

Repair Manual





HP LaserJet Pro 400 M401 Printer Series

Repair Manual

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Conventions used in this guide

- TIP: Tips provide helpful hints or shortcuts.

- Notes provide important information to explain a concept or to complete a task.
- **CAUTION:** Cautions indicate procedures that you should follow to avoid losing data or damaging the product.
- **WARNING!** Warnings alert you to specific procedures that you should follow to avoid personal injury, catastrophic loss of data, or extensive damage to the product.

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1 Removal and replacement

- <u>Removal and replacement strategy</u>
- <u>Service approach</u>
- <u>Removal and replacement procedures</u>

Removal and replacement strategy

	WARNING! Turn the product off, wait 5 seconds, and then remove the power cord before attempting to service the product. If this warning is not followed, severe injury can result, in addition to damage to the product. The power must be on for certain functional checks during problem solving. However, the power supply should be disconnected during parts removal.
	Never operate or service the product with the protective cover removed from the laser scanner assembly. The reflected beam, although invisible, can damage your eyes.
	The sheet-metal parts can have sharp edges. Be careful when handling sheet-metal parts.
\wedge	CAUTION: Do not bend or fold the flat flexible cables (FFCs) during removal or installation. Also, do not straighten pre-folds in the FFCs. You <i>must</i> Make sure that all FFCs are fully seated in their connectors. Failure to fully seat an FFC into a connector can cause a short circuit in a PCA.
	NOTE: To install a self-tapping screw, first turn it counterclockwise to align it with the existing thread pattern, and then carefully turn it clockwise to tighten. Do not overtighten. If a self-tapping screw-hole becomes stripped, repair the screw-hole or replace the affected assembly.

Electrostatic discharge

CAUTION: Some parts are sensitive to electrostatic discharge (ESD). Look for the ESD reminder

when removing product parts. Always perform service work at an ESD-protected workstation or mat. If an ESD workstation or mat is not available, ground yourself by touching the sheet-metal chassis *before* touching an ESD-sensitive part.

Protect the ESD-sensitive parts by placing them in ESD pouches when they are out of the product.

Required tools

- #2 Phillips screwdriver with a magnetic tip and a 152 mm (6 in) shaft length
- Small flatblade screwdriver
- Needle-nose pliers
- ESD mat (if one is available) or ESD strap
- Penlight (optional)

CAUTION: Always use a Phillips screwdriver (callout 1). Do not use a Pozidriv® screwdriver (callout 2) or any motorized screwdriver. These can damage screws or screw threads.

Figure 1-1 Phillips and Pozidriv screwdriver comparison



CAUTION: Avoid pulling directly on wires to disconnect wire-harness connectors. Pull on the plastic body of a connector to avoid damaging the connector wires.

Types of screws

WARNING! Make sure that components are replaced with the correct screw type. Using the incorrect screw (for example, substituting a long screw for the correct shorter screw) can cause damage to the product or interfere with product operation. Do not intermix screws that are removed from one component with the screws that are removed from another component.

For a complete list of screw types and part numbers, see the Parts chapter.

Service approach

Before performing service

- Remove all paper from the product.
- Turn off the power using the power switch.
- Unplug the power cable and interface cable or cables.
- Place the product on an ESD workstation or mat, or use an ESD strap (if one is available). If an ESD workstation, mat, or strap is not available, ground yourself by touching the sheet-metal chassis *before* touching an ESD-sensitive part.

- Remove the toner cartridge.
- Remove the Tray 2 cassette.

After performing service

- Plug in the power cable.
- Reinstall the toner cartridge.
- Reinstall the Tray 2 cassette.
- Load paper in the product.

Post-service test

Perform the following test to verify that the repair or replacement was successful.

Print-quality test

- 1. Verify that you have completed the necessary reassembly steps.
- 2. Make sure that the tray contains clean, unmarked paper.
- 3. Attach the power cord and interface cable or interface cables, and then turn on the product.
- 4. Verify that the expected startup sounds occur.
- 5. Print a configuration page, and then verify that the expected printing sounds occur.
- 6. Print a demo page, and then verify that the print quality is as expected.
- 7. Send a print job from the host computer, and then verify that the output meets expectations.
- 8. Clean the outside of the product with a damp cloth.

Parts removal order

Use the following diagram to determine which parts must be removed before removing other parts.

Figure 1-2 Parts-removal order

Component	Remove	Remove	Remove	Remove	Remove	Remove
Toner cartridge						
Tray 2 cassette						
Tray 1 pickup roller						
Left cover	Tray 2 cassette					
Right cover	Tray 2 cassette					
Tray 1 separation pad	Left cover					
Tray 1 pickup gear assembly	Left cover					
Tray 2/3 pickup roller	Tray 2/3 cassette					
Tray 2/3 separation roller	Tray 2/3 cassette					
Transfer roller	Toner cartridge					
Rear cover and feed assembly	Left cover	Right cover				
Top cover	Left cover	Right cover				
LCD control-panel	Left cover	Right cover	Top cover			
Touchscreen control-panel	Left cover	Right cover	Top cover			
Front-door and front-cover assembly	Left cover	Right cover				
Laser scanner assembly	Left cover	Right cover	Top cover			
Registration roller assembly	Left cover	Right cover	Top cover	Rear cover and feed assembly		
Fuser assembly and paper feed guide	Left cover	Right cover	Rear cover and feed assembly			
Face down drive or duplex drive assembly	Left cover	Right cover	Top cover			
Tray 1 solenoid	Left cover					
Tray 2 solenoid	Right cover					
Duplex solenoid	Left cover	Right cover	Top cover	Rear cover and feed assembly		
Main motor	Left cover	Right cover	Top cover	Rear cover and feed assembly	Fuser	ECU
Fan	Left cover	Right cover	Top cover			
Engine controller unit (ECU) PCA	Left cover	Right cover	Top cover	Rear cover and feed assembly		
Formatter PCA	Left cover	Wireless PCA (wireless models)				
USB PCA (touchscreen CP model)	Left cover					
Wireless PCA	Left cover					
Power switch PCA	Left cover	Right cover	Front cover assembly			
Connecting PCA	Right cover					
Optional paper feeder driver PCA	Tray 3 right cover					
Optional paper feeder paper sensor PCA	Tray 3 right cover					

Removal and replacement procedures

Rollers

Multipurpose (MP) tray pickup roller

- 1. Open the toner cartridge door, and then remove the toner cartridge.
- 2. Pull back and hold the pickup roller cover (callout 1), press the tabs (callout 2) on both ends of the pickup roller away from the roller which should cause the roller to move up and then remove the roller.

