

The paper-feeder driver notifies the formatter if either of the paper-feeder media-stack surface sensors fails to detect the stack surface within a specified period from when a lift-up operation starts.

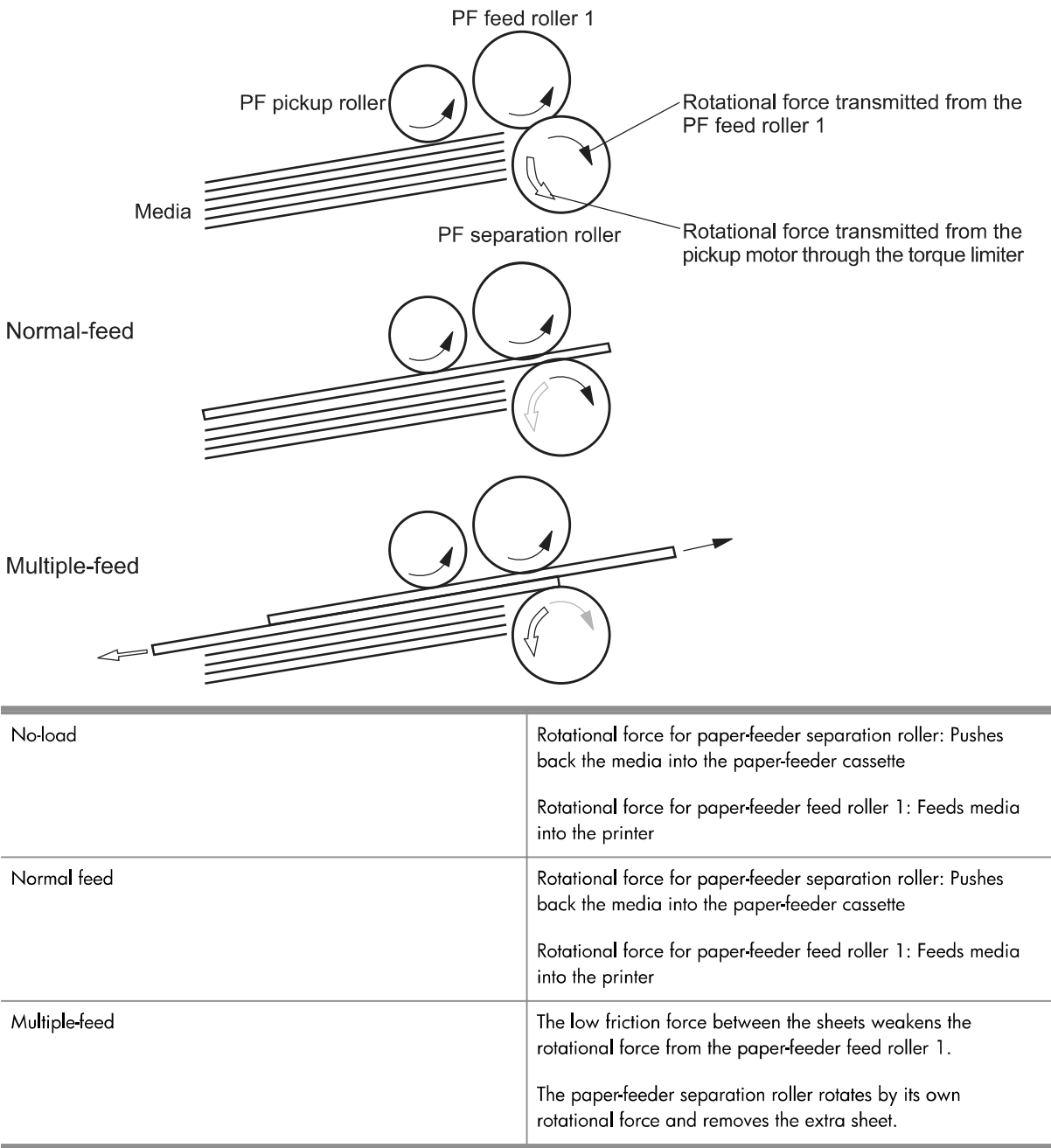
## Paper feeder presence detection

The Tray 3 paper present (SR3) detects whether the paper is present in the paper-feeder cassette.

# Paper-feeder multiple feed prevention

The paper-feeder uses a separation roller to prevent multiple sheets of paper from entering the printer. The separation roller prevents multiple feeds of paper by allowing the paper-feeder separation roller to rotate in the same direction as the paper-feeder feed roller 1. The paper-feeder separation roller is equipped with the torque limiter. If multiple sheets of paper are picked up, the torque limiter takes control of the paper-feeder separation roller, and pushes the extra sheets back to the paper-feeder cassette. That way, only the top sheet is fed to the printer.

**Figure 1-51** Paper-feeder multiple feed prevention



## Paper feeder jam detection

The paper feeder uses the Tray 3 feed (SR4) to detect the presence of paper and to check whether paper has jammed.

**Figure 1-52** Jam detection



The paper-feeder driver identifies a jam if the sensor detects paper at a specified timing stored in the paper-feeder driver. The paper-feeder driver stops printing and notifies the formatter through the DC controller of the jam. The paper feeder detects the following jams:

- Pickup delay jam: The paper-feeder media-feed sensor does not detect the leading edge of media within a specified period from when the paper-feeder pickup solenoid is turned on.
- Pickup stationary jam: The paper-feeder media-feed sensor does not detect the trailing edge of media within a specified time period from when the sensor detects the leading edge.

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## 2 Removal and replacement

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# Introduction

This chapter describes the removal and replacement of field-replaceable units (FRUs) and customer-replaceable units (CRUs).

Replacing FRUs is generally the reverse of removal. Occasionally, notes and tips are included to provide directions for difficult or critical replacement procedures.

HP does *not* support repairing individual subassemblies or troubleshooting to the component level.


Note the length, diameter, color, type, and location of each screw. Be sure to return each screw to its original location during reassembly.

Incorrectly routed or loose wire harnesses can interfere with other internal components and can become damaged or broken. Frayed or pinched harness wires can be difficult to find. When replacing wire harnesses, always use the provided wire loops, lance points, or wire-harness guides and retainers.

## Removal and replacement strategy


### Cautions during removal and replacement


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 **WARNING!** Turn the product off, wait 5 seconds, and then remove the power cord before attempting to service the product. If this warning is not followed, severe injury can result, in addition to damage to the product. The power must be on for certain functional checks during troubleshooting. However, disconnect the power supply during parts removal.

Never operate or service the product with the protective cover removed from the laser/scanner assembly. The reflected beam, although invisible, can damage your eyes.

The sheet-metal parts can have sharp edges. Be careful when handling sheet-metal parts.

 **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* fully seat all FFCs in their connectors. Failure to fully seat an FFC into a connector can cause a short circuit in a PCA.


 **NOTE:** To install a self-tapping screw, first turn it counterclockwise to align it with the existing thread pattern, and then carefully turn it clockwise to tighten. Do not overtighten. If a self-tapping screw-hole becomes stripped, repair the screw-hole or replace the affected assembly.

 **TIP:** For clarity, some photos in this chapter show components removed that would not be removed to service the product. If necessary, remove the components listed at the beginning of a procedure before proceeding to service the product.

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## Electrostatic discharge

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**⚠ CAUTION:**  Some parts are sensitive to electrostatic discharge (ESD). Look for the ESD reminder when removing product parts. Always perform service work at an ESD protected workstation or mat, or use an ESD strap. If an ESD workstation, mat, or strap is not available, ground yourself by touching the sheet-metal chassis *before* touching an ESD sensitive part.

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

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## Required tools

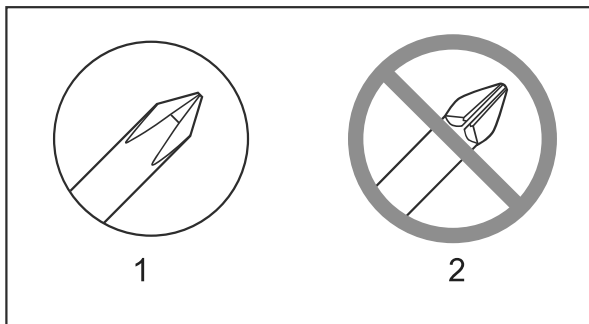
- #2 Phillips screwdriver with a magnetic tip and a 152-mm (6-inch) shaft length
- Small flat blade screwdriver
- Needle-nose pliers
- ESD mat or ESD strap (if one is available)
- Penlight (optional)

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

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**Figure 2-1** Phillips and pozidrive screwdriver comparison





# Service approach

## Before performing service

- Remove all media from the product.
- Turn off the power using the power switch.
- Unplug the power cable and interface cable or cables.
- Place the product on an ESD workstation or mat, or use an ESD strap (if one is available). If an ESD workstation, mat, or strap is not available, ground yourself by touching the sheet-metal chassis *before* touching an ESD sensitive part.
- Remove the print cartridges. See [Print cartridges on page 76](#).
- Remove the tray cassette or cassettes.

## After performing service

- Plug in the power cable.
- Reinstall the print cartridges.
- Reinstall the tray cassette or cassettes.
- If the 1 x 500-sheet paper feeder was removed for service, place the product on the feeder. Engage the feeder tray locks to secure the feeder to the product.

## Post service test

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

### Print-quality test

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

## Parts removal order

**Figure 2-2** Parts removal order (1 of 2)

Component	Remove	Remove	Remove	Remove	Remove	Remove
Print cartridges						
Duplex reverse guide						
Toner collection unit (TCU)						
Formatter						
Hard drive (HDD)	Formatter					
Solid state drive (SSD)	Formatter					
Memory DIMMs	Formatter					
Tray 2-3 cassettes						
Fuser						
Tray 1 pickup roller	Roller cover					
Tray 2 pickup and separation rollers	Tray 2 cassette					
Tray 3 pickup, feed, and separation rollers	Tray 3 cassette					
Secondary transfer rollers						
Secondary transfer assembly (T2)						
Intermediate transfer belt (ITB)						
Front-door assembly						
Right-door assembly						
Right-rear cover						
Left cover	Formatter					
Left-bottom cover	TCU	Left cover				
Hardware integration pocket (HIP)						
Control panel						
Right-front cover	Control panel					
Right-bottom cover	Control panel	Right front cover	Right-rear cover			
Front-top cover	TCU	Left cover	Control panel			
Rear cover	TCU	Right-rear cover	Left cover			
Rear-bottom cover	TCU	Right-rear cover	Left cover	Rear cover		
Upper-rear cover	TCU	Right-rear cover	Left cover	Rear cover		
Rear-top cover	TCU	Left cover	HIP	Control panel	FrontTop cover	Rear cover

**Figure 2-3** Parts removal order (2 of 2)

Component	Remove	Remove	Remove	Remove	Remove	Remove	Remove	Remove	Remove	Remove
<b>Delivery fan, cartridge fan, and environmental sensor</b>	TCU	Left cover								
<b>Toner collection sensor</b>	TCU	Left cover								
<b>Residual-toner feed motor</b>	TCU	ITB	Left cover							
<b>Registration density (RD) sensor</b>	T2	ITB								
<b>Power supply (PS) fan and fan duct</b>	TCU	Right-rear cover	Left cover	Rear cover						
<b>Registration assembly</b>	TCU	T2	ITB	Right-rear cover	Left cover	Rear cover	RD sensor	PS fan and duct		
<b>Interconnect board (ICB)</b>	TCU	Formatter	Left cover	Rear cover						
<b>DC controller (DCC) and tray (optional)</b>	TCU	Formatter	Right-rear cover	Left cover	Rear cover	ICB	LVPS (if removing tray)			
<b>Low-voltage power supply (LVPS)</b>	TCU	Formatter	Right-rear cover	Left cover	Rear cover	ICB				
<b>High-voltage power supply (HVPS) lower</b>	TCU Formatter Right-rear cover Left cover Rear cover	ICB	LVPS							
<b>Developing-disengagement motor</b>		ICB	LVPS	HVPS-lower						
<b>Pickup motor</b>		ICB	LVPS	HVPS-lower						
<b>Lifter-drive assembly</b>		ICB	LVPS	HVPS-lower						
<b>Automatic dose assembly</b>		ICB	LVPS	HVPS-lower	Lifter-drive					
<b>Cassette pickup drive assembly</b>		ICB	LVPS	HVPS-lower						
<b>Laser scanner (Y/M)</b>		ICB	LVPS	HVPS-lower						
<b>Laser scanner (C/Bk)</b>		ICB	LVPS	HVPS-lower	Lifter-drive	Laser scanner (Y/M)				
<b>Cassette pickup assembly</b>		Registration assembly	ICB	LVPS	HVPS lower	PS fan and duct	T2	ITB	RD sensor	Cassette pickup drive assembly
<b>High-voltage power supply (HVPS) upper</b>	TCU Formatter Right-rear cover Left cover HIP Control panel	Front-top cover Rear cover Rear-top cover								
<b>Drum motors 1, 2, or 3</b>		ICB	HVPS-upper							
<b>Fuser motor</b>		DCC LVPS	HVPS-upper							
<b>Main-drive assembly</b>	TCU Formatter Fuser T2 ITB	Right-rear cover Left cover HIP Control panel Front-top cover Rear cover	Rear-top cover PS fan and duct ICB DCC and tray LVPS HVPS lower and upper							
<b>Fuser-drive assembly</b>				Main drive						
<b>Delivery assembly</b>				Main drive	Fuser drive					
<b>Duplex-drive assembly</b>				Main drive	Fuser drive	Delivery assembly				

# Customer self repair (CSR) components

## Print cartridges

**⚠ CAUTION:** If toner gets on your clothing, wipe it off with a dry cloth and wash clothing in cold water. *Hot water sets toner into fabric.*

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1. Open the front door. Make sure that the door is completely open.

**Figure 2-4** Remove the print cartridge (1 of 2)



2. Grasp the print-cartridge handle and pull out to remove. Repeat this step for each print cartridge.

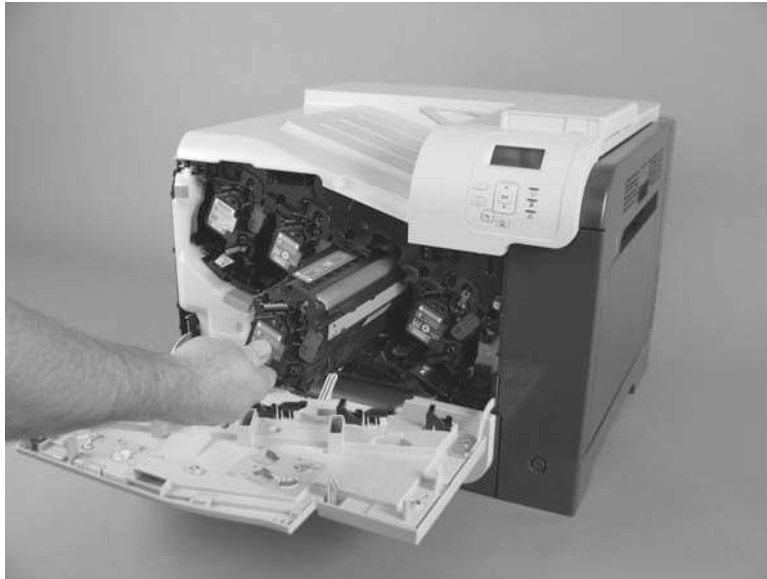
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**⚠ CAUTION:** Do not touch the green roller. Doing so can damage the cartridge. Do not expose the cartridge to strong light. Cover the cartridge with a sheet of paper to protect it from light.

**💡 Reinstallation tip** Align the print cartridge with its slot and insert the print cartridge until it clicks into place.

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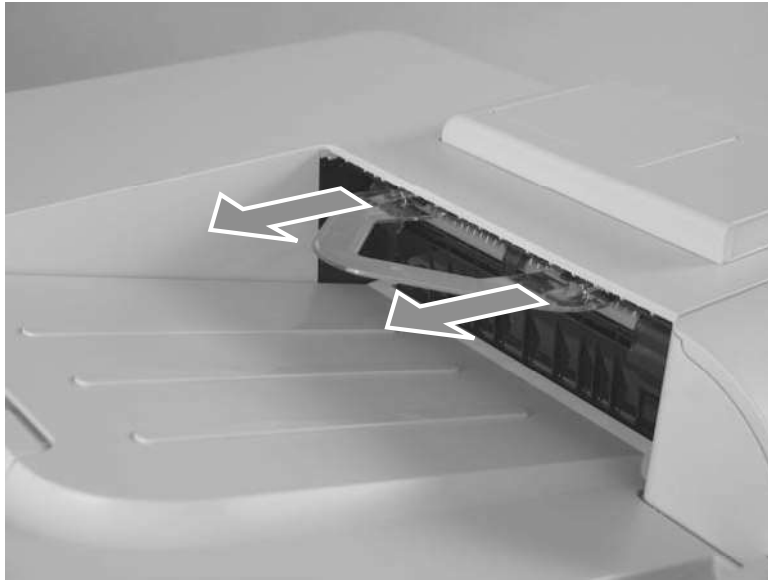
**Figure 2-5** Remove the print cartridge (2 of 2)



## Duplex reverse guide

1. Grasp the duplex reverse guide and pull it away from the product to release it.

**Figure 2-6** Remove the duplex reverse guide (1 of 2)




2. Remove the guide.

**Figure 2-7** Remove the duplex reverse guide (2 of 2)



## Toner collection unit


 **NOTE:** The toner collection unit is designed for a single use. Do not try to empty the toner collection unit and reuse it. Doing so could cause toner to spill inside the product and result in reduced print quality. For recycling information, see the product user guide.

1. Open the front door. Make sure that the door is completely open.

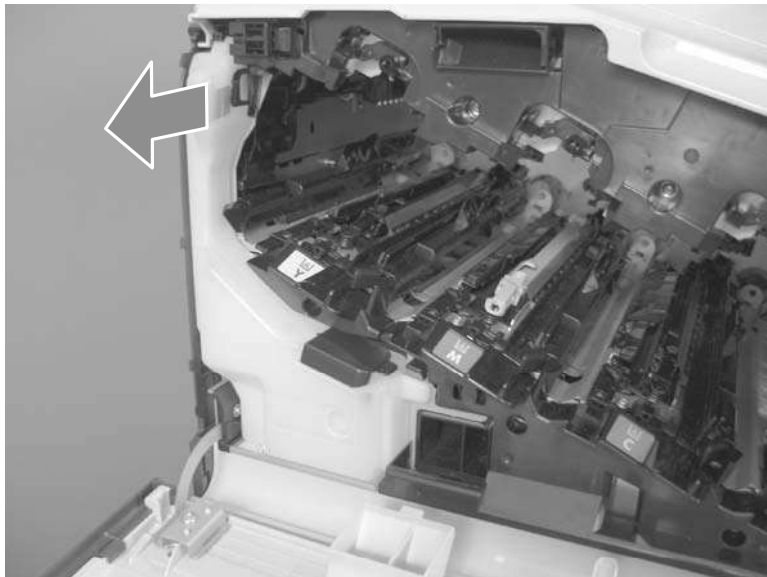
**Figure 2-8** Remove the toner collection unit (1 of 4)



2. Grasp the blue label at the top of the toner collection unit and pull the toner collection unit straight away from the product.

 **Reinstallation tip** Insert the bottom of the replacement unit into the product first and then push the top of the unit until it clicks into place. If the toner collection unit is installed incorrectly, the front door will not close completely.

**Figure 2-9** Remove the toner collection unit (2 of 4)



3. To prevent toner spills, place the blue cap (callout 1) over the blue opening at the top of the unit (callout 2).

**Figure 2-10** Remove the toner collection unit (3 of 4)



**Figure 2-11** Remove the toner collection unit (4 of 4)



4. Recycle the toner collection unit.



## Formatter PCA

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**⚠ CAUTION:**  ESD sensitive component.

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1. Turn the product off and disconnect the power and interface cable or interface cables.
2. Unscrew the formatter thumb screws, and then firmly pull the formatter from the product. Place the formatter on a clean, flat, grounded surface.

**Figure 2-12** Remove the formatter




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**📝 NOTE:** When reinstalling the formatter, push firmly on the right side to make sure the formatter is seated.

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## Disk drives

 **NOTE:** The product has a hard disk drive (HDD) or solid state module (SSM) installed. If you install a replacement disk drive, you must perform reload the product firmware. See [Reload the firmware on page 85](#).

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**Before proceeding, remove the following components:**

- Formatter PCA. See [Formatter PCA on page 81](#)

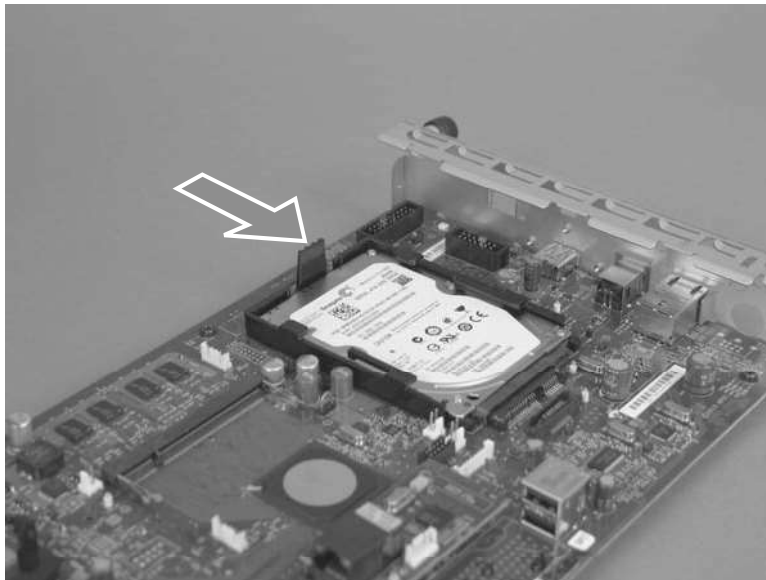
### Remove the HDD

 **CAUTION:**  ESD sensitive component.


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1. Place the formatter on a clean, flat, grounded surface.
2. Release the locking tab to release the HDD.

