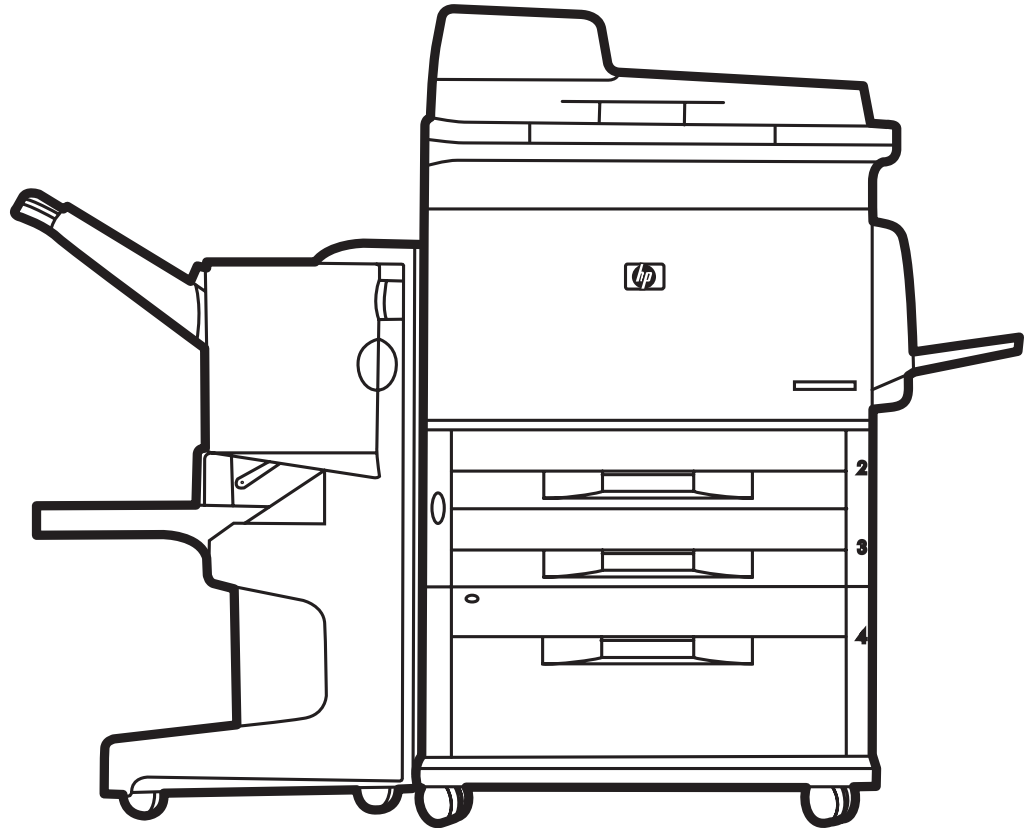


HP LaserJet M9059 MFP

Service Manual



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Service Manual



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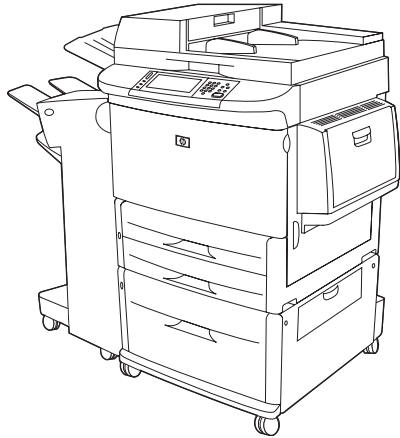
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1 Product basics

- [Product introduction](#)
- [Product features](#)
- [Product walkaround](#)
- [Output devices](#)

Product introduction

Figure 1-1 HP LaserJet M9059 MFP



The HP LaserJet M9059 MFP comes standard with the following items:

- 100-sheet multipurpose input tray (Tray 1)
- Two 500-sheet input trays
- One 2,000-sheet input tray
- Automatic document feeder (ADF)
- HP Jetdirect embedded print server for connecting to a 10/100/1000Base-TX network (Gigabit support)
- 384 megabytes (MB) of random access memory (RAM)
- Duplexer
- Hard drive

Product features

The HP LaserJet M9059 MFP is designed to be shared by a workgroup. The product is a standalone copier that does not require connection to a computer. With the exception of network printing, you can select all functions at the product control panel.

Functions

- Two-sided copying and printing
- Image modification
- Color digital sending
- Black-and-white printing and copying
- Wide-format printing
- Document finishing

Speed and throughput

- 40 ipm when scanning and printing on letter-size or ISO A4-size paper
- 25% to 400% scalability when using the scanner glass
- 25% to 200% scalability when using the automatic document feeder (ADF)
- Transmit Once, Raster Image Processing (RIP) ONCE technology
- Eight-seconds to first page
- Duty cycle of up to 300,000 images per month
- 533 megahertz (MHz) microprocessor

Resolution

- 600 dots per inch (dpi) with Resolution Enhancement technology (REt)
- FastRes 1200 provides 1200 dpi quality at full speed
- Up to 256 levels of gray

Memory

- 384 megabytes (MB) of random-access memory (RAM), expandable to 512 MB by using industry-standard 100-pin double data rate dual inline memory modules (DDR DIMMs)
- Memory Enhancement technology (MEt) that automatically compresses data to use RAM more efficiently

User interface

- Graphical display on control panel
- Embedded Web server to gain access to support (for network-connected products)

Language and fonts

- HP Printer Command Language (PCL) 6
- HP PCL 5e for compatibility
- Printer Management Language
- 80 scalable TrueType typefaces
- HP postscript level 3 emulation

Copying and sending

- Modes for text, graphics, and mixed text and graphics formats
- A job-interrupt feature (at copy boundaries)
- Multiple pages per sheet
- Operator attendance animations (for example, jam recovery)
- The ability to copy books
- E-mail compatibility
- A sleep feature that saves energy
- One-pass duplex scanning

Print cartridge

- No-shake cartridge design
- Authentic HP print cartridge detection
- Automatic seal-tab removal

Paper-handling

- **Input**
 - **Tray 1 (multipurpose tray):** A multipurpose tray for paper, transparencies, labels, and envelopes. Holds up to 100 sheets of paper or 10 envelopes.
 - **Trays 2 and 3:** Two 500-sheet trays. These trays automatically detect standard paper sizes up to 11 x 17/A3 and allow printing on custom-size paper.
 - **Tray 4 (2000-sheet input tray):** This tray automatically detects standard paper sizes up to 11 x 17/A3 and allows printing on custom-size paper.
 - **Automatic Document Feeder (ADF):** Holds up to 100 sheets of Letter- or A4-size paper or 50 sheets of 11 x 17- or A3-size paper.
 - **Duplex printing:** Provides two-sided printing (printing both sides of the paper).
- **Output**

The product has the following optional output choices:

- **3000-sheet stacker:** Stacks up to 3,000 sheets of paper.
Upper bin (face up): Holds up to 100 sheets of paper.
Lower bin (face down): Holds up to 3,000 sheets of paper. The output bins are part of the output device.
- **3000-sheet stapler/stacker:** Provides multiposition stapling for up to 50 sheets of paper per job, or a maximum job height of 5 mm (0.2 in).
Upper bin (face up): Holds up to 100 sheets of paper.
Lower bin (face down): Holds up to 3,000 sheets of paper. The output bins are part of the output device.
- **Multifunction finisher:** Provides 1,000 sheets of stacking capacity, stapling for as many as 50 sheets of paper per document, plus folding and saddle stitching of booklets that contain up to 10 sheets of paper.
Upper bin (face up and face down): Holds up to 1,000 sheets of paper.
Lower booklet bin: Holds up to 50 booklets.
- **8-bin mailbox:** A stacker, collator, or job separator that also provides eight mailbox bins that can be assigned to individual users or workgroups for easy identification and retrieval. The 8-bin mailbox can stack up to 2,000 sheets of A4- or letter-size paper in all the bins.
Upper bin (face up): Holds up to 125 sheets of paper.
Bins 1 through 8 (face down): Each holds up to 250 sheets of paper.

Connectivity

- Hi-Speed USB 2.0 connection
- HP Jetdirect embedded print server.
- Optional analog fax card
- Optional HP Jetdirect EIO print server cards
 - HP Jetdirect 625n gigabit Ethernet internal print server

Environmental features

- To download the latest firmware, go to www.hp.com/go/ljm9059mfp_firmware and follow the onscreen instructions. To easily send firmware updates to multiple products, use the HP Web Jetadmin software (go to www.hp.com/go/webjetadmin).



NOTE: HP Web Jetadmin 10.0 or later is required for full support of this product.

- An internal hard disk can be used to store selected print jobs. It can support RIP ONCE technology and can permanently store downloaded fonts and forms in the product. Many items on the hard disk remain even when the product is turned off. Fonts on the hard disk are available to all users.
- An optional EIO hard disk accessory provides additional capacity for storing fonts and forms. The product does not use the EIO hard disk accessory for tasks such as RIP ONCE and stored jobs.

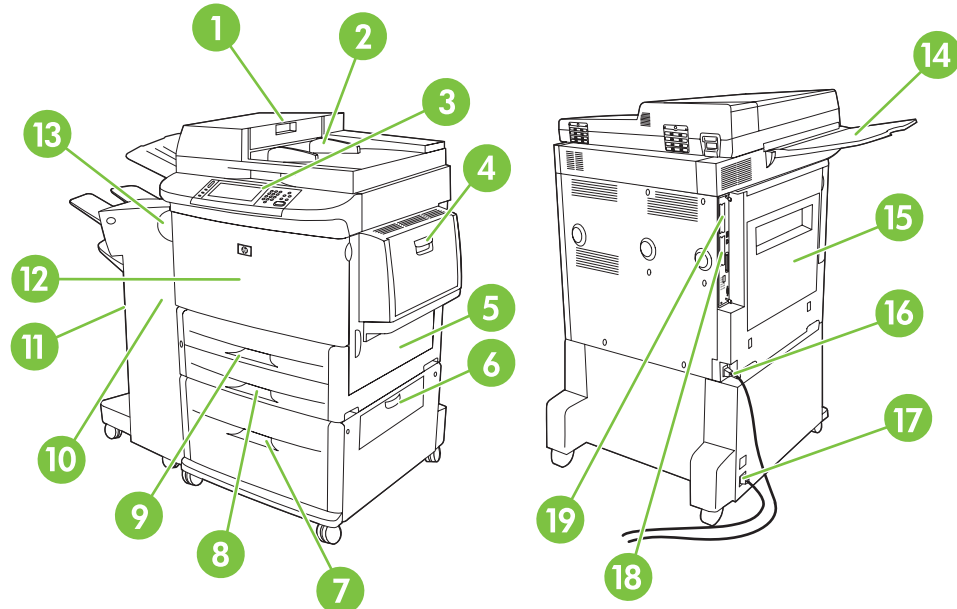
The product uses the internal hard disk for these tasks. Both disks can be write-protected through software for additional security.

Security features

- Secure Disk Erase
- Security lock
- Job retention
- Front-panel authentication

Product walkaround

Figure 1-2 Product walkaround



1	Automatic document feeder cover
2	Automatic document feeder (ADF)
3	Control panel with touchscreen graphical display
4	Tray 1
5	Right door
6	Vertical transfer door
7	Tray 4
8	Tray 3
9	Tray 2
10	Left door (behind output device)
11	Output device
12	Front door
13	Duplex printing accessory (inside the product)
14	ADF output bin
15	Left door
16	Printer power cable
17	Tray 4 power cable
18	EIO slot 1
19	Copy processor EIO card

Output devices

The following optional finishing devices are available for this product: 3,000-sheet stacker, 3,000-sheet stapler/stacker, multifunction finisher, and 8-bin mailbox.

3,000-sheet stacker

- Stacks up to 3,000 sheets of A4- or letter-size paper
- Stacks up to 1,500 sheets of A3- or ledger-size paper
- Can offset jobs, or offset the first page of jobs

The lower bin (face-down bin) is the default bin for all output jobs.

3,000-sheet stapler/stacker

Paper handling features

- Stacks up to 3,000 sheets A4- or letter-size paper
- Stacks up to 1,500 sheets of A3- or ledger-size paper
- Can offset jobs, or offset the first page of jobs

The upper bin (face-up bin) is the default bin for all output jobs.

Stapling information

The 3,000-sheet stapler/stacker can staple 2 to 50 pages of 75 g/m² (20 lb) paper or equivalent 5 mm (0.2 in). The pages must be 64 to 199 g/m² (17 to 53 lb) of all sizes that the device supports.

- Heavier media might have a stapling limit of fewer than 50 pages.
- If the job is only one sheet, or, if it is more than 50 sheets, it is printed and not stapled.

You can usually select the stapler in the software program or print driver, although some options might be available only in the print driver. See the product user guide for more information.

If the stapler cannot be selected in the program or printer driver, it can be selected through the product control panel. See the product user guide for instructions.

Multifunction finisher

Paper handling features

- Stacks up to 1,000 sheets of A4 and letter paper or up to 500 sheets of A3 and 11 x 17 paper
- Stacks up to 40 booklets of 5 sheets of A3 and ledger paper
- Can offset jobs
- Staples up to 50 sheets of paper per document of A4 and letter paper
- Staples up to 25 sheets of paper per document A3 and ledger paper

- Folds single pages
- Saddle-stitches and folds up to 40 booklets of 5 sheets stacked, or 20 booklets of 10 sheets stacked

Stapling information

The finisher can staple 2 to 50 pages of 75 g/m² (20 lb) A-4 or letter-size paper or up to 25 pages of A3 11 x 17 paper or equivalent to 5.5 mm (0.22 in). The pages must be 64 to 199 g/m² (17 to 53 lb) of all sizes supported by the device.

Consider these additional points:

- The upper bin (stacker bin) can hold up to 1,000 sheets stacked (not stapled). The multifunction finisher can deliver jobs face up or face down to the upper bin.
- Heavier media might have a stapling limit of fewer than 50 pages.
- If the job is only one sheet, or, if it is more than 50 sheets, it is printed and not stapled.

You can usually select the stapler in the software program or print driver, although some options might be available only in the print driver. See the product user guide for more information.

If the stapler cannot be selected in the program or print driver, it can be selected through the product control panel. See the product user guide for instructions.

Booklets

You can gain access to the booklet feature in some software programs, such as desktop publishing programs. See the user guide that came with your program for information about making booklets.

If you are using a program that does not support booklet making, you can create booklets by using the HP print driver.



NOTE: HP recommends that you use your program to prepare and preview your document for printing, and then use the HP print driver to print and saddle stitch your booklet.

Use the following steps to create a booklet by using the print driver:

- Prepare your booklet: Arrange the pages on a sheet (called booklet imposition) to create a booklet. You can impose your booklet in your software program, or you can use the booklet-printing feature in print driver.
- Add a cover: Add a cover for the first page by selecting a different paper type that is the same size as the rest of the booklet. The cover can be a weight different from the rest of the booklet.
- Use saddle stitching: Paper must be fed into the product short edge first. The product prompts you for rotated paper. The multifunction finisher staples the center of your booklet (called saddle stitching). If your booklet contains only one sheet of paper, the multifunction finisher folds the sheet but does not staple it. If the booklet contains more than one sheet of paper, the multifunction finisher staples the sheets and then folds up to 10 sheets per booklet.

The booklet-printing feature of the multifunction finisher supports the saddle stitch and fold feature for the following paper sizes:

- A3
- A4-Rotated (A4-R)*
- Letter-Rotated (Letter-R)*

- Legal
- Ledger

See the *HP Multifunction Finisher User Guide* at www.hp.com/support/ljm9059mfp for more information about making booklets.

* A4-R and Letter-R are A4- and letter-size paper that is rotated 90° in the source tray.

8-bin mailbox

- Handles high-capacity output that increases the product output capacity to 2,000 sheets of standard media
- Uses the upper bin to provide 125 sheets of face-up stacking capacity
- Delivers printed jobs face down to the eight face down bins, and each bin provides 250 sheets of stacking capacity
- Offers stacking options in different operational modes: mailbox, stacker, job separator, and sorter/collator

For more information about the 8-bin mailbox, see the user guide that came with the 8-bin mailbox.

2 Control panel

- [Use the control panel](#)
- [Use the Administration menu](#)

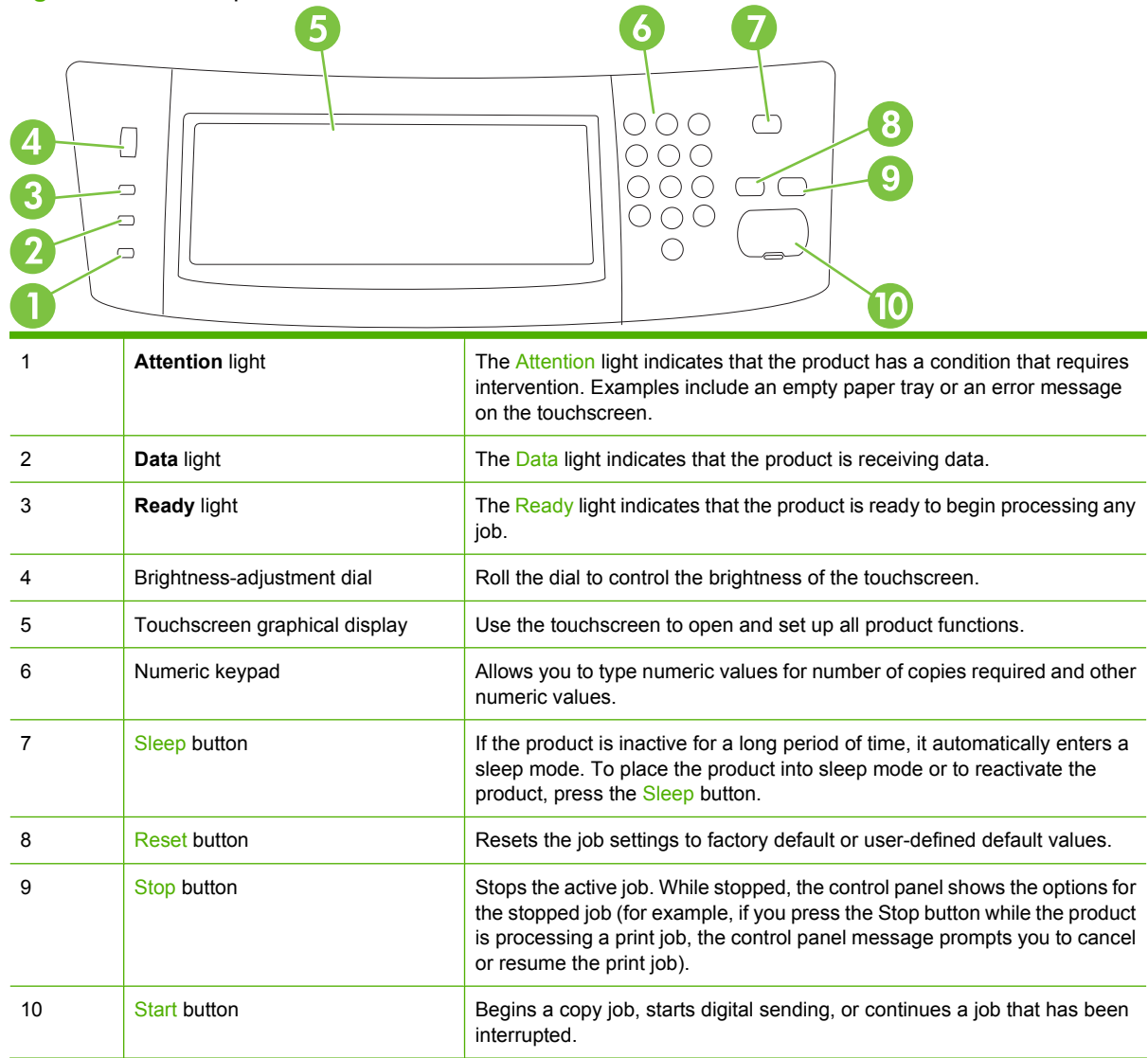
Use the control panel

The control panel has a VGA touchscreen that provides access to all product functions. Use the buttons and numeric keypad to control jobs and the product status. The LEDs indicate overall product status.

Control-panel layout

The control panel includes a touchscreen graphical display, job-control buttons, a numeric keypad, and three light-emitting diode (LED) status lights.

Figure 2-1 Control panel

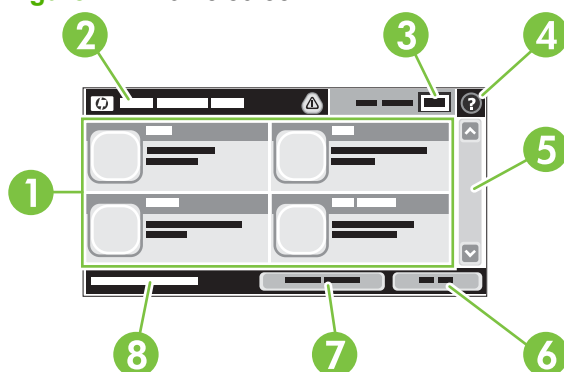


Home screen

The home screen provides access to the product features, and it indicates the current status of the product.

 **NOTE:** Depending on how the system administrator has configured the product, the features that appear on the home screen can vary.

Figure 2-2 Home screen



1	Features	Depending on how the system administrator has configured the product, the features that appear in this area can include any of the following items: • Copy • Fax (Optional) • E-mail • Secondary E-mail • Network Folder • Job Storage • Workflow • Supplies Status • Administration
2	Status line	The status line provides information about the overall product status. Various buttons appear in this area, depending on the current status. For a description of each button that can appear in the status line, see Buttons on the touchscreen on page 14 .
3	Copy count	The copy count box indicates the number of copies that the product is set to make.
4	Help button	Touch the Help button to open the embedded help system.
5	Scroll bar	Touch the up or down arrows on the scroll bar to see the complete list of available features.
6	Sign Out	Touch Sign Out to sign out of the product if you have signed in for access to restricted features. After you sign out, the product restores all options to the default settings.
7	Network Address	Touch Network Address to find information about the network connection.
8	Date and time	The current date and time appear here. The system administrator can select the format that the product uses to show the date and time, for example 12-hour format or 24-hour format.

Buttons on the touchscreen

The status line on the touchscreen provides information about the status of the product. Various buttons can appear in this area. The following table describes each button.

	Home button. Touch the Home button to go to the Home screen from any other screen.
	Start button. Touch the Start button to begin the action for the feature that you are using. NOTE: The name of this button changes for each feature. For example, in the Copy feature, the button is named Start Copy .
	Error button. The Error button appears whenever the product has an error that requires attention before it can continue. Touch the Error button to see a message that describes the error. The message also has instructions for solving the problem.
	Warning button. The Warning button appears when the product has a problem but can continue functioning. Touch the Warning button to see a message that describes the problem. The message also has instructions for solving the problem.
	Help button. Touch the Help button to open the built-in online Help system. For more information, see Control-panel help system on page 14 .

Control-panel help system

The product has a built-in Help system that explains how to use each screen. To open the Help system, touch the Help button (🔍) in the upper-right corner of the screen.

For some screens, the Help opens to a global menu where you can search for specific topics. You can browse through the menu structure by touching the buttons in the menu.

For screens that contain settings for individual jobs, the Help opens to a topic that explains the options for that screen.

If the product alerts you of an error or warning, touch the Error (❗) or Warning (⚠️) button to open a message that describes the problem. The message also contains instructions to help solve the problem.

Use the Administration menu

Use the **Administration** menu to set up default product behavior and other global settings, such as the language and the format for date and time.



NOTE: Menus can be locked by the administrator. Contact the administrator if a menu or menu item is not available.

Navigate the Administration menu

From the Home screen, touch **Administration** to open the menu structure. You might need to scroll to the bottom of the Home screen to see this feature.

The **Administration** menu has several submenus, which are listed on the left side of the screen. Touch the name of a menu to expand the structure. A plus sign (+) next to a menu name means that it contains submenus. Continue opening the structure until you reach the option that you want to configure. To return to the previous level, touch **Back**.

To exit the Administration menu, touch the Home button () in the upper-left corner of the screen.

The product has built-in Help that explains each of the features that are available through the menus. Help is available for many menus on the right-hand side of the touchscreen. Or, to open the global Help system, touch the Help button () in the upper-right corner of the screen.

The tables in the sections that follow indicate the overall structure of each menu.

Information menu

Administration > Information

Use this menu to print information pages and reports that are stored internally on the product.

Table 2-1 Information menu

Menu item	Submenu item	Submenu item	Values	Description
Configuration/Status Pages	Administration Menu Map		Print	Shows the basic structure of the Administration menu and current administration settings.
	Configuration Page		Print	A set of configuration pages that show the current product settings.
	Supplies Status Page		Print	Shows the status of supplies such as cartridges, maintenance kit, and staples
	Usage Page		Print	Shows information about the number of pages that have been printed on each paper type and size.
	File Directory		Print	A directory page that contains information for any mass-storage devices, such as flash drives, memory cards, or hard disks, that are installed in this product
Fax Reports (available only if the fax accessory is installed)	Fax Activity Log		Print	Contains a list of the faxes that have been sent from or received by this product
	Fax Call Report	Fax Call Report	Print	A detailed report of the last fax operation, either sent or received
		Thumbnail on Report	Yes No (default)	Choose whether to include a thumbnail of the first page of the fax on the report.
		When to Print Report	Never auto print Print after any fax job Print after fax send jobs Print after any fax error (default) Print after send errors only Print after receive errors only	
	Billing Codes Report		Print	A list of billing codes that have been used for outgoing faxes. This report shows how many sent faxes were billed to each code.
	Blocked Fax List		Print	A list of phone numbers that are blocked from sending faxes to this product
	Speed Dial List		Print	Shows the speed dials that have been set up for this product
	PCL Font List		Print	A list of printer control language (PCL) fonts that are currently available on the product
	PS Font List		Print	A list of postscript fonts that are currently available on the product

Default Job Options menu

Administration > Default Job Options

Use this menu to define the default job options for each function. If the user does not specify the job options when creating the job, the default options are used.

The **Default Job Options** menu contains the following submenus:

- Default Options For Originals
- Default Copy Options
- Default Fax Options
- Default E-mail Options
- Default Send To Folder Options
- Default Print Options

Default Options for Originals

Administration > Default Job Options > Default Options for Originals



NOTE: Values shown with “(default)” are the factory-default values. Some menu items have no default.

Table 2-2 Default Options for Originals menu

Menu item	Values	Description
Paper Size	Select a paper size from the list.	Select the paper size that is most often used for copy or scan originals.
Number of Sides	1 (default)	Select whether copy or scan originals are most often single-sided or double-sided.
	2	
Orientation	Portrait (default)	Select the orientation that is most often used for copy or scan originals. Select Portrait if the short edge is at the top, or select Landscape if the long edge is at the top.
	Landscape	
Optimize Text/Picture	Manually Adjust (default)	Use this setting to optimize the output for a particular type of original. You can optimize the output for text, pictures, or a mixture.
	Text	If you select Manually Adjust , you can specify the mix of text and pictures that will most often be used.
	Photograph	
Image Adjustment	Darkness	Use this setting to optimize the output for darker or lighter originals that you scan or copy.
	Background Cleanup	Increase the Background Cleanup setting to remove faint images from the background or to remove a light background color.
	Sharpness	Adjust the Sharpness setting to clarify or soften the image.
Heavy Originals	Normal	This setting is important for jobs that use the ADF. Changing this setting adjusts the tension on heavy paper as it moves through the scanning area. It can affect output quality for papers that weigh more than 100 g/m ² .
	Heavy Paper	

Default Copy Options

Administration > Default Job Options > Default Copy Options



NOTE: Values shown with “(default)” are the factory-default values. Some menu items have no default.

Table 2-3 Default Copy Options menu

Menu item	Submenu item	Values	Description
Number of Copies		Type the number of copies. The factory default setting is 1.	Set the default number of copies for a copy job.
Number of Sides		1 (default) 2	Set the default number of sides for copies.
Staple/Collate	Staple	None (default) Staple options	Set up options for stapling and collating sets of copies. When you make multiple copies of a document, collating places the pages in the correct order, one set at a time, rather than placing all copies of each page next to each other.
	Collate	Off On (default)	
Output Bin		Bin numbers/name	Select the default output bin, if applicable, for copies.
Edge-To-Edge		Normal (recommended) (default) Edge-To-Edge Output	If the original document is printed close to the edges, use the Edge-To-Edge feature to avoid shadows that can appear along the edges. Combine this feature with the Reduce/Enlarge feature to ensure that the entire page is printed on the copies.
Auto Include Margins		Off (default) On	Select this feature to ensure that the entire image appears on the copy, including any content that is close to the edges. If necessary, the product shrinks the image slightly, depending on the size of the printable area on the paper.

Default Fax Options

Administration > Default Job Options > Default Fax Options



NOTE: This menu is available when the fax accessory is installed.

Table 2-4 Fax Send menu

Menu item	Submenu item	Values	Description
Resolution		Standard (100x200dpi) (default)	Set the resolution for sent documents. Higher resolution images have more dots per inch (dpi), so they show more detail. Lower resolution images have fewer dots per inch and show less detail, but the file size is smaller.
		Fine (200x200dpi)	
		Superfine (300x300dpi)	
Fax Header		Prepend (default)	Select the position of the fax header on the page.
		Overlay	Select Prepend to print the fax header above the fax content and move the fax content down on the page. Select Overlay to print the fax header over the top of the fax contents without moving the contents down. Using Overlay could prevent a single-page fax from flowing onto another page.

Table 2-5 Fax Receive menu

Menu item	Values	Description
Forward Fax	Fax Forwarding	To forward received faxes to another fax device, select Fax Forwarding and Custom . Then type the number of the other fax device into the Forward to Number field. When you select this menu item for the first time, you are prompted to set up a PIN. Type that PIN every time you use this menu. This is the same PIN that is used to access the Fax Printing menu. This PIN is exactly four digits.
	Change PIN	
Stamp Received Faxes	Enabled	Add the date, time, senders phone number, and page number to each page of the faxes that this product receives.
	Disabled (default)	
Fit to Page	Enabled (default)	Shrink faxes that are larger than Letter-size or A4-size so that they can fit onto a Letter-size or A4-size page. If it this feature is set to Disabled , faxes larger than Letter or A4 will flow across multiple pages.
	Disabled	
Fax Paper Tray	Select Automatic or a specific tray.	Select the tray that holds the size and type of paper that you want to use for incoming faxes.
Output Bin	<Binname>	Select the default output bin, if applicable, to use for faxes.

Default E-mail Options

Administration > Default Job Options > Default E-mail Options

Use this menu to set default options for e-mails that are sent from the product.



NOTE: Values shown with “(default)” are the factory-default values. Some menu items have no default.

Menu item	Values	Description
Document File Type	PDF (default)	Choose the file format for the e-mail.
	JPEG	
	TIFF	
	M-TIFF	
Output Quality	High (large file)	Choosing higher quality for output increases the size of the output file.
	Medium (default)	
	Low (small file)	
Resolution	300 DPI	Use this feature to select the resolution. Use a lower setting to create smaller files.
	200 DPI	
	150 DPI (default)	
	75 DPI	
Color/Black	Color scan (default)	Specify whether the e-mail will be in black or in color.
	Black/white scan	
TIFF Version	TIFF 6.0 (default)	Use this feature to specify the TIFF version to use when saving scanned files.
	TIFF (Post 6.0)	

Default Send to Folder Options

Administration > Default Job Options > Default Send to Folder Options

Use this menu to set default options for scan jobs sent to the computer.



NOTE: Values shown with “(default)” are the factory-default values. Some menu items have no default.

Menu item	Values	Description
Color/Black	Color scan	Specify whether the file will be in black or in color.
	Black/white scan (default)	
Document File Type	PDF (default)	Choose the file format for the file.
	M-TIFF	
	TIFF	
	JPEG	
TIFF Version	TIFF 6.0 (default)	Use this feature to specify the TIFF version to use when saving scanned files.
	TIFF (post 6.0)	
Output Quality	High (large file)	Choosing higher quality for output increases the size of the output file.
	Medium (default)	
	Low (small file)	
Resolution	75 DPI	Use this feature to select the resolution. Use a lower setting to create smaller files.
	150 DPI (default)	
	200 DPI	
	300 DPI	
	400 DPI	
	600 DPI	

Default Print Options

Administration > Default Job Options > Default Print Options

Use this menu to set default options for jobs that are sent from a computer.



NOTE: Values shown with “(default)” are the factory-default values. Some menu items have no default.

Table 2-6 Default Print Options menu

Menu item	Submenu item	Values	Description
Copies Per Job		Type a value.	Use this feature to set the default number of copies for print jobs.
Default Paper Size		(List of supported sizes)	Choose a paper size.
Default Custom Paper Size	Unit of measure	Millimeters Inches	Configure the default paper size that is used when the user selects Custom as the paper size for a print job.
	X Dimension		Configure the width measurement for the Default Custom Paper Size .
	Y Dimension		Configure the height measurement for the Default Custom Paper Size .
Output Bin		<Binname>	Select the default output bin for print jobs.
Print Sides		1-sided (default) 2-sided	Use this feature to select whether print jobs should be single-sided or double-sided by default.
		Long edge Short edge	Use this feature to configure the default style for 2-sided print jobs. If Long edge is selected, the back side of the page is printed the right way up. This option is for print jobs that are bound along the left edge. If Short edge is selected, the back side of the page is printed upside-down. This option is for print jobs that are bound along the top edge.

Time/Scheduling menu

Administration > Time/Scheduling

Use this menu to set options for setting the time and for setting the product to enter and exit sleep mode.



NOTE: Values shown with "(default)" are the factory-default values. Some menu items have no default.

Table 2-7 Time/Scheduling menu

Menu item	Submenu item		Values	Description
Date/Time	Date Format		YYYY/MMM/DD (default)	Use this feature to set the current date and time, and to set the date format and time format that are used to time-stamp outgoing faxes.
			MMM/DD/YYYY	
			DD/MMM/YYYY	
	Date	Month		
		Day		
		Year		
	Time Format		12 hour (AM/PM) (default)	
			24 hour	
	Time	Hour		
		Minute		
		AM		
		PM		
Time Zone				Use this feature to set the time zone for your location and to select whether the product should automatically adjust for daylight-saving time.
Sleep Delay			1 Minute	Use this feature to select the time interval that the product should remain inactive before entering sleep mode.
			20 minutes	
			30 minutes	
			45 minutes (default)	
			1 hour (60 minutes)	
			90 minutes	
			2 hours	
			4 hours	

Table 2-7 Time/Scheduling menu (continued)

Menu item	Submenu item	Submenu item	Values	Description
Wake Time	Monday		Off (default)	Select Custom to set a wake time for each day of the week. The product exits sleep mode according to this schedule. Using a sleep schedule helps conserve energy and prepares the product for use so that users do not have to wait for it to warm up.
	Tuesday		Custom	
	Wednesday			
	Thursday			
	Friday			
	Saturday			
	Sunday			
Sleep Time	Monday		Off (default)	Select Custom to set a sleep time for each day of the week. The product is put in sleep mode according to this schedule. Using a sleep schedule helps conserve energy.
	Tuesday		Custom	
	Wednesday			
	Thursday			
	Friday			
	Saturday			
	Sunday			
Fax Printing (available if the fax accessory is installed)	Fax Printing Mode		Store all received faxes	If you have concerns about the security of private faxes, use this feature to store faxes rather than having them automatically print by creating a printing schedule.
			Print all received faxes (default)	
			Use Fax Printing Schedule	
	Change PIN			Select Change PIN to change the PIN number that users must provide to access the Fax Printing menu and the Forward Fax menu. This PIN is exactly four digits.

Management menu

Administration > Management

Use this menu to set up global product-management options.

 **NOTE:** Values shown with "(default)" are the factory-default values. Some menu items have no default.

Table 2-8 Management menu

Menu item	Submenu item	Values	Description
Network Address Button		Display (default) Hide	Select this option to display the Network Address button on the control-panel home screen.
Stored Job Management	Quick Copy Job Storage Limit	Select the maximum number of jobs to store.	Use this menu to view and manage any jobs that are stored on the product.
	Quick Copy Job Held Timeout	Off (default) 1 Hour 4 hours 1 Day 1 Week	
Sleep mode		Disable Use Sleep Delay (default)	Use this feature to customize the sleep mode settings for this product. Select Use Sleep Delay to set the product to enter sleep mode after the delay that is specified in the Time/Scheduling menu.
Manage Supplies	Replace Black Cartridge	Stop at low Stop at out Override at out (default)	Use this menu to carry out administrative supply management tasks such as changing the threshold when supplies should be ordered.
	Supply Low/Order Threshold	Select a value in the range.	

Initial Setup menu

Administration > Initial Setup

The **Initial Setup** menu contains the submenus shown:

- **Networking and I/O** menu
- **Fax Setup** menu
- **E-mail Setup** menu



NOTE: Values shown with "(default)" are the factory-default values. Some menu items have no default.

Networking and I/O

Administration > Initial Setup > Networking and I/O

Table 2-9 Networking and I/O

Menu item	Submenu item	Values	Description
I/O Timeout		Select a value in the range. The factory default setting is 15 seconds.	I/O timeout refers to the elapsed time before a print job fails. If the stream of data that the product receives for a print job gets interrupted, this setting indicates how long the product will wait before it reports that the job has failed.
Embedded Jetdirect	See Table 2-10 Jetdirect menus on page 26 for the list of options.		
EIO <X> Jetdirect			

Table 2-10 Jetdirect menus

Menu item	Submenu item	Submenu item	Values and Description
TCP/IP	Enable		Off: Disable the TCP/IP protocol. On (default): Enable the TCP/IP protocol.
	Host Name		An alphanumeric string, up to 32 characters, used to identify the product. This name is listed on the HP Jetdirect configuration page. The default host name is NPIxxxxxx, where xxxxxx is the last six digits of the LAN hardware (MAC) address.

Table 2-10 Jetdirect menus (continued)

Menu item	Submenu item	Submenu item	Values and Description
	IPv4 Settings	Config Method	Specifies the method by which TCP/IPv4 parameters for the HP Jetdirect print server will be configured. Bootp: Use BootP (Bootstrap Protocol) for automatic configuration from a BootP server. DHCP (Default): Use DHCP (Dynamic Host Configuration Protocol) for automatic configuration from a DHCPv4 server. If selected and a DHCP lease exists, DHCP Release and DHCP Renew menus are available to set DHCP lease options. Auto IP: Use automatic link-local IPv4 addressing. An address in the form 169.254.x.x is assigned automatically. Manual: Use the Manual Settings menu to configure TCP/IPv4 parameters.
		DHCP Release	This menu appears if Config Method was set to DHCP and a DHCP lease for the print server exists. No (default): The current DHCP lease is saved. Yes: Release the current IP address. Note that the printer will lose network connectivity until it reboots at which point it may have a new address.
		DHCP Renew	This menu appears if Config Method was set to DHCP and a DHCP lease for the print server exists. No (default): The print server does not request to renew the DHCP lease. Yes: The print server renews the lease on its IP address.
		Manual Settings	(Available only if Config Method is set to Manual) Configure parameters directly from the printer control panel: IP Address: The unique IP address of the printer (n.n.n.n), where n is a value from 0 to 255. Subnet Mask: The subnet mask for the printer (m.m.m.m), where m is a value from 0 to 255. Syslog Server: The IP address of the syslog server used to receive and log syslog messages. Default Gateway: The IP address of the gateway or router used for communications with other networks. Idle Timeout: The time period, in seconds, after which an idle TCP print data connection is closed (default is 270 seconds, 0 disables the timeout).

Table 2-10 Jetdirect menus (continued)

Menu item	Submenu item	Submenu item	Values and Description
		Default IP	Specify the IP address to default to when the print server is unable to obtain an IP address from the network during a forced TCP/IP reconfiguration (for example, when manually configured to use BootP or DHCP). Auto IP: A link-local IP address 169.254.x.x is set. Legacy: The address 192.0.0.192 is set, consistent with older HP Jetdirect devices.
		Primary DNS	Specify the IP address (n.n.n.n) of a Primary DNS Server.
		Secondary DNS	Specify the IP address (n.n.n.n) of a Secondary Domain Name System (DNS) Server.
	IPv6 Settings	Enable	Use this item to enable or disable IPv6 operation on the print server. Off (default): IPv6 is disabled. On: IPv6 is enabled.
		Address	Use this item to manually configure an IPv6 address. Manual Settings: Use the Manual Settings menu to enable and manually configure a TCP/ IPv6 address.
		DHCPV6 Policy	Router Specified (Default): The stateful auto-configuration method to be used by the print server is determined by a router. The router specifies whether the print server obtains its address, its configuration information, or both from a DHCPv6 server. Router Unavailable: If a router is not available, the print server should attempt to obtain its stateful configuration from a DHCPv6 server. Always: Whether or not a router is available, the print server always attempts to obtain its stateful configuration from a DHCPv6 server.
		Primary DNS	Use this item to specify an IPv6 address for a primary DNS server that the print server should use.
		Manual Settings	Use this item to manually set IPv6 addresses on the print server. Enable: Select this item and choose On to enable manual configuration, or Off to disable manual configuration. Address: Use this item to type a 32 hexadecimal digit IPv6 node address that uses the colon hexadecimal syntax.

Table 2-10 Jetdirect menus (continued)

Menu item	Submenu item	Submenu item	Values and Description
	Proxy Server		Specifies the proxy server to be used by embedded applications in the product. A proxy server is typically used by network clients for Internet access. It caches Web pages and provides a degree of Internet security for those clients. To specify a proxy server, enter its IPv4 address or fully-qualified domain name. The name can be up to 255 octets. For some networks, you may need to contact your Independent Service Provider (ISP) for the proxy server address.
	Proxy Port		Type the port number used by the proxy server for client support. The port number identifies the port reserved for proxy activity on your network, and can be a value from 0 to 65535.
IPX/SPX	Enable		Off: Disable the IPX/SPX protocol. On (default): Enable the IPX/SPX protocol.
	Frame Type		Selects the frame-type setting for your network. Auto (Default): Automatically sets and limits the frame type to the first one detected. EN_8023, EN_II, EN_8022, and EN_SNAP: Frame-type selections for Ethernet networks.
A Talk	Enable		Off : Disable the AppleTalk protocol. On (default): Enable the AppleTalk protocol.
DLC/LLC	Enable		Off : Disable the DLC/LLC protocol. On (default): Enable the DLC/LLC protocol.

Table 2-10 Jetdirect menus (continued)

Menu item	Submenu item	Submenu item	Values and Description
Security	Print Sec Page		Yes: Prints a page that contains the current security settings on the HP Jetdirect print server.
			No (default): A security settings page is not printed.
	Secure Web		For configuration management, specify whether the embedded Web server will accept communications using HTTPS (Secure HTTP) only, or both HTTP and HTTPS.
			HTTPS Required (Default): For secure, encrypted communications, only HTTPS access is accepted. The print server will appear as a secure site. HTTP/HTTPS optional: Access using either HTTP or HTTPS is permitted.
	IPsec or Firewall		Specify the IPsec or Firewall status on the print server.
			Keep: IPsec/Firewall status remains the same as currently configured. Disable (Default): IPsec/Firewall operation on the print server is disabled.
	Reset Security		Specify whether the current security settings on the print server will be saved or reset to factory defaults.
			No (default): The current security settings are maintained. Yes: Security settings are reset to factory defaults.

Table 2-10 Jetdirect menus (continued)

Menu item	Submenu item	Submenu item	Values and Description
Diagnostics	Embedded Tests		This menu provides tests to help diagnose network hardware or TCP/IP network connection problems. Embedded tests help to identify whether a network fault is internal or external to the product. Use an embedded test to check hardware and communication paths on the print server. After you select and enable a test and set the execution time, you must select Execute to initiate the test. Depending on the execution time, a selected test runs continuously until either the product is turned off, or an error occurs and a diagnostic page is printed.
		LAN HW Test	CAUTION: Running this embedded test will erase your TCP/IP configuration. This test performs an internal loopback test. An internal loopback test will send and receive packets only on the internal network hardware. There are no external transmissions on your network. Select Yes to choose this test, or No to not choose it.
		HTTP Test	This test checks operation of HTTP by retrieving predefined pages from the product, and tests the embedded Web server. Select Yes to choose this test, or No to not choose it.
		SNMP Test	This test checks operation of SNMP communications by accessing predefined SNMP objects on the product. Select Yes to choose this test, or No to not choose it.
		Select All Tests	Use this item to select all available embedded tests. Select Yes to choose all tests. Select No to select individual tests.
		Data Path Test	This test helps to identify data path and corruption problems on an HP PostScript Emulation Universal Print Driver. It sends a predefined file to the product. However, the test is paperless; the file will not print. Select Yes to choose this test, or No to not choose it.
		Execution Time [H]	Use this item to specify the length of time (in hours) that an embedded test will be run. You can select a value from 1 to 60 hours. If you select zero (0), the test runs indefinitely until an error occurs or the product is turned off. Data gathered from the HTTP, SNMP, and Data Path tests is printed after the tests have completed.
		Execute	No: Do not initiate the selected tests. Yes: Initiate the selected tests.

Table 2-10 Jetdirect menus (continued)

Menu item	Submenu item	Submenu item	Values and Description
	Ping Test		This test is used to check network communications. This test sends link-level packets to a remote network host, then waits for an appropriate response. To run a ping test, set the following items:
		Dest Type	Specify whether the target product is an IPv4 or IPv6 node.
		Dest IP	IPv4: Type the IPv4 address. IPv6: Type the IPv6 address.
		Packet Size	Specify the size of each packet, in bytes, to be sent to the remote host. The minimum is 64 (default) and the maximum is 2048.
		Timeout	Specify the length of time, in seconds, to wait for a response from the remote host. The default is 1 and the maximum is 100.
		Count	Specify the number of ping test packets to send for this test. Select a value from 1 to 100. To configure the test to run continuously, select 0.
		Print Results	If the ping test was not set for continuous operation, you can choose to print the test results. Select Yes to print results. If you select No (default), results are not printed.
		Execute	Specify whether to initiate the ping test. Select Yes to initiate the test, or No to not run the test.

Table 2-10 Jetdirect menus (continued)

Menu item	Submenu item	Submenu item	Values and Description
	Ping Results		Use this item to view the ping test status and results using the control panel display. You can select the following items:
		Packets Sent	Shows the number of packets (0 - 65535) sent to the remote host since the most recent test was initiated or completed.
		Packets Received	Shows the number of packets (0 - 65535) received from the remote host since the most recent test was initiated or completed.
		Percent Lost	Shows the percent of ping test packets that were sent with no response from the remote host since the most recent test was initiated or completed.
		RTT Min	Shows the minimum detected round-trip time (RTT), from 0 to 4096 milliseconds, for packet transmission and response.
		RTT Max	Shows the maximum detected round-trip time (RTT) from 0 to 4096 milliseconds for packet transmission and response.
		RTT Average	Shows the average round-trip-time (RTT), from 0 to 4096 milliseconds for packet transmission and response.
		Ping In Progress	Shows whether a ping test is in progress. Yes indicates a test in progress, and No indicates that a test completed or was not run.
		Refresh	When viewing the ping test results, this item updates the ping test data with current results. Select Yes to update the data, or No to maintain the existing data. However, a refresh automatically occurs when the menu times out or you manually return to the main menu.

Table 2-10 Jetdirect menus (continued)

Menu item	Submenu item	Submenu item	Values and Description
Link Speed			The link speed and communication mode of the print server must match the network. The available settings depend on the product and installed print server. Select one of the following link configuration settings: CAUTION: If you change the link setting, network communications with the print server and network device might be lost. Auto (default): The print server uses auto-negotiation to configure itself with the highest link speed and communication mode allowed. If auto-negotiation fails, either 100TX HALF or 10TX HALF is set depending on the detected link speed of the hub/switch port. (A 1000T half-duplex selection is not supported.) 10T Half: 10 Mbps, half-duplex operation 10T Full: 10 Mbps, full-duplex operation 100TX Half: 100 Mbps, half-duplex operation 100TX Full: 100 Mbps, full-duplex operation 100TX Auto: Limits auto-negotiation to a maximum link speed of 100 Mbps. 1000TX Full: 1000 Mbps, full-duplex operation
Print Protocols			Use this item to print a page that lists the configuration of the following protocols: IPX/SPX, Novell NetWare, AppleTalk, DLC/LLC.

Fax Setup

Administration > Initial Setup > Fax Setup



NOTE: This menu is available if the fax accessory is installed.

Table 2-11 Fax Setup menu

Menu item	Submenu item	Submenu item	Values	Description
Required Settings	Country/Region		(Countries/regions listed)	Configure the settings that are legally required for outgoing faxes.
	Date/Time			
	Fax Header Information	Phone Number		
		Company Name		
PC Fax Send			Disabled Enabled (default)	Use this feature to enable or disable PC Fax Send. PC Fax Send enables users to send faxes through the product from their computers if they have the Send Fax driver installed.

Table 2-11 Fax Setup menu (continued)

Menu item	Submenu item	Submenu item	Values	Description
Fax Send Settings	Fax Dial Volume		Off	Use this feature to set the volume of the tones that you hear while the product dials the fax number.
			Low (default)	
			High	
	Error Correction Mode		Enabled (default)	When Error Correction Mode is enabled and an error occurs during fax transmission, the product sends or receives the error portion again.
			Disabled	
	JBIG Compression		Enabled (default)	JBIG compression reduces fax-transmission time, which can result in lower phone charges. However, using JBIG compression sometimes causes compatibility problems with older fax machines. If this occurs, turn off JBIG compression.
			Disabled	
	Maximum Baud Rate		Select a value from the list. The default is 33.6K.	Use this feature to set the maximum baud rate for receiving faxes. This can be used as a diagnostic tool for troubleshooting fax problems.
	TCF T.30 Delay Timer		Default (default)	This setting should be left at the default value and only changed when directed by an HP technical support agent. Adjustment procedures associated with this setting are beyond the scope of this guide.
			Custom	
	TCF Extend		Default (default)	This setting should be left at the default value and only changed when directed by an HP technical support agent. Adjustment procedures associated with this setting are beyond the scope of this guide.
			Custom	
	Dialing Mode		Tone (default)	Select whether the product should use tone or pulse dialing.
			Pulse	
	Redial On Busy		The range is between 0 and 9. The factory default is 3 times.	Type the number of times the product should attempt to redial if the line is busy.
	Redial On No Answer		Never (default)	Use this feature to specify the number of times the product should attempt to dial if the recipient fax number does not answer.
			Once	
			Twice	

Table 2-11 Fax Setup menu (continued)

Menu item	Submenu item	Submenu item	Values	Description
	Redial Interval		The range is between 1 and 5 minutes. The factory default is 5 minutes.	Use this feature to specify the number of minutes between dialing attempts if the recipient number is busy or not answering.
	Detect Dial Tone		Enabled Disabled (default)	Use this feature to specify whether the product should check for a dial tone before sending a fax.
	Dialing Prefix		Off (default) Custom	Use this feature to specify a prefix number that must be dialed when sending faxes from the product.
	Billing Codes		Off (default) Custom	When billing codes are enabled, a prompt appears that asks the user to enter the billing code for an outgoing fax. The range is between 1 and 16 digits. The default is 1 digit.
Fax Receive Settings	Rings To Answer		The range varies by location. The factory default is 2 rings.	Use this feature to specify the number of rings that must occur before the fax modem answers.
	Ring Interval		Default (default) Custom	This setting is used to adjust for some PBX ring signals. Change this setting only when directed by an HP technical support agent.
	Ring Frequency		Default (default) Custom	This setting should be left at the default value and only changed when directed by an HP technical support agent. Adjustment procedures associated with this setting are beyond the scope of this guide.
	Ringer Volume		Off Low (default) High	Set the volume for the fax ring-tone.
	Blocked Fax Numbers	Add Blocked Numbers	Type the fax number to add.	Use this feature to add or delete numbers from the blocked fax list. The blocked fax list can contain up to 30 numbers. When the product receives a call from one of the blocked fax numbers, it deletes the incoming fax. It also logs the blocked fax in the activity log along with job-accounting information.
		Remove Blocked Numbers	Select a fax number to remove.	
		Clear All Blocked Numbers	No (default) Yes	

E-mail Setup

Administration > Initial Setup > E-mail Setup

Use this menu to enable the e-mail feature and to configure basic e-mail settings.

 **NOTE:** To configure advanced e-mail settings, use the embedded Web server. For more information, see [Embedded Web server on page 68](#).

Table 2-12 E-mail Setup menu

Menu item	Values	Description
Address Validation	On (default) Off	This option enables the product to check e-mail syntax when you type an e-mail address. Valid e-mail addresses require the "@" sign and a dot (.).
Find Send Gateways		Search the network for SMTP gateways that the product can use to send e-mail.
SMTP Gateway	Enter a value.	Specify the IP address of the SMTP gateway that is used to send e-mail from the product.
Test Send Gateway		Test the configured SMTP gateway to see if it is functional.

Send Setup menu

Administration > Initial Setup > Send Setup

Table 2-13 Send Setup menu

Menu item	Values	Description
Replicate MFP	Enter a value (IP Address).	Copy the local Send settings from one product to another.
Allow Transfer to New DSS	Off On (default)	Use this feature to allow the transfer of the product from one HP Digital Sending Software (DSS) server to another. HP DSS is a software package that handles digital sending tasks such as faxing, e-mail, and sending a scanned document to a network folder.
Allow Use of Digital Send Service	Off On (default)	This feature allows you to configure the product for use with an HP Digital Sending Software (DSS) server.
Fax Number Confirmation	Disable (default) Enable	Enable fax number confirmation for fax numbers that are entered at the product control panel. When fax number confirmation is enabled, the fax number must be entered twice to ensure that it was entered correctly.
Fax Number Speed Dial Matching	Disable (default) Enable	If this feature is enabled, the product tries to match any fax number entered with existing entries in the speed dial list. If a match is found, you can confirm the match and have the product complete the faxing action automatically.

Device Behavior menu

Administration > Device Behavior



NOTE: Values shown with "(default)" are the factory-default values. Some menu items have no default.

Table 2-14 Device Behavior menu

Menu item	Submenu item	Submenu item	Values	Description
Language			Select the language from the list.	Use this feature to select a different language for control-panel messages. When you select a new language, the keyboard layout might also change.
Key Press Sound			On (default) Off	Use this feature to specify whether you hear a sound when you touch the screen or press buttons on the control panel.
Inactivity Timeout			Type a value between 10 and 300 seconds. The factory default is 60 seconds.	Use this feature to specify the amount of time that elapses between any activity on the control panel and the product resetting to the default settings.
Warning/Error Behavior	Clearable Warnings		On Job (default)	Use this feature to set the amount of time that a clearable warning appears on the control panel.
	Continuable Events		Auto continue (10 seconds) (default) Press OK to continue	Use this option to configure the product behavior when the product encounters certain errors.
	Jam Recovery		Auto (default) On Off	Use this feature to configure how the product handles pages that are lost during a jam.
Tray Behavior	Use Requested Tray		Exclusively (default) First	Use this feature to control how the product handles jobs that have specified a specific input tray.
	Manually Feed Prompt		Always (default) Unless Loaded	Use this feature to indicate whether a prompt should appear when the type or size for a job does not match the specified tray and the product pulls from the multipurpose tray instead.
	PS Defer Media		Enabled (default) Disabled	Use this feature to choose either the postscript or HP paper-handling model.
	Use Another Tray		Enabled (default) Disabled	Use this feature to turn on or off the control-panel prompt to select another tray when the specified tray is empty.
	Size/Type Prompt		Display Do not display (default)	Use this feature to control whether the tray configuration message appears whenever a tray is opened or closed.
	Duplex Blank Pages		Auto (default) Yes	Use this feature to control how the product handles two-sided jobs (duplexing).

Table 2-14 Device Behavior menu (continued)

Menu item	Submenu item	Submenu item	Values	Description
[output device menu]				Use this menu to set the finishing options for the installed output device.
NOTE: This menu varies depending on the output device installed.				
General Copy Behavior	Hold Off Print Job		On	Prevents print jobs from beginning to print while a walk-up user is setting up a job.
			Off	
	Hold Off Time			Prevents non-copy print jobs from starting for a specified time after a copy job is completely printed.
	Scan Ahead		Enabled (default)	Use this feature to turn on no-wait scanning. With Scan Ahead enabled, the pages in the original document are scanned to disk and held until the product becomes available.
			Disabled	
Auto Print Interrupt		Enabled	When this feature is enabled, copy jobs can interrupt print jobs that are set to print multiple copies.	
		Disabled (Default)		
				The copy job is inserted into the print queue at the end of one copy of the print job. After the copy job is complete, the product continues printing the remaining copies of the print job.
Copy Interrupt		Enabled	When this feature is enabled, a copy job that is currently printing can be interrupted when a new copy job is started. You are prompted to confirm that you want to interrupt the current job.	
		Disabled (Default)		
Alternative Letterhead Mode		Off (default)	Enable this feature to load letterhead or preprinted paper into the tray the same way for all copy jobs, whether you are copying to one side of the sheet or to both sides of the sheet. When this option is selected, load the paper as you would for printing on both sides. The product speed slows to the speed required for printing on both sides.	
		On		

Table 2-14 Device Behavior menu (continued)

Menu item	Submenu item	Submenu item	Values	Description
General Printing Behavior	Override A4/Letter		No	Use this feature to print on letter-size paper when an A4 job is sent but no A4-size paper is loaded in the product (or to print on A4 paper when a letter-size job is sent but no letter-size paper is loaded). This option will also override A3 with ledger-size paper and ledger with A3-size paper.
			Yes (default)	
	Manual Feed		Enabled	When this feature is enabled, the user can select manual feed from the control panel as the paper source for a job.
			Disabled (default)	
	Edge-To-Edge Override		Enabled	Use the feature to turn the edge-to-edge mode on or off for all print jobs. This mode can be overridden inside a print job by an edge-to-edge PJL variable.
			Disabled (default)	
	Courier Font		Regular (default)	Use this feature to select which version of the Courier font you want to use.
			Dark	
	Wide A4		Enabled	Use this feature to change the printable area of A4-size paper. If you enable this option, eighty 10-pitch characters can be printed on a single line of A4 paper.
			Disabled (default)	
	Print PS Errors		Enabled	Use this feature to select whether a postscript (PS) error page is printed when the product encounters a PS error.
			Disabled (default)	
	Print PDF Errors		Enabled (default)	Use this feature to select whether a PDF error page is printed when the product encounters a PDF error.
			Disabled	
	Personality		Auto (default)	Select the printer language that the product should use.
			PCL	Normally you should not change the language. If you change the setting to a specific language, the product does not automatically switch from one language to another unless specific software commands are sent to the product.
			PDF	
			PS	

Table 2-14 Device Behavior menu (continued)

Menu item	Submenu item	Submenu item	Values	Description
	PCL	Form Length	Type a value between 5 and 128 lines. The factory default is 60 lines.	PCL is a set of printer commands that Hewlett-Packard developed to provide access to printer features.
		Orientation	Portrait (default) Landscape	Select the orientation that is most often used for print jobs. Select Portrait if the short edge is at the top, or select Landscape if the long edge is at the top.
		Font Source	Select the source from the list.	Use this feature to select the font source for the user-defined soft default font.
		Font Number	Type the font number. The range is between 0 and 999. The factory default is 0.	Use this feature to specify the font number for the user-soft default font using the source that is specified in the Font Source menu item. The product assigns a number to each font and lists it on the PCL font list (available from the Administration menu).
		Font Pitch	Type a value between 0.44 and 99.99. The factory default is 10.00.	If Font Source and Font Number indicate a contour font, then use this feature to select a default pitch (for a fixed-spaced font).
		Font Point Size	Type a value between 4.00 and 999.75. The factory default is 12.00.	If Font Source and Font Number indicate a contour font, then use this feature to select a default point size (for a proportional-spaced font).
		Symbol Set	PC-8 (default) (50 additional symbol sets from which to choose)	Use this feature to select any one of several available symbol sets from the control panel. A symbol set is a unique grouping of all the characters in a font.
		Append CR to LF	No (default) Yes	Use this feature to configure whether a carriage return (CR) is appended to each line feed (LF) encountered in backwards-compatible PCL jobs (pure text, no job control).
		Suppress Blank Pages	No (default) Yes	This option is for users who are generating their own PCL, which could include extra form feeds that would cause blank pages to be printed. When Yes is selected, form feeds are ignored if the page is blank.
		Media Source Mapping	Standard (default) Classic	Use this feature to select and maintain input trays by number when you are not using the product driver or when the software program has no option for tray selection.

Print Quality menu

Administration > Print Quality

 **NOTE:** Values shown with "(default)" are the factory-default values. Some menu items have no default.

Table 2-15 Print Quality menu

Menu item	Submenu item	Values	Description
Set Registration	Test Page	Print (button)	Print a test page for setting the registration. Follow the instructions that are printed on the page to adjust each tray.
	Source	All trays Tray <X>: <contents> Tray <X>: <contents> (choose a tray)	Use Set Registration to shift the margin alignment to center the image on the page from top to bottom and from left to right. You can also align the image on the front with the image printed on the back. Select the source input tray for printing the Set Registration page.
	Adjust Tray <X>	Shift from -20 to 20 along the X or Y axes. 0 is the default.	Perform the alignment procedure for each tray. When it creates an image, the product <i>scans</i> across the page from side to side as the sheet <i>feeds</i> from top to bottom into the product.
Fuser Modes	Standby Fuser Mode	125° Celsius	Set the temperature of the fuser when the product is in standby mode.
		Off	
	<Paper Type>		Configure the fuser mode associated with each media type.
	Restore Modes	Restore (button)	Restore the fuser modes to the default settings.
Resolution		300	Use this feature to select the print resolution.
		600	
		FastRes 1200 (default)	
		ProRes 1200	
REt		Off	Enable Resolution Enhancement technology (REt), which produces print output with smooth angles, curves, and edges. All print resolutions, including FastRes 1200, benefit from REt.
		Light	
		Medium (default)	
		Dark	
Economode		Enabled	When Economode is enabled, the product prints with a reduced amount of toner per page; however, the print quality of the page is reduced.
		Disabled (default)	
Toner Density		Choose from a range of 1 to 5. 3 is the default.	Lighten or darken the print on the page. 1 is the lightest and 5 is the darkest.
Small Paper Mode		Normal (default)	Choose Slow to adjust the product for printing narrow media.
		Slow	

Table 2-15 Print Quality menu (continued)

Menu item	Submenu item	Values	Description
Calibration/Cleaning	Create Cleaning Page	Create (button)	Generate a page for cleaning excess toner off the pressure roller in the fuser. The page has instructions that guide you through the cleaning process.
	Process Cleaning Page	Process (button)	Process the cleaning page that was created by using the Create Cleaning Page menu item. The process takes up to 2.5 minutes.

