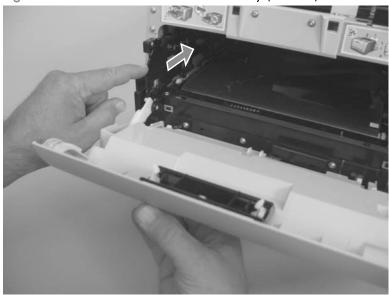
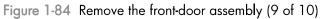
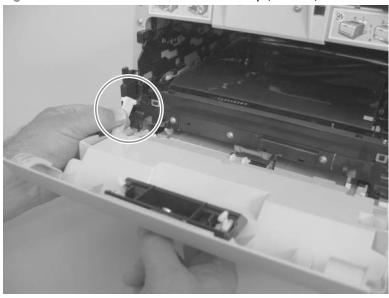
8. Push the black-plastic arm into the product.

Figure 1-83 Remove the front-door assembly (8 of 10)



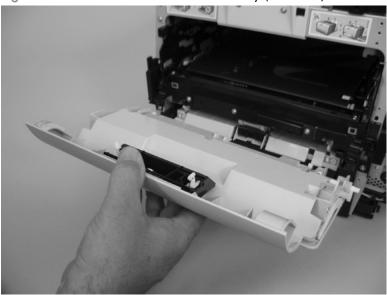
9. Support the door assembly, and carefully release the lower pin on the left-side link.





10. Remove the front-door assembly.

Figure 1-85 Remove the front-door assembly (10 of 10)

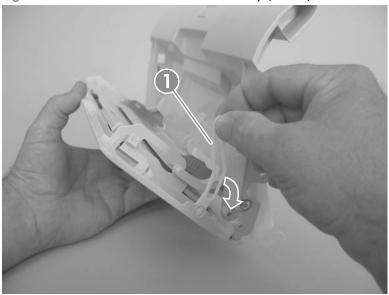


Reinstall the front-door assembly

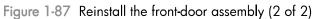
Use this procedure if you are installing a *replacement* front-door assembly.

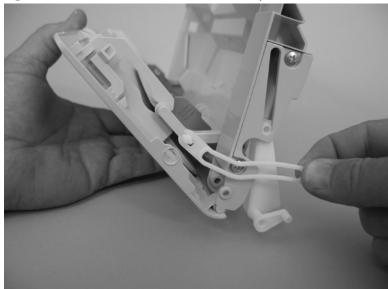
1. Open Tray 1, and then rotate the retainer arm (callout 1) until the tabs on the arm-hinge pin align with the slots in the mounting hole on Tray 1.

Figure 1-86 Reinstall the front-door assembly (1 of 2)



2. Remove the retainer arm from the door assembly, and then install it on the replacement door assembly.





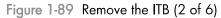
Intermediate transfer belt (ITB)

- 1. Remove the print-cartridge drawer. See Print-cartridge drawer on page 20.
- 2. Open the front door, and then remove two screws (callout 1).

Figure 1-88 Remove the ITB (1 of 6)



- 3. Carefully rotate the color-misregistration sensor away from the ITB.
- <u>CAUTION</u>: The sensor is still attached to the product and cannot be completely removed.





4. Disconnect one connector (callout 1).

Figure 1-90 Remove the ITB (3 of 6)



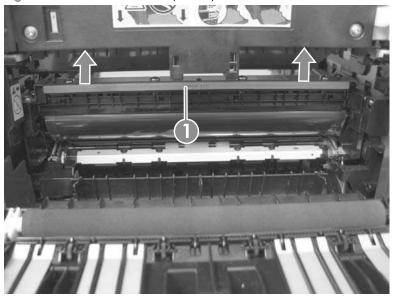
- 5. Carefully lift up on the front of the ITB to release it.
 - Avoid touching the black plastic transfer belt. Skin oils on the belt might cause print-quality problems. Lift the ITB as shown below, by using the hard-plastic edges of the ITB.

Figure 1-91 Remove the ITB (4 of 6)



- Open the rear door, and carefully lift up on the sheet-metal portion (callout 1) of the ITB to release it.
- <u>CAUTION</u>: Avoid touching the black plastic transfer belt. Skin oils on the belt might cause print-quality problems.
- NOTE: You might need to reach in through the front door and support the front portion of the ITB to keep it from falling back into place as you perform this step.

Figure 1-92 Remove the ITB (5 of 6)



- 7. Carefully pull the ITB straight out of the product to remove it.
 - <u>AUTION</u>: Avoid touching the black plastic transfer belt. Skin oils on the belt might cause print-quality problems. Handle the ITB as shown below.

Figure 1-93 Remove the ITB (6 of 6)



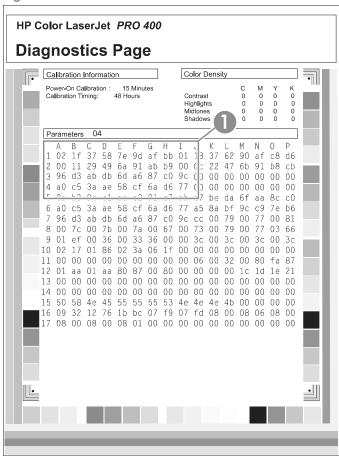
Reinstall the ITB

Use this procedure to verify that the ITB is correctly reinstalled.

- Use the control panel to print the diagnostics pages.
- Verify that rows one through four, columns A through I (callout 1) contain hexadecimal numbers.

If these rows and columns are all zero, ensure that the calibration sensor was correctly reinstalled. The sensor must be correctly positioned and fit securely against the chassis before the mounting screws are installed. See $\underline{1}$ and $\underline{2}$.

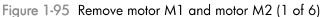
Figure 1-94 Reinstall the ITB



Drum motor (M1) and developer motor (M2)

This procedure can be used to remove the drum motor (M1) or the developer motor (M2). HP does not recommend removing both of the motors at the same time.

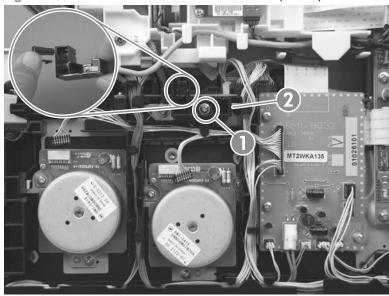
- 1. Remove the right cover. See Right cover on page 23.
- 2. Disconnect one connector (callout 1) for motor M1 or motor M2.
 - NOTE: The drum motor (callout 2) is motor M1. The developer motor (callout 3) is motor M2.



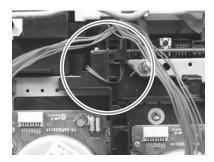


- 3. Remove one screw (callout 1), and then remove the black-plastic retainer (callout 2).
 - NOTE: There is a small clip—the clip is used to activate the engine test button—attached to the retainer that can be easily dislodged when the retainer is removed. Do not lose this clip when handling the retainer.

Figure 1-96 Remove motor M1 and motor M2 (2 of 6)

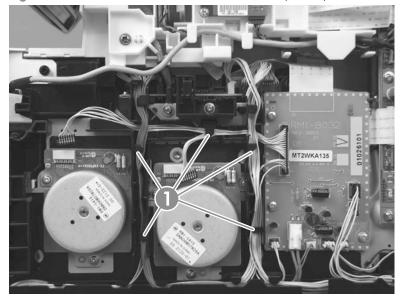


- 4. Release the wire harnesses from the retainer (callout 1).
- NOTE: One of the wire harnesses—behind the drum motor wire harness—is difficult to release from the retainer. Be careful to not damage this wire harness when releasing it.



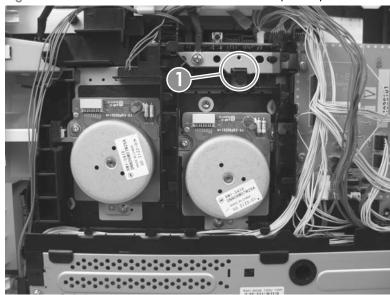
TIP: Additional connectors might need to be disconnected to release the wire harnesses from the retainer.

Figure 1-97 Remove motor M1 and motor M2 (3 of 6)

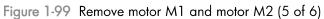


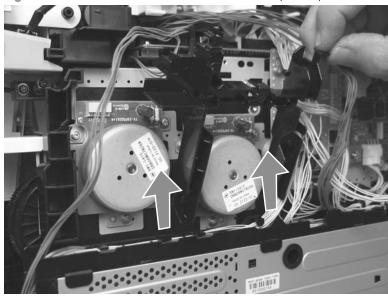
5. Release one tab (callout 1).

Figure 1-98 Remove motor M1 and motor M2 (4 of 6)

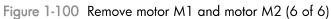


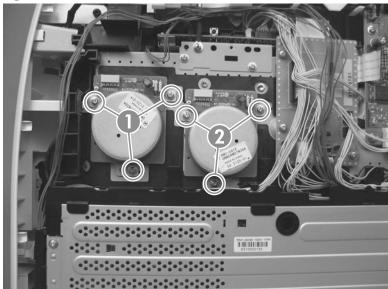
6. Rotate the top of the retainer away from the chassis, and then lift it up to remove it.





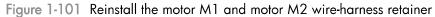
7. Remove three screws (callout 1) to remove motor M1, or remove three screws (callout 2) to remove motor M2.

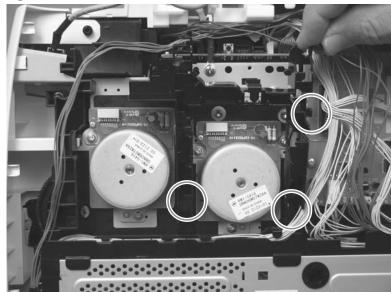




Reinstall the drum motor (M1) and developer motor (M2)

When the motor wire harness retainer is reinstalled, the two tabs at the bottom of the retainer must be positioned behind the retainer on the low-voltage power supply. The tab at the side of motor wire harness retainer must be positioned behind the PCA next to motor M2.

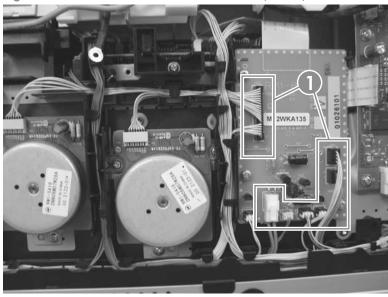




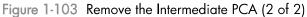
Intermediate PCA

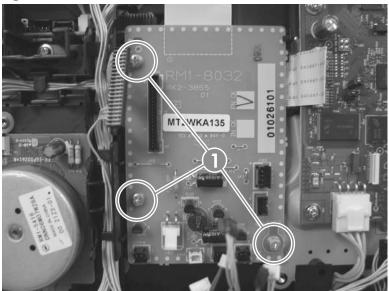
- 1. Remove the right cover. See Right cover on page 23.
- 2. Disconnect all of the connectors and one FFC (callout 1) on the PCA.

