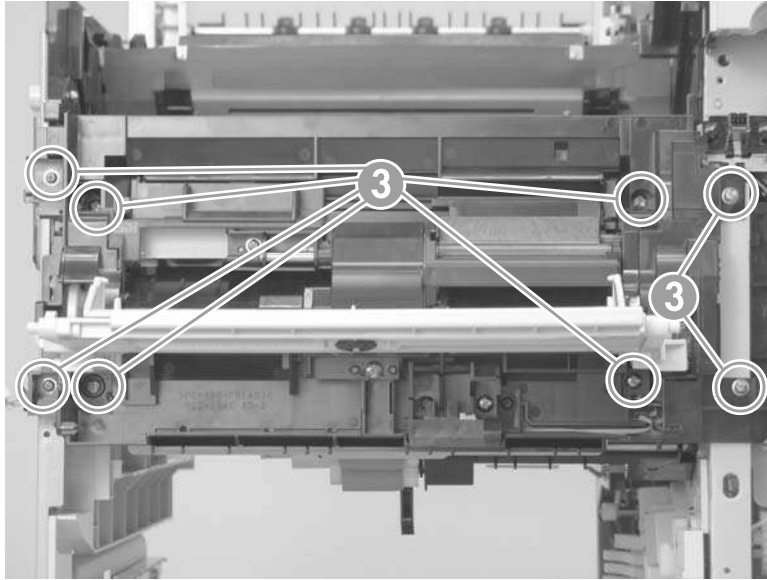
4. Rotate the left side of the assembly away from the chassis, and then slide the assembly to the left to remove it.

Figure 6-117 Remove the Tray 1 pickup assembly (3 of 3)
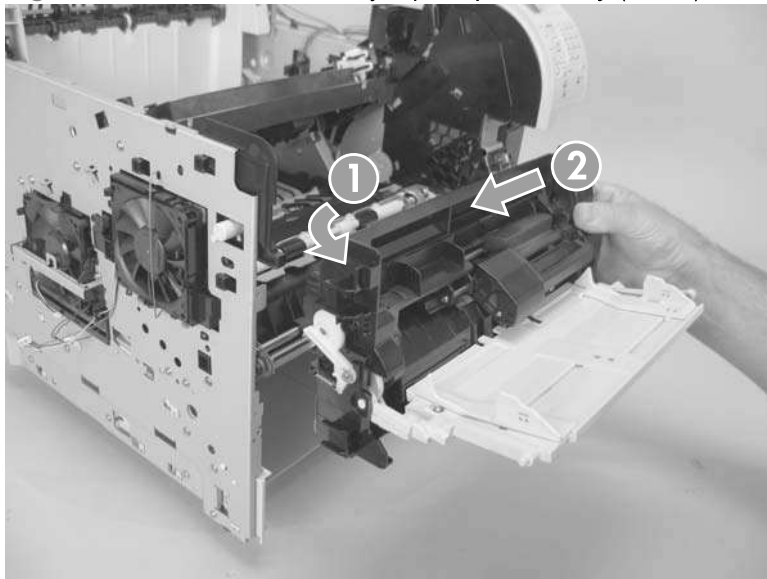
Feed-roller assembly

1. Remove the following components:

   - Top accessory cover. See Top-accessory cover on page 146.

   - Duplex accessory or cover. See Duplex accessory or cover on page 148.

   - Tray 2 extension door. See Tray 2 extension door on page 149.

   - Formatter cover and cage. See Formatter cover, formatter cage, and formatter PCA on page 152.

   - Top cover. See Top cover on page 161.

   - Right-side cover. See Right-side cover on page 163.

   - Left-side cover. See Left-side cover on page 166.

   - Right front cover. See Right-front cover on page 168.

   - Front cover. See Front cover on page 174.

   - Tray 1 paper-pickup assembly. See Tray 1 paper-pickup assembly on page 216.

2. Remove two screws (callout 1), and then remove the feed-roller assembly (callout 2).

Figure 6-118 Remove the feed-roller assembly
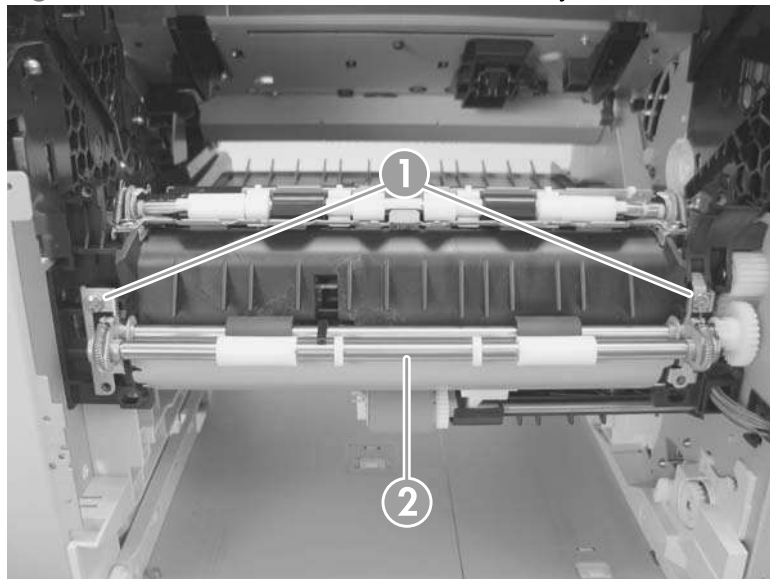
Laser/scanner assembly

1. Remove the following components:

    ● Top accessory cover. See Top-accessory cover on page 146.

    ● Duplex accessory or cover. See Duplex accessory or cover on page 148.

    ● Formatter cover and cage. See Formatter cover, formatter cage, and formatter PCA on page 152

    ● Top cover. See Top cover on page 161.

    ● Right-side cover. See Right-side cover on page 163.

2. Unplug the laser/scanner wire-harness connector from the DC controller PCA (callout 1; J86).

Figure 6-119 Remove the laser/scanner assembly (1 of 4)
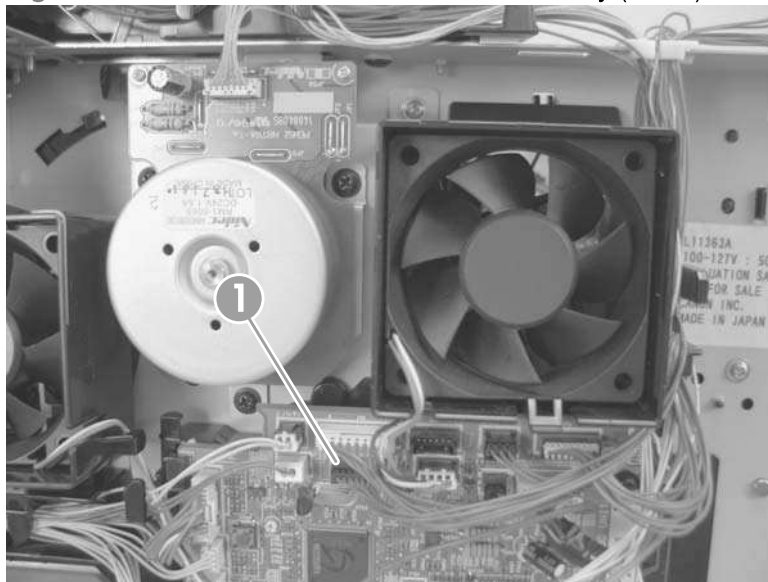
3. Remove the laser/scanner wire-harness from the wire guide (callout 2).

Figure 6-120 Remove the laser/scanner assembly (2 of 4)
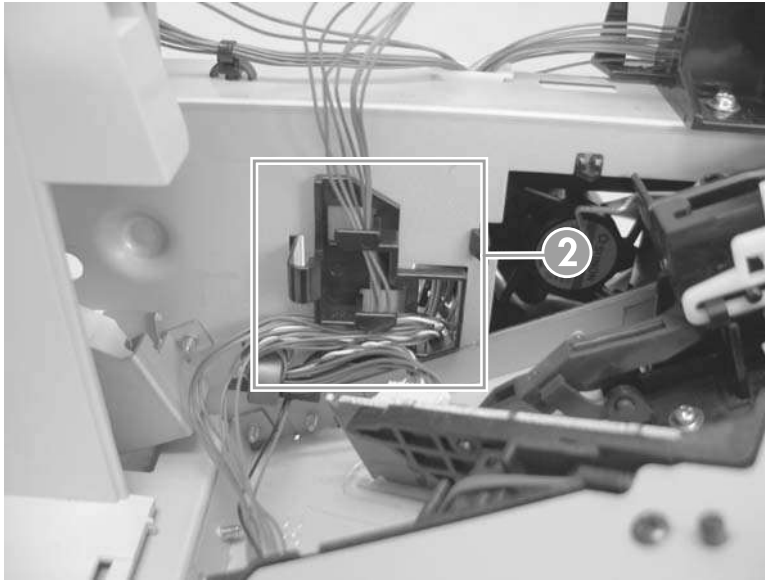
4. Remove four screws (callout 3) and the grounding clips.

Figure 6-121 Remove the laser/scanner assembly (3 of 4)
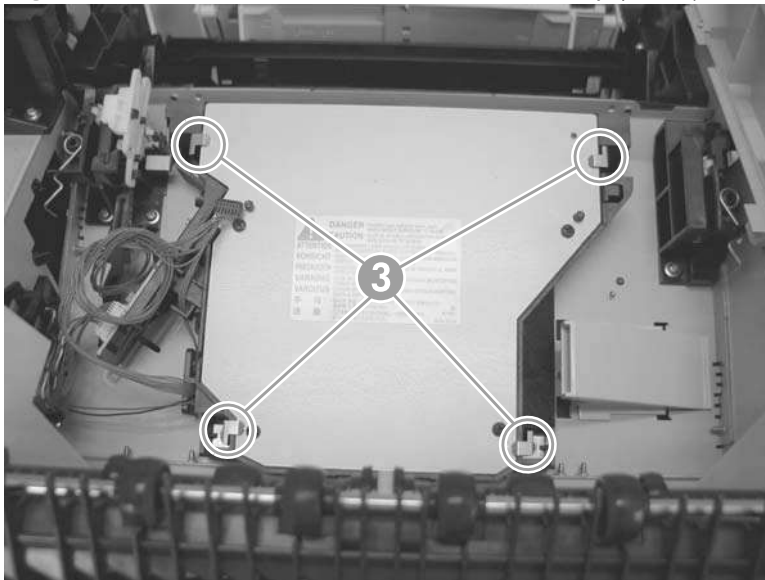
5. Disconnect the laser/scanner wire-harness (callout 4) from the laser/scanner PCA.

Figure 6-122 Remove the laser/scanner assembly (4 of 4)

6. Carefully lift the laser/scanner up and out of the product. Make sure that the laser/scanner assembly does not catch or snag the wires along the bottom of the assembly when you remove the assembly.

△ CAUTION: When you reinstall the laser/scanner assembly, make sure that the wire-harnesses are correctly routed through the cable guides. If the wire-harnesses are not correctly routed, they can be damaged when the top cover is installed.

✎ NOTE: Make sure that the air duct is correctly positioned and that the laser/scanner shutter properly fuctions.

Paper-delivery assembly

1. Remove the following components:

● Top accessory cover. See Top-accessory cover on page 146.

● Rear output bin. See Rear output bin on page 150.

● Formatter cover and cage. See Formatter cover, formatter cage, and formatter PCA on page 152.

● Top cover. See Top cover on page 161.

● Right-side cover. See Right-side cover on page 163.

● Rear upper cover. See Rear-upper cover on page 171.

2. Release two tabs (callout 1), and then slightly rotate the top of the guide away from the product.

Figure 6-123 Remove the paper-delivery assembly (1 of 4)
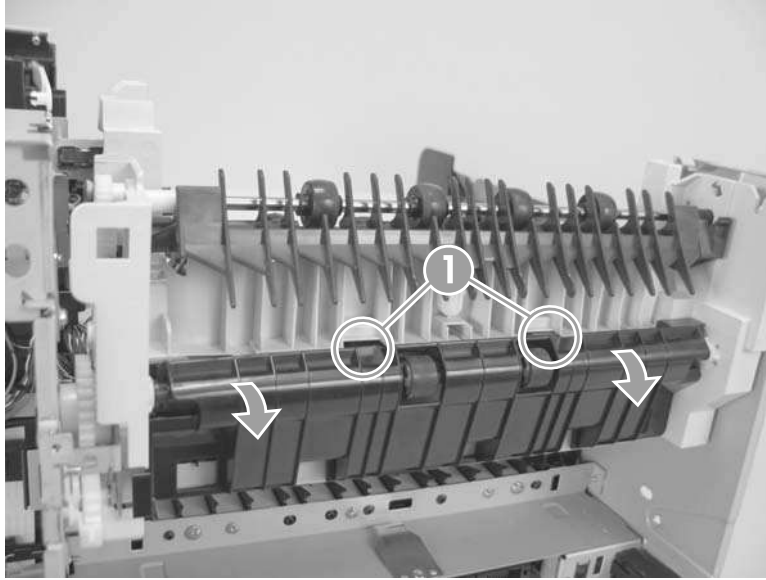
3. Push up on the guide to release it, and then remove the guide.

☼ TIP: To reinstall the guide, first install the top of the guide, and then push down to seat the bottom of the guide onto the product.

Figure 6-124 Remove the paper-delivery assembly (2 of 4)
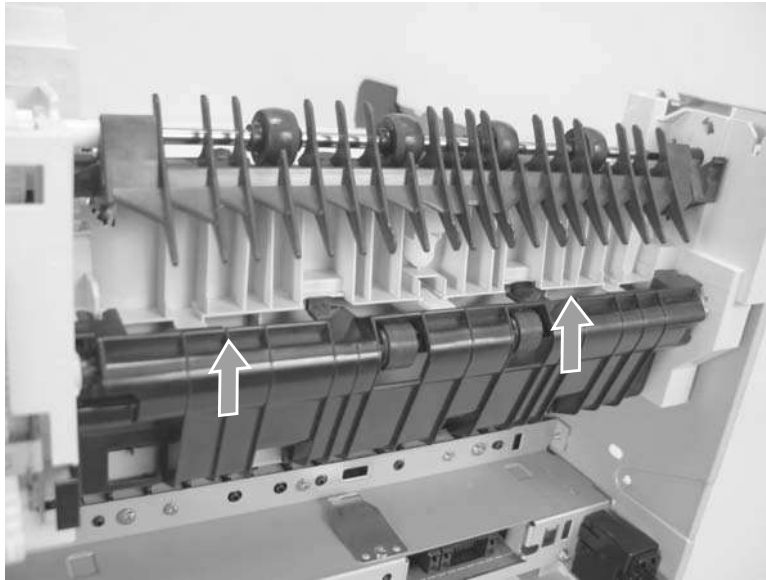
4. Use a small flatblade screwdriver to release the locking pin on the shaft lock, and then rotate the lock counter clockwise until the inner retaining tab (gear side) aligns with the hole in the paper-delivery assembly frame.

Slide the shaft lock to the right and remove it to release the gear shaft from the paper-delivery assembly.

△ CAUTION: Do not break the shaft lock. A replacement is not provided with a new paper-delivery assembly.

☼ TIP: Snap the shaft lock back into place on the assembly so that you will not lose it. Remove the shaft lock when you reinstall the output-delivery assembly. When the paper-delivery assembly is installed, verify that the locking pin on the shaft lock is fully seated in the hole on the paper-delivery assembly.

Figure 6-125 Remove the paper-delivery assembly (3 of 4)
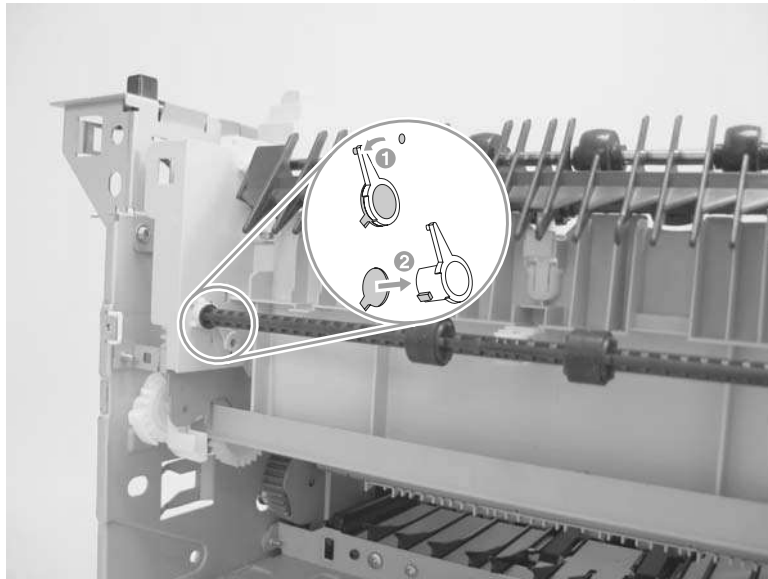
5. Lift up the gear end of the output-delivery assembly slightly and slide the assembly toward the formatter assembly to remove it.

△ **CAUTION:** The rear face-down output-bin-sensor cable is routed through a notch on the paper-delivery assembly at the gear end of the assembly. When you remove the assembly, carefully remove the cable from the notch to avoid damage to the cable. See Figure 6-127 Reinstall the paper-delivery assembly on page 224.

Figure 6-126 Remove the paper-delivery assembly (4 of 4)
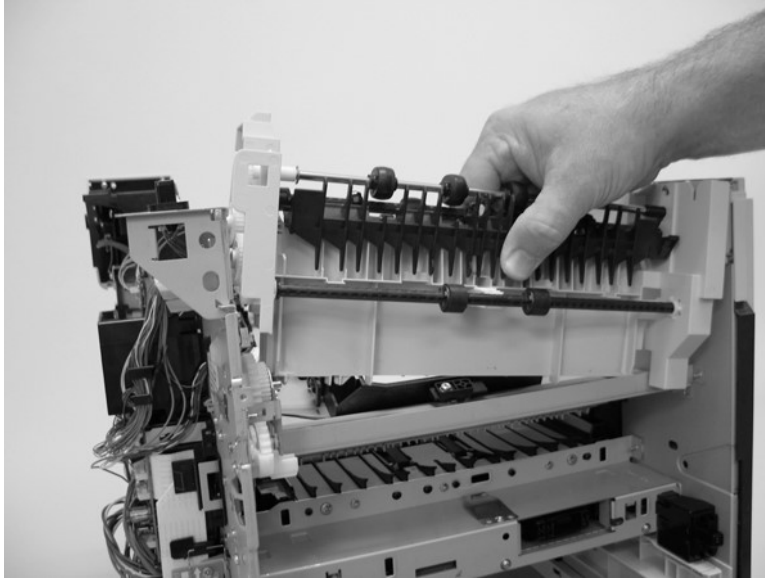
Reinstall the paper-delivery assembly

Make sure that the output-bin sensor is not dislodged when the paper-deliver assembly is reinstalled.

Figure 6-127 Reinstall the paper-delivery assembly
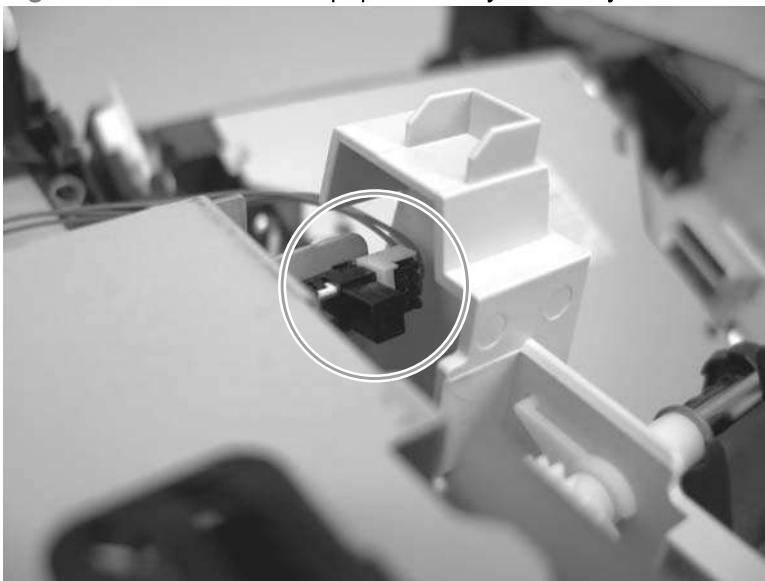
1,500-sheet feeder assembly

NOTE: Your product might not appear exactly as the one shown in the photos in this chapter. Although details such as the color of the external panels and covers might be different than your product, the procedures in this chapter are appropriate for your product.

1,500-sheet feeder feed rollers

NOTE: The removal procedure for the pickup and feed rollers in the 1,500-sheet feeder is the same as the procedure for the Tray 2 rollers. See Figure 6-11 Remove the Tray 2 separation, pickup, and feed rollers (3 of 4) on page 144 and Figure 6-12 Remove the Tray 2 separation, pickup, and feed rollers (4 of 4) on page 144 in Tray 2 separation, pickup, and feed rollers on page 143.

1,500-sheet feeder separation roller

1. Open the 1,500-sheet feeder door. Open the separation-roller cover.

   Figure 6-128 Remove the 1,500-sheet separation roller (1 of 2)
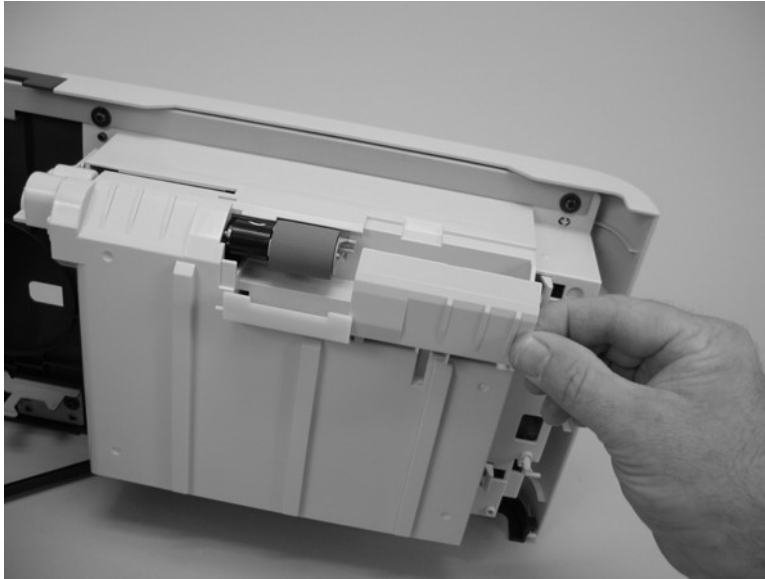
2. Pinch the blue latch that is on the side of the feed roller and slide the roller off of the shaft.