Troubleshooting menu

Administration > Troubleshooting

 **NOTE:** Many of the menu items under the Troubleshooting menu are for advanced troubleshooting purposes.

Table 2-16 Troubleshooting menu

Menu item	Submenu item	Submenu item	Values	Description
Event Log			Print	This shows the event codes and their corresponding engine cycles on the control-panel display.
Fax T.30 Trace (available if the fax accessory is installed)	Print T.30 Report			Print or configure the fax T.30 trace report. T. 30 is the standard that specifies handshaking, protocols, and error correction between fax machines.
	When to Print Report		Never auto print (default)	
			Print after any fax job	
			Print after fax send jobs	
			Print after any fax error	
			Print after send errors only	
			Print after receive errors only	
Fax Transmit Signal Loss (available if the fax accessory is installed)			A value between 0 and 30. The default is 0.	Set loss levels to compensate for phone-line signal loss. Do not modify this setting unless requested to do so by an HP service representative because it could cause the fax to stop functioning.
Fax V.34 (available if the fax accessory is installed)			Normal (default)	Disable V.34 modulations if several fax failures have occurred or if phone line conditions require it.
			Off	
Fax Speaker Mode (available if the fax accessory is installed)			Normal (default)	Use this feature to evaluate and diagnose fax issues by listening to the sounds of fax modulations.
			Diagnostic	

Table 2-16 Troubleshooting menu (continued)

Menu item	Submenu item	Submenu item	Values	Description
Paper Path Test	Test Page		Print	Generate a test page for testing the paper-handling features. Define the path for the test in order to test specific paper paths.
		Source	All trays	Specify whether the test page is printed from all trays or from a specific tray.
			Tray 1	
			Tray 2	
			(Additional trays are shown, if applicable.)	
	Destination	All bins	Select the output option for the test page. Send the test page to all output bins or only to a specific bin.	
		Stacker Bin		
		Standard Output Bin		
	Duplex	Off (default)	Select whether the duplexer should be included in the test.	
		On		
	Copies	1,10,50,100,500	Select how many pages should be sent from the specified source as part of the test.	
		Default=1		
Service Test		Follow the on-screen instructions.	Provides a series of prompts that the user can follow to discover if the printer is functioning properly. It also makes sure that paper is not in the paper path.	
Print/Stop Test		Continuous value from 0 to 60,000 milliseconds. Default: 0	Isolate faults by stopping the product during the print cycle and observing where in the process the image degrades. To run the test, specify a stop time. The next job that is sent to the product stops at the specified time in the process.	
Scanner Tests			A service technician can use this menu item to diagnose potential problems with the product scanner.	
Control Panel	LEDs	Verify that the components of the control panel are functioning correctly.		
	Display			
	Buttons			
	Touchscreen			

Resets menu

Administration > Resets

Table 2-17 Resets menu

Menu item	Values	Description
Clear Local Address Book	Clear (button)	Use this feature to clear all addresses from the address books that are stored on the product.
Clear Fax Activity Log	Yes No (default)	Use this feature to clear all events from the Fax Activity Log.
Restore Factory Telecom Setting	Restore (button)	Use this option to restore the telephone-related settings that are in the Initial Setup menu to factory default values.
Restore Factory Settings	Restore (button)	Use this feature to restore all product settings to their factory defaults.
Clear Maintenance Message	Clear (button)	Clear the Order maintenance kit and Replace maintenance kit warning messages.
Reset Supplies	New Maintenance Kit (Yes/No)	Notify the product that a new maintenance kit has been installed.
Lock Carriage	Lock (button)	Use the feature to lock the carriage. To unlock the carriage, turn the product off and then on.

Service menu

Administration > Service

The [Service](#) menu is locked and requires a PIN for access. This menu is intended for use by authorized service personnel. See [Service menu on page 326](#)

3 Paper and print media

- [Understand paper and print media use](#)
- [Supported paper and print media sizes](#)
- [Custom paper sizes](#)
- [Special paper or print media guidelines](#)
- [Load paper and print media](#)
- [Configure trays](#)
- [Select the output bin](#)

Understand paper and print media use

This product supports a variety of paper and other print media in accordance with the guidelines in this user guide. Paper or print media that does not meet these guidelines might cause the following problems:

- Poor print quality
- Increased jams
- Premature wear on the product, requiring repair

For best results, use only HP-brand paper and print media designed for laserjets or multiuse. Do not use paper or print media made for inkjet printers. Hewlett-Packard Company cannot recommend the use of other brands of media because HP cannot control their quality.

It is possible for paper to meet all of the guidelines in this user guide and still not produce satisfactory results. This might be the result of improper handling, unacceptable temperature and/or humidity levels, or other variables over which Hewlett-Packard has no control.

△ **CAUTION:** Using paper or print media that does not meet Hewlett-Packard's specifications might cause problems for the product, requiring repair. This repair is not covered by the Hewlett-Packard warranty or service agreements.

Supported paper and print media sizes

This product supports a number of paper sizes, and it adapts to various media.

 **NOTE:** To obtain best print results, select the appropriate paper size and type in your print driver before printing.

Table 3-1 Supported paper and print media sizes

Size	Dimensions	Tray 1, Letter R, A4	Trays 2 and 3, Letter R, A4	Tray 4, Letter R, A4	Stapler / Stacker lower bin
Letter	216 x 279 mm (8.5 x 11 in)	✓	✓	✓	✓
Legal	216 x 356 mm (8.5 x 14 in)	✓	✓	✓	✓
A4	210 x 297 mm (8.27 x 11.69 in)	✓	✓	✓	✓
Executive	184 x 267 mm (7.24 x 10.51 in)	✓	✓	✓	✓
Executive (JIS)	216 x 330 mm (8.5 x 13 in)				
A3	297 x 420 mm (11.69 x 16.54 in)	✓	✓	✓	
A5	148 x 210 mm (5.83 x 8.27 in)	✓	✓		✓
A6	105 x 148 mm (4.13 x 5.83 in)				
Statement	140 x 216 mm (5.5 x 8.5 in)				
11 x 17	279 x 432 mm (11 x 17 in)	✓	✓	✓	✓
12 x 18	305 x 457 mm (12 x 18 in)				
B4 (JIS)	257 x 364 mm (10.12 x 14.33 in)	✓	✓	✓	✓
RA3	305 x 430 mm (12.01 x 16.93 in)				
B5 (JIS)	182 x 257 mm (7.17 x 10.12 in)	✓	✓	✓	✓
8k	270 x 390 mm (10.63 x 15.35 in)				✓
16k	197 x 273 mm (7.75 x 10.75 in)				✓
Custom	Minimum: 98 x 191 mm (3.9 x 7.5 in) Maximum: 312 x 470 mm (12.3 x 18.5 in)	✓			
Custom	Minimum: 148 x 210 mm (5.8 x 8.2 in) Maximum: 297 x 431 mm (11.7 x 17 in)		✓	✓	

Table 3-2 Supported envelopes and postcards

Size	Dimensions	Tray 1, mailbox, stacker	Trays 2, 3, 4	Stapler
Envelope #10	105 x 241 mm (4.13 x 9.49 in)	✓		
Envelope DL	110 x 220 mm (4.33 x 8.66 in)	✓		

Table 3-2 Supported envelopes and postcards (continued)

Size	Dimensions	Tray 1, mailbox, stacker	Trays 2, 3, 4	Stapler
Envelope C5	162 x 229 mm (6.93 x 9.84 in)	✓		
Envelope B5	176 x 250 mm (6.7 x 9.8 in)	✓		
Envelope Monarch	98 x 191 mm (3.9 x 7.5 in)	✓		
Post Card	100 x 148 mm (3.94 x 5.83 in)	✓		
Double Post Card	148 x 200 mm (5.83 x 7.87 in)	✓		
Postcard (US)	88.9 x 139.7 mm (3.5 x 5.5 in)	✓		
Postcard (European)	105 x 148 mm (4.13 x 5.83 in)	✓		

Custom paper sizes

This product supports a variety of custom paper sizes. Supported custom sizes are sizes that are within the minimum- and maximum-size guidelines for the product but are not listed in the supported paper sizes table. When using a supported custom size, specify the custom size in the print driver, and load the paper in a tray that supports custom sizes.

Special paper or print media guidelines

This product supports printing on special media. Use the following guidelines to obtain satisfactory results. When using special paper or print media, be sure to set the type and size in your print driver to obtain the best print results.

- △ **CAUTION:** HP LaserJet printers use fusers to bond dry toner particles to the paper in very precise dots. HP laser paper is designed to withstand this extreme heat. Using inkjet paper not designed for this technology could damage your printer.

Media type	Do	Do not
Envelopes	• Store envelopes flat. • Use envelopes where the seam extends all the way to the corner of the envelope. • Use peel-off adhesive strips that are approved for use in laser printers.	• Do not use envelopes that are wrinkled, nicked, stuck together, or otherwise damaged. • Do not use envelopes that have clasps, snaps, windows, or coated linings. • Do not use self-stick adhesives or other synthetic materials.
Labels	• Use only labels that have no exposed backing between them. • Use Labels that lie flat. • Use only full sheets of labels.	• Do not use labels that have wrinkles or bubbles, or are damaged. • Do not print partial sheets of labels.
Transparencies	• Use only transparencies that are approved for use in laser printers. • Place transparencies on a flat surface after removing them from the product.	• Do not use transparent print media not approved for laser printers.
Letterhead or preprinted forms	• Use only letterhead or forms approved for use in laser printers.	• Do not use raised or metallic letterhead.
Heavy paper	• Use only heavy paper that is approved for use in laser printers and meets the weight specifications for this product.	• Do not use paper that is heavier than the recommended media specification for this product unless it is HP paper that has been approved for use in this product.
Glossy or coated paper	• Use only glossy or coated paper that is approved for use in laser printers.	• Do not use glossy or coated paper designed for use in inkjet products.

Load paper and print media

This section contains information about loading standard- and custom-size media into the four input trays.

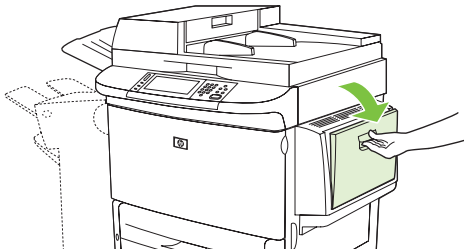
- △ **CAUTION:** To avoid a jam, never add or remove paper from Tray 1 or open Tray 2, Tray 3, or Tray 4 while printing or copying from that tray. To avoid damaging the product, print labels, envelopes, and transparencies from Tray 1 only. Send labels, envelopes, and transparencies to the upper bin. Print on only one side of labels, envelopes, and transparencies.

Load Tray 1

Tray 1 holds up to 100 sheets of paper or 10 envelopes. For more information about supported media, see [Supported paper and print media sizes on page 51](#).

1. Open Tray 1.

Figure 3-1 Load Tray 1 (1 of 3)



2. Load paper according to size and finishing options.

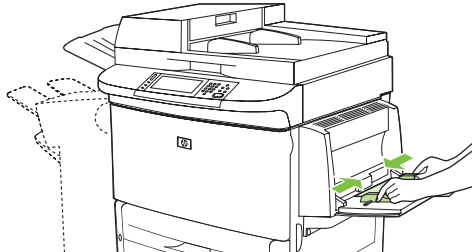
Figure 3-2 Load Tray 1 (2 of 3)



- △ **CAUTION:** To avoid jams, print sheets of labels one sheet at a time.

3. Adjust the paper guides so they lightly touch the paper stack, but do not bend the paper.

Figure 3-3 Load Tray 1 (3 of 3)



4. Make sure the paper fits under the tabs on the guides and not above the load level indicators.

- 📄 **NOTE:** If printing on A3 or 11 x 17 paper, or other long media, also pull out the tray extension until it stops.

Load Trays 2, 3, and 4

Trays 2 and 3 hold up to 500 sheets of standard media. Tray 4 holds up to 2,000 sheets of standard media. For information about paper specifications, see [Supported paper and print media sizes on page 51](#).

Load detectable standard-size paper in Trays 2, 3, and 4

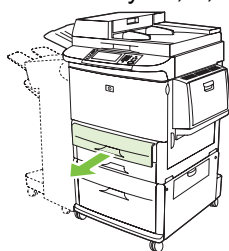
Follow this procedure to load detectable standard-size paper in the tray. The following are the detectable sizes, which are marked inside the tray:

- A4
- Letter
- A3
- Legal
- Executive
- 11 x 17
- B4 (JIS)
- B5 (JIS)
- A4-Rotated
- Letter-Rotated

△ **CAUTION:** To avoid a jam, never add or remove paper from a tray while printing from that tray.

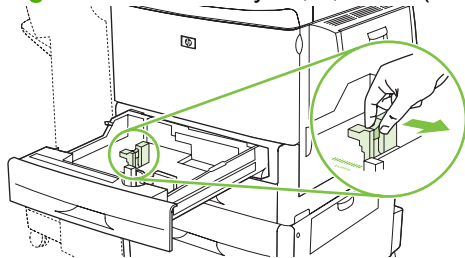
1. Open the tray until it stops.

Figure 3-4 Load Trays 2, 3, and 4 (1 of 6)



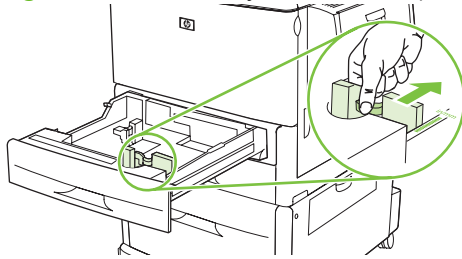
2. Adjust the left (Y) paper guide by pressing the tab on the guide, and set the guide to the correct paper size.

Figure 3-5 Load Trays 2, 3, and 4 (2 of 6)



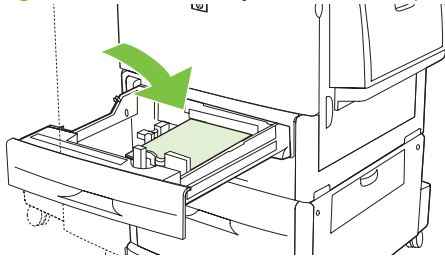
3. Adjust the front (X) paper guide by pressing the tab on the guide, and set the guide to the correct paper size.

Figure 3-6 Load Trays 2, 3, and 4 (3 of 6)



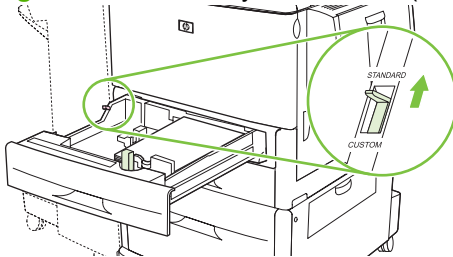
4. Load (orient) the paper according to size.

Figure 3-7 Load Trays 2, 3, and 4 (4 of 6)



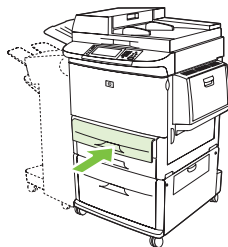
5. Set the Custom/Standard switch to Standard.

Figure 3-8 Load Trays 2, 3, and 4 (5 of 6)



6. Close the tray. The product control panel might show the tray media type and size. If the configuration is not correct, touch **Modify** on the control panel. If the configuration is correct, touch **OK**.

Figure 3-9 Load Trays 2, 3, and 4 (6 of 6)



Load undetectable standard-size paper in Trays 2, 3, and 4

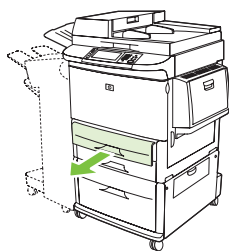
Follow this procedure to load undetectable standard-size paper in the tray. The following are the undetectable sizes:

- 8K
- 16K
- Statement
- JIS Executive
- 8.5 x 13 (216 x 330 mm)

△ **CAUTION:** To avoid a jam, never add or remove paper from a tray while printing from that tray.

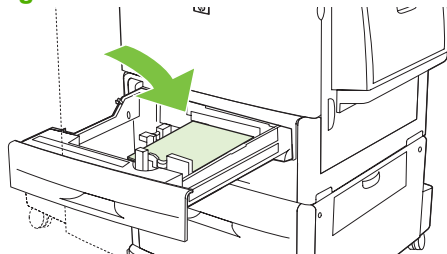
1. Open the tray until it stops.

Figure 3-10 Load undetectable standard-size paper in Trays 2, 3, and 4 (1 of 6)



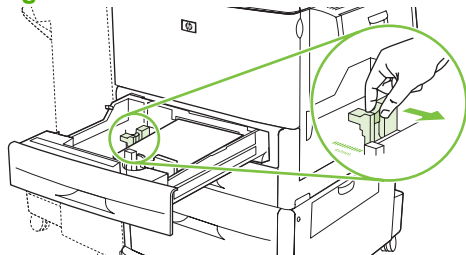
2. Press the tab on the front paper guide, and slide the guide all the way out.
3. Press the tab on the left paper guide, and slide the guide all the way out.
4. Load (orient) the paper according to size.

Figure 3-11 Load undetectable standard-size paper in Trays 2, 3, and 4 (2 of 6)



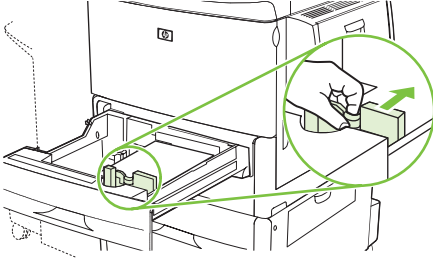
5. Adjust the left paper guide by pressing the tab on the guide, and slide the guide until it gently touches the paper.

Figure 3-12 Load undetectable standard-size paper in Trays 2, 3, and 4 (3 of 6)



6. Adjust the front paper guide by pressing the tab on the guide, and slide the guide until it gently touches the paper.

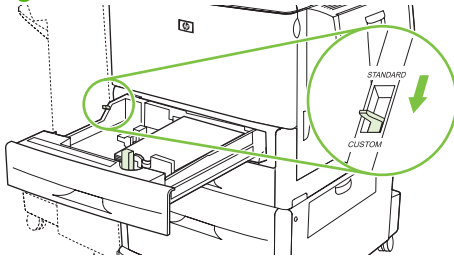
Figure 3-13 Load undetectable standard-size paper in Trays 2, 3, and 4 (4 of 6)



 **NOTE:** When loading Tray 4, make sure that the paper guide lock is in the up position.

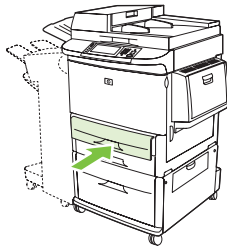
7. Set the Custom/Standard switch to Custom.

Figure 3-14 Load undetectable standard-size paper in Trays 2, 3, and 4 (5 of 6)



8. Close the tray. The product control panel might show the tray media type and size. If the configuration is not correct, touch **Modify** on the control panel. If the configuration is correct, touch **OK**.

Figure 3-15 Load undetectable standard-size paper in Trays 2, 3, and 4 (6 of 6)



Load custom media in Trays 2, 3, and 4

Use the following procedure to load custom-size paper in the tray.

△ **CAUTION:** To avoid a jam, never add or remove paper from a tray while printing from that tray.

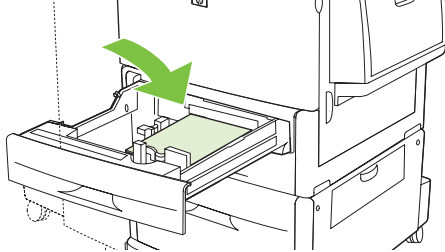
1. Open the tray until it stops.

Figure 3-16 Load custom media in Trays 2, 3, and 4 (1 of 6)



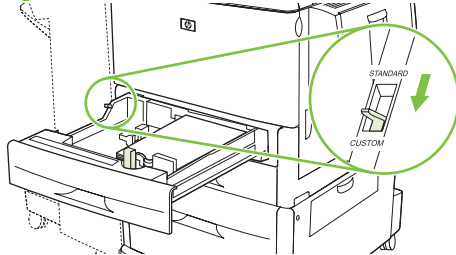
2. Press the tab on the front (X) paper guide and slide the guide all the way out.
3. Press the tab on the left (Y) paper guide and slide the guide all the way out.
4. Load (orient) the paper according to size.

Figure 3-17 Load custom media in Trays 2, 3, and 4 (2 of 6)



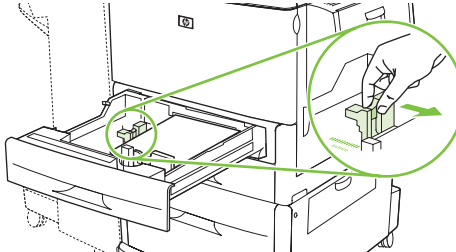
5. Set the Custom/Standard switch to Custom.

Figure 3-18 Load custom media in Trays 2, 3, and 4 (3 of 6)



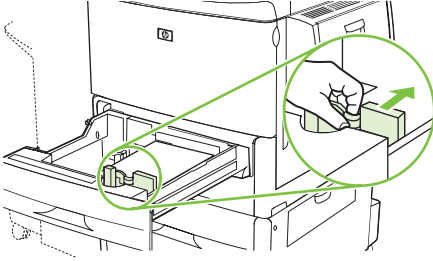
6. Adjust the left (Y) paper guide by pressing the tab on the guide, and slide the guide until it gently touches the paper.

Figure 3-19 Load custom media in Trays 2, 3, and 4 (4 of 6)



7. Adjust the front (X) paper guide by pressing the tab on the guide, and slide the guide until it gently touches the paper.

Figure 3-20 Load custom media in Trays 2, 3, and 4 (5 of 6)

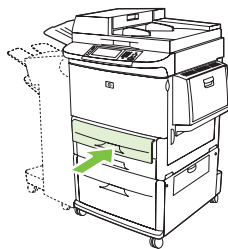


8. Note the orientation of the paper as well as the value of the X dimension and the Y dimension. The X and Y dimensions are marked in the tray. You will need this information for a later step.

 **NOTE:** When loading Tray 4, make sure that the paper guide lock is in the up position.

9. Close the tray. The product control panel might show the tray media type and size. If the configuration is not correct, touch **Modify** on the control panel. If the configuration is correct, touch **OK**.

Figure 3-21 Load custom media in Trays 2, 3, and 4 (6 of 6)



Configure trays

The product might automatically prompt you to configure a tray for type and size when you load media into the tray.

The following message appears on the control panel: **Tray <X> [type] [size] To change size or type, touch “Modify”. To accept, touch “OK”.**

 **NOTE:** The prompt does not appear if you are printing from Tray 1 and Tray 1 is configured for **Any Size** and **Any Type**.

NOTE: If you have used other HP LaserJet printer models, you might be accustomed to configuring Tray 1 to **First** mode or **Cassette** mode. On the HP LaserJet M9059 MFP, setting Tray 1 size and type to **Any Size** is equivalent to **First** mode. Setting size or type for Tray 1 to a setting other than **Any Size** is equivalent to **Cassette** mode.

Configure a tray when loading media

1. Load media in the tray. Close the tray if you are using Tray 2, 3, or 4.
2. If the tray configuration message appears, touch **OK** to accept the detected size, or touch **Modify** to choose a different paper size.
3. If modifying the tray configuration, select the size.

 **NOTE:** The product automatically detects most media sizes in Trays 2, 3, and 4.

4. If modifying the tray configuration, select the paper type.
5. Touch **Exit**.

Configure a tray by using the Supplies Status button on the touchscreen

You can also configure the trays for type and size without a prompt from the product.

1. Scroll to and touch **Supplies Status**.
2. Touch the desired tray.
3. Touch **Modify**.
4. Select the size and type. If you select a custom type, use the numeric keypad to set the X dimension and the Y dimension, and then touch **OK**.
5. Touch **OK**.
6. Touch **OK** again.

Select the media by source, type, or size

In the Microsoft Windows operating system, three settings affect how the print driver selects media when you send a print job. *Source*, *Type*, and *Size* settings appear in the **Page Setup**, **Print**, or **Print Properties** dialog boxes in most software programs. Unless you change these settings, the product automatically selects a tray using the default settings.

Source

To print by *Source*, select a specific tray from which to pull. The product will try to print from this tray regardless of the type or size in the tray. If the tray you select is configured for a type or size that does not match your print job, the product waits until you load the expected media in the tray. It begins printing as soon as the media is loaded.

Type and Size

With *Type* or *Size* selected, the product pulls from whichever tray has the correct type and size of media. This is similar to locking out trays and helps protect special media from accidental use.

For example, if you select plain paper, the product will pull only from a tray that has plain paper; it will not pull from a tray that has letterhead.

Selecting media by Type and Size can improve print quality for heavy paper, glossy paper, or transparencies. Always print by Type for special print media, such as labels or transparencies; print by Size for envelopes.

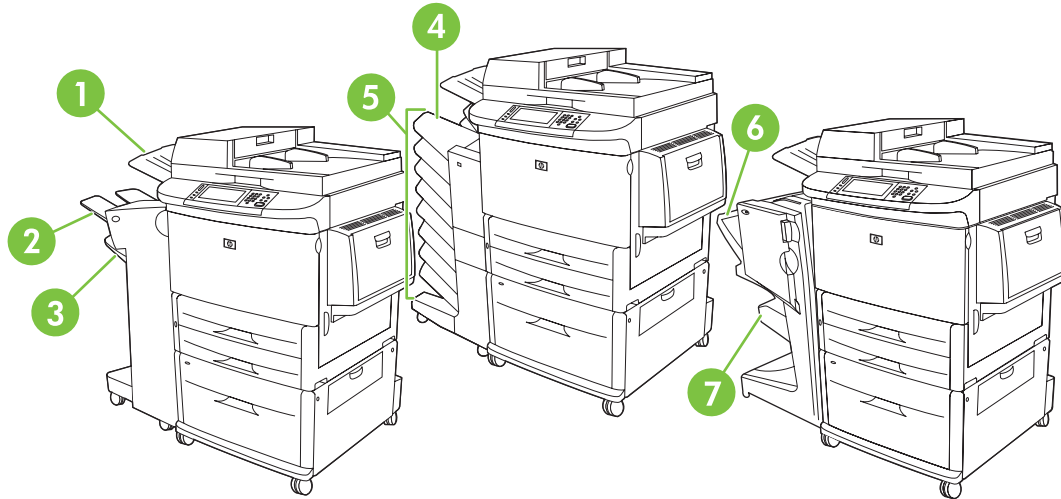
To print by Type or Size, select Type or Size from the **Page Setup** dialog box, the **Print** dialog box, or the **Print Properties** dialog box depending on the software program.

 **TIP:** If you print on a certain type or size of media often, configure a tray for that type or size. Then, whenever you select that type or size, the product always uses the same tray.

Select the output bin

The product has at least two output bin locations: one on the ADF (callout 1) and one or more on the output device.

Figure 3-22 Output bins



For best results, select an output location using the software program or print driver.

Stacker or stapler/stacker output bins

The 3,000-sheet stacker or the 3,000-sheet stapler/stacker have two output bins: the upper bin (callout 2) face up and the lower bin (callout 3) face down.

The upper bin holds up to 100 sheets of paper. It includes a sensor that causes the product to stop when it is full. When the bin is emptied, the product resumes.

The lower bin is the default bin. It holds up to 3,000 sheets of paper and can stack or staple jobs.

8-bin mailbox output bins

The 8-bin mailbox has one face-up upper bin (callout 4) and eight face-down bins (callout 5).

The upper bin holds up to 125 sheets of paper, and each face down bin holds up to 250 sheets of paper.

The network administrator can assign the eight face down bins to individual users or workgroups.

Multifunction finisher output bins

The multifunction finisher includes an upper bin (callout 6) and the lower booklet bin (callout 7).

The upper bin is the default bin. It can hold up to 1,000 sheets of paper and can offset each job as it is stacks. It can deliver unstapled jobs face up or face down. It also can staple documents up to 50 sheets each.

The lower bin is the booklet bin. It can fold and saddle stitch booklets of up to 10 sheets of paper.

Select an output location

Printing

It is recommended that you select an output location (bin) through your program or driver. Where and how you make selections depends on your program or driver. Set the default output location from the product control panel.

1. Scroll to and touch **Administration**.
2. Touch **Default Job Options**.
3. Touch **Default Print Options**.
4. Touch **Output Bin**.
5. Touch the desired output bin.

Copying

You can set and override the current default output location (bin) from the product control panel for copy jobs:

1. Scroll to and touch **Copy**.
2. Touch **More Options**.
3. Touch **Output Bin**.
4. Touch the desired output bin.

Set the default output bin for copy jobs:

1. Scroll to and touch **Administration**.
2. Touch **Default Job Options**.
3. Touch **Default Copy Options**.
4. Touch **Output Bin**.
5. Touch the desired output bin.

4 Manage and maintain

- [Information pages](#)
- [Embedded Web server](#)
- [Use HP Web Jetadmin software](#)
- [HP Printer Utility for Macintosh](#)
- [Security features](#)
- [Set the real-time clock](#)
- [Clean the product](#)
- [Configure alerts](#)
- [Manage supplies](#)
- [Printer maintenance kit](#)
- [Manage memory](#)
- [Economy settings](#)

Information pages

Information pages provide details about the product and its current configuration. The following table provides the instructions for printing the information pages.

Page description	How to print the page from the product control panel
Menu map Shows the control-panel menus and available settings	1. From the Home screen, touch Administration. 2. Touch Information. 3. Touch Configuration/Status Pages. 4. Touch Administration Menu Map. 5. Touch Print. The content of the menu map varies, depending on the options currently installed in the product. For a complete list of control panel menus and possible values, see Use the control panel on page 12.
Configuration page Shows product settings and installed accessories	1. From the Home screen, touch Administration. 2. Touch Information. 3. Touch Configuration/Status Pages. 4. Touch Configuration Page. 5. Touch Print. NOTE: If the product contains an HP Jetdirect print server or an optional hard disk drive, additional configuration pages print that provide information about those devices.
Supplies status page Shows status of print-cartridge life and status of maintenance kit	1. From the Home screen, touch Administration. 2. Touch Information. 3. Touch Configuration/Status Pages. 4. Touch Supplies Status Page. 5. Touch Print. NOTE: If you are using non-HP supplies, the supplies status page might not show the remaining life for those supplies.
Usage page Shows a page count for each size of paper printed, the number of one-sided (simplex) or two-sided (duplex) pages, and the average percentage of coverage	1. From the Home screen, touch Administration. 2. Touch Information. 3. Touch Configuration/Status Pages. 4. Touch Usage Page. 5. Touch Print.

Page description	How to print the page from the product control panel
File directory Contains information for any mass storage devices, such as flash drives, memory cards, or hard disks, that are installed in the product	1. From the Home screen, touch Administration. 2. Touch Information. 3. Touch Configuration/Status Pages. 4. Touch File Directory. 5. Touch Print.
Fax reports Five reports show fax activity, fax calls, billing codes, blocked fax numbers, and speed-dial numbers. NOTE: Fax reports are available only on models that have the fax accessory installed.	1. From the Home screen, touch Administration. 2. Touch Information. 3. Touch Fax Reports. 4. Touch one of the following buttons to print the corresponding report: ◦ Fax Activity Log ◦ Fax Call Report ◦ Billing Codes Report ◦ Blocked Fax List ◦ Speed Dial List 5. Touch Print. For more information, see the fax guide that came with the product.
Font lists Shows which fonts are currently installed in the product	1. From the Home screen, touch Administration. 2. Touch Information. 3. Touch Sample Pages/Fonts. 4. Touch either PCL Font List or PS Font List. 5. Touch Print. NOTE: The font lists also show which fonts reside on a hard disk accessory or DIMM.

Embedded Web server

Use the embedded Web server to view product and network status and to manage printing functions from your computer:

- View product status information.
- Set the type of media that is loaded in each tray.
- Determine the remaining life for all supplies.
- View and change tray configurations.
- View and change the product control-panel menu configuration.
- View and print internal pages.
- Receive notification of product and supplies events.
- View and change network configuration.

The following browsers are required for use of the embedded Web server:

- For Windows: Microsoft Internet Explorer 5.01 or later or Netscape 6.2 or later
- For Mac OS, and Linux: Netscape 6.2 or later
- For HP-UX 10 and HP-UX 11: Netscape Navigator 4.7

The embedded Web server is available whenever the product is connected to an IP-based network. It does not support IPX-based connections. It does not require Internet access.



NOTE: For complete information about using the embedded Web server, see the *Embedded Web Server User Guide*.

Open the embedded Web server by using a network connection

1. In a supported Web browser on your computer, type the device IP address or host name in the address/URL field. To find the IP address or host name, print a configuration page. See [Information pages on page 66](#).



NOTE: After you open the URL, you can bookmark it so that you can return to it quickly in the future.

2. The embedded Web server has four tabs that contain settings and information about the device: the **Information** tab, the **Settings** tab, the **Networking** tab, and the **Digital Sending** tab. Click the tab that you want to view.

See [Embedded Web server sections on page 69](#) for more information about each tab.

Embedded Web server sections

Tab or section	Options
Information tab Provides product, status, and configuration information	● Device Status: Shows the product status, and shows the life remaining of HP supplies with 0% indicating that a supply is empty. The page also shows the type and size of print paper set for each tray. To change the default settings, click Change Settings. ● Configuration Page: Shows the information found on the configuration page. ● Supplies Status: Shows the life remaining of HP supplies, with 0 percent indicating that a supply is empty. This page also provides supplies part numbers. To order new supplies, contact your dealer. ● Event log: Shows a list of all product events and errors. ● Usage page: Shows a summary of the number of pages the product has printed, grouped by size and type. ● Device Information: Shows the product network name, address, and model information. To change these entries, click Device Information on the Settings tab. ● Control Panel: Shows messages from the product control panel, such as Ready or Sleep mode on. ● Print: Allows you to send print jobs to the product.

Tab or section	Options
Settings tab Provides the ability to configure the product from your computer	• Configure Device: Allows you to configure product settings. This page contains the traditional menus found on products using a control-panel display. • Tray Sizes/Types: Allows you to assign paper sizes and paper types for each tray on the product. • E-mail Server: Network only. Used in conjunction with the Alerts page to set up incoming and outgoing e-mail, as well as to set e-mail alerts. • Alerts: Network only. Allows you to set up to receive e-mail alerts for various product and supplies events. • AutoSend: Allows you to configure the product to send automated e-mails regarding product configuration and supplies to specific e-mail addresses. • Security: Allows you to set a password that must be entered to gain access to the Settings and Networking tabs. Enable and disable certain features of the embedded Web server. • Authentication Manager: Allows you to determine which product functions will require a user to provide log-in information in order to use those functions. • LDAP Authentication: Allows you to configure a Lightweight Directory Access Protocol (LDAP) server to limit product access to certain users. The LDAP server will require a user to provide log-in information in order to gain access to the product. • Kerberos Authentication: Use the Kerberos Authentication page to configure the product to authenticate users to a Kerberos Realm. When Kerberos authentication is selected as the Log In Method for one or more Device Functions, the user at the product must enter valid credentials (username, password, and realm) to gain access to those functions. • Device PIN: Allows you to limit access to one or more product functions using a Personal Identification Number (PIN). • User PIN: Allows you to add user PIN records into the product and to edit or delete user PIN records that have already been saved in the product. You can set up the product to require each user to provide a PIN to access the product. • Edit Other Links: Allows you to add or customize a link to another Web site. This link is displayed in the Other Links area on all embedded Web server pages. • Device Information: Allows you to name the product and assign an asset number to it. Enter the name and e-mail address for the primary contact who will receive information about the product. • Language: Allows you to determine the language in which to display the embedded Web server information. • Date & Time: Allows time synchronization with a network time server. • Wake Time: Allows you to set or edit a wake time for the product. NOTE: The Settings tab can be password-protected. If this product is on a network, always consult with the system administrator before changing settings on this tab.

Tab or section	Options
Digital Sending tab Provides the ability to change digital sending settings from your computer	● General Settings: Allows you to set digital-sending administrator information. ● Send to Folder: Allows you to send scanned documents to shared folders or FTP sites. ● E-mail Settings: Allows you to configure SMTP settings, set the maximum e-mail attachment size, and set the default e-mail address for the product. You can also set a default subject for all e-mail messages that the product sends. ● E-mail Address Book: Allows you to add e-mail addresses into the product, and to edit e-mail addresses that have already been saved in the product. ● Fax Address Book: Allows you to add fax numbers into the product and to edit fax numbers that have already been saved in the product. ● Import/Export: Allows you to import and export address book and user information to and from the product. ● LDAP Settings: Allows you to configure a Lightweight Directory Access Protocol (LDAP) server to look up e-mail addresses. ● Log: Allows you to view digital sending job information, including any errors that occur. ● Preferences: Allows you to configure general settings for the digital-sending features.
Networking tab Provides the ability to change network settings from your computer	Network administrators can use this tab to control network-related settings for the product when it is connected to an IP-based network. This tab does not appear if the product is directly connected to a computer, or if the product is connected to a network using anything other than an HP Jetdirect print server. NOTE: The Networking tab can be password-protected.

Use HP Web Jetadmin software

HP Web Jetadmin is a Web-based software solution for remotely installing, monitoring, and troubleshooting network-connected peripherals. The intuitive browser interface simplifies cross-platform management of a wide range of devices, including HP and non-HP devices. Management is proactive, allowing network administrators the ability to resolve issues before users are affected. Download this free, enhanced-management software at www.hp.com/go/webjetadmin_software.



NOTE: HP Web Jetadmin 10.0 or later is required for full support of this product.

To obtain plug-ins to HP Web Jetadmin, click **plug-ins**, and then click the **download** link that is next to the name of the plug-in that you want. The HP Web Jetadmin software can automatically notify you when new plug-ins are available. On the **Product Update** page, follow the directions to automatically connect to the HP Web site.

If installed on a host server, HP Web Jetadmin is available to any client through a supported Web browser, such as Microsoft Internet Explorer 6.0 for Windows or Netscape Navigator 7.1 for Linux. Browse to the HP Web Jetadmin host.



NOTE: Browsers must be Java-enabled. Browsing from an Apple PC is not supported.

HP Printer Utility for Macintosh

Use the optional HP Printer Utility to configure and maintain a product from a Mac OS X V10.3 or V10.4 computer. This section describes several functions that you can perform through the HP Printer Utility.

Open the HP Printer Utility

The process that you use to start the HP Printer Utility depends on the Macintosh operating system that you are using.

Open the HP Printer Utility in Mac OS X V10.3 or Mac OS X V10.4

1. In the Dock, click the **Printer Setup Utility** icon.



NOTE: If the **Printer Setup Utility** icon does not appear in the Dock, open the Finder, click **Applications**, click **Utilities**, and then double-click **Printer Setup Utility**.

2. Select the product that you want to configure, and then click **Utilities**.

Print a cleaning page

Print a cleaning page if the product is not printing jobs at the expected quality level.

1. Open the HP Printer Utility.
2. In the **Configuration Settings** list, select **Cleaning**.
3. Click **Print Cleaning Page** to print the cleaning page.

Print a configuration page

Print a configuration page to view the product settings.

1. Open the HP Printer Utility.
2. In the **Configuration Settings** list, select **Configuration Page**.
3. Click **Print Configuration Page** to print the configuration page.

View supplies status

View the status of the product supplies (such as print cartridges, imaging drum, or print media) from a computer.

1. Open the HP Printer Utility.
2. In the **Configuration Settings** list, select **Supplies Status**.
3. Click the **Supplies** tab to view the status of various replaceable supplies, and click the **Media** tab to view the status of print media.
 - To view a more detailed status list, click **Detailed Supplies Information**. The Supplies Information dialog box appears.

Upload a file to the product

Send a file from the computer to the product. The action that the product takes depends on the type of file that is being sent to it. For example, when a print-ready file (such as a .PS or .PCL file) is sent, the product prints the file.

1. Open the HP Printer Utility.
2. In the **Configuration Settings** list, select **File Upload**.
3. Click **Choose**, navigate to the file that you want to upload, and then click **OK**.
4. Click **Upload** to load the file.

Update the firmware

Update the product firmware by loading the new firmware file from the computer. You can find new firmware files for your product at www.hp.com/go/ljm9059mfp_firmware.

1. Open the HP Printer Utility.
2. In the **Configuration Settings** list, select **Firmware Update**.
3. Click **Choose**, navigate to the firmware file that you want to upload, and then click **OK**.
4. Click **Upload** to load the firmware file.

Activate the two-sided printing (duplexing) mode

Turn on the two-sided printing feature on products equipped with automatic duplexers.

1. Open the HP Printer Utility.
2. In the **Configuration Settings** list, select **Duplex mode**.
3. Select **Enable Duplex Mode** to activate the two-sided printing mode, and then click **Apply Now**.

Lock or unlock storage devices

Manage access to product storage devices from the computer.

1. Open the HP Printer Utility.
2. In the **Configuration Settings** list, select **Lock Resources**.
3. On the **Control Panel Access Level** pop-up menu, select the access level that you want to set for the product control panel.
4. Select the devices that you want to lock, and clear any devices that you want to unlock.
5. Click **Apply Now**.

Save or print stored jobs

Turn on the product job-storing function, or print a stored job from the computer. You also can delete a stored print job.

1. Open the HP Printer Utility.
2. In the **Configuration Settings** list, select **Stored Jobs**.
3. Perform any of the following tasks:
 - To turn on the job-storing function, select **Enable Job Storing**, and then click **Apply Now**.
 - To print a stored job, select a stored job in the list, type the necessary personal identification number (PIN) in the **Enter Secure Job PIN** box, type the number of copies that you want in the **Copies To Print** box, and then click **Print**.
 - To delete a stored job, select a stored job in the list, and then click **Delete**.

Configure trays

Change the default product tray settings from the computer.

1. Open the HP Printer Utility.
2. In the **Configuration Settings** list, select **Tray Configuration**.
3. In the **Trays** list, select the tray to be configured.



NOTE: To make the selected tray the default tray for printing, click **Make Default**.

4. In the **Default Media Size** pop-up menu, select the default media size for the tray.
5. In the **Default Media Type** pop-up menu, select the default media type for the tray.
6. Click **Apply Now**.

Change network settings

Change the network Internet Protocol (IP) settings from the computer. You also can open the embedded Web server to change additional settings. For more information, see [Embedded Web server on page 68](#).

1. Open the HP Printer Utility.
2. In the **Configuration Settings** list, select **IP Settings**.
3. Change any of the settings in the following pop-up menus or fields:
 - **Configuration**
 - **Host Name**
 - **IP Address**
 - **Subnet Mask**
 - **Default Gateway**

If you want to change more settings in the embedded Web server, click **Additional Network Settings**. The embedded Web server opens with the **Networking** tab selected.

4. Click **Apply Now**.

Open the embedded Web server

1. Open the HP Printer Utility.
2. In the **Configuration Settings** list, select **Additional Settings**.
3. Click **Open Embedded Web Server**.

Set up e-mail alerts

Set up e-mail messages that alert you to certain events that occur with the product, such as a low toner level in a print cartridge.

1. Open the HP Printer Utility.
2. In the **Configuration Settings** list, select **E-mail Alerts**.
3. Click the **Server** tab, and, in the **SMTP Server** box, type the server name.
4. Click the **Destination** tab, click the add (+) button, and then type the e-mail addresses, mobile device numbers, or Web site URLs to which you want the e-mail alerts sent.



NOTE: If your product supports e-mail lists, you can make alerts lists for specific events the same way that you added e-mail addresses.

5. Click the **Events** tab, and, in the list, define the events for which an e-mail alert should be sent.
6. To test the alerts setup, click the **Server** tab, and then click **Test**. A sample message is sent to the defined e-mail addresses if the configuration is correct.
7. Click **Apply Now**.

Security features

This section explains important security features that are available for the product:

- [Secure the embedded Web server](#)
- [Secure Disk Erase](#)
- [Security lock](#)
- [Authentication](#)
- [Lock the control-panel menus](#)

Secure the embedded Web server

Configure a password for access to the embedded Web server to prevent unauthorized users from changing the product settings.

1. Open the embedded Web server. See [Embedded Web server on page 68](#).
2. Click the **Settings** tab.
3. On the left side of the window, click **Security**.
4. Type the password next to **New Password**, and type it again next to **Verify Password**.
5. Click **Apply**. Make note of the password and store it in a safe place.

Secure Disk Erase

Use the Secure Disk Erase feature to protect deleted data from unauthorized access. This feature can securely erase print and copy jobs from the hard drive.

Secure Disk Erase offers the following levels of disk security:

- **Non-Secure Fast Erase.** This is a simple file-table erase function. It is the fastest mode. It removes access to the file, but the data in the file remains on the disk until it is overwritten by subsequent data-storage operations. Non-Secure Fast Erase is the default erase mode.
- **Secure Fast Erase.** This function removes access to the file, and it erases the file data from the disk. It does this by overwriting the data with a fixed identical character pattern. It is slower than Non-Secure Fast Erase, but meets U.S. Department of Defense 5220-22.M requirements for the clearing of disk media.
- **Secure Sanitizing Erase.** This level is similar to the Secure Fast Erase, but it overwrites the data with two more passes. It uses an algorithm that prevents residual data persistence. This mode significantly impacts performance, but it meets U.S. Department of Defense 5220-22.M requirements for sanitization of disk media.

Data affected

Data affected (covered) by the Secure Disk Erase feature includes temporary files that are created during the print and copying process, stored jobs, proof and hold jobs, disk-based fonts, disk-based macros (forms), stored fax files, address books, and HP and third-party applications.



NOTE: Stored jobs are securely overwritten only when they have been deleted through the **Retrieve Job** menu on the product after the appropriate erase mode has been set.

This feature does not impact data that is stored on flash-based product non-volatile RAM (NVRAM) that is used to store default settings, page counts, and similar data. This feature does not affect data that is stored on a system RAM disk (if one is used). This feature does not impact data that is stored on the flash-based system boot RAM.

Changing the Secure Disk Erase mode does not overwrite previous data on the disk, nor does it immediately perform a full-disk sanitization. Changing the Secure Disk Erase mode changes how the product cleans up temporary data for jobs after the erase mode has been changed.

Gain access to Secure Disk Erase

Use HP Web Jetadmin to gain access to and set the Secure Disk Erase feature.

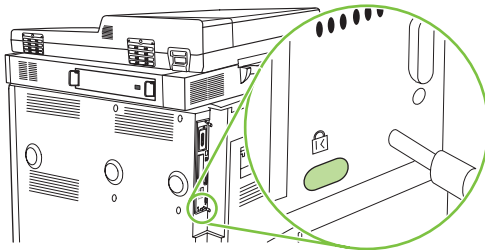
Additional Information

For additional information about the HP Secure Disk Erase feature, go to <http://www.hp.com/go/webjetadmin/>.

Security lock

The security lock is a mechanical lock that is used to prevent the removal of internal computer components. Optional EIO accessories are not protected. Purchase the security lock assembly separately, and then install it on the product.

Figure 4-1 Security lock



Authentication

This product offers several embedded authentication methods. These methods include Kerberos, LDAP, LDAP over SSL, and PIN.

Optional HP Digital Send Software supports Windows SPNEGO, LDAP, LDAP over SSL, and Novell authentication.

Lock the control-panel menus

To prevent someone from changing the product configuration, you can lock the control-panel menus. This prevents unauthorized users from changing the configuration settings such as the SMTP server. The following procedure describes how to restrict access to the control-panel menus by using the HP Web Jetadmin software. (See [Use HP Web Jetadmin software on page 72](#).)

1. Open the HP Web Jetadmin program.
2. Open the **DEVICE MANAGEMENT** folder in the drop-down list in the **Navigation** panel. Navigate to the **DEVICE LISTS** folder.
3. Select the product.

4. In the **Device Tools** drop-down list, select **Configure**.
5. Select **Security** from the **Configuration Categories** list.
6. Type a **Device Password**.
7. In the **Control Panel Access** section, select **Maximum Lock**. This prevents unauthorized users from gaining access to configuration settings.

Set the real-time clock

Use the real-time clock feature to set the date and time settings. The date and time information is attached to stored print, fax, and digital-send jobs, so you can identify the most recent versions of stored print jobs.

1. On the control panel, scroll to and touch **Administration**.
2. Touch **Time/Scheduling**.
3. Touch **Date/Time**.
4. Choose a date format.
5. Choose a time format.
6. Touch the **Date** fields to enter the date.
7. Touch the **Time** fields to enter the time.
8. Touch **Save**.

Clean the product

Print a cleaning page

1. From the Home screen, touch **Administration**.
2. Touch **Print Quality**.
3. Touch **Calibration/Cleaning**.
4. Touch **Create Cleaning Page**.

The product prints a cleaning page.

5. Follow the instructions printed on the cleaning page.

Clean the product hardware

To maintain print quality, clean the product thoroughly:

- every time you change the print cartridge
- whenever print-quality problems occur

Clean the outside of the product with a lightly water-dampened cloth. Clean the inside with only a dry, lint-free cloth. Observe all warnings and cautions regarding the cleaning tasks.

⚠ **WARNING!** Avoid touching the fusing area when cleaning the product. It can be hot.

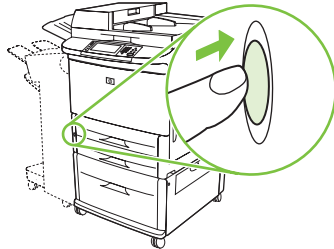
WARNING! Do not touch the transfer roller when cleaning the product.

⚠ **CAUTION:** To avoid permanent damage to the print cartridge, do not use ammonia-based cleaners on or around the product.

Clean the paper path

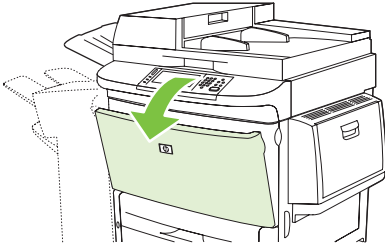
1. Before you begin these steps, turn the product off (button out) and disconnect all cables, including the power cord.

Figure 4-2 Clean the paper path (1 of 6)



2. Open the front cover, rotate the green lever downward to the unlocked position, and remove the print cartridge.

Figure 4-3 Clean the paper path (2 of 6)

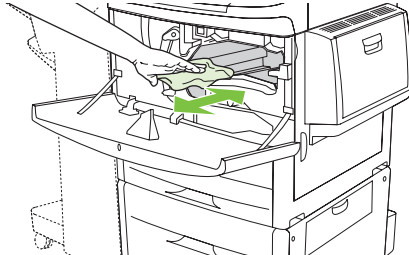


△ **CAUTION:** To prevent damage to the print cartridge, use two hands when removing it from the product. Do not expose the print cartridge to light for more than a few minutes. Cover the print cartridge when it is outside of the product.

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

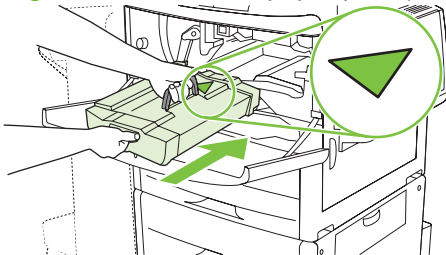
3. With a dry, lint-free cloth, wipe any residue from the paper path area, the registration roller, and the print cartridge cavity.

Figure 4-4 Clean the paper path (3 of 6)



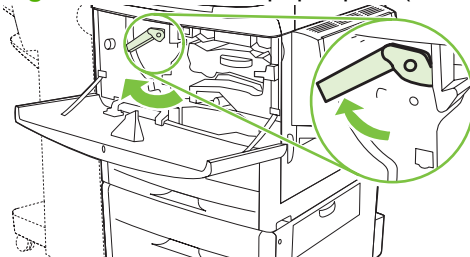
4. Replace the print cartridge.

Figure 4-5 Clean the paper path (4 of 6)



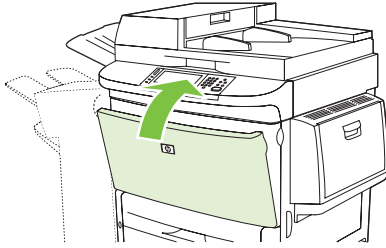
5. Rotate the green handle into the locked position.

Figure 4-6 Clean the paper path (5 of 6)



6. Close the front cover, reconnect all cables, and turn the product on (button in).

Figure 4-7 Clean the paper path (6 of 6)



Clean the outside of the product

- Clean the outside of the product if it is visibly marked.
- Use a soft, lint-free cloth dampened with water.

Clean the touchscreen

- Clean the touchscreen when needed (fingerprints, dust build-up).
- Wipe the touchscreen gently with a clean, water-dampened, lint-free cloth.

△ **CAUTION:** Use water only. Solvents or cleaners can damage the touchscreen. Do not pour or spray water directly onto the touchscreen.

Clean the glass

- Clean the glass only if dirt is visible, or if you are experiencing a decrease in copy quality, such as streaking.
- Clean the glass surface by wiping it gently with a clean, slightly damp, lint-free cloth.

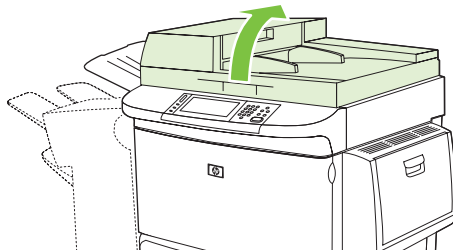
△ **CAUTION:** Do not pour or spray liquids directly onto the glass. Do not press hard on the glass surface. (You could break the glass).

Clean the ADF delivery system

Clean the ADF only if it is visibly marked or dirty, or if you are experiencing a decrease in copy quality (such as streaking).

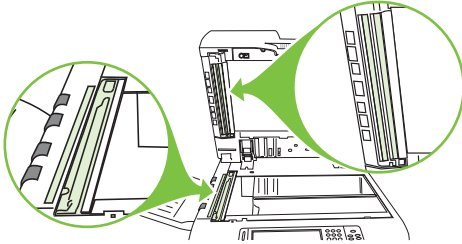
1. Lift the top cover.

Figure 4-8 Clean the ADF delivery system (1 of 5)



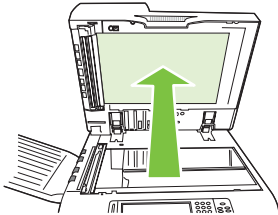
2. Locate the top and bottom ADF glass strips.

Figure 4-9 Clean the ADF delivery system (2 of 5)



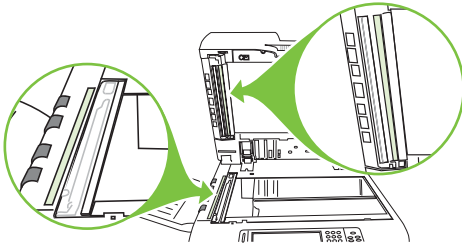
3. Clean the glass strips by wiping them gently with a clean, damp, lint-free cloth.
4. Locate the white, vinyl backing.

Figure 4-10 Clean the ADF delivery system (3 of 5)



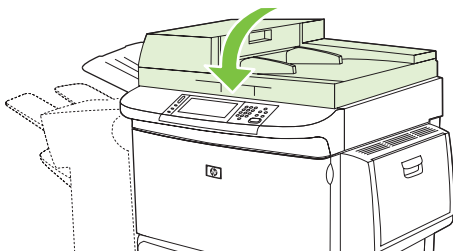
5. Locate the white, vinyl calibration strips.

Figure 4-11 Clean the ADF delivery system (4 of 5)



6. Clean the ADF backing and the calibration strips by wiping them with a clean, damp, lint-free cloth.
7. Close the top cover.

Figure 4-12 Clean the ADF delivery system (5 of 5)



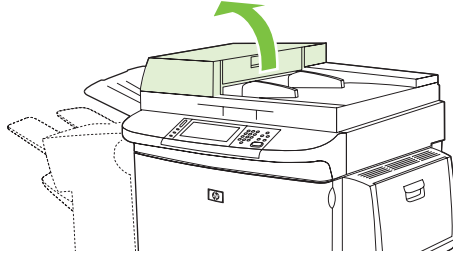
Clean the top ADF glass strip

If you are still experiencing poor copy quality, you might need to clean the top ADF glass strip.

△ **CAUTION:** Clean this area only if you see copy defects such as streaks, and you notice dust inside the glass strip. Cleaning this area frequently could introduce dust into the product.

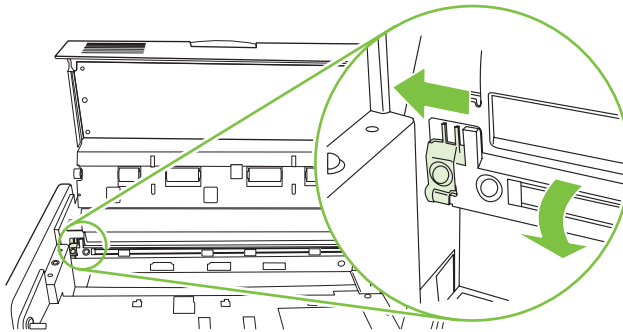
1. Open the ADF cover.

Figure 4-13 Clean the top ADF glass strip (1 of 4)



2. Locate the latch that releases the top ADF glass strip. Push the latch to the left, and pull down to expose the inside of the glass strip.

Figure 4-14 Clean the top ADF glass strip (2 of 4)

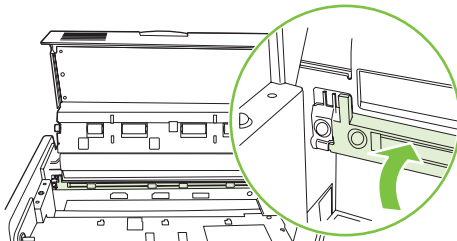


3. Gently wipe the glass with a dry, lint-free cloth.

△ **CAUTION:** Use only a clean dry cloth in this area. Do not use solvents, cleaners, water, or compressed air. Doing so could severely damage the product.

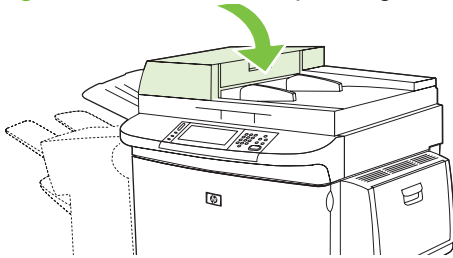
4. Pull the latch to the left and return the glass strip to its normal position.

Figure 4-15 Clean the top ADF glass strip (3 of 4)



5. Close the ADF cover.

Figure 4-16 Clean the top ADF glass strip (4 of 4)



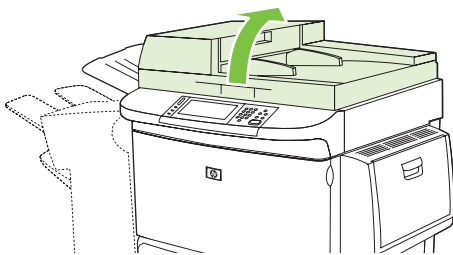
Clean the ADF rollers

You should clean the rollers in the ADF if you are experiencing misfeeds or if your originals show marks as they exit the ADF.

1. Open the top cover.

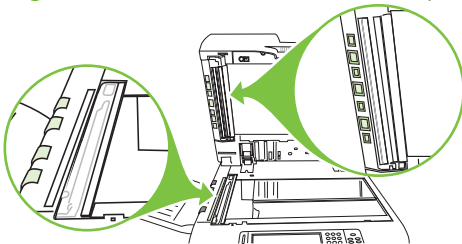
△ **CAUTION:** Clean the rollers only if you experience misfeeds or marks on the originals, and you notice dust on the rollers. Cleaning the rollers frequently could introduce dust into the product.

Figure 4-17 Clean the ADF rollers (1 of 6)



2. Locate the rollers near the glass strips.

Figure 4-18 Clean the ADF rollers (2 of 6)

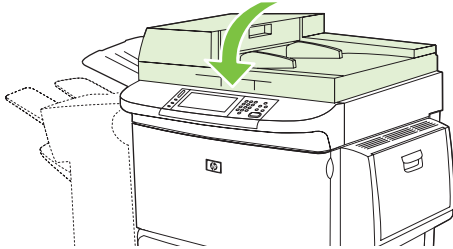


3. Wipe the rollers gently with a clean, water-dampened, lint-free cloth.

△ **CAUTION:** Do not pour water directly onto the rollers. Doing so might damage the product.

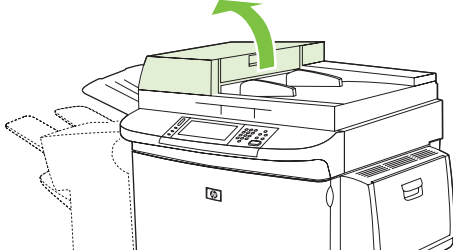
4. Close the top cover.

Figure 4-19 Clean the ADF rollers (3 of 6)



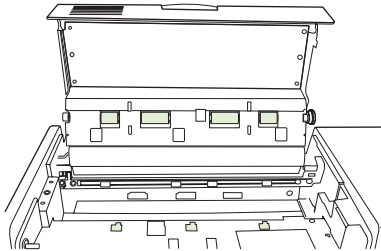
5. Open the ADF cover.

Figure 4-20 Clean the ADF rollers (4 of 6)



6. Locate the rollers.

Figure 4-21 Clean the ADF rollers (5 of 6)

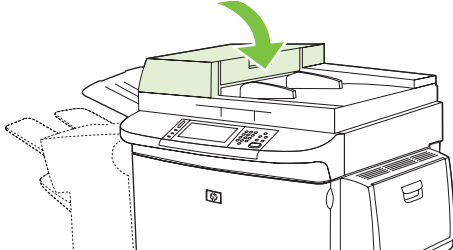


7. Wipe the rollers with a clean, water-dampened, lint-free cloth.

△ **CAUTION:** Do not pour water directly onto the rollers. Doing so might damage the product.

8. Close the ADF cover.

Figure 4-22 Clean the ADF rollers (6 of 6)



9. Close the delivery guide and wipe its outside surface with the cloth.

Configure alerts

You can use HP Web Jetadmin or the embedded Web server to configure the system to alert you of problems with the product. The alerts take the form of e-mail messages to the e-mail account or accounts that you specify.

You can configure the following:

- The product(s) you want to monitor
- The alerts to be received (for example, alerts for paper jams, paper out, supplies status, and cover open)
- The e-mail account to which the alerts should be forwarded

Software	Information location
HP Web Jetadmin	See the HP Web Jetadmin Help system for details on alerts and how to set them up.
Embedded Web server	See Embedded Web server on page 68 for general information about the embedded Web server. See the embedded Web server Help system for details on alerts and how to set them up.

Manage supplies

Use genuine HP print cartridges for the best printing results.

HP print cartridges

When you use a genuine new HP print cartridge, you can obtain the following supplies information:

- Percentage of supplies remaining
- Estimated number of pages remaining
- Number of pages printed

Non-HP print cartridges

Hewlett-Packard Company cannot recommend the use of non-HP print cartridges, either new or remanufactured. Service or repair required as a result of using a non-HP print cartridge will not be covered under the product warranty.

If the non-HP print cartridge was sold to you as a genuine HP product, see [HP fraud hotline on page 89](#).

Print cartridge authentication

The HP LaserJet M9059 MFP automatically authenticates the print cartridges when the cartridges are inserted into the product. During authentication, the product will let you know if a cartridge is a genuine HP print cartridge.

If the product control panel message states that this is not a genuine HP print cartridge and you believe you purchased an HP print cartridge, call the HP fraud hotline.

To override a non-HP print cartridge error message, touch **OK**.

HP fraud hotline

Contact the HP fraud hotline if you install an HP print cartridge and a message on the control panel states that the cartridge is non-HP. HP will help determine if the product is genuine and take steps to resolve the problem.

The following issues are signs that your print cartridge might not be a genuine HP print cartridge:

- A high number of problems occur with the print cartridge.
- The cartridge does not look like it usually does (for example, the packaging differs from HP packaging).

Go to www.hp.com/sbso/product/supplies/whybuy_fraud.html for more information.

Print cartridge storage

Do not remove the print cartridge from its package until you are ready to use it.

△ **CAUTION:** To prevent damage to the print cartridge, do not expose it to light for more than a few minutes.

Table 4-1 Print cartridge temperature specifications

Environmental condition	Recommended	Allowed	Storage/standby
Temperature (print cartridge)	17° to 25°C (62.6° to 77°F)	15° to 30°C (59° to 86°F)	-20° to 40°C (-4° to 104°F)

Print cartridge life expectancy

Average cartridge yield is 30,000 pages in accordance with ISO/IEC 19752. Actual yield depends on specific use.

Check the print cartridge life

You can check the print cartridge life using the control panel, the embedded Web server, the product software, or HP Web Jetadmin.

Control panel

1. From the Home screen, touch **Administration**.
2. Touch **Information**.
3. Touch **Configuration/Status Pages**.
4. Touch **Supplies Status Page**.
5. Touch **Print**.



NOTE: If you are using non-HP supplies, the supplies status page might not show the remaining life for those supplies.

Embedded Web server

1. In your browser, type the IP address or host name for the product home page. This takes you to the product status page.
2. On the left side of the screen, click **Supplies Status**. This takes you to the supplies status page, which provides print cartridge information.

HP Web Jetadmin

In HP Web Jetadmin, select the printer product. The device status page shows print cartridge information.

Printer maintenance kit



NOTE: The printer maintenance kit is a consumable and is not covered under warranty.

To ensure optimum print quality, HP recommends that a new printer maintenance kit be installed approximately every 350,000 pages. Depending on how you use the product, you might need to replace the kit more often.

When the **Replace maintenance kit** message appears on the control panel, a printer maintenance kit is needed to install the new parts. The part number for the 110 V kit is C9152A. The part number for the 220 V kit is C9153A. The printer maintenance kit contains two Type 1 rollers, seven Type 2 rollers, one transfer roller assembly, and one fuser assembly. Complete instructions for installing the kit components are included in the printer maintenance kit box.