Figure 1-102 Remove the Intermediate PCA (1 of 2)



3. Remove three screws (callout 1), and then remove the intermediate PCA.





Formatter PCA and fax PCA

MARNING! Do not install a *replacement* formatter PCA and DC controller PCA at the same time.

The formatter PCA and the DC controller PCA store important product configuration information (NVRAM data) that is lost if both PCAs are replaced at the same time. When the product power is turned on, the DC controller restores the NVRAM data on the replacement formatter.

Replacing both the formatter and the DC controller at the same time will result in severe print-quality problems.



NOTE: The base model does not have a fax card installed.

Replacing the formatter PCA before the DC controller PCA

Use the following procedure if you need to install a replacement formatter PCA and a replacement DC

NOTE: If you are only installing a replacement formatter PCA, go to Remove the formatter PCA and fax PCA on page 76.

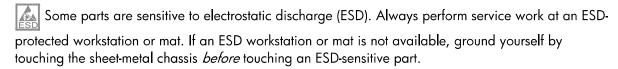
- Install a replacement formatter PCA.
- Turn the product on, and wait for the print-cartridge volume indicators to appear on the controlpanel display.

NOTE: This allows important product information to be written to the replacement formatter PCA.

- Turn the product off. 3.
- Install a replacement DC controller. See <u>DC controller PCA on page 80</u>.
- 5. Turn the product on.

Remove the formatter PCA and fax PCA

A 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.



NOTE: The base model does not have a fax PCA.

Remove the right cover. See Right cover on page 23.

2. Disconnect all of the connectors (callout 1).

Figure 1-104 Remove the formatter (1 of 4; base model)

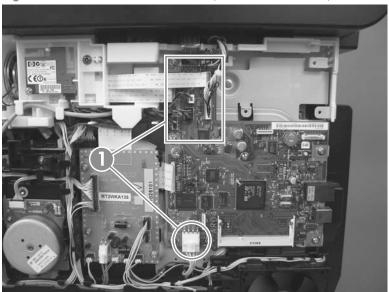
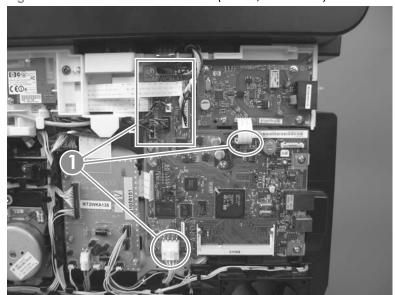


Figure 1-105 Remove the formatter (2 of 4; fax model)



- 3. Remove six screws for the base model or ten screws (callout 1) for the fax model, and then remove the formatter PCA and the fax PCA.
- NOTE: The base model does not have a fax PCA.

Figure 1-106 Remove the formatter (3 of 4; base model)

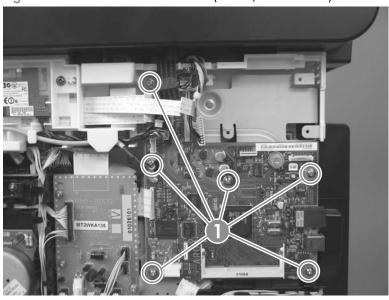
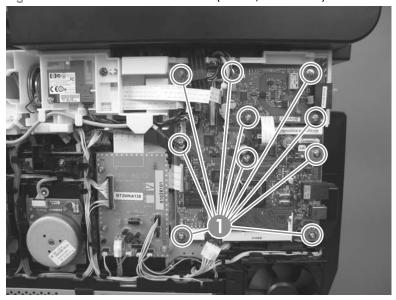


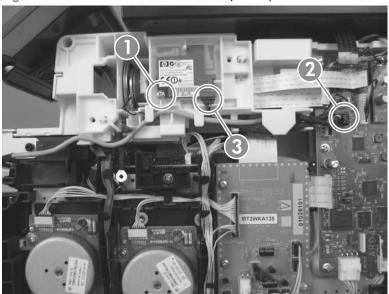
Figure 1-107 Remove the formatter (4 of 4; fax model)



Wireless PCA

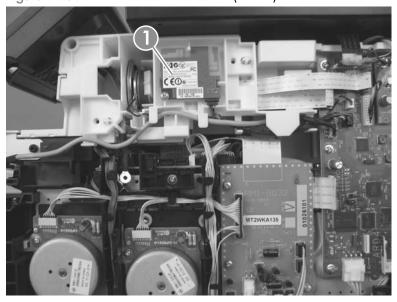
- 1. Remove the right cover. See Right cover on page 23
- 2. Remove one screw (callout 1). Disconnect one connector (callout 2) at the formatter PCA if you are removing the wireless PCA, or disconnect one connector (callout 3) if you are replacing the wireless PCA.

Figure 1-108 Remove the wirelss PCA (1 of 2)



3. Remove the wireless PCA (callout 1).

Figure 1-109 Remove the wirelss PCA (2 of 2)



DC controller PCA

WARNING! Do not install a *replacement* formatter PCA and a *replacement* DC controller PCA at the same time.

The formatter PCA and the DC controller PCA store important product configuration information (NVRAM data) that is lost if both PCAs are replaced at the same time. When the product power is turned on, the formatter restores the NVRAM data to a replacement DC controller.

Replacing both the DC controller and the formatter at the same time will result in severe print-quality problems.

Replacing the DC controller PCA before the formatter PCA

Use the following procedure if you need to install a replacement DC controller *and* a replacement formatter PCA.

- 1. Install a replacement DC controller PCA.
- Turn the product on, and wait for the print-cartridge volume indicators to appear on the controlpanel display.
- NOTE: This allows important product information to be written to the replacement DC controller PCA.
- Turn the product off.
- 4. Install a replacement formatter PCA. See Formatter PCA and fax PCA on page 76.
- 5. Turn the product on.

Before you proceed, remove the following components:

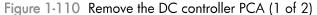
- Right cover. See <u>Right cover on page 23</u>.
- Scanner assembly. See Scanner assembly on page 26.
- Upper cover. See <u>Upper-cover assembly on page 51</u>.

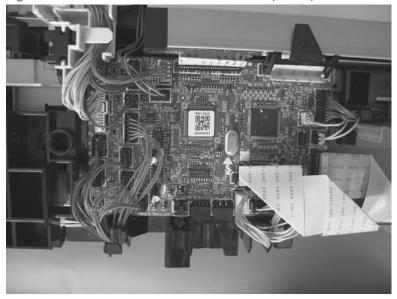
<u>CAUTION:</u> Do not bend or fold the flat flexible cables (FFCs) during removal or installation. Also, do not straighten pre-folds in the FFCs. You *must* make sure that all FFCs are fully seated in their connectors. Failure to fully seat an FFC into a connector can cause a short circuit in a PCA.

Some parts are sensitive to electrostatic discharge (ESD). 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.

1. Disconnect all of the connectors.

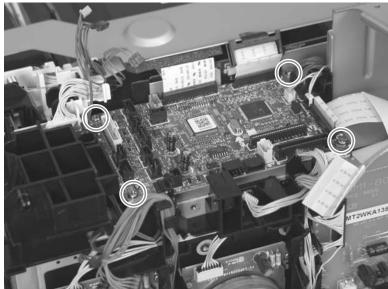
NOTE: The DC controller is located along the top right of the product.





2. Remove four screws (callout 1) and then remove the DC controller PCA.





Fuser-motor assembly

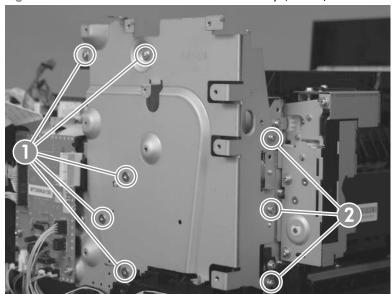
Before proceeding, remove the following components:

- Right cover. See <u>Right cover on page 23</u>.
- Control panel and right-arm mount. See Control panel and right-arm mount on page 48.
- Formatter and fax PCAs. See Formatter PCA and fax PCA on page 76.
- Simplex products
 - Rear door. See Rear door (simplex product) on page 33.
 - Rear cover (simplex products). See Rear cover and feed guide (simplex product) on page 37.
- Duplex products
 - Rear-upper cover. See Rear-upper cover (duplex product) on page 30.

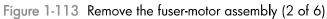
Remove the fuser-motor assembly

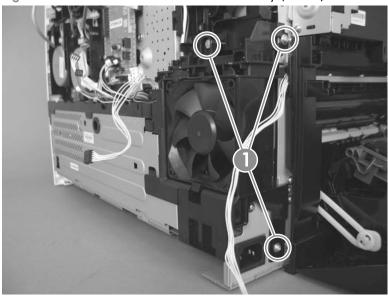
1. Remove 5 screws (callout 1) and 3 screws (callout 2).

Figure 1-112 Remove the fuser-motor assembly (1 of 6)

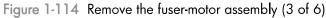


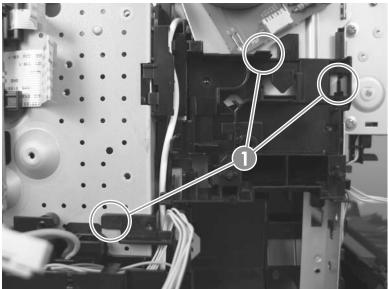
- 2. Remove three screws (callout 1) and release the wire harness from the retainer. Remove the fan assembly.
 - NOTE: The fan assembly is still attached to the product. Move the fan assembly off to one side.





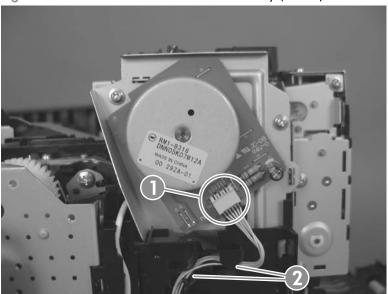
3. Release three tabs (callout 1), and then remove the retainer.