Figure 1-3 Remove the MP tray pickup roller

Multipurpose (MP) tray separation pad

To remove the separation pad, you must first remove the pickup roller assembly.

- **1.** Remove the following components:
 - Tray 2 cassette
 - Left cover. See <u>Left cover on page 10</u>.
- 2. Open the toner cartridge door, and then remove the toner cartridge.

- 3. On the left side of the product, release the innermost tab (callout 1) at the center of the gear, and then remove the gear (callout 2).
 - **NOTE:** The gear is composed of two pieces. Releasing the outer tab does not remove the entire gear assembly and exposes an internal spring in the gear.



Figure 1-4 Remove the MP tray separation pad (1 of 5)

- Reinstallation tip Press and hold back the gear arm (callout 3) when reinstalling the pickup gear.
- 4. In the toner cartridge cavity, pull back the pickup roller cover, and then use a small flat-blade screwdriver to release the tab (callout 1) on the pickup roller shaft.



Figure 1-5 Remove the MP tray separation pad (2 of 5)

5. Move the pickup roller shaft to the left to free the right end of the shaft from the holder, and then remove the pickup roller shaft assembly to expose the separation pad.



Figure 1-6 Remove the MP tray separation pad (3 of 5)

Reinstallation tip The spring at the right end of the shaft is not captive and might fall off during this process. Make sure that the spring is positioned correctly when reinstalling, as shown in the following figure.

Figure 1-7 Remove the MP tray separation pad (4 of 5)



6. Pull up on the top edge of the separation pad to release it from the product.

Figure 1-8 Remove the MP tray separation pad (5 of 5)



Reinstallation tip When reinstalling the pickup roller shaft assembly, make sure that the flat part of the pickup roller is directly over the separation pad.

Tray 2 and optional Tray 3 pickup roller

1. Remove the tray cassette from the product.

2. Locate the pickup roller at the top of the cassette cavity. On the left roller holder, release the tab (callout 1), and then turn the holder away from you.



Figure 1-9 Remove the Tray 2 or Tray 3 pickup roller (1 of 2)

3. Push the pickup roller to the left to release the right side roller, and then pull the roller out of the product.



Figure 1-10 Remove the Tray 2 or Tray 3 pickup roller (2 of 2)

4.

Tray 2 and optional Tray 3 separation pad

1. Remove the tray cassette from the product.

2. Locate the separation pad at the front of the cassette. On the separation pad, remove two screws (callout 1), and then remove the pad from the tray cassette.



Figure 1-11 Remove the Tray 2 or Tray 3 separation pad

3.

Covers and control panel

Left cover

NOTE: No tools are necessary to remove this cover. However, a small flat-blade screwdriver might be helpful in releasing some of the tabs that hold the cover to the product chassis.

- 1. Remove the Tray 2 cassette.
- 2. Open the toner cartridge door and the rear jam access door.

3. Grasp the front edge of the cover, and then pull the cover toward the front to release the four tabs (callout 1).





4. With the top and front edges loose, carefully slide the cover toward the back of the product, and then remove it.

Right cover

NOTE: No tools are necessary to remove this cover. However, a small flat-blade screwdriver might be helpful in releasing some of the tabs that hold the cover to the product chassis.

- **1.** Remove the Tray 2 cassette.
- 2. Open the toner cartridge door and the rear jam access door.
- 3. Grasp the rear edge of the cover, and then pull that edge toward the rear to release the four tabs (callout 1).

Figure 1-13 Remove the right cover



4. With the back and top edges loose, carefully slide the cover toward the front of the product, and then remove it.

Top cover with LCD control-panel module

- **1.** Remove the following components:
 - Tray 2 cassette
 - Right cover. See <u>Right cover on page 12</u>.
 - Left cover. See <u>Left cover on page 10</u>.
- 2. Open the toner cartridge door and the rear jam access door.
- 3. On the left side of the product, disconnect one flat cable (callout 1) from the formatter.

Figure 1-14 Remove the top-cover assembly and LCD control-panel module (1 of 3)



4. At the rear and on the right side of the product, remove three screws (callout 1).

Figure 1-15 Remove the top-cover assembly and LCD control-panel module (2 of 3)



5. On the top of the top-cover assembly, remove two screws (callout 1).

Figure 1-16 Remove the top-cover assembly and LCD control-panel module (3 of 3)



6. Lift the top-cover assembly off of the product to remove it.

NOTE: You do not need to remove the control panel from the top cover assembly, unless you are replacing the control panel.

LCD control panel

- 1. Remove the following components:
 - Tray 2 cassette
 - Right cover. See <u>Right cover on page 12</u>.
 - Left cover. See <u>Left cover on page 10</u>.
 - Top cover assembly. See <u>Top cover with LCD control-panel module on page 13</u>.

2. On the underside of the top cover assembly, disconnect the flat cable (callout 1), and then release the two tabs (callout 2) at the back of the control panel assembly. You might need to use a small, flatblade screwdriver to release the tabs.



Figure 1-17 Remove the LCD control panel (1 of 2)

3. Pull the back of the control panel assembly away from the top cover assembly.

Figure 1-18 Remove the LCD control panel (2 of 2)



Top cover with touchscreen control-panel module

- **1.** Remove the following components:
 - Tray 2 cassette
 - Right cover. See <u>Right cover on page 12</u>.
 - Left cover. See <u>Left cover on page 10</u>.
- 2. Open the toner cartridge door and the rear jam access door.
- 3. On the left side of the product, disconnect one flat cable (callout 1) from the formatter, and then remove two screws (callout 2).

Figure 1-19 Remove the top-cover assembly (1 of 3)



4. On the right side of the product, remove two screws (callout 1).

Figure 1-20 Remove the top-cover assembly (2 of 3)



- 5. On the top-cover assembly, remove three screws (callout 1).
- **NOTE:** The screw behind the control panel has a protective cover over it. Remove the cover to remove the screw, but keep the cover in order to reinstall it after installing the control panel.