**Figure 2-13** Remove the HDD (1 of 2)

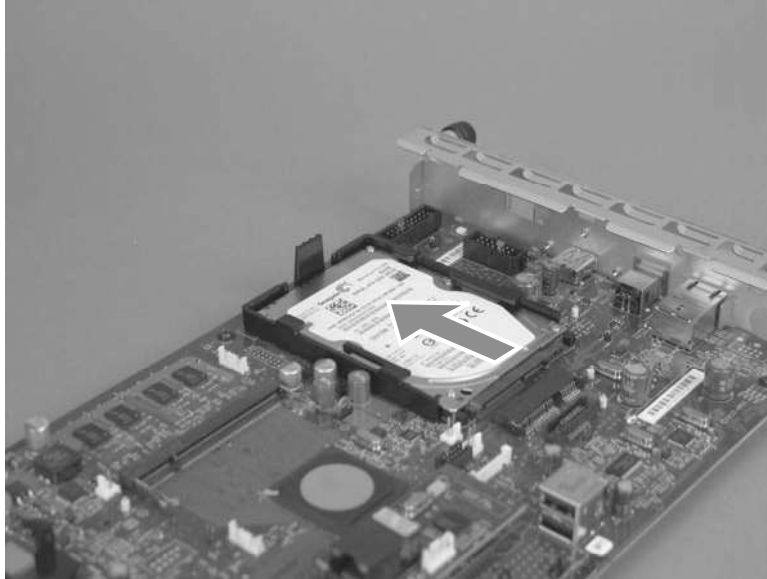


3. Hold the locking tab in the release position, and then slide the HDD toward the edge of the formatter to remove it.

 **Reinstallation tip** When the HDD is reinstalled, make sure that the HDD is fully seated and that the locking lever snaps into the locked position.

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**Figure 2-14** Remove the HDD (2 of 2)

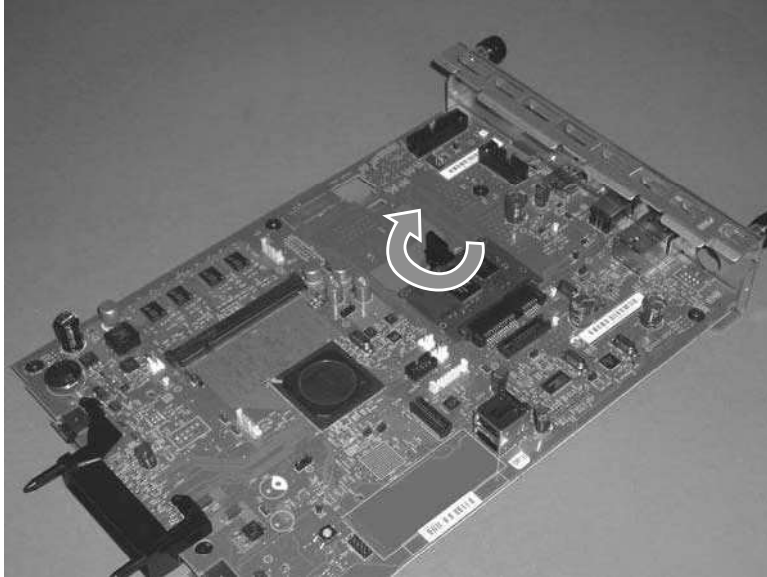


## Remove the SSM

**⚠ CAUTION:**  ESD sensitive component.

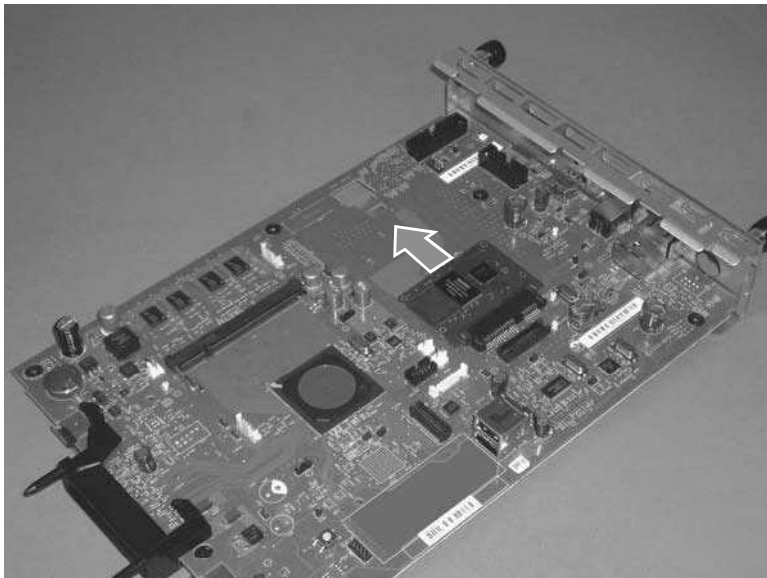
1. Place the formatter on a clean, flat, grounded surface.
2. Turn the locking tab to release it, and then remove the tab.

**Figure 2-15** Remove the SSM (1 of 2)



3. Slide the SSM toward the edge of the formatter to remove it.


**Figure 2-16** Remove the SSM (2 of 2)



## Install a replacement hard drive

After installing a replacement hard drive, you must reload the firmware by performing a firmware upgrade.

### Reload the firmware

1. Copy the `xxxxxxx.bdl` file to a portable USB flash memory storage device (thumbdrive).
2. Turn the product on, and then wait until it reaches the Ready state.
3. Press the Home  button or OK button.
4. Press the Down arrow ▼ button to highlight **Device Maintenance**, and then press the OK button.
5. Press the Down arrow ▼ button to highlight **USB Firmware Upgrade**, and then press the OK button.
6. Insert the portable USB storage device with the `xxxxxxx.bdl` file on it into the USB port on the front of the product, and then press the OK button.
7. Press the Down arrow ▼ button to highlight the `xxxxxxx.bdl` file, and then press the OK button.



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**TIP:** If there is more than one `xxxxxxx.bdl` file on the storage device, make sure that you select the correct file for this product.

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8. A prompt to upgrade an older, newer, or reinstall the same version appears. Press the Down arrow ▼ button to highlight the desired option, and then press the OK button.

When the upgrade is complete, the product will initialize.




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**NOTE:** The upgrade process can take up to 10 minutes to complete.

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9. When the upgrade process is complete, print a configuration page and verify that the upgrade firmware version was installed.

## Tray cassette

 **NOTE:** Use this procedure to remove the Tray 2 or optional Tray 3 cassette.

1. Pull the tray straight out of the product until it stops.

**Figure 2-17** Remove the tray cassette (1 of 2)



2. Carefully lift up on the tray to release it, and then remove the tray.

**Figure 2-18** Remove the tray cassette (2 of 2)



## Fuser

**⚠ CAUTION:** The fuser might be hot. Allow enough time after turning off the product power for the fuser to cool.

1. Open the right door assembly.

**Figure 2-19** Remove the fuser (1 of 2)



2. Grasp the handles and squeeze the blue release triggers.  
Pull the fuser straight out of the product to remove it.

**Figure 2-20** Remove the fuser (2 of 2)



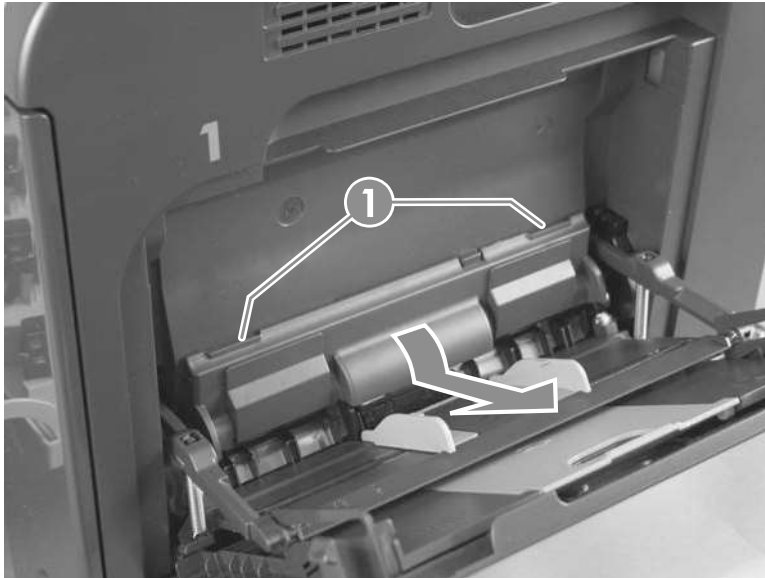
## Pickup roller (Tray 1)

**⚠ CAUTION:** Do not touch the spongy roller surface unless you are replacing the roller. Skin oils on the roller can cause paper pickup problems.

1. Open Tray 1, release two tabs (callout 1), and then rotate the roller cover away from the product to remove it.

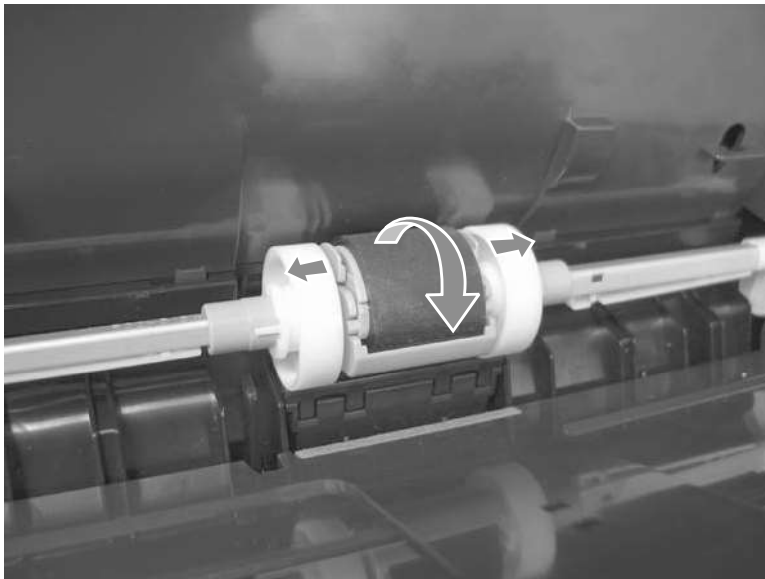
**💡 TIP:** Push down along the top edge of the cover to easily release the tabs.

**Figure 2-21** Remove the pickup roller (Tray 1; 1 of 2)



2. Release two tabs and rotate the roller body away from the product to remove it.

**Figure 2-22** Remove the pickup roller (Tray 1; 2 of 2)





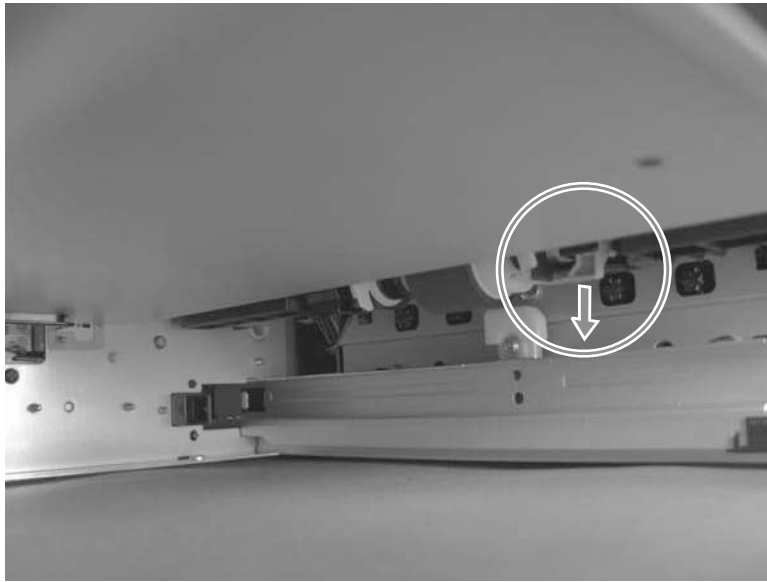
## Pickup roller (Tray 2)

**⚠ CAUTION:** Do not touch the spongy roller surface unless you are replacing the roller. Skin oils on the roller can cause paper pickup problems.

1. Look up into the Tray 2 cavity (where the cassette would be installed), and pull down to release the blue roller-locking lever.

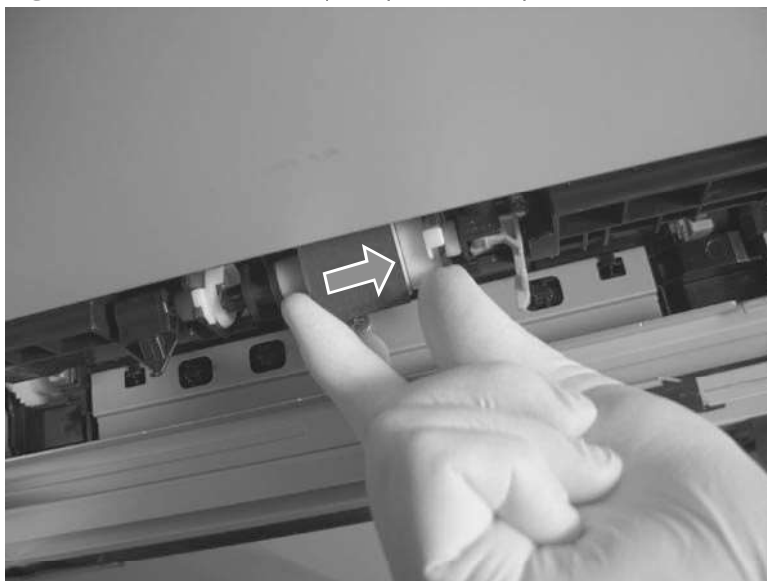
**💡 Reinstallation tip** When the roller is reinstalled, rotate the roller shaft several times to make sure that the shaft correctly engages the drive mechanism. You should hear a click when the shaft engages the drive mechanism.

**Figure 2-23** Remove the pickup roller (Tray 2; 1 of 4)



2. Pull the roller toward the front of the product to release the rear of the roller shaft.

**Figure 2-24** Remove the pickup roller (Tray 2; 2 of 4)




3. Rotate the roller shaft down and away from the product, and then slide the roller toward the rear of the product to release the front of the roller shaft.

**Figure 2-25** Remove the pickup roller (Tray 2; 3 of 4)



4. Remove the pickup roller.

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 **Reinstallation tip** Make sure that the roller is orientated correctly when it is reinstalled the large white collar should be positioned toward the front of the product.

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**Figure 2-26** Remove the pickup roller (Tray 2; 4 of 4)



## Pickup and feed rollers (Tray 3)

**⚠ CAUTION:** Do not touch the spongy roller surface unless you are replacing the roller. Skin oils on the roller can cause paper pickup problems.

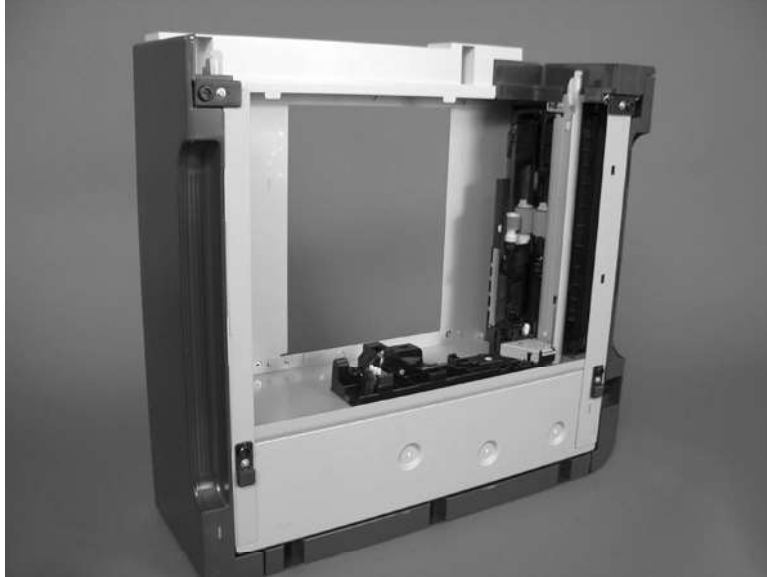
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1. Locate the Tray 3 pickup and feed rollers.


**💡 TIP:** The feeder is shown front side up in this procedure for clarity. You do not have to separate the product from the feeder to remove these rollers. Remove the cassette, and then reach up into the cavity to remove the rollers.

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**Figure 2-27** Remove the Pickup and feed rollers (Tray 3; 1 of 2)

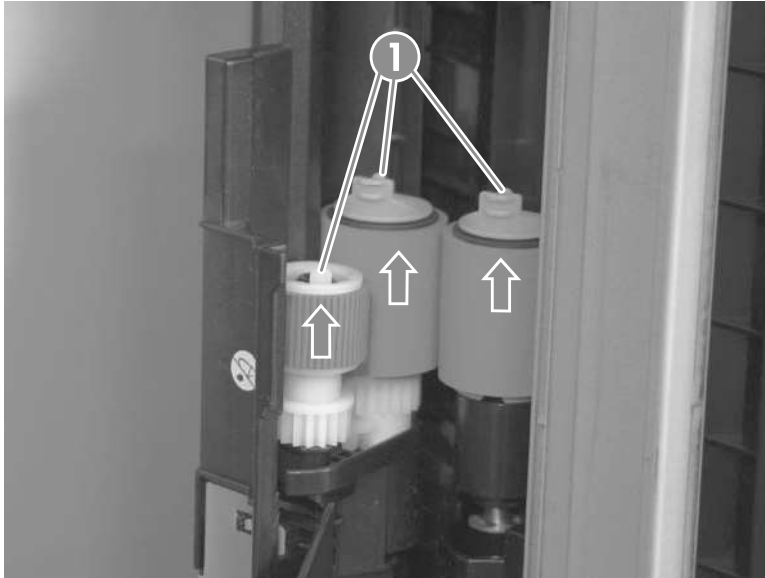


2. Release three tabs (callout 1), and then remove the rollers.

 **Reinstallation tip** When you reinstall the rollers, make sure that the rollers snap into place.

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**Figure 2-28** Remove the Pickup and feed rollers (Tray 3; 2 of 2)



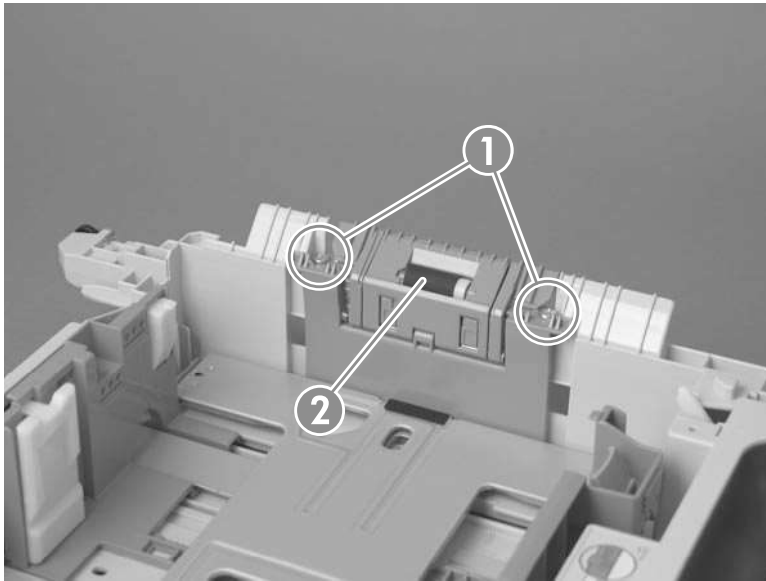
## Separation roller (Tray 2)

**CAUTION:** Do not touch the spongy roller surface unless you are replacing the roller. Skin oils on the roller can cause paper pickup problems.

**NOTE:** Remove the Tray 2 cassette if not already removed for service. See [Tray cassette on page 86](#).

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

**Figure 2-29** Remove the separation roller (Tray 2)



## Secondary transfer roller

**CAUTION:** Do not touch the spongy roller surface unless you are replacing the roller. Skin oils on the roller can cause image quality problems.

1. Open the right door assembly.

**Figure 2-30** Remove the transfer roller (1 of 3)



2. Use the blue lever (callout 1) to lower the secondary transfer assembly.

**Figure 2-31** Remove the transfer roller (2 of 3)



3. Grasp the roller shaft collars, and lift the transfer roller off of the product.

**Figure 2-32** Remove the transfer roller (3 of 3)



## Reinstall the transfer roller

When you reinstall the transfer roller, make sure that the pins on the shaft collars (callout 1) align with the holes in the mounting assembly.

**Figure 2-33** Reinstall the transfer roller



## Secondary transfer assembly

The secondary transfer assembly includes the transfer roller.

