

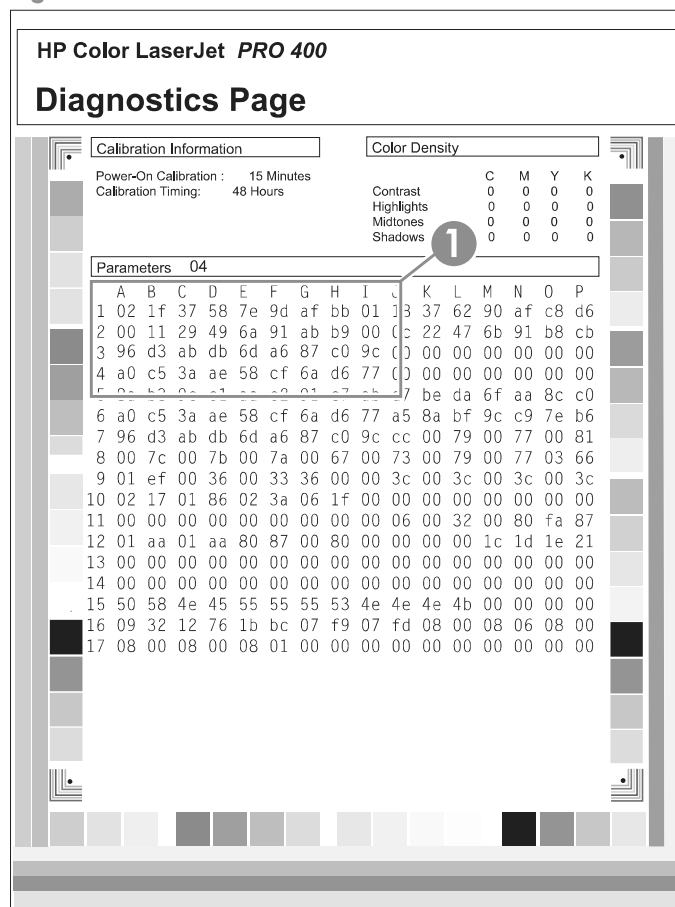
Reinstall the ITB

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

1. Use the control panel to print a **Diagnostics page**. See the complete version of the English service manual.
2. 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 [Figure 1-93 Remove the ITB \(2 of 6\) on page 64](#) and [Figure 1-92 Remove the ITB \(1 of 6\) on page 64](#).

Figure 1-98 Reinstall the ITB



Drum motor (M1) and developer motor (M2)

This procedure can be used to remove motor M1 or motor M2 separately.

CAUTION: HP does not recommend that you remove or replace both motors at the same time.

1. Remove the right cover. See [Right cover on page 21](#).
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.

Figure 1-99 Remove motor M1 or motor M2 (1 of 5)



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


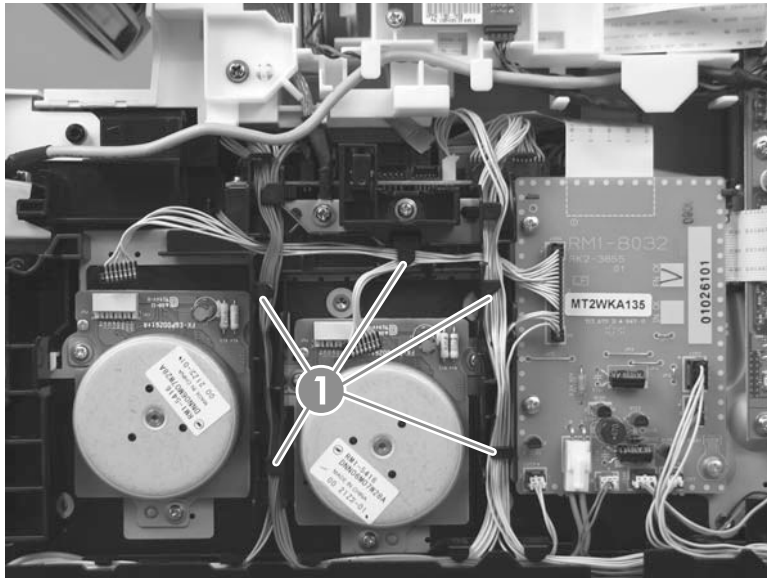
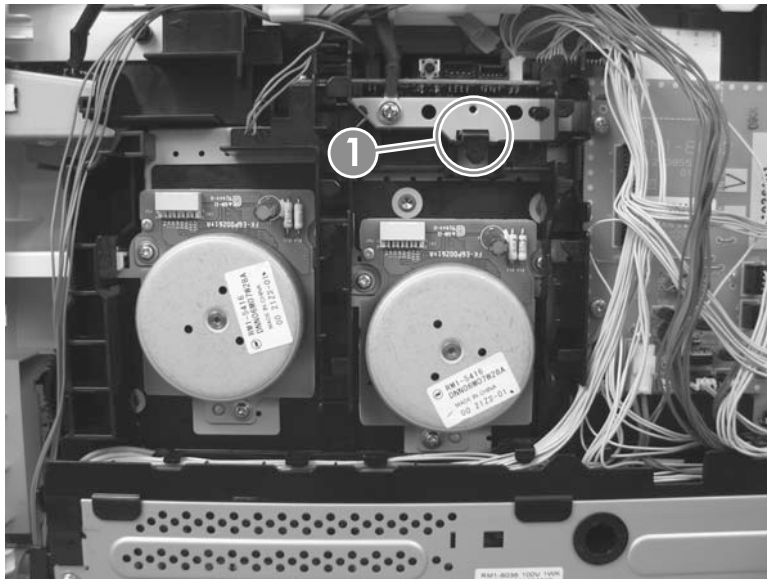
 **TIP:** Additional connectors might need to be disconnected to release the wire harnesses from the retainer.

Figure 1-100 Remove motor M1 and motor M2 (2 of 5)



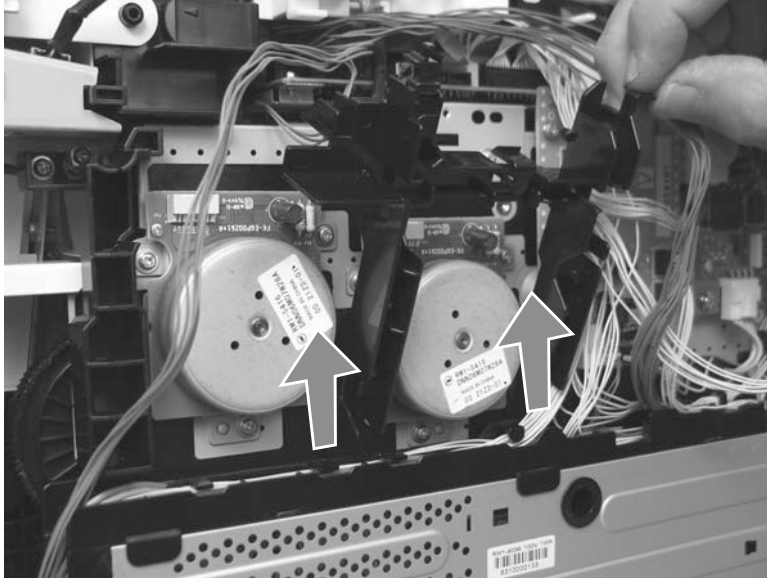
4. Release one tab (callout 1).

Figure 1-101 Remove motor M1 and motor M2 (3 of 5)



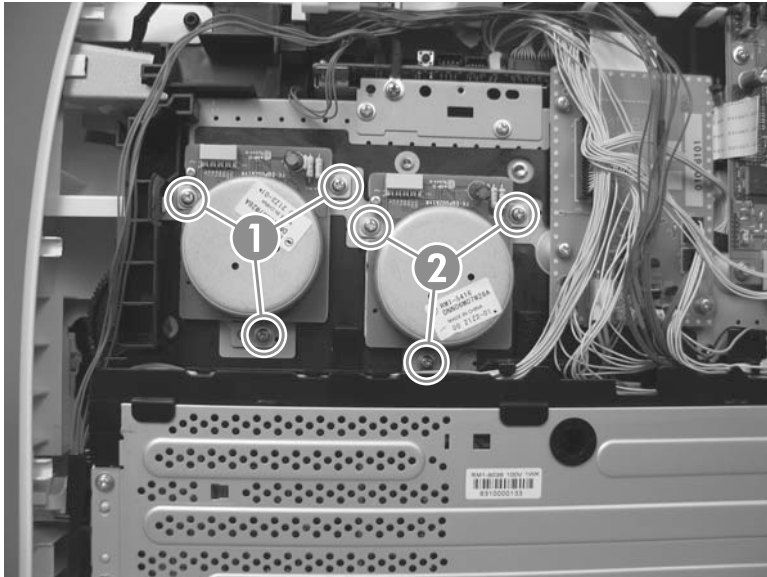
5. Rotate the top of the retainer away from the chassis, and then lift it up to remove it.

Figure 1-102 Remove motor M1 and motor M2 (4 of 5)



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

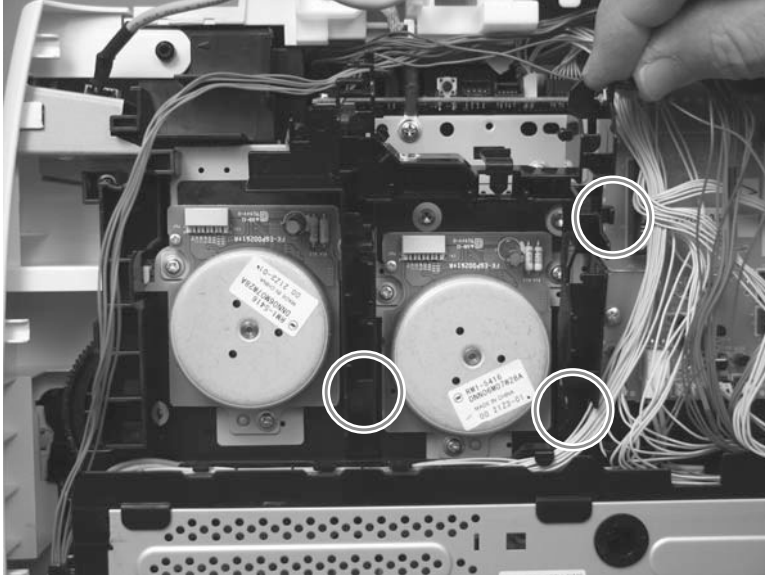
Figure 1-103 Remove motor M1 and motor M2 (5 of 5)



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

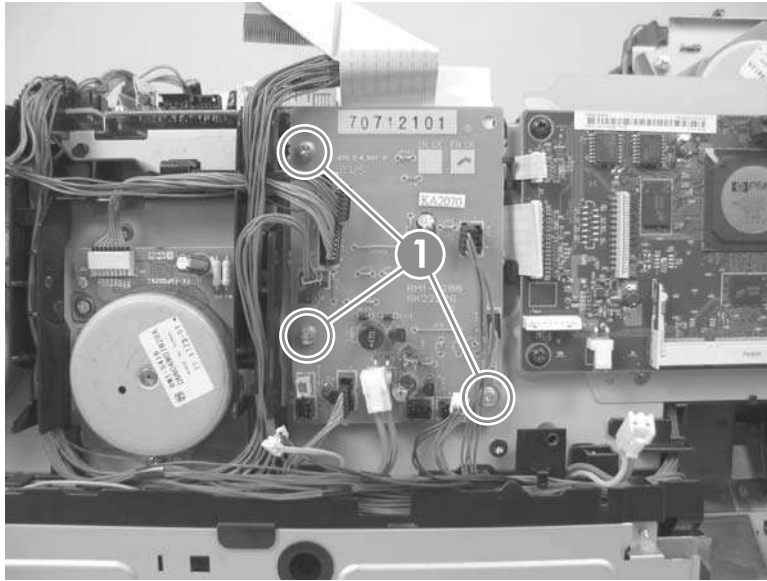
When the motor wire harness retainer is reinstalled, the two tabs at the bottom of the retainer must be positioned behind the retainer on the low-voltage power supply. The tab at the side of motor wire harness retainer must be positioned behind the PCA next to motor M2.

Figure 1-104 Reinstall the motor M1 and motor M2 wire-harness retainer



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

Figure 1-106 Remove the Intermediate PCA (2 of 2)




Formatter PCA

Special considerations

 **WARNING!** 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 controller.


 **NOTE:** If you are only installing a replacement formatter PCA, go to [Remove the formatter PCA on page 74](#).


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

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

3. Turn the product off.
4. Install a replacement DC controller. See [DC controller PCA on page 76](#).
5. Turn the product on.

Remove the formatter PCA

 **CAUTION:** Do not bend or fold the flat flexible cables (FFCs) during removal or installation. Also, do not straighten prefolds in the FFCs. You *must* ensure 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. Remove the right cover. See [Right cover on page 21](#).

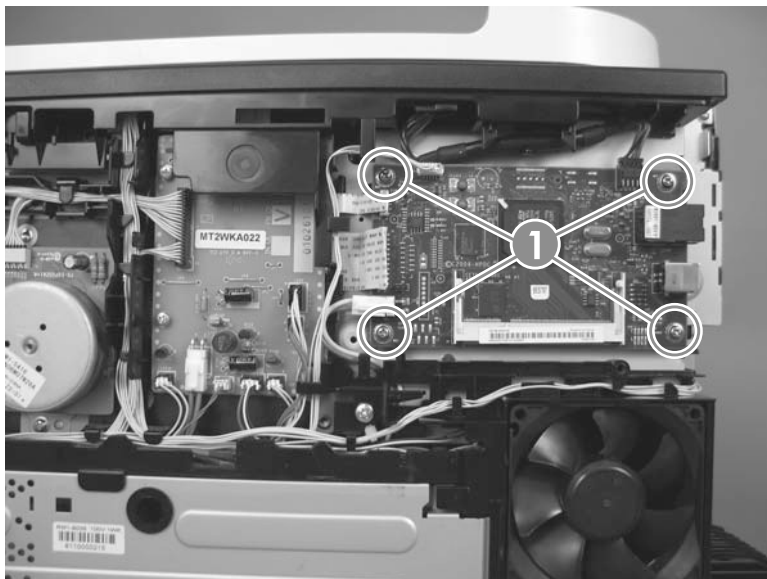
2. Disconnect all the connectors.

Figure 1-107 Remove the formatter PCA (1 of 2)




3. Remove four screws (callout 1), and then remove the formatter PCA.

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



DC controller PCA

Special considerations


 **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.

 **NOTE:** If you are only installing a replacement DC controller PCA, go to [Remove the DC controller PCA on page 76](#).

1. Install a replacement DC controller PCA.
2. Turn the product on, and wait for the print-cartridge volume indicators to appear on the control-panel display.

 **NOTE:** This allows important product information to be written to the replacement DC controller PCA.

3. Turn the product off.
4. Install a replacement formatter PCA. See [Formatter PCA on page 74](#).
5. Turn the product on.

Remove the DC controller PCA

Before proceeding, remove the following components:

- Right cover. See [Right cover on page 21](#).
- Upper cover. See [Upper-cover assembly on page 41](#).
- Right panel. See [Right panel on page 52](#).

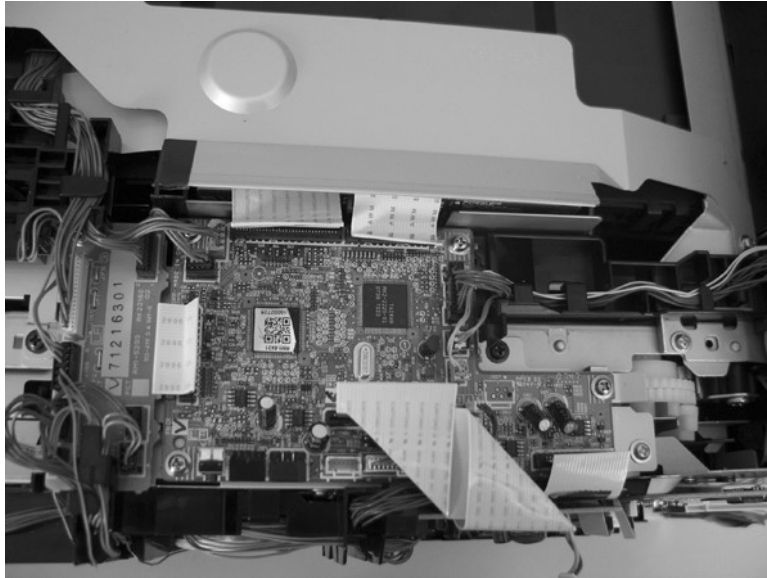
⚠ CAUTION: Do not bend or fold the flat flexible cables (FFCs) during removal or installation. Also, do not straighten prefolds in the FFCs. You *must* ensure that all FFCs are fully seated in their connectors. Failure to fully seat an FFC into a connector can cause a short circuit in a PCA.



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.

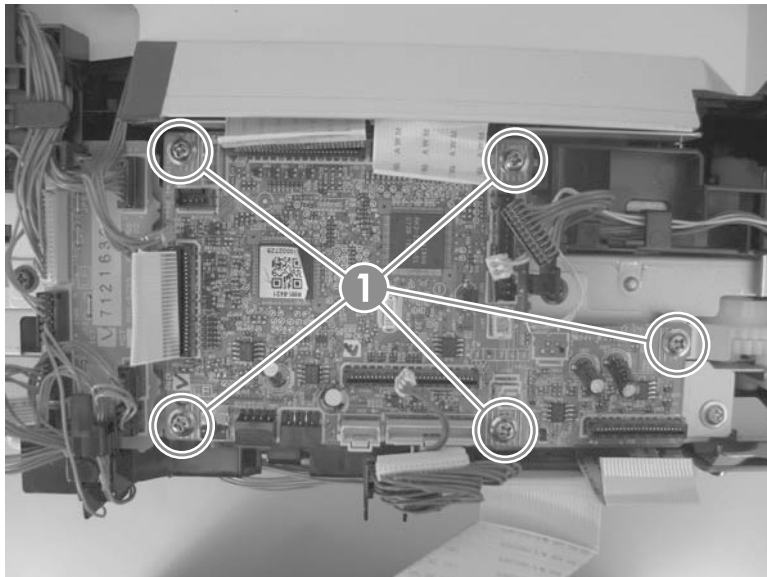
1. Disconnect all the connectors.

Figure 1-109 Remove the DC controller PCA (1 of 2)



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

Figure 1-110 Remove the DC controller PCA (2 of 2)



Fuser motor assembly

Before proceeding, remove the following components:

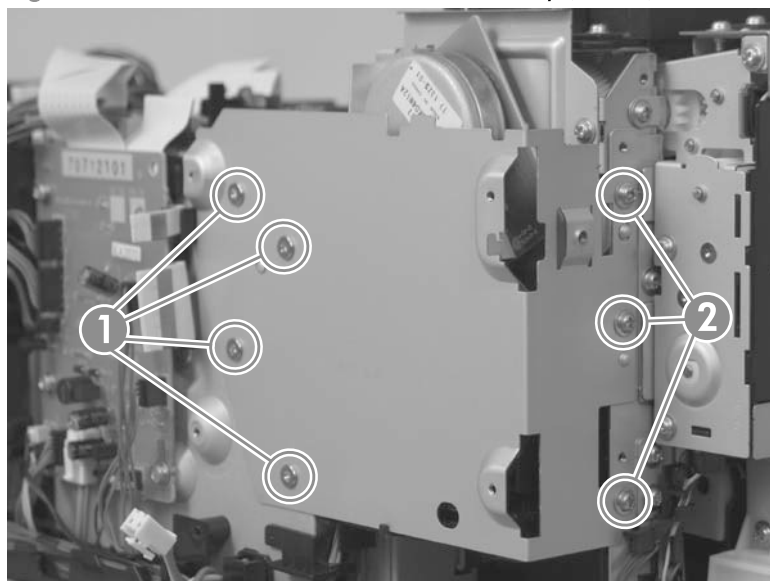
- Right cover. See [Right cover on page 21](#).
- Formatter PCA. See [Formatter PCA on page 74](#).
- Rear-upper cover (duplex products). See [Rear-upper cover \(duplex product\) on page 24](#).
- Rear door (simplex products). See [Rear door \(simplex product\) on page 26](#).
- Rear cover (simplex products). See [Rear cover and feed guide \(simplex product\) on page 30](#).
- Upper-cover assembly. See [Upper-cover assembly on page 41](#).
- Control-panel assembly. See [Control-panel assembly on page 50](#).
- Right panel. See [Right panel on page 52](#).