   ☼ **Reinstallation tip**   When this roller is reinstalled, it must lock into place. Verify that the roller is seated on the locking bars that are located on the round black spacer and that the spacer is seated on the shaft-locking pin (callout 1 and callout 2).

   Figure 6-129 Remove the 1,500-sheet separation roller (2 of 2)
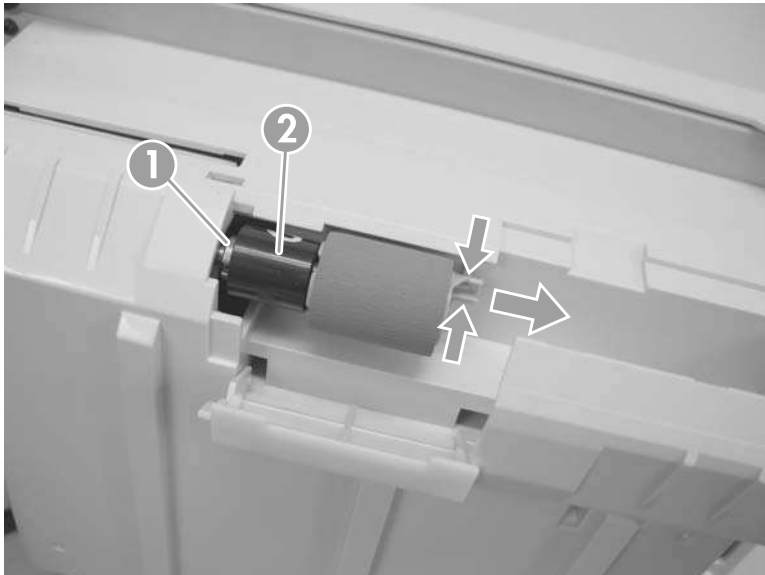
1,500-sheet feeder rear cover

1.   Release two tabs (callout 1).

Figure 6-130 Remove the 1,500-sheet feeder rear cover (1 of 2)

2.   Rotate the top of the cover away from the feeder, and then lift up on the cover to release it. Remove the cover.

Figure 6-131 Remove the 1,500-sheet feeder rear cover (2 of 2)
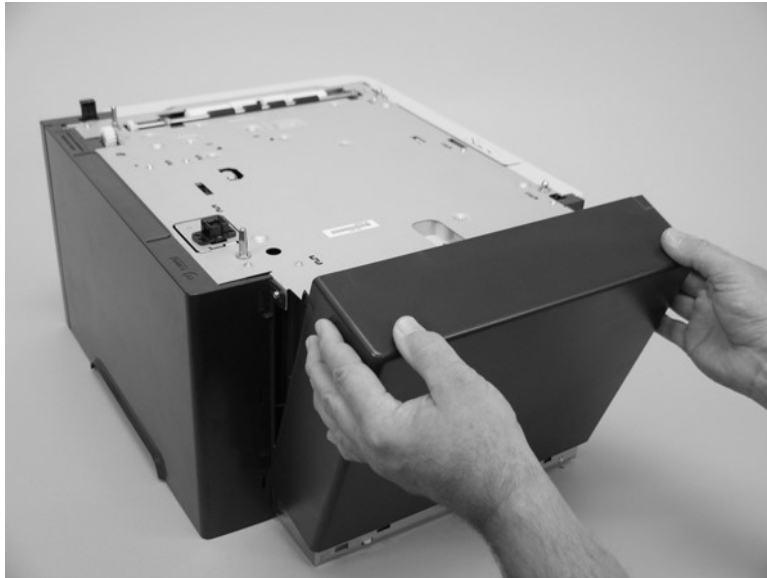
1,500-sheet feeder right-side cover

1. Remove the 1,500-sheet feeder rear cover. See 1,500-sheet feeder rear cover on page 227.

2. Remove one screw (callout 1).

Figure 6-132 Remove the 1,500-sheet feeder right-side cover (1 of 2)
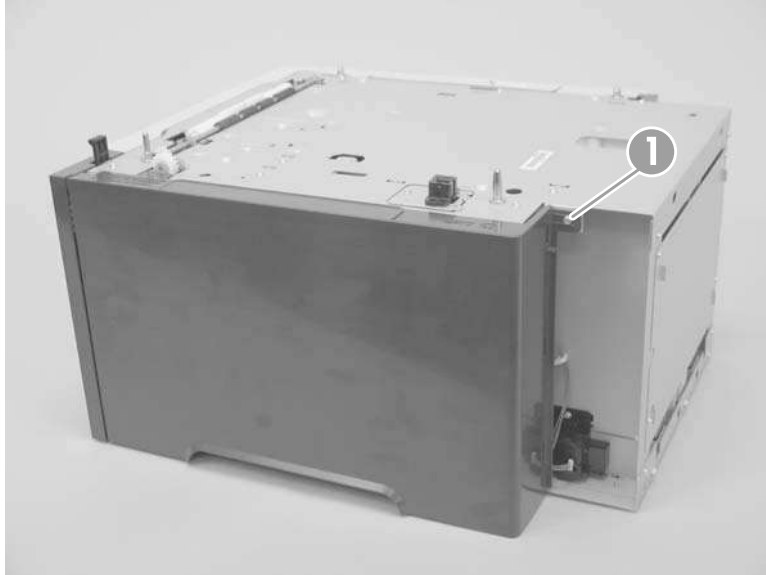
3. Rotate the top of the cover away from the chassis and then lift it up and remove it.

Figure 6-133 Remove the 1,500-sheet feeder right-side cover (2 of 2)
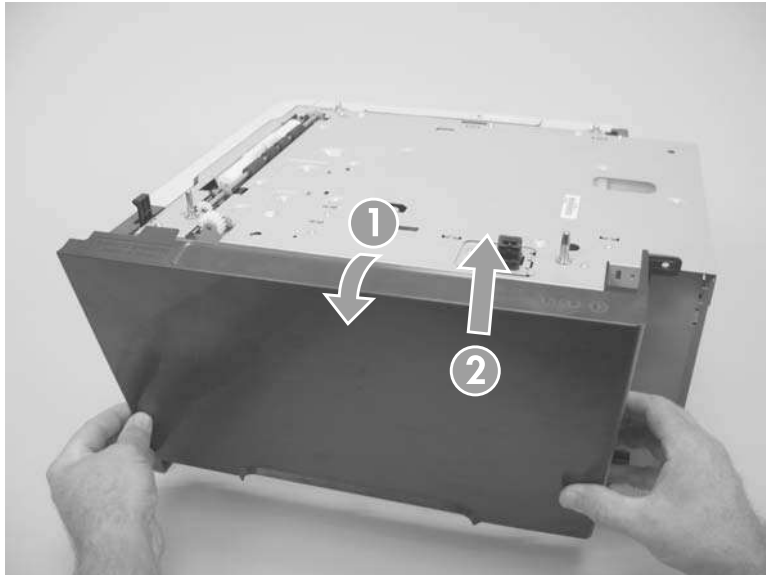
1,500-sheet feeder left-side cover

1. Remove the 1,500-sheet feeder rear cover. See .

2. Before removing the lock-mechanism cover, take note of the location of the retainer tabs (callout 1). The retaining tabs on this cover can be easily broken.

Figure 6-134 Remove the 1,500-sheet feeder left-side cover (1 of 5)
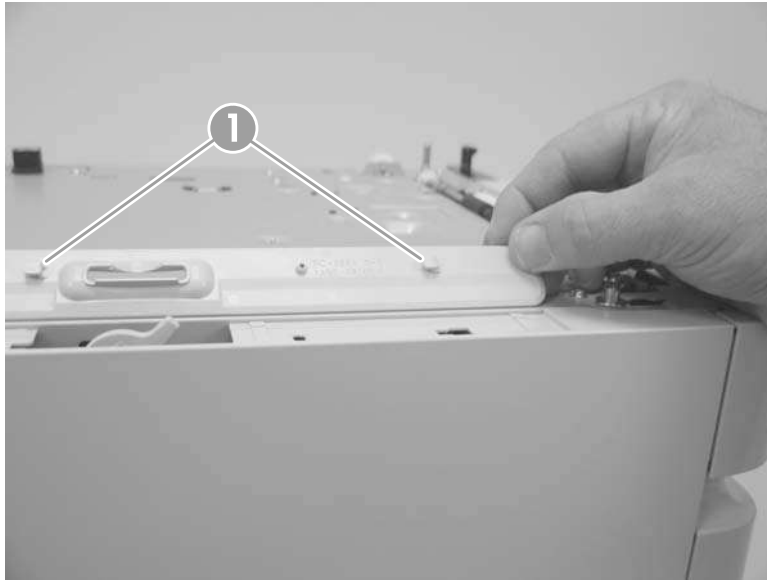
3. *Slightly* pry up on the lock-mechanism cover, and then slide it toward the front of the feeder to release it. Remove the cover.

⚠ CAUTION: Do not pry this cover up more than is necessary for clearance when sliding it forward. The retaining tabs on this cover can be easily broken.

Figure 6-135 Remove the 1,500-sheet feeder left-side cover (2 of 5)
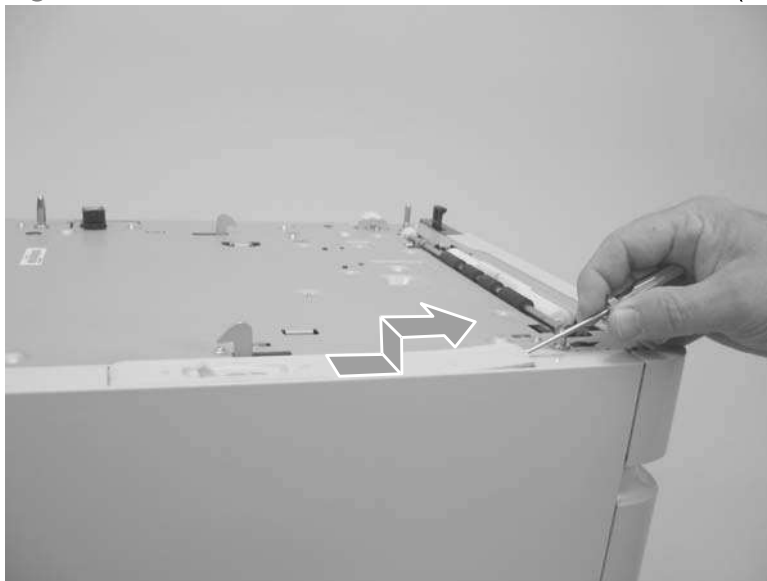
4. Open the 1,500-sheet feeder door, and then remove two screws (callout 2).

Figure 6-136 Remove the 1,500-sheet feeder left-side cover (3 of 5)
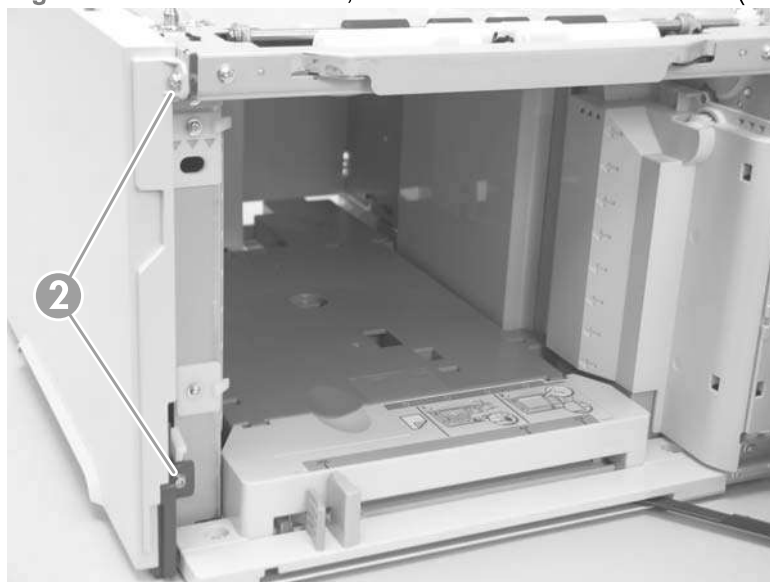
5. Remove one screw (callout 3).

Figure 6-137 Remove the 1,500-sheet feeder left-side cover (4 of 5)
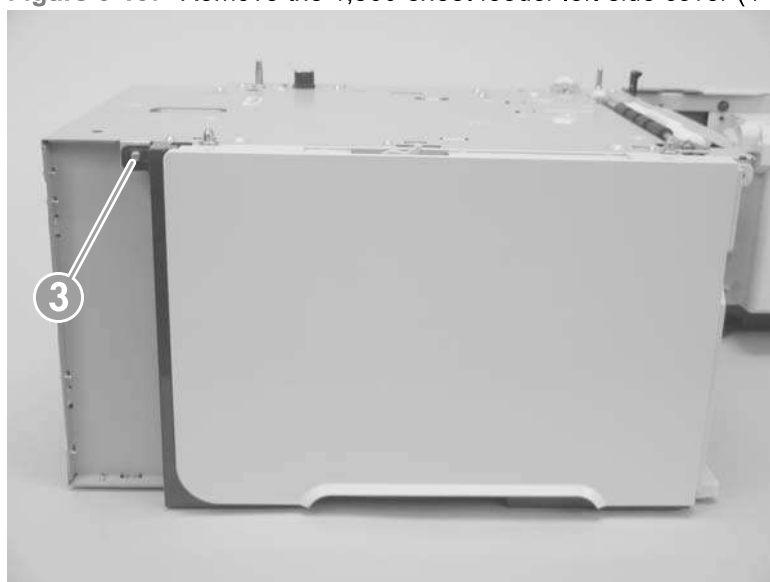
6.   Rotate the top of the cover away from the chassis and then lift it up and remove it.

Figure 6-138 Remove the 1,500-sheet feeder left-side cover (5 of 5)
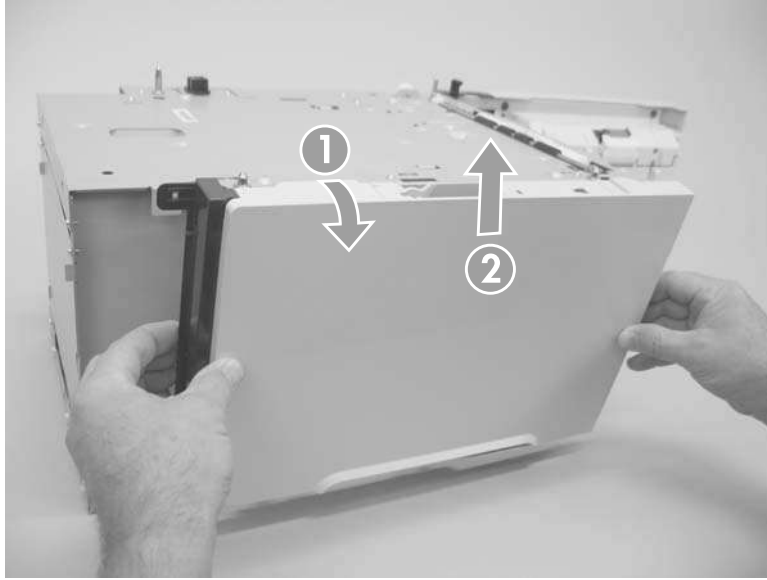
1,500-sheet feeder door

1. Open the 1,500-sheet feeder door.

2. Release one tab (callout 1), and then remove the door-stop plate (callout 2).

   Figure 6-139 Remove the 1,500-sheet feeder door (1 of 3)

3. With the door open about halfway, gently pry open the door slide-bar slot and disengage the door slide-bar from the feeder.

   Figure 6-140 Remove the 1,500-sheet feeder door (2 of 3)
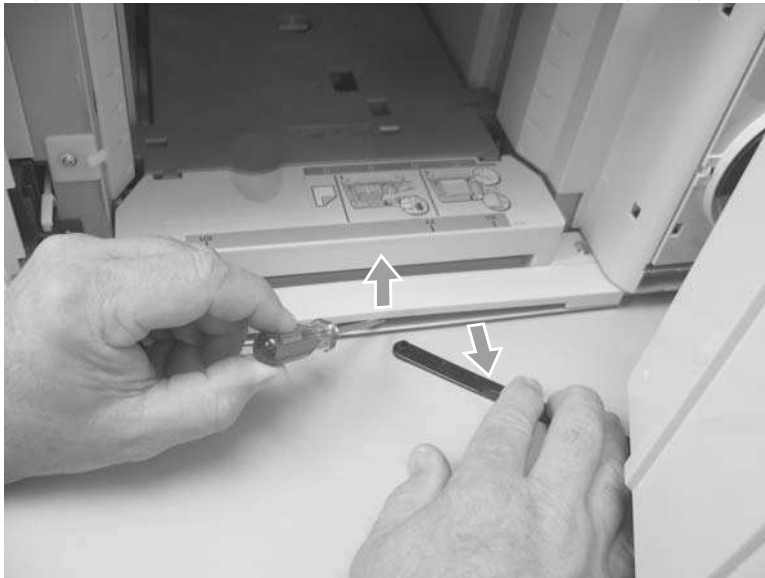
4. Lift the door straight up and off of the door hinge pins to remove it.

△ **CAUTION:** The door hinge pins are not captive. If the feeder must be turned on its side or placed upside down, remove the hinge pins and the door spring (on the lower hinge pin). Place the pins and the spring where you will not lose them.

Figure 6-141 Remove the 1,500-sheet feeder door (3 of 3)
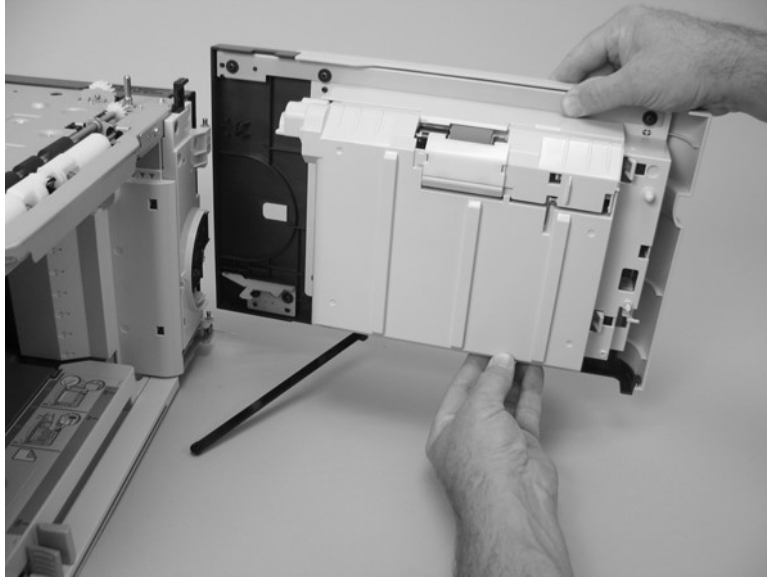
1,500-sheet feeder motor

1. Remove the following components:

    - 1,500-sheet feeder rear cover. See 1,500-sheet feeder rear cover on page 227.

    - 1,500-sheet feeder right-side cover. See 1,500-sheet feeder right-side cover on page 228.

2. Disconnect one wire-harness connector (callout 1; J1703), and then release the wire harness from two retainers (callout 2).

    Figure 6-142 Remove the 1,500-sheet feeder motor (1 of 2)
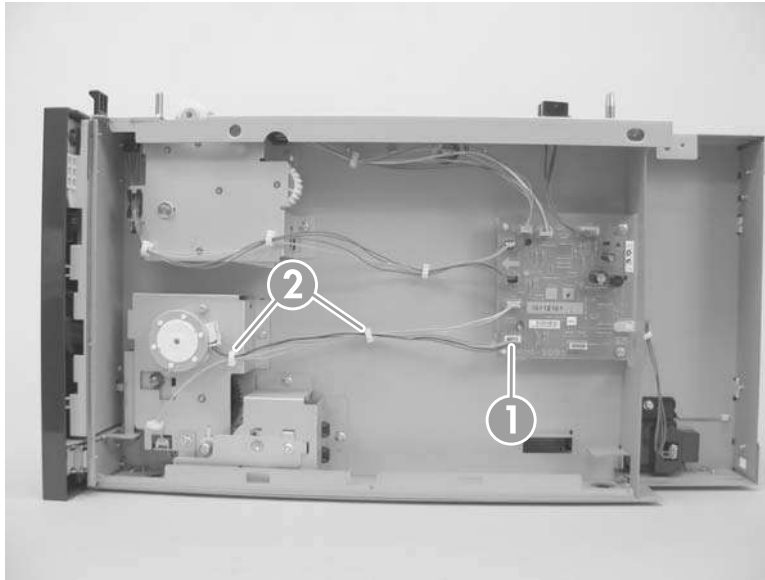
3. Remove two screws (callout 3). Slightly separate the motor from the feeder chassis, and then slide the motor toward the back of the feeder to remove the motor.

    Figure 6-143 Remove the 1,500-sheet feeder motor (2 of 2)
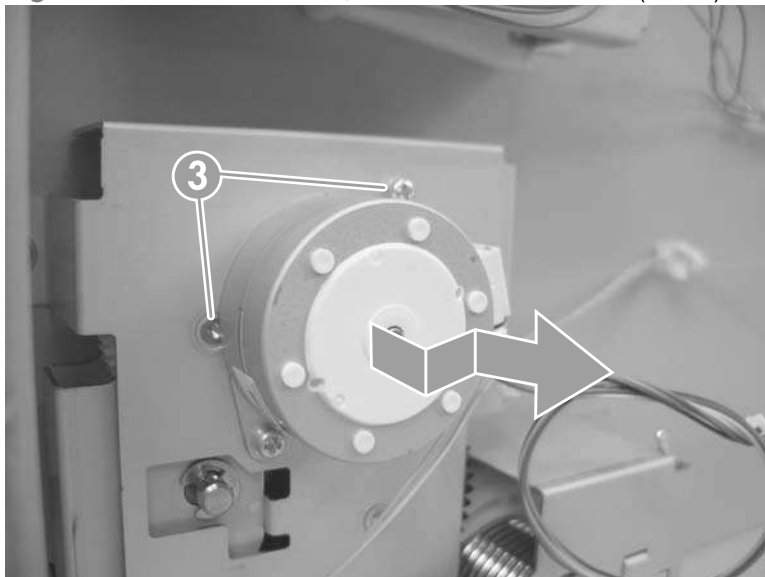
1,500-sheet feeder driver PCA

1. Remove the following components:

   ● 1,500-sheet feeder rear cover. See 1,500-sheet feeder rear cover on page 227.

   ● 1,500-sheet feeder right-side cover. See 1,500-sheet feeder right-side cover on page 228.