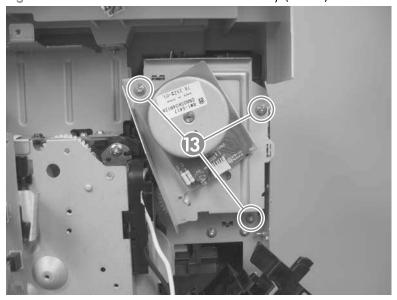
4. Disconnect one connector (callout 1) and remove the wire harness from the retainer (callout 2).



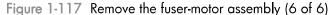


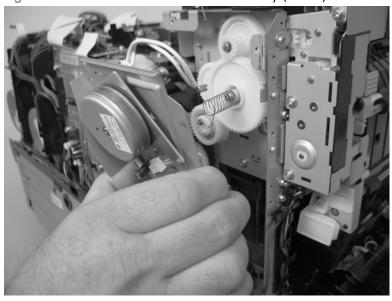
5. Remove three screws (callout 1), and then remove the fuser-motor assembly.

Figure 1-116 Remove the fuser-motor assembly (5 of 6)



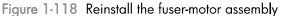
- 6. Before you proceed, take note that the spring and the gears behind the fuser-motor assembly are not captive.
- <u>ACAUTION:</u> Do not lose the spring or gears when you remove the fuser-motor assembly.

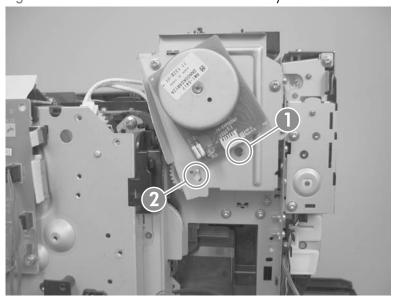




Reinstall the fuser-motor assembly

Make sure that the fuser-motor assembly spring (callout 1) and gear pin (callout 2) are correctly positioned in the hole and slot provided in the assembly mounting bracket. The assembly mounting bracket will fit flat against the product chassis when the fuser-motor assembly is correctly installed.





High-voltage power-supply PCA

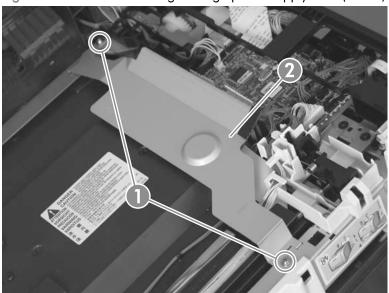
Before proceeding, remove the following components:

- Right cover. See Right cover on page 23.
- Scanner assembly. See <u>Scanner assembly on page 26</u>.
- Simplex products
 - Rear door. See Rear door (simplex product) on page 33.
 - Rear cover. See Rear cover and feed guide (simplex product) on page 37.
- Duplex products
 - Rear door. See Rear door (duplex product) on page 35.
 - Rear-lower cover. See Rear-lower cover and rear-door links (duplex product) on page 41.
- Upper-cover assembly. See <u>Upper-cover assembly on page 51</u>.
- Left cover. See <u>Left cover on page 55</u>.

Remove the high-voltage power-supply PCA

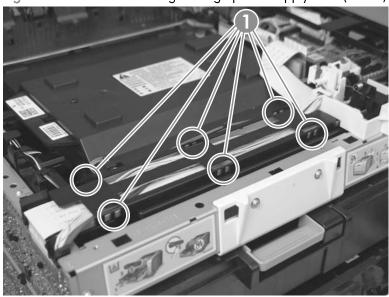
1. Remove two screws (callout 1), and then remove the sheet-metal plate (callout 2).





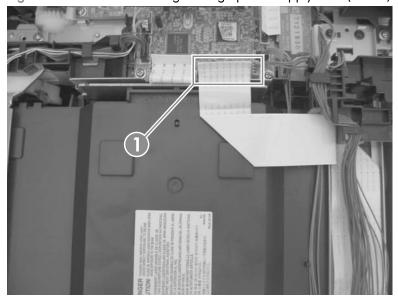
2. Release six tabs (callout 1), and then remove the black-plastic cover.

Figure 1-120 Remove the high-voltage power-supply PCA (2 of 5)



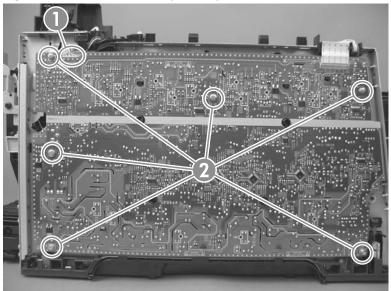
3. Disconnect one FFC (callout 1) on the DC controller.

Figure 1-121 Remove the high-voltage power-supply PCA (3 of 5)



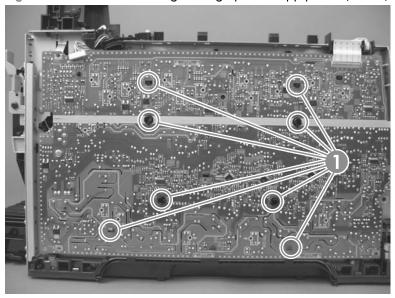
4. Disconnect one connector (callout 1), and then remove six screws (callout 2).

Figure 1-122 Remove the high-voltage power-supply PCA (4 of 5)



5. Release ten tabs (callout 1), and then remove the high-voltage power-supply PCA.

Figure 1-123 Remove the high-voltage power-supply PCA (5 of 5)



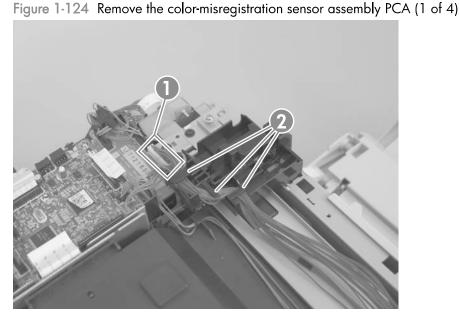
Color-misregistration sensor assembly

Before proceeding, remove the following components:

- Print-cartridge drawer. See <u>Print-cartridge drawer on page 20</u>.
- Right cover. See Right cover on page 23.
- Scanner assembly. See <u>Scanner assembly on page 26</u>.
- Simplex products
 - Rear door. See Rear door (simplex product) on page 33.
 - Rear cover. See Rear cover and feed guide (simplex product) on page 37.
- Duplex products
 - Rear-lower cover. See Rear-lower cover and rear-door links (duplex product) on page 41.
- Upper-cover assembly. See <u>Upper-cover assembly on page 51</u>.
- Left cover. See <u>Left cover on page 55</u>.
- High-voltage power-supply PCA. See <u>High-voltage power-supply PCA on page 87</u>.

Remove the color-misregistration sensor assembly

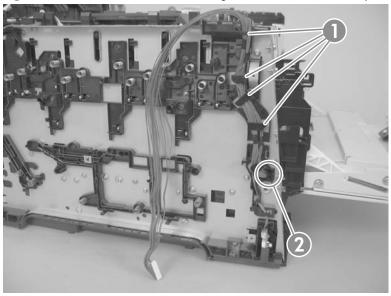
1. Disconnect one connector (callout 1), and then release the wire harness from the guide (callout 2).



Release the wire harness from the guide (callout 1).

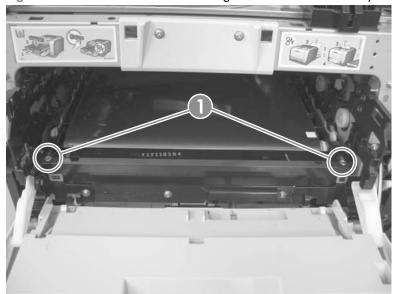
NOTE: When you remove the sensor assembly later in this procedure, pass the connector and wire harness through the hole in the chassis (callout 2).

Figure 1-125 Remove the color-misregistration sensor assembly PCA (2 of 4)

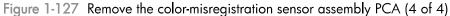


3. Remove two screws (callout 1).

Figure 1-126 Remove the color-misregistration sensor assembly PCA (3 of 4)



- 4. Carefully separate the sensor assembly (callout 1) from the product, pass the wire harness through the hole in the chassis, and then remove the assembly.
 - NOTE: Pass the connector and wire harness through the hole in the chassis. See Figure 1-125
 Remove the color-misregistration sensor assembly PCA (2 of 4) on page 91.





Reinstall the color-misregistration sensor assembly

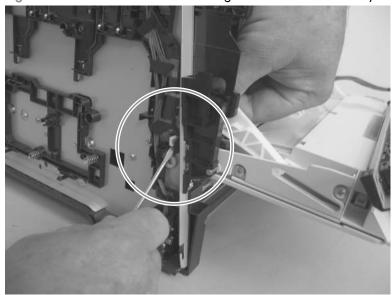
- בְּלֶבְ TIP: You might have to attempt this reinstall procedure several times before you successfully pass the connector through the hole in the chassis.
 - 1. Push the sensor assembly wire-harness connector into the hole in the chassis from the ITB side of the product.

Figure 1-128 Reinstall the color-misregistration sensor assembly PCA (1 of 2)



2. Use a small flat blade screwdriver to guide the connector through the hole.

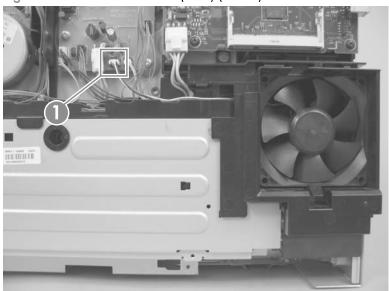




Fan (FM1)

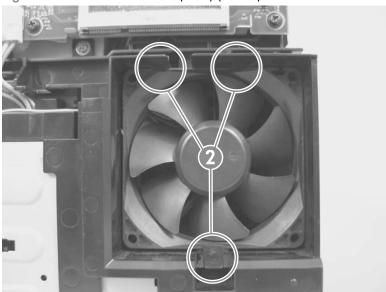
- CAUTION: When the fan is reinstalled, it must pull air into the product. The air-flow indicator arrow embossed on the fan chassis point into the fan duct when the fan is correctly installed.
 - 1. Remove the right cover. See Right cover on page 23.
 - 2. Disconnect one connector (callout 1; J206)

Figure 1-130 Remove the fan (FM1) (1 of 2)



- 3. Release three tabs (callout 1), and then remove the fan.
- NOTE: As the fan is removed, you must feed the wire harness through an opening behind the fan duct.
- TIP: Use a small flat blade screwdriver to release the upper to tabs on the fan duct a second time when the fan is about half way out of the duct.