Remove the fuser motor assembly

1. Remove four flat-head screws (callout 1), three screws (callout 2), and then remove the sheet-metal plate.

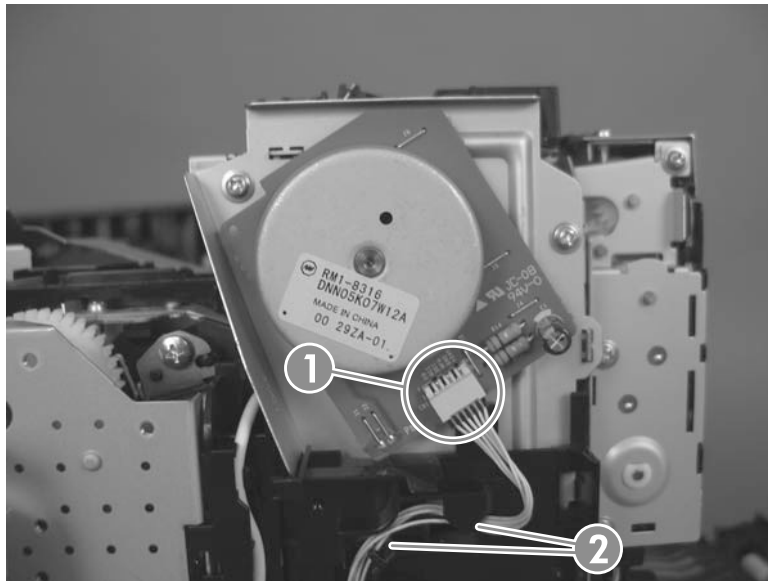
⚠ CAUTION: The four flat-head screws must be installed in the correct position to avoid damage to the formatter. Standard screws can contact the formatter when it is installed and can cause a formatter short circuit.

Figure 1-111 Remove the fuser motor assembly (1 of 4)



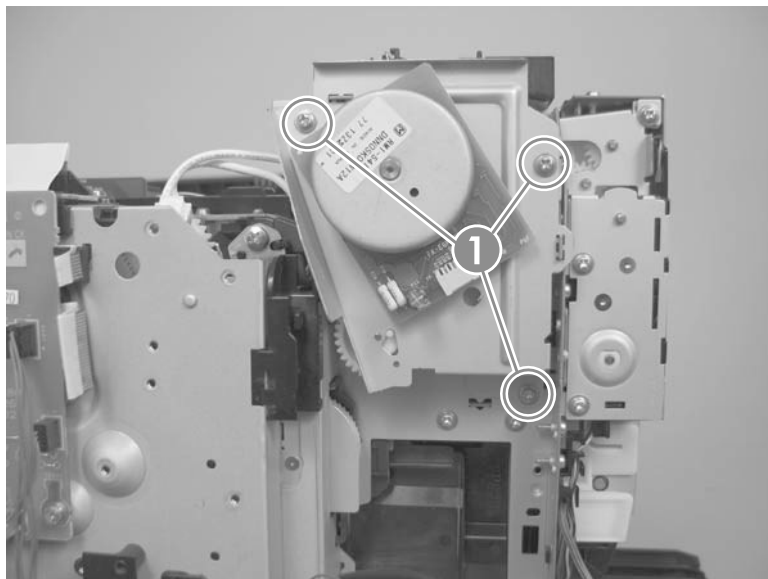
2. Disconnect one connector (callout 1) and remove the wire from the retainer (callout 2).

Figure 1-112 Remove the fuser motor assembly (2 of 4)



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

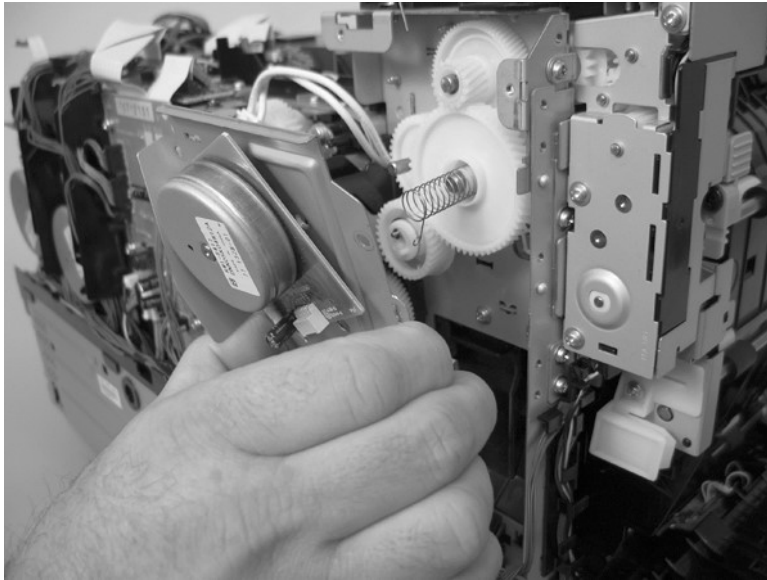
Figure 1-113 Remove the fuser motor assembly (3 of 4)



4. Be careful, the spring and the gears behind the fuser motor assembly are not captive.

⚠ CAUTION: Do not lose the spring or gears when you remove the fuser motor assembly.

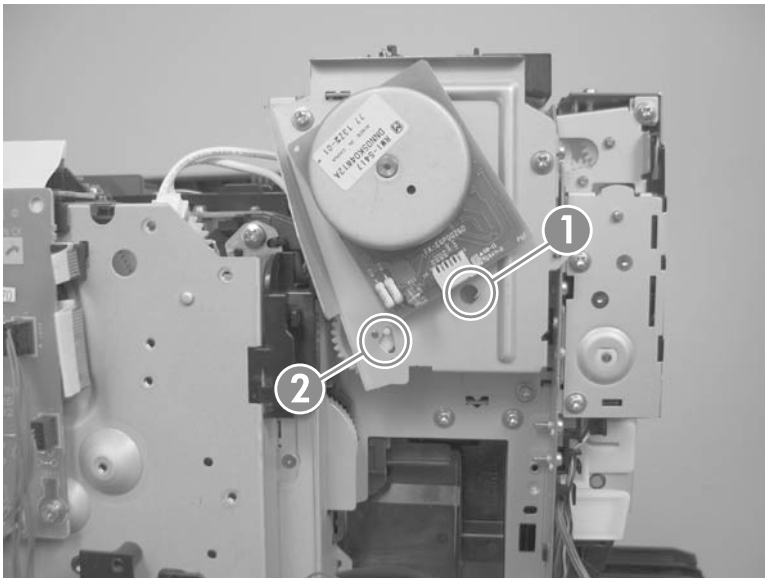
Figure 1-114 Remove the fuser motor assembly (4 of 4)



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 fits flat against the product chassis when the fuser motor assembly is correctly installed.

Figure 1-115 Reinstall the fuser motor assembly



High-voltage power-supply PCA

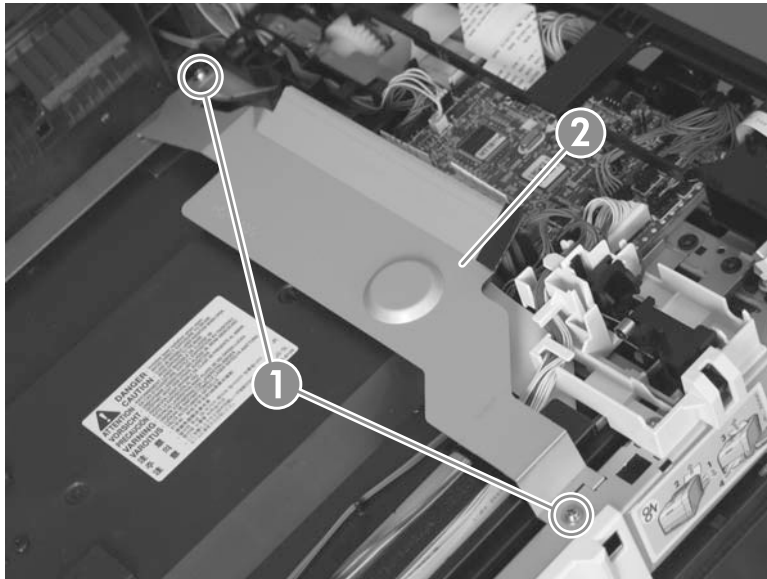
Before proceeding, remove the following components:

- Right cover. See [Right cover on page 21](#).
- Upper-cover assembly. See [Upper-cover assembly on page 41](#).
- Left cover. See [Left cover on page 44](#).
- Rear-lower cover (duplex products). See [Rear-upper cover \(duplex product\) on page 24](#).
- Rear door (simplex products). See [Rear door \(simplex product\) on page 26](#).
- Rear cover (simplex products). See [Rear cover and feed guide \(simplex product\) on page 30](#).

Remove the high-voltage power-supply PCA

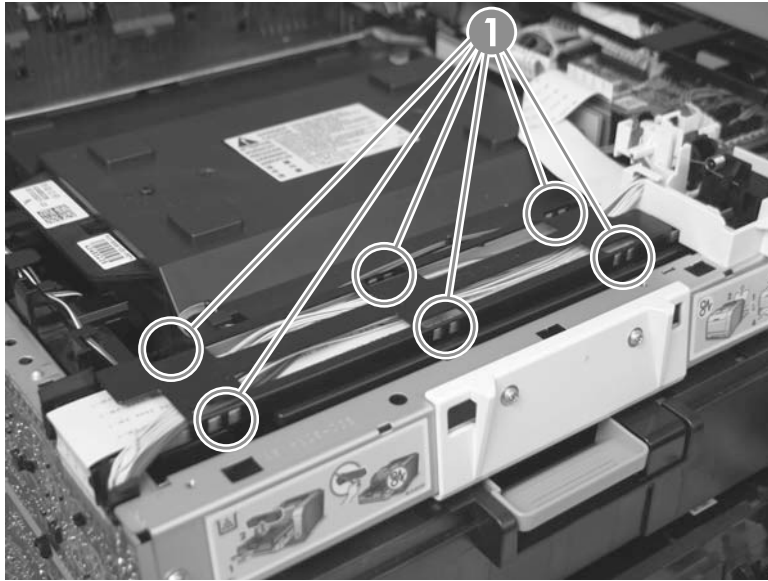
1. Remove two screws (callout 1), and then remove the sheet-metal plate (callout 2).

Figure 1-116 Remove the high-voltage power-supply PCA (1 of 5)



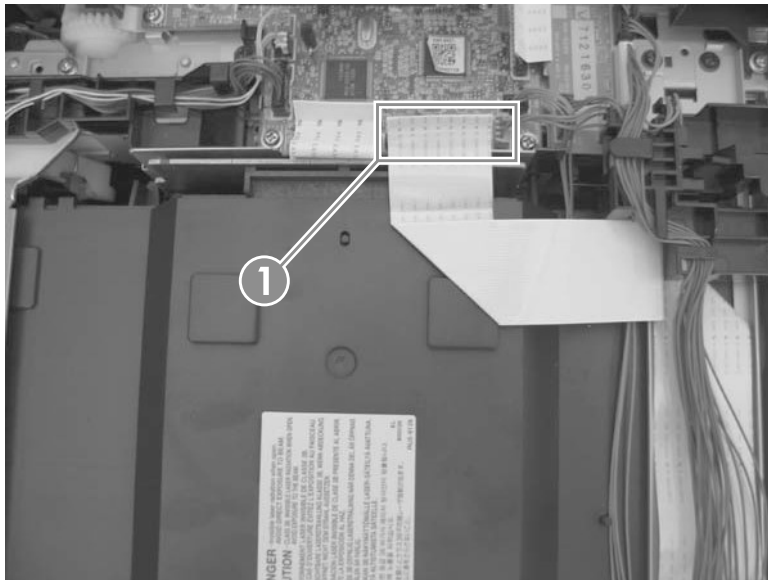
2. Release six tabs (callout 1), and then remove the black-plastic cover.

Figure 1-117 Remove the high-voltage power-supply PCA (2 of 5)



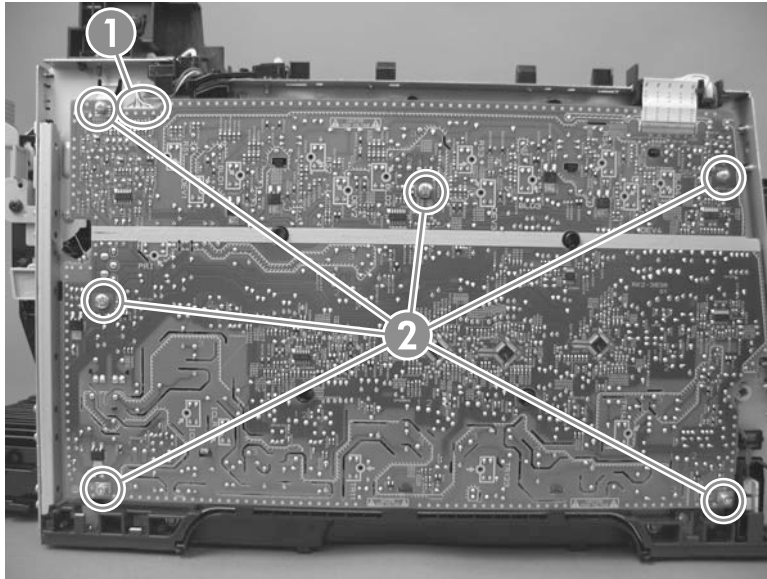
3. Disconnect one FFC (callout 1) on the DC controller.

Figure 1-118 Remove the high-voltage power-supply PCA (3 of 5)



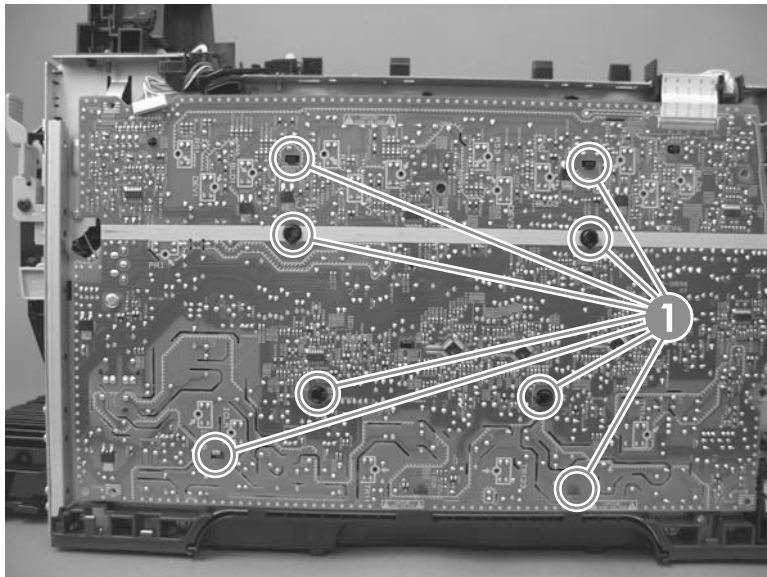
4. Disconnect one connector (callout 1), and then remove six screws (callout 2).

Figure 1-119 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 1-120 Remove the high-voltage power-supply PCA (5 of 5)



Color-misregistration sensor assembly PCA

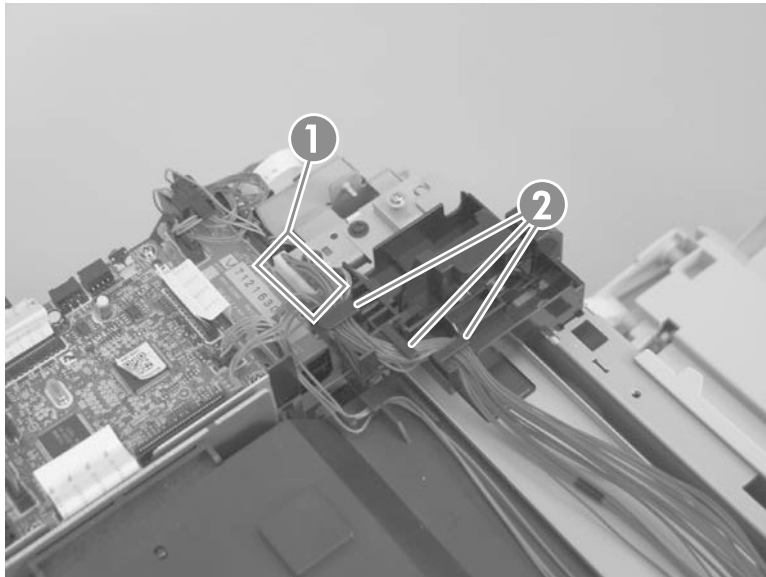
Before proceeding, remove the following components:

- Print-cartridge drawer. See [Print-cartridge drawer on page 18](#).
- Right cover. See [Right cover on page 21](#).
- Upper-cover assembly. See [Upper-cover assembly on page 41](#).
- Left cover. See [Left cover on page 44](#).
- Rear-lower cover (duplex products). See [Rear-upper cover \(duplex product\) on page 24](#).
- Rear door (simplex products). See [Rear door \(simplex product\) on page 26](#).
- Rear cover (simplex products). See [Rear cover and feed guide \(simplex product\) on page 30](#).
- High-voltage power-supply PCA. See [High-voltage power-supply PCA on page 81](#).

Remove the color-misregistration sensor assembly PCA

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

Figure 1-121 Remove the color-misregistration sensor assembly PCA (1 of 4)



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


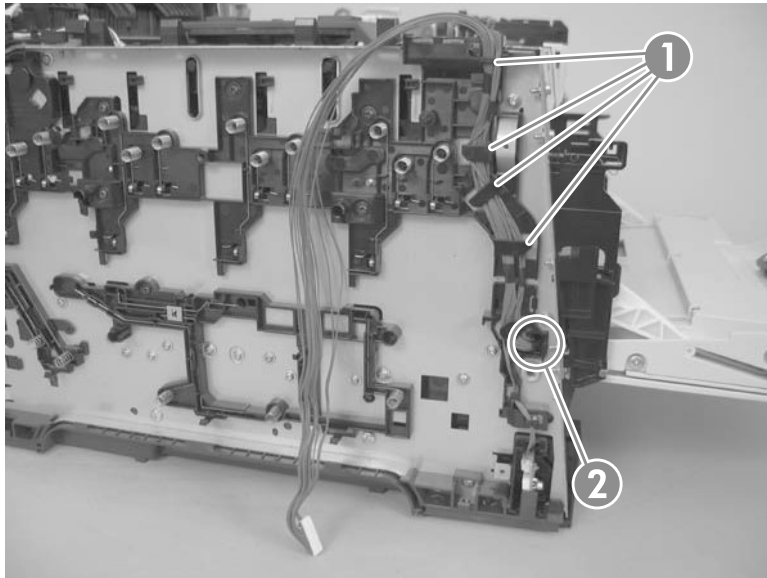
 **NOTE:** When you remove the sensor assembly later in this procedure, pass the connector and wire harness through the hole in the chassis (callout 2).

Figure 1-122 Remove the color-misregistration sensor assembly PCA (2 of 4)



4. Remove two screws (callout 1).

Figure 1-123 Remove the color-misregistration sensor assembly PCA (3 of 4)




5. 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:** See callout 1 in [Figure 1-122 Remove the color-misregistration sensor assembly PCA \(2 of 4\)](#) on page 85.

Figure 1-124 Remove the color-misregistration sensor assembly PCA (4 of 4)



Reinstall the color-misregistration sensor assembly

 **TIP:** You might have to attempt this reinstall procedure several times before you successfully pass the connector through the hole in the chassis.

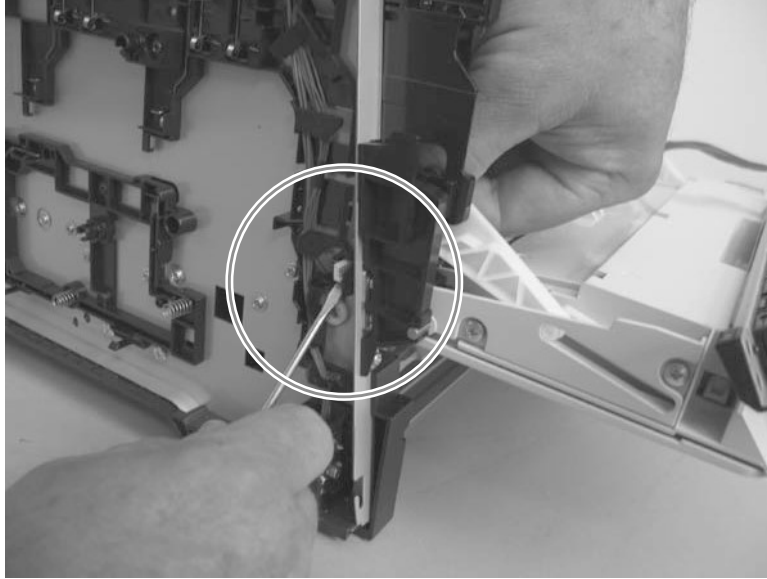
1. Push the sensor assembly wire-harness connector into the hole in the chassis from the ITB side of the product.