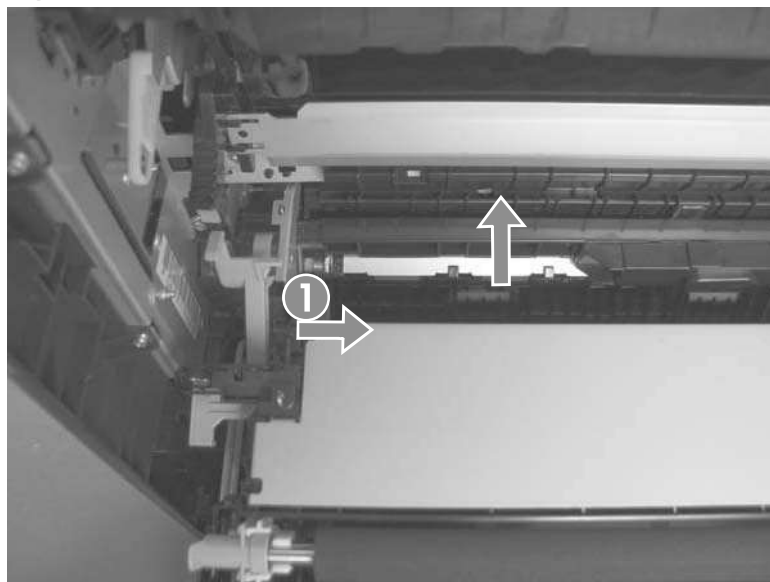
1. Open the right door assembly.
2. Use the blue lever (callout 1) to lower the secondary transfer assembly.

**Figure 2-34** Remove the secondary transfer assembly (1 of 3)



3. Push the pin on the release-lever side of the assembly toward the inside of the product to release it, and then lift the assembly up.

**Figure 2-35** Remove the secondary transfer assembly (2 of 3)





4. Pull the assembly straight out of the product to remove it.

**Figure 2-36** Remove the secondary transfer assembly (3 of 3)



### Reinstall the secondary transfer assembly

Press and hold down the blue release lever when you reinstall the assembly.

**Figure 2-37** Reinstall the secondary transfer assembly



## Intermediate transfer belt (ITB)

**⚠ CAUTION:** Do not touch the black-plastic belt. Skin oils and fingerprints on the belt can cause print-quality problems. Always place the ITB on a flat surface in a safe and protected location.

1. Open the right door assembly.
2. Use the blue lever (callout 1) to lower the secondary transfer assembly.

**Figure 2-38** Remove the intermediate transfer belt (1 of 3)



3. Grasp the small handles on the ITB and then pull the ITB out of the product until two large handles expand along the right- and left-side of the ITB.

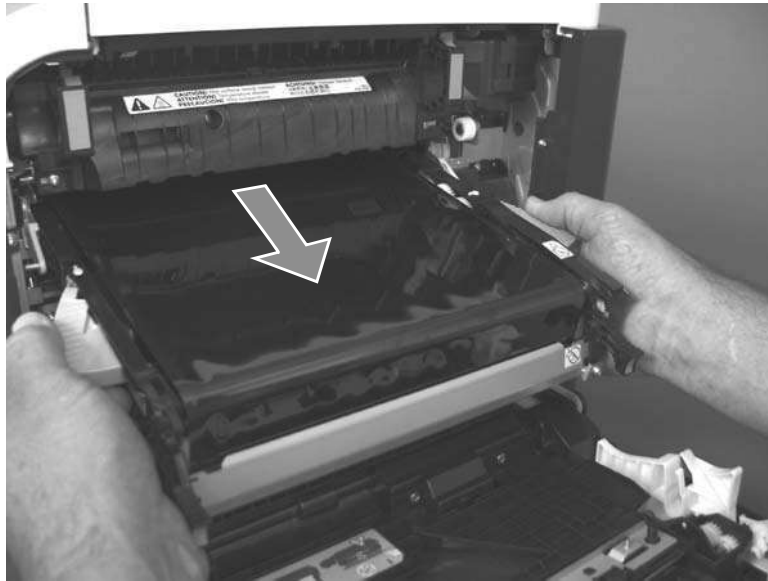
**Figure 2-39** Remove the intermediate transfer belt (2 of 3)



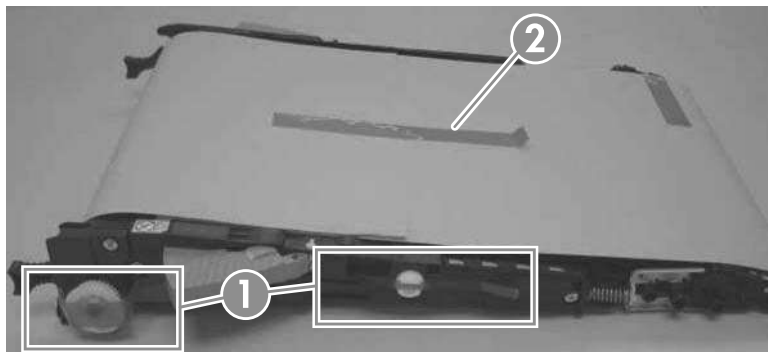
4. Grasp the large handles on the ITB and then pull the ITB straight out of the product to remove it.

**⚠ CAUTION:** The ITB is a sensitive component. Be careful when handling the ITB so that it is not damaged. Always place the ITB in a safe and protected location.

**Figure 2-40** Remove the intermediate transfer belt (3 of 3)



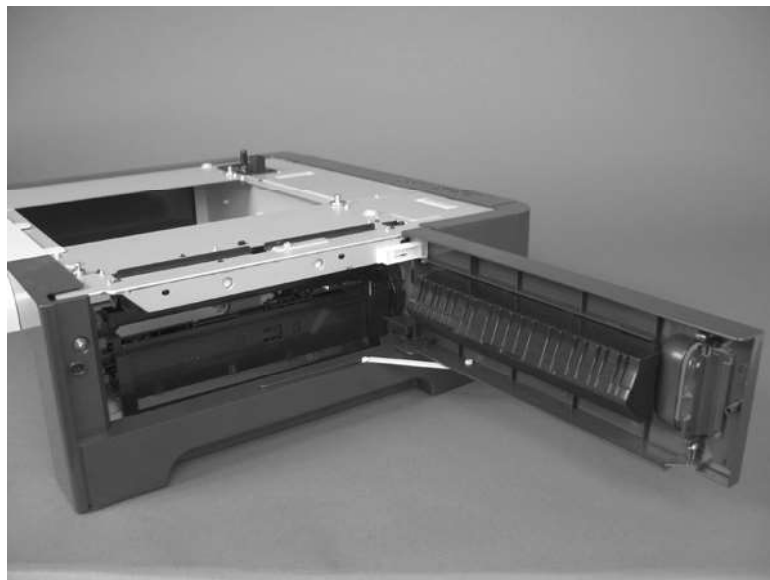
**💡 Reinstallation tip** If you are installing a replacement ITB, make sure that you remove all of the packing tape (callout 1) and the protective cover sheet (callout 2).



## Right door (optional paper feeder)

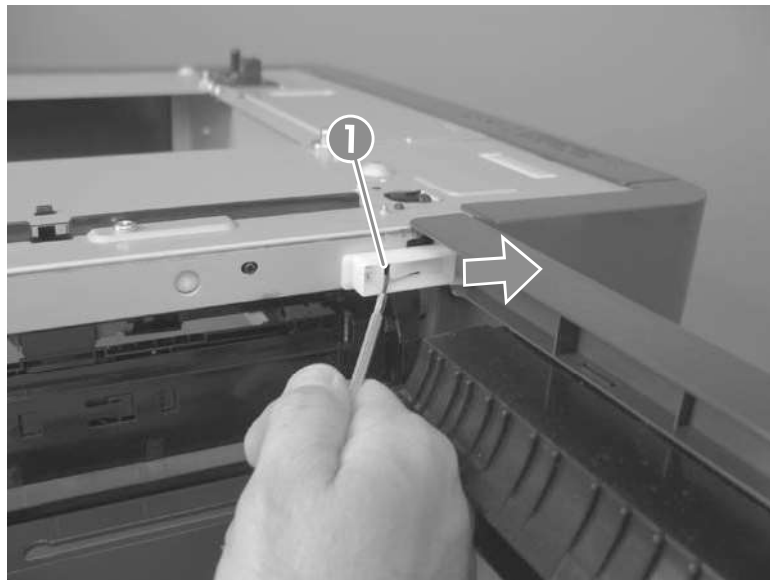
1. Open the right door.

**Figure 2-41** Remove the right door; optional paper feeder (1 of 3)



2. Release one tab (callout 1), and then slide the stopper toward the right side of the product to remove it.

**Figure 2-42** Remove the right door; optional paper feeder (2 of 3)



3. Support the door, and then release the door-retainer arm at the bottom of the door. Raise the door to release the lower hinge pin, and then remove the door.

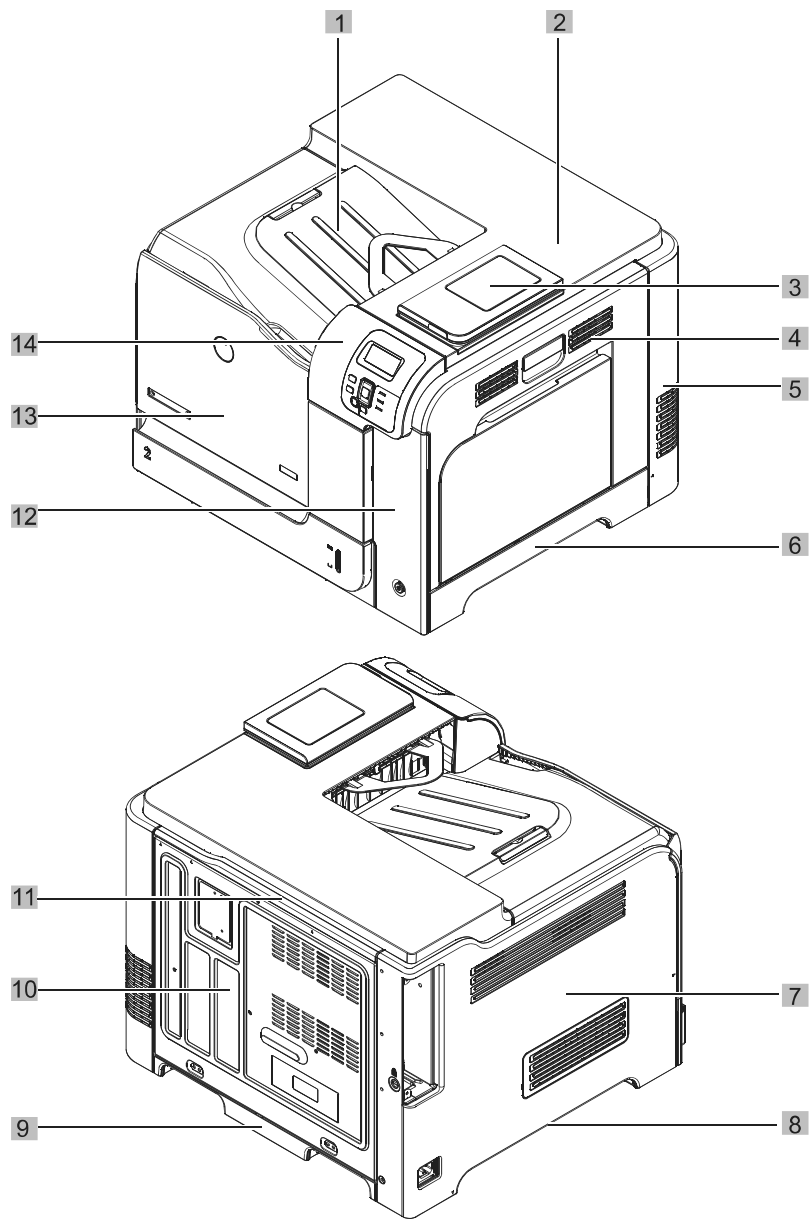
**Figure 2-43** Remove the right door; optional paper feeder (3 of 3)



# Covers

## Identification and location

Figure 2-44 External panels, covers, and doors; identification and location



Item	Description	Item	Description
1	Front top cover (see <a href="#">Front top cover</a> on page 122)	8	Left bottom handle (see <a href="#">Left bottom handle</a> on page 114)

Item	Description	Item	Description
2	Rear top cover (see <a href="#">Rear top cover on page 127</a> )	9	Rear bottom handle (see <a href="#">Rear bottom handle on page 130</a> )
3	Hardware integration pocket (HIP) (see <a href="#">Hardware integration pocket (HIP) (dn and xh models only) on page 115</a> )	10	Rear cover (see <a href="#">Rear cover and upper rear cover on page 124</a> )
4	Right door assembly (see <a href="#">Right door assembly on page 105</a> )	11	Upper rear cover (see <a href="#">Rear cover and upper rear cover on page 124</a> )
5	Rear right cover (see <a href="#">Right rear cover on page 109</a> )	12	Right front cover (see <a href="#">Right front cover on page 118</a> )
6	Right bottom handle (see <a href="#">Right bottom handle on page 129</a> )	13	Front door assembly (see <a href="#">Front door assembly on page 103</a> )
7	Left cover (see <a href="#">Left cover on page 111</a> )	14	Control panel assembly (see <a href="#">Control panel assembly on page 116</a> )


## Front door assembly

1. Open the front door.

**Figure 2-45** Remove the front door assembly (1 of 2)



2. Remove two screws (callout 1), and then remove the front door assembly.

 **NOTE:** A small sheet-metal bracket on the left side of the door is not captive. Do not lose the bracket when you remove the screw.

**Figure 2-46** Remove the front door assembly (2 of 2)





## Right door assembly

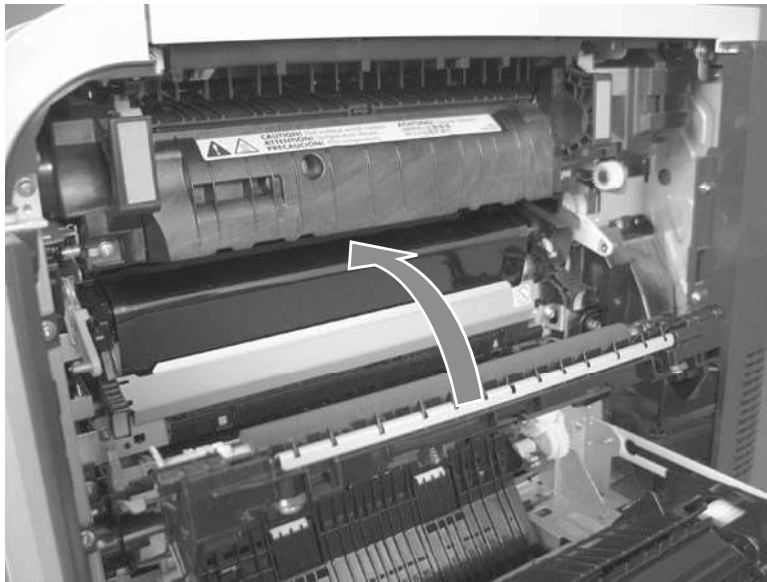
1. Open the right door assembly.

**Figure 2-47** Remove the right door assembly (1 of 8)




2. Close the secondary transfer assembly.

**Figure 2-48** Remove the right door assembly (2 of 8)



3. Remove three screws (callout 1).

 **NOTE:** Press down on the hinge with your hand to prevent it from springing upward when the screws are removed.

**Figure 2-49** Remove the right door assembly (3 of 8)



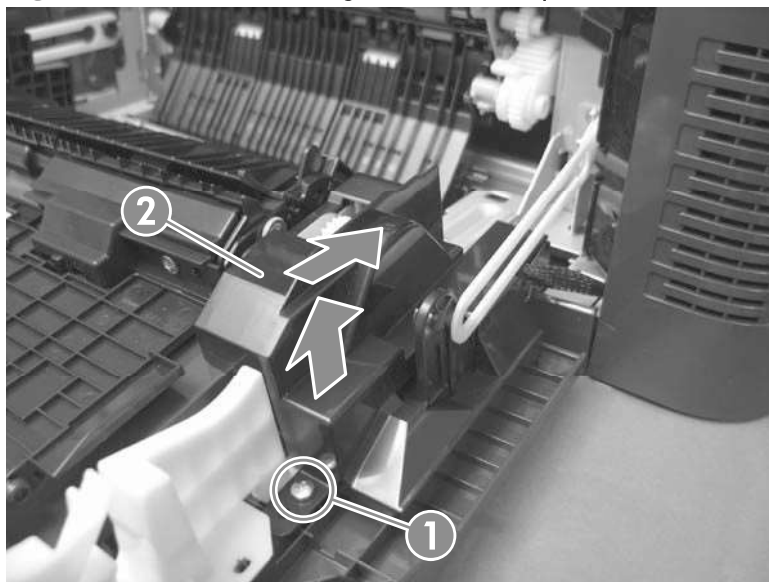
4. Carefully release one link arm.

**Figure 2-50** Remove the right door assembly (4 of 8)



5. Remove one screw (callout 1). Push the cover (callout 2) toward the product, and then lift the cover to remove.

**Figure 2-51** Remove the right door assembly (5 of 8)



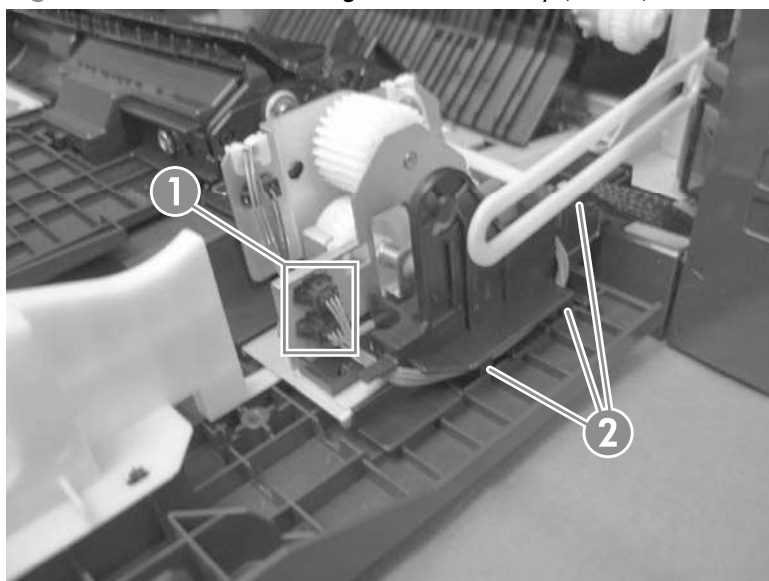
6. Disconnect two connectors (callout 1), and then release the wire harness from the guide (callout 2).

---

 **TIP:** It is easier to disconnect the lower connector if you first remove the wire harnesses from the guide.

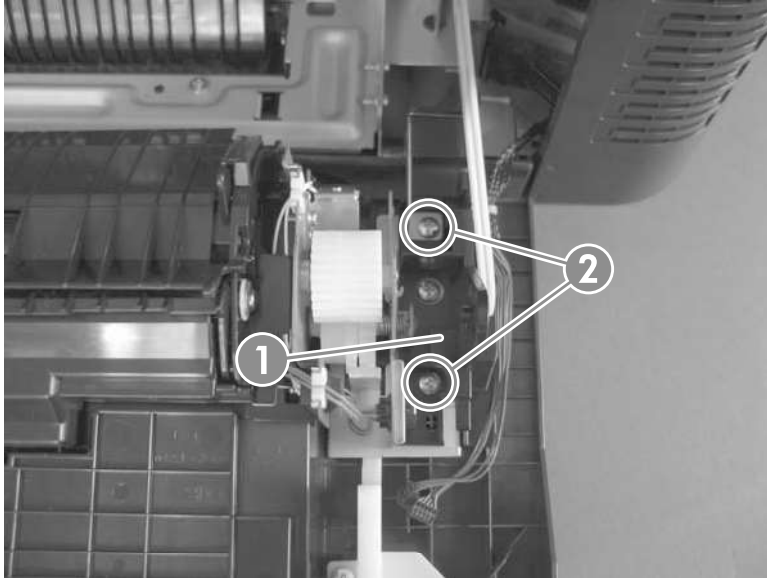
---

**Figure 2-52** Remove the right door assembly (6 of 8)



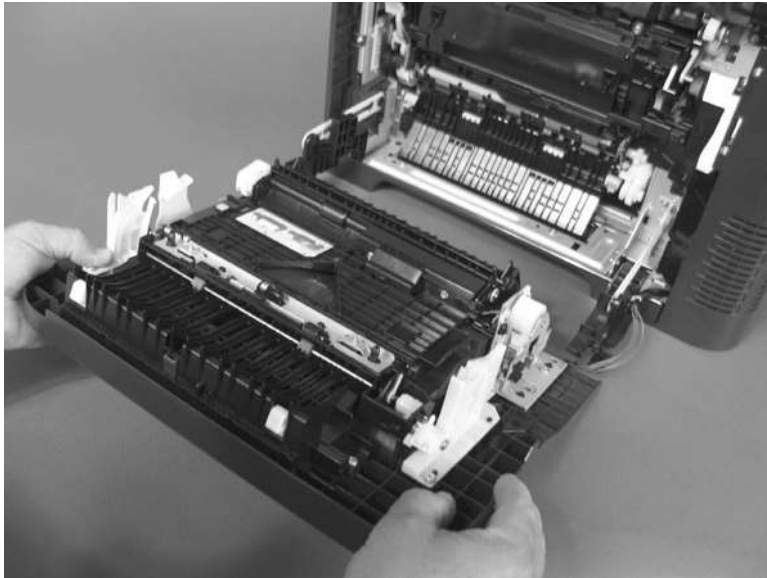
7. While pressing down on the small hinge (callout 1), remove two screws (callout 2).