Manage memory

The product has two double data rate (DDR) DIMM slots to provide more product memory. DDR DIMMs are available in 64, 128, and 256 MB, for a maximum of 512 MB.

 **NOTE:** Single in line memory modules (SIMMs) used on other HP LaserJet products are not compatible with this product.

For ordering information, go to www.hp.com/support/ljm9059mfp.

Determine memory requirements

The amount of memory required depends on the types of documents you print. The product can print most text and graphics at 1200 dpi FastRes without additional memory.

You may wish to add more memory if you print complex graphics or post script documents, print two-sided documents (duplex printing), use downloaded fonts, or print on large paper sizes (such as A3, B4, or 11 x 17).

Install memory

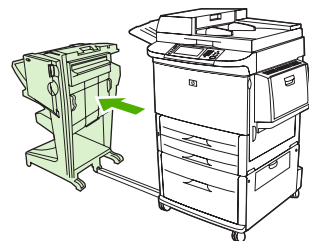
Use this procedure to install additional DDR memory DIMMs. Before you begin, print a configuration page to find out how much memory is installed. The following table lists the maximum amount of memory allowed for each DIMM slot.

Slot label on the configuration page	Slot label on the formatter board	Description
Slot 1	J1	256 MB
Slot 2	J2	128 MB
Total		384 MB

 **CAUTION:** Static electricity can damage DDR DIMMs. When handling DDR DIMMs, either wear an antistatic wrist strap or frequently touch the surface of the DIMM antistatic package, and then touch bare metal on the product.

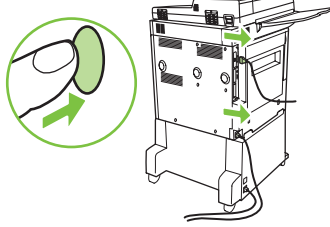
1. If you have not already done so, print a configuration page to find out how much memory is installed.
2. Slide the optional output device away from the print engine.

Figure 4-23 Install DDR memory DIMMs (1 of 8)



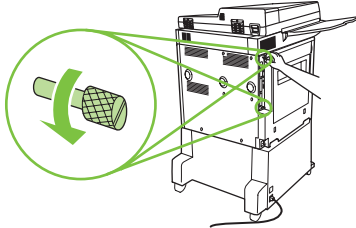
3. Turn the product off, and then disconnect the power cord and all cables.

Figure 4-24 Install DDR memory DIMMs (2 of 8)



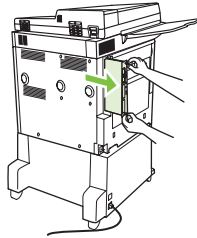
4. Loosen the two captive thumb screws on the back of the product.

Figure 4-25 Install DDR memory DIMMs (3 of 8)



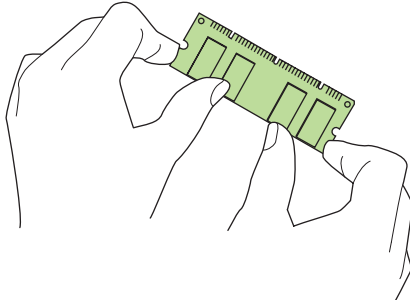
5. Grasp the screws and pull the formatter board out of the product. Place it on a flat, non-conductive surface.

Figure 4-26 Install DDR memory DIMMs (4 of 8)



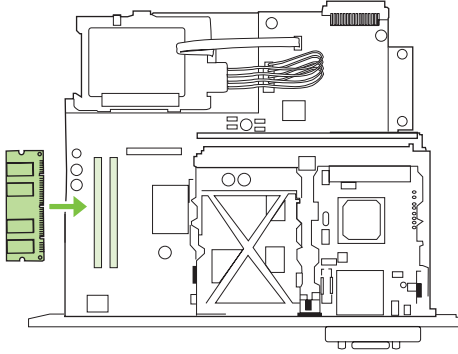
6. Remove the DIMM from the antistatic package. Hold the DIMM with fingers against the side edges and thumbs against the back edge. Align the notches on the DIMM with the DIMM slot. (Check that the locks on each side of the DIMM slot are open, or outward.)

Figure 4-27 Install DDR memory DIMMs (5 of 8)



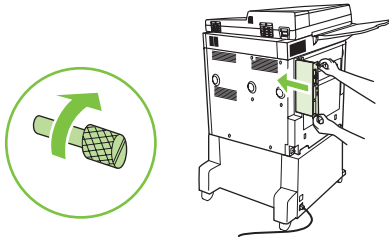
7. Press the DIMM straight into the slot (press firmly). Make sure the locks on each side of the DIMM snap inward into place. (To remove a DIMM, the locks must be released.)

Figure 4-28 Install DDR memory DIMMs (6 of 8)



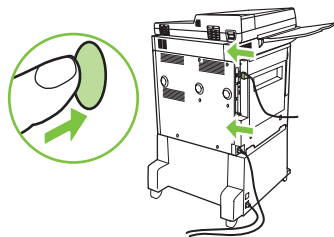
8. Slide the formatter board back into the product and tighten the two screws.

Figure 4-29 Install DDR memory DIMMs (7 of 8)



9. Plug in the power cord and connect all cables.

Figure 4-30 Install DDR memory DIMMs (8 of 8)



10. Reconnect the optional output device to the product.

Turn the product on.

Verify memory installation

Follow this procedure to verify that DDR DIMMs are installed correctly:

1. Check that the product control panel displays **Ready** when the product is turned on. If an error message appears, a DIMM might be installed incorrectly.
2. Print the configuration page.
3. Check the memory section on the configuration page and compare it to the configuration before the DIMM installation. If the amount of memory has not increased, one of the following situations might have occurred:
 - The DIMM might not be installed correctly. Repeat the installation procedure.
 - The DIMM might be defective. Try a new DIMM, or try installing the DIMM in a different slot.

 **NOTE:** If you installed a printer language (personality), check the Installed Personalities and Options section on the configuration page. This area should list the new printer language.

Economy settings

Sleep and wake

Set the sleep delay

Use the sleep-delay feature to choose the period of time to allow the product to be idle before it enters sleep mode. The default setting is 45 minutes.

1. Scroll to and touch **Administration**.
2. Touch **Time/Scheduling**.
3. Touch **Sleep Delay**.
4. Touch the sleep-delay setting that you want.

Set the sleep time

Use the sleep time feature to put the product in sleep mode at a set time each day.

1. Scroll to and touch **Administration**.
2. Touch **Time/Scheduling**.
3. Touch **Sleep Time**.
4. Touch the day of the week for the sleep time.
5. Touch **Custom**.
6. Touch **Save**.
7. Touch the appropriate options to set the correct hour, minute, and AM/PM setting.
8. To place the product in sleep mode at the same time every day (including weekends), on the **Apply to All Days** screen, touch **Yes**. To set the time for individual days, touch **No**, and repeat the procedure for each day.

Set the wake time

Use the wake time feature to wake the product at a set time each day.

1. Scroll to and touch **Administration**.
2. Touch **Time/Scheduling**.
3. Touch **Wake Time**.
4. Touch the day of the week for the wake time.
5. Touch **Custom**.
6. Touch **Save**.
7. Touch the appropriate options to set the correct hour, minute, and AM/PM setting.
8. To set the same wake time for every day (including weekends), on the **Apply to All Days** screen, touch **Yes**. To set the time for individual days, touch **No**, and repeat the procedure for each day.

5 Theory of operation

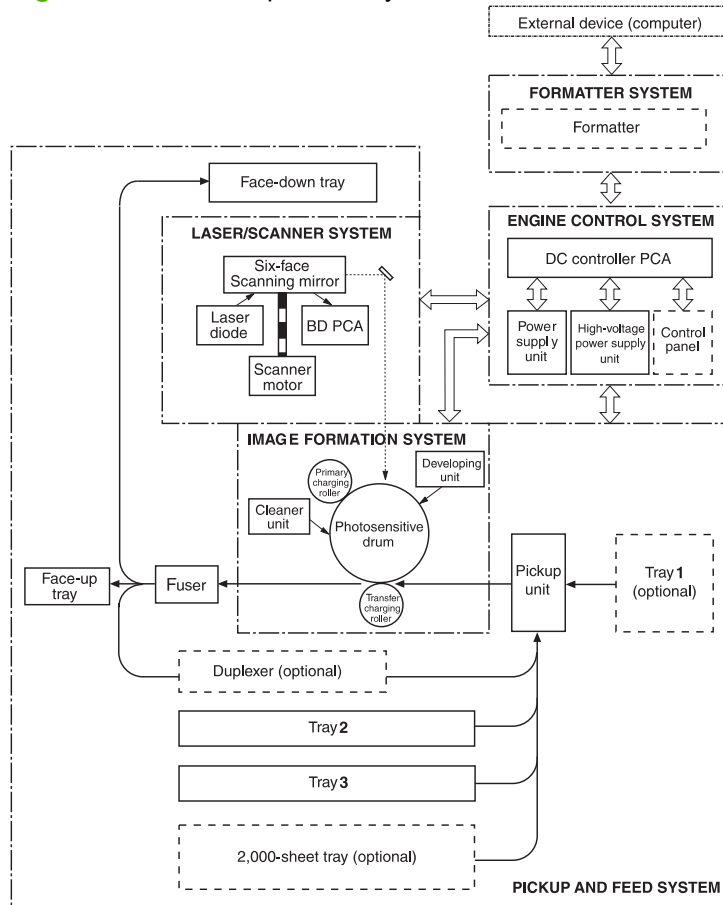
- [Basic operation](#)
- [Engine control system](#)
- [Formatter system](#)
- [Laser/scanner system](#)
- [Image formation system](#)
- [Pickup and feed system](#)
- [Tray 1](#)
- [Tray 4](#)

Basic operation

Product operation is composed of the following systems:

- Engine control
- Formatter
- Laser/scanner
- Image formation
- Pickup and feed

Figure 5-1 Product operation systems



Sequence of operation

Figure 5-2 Operation sequence

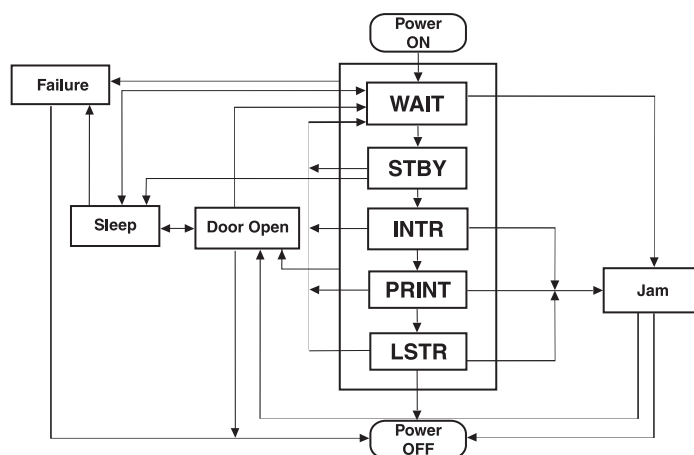


Table 5-1 Normal sequence

State	Period	Operation
WAIT	The time required for the fuser surface and rollers to reach target temperatures after the product is turned on (four minutes or less)	- Initialize CPU and ASIC. - Run fans 1-6 for 30 seconds; run duplexer fan for 3 seconds. - Start formatter interface communication. - Start fuser heaters. - Start cartridge check - Check toner level memory - Start communication with optional interfaces (duplexer, Tray 1, Tray 4). - Check cassette lifting and loading status. - Check jam status (auto flush/eject) - Check for fuser wrapping jam - Check door open/sleep - Start fuser-roller temperature control and delivery motor.

Table 5-1 Normal sequence (continued)

State	Period	Operation
Standby (STBY)	After the WAIT state or after the Last Rotation state until a print reservation command comes from the formatter	• Run fuser control (fuser roller temperature at 180°C (356°F), pressure roller at 140°C (285°F)) • Await print reservation command (await INTR sequence) • Run fan motors 1-5 at half speed with fan 6 off. • After five minutes or more, run the fuser/delivery motor for about 0.08 seconds to prevent deformation of the pressure roller.
Initial rotation (INTR)	After a print-reservation command until the laser/scanner enters a ready state	• Run scanner motor. • Run fuser/delivery motor. • Run drum motor. • Run high-voltage control (negative bias to transfer roller). • Receive print command. • Run fan motors 1-6 at full speed. • Start pickup operation. • Apply high-voltage control bias to primary charging roller, developing roller, and transfer roller. • Heat fuser roller to 190°C (374 °F) and pressure roller to 180°C (356°F). • Execute final check on initial rotation (high-voltage, scanner motor, pickup operation complete). • Check jam/door open/failure/sleep.

Table 5-1 Normal sequence (continued)

State	Period	Operation
PRINT	After the input of a print command until the primary DC bias is turned off	• Run fuser/delivery, drum, scanner, and fan motors. • Set fuser control to print temperature: fuser 190°C (374°F). • Send engine-to-formatter output signal. • Send formatter-to-engine input signal. • Run paper-feed control. • Run image control. • Set high-voltage control (toner level-output separation bias and pressure roller bias). • Run next-pickup control to calculate the speed at which to move media. • Check jam/door open/failure.
Last rotation (LSTR)	After the primary charging roller is turned off until each motor stops	• Run fuser/delivery, drum, scanner, and fan motors. Complete high-voltage control. • Set fuser control to standby temperature (180°C (356°F)). Run fans 1–6 at full speed. • Stop fuser/delivery, drum, and scanner motors (write in cartridge memory). • Check jam/door open/failure. Await next pickup.

Table 5-2 Failure sequence

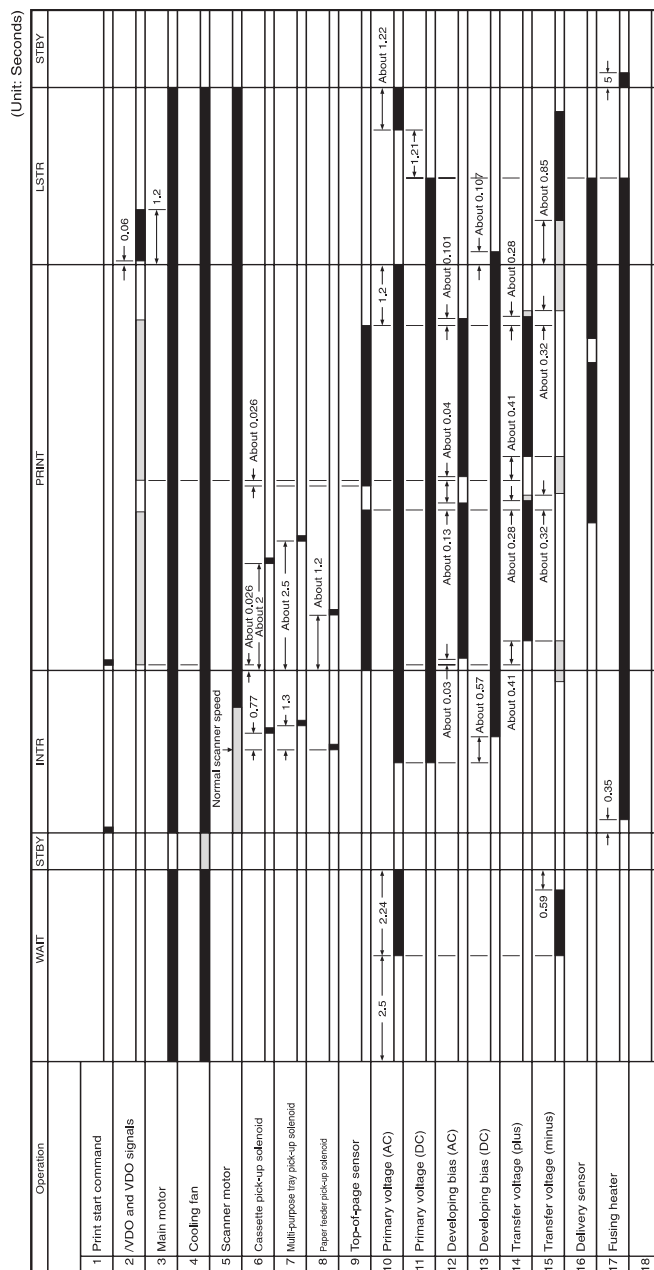
State	Period	Operation
JAM	After product is turned on until the end of the LSTR state	• Check sensors. • Stop drives. • Set status. • Check door open.
DOOR OPEN	After product is turned on until the end of the LSTR period	• Stop drives. • Set status. • Await door close sequence.
FAILURE	After product is turned on until the end of the LSTR period	• Stop drives. • Set status.
SLEEP	After product is turned on until the end of the LSTR period	• Stop drives (scanner motor, high-voltage control, fuser control, fuser/delivery motor, 24 V, 3.3 V sets PowerSave mode, fan motor). • Set status. • Check door open.

Product start up sequence (turn on product)

1. Product is turned on.
2. Initialize CPU and ASIC.
3. Begin video interface communication with the formatter.
4. Start all fans.
5. Flush residual paper from the paper path.
6. Check for cartridge presence.
7. Check cartridge memory.
8. Initialize installed accessories.
9. Start fuser and pressure roller heaters.
10. Turn on pickup-roller motor and cassette-lifter motors.
11. Turn off pickup-roller motor and cassette-lifter motors.
12. Turn on fuser motor, drum motor, and transfer negative bias.
13. Turn on pressure bias and jam detection lever drive solenoid (SL501).
14. Turn on developing AC bias for toner-level detection.
15. Turn off fuser motor, drum motor, transfer negative bias, pressure bias, and SL501 once the fuser reaches target temperature.
16. Initialize standby mode.

Timing chart

Figure 5-3 Operational timing chart



Scanner subsystem

Mechanical structure

The ADF optical assembly and the flatbed optical assembly each has a complete scanning system. This enables single-pass duplex scanning.



NOTE: The lamps (callout 1) cannot be replaced separately. You must replace the entire optical assembly.

Figure 5-4 Scanning system structure, showing the optical assemblies

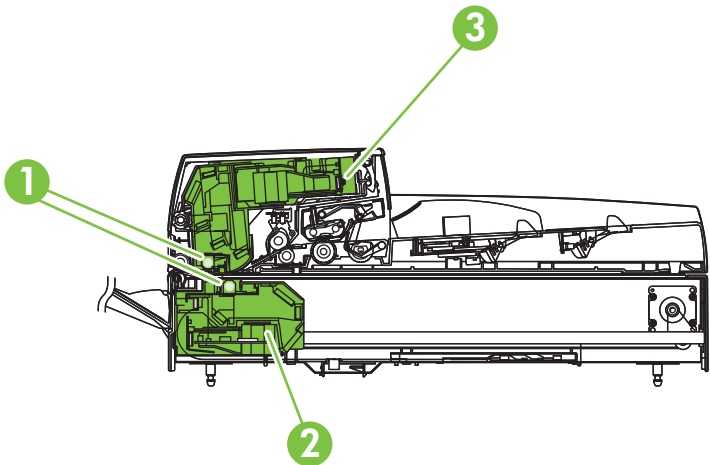


Table 5-3 Scanning system optical assemblies

Number	Part	Part number
1	Optical assembly lamps	Not available
2	Flatbed optical assembly	RG5-6263-000CN
3	ADF optical assembly	RG5-6307-020CN

 **NOTE:** Each ADF or flatbed optical assembly includes the lamp, the lens, and the mirrors.

Figure 5-5 Scanner system mechanical structure

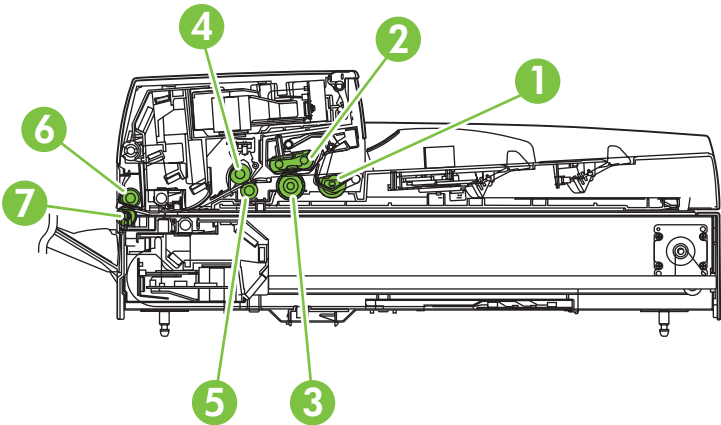


Table 5-4 Scanner system mechanical structure

Number	Part	Part number
1	Pickup roller	RB2-7961-000CN

Table 5-4 Scanner system mechanical structure (continued)

Number	Part	Part number
2	Separation belt assembly (belt, timing)	RB2-7988-000CN (4)
3	Feed roller assembly	RB2-6281-000CN
4	Upper registration roller assembly	RG5-6304-000CN
5	Lower registration roller assembly	RG5-6277-000CN
6	Upper delivery roller assembly	RB2-7969-000CN
7	Lower delivery rollers	RB2-7884-000CN (4)

Motors and fans

The scanner uses three DC stepping motors. Two of the stepping motors drive the ADF unit rollers, and the other stepping motor drives the flatbed optical unit:

- The flatbed motor rotates in one direction to drive the flatbed optical unit when scanning is from the glass. The flatbed motor rotates in the opposite direction to position the flatbed optical unit for scanning from the ADF front side.
- The pickup motor rotates in one direction to rotate the pickup and feed rollers. The pickup motor rotates in the opposite direction to rotate the registration rollers.
- The delivery motor rotates the delivery rollers.

The three fans are for the ADF, the flatbed, and the power supply:

- The ADF fan assembly includes a fan housing. The ADF fan is an intake fan.

 **NOTE:** The ADF fan can be ordered separately or with its plastic housing.

- The flatbed fan assembly includes a filter. The flatbed fan is an intake fan.

 **NOTE:** The flatbed fan assembly filter needs to be replaced only when replacing the flatbed fan.

- The power supply fan is an exhaust fan.

Figure 5-6 Motors and fans

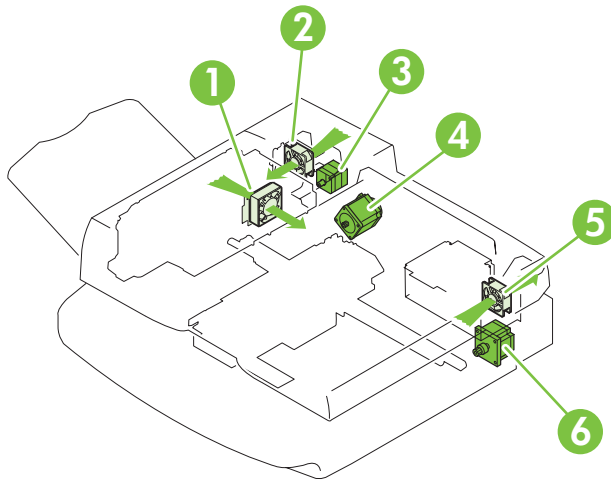


Table 5-5 Motors and fans

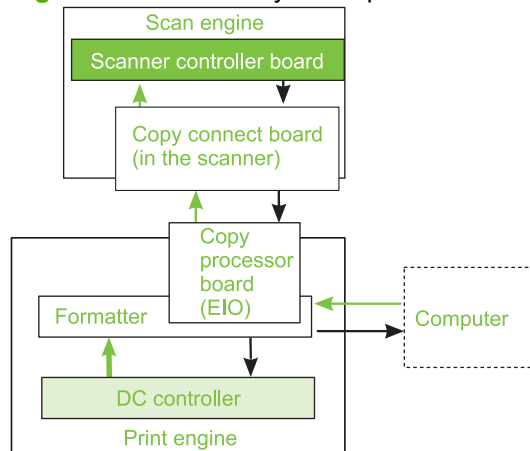
Number	Part	Part number
1	Flatbed fan assembly	RG5-6318-000CN
2	ADF fan	RH7-1486-020CN
2	ADF fan assembly (includes cable and shroud)	RG5-6312-030CN
3	Delivery motor (24 vdc)	RH7-1487-020CN
4	Pickup motor (24 vdc)	RH7-1488-030CN
5	Power supply assembly (fan (callout 5) included)	RG1-4153-000CN
6	Flatbed motor (24 vdc)	RH7-1485-000CN

Basic block diagram

The formatter sends a scan command to the copy processor after it receives a scan command from the control panel by way of the DC controller. The copy processor then sends a scan command to the scanner controller board. The scanner controller board generates the image data and sends the image data back to the copy processor which, in turn, passes the image to the formatter. Depending on the original request from the control panel (n-up, book copying, or image rotation), the formatter completes

the processing. The data is then passed to the DC controller for printing, or is passed to a computer for digital sending.

Figure 5-7 Scanner system operations



Basic system configuration

Scanner unit systems

The five main systems in the scanner unit include the following:

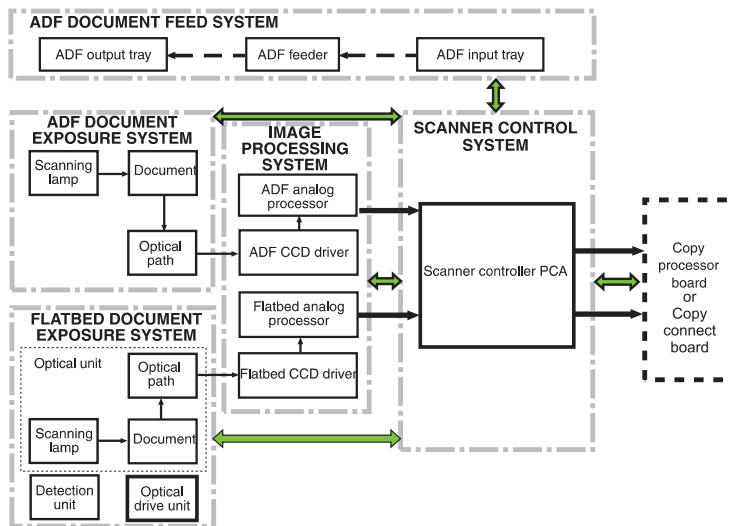
- ADF document feed system
 - ADF output tray
 - ADF feeder
 - ADF input tray
- ADF document exposure system
 - Scanning lamp
 - Document
 - Optical path
- Flatbed document exposure system
 - Scanning lamp
 - Document
 - Optical path
 - Optical drive unit
 - Detection unit (home position sensor)
- Image processing system
 - ADF analog processor
 - ADF CCD (charge coupled device) driver

- Flatbed analog processor
- Flatbed CCD driver
- Scanner control system
 - Scanner controller board (SCB)

Scan mode

- ADF duplex mode: controlled by the ADF document feed system, ADF document exposure system, flatbed document exposure system, and image processing system.
- ADF simplex mode: controlled by the ADF document feed system, flatbed document exposure system, and image processing system.
- Flatbed mode: controlled by the flatbed document exposure system and image processing system.

Figure 5-8 Basic system configuration

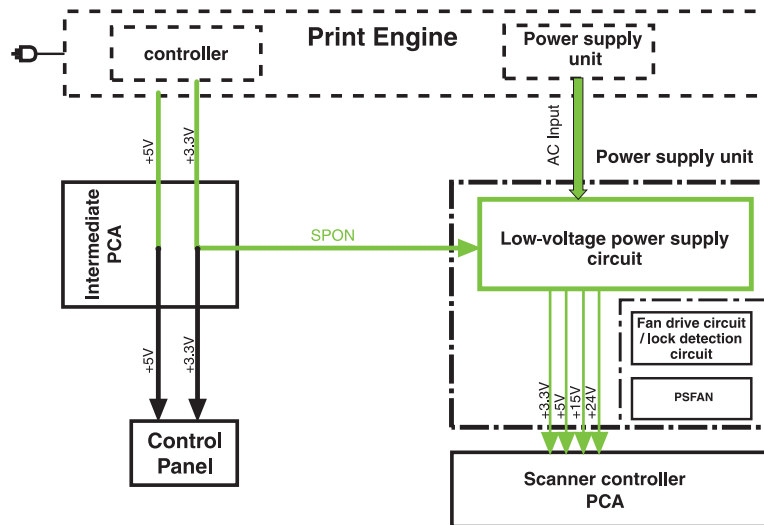


Power supply assembly

- △ **CAUTION:** AC is always on. Even if the product is turned off, the scan engine power supply is supplied with AC power from the print engine power supply. Make sure you unplug the product before beginning any service.

Table 5-6 Power supply assembly ratings

Product	Volts	Frequency	Amps	Watts (typical)	Typical Electricity Consumption (TEC)
HP LaserJet M9059 MFP	100-127 Vac $\pm$ 10 percent 220-240 Vac $\pm$ 10 percent	50/60 Hz $\pm$ 2 Hz	100–127 Vac: minimum recommended current capacity = 15-amp dedicated circuit 220-240 Vac: minimum recommended current capacity = 6.5-amp dedicated circuit	Print: 1,022; Copy: 1,030; Ready: 331; Sleep 1: 244; Sleep 2: 47; Sleep 3: 30; Off: 2.0	18.9 KWhr/Week

Figure 5-9 Power supply assembly

NOTE: When the control panel backlight is off, the +5V line is being signaled off at the control panel assembly by the control panel controller board. SPON is the scanner power-on signal sent to the scan engine power supply when the product is powered on by pressing the power switch on the print engine. See [Low-voltage power supply on page 131](#).

Sleep mode

To extend the life of product components and to meet Energy Star energy use guidelines, the product uses a sleep mode to conserve energy use. To further extend the life of the control panel backlight, the backlight will turn off after 15 minutes of product inactivity (the backlight also turns off when the product enters sleep mode). The table below describes the energy use behavior of the product components when the product is in sleep mode.

 **NOTE:** Sleep mode can be enabled or disabled by using the control panel menus (**Administration** menu, **Management** sub-menu, **Sleep mode** sub-menu) or by pushing the **Sleep** button on the control panel. Pushing the **Sleep** button while the product is in the **Ready** (waiting for a print job) state begins the sleep mode (sleep mode 2). Pushing the **Sleep** button while the product is in sleep mode, returns the product to the **Ready** state.

Sleep mode 1 is defined as a level of product power consumption of less than that used when the product is in the **Ready** (waiting for a print job) state, and more than that used when in sleep mode 2. Sleep mode 1 begins when the product has been inactive for 15 minutes (the 15 minute delay time is not configurable). Sleep mode 1 is the equivalent of the Energy Star program “Low Power” mode.

Sleep mode 2 begins after the product has been inactive for the amount of time that is set for **Sleep Delay** (45 minutes is the default).

Sleep mode 3 begins after the product has been inactive for 10 minutes (which is not configurable) while in sleep mode 2.

Recovery time for sleep mode 1 is 26 seconds; for sleep mode 2 it is 1 minute, 53 seconds; and for sleep mode 3 it is 3 minutes, 19 seconds.

 **NOTE:** When the sleep mode setting is set to **Off**, and a **Sleep Delay** setting is selected, the sleep mode setting is automatically set to **On** or **Off** (which ever was the last saved option).

Table 5-7 Sleep mode behavior

Sleep mode	Behavior
1	• Turns off control panel back light
2	Sleep mode 1, plus the following: • Slows processor • Turns off external paper handling device • Places scanner in sleep mode • Turns of 24 V power supply • Decreases fuser power • Slows fuser fan • Slows delivery fans
3	Sleep mode 2, plus the following: • Turns off fuser power • Turns off duplexer • Turns off delivery fans • Stops hard disk

Low-voltage power supply circuit

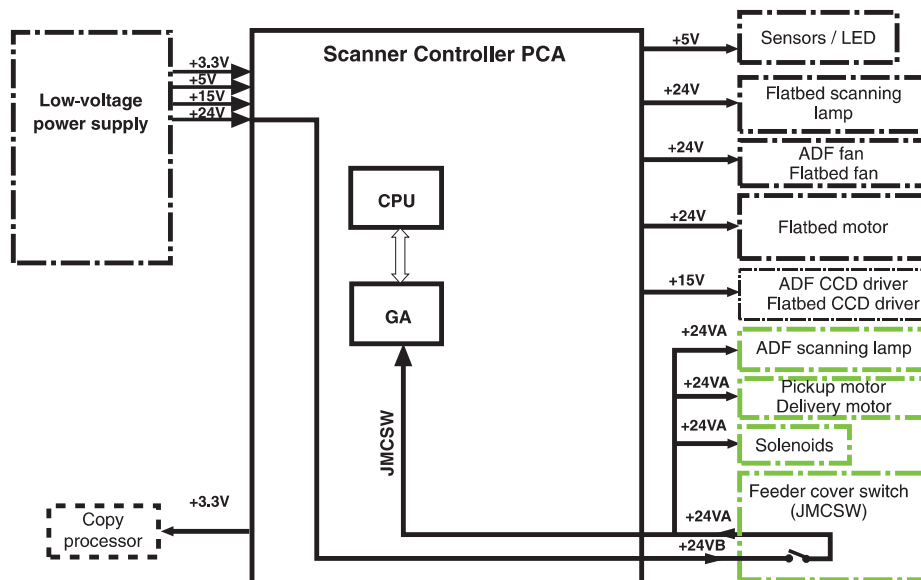
Opening the feeder cover switch cuts power to the ADF scanning lamp, pickup motor, delivery motor, and the solenoids.

The power supply unit generates DC power required in the scan engine based on the AC voltage supplied from the print engine power supply.

The remote switch is employed as a power switch of the scan engine. Of the voltages supplied from the print engine dc controller to the power supply of the scan engine, 3.3 vdc are used as a remote signal. The signal is supplied to the power supply unit as the power remote signal (SPON) through the intermediate circuit. When the signal is "H," the low-voltage power supply circuit generates the AC power to the dc power. The power generated in the circuit is converted to +24 vdc, +15 vdc, +5 vdc, and +3.3 vdc required in the scan engine. The +24 vdc is supplied to the motors, solenoids, and scanning lamps; +15 vdc to the sensors, LEDs, and ICs in the SCB; and +3.3 vdc to the CP.

The +24 vdc is divided into the +24 vb and +24 va. The +24 vb is constantly supplied from the low-voltage power supply circuit, and the +24 va stops power supply when the feeder cover switch (JMCSW) is turned off by opening the ADF feeder cover. The +24 va is supplied to the scanning lamps, pickup motors, delivery motors, and solenoids. It also functions as the ADF feeder cover open detection signal, and allows the CPU to detect an open cover.

Figure 5-10 Low-voltage power supply circuit



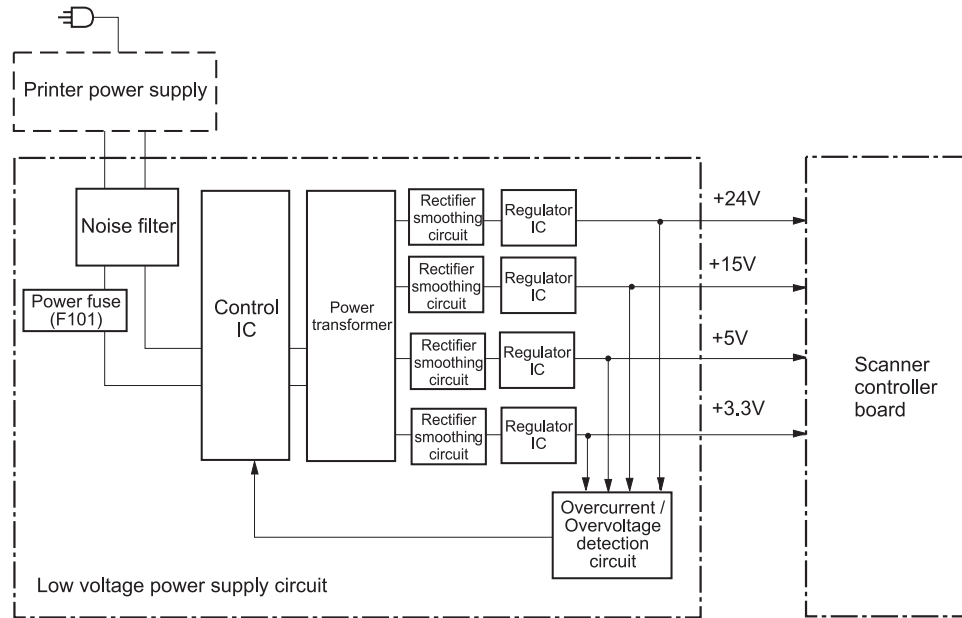
Protective functions

The low-voltage power supply circuit includes overcurrent and overvoltage protective functions. The protective functions automatically interrupt output voltage to prevent power supply failures. These failures occur from an excessive current flow that is caused by a short circuit on the load side or from an abnormal voltage increase.

When the DC voltage is not output from the low-voltage power supply circuit, the overcurrent or overvoltage protective functions might be activated. If they are activated, turn off the product, correct

the problem in the failure loads, wait about two minutes, and then turn on the product. The circuit contains a power fuse (F1) which breaks and cuts off the power supply if overcurrent flows through the AC line.

Figure 5-11 Power supply



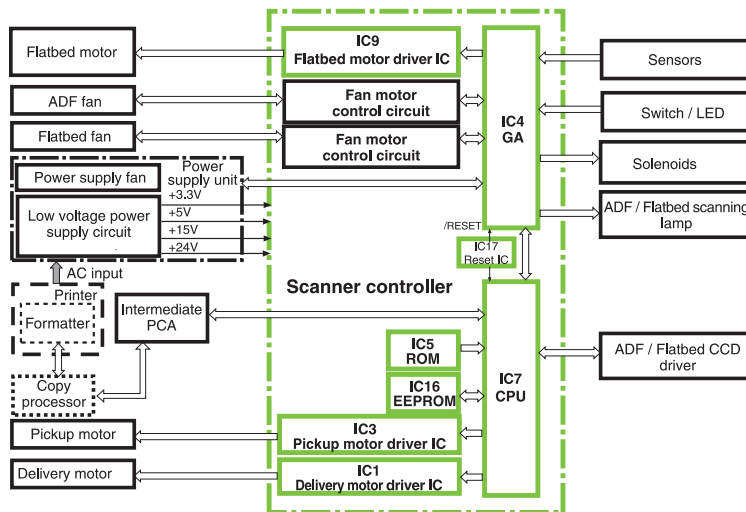
Scanner controller circuit

The CPU on the SCB controls the operation sequences of the scan engine. When the dc power is supplied to the scanner controller, the CPU starts to control the scan engine. When the scan engine is in standby status, the CPU outputs signals to drive each load of charge-coupled devices (CCDs), motors, solenoids, and scanning lamps based on a scan command from the CP.

- CPU (IC7): According to the control programs stored in the ROM (IC5), the CPU performs:
 - image scanner sequence control
 - communication with the copy processor control
 - pickup motor and delivery motor drives control
- GA (Gate Array) (IC4): According to commands from the CPU, the GA performs:
 - scanning lamp drive control
 - sensors, switches, and LEDs control
 - solenoids control
 - fan motors control
 - flatbed document scanning motor control

- (IC16): The EEPROM stores the specific backup adjustment data of the scanner, such as the leading-edge registration adjustment values and horizontal registration adjustment values.
- ROM (IC5): Stores the scanner control programs.
- Pickup motor driver IC (IC3): Drives the pickup motor based on commands from the CPU.
- Delivery motor driver IC (IC1): Drives the delivery motor based on commands from the CPU.
- Flatbed document scanning motor driver IC (IC 9): Drives the flatbed scanning motor based on commands from the GA.
- Reset IC (IC17): Monitors +3.3V, and resets the CPU and GA when the power is turned on.

Figure 5-12 Scanner controller circuit

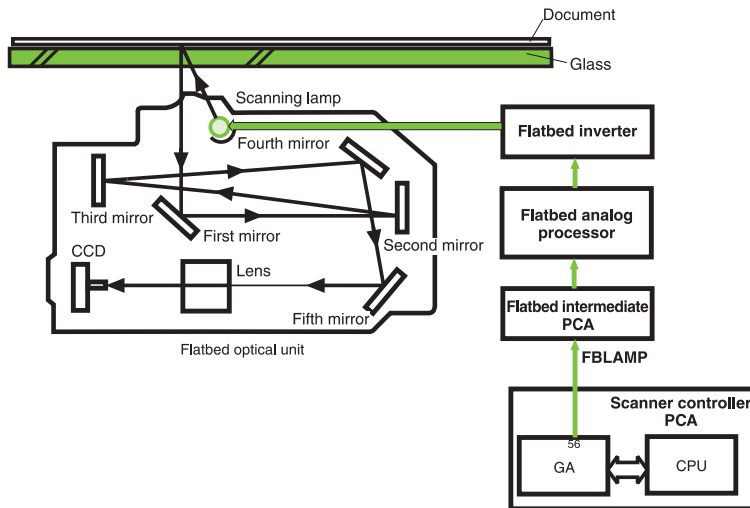


Flatbed operation

Flatbed document exposure control

The SCB sends a signal (FBLAMP) to the flatbed inverter to turn on the scanning lamp. The flatbed intermediate PCA and flatbed analog processor board pass on the signal. The flatbed inverter sends the signal to the scanning lamp and the document exposure process begins.

Figure 5-13 Flatbed document exposure control

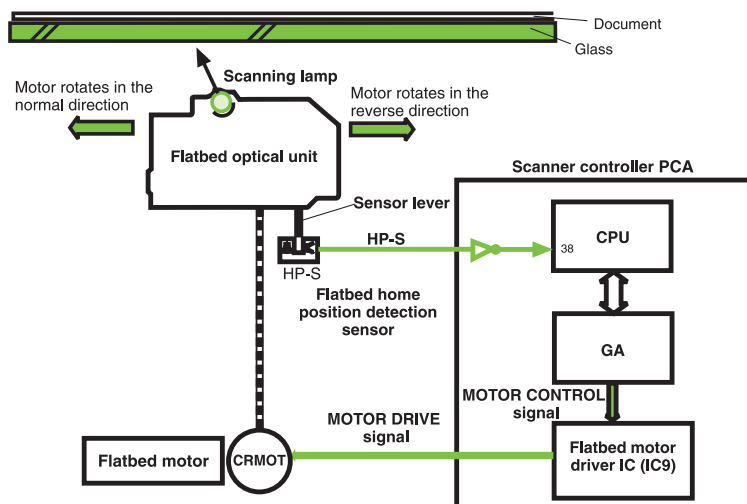


Flatbed optical drive control

The SCB sends a signal (CRMOT) to the flatbed motor to drive the flatbed optical unit forward to scan from the glass, or backward when scanning from the ADF frontside.

HP-S is the flatbed home position detection sensor. When the flatbed optical unit is in the home position, a signal (HP-S) is sent to the SCB.

Figure 5-14 Flatbed optical drive control



Flatbed optical unit operation

The ADF optical unit is located 26.5 mm (1 in) from the flatbed optical unit when the flatbed optical unit is in the ADF scanning position.

When a two-sided original document is copied from the ADF, the first side begins copying before the second side of the two-sided copy.

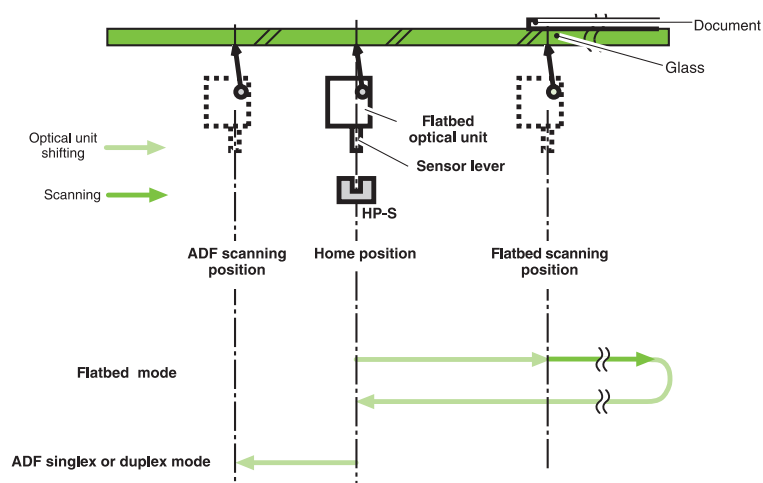
 **NOTE:** The mechanical lock on the product is not located in the “home position.” Locking the carriage in the control panel moves the optical unit into position so the mechanical lock, which is located on the left side of the unit, can hold the flatbed optical unit during a move.

 **CAUTION:** Always engage the mechanical lock before moving the product to avoid damaging the flatbed optical unit.

Lock the carriage:

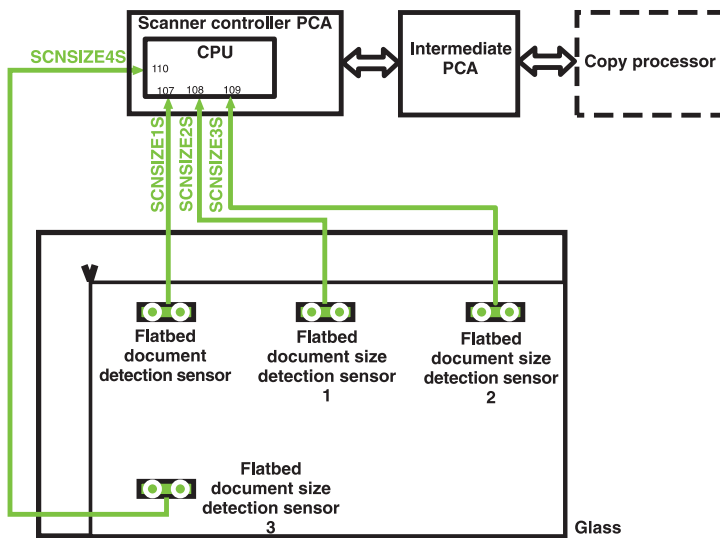
1. Touch **Administration**.
2. Touch **Resets**
3. Touch **Lock Carriage**
4. Remove the ADF output bin on the left side of the product, and then engage the mechanical lock.

Figure 5-15 Flatbed optical unit operation



Flatbed document size detection

Figure 5-16 Flatbed document size detection



Sensor names

- Flatbed document detection sensor: SCNSIZE1S (only detects the document on the glass)
- Flatbed document size detection sensor (1): SCNSIZE2S size sensor
- Flatbed document size detection sensor (2): SCNSIZE3S size sensor
- Flatbed document size detection sensor (3): SCNSIZE4S size sensor

The sensors send signals to the SCB. The signals are transferred through the intermediate PCA to the CP. The CP calculates the size of the document based on the signals from the sensors.

The flatbed document sensors are located in the same positions on the 110 vdc and 220 vdc products. To determine the sizes of larger documents, the product searches for the cold reset paper size. For example, it will detect ledger if it is set to letter, and it will detect A3 if it is set to A4.

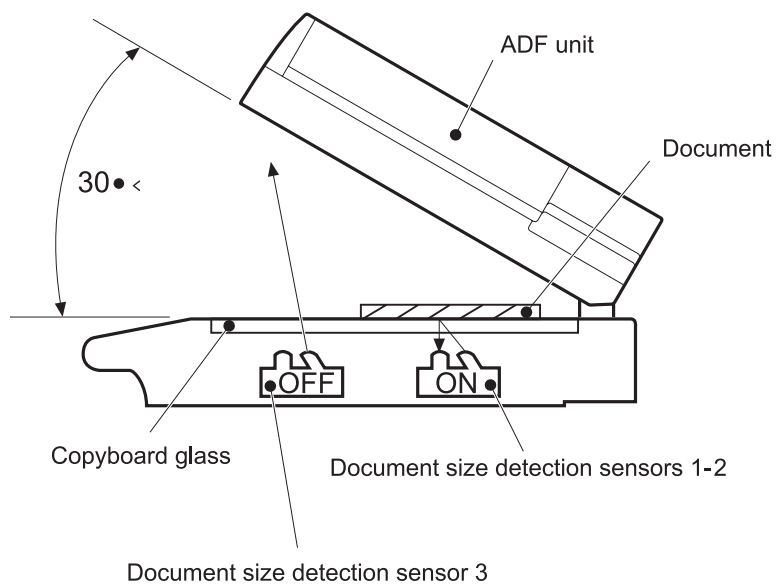
Functions operation

When a document is placed on the glass and the ADF unit is closed or at an angle of less than 30 degrees, the SCB begins to detect the presence and size of the document. The SCB monitors outputs from the flatbed document detection sensor (SCNSIZE1S) and the flatbed document size detection sensors (SCNSIZE2S, SCNSIZE3S, and SCNSIZE4S). The SCB passes the signals from the sensors to the CP.

The reflecting sensor detects the presence and size information of the document based on whether the photoreceptor can receive the emitted light from the luminous body of the sensor. When a document is on the glass, the document reflects the emitted light and the photoreceptor can receive the reflected

light. When there is not a document on the glass, the emitted light passes through the glass and the photoreceptor cannot receive the emitted light.

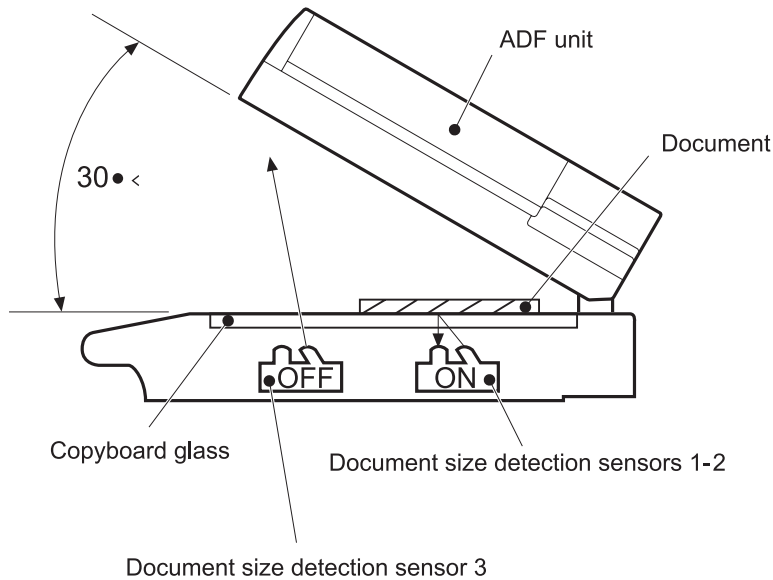
Figure 5-17 Functions operation



ADF angle detection

The SCB performs the detection by monitoring an output of the ADF angle detection sensor (PI-1). The output of the PI-1 is "H" when the ADF unit is opened. When the angle between the glass and the ADF is less than 30 degrees, the sensor lever interrupts the PI-1 and the output of the PI-1 is "L."

Figure 5-18 ADF angle detection



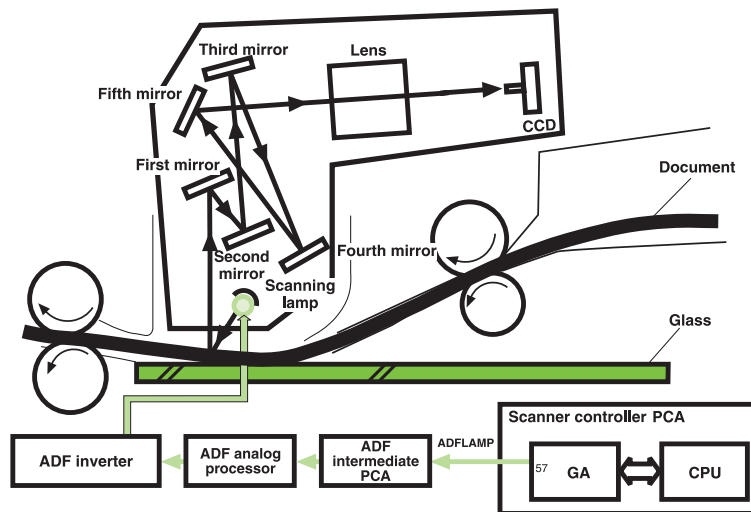
ADF operation

ADF document exposure control

1. The SCB sends a signal to the ADF inverter to turn on the scanning lamp.
2. The ADF intermediate PCA and ADF analog processor board pass the signal through.
3. The ADF inverter sends the signal to the scanning lamp and the document exposure process begins.

 **NOTE:** The ADF inverter, the ADF analog processor, and the ADF intermediate PCA are inside the ADF.

Figure 5-19 ADF document exposure control



ADF document feed control

ADF document feed control is performed to pass paper over the optical units for exposure. The ADF document feed control process begins when the SCB sends signals. The shutter solenoid helps to align the paper, and the weight plate “slaps” down on the stack of paper.

 **NOTE:** Both the shutter solenoid and the weight plate help to perform the pickup process.

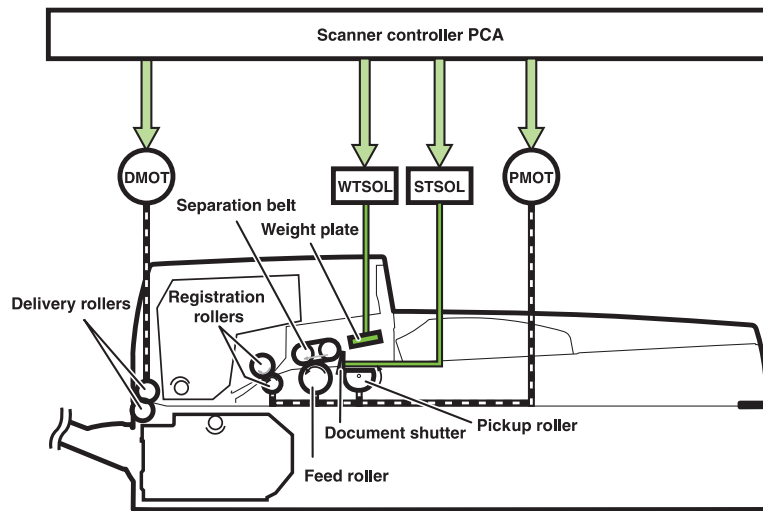
The pickup motor drives the pickup rollers and the feed rollers, and then reverses rotation to drive the registration rollers.

ADF document feed control terminology

- STSOL: shutter solenoid
- PMOT: pickup motor

- WTSOL: weight solenoid
- DMOT: delivery motor

Figure 5-20 ADF document feed control



Pickup and feed operation

1. The shutter solenoid is turned on when the SCB receives a scan command, and the document shutters drop.
2. About 200 milliseconds after the shutter solenoid is turned on, the pickup motor rotates in the normal direction. The pickup roller, feed roller, and separation belts begin to rotate. At the same time, the weight solenoid is turned on and the weight plate drops down. This allows the document on the document tray to be sent to the feed roller by receiving the rotation drive from the pickup roller and being pressed by the weight plate.
3. The document sent to the feed roller is sent to the ADF feeder after any multiple feeds are cleared by the feed roller and separation belts being driven by the pickup motor.
4. The document sent to the ADF feeder passes through the registration document detection sensor (REG-S) and reaches the registration roller. At this time the registration roller is not rotating so that the leading edge of the document is pushed against the registration roller to correct a skew.
5. After a set period of time from when the leading edge of the document passes the REG-S, the pickup motor rotates in its reverse direction. This allows the registration roller to start rotating and it re-feeds the document.
6. When the leading edge of the re-fed document reaches the timing detection sensor (TMG-S), the document scanning operation starts after a set period of time. The document set to the delivery roller is sent out of the scan engine by the delivery motor rotating in the normal direction. The delivery motor stops rotating after a set period of time.
7. When the delivery motor stops, the shutter solenoid is turned off. The pickup operation is complete after the pickup roller home position control operation.

Pickup roller home position control operation

The pickup roller home position control operation sets the pickup roller at its home position as an advance preparation to allow the roller to pick up the document.

1. The SCB monitors the pickup home position detection sensor (PICK-S) to detect the home position.
2. At the initial operation, or after delivering the document, the SCB rotates the pickup motor in the reverse direction and checks a signal from the PICK-S.
3. When the PICK-S detects the pickup home position lever on the shaft of the pickup roller, the SCB determines that the pickup roller is at its home position and stops the pickup motor.
4. When the SCB cannot detect the home position of the pickup roller within a specified period of time after the pickup motor starts rotating in the normal direction, the SCB recognizes the pickup motor failure and notifies the CP. A 30.1.9 error is shown on the control panel.

ADF document size detection

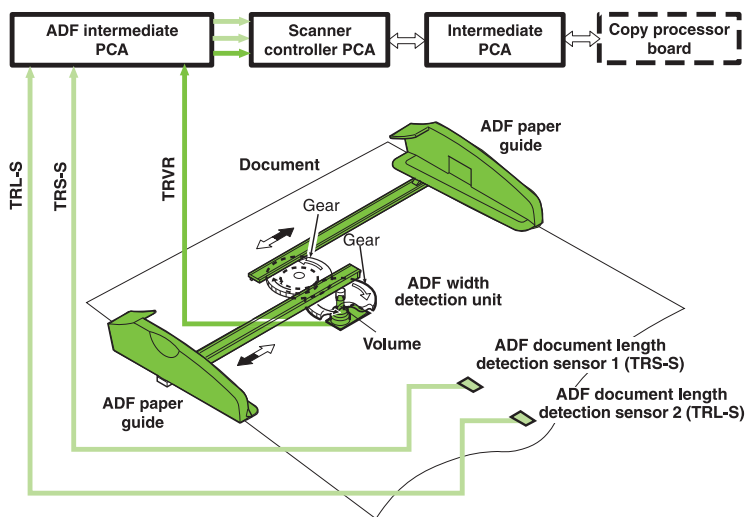
The sensors and the potentiometer send signals to the SCB, and these signals are transferred through the intermediate PCA to the CP. The CP calculates the size of the document based on the signals in the service menu.

ADF document size detection terminology

- TRS-S: ADF document length detection (short)
- TRL-S: ADF document length detection (long)
- TRVR: ADF width detection unit (potentiometer)

 **NOTE:** The width detection unit can be calibrated in the service menu.

Figure 5-21 ADF document size detection

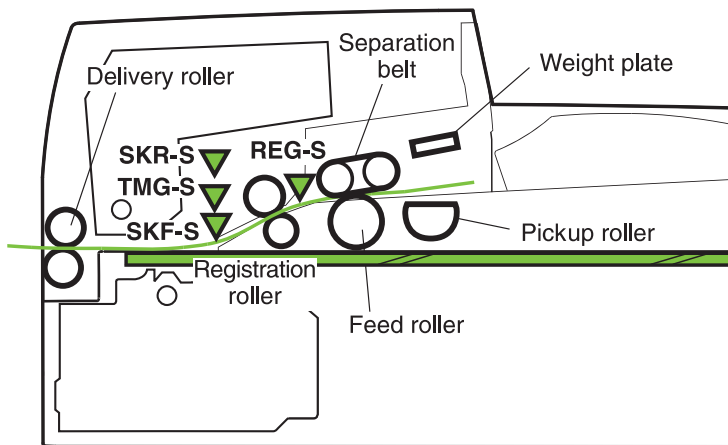


ADF feeder sensors

- REG-S (registration sensor): detects when paper is approaching the registration rollers.
- TMG-S (timing sensor): verifies that paper is moving through the paper path.
- SKR-S (back skew sensor)
- SKF-S (front skew sensor)

 **NOTE:** The ADF has a document detection sensor that detects the presence of paper. This sensor is not shown in the graphic below. When the sensor detects the presence of paper, the LED on the ADF illuminates.

Figure 5-22 ADF feeder sensors

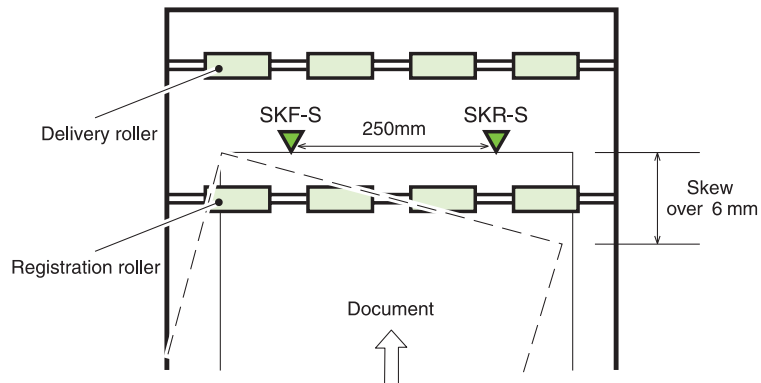


ADF document skew detection

1. One of the skew sensors is activated.
2. A signal is sent to the SCB.
3. The SCB begins to read a certain number of clock pulses in 6 mm (.02 inch).
4. A skew jam is not reported if the second skew sensor is activated before the allotted number of pulses.

 **NOTE:** Skew detection is only performed when the document width is less than or equal to 257 mm (10.1 inches).

Figure 5-23 Document skew jam



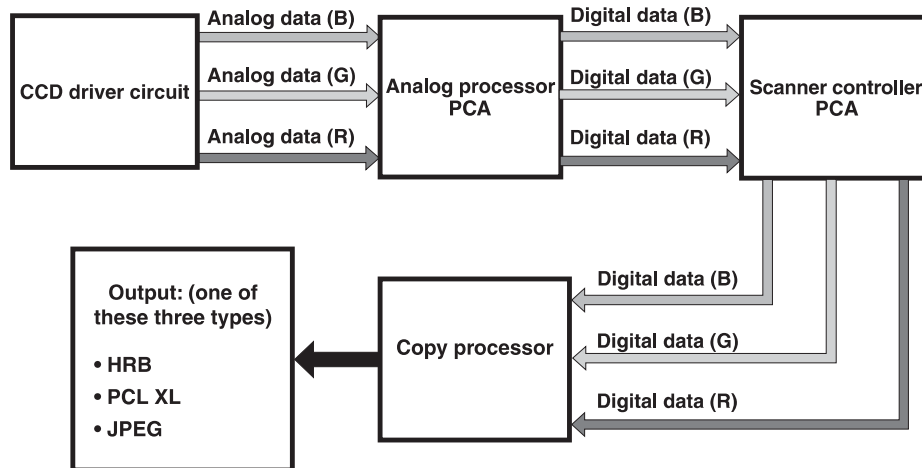
Scanned data flow

The product has a scan engine with 600 by 600 ppi (pixels per inch) resolution. It has three channels (red, blue, and green) with 10 bits per channel, resulting in the equivalent of a 30-bit scan engine.

Analog data is captured by the CCD driver circuit and converted to digital data on the analog processor board. Digital data is then sent through the three channels to the CP. The CP converts the digital data into one of the three final output types:

- HRB (hardware ready bits): Most copy jobs are processed at the CP and sent to the print engine as HRB.
- PCL-XL: If rotation, book copying, or n-up is chosen in the job, the CP passes PCL-XL data to the print engine and the formatter finishes the processing.
- JPEG (lossless): Compresses image data from the CP to the formatter when processing a digital send job. The formatter then processes the data into the desired file type (TIFF, MTIFF, JPEG, or PDF).

Figure 5-24 Scanned data flow

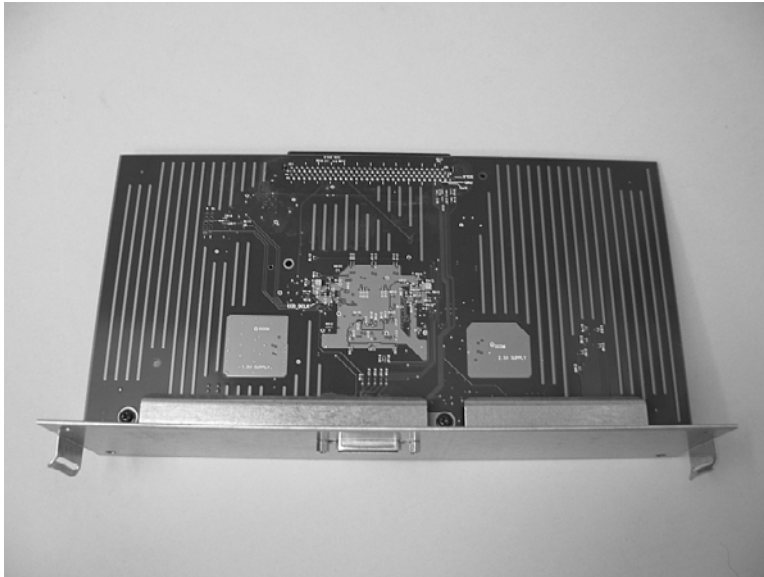


Copy processor

The copy processor (CP) is the link between the formatter in the print engine and the SCB in the scan engine. Control signals from the formatter are sent to the CP. The CP sends these control signals to the

SCB. After the scanning process is completed by the SCB, the scanned data is sent to the CP. The CP processes the image and sends the image data to the formatter.