Figure 1-21 Remove the top-cover assembly (3 of 3)



6. Lift the top-cover assembly off of the product to remove it.

Touchscreen control panel

- **1.** Remove the following components:
 - Tray 2 cassette
 - Right cover. See <u>Right cover on page 12</u>.
 - Left cover. See <u>Left cover on page 10</u>.
 - Top cover assembly. See Top cover with touchscreen control-panel module on page 16.
- 2. On the underside of the top cover assembly, remove six screws (callout 1) and the protective plate (callout 2).



Figure 1-22 Remove the touchscreen control panel (1 of 3)

- **3.** Disconnect the flat cable (callout 1), and then remove the following parts:
 - Holder (callout 2)
 - Pin (callout 3)

- Spring (callout 4)
- Sheet (callout 5)



Figure 1-23 Remove the touchscreen control panel (2 of 3)

4. Pull the back of the control panel assembly away from the top cover assembly.



Figure 1-24 Remove the touchscreen control panel (3 of 3)

Rear cover, rear door, and feed assembly

CAUTION: The fuser can be hot while the product is in use. Wait for the fuser to cool before working in that area.

- 1. Remove the following components:
 - Tray 2 cassette
 - Right cover. See <u>Right cover on page 12</u>.
 - Left cover. See <u>Left cover on page 10</u>.
- 2. Open the toner cartridge door and the rear jam access door.
- 3. **Duplex models only**: At the front of the product, in the Tray 2 cassette cavity, pull down on the green duplex-paper-feed-assembly release tab (callout 1), and then lower the assembly (callout 2).

Figure 1-25 Remove the rear cover, rear door, and feed assembly (1 of 3)


4. At the rear of the product, remove five screws (callout 1), release one tab (callout 2) near the bottom corner, and release two tabs (callout 3) from under the top cover assembly.



Figure 1-26 Remove the rear cover, rear door, and feed assembly (2 of 3)

- 5. Carefully separate the rear cover and rear door from the product, and then remove them.
 - **NOTE:** For the duplex models, the duplex-paper-feed assembly is removed with the cover and door
 - Reinstallation tip When you reinstall the rear cover assembly, open the rear door to make sure that the rear cover fits even against the product chassis before you install the mounting screws.

6. Duplex models only: There are two hinge pins (callout 1). Release the shorter left pin first, and then separate the rear cover and rear door assembly (callout 2) from the duplex-paper-feed assembly (callout 3).



Figure 1-27 Remove the rear cover, rear door, and feed assembly (3 of 3)

Cartridge door and front cover assembly

NOTE: The cartridge door assembly includes the cartridge door, Tray 1, and the front cover.

- 1. Remove the following components:
 - Tray 2 cassette
 - Right cover. See <u>Right cover on page 12</u>.
 - Left cover. See <u>Left cover on page 10</u>.
- 2. Open the toner cartridge door and the rear jam access door.
- 3. Disconnect one connector (callout 1), and then release two tabs in the pivot joint (callout 2) to disengage the cartridge-door assembly link arm (callout 3).
 - $\frac{1}{10}$ TIP: The link arm releases the fuser-pressure lever when the cartridge door is opened.

Figure 1-28 Remove the cartridge door assembly and front cover (1 of 4)



4. Remove two screws (callout 1).

Figure 1-29 Remove the cartridge door assembly and front cover (2 of 4)



5. Pull the bottom of the assembly up in order to release two hooked tabs (callout 1), and then pull the assembly away from the product.

Figure 1-30 Remove the cartridge door assembly and front cover (3 of 4)



6. Release two hinge pins (callout 1), and then separate the front cover (callout 2) from the cartridge door assembly (callout 3).



Figure 1-31 Remove the cartridge door assembly and front cover (4 of 4)

Main assemblies

Laser scanner assembly

ESD sensitive component.

CAUTION: Do not bend or fold the flat flexible cables (FFCs) during removal or installation. Also, do not straighten pre-folds in the FFCs. You *must* make sure that all FFCs are fully seated in their connectors. Failure to fully seat an FFC into a connector can cause a short circuit in a PCA.

- 1. Remove the following components:
 - Tray 2 cassette
 - Right cover. See <u>Right cover on page 12</u>.
 - Left cover. See <u>Left cover on page 10</u>.
 - Top cover assembly. See <u>Top cover with touchscreen control-panel module on page 16</u> or <u>Top cover with LCD control-panel module on page 13</u>.
- 2. Open the toner cartridge door and the rear jam access door.
- 3. On the top of the product, remove the antistatic foam pad and disconnect one connector (callout 1), and then disconnect the flat cable (callout 2).



Figure 1-32 Remove the laser scanner assembly (1 of 2)

4. Remove four screws (callout 1), and then remove the laser scanner assembly.



Figure 1-33 Remove the laser scanner assembly (2 of 2)

Registration roller assembly

- **1.** Remove the following components:
 - Tray 2 cassette
 - Right cover. See <u>Right cover on page 12</u>.
 - Left cover. See <u>Left cover on page 10</u>.
 - Rear cover, rear door, and feed assembly. See <u>Rear cover, rear door, and feed assembly</u> on page 20.
 - Top cover assembly. See <u>Top cover with touchscreen control-panel module on page 16</u> or <u>Top cover with LCD control-panel module on page 13</u>.
- 2. Open the toner cartridge door and the rear jam access door.

3. On the left side of the product, release one tab (callout 1), and then remove the gear.

Figure 1-34 Remove the registration assembly (1 of 3)



4. Inside the product chassis, on the formatter side, release two tabs (callout 1), and then lift up on the guide (callout 2) to release it and remove it from the product.



Figure 1-35 Remove the registration assembly (2 of 3)

5. Remove four screws (callout 1), and then remove the gear cover (callout 2).

Figure 1-36 Remove the registration assembly (3 of 3)



6. Slightly raise the right end of the assembly (callout 3), and then slide it to the right and lift it up to release it and remove it from the product.

 $\frac{1}{2}$ Reinstallation tip Insert the left end of the assembly first to reinstall the assembly.