**Figure 2-53** Remove the right door assembly (7 of 8)



8. Remove the right door assembly.

**Figure 2-54** Remove the right door assembly (8 of 8)



## Right rear cover

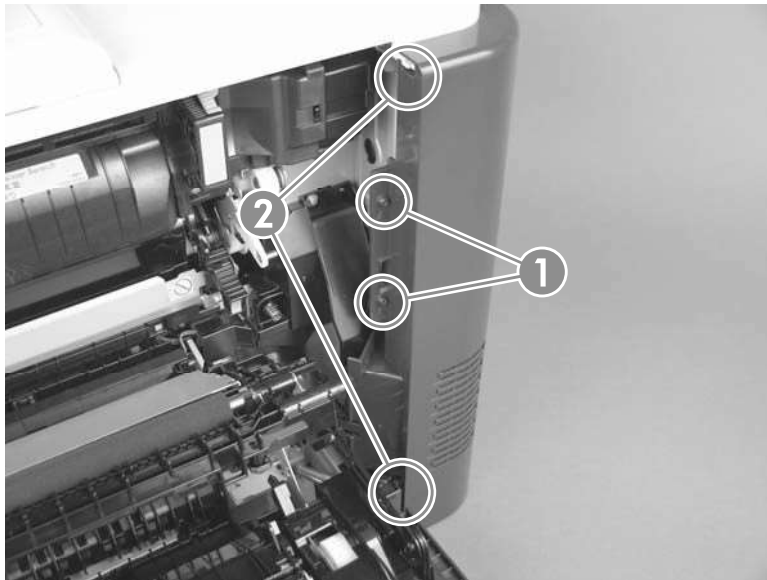
1. Open the right door assembly.

**Figure 2-55** Remove the right rear cover (1 of 3)



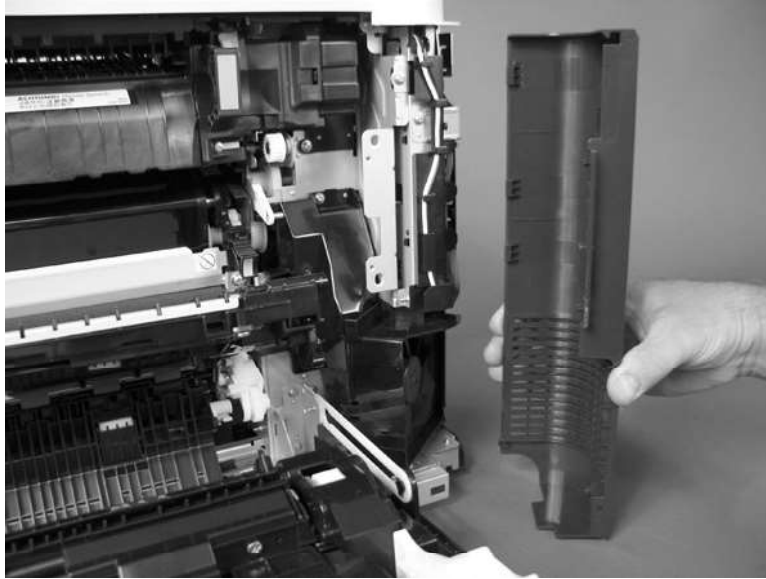
2. Remove two screws (callout 1) and release two tabs (callout 2).

**Figure 2-56** Remove the right rear cover (2 of 3)



3. Rotate the cover away from the product, and then remove it.

**Figure 2-57** Remove the right rear cover (3 of 3)



## Left cover

**Before proceeding, remove the following components:**

- Formatter PCA. See [Formatter PCA on page 81](#).
- Toner collection unit. See [Toner collection unit on page 79](#).

### Remove the left cover

1. Remove four screws (callout 1).

**Figure 2-58** Remove the left cover (1 of 4)



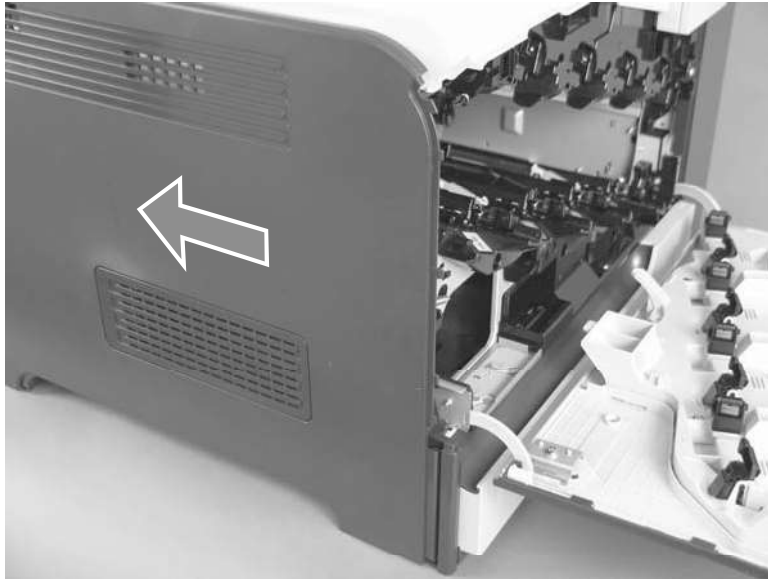
2. Release the rear edge of the cover, and slightly separate the cover from the product.

**Figure 2-59** Remove the left cover (2 of 4)



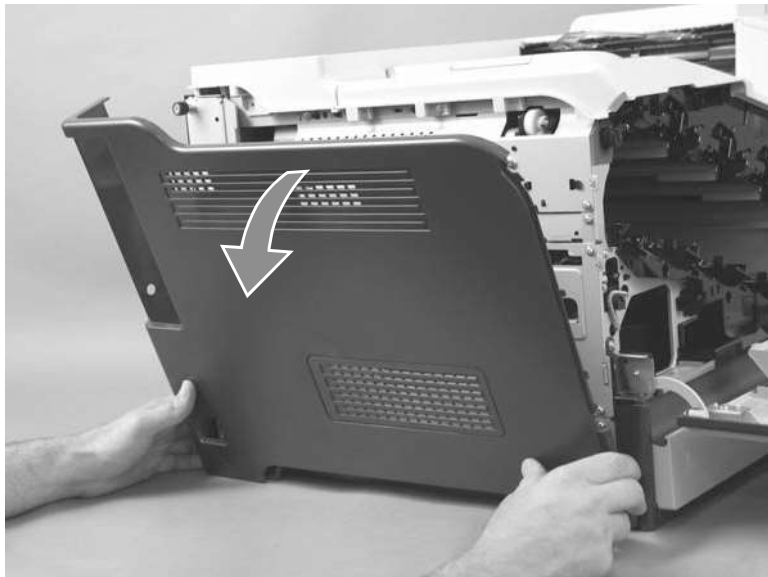
3. Slide the cover toward the back of the product.

**Figure 2-60** Remove the left cover (3 of 4)



4. Remove the cover.

**Figure 2-61** Remove the left cover (4 of 4)





## Left bottom cover

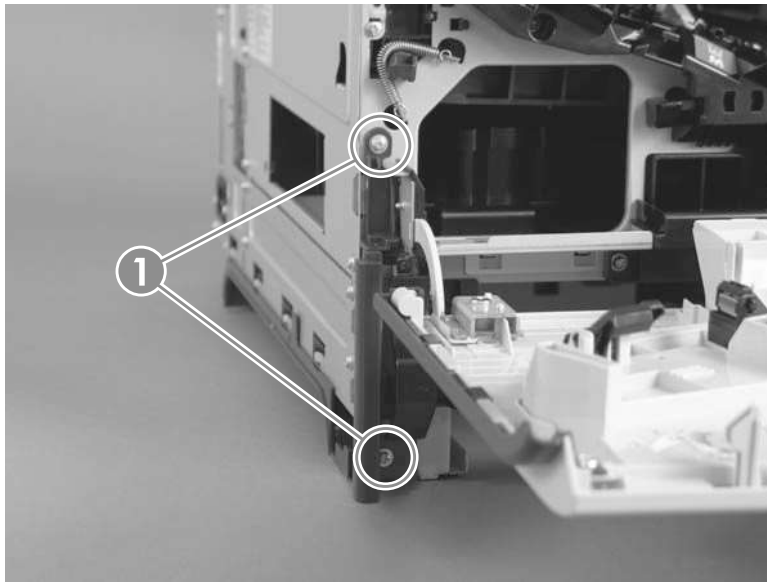
**Before proceeding, remove the following components:**

- Toner collection unit. See [Toner collection unit on page 79](#).
- Left cover. See [Left cover on page 111](#).

### Remove the left bottom cover

- ▲ Remove two screws (callout 1) and the cover.

**Figure 2-62** Remove the left bottom cover



## Left bottom handle

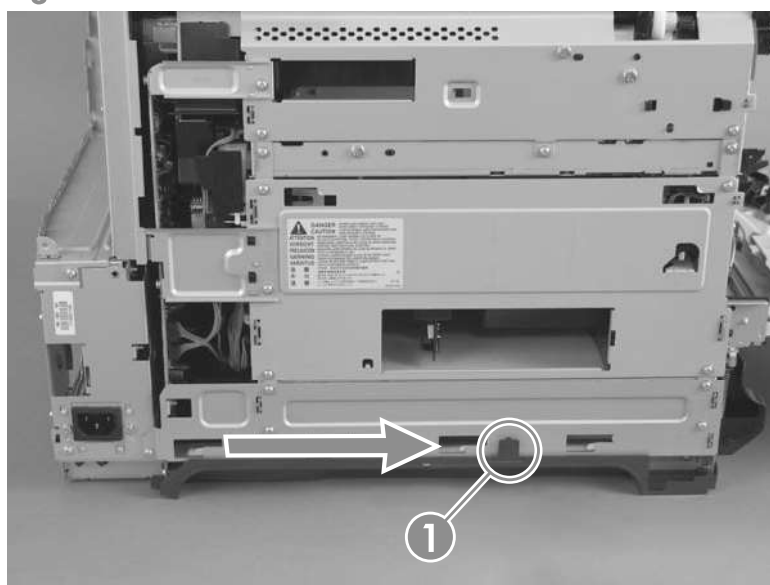
**Before proceeding, remove the following components:**

- Toner collection unit. See [Toner collection unit on page 79](#).
- Left cover. See [Left cover on page 111](#).
- Left bottom cover. See [Left bottom cover on page 113](#).

### Remove the left bottom handle

- ▲ Release the retainer (callout 1), and then slide the handle toward the front side of the product to remove it.

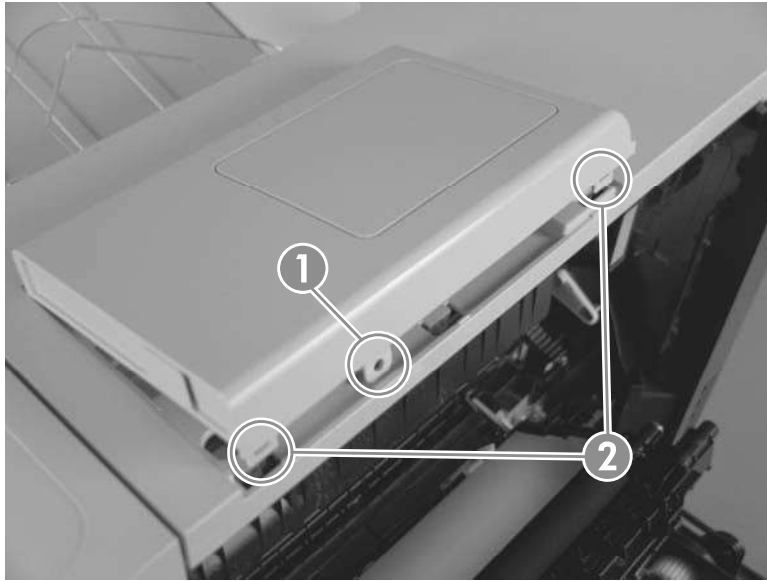
**Figure 2-63** Remove the left bottom handle



## Hardware integration pocket (HIP) (dn and xh models only)

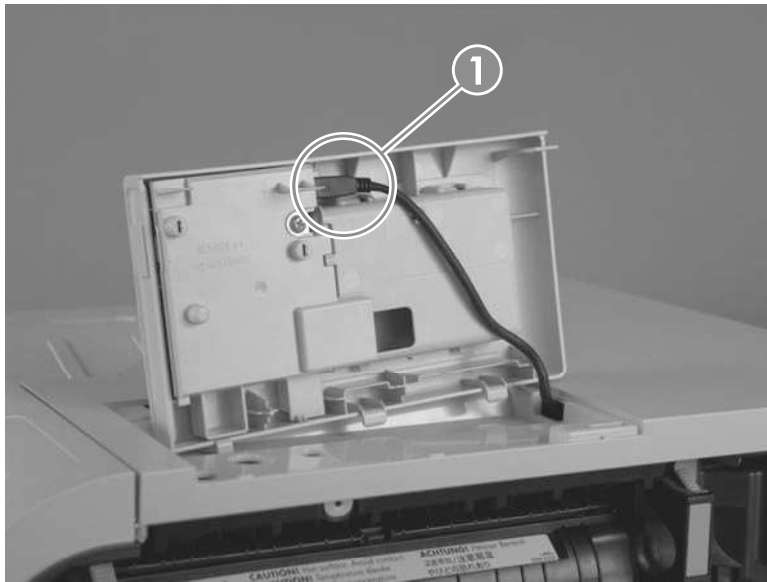
1. Remove one screw (callout 1), and then release two tabs (callout 2).

**Figure 2-64** Remove the HIP (1 of 2)



2. Release one connector (callout 1).

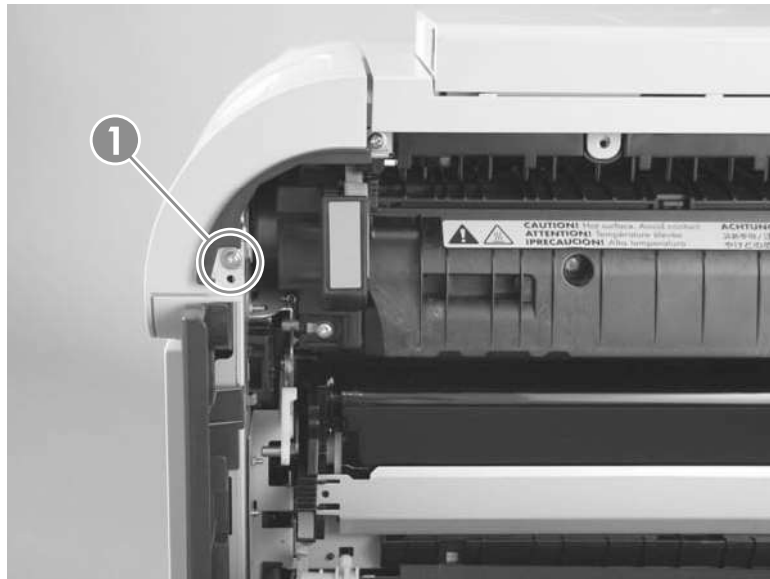
**Figure 2-65** Remove the HIP (2 of 2)



## Control panel assembly

1. Open the front door and the right door.
2. Remove one screw (callout 1).

**Figure 2-66** Remove the control panel assembly (1 of 4)



3. Remove one screw (callout 1).

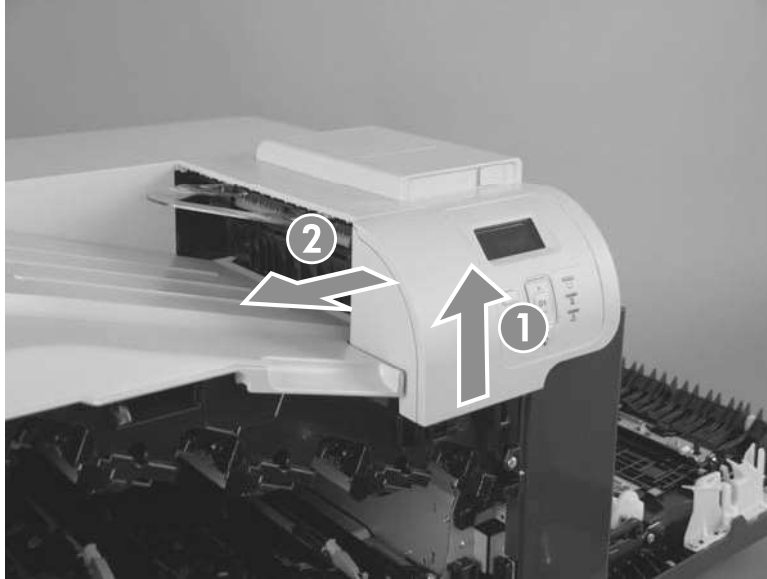
**Figure 2-67** Remove the control panel assembly (2 of 4)



4. Lift the control panel assembly up, and then rotate the top of the assembly to the left to release from the product.

**⚠ CAUTION:** The control panel assembly is attached to the product by the wire harness connector.

**Figure 2-68** Remove the control panel assembly (3 of 4)



5. Disconnect one connector (callout 1), and then remove the control panel assembly.

**Figure 2-69** Remove the control panel assembly (4 of 4)



## Right front cover

Before proceeding, remove the following components:

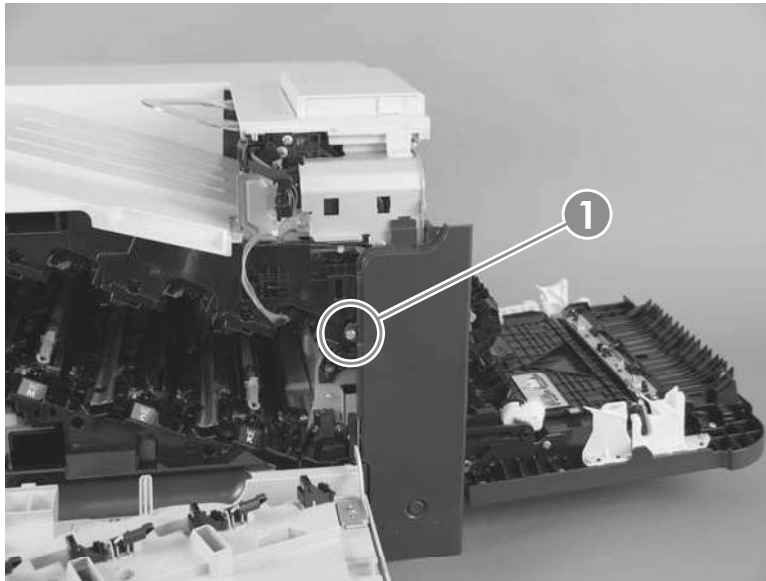
- Control panel assembly. See [Control panel assembly on page 116](#).

### Remove the right front cover

 **NOTE:** Be careful. When removing the cover, do not dislodge the power button. If the button is dislodged, see [Reinstall the power button on page 121](#) to reinstall it.

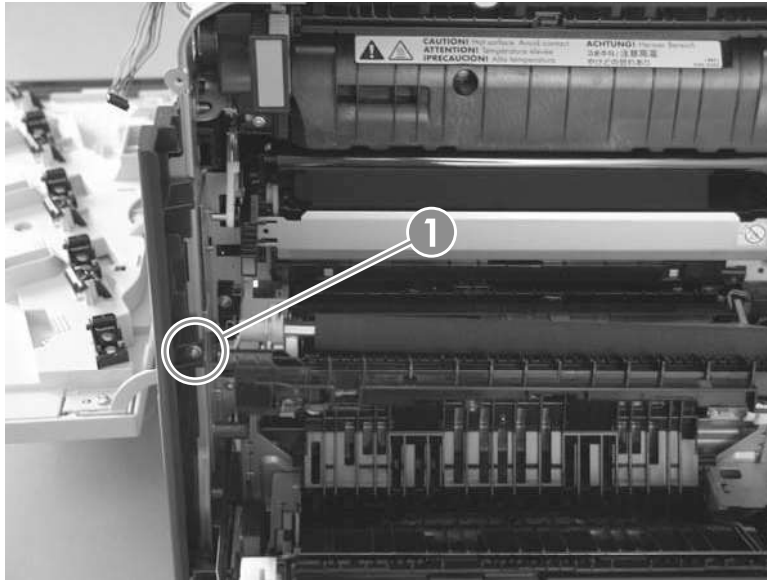
1. Remove one screw (callout 1).

**Figure 2-70** Remove the right front cover (1 of 5)



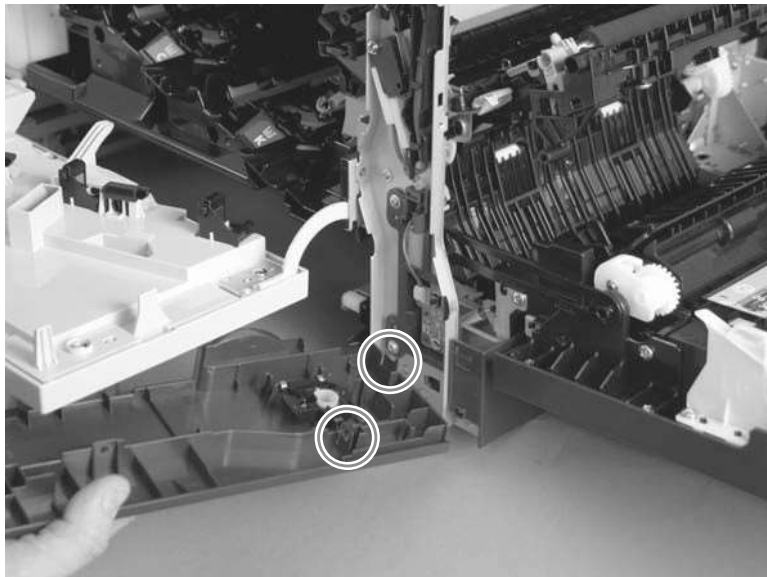
2. Remove one screw (callout 1).