Figure 5-25 Copy processor



Scanning process control signals

The CP controls the following scanning process control signals:

- ADF unit and flatbed unit operation directs the SCB about the following:
 - When to scan
 - How to scan
 - When to activate motors
 - When to turn the scanning lamps on and off
- Image processing
 - Color alignment
 - Resolution conversion
 - Image sharpening
 - Moire removal
 - Image scaling
 - Shifting of data strips (reconstructing separately processed image data before CP communication to the formatter)
 - RGB conversion for CP communication
 - CP communication to the formatter using one of the following formats:
 - HRB (fastpath) communication with the hard drive on the formatter
 - PCL-XL (n-up, rotation, book mode) communication with the hard drive on the formatter

- JPEG compression (when digitally sending data) communication with the hard drive on the formatter
- Data compression before sending to the formatter over the high speed copy connect cable

Typical scanning process flow

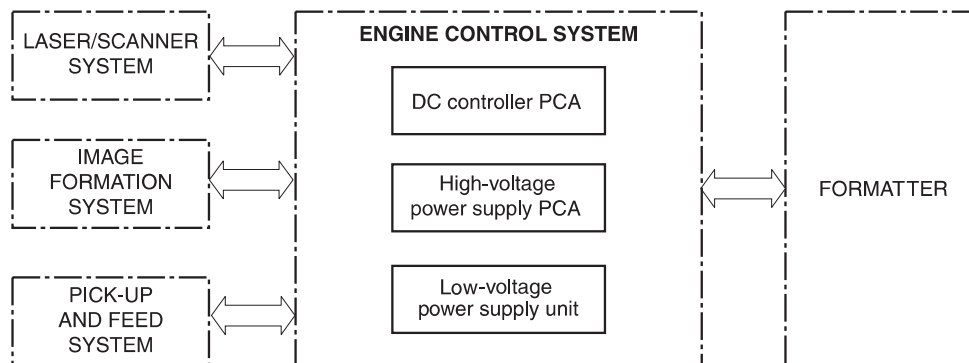
1. The original document is placed on the glass or in the ADF.
2. The user enters job preferences using the control panel keys. The user presses the **Start** key. Job preferences are sent to the formatter.
3. Some job preferences, such as n-up, will be held and processed later by the formatter. Others are sent to the CP.
4. The CP sends control signals to the SCB. The document is scanned.
5. The SCB sends scanned image data back to the CP.
6. The CP processes the image.
7. The CP sends the image data to the formatter.
8. The formatter further processes the image data (if required).
9. The image data is then either printed or digitally sent depending on what the user specified at the beginning of the process.

Engine control system

The engine control system coordinates the laser/scanner system, the image formation system, and the pickup and feed system according to instructions from the formatter. It consists of the DC controller PCA, the high-voltage power supply circuit, and the low-voltage power supply unit.

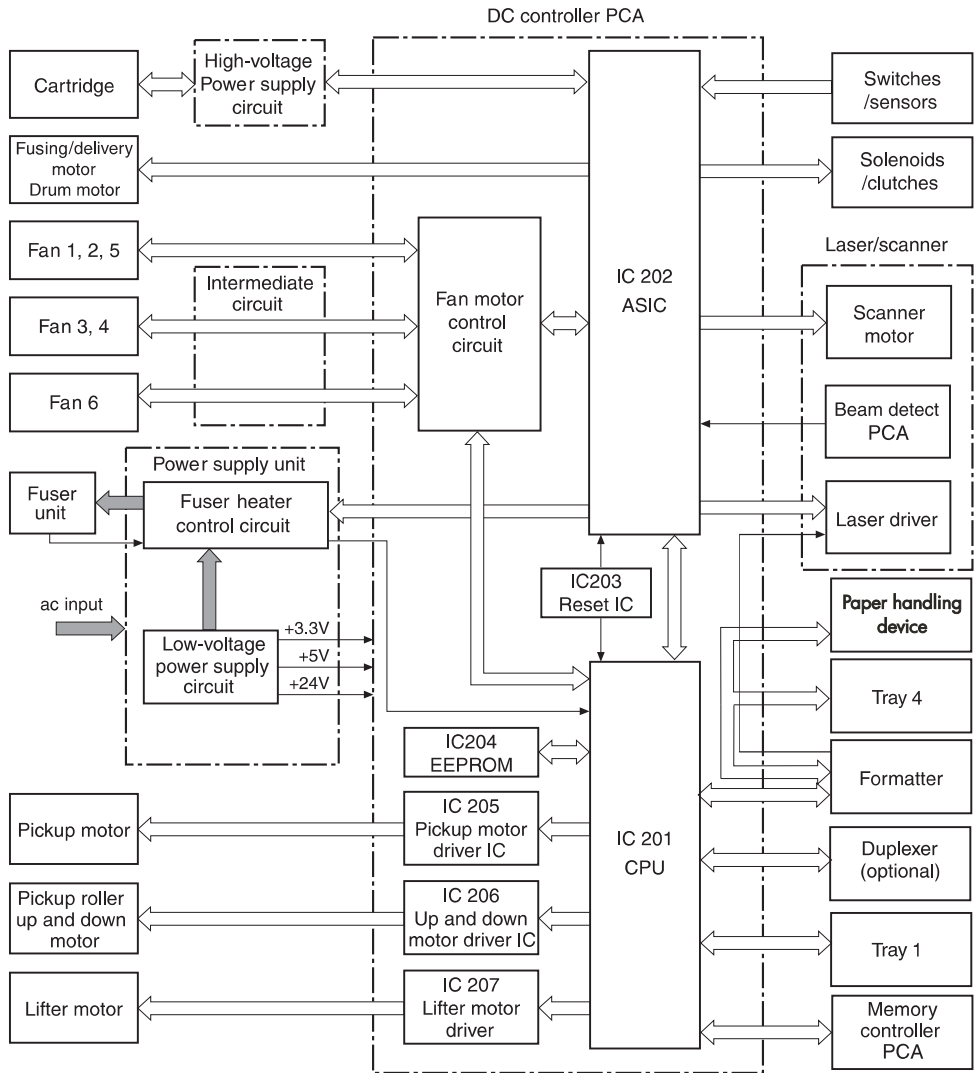
Figure 24 shows a block diagram of the engine control system.

Figure 5-26 Engine control system operation



DC controller PCA

Figure 5-27 DC controller PCA



The DC controller PCA manages the operational sequences of the product. The following table lists the DC controller components and their functions.

Table 5-8 DC controller operations

Component	Function
CPU (IC201)	- Controls sequences of the product - Communications with the formatter - Controls the high-voltage power supply circuit - Controls the pickup motor, the lifter motor, the pickup roller motor, and fan motor 6 - Communicates with the duplexer and tray 1 - Controls the fuser heater control circuit and the fuser heater safety circuit

Table 5-8 DC controller operations (continued)

Component	Function
ASIC (IC202)	• Receives instructions from the CPU • Controls laser/scanner functions • Controls fuser/delivery motor and drum motor • Monitors sensors and controls switches • Controls clutches and solenoids • Controls fan motors 1 through 5
Reset IC (IC203)	• Monitors +3.3 V • Resets the CPU and ASIC when the product is turned on
EEPROM (IC204)	• Stores backup data
Pickup motor driver IC (IC205)	• Operates the pickup motor
Pickup roller up-and-down motor IC (IC206)	• Operates the pickup roller up-and-down motor
Lifter motor IC (IC207)	• Operates the lifter motor
Fan motor controller	• Turns fans on and off

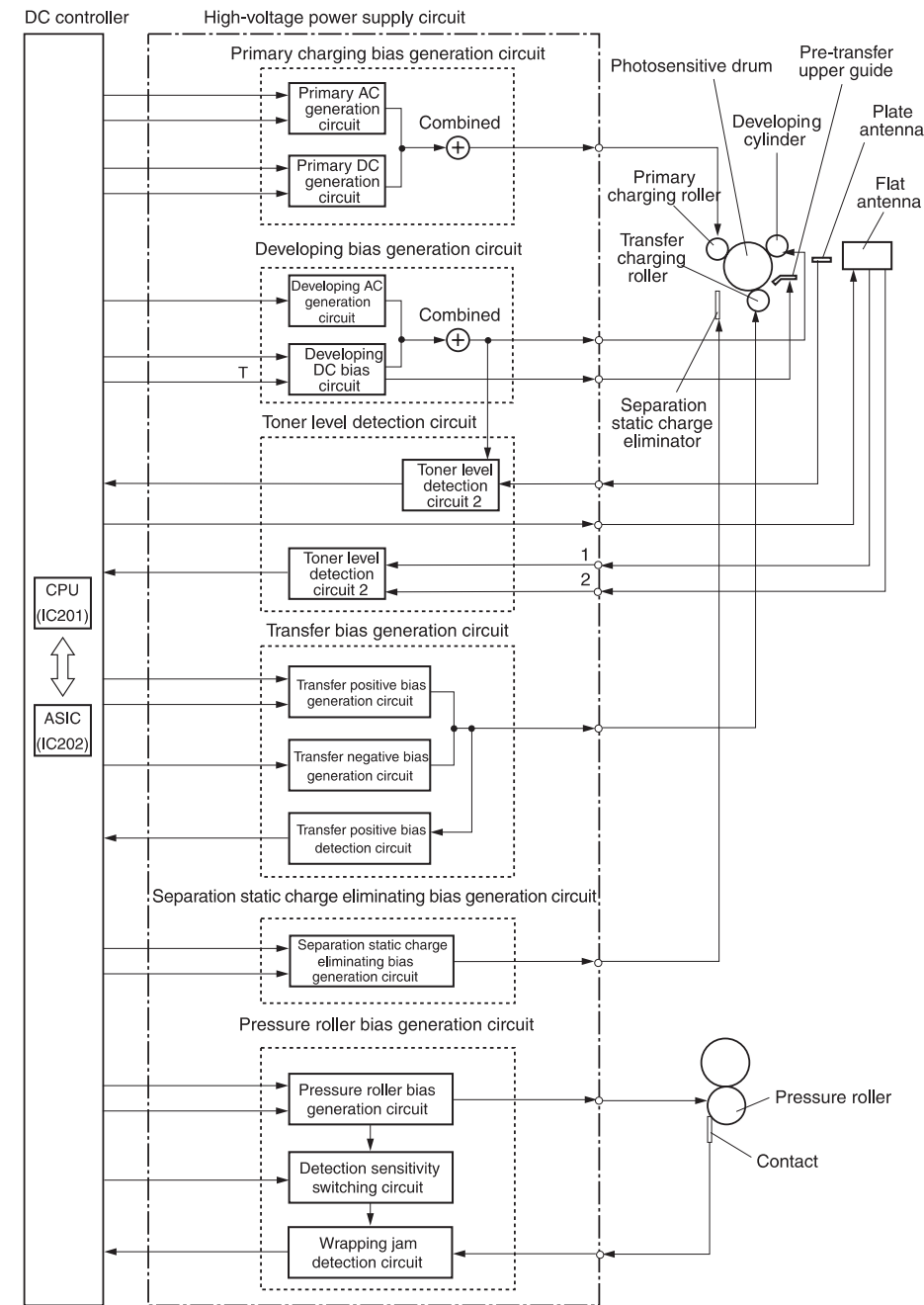
High-voltage power supply circuit

The high-voltage power supply receives instructions from the DC controller to apply high-voltage bias to the following components:

- Primary charging roller
- Developing cylinder
- Pre-transfer upper guide
- Transfer charging roller
- Separation static charge eliminator
- Pressure roller

It also detects the toner level.

Figure 5-28 High-voltage power supply



Each circuit serves a specific purpose:

Table 5-9 High-voltage power supply circuits

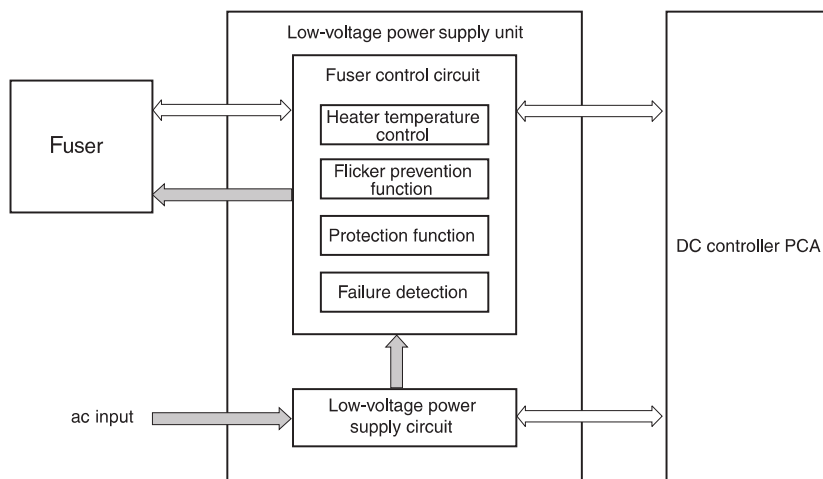
Bias generation circuit	Purpose
Primary charging bias	The circuit applies bias to the primary charging roller to spread a uniform negative charge to the photosensitive drum.
Developing bias	The circuit controls the amount of toner transferred to latent images on the photosensitive drum.

Table 5-9 High-voltage power supply circuits (continued)

Bias generation circuit	Purpose
Pre-transfer upper guide bias	The circuit prevents toner from adhering to the pre-transfer upper guide.
Transfer bias	The circuit applies specific bias levels to the transfer charging roller at specific times. • Cleaning bias: Cleans the transfer charging roller by moving toner to the photosensitive drum. • Between-page bias: Prevents residual toner from adhering to the transfer charging roller between pages of a print job. • Print bias: Transfers toner to print media from the photosensitive drum.
Separation static charge eliminating bias	The circuit discharges media at delivery.
Toner level detection	The circuit monitors toner level via two antennae inside the print cartridge.

Low-voltage power supply

The low-voltage power supply consists of the fuser control circuit and the low-voltage power circuit.

Figure 5-29 Low-voltage power supply

The low-voltage power-supply circuit converts AC voltage DC voltage as follows:

- +24 Vdc for motors, solenoids, clutches, and for the high-voltage power supply
- +5 Vdc for the laser/scanner PCA, the beam detect PCA, and the formatter
- +3.3 Vdc for the formatter, the sensors, and the ICs on the DC controller PCA

Fuser control circuit

The fuser control circuit controls the temperature of the fuser roller and the pressure roller. It consists of the following components:

Table 5-10 Fuser control circuit components

Component	Purpose
Main heater (H1)	Heats the center of the fuser roller

Table 5-10 Fuser control circuit components (continued)

Component	Purpose
Sub-heater (H2)	Heats both ends of the fuser roller
Lower heater (H3)	Heats the pressure roller
Upper thermistor (TH1)	Monitors the surface temperature of the fuser roller
Lower thermistor (TH2)	Monitors the surface temperature of the pressure roller
Two thermal switches	Turn off power to the heaters if they overheat.
Flicker prevention function	Controls power to heaters to prevent power source fluctuations that cause lights to flicker.

Formatter system

The formatter system provides the following functions:

- Receives and processes data from product interfaces
- Monitors control panel input and relays status information to the control panel and the I/O
- Develops and coordinates data placement and timing with the print engine
- Stores font information and macros
- Communicates with computers

The formatter exchanges signals with the DC controller to start the initial rotation period (INTR), to turn on the registration roller drive clutch, and to feed media into the product. When media is positioned for printing, the formatter sends information through the DC controller to the laser/scanner, which turns on and turns off the laser diodes.

Formatter hardware

The formatter system includes the following components:

Table 5-11 Formatter hardware components

Component	Function
ROM	Stores fonts and microprocessor control programs
RAM	Stores printing and font information and temporarily stores print-image data before it sent to the print engine. RAM data is lost when the product is turned off. NOTE: Upgrading RAM improves graphic-intense printing operations, but does not increase the I/O buffer space or the printing speed.
NVRAM	Stores configuration information. NVRAM is saved with the product is turned off.
USB	Sends and receives data through USB type B interface connector (connected to the host computer).
EIO interface	Sends and receives data through EIO slots such as HP Jetdirect, analog fax, and other accessories.
Flash memory card	The slot is dedicated to firmware.
Real time clock	This clock is used for the Wake-up time feature. It includes a battery to supply power when the product is turned off.
HP Jetdirect Inside (JDI)	JDI is an Ethernet interface that is part of the formatter.

Laser/scanner system

The laser unit of the laser/scanner system includes two laser diodes which enable scanning two lines simultaneously.

The laser/scanner PCA turns on the laser diodes based on signals from the DC controller and the formatter systems. The laser beams strike a six-sided mirror that rotates at a constant speed. The six-sided mirror reflects the beams through a focusing lens to a reflective mirror and then to the photosensitive drum, which also rotates at a constant speed. This allows the beams to scan across the drum at a constant speed to form the latent image on the drum surface.

Figure 5-30 Laser/scanner system

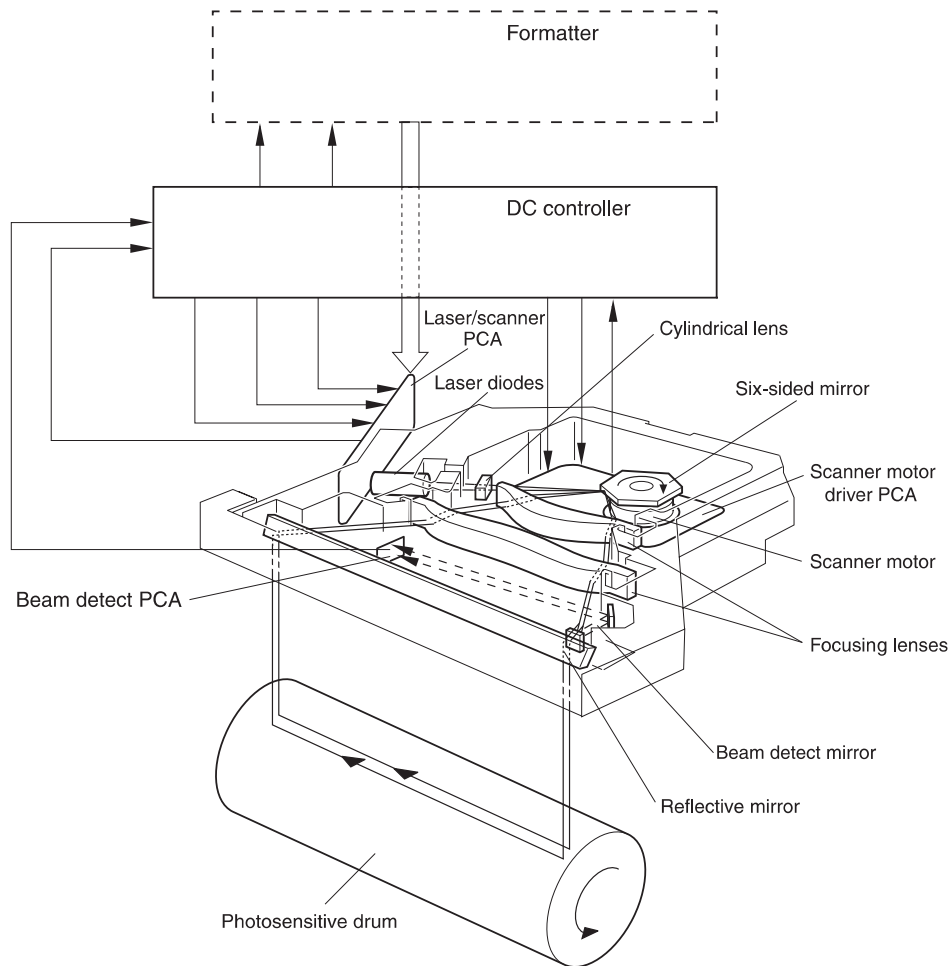


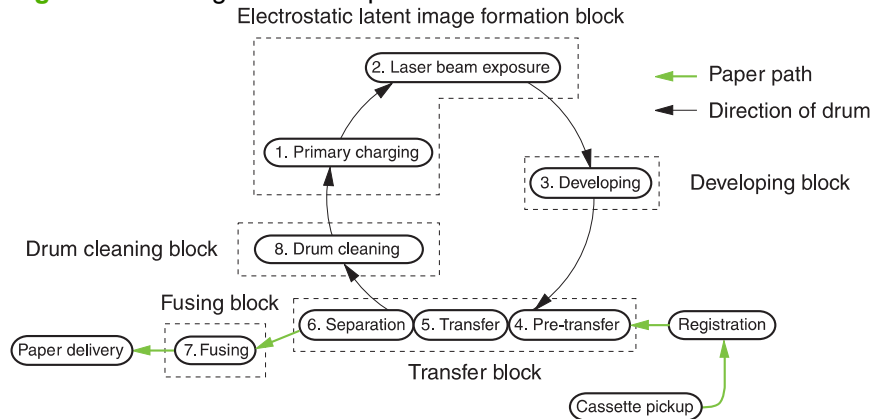
Image formation system

The image formation system consists of the print cartridge, the transfer charging roller, and the fuser.

When the formatter sends a print command, the image formation system completes the following process:

1. The main motor rotates the photosensitive drum, the primary charging roller, the developing cylinder, the transfer charging roller, and the pressure roller.
2. The primary charging roller applies a uniform negative charge to the photosensitive drum surface.
3. The laser beams, modulated by signals from the formatter, focus on the photosensitive drum surface to form a latent image.
4. Toner on the developing cylinder converts the latent image into a visible image, which is transferred onto media by the transfer charging roller.
5. The fuser applies heat and pressure to the toner image on the media to make the image permanent.
6. The cleaning blade scrapes residual toner from the photosensitive drum.
7. The primary charging roller applies a new charge to the photosensitive drum for the next image.

Figure 5-31 Image formation process



The image formation process

Table 5-12 Image formation process

Step	process
Conditioning (primary charging)	The primary charging roller, which is made of conductive rubber, is located inside the print cartridge. An AC bias applied to it erases residual charges from the previous image. Then a negative DC bias applied to it creates a uniform negative potential on the photosensitive drum.
Writing	Two laser diodes project laser beams onto a rotating scanning mirror. As the scanning mirror rotates, it reflects the beams through a set of focusing lenses and onto another mirror, which reflects the beams through a slot in the top of the print cartridge and onto the photosensitive drum. The beams sweep from left to right on the drum discharging the negative potential wherever they strike the surface. This creates the latent electrostatic image on the drum.

Table 5-12 Image formation process (continued)

Step	process
Developing	The developing drum inside the toner cartridge receives a negative charge from the negative DC supply and charges the toner as it rotates. With the negative charge, the toner is attracted to the laser discharged areas of the latent image on the photosensitive drum and is repelled from the negatively charged (unexposed) areas.
Pre-transfer	The pre-transfer upper guide receives bias to prevent toner from adhering to it from the photosensitive drum.
Transfer	The transfer charging roller applies a positive charge to the paper causing the negatively charged toner image to be attracted to the paper from the photosensitive drum.
Separation	As the paper is separated from the photosensitive drum, the static charge eliminator reduces the charge on the paper. This stabilizes the feed system and prevents loss of the toner image in temperature and humidity.
Fusing	The paper with the toner image on it passes between the heated fuser roller and the pressure roller. This melts the toner and presses it into the paper.
Drum cleaning	After the separation process, the drum is cleaned and conditioned for the next image. The cleaning blade, which is always in contact with the surface of the drum, scrapes off excess toner. The excess toner is stored in the waste toner receptacle.

Print cartridge

Figure 5-32 Layout of the print cartridge

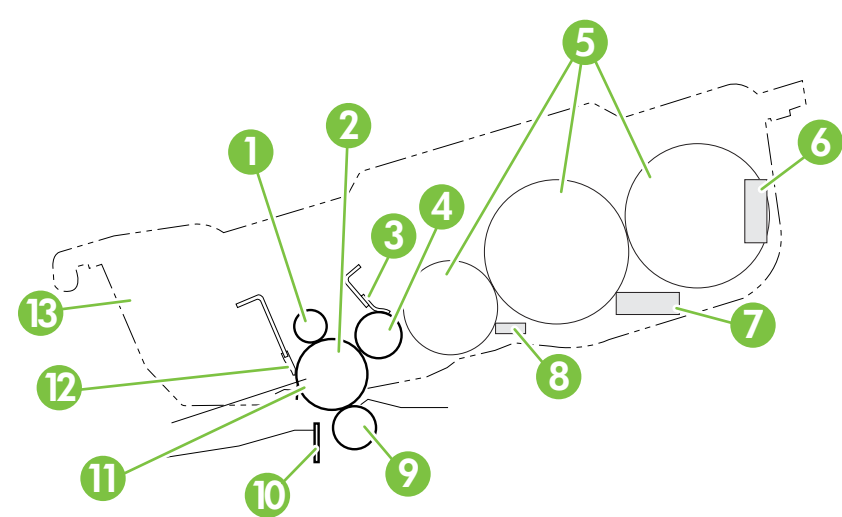


Table 5-13 Print cartridge components

Number	Description
1	Primary charging roller
2	Laser beams
3	Blade
4	Developing cylinder
5	Toner reservoirs
6	Cartridge memory

Table 5-13 Print cartridge components (continued)

Number	Description
7	Flat antenna
8	Plate antenna
9	Transfer charging roller
10	Static charge eliminator
11	Photosensitive drum roller
12	Cleaner blade
13	Waste toner reservoir

Print cartridge design

The print cartridge contains three cylindrical toner reservoirs (callout 5) that interconnect. Cylindrical hoppers eliminate packing and accumulation in areas where the toner does not reach the development area (callout 4). Stirrers rotating within each of the cylinders unpack the toner allowing it to be displaced easily into the development area.

No-shake toner

The geometry of the hoppers and stirrers automatically redistributes and unpacks the toner eliminating the need to shake the print cartridge at installation or when toner begins to run low. The print cartridge is out of toner at the point when print fading occurs.

Cartridge memory

The print cartridge includes RAM (callout 6) to record its condition and to provide information to the product. The memory controller reads and writes to the memory after receiving instructions from the DC controller, which monitors the antenna unit:

- Read:
 - When power is turned on
 - When the front cover is closed
 - When DC controller receives a command from the formatter
- Write:
 - When a print operation is complete
 - When the DC controller receives a command from the formatter

The DC controller also detects memory failures. If a read/write attempt fails twice, it reports the failure as a cartridge memory abnormality.

Toner seal

The print cartridge toner seal is opened automatically when the print cartridge is installed into the product.

The DC controller checks the toner seal status to verify whether the print cartridge is new whenever the product is turned on, the print cartridge is inserted, or the front cover is closed. If the print cartridge is

new, the DC controller sends the open signal to the drum motor. The drum motor rotates in reverse to roll up the toner seal, and then, after a short time, the DC controller turns off the open signal.

The DC controller also monitors the presence of a print cartridge. When a print cartridge is inserted, the DC controller checks toner seal status as a signal that the print cartridge is present.

Toner level detection

The print cartridge includes a plate antenna and a flat antenna to enable the DC controller to detect toner-level.

Whenever the power is turned on, a door cover is closed, or a print operation is performed, the DC controller sets the developing bias signal, and the developing AC bias circuit sends a signal to the toner level circuit 1 and to the developing cylinder. This causes the plate antenna to return the output value to the toner level circuit 1. The toner level circuit 1 compares the two signals and sends the results to the DC controller as the toner level detection signal. At the same time, the DC controller turns on the frequency output signal to output the reference frequency to the flat antenna. This causes the flat antenna to return the output value to the toner level circuit 2. The toner level circuit 2 compares the two signals and sends the results to the DC controller as a toner level percentage, which is accurate within 1%. The DC controller reports the result to the formatter.

Pickup and feed system

The pickup and feed system picks up single sheets from Tray 2 or Tray 3, feeds each sheet to the fuser unit, and delivers each sheet to the face-up bin or to the face-down bin.

When the product is turned on, the lifter lifts the stack of media to the pickup area in preparation for printing. When the DC controller receives a print command, the pickup roller starts rotating and lowers to the paper surface. This feeds a sheet of paper to the feed rollers and to the pre-registration roller, which corrects the skew. After a short time, the sheet is fed to the photosensitive drum where the image is transferred onto the sheet. Then the sheet is fed to the fuser and delivered to a bin.

Media-size detection

The pickup and feed system includes a custom/standard switch and two media-size detection switches because either tray can accommodate custom media sizes. If custom/standard switch is set to standard, the DC controller determines the width and length of the media according to the size-detection switches. If the custom/standard switch is set to custom, the system requires the dimensions to be configured in the control panel. The width-detection switches also sense the presence of trays. If all of the width-detection switches are off, the DC controller assumes that a tray is missing.

Media-level detection

The lifter detects the media level in the trays using a blocking plate and two sensors. The lifter position indicates the media level by shutting off the sensors. Media level is based on the approximate number of sheets in the tray: full (200 or more sheets), high (100 to 200 sheets), middle (50 to 100 sheets), or low (less than 50 sheets).

Multifeed prevention

The product prevents feeding of multiple sheets using torque-limited separation roller. The separation roller rotates in the opposite direction of the feed roller. The torque limiter allows the separation roller to be turned backward as the top sheet feeds into the system, but it returns additional sheets to the tray.

Transparency media detection

The transparency sensor detects transparency media by reading a light that shines through a prism in the media path. Paper passing through the media path blocks the light indicating that it is not a transparency.

Fuser-wrapping jam detection

The paper path includes a mechanism to detect jams where media wraps around fuser rollers. The DC controller sends signals to the pressure roller bias generation circuit, which applies the same bias values to the pressure roller and to the wrapping jam detection circuit. The jam-detection lever solenoid contacts the pressure roller to monitor its bias value. The wrapping jam detection circuit compares the original bias value to the bias value monitored on the pressure roller. If the values differ, the circuit signals the DC controller that a wrapping jam has occurred and to stop the printing operation.

Jam detection

The product can detect the following jams:

Table 5-14 Jam detection

Jam	Causes and conditions
Pickup 1 delay jam	Media fails to reach Tray 2 feed sensor A (PS1402) or Tray 3 feed sensor A (PS1404) within 3.2 seconds after pickup begins.
Pickup 2 delay jam	- Media fails to reach Tray 2 feed sensor B (PS1401) or Tray 3 feed sensor B (PS1403) within 3.0 seconds after Tray 2 feed sensor A (PS1402) or Tray 3 feed sensor A (PS1404) detects the leading edge. - Media fails to reach the registration paper sensor (PS2) within 4.0 seconds after Tray 2 feed sensor B (PS1401) detects the leading edge of the media or within 4.5 seconds after Tray 3 feed sensor B (PS1403) detects the leading edge.
Fuser delivery 1 delay jam	The leading edge fails to reach the fuser delivery sensor (PS502) within 1.4 seconds after the /VSYNC signal.
Fuser delivery 2 delay jam	The leading edge fails to reach the fuser jam sensor (PS501) within 1.6 seconds after the /VSYNC signal.
Fuser delivery stationary jam	The trailing edge fails to clear the fuser delivery sensor (PS502) within the specified time (3.4 seconds for A3 media or 2.5 seconds for A4 media) after the /VSYNC signal.
Face-down delivery delay jam	The leading edge fails to reach the face-down bin delivery sensor (PS1451) within 2.4 seconds after the /VSYNC signal.
Face-down delivery stationary jam	The leading edge fails to clear the face-down bin delivery sensor (PS1451) within the specified time (4.3 seconds for A3 media or 3.4 seconds for A4 media) after the /VSYNC signal.
Door open jam	The following sensors detect media in the system when the door is opened or closed: - Registration paper sensor (PS2) - Fuser delivery sensor (PS501) - Fuser jam sensor (PS502) - Face-down bin delivery sensor (PS1451) - Tray 2 feed sensor A (PS1401) - Tray 2 feed sensor B (PS1401) - Tray 3 feed sensor A (PS1404) - Tray 3 feed sensor B (PS1403)
Residual jam	The following conditions indicate a residual jam: - The product is turned on, and the fuser delivery sensor (PS502) and the fuser jam sensor (PS501) have detected media during the startup process. - The DC controller has not received an automatic delivery command three minutes after a jam that should include the command was cleared. - At least one of the following sensors detects media after a jam was cleared, the jammed media was delivered, the product is turned on, and the fuser is at target temperature: - Registration paper sensor (PS2) - Fuser delivery sensor (PS501) - Fuser jam sensor (PS502)

Table 5-14 Jam detection (continued)

Jam	Causes and conditions
	- Tray 2 feed sensor B (PS1401) - Tray 3 feed sensor B (PS1403) - Face-down bin delivery sensor (PS1451)

Figure 5-33 Pickup and feed system sensors and switches

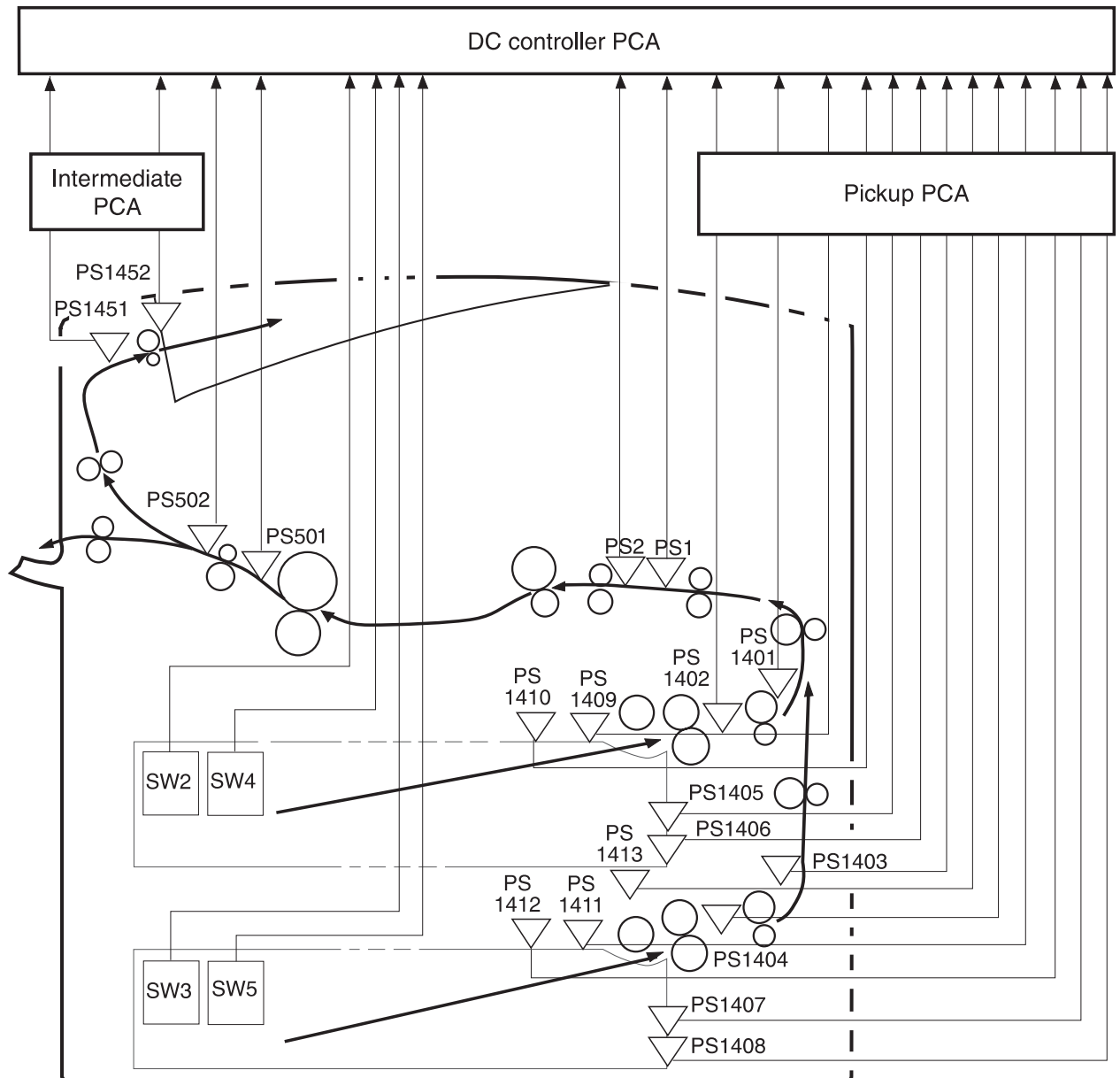


Table 5-15 Pickup and feed system sensors and switches

Sensor or switch	Description
PS1	Transparency media sensor
PS2	Registration paper sensor

Table 5-15 Pickup and feed system sensors and switches (continued)

Sensor or switch	Description
PS501	Fuser delivery sensor
PS502	Fuser jam sensor
PS1401	Tray 2 feed sensor B
PS1402	Tray 2 feed sensor A
PS1403	Tray 3 feed sensor B
PS1404	Tray 3 feed sensor A
PS1405	Tray 2 media level sensor 1
PS1406	Tray 2 media level sensor 2
PS1407	Tray 3 media level sensor 1
PS1408	Tray 3 media level sensor 2
PS1409	Tray 2 media surface sensor
PS1410	Tray 2 empty sensor
PS1411	Tray 3 media surface sensor
PS1412	Tray 3 empty sensor
PS1413	Pickup shaft home position sensor
PS1451	Face-down bin delivery sensor
PS1452	Face-down bin full sensor
SW2	Tray 2 media length detection switch
SW3	Tray 3 media length detection switch
SW4	Tray 2 media width detection switch
SW5	Tray 3 media width detection switch

Figure 5-34 Pickup and feed system motors and solenoids

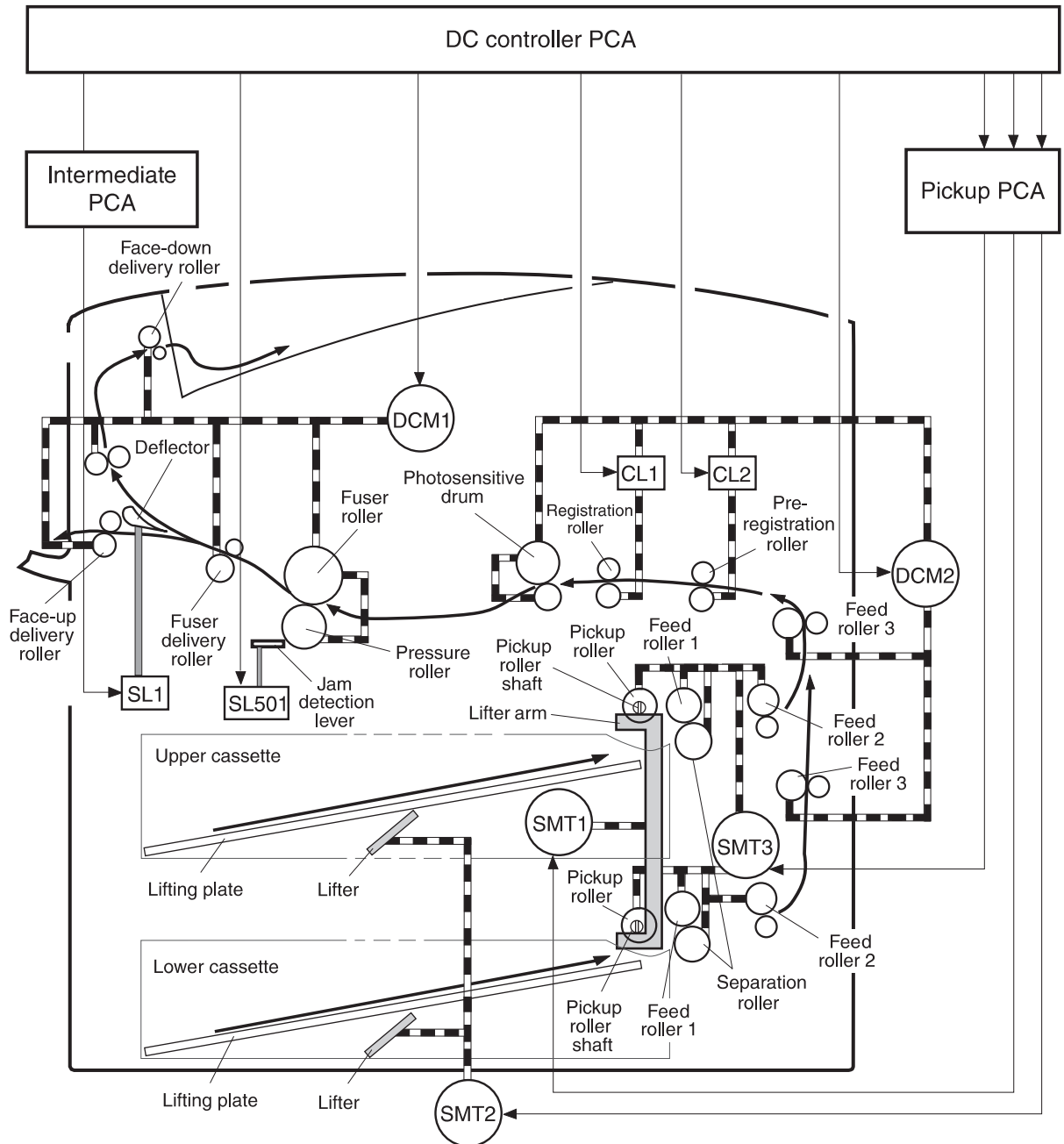


Table 5-16 Pickup and feed system motors and solenoids

Motor or solenoid	Description
DCM1	Fuser/delivery motor
DCM2	Main/drum motor
SMT1	Pickup roller up and down motor
SMT2	Lifter motor
SMT3	Pickup motor
SL1	Face-up solenoid

Table 5-16 Pickup and feed system motors and solenoids (continued)

Motor or solenoid	Description
SL501	Jam detection lever drive solenoid
CL1	Registration roller drive clutch
CL2	Pre-registration roller drive clutch

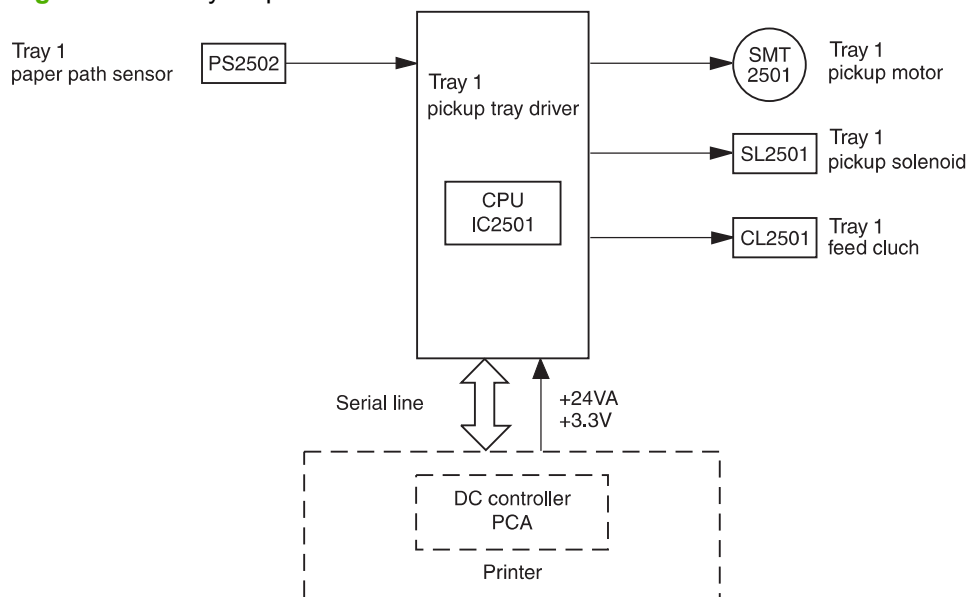
Tray 1

Tray 1 accommodates a wide variety of media. It picks up and feeds media directly into the paper path.

Tray 1 driver PCA

Tray 1 includes a driver PCA with a four-bit microcomputer (CPU-IC2501) that controls the operational sequence and the serial communications with the DC controller. The CPU drives a motor, a solenoid, and a clutch according to commands from the DC controller.

Figure 5-35 Tray 1 operations



Tray 1 power supply

The power supply provides +24 volts DC to the motor, the solenoid, and the clutch, and +3.3 volts DC for the IC and the sensors.

Tray 1 sequence of operation

If no media is detected by the paper path sensor, the Tray 1 pickup roller is returned to its initial position whenever any of the following occurs:

- The door is closed
- The product returns from sleep mode
- Tray 1 is installed

Tray 1 picks up media according to the following sequence:

1. Receives a pickup command
2. Turns on the pickup solenoid (SL2501) to place the pickup roller in contact with the media surface
3. Turns on the feed clutch (CL2501) to rotate the pickup roller and the feed roller to pick up the media.

4. Feeds the media to the between-page adjustment position, turns off CL2501, and feeds media into the paper path.
5. Receives a feed-stop command, stops the motor, and returns to a standby state

Tray 1 pickup and feed

The pickup roller moves up and down to feed media into the paper path. This happens when the pickup solenoid moves the stopper away from the pickup cam allowing the cam to rotate. After completing one rotation, the cam contacts the stopper again holding it in place to bring the pickup roller back to its initial position.

Tray 1 prevents feeding of multiple sheets using a torque-limited separation roller. The separation roller rotates in the opposite direction of the feed roller. The torque limiter allows the separation roller to be turned backward as the top sheet feeds into the system, but it returns additional sheets to the tray.

Tray 1 jam detection

Tray 1 includes a paper path sensor (PS2502) that detects the leading edge of the media as it is transported into the paper path. If the paper path sensor fails to detect the media within a specified time after the pickup solenoid is turned on, the CPU stops the operation and notifies the DC controller of a jam. The CPU in Tray 1 can detect the following jams:

Table 5-17 Tray 1 jam detection

Jam type	Description
Pickup retry jam	The paper path sensor fails to detect the leading edge of the media 1 second after turning on the pickup solenoid. The CPU stops the motor once, and then restarts it. Then it turns on the pickup solenoid 0.7 seconds later.
Pickup delay jam	The paper path sensor (PS2502) fails to detect the leading edge of media within 3 seconds of turning on the pickup solenoid. The CPU stops the operation and sends an error message to the DC controller.
Residual jam	The paper path sensor detects media when as the product is turned on, the product is returning from sleep mode, or the front cover is being closed.

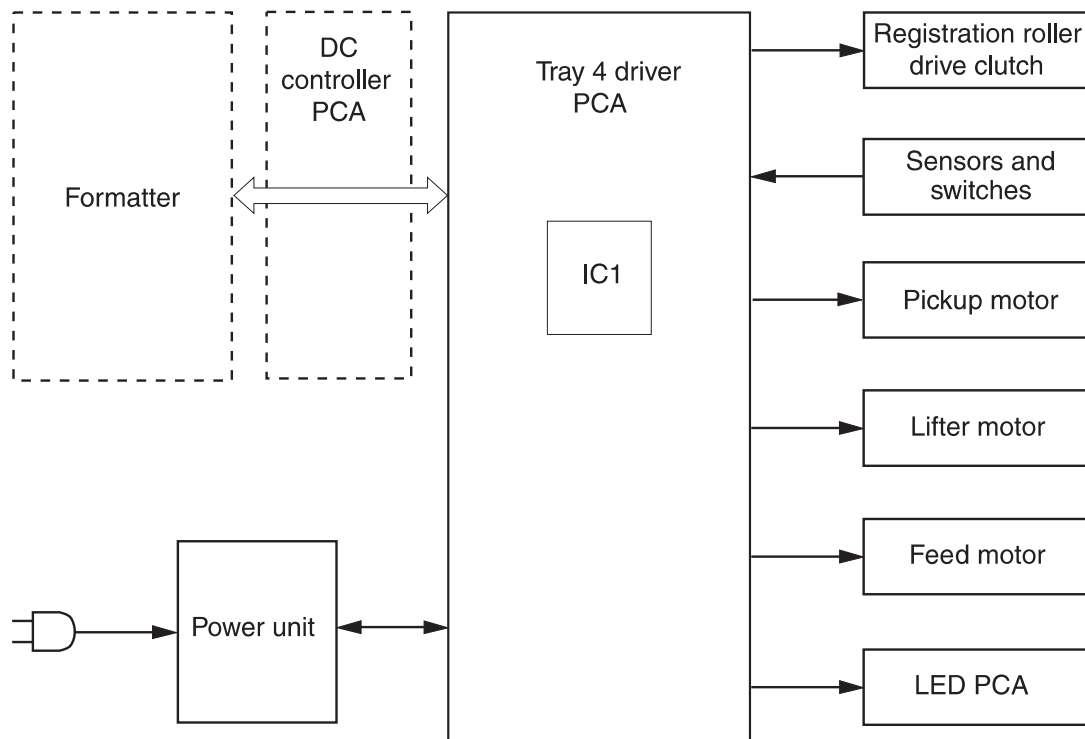
Tray 4

Tray 4 is a 2,000-sheet feeder that picks up media and feeds it into the paper path.

Tray 4 driver PCA

Tray 4 includes a driver PCA with a 16-bit microcomputer (IC1) that controls the operational sequence and the serial communication with the formatter. It drives the motors and the clutch according to commands from the formatter.

Figure 5-36 Tray 4 PCA interactions



Tray 4 power supply

Tray 4 uses a remote switch method for the power supply unit. The formatter sends a power-on signal to the power supply unit through the driver PCA. When the signal is received, the power supply unit supplies +24 Vdc and +5 Vdc to the driver PCA. +24 V is then supplied to the lifter, feed, and pickup motors to drive them. The +5 V is supplied to the sensors and also to the ICs on the driver PCA.

The power unit utilizes a standalone switch so that Tray 4 can be powered on without turning on the product. This switch is used for standalone diagnostics. See [Tray 4 diagnostics on page 349](#).

Tray 4 sequence of operation

When Tray 4 is loaded with media and closed, the paper deck starts lifting the stack to the pickup position. When the formatter instructs Tray 4 to deliver media, the drive rollers pick up a sheet and feed it to the registration assembly. The Tray 4 registration assembly adjusts the skew and transports the sheet to the product.

Tray 4 pickup and feed

The formatter sends a signal to the driver PCA to start driving the pickup and feed motors. Rotated by the rollers, the pickup roller picks up a sheet, the separation roller removes any excessive sheets, and the feed roller transports the sheet to the registration roller unit.

After the media enters the registration roller unit, the registration roller corrects the skew and the second feed roller feeds the media to the product.

When the media reaches the merge-point in the product, the driver PCA checks for a merge-point permission command sent from the formatter. If the signal is detected, Tray 4 continues feeding to the product. If the signal is not detected, Tray 4 stops feeding until the signal is received.

Tray 4 media level and media size detection

The paper level is detected by the paper-level sensors (PS21 to 23) on the paper-level sensor PCA.

The combination of these sensors determines the level of the print media loaded in Tray 4. The paper size is detected by the paper size detection switches (SW11 to 15) on the paper size detection switch PCA. The combination of these switches determines the paper size.

Tray 4 sends the size and level information to the product formatter.

Tray 4 jam detection

Tray 4 determines a jam by monitoring the presence of media in the sensor areas at specific times that are stored in the CPU. If the CPU determines a jam under the following conditions, the tray stops feeding operations and notifies the formatter.

Table 5-18 Tray 4 jam detection

Jam type	Description
Residual jam	The registration paper sensor (PS11) or jam sensor (PS103) detects media during the warm-up period.
Pickup delay jam	The between page sensor (PS12) does not detect media after receiving a print command or the PS12 sensor detects media, but the registration paper sensor (PS11) does not.
Pickup stationary jam	The edge does not clear the registration paper sensor (PS11) after the between-page sensor (PS12) detects the trailing edge of the media.
Feed delay jam	The jam sensor (PS103) does not detect media after the start of the registration rollers.
Feed stationary jam	The trailing edge of the media does not pass through the jam sensor (PS103) after the registration rollers are turned off.

6 Removal and replacement

- [Removal and replacement strategy](#)
- [Repair notices](#)
- [Electrostatic discharge](#)
- [Required tools](#)
- [Product orientation](#)
- [Scanner assembly covers](#)
- [Scan engine internal assemblies](#)
- [Print engine covers](#)
- [Front assemblies](#)
- [Right assemblies](#)
- [Left assemblies](#)
- [Back assemblies](#)
- [Tray 4](#)

Removal and replacement strategy

This chapter describes the removal and replacement of field replaceable units (FRUs) only. Replace parts in the reverse order of their removal. Directions for difficult or critical replacement procedures are included.

Repair notices

⚠ **WARNING!** The product can have sharp sheet metal edges. Use caution when working on the product.

⚠ **CAUTION:** Always remove the print cartridge before removing or replacing assemblies and parts (see [Print cartridge on page 240](#)). **IMPORTANT:** Put the print cartridge in its original print-cartridge bag, or, if the bag is not available, cover the print cartridge with a piece of paper. Light can damage the print cartridge.

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

📝 **NOTE:** Note the lengths, diameters, and locations of screws. 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 be damaged or broken. Frayed or pinched harness wires can be difficult to locate. When replacing wire harnesses, always use the provided wire loops, lance points, or wire-harness guides.

Electrostatic discharge



CAUTION:



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

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

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

Required tools

- #2 Phillips screwdriver with magnetic tip



CAUTION: Do not use a pozidrive screwdriver for service on this product. Pozidrive screwdrivers can damage Phillips #2 screw heads. Use only a #2 Phillips screwdriver. Use a torque limiter with power screwdrivers.

- T-10 TORX screwdriver
- T-20 TORX screwdriver
- Small, flatblade screwdriver
- Small needle-nose pliers
- ESD mat
- Penlight

Product orientation

Front and right side orientation

Figure 6-1 View of the front and right sides



Table 6-1 Product front and right sides

1	Front side
2	Right side

Back and left side orientation

Figure 6-2 View of the back and left sides

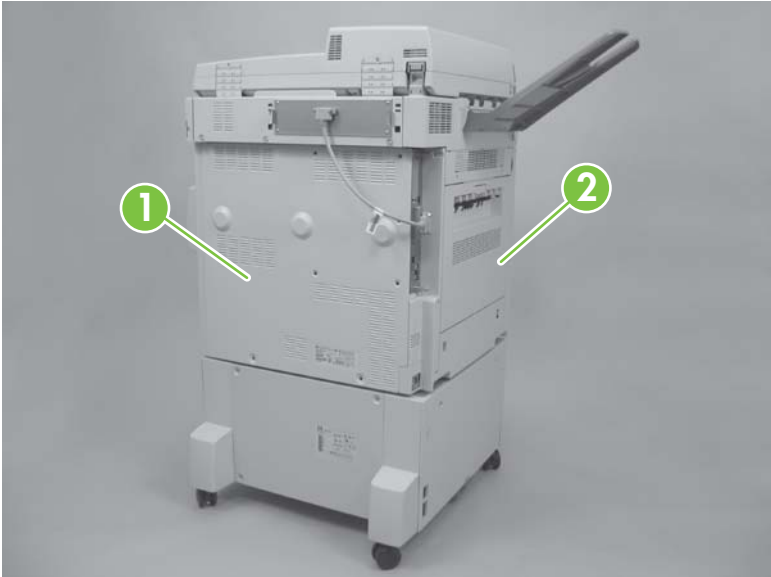


Table 6-2 Product back and left sides

1	Back side
2	Left side

Scanner assembly covers

Control panel

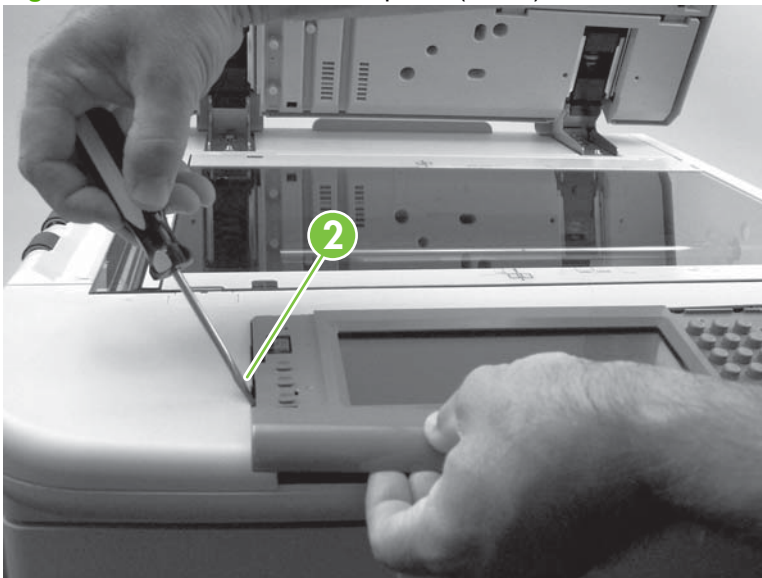
1. Open the ADF unit.
2. Insert a small flat blade screwdriver into the slot (callout 1) and pry off the overlay. Repeat for the other side.

Figure 6-3 Remove the control panel (1 of 3)



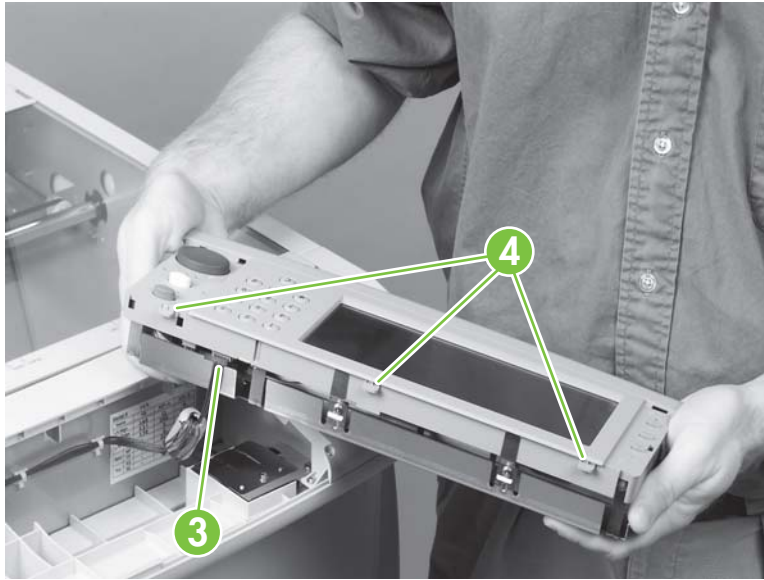
3. Insert a small flat blade screwdriver in the notch on the side of the control panel and press the tab (callout 2) while lifting the control panel. Repeat for the other side, and then disconnect the connector on the back of the control panel.

Figure 6-4 Remove the control panel (2 of 3)



4. Disconnect the connector (callout 3) from the control panel, and then remove the panel.

Figure 6-5 Remove the control panel (3 of 3)



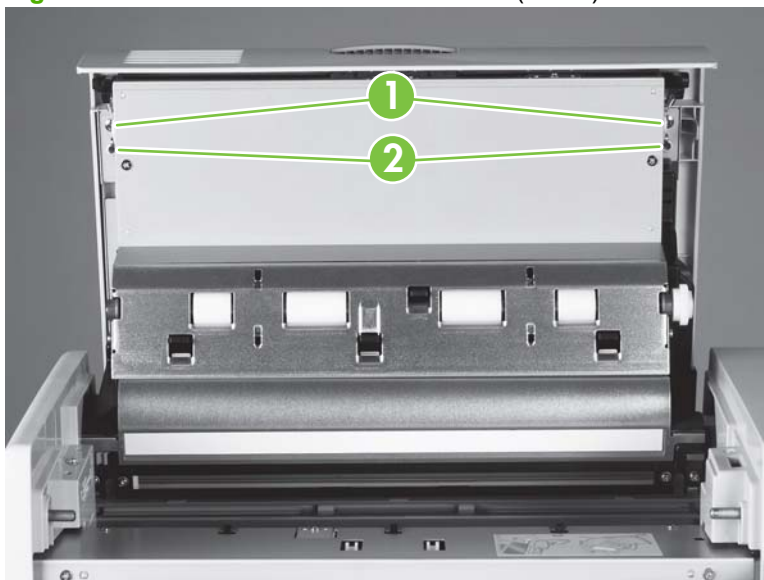
Reinstall the control panel

Be sure to place the three alignment tabs (callout 4) on the back of the control panel into the slots before completely installing the control panel.

ADF feeder cover

1. Open the ADF feeder.
2. Remove two screws (callout 1).
3. Pull the ADF feeder cover away from the product to disengage two round tabs (callout 2).

Figure 6-6 Remove the ADF feeder cover (1 of 3)



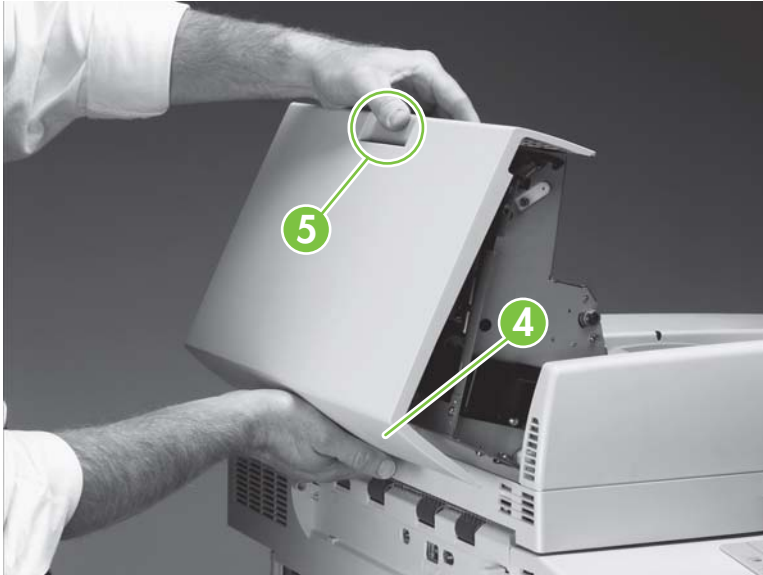
4. Push the ADF feeder cover downward to disengage four claws (callout 3) (two on the right side are shown).

Figure 6-7 Remove the ADF feeder cover (2 of 3)



5. Pull the bottom of the ADF feeder cover out (callout 4).
6. Squeeze the ADF feeder cover handle (callout 5) to release the attaching tabs (not visible).
7. Lift off the cover to remove it.

Figure 6-8 Remove the ADF feeder cover (3 of 3)



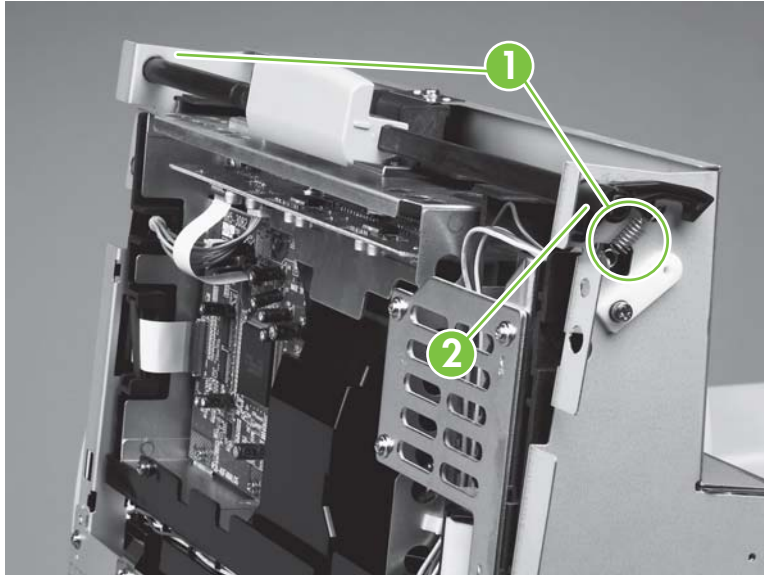
Reinstall the ADF feeder cover

- △ **CAUTION:** Reinstall the cover on the handle, and then reinsert the four claws. Make sure that all four claws are aligned in the slots before closing the feeder cover, or the cover will break.