Fuser assembly and paper feed guide

CAUTION: The fuser might be hot. Allow enough time for the fuser to cool after the product power is turned off.

NOTE: The toner cartridge door assembly should be in the closed position when the fuser is removed to make sure that the fuser-drive gear is correctly aligned for reinstallation.

- **1.** Remove the following components:
 - Tray 2 cassette
 - Right cover. See <u>Right cover on page 12</u>.
 - Left cover. See <u>Left cover on page 10</u>.
 - Rear cover, rear door, and feed assembly. See <u>Rear cover, rear door, and feed assembly</u> on page 20.
- 2. Open the rear jam access door

3. On the right side of the product, remove three gears (callout 1).



Figure 1-37 Remove the fuser (1 of 5)

4. Remove two screws (callout 1).

Figure 1-38 Remove the fuser (2 of 5)



5. At the rear of the product, disconnect seven connectors (callout 1), and then pull the cable guide (callout 2) away from the product.



Figure 1-39 Remove the fuser (3 of 5)

6. Remove one screw (callout 1), remove the paper feed guide (callout 2), and unroute the wire at the corner of the engine controller assembly (callout 3).



Figure 1-40 Remove the fuser (4 of 5)

7. Disconnect three connectors (callout 1), remove two screws (callout 2), and then remove the fuser (callout 3).



Figure 1-41 Remove the fuser (5 of 5)

Face down drive or duplex drive assembly

Simplex products have a face-down-drive assembly installed. Duplex products have a duplexing-paperfeed assembly installed.

These components appear identical from the outside, but they have different internal gears and functions. The same procedure is used to remove either component.

- 1. Remove the following components:
 - Tray 2 cassette
 - Right cover. See <u>Right cover on page 12</u>.
 - Left cover. See <u>Left cover on page 10</u>.
 - Top cover assembly. See <u>Top cover with touchscreen control-panel module on page 16</u> or <u>Top cover with LCD control-panel module on page 13</u>.
- 2. Open the toner cartridge door and the rear jam access door.

3. On the right side of the product, remove the grounding spring (callout 1), disconnect five connectors (callout 2), remove two screws (callout 3), and then remove the fan holder (callout 4) and the main fan (callout 5) together.



Figure 1-42 Remove the face-down-drive or duplex drive assembly (1 of 2)

4. Remove three screws (callout 1), and then pull the assembly (callout 2) away from the product.

Figure 1-43 Remove the face-down-drive or duplexing-paper-feed assembly (2 of 2)



CAUTION: Some of the gears and the solenoid arm are not captive. Do not lose the gears or the arm when you remove the assembly.

Solenoids

Tray 1 solenoid

- 1. Remove the following components:
 - Tray 2 cassette
 - Left cover. See <u>Left cover on page 10</u>.
- 2. Open the toner cartridge door and the rear jam access door.
- **3.** On the left side of the product, disconnect one connector (callout 1), and then release the wires from the wire harness (callout 2).



Figure 1-44 Remove the Tray 1 pickup solenoid (1 of 2)

4. Remove one screw (callout 1), and then remove the Tray 1 pickup solenoid.

Figure 1-45 Remove the Tray 1 pickup solenoid (2 of 2)

Duplex solenoid

NOTE: This section applies to duplex models only.

- 1. Remove the following components:
 - Tray 2 cassette
 - Right cover. See <u>Right cover on page 12</u>.
 - Left cover. See <u>Left cover on page 10</u>.
 - Rear cover, rear door, and duplex-paper-feed assembly. See <u>Rear cover, rear door, and feed</u> assembly on page 20.
 - Top cover assembly. See <u>Top cover with touchscreen control-panel module on page 16</u> or <u>Top cover with LCD control-panel module on page 13</u>.
 - Fan. See Fan on page 39.
- 2. Open the toner cartridge door and the rear jam access door.

3. On the right side of the product, disconnect one connector (callout 1) from the connecting PCA, and then remove one screw (callout 2).



Figure 1-46 Remove the duplex solenoid

Motors and fans

Main motor

- 1. Remove the following components:
 - Tray 2 cassette
 - Right cover. See <u>Right cover on page 12</u>.
 - Left cover. See <u>Left cover on page 10</u>.
 - Top cover assembly. See <u>Top cover with touchscreen control-panel module on page 16</u> or <u>Top cover with LCD control-panel module on page 13</u>.
 - Rear cover, rear door, and duplex-paper-feed assembly. See <u>Rear cover, rear door, and feed</u> assembly on page 20.
 - Fuser. See Fuser assembly and paper feed guide on page 29.
 - Engine controller assembly (DC controller). See Engine controller assembly (DC controller) <u>PCA on page 41</u>.
- 2. Open the toner cartridge door and the rear jam access door.
- 3. At the rear of the product, release the cables (callout 1) from the cable guides (callout 2), and then pull out the paper feed assembly (callout 3).

Tigore has kenove me main molor (non4)

Figure 1-47 Remove the main motor (1 of 4)

4. Release the cables (callout 1) from the cable guides (callout 2), remove one screw (callout 3), and then remove the cable guide (callout 4).



Figure 1-48 Remove the main motor (2 of 4)

5. Remove one screw (callout 1), remove the duct (callout 2), and then disconnect one connector (callout 3).



Figure 1-49 Remove the main motor (3 of 4)

6. Remove three black-screws (callout 1) and one silver-screw (callout 2), release two tabs (callout 3), and then remove the main motor (callout 4) and the cable guide (callout 5) together.



Figure 1-50 Remove the main motor (4 of 4)

Reinstallation tip Remember the location from where you removed the silver screw. The silver screw needs to be reinstalled in the same place.

Fan

- **1.** Remove the following components:
 - Tray 2 cassette
 - Right cover. See <u>Right cover on page 12</u>.
 - Left cover. See <u>Left cover on page 10</u>.
 - Top cover assembly. See <u>Top cover with touchscreen control-panel module on page 16</u> or <u>Top cover with LCD control-panel module on page 13</u>.
- 2. Open the toner cartridge door and the rear jam access door.

3. On the right side of the product, remove the grounding spring (callout 1), disconnect one connector (callout 2), release two tabs (callout 3), and then remove the main fan.