**Figure 2-71** Remove the right front cover (2 of 5)




3. Before you proceed, take note of the tab locations at the bottom of the cover.

**Figure 2-72** Remove the right front cover (3 of 5)



4. Release the tab on the bottom of the cover.

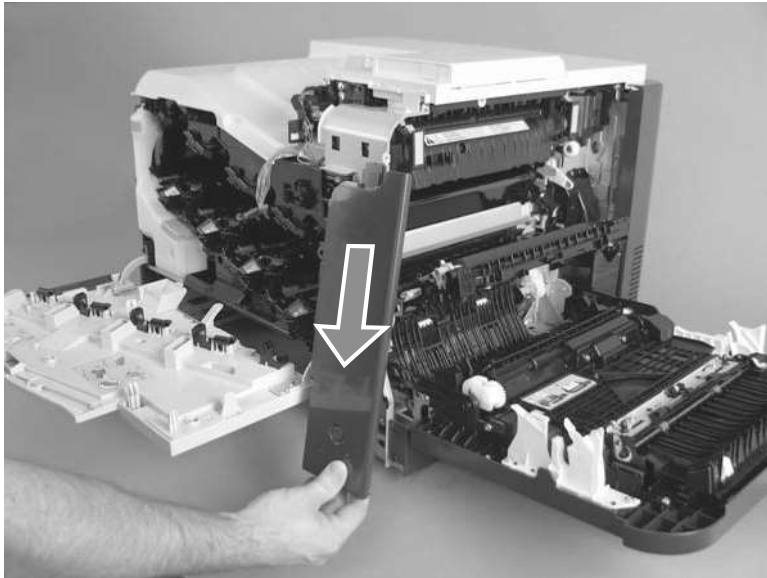
 **TIP:** It might be easier if you position the product at the edge of the work surface so that there is space to access the tab. You might try pushing the tab down by carefully inserting a small flat blade screwdriver.

**Figure 2-73** Remove the right front cover (4 of 5)



5. Pull down on the cover to remove it.

**Figure 2-74** Remove the right front cover (5 of 5)

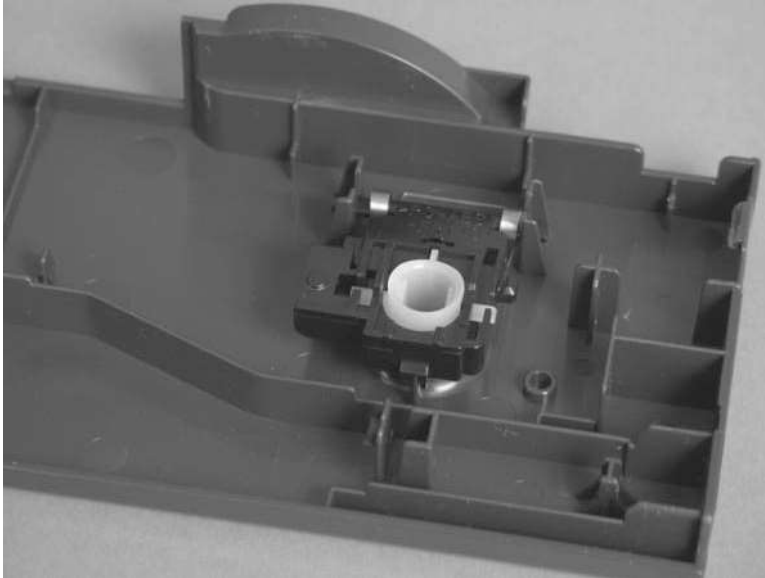




## Reinstall the power button

Snap the power button into the holders on the cover. Make sure that the spring is correctly installed.

**Figure 2-75** Reinstall the power button



## Front top cover

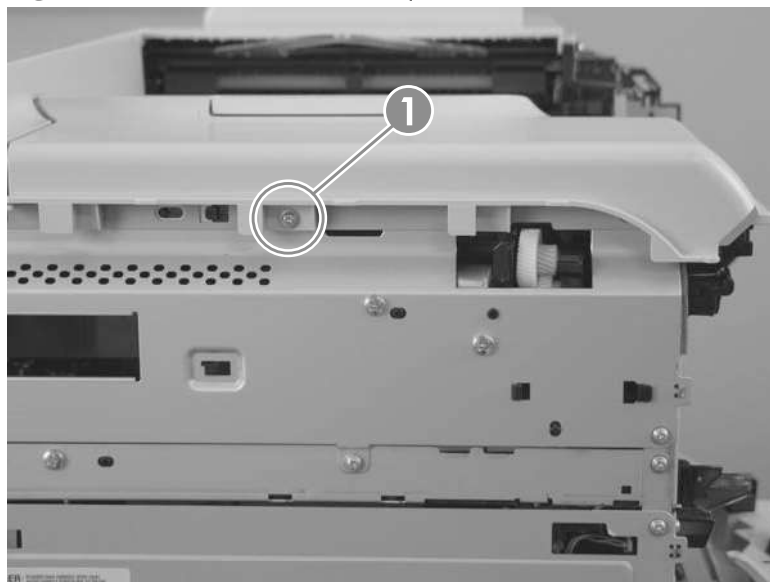
**Before proceeding, remove the following components:**

- Toner collection unit. See [Toner collection unit on page 79](#).
- Left cover. See [Left cover on page 111](#).
- Control panel assembly. See [Control panel assembly on page 116](#).

### Remove the front top cover

1. Remove one screw (callout 1).

**Figure 2-76** Remove the front top cover (1 of 2)



2. Slide the cover toward the left side of the product to release it, and then remove the cover.

**Figure 2-77** Remove the front top cover (2 of 2)



## Rear cover and upper rear cover

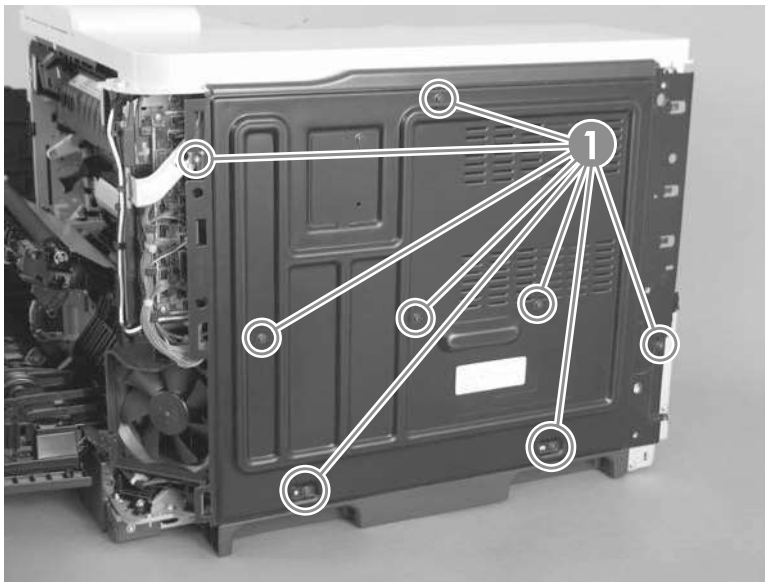
**Before proceeding, remove the following components:**

- Toner collection unit. See [Toner collection unit on page 79](#).
- Right rear cover. See [Right rear cover on page 109](#).
- Left cover. See [Left cover on page 111](#).

### Remove the rear cover and upper rear cover

1. Remove eight screws (callout 1).

**Figure 2-78** Remove the rear cover and upper rear cover (1 of 4)



2. Slide the cover up.

**Figure 2-79** Remove the rear cover and upper rear cover (2 of 4)



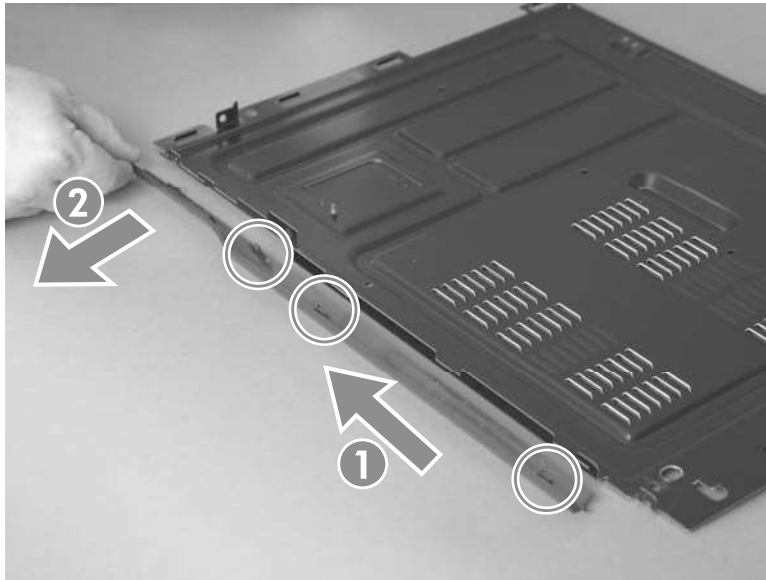
3. Release three tabs (callout 1) and then remove the cover.

**Figure 2-80** Remove the rear cover and upper rear cover (3 of 4)



4. Slide the upper rear cover toward the left to release three tabs (callout 1), and then separate the upper rear cover (callout 2) from the rear cover.

**Figure 2-81** Remove the rear cover and upper rear cover (4 of 4)



## Rear top cover

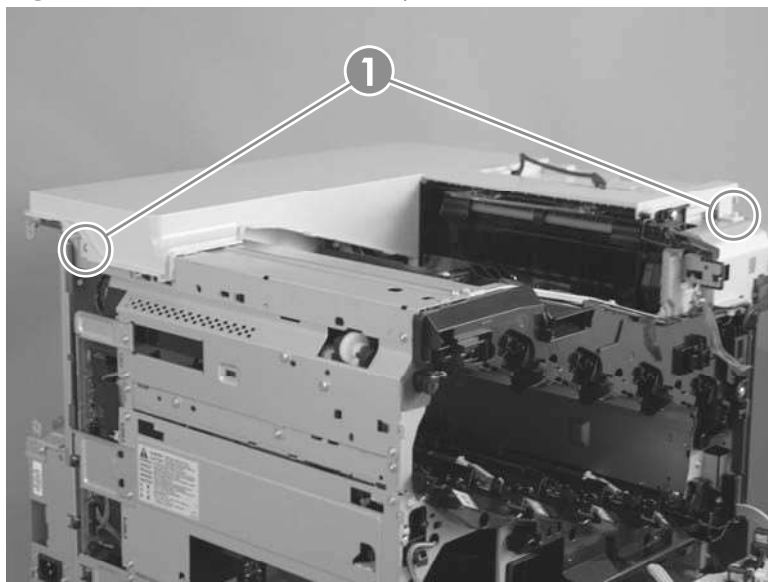
**Before proceeding, remove the following components:**

- Toner collection unit. See [Toner collection unit on page 79](#).
- Left cover. See [Left cover on page 111](#).
- Hardware integration pocket (HIP). See [Hardware integration pocket \(HIP\) \(dn and xh models only\) on page 115](#).
- Control panel assembly. See [Control panel assembly on page 116](#).
- Front top cover. See [Front top cover on page 122](#).
- Rear cover and rear upper cover. See [Rear cover and upper rear cover on page 124](#).

### Remove the rear top cover

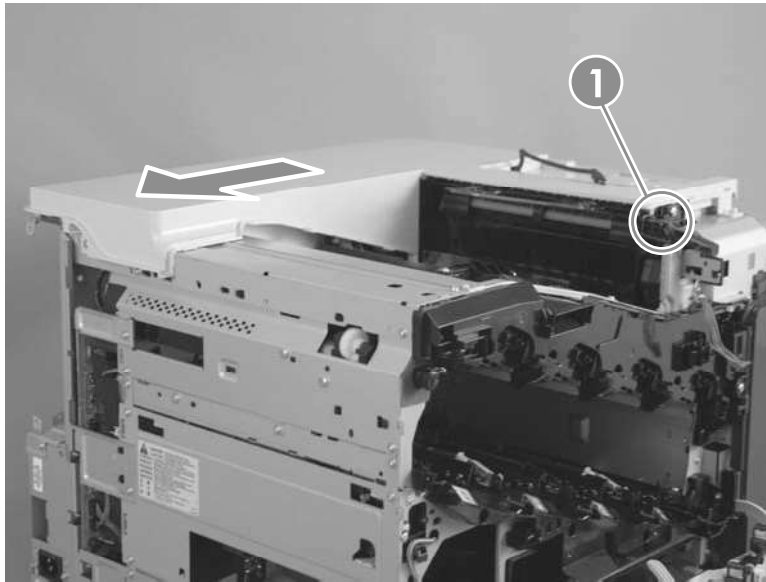
1. Remove two screws (callout 1).

**Figure 2-82** Remove the rear top cover (1 of 2)



2. Lift the corner of the cover to release one tab (callout 1), and then slide the cover toward the left side of the product to remove it.

**Figure 2-83** Remove the rear top cover (2 of 2)





## Right bottom handle

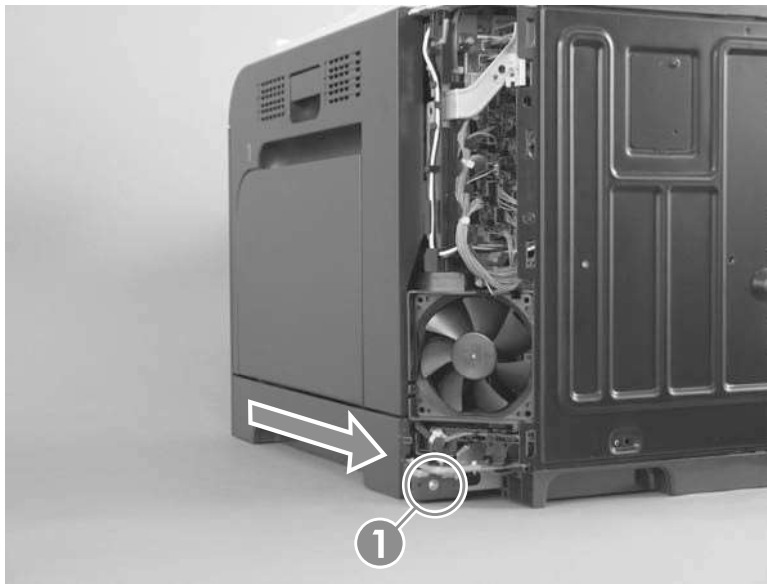
**Before proceeding, remove the following components:**

- Right rear cover. See [Right rear cover on page 109](#).
- Control panel assembly. See [Control panel assembly on page 116](#).
- Right front cover. See [Right front cover on page 118](#).

### Remove the right bottom handle

- ▲ Remove one screw (callout 1), and then slide the handle toward the rear of the product to remove.

**Figure 2-84** Remove the right bottom handle



## Rear bottom handle

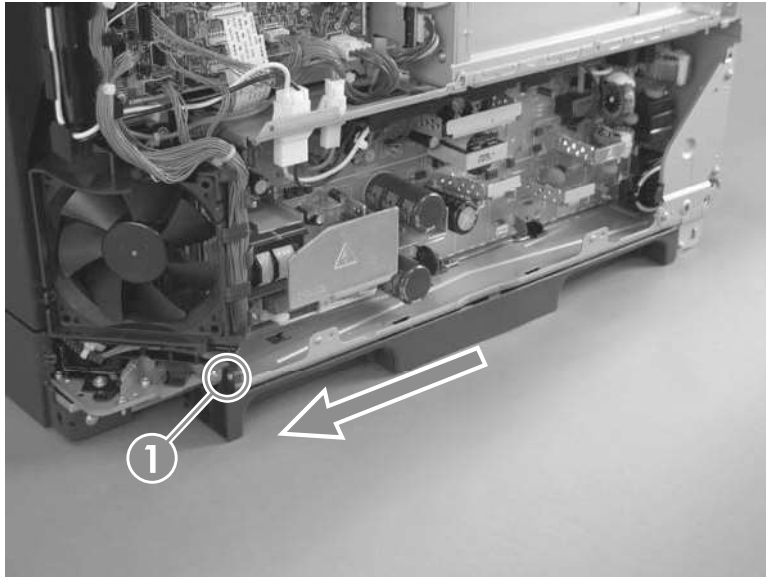
**Before proceeding, remove the following components:**

- Toner collection unit. See [Toner collection unit on page 79](#).
- Right rear cover. See [Right rear cover on page 109](#).
- Left cover. See [Left cover on page 111](#).
- Rear cover and rear upper cover. See [Rear cover and upper rear cover on page 124](#).

### Remove the rear bottom handle

- ▲ Remove one screw (callout 1), and then slide the handle to the right of the product to remove.

**Figure 2-85** Remove the rear bottom handle



# Internal assemblies

**TIP:** For clarity, some photos in this chapter show components removed that would not be removed to service the product. If necessary, remove the components listed at the beginning of a procedure before proceeding to service the product.

## Delivery fan, cartridge fan, and environmental sensor

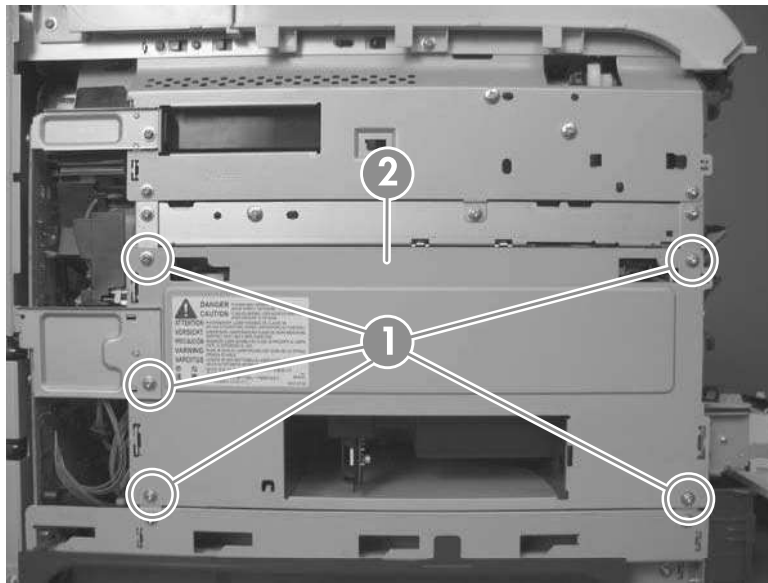
**Before proceeding, remove the following components:**

- Toner collection unit. See [Toner collection unit on page 79](#).
- Left cover. See [Left cover on page 111](#).


## Remove the delivery fan, cartridge fan, and environmental sensor

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

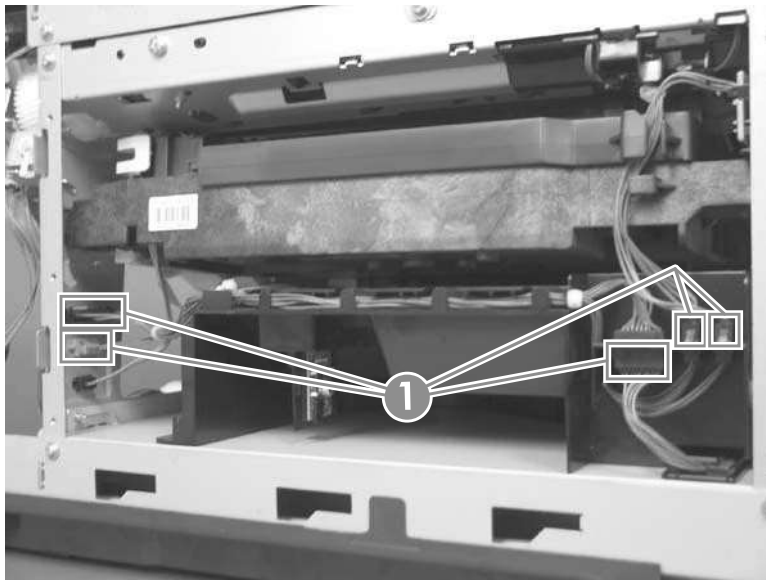
**Figure 2-86** Remove the delivery fan, cartridge fan, and environmental sensor (1 of 9)



2. Disconnect five connectors (callout 1).

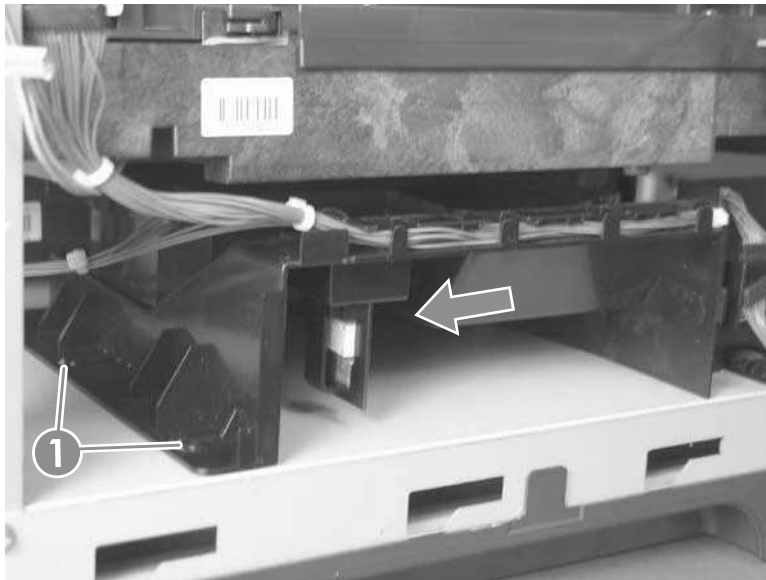
 **NOTE:** Disconnect the larger connector on the right side from the bottom. Disconnect the two smaller connectors on the right side from the top.