Figure 1-131 Remove the fan (FM1) (2 of 2)



USB PCA (fax/memory-card models)

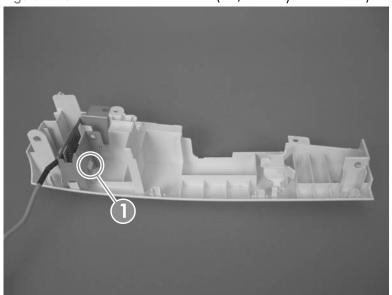
Before proceeding, remove the following components:

- Right cover. See <u>Right cover on page 23</u>.
- Right-front cover and power button. See <u>Right-front cover and power button on page 28</u>.

Remove the USB PCA

Release one tab (callout 1), and then remove the USB PCA.

Figure 1-132 Remove the USB PCA (fax/memory-card models)



Duplex-reverse drive assembly

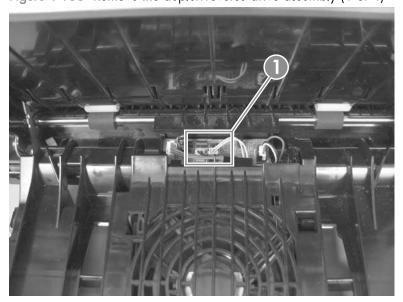
Before proceeding, remove the following components:

- Right cover. See <u>Right cover on page 23</u>.
- Scanner assembly. See <u>Scanner assembly on page 26</u>.
- Simplex product
 - Rear door. See Rear door (simplex product) on page 33.
 - Rear cover. See Rear cover and feed guide (simplex product) on page 37.
- Duplex product
 - Rear-upper cover. See Rear-upper cover (duplex product) on page 30.
 - Rear door. See Rear door (duplex product) on page 35.
 - Rear-lower cover. See Rear-lower cover and rear-door links (duplex product) on page 41.
- Upper-cover assembly. See <u>Upper-cover assembly on page 51</u>.

Remove the duplex-reverse drive assembly

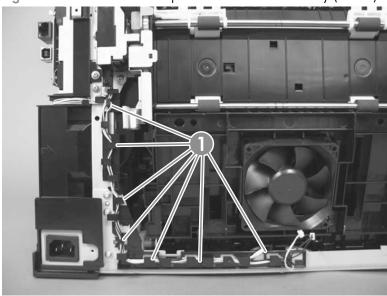
1. Disconnect two connectors (callout 1), and then pass the connectors under the rear-door rib assembly.

Figure 1-133 Remove the duplex-reverse drive assembly (1 of 4)



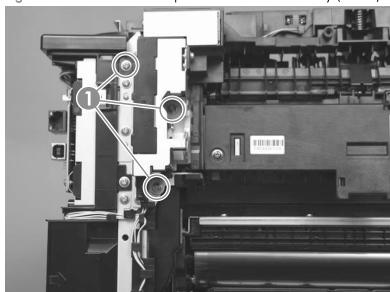
2. Release the wire harnesses from the retainer (callout 1).

Figure 1-134 Remove the duplex-reverse drive assembly (2 of 4)



3. Remove three screws (callout 1).

Figure 1-135 Remove the duplex-reverse drive assembly (3 of 4)



4. Remove the duplex-reverse drive assembly.

Figure 1-136 Remove the duplex-reverse drive assembly (4 of 4)



Fuser

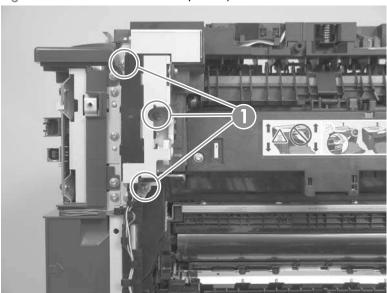
NOTE: The fuser can be removed without removing the scanner assembly and the upper-cover assembly. However, it might be easier to access some of the connectors with these components removed.

Before proceeding, remove the following components:

- Right cover. See Right cover on page 23.
- Scanner assembly. See <u>Scanner assembly on page 26</u>.
- Simplex product
 - Rear door. See Rear door (simplex product) on page 33.
 - Rear cover. See Rear cover and feed guide (simplex product) on page 37.
- Duplex product
 - Rear-upper cover. See Rear-upper cover (duplex product) on page 30.
 - Rear door. See Rear door (duplex product) on page 35.
 - Rear-lower cover. See Rear-lower cover and rear-door links (duplex product) on page 41.
- Upper-cover assembly. See <u>Upper-cover assembly on page 51</u>.
- Left cover. See <u>Left cover on page 55</u>.

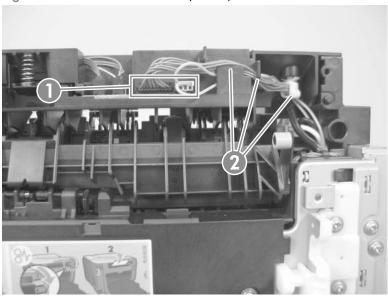
- WARNING! The fuser might be very hot. After turning off the product power, allow the fuser to cool for at least 5 minutes before removing it.
 - 1. **Duplex models only**: Remove three screws (callout 1) and separate the duplex-reverse drive assembly from the product.
 - <u>CAUTION</u>: The duplex-reverse drive assembly is still attached to the product. Carefully set the assembly out of the way.

Figure 1-137 Remove the fuser (1 of 8)



- 2. Disconnect two connectors (callout 1), and then release the wire harnesses from the guide (callout 2).
- Reinstallation tip When the upper cover is reinstalled, make sure that these wire harnesses (near the connectors) are correctly routed under the cover.

Figure 1-138 Remove the fuser (2 of 8)



3. Disconnect one connector (callout 1).

Figure 1-139 Remove the fuser (3 of 8)



4. In the following step, the connector and guide will be separated from the fuser. You **must not** use too much force and damage the lower portion of the guide. If the guide is damaged, the fuser must be replaced.

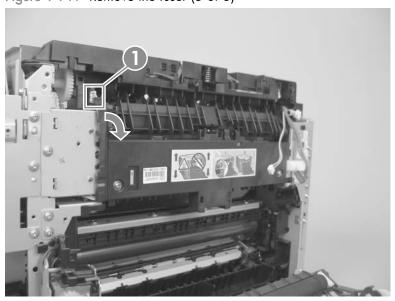
Figure 1-140 Remove the fuser (4 of 8)



- 5. Carefully disconnect one connector (callout 1) and then rotate the connector and the top portion of the guide away from the fuser.
- CAUTION: Do not separate the connector and guide more than is shown in Figure 1-140

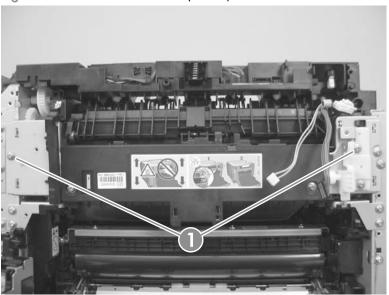
 Remove the fuser (4 of 8) on page 103. If the guide is damaged, you must replace the fuser. Do not damage the connector.

Figure 1-141 Remove the fuser (5 of 8)



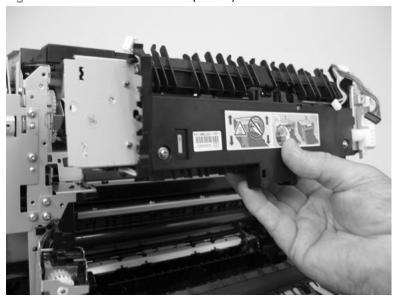
6. Remove two screws (callout 1).

Figure 1-142 Remove the fuser (6 of 8)



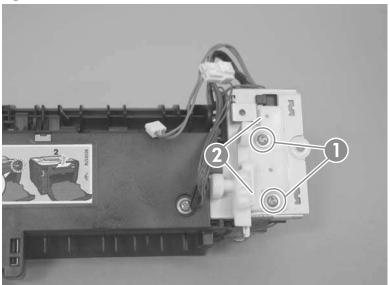
7. Remove the fuser.

Figure 1-143 Remove the fuser (7 of 8)



8. **Duplex models only**: Remove two screws (callout 1) and remove the duplex-gear assembly (callout 2). Install the assembly on the replacement fuser.

Figure 1-144 Remove the fuser (8 of 8)

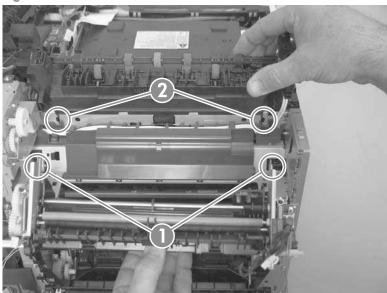


Reinstall the fuser

To reinstall you must insert the tabs (callout 1) on the fuser frame into the slots on the product chassis (callout 2).

ACAUTION: The fuser frame must be flush with the product chassis before you install the two fuser mounting screws. **Do not** use the screws to pull the fuser frame against the chassis.

Figure 1-145 Reinstall the fuser



Paper-delivery assembly

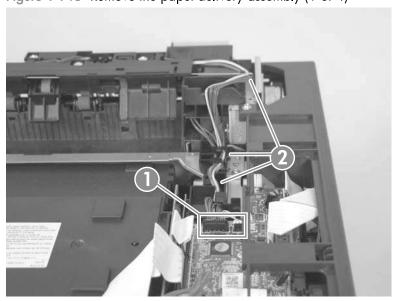
Before proceeding, remove the following components:

- Right cover. See <u>Right cover on page 23</u>.
- Scanner assembly. See <u>Scanner assembly on page 26</u>.
- Simplex product
 - Rear door. See Rear door (simplex product) on page 33.
 - Rear cover. See Rear cover and feed guide (simplex product) on page 37.
- Duplex product
 - Rear-upper cover. See Rear-upper cover (duplex product) on page 30.
 - Rear door. See Rear door (duplex product) on page 35.
 - Rear-lower cover. See Rear-lower cover and rear-door links (duplex product) on page 41.
- Upper-cover assembly. See <u>Upper-cover assembly on page 51</u>.
- Left cover. See <u>Left cover on page 55</u>.

Remove the paper-delivery assembly

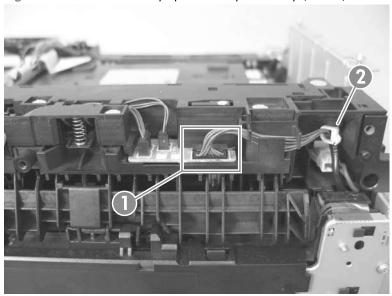
1. Disconnect three connectors (callout 1), and then release the wire harnesses from the retainer (callout 2).