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



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

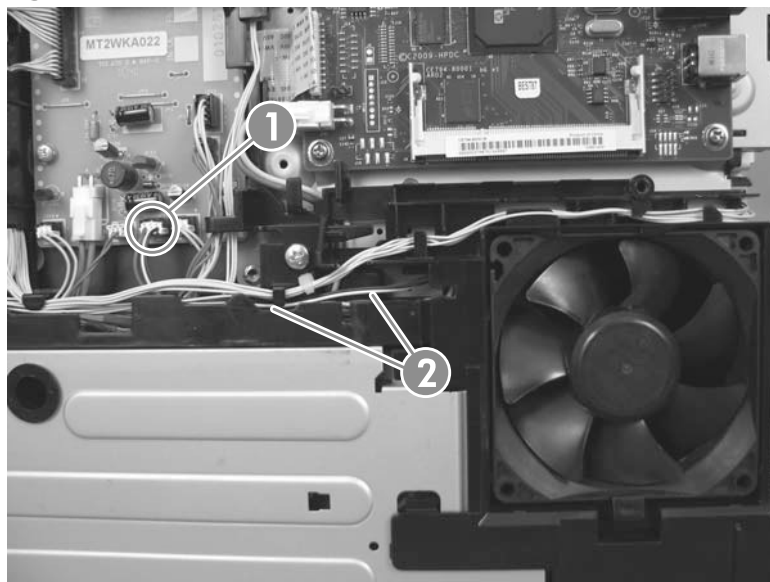
Figure 1-126 Reinstall the color-misregistration sensor assembly PCA (2 of 2)



Fan

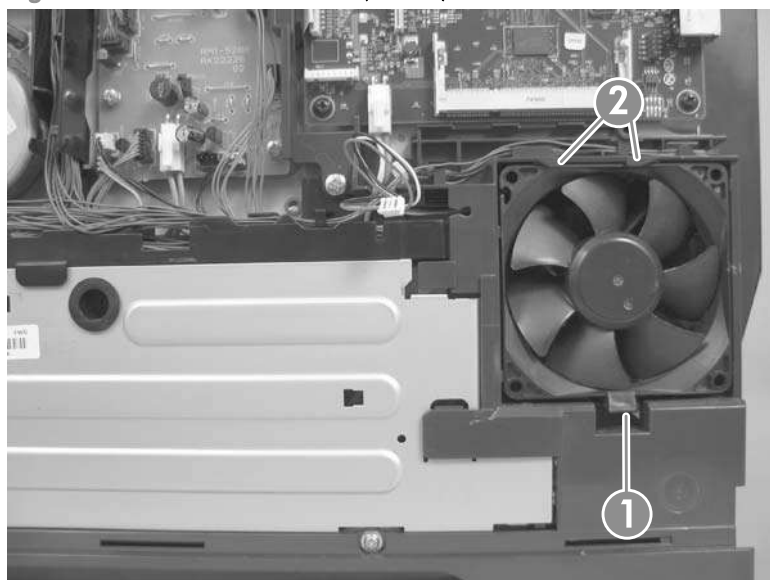
1. Remove the right cover. See [Right cover on page 21](#).
2. Disconnect one connector (callout 1) and then release the wire harness from the retainer (callout 2).

Figure 1-127 Remove the fan (1 of 2)



3. Release one tab (callout 1), push down on the fan to release it from the mounting points (callout 2), and then remove the fan.

Figure 1-128 Remove the fan (2 of 2)



Duplex reverse-drive assembly

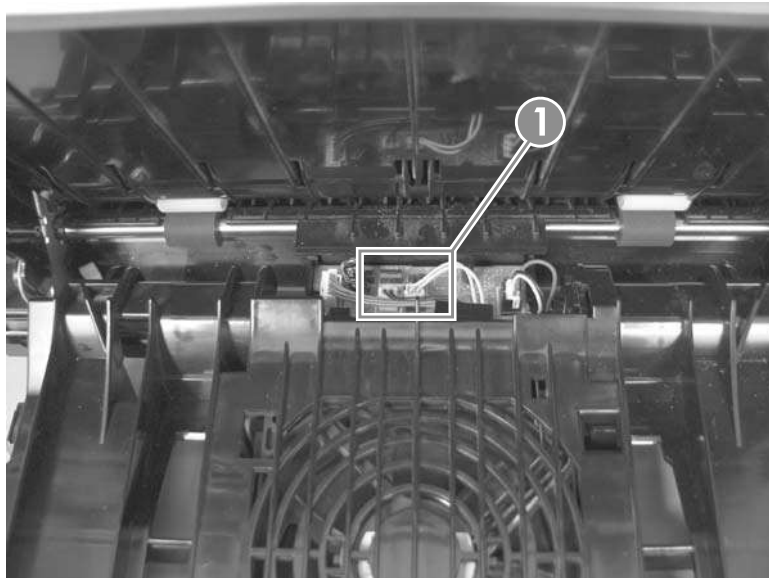
Before proceeding, remove the following components:

- Right cover. See [Right cover on page 21](#).
- Rear-upper cover (duplex products). See [Rear-upper cover \(duplex product\) on page 24](#).
- Rear door (simplex products). See [Rear door \(simplex product\) on page 26](#).
- Rear door (duplex products). See [Rear door \(duplex product\) on page 28](#).
- Rear cover (simplex products). See [Rear cover and feed guide \(simplex product\) on page 30](#).
- Rear-lower cover (duplex products). See [Rear-lower cover and rear-door links \(duplex product\) on page 34](#).
- Upper-cover assembly. See [Upper-cover assembly on page 41](#).
- Control-panel assembly. See [Control-panel assembly on page 50](#).
- Right panel. See [Right panel on page 52](#).

Remove the duplex reverse-drive assembly

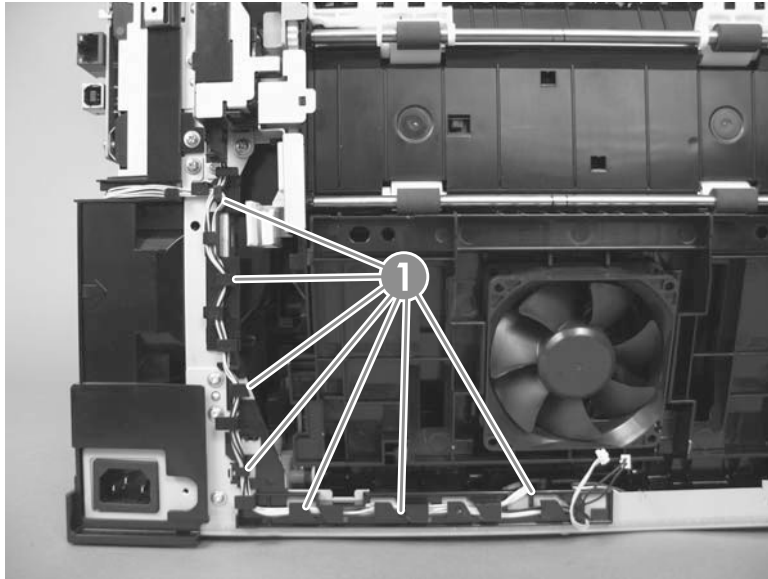
1. Disconnect two connectors (callout 1), and then pass the connectors under the rear-door rib assembly.

Figure 1-129 Remove the duplex reverse-drive assembly (1 of 4)



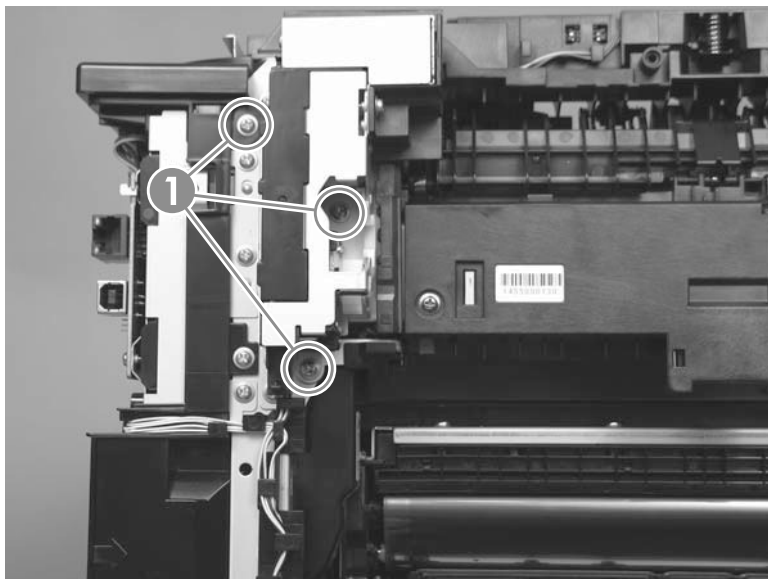
2. Release the wire harnesses from the retainer (callout 1).

Figure 1-130 Remove the duplex reverse-drive assembly (2 of 4)



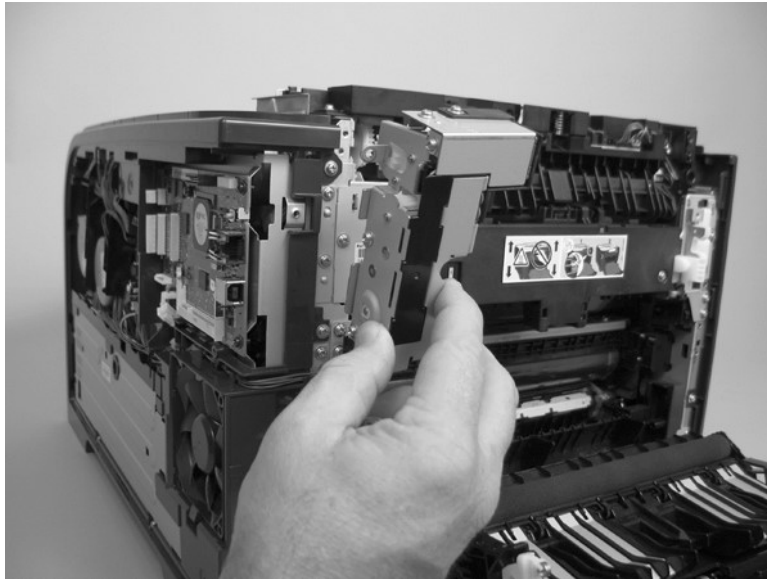
3. Remove three screws (callout 1).

Figure 1-131 Remove the duplex reverse-drive assembly (3 of 4)



4. Remove the duplex reverse-drive assembly.

Figure 1-132 Remove the duplex reverse-drive assembly (4 of 4)



Fuser

Before proceeding, remove the following components:

- Right cover. See [Right cover on page 21](#).
- Rear-upper cover (duplex products). See [Rear-upper cover \(duplex product\) on page 24](#).
- Rear door (simplex products). See [Rear door \(simplex product\) on page 26](#).
- Rear door (duplex products). See [Rear door \(duplex product\) on page 28](#).
- Upper-cover assembly. See [Upper-cover assembly on page 41](#).
- Left cover. See [Left cover on page 44](#).
- Rear cover (simplex products). See [Rear cover and feed guide \(simplex product\) on page 30](#).
- Rear-lower cover (duplex products). See [Rear-lower cover and rear-door links \(duplex product\) on page 34](#).

Remove the fuser

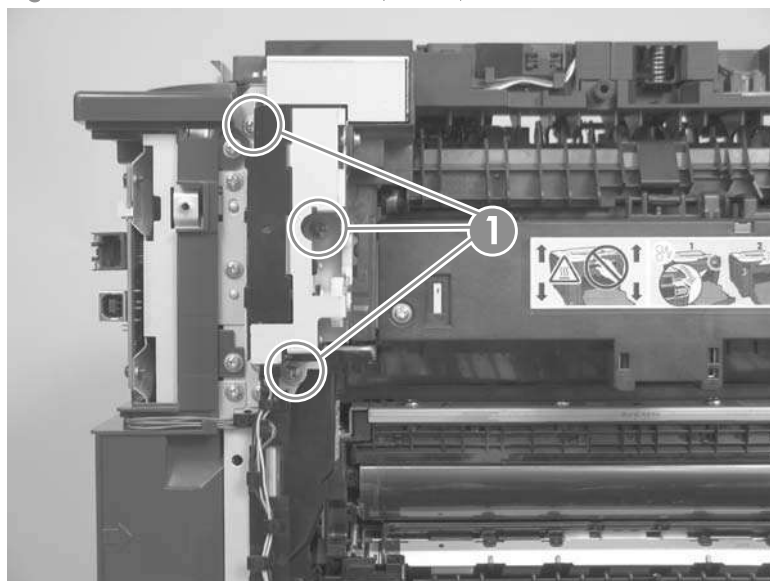
⚠ WARNING! The fuser might be hot. After turning off the product power, allow the fuser to cool for at least five minutes before removing it.

📝 NOTE: The fuser can be removed without removing the upper-cover assembly. However, it might be easier to access some of the connectors with this component removed.

1. **Duplex models only:** Remove three screws (callout 1) and separate the duplex reverse-drive assembly from the product.

⚠ CAUTION: The duplex reverse-drive assembly is still attached to the product. Carefully set the assembly out of the way.

Figure 1-133 Remove the fuser (1 of 8)



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


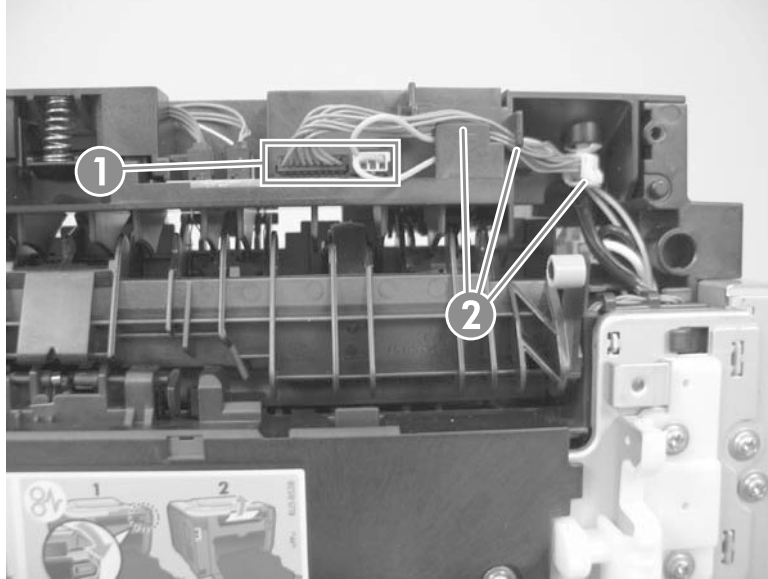
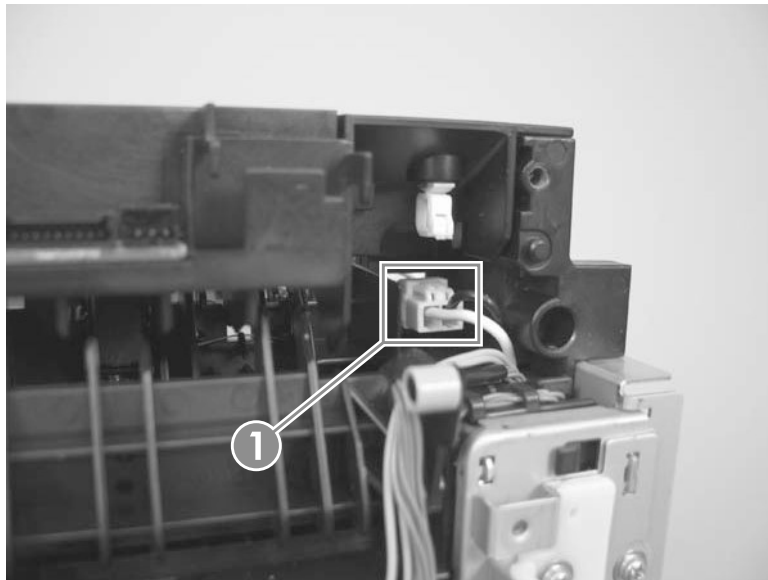
 **Reinstallation tip** When the upper cover is reinstalled, make sure that these wire harnesses (near the connectors) are correctly routed under the cover.

Figure 1-134 Remove the fuser (2 of 8)



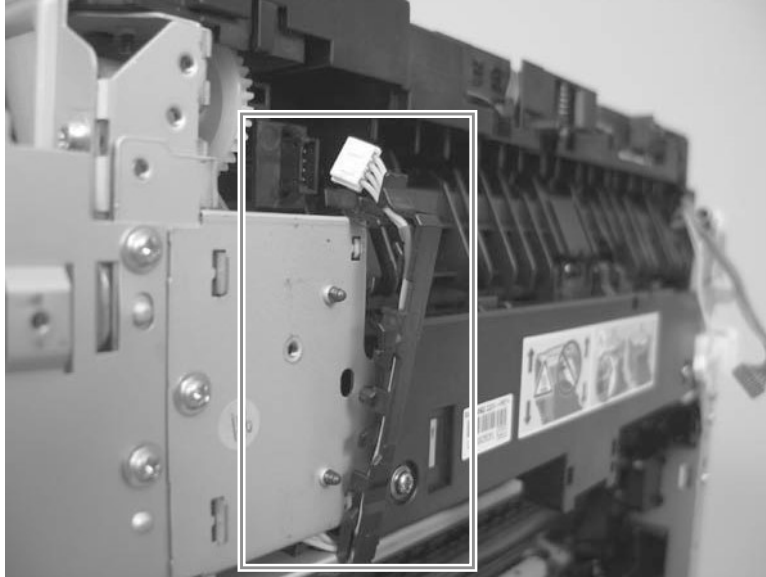
3. Disconnect one connector (callout 1).

Figure 1-135 Remove the fuser (3 of 8)



4. *Before you proceed*, look at [Figure 1-136 Remove the fuser \(4 of 8\)](#) on page 94. 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.

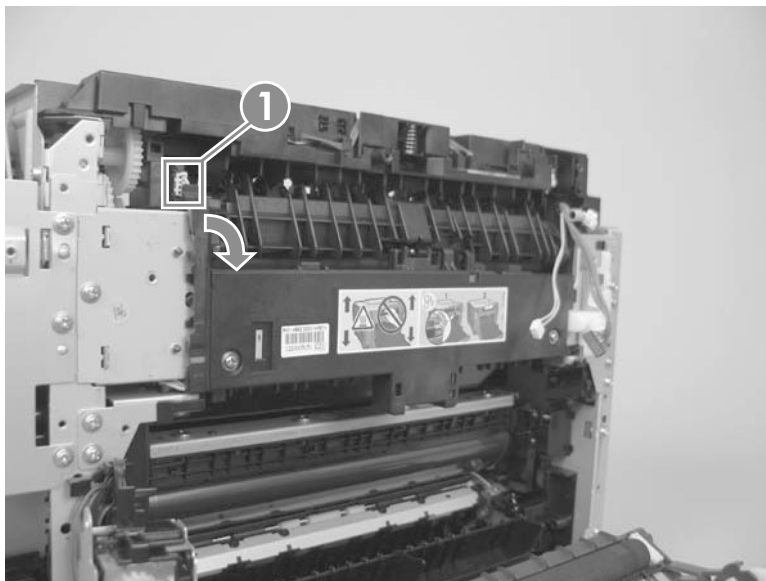
Figure 1-136 Remove the fuser (4 of 8)



5. Carefully disconnect one connector and rotate the connector and the top portion of the guide away from the fuser (callout 1).

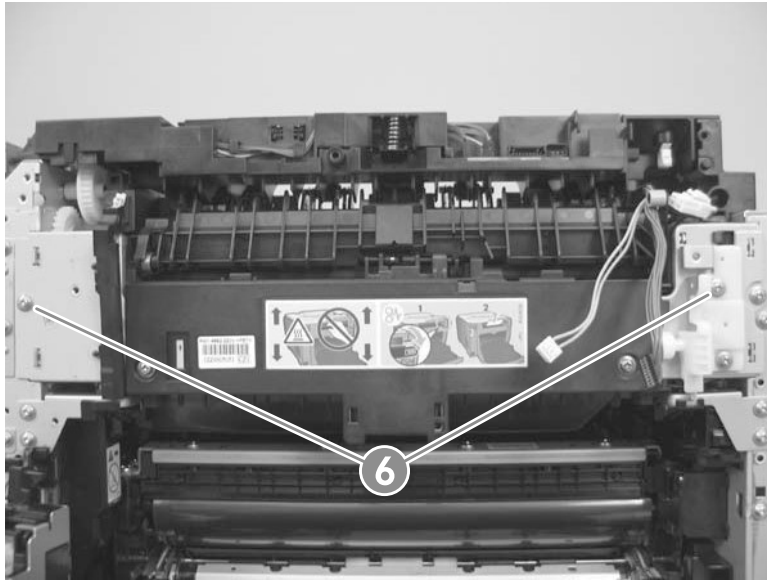
⚠ WARNING! Do not separate the connector and guide more than is shown in [Figure 1-136 Remove the fuser \(4 of 8\)](#) on page 94. If the guide is damaged, you must replace the fuser.