ADF feeder cover handle

1. Remove the ADF feeder cover. See [ADF feeder cover on page 155](#).
2. Remove two springs (callout 1) (one on the right side is shown).

Figure 6-9 Remove the ADF feeder cover handle (1 of 2)



3. Remove the latch (callout 2).
4. Slide the shaft to the left and tilt the right end up.
5. Slide the handle (callout 3) off to the right and pull the shaft to the left to remove it.

Figure 6-10 Remove the ADF feeder cover handle (2 of 2)

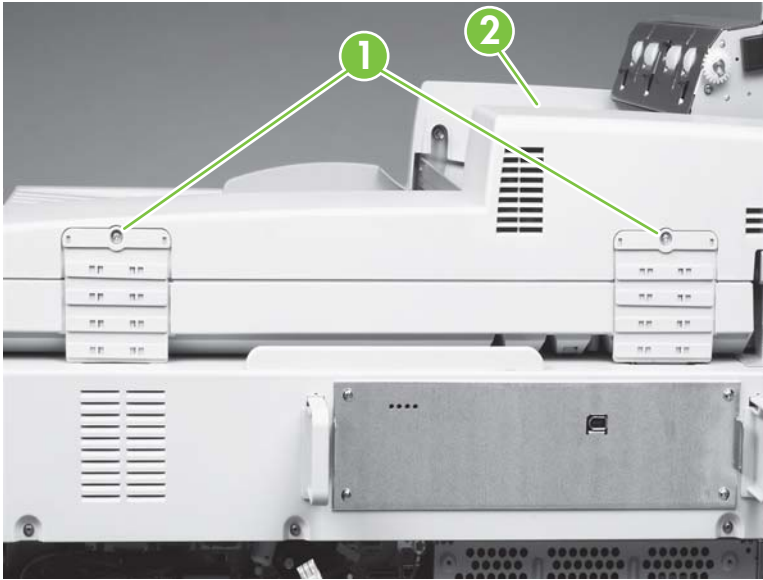


ADF back cover

1. Open the ADF feeder.

2. Remove two external screws (callout 1) and one internal screw (callout 2).

Figure 6-11 Remove the ADF back cover (1 of 2)



3. Tilt the ADF back cover up to disengage two claws (not visible) (callout 3) and lift to remove the cover.

Figure 6-12 Remove the ADF back cover (2 of 2)



△ **CAUTION:** Do not pull on the flap (hinge) that is on the hinge covers.

ADF front cover

1. Remove one screw (callout 1).

Figure 6-13 Remove the ADF front cover

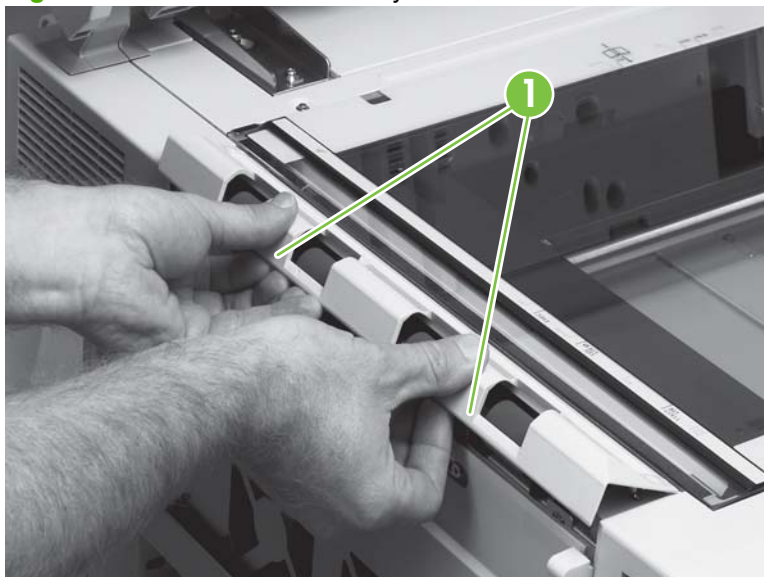


2. Slightly lift the ADF front cover, and slide the cover to the left to disengage two claws (not visible). Lift to remove the cover.

Lower delivery roller cover

1. Open the ADF unit.
2. Pull the delivery roller cover to disengage two claws (marked with arrows) (callout 1), and then lift to remove the cover.

Figure 6-14 Remove the delivery roller cover



Reinstall the delivery roller cover

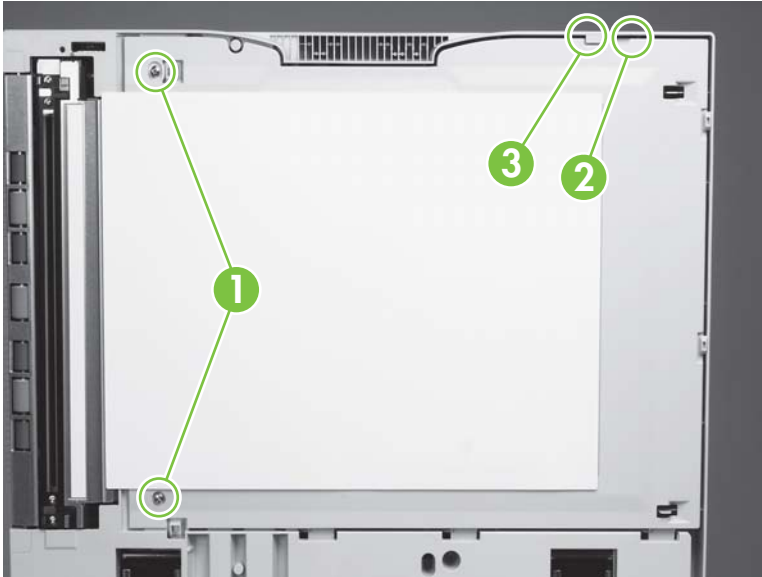
Make sure all three tabs are aligned in the slots before pressing the cover back into place.

△ **CAUTION:** Do not put tools on the glass when the glass is exposed.

White board cover

1. Open the ADF unit.
2. Remove two shoulder screws (callout 1).

Figure 6-15 Remove the white board cover

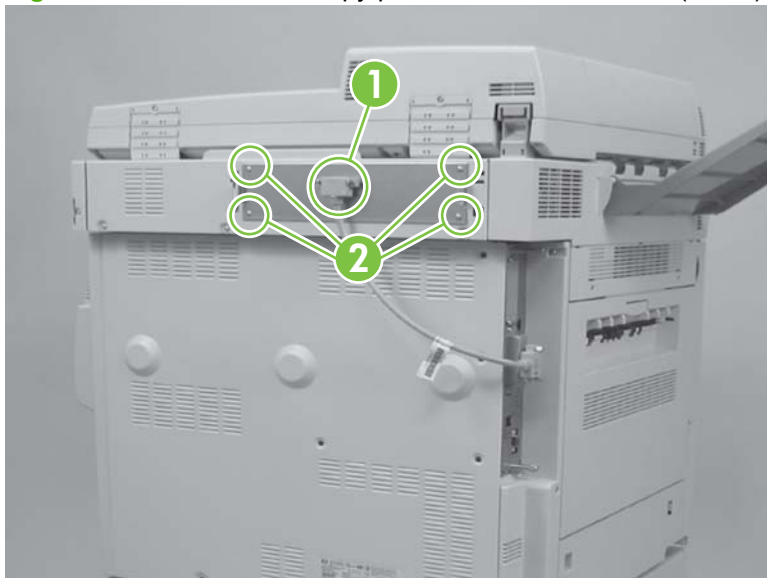


3. Use a small flatblade screwdriver to pry up the outer skin at the slot (callout 2) to disengage the claw (callout 3).
4. Tilt out and lift the cover to remove it.

Copy processor/connect board

1. Unplug the scanner processor cord (callout 1).

Figure 6-16 Remove the copy processor/connect board (1 of 2)

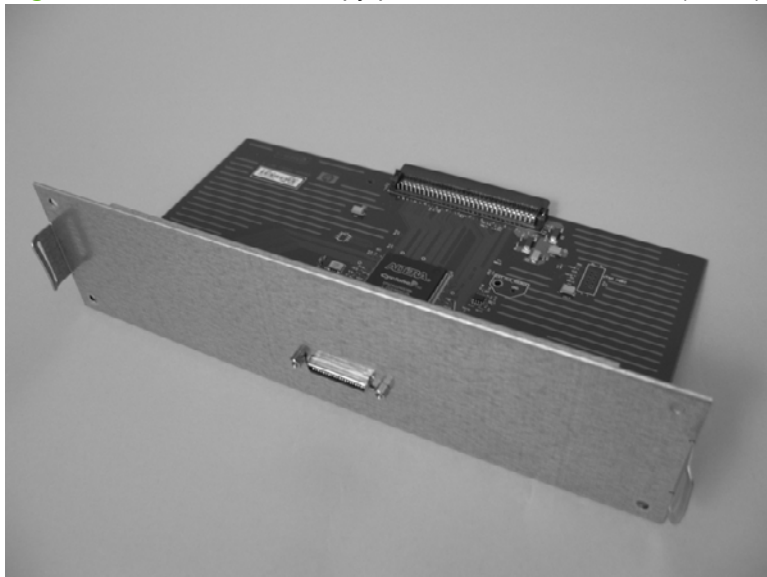


2. Remove four screws (callout 2).

△ **CAUTION:** When removing or installing the copy processor/connect board, do not drag the top of the board along the RFI fingers at the top of the slot. Doing so will damage the copy processor/connect board components.

3. Gently pull the copy processor/connect board out to remove it.

Figure 6-17 Remove the copy processor/connect board (2 of 2)



Reinstall the copy processor/connect board

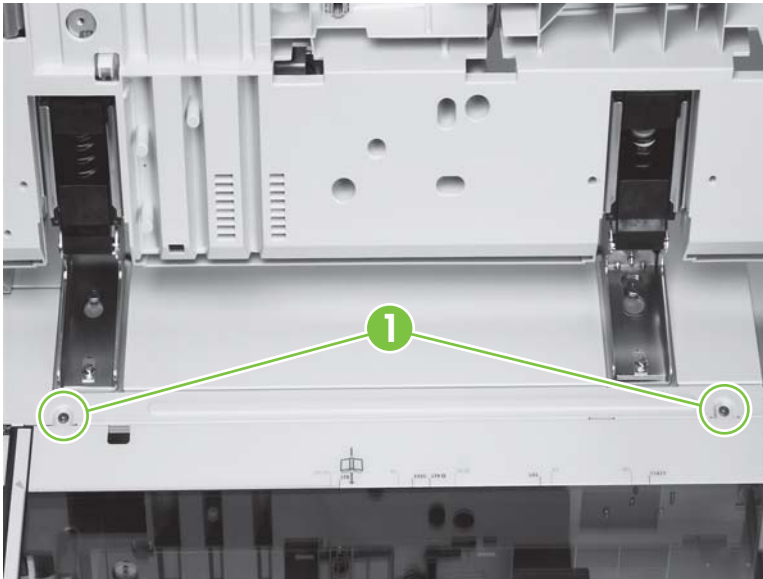
Align the copy processor/connect board with the rails and slide the board into the slot. When the board reaches the end of the slot, slightly angle the board, lifting the connector end, and push to engage.

Push in on both sides of the board to make sure it is fully seated.

Flatbed rail cover

1. Open the ADF unit.
2. Remove two screws (callout 1).

Figure 6-18 Remove the flatbed rail cover



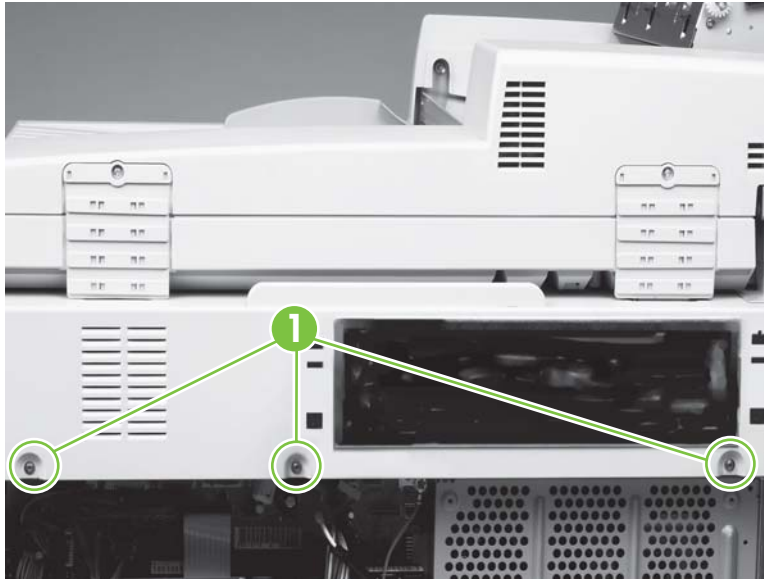
3. Lift off the flatbed rail cover.

Flatbed back cover

1. Remove the copy connect board. See [Copy processor/connect board on page 161](#).
2. Remove the print engine back cover. See [Back cover on page 237](#)

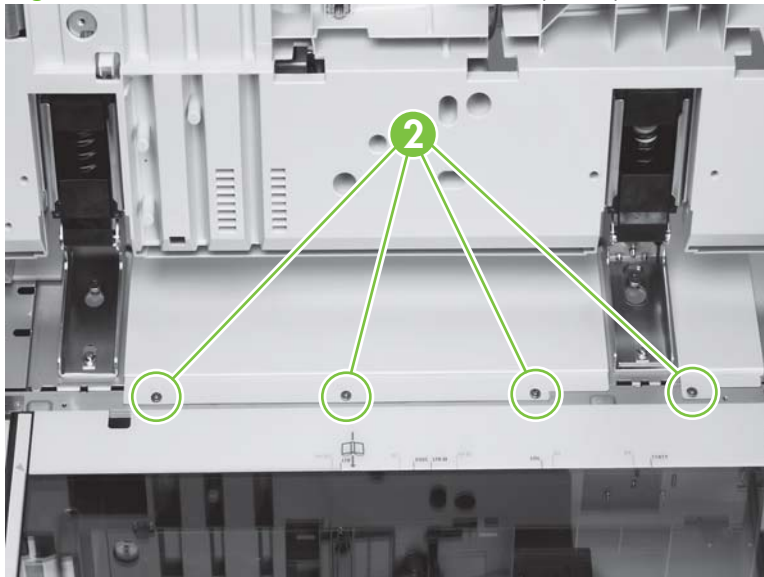
3. Remove three screws (callout 1).

Figure 6-19 Remove the flatbed back cover (1 of 2)



4. Open the ADF unit.
5. Remove the flatbed rail cover. See [Flatbed rail cover on page 162](#).
6. Remove four screws (callout 2).

Figure 6-20 Remove the flatbed back cover (2 of 2)

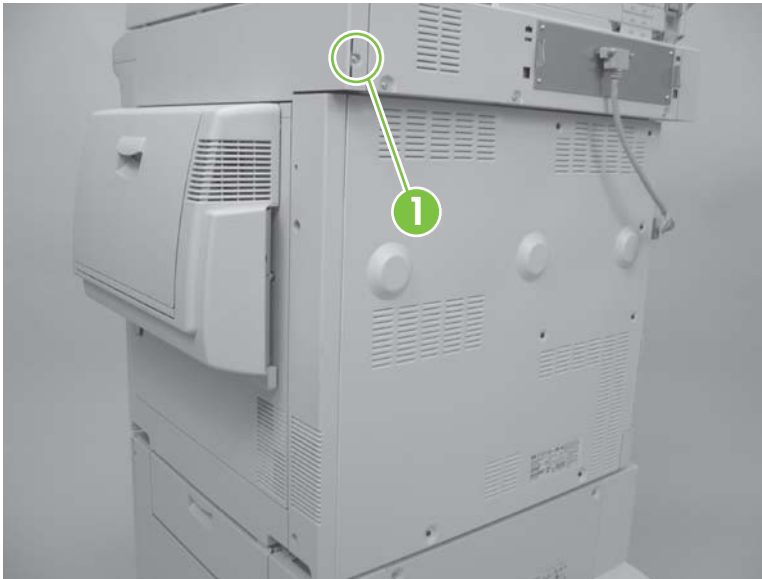


7. Slide the flatbed back cover toward the back of the product to remove it.

Flatbed right cover

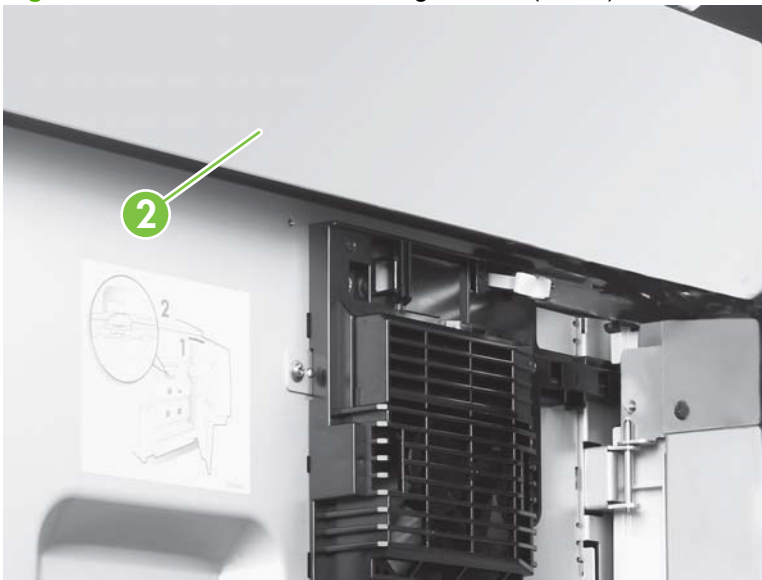
1. Remove one screw (callout 1).

Figure 6-21 Remove the flatbed right cover (1 of 2)



2. Open the ADF unit.
3. Open the door on the right side of the print engine.
4. Pull out the cover (callout 2) and slide it toward the back of the product to remove it.

Figure 6-22 Remove the flatbed right cover (2 of 2)



 **TIP:** Look through the glass to see the tab and claws that you are disengaging.

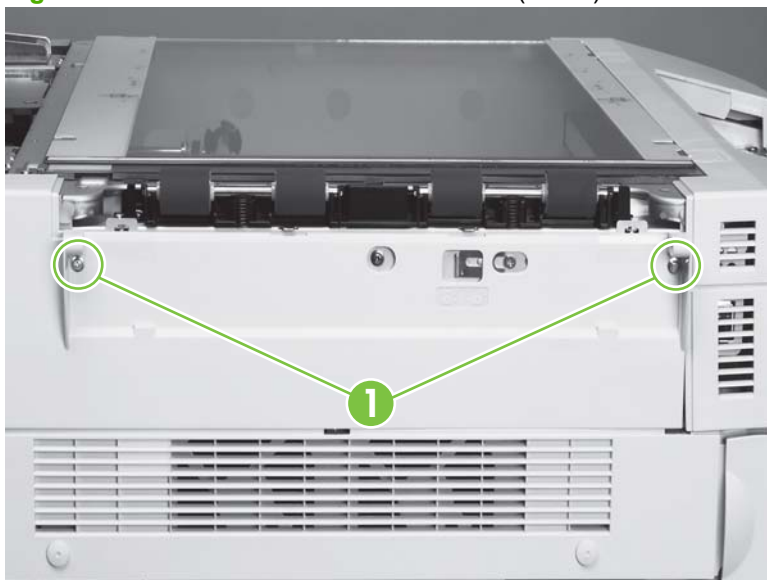
Reinstall the flatbed right cover

Align and engage the top claws before completely seating the cover.

Flatbed left cover

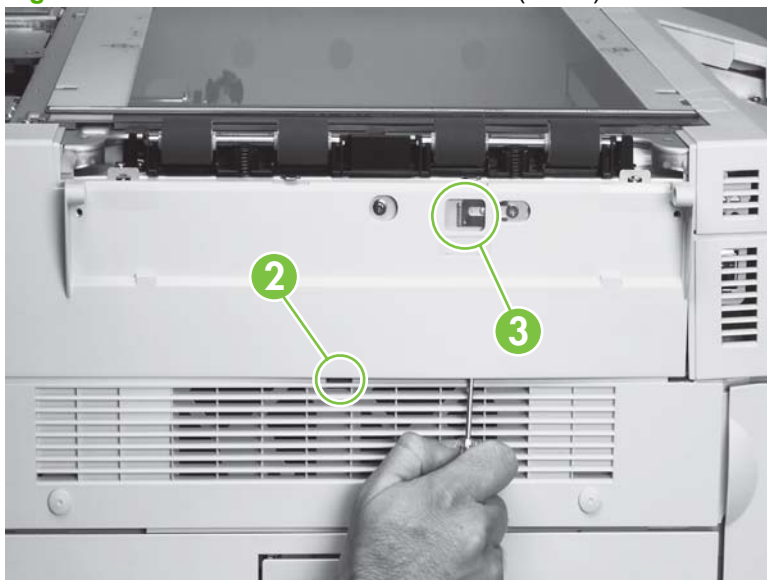
1. Open the ADF unit.
2. Remove the lower delivery roller cover. See [Lower delivery roller cover on page 159](#).
3. Remove two screws (callout 1).

Figure 6-23 Remove the flatbed left cover (1 of 2)



4. Insert a small flat blade screwdriver into the slot (callout 2).

Figure 6-24 Remove the flatbed left cover (2 of 2)

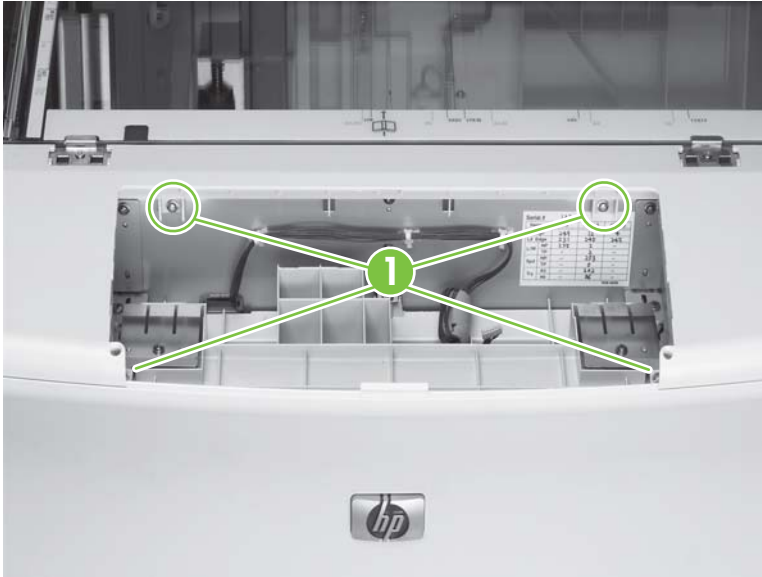


5. Slide the screwdriver toward the front of the product until the screwdriver is aligned with the lock (callout 3), and pry outward to disengage one tab (not visible).
6. Slide the cover toward the back of the scan engine and remove it.

Flatbed upper front cover

1. Remove the following components:
 - Control panel. See [Control panel on page 154](#).
 - Delivery roller cover. See [Lower delivery roller cover on page 159](#).
 - Flatbed right cover. See [Flatbed right cover on page 164](#).
 - Flatbed left cover. See [Flatbed left cover on page 165](#).
2. Remove four screws located in the plastic tabs (callout 1).

Figure 6-25 Remove the flatbed upper front cover



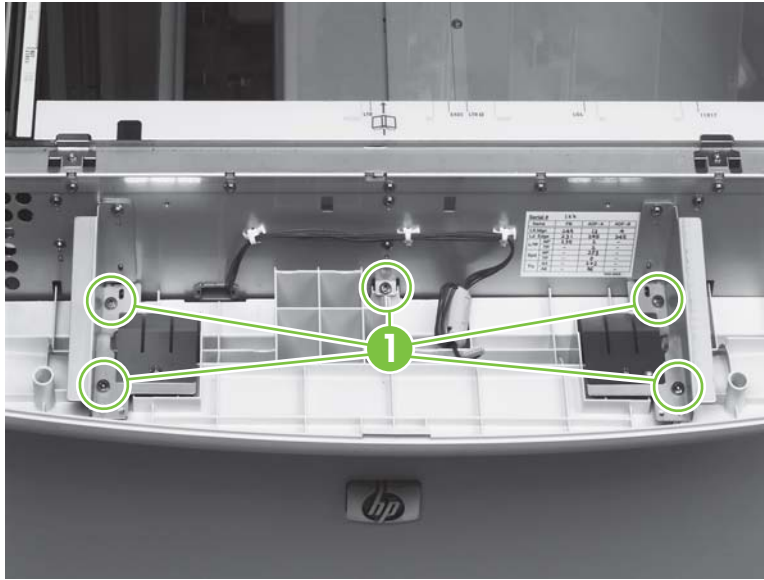
3. Lift the cover to remove it.

Flatbed lower front cover

1. Remove the following components:
 - Control panel. See [Control panel on page 154](#).
 - Delivery roller cover. See [Lower delivery roller cover on page 159](#).
 - Flatbed right cover. See [Flatbed right cover on page 164](#).
 - Flatbed left cover. See [Flatbed left cover on page 165](#).
 - Flatbed upper front cover. See [Flatbed upper front cover on page 166](#).

2. Remove five screws (callout 1).

Figure 6-26 Remove the flatbed lower front cover



3. Open the front door.
4. Flex the sides of the cover out and lower the cover to remove it.

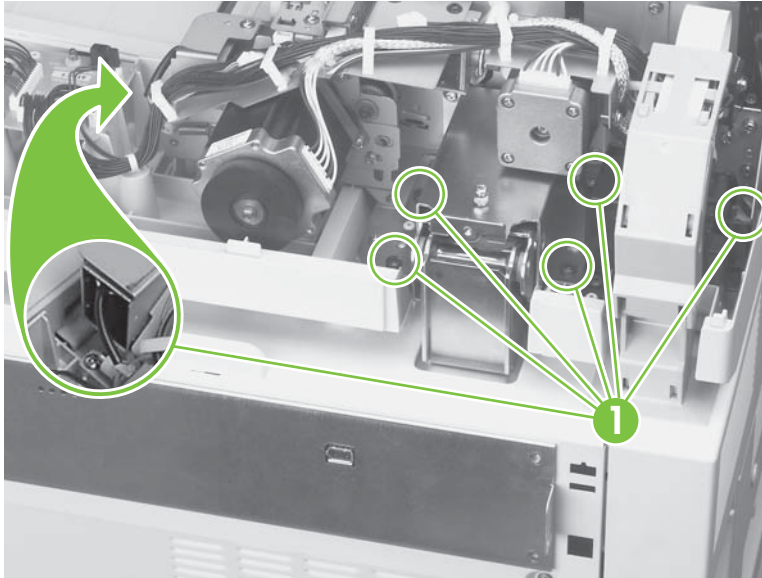
ADF base cover assembly

1. Remove the following components:
 - ADF feeder cover. See [ADF feeder cover handle on page 157](#).
 - ADF back cover. See [ADF back cover on page 157](#).
 - ADF front cover. See [ADF front cover on page 159](#).
 - Flatbed back cover. See [Flatbed back cover on page 162](#).
2. Remove the white board. See [White board cover on page 160](#).

3. Remove six screws (callout 1) that attach the sheet metal to plastic.

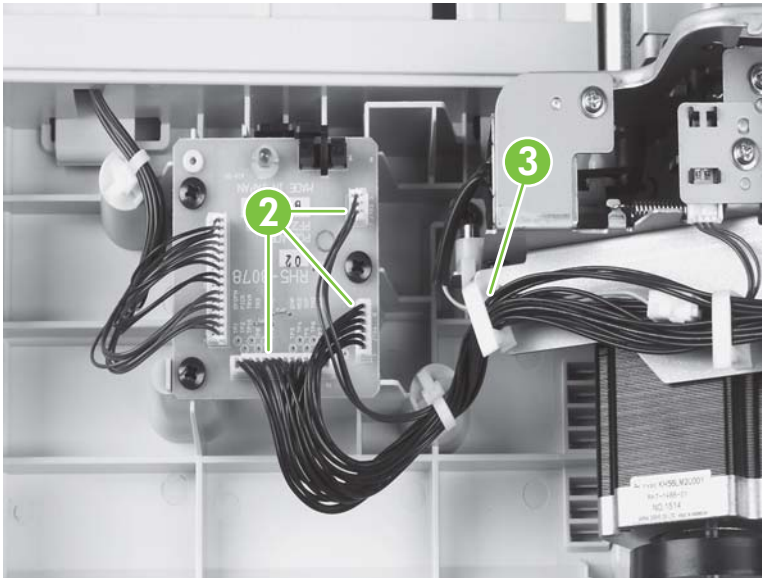
⚠ **WARNING!** Do not remove the screws connected to the opposite hinge.

Figure 6-27 Remove the ADF base cover assembly (1 of 7)



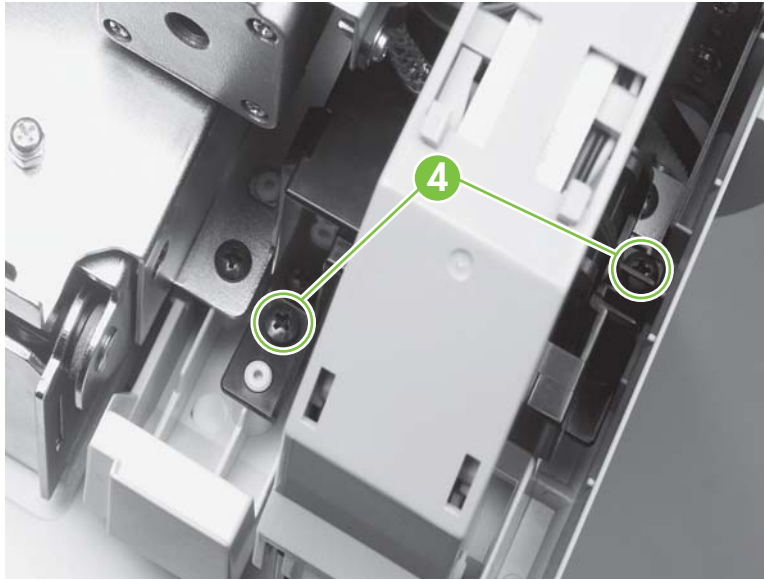
4. Disconnect three connectors (callout 2) from the ADF intermediate PCA, and remove one clip (callout 3).

Figure 6-28 Remove the ADF base cover assembly (2 of 7)



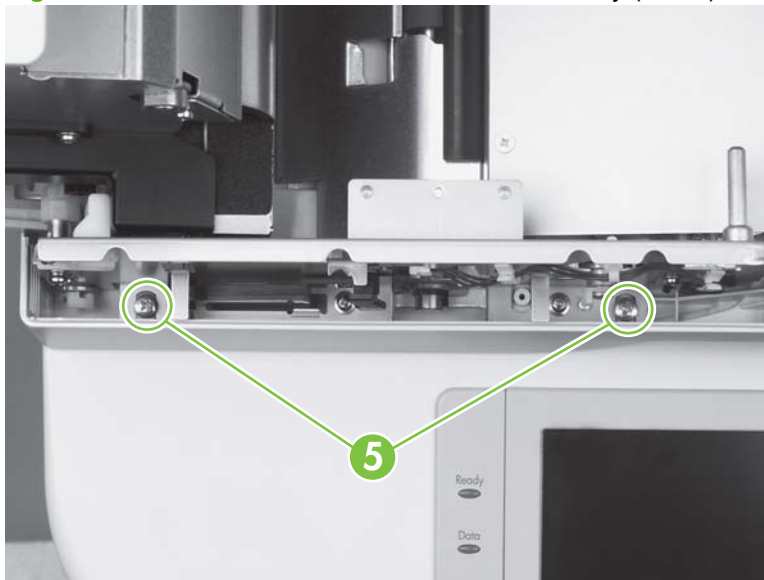
5. Remove two screws (callout 4) and leave the ADF fan assembly in place.

Figure 6-29 Remove the ADF base cover assembly (3 of 7)



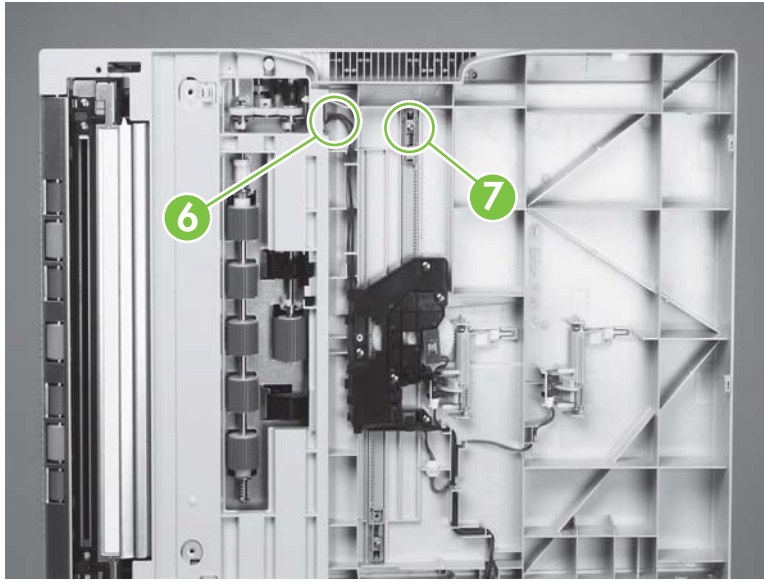
6. Remove two screws (callout 5).

Figure 6-30 Remove the ADF base cover assembly (4 of 7)



7. Remove one connector (callout 6) from under the ADF cover.

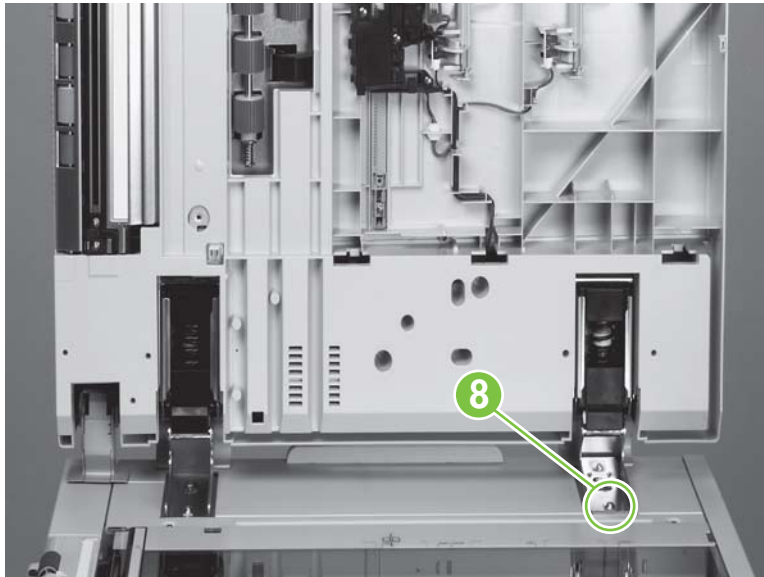
Figure 6-31 Remove the ADF base cover assembly (5 of 7)



8. Remove one screw (callout 7), and remove the front ADF paper width guide.
9. Remove one screw and the locking plate (callout 8) on the right hinge.

 **NOTE:** Do *not* remove the left hinge.

Figure 6-32 Remove the ADF base cover assembly (6 of 7)



10. Slide the right hinge off of the placement screw and then remove the ADF base cover assembly.

11. Hold the ADF main assembly open with your left hand, and grasp the ADF base cover handle with your right hand. Shift the ADF main assembly to the right to disengage the assembly from the cover.

Figure 6-33 Remove the ADF base cover assembly (7 of 7)

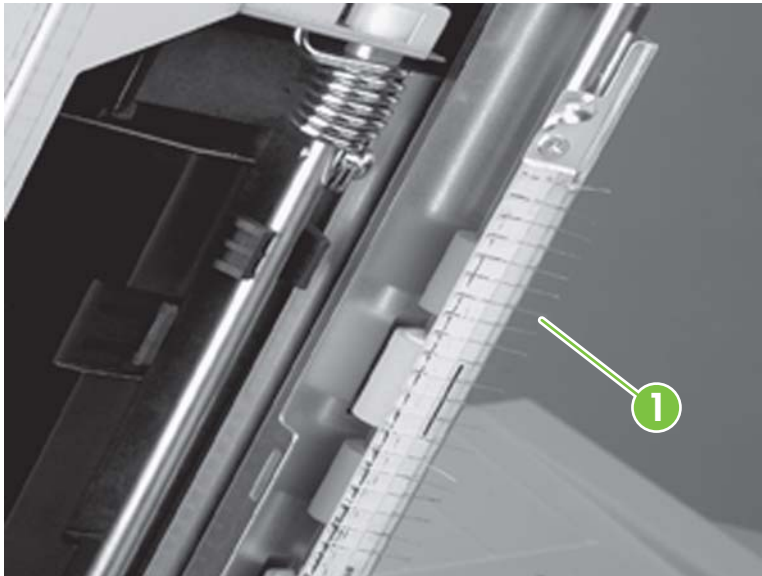


12. Remove the ADF base cover assembly.

Reinstall the ADF base cover assembly

- △ **CAUTION:** When you reinstall the ADF base cover assembly, make sure that you do not damage the ESD threads (callout 1).

Figure 6-34 Reinstall the ADF base cover assembly

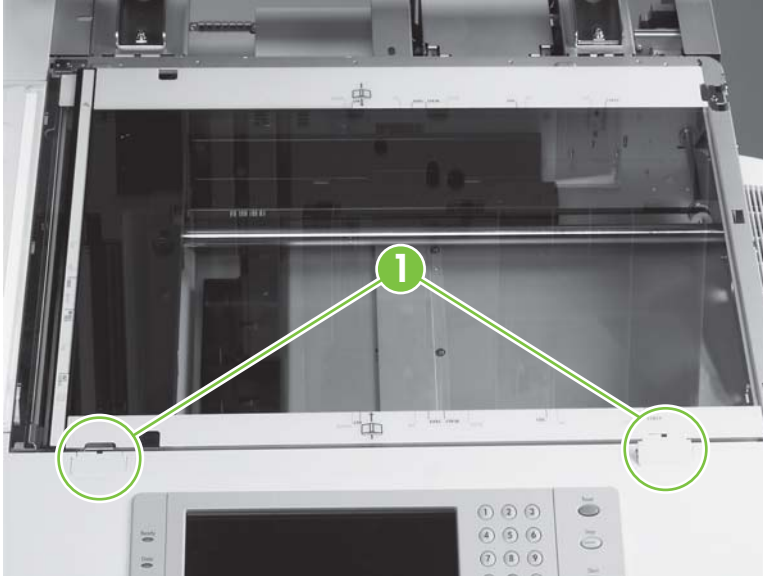


- 📝 **NOTE:** Remove four screws from the right hinge and install the hinge on the replacement ADF base cover.

Scanner glass

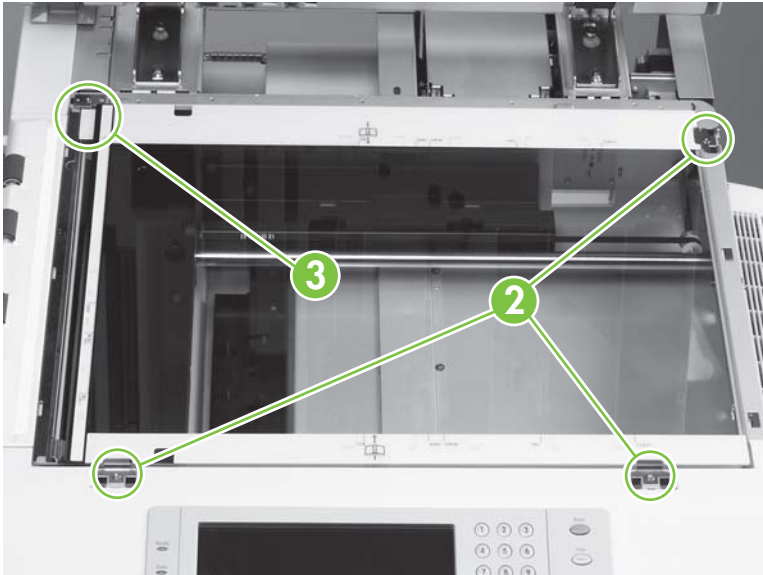
1. Remove the following components:
 - Flatbed right cover. See [Flatbed right cover on page 164](#).
 - Flatbed rail cover. See [Flatbed rail cover on page 162](#).
2. Using a small flatblade screwdriver, remove two glass-mount covers (callout 1).

Figure 6-35 Remove the scanner glass (1 of 2)



3. Remove three screws and three glass mounts (callout 2).

Figure 6-36 Remove the scanner glass (2 of 2)

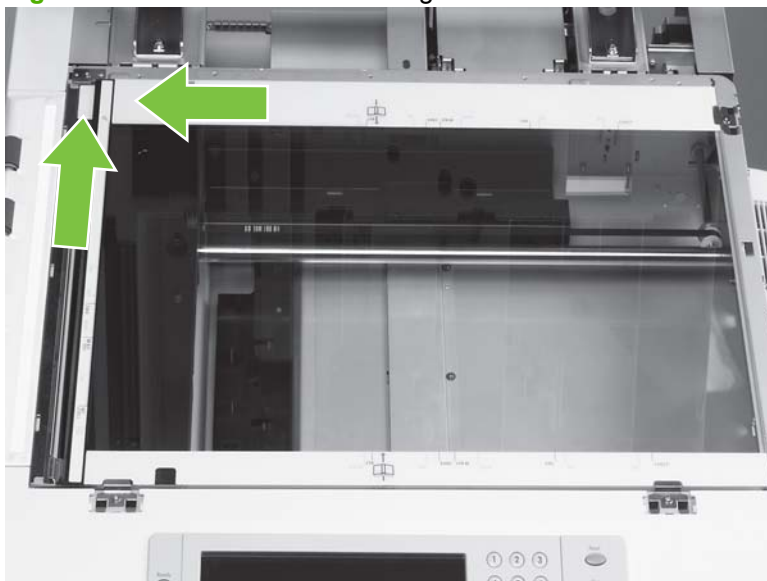


4. Remove one screw and one alignment glass mount (callout 3).
5. Grasp the glass on its edge and carefully lift to remove it.

Reinstall the scanner glass

1. Insert the glass.
2. Reinsert the top left plate with one screw.
3. Put the three clips and one screw in loosely.
4. Make sure the glass is tight up against the upper left corner of the frame (this will make sure that the glass is correctly registered in the frame).

Figure 6-37 Reinstall the scanner glass



5. Tighten the four screws.

△ **CAUTION:** When reinstalling the glass mounts, be sure to seat the mounts completely using your fingers before screwing them in. Using a screw to force the mount into place can break the edges of the glass.

CAUTION: Do not damage the calibration strip on the back of the glass.

Scan engine internal assemblies

Gain access to the following assemblies from the top of the product:

- Control panel
- Laser/scanner assembly
- Delivery assembly
- Delivery-fan assembly
- Delivery motor
- Cartridge release lever

ADF and flatbed internal assemblies

ADF main assembly

- △ **CAUTION:** Dirt and dust can damage the ADF main assembly. Be careful to keep the internal components clean.



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

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

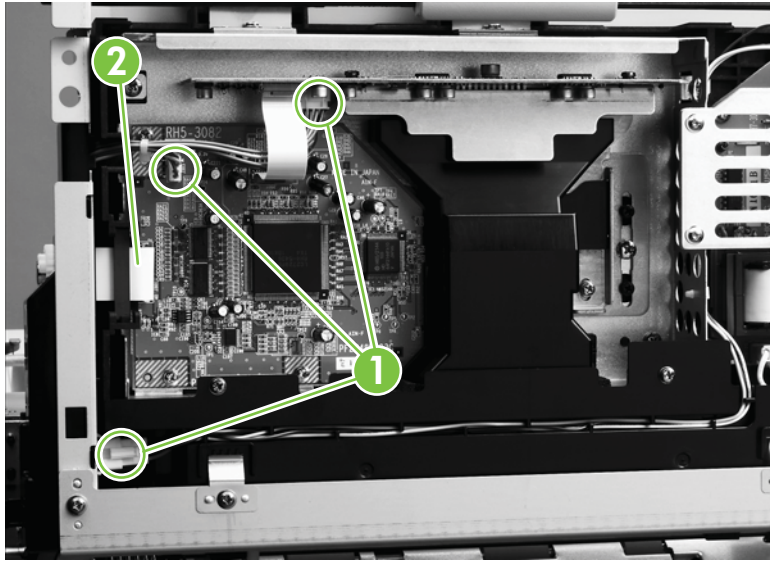
Protect the ESD-sensitive parts by placing them in ESD pouches when they are out of the product.

- 💡 **TIP:** Have a soft cloth ready on which to place the main assembly.

1. Remove the following components (see [Scanner assembly covers on page 154](#)):
 - ADF feed cover
 - ADF back cover
 - ADF front cover

2. Disconnect three connectors (callout 1) inside the top of the ADF assembly.

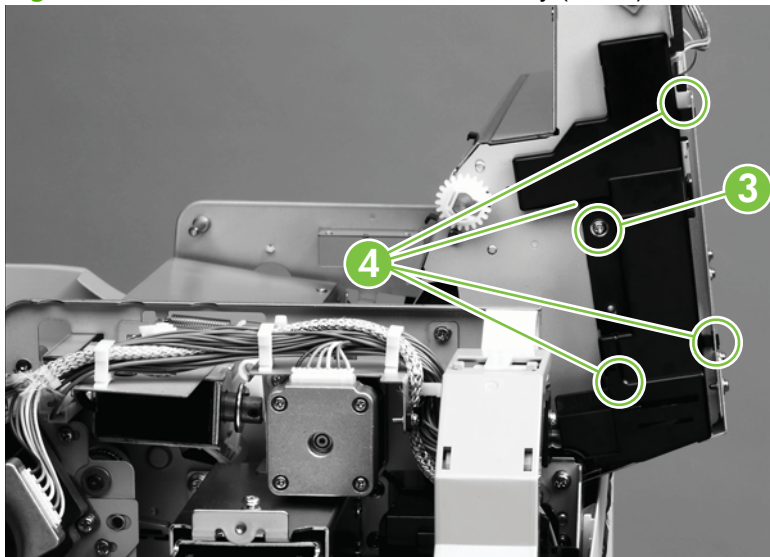
Figure 6-38 Remove the ADF main assembly (1 of 8)



NOTE: The ribbon cable is equipped with a ferrite block that can easily come off. Be careful to avoid losing it.

3. Disconnect the ribbon cable (callout 2).
4. Remove one screw on the ADF cable cover (callout 3).

Figure 6-39 Remove the ADF main assembly (2 of 8)

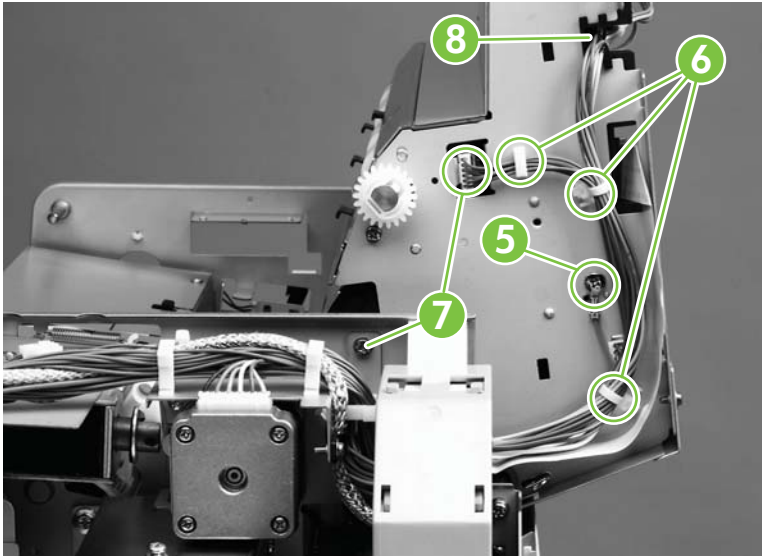


5. Push the cable cover away from the ADF to disengage the four claws (callout 4).
6. Tilt the cable cover up to remove it.

CAUTION: Be careful to avoid damaging the ribbon cable.

7. Remove the grounding screw (callout 5).

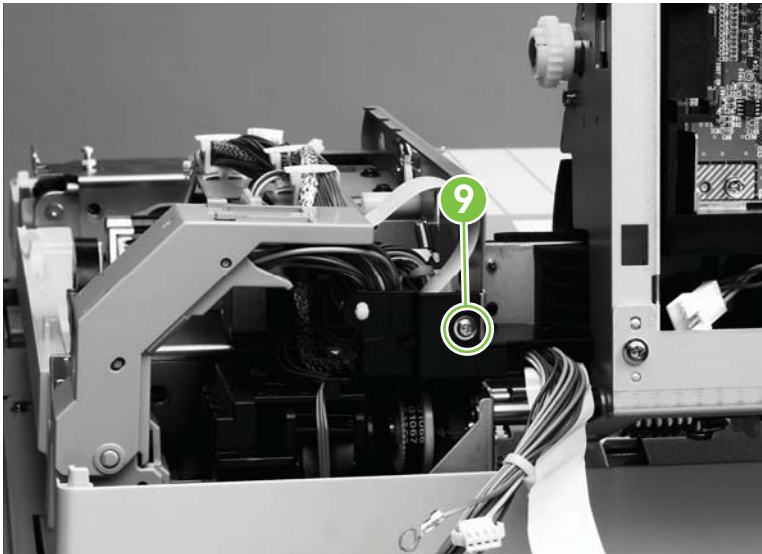
Figure 6-40 Remove the ADF main assembly (3 of 8)



 **TIP:** Twist the cable ties to release the cables, and press the tabs to release the cable clamps.

8. Remove one cable tie and two saddle clamps (callout 6).
9. Disconnect one connector, unseat the connector and loosen one screw (callout 7).
10. Remove the cables from the harness (callout 8).
11. Remove one screw from the flatbed cable cover (callout 9).

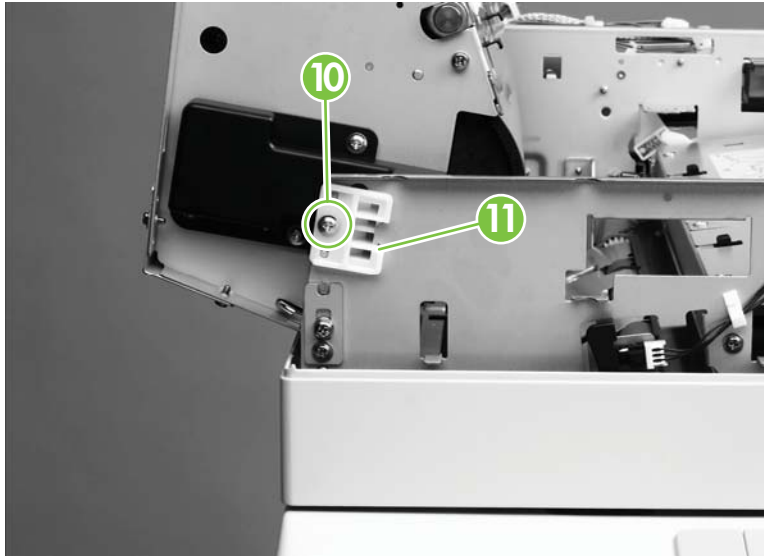
Figure 6-41 Remove the ADF main assembly (4 of 8)



12. Slide the flatbed cable cover away from the optical unit to remove it.

13. Hold the optical unit to prevent it from falling while removing the stopper cover screw (callout 10) and the stopper cover (callout 11).

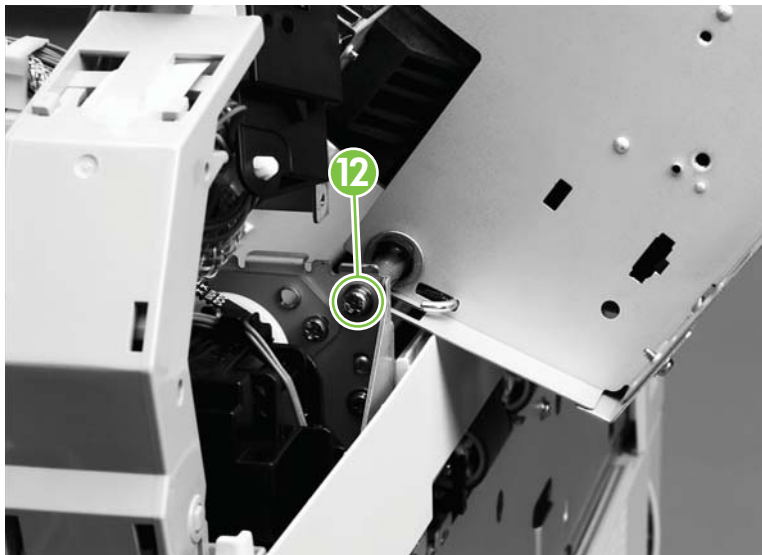
Figure 6-42 Remove the ADF main assembly (5 of 8)



△ **CAUTION:** Be careful to avoid letting the optical unit fall.

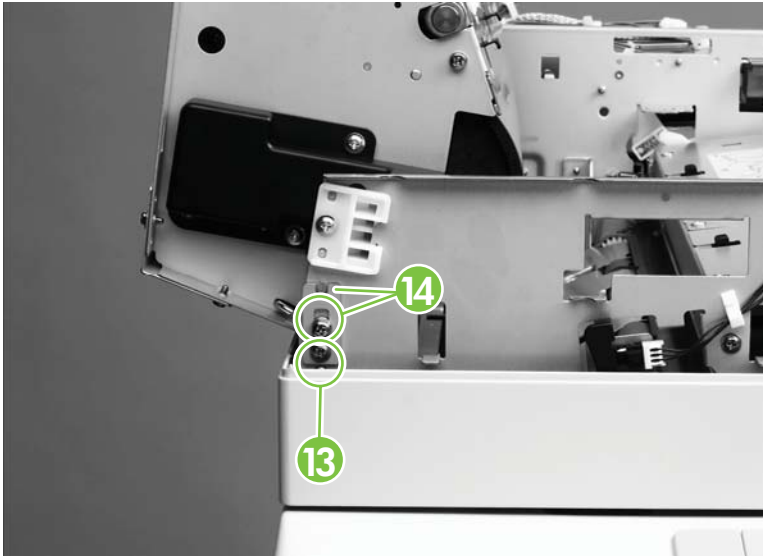
14. Remove one screw (callout 12) from the shaft at the back of the ADF.

Figure 6-43 Remove the ADF main assembly (6 of 8)



15. Remove one screw from the shaft retaining plate (callout 13).

Figure 6-44 Remove the ADF main assembly (7 of 8)



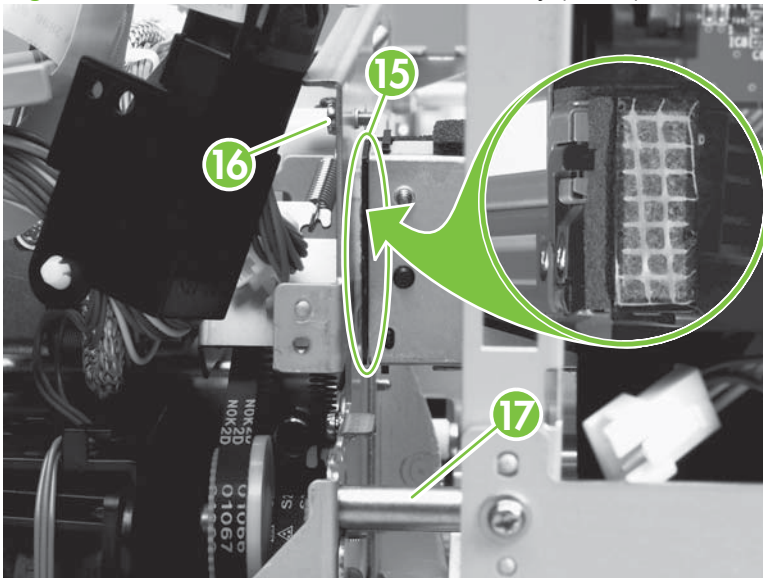
16. Make sure the ADF optical assembly is supported. Remove one screw from the shaft (callout 14), and remove the shaft retaining plate.

△ **CAUTION:** Prevent the ADF optical unit from falling by supporting it while removing the shaft screws.

📝 **NOTE:** Hold down the ADF assembly to prevent it from springing open.

△ **CAUTION:** Avoid damaging the ADF main assembly filter (see figure). Maintain clearance to avoid catching it on other parts. A damaged or missing filter can cause poor quality scans.

Figure 6-45 Remove the ADF main assembly (8 of 8)



💡 **TIP:** Be sure to keep the front plate on the ADF main assembly from falling off.

17. Remove one screw from optical assembly (callout 16).

18. Slide the optical assembly to the right to disengage the shaft (callout 17).
19. Tilt the optical assembly up, slide it to the left to disengage the other end of the shaft, and then remove the it.

Reinstall the ADF main assembly

- △ **CAUTION:** Ensure that the ferrite block remains installed on the ribbon cable.

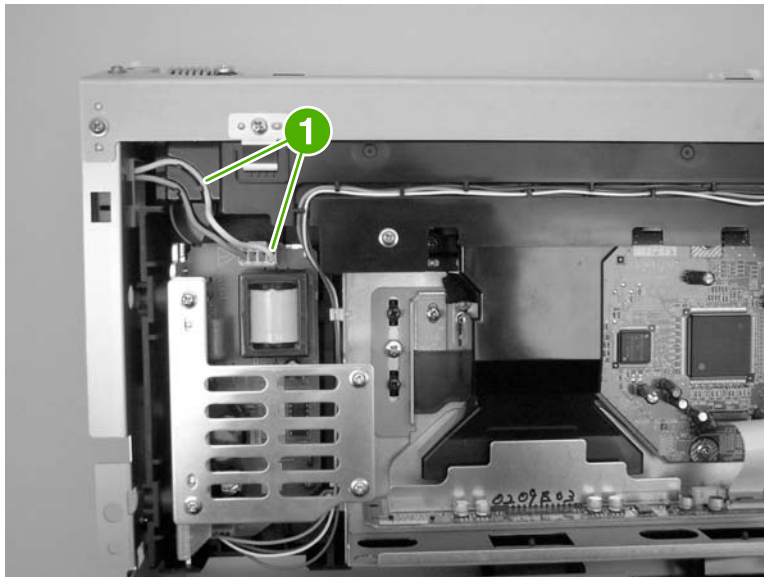
Provide adequate clearance around the ADF main assembly filter to ensure that it is not damaged.

Prevent the ADF door from swinging open while installing it.

ADF optical assembly

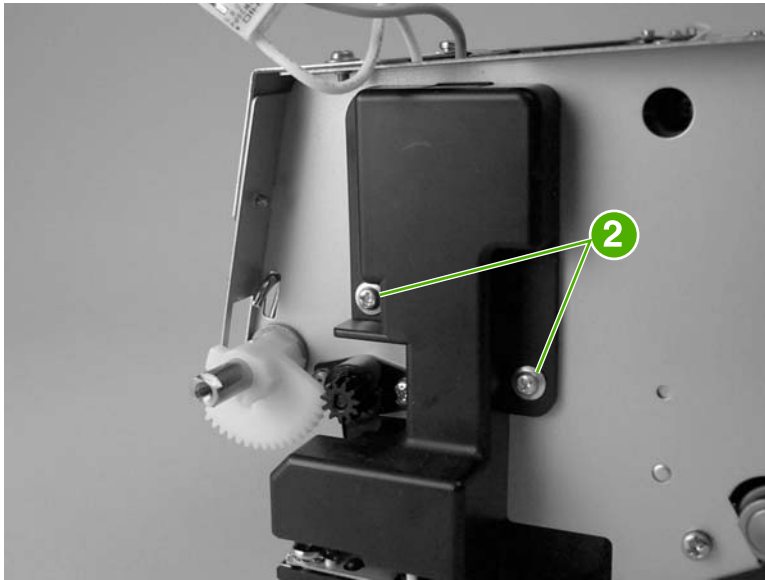
1. Remove the ADF main assembly. See [ADF main assembly on page 174](#).
2. Disconnect the cable to the optical assembly (callout 1) and remove it from the cable guide.

Figure 6-46 Remove the ADF optical assembly (1 of 13)



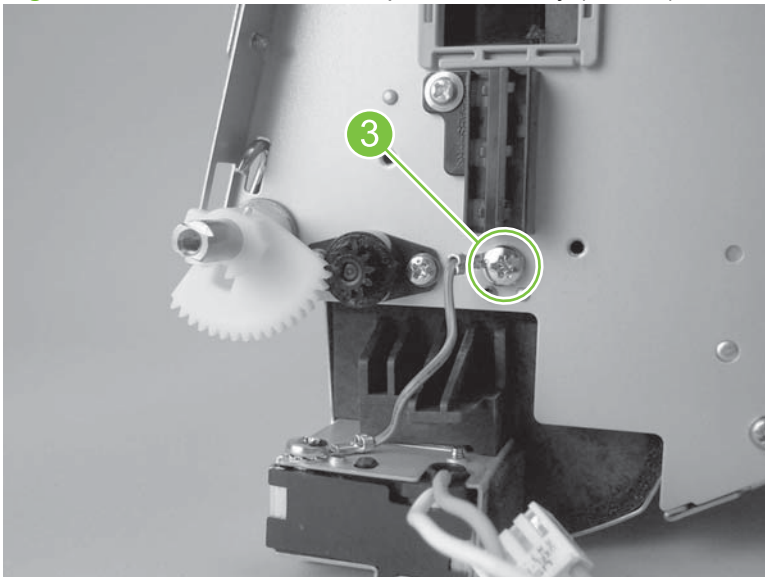
3. Remove the two screws from the cable cover (callout 2), and then remove the cable cover.

Figure 6-47 Remove the ADF optical assembly (2 of 13)



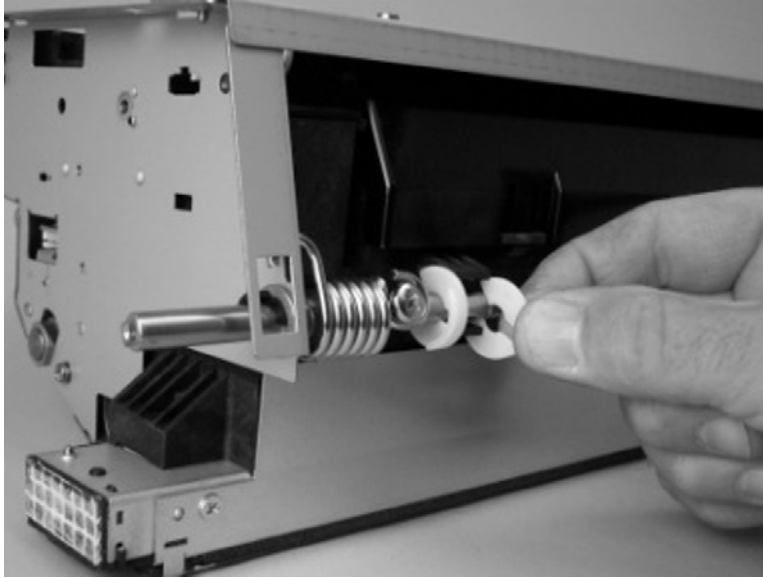
4. Pull the cable out through the hole in the chassis, and then remove it from the cable guide.
5. Remove the ground screw (callout 3).