Figure 1-146 Remove the paper-delivery assembly (1 of 4)



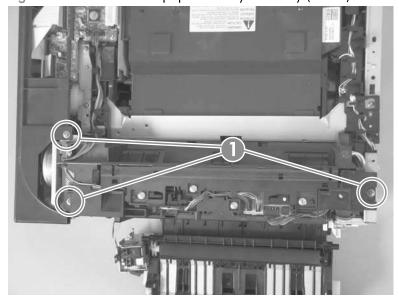
2. Disconnect two connectors (callout 1), and then release the wire harness from the wire clip (callout 2).

Figure 1-147 Remove the paper-delivery assembly (2 of 4)



3. Remove three screws (callout 1).

Figure 1-148 Remove the paper-delivery assembly (3 of 4)



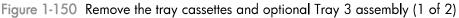
4. Remove the paper-delivery assembly.

Figure 1-149 Remove the paper-delivery assembly (4 of 4)



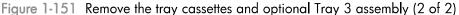
Tray cassettes and optional Tray 3 assembly

1. Tray 2 and Tray 3 cassette: Pull the tray straight out of the product to remove it.





- 2. Optional Tray 3 assembly: Lift the product straight up from the assembly, and then set the product on a sturdy, level surface.
 - CAUTION: Lift the product by using the right- and left-side hand-holds. Do not lift the product by grasping the Tray 2 cassette, or the cavity created if the cassette is removed.





2 Solve problems

To use the information in this chapter, you should have a basic understanding of the HP LaserJet printing process. Explanations of each mechanical assembly, the printer systems, and the basic theory of operation are contained in *LASERJET PRO 300/400 COLOR MFP Theory of Operation*. Do not perform any of these troubleshooting processes unless you understand the function of each product component.

- Solve problems checklist
- Menu map
- Troubleshooting process
- Troubleshooting tools
- Clear jams
- Solve paper-handling problems
- Solve image-quality problems
- Clean the product
- Solve performance problems
- Solve product connectivity problems
- Service mode functions
- Solve fax problems
- Product updates

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Solve problems checklist

If you are experiencing problems with the product, use the following checklist to identify the cause of the problem:

- Is the product connected to power?
- Is the product on?
- Is the product in the Ready state?
- Are all necessary cables connected?
- Are any lights blinking or do any messages appear on the control panel?
- Are genuine HP supplies installed?
- Was a recently replaced toner cartridge installed correctly, and was the pull tab on the cartridge removed?

For additional information about installation and setup, see the product getting started guide.

If you cannot find solutions to problems in this guide, go to www.hp.com/go/LJColorMFPM375 or www.hp.com/go/LJColorMFPM475.

Menu map

Print a menu map

- 1. Touch the Setup 🗞 button.
- 2. Open the Reports menu, and then touch the Menu Structure item.
- TIP: Touch the area of the control-panel display where the Cancel \times button would be to close the menus without printing the report.

ENWW Menu map 113

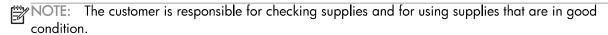
Troubleshooting process

When the product malfunctions or encounters an unexpected situation, the product control panel alerts you to the situation. This chapter contains information to help diagnose and solve problems.

- Use the pre-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 root cause of hardware malfunctions. The flowchart guides you to the section of this chapter that contains steps for correcting the malfunction.

Before beginning any troubleshooting procedure, check the following issues:

- Are supply items within their rated life?
- Does the configuration page reveal any configuration errors?



Pretroubleshooting checklist

The following table includes basic questions to ask the customer to quickly help define the problem.

General topic	Questions
Environment	 Is the product installed on a solid, level surface (+/- 1°)?
	• Is the power-supply voltage within \pm 10 volts of the specified power source?
	Is the power-supply plug inserted in the product and the outlet?
	 Is the operating environment within the specified parameters?
	 Is the product exposed to ammonia gas, such as that produced by diazo copiers or office cleaning materials?
	NOTE: Diazo copiers produce ammonia gas as part of the coping processes. Ammonia gas (from cleaning supplies or a diazo copier) can have an adverse affect on some product components (for example, the print-cartridge OPC).
	Is the product exposed to direct sunlight?
Media	Does the customer use only supported media?
	 Is the media in good condition (no curls, folds, or distortion)?
	 Is the media stored correctly and within environmental limits?
Input trays	 Is the amount of media in the tray within specifications?
	Is the media correctly placed in the tray?
	 Are the paper guides aligned with the stack?
	Is the cassette correctly installed in the product?

General topic	Questions
Toner cartridges	Is each toner cartridge installed correctly?
Transfer unit and fuser	Are the transfer unit and fuser installed correctly?
Doors	Is the front door closed?
Condensation	 Does condensation occur following a temperature change (particularly in winter following cold storage)? If so, wipe affected parts dry or leave the product on for 10 to 20 minutes.
	 Was a toner cartridge opened soon after being moved from a cold to a warm room? If so, allow the toner cartridge to sit at room temperature for 1 to 2 hours.
Miscellaneous	 Check for and remove any non-HP components (for example, toner cartridges or memory modules) from the product.
	 Check to see whether the hardware or software configuration has changed or the problem is not associated with any specific software.
	 Remove the product from the network and ensure that the failure is associated with the product before beginning troubleshooting.
	 For any print-quality issues, calibrate the product. See <u>Calibrate the product</u> on page 137

Power-on checks

When you turn on the product, if it does not make any sound or if the control-panel display is blank, check the following items:

- Verify that the product is plugged directly into an active electrical outlet that has the correct voltage. Do not plug the product into a surge protector or power strip.
- Verify that the power button is in the on position.
- Verify that the formatter is seated correctly.
- Remove any HP Jetdirect or other devices, and then try to turn the product on again.
- Ensure that the control-panel display is connected.
- Check the two fuses on the power supply.
- If necessary, replace the power supply.
- If necessary, replace the DC controller.

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Troubleshooting tools

Component diagnostics

LED diagnostics

Network LEDs (network models only)

The onboard network solution has two network port LEDs. When the product is connected to a properly working network through a network cable, 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. In addition, you can try to manually configure the link settings on the onboard network solution by using the product control-panel menus.

- 1. Touch the Setup 🔊 button.
- 2. Scroll to, and then touchNetwork Setup.
- 3. Scroll to, and then touch Link Speed.
- 4. Touch the appropriate link speed.

Control panel LEDs

The state of the Ready light and Attention light on the product signal the product status. The following table outlines the possible control-panel light states.

Product state	Ready light state	Attention light state
Initializing	Blinking	Blinking
Ready	On	Off
Receiving data/processing job or cancelling job	Blinking	Off
Error message	Off	Blinking
Fatal error (49 or 79 error)	On	On

The product will power off and then power on after one of these errors occurs.

Memory card LED (memory-card models only)

When a memory card is inserted into the correct memory-card slot, this LED turns on. If the LED is not lighting, try the following actions:

- Make sure that the memory card is in the correct slot.
- Make sure that the memory card is not defective.

- Verify that the flat flexible cable connection from the formatter to the memory-card reader assembly is firmly connected.
- If the card is not defective and the card is in the correct slot, the circuit board might have been
 inadvertently damaged by an electrostatic discharge from someone inserting a memory card. If
 this is the case, replace the memory-card reader assembly. If the error still occurs, replace the
 formatter.

Component tests

The control-panel tests require touching the Left Arrow \triangleleft button and the Cancel \times button on the touchscreen when they are not illuminated. Use the figure below to locate these buttons on the touchscreen.





Control-panel tests

Test the control-panel display

- 1. Touch the Setup 🔊 button.
- 2. Touch the Left Arrow ■ button and the Cancel ★ button at the same time.
- 3. Touch the Setup 🔊 button.
- 4. Open the 2ndry Service menu.
- 5. Touch the Dispaly Test item.

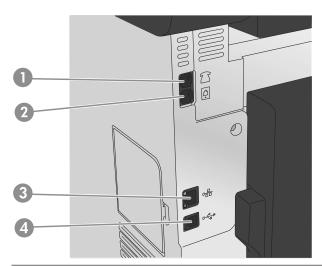
Test the control-panel buttons

- Touch the Setup button.

- 4. Open the 2ndry Service menu.
- 5. Touch the Button Test item.

Diagrams

Plug/jack locations

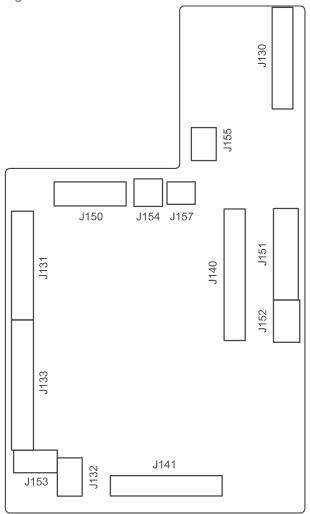


1	Telephone "line out" port for attaching an extension phone, answering machine, or other device
2	Fax "line in" port for attaching fax line to product
3	Network port
4	Hi-Speed USB 2.0 port

Location of connectors

DC controller PCA

Figure 2-2 DC controller connectors



Loose DC controller connections can cause issues. Check the following connections when troubleshooting product problems.