Figure 1-137 Remove the fuser (5 of 8)



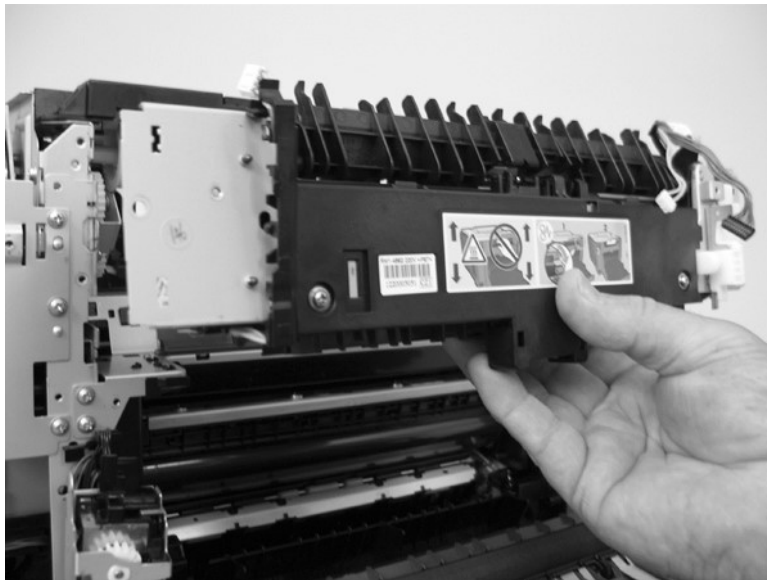
6. Remove two screws (callout 6).

Figure 1-138 Remove the fuser (6 of 8)



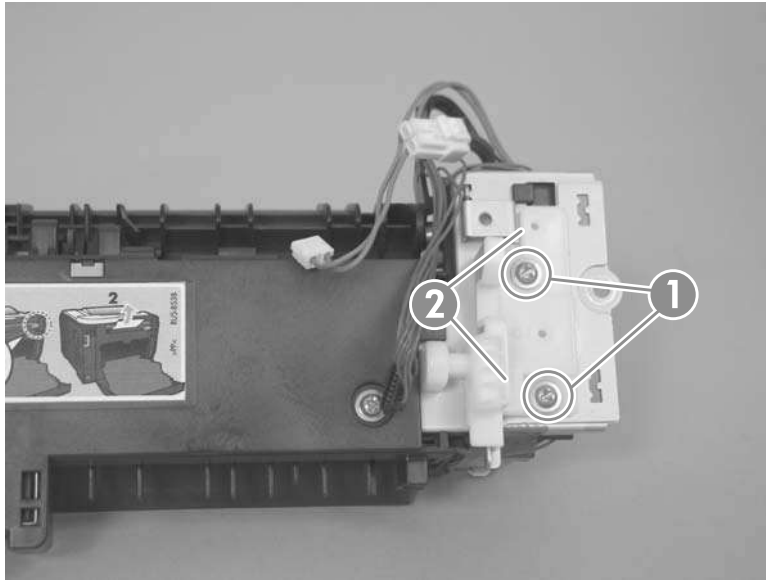
7. Remove the fuser.

Figure 1-139 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 1-140 Remove the fuser (8 of 8)

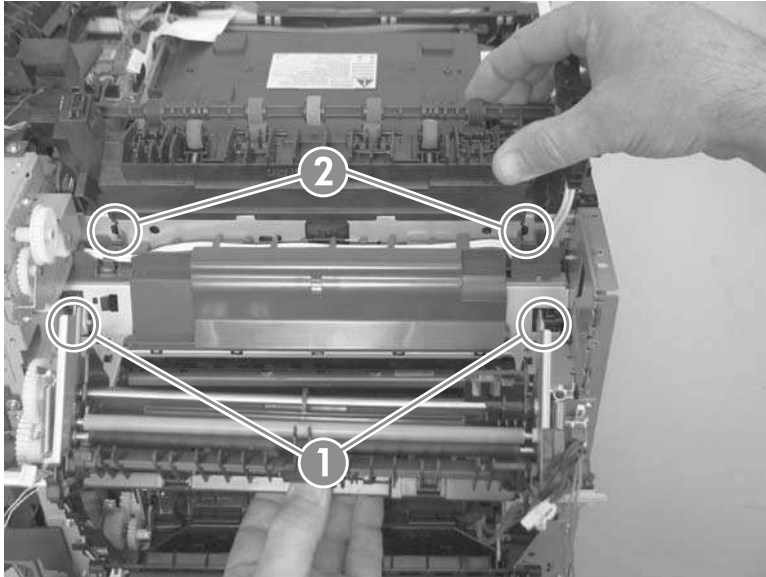


Reinstall the fuser

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

⚠ WARNING! The fuser frame must be flush against 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 1-141 Reinstall the fuser



Paper-delivery assembly

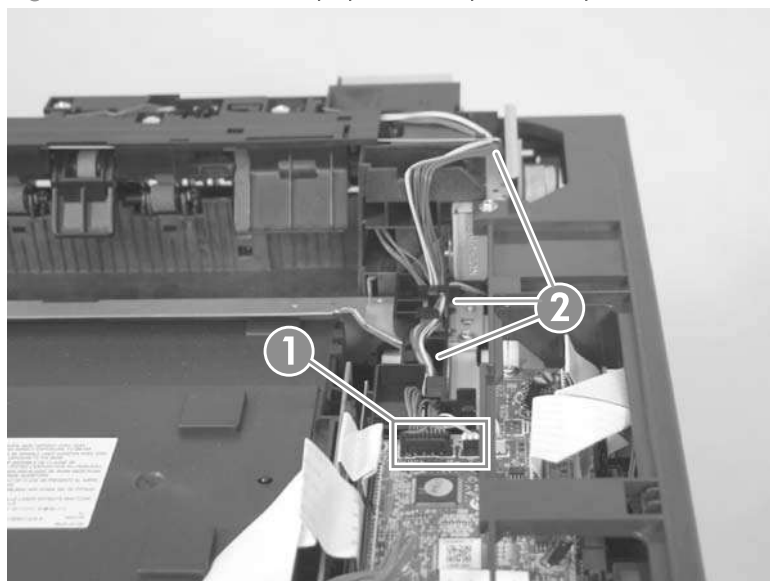
Before proceeding, remove the following components:

- Right cover. See [Right cover on page 21](#).
- Rear-upper cover (duplex products). See [Rear-upper cover \(duplex product\) on page 24](#).
- Rear door (simplex products). See [Rear door \(simplex product\) on page 26](#).
- Rear door (duplex products). See [Rear door \(duplex product\) on page 28](#).
- Rear cover (simplex products). See [Rear cover and feed guide \(simplex product\) on page 30](#).
- Upper-cover assembly. See [Upper-cover assembly on page 41](#).
- Left cover. See [Left cover on page 44](#).
- Rear-lower cover (duplex products). See [Rear-lower cover and rear-door links \(duplex product\) on page 34](#).

Remove the paper-delivery assembly

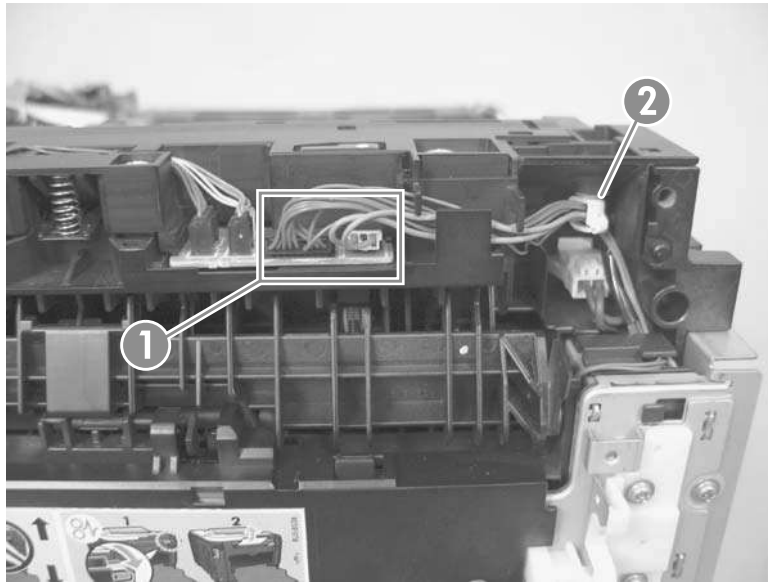
1. Disconnect two connectors (callout 1), and then release the wire harnesses from the retainer (callout 2).

Figure 1-142 Remove the paper-delivery assembly (1 of 4)



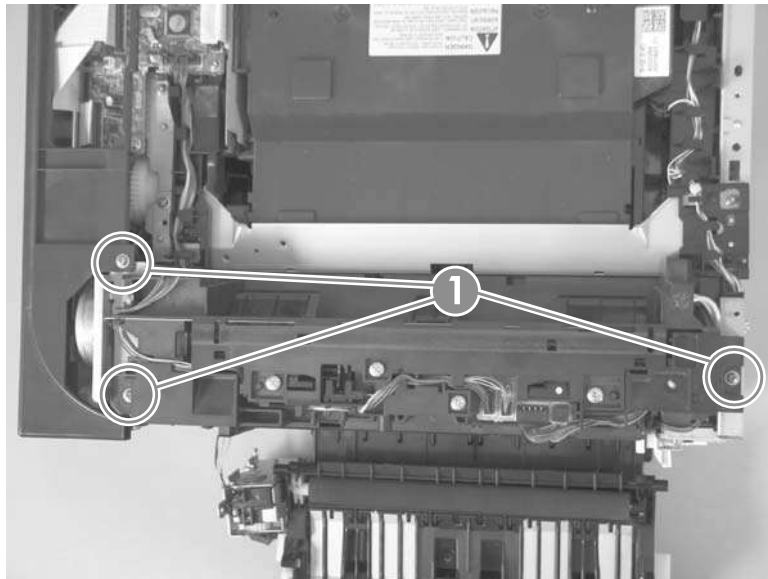
2. Disconnect two connectors (callout 1), and then release the wire harnesses from the wire clip (callout 2).

Figure 1-143 Remove the paper-delivery assembly (2 of 4)



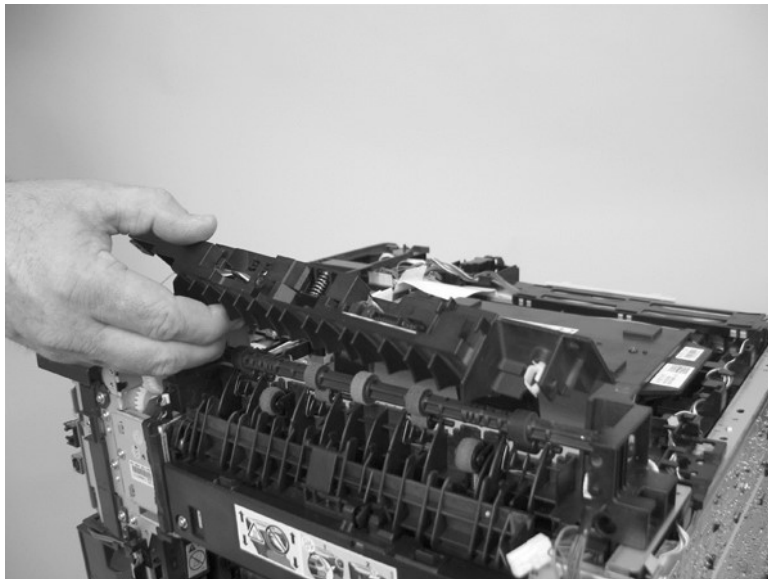
3. Remove three screws (callout 1).

Figure 1-144 Remove the paper-delivery assembly (3 of 4)



4. Remove the paper-delivery assembly.

Figure 1-145 Remove the paper-delivery assembly (4 of 4)



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 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](#)
- [Tools for troubleshooting](#)
- [Clear jams](#)
- [Solve paper-handling problems](#)
- [Solve image-quality problems](#)
- [Clean the product](#)
- [Solve performance problems](#)
- [Solve product connectivity problems](#)
- [Service mode functions](#)
- [Product updates](#)

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 flashing 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/support/LJColorM351 or www.hp.com/support/LJColorM451.

Menu map

Print a menu map

1. Press the **OK** button.
2. Use the arrow buttons to navigate to the **Reports** menu, and then press the **OK** button to select it.
3. Use the arrow buttons to navigate to the **Menu Structure** item, and then press the **OK** button to print the menu map.
4. Press the **Cancel** button to exit the menus.


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 pretroubleshooting 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?

 **NOTE:** The customer is responsible for checking supplies and for using supplies that are in good condition.

Pretroubleshooting checklist

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

General topic	Questions
Environment	<ul style="list-style-type: none">• Is the product installed on a solid, level surface (+/- 1°)?• Is the power-supply voltage within ± 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? <p>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).</p> <ul style="list-style-type: none">• Is the product exposed to direct sunlight?
Media	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none"> • Is each toner cartridge installed correctly?
Transfer unit and fuser	<ul style="list-style-type: none"> • Are the transfer unit and fuser installed correctly?
Doors	<ul style="list-style-type: none"> • Is the front door closed?
Condensation	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 Calibrate the product on page 123

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.

Tools for troubleshooting

Engine diagnostics

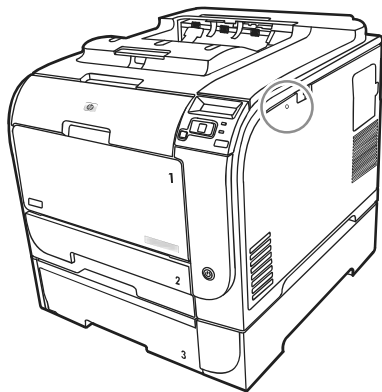
Engine test button

1. Turn the product on.
2. Use a fine-point tool, (for example a precision-slotted screwdriver with a 1 mm (0.04 in) blade width) to press the engine test button.

 **NOTE:** Access the engine test button through a hole in the right-side cover.

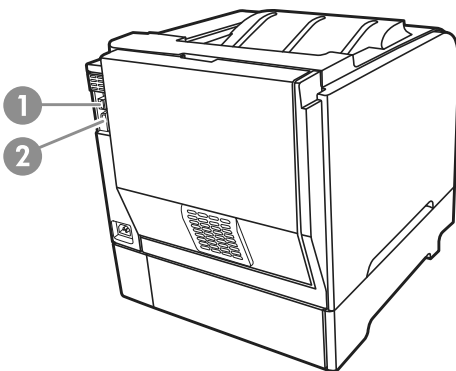
3. An engine test page (horizontal lines in each of the toner cartridge colors) prints.

Figure 2-1 Engine test button location



Diagrams

Plug/jack locations



1	Network port (HP LaserJet Pro 300 color M351a, HP LaserJet Pro 300 color M351dw, and HP LaserJet Pro 300 color M351dn models only)
2	Hi-Speed USB 2.0 port

Location of connectors

DC controller PCA

Figure 2-2 DC controller connectors

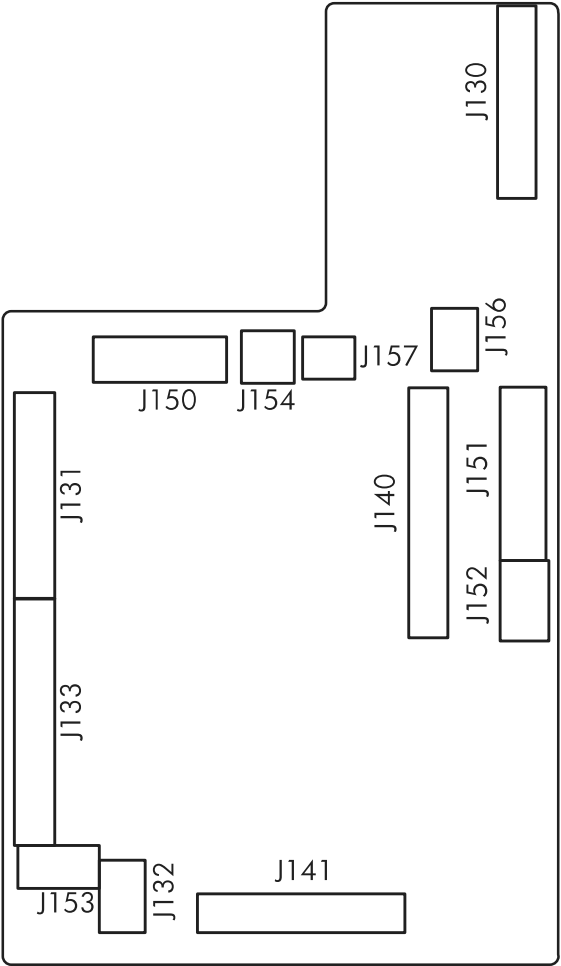


Table 2-1 DC controller connectors

Item	Description
J130	Formatter
J131	Laser-driver PCA
J132	Scanner motor (M7)
J133	High-voltage power supply
J140	Motor-driver PCA
J141	Relay PCA
J150	Fuser
J151	Low-voltage and fuser power supply
J152	Duplex driver PCA (duplex models only)

Table 2-1 DC controller connectors (continued)

Item	Description
J153	Environmental sensor
J154	Developing disengagement solenoid
J156	Sub-power supply PCA
157	Fuser relay PCA

Location of major components

Major components

Figure 2-3 Major components

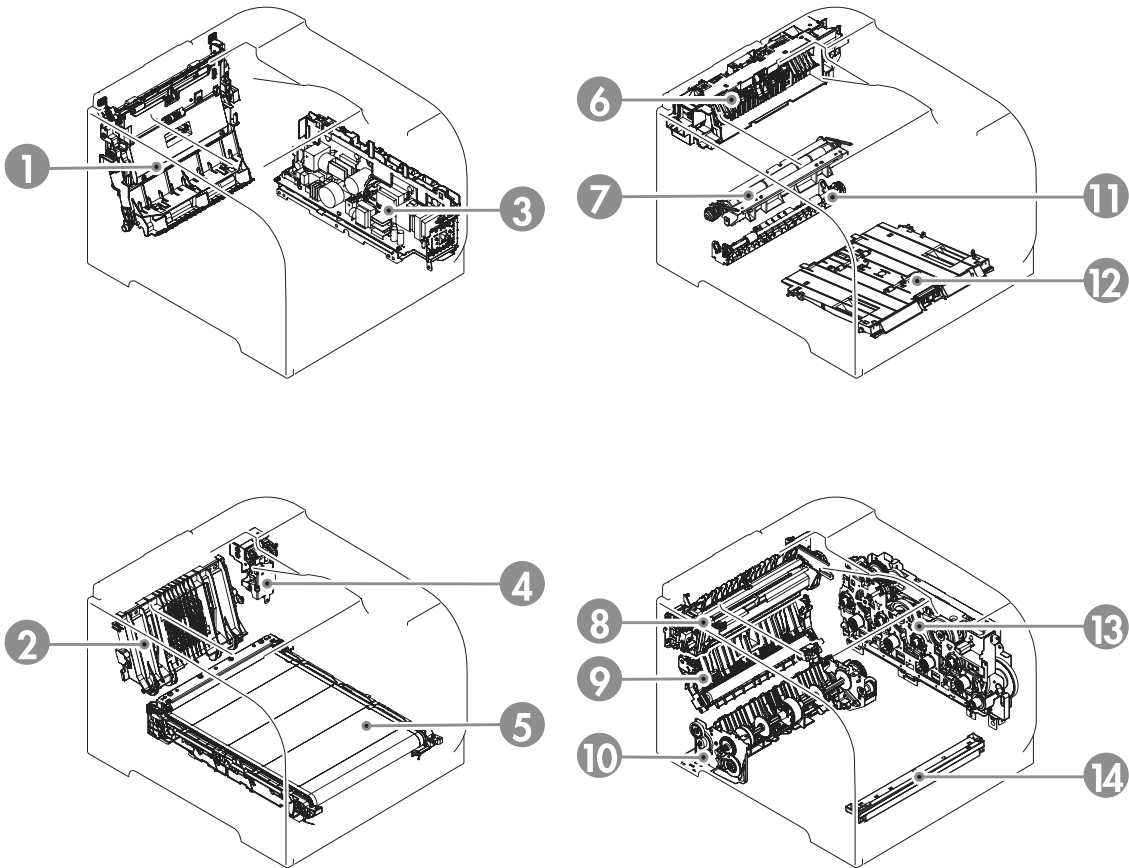


Table 2-2 Major components

Item	Description	Item	Description
1	Duplex feed assembly (duplex models only)	8	Fuser
2	Rear-door rib assembly (duplex models only)	9	Paper-feed guide assembly (includes the transfer roller)
3	Power supply (low-voltage and fuser)	10	Cassette pickup assembly

Table 2-2 Major components (continued)

Item	Description	Item	Description
4	Duplex reverse-drive assembly (duplex models only)	11	Duplex repick assembly (duplex models only)
5	ITB	12	MP tray pickup assembly
6	Paper-delivery assembly	13	Drive assembly
7	Registration assembly	14	Color misregistration sensor