2. Disconnect eight wire-harness connectors (callout 1).

   Figure 6-144 Remove the 1,500-sheet feeder driver PCA (1 of 2)
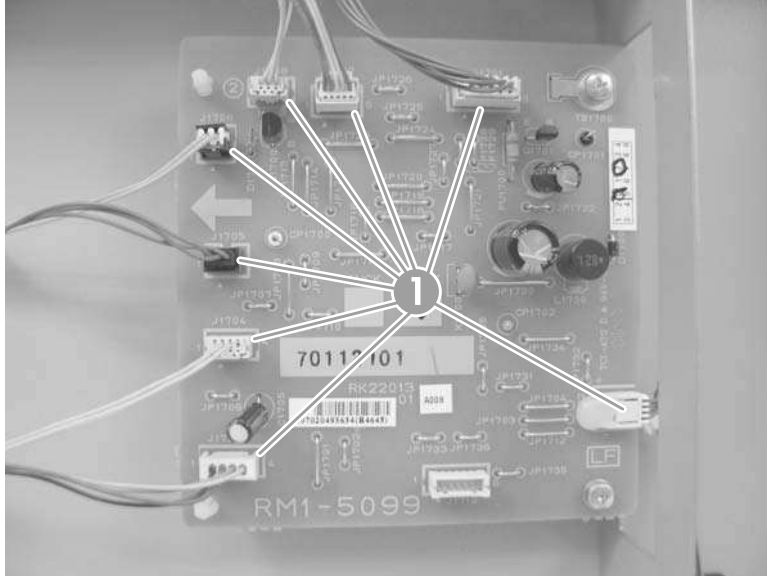
3. Remove two screws (callout 2). Use needle-nose pliers to squeeze the top of one of the nylon PCA standoff (callout 3). Gently pop the PCA off of the tab. Repeat the procedure on the remaining standoff. Remove the PCA.

   Figure 6-145 Remove the 1,500-sheet feeder driver PCA (2 of 2)
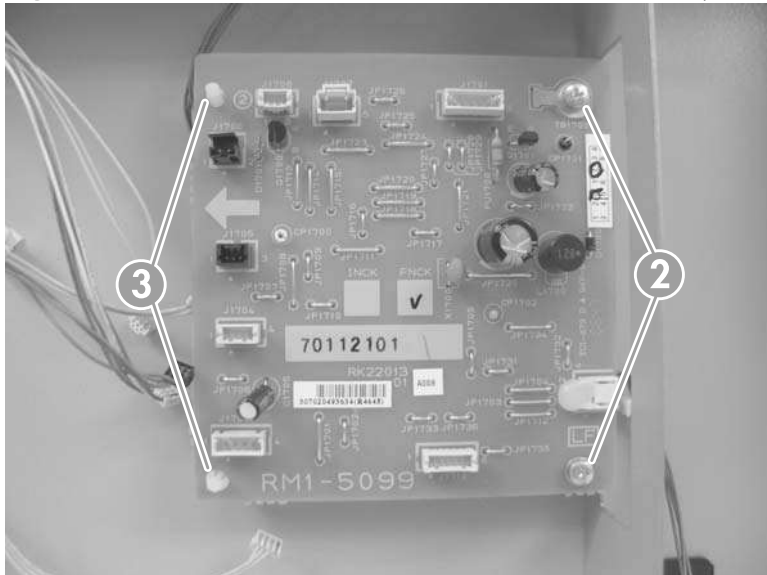
1,500-sheet feeder lift-drive assembly

1. Remove the following components:

    ● 1,500-sheet feeder rear cover. See 1,500-sheet feeder rear cover on page 227.

    ● 1,500-sheet feeder right-side cover. See 1,500-sheet feeder right-side cover on page 228.

    ● 1,500-sheet feeder motor. See 1,500-sheet feeder motor on page 234.

2. Disconnect one wire-harness connector (callout 1), and then release the wire harnesses from two retainers (callout 2).

    Figure 6-146 Remove the 1,500-sheet feeder lift-drive assembly (1 of 3)
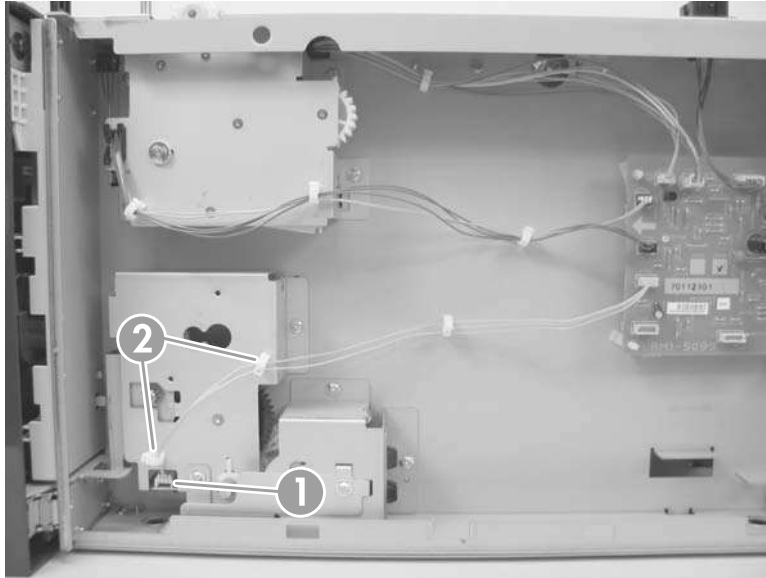
3. Remove two screws (callout 3) and the remove the sheet-metal plate (callout 4).

    Figure 6-147 Remove the 1,500-sheet feeder lift-drive assembly (2 of 3)
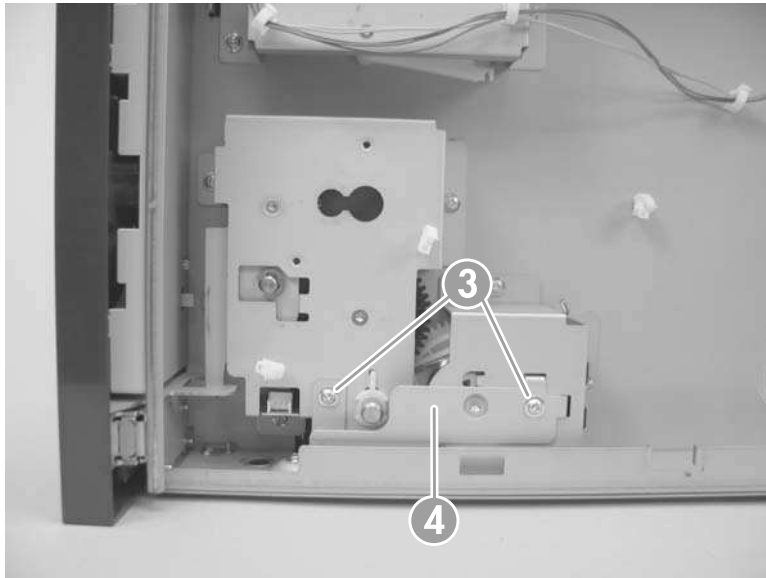
4. Remove three screws (callout 5), and then carefully remove the lift-drive assembly.

Figure 6-148 Remove the 1,500-sheet feeder lift-drive assembly (3 of 3)
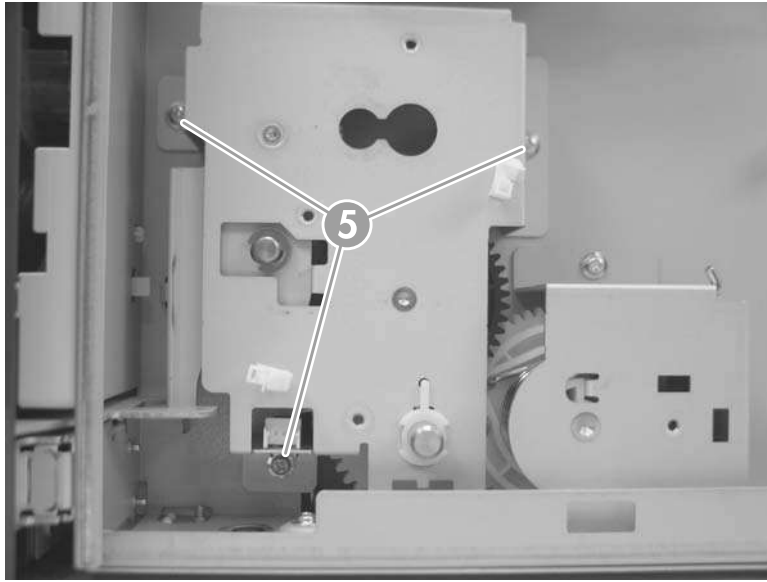
7 Solve problems

Troubleshooting checklist

The following checklist contains basic questions that you can ask the customer in order to help define the problem(s) quickly. For more information about product and media specifications, see Paper and print media on page 47.

Table 7-1 Initial troubleshooting checklist

Environment	• Is the product installed in a suitable environment? See Operating environment on page 504.
	• Is the product installed on a solid, level surface?
	• Is the supply voltage (from the wall receptacle) within ± 10% of the product's rated voltage (see Electrical specifications on page 502)?
	• Is the power cord fully seated into both the product and the electrical receptacle in the wall?
	• Is the product exposed to ammonia gas, such as that produced by diazo copiers or office-cleaning materials?
	• Is the product exposed to direct sunlight?
Media	• Is suitable media being used in the product? See Supported paper and print media sizes on page 48 and Supported paper and print media types on page 50.
	• Does the customer use only supported print media?
	• Is the media in good condition (no curl, folds, or other flaws)?
	• Is the media stored correctly and within environmental limits?
	• Is the correct side of the page printed on first?
	• Is long-grain paper being used?
Input trays	• Is the correct amount of media loaded in the tray (not stacked above the arrows embossed in the tray)?
	• Is the media placed in the tray correctly?
	• Are the paper guides aligned with the stack?
	• Is the tray cassette installed correctly in the product?
Print cartridge	• Is the print cartridge installed correctly?
Fuser	• Is the fuser installed correctly?
Covers	• Is the top cover closed?
Condensation	• Does condensation occur following a temperature change (particularly in winter following cold storage)? If so, wipe off the affected parts or leave the product on for 10 to 20 minutes and then attempt to resume printing.
	• Was a print cartridge opened soon after it was moved from a cold room to a warm one? If so, allow the print cartridge and the product to acclimate to room temperature for one to two hours.
Miscellaneous	• Are any non-HP components installed? Check for any non-HP components (print cartridges, memory modules, and EIO cards) installed in the product and remove them. Hewlett-Packard recommends the use of HP components in its products.
	• Remove the product from the network, and make sure that the failure is associated with the product before beginning troubleshooting.

Menu map

The menu map can be an important troubleshooting tool. It shows each control-panel menu and submenu in order to aid navigation through the menu system. Print the menu map from the control panel by completing the following steps.

1. Press Menu ▤.

2. Press the down arrow ▼ to highlight **INFORMATION**, and then press OK.

3. Press the down arrow ▼ to highlight **PRINT MENU MAP**, and then press OK to print.

Troubleshooting process

When the product malfunctions or encounters an unexpected situation, information on the control panel alerts you to the situation. This section contains an initial troubleshooting checklist that helps to eliminate many possible causes of the problem. The subsequent troubleshooting flowchart helps you to diagnose the cause of the problem. The remainder of the chapter provides steps for correcting the problems that have been identified.

- Use the initial troubleshooting checklist to evaluate the source of the problem and to reduce the number of steps that are required to fix the problem.

- Use the troubleshooting flowchart to pinpoint the cause of malfunctions. The flowchart lists the section within this chapter that provides steps for correcting the malfunction.

Before beginning any troubleshooting procedure, check the following issues.

- Are supply items (for example, the print cartridge, fuser, and rollers) within their rated life?

- Does the configuration page reveal any configuration problems? See Print the information and show-me-how pages on page 66.

📝 **NOTE:** The customer is responsible for checking and maintaining supplies, and for using supplies that are in good condition. The customer is responsible for media and print-cartridge supplies. The customer is also responsible for replacing the fuser, transfer roller, and all paper pickup, feed, and separation rollers that are at or near the end of their 225,000-page rated life.

Power-on checks

The basic product functions should start up as soon as the product is plugged into an electrical receptacle and the power switch is pushed to the *on* position.

Overview

Turn on the product power. If the control-panel display remains blank, random patterns appear, or asterisks remain on the display, perform power-on checks to locate the cause of the problem.

During normal product operation, the left rear cooling fan begins to spin briefly after the product power is turned on. Place your hand over the holes in the left-side cover. If the fan is operating, you will feel a slight vibration and feel air passing into the product. You can also lean close to the product and hear the fan operating. When this fan is operational, the dc side of the power supply is functioning correctly.

After the fan is operating, the main motor turns on (unless the top cover is open, a jam condition is sensed, or the paper path sensor is blocked). You should be able to visually and audibly determine if the main motor is turned on.

If the fan and main motor are operating correctly, the next troubleshooting step is to separate print engine, formatter, and control-panel problems. Perform an engine test (see Engine test on page 246). If the formatter is damaged, it might interfere with the engine test. If the engine test page does not print, try removing the formatter and then performing the engine test again. If the engine test is then successful, the problem is almost certainly with the formatter, the control panel, or the cable that connects them.

If the control panel is blank when you turn on the product, check the following items.

1. Make sure that the product is plugged into an active electrical outlet receptacle that delivers the correct voltage.

2. Make sure that the on/off switch is in the *on* position.

3. Make sure that the fan runs briefly, which indicates that the power supply is operational.

4. Make sure that the control-panel display wire-harness is connected to connector J70 of the DC controller PCA.

5. Make sure that the formatter is seated and operating correctly.

6. Remove any HP Jetdirect or other EIO cards, and then try to turn the product on again.

NOTE: If the control-panel display is blank, but the main cooling fan runs briefly after the product power is turned on, try printing an engine test page to determine whether the problem is with the control-panel display, formatter, or other components. See Engine test on page 246.

If the main cooling fan is not operating, replace the power-supply assembly. See High voltage power supply on page 208.

NOTE: It is important to have the control panel functional as soon as possible in the troubleshooting process so that the control-panel display can be used to help locate errors.

If problems with the power-on check persist, refer to table Table 7-2 Power-on defect or blank display on page 243.

Table 7-2 **Power-on defect or blank display**

Problem	Action
The power cord is not plugged into the wall receptacle and connected to the product.	Make sure that the power cord is firmly plugged into the wall receptacle and connected to the product.
The correct voltage (power) is not available.	Measure the voltage at the outlet. If necessary, plug the power cord into another circuit outlet.
The power switch is off.	Set the switch to the *on* position. You should hear the switch toggle. If the front right-side cover has been removed recently, make sure that the rod connecting the power-supply switch moves as you toggle the switch. See the reinstall note in Reinstall the right cover on page 164. If the product still does not turn on, the power switch might be defective. 1. Remove the power supply. 2. Measure the resistance between the two terminals of the power switch (SW1) by applying the tester probes to the terminals. The resistance must be low (under 1 K/ohm) when the power is turned on, and high (over 6 K/ohm) when the switch is turned off. 3. Replace the power-supply assembly, if necessary.
The overcurrent/overvoltage detection circuit is activated.	Wait for more than two minutes before turning the product back on.
A fuse is blown.	1. Check the fuses (FU1 and FU2) on the power supply. 2. Replace the power-supply assembly if necessary.
The main cooling fan (located on the left side near the rear of the product) does not turn on when the product is started.	An operational fan indicates the following conditions: • The AC power is present in the product. • The DC power supply is functional (24 V, 5 V, and 3.3 V are being generated). • The DC controller microprocessor is functional.

Table 7-2 Power-on defect or blank display (continued)

Problem	Action
	If the fan is not working:
	1. Turn the product off and remove the formatter. Disconnect the optional accessories.
	2. Turn the product on and check the fan again.
	If the fan is still not working:
	1. Verify that the fan is connected to the power supply (connector J64).
	2. Replace the fan. See Fan FN101 on page 202.
	3. Replace the power-supply assembly. See High voltage power supply on page 208.
	4. Replace the DC controller. See DC controller PCA on page 188.
	Note:
	The fan only operates during the initial startup and while printing, and when the temperature inside the product is too high. If the temperature is too high, the fan turns on to cool the inside of the product.
The fan works, but the control-panel display is blank.	1. Print an engine test. Engine test on page 246.
	2. If the engine test is successful, perform the following steps, in order.
	◦ Reseat the control panel and formatter connector. See Control-panel assembly on page 172 and Formatter cover, formatter cage, and formatter PCA on page 152.
	◦ Replace the control-panel cable. See Control-panel assembly on page 172.
	◦ Replace the control-panel assembly. See Control-panel assembly on page 172.
	◦ Replace the formatter. See Formatter cover, formatter cage, and formatter PCA on page 152.
	3. If the engine test is not successful, remove the formatter and attempt to perform the engine test again. If the engine test is successful with the formatter removed, replace the formatter. See Formatter cover, formatter cage, and formatter PCA on page 152. If the test is not successful with the formatter removed, replace the DC controller PCA. See DC controller PCA on page 188.

Troubleshooting tools

Individual component diagnostics

LED diagnostics

LED, engine, and individual diagnostics can help identify and troubleshoot product problems.

Understand lights on the formatter

Three LEDs on the formatter indicate that the product is functioning correctly.
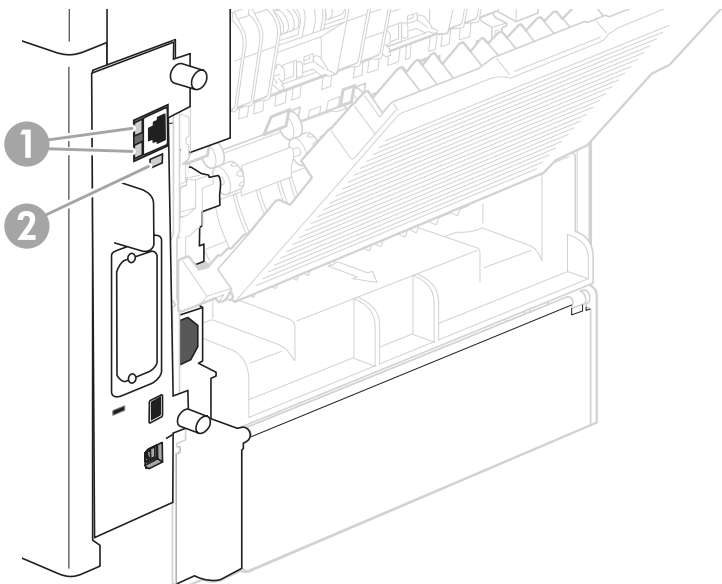
1	HP Jetdirect LEDs
2	Heartbeat LED

HP Jetdirect LEDs

The embedded HP Jetdirect print server has two LEDs. The yellow LED indicates network activity, and the green LED indicates the link status. A blinking yellow LED indicates network traffic. If the green LED is off, a link has failed.

For link failures, check all of the network cable connections.

For non-link errors, print a configuration page. The second page is the HP Jetdirect configuration page. Examine this page for any inconsistencies among the network settings.

Heartbeat LED

The heartbeat LED indicates that the formatter is functioning correctly. While the product is initializing after you turn it on, the LED blinks rapidly, and then turns off. When the product has finished the initialization sequence, the heartbeat LED pulses on and off.

The heartbeat LED will perform the following sequences:

1. The LED blinks every four seconds with the power on.

2. If the light is not blinking, check the following:

    ◦ Reseat the formatter cage.

    ◦ Replace the memory.

    ◦ Replace the formatter.

3. If the control panel display does not illuminate, perform an engine test to check the engine (see Engine test on page 246). You must have paper loaded in Tray 2 for the engine test.

Formatter test

To check that the formatter is working, print a configuration page.

1. Press Menu 🗒.

2. Press the down arrow ▼ to highlight **INFORMATION**, and then press OK.

3. Press the down arrow ▼ to highlight **PRINT CONFIGURATION**, and then press OK.

Engine diagnostics

Engine test

To verify that the product engine (all product components *except* the formatter, formatter DIMMs, EIO products, and the stacker or stapler/stacker) is functioning, print an engine-test page. Use a small, non-metallic, pointed object to depress the test-page switch, which is accessible through a slot in the right-side cover.

Figure 7-1 Engine-test-page switch

The test page should have a series of horizontal lines. The test page prints from the last tray that you printed from. However, if the product has been turned off and then on again since the most recent print job, the page will print from Tray 2. The product will not print a test page if it is in PowerSave or Sleep mode.

NOTE: A damaged formatter might interfere with the engine test. If the engine-test page does not print, try removing the formatter and performing the engine test again. If the engine test is then successful, the problem is almost certainly with the formatter, the control panel, or the cable that connects them.

Half self test

Perform a half self test to determine which image-formation process might be malfunctioning.

NOTE: It might be easier to perform the print/stop test to stop the product during the printing process. See .

1. Print a configuration page from the control panel.

2. Open the top cover after the paper advances half-way through the product, which is about 3 to 5 seconds after the main motor begins to rotate. The leading edge of the paper should have advanced past the print cartridge.

3. Remove the print cartridge.

4. Open the print cartridge drum shield to view the drum surface.

If a dark and distinct toner image is present on the drum surface, assume that the cleaning, conditioning, writing, and developing functions of the electrophotographic process are functioning correctly. Troubleshoot the failure as a transfer or fusing problem. If no image is present on the drum, perform the drum-rotation test.

Drum rotation test

The photosensitive drum, which is located in the print cartridge, must rotate in order for the print process to work. The photosensitive drum receives its drive from the main gear assembly. Use this procedure to determine whether the drum is rotating.

1. Open the top cover.

2. Remove the print cartridge.

3. Mark the cartridge drive gear with a felt-tipped marker. Note the position of the mark.

4. Install the print cartridge, and then close the top cover. The start-up sequence should rotate the drum enough to move the mark on the gear.

5. Open the product and inspect the mark on the cartridge drive gear. Verify that the mark moved. If there was no movement, inspect the main gear assembly to make sure that it connects with the print-cartridge gears. If the drive gears function but the drum does not move, replace the print cartridge.

NOTE: This test is especially important if refilled print cartridges are in use.

If a dark and distinct toner image is present on the drum surface, assume that the cleaning, conditioning, writing, and developing functions of the electrophotographic process are functioning correctly. Troubleshoot the failure as a transfer or fusing problem. If no image is present on the drum, perform the drum-rotation test.

Paper path sensors test

📝 **NOTE:** To view the function of each sensor and how to toggle them manually, see Manual sensor test (special mode test) on page 250.

This test displays the status of each paper path sensor and allows viewing of sensor status while printing internal pages.

1. Press Menu 🗒.

2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press OK.