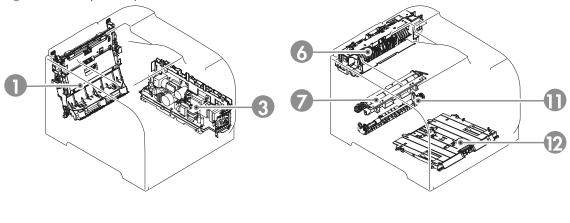
Connector	Board
J130	DC controller
J131	DC controller
J132	DC controller
J133	DC controller
J140	DC controller
J141	DC controller
J150	DC controller

Connector	Board
J151	DC controller
J152	DC controller
J153	DC controller
J154	DC controller
J156	DC controller
J157	DC controller
J1	Formatter
Ј2	Formatter
13	Formatter
J4	Formatter
J6	Formatter
J9	Formatter
J11	Formatter
P1	Formatter
P2	Formatter
P12	Formatter

Location of major components

Major components

Figure 2-3 Major components



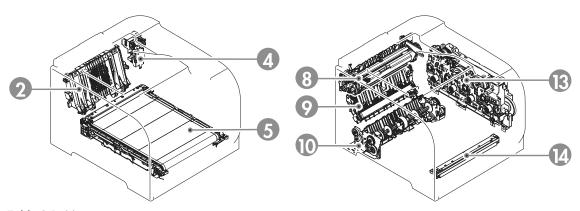


Table 2-1 Major components

ltem	Description
1	Duplex feed assembly (duplex models only)
2	Rear door rib assembly (duplex models only)
3	Power supply assembly
4	Duplex reverse drive assembly (duplex models only)
5	ITB assembly
6	Delivery assembly
7	Registration assembly
8	Fuser assembly
9	Secondary transfer feed assembly
10	Cassette pickup assembly
11	Duplex re-pickup guide assembly (duplex models only)

Table 2-1 Major components (continued)

Item	Description
12	Multipurpose tray pickup assembly
13	Drive assembly
14	Color misregistration and density sensor

Motors and fans

Figure 2-4 Motors and fans

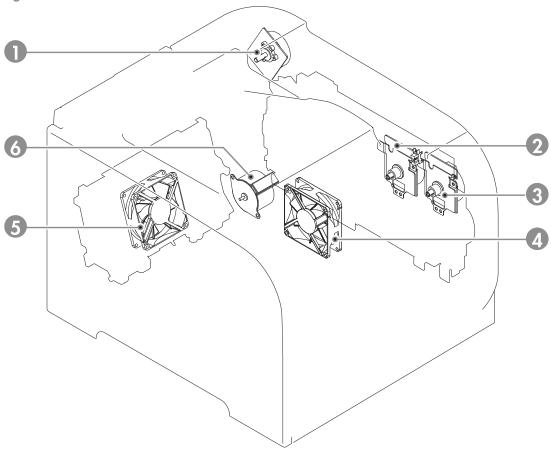


Table 2-2 Solenoid, sensors, and motors

ltem	Description
1	Fuser motor
2	Drum motor (M1)
3	Developing motor (M2)
4	Fan 1
5	Fan 2 (duplex models only)
6	Pickup motor

Rollers

Figure 2-5 Rollers

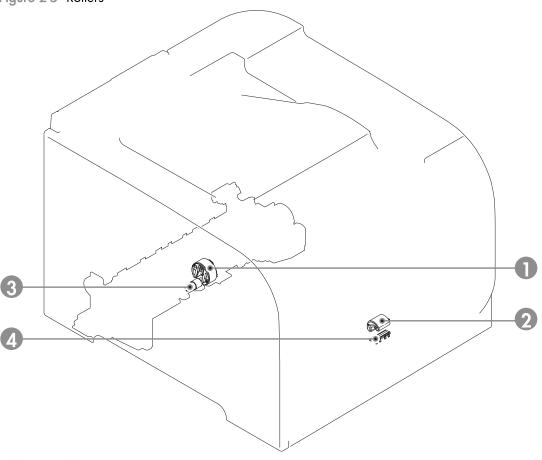


Table 2-3 Rollers

ltem	Description
1	Cassette pickup roller
2	Multipurpose tray pickup roller
3	Multipurpose tray separation pad
4	Cassette separation roller

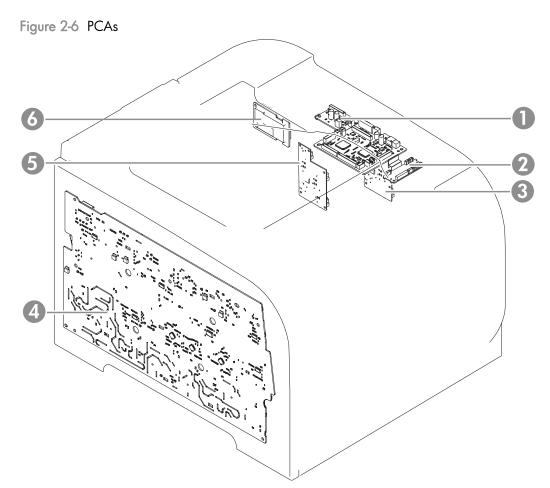


Table 2-4 PCAs

ltem	Description
1	DC controller PCA
2	Connector PCA
3	Driver PCA
4	High-voltage power supply PCA
5	Formatter
6	Sub-power supply PCA

Figure 2-7 Optional 250-sheet cassette

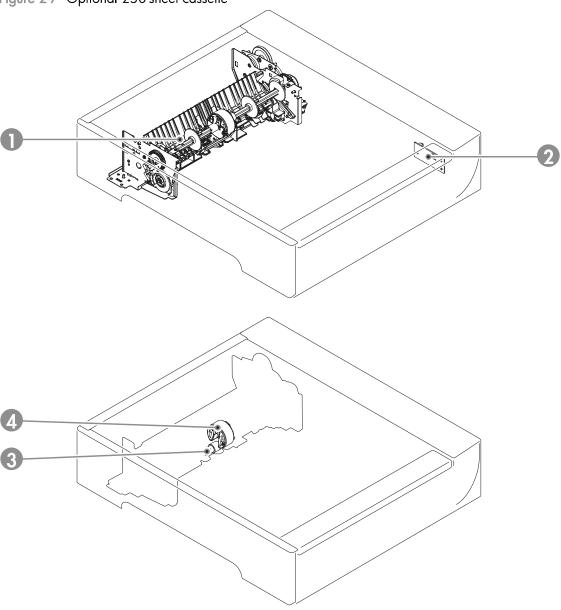


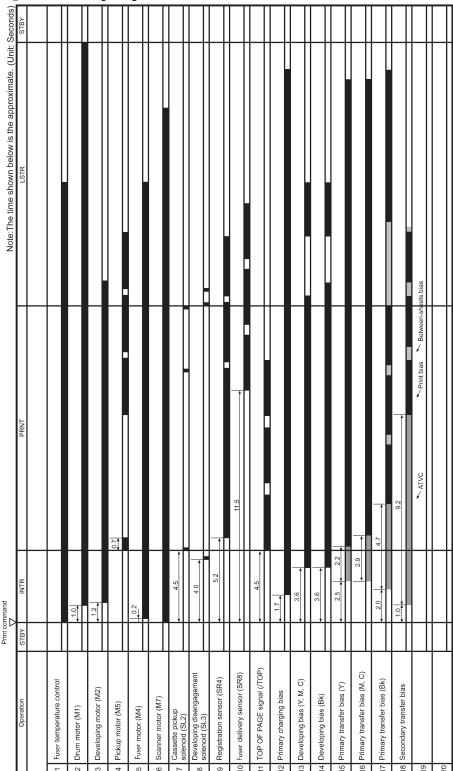
Table 2-5 Optional 250-sheet cassette

ltem	Description
1	Paper feeder pickup assembly
2	Paper feeder connector PCA
3	Paper feeder separation roller
4	Paper feeder pickup roller

General timing diagram

Approximate timing in seconds.

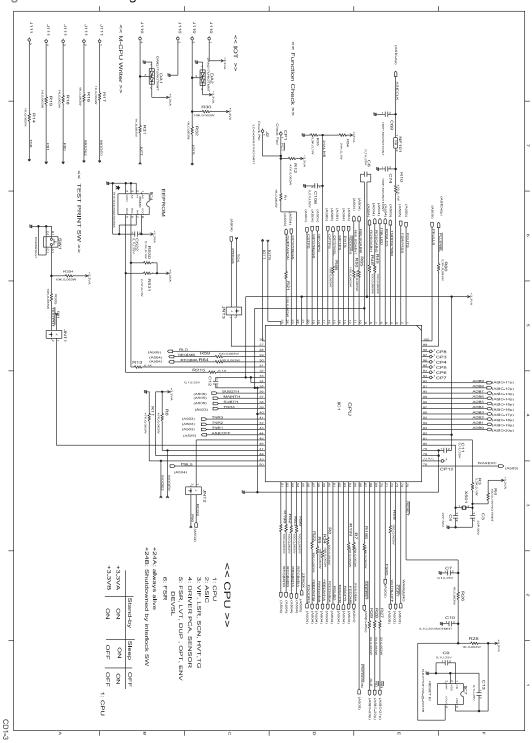
Figure 2-8 Timing diagram



General circuit diagram

Figure 2-9 Circuit diagram Ω ⋖ ന 2 9

Figure 2-10 CPU diagram



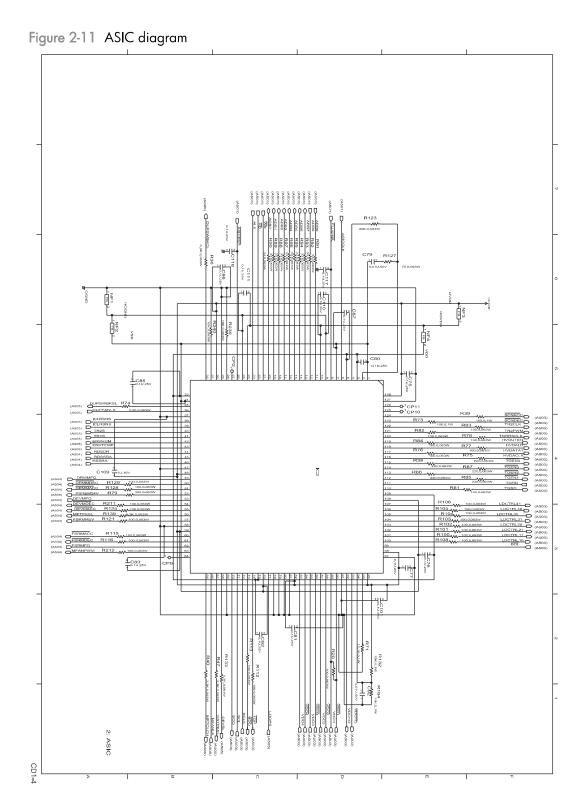
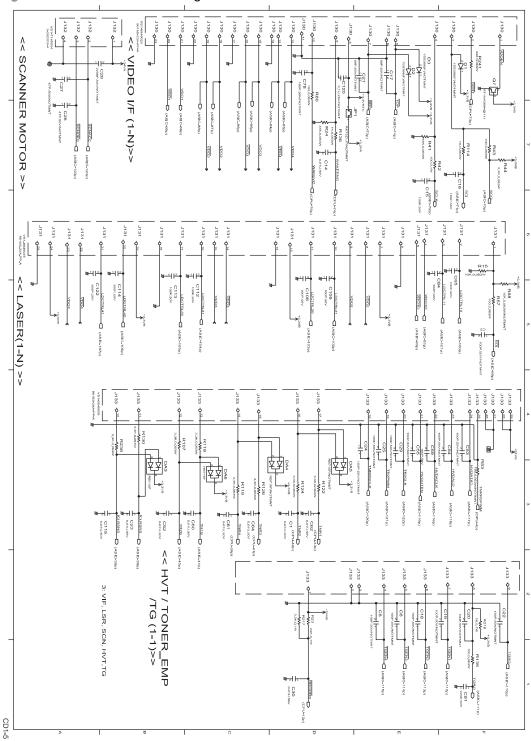
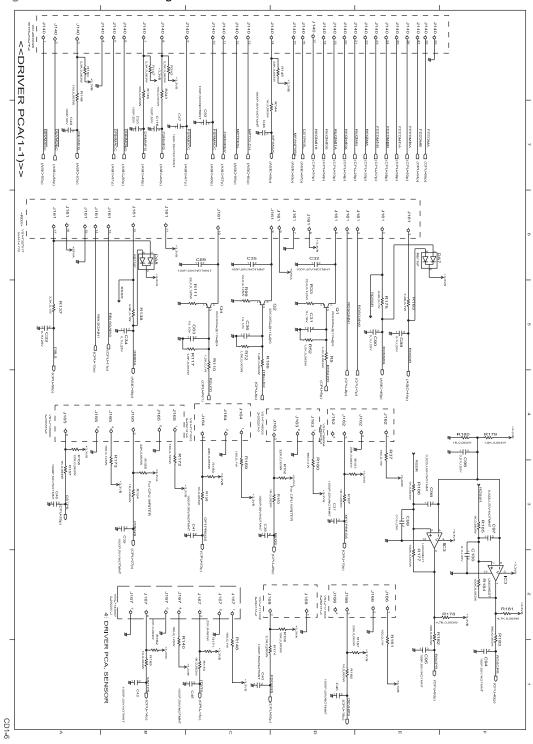