Solenoids, clutches, and sensors

Figure 2-4 Solenoid, clutches, and sensors

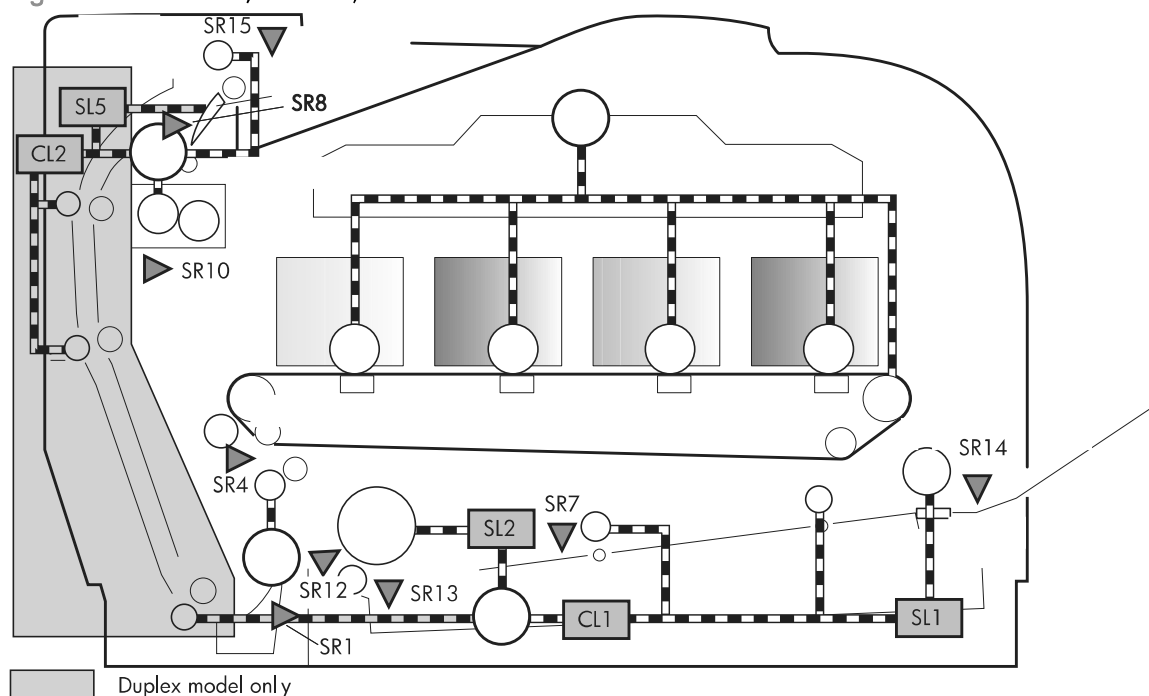


Table 2-3 Solenoid, clutches, and sensors

Item	Description	Item	Description
SR1	Paper feeder pre-registration sensor	SR14	MP tray media presence sensor
SR3	Paper feeder media presence sensor (in the optional paper feeder; not shown)	SR15	Face-down bin media full sensor (output bin)
SR4	Registration sensor	SL1	MP tray pickup solenoid
SR7	MP tray preregistration sensor	SL2	Cassette pickup solenoid
SR8	Fuser delivery sensor	SL5	Duplex reverse solenoid (duplex models only)
SR10	Loop sensor	SL6	Paper feeder pickup solenoid (in the optional paper feeder; not shown)

Table 2-3 Solenoid, clutches, and sensors (continued)

Item	Description	Item	Description
SR12	Pre-registration sensor	CL1	MP tray feed clutch
SR13	Cassette media presence sensor	CL2	Duplex feed clutch (duplex models only)

Rollers

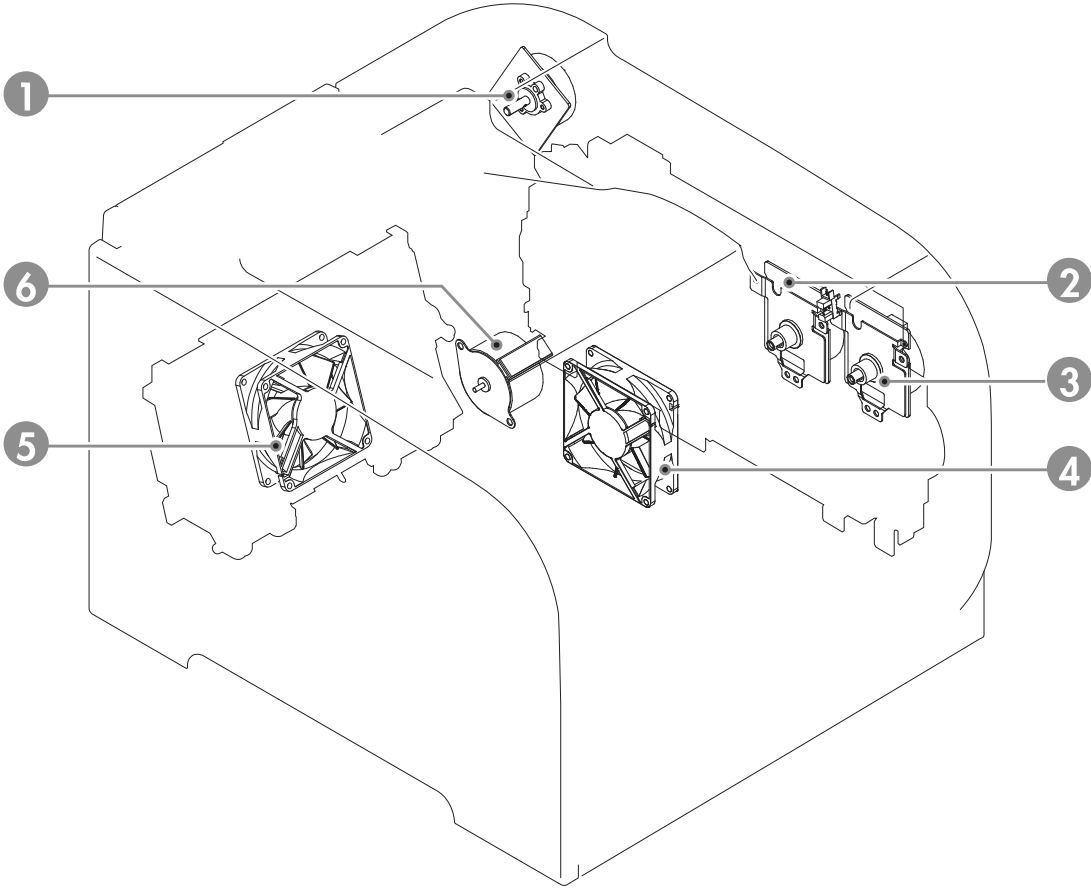
Figure 2-5 Rollers




Table 2-4 Rollers

Item	Description	Item	Description
1	Cassette pickup roller	3	MP tray separation pad
2	MP tray pickup roller	4	Cassette separation roller

Figure 2-6 Motors and fans



 **NOTE:** The registration motor (M3) is not shown in this illustration.

Item	Description	Item	Description
1	Fuser motor (M4)	4	Fan 1
2	Drum motor (M1)	5	Fan 2 (duplex models only)
3	Developing motor (M2)	6	Pickup motor (M5)

Figure 2-7 PCAs

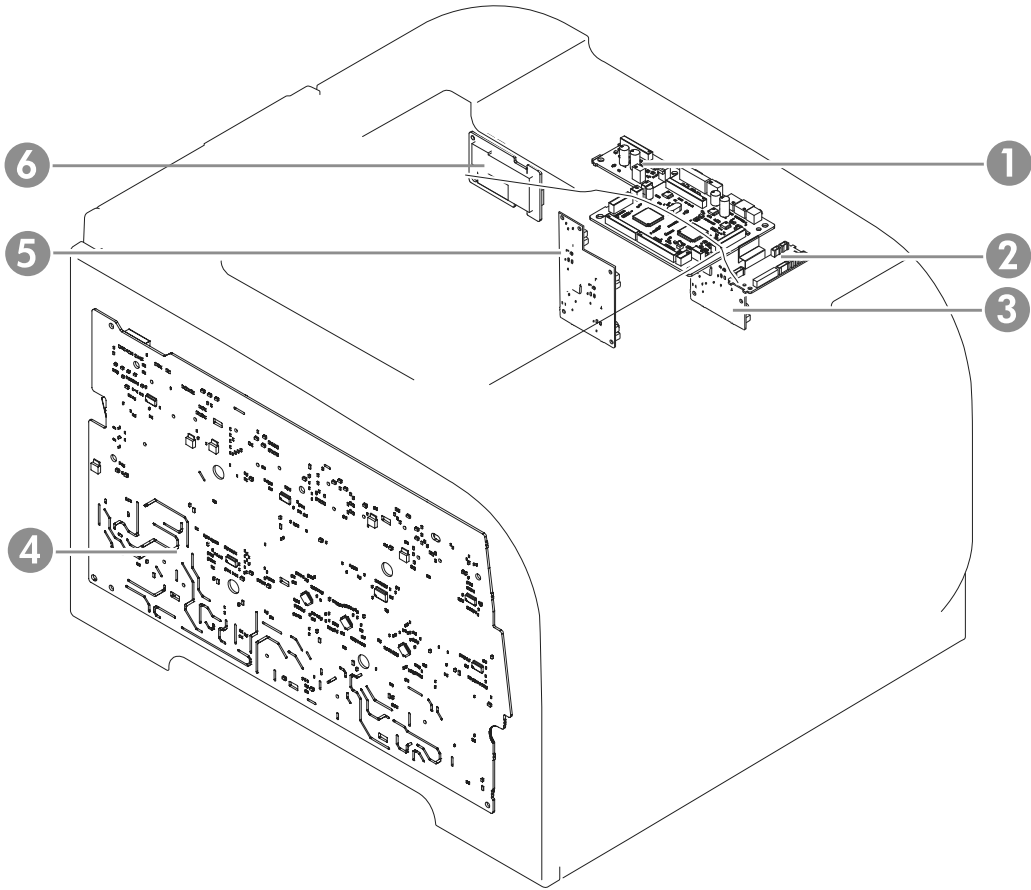


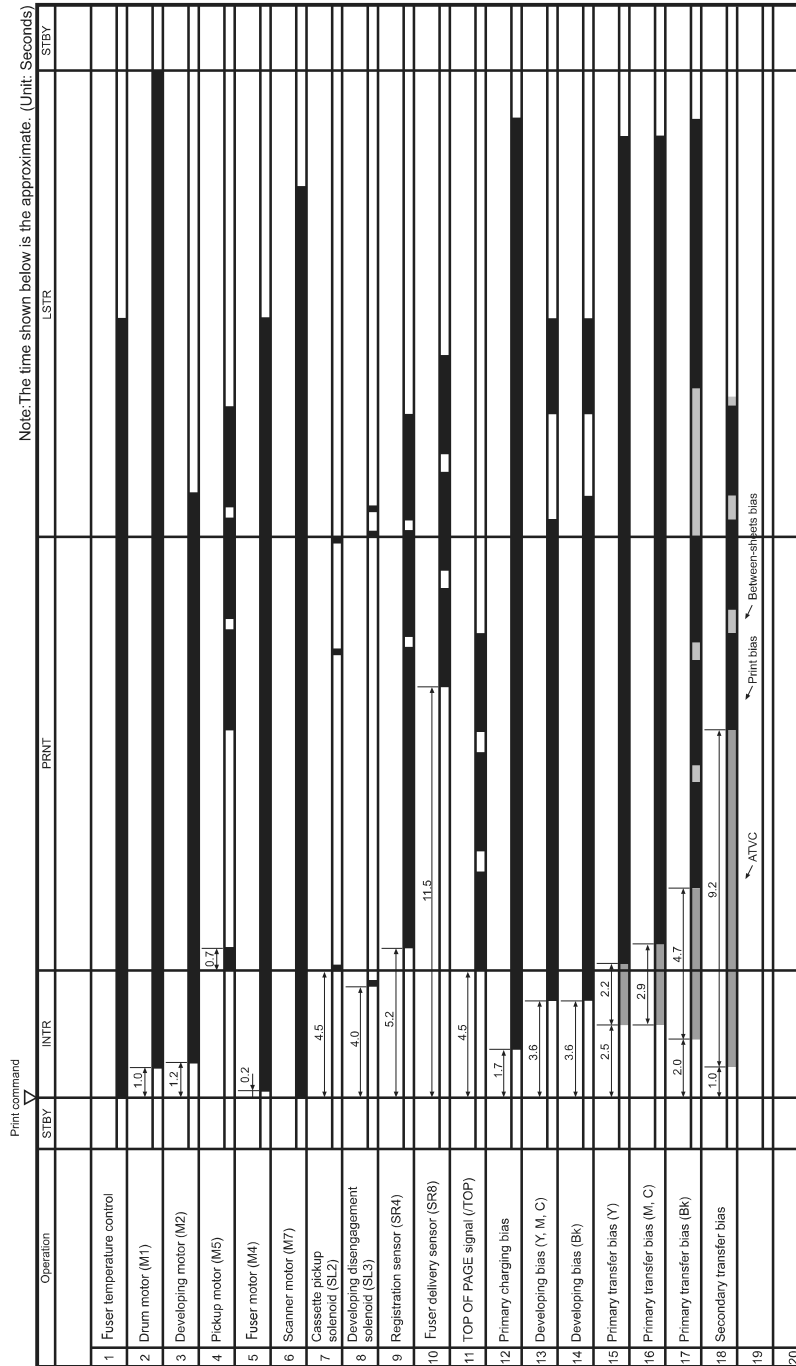
Table 2-5 PCAs

Item	Description	Item	Description
1	DC controller PCA	4	High-voltage power supply PCA
2	Connector PCA (relay PCA)	5	Formatter
3	Driver PCA	6	Sub-power PCA

General timing charts

Approximate timing in seconds.

Figure 2-8 Timing diagram



General circuit diagram

Figure 2-9 Circuit diagram

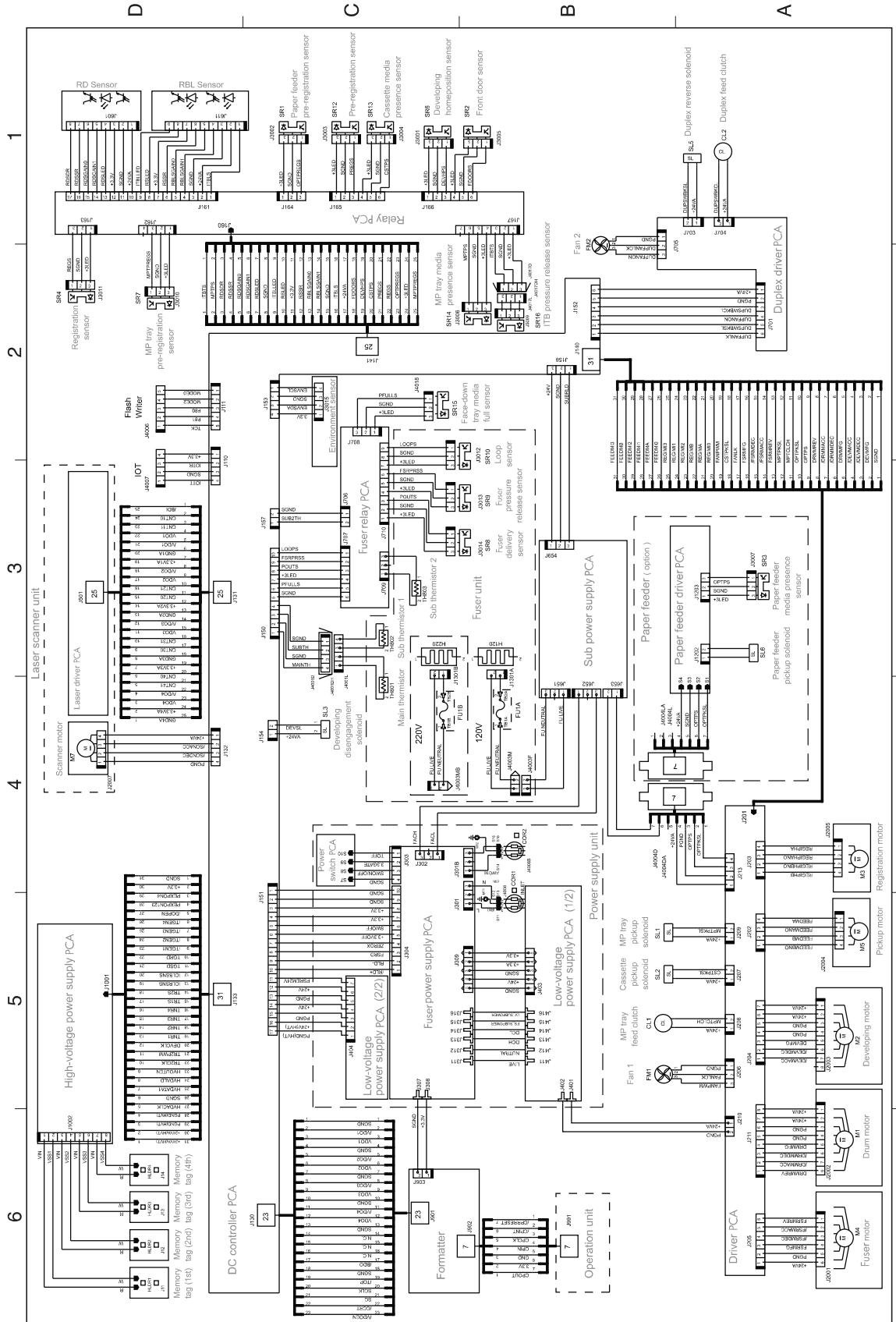
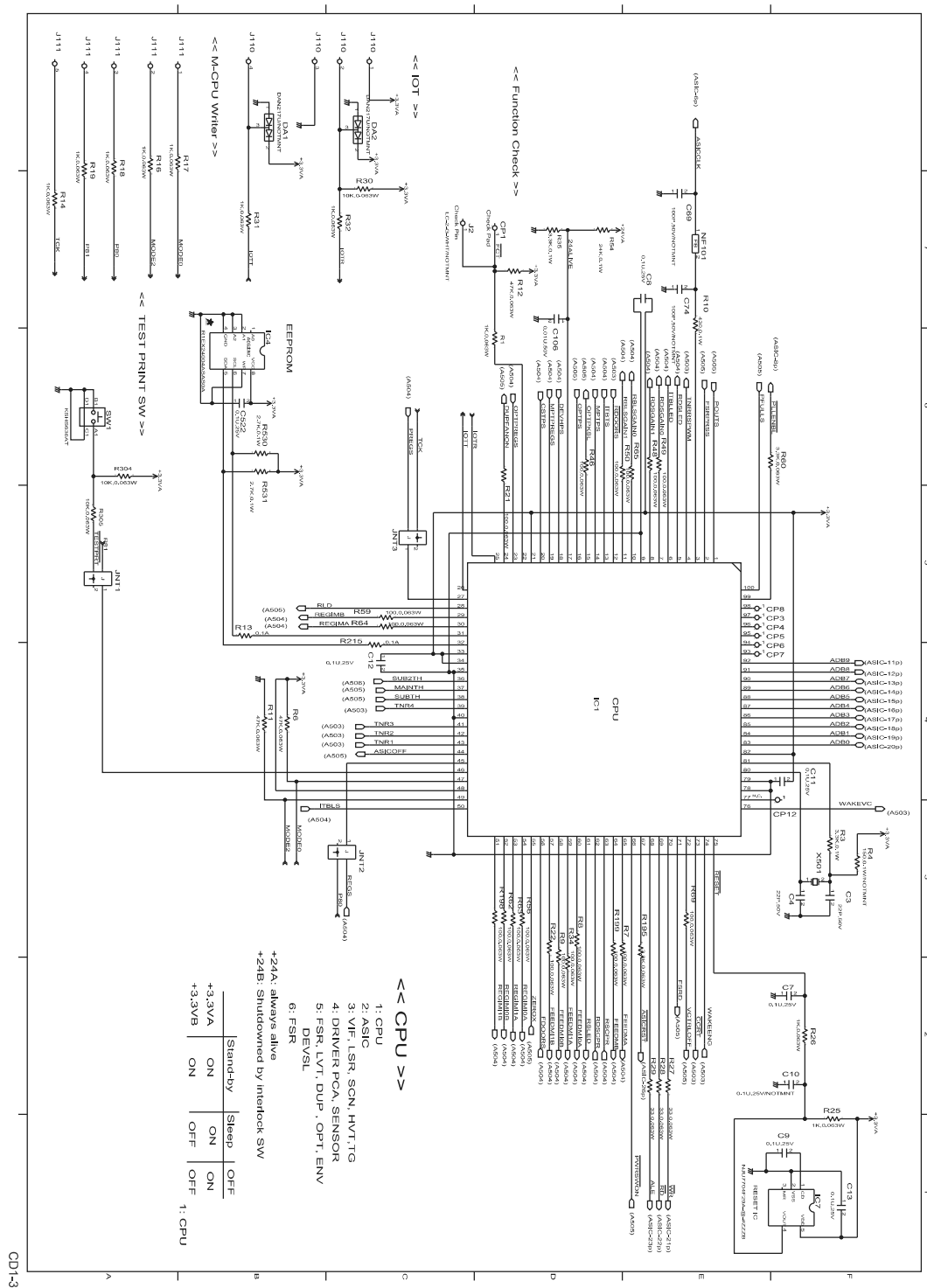
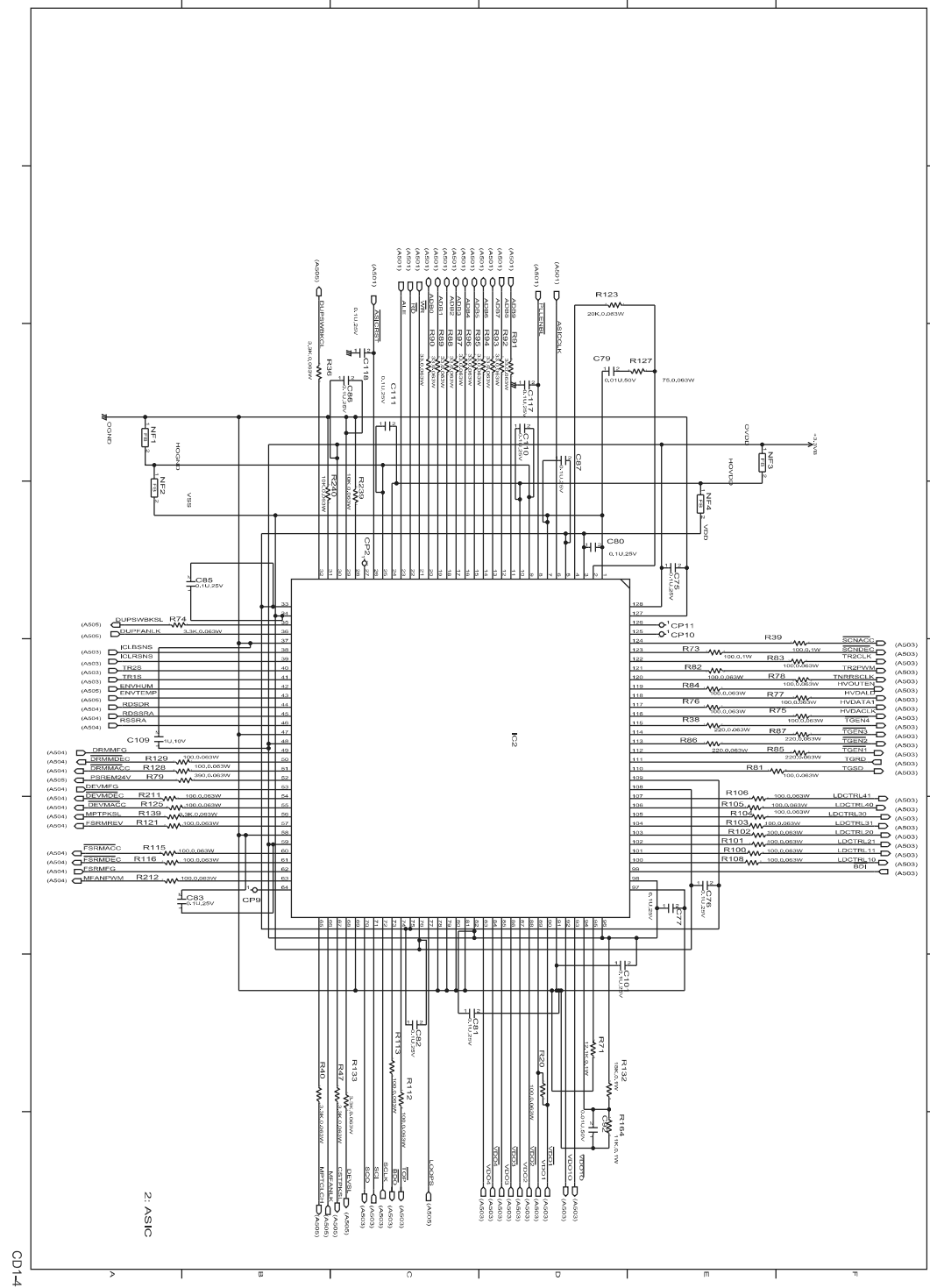