Figure 6-48 Remove the ADF optical assembly (3 of 13)



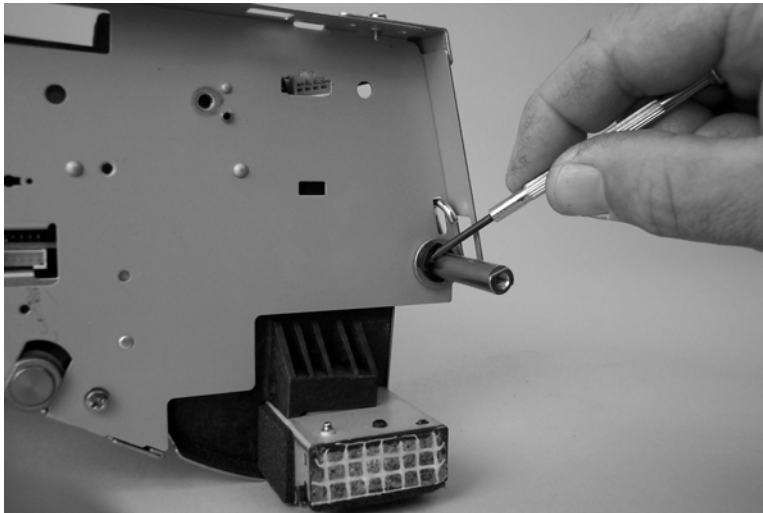
6. Carefully remove the two white clips from the shaft.

Figure 6-49 Remove the ADF optical assembly (4 of 13)



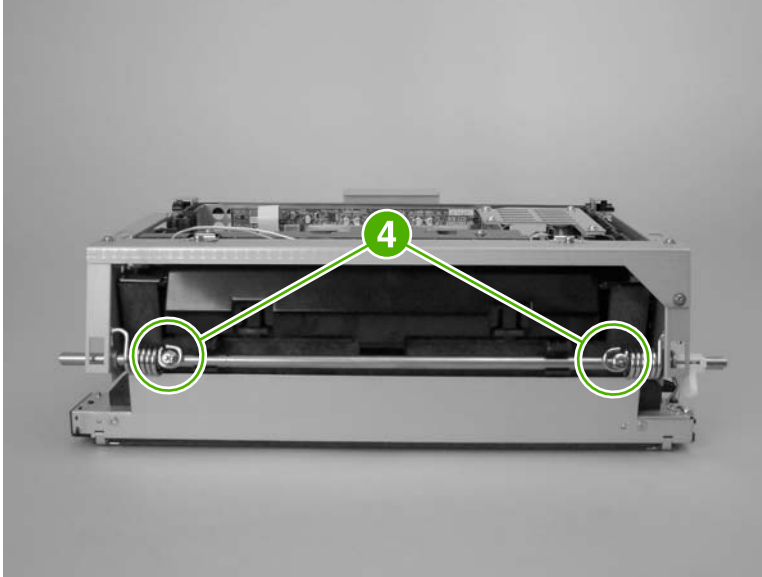
7. Remove the black E-ring from the shaft. Use a small screwdriver to pry it out.

Figure 6-50 Remove the ADF optical assembly (5 of 13)



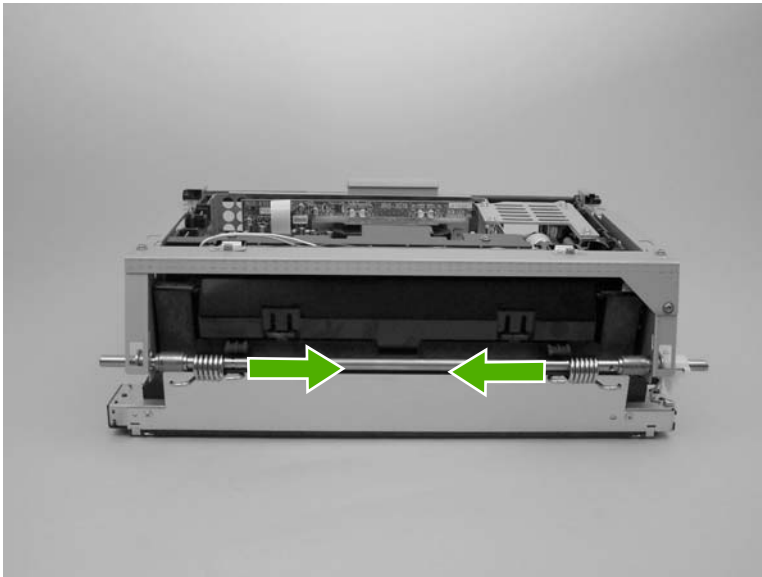
8. Remove the two spring retention screws (callout 4).

Figure 6-51 Remove the ADF optical assembly (6 of 13)



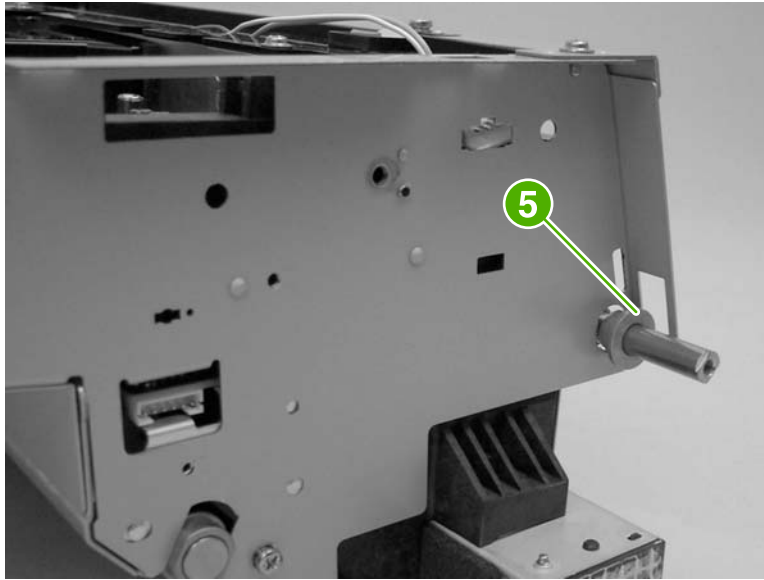
9. Slide the springs to the center of the shaft until they stop.

Figure 6-52 Remove the ADF optical assembly (7 of 13)



10. Remove the bushing (callout 5) from the left side of the shaft.

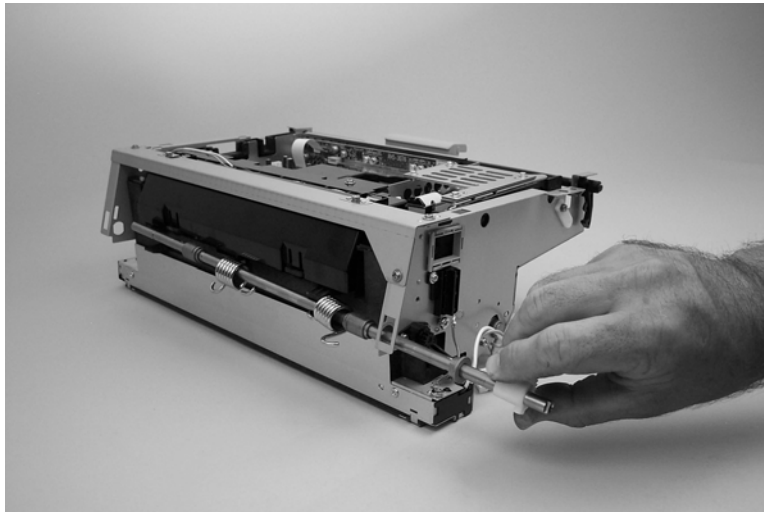
Figure 6-53 Remove the ADF optical assembly (8 of 13)



11. Slide the shaft out of the right side of the chassis.

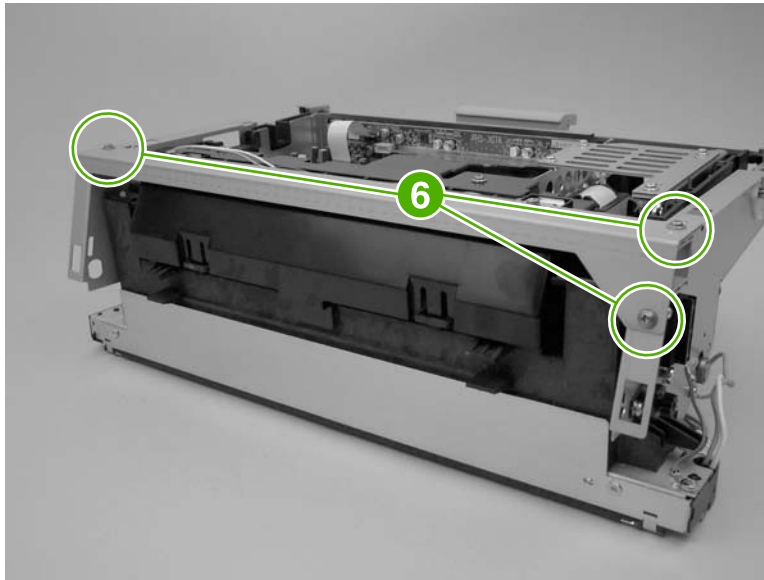
△ **CAUTION:** Before removing the shaft, take note of the order in which the bushings and springs are placed on it.

Figure 6-54 Remove the ADF optical assembly (9 of 13)



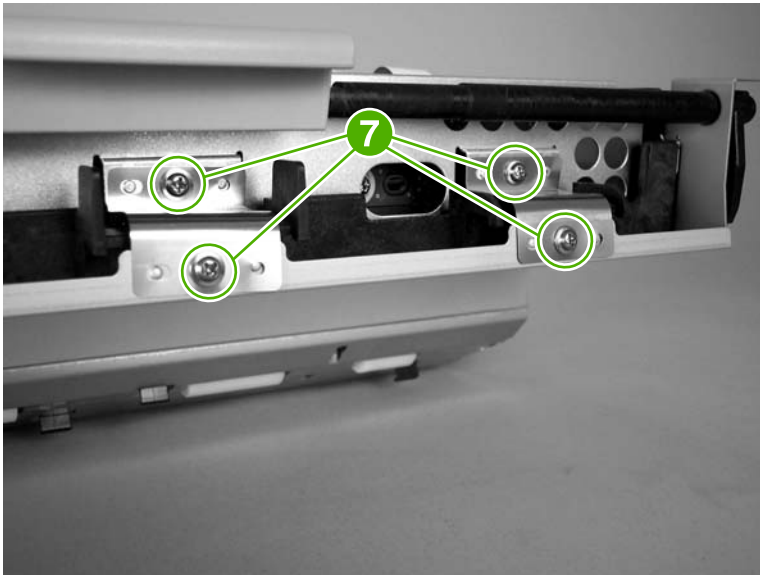
12. Remove three screws from the front of the assembly (callout 6), and then remove the metal cover.

Figure 6-55 Remove the ADF optical assembly (10 of 13)



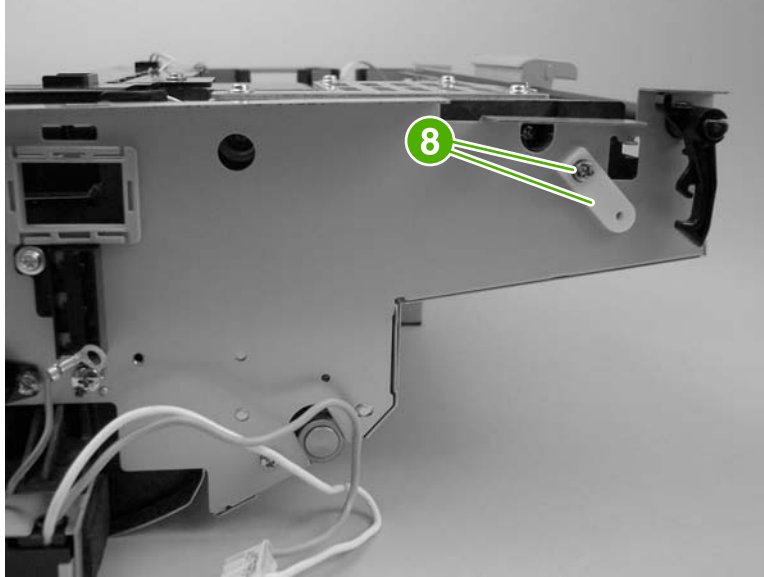
13. Remove four screws (callout 7) from the back of the assembly, and then remove the two sheet metal clips.

Figure 6-56 Remove the ADF optical assembly (11 of 13)



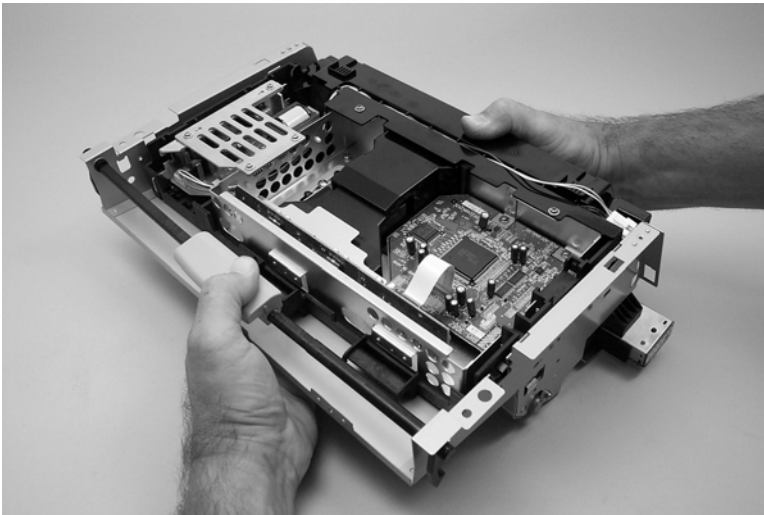
14. Remove one screw and the white pushing (callout 8) from each side of the assembly.

Figure 6-57 Remove the ADF optical assembly (12 of 13)



15. Remove the ADF optical assembly from the sheet metal chassis.

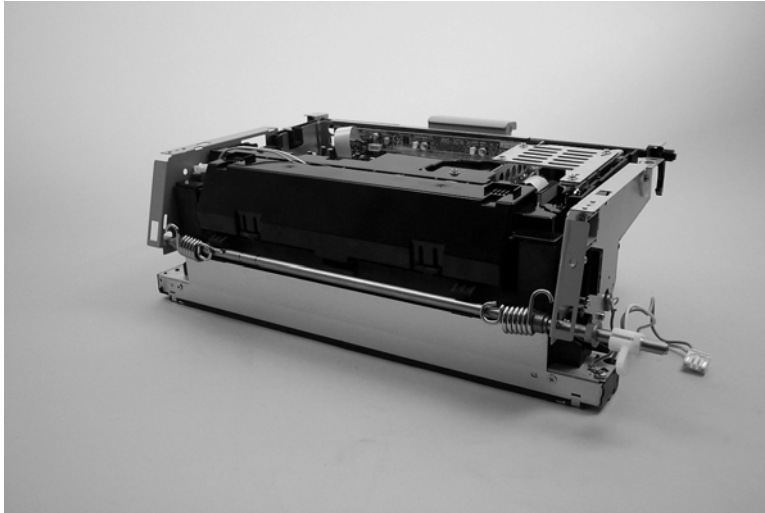
Figure 6-58 Remove the ADF optical assembly (13 of 13)



Reinstall the ADF optical assembly

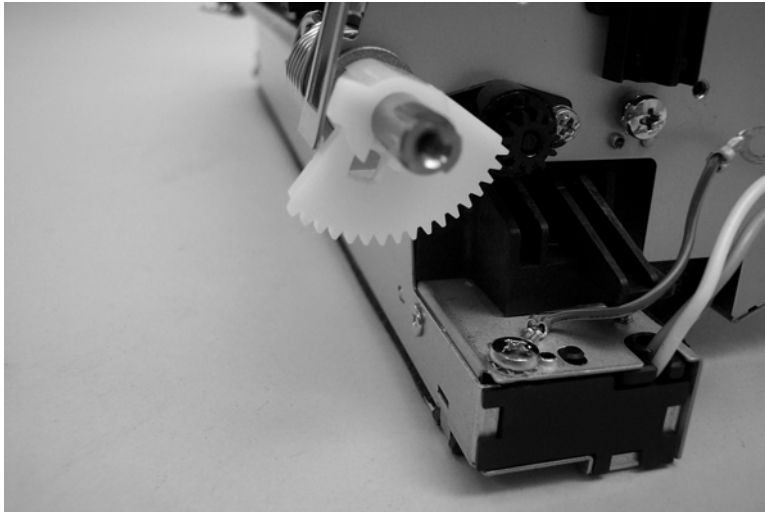
Be sure that the bushings and springs are in the correct order and that the spring ends fit into the slots in the chassis (see figure).

Figure 6-59 Reinstall the ADF optical assembly (1 of 2)



Be sure the white gear is engaged with the black gear (see figure).

Figure 6-60 Reinstall the ADF optical assembly (2 of 2)

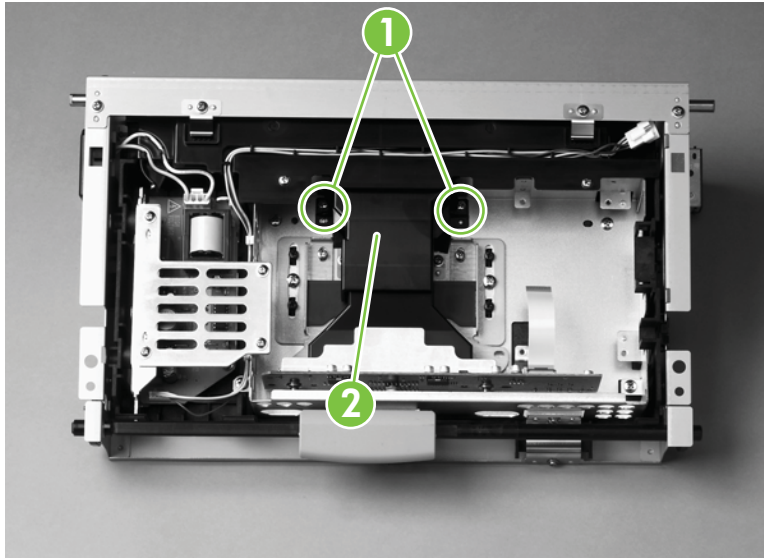


ADF shading filter

1. Remove the ADF analog processor PCA.

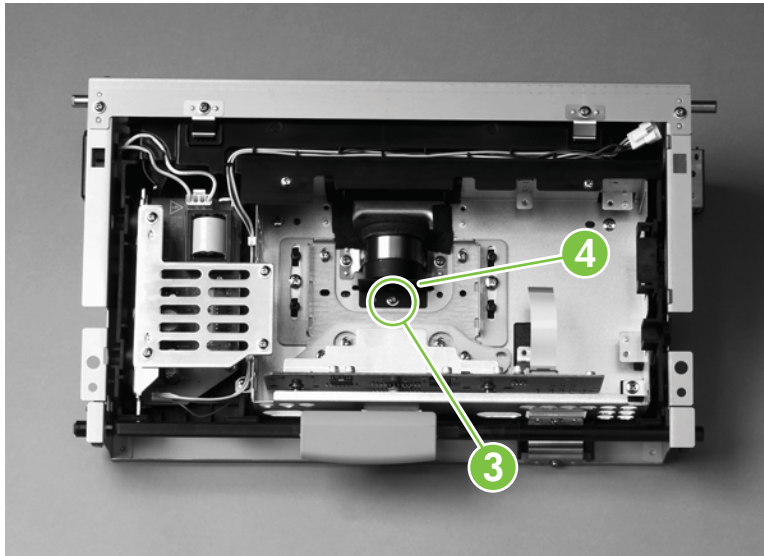
2. Remove two screws (callout 1) from the lens cover, and remove the front lens cover (callout 2).

Figure 6-61 Remove the ADF shading filter (1 of 2)



3. Squeeze the sides of the back lens cover to release the four claws, and then lift out the cover.
4. Remove one screw (callout 3), and then lift off the ADF shading filter (callout 4).

Figure 6-62 Remove the ADF shading filter (2 of 2)



Flatbed optical unit

△ **CAUTION:** Grease from lubricated parts can cause scanning problems if it becomes smeared on other parts. Clean all smeared grease using general cleaning procedures.

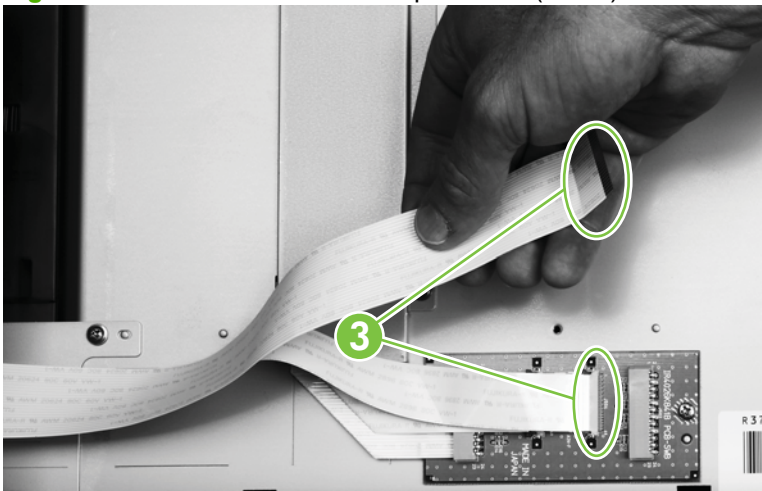
1. Remove the following components:
 - Flatbed right cover. See [Flatbed right cover on page 164](#)
 - Flatbed left cover. See [Flatbed left cover on page 165](#)
 - Scanner glass. See [Scanner glass on page 172](#)
2. Remove two screws (callout 1), and remove the flatbed mount cover (callout 2).

Figure 6-63 Remove the flatbed optical unit (1 of 6)



3. Disconnect two ribbon cables (callout 3).

Figure 6-64 Remove the flatbed optical unit (2 of 6)

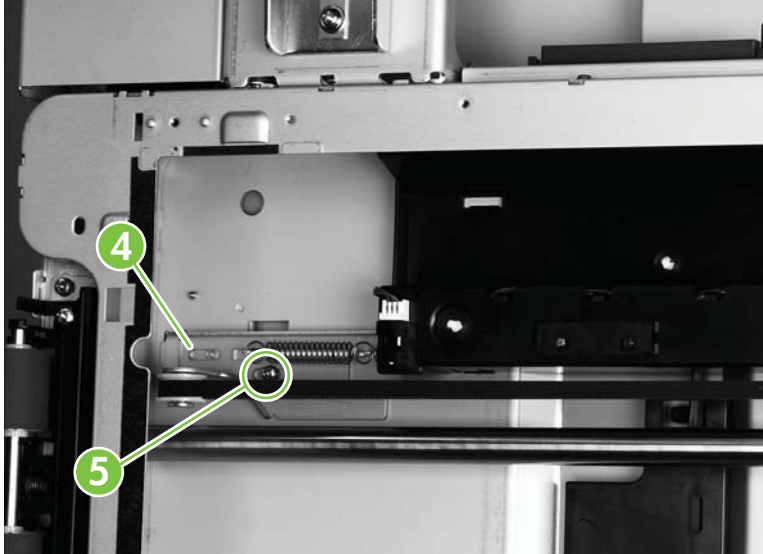


📝 **NOTE:** One of the ribbon cables is a Zero Insertion Force cable with no retaining clip.

△ **CAUTION:** The retaining clips on the two center connectors are fragile. Be careful to avoid breaking them.

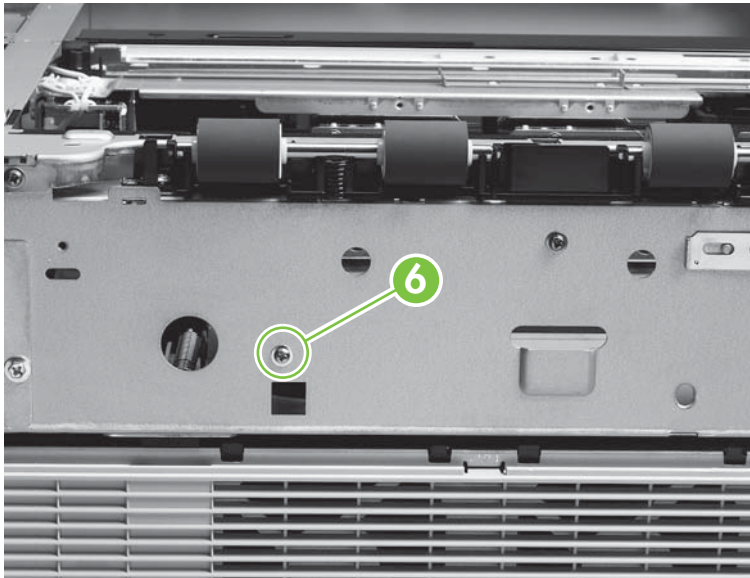
4. Slide the optical unit to the right for access to the belt tension adjusting plate (callout 4), and then loosen the screw on the adjusting plate (callout 5).

Figure 6-65 Remove the flatbed optical unit (3 of 6)



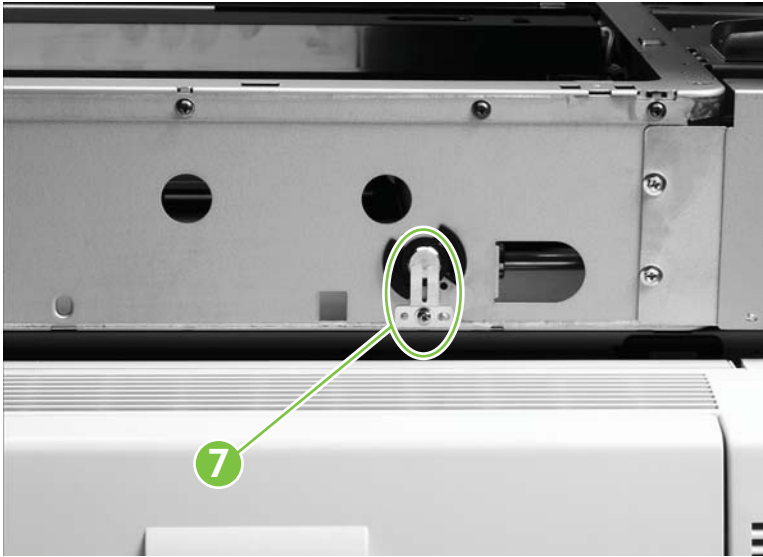
5. Push the belt tension adjusting plate to the right to relieve tension on the belt, and then remove the belt.
6. Remove one screw (callout 6) at the left end of the shaft.

Figure 6-66 Remove the flatbed optical unit (4 of 6)



7. Remove one screw and the shaft ground plate (callout 7) from the right end of the shaft.

Figure 6-67 Remove the flatbed optical unit (5 of 6)

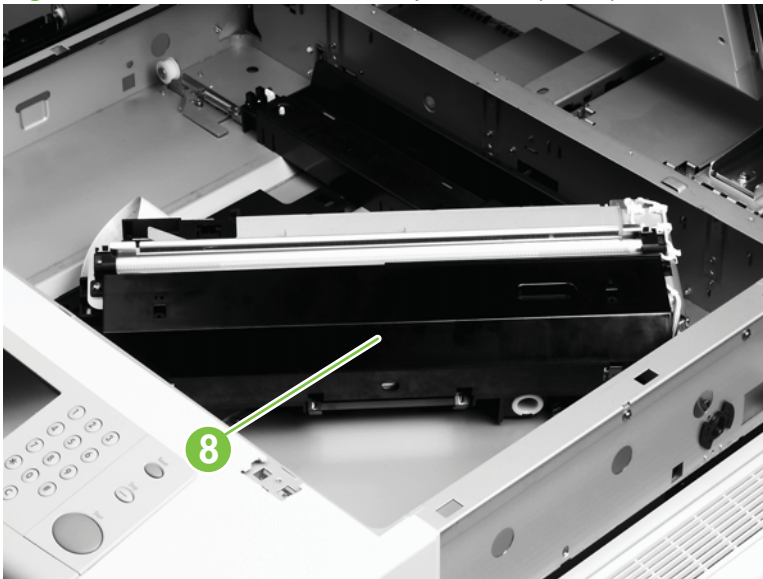


8. Pull the shaft slowly out from the right side while supporting the optical unit.

△ **CAUTION:** Prevent scrapes and wear on the optical unit by pulling the shaft out slowly while supporting the optical unit.

9. Rotate the optical unit (callout 8) clockwise for clearance to lift it out.

Figure 6-68 Remove the flatbed optical unit (6 of 6)



Reinstall the flatbed optical unit

△ **CAUTION:** Do not touch the scanner lamp. Fingerprints can cause the lamp to break.

📝 **NOTE:** Avoid touching the greasy rail.

As you insert the shaft, support the left end of the optical unit until the left end screw is installed. Be sure that the keyed end of the shaft is aligned with the frame.

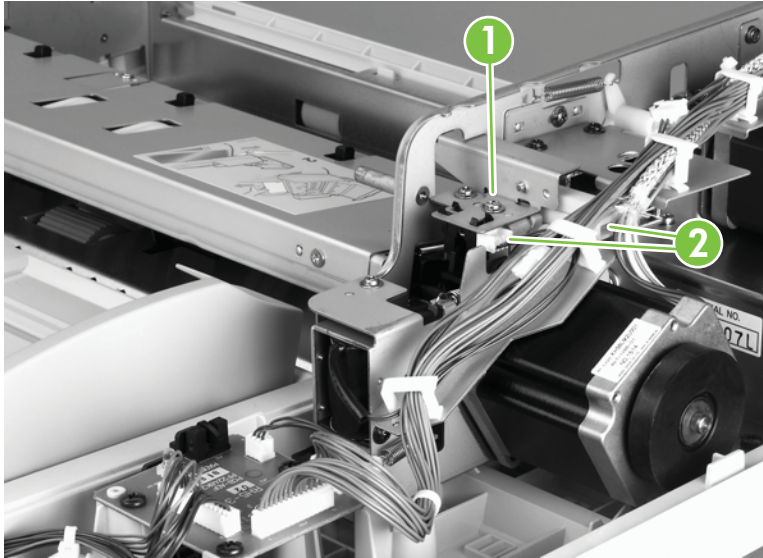
 **NOTE:** The entire flatbed optical unit is an FRU.

Switch and solenoids

ADF feeder cover detection switch

1. Open the ADF feeder.
2. Remove the ADF back cover. See [ADF back cover on page 157](#).
3. Remove one screw (callout 1), and then disconnect two connectors (callout 2).

Figure 6-69 Remove the feeder cover detection switch



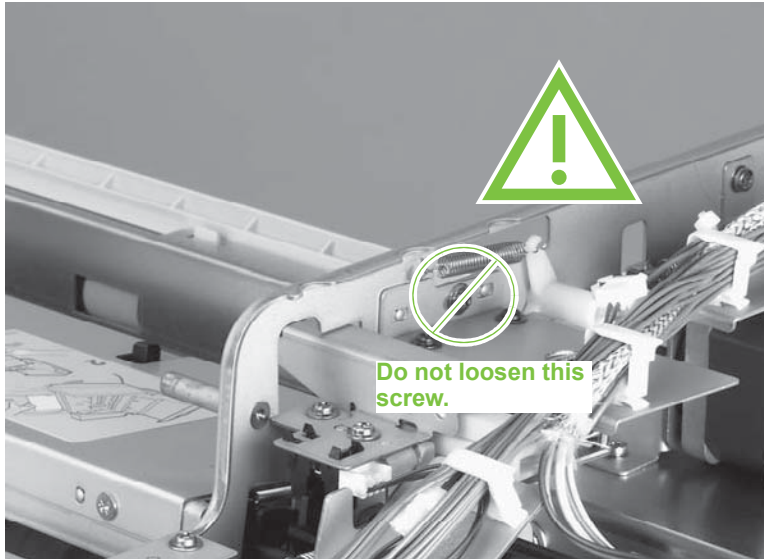
4. Remove the ADF feeder cover detection switch and mount.
5. Remove the switch from the mount.

Weight solenoid

1. Remove the ADF back cover. See [ADF back cover on page 157](#).

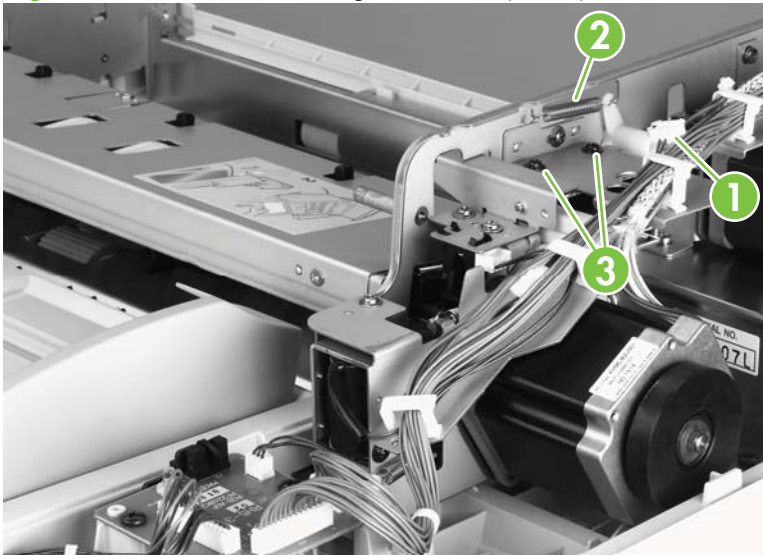
△ **CAUTION:** Do not loosen the blue retaining screw on the solenoid mounting plate (see figure). It is not involved with this procedure.

Figure 6-70 Remove the weight solenoid (1 of 2)



2. Disconnect one connector (callout 2), remove one spring (callout 3), and two screws (callout 4).

Figure 6-71 Remove the weight solenoid (2 of 2)



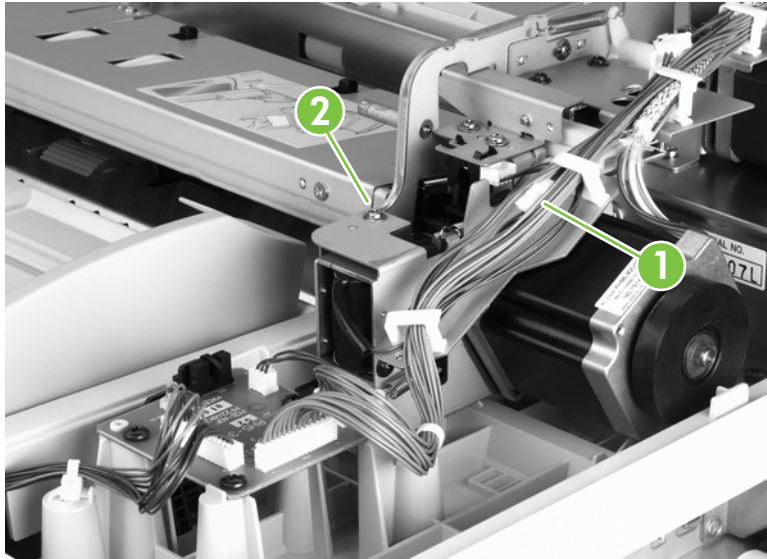
3. Remove the weight solenoid.

Shutter solenoid

1. Remove the ADF back cover. See [ADF back cover on page 157](#).

2. Disconnect one connector (callout 1), and remove one screw (callout 2).

Figure 6-72 Remove the shutter solenoid



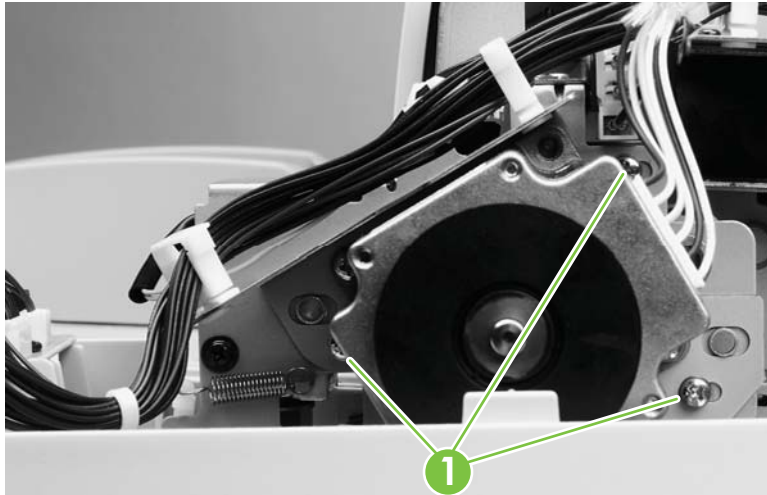
3. Remove the shutter solenoid.

Motors and fans

Pickup motor

1. Remove the ADF back cover. See [ADF back cover on page 157](#).
2. Loosen, but do not remove, three screws on the motor mount (callout 1).

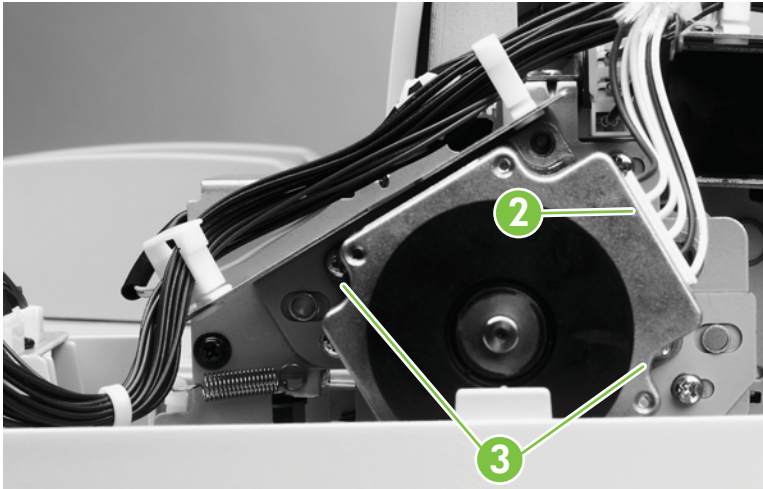
Figure 6-73 Remove the pickup motor (1 of 2)



3. Slide the motor to the right to relieve the belt tension, and then tighten the three motor mount screws.

4. Disconnect one connector (callout 2), and remove two screws (callout 3).

Figure 6-74 Remove the pickup motor (2 of 2)



5. Remove the pickup motor.

Reinstall the pickup motor

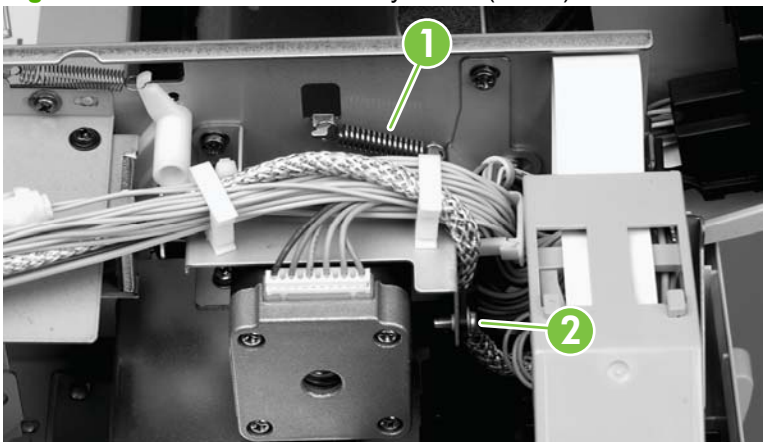
Loosen the three screws on the motor mount, and allow the spring to adjust the position of the motor, and then retighten the screws. After replacing the motor, run the motor speed calibration and ADF scaling operation. See [ADF calibrations on page 336](#)

 **NOTE:** Make sure the belt is captured on the motor gear.

Delivery motor

1. Remove the ADF back cover. See [ADF back cover on page 157](#).
2. Remove one spring (callout 1) using needle nose pliers.

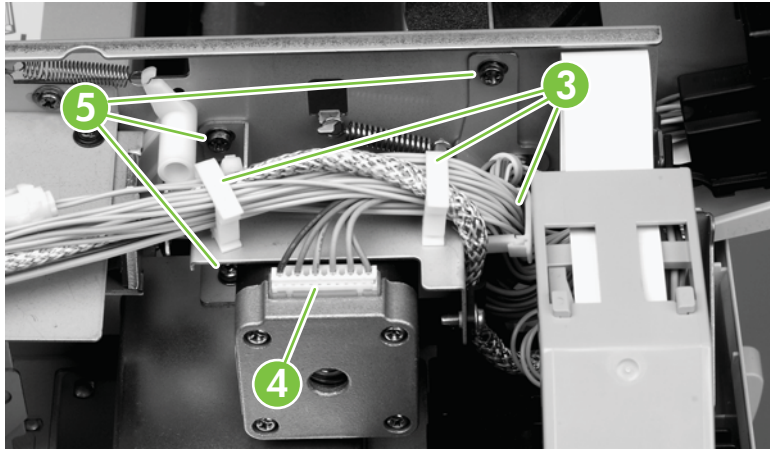
Figure 6-75 Remove the delivery motor (1 of 2)



3. Remove one cable clamp screw (callout 2) and the cable clamp.

4. Remove 3 cable ties (callout 3) and disconnect one connector (callout 4).

Figure 6-76 Remove the delivery motor (2 of 2)



5. Remove three screws (callout 5).
6. Slide the delivery motor to the right, and remove it with the motor mount.
7. Remove two screws from the back of the motor mount, and remove the motor from the motor mount.

Reinstall

Install the three motor mount screws without tightening them. Reinstall the spring, and allow it to adjust the position of the motor mount. Then tighten the motor mount screws.

After replacing this motor, run the glass scaling calibration and motor speed calibration operations. See [ADF calibrations on page 336](#)



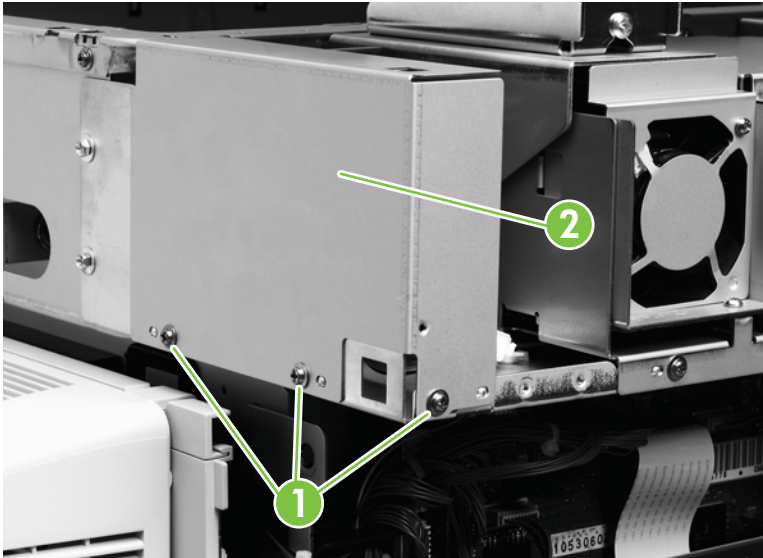
NOTE: Make sure the belt is captured on the motor gear.

Flatbed motor

1. Remove the flatbed back cover. See [Flatbed back cover on page 162](#).
2. Remove the flatbed right cover. See [Flatbed right cover on page 164](#).

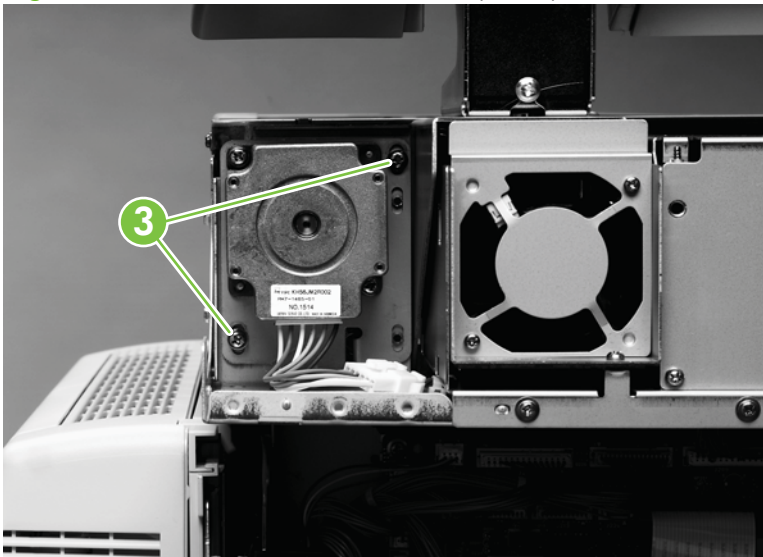
3. Remove the three screws on the reinforcement plate (callout 1), and remove the reinforcement plate (callout 2).

Figure 6-77 Remove the flatbed motor (1 of 3)



4. Loosen the two screws on the motor adjustment plate (callout 3), and then slide the motor down to relieve the belt tension.

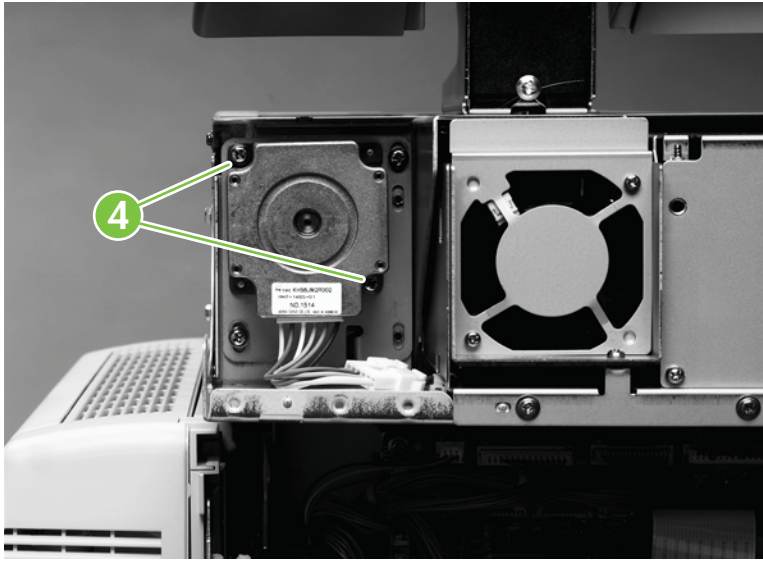
Figure 6-78 Remove the flatbed motor (2 of 3)



5. Tighten the two screws on the motor adjustment plate.

6. Remove the two motor mount screws (callout 4), and then remove the motor.

Figure 6-79 Remove the flatbed motor (3 of 3)



Reinstall the flatbed motor

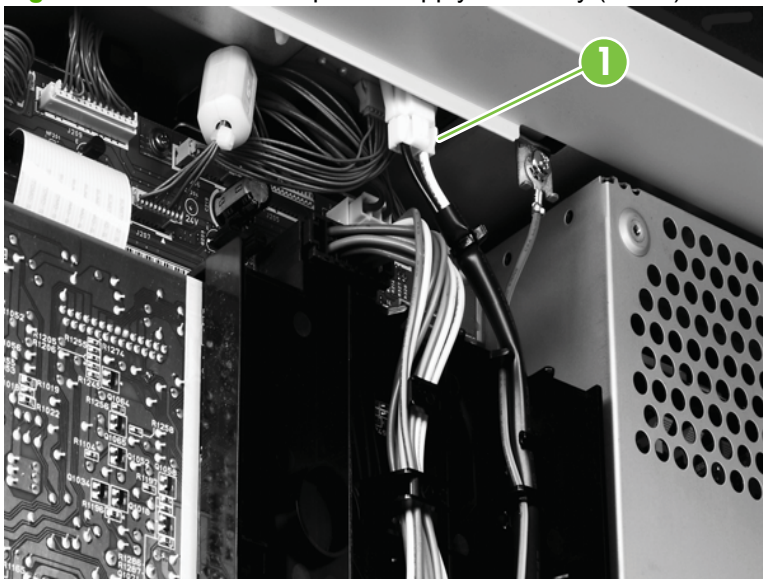
Loosen the two screws on the motor mount, and allow the spring to adjust the position of the motor. Then tighten the two screws. After replacing the motor, run the scanner/ADF scaling calibration and motor speed calibration operations. See [Calibrations on page 332](#).

 **NOTE:** Make sure the belt is captured on the motor gear.

Power supply assembly

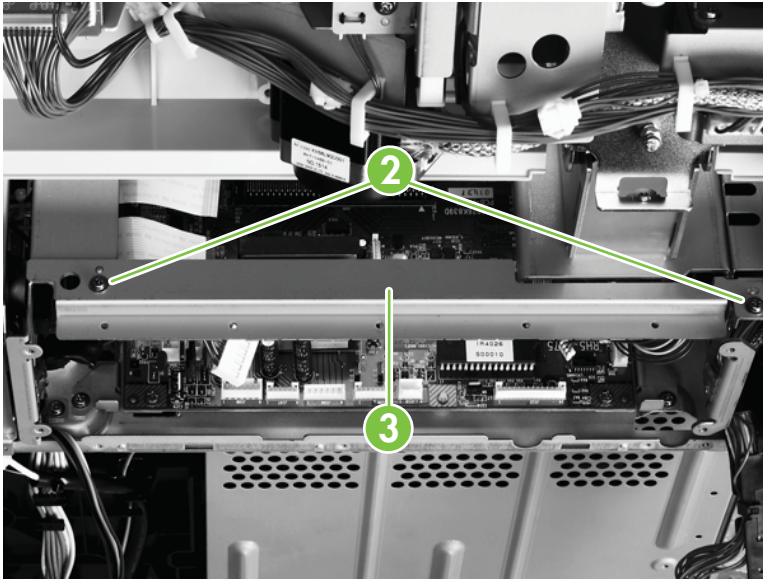
1. Remove the flatbed back cover. See [Flatbed back cover on page 162](#).
2. Disconnect the power supply connector (callout 1).

Figure 6-80 Remove the power supply assembly (1 of 6)



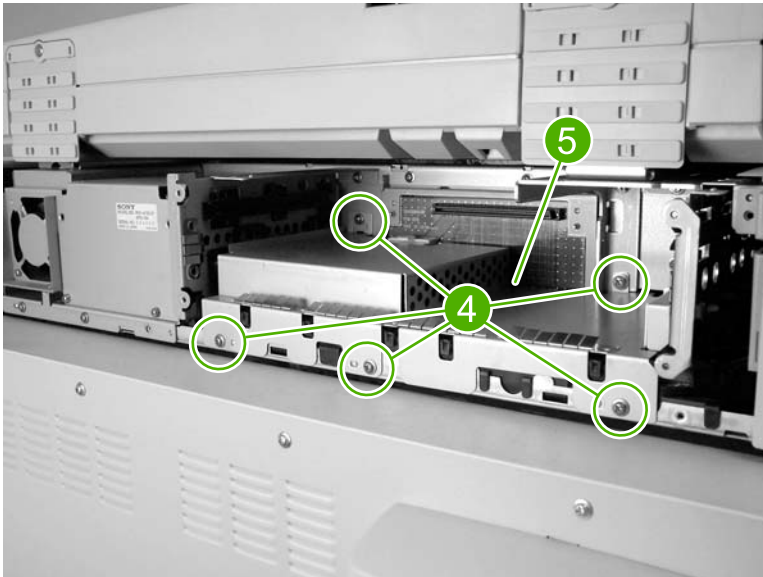
3. Remove the two screws on the upper rail (callout 2), and remove the rail (callout 3).

Figure 6-81 Remove the power supply assembly (2 of 6)



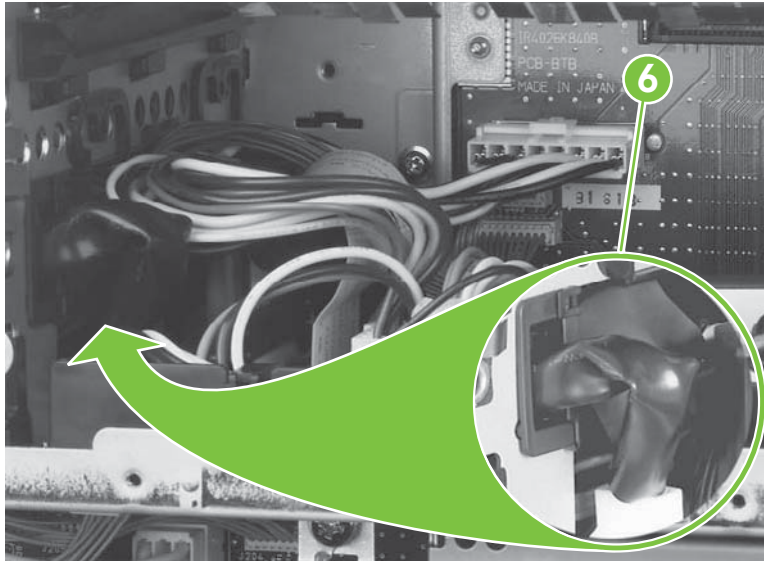
4. Remove the five screws on the RFI shield plate (callout 4), and remove the RFI shield plate (callout 5).

Figure 6-82 Remove the power supply assembly (3 of 6)



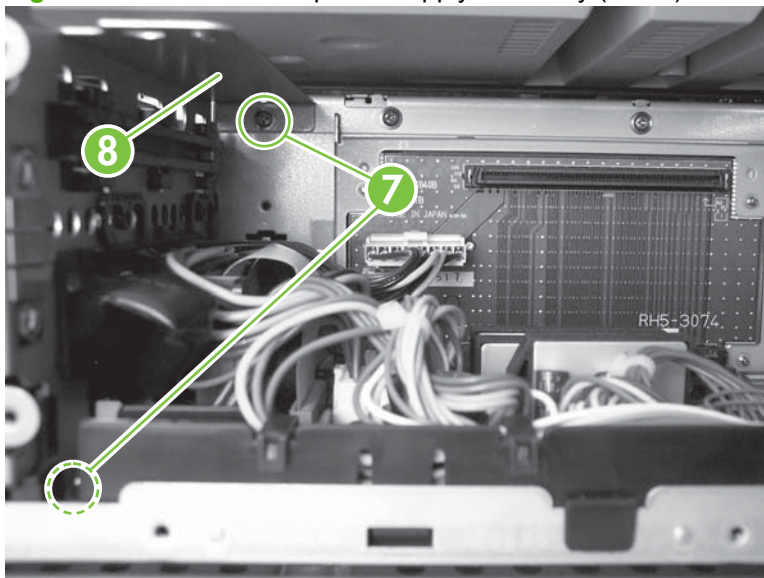
5. Unlock the connector guide claw (callout 6).

Figure 6-83 Remove the power supply assembly (4 of 6)



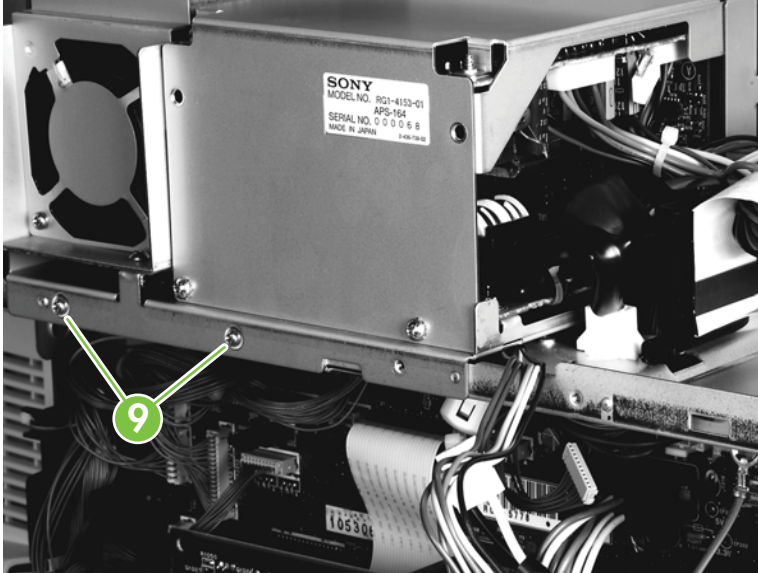
6. Remove the two left shield plate screws (callout 7), and remove the shield plate (callout 8).

Figure 6-84 Remove the power supply assembly (5 of 6)



7. Remove the two screws from the power supply (callout 9), and then slide the power supply out slightly.

Figure 6-85 Remove the power supply assembly (6 of 6)



8. Disconnect the connector from the scanner controller board, and disconnect the connector from the intermediate PCA.
9. Thread the power supply connector up through the sheet metal, and then remove the power supply assembly.

Reinstall power supply assembly

Be careful to avoid pinching the cables.

The power supply assembly screws go to the holes at the left and the center of the plate.

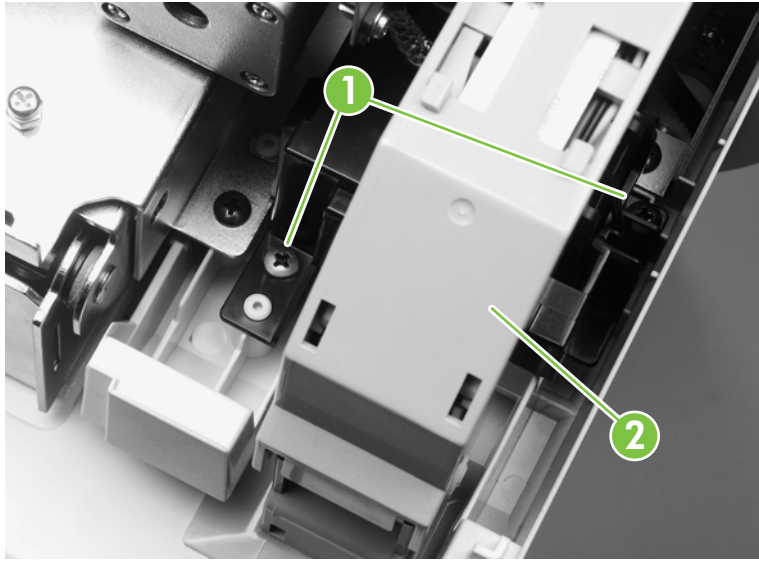
ADF fan assembly

 **NOTE:** The ADF fan is an intake fan.

1. Remove the ADF back cover. See [ADF back cover on page 157](#).

2. Remove the two screws from the plastic fan housing (callout 1), and lift out the fan with the housing.

Figure 6-86 Remove the ADF fan assembly



 **NOTE:** This might require lifting the cable guide assembly (callout 2) to provide clearance.

3. Disconnect the fan power connector.
4. Remove the fan from the housing.

Reinstall the ADF fan assembly

Check that the airflow direction arrow on the fan matches the arrow on the housing.

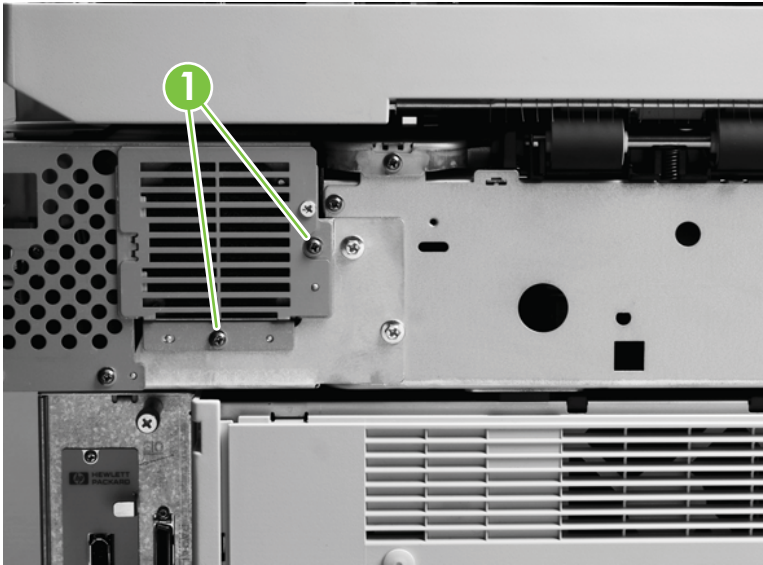
Flatbed fan assembly

 **NOTE:** The flatbed fan is an intake fan.

1. Remove the flatbed left cover. See [Flatbed left cover on page 165](#).

2. Remove the two screws (callout 1), and pullout the flatbed fan assembly.

Figure 6-87 Remove the flatbed fan assembly



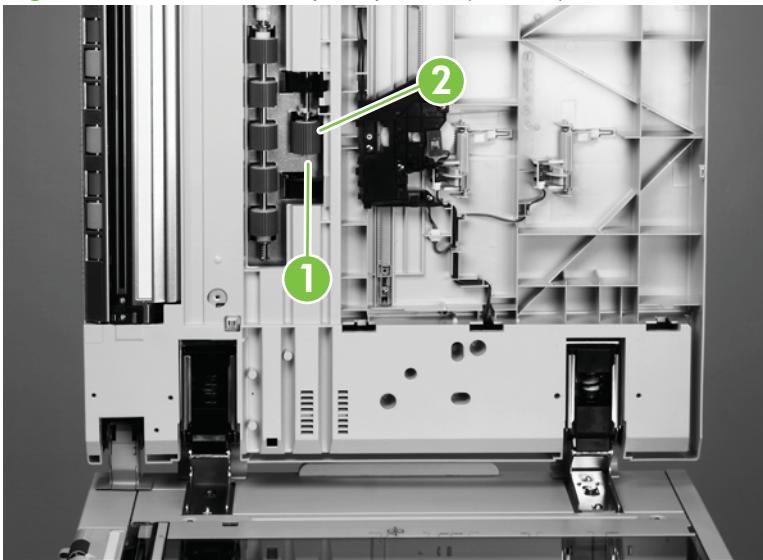
3. Disconnect the power connector.

Rollers and belts

Pickup roller (D roller)

1. Remove the white board cover. See [White board cover on page 160](#).
2. Pull the tab outside of the shaft (callout 1) while sliding the pickup roller (callout 2) down to remove it.

Figure 6-88 Remove the pickup roller (D roller)

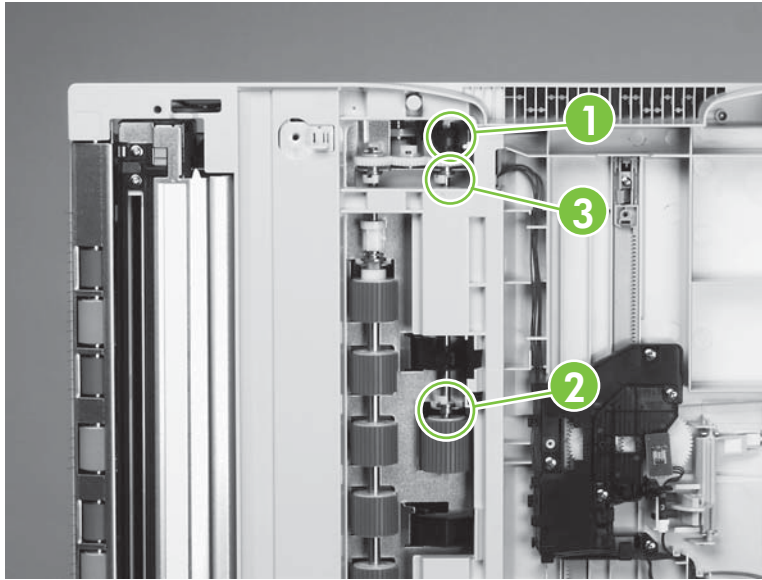


Pickup roller assembly

1. Remove the pickup roller. See [Pickup roller \(D roller\) on page 202](#).

2. Rotate the shaft manually until the tab on the round black sensor flag (callout 1) points outward.

Figure 6-89 Remove the pickup roller assembly



3. Pull the tab to remove the round black sensor from the shaft.
4. Remove the lower C-clip (callout 2).
5. Hold the gear (callout 3) with one hand, and hold the bushing with the other hand to remove the pickup roller assembly.

Reinstall the pickup roller assembly

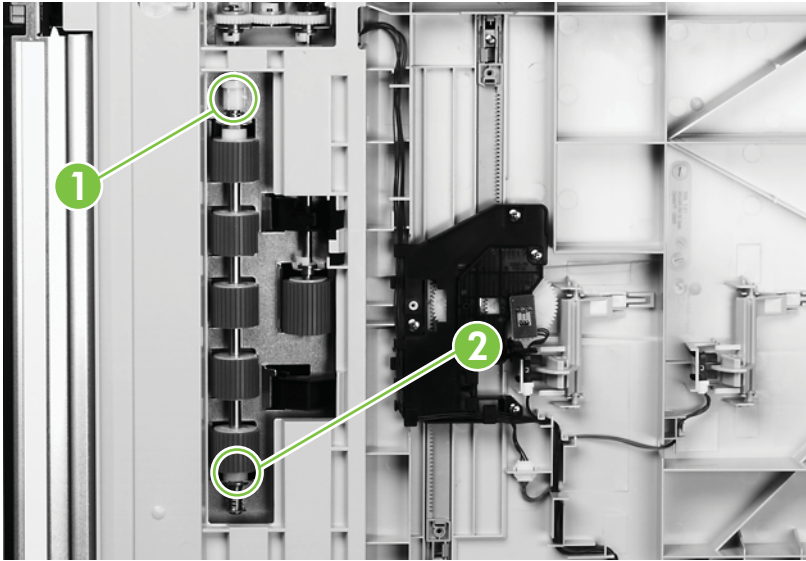
Align the shaft so the flat part faces outward to accept the pin in the round black sensor flag.