Figure 2-12 HVT/Toner EMP diagram



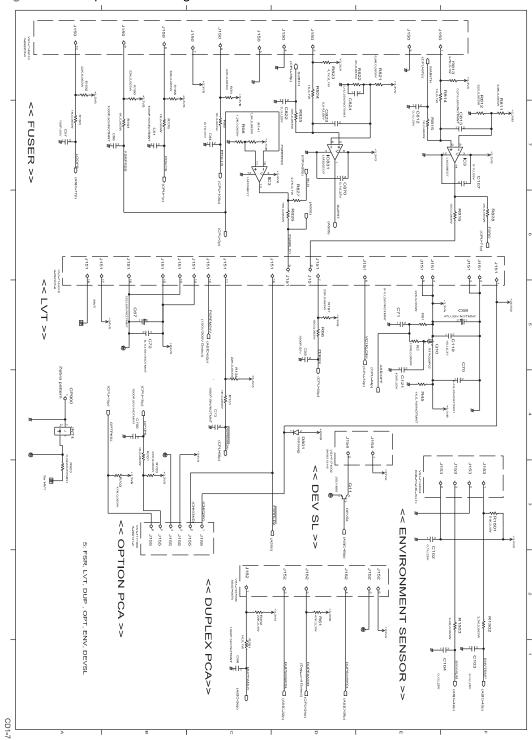
Driver PCA diagram

Figure 2-13 Driver PCA diagram



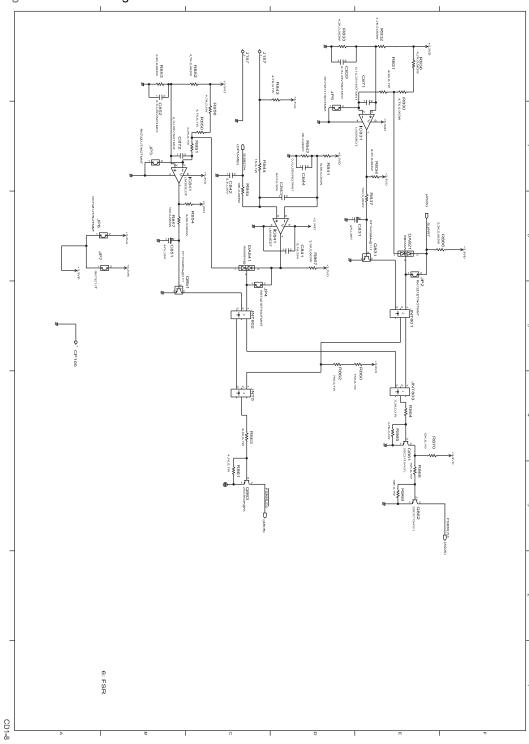
Duplexer PCA diagram

Figure 2-14 Duplexer PCA diagram



FSR diagram

Figure 2-15 FSR diagram



Internal print quality test pages

Print quality troubleshooting page

The print quality page helps solve problems with print quality.

Print a print quality page

- 1. Touch the Setup 🔊 button.
- 2. Open the Reports menu.
- 3. Scroll to, and then touch the Print Quality Page item.

Print quality assessment page

The print quality assessment page (diagnostics page) prints the calibration and color diagnostics pages.

On the first page, verify that all four toner cartridge colors appear on the page. Also, verify that the 90-degree angles in the corners are single toner colors and that the color plane registration is correct.

On the second page, verify that there are four print-cartridge color sweep bars near the top of thepage. From right to left, there should be even steps of toner gradation from light to 100%. The othersquares on the page are for use only during manufacturing.

Print a Diagnostics Page

- 1. Touch the Setup 🔊 button.
- 2. Open the Reports menu.
- 3. Touch the Diagnostics Page item.

Print the Configuration Page

The configuration page lists the current settings and properties of the product. You can use this page to check for color-plane registration and cartridge half tones. Print a configuration page from the product or from one of the Toolbox software programs.

Print a Configuration Page

- 1. Touch the Setup 🔊 button.
- 2. Open the Reports menu.
- 3. Touch the Configuration Report item.

Service page

The service page lists information about paper type settings, copy quality settings, and other status settings.

Print the Service Page

- 1. Touch the Setup 🔊 button.
- 2. Open the Reports menu.
- 3. Touch the Service Page item.

Clean the paper path

To clean the paper path, process a cleaning page.

Print the cleaning page

- 1. Touch the Setup 🔊 button.
- 2. Open the Service menu.
- 3. Touch the Cleaning Page item.

Print-quality troubleshooting tools

Repetitive image defects

If the product output has a consistent, repetitive defect, then use the table in this section to determine which part needs to be replaced based on the measured distance between the repetitions of the defect.

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 2-6 Repetitive image defects

Distance between identical defects	Component	Notes	
22 mm (0.87 in)	Developer roller	Replace the toner cartridge.	
38 mm (1.5 in)	Primary charging roller	Replace the toner cartridge.	
44.0 mm (1.73 in)	Registration roller	Clean the roller. If dirt still displays on the page, replace the registration unit.	
58 mm (2.3 in)	Fuser sleeve	Process a cleaning page. If dirt still displays on the page, replace the fuser.	
58 mm (2.3 in)	Transfer roller	Replace the secondary transfer feed unit.	
63 mm (2.5 in)	Preasure roller (one rotation)	Process a cleaning page. If dirt still displays on the page, replace the fuser.	
75 mm (2.9 in)	OPC drum	Replace the toner cartridge.	
78 mm (3 in)	ITB	Calibrate the product. If dirt still displays on the page, replace the ITB unit.	

Calibrate the product

Calibration is a product function that optimizes print quality. If you experience any print-quality problems, calibrate the product.

Calibrate the product from the control panel

- 1. Touch the Setup 🔊 button.
- 2. Open the System Setup menu.
- 3. Open the Print Quality menu.
- 4. Open the Color Calibration menu.
- 5. Touch the Calibrate Now item.

Calibrate the product from HP ToolboxFX

- 1. Open HP ToolboxFX.
- Click the Device Settings folder, and then click the Print Quality page.
- 3. In the area for Color Calibration, select the Calibrate Now check box.
- 4. Click the **Apply** item to calibrate the product immediately.

Control panel menus

Setup Menu

- HP Web Services
- Reports
- Quick Forms
- Fax Setup
- System Setup
- Service
- Network Setup

HP Web Services menu

Menu item	Description			
Enable Web Services	Enables HP Web Services so you can use HP ePrint and the Apps menu.			
	HP ePrint is a tool that prints documents by using any e-mail enabled device to send them to the product's e-mail address.			
	Use the Apps menu to print directly from select Web applications.			
Display E-Mail Address	Select whether to display the product's IP address on the control panel.			
Print Information Sheet	Print a page that contains the e-mail address for the product as well as other information for HP Web Services.			
Turn ePrint On/Off	Turn HP ePrint on or off.			
Turn Apps On/Off	Turn the Apps feature on or off.			
Remove Web Services	Remove HP Web Services from this product.			

Reports menu

Use the Reports menu to print reports that provide information about the product.

Menu item	Description		
Demo Page	Prints a page that demonstrates print quality		
Menu Structure	Prints a map of the control panel-menu layout. The active settings for each menu are listed.		
Configuration Report	Prints a list of all the product settings. Includes basic network information when the product is connected to a network.		
Supplies Status	Prints the status for each toner cartridge, including the following information:		
	 Estimated percentage of cartridge life remaining 		
	Approximate pages remaining		
	 Part numbers for HP toner cartridges 		
	 Number of pages printed 		
	 Information about ordering new HP toner cartridges and recycling used HP toner cartridges 		
Network Summary	Prints a list of all product network settings		
Usage Page	Prints a page that lists pages that were jammed or mispicked in the product, monochrome (black and white) or color pages, and reports the count for pages scanned, faxed, and copied.		
PCL Font List	Prints a list of all the PCL fonts that are installed.		
PS Font List	Prints a list of all the PostScript (PS) fonts that are installed		
PCL6 Font List	Prints a list of all the PCL6 fonts that are installed		
Color Usage Log	Prints a report that shows the user name, application name, and color usage information on a job-by-job basis		
Service Page	Prints the service report		
Diagnostics Page	Prints the calibration and color diagnostics pages		
Print Quality Page	Prints a page that helps solve problems with print quality		

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Quick Forms menu

Menu item	Sub-menu item	Description
Notebook Paper	Narrow Rule	Prints pages that have preprinted lines
	Wide Rule	
	Child Rule	
Graph Paper	1/8 inch	Prints pages that have preprinted graph lines
	5 mm	
Checklist	1-Column	Prints pages that have preprinted lines with check boxes
	2-Column	
Music Paper	Portrait	Prints pages that have preprinted lines for writing music
	Landscape	

Fax Setup menu

In the following table, items that have an asterisk (*) indicate the factory default setting.