Figure 1-51 Remove the fan (1 of 2)

Reinstallation tip When reassembling the main fan to the duct, make sure that the fan cable (callout 1) is positioned as shown in the figure below. Also, make sure that the label (callout 2) on the fan is facing inside.

Figure 1-52 Remove the fan (2 of 2)



Printed circuit-board assemblies (PCAs)

Engine controller assembly (DC controller) PCA



ESD sensitive component.

CAUTION: When removing the engine controller assembly (callout 1) from the rear of the product, the portion (callout 2) on the left side of the assembly might be hot. Allow enough time for the engine controller assembly to cool after the product power is turned off.

Figure 1-53 Allow the engine controller assembly to cool



- **1.** Remove the following components:
 - Tray 2 cassette
 - Right cover. See <u>Right cover on page 12</u>.
 - Left cover. See <u>Left cover on page 10</u>.
 - Rear cover, rear door, and feed assembly. See <u>Rear cover, rear door, and feed assembly</u> on page 20.
 - Top cover assembly. See <u>Top cover with touchscreen control-panel module on page 16</u> or <u>Top cover with LCD control-panel module on page 13</u>.

2. At the rear of the product, disconnect seven connectors (callout 1).



Figure 1-54 Remove the engine controller assembly (1 of 9)

3. Remove one screw (callout 1), and then remove the paper feed guide (callout 2).

Figure 1-55 Remove the engine controller assembly (2 of 9)



4. Disconnect seven connectors (callout 1).

Figure 1-56 Remove the engine controller assembly (3 of 9)

5. Release the cables (callout 1) from the cable guide (callout 2).

Figure 1-57 Remove the engine controller assembly (4 of 9)



6. On the right side of the product, remove one screw (callout 1).



Figure 1-58 Remove the engine controller assembly (5 of 9)

- 7. On the left side of the product, disconnect the two cartridge-door interlock switch connectors (callout 1), release the cables (callout 2) from the cable guides (callout 3), and then disconnect one connector (callout 4) and one flat cable (callout 5) on the formatter PCA.
 - **NOTE:** Place a mark on one of the cartridge-door interlock switch wires before you disconnect them, so that you can reconnect the connectors to the same switch lugs.



Figure 1-59 Remove the engine controller assembly (6 of 9)

8. Remove three screws (callout 1).



Figure 1-60 Remove the engine controller assembly (7 of 9)

9. On both sides of the product, use a small flat blade screwdriver to release the sheet-metal tabs (callout 1) in the product chassis to lower the engine controller assembly (DC controller) PCA (callout 2).

NOTE: It might be easier to release the right side tab from inside the chassis.

CAUTION: Carefully push the tab toward the outside of the product to release it. Do not bend the tab so much that it will not engage the mounting bracket when the engine controller assembly is reinstalled.



Figure 1-61 Remove the engine controller assembly (8 of 9)

10. Pull the cable (callout 1) and the flat cable (callout 2) into the product chassis, and then carefully slide the engine controller assembly (callout 3) out of the product.



Figure 1-62 Remove the engine controller assembly (9 of 9)

Universal serial bus (USB) PCA

NOTE: This section applies to walkup USB-equipped models only.

- **1.** Remove the following components:
 - Tray 2 cassette
 - Left cover. See <u>Left cover on page 10</u>.

2. On the left side of the product, remove two screws (callout 1) on the USB PCA, and then pull the PCA away from the product.



Figure 1-63 Remove the USB PCA (1 of 2)

3. Disconnect the connector (callout 1) on the back of the PCA.

Figure 1-64 Remove the USB PCA (2 of 2)



Formatter PCA



- 1. Remove the following components:
 - Tray 2 cassette
 - Left cover. See <u>Left cover on page 10</u>.
 - Wireless PCA (wireless models only). See <u>Wireless PCA on page 48</u>.
- 2. On the left side of the product, disconnect any connectors and flat cables (callout 1) on the formatter, and then remove four screws (callout 2).



NOTE: Wireless models only: The screw in the upper-right corner also fastens the wireless PCA holder to the formatter PCA. Keep this screw, which is longer, with the holder for reinstallation.

Wireless PCA

NOTE: This section applies to wireless models only.

The wireless PCA is located at the top of the formatter PCA.

- 1. Remove the following components:
 - Tray 2 cassette
 - Left cover. See <u>Left cover on page 10</u>.

2. On the left side of the product, release two tabs (callout 1), pull the lower left-hand corner of the PCA to disconnect the connector on the back of the PCA, and then pull the PCA away from the product.



Figure 1-66 Remove the wireless PCA

Power switch PCA

The power switch PCA is located in the product front cover.

- **1.** Remove the following components:
 - Tray 2 cassette
 - Right cover. See <u>Right cover on page 12</u>.
 - Left cover. See <u>Left cover on page 10</u>.
 - Cartridge door and front cover assembly. See <u>Cartridge door and front cover assembly</u> on page 23.

2. On the back of the front cover, use a small flat-blade screwdriver to release two tabs (callout 1) to separate the two pieces of the cover.



Figure 1-67 Remove the power-switch PCA (1 of 3)

3. Release two tabs (callout 1) to remove the PCA shield.

Figure 1-68 Remove the power-switch PCA (2 of 3)



4. Release one tab (callout 1), and then pull the PCA out of the front cover.

Figure 1-69 Remove the power-switch PCA (3 of 3)



Connecting PCA

The connecting PCA is located on the product right side, below the control panel.

- **1.** Remove the following components:
 - Tray 2 cassette
 - Right cover. See <u>Right cover on page 12</u>.
- 2. On the right side of the product, disconnect any connectors (callout 1) on the PCA, remove one screw (callout 2), and then remove the connecting PCA.

Figure 1-70 Remove the connecting PCA



Miscellaneous parts

Transfer roller

CAUTION: Do not touch the sponge surface of the roller unless you are replacing the roller. Skin oils on the roller can cause print-quality problems.

Always wear latex gloves when handling a transfer roller for reinstallation or replacement.