Feed roller assembly

1. Remove the white board cover. See [White board cover on page 160](#).

2. Disengage the locking tab, and slide the collar up (callout 1).

Figure 6-90 Remove the feed roller assembly



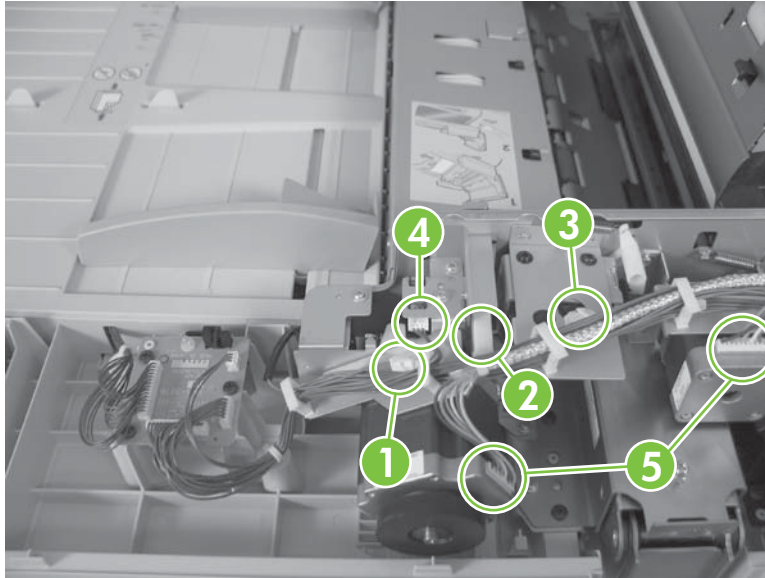
3. Push the bottom brass bushing down (callout 2), and tilt the roller assembly out to remove it.

Lower registration roller assembly

1. Remove the base cover assembly. See [ADF base cover assembly on page 167](#).
2. Disconnect the shutter solenoid connector (callout 1), and then disconnect the following connectors:
 - Feeder cover detection switch cover (callout 2)
 - Weight solenoid connector (callout 3)
 - Paper loaded sensor connector (callout 4)

- Delivery motor connector (callout 5)
- Pickup motor (callout 5).

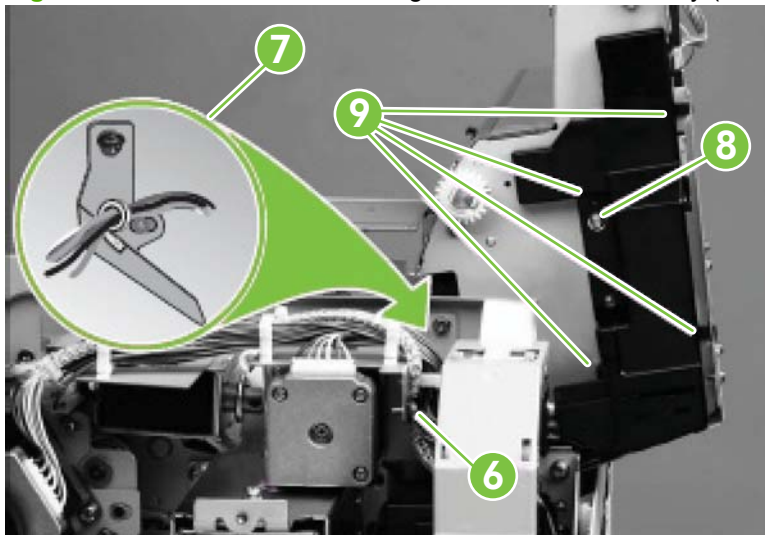
Figure 6-91 Remove the lower registration roller assembly (1 of 11)



3. Open the cable guides at the following locations, and remove the cables:
 - One on the shutter solenoid
 - Two on the feeder cover detection switch
 - One on the weight solenoid
 - Two on the motor
4. Remove the cable clamp screw and the cable clamp (callout 6).

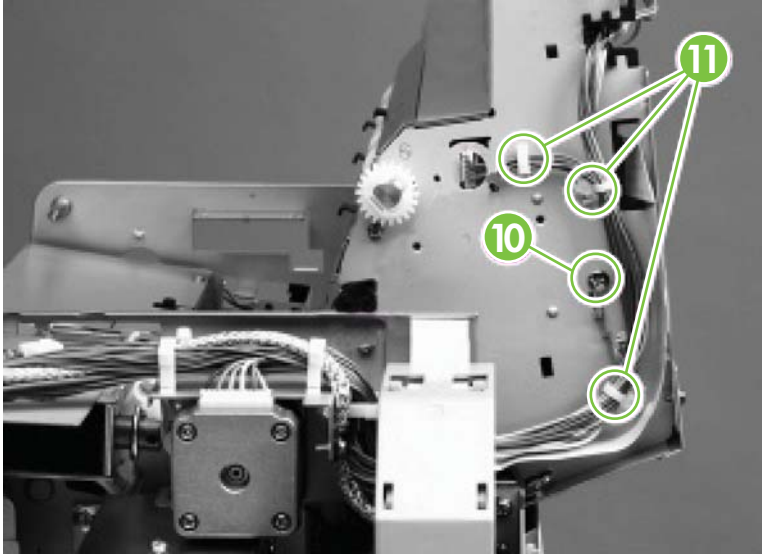
 **NOTE:** One end of the cable clamp fits into the sheet metal.

Figure 6-92 Remove the lower registration roller assembly (2 of 11)



5. Keep the cables in the tie wrap (callout 7), and remove the tie wrap from the motor mount.
6. Remove the screw from the cable cover (callout 8).
7. Push the cable cover to the right to disengage the two claws (callout 9).
8. Tilt the cable cover up to remove it.
9. Remove the grounding screw (callout 10).

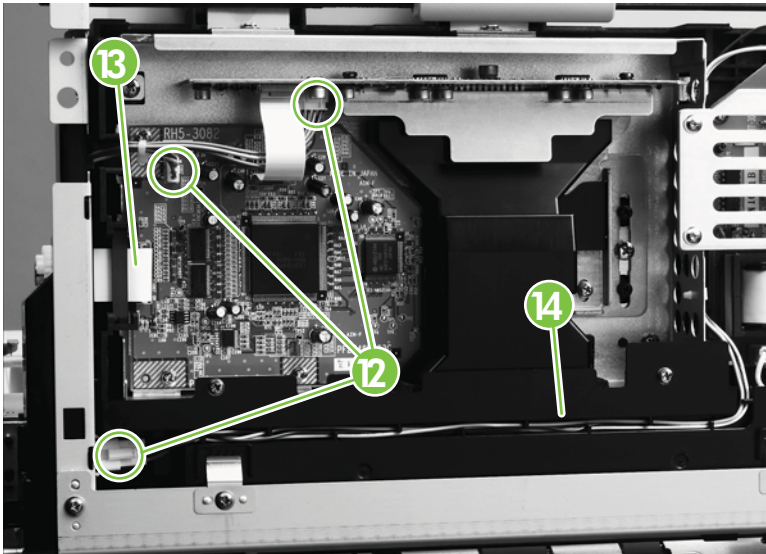
Figure 6-93 Remove the lower registration roller assembly (3 of 11)



 **TIP:** Twist the cable ties to disengage them, and depress the tabs to disengage the saddle clamps.

10. Remove the cable tie and the two saddle clamps (callout 11)
11. Disconnect three connectors (callout 12) inside the tip of the ADF assembly.

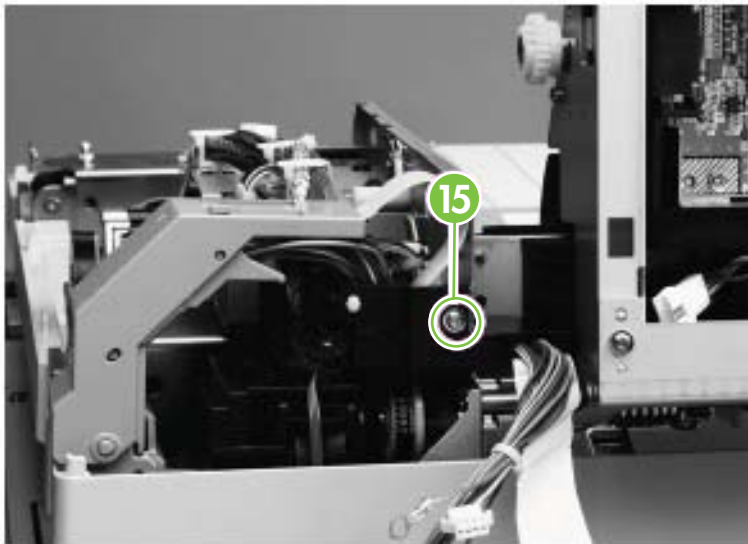
Figure 6-94 Remove the lower registration roller assembly (4 of 11)



12. Disconnect one connector and unseat one connector (callout 13).

13. Remove the cables from the harness (callout 14).
14. Remove one screw (callout 15) from the flatbed cable cover.

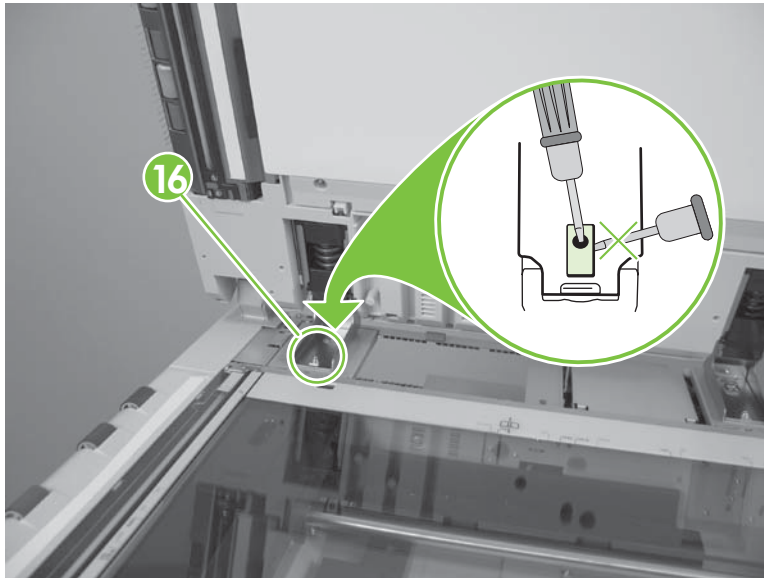
Figure 6-95 Remove the lower registration roller assembly (5 of 11)



15. Remove one screw and the locking plate on the left hinge (callout 16).

△ **CAUTION:** Do not pry the locking plate to remove it. This will bend the locking plate. Insert a small screwdriver into the screw hole, and wiggle it back and forth to free the locking plate.

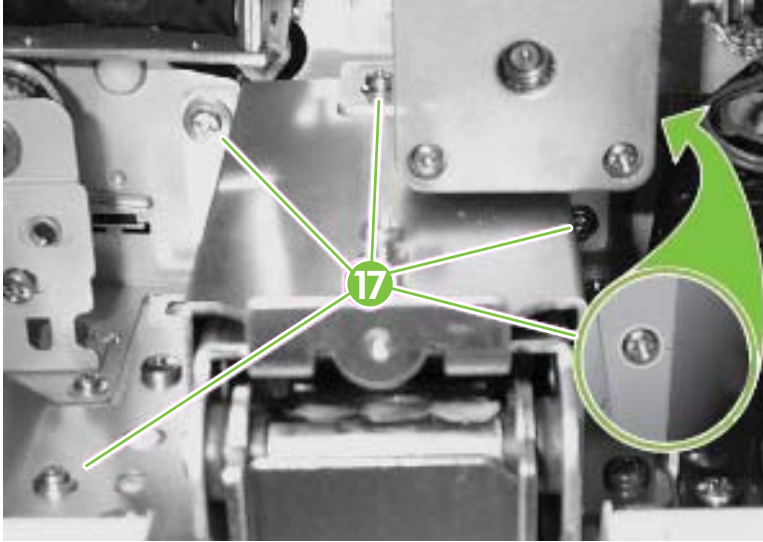
Figure 6-96 Remove the lower registration roller assembly (6 of 11)



16. Remove the ADF main assembly, and place it on an ESD mat.

17. Remove five screws (callout 17) from the right hinge on the ADF main assembly, and remove the hinge.

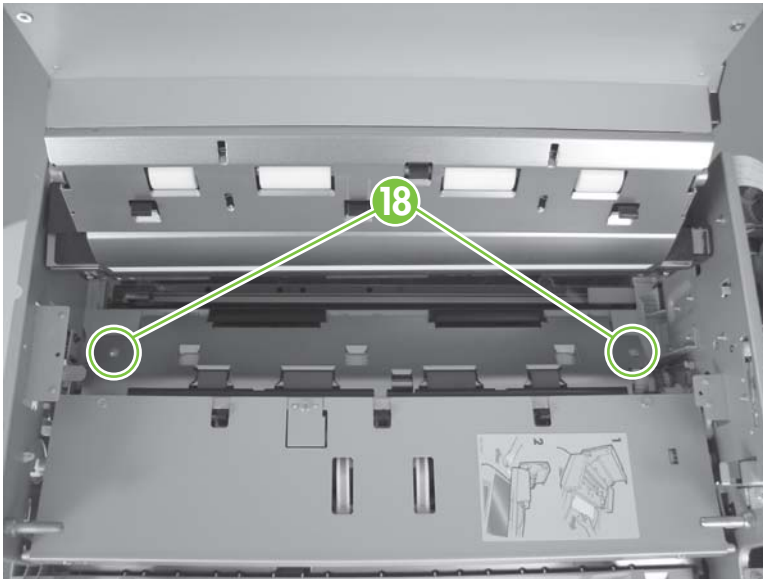
Figure 6-97 Remove the lower registration roller assembly (7 of 11)



18. With the ADF feeder closed, remove the two screws (callout 18) in the feed roller cover plate using a long screwdriver.

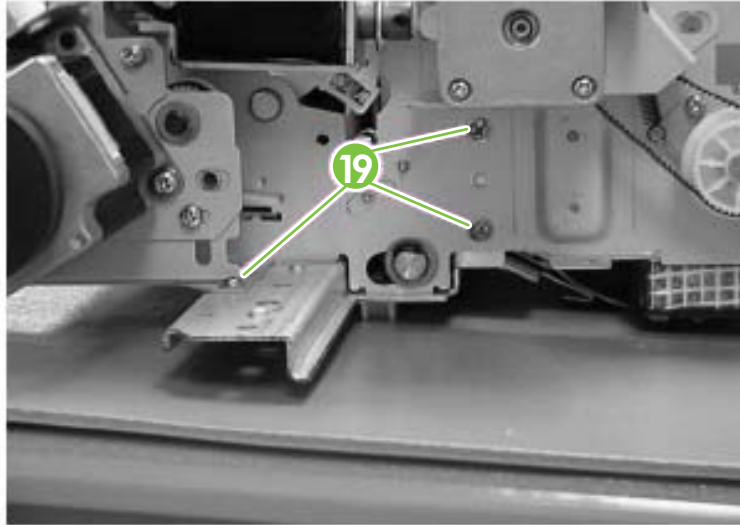
△ **CAUTION:** Remove the two screws with the ADF feeder closed to prevent stripping.

Figure 6-98 Remove the lower registration roller assembly (8 of 11)



19. Remove three screws (callout 19) from the from the side of the ADF main assembly.

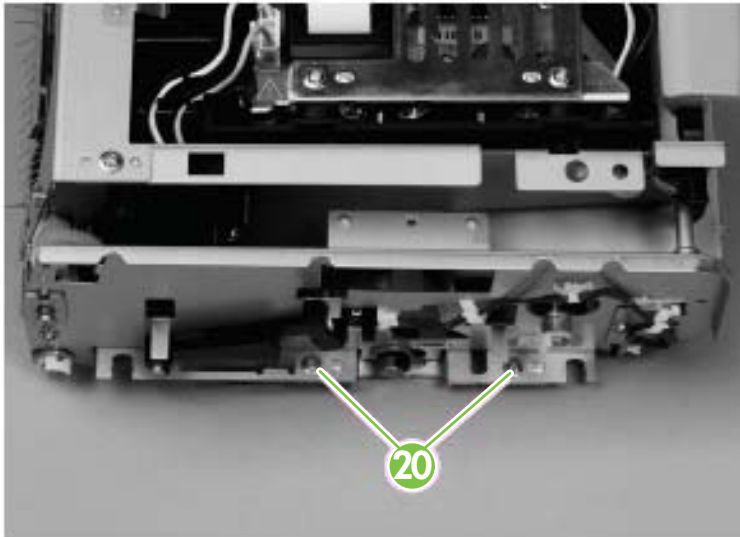
Figure 6-99 Remove the lower registration roller assembly (9 of 11)



20. Remove two screws (callout 20), and remove the reinforcement rail.

 **TIP:** You might have to work the rail loose.

Figure 6-100 Remove the lower registration roller assembly (10 of 11)



21. With the assembly open, loosen one screw (callout 21) on the registration belt tension plate.

Figure 6-101 Remove the lower registration roller assembly (11 of 11)



22. Rotate the plate to relieve tension on the registration belt, and then retighten the screw.
23. Remove one C-clip at each end of the shaft.
24. Slide one bushing off of each end of the shaft.
25. Slide out the lower registration assembly with the gear.

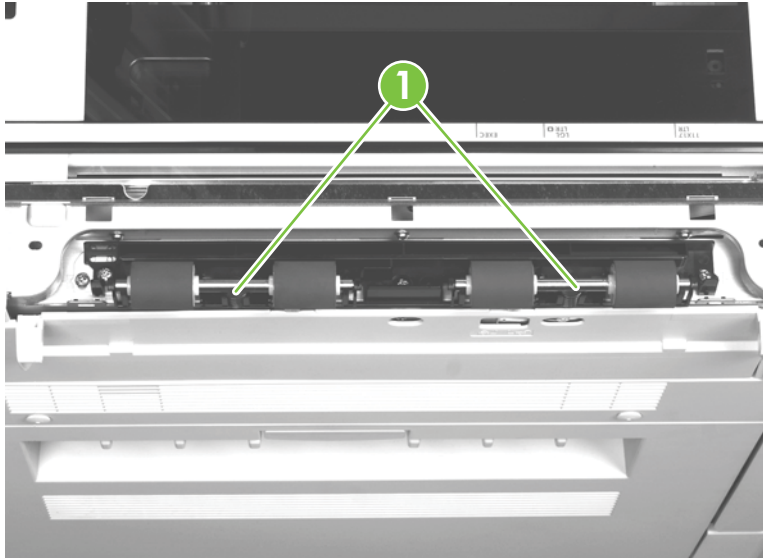
Reinstall the lower registration assembly

Be sure to apply tension to the registration belt by loosening the screw, rotating the plate, and tightening the screw.

Lower delivery roller

- △ **CAUTION:** When removing the delivery rollers, be sure to hold the springs (callout 1). The springs are under tension and will eject from the product.

Figure 6-102 Remove the lower delivery roller (1 of 2)



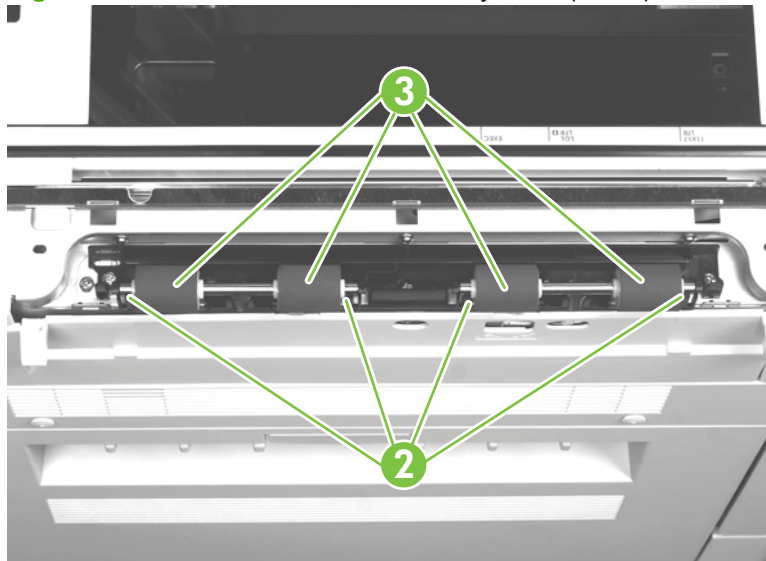
1. Remove the lower delivery roller cover. See [Lower delivery roller cover on page 159](#)



NOTE: Lubricant is on the shafts. If lubricant gets on a roller, clean the roller.

2. Disengage the four claws (callout 2) and remove the delivery rollers with shafts (callout 3).

Figure 6-103 Remove the lower delivery roller (2 of 2)



Reinstall the lower delivery roller

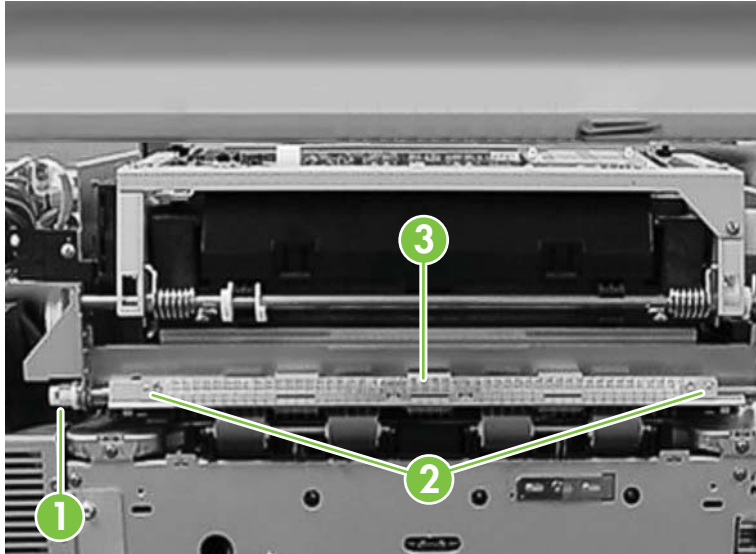
Insert the keyed ends of the shafts into the keyed claws, which are the innermost claws.

Upper delivery roller assembly

1. Remove the ADF base cover assembly. See [ADF base cover assembly on page 167](#).
2. Remove one C-clip from each end of the shaft.

3. Remove one gear (callout 1).

Figure 6-104 Remove the upper delivery roller assembly



4. Slide one bushing off of each end of the shaft.
5. Remove the two screws (callout 2) in the ESD strip, and remove the ESD strip (callout 3).
6. Lift the ADF up slightly while removing the upper delivery roller assembly.

Reinstall the upper delivery roller assembly

Replace the shaft so the longer keyed end points toward the back of the product.

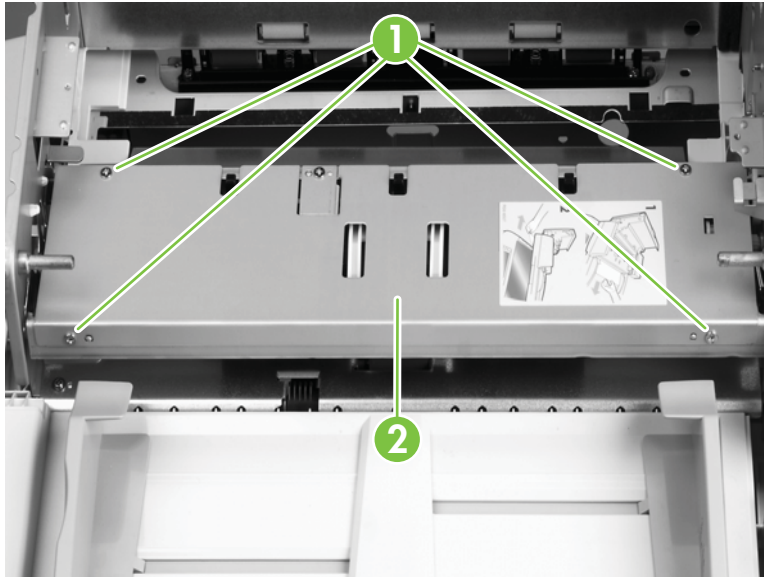
Separation belt assembly

 **NOTE:** The separation belt assembly is not available as a complete assembly. Replace separation belt assembly components as necessary.

1. Remove the following components:
 - ADF back cover. See [ADF back cover on page 157](#).
 - ADF front cover. See [ADF front cover on page 159](#).

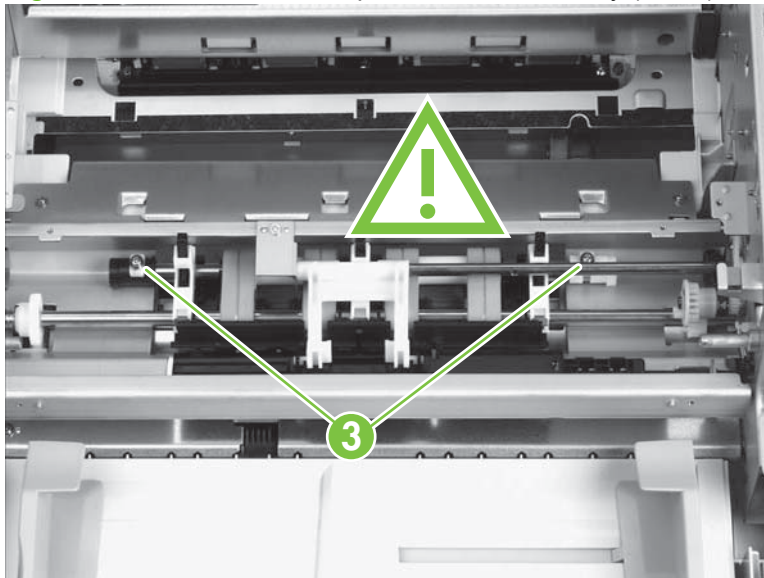
2. Remove the four screws (callout 1) on the separation belt assembly cover, and lift the cover off (callout 2).

Figure 6-105 Remove the separation belt assembly (1 of 6)



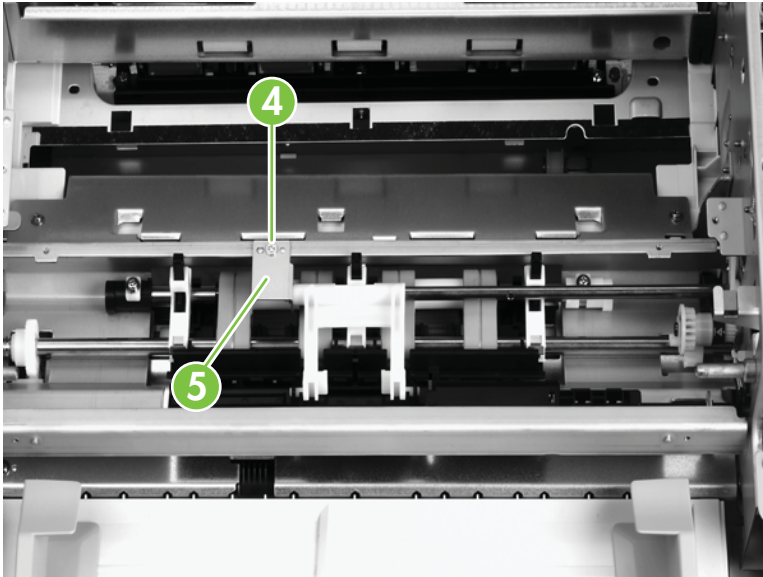
△ **CAUTION:** Do not touch the retaining screws (callout 3) that are marked with blue paint on the gap adjustment roller. This is a factory setting that cannot be adjusted in the field.

Figure 6-106 Remove the separation belt assembly (2 of 6)



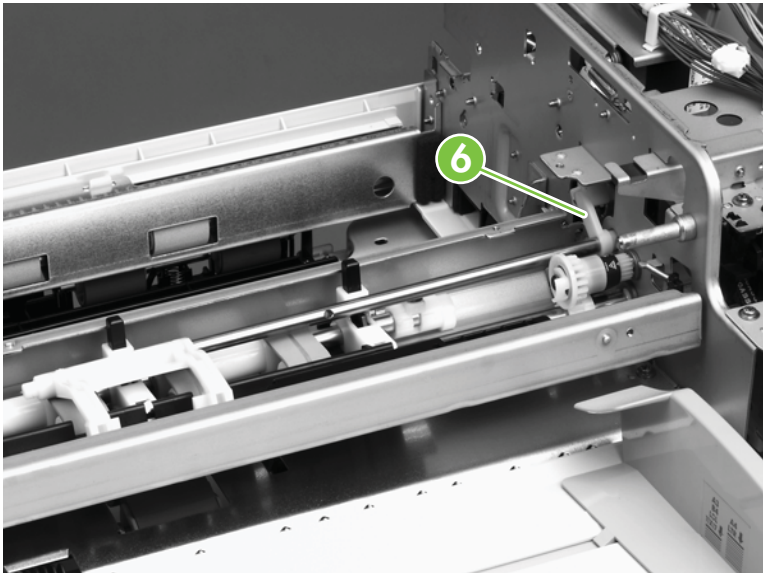
3. Remove the screw from the weight arm retaining plate (callout 4), and remove the plate (callout 5).

Figure 6-107 Remove the separation belt assembly (3 of 6)



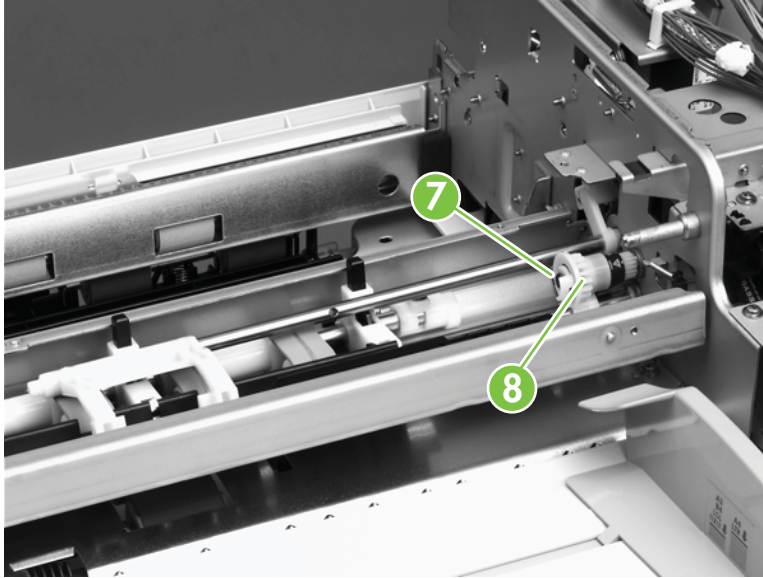
4. Tilt the end of the weight arm (callout 6) to disengage it from the solenoid lever, and remove it.

Figure 6-108 Remove the separation belt assembly (4 of 6)



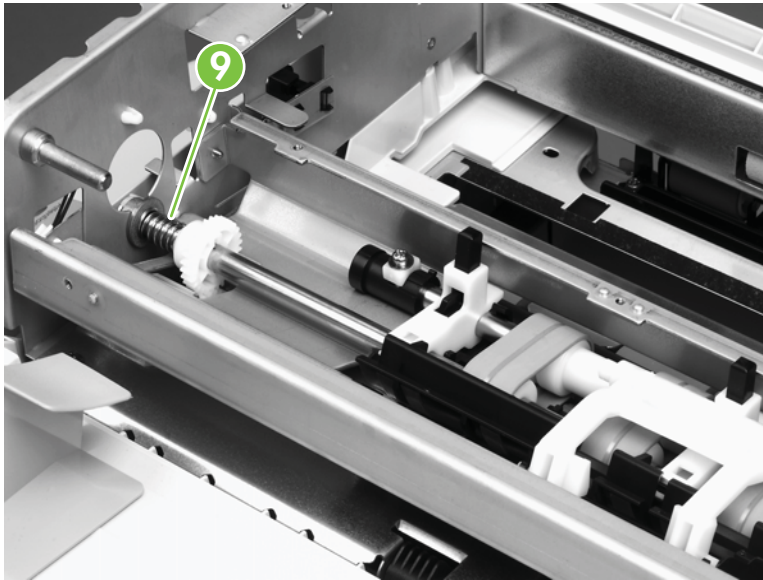
5. Remove the E-clip (callout 7), and pull the drive gear off (callout 8).

Figure 6-109 Remove the separation belt assembly (5 of 6)



6. Slide the bushing (callout 9), and lift the separation belt assembly out.

Figure 6-110 Remove the separation belt assembly (6 of 6)



Reinstall the separation belt assembly

Align the pin on the weight arm shaft with the arm stop hole on the solenoid lever.

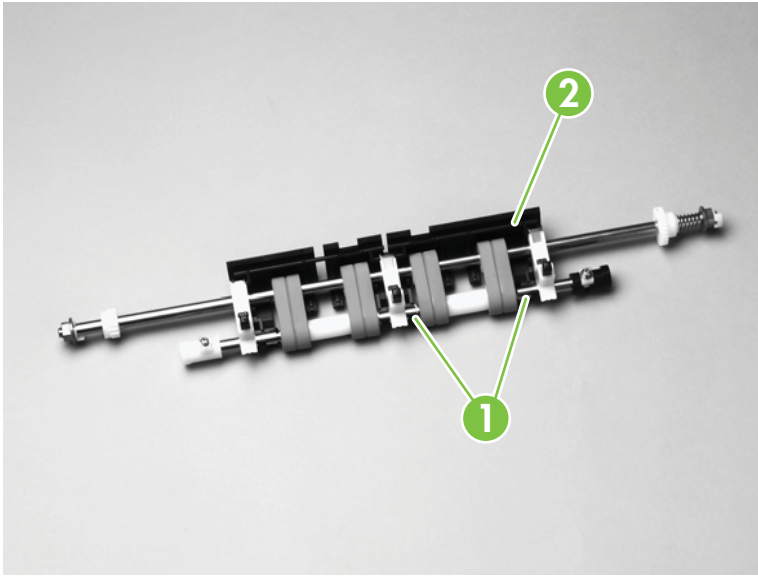
Separation belts

- △ **CAUTION:** When replacing the separation belts, remove only the belts on one side at a time. This unit is difficult to assemble if all belts are removed at the same time.

1. Remove the separation belt assembly. See [Separation belt assembly on page 212](#).

2. Unhook two claws (callout 1), and remove the document guide (callout 2).

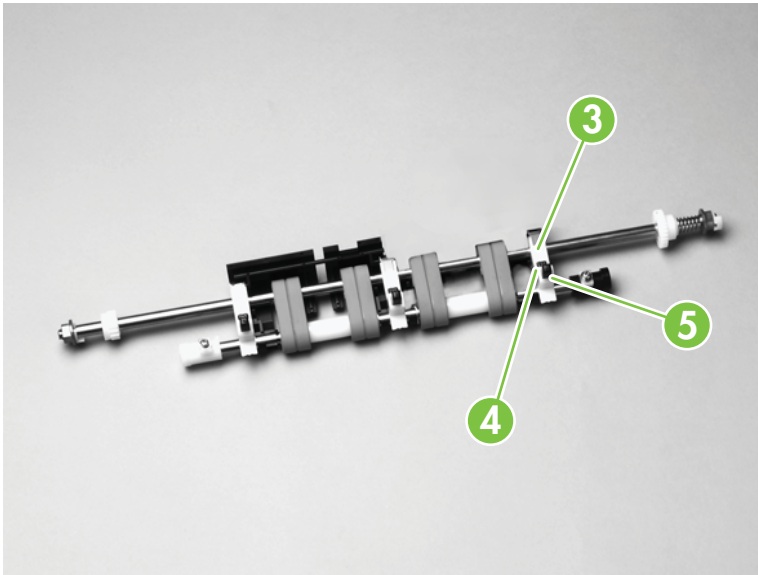
Figure 6-111 Remove the separation belts (1 of 3)



3. Lift the end of the shaft holder (callout 3), and pull it off.

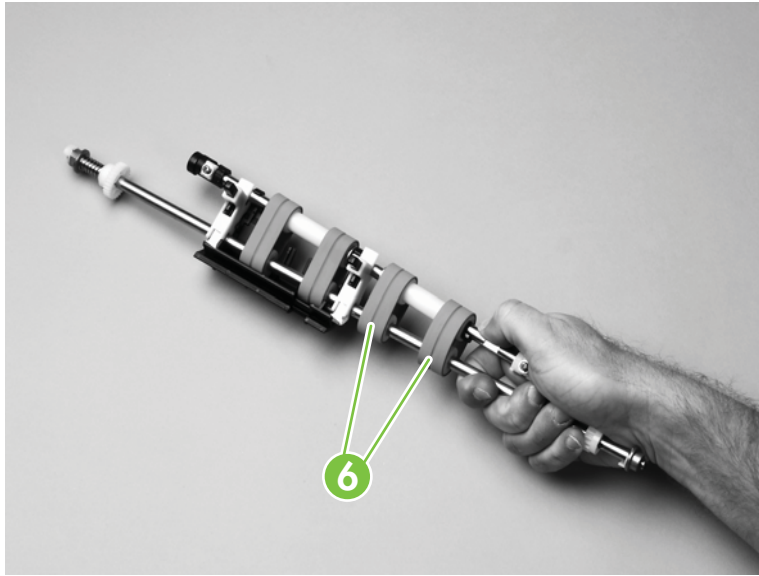
△ **CAUTION:** Be careful not to lose the leaf spring (callout 4) and the holder block (callout 5).

Figure 6-112 Remove the separation belts (2 of 3)



4. Squeeze the shafts together, and slide the two belts off (callout 6).

Figure 6-113 Remove the separation belts (3 of 3)



Reinstall the separation belts

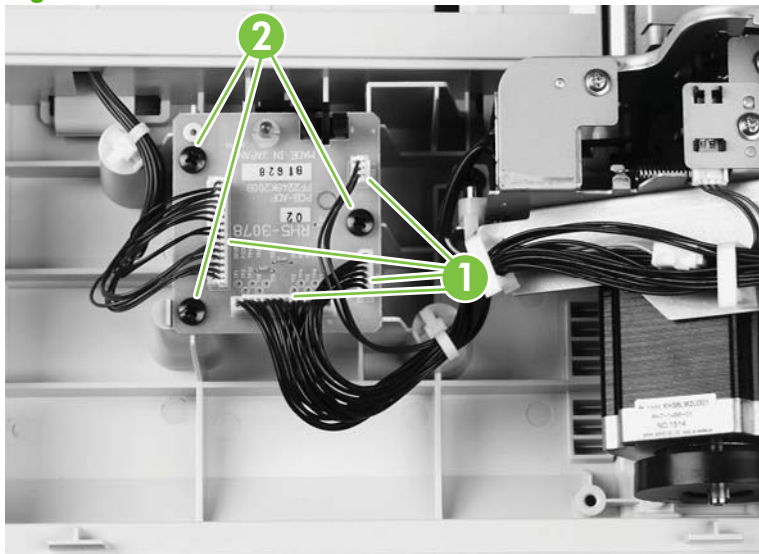
After installing the first two belts, repeat these steps for the other side. If grease gets on the belts, clean them.

PCAs

ADF intermediate PCA

1. Remove the ADF back cover. See [ADF back cover on page 157](#).
2. Disconnect four connectors (callout 1), and remove three screws (callout 2).

Figure 6-114 Remove the ADF intermediate PCA



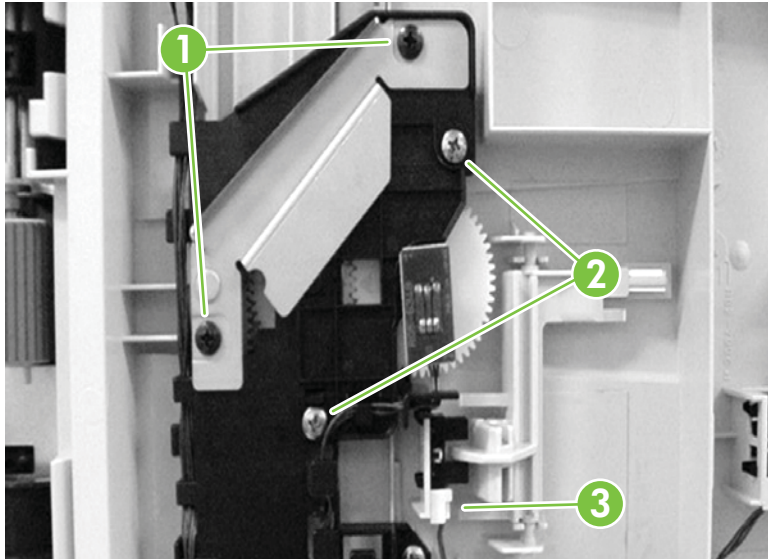
3. Remove the ADF intermediate PCA.

ADF width detection sensor assembly

 **NOTE:** The ADF width detection assembly includes three gears that are aligned with the ADF width guides. Take care to hold the gear assembly in place while replacing the ADF width detection sensor assembly. This will prevent the need to realign the gears during reinstallation.

1. Remove the white board cover. See [White board cover on page 160](#).
2. Hold the black plastic assembly in place while removing the two screws on the metal plate (callout 1).

Figure 6-115 Remove the ADF width detection sensor assembly



3. Continue to hold the plastic assembly in place while removing the metal plate.
4. Continue to hold the plastic assembly in place while replacing the two screws without the metal plate.
5. Remove the two screws (callout 2) that mount the plastic assembly.
6. Remove one connector (callout 3).
7. Remove the ADF width detection sensor assembly.

Reinstall the ADF width detection sensor assembly

Be sure to replace the metal plate.

Check that the gears are aligned correctly to ensure accurate width sensing during operation: with the ADF width guides extended to the maximum width, the arrow on each gear should point to the left.

Be sure to run the ADF width sensor adjustment operation in the [Service](#) menu. See [ADF width sensor adjustment on page 347](#).

Flatbed intermediate PCA

1. Remove the following components:
 - Flatbed right cover. See [Flatbed right cover on page 164](#).
 - Flatbed left cover. See [Flatbed left cover on page 165](#).
 - Scanner glass. See [Scanner glass on page 172](#).
2. Remove the two flatbed mount cover screws (callout 1), and remove the cover (callout 2).

Figure 6-116 Remove the flatbed intermediate PCA (1 of 2)



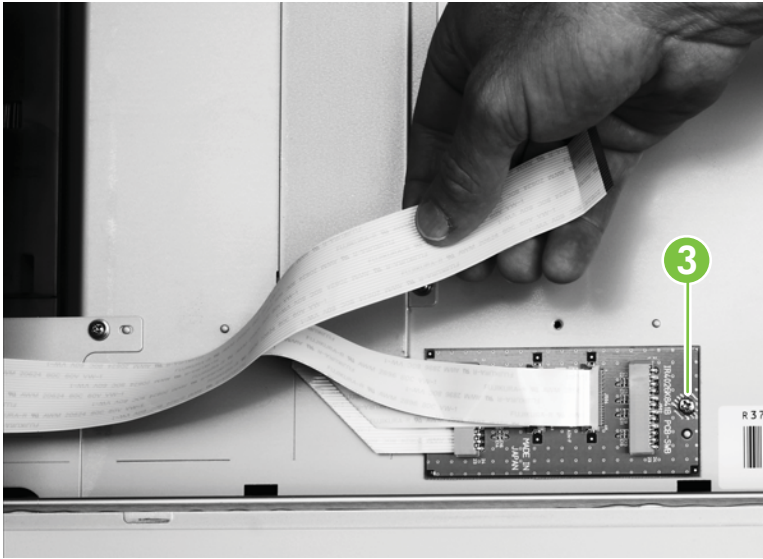
3. Disconnect four ribbon cables.

△ **CAUTION:** The ribbon cable retaining clips are fragile. Be careful to avoid breaking them.

📝 **NOTE:** Two of the cables are ZIF cables with no retaining clips.

4. Remove one screw (callout 3), and remove the flatbed intermediate PCA.

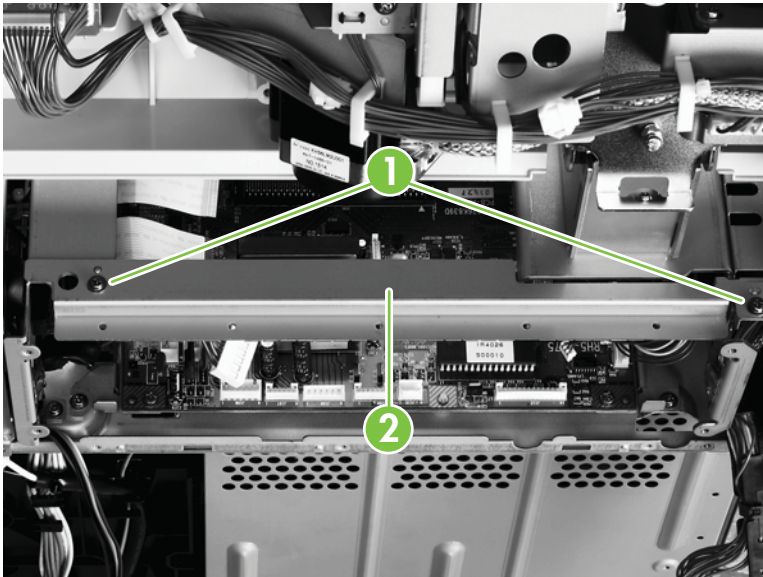
Figure 6-117 Remove the flatbed intermediate PCA (2 of 2)



Scanner controller board

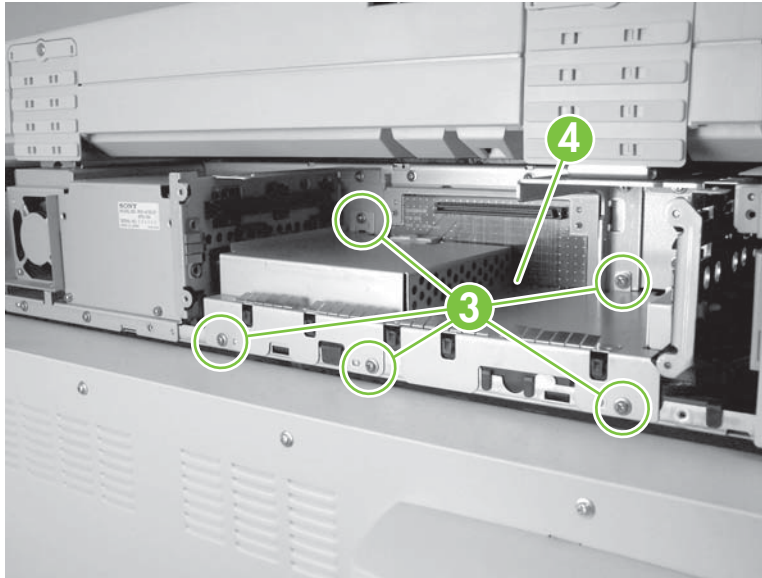
1. Remove the following components:
 - Copy connect board. See [Copy processor/connect board on page 161](#).
 - Flatbed back cover. See [Flatbed back cover on page 162](#).
2. Remove the two upper rail screws (callout 1), and the upper rail (callout 2).

Figure 6-118 Remove the scanner controller board (1 of 5)



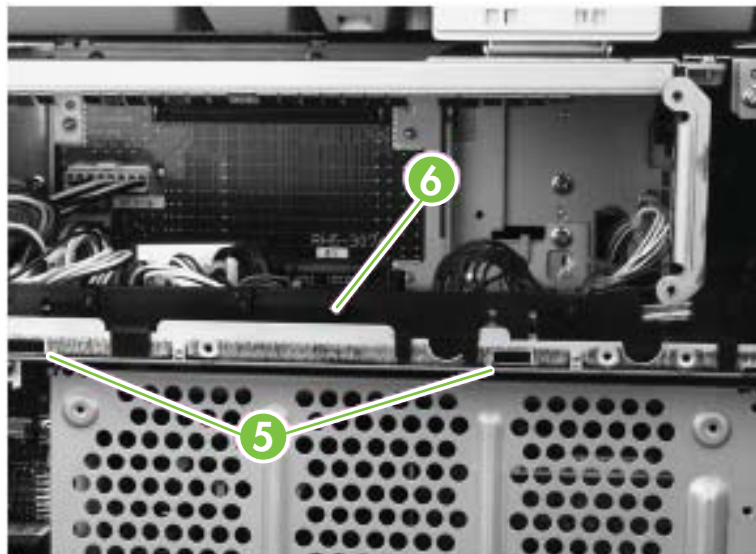
3. Remove five screws (callout 3), and remove the RFI shield plate (callout 4).

Figure 6-119 Remove the scanner controller board (2 of 5)



4. Disconnect 11 connectors and three ribbon cables (two of which are ZIF cables).
5. Release two tabs (callout 5), and remove one cable guide (callout 6).

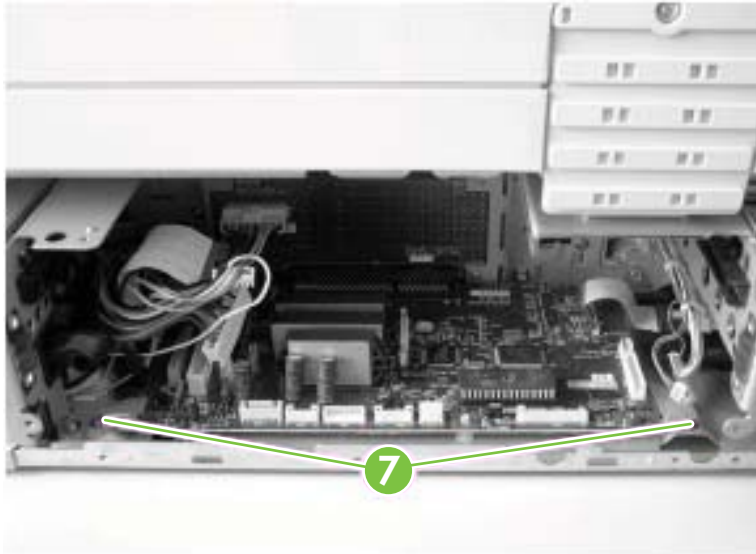
Figure 6-120 Remove the scanner controller board (3 of 5)



 **TIP:** It is not necessary to remove the cables from the cable guide.

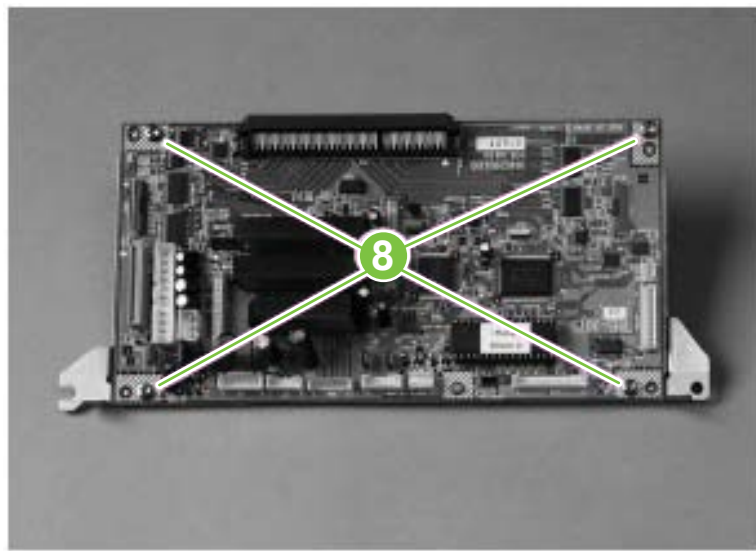
6. Remove two screws from the sheet metal (callout 7). Do not remove the screws in the scanner controller board.

Figure 6-121 Remove the scanner controller board (4 of 5)



7. Slide the scanner controller board assembly out to remove it.
8. Remove the four screws (callout 8) from the scanner controller board to remove it from the metal brackets.

Figure 6-122 Remove the scanner controller board (5 of 5)

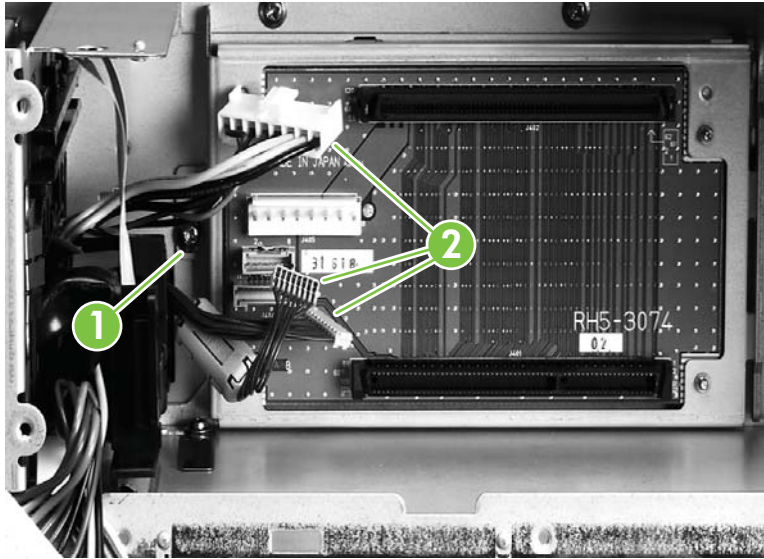


Intermediate PCA

1. Remove the scanner controller PCA. See [Scanner controller board on page 220](#).

2. Remove one screw (callout 1), and disconnect three connectors (callout 2).

Figure 6-123 Remove the intermediate PCA



3. Remove the intermediate PCA.

Scan engine

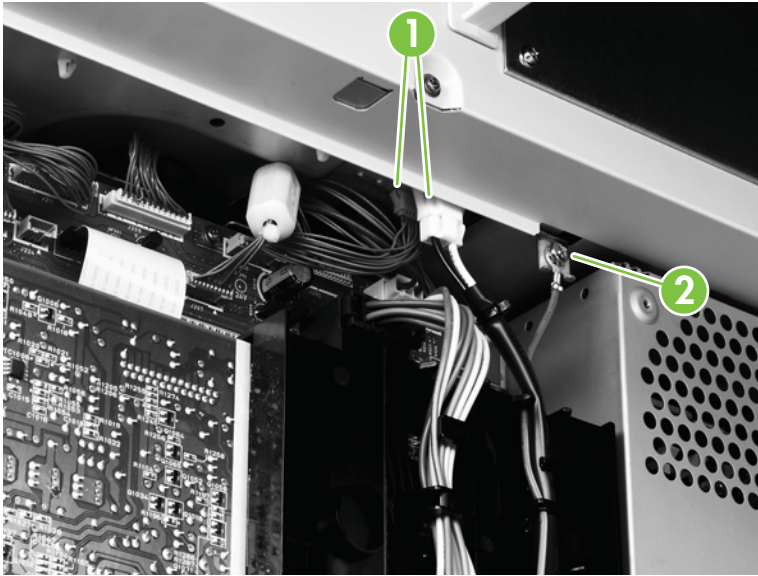
 **NOTE:** Removal of the scan engine is required for some procedures that involve the print engine.

 **CAUTION:** The scan engine assembly is large and heavy. Removing it requires at least two people.

1. Remove the following components:
 - Print engine back cover. See [Back cover on page 237](#).
 - Print engine left upper cover. See [Left upper cover on page 234](#).
 - Flatbed left cover. See [Flatbed left cover on page 165](#).

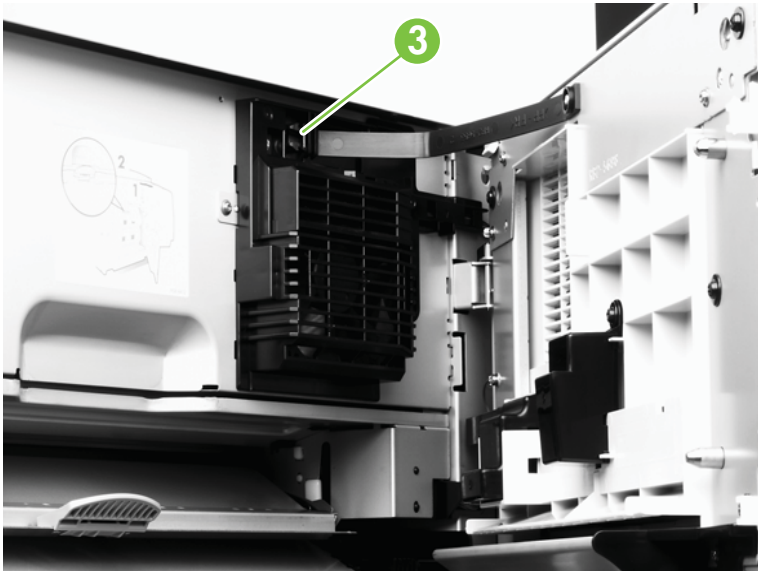
2. Disconnect two connectors (callout 1) and the ground wire (callout 2).

Figure 6-124 Remove the scan engine (1 of 7)



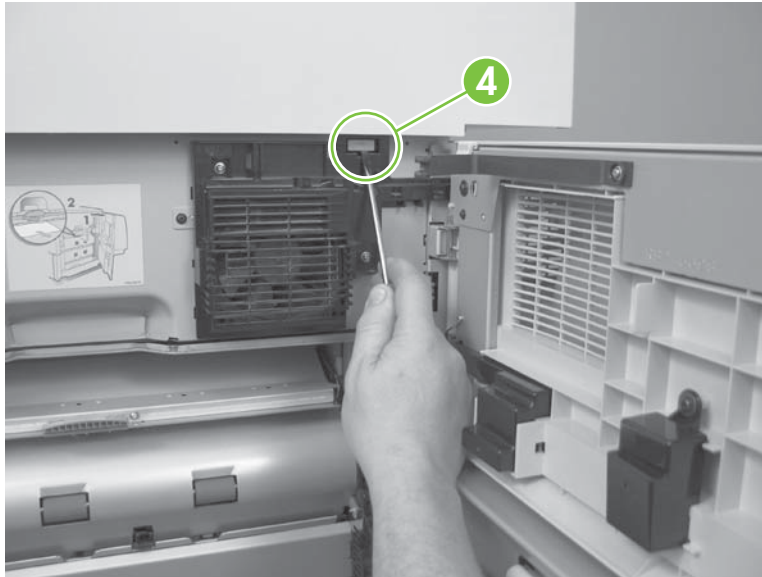
3. Open the print engine right door, and press the tabs (callout 3) at the end of the black strap to disconnect it.

Figure 6-125 Remove the scan engine (2 of 7)



4. Using a flat blade screwdriver or needle nose pliers, remove the locking clip (callout 4) from the right side.

Figure 6-126 Remove the scan engine (3 of 7)



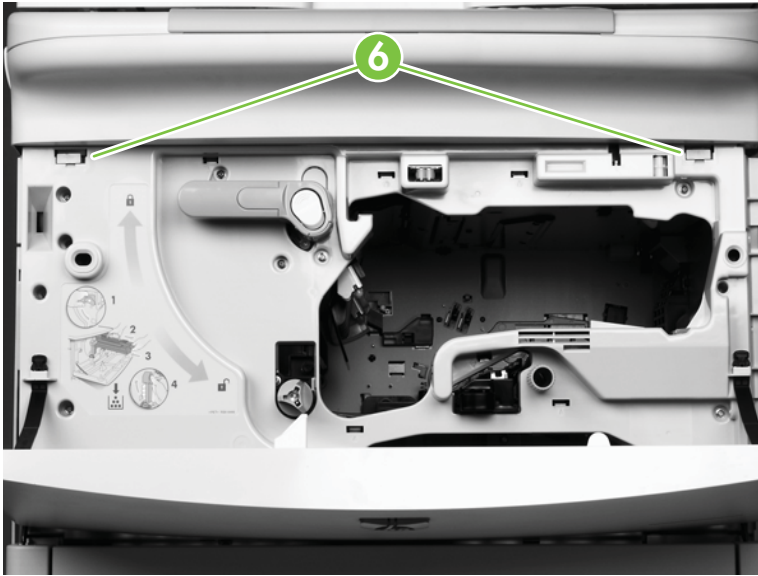
5. Remove the locking clip (callout 5) on the left side.

Figure 6-127 Remove the scan engine (4 of 7)



6. Open the print engine front door, and remove the two locking clips (callout 6).

Figure 6-128 Remove the scan engine (5 of 7)



7. Close all doors.

8. Have two people lift the scan engine off the top of the product. See figure.

⚠ **WARNING!** The scan engine is heavy: 36.3 kg (80 lb).

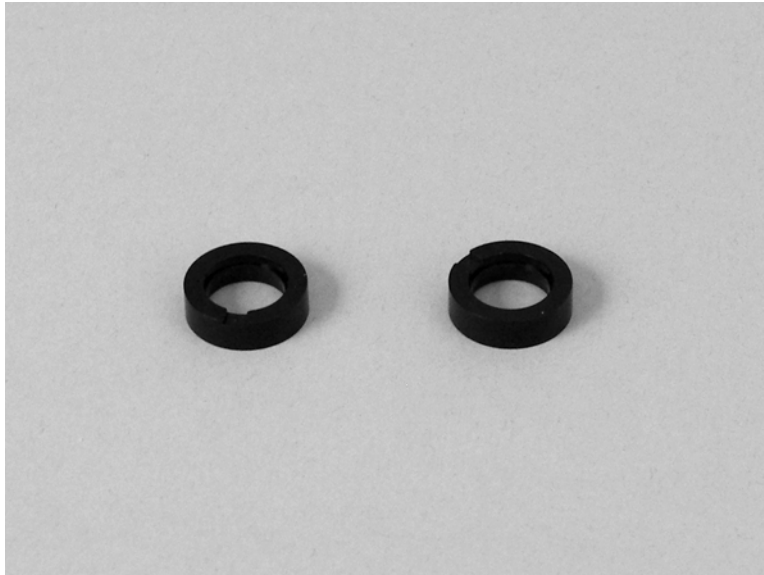
⚠ **CAUTION:** The ground post is fragile. Place the scan engine on a flat, level surface.

Figure 6-129 Remove the scan engine (6 of 7)



📝 **NOTE:** As you remove the scan engine assembly, two black plastic spacer rings (see figure) fall into the top of the print engine under the rear alignment holes. These rings cannot be reinstalled, but removing them is recommended to ensure that they do not interfere with printing operations.

Figure 6-130 Remove the scan engine (7 of 7)

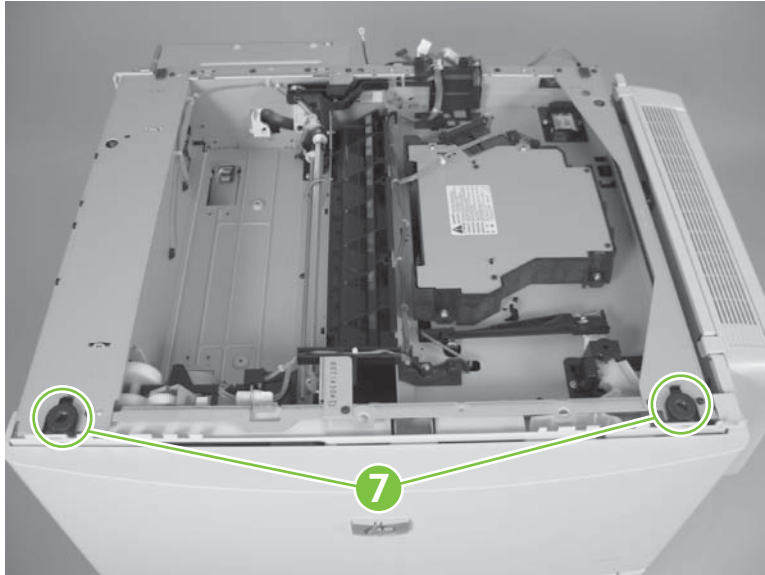


Reinstall the scan engine

Be sure the seating pegs are lined up with the seating tabs (callout 7) before placing the scan engine on the print engine.