Menu item	Sub-menu item	Sub-menu item	Description		
Fax Set-Up Utility			This is a tool for configuring the fax settings. Follow the on-screen prompts and select the appropriate response for each question.		
Basic Setup	Time/Date	(Settings for time format, current time, date format, and current date.)	Sets the time and date setting for the product.		
	Fax Header	Enter your fax number.	Sets the identifying information that is sent to the receiving product.		
		Enter company name.			
	Answer Mode	Automatic*	Sets the type of answer mode. The following options are available:		
		Manual			
		TAM	 Automatic: The product automatically answers an incoming call on the configured number of rings. 		
		Fax/Tel	 Manual: The user must press the Start Fax button or use an extension phone (press buttons 1-2-3 on the extension phone) to make the product answer the incoming call. 		
			 TAM: A telephone answering machine (TAM) is attached to the Aux phone port of the product. The product will listen for fax tones after the answering machine has picked up the call- and pick up a call if fax tones are detected. 		
			 Fax/Tel: The product will automatically pick up all calls and determine if the call is a voice or fax call. If the call is a fax call, the product handles the call as an incoming fax. If the incoming call is detected as a voice call, the product will generate an audible synthesized ring to alert the user of an incoming voice call. 		
	Rings to Answer		Sets the number of rings that must occur before the fax modem answers. The default setting is 5.		
	Distinctive Ring	All Rings*	If you have distinctive ring phone service, use this item to configure how the product responds to incoming calls.		
		Single			
		Double	 All Rings: The product answers all ring patterns or calls that come through the telephone line. 		
		Triple	 Single: The product answers any calls that produce a single- ring pattern. 		
		Double and Triple	 Double: The product answers any calls that produce a double-ring pattern. 		
			Triple: The product answers any calls that produce a triple- ring pattern.		
			 Double and Triple: The product answers any calls that produce a double-ring or triple-ring pattern. 		

Menu item	Sub-menu item	Sub-menu item	Description
	Dial Prefix On		Specifies a prefix number that must be dialed when sending faxes from the product. If you turn this feature on, the product prompts
		Off*	you to enter the number and then it automatically includes that number every time you send a fax.
Advanced Setup	Fax Resolution	Standard	Sets the resolution for sent documents. Higher resolution images
		Fine*	have more dots per inch (dpi), so they show more detail. Lower resolution images have fewer dots per inch and show less detail,
		Superfine	but the document size is smaller and the fax takes less time to transmit.
		Photo	
	Lighter/Darker		Sets the darkness of outgoing faxes.
	Fit to Page	On*	Shrinks incoming faxes that are larger than the paper size set for
		Off	the tray.
	Glass Size	Letter	Sets the default paper size for documents being scanned from the flatbed scanner.
		A4	tiatbea scanner.
	Dialing Mode	Tone*	Sets whether the product should use tone or pulse dialing.
		Pulse	
	Redial if Busy	On*	Sets whether the product should attempt to redial if the line is
		busy.	busy.
	Redial if No Answer	On	Sets whether the product should attempt to redial if the recipient fax number does not answer.
		Off*	tax number does not driswer.
	Redial if Comm. Error	On*	Sets whether the product should attempt to redial the recipient fax
		Off	number if a communication error occurs.
	Detect Dial Tone	On	Sets whether the product should check for a dial tone before
		Off*	sending a fax.
	Billing Codes	On	Enables the use of billing codes when set to On . A prompt
		Off*	displays where you can enter the billing code for an outgoing fax
	Extension Phone	On*	When this feature is enabled, you can press the 1-2-3 buttons on
		Off	the extension phone to cause the product to answer an incoming fax call.
	Stamp Faxes	On	Sets the product to print the date, time, sender's phone number,
		Off*	and page number on each page of incoming faxes.

Menu item	Sub-menu item	Sub-menu item	Description		
	Private Receive	On	Setting the Private Receive feature to On requires you to set a		
		Off*	product password. After setting the password, the following options are set:		
			The Private Receive feature is turned on.		
			 All old faxes are deleted from memory. 		
			 Fax forwarding is set to Off and is not allowed to be changed. 		
			All incoming faxes are stored in memory.		
	Confirm Fax Number	On	Confirm a fax number by entering it a second time.		
		Off*			
	Allow Fax Reprint	On*	Sets whether incoming faxes are stored in memory for reprinting		
		Off	later.		
	Fax/Tel Ring Time	20*	Sets the time, in seconds, after which the product should stop		
		30	sounding the Fax/Tel audible ring to notify the user of an incoming voice call.		
		40			
		70			
	Print Duplex	On	Sets duplex printing as the default for faxes.		
		Off*	NOTE: This item is available only for duplex models.		
	Fax Speed	Fast (V.34)*	Sets the allowed fax communication speed.		
		Medium (V.17)			
		Slow (V.29)			

System Setup menu

In the following table, items that have an asterisk (*) indicate the factory default setting.

Menu item	Sub-menu item	Sub-menu item	Sub-menu item	Description
Language	(List of available control-panel display languages.)			Sets the language in which the control panel displays messages and product reports.
Paper Setup	Default Paper Size	Letter A4 Legal		Sets the size for printing internal reports, faxes, or any print job that does not specify a size.
	Default Paper Type	Lists available paper types.		Sets the type for printing internal reports, faxes, or any print job that does not specify a type.
	Tray 1	Paper Type Paper Size		Select the default size and type for Tray 1 from the list of available sizes and types.
	Tray 2	Paper Type Paper Size		Select the default size and type for Tray 2 from the list of available sizes and types.
	Paper Out Action	Wait forever*		Determines how the product reacts when a print job requires a paper size or type that is unavailable or when the tray is empty.
		Override		Wait forever: The product waits until you load the correct paper.
				 Override: Print on a different size paper after a specified delay.
				 Cancel: Automatically cancel the print job after a specified delay.
				 If you select either the Override or Cancel item, the control panel prompts you for the number of seconds to delay.
Print Quality	Color Calibration	Calibrate Now		Performs a full calibration.
		Power-On Calibration		 Calibrate Now: Performs an immediate calibration.
				 Power-On Calibration: Specify the length of time the product should wait after you turn it on before it calibrates.
	Adjust Alignment	Print Test Page		Use this menu to shift the margin alignment to center the image on the page from top to bottom and from left to right. Before adjusting these values, print a test page. It provides alignment guides in the X and Y directions so you can determine which adjustments are necessary.

Menu item	Sub-menu item	Sub-menu item	Sub-menu item	Description
		Adjust Tray <x></x>	X1 Shift	Use the X1 Shift setting to center the image from side to
			X2 Shift	side on a single-sided page or for the second side of a two-sided page.
			Y Shift	Use the X2 Shift setting to center the image from side to side on the first side of a two-sided page.
				Use the Y Shift setting to center the image from top to bottom on the page.
Energy Settings	Sleep Delay	15 Minutes*		Sets how long the product remains idle before it enters
		30 Minutes		Sleep mode. The product automatically exits Sleep mode when you send a print job or press a control
		1 Hour		panel button.
		2 Hours		NOTE: The default Sleep Delay time is 15 minutes.
		Off		
		1 Minute		
	Auto Power Down		30 Minutes*	Select the length of time after which the product
		Delay	1 Hour	automatically turns off.
			2 Hours	NOTE: The default Power Down Delay time is 30 minutes.
			4 Hours	
			8 Hours	
			24 Hours	
			Never	
		Wake Events	USB Job	Select whether the product wakes when it receives each
			LAN Job	of these types of jobs or actions.
			Wireless Job	The default for each option is Yes.
			Button Press	
/olume Settings	Alarm Volume			Set the volume levels for the product. The following
	Ring Volume			options are available for each volume setting: Off
	Key-Press Volume			
	Phone Line Volume			SoftMedium*
T: /D/	(C - 11: 1 - 1:			• Loud
Time/Date	(Settings for time format, current time, date format, and current date.)			Sets the time and date setting for the product.

Menu item	Sub-menu item	Sub-menu item	Sub-menu item	Description
Product Security	On			Sets the product-security feature. If you select the On
	Off			setting, you must set a password.
USB Flash Drive	On			Enable or disable printing directly from the USB port on
	Off			the front of the product.
Disable Fax	On			Enable or disable the Fax feature.
	Off			
Supply Settings	Black Cartridge	Very Low Setting	Prompt	Set how the product behaves when the black toner cartridge reaches the very low threshold.
			Continue*	 Prompt: The product stops printing and prompts
			Stop	you to replace the toner cartridge. You can acknowledge the prompt and continue printing. A customer configurable option on this product is "Prompt to Remind Me in 100 pages, 200 pages, 300 pages, or never." This option is provided as a customer convenience and is not an indication these pages will have acceptable print quality. Continue: The product alerts you that the toner cartridge is very low, but it continues printing. Stop: The product stops printing until you replace the toner cartridge.
		Low Threshold	Enter percentage	Use the arrow buttons to increase or decrease the percentage of estimated life remaining at which the product alerts you that the toner cartridge is low.
				For the black cartridge that ships with the product, the default is 27%. For the standard replacement black toner cartridge, the default is 15%. For the high-capacity replacement black toner cartridge, the default is 8%.
				The default values are intended to provide approximately two weeks of use before the cartridge reaches the very low state.

Menu item	Sub-menu item	Sub-menu item	Sub-menu item	Description
	Color Cartridges	Very Low Setting	Stop	Set how the product behaves when the one of the color
			Prompt	toner cartridges reaches the very low threshold.
			Continue	 Prompt: The product stops printing and prompts you to replace the toner cartridge. You can
			Print Black*	acknowledge the prompt and continue printing. A customer configurable option on this product is "Prompt to Remind Me in 100 pages, 200 pages, 300 pages, or never." This option is provided as a customer convenience and is not an indication these pages will have acceptable print quality.
				 Continue: The product alerts you that the toner cartridge is very low, but it continues printing.
				 Print Black: The product has been customer configured to print using only the black toner cartridge when the level of a color supply is very low. The color supply might still be able to produce acceptable print quality. To print in color, either replace the color supply or reconfigure the product.
				When you choose to replace the very low toner cartridge, color printing resumes automatically.
				 Stop: The product stops printing until you replace the toner cartridge.
		Low Threshold	Cyan	Enter percentage
			Magenta	Use the arrow buttons to increase or decrease the
			Yellow	percentage of estimated life remaining at which the product alerts you that the toner cartridge is low.
				For the color toner cartridges that ship with the product, the default is 20%. For the replacement color toner cartridges, the default is 10%.
				The default values are intended to provide approximately two weeks of use before the cartridge reaches the very low state.