**Figure 2-87** Remove the delivery fan, cartridge fan, and environmental sensor (2 of 9)



3. Release two tabs (callout 1), and then slide the delivery fan and cartridge fan assembly toward the power-supply side of the product to release it.

**Figure 2-88** Remove the delivery fan, cartridge fan, and environmental sensor (3 of 9)



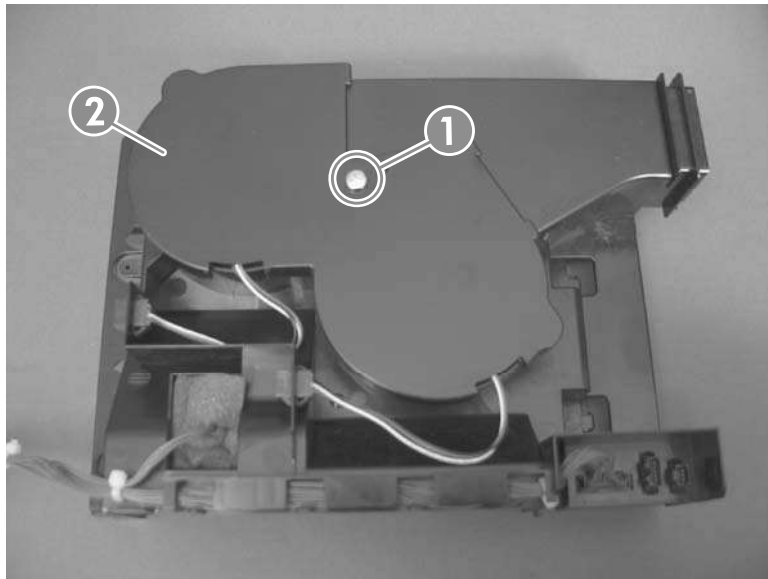
4. Pull the assembly slightly out of the product, disconnect two connectors (callout 1), and then remove the assembly.

**Figure 2-89** Remove the delivery fan, cartridge fan, and environmental sensor (4 of 9)



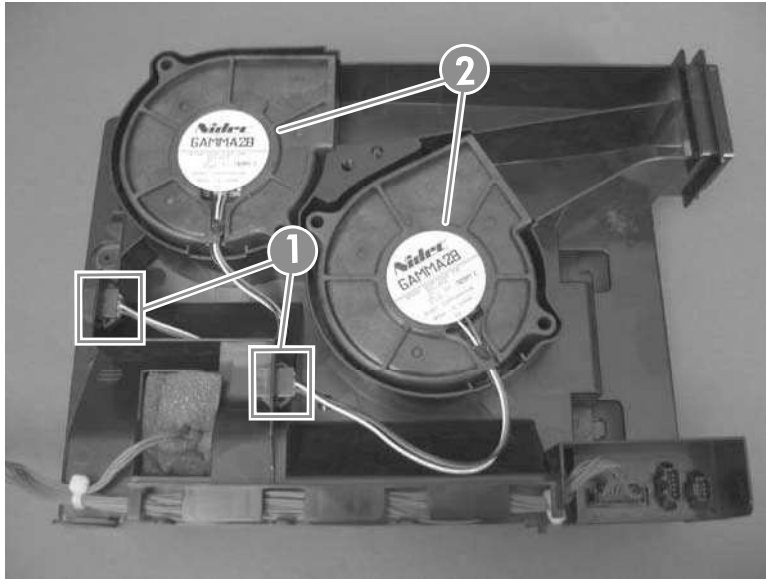
5. Remove one screw (callout 1), and then remove the cover (callout 2).

**Figure 2-90** Remove the delivery fan, cartridge fan, and environmental sensor (5 of 9)



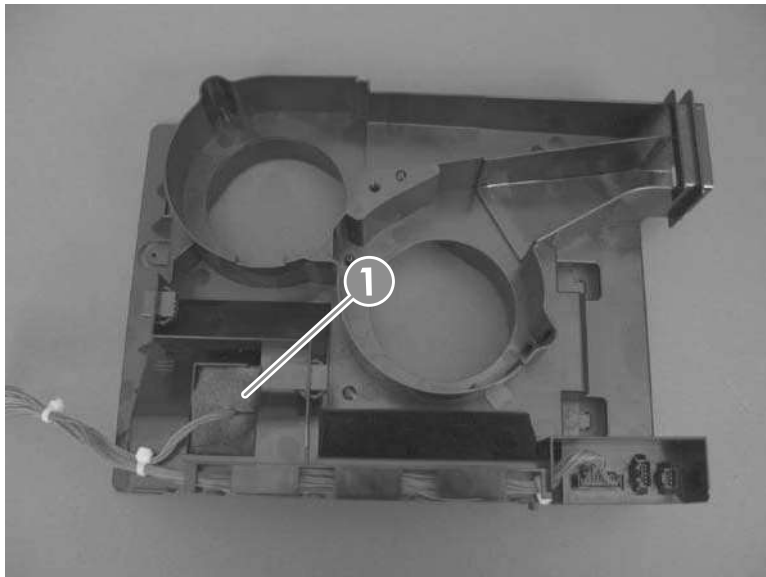
6. Disconnect two connectors (callout 1), and then remove the fans (callout 2).

**Figure 2-91** Remove the delivery fan, cartridge fan, and environmental sensor (6 of 9)



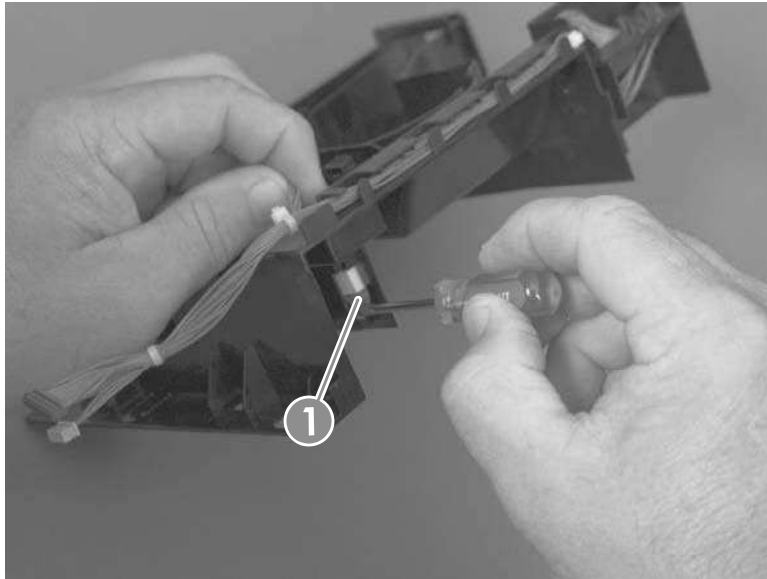
7. Remove the antistatic foam (callout 1).

**Figure 2-92** Remove the delivery fan, cartridge fan, and environmental sensor (7 of 9)



8. Release one tab (callout 1).

**Figure 2-93** Remove the delivery fan, cartridge fan, and environmental sensor (8 of 9)



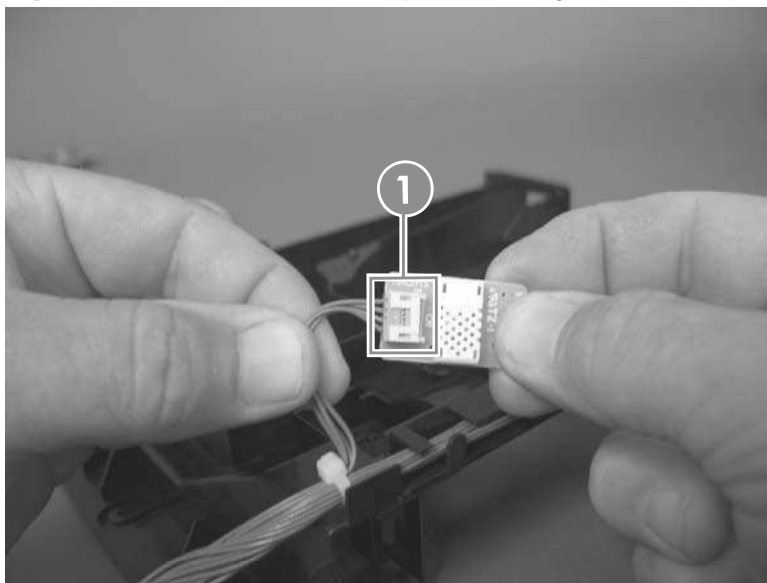
9. Disconnect one connector (callout 1), and then remove the environmental sensor.

---

**CAUTION:**  ESD sensitive part.

---

**Figure 2-94** Remove the delivery fan, cartridge fan, and environmental sensor (9 of 9)



## Toner collection sensor

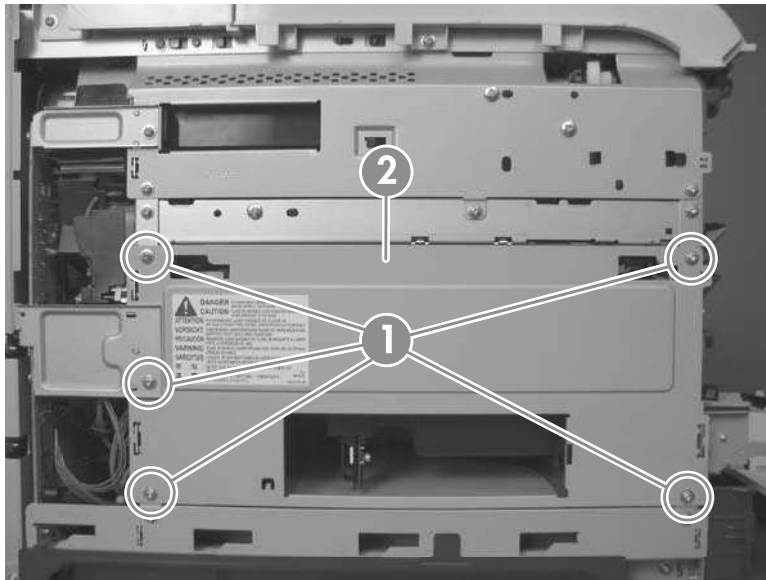
Before proceeding, remove the following components:

- Toner collection unit. See [Toner collection unit on page 79](#).
- Left cover. See [Left cover on page 111](#).

### Remove the toner collection sensor

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

**Figure 2-95** Remove the toner collection sensor (1 of 4)



2. Disconnect one connector (callout 1).

**Figure 2-96** Remove the toner collection sensor (2 of 4)



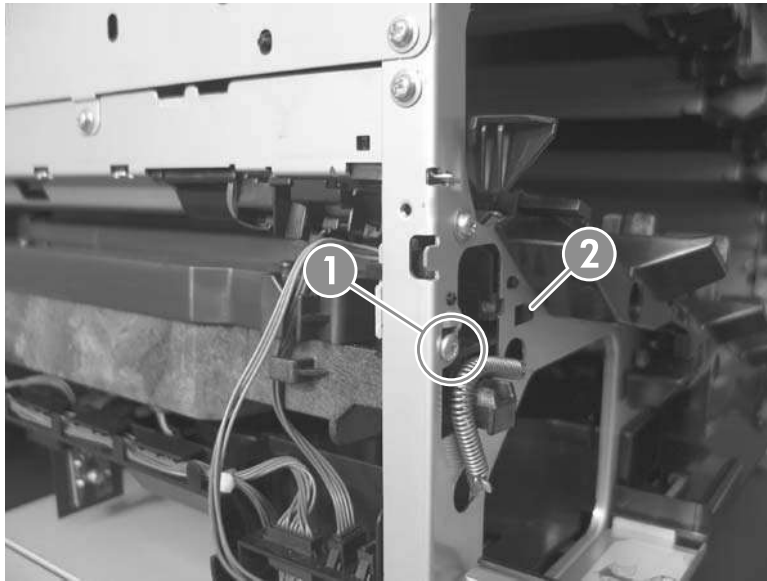


3. Remove one screw (callout 1).



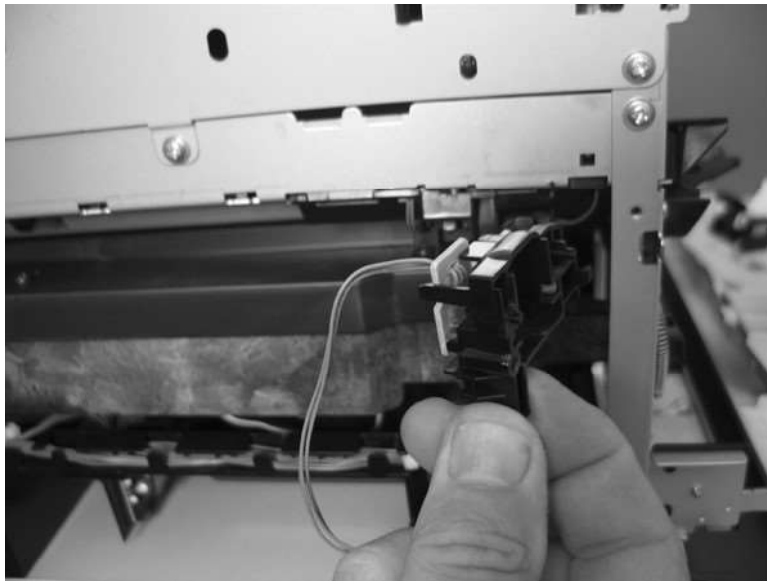
**Reinstallation tip** When you reinstall the sensor, make sure that the tab (callout 2) on the sensor body completely engages the slot in the product chassis.

**Figure 2-97** Remove the toner collection sensor (3 of 4)



4. Remove the toner collection sensor.

**Figure 2-98** Remove the toner collection sensor (4 of 4)



## Residual toner feed motor

Before proceeding, remove the following components:

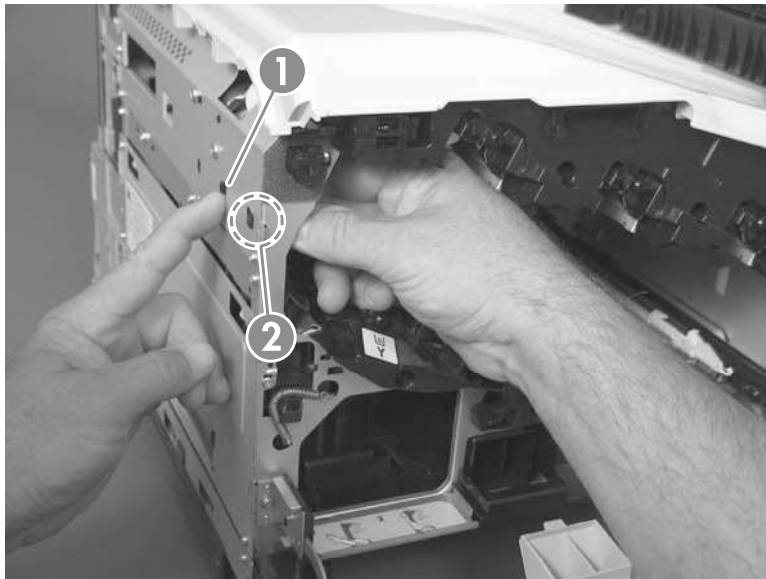
- Toner collection unit. See [Toner collection unit on page 79](#).
- Intermediate transfer belt (ITB). See [Intermediate transfer belt \(ITB\) on page 98](#).
- Left cover. See [Left cover on page 111](#).

### Remove the residual toner feed motor

 **NOTE:** Be careful. Do not dislodge the residual toner collection door when you remove the assembly. If the door becomes dislodged, see [Reinstall the residual toner collection door on page 142](#) to reinstall it.

1. Release one tab (callout 1) while you support the cover (callout 2).

**Figure 2-99** Remove the residual toner feed motor (1 of 7)



2. Remove the cover.

**Figure 2-100** Remove the residual toner feed motor (2 of 7)



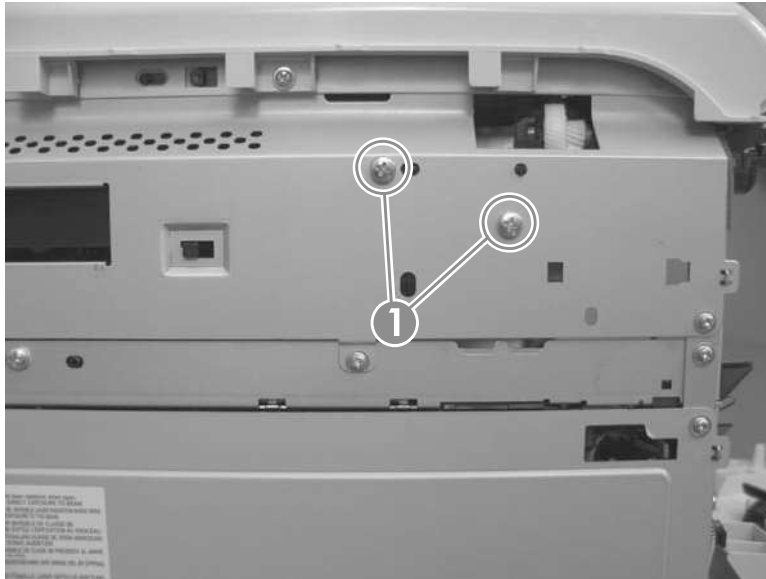
3. Disconnect one connector (callout 1).

**Figure 2-101** Remove the residual toner feed motor (3 of 7)



4. Support the assembly, and then remove two screws (callout 1).

**Figure 2-102** Remove the residual toner feed motor (4 of 7)



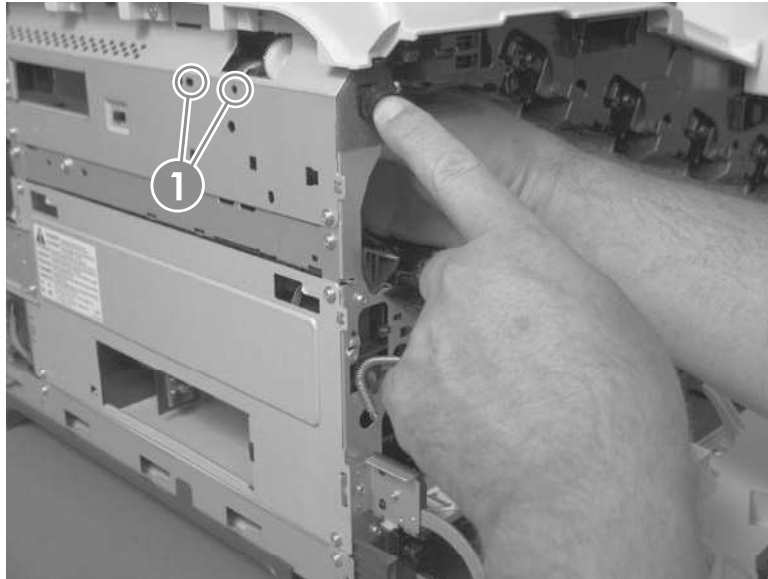
5. Be careful. Do not dislodge the residual toner collection door when you remove the assembly. If the door becomes dislodged, see [Reinstall the residual toner collection door on page 142](#) to reinstall it.

**Figure 2-103** Remove the residual toner feed motor (5 of 7)



6. Release two tabs (callout 1), and then push the assembly into the product to release it.

**Figure 2-104** Remove the residual toner feed motor (6 of 7)



7. Remove the motor.

**Figure 2-105** Remove the residual toner feed motor (7 of 7)



## Reinstall the residual toner collection door

Snap the residual toner collection door into the holders on the assembly. Make sure that the spring is correctly installed.

**Figure 2-106** Reinstall the residual toner collection door



## Registration density (RD) sensor assembly

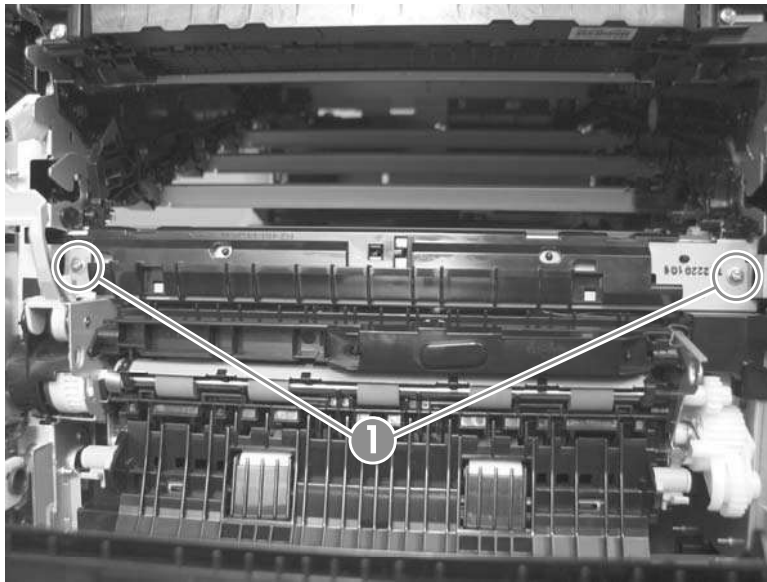
**Before proceeding, remove the following components:**

- Secondary transfer assembly. See [Secondary transfer assembly on page 96](#).
- Intermediate transfer belt (ITB). See [Intermediate transfer belt \(ITB\) on page 98](#).