- 1. Open the toner cartridge door, and then remove the toner cartridge.
- 2. In the toner cartridge cavity, pull the sheet-metal jam plate toward the Tray 1 pickup roller cover (callout 1) and hold it, release the two tabs of the black locking clip on the right-side bushing (callout 2), pull the bushing up, and then slide the transfer roller (callout 3) to the right and remove it.



CAUTION: The black locking clip on the right side of the transfer-roller shaft is not captive. Do not lose the locking clip when you remove the transfer roller.

Multipurpose (MP) tray pickup gear assembly

NOTE: The multipurpose tray is referred to as Tray 1 in user documentation.

- 1. Remove the following components.
 - Tray 2 cassette
 - Left cover. See <u>Left cover on page 10</u>.

2. On the left side of the product, release the tab (callout 1) at the center of the gear, and then remove the gear (callout 2).



Figure 1-72 Remove the paper-pickup-gear assembly

Reinstallation tip Press and hold back the gear arm (callout 3) when reinstalling the pickup gear.

Optional paper feeder (Tray 3)

When replacing any parts on the optional paper feeder (Tray 3), remove the tray cassette before removing any other parts.

NOTE: To view the procedures for removing the optional paper feeder pickup roller or separation pad, see <u>Rollers on page 6</u>.

Optional paper feeder right cover

▲ Starting at the back of the unit, release six tabs (callout 1), and then slide the right cover toward the front of the unit to remove it.



Figure 1-73 Remove the optional paper feeder right cover

Optional paper feeder driver PCA

- **1.** Remove the right cover.
- 2. On the right side of the unit, remove one screw (callout 1), release one tab (callout 2) from the driver PCA cover (callout 3), and then slide the PCA cover to the right to remove it.

Figure 1-74 Remove the optional paper feeder driver PCA (1 of 2)



3. Disconnect three connectors (callout 1), and then remove one screw (callout 2) to remove the driver PCA.



Figure 1-75 Remove the optional paper feeder driver PCA (2 of 2)

Optional paper feeder paper sensor PCA

- **1.** Remove the right cover.
- 2. On the right side of the unit, remove one screw (callout 1), release one tab (callout 2) from the driver PCA cover (callout 3), and then slide the PCA cover to the right to remove it.

Figure 1-76 Remove the optional paper feeder paper sensor PCA (1 of 4)



3. On the driver PCA, disconnect one connector (callout 1).

Figure 1-77 Remove the optional paper feeder paper sensor PCA (2 of 4)



4. At the front of the paper feeder, remove two screws (callout 1), remove the two plastic positioning pins (callout 2), and then lift the metal cover (callout 3) off the paper feeder.




5. Remove one screw (callout 1), and then release the PCA cable from the cable guides to remove the sensor PCA.



Figure 1-79 Remove the optional paper feeder paper sensor PCA (4 of 4)

2 Parts and diagrams

NOTE: In this chapter, part numbers are listed only for available replaceable parts.

- Order parts by authorized service providers
- <u>How to use the parts lists and diagrams</u>
- Assembly locations
- <u>Covers, panels, and doors</u>
- Internal assemblies
- Input devices
- Alphabetical parts list
- Numerical parts list

Order parts by authorized service providers

Order replacement parts

Table 2-1 Order parts, accessories, and supplies

Order supplies and paper	www.hp.com/go/suresupply
Order genuine HP parts or accessories	www.hp.com/buy/parts
Order through service or support providers	Contact an HP-authorized service or support provider.

Related documentation and software

Table 2-2 Related documentation and software

ltem	Description	Part number
HP LaserJet Pro 400 M401 Printer Series User Guide	Product user guide	CF270-90908 (English)
HP LaserJet Pro 400 M401 Printer Series Repair Manual	English repair manual (this manual)	CF270-90977
HP LaserJet Pro 400 M401 Printer Series Troubleshooting Manual	English troubleshooting manual	CF270-91001

Supplies part numbers

Table 2-3 Supplies part numbers

Part	Part number	Type/size
Toner cartridge	CF280-67901 (standard)	Black toner cartridge
	CF280-67902 (extended)	
Paper feeder	CF284A	500-sheet Tray 3
USB 2.0 cable	C6518A	(2-meter standard) A-to-B cable

Whole-unit replacement part numbers

NOTE: Whole-unit replacement products include the formatter PCA.

Table 2-4	Whole-unit	replacement	part numbers
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ltem	Description	Part number
HP LaserJet Pro 400 M401a Printer	220v WUR EMEA	CF270-69001 (exchange)

ltem	Description	Part number
HP LaserJet Pro 400 M401d Printer	220v WUR EMEA	CF274-69001 (exchange)
	220v WUR CN/MY	CF274-67058 (replace)
	220v WUR AP	CF274-69002 (exchange)
HP LaserJet Pro 400 M401n Printer	110v wur nar/tw	CZ195-69001 (exchange)
	220v WUR CN/MY	CZ195-67058 (replace)
	220v WUR AP/LAR	CZ195-69002 (exchange)
	220v WUR CL/AR	CZ195-69003 (exchange)
	110v WUR BR	CZ195-69004 (exchange)
HP LaserJet Pro 400 M401dn Printer	110v wur nar/tw	CF278-69001 (exchange)
	220v WUR EMEA	CF278-69002 (exchange)
	220v WUR CN/MY	CF278-67059 (replace)
	220v WUR AP/LAR	CF278-69003 (exchange)
	220v WUR CL/AR	CF278-69004 (exchange)
	110v WUR BR	CF278-69005 (exchange)
HP LaserJet Pro 400 M401dw Printer	110v wur nar/tw	CF285-69001 (exchange)
	220v WUR EMEA	CF285-69002 (exchange)
	220v WUR CN/MY	CF285-67059 (replace)
	220v WUR AP/LAR	CF285-69003 (exchange)
	110v WUR BR	CF285-69004 (exchange)

Table 2-4 Whole-unit replacement part numbers (continued)

How to use the parts lists and diagrams

The figures in this chapter show the major subassemblies in the product and their component parts. A parts list table follows each exploded view assembly diagram. Each table lists the item number, the associated part number, and the description of each part. If a part is not listed in the table, then it is not a field replacement unit (FRU).

CAUTION: Be sure to order the correct part. When looking for part numbers for electrical components, pay careful attention to the voltage that is listed in the description column. Doing so will ensure that the part number selected is for the correct all-in-one model.