3. Press the down arrow ▼ to highlight **PAPER PATH SENSORS**, and then press OK.

4. Select the paper path test options for the test you want to run.

5. Press OK to start the test, and then observe the control panel designators (see figure and table below). The sensors should display a **1** status as paper passes by the sensors.

Figure 7-2 Paper sensors

Figure 7-2 Paper sensors
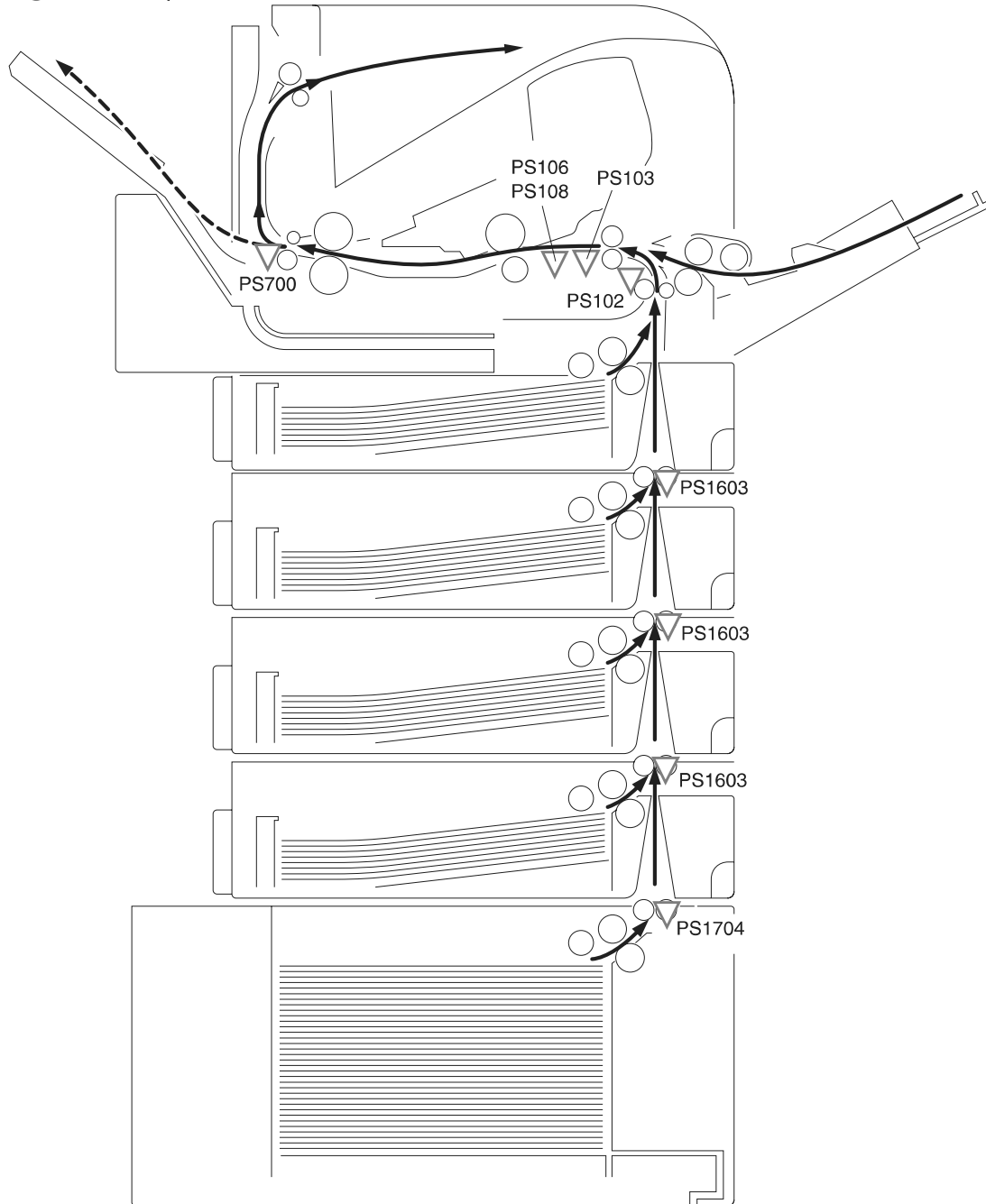
Designator	Sensor
A	Top of page sensor (PS103)
B	Pre-feed sensor (PS102)
C	Fuser delivery sensor (PS700)
D	Duplex sensor (PS1502)
E	Left-side paper width sensor (PS106)
F	Right-side paper width sensor (PS108)

Designator	Sensor
G	Tray 3 media path sensor (PS1603)[1]
H	Tray 4 media path sensor (PS1603)[1]
I	Tray 5 media path sensor (PS1603)[1]
J	Tray 6 media path sensor (PS1704)[1]

[1] This sensor is present only if the accessory is installed.

Paper path test

This diagnostic test generates one or more test pages that you can use to isolate the cause of jams.

To isolate a problem, you can specify which input tray to use, specify whether to use the duplex path, and specify the number of copies to print. Multiple copies can be printed to help isolate intermittent problems. The following options become available after you start the diagnostic feature:

- **PRINT TEST PAGE**: Run the paper path test from the default settings: Tray 2, no duplex, and one copy. To specify other settings, scroll down the menu and select the setting, and then scroll back up and select **PRINT TEST PAGE** to start the test.

- **SOURCE**: Select Tray 1, Tray 2, one of the optional trays, or the envelope feeder.

- **DESTINATION**: Select the standard bin or an optional output destination, such as a stacker. This menu item appears only if optional output bins are attached to the product.

- **DUPLEX**: Enable or disable 2-sided printing.

- **COPIES**: Set the numbers of copies to be printed; the choices are 1,10, 50, 100, or 500.

1. Press Menu 📑.

2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press OK.

3. Press the down arrow ▼ to highlight **PAPER PATH TEST**, and then press OK.

4. Select the paper path test options for the test you want to run.

Sensor test (interactive)

Manual sensor test (special mode test)

Use this diagnostic test to manually test the product sensors and switches. Each sensor is represented by a letter and number on the control panel display. See Table 7-3 Manual sensor diagnostic tests on page 251 for a definition of the sensor letter codes. A 1 below the letter indicates that paper is present. For the paper size sensor, the range of values is from 0 to 7.

1. Press Menu 📑.

2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press OK.

3. Press the down arrow ▼ to highlight **MANUAL SENSOR TEST 1**, and then press OK.

4. Use the arrow buttons to highlight the sensor letter code that you want to test, and then press OK.

To exit this diagnostic, press the stop button ⊗, and then select **EXIT DIAGNOSTICS**.

Menus cannot be opened during this test, so the OK button serves the same function as the stop button ⊗.

Table 7-3 Manual sensor diagnostic tests

Manual sensor test designator	Sensor or switch
A	Top of page sensor (PS103) (see Figure 7-8 Checking sensors in the print-cartridge area on page 257)
B	Tray 2 pre-feed sensor (PS102) (see Figure 7-6 Checking the Tray 2 pre-feed sensor on page 255)
C	Fuser delivery sensor (PS700) (see Figure 7-5 Checking the fuser delivery sensor on page 254)
D	Duplex sensor (PS1502)
E	Left-side paper width sensor (PS106) (see Figure 7-8 Checking sensors in the print-cartridge area on page 257)
F	Right-side paper width sensor (PS108) (see Figure 7-8 Checking sensors in the print-cartridge area on page 257)
G	Tray 3 media path sensor (PS1603) (see Figure 7-7 Checking media path sensors on page 256)
H	Tray 4 media path sensor (PS1603) (see Figure 7-7 Checking media path sensors on page 256)
I	Tray 5 media path sensor (PS1603) (see Figure 7-7 Checking media path sensors on page 256)
J	Tray 6 media path sensor (PS1704) (see Figure 7-7 Checking media path sensors on page 256)
K	Output bin full sensor (PS104) (see Figure 7-3 Checking the output bin full sensor on page 252)
L	Top cover open switch (SW101) (open and close the top cover)
M	Tray 1 paper present sensor (PS105) (see Figure 7-4 Checking the Tray 1 paper present sensor on page 253)
N	Tray 2 paper present sensor (PS101) (see Figure 7-9 Checking sensors in the Tray 2 area on page 258)
O	Tray 2 top of stack sensor (PS107) (see Figure 7-9 Checking sensors in the Tray 2 area on page 258)
P	Tray 2 paper size switches (SW102) (see Figure 7-9 Checking sensors in the Tray 2 area on page 258)

The following illustrations show the location of several of the product sensors and switches.

● Check the output bin full sensor (PS104) by running manual sensor test 1 and checking the status of designator K while moving the arm.

Figure 7-3 Checking the output bin full sensor

● Check the Tray 1 paper present sensor (PS105) by running manual sensor test 1 and checking the status of designator M.

Figure 7-4 Checking the Tray 1 paper present sensor

● Check the fuser delivery sensor (PS700) by running manual sensor test 1 and checking the status of designator C while toggling the sensor.

Figure 7-5 Checking the fuser delivery sensor

- Check the Tray 2 pre-feed sensor (PS102) by running manual sensor test 1 and checking the status of designator C while using a piece of stiff paper to toggle the sensor.

Figure 7-6 Checking the Tray 2 pre-feed sensor
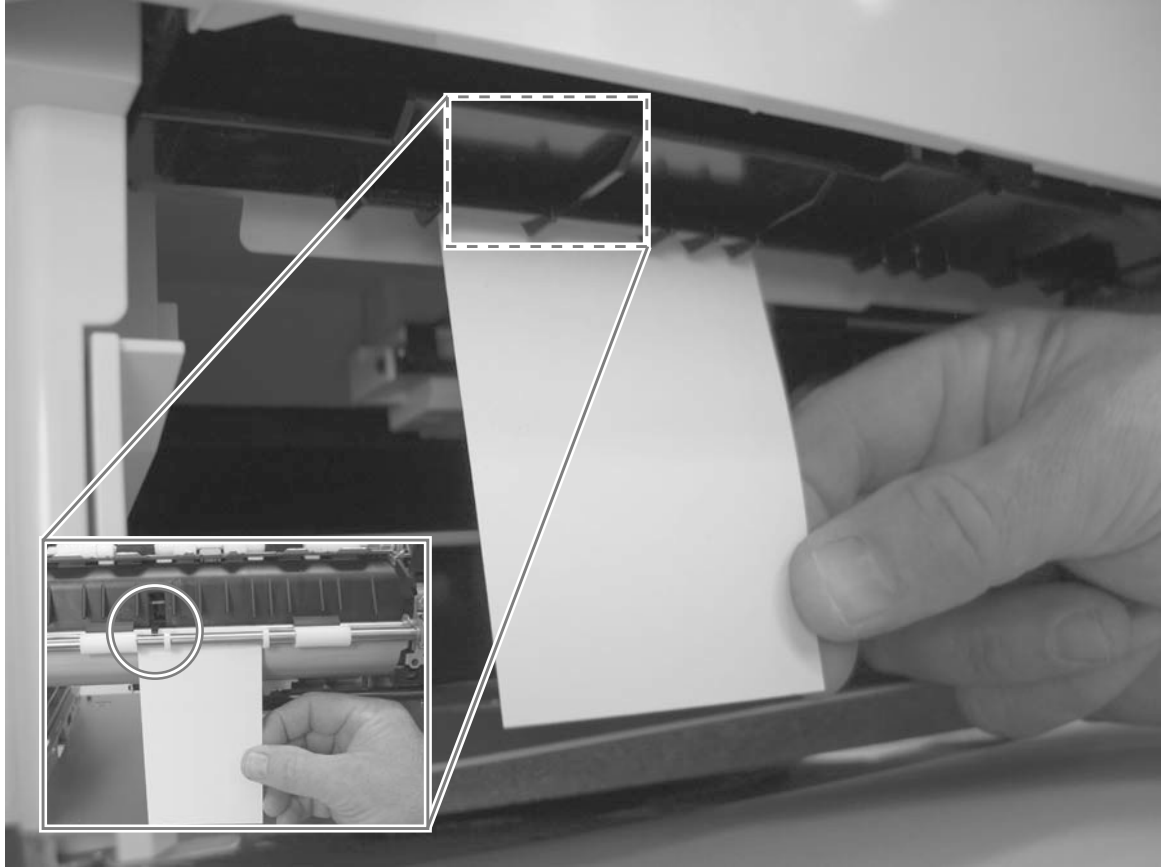
- Check the media path sensors in trays 3, 4, 5, or 6 by running manual sensor test 1 and checking the status of the following designators while using a piece of stiff paper to toggle the sensor.

  ○ Tray 3 media path sensor (PS 1603): Check designator G.

  ○ Tray 4 media path sensor (PS 1603): Check designator H.

- ◦ Tray 5 media path sensor (PS 1603): Check designator I.

- ◦ Tray 6 media path sensor (PS 1704): Check designator J.

Figure 7-7 Checking media path sensors
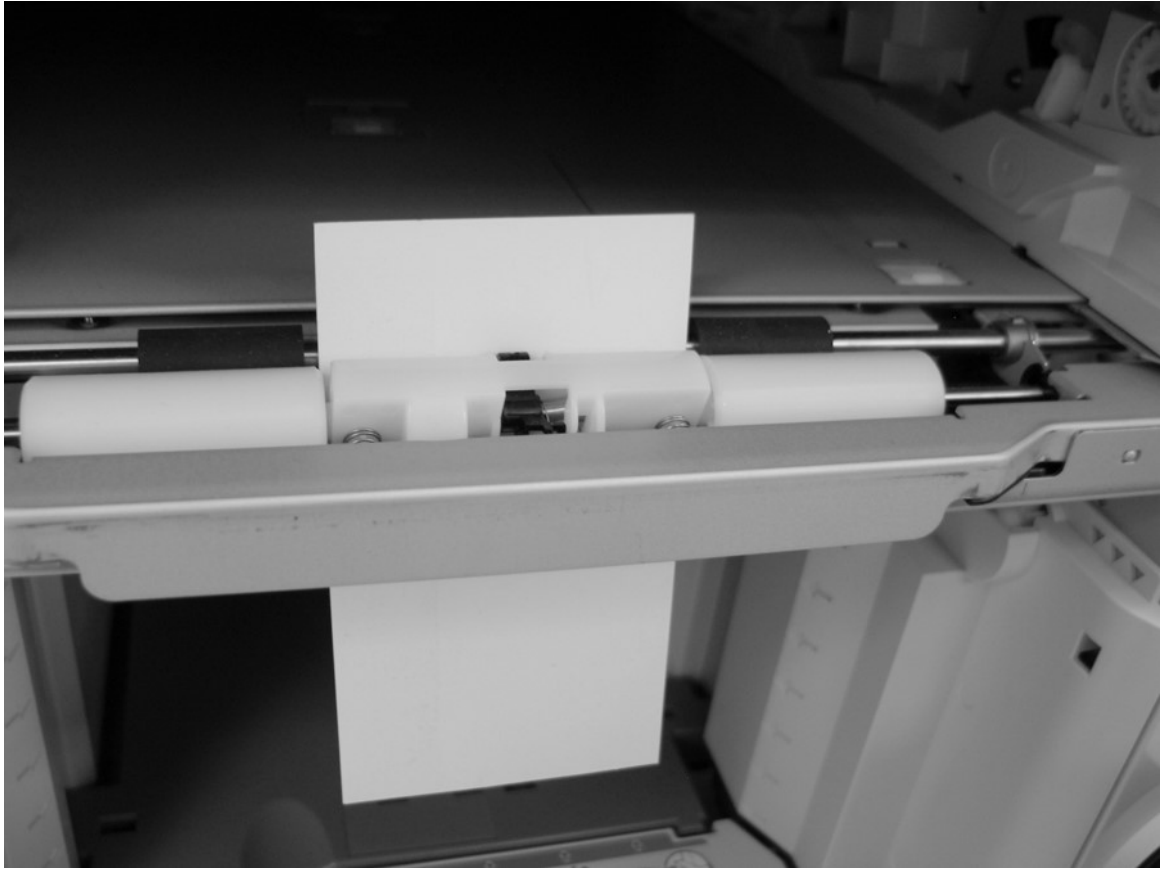
● Check the following sensors in the print-cartridge area.

  ◦ **(1)**: Check the left-side paper width sensor (PS106) by running manual sensor test 1 and checking the status of designator E.

  ◦ **(2)**: Check the top of page sensor (PS103) by running manual sensor test 1 and checking the status of designator A.

  ◦ **(3)**: Check the right-side paper width sensor (PS108) by running manual sensor test 1 and checking the status of designator F.

Figure 7-8 Checking sensors in the print-cartridge area
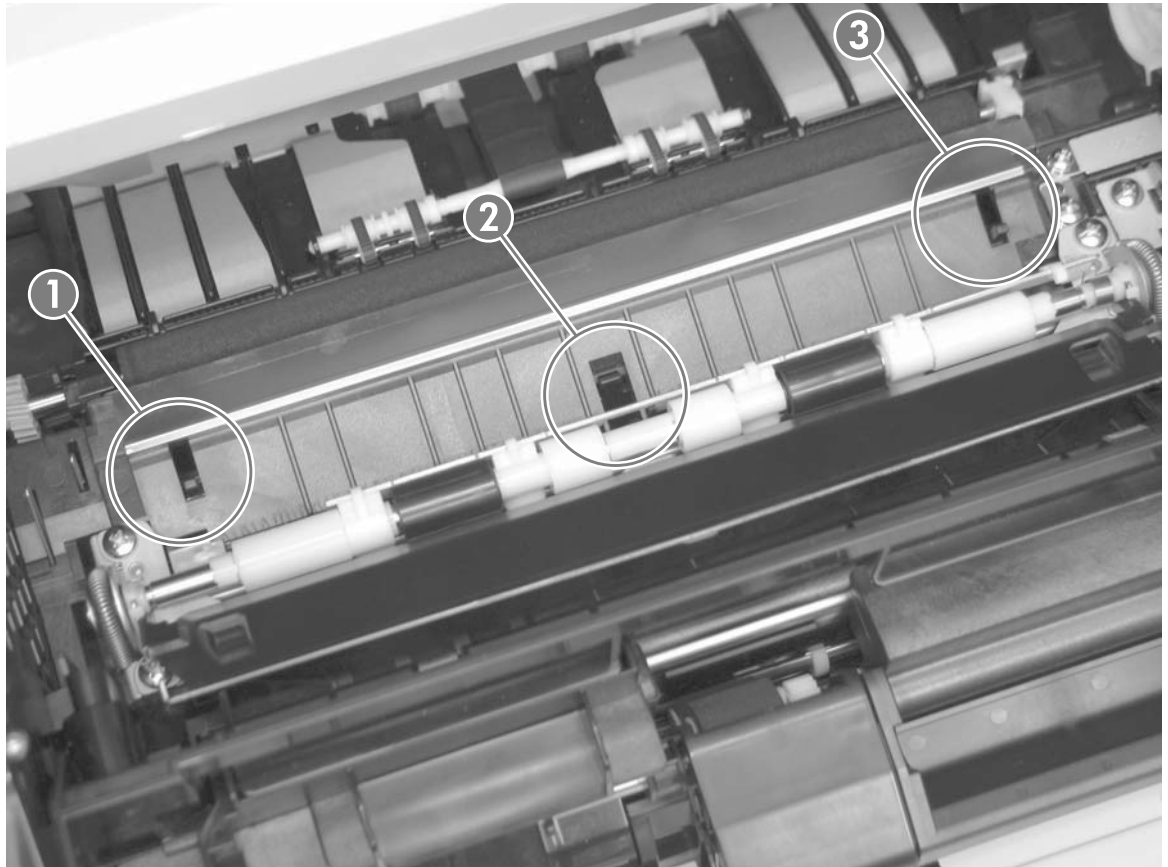
- Check the following sensors in the Tray 2 area with the tray, loaded with paper, in the product.

  - **(1)**: Check the Tray 2 paper present sensor (PS101) by running manual sensor test 1 and checking the status of designator N.

  - **(2)**: Check the Tray 2 top of stack sensor (PS107) by running manual sensor test 1 and checking the status of designator O.

  - **(3)**: Check the Tray 2 paper size switches (SW102) by running manual sensor test 1 and checking the status of designator P.

Figure 7-9 Checking sensors in the Tray 2 area
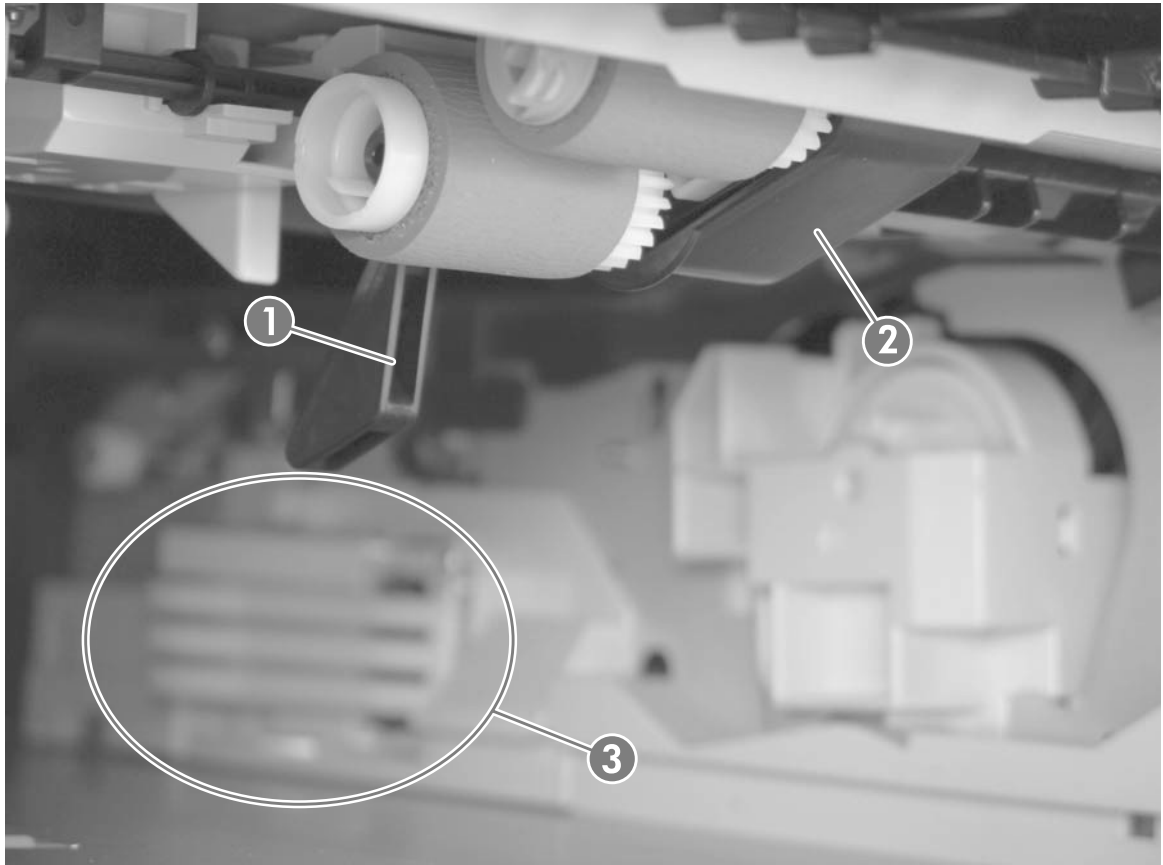
📝 **NOTE:** The sensors for trays 3, 4, 5, and 6 can be checked in the same manner with manual sensor test 2.