Figure 2-10 CPU diagram



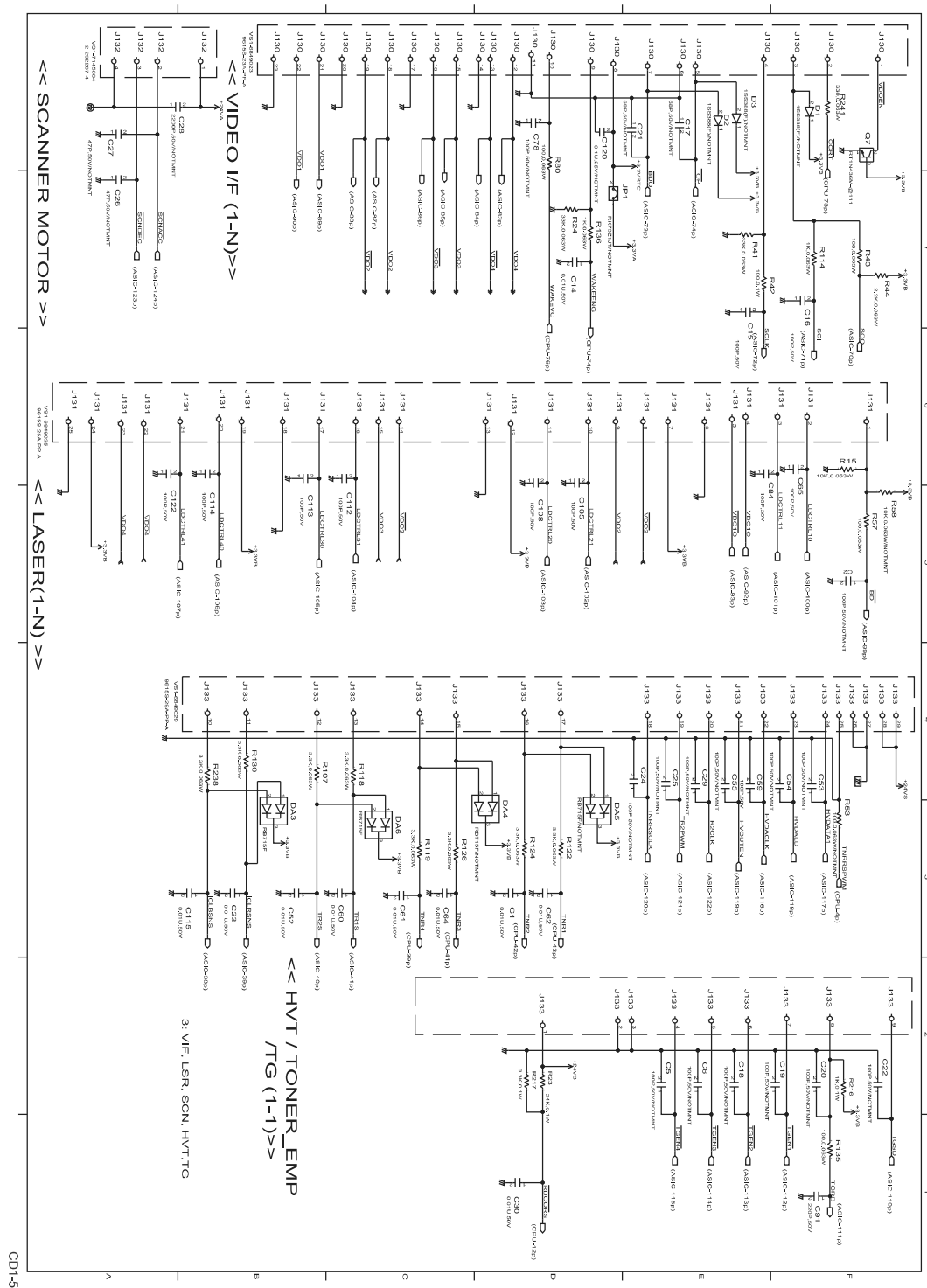
001-3

Figure 2-11 ASIC diagram



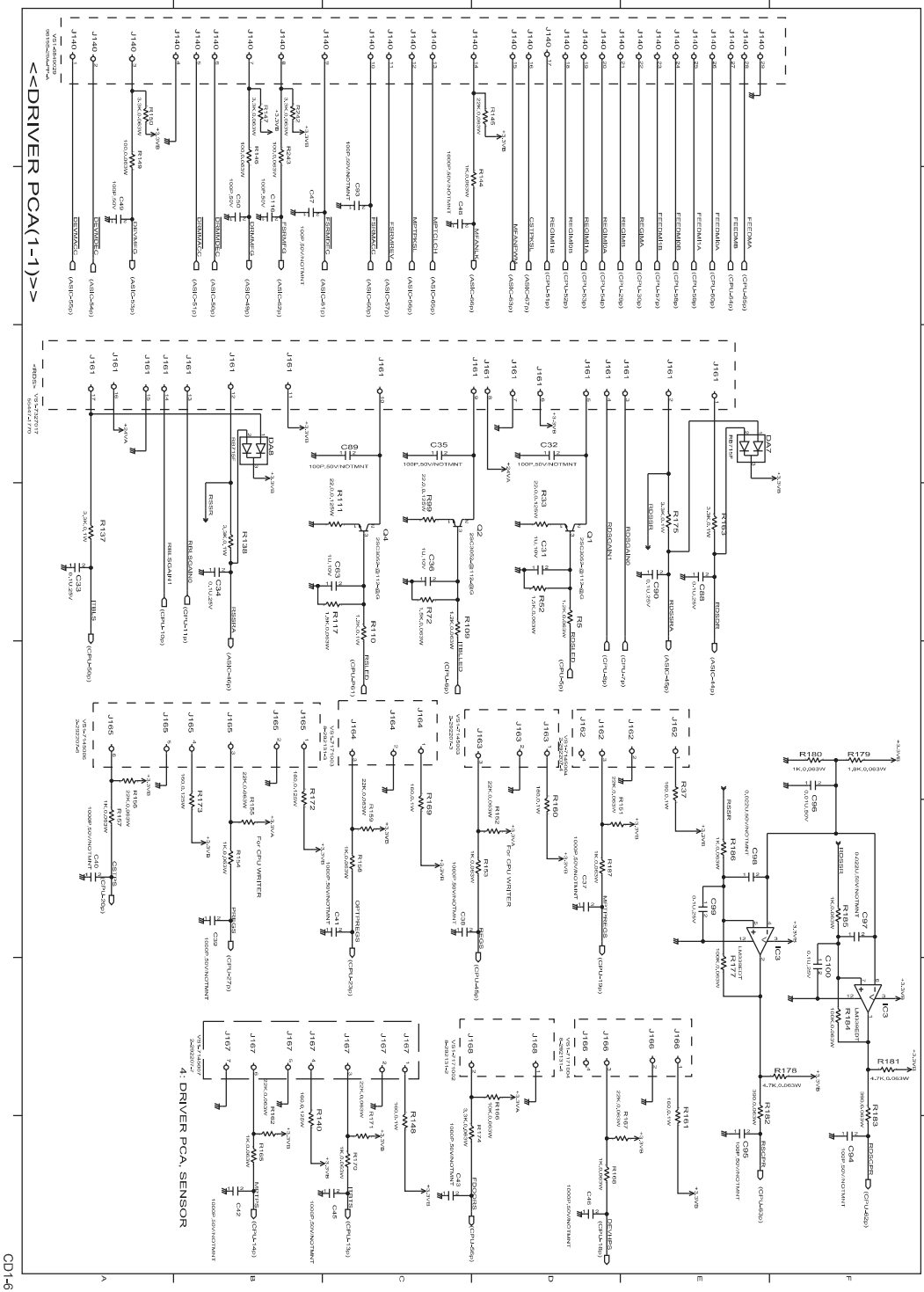
HVT/Toner EMP diagram

Figure 2-12 HVT/Toner EMP diagram



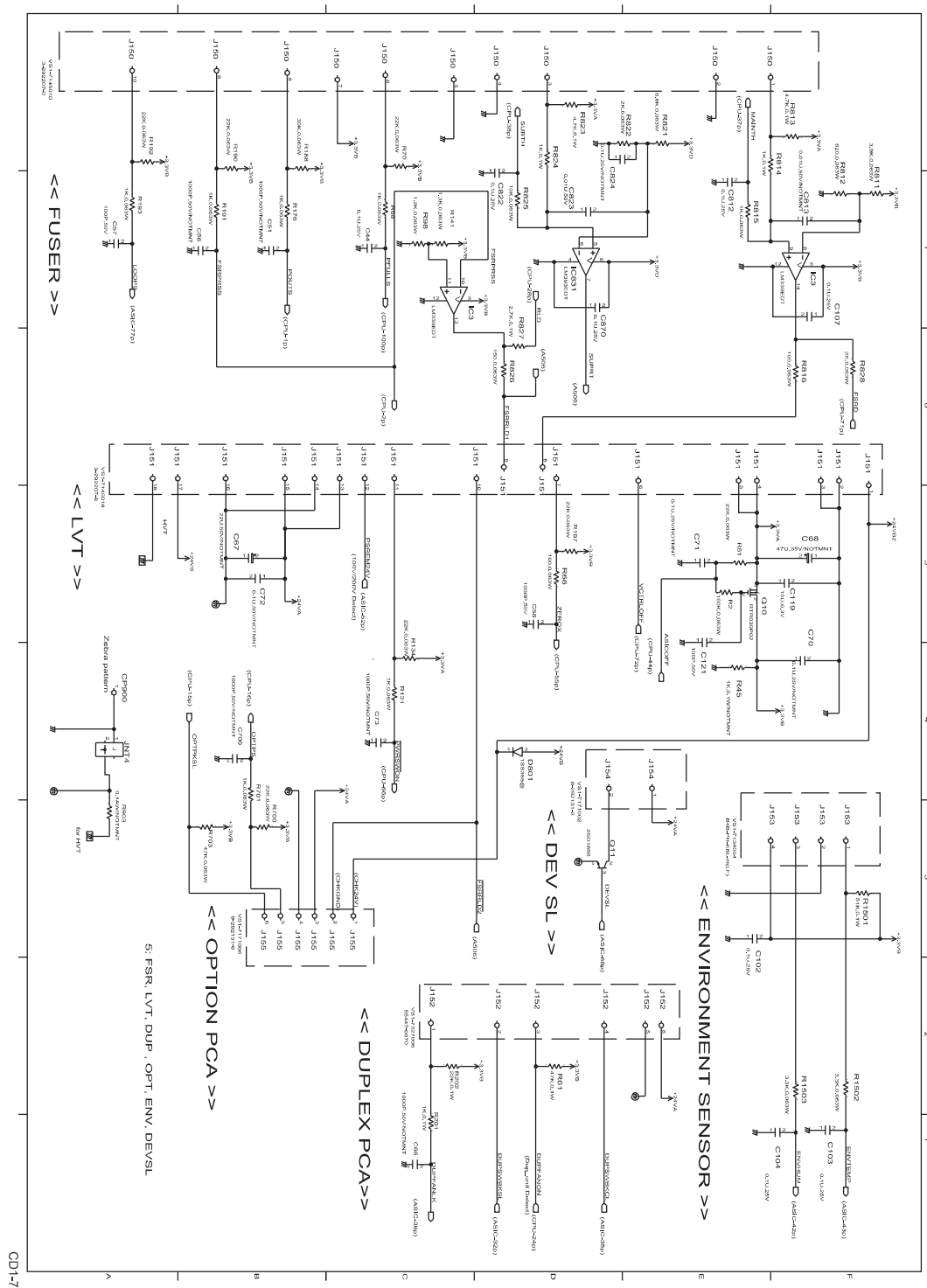
Driver PCA diagram

Figure 2-13 Driver PCA diagram



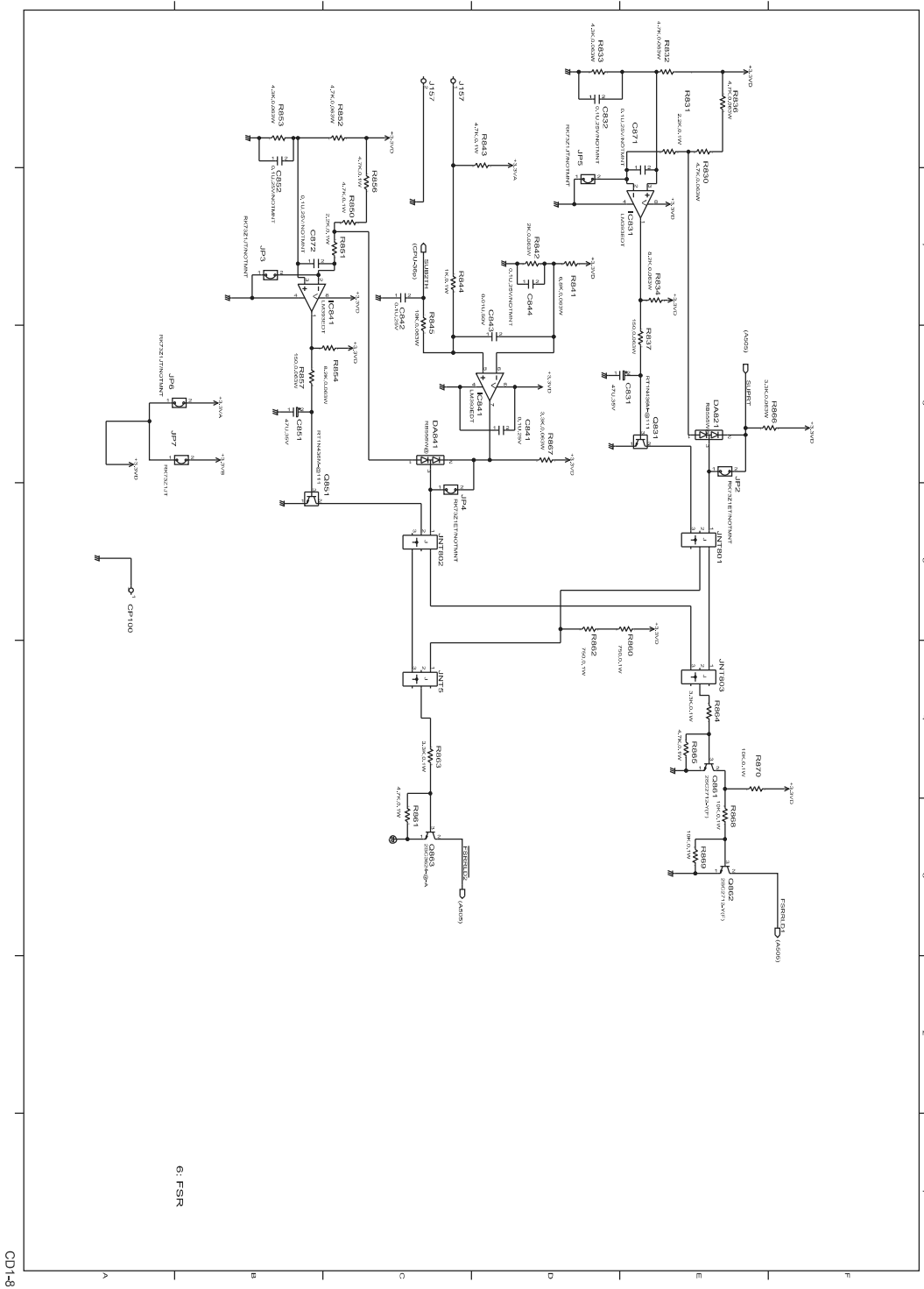
Duplexer PCA diagram

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. Press the **OK** button to open the menus.
2. Use the arrow buttons to navigate to the **Reports** menu, and then press the **OK** button.
3. Use the arrow buttons to navigate to the **Print Quality Page** item, and then press the **OK** button.
4. Press the **Cancel** button to exit the menus.

Print quality assessment page

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

Print a diagnostics page

1. Press the **OK** button to open the menus.
2. Use the arrow buttons to navigate to the **Reports** item, and then press the **OK** button.
3. Use the arrow buttons to navigate to the **Diagnostics Page** item, and then press the **OK** button.
4. Press the **Cancel** button to exit the menus.

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. Press the **OK** button to open the menus.
2. Use the arrow buttons to navigate to the **Reports** menu, and then press the **OK** button.
3. Use the arrow buttons to navigate to the **Config Report** item, and then press the **OK** button.
4. Press the **Cancel** button to exit the menus.

Print-quality troubleshooting tools

Repetitive image defects

If the product output has a consistent, repetitive defect, 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.

Repetitive defects caused by the ITB normally appear on every other page, because the ITB is longer than a page. However, the period of the repetitive defect can vary depending on the type of media, and a repetitive defect can occur more than once on the same page.



NOTE: The following table replaces the graphical repetitive defect ruler. You can make your own ruler by using these measurements.

Table 2-6 Repetitive image defects

Distance between identical defects	Component
About 22.0 mm (0.86 in)	Developer roller (one rotation)
About 38.0 mm (1.49 in)	Primary charging roller
About 44.0 mm (1.73 in)	Registration roller
About 58.0 mm (2.28 in)	Secondary transfer roller or Fuser sleeve
About 63.0 mm (2.48 in)	Pressure roller
About 75.0 mm (2.95 in)	Photosensitive drum
About 78.0 mm (3.07 in)	ITB (ITB drive roller or secondary transfer opposed roller)

Calibrate the product

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

1. Open HP ToolboxFX.
This is now called "HP Device Toolbox?"
2. Click the **System** tab, and then click the **Print Quality** link.
3. In the area for Color Calibration, select the **Calibrate Now** check box.
4. Click **Apply** to calibrate the product immediately.