### Remove the RD sensor assembly

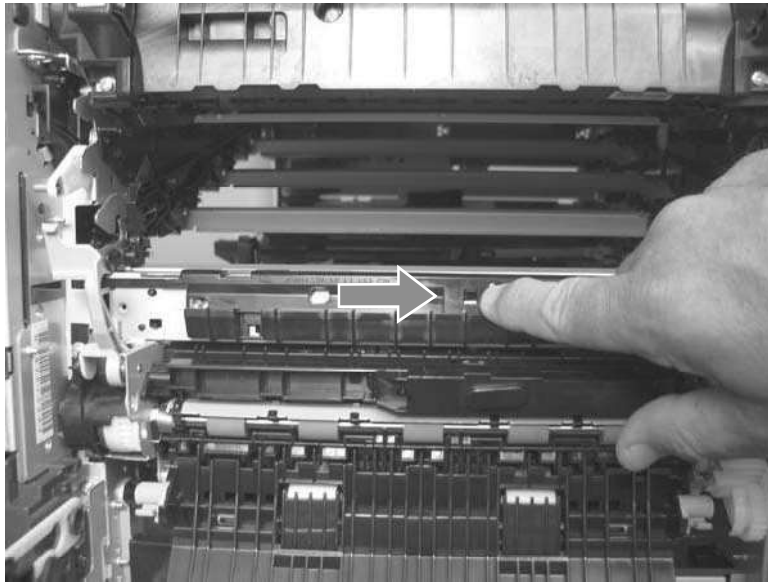
1. Remove two screws (callout 1).

**Figure 2-107** Remove the RD sensor assembly (1 of 6)



2. Slide the shutter toward the right side of the product. Keep the shutter in this position for the following step.

**Figure 2-108** Remove the RD sensor assembly (2 of 6)



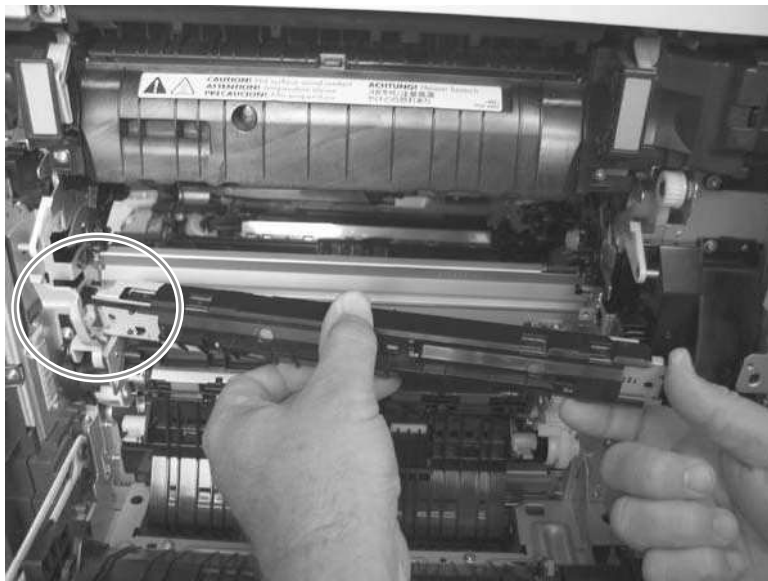
3. Carefully separate the assembly from the product. The assembly wire harnesses are still attached to the product.

---

**CAUTION:** Do not damage the shutter as it passes through the chassis.

---

**Figure 2-109** Remove the RD sensor assembly (3 of 6)






4. Disconnect two connectors (callout 1) on the back side of the assembly.

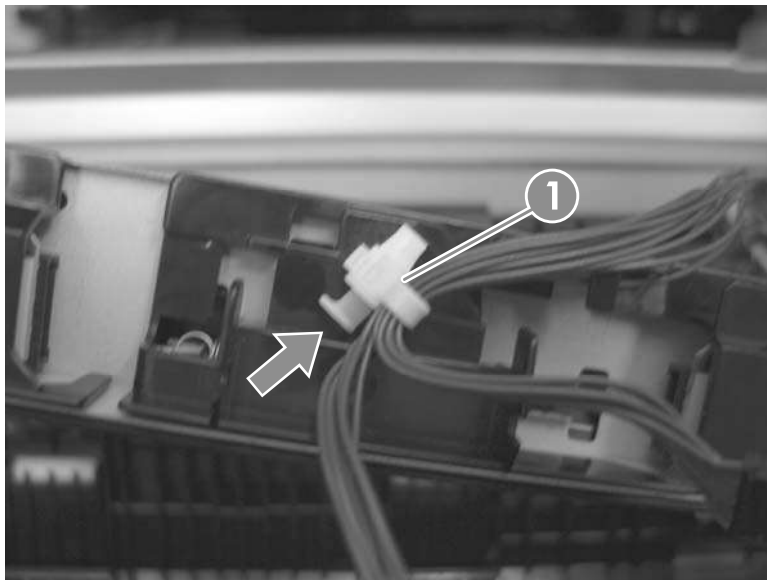
**Figure 2-110** Remove the RD sensor assembly (4 of 6)



5. Push in on the locking tab to release the retainer (callout 1), and then separate the retainer from the assembly.

 **NOTE:** The retainer remains attached to the wire harness, and disengages from the assembly.

**Figure 2-111** Remove the RD sensor assembly (5 of 6)



6. Remove the assembly.

**Figure 2-112** Remove the RD sensor assembly (6 of 6)




## Power supply fan and fan duct

**Before proceeding, remove the following components:**

- Toner collection unit. See [Toner collection unit on page 79](#).
- Right rear cover. See [Right rear cover on page 109](#).
- Left cover. See [Left cover on page 111](#).
- Rear cover and upper rear cover. See [Rear cover and upper rear cover on page 124](#).

---

 **NOTE:** It is not necessary to separate the upper rear cover from the rear cover to remove the power supply fan.

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### Remove the power supply fan and fan duct

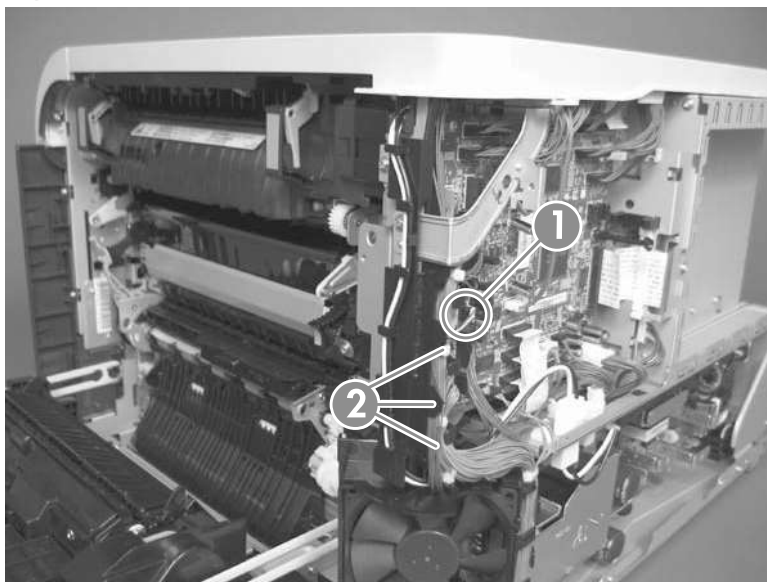
1. Disconnect one connector (callout 1; J119) and release the wire harnesses from the guide (callout 2).

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 **NOTE:** To locate DC controller connector locations, see [DC controller PCA on page 284](#).

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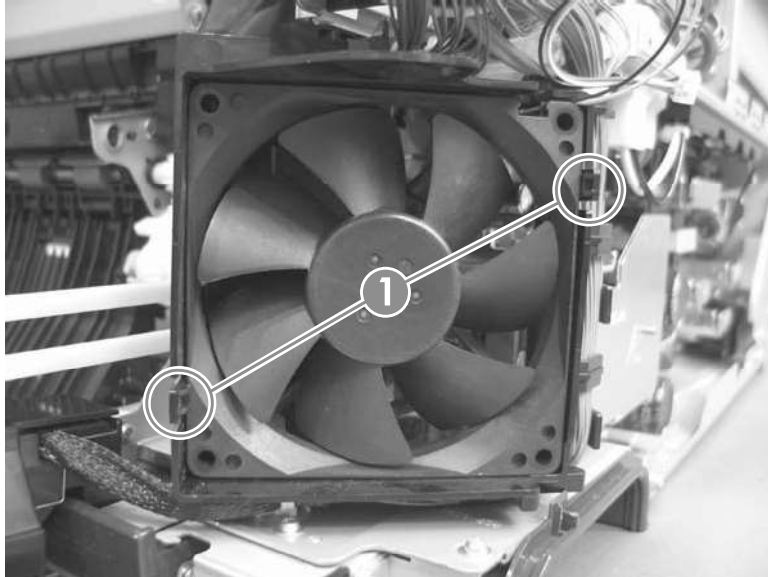
**Figure 2-113** Remove the power supply fan (1 of 4)



2. **To remove the fan only:** Release two tabs (callout 1), and then remove the fan from the fan duct.

 **Reinstallation tip** When the fan is reinstalled, the air must flow into the product. Look at the arrows embossed on the fan frame that indicate air flow direction.

**Figure 2-114** Remove the power supply fan (2 of 4)



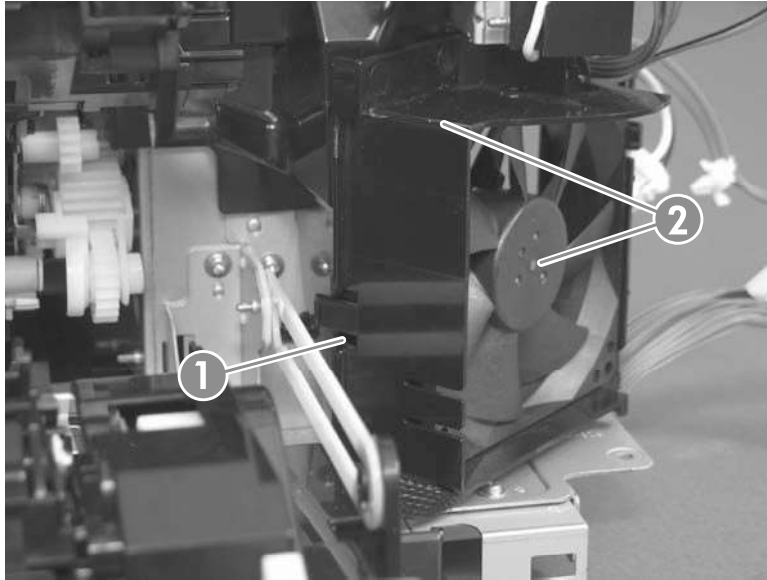
3. **To remove the fan and fan duct:** Remove one screw (callout 1), and then release the wire harnesses from the guides on the fan duct.

**Figure 2-115** Remove the power supply fan (3 of 4)



4. **To remove the fan and fan duct:** Release one tab (callout 1), and then remove the fan and fan duct (callout 2).

**Figure 2-116** Remove the power supply fan (4 of 4)




## Registration assembly

**Before proceeding, remove the following components:**

- Toner collection unit. See [Toner collection unit on page 79](#).
- Secondary transfer assembly. See [Secondary transfer assembly on page 96](#).
- Intermediate transfer belt (ITB). See [Intermediate transfer belt \(ITB\) on page 98](#).
- Right rear cover. See [Right rear cover on page 109](#).
- Left cover. See [Left cover on page 111](#).
- Rear cover and upper rear cover. See [Rear cover and upper rear cover on page 124](#).


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 **NOTE:** It is not necessary to separate the upper rear cover from the rear cover to remove the registration assembly.

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- RD sensor assembly. See [Registration density \(RD\) sensor assembly on page 143](#).

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 **TIP:** Removing the RD sensor assembly makes it much easier to reinstall the registration assembly.

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- Power supply fan and fan duct. See [Power supply fan and fan duct on page 147](#).

## Remove the registration assembly

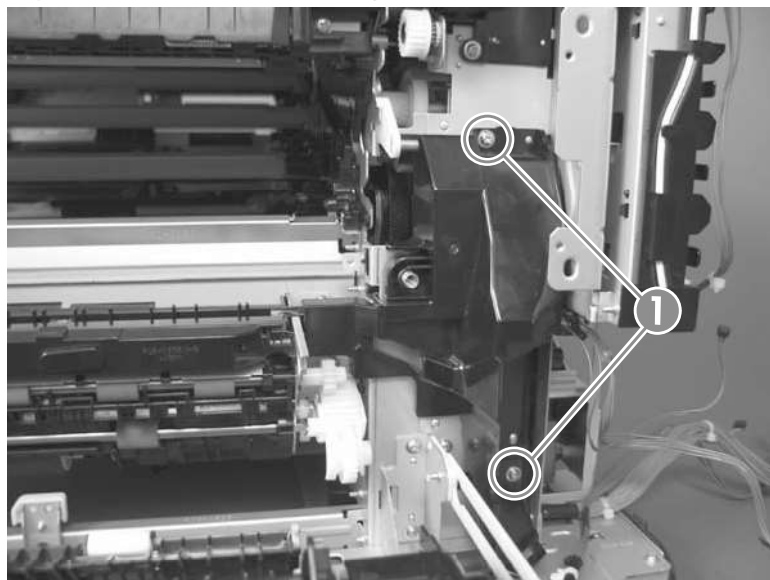
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 **NOTE:** If a replacement registration assembly is installed, you must use the control panel menus to reset the registration-roller count.

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1. Remove two screws (callout 1).

**Figure 2-117** Remove the registration assembly (1 of 8)




2. Pull down on the cover to release one tab, and then rotate the cover away from the product to remove it.

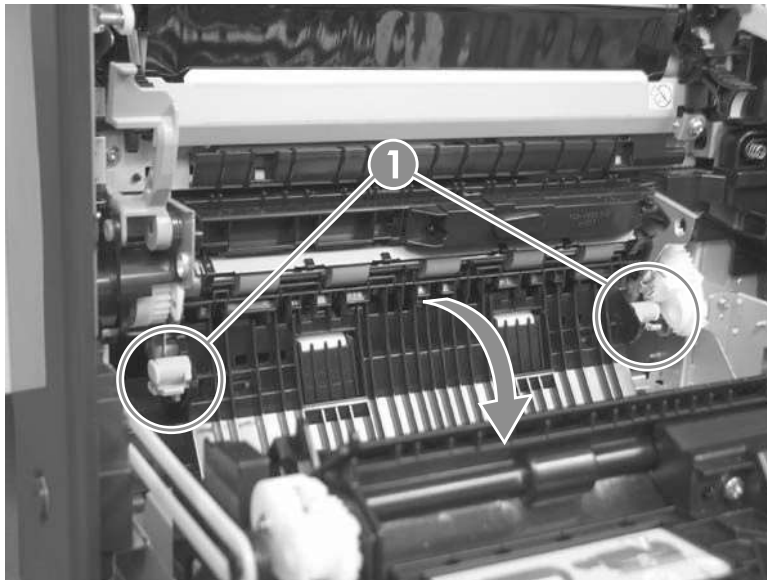
**Figure 2-118** Remove the registration assembly (2 of 8)



3. Release two green latches (callout 1), and then lower the feed guide.

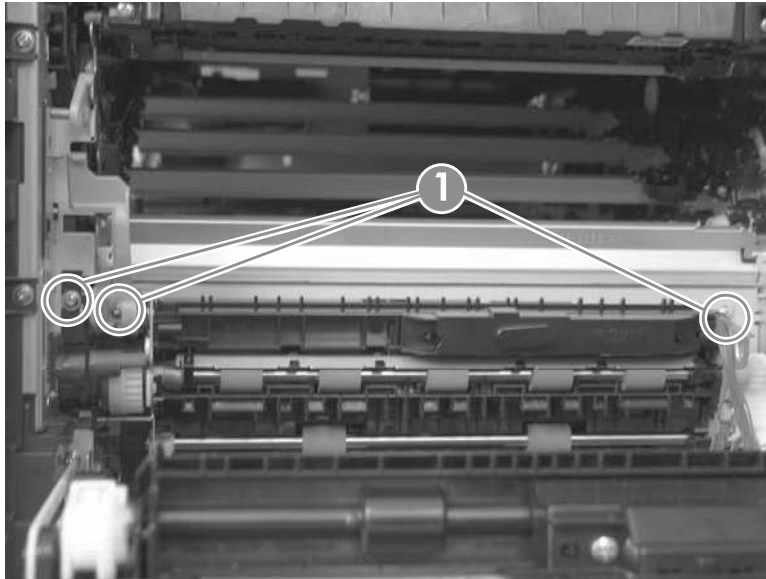
 **Reinstallation tip** Make sure that the feed guide snaps into the closed position when you reinstall the registration assembly.

**Figure 2-119** Remove the registration assembly (3 of 8)



4. Remove three screws (callout 1).

**Figure 2-120** Remove the registration assembly (4 of 8)



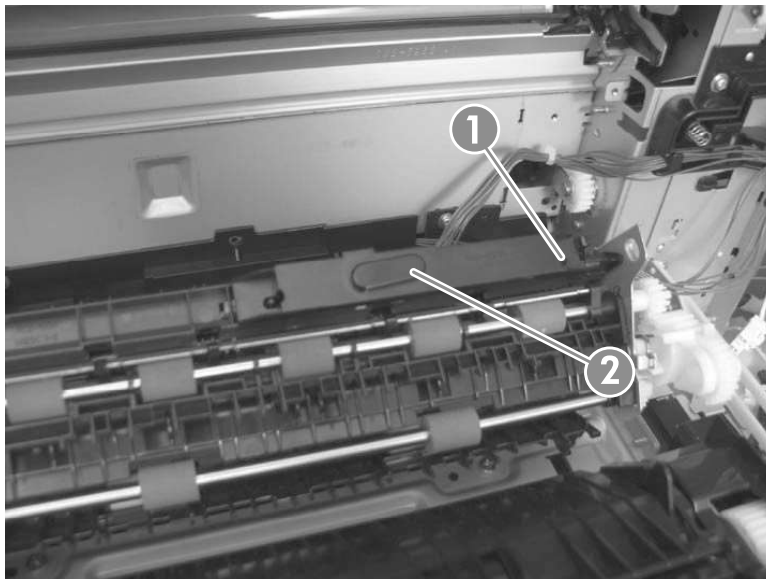
5. Separate the assembly from the product, release one tab (callout 1), and then remove the cover (callout 2).

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**⚠ CAUTION:** The assembly is still attached to the product by the wire harnesses.

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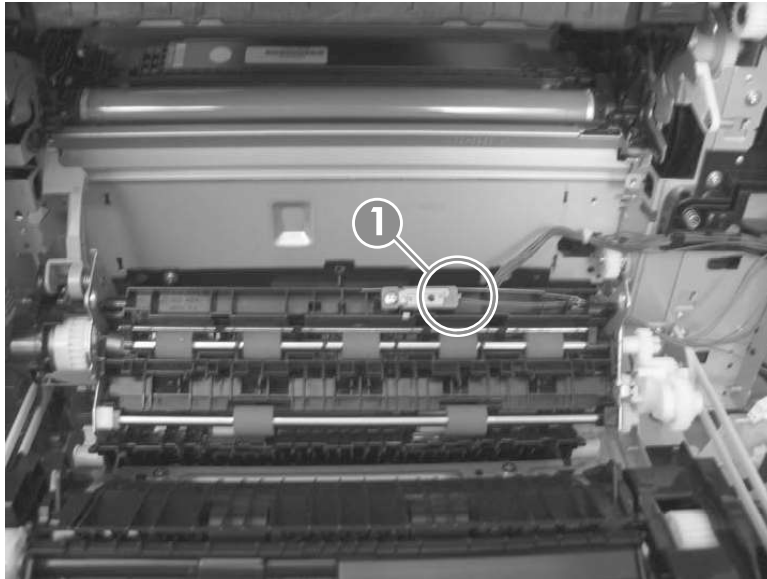
**Figure 2-121** Remove the registration assembly (5 of 8)





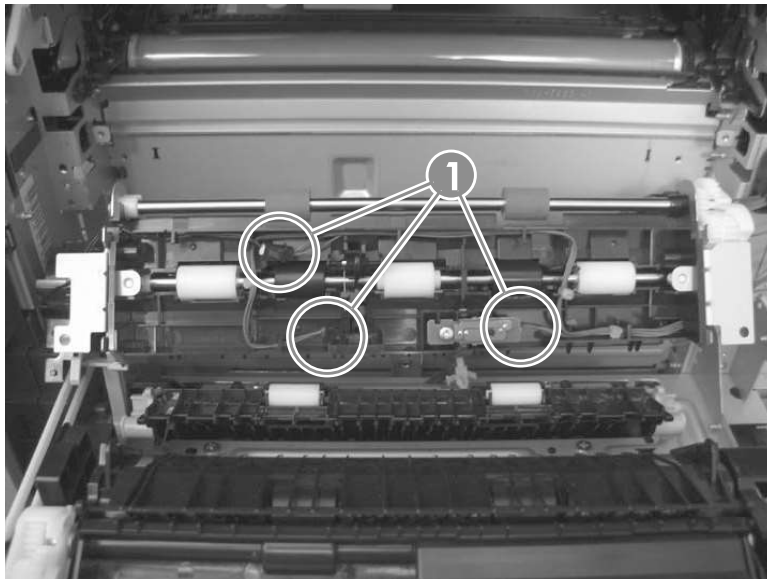
6. Disconnect one connector (callout 1), and then release the wire harness from the retainer.

**Figure 2-122** Remove the registration assembly (6 of 8)




7. Disconnect three connectors (callout 1) on the back side of the assembly, and then release the wires from the retainers.

**Figure 2-123** Remove the registration assembly (7 of 8)



8. Remove the assembly.

 **Reinstallation tip** When you reinstall the registration assembly, make sure that it is correctly positioned in the product. The tabs on the assembly must fit into the slots in the product chassis and the assembly should fit securely up against the product chassis.