Manual sensor test 2 (special mode test)

Use this test to test paper path sensors and the paper-size switches manually.

1. Press Menu 📄.

2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press OK.

3. Press the down arrow ▼ to highlight **MANUAL SENSOR TEST 2**, and then press OK.

4. Use the arrow buttons to highlight the sensor letter code that you want to test, and then press OK.

Table 7-4 Manual sensor test 2 diagnostic tests

Manual sensor test 2 designator	Sensor or switch	
Q	Tray 3 paper present sensor (PS1600)	**NOTE:** The locations of these switches and sensors are the same as those in Figure 7-9 Checking sensors in the Tray 2 area on page 258 with respect to the optional paper input accessory.
R	Tray 3 top of stack sensor (PS1601)	
S	Tray 3 paper size switches (SW1600)	
T	Tray 4 paper present sensor (PS1600)	
U	Tray 4 top of stack sensor (PS1601)	
V	Tray 4 paper size switches (SW1600)	
W	Tray 5 paper present sensor (PS1600)	
X	Tray 5 top of stack sensor (PS1601)	
Y	Tray 5 paper size switches (SW1600)	
Z	Tray 6 paper present sensor (PS1700)	
a	Tray 6 top of stack sensor (PS1701)	
b	Tray 6 paper size switches (SW1700)	
c	Envelope feeder—envelope present sensor (PS1800)	

Print/stop test

Use this diagnostic test to isolate the cause of problems such as image formation defects and jams within the engine. The test can be programmed to stop from 0 to 60,000 mS.

1. Press Menu 🖹.

2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press OK.

3. Press the down arrow ▼ to highlight **PRINT/STOP TEST**, and then press OK.

4. Use the arrow buttons to set a stop time, when the print job should be interrupted, and then press OK.

Table 7-5 Print/Stop settings

Duration	Description
0 msecs	The leading edge of the paper stops approximately 28 mm beyond the "black" paper guide of the registration assembly.
100 msecs	The leading edge of the paper stops approximately 63 mm beyond the "black" paper guide of the registration assembly.
500 msecs	The leading edge of the paper stops just prior to the paper entering the "nip" of the fuser assembly; the nip is the gap between the pressure roller and the hot fusing roller.
600 msecs	The leading edge of the paper stops approximately 5 mm prior to the paper encountering the fuser assembly delivery photo sensor flag.

Table 7-5 Print/Stop settings (continued)

Duration	Description
1,200 msecs	(Simplex print operation) The leading edge of the paper stops 35 mm past the face-down delivery stacker rollers. The trailing edge of the paper is approximately 30 mm from the "nip" of the fusing rollers.
2,250 msecs	(Duplex print operation) The leading edge of the paper has passed through the fuser assembly and into the output stacker rollers. The paper has now reversed direction and entered the duplex accessory. The leading edge of the paper stops approximately 15 mm before encountering the duplex assembly re-pick photosensor (PS1502).

If the timer is set to a value that is greater than the job-print time, you can recover the product in one of two ways.

● After the print job is completed press the stop button ⊗ to return to the **DIAGNOSTICS** menu before the timer times out.

● After the timer times out, press the stop button ⊗. Activate the door switch to restart the engine and return it to a normal state.

When the timer trips, the control panel display shows the message **PRINTING STOPPED To continue press OK**. Pressing OK will print the previously selected job. If you do not want the previous job to print, press the stop button ⊗ first, and then press OK .

Component tests

These tests activate the selected component.

1. Press Menu ▤.

2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press OK.

3. Press the down arrow ▼ to highlight **COMPONENT TEST**, and then press OK.

4. Press the down arrow ▼ to highlight the particular component test that you want to perform, and then press OK.

The following table describes the component tests.

Component test	Description
DRUM MOTOR	This test activates the drum motor.
LASER SCANNER MOTOR	This test activates the laser scanner motor.
FUSER MOTOR	This test activates the fuser motor and drive gears.
TRAY PICKUP MOTOR	This test activates the tray pickup motor.
FEED ROLLER CLUTCH	This test activates the paper feed roller clutch.
MP TRAY SOLENOID	These tests activate the pickup solenoid for the selected input tray.
TRAY 2 PICKUP SOLENOID	
TRAY 3 PICKUP SOLENOID	
TRAY 4 PICKUP SOLENOID	
TRAY 5 PICKUP SOLENOID	
TRAY 6 PICKUP SOLENOID	
DUPLEXER REVERSE MOTOR	This test activates the duplexing reverse motor.
DUPLEX FEED MOTOR	This test activates the duplexing feed motor.

Diagrams

Block diagrams

Main assemblies

Figure 7-10 Main assemblies
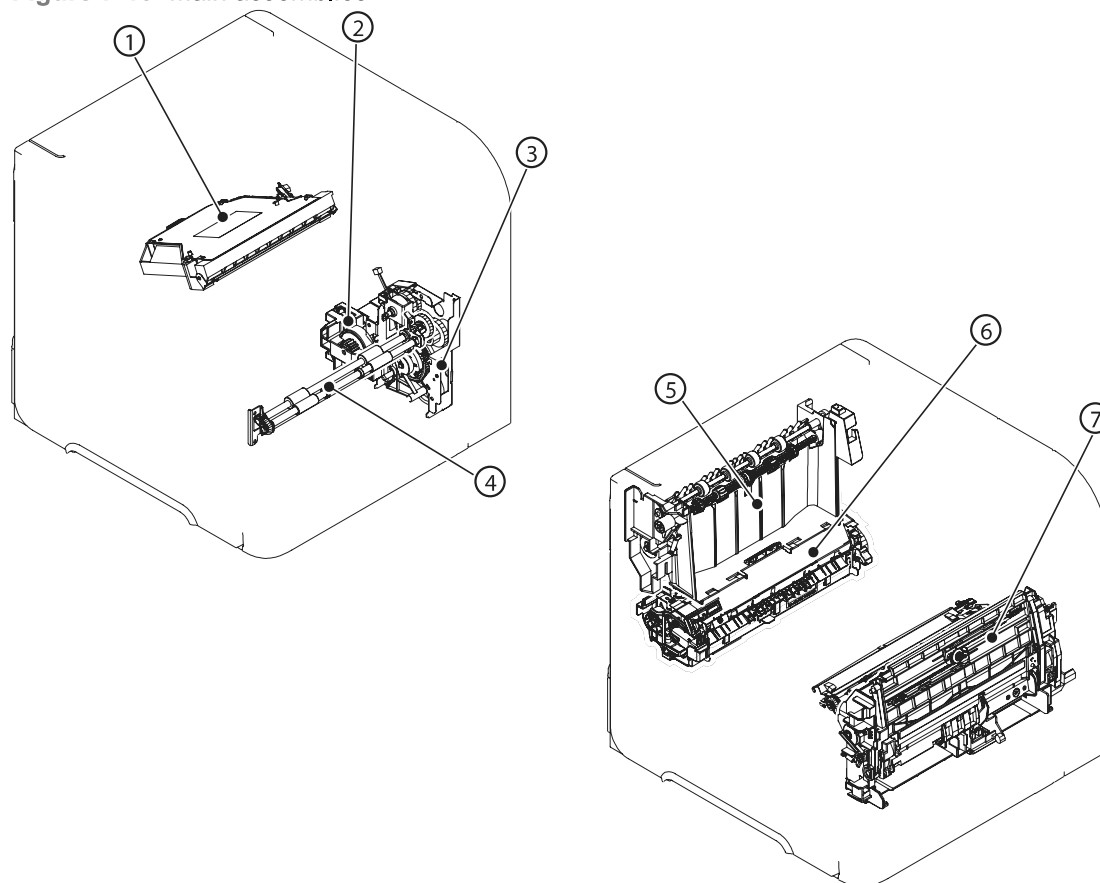
1	Laser/scanner unit
2	Lifter drive unit
3	Tray 2 pickup drive unit
4	Feed roller unit
5	Delivery unit
6	Fuser
7	Multipurpose tray pickup unit

Main parts

Figure 7-11 Main parts
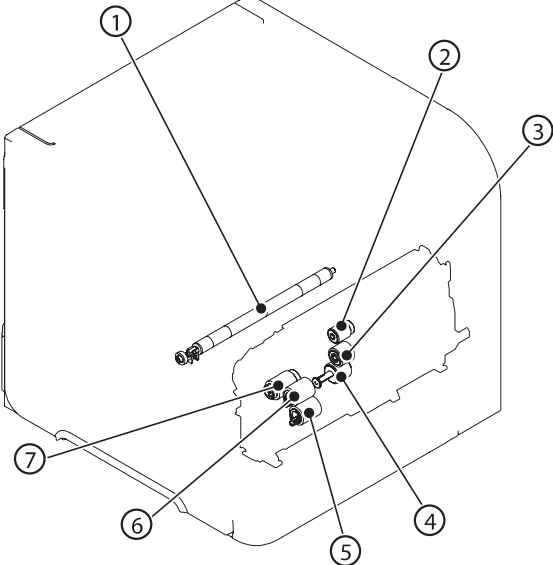
1	Transfer roller
2	Multipurpose tray pickup roller
3	Multipurpose tray feed roller
4	Multipurpose tray separation roller
5	Input tray separation roller (resides in input tray)
6	Input tray feed roller
7	Input tray pickup roller

Figure 7-12 Motors and fans
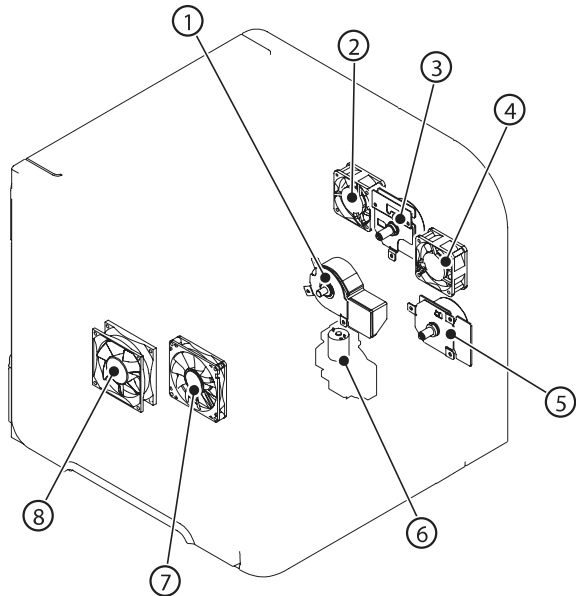
1	Fuser motor (M299)
2	Fan (FN102)
3	Drum motor (M102)
4	Fan (FN103)
5	Feed motor (M101)
6	Lifter motor (M103)
7	Fan (FN301)
8	Fan (FN101)

PCAs

Figure 7-13 PCAs
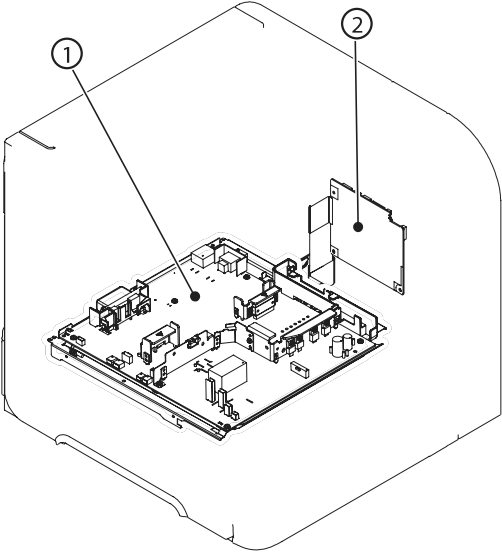
1	Power supply PCA
2	DC controller PCA

500-sheet feeder

Figure 7-14 500-sheet feeder main parts
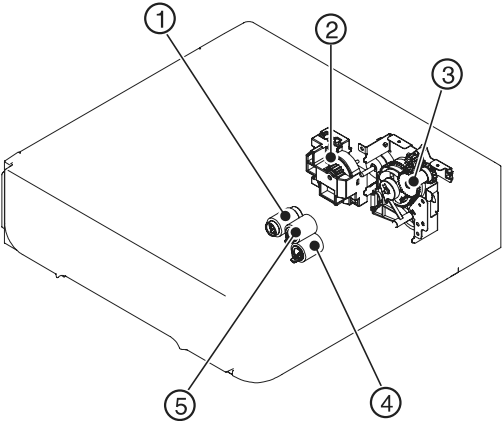
1	Paper feeder pickup roller
2	Paper feeder lifter driver unit
3	Paper feeder pickup drive unit
4	Paper feeder separation roller
5	Paper feed roller

Figure 7-15 500-sheet feeder solenoid and PCA
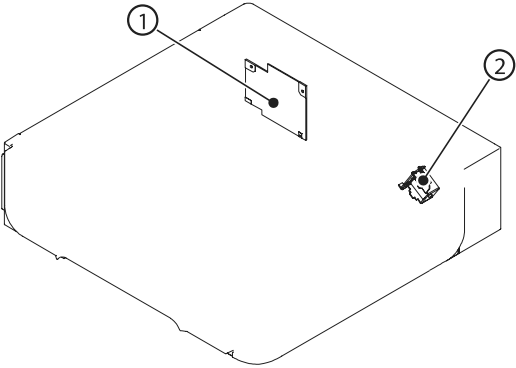
1	Driver PCA
2	Pickup solenoid

1,500-sheet feeder

Figure 7-16 1,500-sheet feeder main units
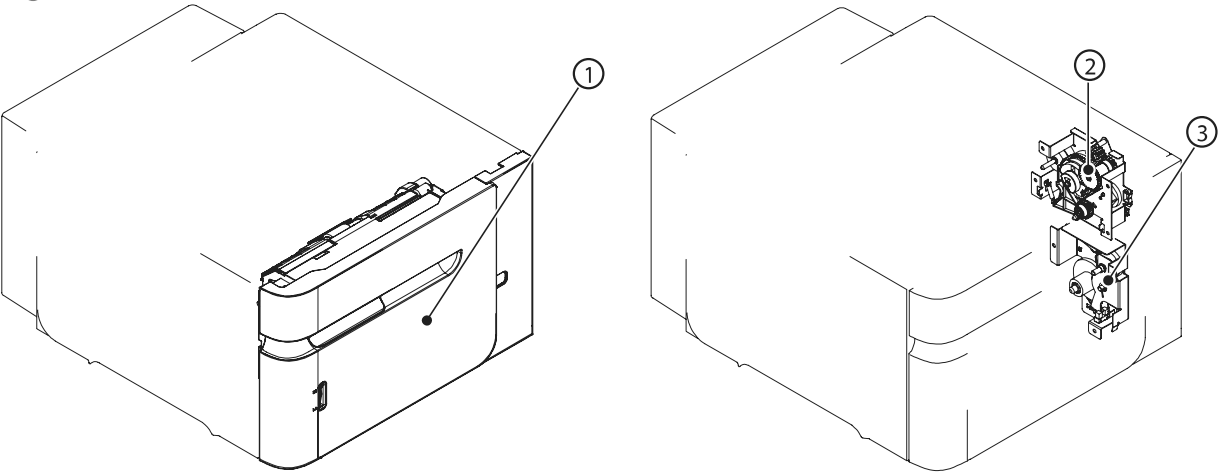
1	Front door unit
2	Pickup drive unit
3	Lifter drive unit

Figure 7-17 1,500-sheet feeder main parts
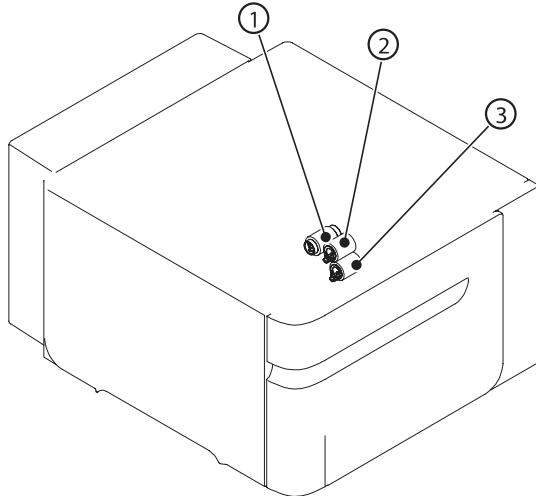
1	Pickup roller
2	Feed roller
3	Separation roller

Figure 7-18 1,500-sheet feeder motor and PCA
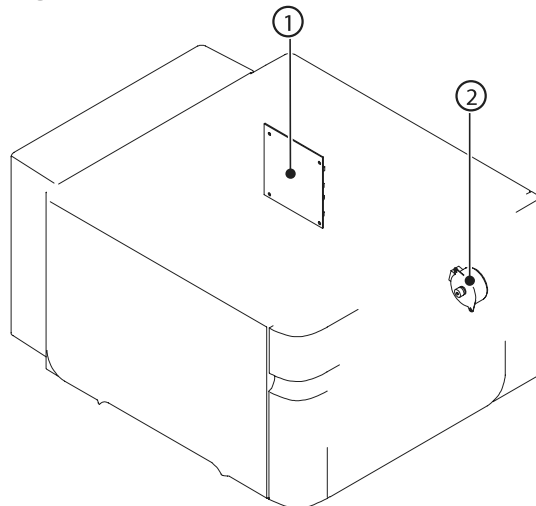
1	Driver PCA
2	Lifter motor

Connectors

DC controller PCA connectors

Figure 7-19 DC controller PCA connectors
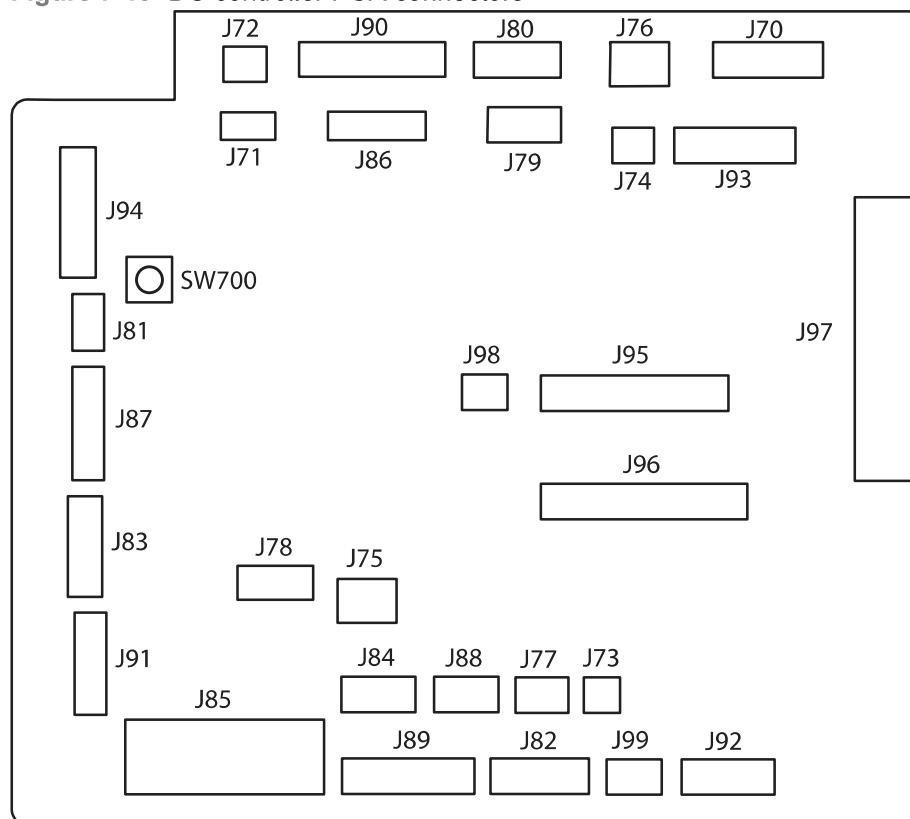
Table 7-6 DC controller connectors

Connector	Functionality	Pin configuration
J70	Control panel connector	8-pin
J71	**SL102** Tray 1 pickup solenoid	2-pin
J72	**SL101** Tray 2 pickup solenoid	2-pin
J73	**M103** Tray 2 lift motor	2-pin
J74	**TG101** memory tag I/O	2-pin
J75	**FN102** cooling fan	3-wire
J76	**PS104** face-down output full sensor	3-pin
J77	**CL101** feed clutch	3-pin (2-wire)
J78	**SW101** door open switch	3-pin
J79	**FN103** cooling fan	4-pin (3-wire)
J80	Not used	6-pin
J81	**PS105** Tray 1 media present sensor	3-pin
J82	Fusing assembly	7-wire

Table 7-6 DC controller connectors (continued)

Connector	Functionality	Pin configuration
J83	Envelope feeder accessory	5-pin
J84	Duplex accessory	6-pin
J85	Power supply PCA (+24Vdc/3.3Vdc)	6-wire
J86	Scanner motor/beam detect	7-pin
J87	**M102** drum motor	8-pin (7-wire)
J88	Paper deck accessory	5-pin
J89	**M299** fusing motor	10-pin
J90	Stacker/stacker-stapler/mailbox	8-pin
J91	**M101** feed motor	7-pin
J92	**PS101** Tray 2 media present sensor **PS107** Tray 2 media stack sensor 1 **PS907** Tray 2 media stack sensor 2	8-pin
J93	Laser/driver PCA	11-pin
J94	**PS102** pre-feed sensor **PS108** media width sensor 2 **PS103** top of page sensor **PS106** media width sensor 1	12-pin
J95	Power supply PCA	18-pin
J96	Power supply PCA	20-pin
J97	Intermediate PCA to formatter PCA	32-pin ribbon
J98	Not used	
J99	**SW102** Tray 2 media size switches	4-pin
TB700	3.3 volts DC	
TB701	GRN	