NOTE: In this manual, the abbreviation "PCA" stands for "printed circuit-board assembly." Components described as a PCA might consist of a single circuit board or a circuit board plus other parts, such as cables and sensors.

Assembly locations

HP LaserJet M401a, M401n, M401d models

Figure 2-1 Assembly locations: HP LaserJet M401a, M401n, M401d models



Table 2-5 Assembly locations: HP LaserJet M401a, M401n, M401d models

ltem	Description	ltem	Description
1	Cartridge door	7	Rear cover (HP LaserJet M401a and M401n models) or duplex cover (HP LaserJet M401d model)
2	LCD control panel	8	Power receptacle
3	Jam removal door	9	Power switch
4	Rear output door	10	Tray 2 cassette
5	Output bin	11	Multipurpose tray (Tray 1)
6	DIMM door		

HP LaserJet M401dn and M401dw models

Figure 2-2 Assembly locations: HP LaserJet M401dn and M401dw models



Table 2-6 Assembly locations: HP LaserJet M401dn and M401dw models

ltem	Description	ltem	Description
1	Toner cartridge door	7	Duplex cover
2	Touchscreen control panel	8	Power receptacle
3	Jam removal door	9	Power button
4	Rear output door	10	Tray 2 cassette
5	Output bin	11	Multipurpose tray (Tray 1)
6	DIMM cover		

Optional paper feeder



 Table 2-7
 Assembly locations: optional paper feeder

ltem	Description	ltem	Description
1	Positioning pins	3	Tray 3 cassette
2	Option interface connector		



Covers, panels, and doors

Ref	Description	Part number	Qty
1	Cartridge door assembly	RM1-9145-000CN	1
2	Cover, top	RM1-9180-000CN	1
3	Cover, rear (duplex model)	RM1-9161-000CN	1
3	Cover, rear (simplex model)	RM1-9163-000CN	1
4	Cover, right	RM1-9171-000CN	1
5	Cover, left	RM1-9174-000CN	1
6	Cover, outer, front	RC3-2533-000CN	1
7	Switch, power button assembly	RM1-9125-000CN	1
8	Cover, inner, front	RC3-2532-000CN	1
9	Lever, power supply button	RC3-2545-000CN	1
10	Power button PCA	RM1-9039-000CN	1
11	Control-panel assembly	RM1-9149-000CN	1

 Table 2-8
 Covers, panels, and doors (LCD control panel models)



Figure 2-5 Covers, panels, and doors (touchscreen control panel models)

Ref	Description	Part number	Qty
1	Cartridge door assembly	RM1-9145-000CN	1
2	Cover, top	RM1-9179-000CN	1
3	Cover, rear	RM1-9161-000CN	1
4	Cover, right	RM1-9171-000CN	1
5	Cover, left	RM1-9123-000CN	1
6	Cover, outer, front	RC3-2533-000CN	1
7	Switch, power button assembly	RM1-9125-000CN	1
8	Cover, inner, front	RC3-2532-000CN	1
9	Lever, power supply button	RC3-2545-000CN	1
10	Power button PCA	RM1-9039-000CN	1
11	Arm, control panel	RC3-2584-000CN	1
12	Cover, cable	RC3-2585-000CN	1
13	Plate, base	RC3-2586-000CN	1
14	Control-panel assembly	CF285-60101	1

 Table 2-9
 Covers, panels, and doors (touchscreen control panel models)

Internal assemblies

Figure 2-6 Internal components (1 of 5)



Ref	Description	Part number	Qty
1	Fuser (110V)	RM1-8808-000CN	1
1	Fuser (220V)	RM1-8809-000CN	1

 Table 2-10 Internal components (1 of 5)



Ref	Description	Part number	Qty
1	Main motor assembly	RM1-9042-000CN	1
2	Bushing	RC2-8263-000CN	1
3	Separation pad, multipurpose tray	RL1-2115-000CN	1
4	Bushing	RC2-6131-000CN	1
5	Paper pickup gear assembly	RM1-7360-000CN	1
6	Paper pickup roller assembly	RM1-9168-000CN	1

Table 2-11 Internal components (2 of 5)





Ref	Description	Part number	Qty
1	Cable, flexible, flat	RK2-4452-000CN	1
2	Paper feed guide assembly	RM1-9122-000CN	1
3	Laser scanner assembly	RM1-9135-000CN	1
4	Registration roller assembly	RM1-8806-000CN	1
5	Transfer roller assembly	RM1-9175-000CN	1
6	Sensor assembly	RM1-8807-000CN	1

Table 2-12 Internal components (3 of 5)

Figure 2-9 Internal components (4 of 5)



Ref	Description	Part number	Qty
1	Fan	RK2-4418-000CN	1
2	Connecting PCA	RM1-9047-000CN	1
4	Solenoid	RK2-2731-000CN	1
5	Separation pad holder assembly	RM1-7365-000CN	1
6	Cassette assembly (Tray 2)	RM1-9137-000CN	1
7	Pickup roller, multipurpose tray (Tray 1)	RL1-3307-000CN	1
8	Multipurpose tray pickup gear assembly	RM1-9127-000CN	1

 Table 2-13 Internal components (4 of 5)

Figure 2-10 Internal components (5 of 5)



Ref	Description	Part number	Qty
1	Engine controller assembly (DC controller) $-$ 110V	RM1-9164-000CN	1
1	Engine controller assembly (DC controller) $-$ 220V	RM1-9165-000	1
2	Duplexing paper feed assembly (duplex models only)	RM1-9153-000CN	1
3	Reverse drive assembly (duplex models only)	RM1-9157-000CN	1
3	Face-down drive assembly (simplex models only)	RM1-9160-000CN	1
4	Solenoid, duplex	RK2-2733-000CN	1

 Table 2-14 Internal components (5 of 5)