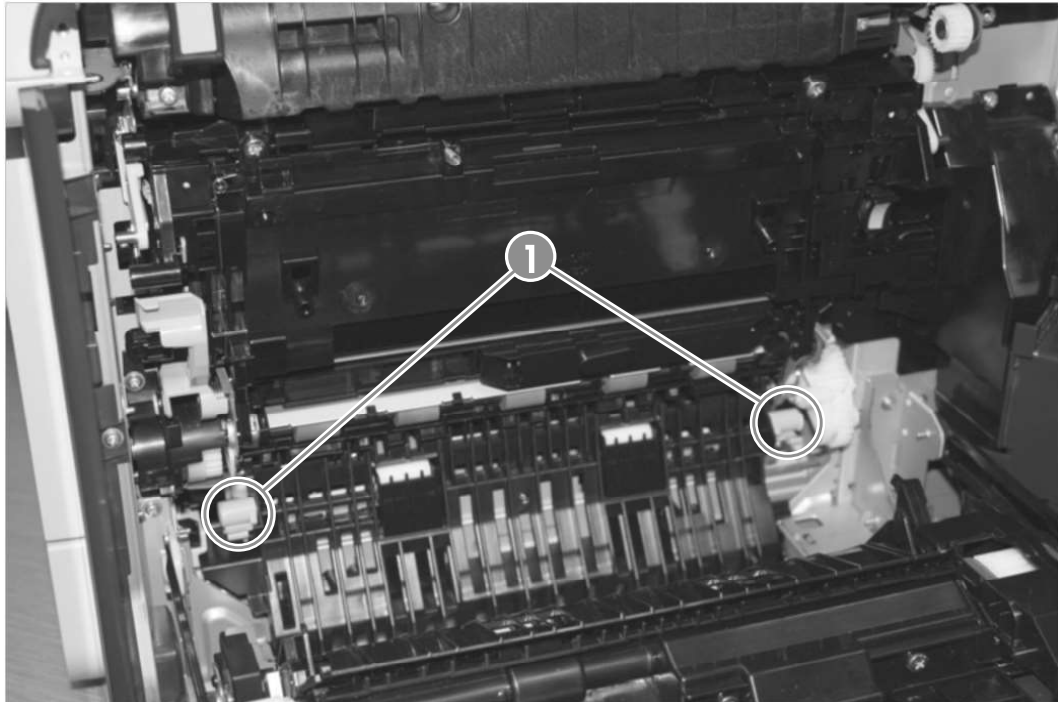
**Figure 2-124** Remove the registration assembly (8 of 8)



## Lower pickup guide

### Remove the lower pickup guide

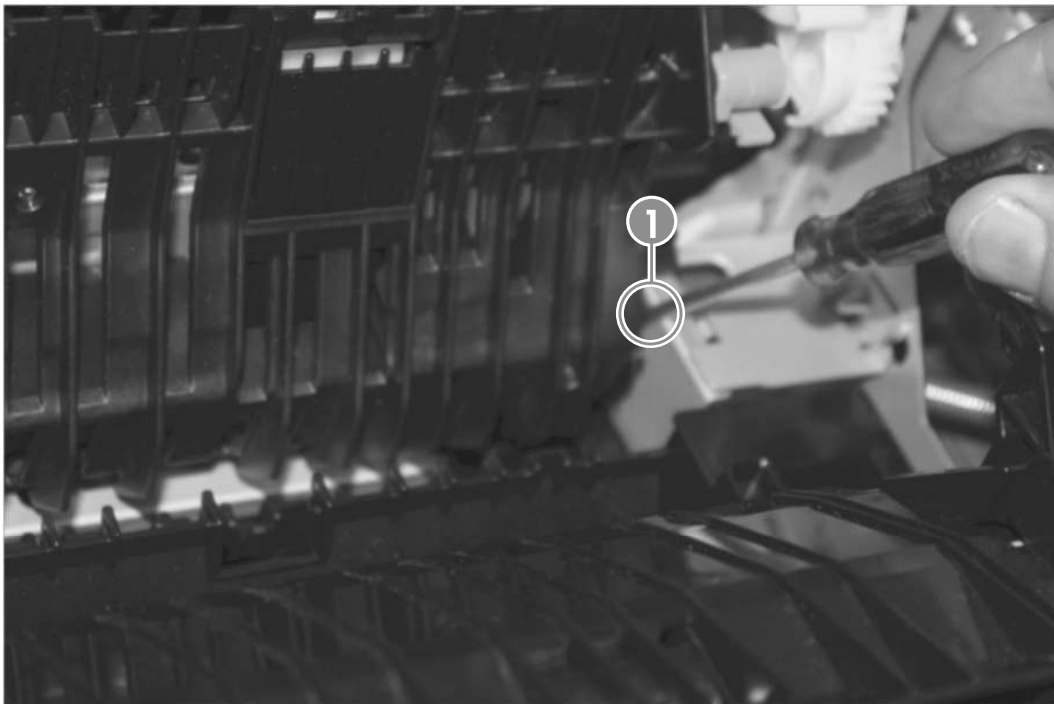
1. Open the right Door. The lower pickup guide is directly below the registration assembly and is locked into place by 2 green circular knobs, one on each side of the upper portion of the guide.



2. Press upward from below the on each knob at the same time to release the assembly.



3. Using a small straight edged screw driver, wedge the blade and press inward on the hinge pin on the lower right side of the assembly and then pull the assembly out of the hinge pin hole.



4. Remove the assembly by rotating it up and away from the printer counter clockwise.


## Reinstall the lower pickup guide

- ▲ Put the lower left side of the parts axle into the hole in the sheet metal, slightly depress the right hinge pin, and then snap the pin back into the whole in the sheet metal. Rotate the lower pickup guide back into place toward the printer until the green knobs snap back into place.


## Interconnect board (ICB)

Before proceeding, remove the following components:

- Toner collection unit. See [Toner collection unit on page 79](#).
- Formatter. See [Formatter PCA on page 81](#).
- Right rear cover. See [Right rear cover on page 109](#).
- Left cover. See [Left cover on page 111](#).
- Rear cover and upper rear cover. See [Rear cover and upper rear cover on page 124](#).


 **NOTE:** It is not necessary to separate the upper rear cover from the rear cover to remove the interconnect board (ICB).

### Remove the ICB

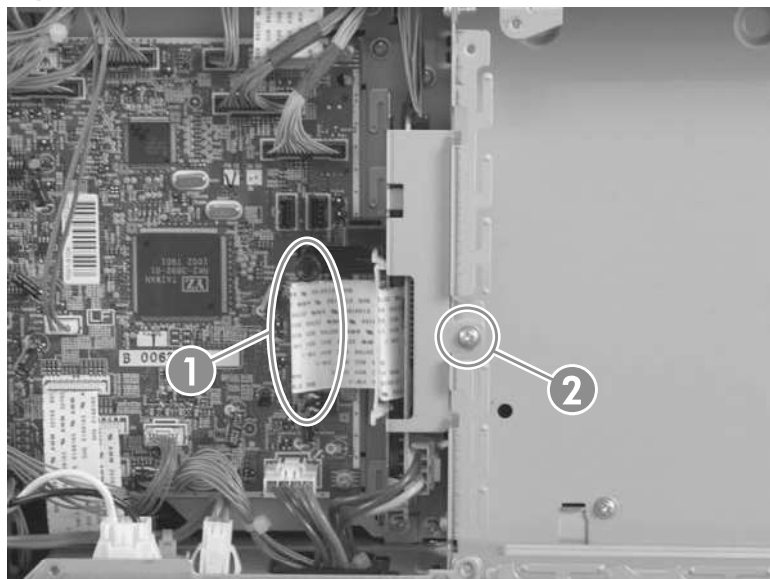
 **WARNING!** Do not remove the ICB from a product and then install it into a **different** product. Failure to follow this warning will result in severe damage to that product and cause it to be unusable. HP recommends that if you remove and replace the ICB, you should destroy the discarded ICB so that it can not accidentally be installed in a different product.

 **CAUTION:**  ESD sensitive part.

1. Disconnect one connector (callout 1; J105) from the DC controller, and then remove one screw (callout 2).

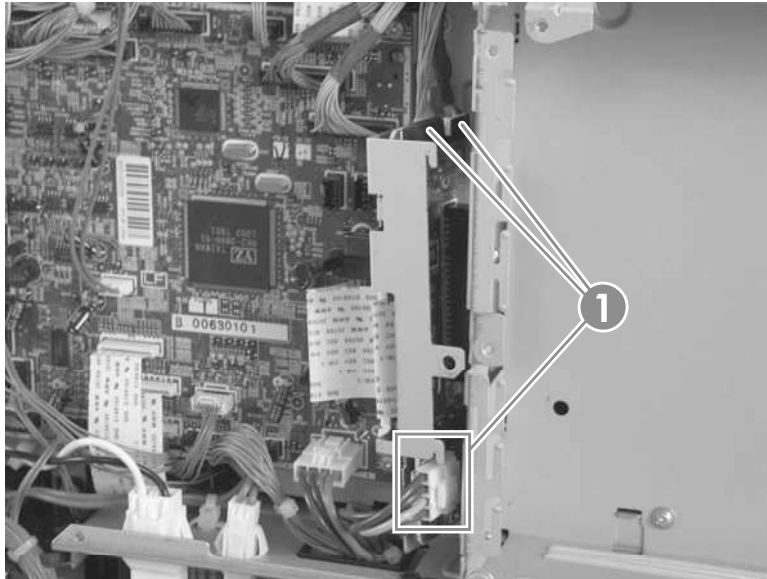
 **NOTE:** To locate DC controller connector locations, see [DC controller PCA on page 284](#).

**Figure 2-125** Remove the ICB (1 of 3)



2. Disconnect three connectors (callout 1).

**Figure 2-126** Remove the ICB (2 of 3)



3. Carefully rotate and slide the ICB up and away from the chassis to remove.


**Figure 2-127** Remove the ICB (3 of 3)




## DC controller PCA and tray


Before proceeding, remove the following components:

- Toner collection unit. See [Toner collection unit on page 79](#).
- Formatter. See [Formatter PCA on page 81](#).
- Right rear cover. See [Right rear cover on page 109](#).
- Left cover. See [Left cover on page 111](#).
- Rear cover and upper rear cover. See [Rear cover and upper rear cover on page 124](#).

 **NOTE:** It is not necessary to separate the upper rear cover from the rear cover to remove the DC controller PCA.

- Interconnect board (ICB). See [Interconnect board \(ICB\) on page 158](#).
- Low voltage power supply. See [Low voltage power supply on page 163](#).

 **NOTE:** Remove the low voltage power supply only if removing the tray with the DC controller PCA.

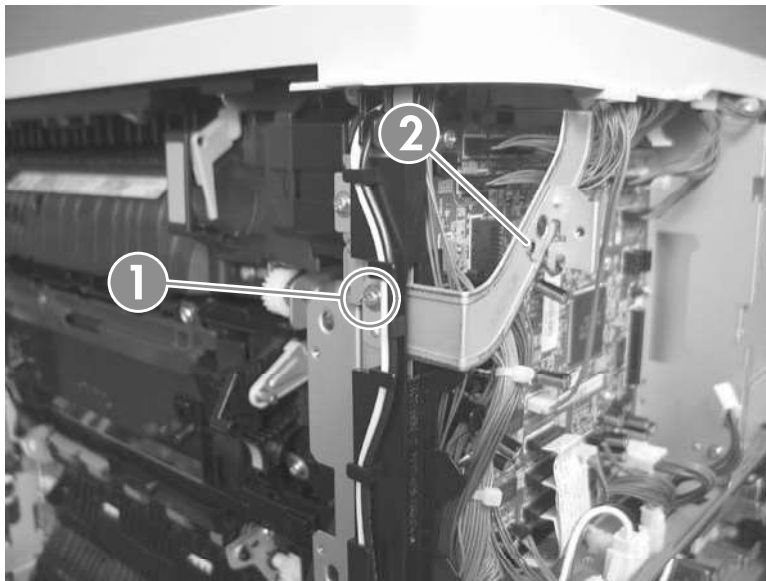
 **NOTE:** If removing the DC controller to access another component, skip the third step and leave the DC controller attached to the sheet-metal tray.

### Remove the DC controller PCA

 **CAUTION:**  ESD sensitive part.

1. Remove one screw (callout 1), and then remove the sheet-metal bracket (callout 2).

**Figure 2-128** Remove the DC controller PCA and tray (1 of 4)



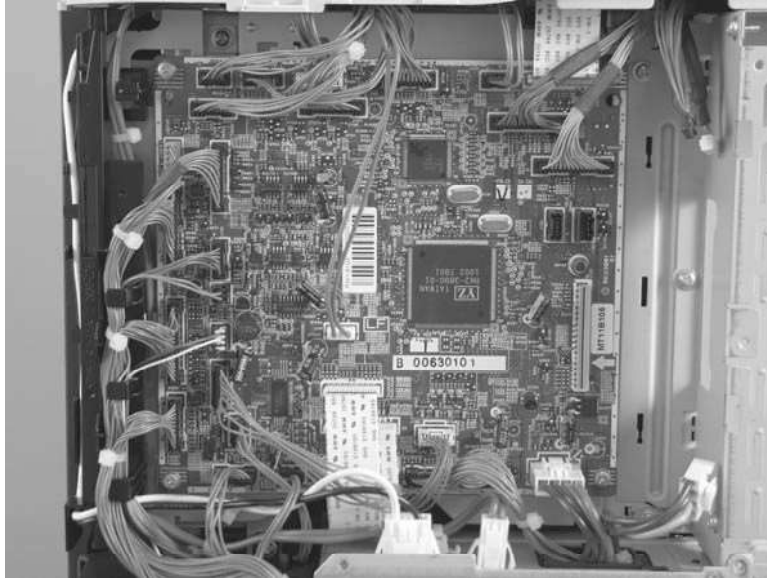


2. Disconnect all the connectors.



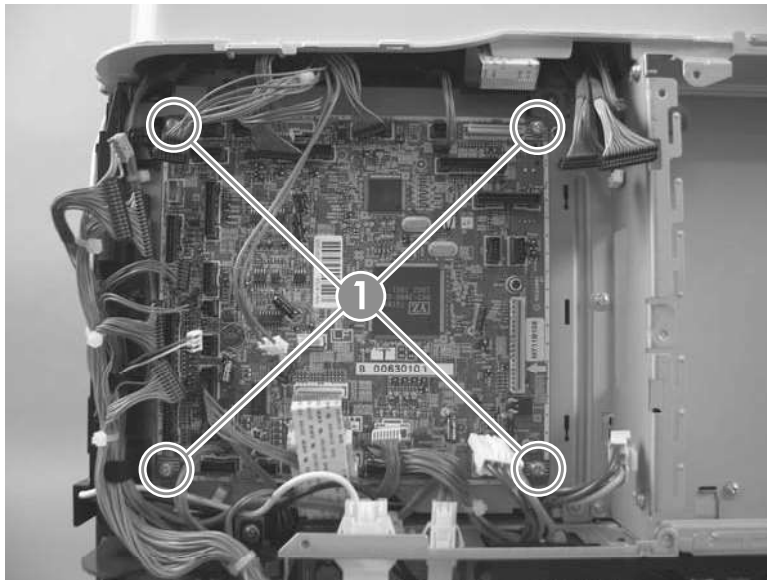
**Reinstallation tip** The connector locations J133 and J134 are not used.

**Figure 2-129** Remove the DC controller PCA and tray (2 of 4)



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

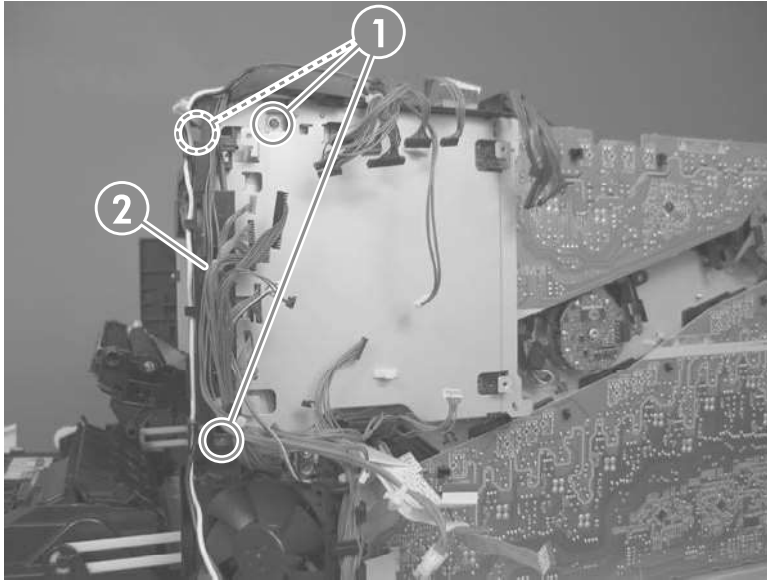
**Figure 2-130** Remove the DC controller PCA and tray (3 of 4)



**NOTE:** If removing the DC controller to access another component, skip this step and leave the DC controller attached to the sheet-metal tray.

4. If necessary, remove three screws (callout 1), remove the wire guide (callout 2), and then remove the sheet-metal tray.


**Figure 2-131** Remove the DC controller PCA and tray (4 of 4)




## Low voltage power supply

Before proceeding, remove the following components:

- Toner collection unit. See [Toner collection unit on page 79](#).
- Formatter. See [Formatter PCA on page 81](#).
- Right rear cover. See [Right rear cover on page 109](#).
- Left cover. See [Left cover on page 111](#).
- Rear cover and upper rear cover. See [Rear cover and upper rear cover on page 124](#).

 **NOTE:** It is not necessary to separate the upper rear cover from the rear cover to remove the low voltage power supply.


- Interconnect board (ICB). See [Interconnect board \(ICB\) on page 158](#).


 **NOTE:** The formatter cage is attached to the low voltage power supply (LVPS). Remove both components as an assembly. You can then remove the formatter cage from the LVPS.

## Remove the low voltage power supply

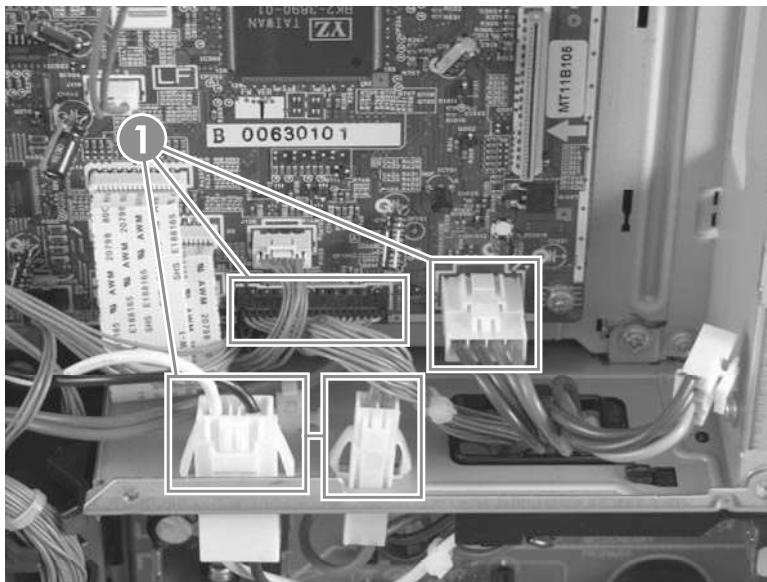
 **CAUTION:**  ESD sensitive part.

1. Disconnect four connectors (callout 1; J100 and J101 on the DC controller PCA).


 **NOTE:** To locate DC controller connector locations, see [DC controller PCA on page 284](#).

 **NOTE:** If the ICB is removed with the power supply, as noted in the above bulleted list, also disconnect one FFC (J105) on the DC controller and the connector on the top of the ICB.

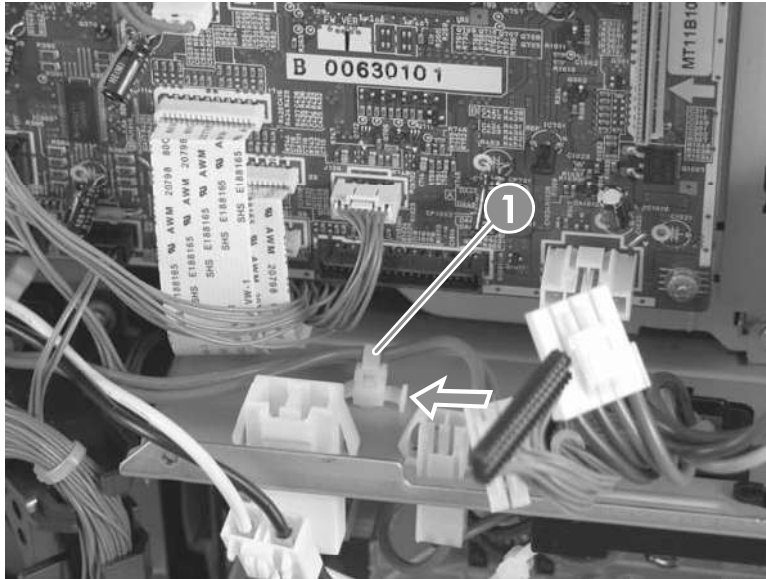
**Figure 2-132** Remove the low voltage power supply (1 of 7)




2. Push in on the locking tab to release the retainer (callout 1), and then separate the retainer from the assembly.

 **NOTE:** The retainer remains attached to the wire harness, and disengages from the assembly.

**Figure 2-133** Remove the low voltage power supply (2 of 7)



3. Remove seven screws (callout 1).

 **NOTE:** The illustration below shows the ICB removed.

**Figure 2-134** Remove the low voltage power supply (3 of 7)