Figure 7-20 Product base connectors
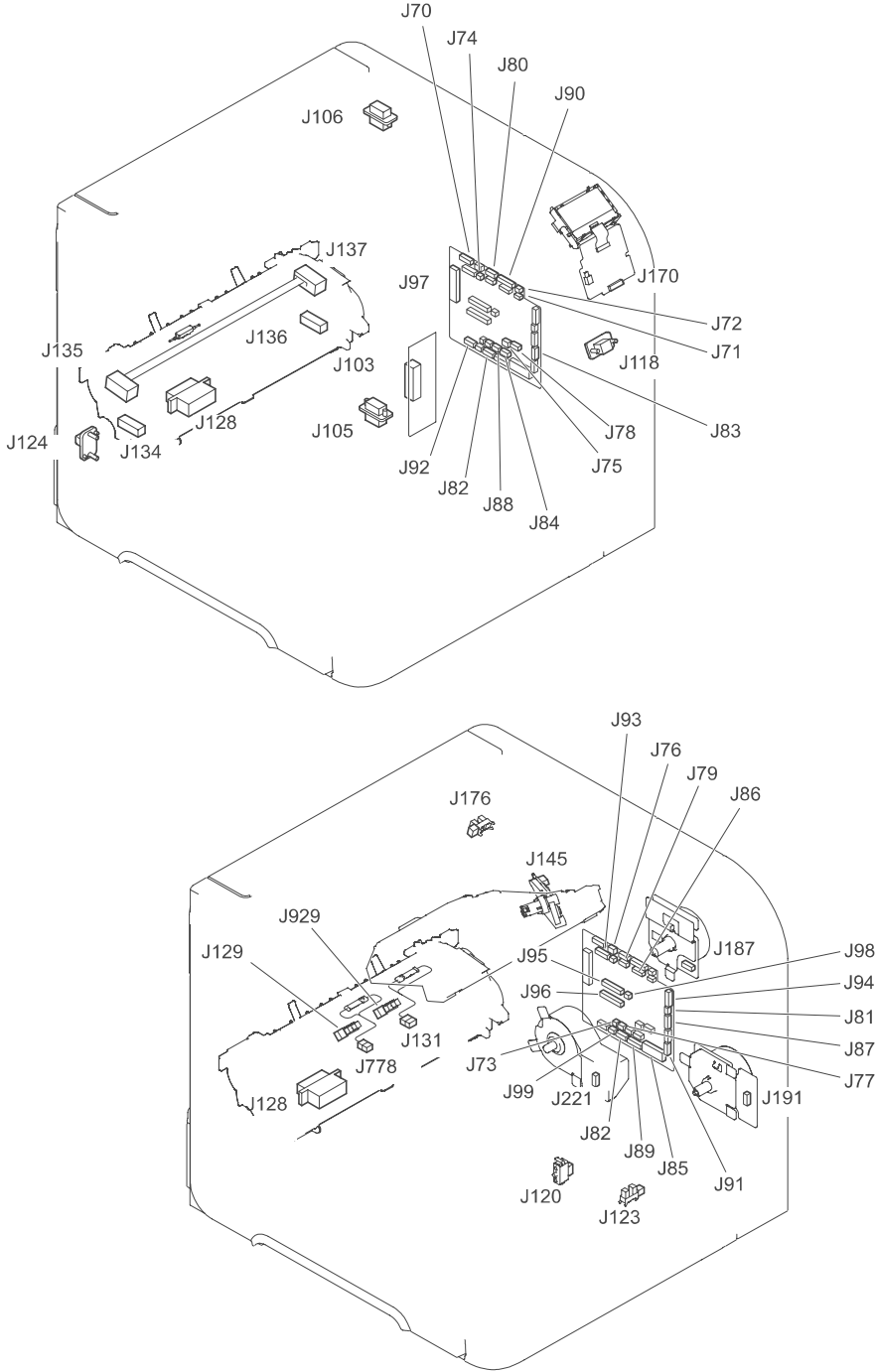
500-sheet paper tray connectors

Figure 7-21 500-sheet paper tray connectors
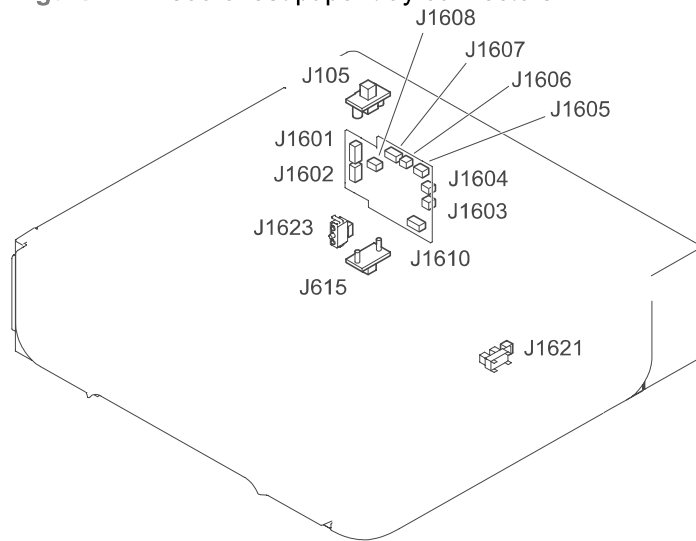
1,500-sheet paper tray connectors

Figure 7-22 1,500-sheet paper tray connectors
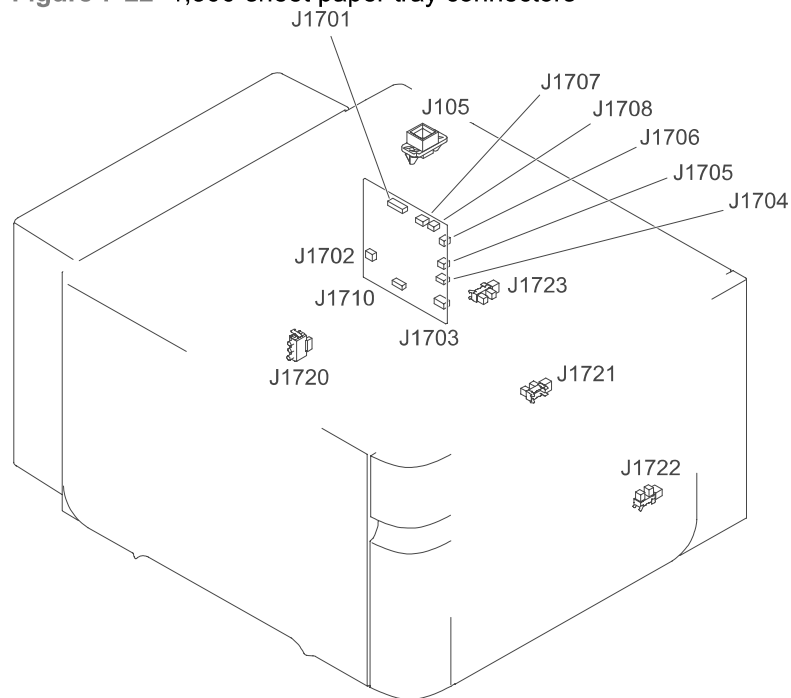
Duplexer connectors

Duplexer connectors

Envelope feeder connectors
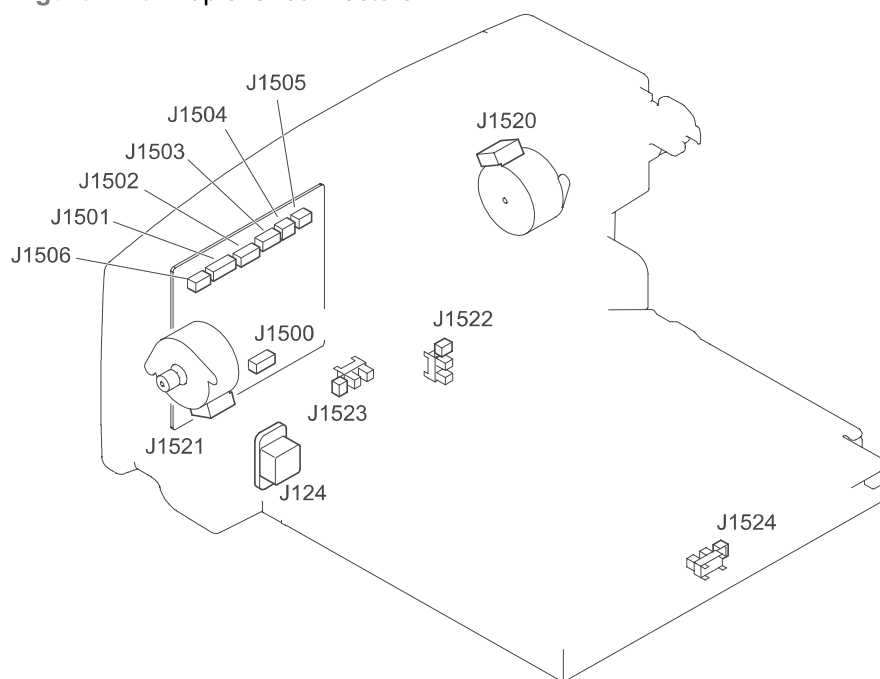
Envelope feeder connectors

Figure 7-25 General timing chart
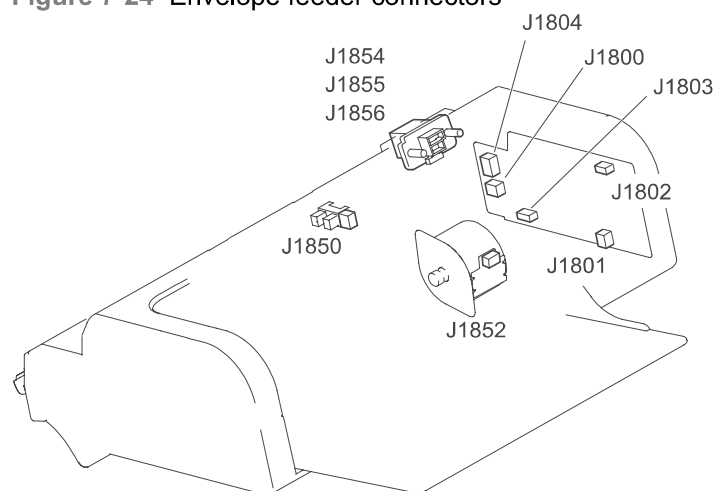
Circuit diagrams

Figure 7-26 General circuit diagram (1 of 2)

Figure 7-27 General circuit diagram (2 of 2)

Figure 7-28 500-sheet paper tray circuit diagram
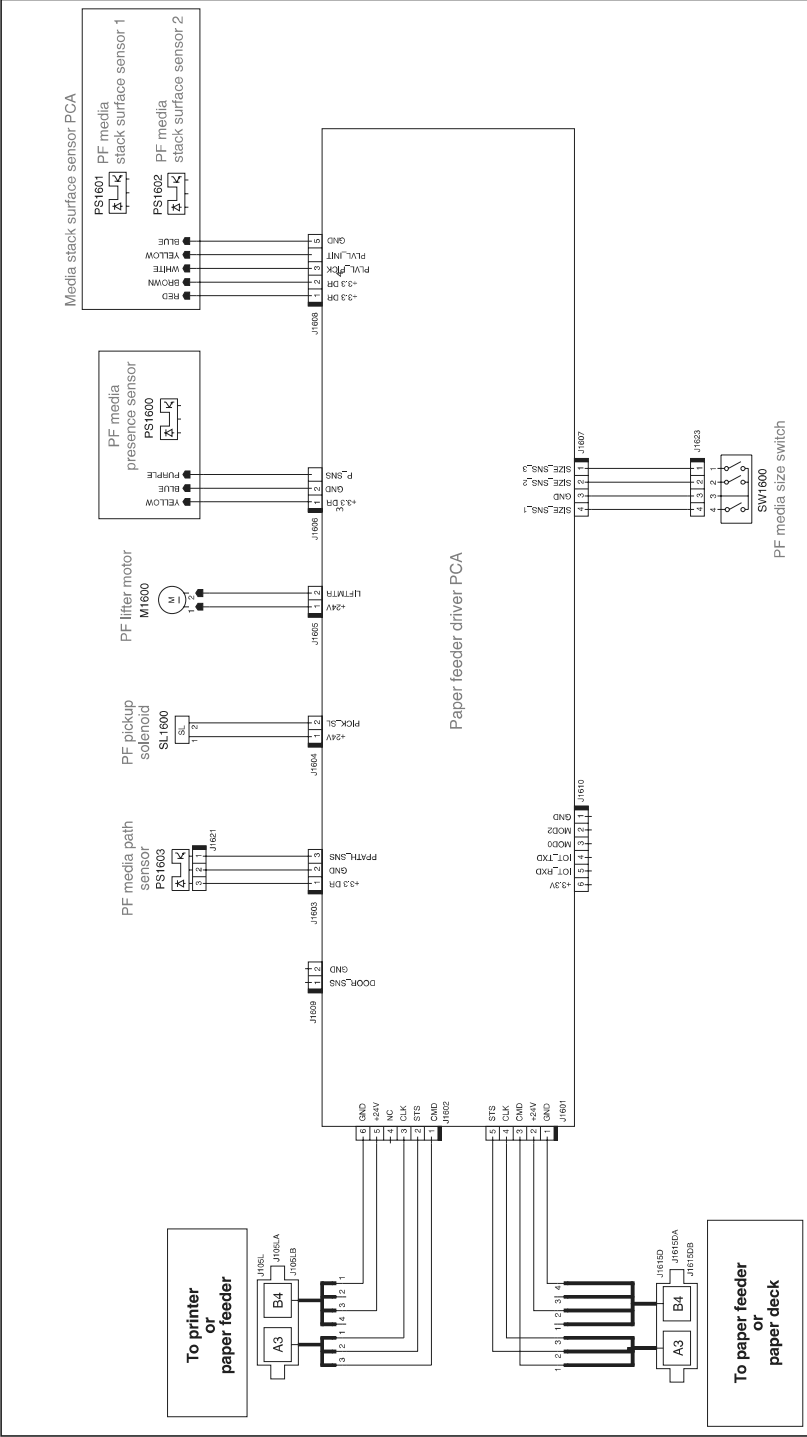
Figure 7-29 1,500-sheet paper tray circuit diagram
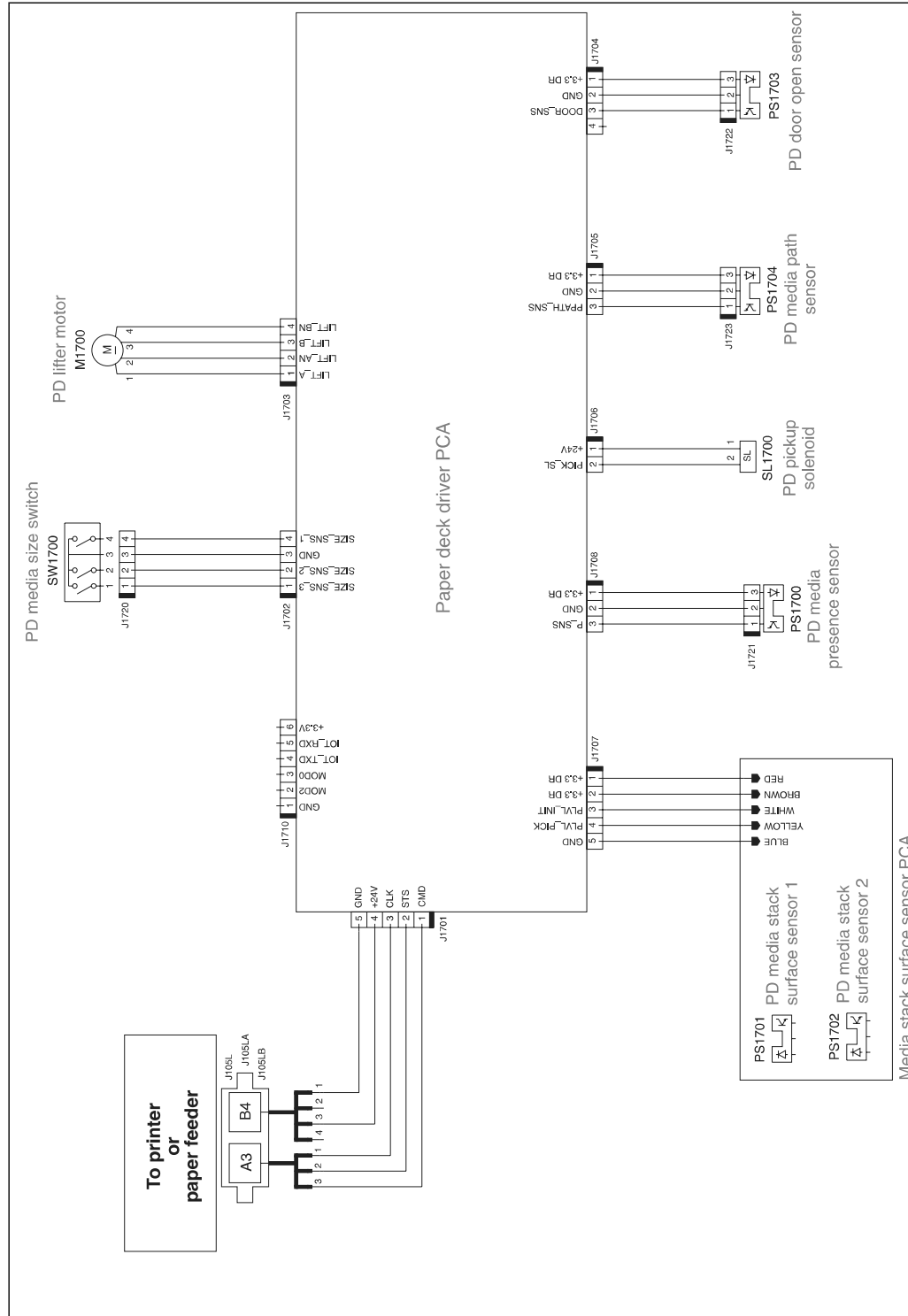
Figure 7-30 Envelope feeder circuit diagram
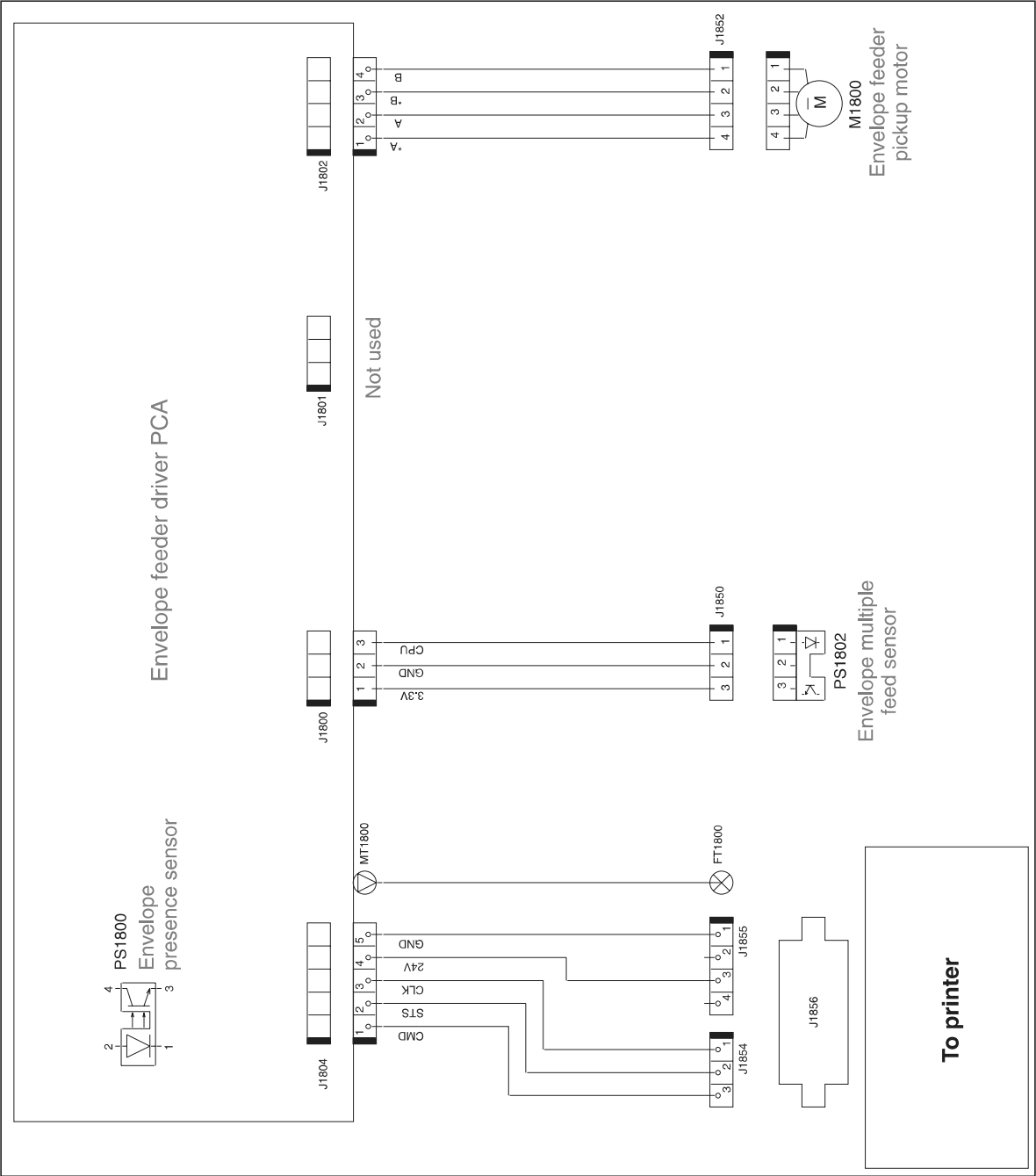
Figure 7-31 Duplexer circuit diagram
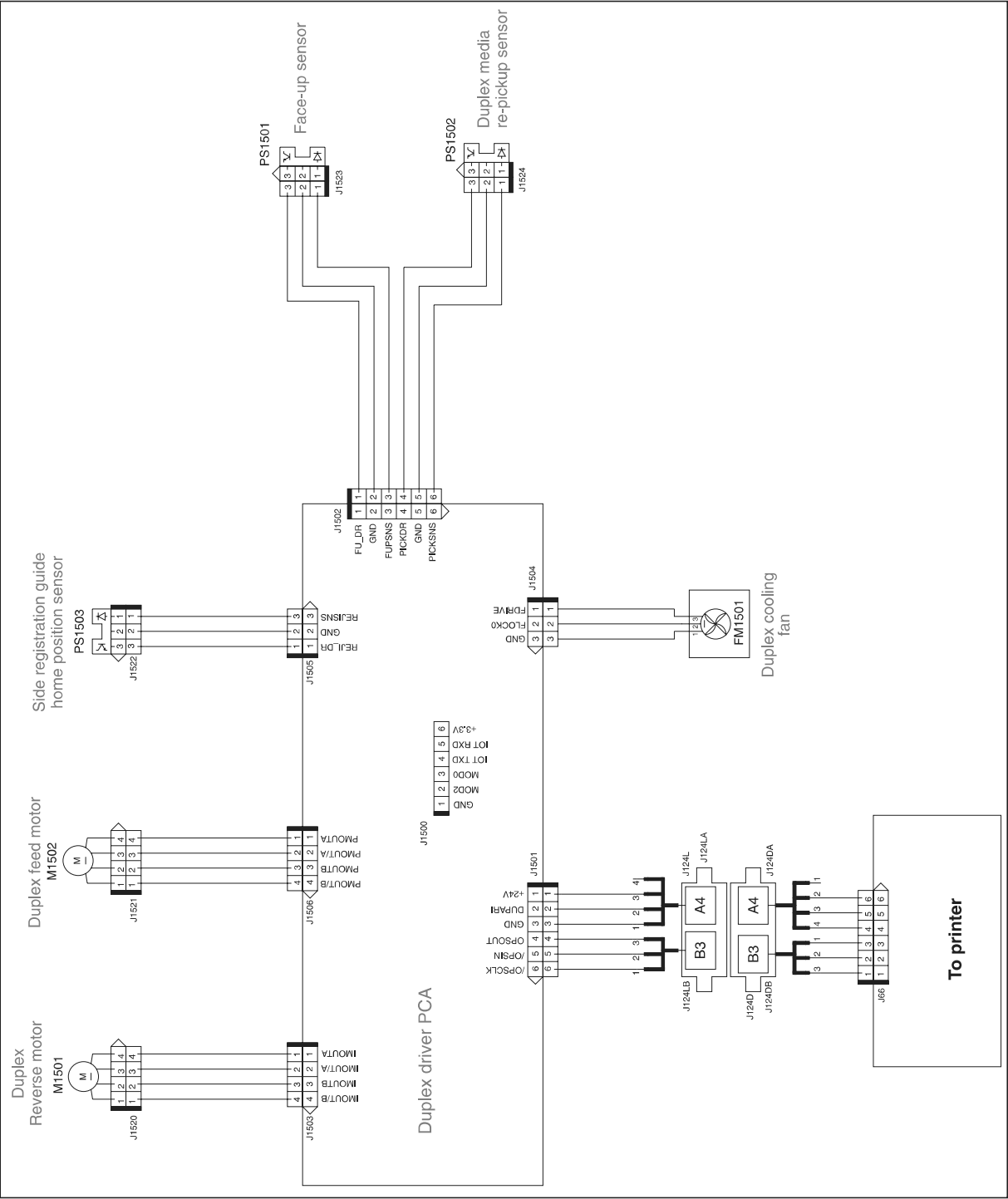
Print quality troubleshooting tools

Repetitive image defect ruler

Defects on product rollers can cause image defects to appear at regular intervals on the page, corresponding to the circumference of the roller that is causing the defect. Measure the distance between defects that recur on a page. Use the following table or the repetitive-defect ruler to determine which roller is causing the defect. To resolve the problem, try cleaning the roller first. If the roller remains dirty after cleaning or if it is damaged, replace the part that is indicated in Table 7-7 Repetitive defects on page 280.