Table 2-15 PCA location

Ref	Description	Part number	Qty
1	Formatter PCA (HP LaserJet M401a, M401d models)	CF148-60001	1
1	Formatter PCA (HP LaserJet M401n model)	CF149-60001	1
1	Formatter PCA (HP LaserJet M401dn, M401dw models)	CF150-60001	1
1	Formatter PCA (China, HP LaserJet M401a, M401d models)	CF148-69001	1
1	Formatter PCA (China, HP LaserJet M401n model)	CF149-69001	1
1	Formatter PCA (China, HP LaserJet M401dn, M401dw models)	CF150-69001	1
1	Formatter PCA (HP LaserJet M401dne model with LCD)	CF399-60001	1
2	Wireless PCA (HP LaserJet M401dw model only)	1150-7940	1
2	Wireless PCA holder (not pictured — HP LaserJet M401dw model only)	CF286-40014	1
3	Engine controller assembly (DC controller) PCA $-$ 110V	RM1-9164-000CN	1
3	Engine controller assembly (DC controller) PCA $-$ 220V	RM1-9165-000CN	1
4	Connecting PCA	RM1-9047-000CN	1
5	Power switch PCA	RM1-9039-000CN	1
6	Universal serial bus (USB) PCA (HP LaserJet M401dn and M401dw models only)	CF368-60001	1

Input devices

500-sheet paper feeder

Paper feeder covers

Figure 2-12 Paper feeder covers



Ref	Description	Part number	Qty
1	Cover, left	RC3-2618-000CN	1
2	Cover, right	RM1-9316-000CN	1
3	Cover, rear	RC3-2621-000CN	1

Table 2-16 Paper feeder covers

Paper feeder main body (1 of 2)

Figure 2-13 Paper feeder main body (1 of 2)



Ref	Description	Part number	Qty
1	Paper pickup gear assembly	RM1-7360-000CN	1
2	Solenoid	RK2-0426-000CN	1

 Table 2-17
 Paper feeder main body (1 of 2)

Paper feeder main body (2 of 2)

Figure 2-14 Paper feeder main body (2 of 2)



Ref	Description	Part number	Qty
1	Paper feeder pickup roller assembly	RM1-9168-000CN	1
2	Paper feeder driver PCA	RM1-9297-000CN	1
3	Paper feeder cassette (Tray 3)	RM1-9313-000CN	1
4	Paper feeder separation pad holder assembly	RM1-6303-000CN	1
5	Paper feeder paper sensor PCA	RM1-1267-000CN	1

 Table 2-18
 Paper feeder main body (2 of 2)

Alphabetical parts list

Table 2-19 Alphabetical parts list

Description	Part number	Table and page
Arm, control panel	RC3-2584-000CN	<u>Covers, panels, and doors</u> (<u>touchscreen control panel</u> models) on page 69
Bushing	RC2-8263-000CN	Internal components (2 of 5) on page 73
Bushing	RC2-6131-000CN	Internal components (2 of 5) on page 73
Cable, flexible, flat	RK2-4452-000CN	Internal components (3 of 5) on page 75
Cartridge door assembly	RM1-9145-000CN	Covers, panels, and doors (LCD control panel models) on page 67
Cartridge door assembly	RM1-9145-000CN	Covers, panels, and doors (touchscreen control panel models) on page 69
Cassette assembly (Tray 2)	RM1-9137-000CN	Internal components (4 of 5) on page 77
Connecting PCA	RM1-9047-000CN	Internal components (4 of 5) on page 77
Connecting PCA	RM1-9047-000CN	PCA location on page 81
Control-panel assembly	RM1-9149-000CN	Covers, panels, and doors (LCD control panel models) on page 67
Control-panel assembly	CF285-60101	<u>Covers, panels, and doors</u> (touchscreen control panel models) on page 69
Cover, cable	RC3-2585-000CN	<u>Covers, panels, and doors</u> (touchscreen control panel models) on page 69
Cover, inner, front	RC3-2532-000CN	Covers, panels, and doors (LCD control panel models) on page 67
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Paper feeder paper sensor PCA	RM1-1267-000CN	Paper feeder main body (2 of 2) on page 87
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RC3-2585-000CN	Cover, cable	<u>Covers, panels, and doors</u> (touchscreen control panel models) on page 69
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RL1-2115-000CN	Separation pad, multipurpose tray	Internal components (2 of 5) on page 73
RL1-3307-000CN	Pickup roller, multipurpose tray (Tray 1)	Internal components (4 of 5) on page 77
RM1-1267-000CN	Paper feeder paper sensor PCA	<u>Paper feeder main body</u> (2 of 2) on page 87
RM1-6303-000CN	Paper feeder separation pad holder assembly	<u>Paper feeder main body</u> (2 of 2) on page 87
RM1-7360-000CN	Paper pickup gear assembly	Internal components (2 of 5) on page 73
RM1-7360-000CN	Paper pickup gear assembly	<u>Paper feeder main body</u> (<u>1 of 2) on page 85</u>
RM1-7365-000CN	Separation pad holder assembly	Internal components (4 of 5) on page 77
RM1-8806-000CN	Registration roller assembly	Internal components (3 of 5) on page 75
RM1-8807-000CN	Sensor assembly	Internal components (3 of 5) on page 75

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RM1-9039-000CN	Power button PCA	Covers, panels, and doors (touchscreen control panel models) on page 69
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RM1-9042-000CN	Main motor assembly	Internal components (2 of 5) on page 73
RM1-9047-000CN	Connecting PCA	Internal components (4 of 5) on page 77
RM1-9047-000CN	Connecting PCA	PCA location on page 81
RM1-9122-000CN	Paper feed guide assembly	Internal components (3 of 5) on page 75
RM1-9123-000CN	Cover, left	Covers, panels, and doors (touchscreen control panel models) on page 69
RM1-9125-000CN	Switch, power button assembly	Covers, panels, and doors (LCD control panel models) on page 67
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RM1-9135-000CN	Laser scanner assembly	Internal components (3 of 5) on page 75
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RM1-9145-000CN	Cartridge door assembly	<u>Covers, panels, and doors</u> (touchscreen control panel models) on page 69
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RM1-9161-000CN	Cover, rear (duplex model)	<u>Covers, panels, and doors</u> (LCD control panel models) on page 67
RM1-9161-000CN	Cover, rear	<u>Covers, panels, and doors</u> (touchscreen control panel models) on page 69
RM1-9163-000CN	Cover, rear (simplex model)	<u>Covers, panels, and doors</u> (LCD control panel models) on page 67
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