Control panel menus

Reports menu

Menu item	Description
Menu Structure	Prints a map of the control panel-menu layout. The active settings for each menu are listed.
Config Report	Prints a list of all the product settings. Includes network information when the product is connected to a network.
Supplies Status	Prints the status for each print cartridge, including the following information: <ul style="list-style-type: none">• Estimated percentage of cartridge life remaining• Approximate pages remaining• Part numbers for HP print cartridges• Number of pages printed• Information about ordering new HP print cartridges and recycling used HP print cartridges
Network Summary	Prints a list of all product network settings
Usage Page	Prints a page that lists PCL pages, PCL 6 pages, PS pages, pages that were jammed or mispicked in the product, monochrome (black and white) or color pages; and reports the page count
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

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	

Menu item	Sub-menu item	Description
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	

System Setup menu

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

Menu item	Sub-menu item	Sub-menu item	Sub-menu item	Description
Language				Select the language for the control panel display messages and the product reports.
Paper Setup	Def. Paper Size	Letter		Select the size for printing internal reports or any print job that does not specify a size.
		A4		
		Legal		
	Def. Paper Type	A list of available paper types appears.		Select the paper type for printing internal reports or any print job that does not specify a type.
	Tray 1	Paper Type		Select the default size and type for Tray 1 from the list of available sizes and types.
		Paper Size		
	Tray 2	Paper Type		Select the default size and type for Tray 2 from the list of available sizes and types.
		Paper Size		
	Paper Out Action	Wait Forever*		Select how the product should react when a print job requires a size or type that is not available or when a specified tray is empty.
		Cancel		
		Override		
				Select the Wait Forever option to make the product wait until you load the correct paper and press the OK button. This is the default setting.
				Select the Override option to print on a different size or type after a specified delay.
				Select the Cancel option to automatically cancel the print job after a specified delay.
				If you select either the Override or Cancel options, the control panel prompts you to specify the number of seconds to delay. Use the arrow buttons to increase or decrease the time.

Menu item	Sub-menu item	Sub-menu item	Sub-menu item	Description
Print Quality	Calibrate Color	After Power On		<p>After Power On: Select how soon the product should calibrate after you turn it on. The default setting is 15 Minutes.</p> <p>Calibrate Now: Makes the product perform a calibration immediately. If a job is processing, the product calibrates after the job is complete. If an error message displays, you must clear the error first.</p>
		Calibrate Now		
	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.
		Adjust Tray <X>	X1 Shift	Use the X1 Shift setting to center the image from side to side on a single-sided page or for the second side of a two-sided page.
			X2 Shift	
			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 Sleep mode. The product automatically exits Sleep mode when you send a print job or press a control panel button.
		30 Minutes		
		1 Hour		<p>NOTE: The default Sleep Delay time is 15 minutes.</p>
		2 Hours		
		Off		
		1 Minute		
	Auto Power Down	Power Down Delay	30 Minutes*	Select the length of time after which the product automatically turns off.
			1 Hour	
			2 Hours	<p>NOTE: The default Power Down Delay time is 30 minutes.</p>
			4 Hours	
			8 Hours	
			24 Hours	
			Never	
		Wake Events	USB Job	Select whether the product wakes when it receives each of these types of jobs or actions.
			LAN Job	
			Wireless Job	The default for each option is Yes .
			Button Press	

Menu item	Sub-menu item	Sub-menu item	Sub-menu item	Description
Display Contrast	Medium*			Select the level of contrast for the display.
	Darker			
	Darkest			
	Lightest			
	Lighter			
Supply Settings	Black Cartridge	Very Low Setting	Prompt*	<p>Set how the product behaves when the black print cartridge reaches the very low threshold.</p> <ul style="list-style-type: none"> • Prompt: The product stops printing and prompts you to replace the print 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 print cartridge is very low, but it continues printing. • Stop: The product stops printing until you replace the print cartridge.
			Continue	
			Stop	
		Low Threshold	Enter percentage	<p>Use the arrow buttons to increase or decrease the percentage of estimated life remaining at which the product alerts you that the print cartridge is low.</p> <p>For the black cartridge that ships with the product, the default is 24%. For the standard replacement black print cartridge, the default is 13%. For the high-capacity replacement black print cartridge, the default is 7%.</p> <p>The default values are intended to provide approximately two weeks of use before the cartridge reaches the very low state.</p>

Menu item	Sub-menu item	Sub-menu item	Sub-menu item	Description
	Color Cartridges	Very Low Setting	Stop Prompt* Continue Print Black	<p>Set how the product behaves when the one of the color print cartridges reaches the very low threshold.</p> <ul style="list-style-type: none"> Prompt: The product stops printing and prompts you to replace the print 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 print cartridge is very low, but it continues printing. Print Black: The product has been customer configured to print using only the black print 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. <p>When you choose to replace the very low print cartridge, color printing resumes automatically.</p> <ul style="list-style-type: none"> Stop: The product stops printing until you replace the print cartridge.
		Low Threshold	Cyan Magenta Yellow	<p>Enter percentage</p> <p>Use the arrow buttons to increase or decrease the percentage of estimated life remaining at which the product alerts you that the print cartridge is low.</p> <p>For the color print cartridges that ship with the product, the default is 16%. For the replacement color print cartridges, the default is 7%.</p> <p>The default values are intended to provide approximately two weeks of use before the cartridge reaches the very low state.</p>

Menu item	Sub-menu item	Sub-menu item	Sub-menu item	Description
	Store Usage Data	On Supply*		The product automatically stores print-cartridge usage data in its internal memory. It can also store this data on memory chips in the print cartridges. Select the Not on Supply option to store the data only in the product memory.
		Not on Supply		<p>The information stored on the print cartridge memory chip helps HP design future products to meet our customers' printing needs. HP collects a sampling of memory chips from print cartridges returned to HP's free return and recycling program. The memory chips from this sampling are read and studied in order to improve future HP products.</p> <p>The data collected from the print cartridge memory chip does not contain information that can be used to identify a customer or user of the print cartridge or their product.</p>
Courier Font	Regular*			Select a version of the Courier font.
	Dark			

Service menu


Use this menu to restore default settings, clean the product, and activate special modes that affect print output. Items that have asterisks (*) indicate the factory default setting.

Menu item	Sub-menu item	Description
Cleaning Page		<p>Use this option to clean the product if you see toner specks or other marks on the printed output. The cleaning process removes dust and excess toner from the paper path.</p> <p>When you select this item, the product prompts you to load plain paper in Tray 1 and then press the OK button to start the cleaning process. Wait until the process is complete. Discard the page that prints.</p> <p>NOTE: For models that do not have an automatic duplexer, the product prints the first side and then prompts you to remove the page from the output bin and reload it in Tray 1, keeping the same orientation.</p>
USB Speed	High*	
	Full	For the product to actually operate at high speed, it must have high speed enabled and be connected to an EHCI host controller that is also operating at high speed. This menu item also does not reflect the current operating speed of the product.
Less Paper Curl	On	
	Off*	If printed pages are consistently curled, use this option to set the product to a mode that reduces curl.

Menu item	Sub-menu item	Description
Archive Print	On	If you are printing pages that will be stored for a long time, use this option to set the product to a mode that reduces toner smearing and dusting.
	Off*	
Firmware Date		Displays the current firmware datecode.
Restore Defaults		Sets all customized menu settings to the factory default values.
HP Smart Install	On*	Enable or disable the HP Smart Install tool.
	Off	Disable the tool if you want to connect to a network by using an Ethernet cable.

Network Setup menu

Use this menu to establish network configuration settings. Items that have asterisks (*) indicate the factory default setting.

Menu item	Sub-menu item	Description
Wireless Menu (wireless products only) NOTE: You can also access this menu by pressing the Wireless  button on the front of the product.	Direct WiFi	Provides the product's Direct Wifi name, so you can access it from other wireless devices that support the Wi-Fi Direct protocol.
	WPS Setup	If your wireless router supports this feature, use this method to set up the product on a wireless network. This is the simplest method.
	Network Test	Tests the wireless network and prints a report with the results.
	Wireless Off/On	Enable or disable the wireless network feature.
TCP/IP Config	Automatic*	Select the Automatic option to automatically configure all the TCP/IP settings.
	Manual	Select the Manual option to manually configure the IP address, subnet mask, and default gateway.
Auto Crossover	On*	Enables or disables the use of a standard 10/100 network cable when the product is directly connected to a computer.
	Off	
Network Services	IPv4	Enable or disable the IPv4 and IPv6 protocols. By default, each protocol is enabled.
	IPv6	
Show IP Address	No	No: The product IP address will not appear on the control panel display.
	Yes*	Yes: The product IP address will appear on the control panel display.

Menu item	Sub-menu item	Description
Link Speed	Automatic*	Sets the link speed manually if needed.
	10T Full	After setting the link speed, the product automatically restarts.
	10T Half	
	100TX Full	
	100TX Half	
HTTPS Enforced	No*	Sets the product so it communicates only with Web sites that use hypertext transfer protocol secure (HTTPS).
	Yes	
Restore Defaults		Restores the network configuration settings to the default values.

Interpret control panel messages

Control panel message types

The control panel messages indicate the current product status or situations that might require action.

Alert and warning messages appear temporarily and might require you to acknowledge the message by pressing the **OK** button to resume or by pressing the **Cancel** **X** button to cancel the job. With certain warnings, the job might not complete or the print quality might be affected. If the alert or warning message is related to printing and the auto-continue feature is on, the product will attempt to resume the printing job after the warning has appeared for 10 seconds without acknowledgement.

Critical error messages can indicate some kind of failure. Turning off and then turning on the power might fix the problem. If a critical error persists, the product might require service.

Control panel messages

10.XXXX Supply error

Description

The memory chip for one of the print cartridges cannot be read or is missing.

- 10.0000 = black memory chip error
- 10.0001 = cyan memory chip error
- 10.0002 = magenta memory chip error
- 10.0003 = yellow memory chip error
- 10.1000 = black memory chip is missing
- 10.1001 = cyan memory chip is missing
- 10.1002 = magenta memory chip is missing
- 10.1003 = yellow memory chip is missing

Recommended action

Reinstall the print cartridge.

Turn the product off and then on.

If the problem is not solved, replace the print cartridge.

49 Error Turn off then on

Description

The product experienced an internal error.

Recommended action

Turn the product off, wait at least 30 seconds, and then turn the product on and wait for it to initialize.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product power on.

If the message persists, contact HP support.

50.X Fuser error Turn off then on**Description**

The product has experienced an error with the fuser.

Recommended action

Turn the product power off, wait at least 30 seconds, and then turn the product power on and wait for it to initialize.

Turn off the product, wait at least 25 minutes, and then turn on the product.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product power on.

If the message persists, contact HP support.

51.XX Error Turn off then on**Description**

The product has experienced an internal hardware error.

Recommended action

Turn the product power off, wait at least 30 seconds, and then turn the product power on and wait for it to initialize.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product on.

If the message persists, contact HP support.

54.XX Error Turn off then on**Description**

The product has experienced an error with one of the internal sensors.

Recommended action

Turn the product power off, wait at least 30 seconds, and then turn the product power on and wait for it to initialize.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product power on.

If the message persists, contact HP support.

55.X Error Turn off then on

Description

The product has experienced an internal error.

Recommended action

Turn the product power off, wait at least 30 seconds, and then turn the product power on and wait for it to initialize.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product power on.

If the message persists, contact HP support.

57 Fan error Turn off then on

Description

The product has experienced a problem with its internal fan.

Recommended action

Turn the product power off, wait at least 30 seconds, and then turn the product power on and wait for it to initialize.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product power on.

If the message persists, contact HP support.

59.X Error Turn off then on

Description

The product has experienced a problem with one of the motors.

Recommended action

Turn the product power off, wait at least 30 seconds, and then turn the product power on and wait for it to initialize.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product power on.

If the message persists, contact HP support.

79 Error Turn off then on

Description

The product has experienced an internal firmware error.

Recommended action

Turn the product power off, wait at least 30 seconds, and then turn the product power on and wait for it to initialize.

If you are using a surge protector, remove it. Plug the product directly into the wall socket. Turn the product power on.

If the message persists, contact HP support.

79 Service error Turn off then on**Description**

An incompatible DIMM is installed.

Recommended action

1. Turn the product power off.
2. Install a DIMM that the product supports.
3. Turn the product on.

If the message persists, contact HP support.

Black cartridge low**Description**

The print cartridge is nearing the end of its useful life.

Recommended action

Printing can continue, but consider having a replacement supply on hand.

Black in wrong position**Description**

The print cartridge is installed in the incorrect slot.

Recommended action

Make sure that each print cartridge is installed in the correct slot. From front to back, the print cartridges are installed in this order: black, cyan, magenta, and yellow.

Black very low**Description**

The print cartridge is at the end of its useful life. 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.

Recommended action

To ensure optimal print quality, HP recommends replacing the print cartridge at this point. You can continue printing until you notice a decrease in print quality. Actual cartridge life may vary.

Once an HP supply has reached very low, HP's premium Protection Warranty on that supply has ended. All print defects or cartridge failures incurred when an HP supply is used in continue at very low mode will not be considered to be defects in materials or workmanship in the supply under the HP Print Cartridge Warranty Statement.

Cleaning . . .**Description**

The product periodically performs a cleaning procedure to maintain the best print quality.

Recommended action

Wait for the cleaning process to finish.

Cyan cartridge low**Description**

The print cartridge is nearing the end of its useful life.

Recommended action

Printing can continue, but consider having a replacement supply on hand.

Cyan in wrong position**Description**

The print cartridge is installed in the incorrect slot.

Recommended action

Make sure that each print cartridge is installed in the correct slot. From front to back, the print cartridges are installed in this order: black, cyan, magenta, and yellow.

Cyan very low**Description**

The print cartridge is at the end of its useful life. 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.

Recommended action

To ensure optimal print quality, HP recommends replacing the print cartridge at this point. You can continue printing until you notice a decrease in print quality. Actual cartridge life may vary.

Once an HP supply has reached very low, HP's premium Protection Warranty on that supply has ended. All print defects or cartridge failures incurred when an HP supply is used in continue at very low

mode will not be considered to be defects in materials or workmanship in the supply under the HP Print Cartridge Warranty Statement.

Device error Press [OK]

Description

An internal error occurred.

Recommended action

Press the OK button to resume the job.

Front door open

Description

The product front door is open.

Recommended action

Close the door.

Genuine HP supply installed

Description

A genuine HP supply was installed.

Recommended action

No action necessary.

Incompatible <color>

Description

You have installed a print cartridge that is intended for use in a different HP product model. The product might not function correctly with this print cartridge installed.

Recommended action

Install the correct print cartridge for this product.

Incorrect supplies

Description

More than one print cartridge is installed in the incorrect slot.

Recommended action

Be sure that each print cartridge is in the correct slot. From front to back, the print cartridges are installed in this order: black, cyan, magenta, yellow.

Install <color> cartridge

Description

The print cartridge is either not installed or not correctly installed in the product.

Recommended action

Install the print cartridge.

Invalid driver Press [OK]

Description

You are using an incorrect printer driver.

Recommended action

Select the correct printer driver.

Jam in <location>

Description

The product has detected a jam.

Recommended action

Clear the jam from the location indicated. The job should continue to print. If it does not, try reprinting the job.

If the message persists, contact HP support.

Jam in tray # Clear jam and then Press [OK]

Description

The product has detected a jam.

Recommended action

Clear the jam from the location indicated, and then press OK.

If the message persists, contact HP support.

Load tray # <TYPE> <SIZE>

Description

A tray is configured for the paper type and size that the print job is requesting, but that tray is empty.

Recommended action

Load the correct paper into the tray, or press the OK button to use paper in a different tray.

Load tray 1 plain <SIZE> Cleaning Mode [OK] to start

Description

The product is ready to process the cleaning operation.

Recommended action

Load Tray 1 with plain paper in the size indicated, and then press the OK button.

Load tray <X> Press [OK] for available media

Description

The tray is empty.

Recommended action

Load paper into the tray to continue printing. Press the OK button to select a different tray.

Load tray 1 <TYPE> <SIZE>

Description

No trays are configured for the paper type and size that the print job is requesting.

Recommended action

Load the correct paper into Tray 1, or press OK to use paper in a different tray.

Magenta cartridge low

Description

The print cartridge is nearing the end of its useful life.

Recommended action

Printing can continue, but consider having a replacement supply on hand.

Magenta in wrong position

Description

The print cartridge is installed in the incorrect slot.

Recommended action

Make sure that each print cartridge is installed in the correct slot. From front to back, the print cartridges are installed in this order: black, cyan, magenta, and yellow.

Magenta very low

Description

The print cartridge is at the end of its useful life. 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.

Recommended action

To ensure optimal print quality, HP recommends replacing the print cartridge at this point. You can continue printing until you notice a decrease in print quality. Actual cartridge life may vary.

Once an HP supply has reached very low, HP's premium Protection Warranty on that supply has ended. All print defects or cartridge failures incurred when an HP supply is used in continue at very low mode will not be considered to be defects in materials or workmanship in the supply under the HP Print Cartridge Warranty Statement.

Manual duplex Load tray <X> Press [OK]

Description

The first side of a manual duplex job has printed, and the page needs to be loaded to process the second side.

Recommended action

Load the page in the indicated tray with the side to be printed face up, and the top of the page away from you and then press the OK button.

Manual feed <TYPE> <SIZE> Press [OK] for available media

Description

The product is set for manual feed mode.

Recommended action

Press the OK button to clear the message or load the correct paper into Tray 1.

Memory is low Press [OK]

Description

The product memory is almost full.

Recommended action

Press the OK button to finish the job, or press the Cancel X button to cancel the job.

Break the job into smaller jobs that contain fewer pages.

Misprint Press [OK]

Description

Paper has been delayed as it moves through the product.

Recommended action

Press the **OK** button to clear the message.

To avoid this problem, try the following solutions:

1. Adjust the paper guides in the tray. Make sure the front paper guide is pushing the paper against the back edge of the tray.
2. Use paper that meets HP specifications. Store paper unopened in its original packaging.
3. Use the product in an area that meets the environmental specifications for this product.

Print failure, press OK. If error repeats, turn off then on.

Description

The product cannot process the page.

Recommended action

Press the **OK** button to continue printing the job, but output might be affected.

If the error persists, turn the power off and then on. Resend the print job.

Rear door open

Description

The product rear door is open.

Recommended action

Close the door.

Remove shipping lock from <color> cartridge

Description

A print cartridge shipping lock is installed.

Recommended action

Pull the orange tab to remove the shipping lock from the cartridge.

Remove shipping locks from cartridges

Description

A print cartridge shipping lock is installed on one or more print cartridges.

Recommended action

Pull the orange tab to remove the shipping lock from the cartridge.

Replace <color>**Description**

The print cartridge is at the end of its useful life, and the product is customer-configured to stop printing when it reaches the very low state.

Recommended action

To ensure optimal print quality, HP recommends replacing the print cartridge at this point. You can continue printing until you notice a decrease in print quality. Actual cartridge life may vary. Once an HP supply has reached very low, HP's premium Protection Warranty on that supply has ended. All print defects or cartridge failures incurred when an HP supply is used in continue at very low mode will not be considered to be defects in materials or workmanship in the supply under the HP Print Cartridge Warranty Statement.

Supplies low**Description**

More than one supply item is low.

Recommended action

Check the supply level gauges on the control panel, or print a supplies status page to determine which print cartridges are low.

Printing will continue until a Very Low message displays. Consider having replacement supplies on hand.

Unexpected size in tray # Load <size> Press [OK]**Description**

The product has detected paper in the tray that does not match the configuration for the tray.

Recommended action

Load the correct paper into the tray, or configure the tray for the size that you have loaded.

Unsupported <color> Press [OK] to continue**Description**

The product has detected a print cartridge that was not made by HP.

Recommended action

Press the OK button to continue printing.

If you believe you purchased an HP supply, go to www.hp.com/go/anticounterfeit. Service or repairs that are required as a result of using unsupported supplies is not covered under HP warranty.

Used <color> in use

Description

You are using a print cartridge that reached the default low threshold while it was installed in a product.

Recommended action

Printing can continue, but consider having a replacement supply on hand.

Used <color> installed Press [OK] to continue

Description

You have installed a print cartridge that reached the default low threshold while it was installed in another product.

Recommended action

Press the OK button to continue.

Used supplies in use

Description

You are using more than one print cartridge that reached the default low threshold while it was installed in a product.

Recommended action

Printing can continue, but consider having replacement supplies on hand.

Yellow cartridge low

Description

The print cartridge is nearing the end of its useful life.

Recommended action

Printing can continue, but consider having a replacement supply on hand.

Yellow in wrong position

Description

The print cartridge is installed in the incorrect slot.

Recommended action

Make sure that each print cartridge is installed in the correct slot. From front to back, the print cartridges are installed in this order: black, cyan, magenta, and yellow.

Yellow very low

Description

The print cartridge is at the end of its useful life. 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.

Recommended action

To ensure optimal print quality, HP recommends replacing the print cartridge at this point. You can continue printing until you notice a decrease in print quality. Actual cartridge life may vary.

Once an HP supply has reached very low, HP's premium Protection Warranty on that supply has ended. All print defects or cartridge failures incurred when an HP supply is used in continue at very low mode will not be considered to be defects in materials or workmanship in the supply under the HP Print Cartridge Warranty Statement.