△ **CAUTION:** Do not use solvents or oils to clean rollers. Instead, rub the roller with lint-free paper. If dirt is difficult to remove, rub the roller with lint-free paper that has been dampened with water.

📝 **NOTE:** The following table replaces the graphical repetitive defect ruler. You can make your own ruler by using these measurements. For the most accurate results, use a metric ruler.

Table 7-7 Repetitive defects

Component	Distance between defects
Primary charging roller	37.7 mm (1.5 inches)
Transfer roller	47 mm (1.85 inches)
Developer roller	63 mm (2.5 inches)
Tray 1 pickup roller	63 mm (2.5 inches)
Tray 1 feed roller	79 mm (3.1 inches)
Tray 1 separation roller	
Tray 2 feed roller	79 mm (3.1 inches)
Tray 2 pickup roller	
Tray 2 separation roller	
Fuser sleeve unit or pressure roller	94 mm (3.75 inches)
Photosensitive drum	94 mm (3.75 inches)

📝 **NOTE:** Defects on the tray pickup rollers or the Tray 1 pickup roller do not cause a repetitive defect. Defects on these rollers cause a defect to appear only on the leading edge of the image.

Cleaning page

Use the cleaning page to keep the fuser free of toner and paper particles that can sometimes accumulate. Accumulation of toner and particles can cause specks to appear on the front or back side of print jobs.

HP recommends that you use the cleaning page when there is a print quality issue.

A **CLEANING** message appears on the product control panel display while the cleaning is taking place.

In order for the cleaning page to work correctly, print the page on copier-grade paper (not bond, heavy, or rough paper). A blank page will be printed when the task is complete. Discard the page.

Create and process a cleaning page

1. Press Menu ▤.

2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press OK.

3. Press the down arrow ▼ to highlight **PRINT QUALITY**, and then press OK.

    📝 **NOTE:** If your product has an automatic duplexer, go to step 7.

4. Press the down arrow ▼ to highlight **CREATE CLEANING PAGE**, and then press OK.

5. Remove all paper from Tray 1.

6. Remove the cleaning page from the output bin, and load it face-down in Tray 1.

    📝 **NOTE:** If you are not in the menus, navigate to **PRINT QUALITY** by using the previous instructions.

7. At the product control panel, press the down arrow ▼ to highlight **PROCESS CLEANING PAGE**, and then press OK.

You can set the product to clean the paper path automatically after the product has printed a certain number of pages. Products in dirtier environments can be cleaned more frequently by choosing one of the lower page count settings.

Clean the paper path automatically

1. Press Menu ▤.

2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press OK.

3. Press the down arrow ▼ to highlight **PRINT QUALITY**, and then press OK.

4. Press the down arrow ▼ to highlight **AUTO CLEANING**, and then press OK.

5. Press the down arrow ▼ to highlight **ON**, and then press OK.

6. Press the down arrow ▼ to highlight **CLEANING INTERVAL**, and then press OK.

    📝 **NOTE:** If you are not in the menus, navigate to **PRINT QUALITY** by using the previous instructions.

7. Press the down arrow ▼ to highlight the correct page count interval, and then press OK.

Control-panel messages

Table 7-8 Control-panel messages

Control panel message	Description	Recommended action
10.10.00 SUPPLY MEMORY ERROR	The product has experienced a print cartridge error.	1. Ensure that the cartridge is a genuine HP print cartridge. 2. Verify the connector at J74 on the DC controller PCA is securely connected. 3. Replace the print cartridge.
10.94.YY REMOVE SHIPPING LOCKS FROM CARTRIDGE <AREA> **For help press ?**	At least one shipping lock is installed.	1. Open the top cover. 2. Pull the tape and then remove the print cartridge. 3. Remove the orange tabs from the print cartridge. 4. Remove the plastic insert and foam from the print cartridge area. 5. Reinsert the print cartridge and then close the top cover.
10.XX.YY SUPPLY MEMORY ERROR **For help press ?**	An error has occurred in one or more of the product's supplies. Values of XX and YY are listed below: XX00 = memory is defective XX01 = memory is missing YY00 = cartridge	• Turn the product off and then on to clear the message. • Replace the print cartridge.
11.XX INTERNAL CLOCK ERROR **To continue press OK**	The real time clock has experienced an error.	1. Power cycle the product to see if the message clears. 2. If possible, print a configuration page to record product information, and then perform an NVRAM initialization routine. If the initialization routine is successful, you will need to re-enter several configuration parameters (such as the page count and the serial number). 3. If the error persists, replace the formatter PCA.
13.01.00 Jam in Tray 1	The Tray 1 pickup roller or solenoid might not be working correctly.	1. Load paper in Tray 1, and then use the paper path test to pull paper. Verify that the roller rotates. 2. If someone has performed maintenance on the product recently, verify that the Tray 1 pickup roller, feed roller, and separation roller have been installed correctly. 3. From the **DIAGNOSTICS** menu, run the multipurpose tray (Tray 1) solenoid component test to verify that the solenoid moves when energized. Listen

Table 7-8 Control-panel messages (continued)

Control panel message	Description	Recommended action
		for an audible "click" when the test is initiated. If the solenoid is not being energized, verify that the solenoid connector is attached to connector J71 on the DC controller PCA.
		4. If the error persists, replace the Tray 1 solenoid (SL102).
13.03.00 Jam in Tray 2	The paper path might have an obstruction, or the Tray 2 solenoid might not be working correctly.	1. Inspect the paper path and ensure no obstacles are blocking the paper path.
		2. If maintenance has recently be performed, verify that the pickup, feed, and separation rollers have been reinstalled correctly.
		3. From the **DIAGNOSTICS** menu, run the Tray 2 pickup solenoid component test to verify that the solenoid moves when energized. Listen for an audible "click" when the test is initiated. If the solenoid is not being energized, verify that the solenoid connector is attached to connector J72 on the DC controller PCA.
		4. If the error persists, replace the Tray 2 pickup solenoid (SL101).
13.03.00 JAM IN TRAY X	A jam has occurred in the specified location. This jam occurs when the product cannot move paper from the specified tray into the paper path.	1. Inspect the paper path and remove any obstructions.
		2. Verify that the tray is not loaded incorrectly or overfilled.
		3. For Trays 3, 4, 5, or 6, verify that the trays are stacked correctly.
		4. Verify that the media meets HP media specifications.
		5. If maintenance has recently be performed, verify that the pickup, feed, and separation rollers have been reinstalled correctly.
		6. Verify that connector J77 on the DC controller PCA is firmly seated.
		7. From the **DIAGNOSTICS** menu, run the feed roller clutch (CL101) component test.
		8. If the tray pickup motor rotates, yet the drive gears directly below the motor (on the Tray 2 pickup assembly) do not rotate, the clutch is not functioning properly. Replace the feed roller assembly.

Table 7-8 Control-panel messages (continued)

Control panel message	Description	Recommended action
13.20.00 JAM INSIDE <LOCATION>	Paper has not moved past a certain paper sensor. <LOCATION> can be one of the following locations. ● **TRAY 2** ● **TOP COVER** ● **REAR DOOR** ● **DUPLEXER**	● **TRAY 2** Remove the tray, and then check the paper path for obstructions. Perform a manual sensor test and observe the pre-feed sensor (PS102) status (**B**). Toggle the sensor flag to determine if the status changes. ● **TOP COVER** Remove the print cartridge, and then check the paper path for obstructions. Verify that the top-of-page sensor (PS103) and the media width sensors (PS106 and PS108) are unblocked. Perform a manual sensor test and observe the status of these sensors. Toggle the sensor flags to determine if their status changes. ● **REAR DOOR** Open or remove the rear face-up bin, and then check the paper path on each side of the fusing assembly for obstructions. Remove the fuser, if necessary. Perform a manual sensor test and observe the fuser delivery sensor (PS700) status (**C**). Toggle the sensor flag to determine if the status changes. ● **DUPLEXER** Remove the duplexer, and then check the paper path for obstructions. If the message persists, replace the duplexer.
13.JJ.NT DEVICE WARNING	The external device sent a warning.	No action is necessary.
13.JJ.NT JAM IN <LOCATION>	A jam has occurred in the specified location.	Remove jammed paper from the specified location. If the message persists after all jams have been cleared, a sensor might be stuck or broken. Contact an HP-authorized service or support provider.
13.JJ.NT JAM INSIDE <LOCATION>	A jam has occurred in the specified location.	Remove jammed paper from the specified location. If the message persists after all jams have been cleared, a sensor might be stuck or broken. Contact an HP-authorized service or support provider.
13.JJ.NT PAPER JAM OPEN INPUT TRAYS alternates with **Open all trays**	A jam has occurred in an input tray.	1. Open the top cover. 2. Remove the print cartridge and any paper.

Table 7-8 Control-panel messages (continued)

Control panel message	Description	Recommended action
		3. Reinstall the print cartridge and close the top cover.
		4. Close all trays.
21 PAGE TOO COMPLEX **For help press ?** alternates with **21 PAGE TOO COMPLEX** **To continue press OK**	The data (dense text, rules, raster or vector graphics) sent to the product was too complex.	• Press OK to print the transferred data (some data might be lost). • If this message appears often, simplify the print job or install additional memory.
22 EIO X BUFFER OVERFLOW **To continue press OK**	Too much data was sent to the EIO card in the specified slot [X]. An improper communications protocol might be in use. Note: EIO 0 is reserved for the HP Jetdirect embedded print server.	• Press OK to clear the message. (The job will not be printed.) • Check the host configuration. If the message persists, contact an HP-authorized service or support provider.
22 EMBEDDED I/O BUFFER OVERFLOW **To continue press OK**	Too much data was sent to the product's internal HP Jetdirect.	Press OK to continue printing. Some data may be lost.
22 USB I/O BUFFER OVERFLOW **To continue press OK**	Too much data was sent to the USB port.	Press OK to clear the error message. (The job will not be printed.)
40 EIO X BAD TRANSMISSION **To continue press OK**	The connection has been broken between the product and the EIO card in the specified slot [X]. Note: EIO 0 is reserved for the HP Jetdirect embedded print server.	Press OK to clear the error message and continue printing.
40 EMBEDDED I/O BAD TRANSMISSION **To continue press OK**	The connection has been broken between the product and HP Jetdirect print server.	1. Print the configuration and Embedded JetDirect pages to verify that the card status is "Ready," and that the protocol reads "Ready." 2. Verify that all the configuration parameters (IP address, configuration method, and domain) are correct. 3. Verify that you are using a working network cable. 4. Verify you can "ping" a network address from the product. 5. Verify that the HP JetDirect print server has the latest firmware. HP JetDirect firmware is part of the product firmware. Find the latest product firmware at www.hp.com.

Table 7-8 Control-panel messages (continued)

Control panel message	Description	Recommended action
41.X ERROR **For help press ?** alternates with **41.X ERROR** **To continue press OK**	A temporary printing error occurred.	1. Press OK to see if the page will print. If necessary, turn the product off and then on. 2. Verify that the loaded paper meets HP specifications. If pages stick together, the paper detect sensors will detect a sheet of paper longer than what is expected in the product. 3. Verify that all paper size settings on the control panel, in the print driver settings, and in the software program match. 4. Verify that the correct size paper is loaded in the input tray.
49.XXXX ERROR **To continue turn off then on**	A critical firmware error has occurred that caused the processor on the formatter to cease operation. This error can be caused by invalid print commands, corrupt data, or invalid operations. In some cases, electrical "noise" in the cable can corrupt data during transmission to the product. Other causes can be poor-quality cables, poor connections, or home-grown programs. On rare occasions, the formatter is at fault.	1. Turn off the product, and then turn it on. 2. Press Stop to clear the print job from the product memory. 3. Turn off the product, and then turn it on. 4. Print a document from a different software program. If the job prints, return to the first program and try to print a different file. If the message appears only with a certain software program or print job, contact the software program vendor for assistance. 5. If the message persists with different software programs and print jobs, disconnect all of the cables to the product that connect it to the network or computer. 6. Turn off the product. 7. Remove all EIO devices from the product. 8. Turn on the product. 9. If the error no longer exists, replace each EIO device one at a time, making sure to turn the product off and on again as you install each device. 10. Replace an EIO device if you determine that it causes the error.
50.X FUSER ERROR **For help press ?**	A fuser error has occurred. The values for X are listed below. ● **50.1**: Low fuser temperature ● **50.2**: Fuser warm-up service ● **50.3**: High fuser temperature ● **50.4**: Faulty fuser	1. Power cycle the product to determine if the error is persistent. 2. Verify that the correct fuser model is installed in the product. 3. Verify that the correct voltage fuser is installed in the product. 4. Verify that the fusing assembly is firmly seated in the product chassis. Reseat

Table 7-8 **Control-panel messages (continued)**

Control panel message	Description	Recommended action
	• **50.5**: Inconsistent fuser (verify voltage model) • **50.6**: Open fuser • **50.7**: Pressure release mechanism failure • **50.8**: Lower fuser temperature • **50.9**: High fuser temperature	the fusing the assembly, and listen for a "click" at the end of the assembly when you insert it into the product. 5. Verify that the connection to connector J82 on the DC controller PCA is firmly seated. 6. Inspect the fusing assembly connectors, at the front of the assembly, and the connectors on the high-voltage power supply PCA. Look for bent pins or debris. Clean or straighten the pins if necessary. 7. If the error persists, replace the fusing assembly. 8. If the error still persists, replace the high-voltage power supply.
51.XY ERROR **To continue turn off then on**	A laser/scanner error has occurred.	1. From the **DIAGNOSTICS** menu, run the laser/scanner motor component test. Verify that you can hear motor rotate. 2. If you cannot hear the motor rotate, verify that the connections to connector J86 and connector J93 on the DC controller PCA are firmly seated. 3. Verify that the wiring harness at the laser/scanner assembly is securely attached. 4. If the error persists, replace the laser/scanner assembly.
53.XY.ZZ CHECK RAM DIMM SLOT <X>	There is a problem with the product memory. The DIMM that caused the error will not be used. Values of X and Y are as follows: • X = DIMM type, 0 = ROM, 1 = RAM • Y = DIMM location, 0 = Internal memory (ROM or RAM), 1 = DIMM slot 1	Press OK to continue if you are prompted. If the message continues, you might need to replace the specified DIMM. Turn the product off, and then replace the DIMM that caused the error.
54.XX ERROR **To continue turn off then on**	This message is typically related to a sensor issue.	Turn the product off and then on. Follow the instructions displayed on the product control panel.
55.XX.YY DC CONTROLLER ERROR **For help press ?** alternates with **55.XX.YY DC CONTROLLER ERROR** **To continue turn off then on**	A temporary printing error occurred.	1. Turn the product off and then on. 2. Remove any third-party memory or USB device, and then turn the product off and then on. 3. Remove and then reinstall the formatter. 4. If the error persists, remove the formatter and perform an engine test. If the engine test page fails to print,

Table 7-8 Control-panel messages (continued)

Control panel message	Description	Recommended action
		replace the DC controller. If the engine test page prints, replace the formatter.
56.XX ERROR **For help press ?** alternates with **56.XX ERROR** **To continue turn off then on**	A temporary printing error occurred as a result of an incorrect input or output request.	● Turn the product off and then on. ● If the message persists, contact an HP-authorized service or support provider.
57.01 ERROR **To continue turn off then on**	Fan FN103 has experienced an error.	1. Inspect fan FN103 to determine if its rotational movement is being obstructed. 2. Verify that the fan connection at connector J79 on the DC controller PCA is securely seated. 3. If the error persists, replace the fan.
57.03 ERROR **To continue turn off then on**	Fan FN102 has experienced an error.	1. Inspect fan FN102 to determine if its rotational movement is being obstructed. 2. Verify that the fan connection at connector J75 on the DC controller PCA is securely seated. 3. If the error persists, replace the fan.
57.04 ERROR **To continue turn off then on**	Fan FN101 has experienced an error.	1. Inspect fan FN101 to determine if its rotational movement is being obstructed. 2. Verify that the fan connection at connector J64 on the power supply PCA is securely seated. 3. If the error persists, replace the fan.
57.05 ERROR **To continue turn off then on**	The duplexer fan has experienced an error.	1. Inspect the fan to determine if its rotational movement is being obstructed. 2. If the error persists, replace the duplexer.
57.07 ERROR **To continue turn off then on**	Fan FN301 has experienced an error.	1. Inspect fan FN301 to determine if its rotational movement is being obstructed. 2. Verify that the fan connection at connector J65 on the power supply PCA is securely seated. 3. If the error persists, replace the fan.

Table 7-8 Control-panel messages (continued)

Control panel message	Description	Recommended action
58.XX ERROR **To continue turn off then on**	The environmental sensor (TH3) has experienced an error.	1. Verify that the environmental sensor connection at connector J63 on the high-voltage power supply PCA is securely seated. 2. If the error persists, replace the environmental sensor (TH3).

59.XY ERROR
 	
For help press ?
 	
alternates with
 	
59.XY ERROR
 	
To continue turn off then on
	A temporary printing error occurred.	1. Inspect the DC controller PCA and verify that the following connectors are firmly seated:
		
		    ◦ Drum motor (M102) to connector J87
		
		    ◦ Feed motor (M101) to connector J91
		
		    ◦ Fusing motor (M299) to connector J89
		
		    NOTE: There is a cable between the drum motor and the DC controller. Both ends of the cable need to be firmly seated.
		
		2. If the error persists, from the **DIAGNOSTICS** menu, run the component tests for each motor to verify that they are operating. If any of the motors is not operating, replace the motor.

60.XX ERROR	An error has occurred while the product was attempting to lift the tray designated by **XX**.	1. Open the tray, and then remove the paper. 2. Open the guides and look for any torn pieces of paper or foreign objects inside the tray. 3. Replace the paper, and then close the tray. 4. Turn the product off and then on. 5. Remove most of the paper from the tray except for a few sheets, and insert the tray into the product. Listen for the sound of the lift motor lifting the paper stack. Also, observe if the paper level indicator moves at the front of the tray. 6. **Tray 2 only**: If the paper stack in the tray is not being lifted, verify that the lift motor connector is firmly seated in connector J73 on the DC controller PCA. 7. If the error persists, replace the lift motor.
62 NO SYSTEM **To continue turn off then on**	This message indicates that no system was found. The product software system is corrupt.	• Turn the product off and then on. • If the message persists, contact an HP-authorized service or support provider.

Table 7-8 Control-panel messages (continued)

Control panel message	Description	Recommended action
65.XY.ZZ OUTPUT DEVICE DISCONNECTED **For help press ?**	An output device was removed while the product was turned on.	To continue printing, you must do one of the following: ● Reconnect the output device. ● Turn the product off and then on. If the message persists, replace the output device.

66.XY.ZZ INPUT DEVICE ERROR
 	
66.XY.ZZ INPUT DEVICE FAILURE
 	
66.XY.ZZ OUTPUT DEVICE ERROR
 	
66.XY.ZZ OUTPUT DEVICE FAILURE
	The product has detected a problem with an input or output device, depending on the specific error message.	1. Turn the product off and then on.
		
		2. Reconnect the device.
		
		3. If possible, print the configuration page to determine if the product is recognizing the device.
		
		4. Verify that the following DC controller connections are seated firmly in the connectors.
		
		   ○ J83: envelope feeder
		
		   ○ J88: 500-sheet tray feeder or 1,500-sheet tray feeder
		
		   ○ J90: stacker, stapler-stacker, or mailbox
		
		   ○ J84: duplexer
		
		5. If the message persists, replace the input or output device.

66.XY.ZZ SERVICE ERROR **For help press ?** alternates with **66.XY.ZZ SERVICE ERROR** **Check cables and turn off then on**	The external paper-handling controller has detected a problem.	Check the cables, and then turn the product off and then on.
68.X PERMANENT STORAGE FULL **For help press ?** alternates with **68.X PERMANENT STORAGE FULL** **To continue press OK**	The permanent storage is full. Some settings might have been reset to the factory defaults.	● If the error does not clear, turn the product off and then on. ● Print a configuration page and check the product settings to determine which values have changed.
68.X PERMANENT STORAGE WRITE FAIL **To continue press OK**	The storage device is failing to write. Printing can continue, but there might be some unexpected behaviors because an error occurred in permanent storage.	Press OK to continue. If the error does not clear, turn the product off then on. If the message persists, contact an HP-authorized service or support provider.
68.X STORAGE ERROR SETTINGS CHANGED **For help press ?**	An error occurred in the product permanent storage and one or more product settings has been reset to its factory default.	Press OK to resume printing.

Table 7-8 Control-panel messages (continued)

Control panel message	Description	Recommended action
alternates with **68.X STORAGE ERROR SETTINGS CHANGED** **To continue press OK**		Print a configuration page and check the product settings to determine which values have changed. If the error does not clear, turn the product off and then on. If the message persists, contact an HP-authorized service or support provider.
69.X ERROR **For help press ?** alternates with **69.X ERROR** **To continue press OK**	A printing error occurred.	● Turn the product off and then on. ● If the message persists, contact an HP-authorized service or support provider.
79.XXXX ERROR **To continue turn off then on**	The product detected a critical hardware error.	● Press the stop button ⊗ to clear the print job from the product memory. Turn the product off and then on. ● Try printing a job from a different program. If the job prints, go back to the first program and try printing a different file. If the message appears only with a certain program or print job, contact the software vendor for assistance. If the message persists with different programs and print jobs, try these steps. ● Turn the product off. ● Disconnect all cables to the product that connect it to the network or computer. ● Remove all the memory DIMMs or third-party DIMMs from the product. Then reinstall the memory DIMM. ● Remove the EIO device from the product. ● Turn the product on. If the error no longer exists, follow these steps. ● Install the DIMM and EIO device one at a time, making sure to turn the product off and then on as you install each device. ● Replace the DIMM or EIO device if you determine that it causes the error. ● Reconnect all cables that connect the product to the network or computer.

Table 7-8 Control-panel messages (continued)

Control panel message	Description	Recommended action
8X.YYYY EIO ERROR	The EIO accessory card in slot [X] has encountered a critical error.	● Turn the product off and then on. ● Turn the product off, reseat the EIO accessory in slot [X], and then turn the product on. ● Turn the product off, remove the EIO accessory from slot [X], install it in a different EIO slot, and then turn the product on. ● Replace the EIO accessory in slot [X].
8X.YYYY EMBEDDED JETDIRECT ERROR	The embedded HP Jetdirect print server has encountered a critical error.	● Turn the product off and then on. ● If the message persists, contact an HP-authorized service or support provider.
Access denied **MENUS LOCKED**	The product control-panel function you are trying to use has been locked to prevent unauthorized access.	See your network administrator.
ACTION NOT CURRENTLY AVAILABLE FOR TRAY X **Tray size cannot be ANY SIZE/ANY CUSTOM**	Duplexing is not available when the tray size is set to **ANY SIZE** or **ANY CUSTOM**.	Change tray settings. 1. Press Menu 📑. 2. Press the down arrow ▼ to highlight **PAPER HANDLING**, and then press OK. 3. Press the down arrow ▼ to highlight the specified tray, and then press OK. 4. Change the selected tray's size and type settings.
BAD DUPLEXER CONNECTION **For help press ?**	The optional duplexer is not properly connected to the product.	● Make sure that you are using the right-angle power cord that came with the product. ● Try removing and reinstalling the optional duplexer. Then turn the product off and then on.
BAD ENVELOPE FEEDER CONNECTION	The optional envelope feeder is not connected properly to the product.	Try removing and reinstalling the optional envelope feeder. Then, turn the product off and then on.
BAD OPTIONAL TRAY CONNECTION	An optional tray is not connected correctly.	Remove the product from the tray, and reinstall it. Then, turn the product off and then on.
Canceling...	The product is canceling a job. The message continues while the job is stopped, the paper path is cleared, and any remaining incoming data on the active data channel is received and discarded.	No action is necessary.
CANNOT DUPLEX CLOSE REAR DOOR **For help press ?**	The rear door must be closed to duplex.	Close the rear door.
Checking paper path	The product is checking for possible jams or paper that was not cleared from the product.	No action is necessary.

Table 7-8 Control-panel messages (continued)

Control panel message	Description	Recommended action
Checking printer	The product is checking for possible jams or paper that was not cleared from the product.	No action is necessary.
CHOSEN PERSONALITY NOT AVAILABLE **To continue press OK**	The product received a request for a personality (product language) that does not exist. The print job is canceled.	Print the job using a printer driver for a different product language, or add the requested language to the product (if available). To see a list of available personalities, print a configuration page.
CLEANING DISK <X> % COMPLETE **Do not power off** alternates with **CLEANING DISK <X> % COMPLETE** **For help press ?**	The storage device is being sanitized or cleaned. Do not turn off. Product functions are unavailable. The product automatically turns off then on when finished.	No action is necessary.
CLEANING PAGE ERROR **Open rear bin**	You have attempted to create or process a cleaning page when a duplexer is present and the rear door is closed.	Open the rear output bin to begin creating or processing the cleaning page.
Cleaning...	The product is performing an automatic cleaning.	Not action is necessary.
Clearing event log	The product is clearing the event log.	No action is necessary.
Clearing paper path	The product jammed or was turned on and paper was detected in a wrong location. The product is automatically attempting to eject the pages.	Wait for the product to finish trying to clear the pages. If it cannot, a jam message will appear on the control panel display.
CLOSE TOP COVER	The top cover open switch is signaling that the cover is open.	1. Inspect the top cover open switch (SW101) to determine if the switch is correctly installed. 2. Verify that the connection to connector J78 on the DC controller PCA is firmly seated. 3. From the **DIAGNOSTICS** menu, run the manual sensor test and see if the component "L" status changes when the top cover is opened and closed. 4. If the status does not change, replace the switch (SW101).
CODE CRC ERROR SEND FULL RFU ON <X> PORT	An error occurred during a firmware upgrade.	Contact an HP-authorized service or support provider.
CORRUPT FIRMWARE IN EXTERNAL ACCESSORY **For help press ?**	The product detected corrupt firmware in an input or output accessory.	Printing can continue, but jams might occur. To view instructions for upgrading the firmware and to download the firmware upgrade, see Upgrade the firmware on page 96.
DATA RECEIVED **To print last page press OK** alternates with	The product is waiting for the command to print (such as waiting for a form feed, or when the print job is paused).	Press OK to continue.

Table 7-8 Control-panel messages (continued)

Control panel message	Description	Recommended action
<current status message>		
DATE/TIME=YYYY/MMMM/DD HH:MM **Press OK to continue** **To skip press ⊗.**	The current date and time.	Set the date and time or press the stop button ⊗ to skip.
Deleting...	Product is deleting a stored job.	No action is necessary.
DUPLEXER ERROR REMOVE DUPLEXER **Install duplexer with power off**	The optional duplexer has an error.	Turn off the product and reattach the optional duplexer. (Any print jobs at the product might be lost.)
EIO <X> DISK NOT FUNCTIONAL **For help press ?**	The EIO disk in slot X is not working correctly.	● Turn the product off. ● Make sure the EIO disk is inserted correctly and securely fastened. ● If the control panel message continues to appear, the optional hard disk needs to be replaced.
EIO <X> DISK SPINNING UP alternates with **<Current status message>**	The disk accessory in EIO slot [X] is initializing.	No action is necessary.
EIO DEVICE FAILURE **To clear press OK**	The specified device has failed.	Press OK to continue.
EIO FILE OPERATION FAILED **To clear press OK**	A command attempted an illogical operation.	Press OK to continue.
EIO FILE SYSTEM IS FULL **To clear press OK**	The specified file system is full and cannot be written to.	Press OK to continue.
EIO IS WRITE PROTECTED **To clear press OK**	The file system cannot be written to.	Press OK to continue.
Envelope Feeder [Type] [Size] **To change size or type press OK** alternates with **TRAY <XX> [TYPE] [SIZE]** **For help press ?**	Current size and type of tray.	To accept the size and type, press the back arrow ↰. To change settings, press OK.
ENVELOPE FEEDER EMPTY alternates with **<Current status message>**	The envelope feeder is empty.	Load envelopes in the envelope feeder.
Event log empty	You are attempting to view an empty event log by selecting **SHOW EVENT LOG** from the control panel.	No action is necessary.
Incorrect	The wrong PIN number was entered.	Reenter PIN number.

Table 7-8 Control-panel messages (continued)

Control panel message	Description	Recommended action
INFLATE FAILURE SEND FULL RFU ON <X> PORT	An error occurred during a firmware upgrade.	Contact an HP-authorized service or support provider.
Initializing	Individual tasks are being initialized.	No action is necessary.
INSERT OR CLOSE TRAY <XX> **For help press ?**	The specified tray is open or missing.	Insert or close the tray for printing to continue.
INSTALL BLACK CARTRIDGE **For help press ?**	The print cartridge is missing and must be reinstalled for printing to continue.	1. Open the top cover. 2. Install the cartridge. 3. Close the top cover.
INSUFFICIENT MEMORY TO LOAD FONTS/DATA **For help press ?** alternates with **<DEVICE>** **To continue press OK**	The product received more data than can fit in its available memory. You might have tried to transfer too many macros, soft fonts, or complex graphics.	Press OK to print the transferred data (some data might be lost). To solve this problem, simplify the print job or install additional memory.
INTERNAL DISK CANNOT BE WRITTEN TO **To clear press OK**	The device cannot be written to.	Press OK to continue.
INTERNAL DISK DEVICE FAILURE **To clear press OK**	The specified device has failed.	Press OK to continue.
INTERNAL DISK FILE OPERATION FAILED **To clear press OK**	A command attempted an illogical operation.	Press OK to continue.
INTERNAL DISK FILE SYSTEM IS FULL **To clear press OK**	The specified file system is full and cannot be written to.	Press OK to continue.
INTERNAL DISK NOT FUNCTIONAL	The internal disk is not working correctly.	Contact an HP-authorized service or support provider.
INTERNAL DISK SPINNING UP alternates with **<Current status message>**	The internal disk is spinning up its platter. Jobs that require disk access must wait.	No action is necessary.
LOAD ENVELOPE FEEDER [TYPE] [SIZE] **For help press ?**	The envelope feeder is empty.	Load the envelope feeder. If paper is already in the envelope feeder, press OK to print. To use another tray, remove paper from the envelope feeder, and then press OK to continue.
LOAD ENVELOPE FEEDER [TYPE] [SIZE] **To use another tray press OK**	The envelope feeder is empty.	Load the envelope feeder. If paper is already in the envelope feeder, press OK to print.

Table 7-8 Control-panel messages (continued)

Control panel message	Description	Recommended action
alternates with **LOAD ENVELOPE FEEDER [TYPE] [SIZE]** **For help press ?**		To use another tray, remove paper from the envelope feeder, and then press OK to print.
LOAD TRAY 1 [TYPE] [SIZE] **To continue press OK** alternates with **LOAD TRAY 1 [TYPE] [SIZE]** **For help press ?**	Tray 1 is empty.	Load Tray 1 with the requested paper. If the paper is already in the Tray 1, press the help button ?, and then press OK to print. To use another tray, remove paper from Tray 1, and then press OK to continue.
LOAD TRAY 1 [TYPE] [SIZE] **To use another tray press OK** alternates with **LOAD TRAY 1 [TYPE] [SIZE]** **For help press ?**	Tray 1 is empty and other trays are available.	Press OK to use another tray. To use Tray 1, load it with the requested paper. If the paper is already in the Tray 1, press the help button ?, and then press OK to print. To use another tray, remove paper from Tray 1, and then press OK to use another tray.
LOAD TRAY <XX> [TYPE] [SIZE] **For help press ?**	The indicated tray is configured for a specific type and size of paper needed by a print job, but the tray is empty. All other trays are also empty.	Load the requested paper in the tray that is indicated.
LOAD TRAY <XX> [TYPE] [SIZE] **To use another tray press OK** alternates with **LOAD TRAY <XX> [TYPE] [SIZE]** **For help press ?**	A job is sent that requires a specific type and size that is not available in the tray that is indicated.	Press OK to use a type and size that are available in another tray.
LOWER THE <BINNAME> **For help press ?**	The optional bin is in the up position.	Lower the bin.
MANUALLY FEED [TYPE] [SIZE]	The product is waiting for paper to be loaded in Tray 1 for manual feed.	If paper is already in the Tray 1, press the help button ?, and then press OK to print. To use another tray, remove paper from Tray 1, and then press OK.
MANUALLY FEED [TYPE] [SIZE] **To continue press OK** alternates with **MANUALLY FEED [TYPE] [SIZE]** **For help press ?**	The product is waiting for paper to be loaded in Tray 1 for manual feed.	Load the requested paper into Tray 1 and press OK.
MANUALLY FEED [TYPE] [SIZE] **To use another tray press OK**	The product is waiting for paper to be loaded in Tray 1 for manual feed.	Press OK to use a type and size that are available in another tray.

Table 7-8 Control-panel messages (continued)

Control panel message	Description	Recommended action
alternates with **MANUALLY FEED [TYPE] [SIZE]** **For help press ?**		
MANUALLY FEED OUTPUT STACK **Then press OK to print second sides**	The first side of a manual duplex job has been printed and the product is waiting for you to insert the output stack to complete the second side.	● Load the output stack into Tray 1, maintaining the same orientation with printed side down. ● To continue printing, press OK.
No job to cancel	The stop button ⊗ was pressed, but there is no active job or buffered data to cancel. The message is displayed for approximately 2 seconds before the product returns to the ready state.	No action is necessary.
NON HP SUPPLY INSTALLED **Economode disabled**	The product has detected that the print cartridge is not a genuine HP supply.	If you believe you purchased a genuine HP supply, call the HP fraud hotline Any product repair required as a result of using non-HP supplies or unauthorized supplies is not covered under the product warranty. To continue printing, press OK.
NON HP SUPPLY INSTALLED alternates with **For help press ?**	The product has detected that the print cartridge is not a genuine HP supply.	If you believe you purchased a genuine HP supply, call the HP fraud hotline. Any product repair required as a result of using non-HP supplies or unauthorized supplies is not covered under the product warranty. To continue printing, press OK.
Output bin FULL **Remove all paper from bin**	The output bin is full, and printing cannot continue.	Empty the bin so that the current print job can finish.
Output bin FULL **Remove all paper from bin** alternates with **<Current status message>**	The output bin is full, but it is not needed for the current print job.	Empty the bin before sending a job to that bin.
PAPER WRAPPED AROUND FUSER **For help press ?**	A jam has occurred because paper has wrapped around the fuser.	CAUTION: The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it. 1. Turn the product off. 2. Remove the rear output bin. 3. Press the blue tabs to remove the fuser. 4. Remove the jammed paper.

Table 7-8 Control-panel messages (continued)

Control panel message	Description	Recommended action
		5. Reinstall the fuser and the rear output bin.
		6. Turn the product on.
PERFORM PRINTER MAINTENANCE **For help press ?** alternates with **<Current status message>**	The product is due for regular maintenance.	Contact your service representative to schedule maintenance. Continue printing until maintenance is performed.
Performing upgrade	Firmware is being upgraded.	No action is necessary.
Please wait	The product is going offline.	No action is necessary.
Printing...ENGINE TEST	The product is printing an engine test page.	No action is necessary.
RAM DISK DEVICE FAILURE **To clear press OK**	The specified device has failed.	Press OK to continue.
RAM DISK FILE SYSTEM IS FULL **To clear press OK**	The specified file system is full and cannot be written to.	Press OK to continue.
RAM DISK IS WRITE PROTECTED **To clear press OK**	The device cannot be written to.	Press OK to continue.
RAM DISK OPERATION FAILED **To clear press OK**	A command attempted an illogical operation.	Press OK to continue.
REINSERT DUPLEXER	The duplexer has been removed.	Reinsert the duplexer.
REPLACE BLACK CARTRIDGE **For help press ?**	The print cartridge has reached the end of life.	Replace the cartridge.
REPLACE BLACK CARTRIDGE **For help press ?** alternates with **REPLACE BLACK CARTRIDGE** **To continue press OK**	The cartridge has reached the low threshold.	Order a new cartridge. To continue printing press OK.
REPLACE STAPLE CARTRIDGE **To continue press OK**	The stapler is out of staples.	Press OK to continue without stapling.
REPLACE STAPLES **To continue press OK**	The stapler is out of staples.	Press OK to continue without stapling.
Request accepted please wait	The request to print an internal page is waiting to print.	Wait for the current job to finishing printing.
Restoring factory settings	Factory settings are being restored.	No action is necessary.
Restoring...	The specific settings are being restored.	No action is necessary.

Table 7-8 **Control-panel messages (continued)**

Control panel message	Description	Recommended action
RFU LOAD ERROR SEND FULL RFU ON <X> PORT	An error occurred during a firmware upgrade.	Contact an HP-authorized service or support provider.
ROM DISK DEVICE FAILURE **To clear press OK**	The specified device has failed.	Press OK to continue.
ROM DISK FILE OPERATION FAILED **To clear press OK**	A command attempted an illogical operation.	Press OK to continue.
ROM DISK FILE SYSTEM IS FULL **To clear press OK**	The specified file system is full and cannot be written to.	Press OK to continue.
ROM DISK IS WRITE PROTECTED **To clear press OK**	The device cannot be written to.	Press OK to continue.
SANITIZING DISK <X>% COMPLETE **Do not power off** alternates with **CLEANING DISK <X>% COMPLETE** **For help press ?**	A hard disk is being sanitized.	No action is necessary.
SIZE MISMATCH IN TRAY <XX> **For help press ?** alternates with **Current status message**	The tray indicated is loaded with a different size of paper than the size configured for the tray.	Load the tray with the size configured for the tray. Make sure that the guides are positioned correctly in the specified tray. Printing can continue from other trays.
Sleep mode on	The product is in Sleep mode.	No action is necessary.
STANDARD TOP BIN FULL	The output bin full sensor is signaling that the bin is full.	1. The sensor flag is connected to the top cover assembly. Verify that the top cover is correctly installed. Verify that the flag is not hindered and moves freely. 2. From the **DIAGNOSTICS** menu, run the manual sensor test. Toggle the tray full flag and see if reference "K" changes. If the flag moves freely, but the flag status does not change during testing, verify that connector J76 on the DC controller PCA is firmly seated. 3. If the error persists, replace the sensor (PS104).
STAPLER LOW ON STAPLES **For help press ?** alternates with **READY** **To enter menus, press OK**	Fewer than 70 staples remain in the optional stapler/stacker cartridge. Printing continues until the cartridge runs out of staples.	Replace the staple cartridge. For information about replacing the staple cartridge, see Load staples on page 82.

Table 7-8 Control-panel messages (continued)

Control panel message	Description	Recommended action
SUPPORTED HOST USB DEVICE DETECTED BUT INACCESSIBLE **For help press ?**	A USB device has been detected. The product does not support plug and play operation.	Turn the product off and then on, but do not unplug the USB device.
TOO MANY PAGES IN JOB TO FINISH **For help press ?**	The finishing device received too many pages to perform finishing. Pages will eject without finishing.	Reduce the number of pages.
TOO MANY PAGES IN JOB TO STAPLE **For help press ?**	The maximum number of sheets the stapler can staple is 15. The print job finishes printing but is not stapled.	For print jobs that have more than 15 pages, staple them manually.
TOO MANY PAGES TO BIND **For help press ?**	Too many pages were sent with the job. Binding cannot be completed.	Reduce the number of pages.
TOO MANY TRAYS INSTALLED	You have installed more optional trays than the product supports. The product can accept up to four optional 500-sheet trays, or it can accept one optional 1,500-sheet tray and up to three optional 500-sheet trays, for a total of up to four optional trays.	Remove one of the optional trays.
TRAY <XX> [TYPE] [SIZE] **To change size or type press OK** alternates with **TRAY <XX> [TYPE] [SIZE]** **To accept settings press ⤺**	This message states the current type and size configuration of the paper tray, and allows you to change the configuration.	To change the paper size or type press OK while the message is present. To clear the message, press the back arrow ⤺ while the message is present. ● Set size and type to **ANY** if the tray is used frequently for different sizes or types. ● Set size and type to a specific setting if printing with only one type of paper.
TRAY <XX> OPEN **For help press ?** alternates with **<Current status message>**	The tray cannot feed paper to the product because tray [X] is open and must be closed for printing to continue.	Check the trays and close any that are open.
Unable to mopy job alternates with **Current status message**	Memory or file system failures would not allow a mopy job to occur. Only one copy will be produced.	Correct the error and then try again to store the job.
Unable to store job alternates with **<Current status message>**	The print job named cannot be stored due to a memory, disk, or configuration problem.	Correct the error and then try again to store the job.
UNSUPPORTED HOST USB DEVICE DETECTED	An unsupported USB device has been inserted into a USB port.	The product cannot use the USB device. Remove the device.
USB HUBS NOT FULLY SUPPORTED **For help press ?**	The product does not meet the power requirement of the USB hub.	Some operations may not work properly.

Table 7-8 **Control-panel messages (continued)**

Control panel message	Description	Recommended action
USB STORAGE DEVICE FAILURE **To clear press OK**	The specified device has failed.	Press OK to continue.
USB STORAGE FILE OPERATION FAILED **To clear press OK**	A command attempted an illogical operation.	Press OK to continue.
USB STORAGE FILE SYSTEM IS FULL **To clear press OK**	The specified file system is full and cannot be written to.	Press OK to continue.
USB STORAGE IS WRITE PROTECTED **To clear press OK**	The device cannot be written to.	Press OK to continue.
USE TRAY <XX> [TYPE] [SIZE] **To change press ▲/▼.** **To use press OK**	The product did not detect the type and size of paper requested. The message shows the most likely type and size available and the tray in which they are available.	Press OK to accept the values in the message, or press the up or down arrow ▲/▼ to scroll through the available choices.
Wait for printer to reinitialize	This message can appear for a variety of reasons: ● The RAM DISK settings changed before the product restarted. ● The product is restarting after changing external device modes. ● You have exited the **DIAGNOSTICS** menu. ● A new formatter has been installed with an old product, or a new product has been installed with an old formatter.	No action is necessary.
WAITING FOR TRAY <XX> TO LIFT alternates with **<Current status message>**	The specified tray is in the process of lifting the paper to the top of the tray for proper feeding.	No action is necessary.
WARMING UP alternates with **<Current status message>**	The product is coming out of sleep mode. Printing will continue as soon as it is done.	No action is necessary.