Event log messages

The event log is located on the configuration page (labeled Status Log) and lists the last five events.

Table 2-7 Event-log messages

Error log code	Description
10.0000	Black e-label error
10.0001	Cyan e-label error
10.0002	Magenta e-label error
10.0003	Yellow e-label error
10.1000	Black e-label missing
10.1001	Cyan e-label missing
10.1002	Magenta e-label missing
10.1003	Yellow e-label missing
10.3000	Non-HP black
10.3001	Non-HP cyan
10.3002	Non-HP magenta
10.3003	Non-HP yellow
13.0000	Paper jam, Tray 1 area
13.0001	Paper jam, Tray 2 area
13.0003	Paper jam, registration drum area
13.0004	Paper jam, drum fuser area
13.0005	Paper jam, fuser output area
20.0000	Memory out
21.0000	Video under run
50.1000	Low temperature fuser error
50.2000	Slow fuser error
50.3000	High temperature fuser error
50.4000	Fuser heater wire failure
50.5000	Fuser low temperature subtherm failure
50.6000	Fuser high temperature subtherm failure
52.0000	Scanner error, black laser failure
52.0100	Scanner error, cyan laser failure
52.0200	Scanner error, magenta laser failure
52.0300	Scanner error, yellow laser failure

Table 2-7 Event-log messages (continued)

Error log code	Description
54.0600	Density sensor error
54.1000	Color plane registration sensor error
54.2800	Sensor density contaminated
54.2801	Sensor color plane registration contaminated
55.0000	Engine comm fatal error
55.0001	Engine comm critical error
55.1000	DC controller memory error
59.0000	ITB rotation failure
59.0001	ITB ramp up failure
101.0000	Color-plane registration error
102.0000	DMAX calibration error
103.0000	DHALF calibration error

Clear jams

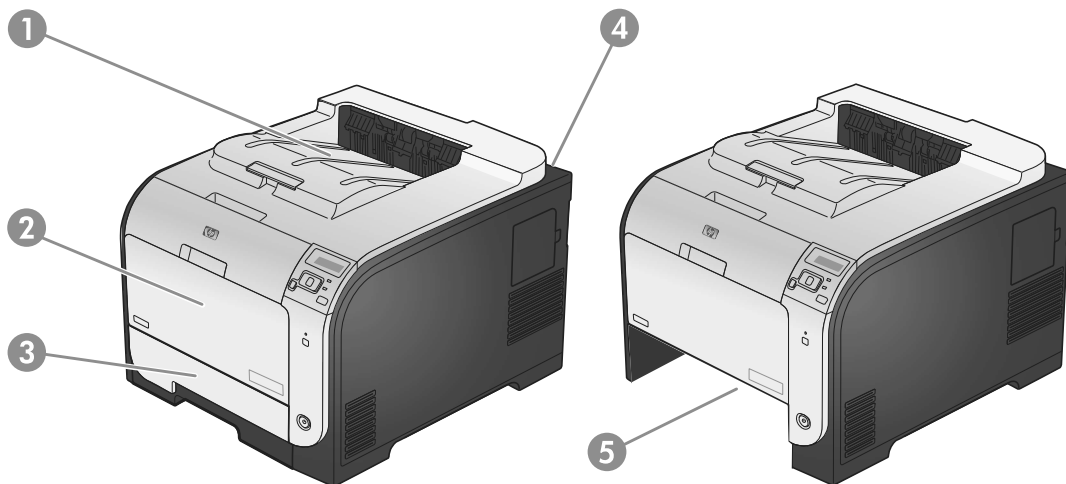
Common causes of jams

To reduce the number of paper jams, try these solutions.

1. Use only paper that meets HP specifications for this product.
2. Use paper that is not wrinkled, folded, or damaged. If necessary, use paper from a different package.
3. Use paper that has not previously been printed or copied on.
4. Make sure the tray is not overfilled. If it is, remove the entire stack of paper from the tray, straighten the stack, and then return some of the paper to the tray.
5. Make sure the paper guides in the tray are adjusted correctly for the size of paper. Adjust the guides so they are touching the paper stack without bending it.
6. Make sure that the tray is fully inserted in the product.
7. If you are printing on heavy, embossed, or perforated paper, use the manual feed feature and feed sheets one at a time.

Jam locations

Use this illustration to find the locations of jams.

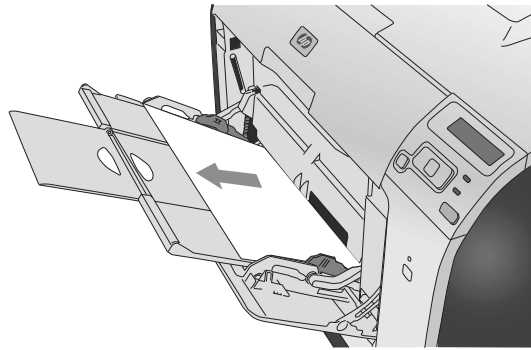


1	Output bin
2	Tray 1
3	Tray 2
4	Fuser
5	Tray 2 jam-access area

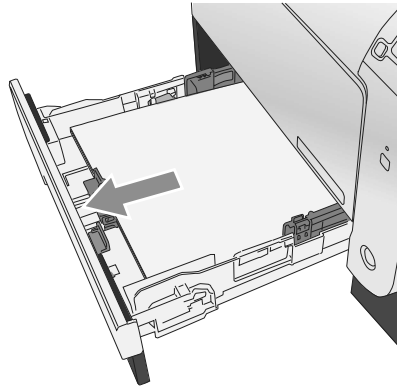
Clear jams in Tray 1

1. Pull the jammed sheet from Tray 1.

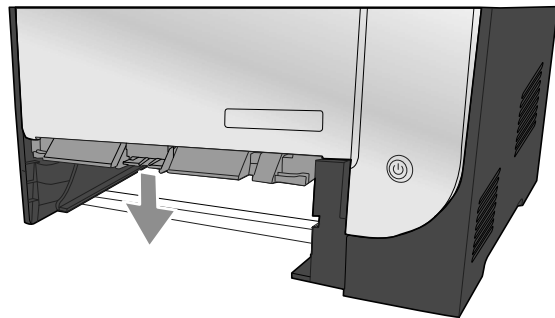
NOTE: If the sheet tears, make sure that all of the fragments are removed before you resume printing.



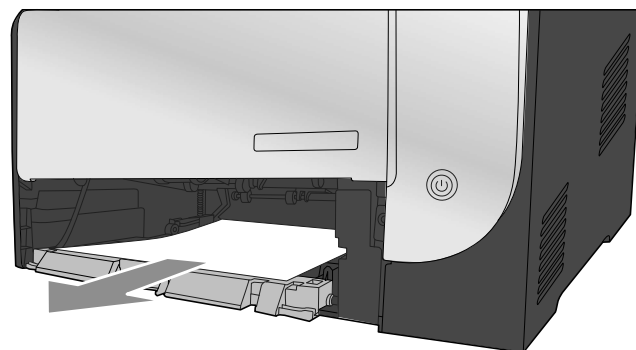
2. Pull out Tray 2 and place it on a flat surface.



3. Lower the jam-access tray.

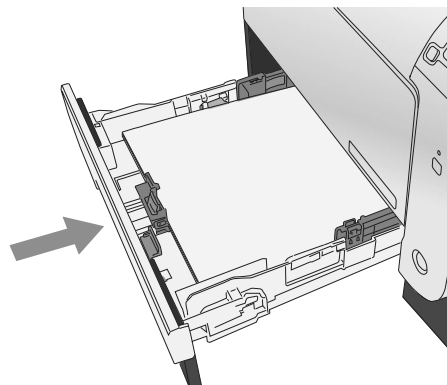


4. Remove the jammed sheet by pulling it straight out.



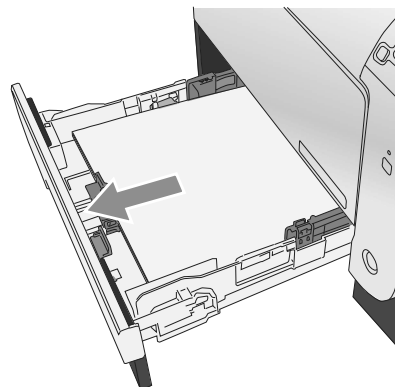
5. Push the jam-access tray up to close it, and then replace Tray 2.

NOTE: To close the tray, push in the middle or with even pressure on both sides. Avoid pushing on one side only.

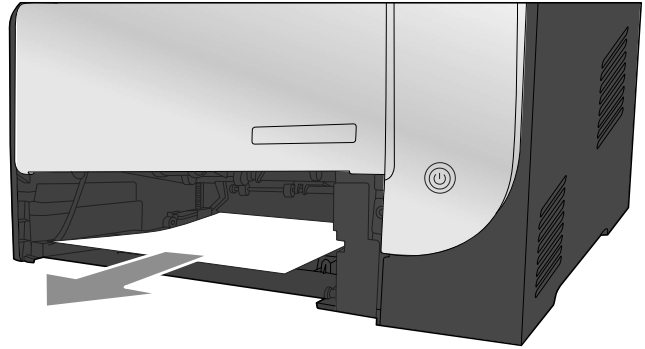


Clear jams in Tray 2

1. Open Tray 2.

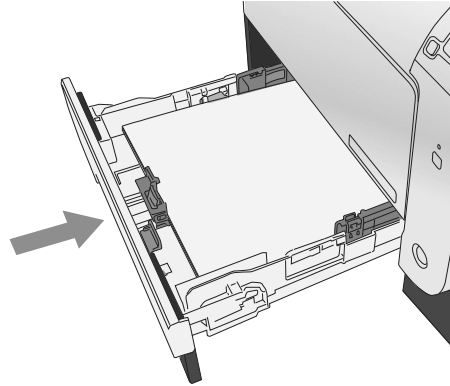


2. Remove the jammed sheet by pulling it straight out.



3. Close Tray 2.

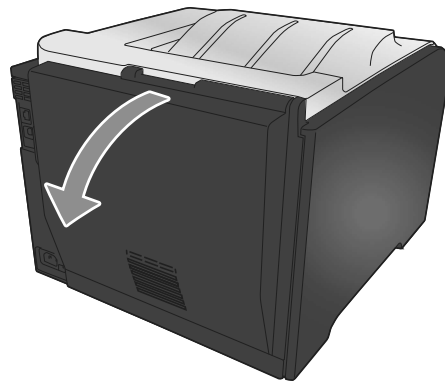
NOTE: To close the tray, push in the middle or with even pressure on both sides. Avoid pushing on one side only.



Clear jams in the fuser area

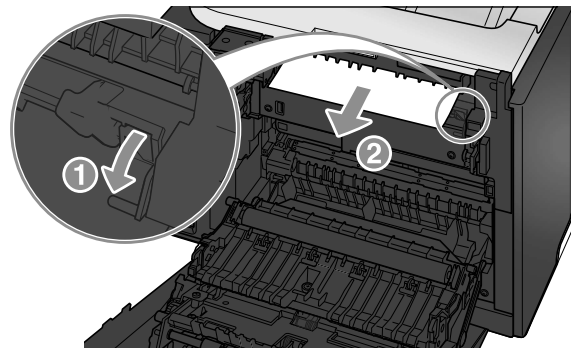
1. Open the rear door.

CAUTION: The fuser, located in the back of the product, is hot. Wait for the fuser to cool before continuing.

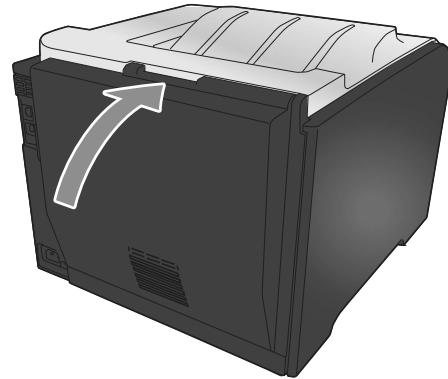


2. If necessary, push the guide (callout 1) and remove any visible paper (callout 2) from the bottom of the delivery area.

NOTE: If the sheet tears, make sure that all fragments are removed before you resume printing. Do not use sharp objects to remove fragments.



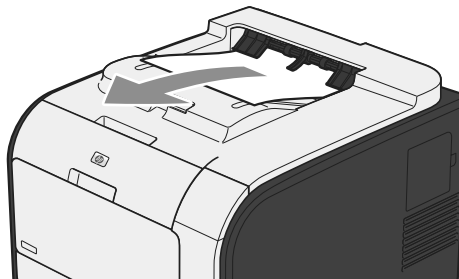
3. Close the rear door.



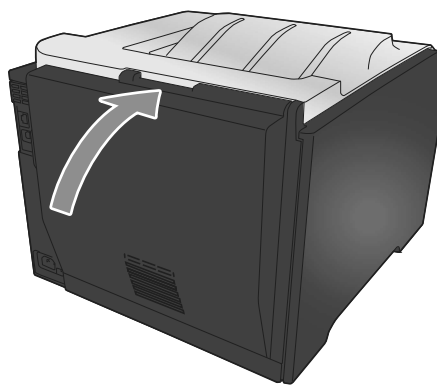
Clear jams in the output bin

1. Look for jammed paper in the output bin area.
2. Remove any visible media.

NOTE: If the sheet tears, make sure that all fragments are removed before resuming printing.



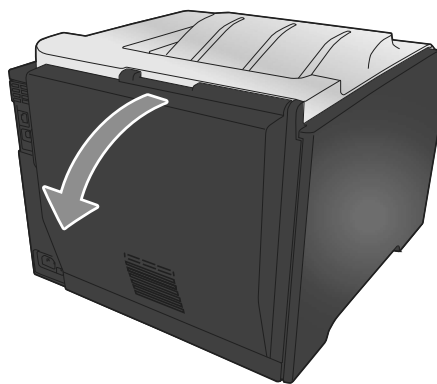
3. Open and then close the rear door to clear the message.



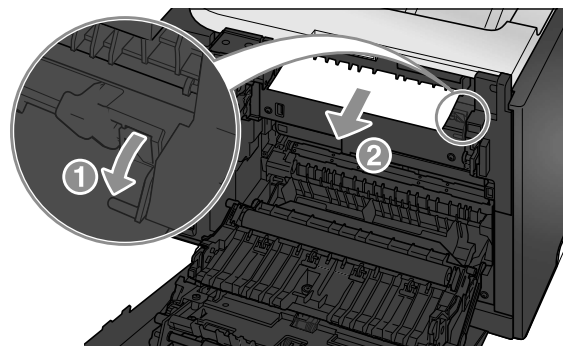
Clear jams in the duplexer (duplexing models only)

1. Open the rear door.

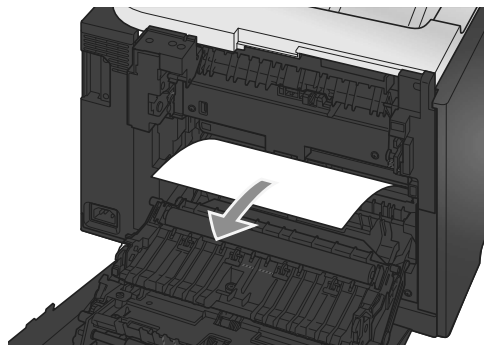
CAUTION: The fuser, located in the back of the product, is hot. Wait for the fuser to cool before continuing.



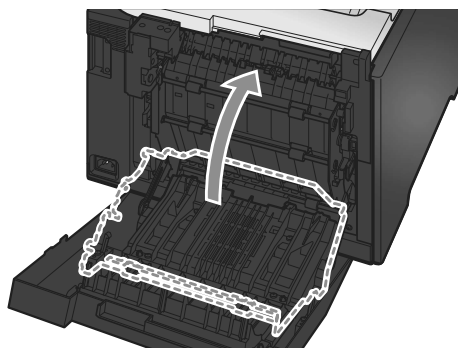
2. If necessary, pull the guide (callout 1) and remove any visible paper (callout 2) from the bottom of the delivery area.



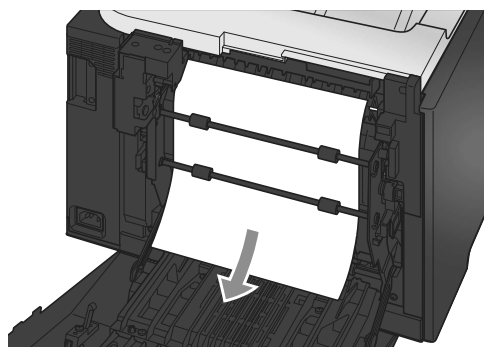
3. If necessary, remove any visible paper from bottom side of the duplexing unit.



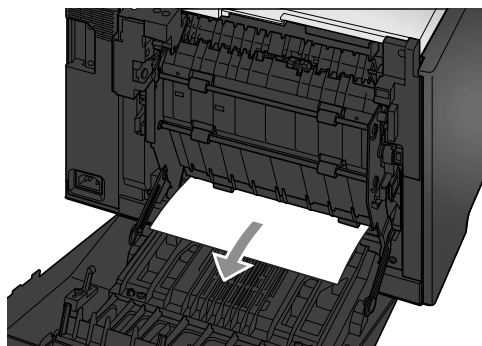
4. If you can not see any jammed paper, lift the duplexing unit using the tab on the side of the duplexing unit.



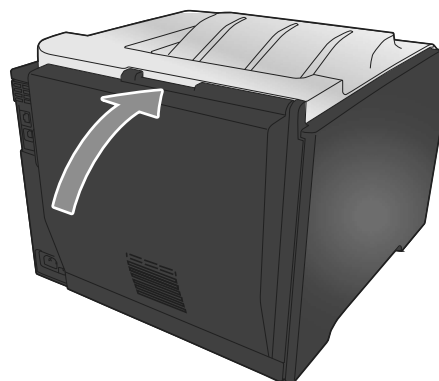
5. If you can see the trailing edge of the paper, remove the paper from the product.



6. If you can see the leading edge of the paper, remove it from the product.



7. Close the rear door.



Solve paper-handling problems

The product picks up multiple sheets of paper

If the product picks up multiple sheets of paper from the tray, try these solutions.

1. Remove the stack of paper from the tray and flex it, rotate it 180 degrees, and flip it over. *Do not fan the paper.* Return the stack of paper to the tray.
2. Use only paper that meets HP specifications for this product.
3. Use paper that is not wrinkled, folded, or damaged. If necessary, use paper from a different package.
4. Make sure the tray is not overfilled. If it is, remove the entire stack of paper from the tray, straighten the stack, and then return some of the paper to the tray.
5. Make sure the paper guides in the tray are adjusted correctly for the size of paper. Align the guides with the paper-size markings in the bottom of the tray.

The product does not pick up paper

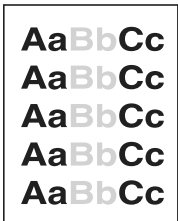
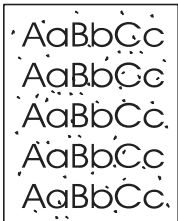
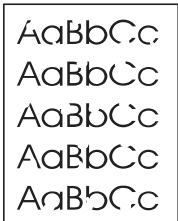
If the product does not pick up paper from the tray, try these solutions.

1. Open the product and remove any jammed sheets of paper.
2. Load the tray with the correct size of paper for your job.
3. Make sure the paper guides in the tray are adjusted correctly for the size of paper. Align the guides with the paper-size markings in the bottom of the tray.
4. Check the product control panel to see if the product is waiting for you to acknowledge a prompt to feed the paper manually. Load paper, and continue.

Solve image-quality problems

Print quality examples

The following examples depict Letter-size paper that has passed through the product short-edge first. These examples illustrate problems that would affect all the pages that you print, whether you print in color or in black only. The topics that follow list the typical cause and solution for each of these examples.

Problem	Cause	Solution
Print is light or faded.	The media might not meet HP specifications.	Use media that meets HP specifications.
	One or more toner cartridges might be defective.	Print the Supplies status page to check the remaining life. See the complete version of the English service manual.
		Replace any low toner cartridges.
	The product is set to override the Replace <Color> Cartridge message and to continue printing.	Replace any low toner cartridges.
	The print density settings might have been changed.	Set the print density setting to 0 .
	The product might need to be calibrated.	Run a calibration. See Calibrate the product on page 123 .
Toner specks appear.	The media might not meet HP specifications.	Use only media that meets HP specifications. See the complete version of the English service manual.
	The paper path might need cleaning.	Clean the paper path. See the complete version of the English service manual.
	One or more of the cartridges might be leaking.	Try to verify the color of the toner specks and check the cartridge for leaks.
	The cartridge waste tank might be overfilled.	Check for error code 10.98.XX in the event log. The XX portion of the code identifies the cartridge (00 is black, 01 is cyan, 02 is magenta, 03 is yellow). If the error was logged, replace the appropriate cartridge.
Dropouts appear.	A single sheet of print media might be defective.	Try reprinting the job.
	The moisture content of the paper is uneven or the paper has moist spots on its surface.	Try different paper, such as high-quality paper that is intended for color laser printers.
	The media is flawed. The media manufacturing processes can cause some areas to reject toner.	Try different paper, such as high-quality paper that is intended for color laser printers.