-
- △ **CAUTION:** If either of the front tabs becomes disengaged, replace it before reinstalling the scan engine.
- △ **WARNING!** Position your hands carefully when installing the scan engine to avoid pinching your fingers.
-

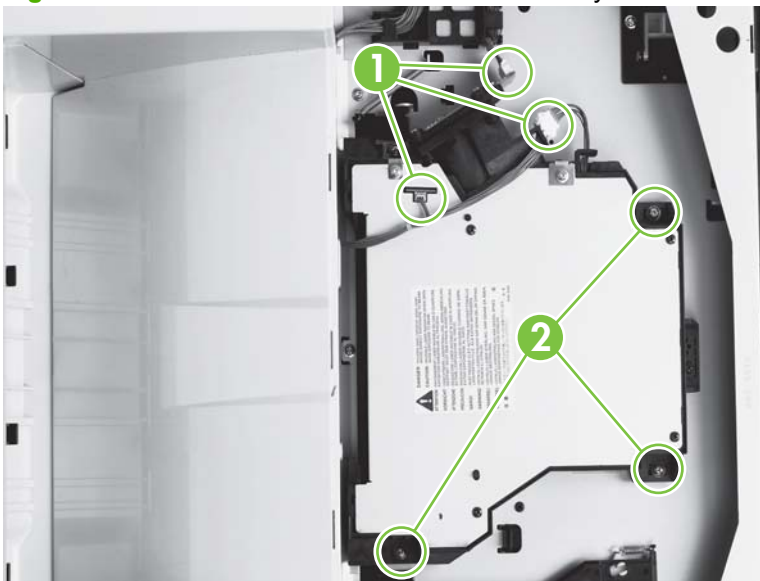
Figure 6-131 Reinstall the scan engine



Laser/scanner assembly

1. Remove the scan engine. See [Scan engine on page 223](#).
2. Unplug three cable connectors (callout 1).

Figure 6-132 Remove the laser/scanner assembly

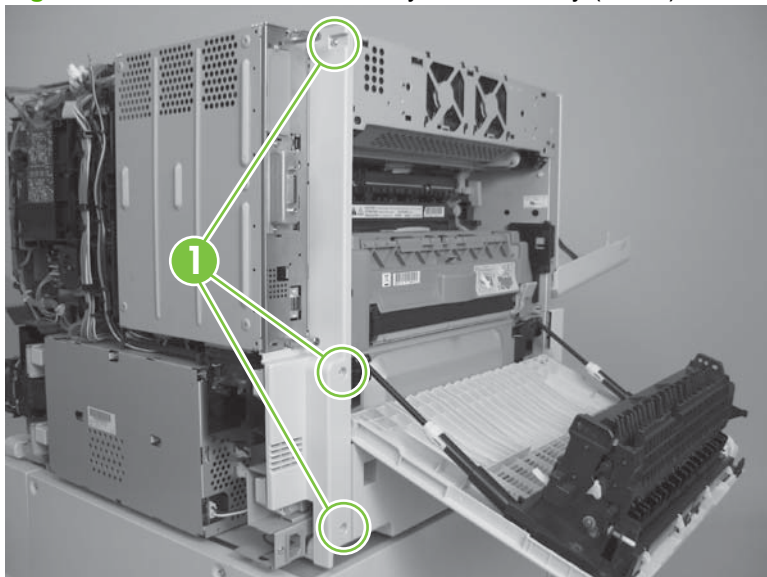


3. Remove four long screws (callout 2).
4. Lift the laser/scanner assembly out of the product.

Delivery fan assembly

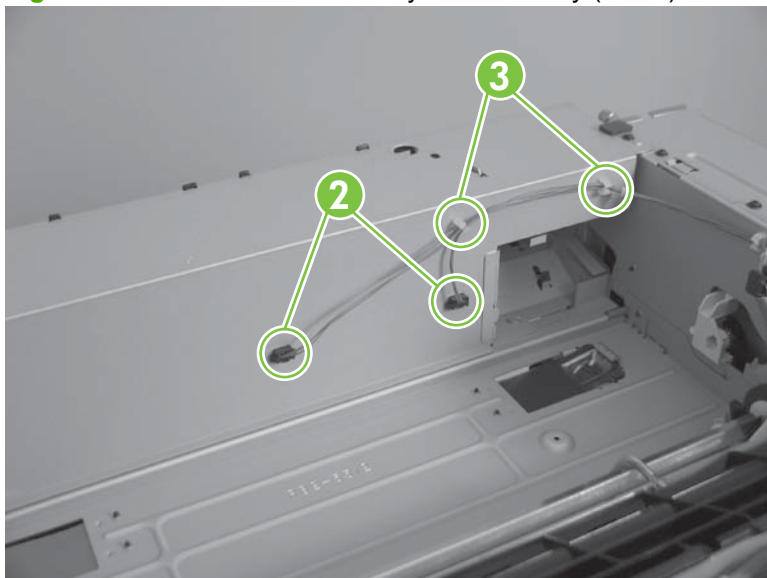
1. Remove the scan engine assembly. See [Scan engine on page 223](#).
2. Open the left door.
3. Remove the left back cover by removing three screws (callout 1) and pulling the cover out and toward the back of the product.

Figure 6-133 Remove the delivery fan assembly (1 of 5)



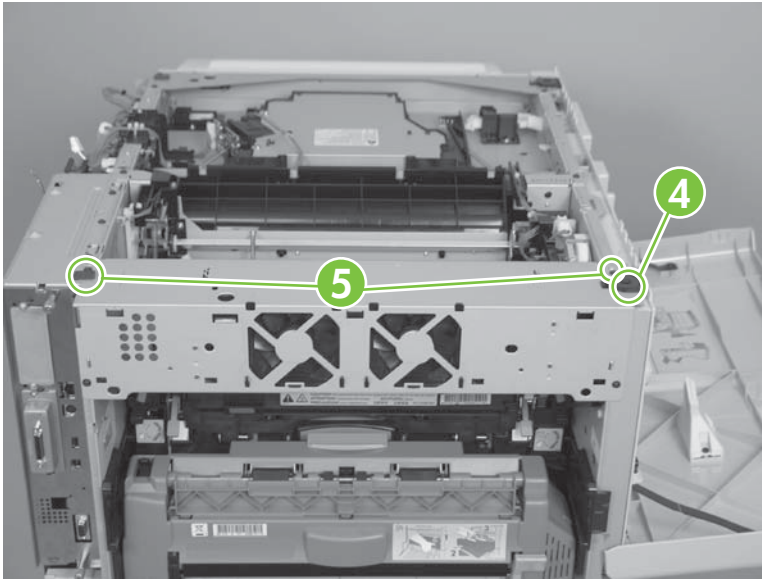
4. Disconnect the 2 fan connectors (callout 2), and then pull the wires from the cable guides (callout 3).

Figure 6-134 Remove the delivery fan assembly (2 of 5)



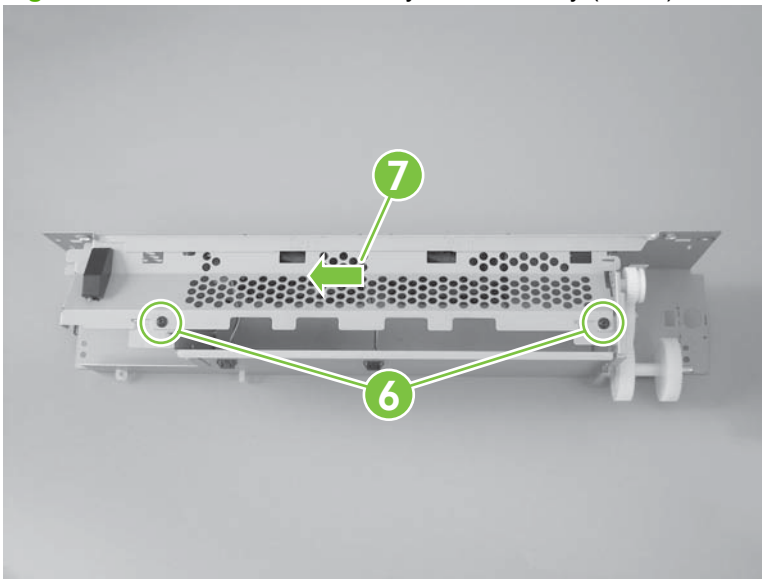
5. Remove the front scan engine clip (callout 4).

Figure 6-135 Remove the delivery fan assembly (3 of 5)



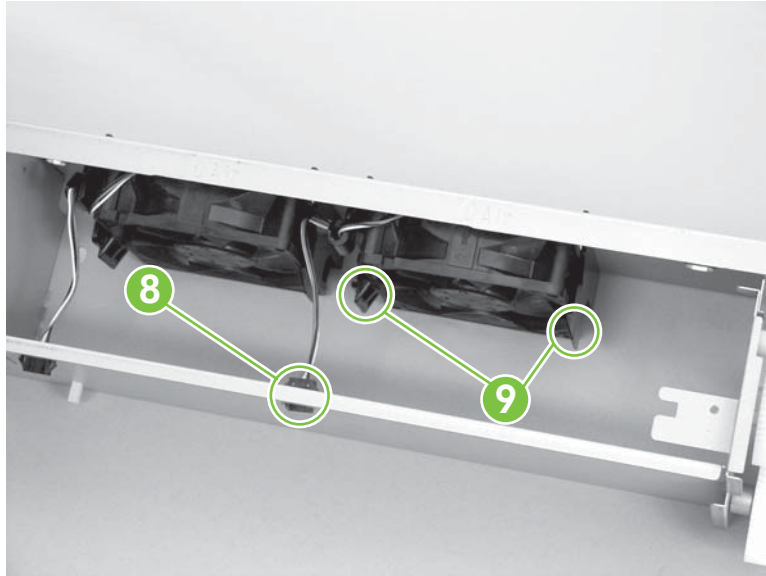
6. Remove four screws (callout 5), and lift the assembly out of the product.
7. Remove two screws (callout 6) from the bottom of the fan assembly, and slide the vent plate (callout 7) toward the back of the assembly away from the gears.

Figure 6-136 Remove the delivery fan assembly (4 of 5)



8. Remove each fan as necessary:
 - a. Pinch the connector tabs (callout 8) together to release the connector from the metal plate.

Figure 6-137 Remove the delivery fan assembly (5 of 5)



- b. Release the fan from the plastic mount tabs (callout 9).

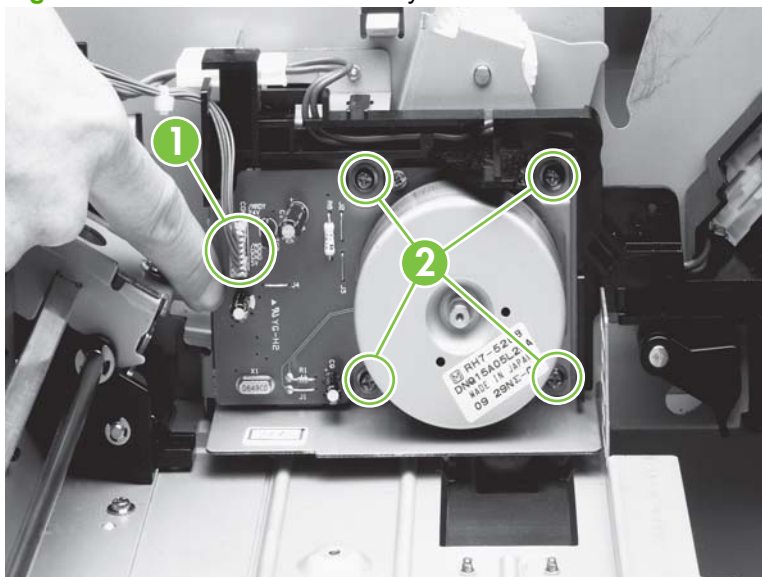
Delivery motor

1. Remove the delivery fan assembly. See [Delivery fan assembly on page 229](#).

⚠ WARNING! The PCA board is fragile. To prevent damage, hold the PCA board when you remove or replace the connector.

2. Hold the PCA board, and unplug one cable connector (callout 1).

Figure 6-138 Remove the delivery motor



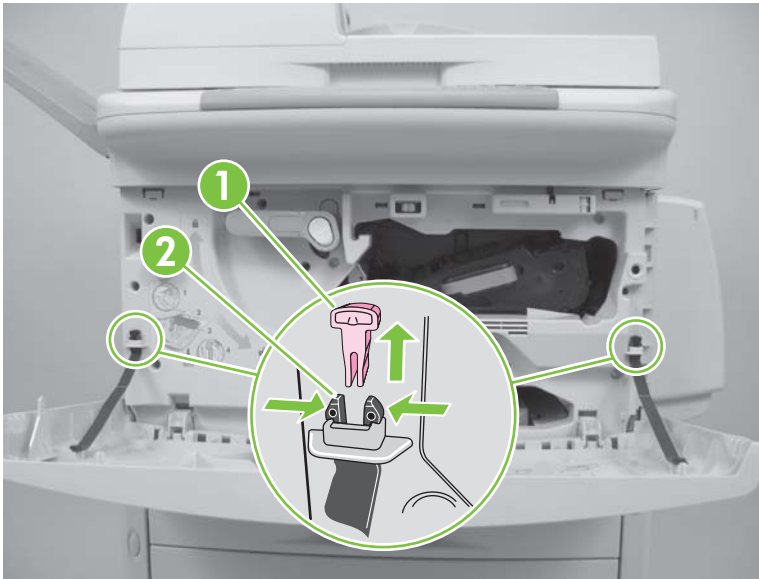
3. Remove four screws (callout 2).

Print engine covers

Front cover

1. Remove two small, plastic retaining pins (callout 1).
2. Pinch and release two tabs (below the retaining cups, callout 2) on the end of each black retaining strap to release the strap ends.

Figure 6-139 Remove the front cover (1 of 2)



3. Remove the front cover from the hinges (callout 3) by pulling up on the hinge tabs that are located below the front cover.

 **NOTE:** To gain access to the tabs, the front cover needs to be lifted away from the product.

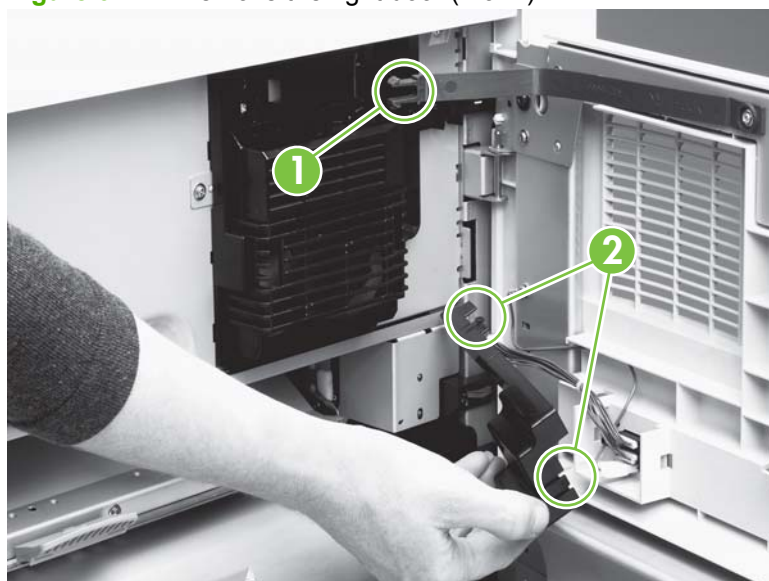
Figure 6-140 Remove the front cover (2 of 2)



Right door

1. Remove Tray 1 if it is installed. See [Tray 1 on page 246](#).
2. Open the right door.
3. Pinch and then push the two tabs (callout 1) on the end of the black strap to release the strap ends. If you have difficulty, use needle-nose pliers.
4. Disconnect the four locator tabs (callout 2) on the cable cover, and then remove the cable cover.

Figure 6-141 Remove the right door (1 of 2)

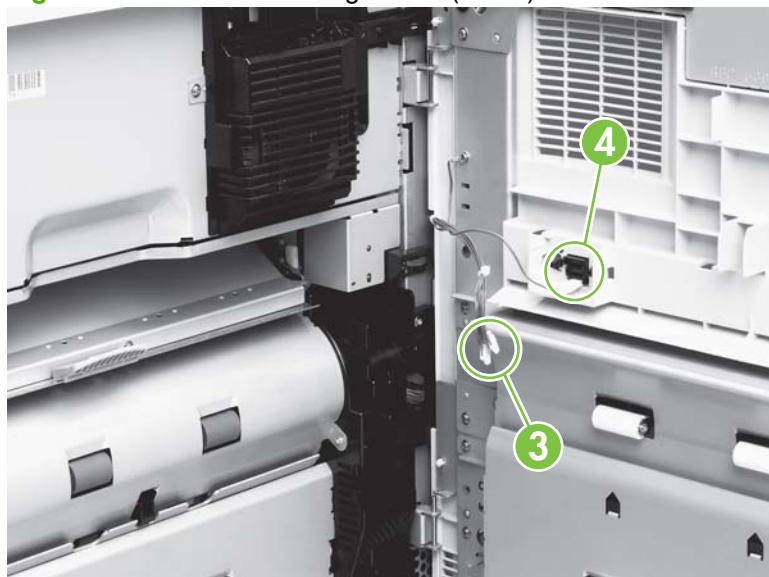


5. Unplug two multiple-wire cable connectors (callout 3).

 **NOTE:** Do not remove the single grounding cable (callout 4).

6. Lift the right door up and off of the two hinges, and remove it from the product.

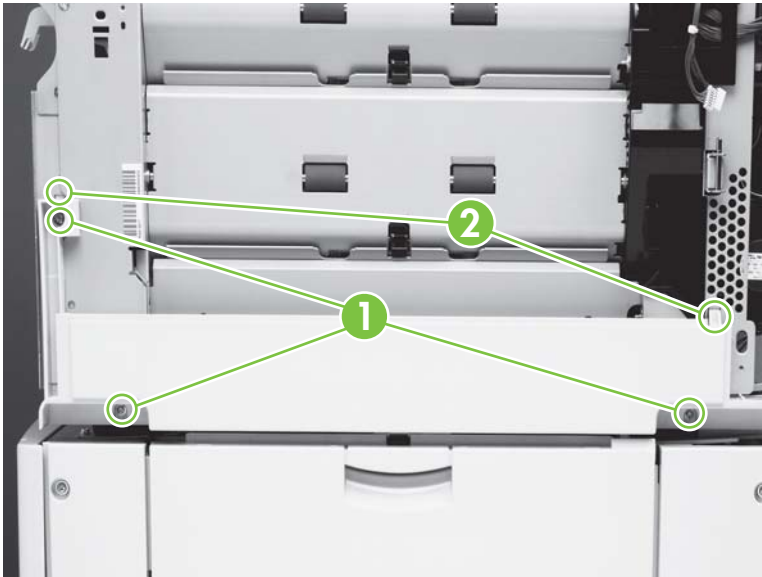
Figure 6-142 Remove the right door (2 of 2)



Right lower cover

1. Remove the following components:
 - Right door. See [Right door on page 233](#).
 - Back cover. See [Back cover on page 237](#).
 - Right and left rail covers. See [Right and left rail covers on page 238](#).
2. Remove three screws (callout 1).
3. Rotate the lower edge up to release two tabs (callout 2).
4. Remove the right lower cover.

Figure 6-143 Remove the right lower cover



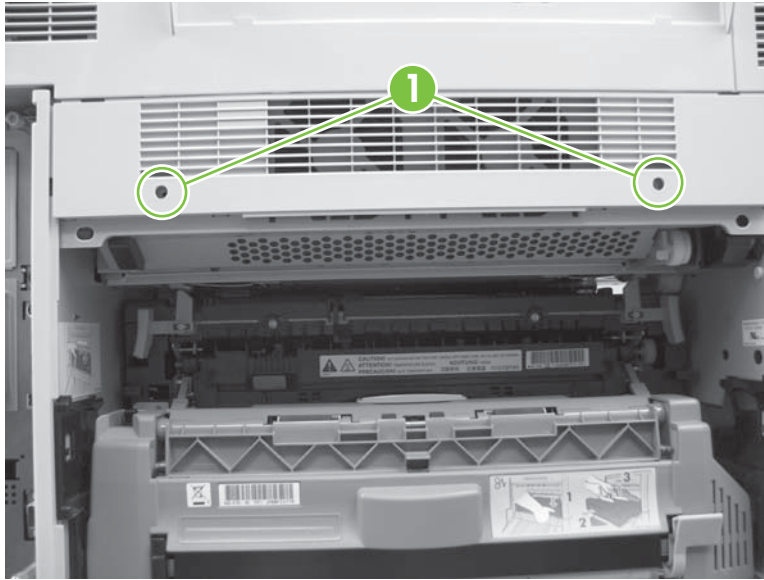
Left upper cover

 **NOTE:** If the 3,000-sheet stacker, 3,000-sheet stapler/stacker, or multifunction finisher is installed, move it away from the product to gain access to the left upper cover.

1. Open the front cover.
2. Remove the ADF output bin.
3. Open the left door.
4. If an output device bracket is installed, remove it.

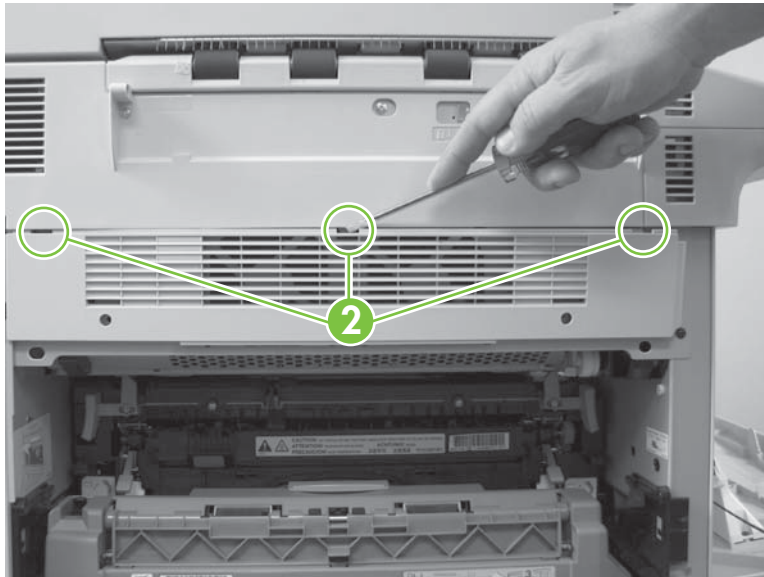
5. Remove two screws (callout 1).

Figure 6-144 Remove the left upper cover (1 of 2)



6. Use a small flat blade screwdriver to release the three tabs (callout 2) at the top edge of the left upper cover

Figure 6-145 Remove the left upper cover (2 of 2)



7. Tilt the cover, and then lift it out.

Reinstall the left upper cover

Align the four lower tabs with the slots on the product, and snap the upper tabs into place.

Left door and diverter

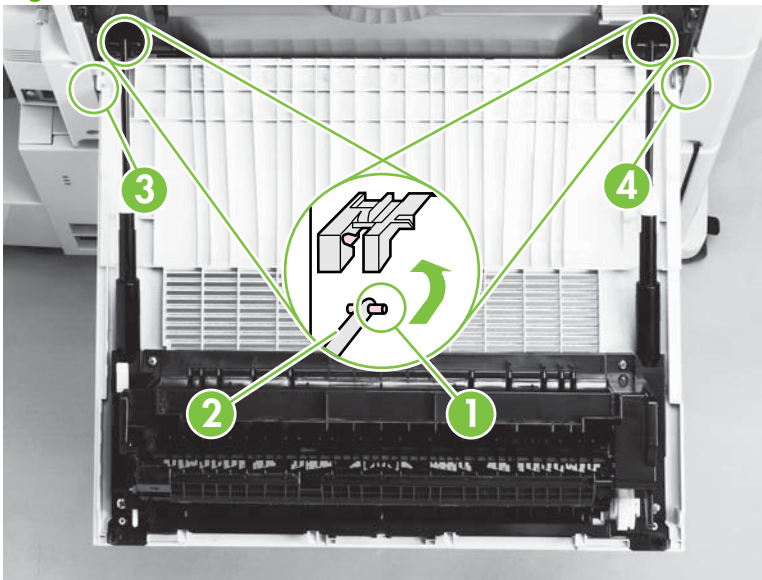
 **NOTE:** If the 3,000-sheet stacker, 3,000-sheet stapler/stacker, or multifunction finisher is installed, move it away from the product to gain access to the left door and diverter.

1. Open the left door.

△ **CAUTION:** Make sure that you do not drop the pins (callout 1) that are on the end of each spring-loaded rod.

2. Grasp the two spring-loaded rods (callout 2), push them in toward the product, and then pull them down and away from the product.
3. Lift the left side of the door to a 45° angle, and then remove the left hinge (callout 3).
4. Slide the door toward the left and out of the right hinge (callout 4).

Figure 6-146 Remove the left door and diverter

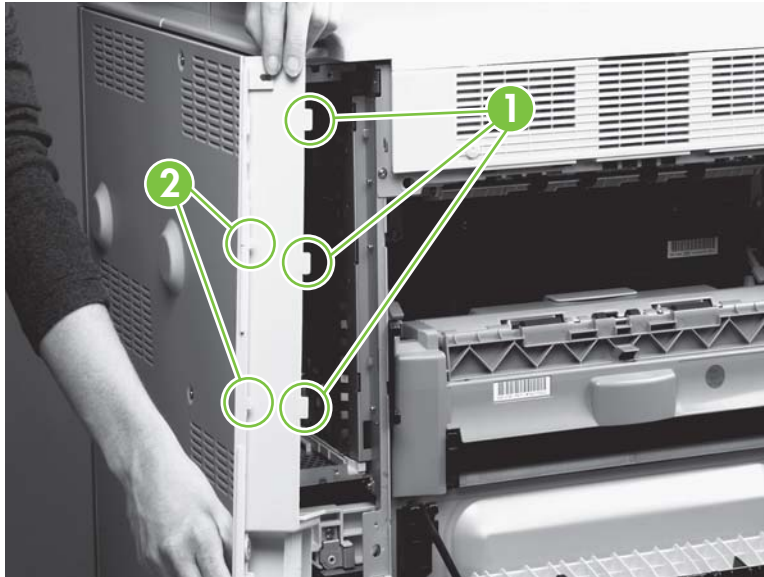


Left back cover

1. Open the left door.
2. Remove three silver screws (not shown) from the left back cover.

3. Rotate the left back cover toward the back of the product to release the three tabs (callout 1) on the left side of the cover and the two tabs (callout 2) on the right side of the cover.

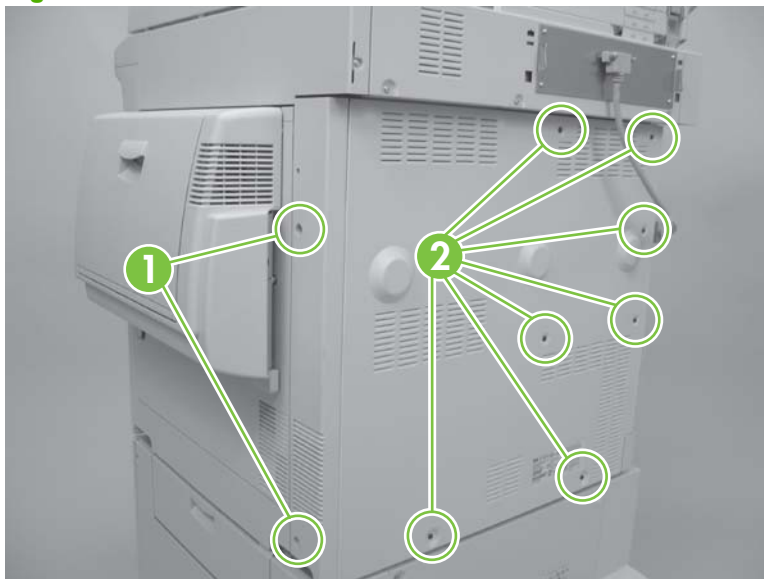
Figure 6-147 Remove the left back cover



Back cover

1. Remove the power cord.
2. Remove two silver screws (callout 1) on the right back cover.

Figure 6-148 Remove the back cover



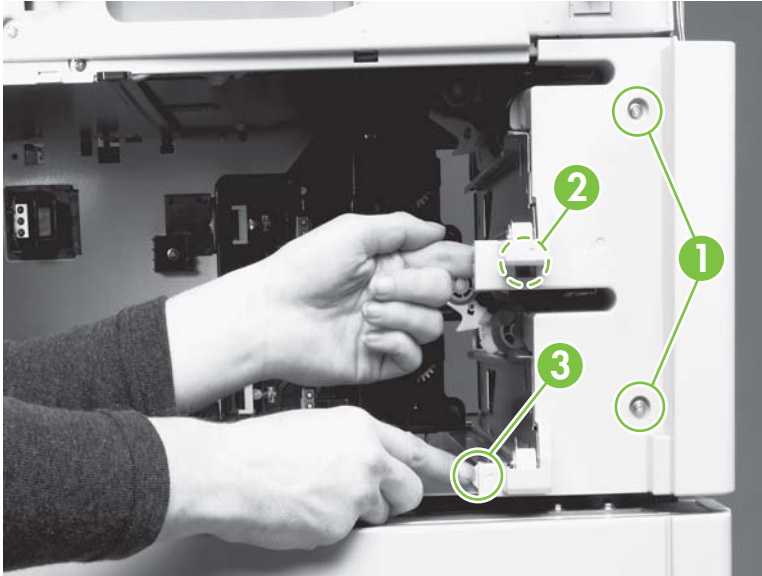
3. Remove seven screws (callout 2) on the back cover.
4. While facing the back of the product, rotate the left edge out and then remove the back cover.

△ **CAUTION:** Make sure that you do not damage the plastic that surrounds the power connection.

Right and left rail covers

1. Remove Trays 2 and 3. See [Tray 2 and Tray 3 \(interchangeable\) on page 242](#).
2. Remove two silver screws (callout 1) from the right rail cover.
3. Lift the upper tab (callout 2) to release it, and push the lower tab (callout 3) toward the right to release it.
4. Remove the right rail cover.
5. Remove the screw from the left rail cover, and then remove the left rail cover.

Figure 6-149 Remove the right and left rail covers



Front assemblies

Gain access to the following assemblies from the front of the product:

- Print cartridge
- Transfer-roller assembly
- Tray 2 and Tray 3
- Rollers (pickup, feed, and separation)
- Fuser-jam-removal knob
- Registration-jam-removal knob

Cartridge release lever

1. Remove the scan engine. See [Scan engine on page 223](#).
2. Open the front cover.
3. Rotate the cartridge release lever downward.

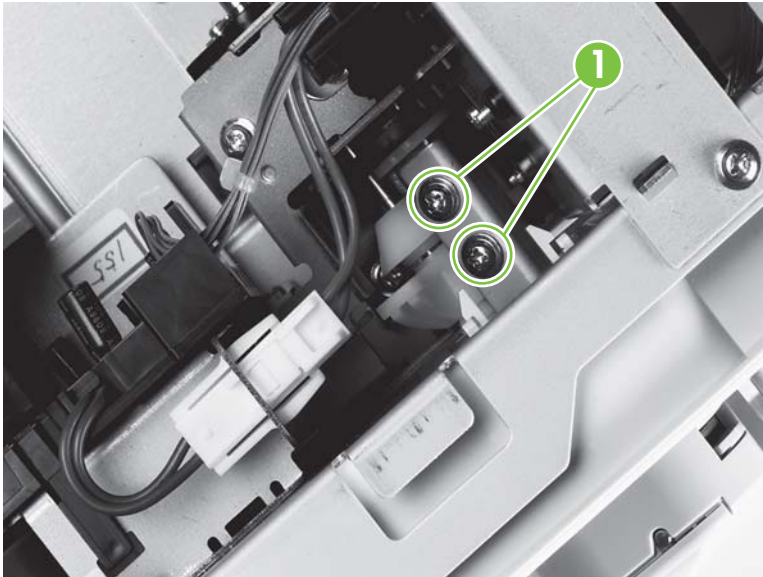
Figure 6-150 Remove the cartridge release lever (1 of 3)



4. Remove the print cartridge. See [Print cartridge on page 240](#).
5. Rotate the cartridge release lever to a 45° angle.

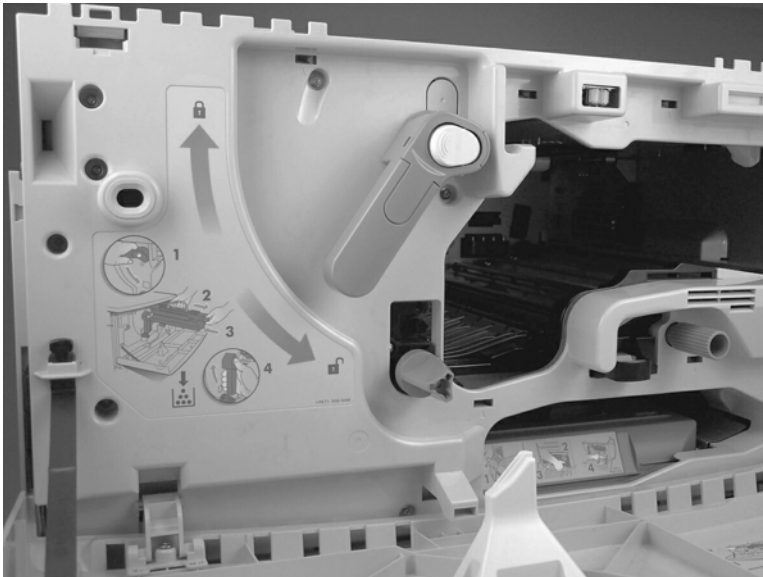
6. Face the top of the product, and remove two long screws (callout 1) from the cartridge release lever shaft.

Figure 6-151 Remove the cartridge release lever (2 of 3)



7. Rotate the cartridge release lever to the vertical, unlocked position.

Figure 6-152 Remove the cartridge release lever (3 of 3)



8. Face the front of the product, and slide the cartridge release handle away from the front of the product.

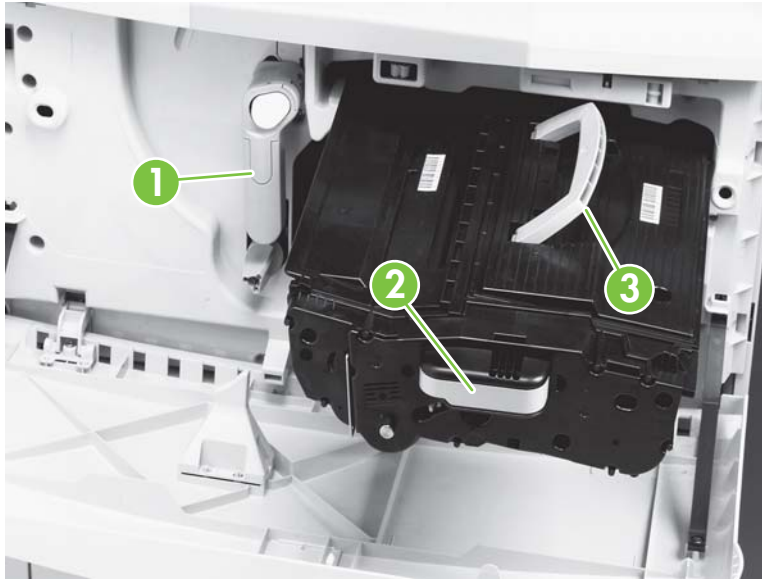
Print cartridge

⚠ WARNING! To prevent damage, do not expose the print cartridge to light. Put it in the plastic envelope in which it was shipped, or, if the envelope is not available, cover the cartridge with a piece of paper.

1. Open the front cover.

2. Rotate the cartridge release lever (callout 1) downward until it clicks into place.

Figure 6-153 Remove the print cartridge



3. Grasp the front handle (callout 2) with one hand, and pull the print cartridge out of the product until the top handle (callout 3) is visible.
4. Grasp the top handle with your other hand, and continue pulling the print cartridge out of the product.

Reinstall the print cartridge

- Check to see that the roller assembly (see [Transfer-roller assembly on page 241](#)) is installed before installing the print cartridge.
- Align the print cartridge with its guides, and insert it completely.
- Press and hold the white button (on the green lever), and rotate the green lever clockwise until it locks into place.

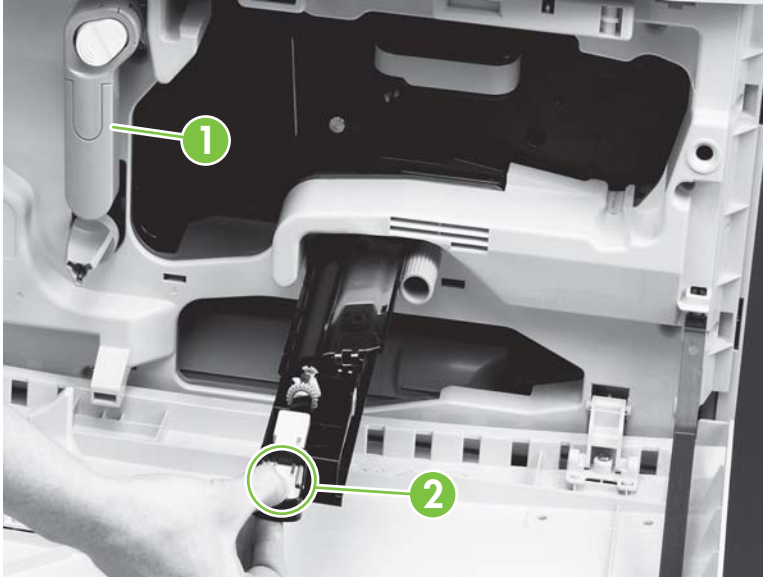
Transfer-roller assembly

△ **CAUTION:** Do not touch the black transfer roller. Finger oils can damage it.

1. Open the front cover.

2. Rotate the cartridge release lever (callout 1) downward until it clicks into place.

Figure 6-154 Remove the transfer-roller assembly



3. Press the blue tab (callout 2), and then slowly pull the transfer roller assembly out.
4. Lift the assembly upward to release the catch on the underside, and then remove the assembly.

Reinstall the transfer-roller assembly

Check that the transfer roller is completely inserted and latched.

Tray 2 and Tray 3 (interchangeable)

1. Slide the tray open until it stops.
2. Grasp the sides of the tray, and lift it up to remove it.

Figure 6-155 Remove Tray 2 or Tray 3

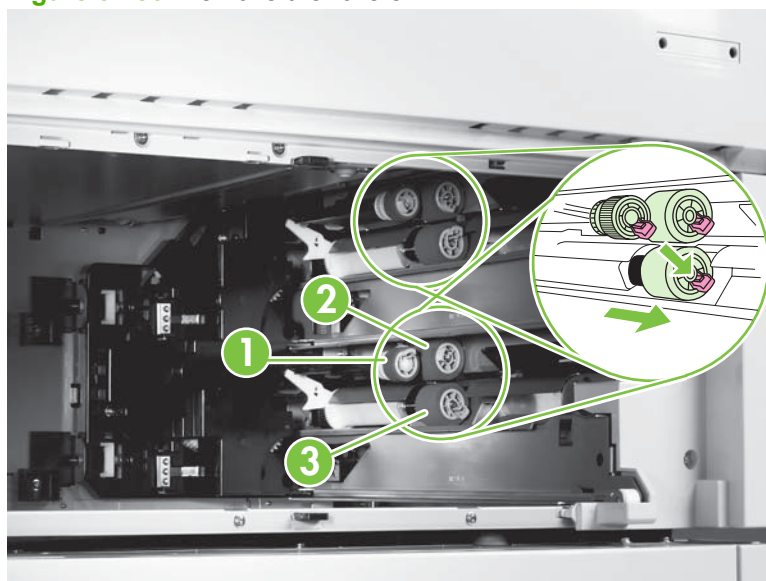


Rollers (pickup, feed, or separation)

△ **CAUTION:** Do not remove the torque limiter from behind the separation roller. If the black spacer comes off, return it to the shaft: metal-edge first.

1. Remove Tray 2 or Tray 3. See [Tray 2 and Tray 3 \(interchangeable\) on page 242](#).
2. Locate the appropriate roller on the upper-right side of the tray cavity. The pickup roller (callout 1) is a type 1 roller. The feed roller (callout 2) and the separation roller (callout 3) are type 2 rollers.

Figure 6-156 Remove the rollers



3. Pinch the tab on the end of each roller to release it.
4. Slide the roller off of the shaft.

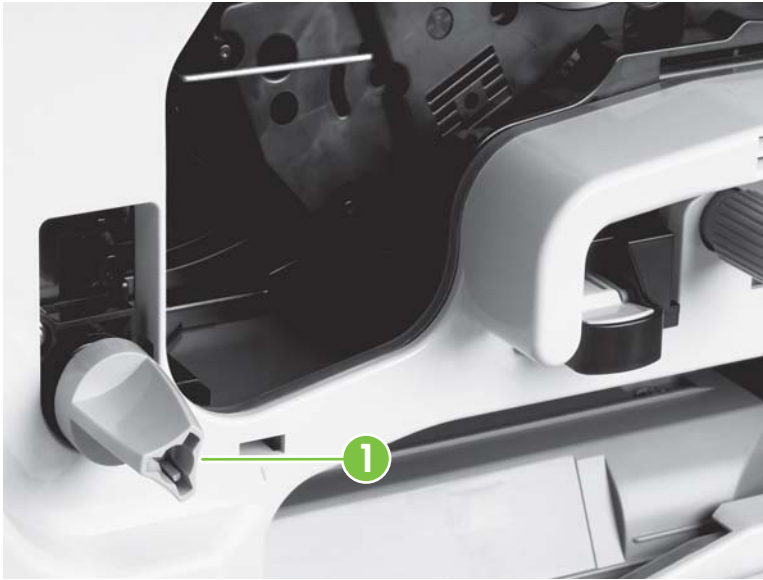
Fuser-jam-removal knob

△ **CAUTION:** Be careful to avoid dropping the internal parts of the fuser-jam-removal knob. Pay close attention to the original location of the parts.

1. Open the front cover.

2. Release the tab (callout 1) with a small flatblade screwdriver.

Figure 6-157 Remove the fuser-jam-removal knob



3. Slowly remove the knob with its internal parts (spring, pin, and bushing).

Reinstall the fuser-jam-removal knob

The internal parts fit together in the following order: pin, spring (spring-side facing in), bushing, knob.

Registration-jam-removal knob

1. Open the front cover.
2. Hold the registration-jam-removal knob firmly, and remove the screw inside the knob (callout 1).

Figure 6-158 Remove the registration-jam-removal knob



3. Pull the knob off of the product.

Reinstall the registration-jam-removal knob

Be sure to align the knob with the notch on the post.

Right assemblies

Gain access to the following assemblies from the right side of the product:

- Multipurpose tray (Tray 1)
- Paper-input unit (PIU)
- Registration assembly
- Transfer-guide assembly

Tray 1

1. Unlock two locking pins (callout 1) at the bottom of Tray 1.

Figure 6-159 Remove Tray 1 (1 of 2)



2. Open the right door, gently pull the bottom of the tray away from the product, and lift Tray 1 off of the door.

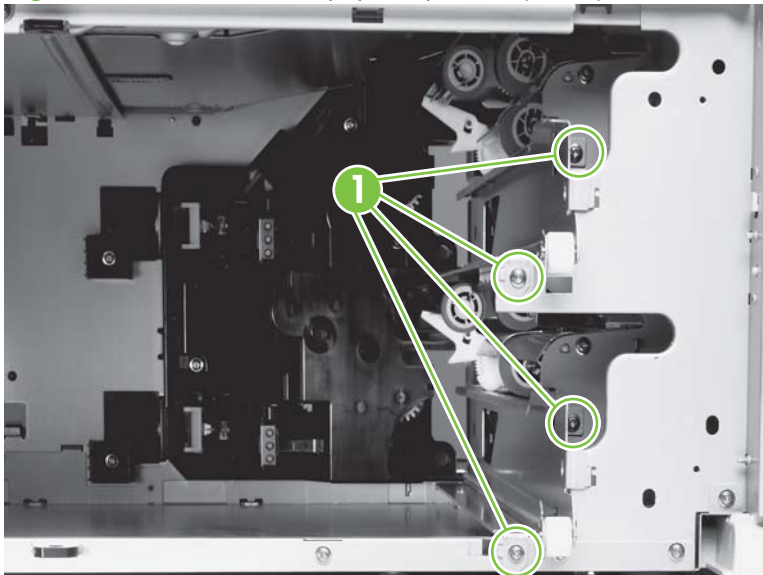
Figure 6-160 Remove Tray 1 (2 of 2)



Paper-input unit (PIU)

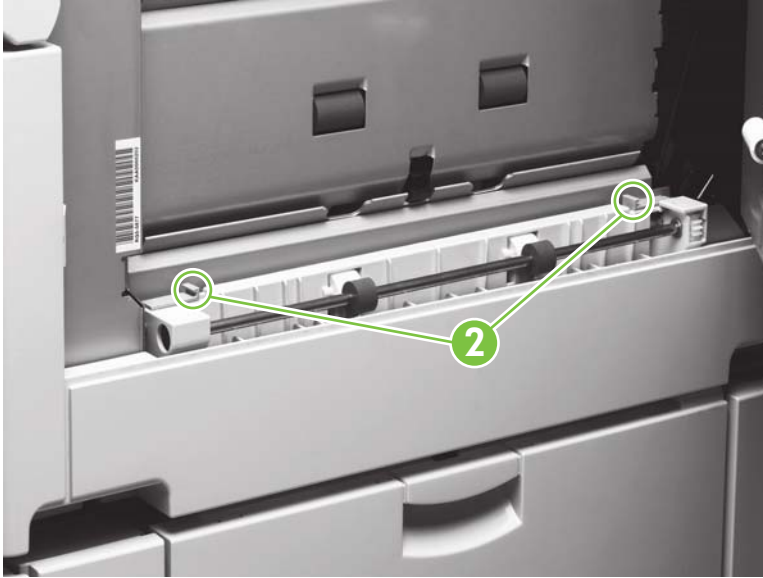
1. Remove the following components:
 - Right door. See [Right door on page 233](#).
 - Back cover. See [Back cover on page 237](#).
 - Tray 2 and Tray 3. See [Tray 2 and Tray 3 \(interchangeable\) on page 242](#).
 - Right rail cover. See [Right and left rail covers on page 238](#).
2. Remove four screws (callout 1), two from each rail.

Figure 6-161 Remove the paper-input unit (1 of 5)



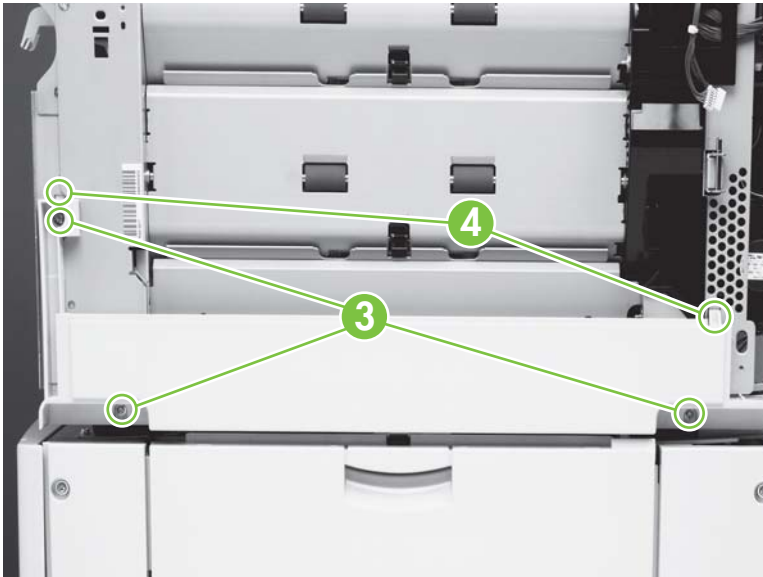
3. Pull the rails out from the front of the product.
4. Face the right side of the product.
5. If Tray 4 is installed, remove the paper connecting unit by sliding two levers (callout 2) toward the center of the unit, and then lifting up to remove the assembly.

Figure 6-162 Remove the paper-input unit (2 of 5)



6. Remove three screws (callout 3) from the right lower cover.

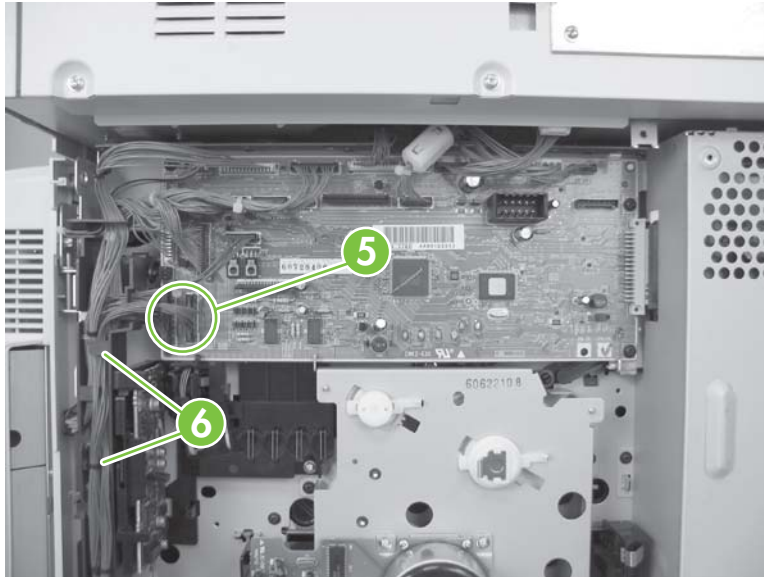
Figure 6-163 Remove the paper-input unit (3 of 5)



7. Rotate the lower edge up to release two tabs (callout 4).
8. Remove the right lower cover.
9. Face the back of the product.

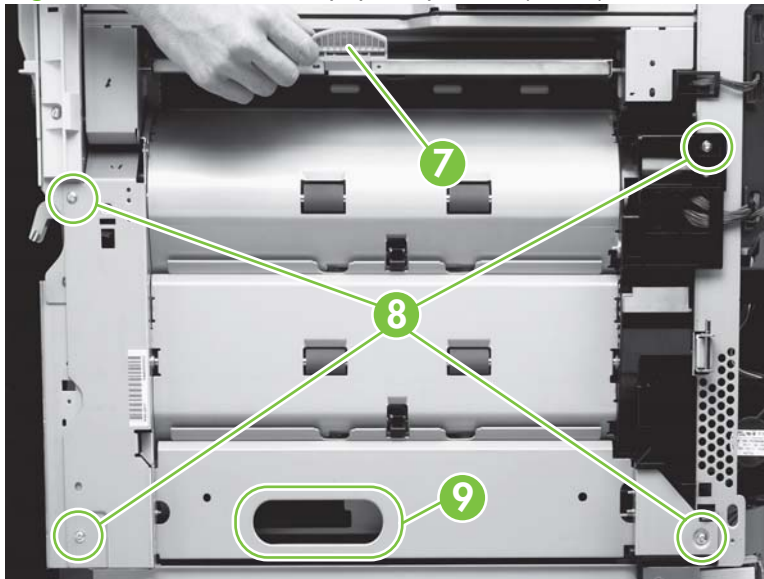
10. Remove the J-220 and J-221 cable connectors (callout 5) from the DC controller, and carefully remove the cables from the cable guides (callout 6).

Figure 6-164 Remove the paper-input unit (4 of 5)



11. Facing the right side of the product, push the registration handle (callout 7) down slightly, and then pull it out to gain access to the PIU.

Figure 6-165 Remove the paper-input unit (5 of 5)



12. Remove four screws (callout 8).

△ **CAUTION:** The PIU is heavy.

13. Grasp the PIU handle (callout 9), and lift the PIU out.

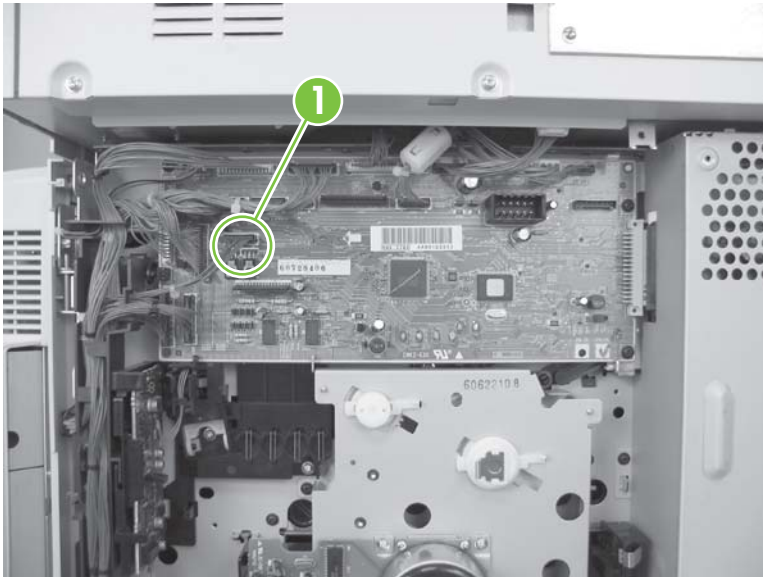
Reinstall the paper-input unit

- Make sure that the registration handle is up before reinstalling the PIU.
- Reinstall the right lower cover (see [Right lower cover on page 234](#)) before installing the right rail cover (see [Right and left rail covers on page 238](#)).

Registration assembly

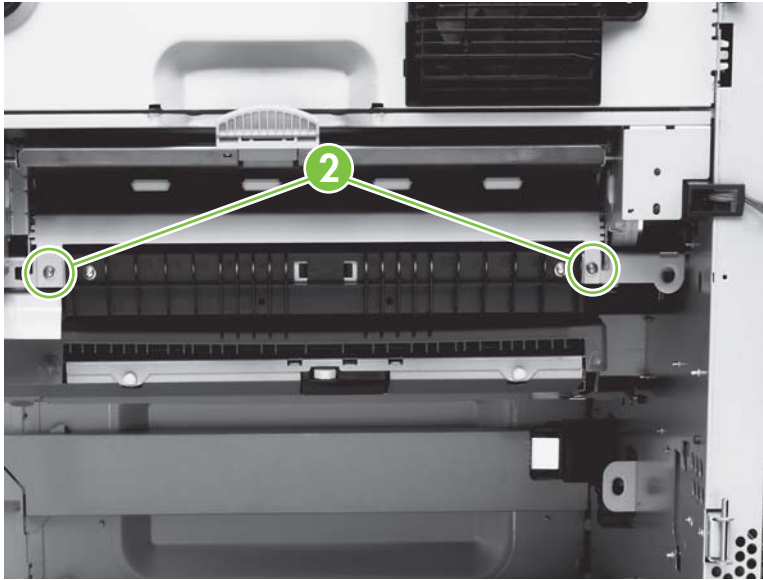
1. Remove the following components:
 - Right door. See [Right door on page 233](#).
 - Back cover. See [Back cover on page 237](#).
 - Print cartridge. See [Print cartridge on page 240](#).
 - Tray 2 and Tray 3. See [Tray 2 and Tray 3 \(interchangeable\) on page 242](#).
 - Registration-jam-removal knob. See [Registration-jam-removal knob on page 244](#).
 - PIU. See [Paper-input unit \(PIU\) on page 247](#).
2. Unplug the J-215 cable connector (callout 1) from the DC controller.

Figure 6-166 Remove the registration assembly (1 of 2)



3. Remove two screws (callout 2) from the registration assembly.

Figure 6-167 Remove the registration assembly (2 of 2)



4. Lift the registration assembly up slightly, and then rotate it downward until you can remove it from the chassis.

Reinstall the registration assembly

⚠ **WARNING!** Do not scrape the top of the registration assembly against the chassis. This can damage the small black plastic parts on top of the registration assembly.

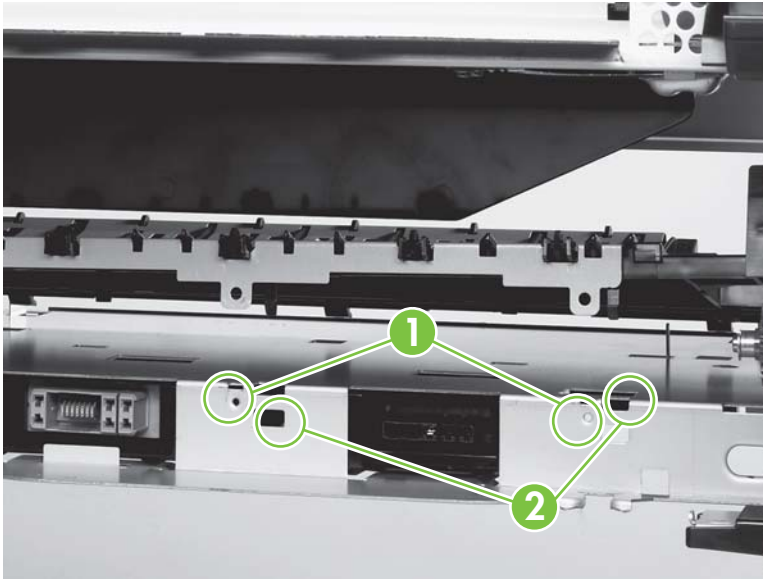
Transfer-guide assembly

1. Remove the following components:
 - Right door. See [Right door on page 233](#).
 - Back cover. See [Back cover on page 237](#).
 - Transfer-roller assembly. See [Transfer-roller assembly on page 241](#).
 - Tray 2 and Tray 3. See [Tray 2 and Tray 3 \(interchangeable\) on page 242](#).
 - PIU. See [Paper-input unit \(PIU\) on page 247](#).
 - Registration assembly. See [Registration assembly on page 250](#).
 - Fuser assembly. See [Fuser assembly on page 254](#).
 - Feed-drive assembly. See [Feed-drive assembly on page 264](#).

 **NOTE:** This procedure does not require removal of the drum motor.

2. Remove two screws (callout 1) from the transfer-guide assembly.

Figure 6-168 Remove the transfer-guide assembly

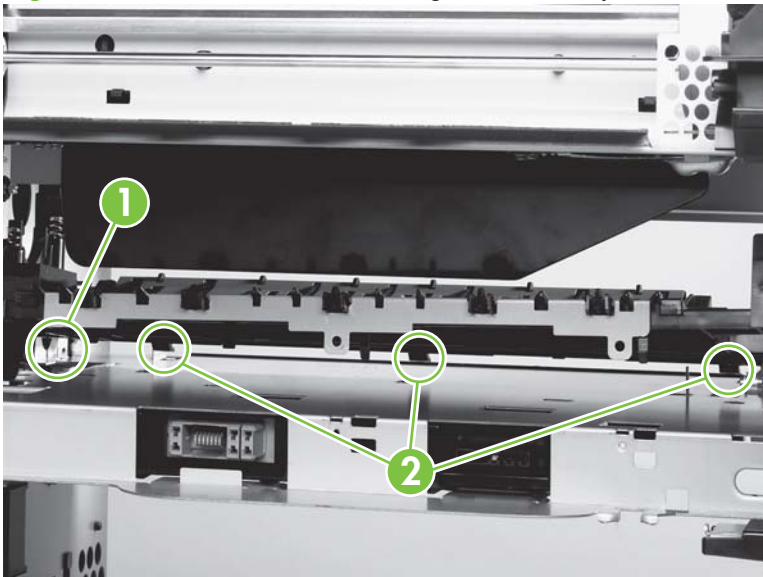


3. Push in and release the two plastic tabs (callout 2) to the right of each screw.
4. Lift the transfer-guide assembly up, rotate it forward slightly, and then pull it out of the product.

Reinstall the transfer-guide assembly

1. Face the right side of the product, and reinsert the pin (callout 1) in the back, left corner.

Figure 6-169 Reinstall the transfer-guide assembly



2. Rotate the transfer guide assembly upward, and slide the three back tabs (callout 2) into place.

Left assemblies

 **NOTE:** If the 3,000-sheet stacker, 3,000-sheet stapler/stacker, multifunction finisher, or 8-bin mailbox is installed, move it away from the product before beginning repairs to the left side of the product.

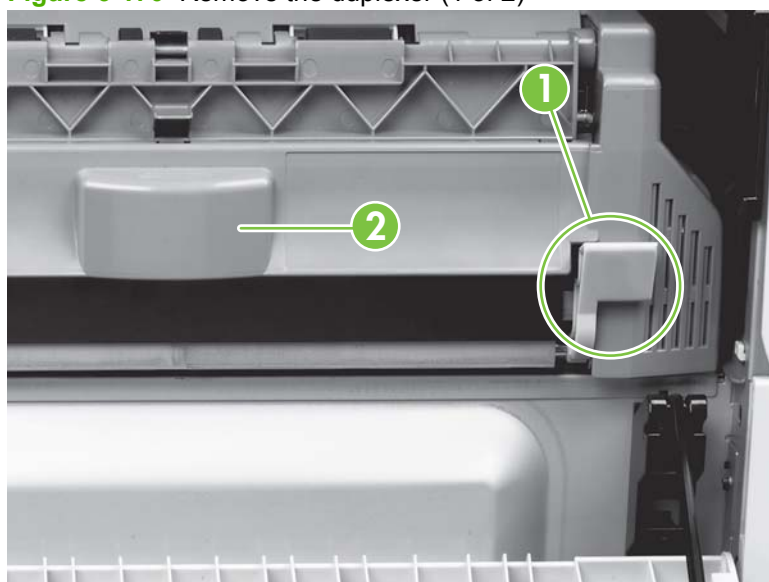
Gain access to the following assemblies from the left side of the product:

- Duplexer
- Fuser assembly

Duplexer

1. Open the left door.
2. Push the green tab (callout 1) downward to release the duplexer and move it forward slightly.

Figure 6-170 Remove the duplexer (1 of 2)



3. Pull the center handle (callout 2), and slide the duplexer from the product until it stops.

4. Grasp the two handles that are on the sides of the duplexer.

Figure 6-171 Remove the duplexer (2 of 2)



5. Lift the duplexer up to release two underside catches, and then remove it.

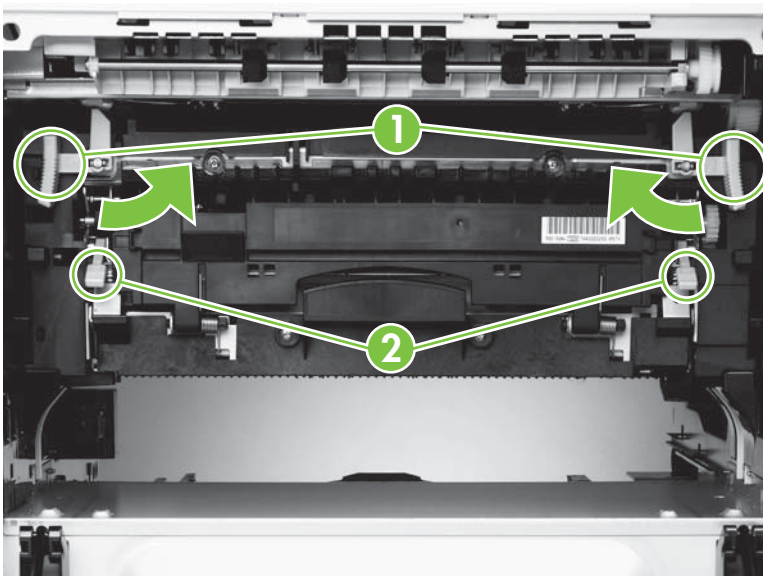
Fuser assembly

⚠ **WARNING!** The fuser assembly might be hot.

1. Remove the output device, and remove the duplexer. See [Duplexer on page 253](#).
2. Open the left door.
3. Rotate the two blue locking tabs (callout 1) toward each other and downward to release them.

📝 **NOTE:** Do not release the T-shaped envelope levers (callout 2).

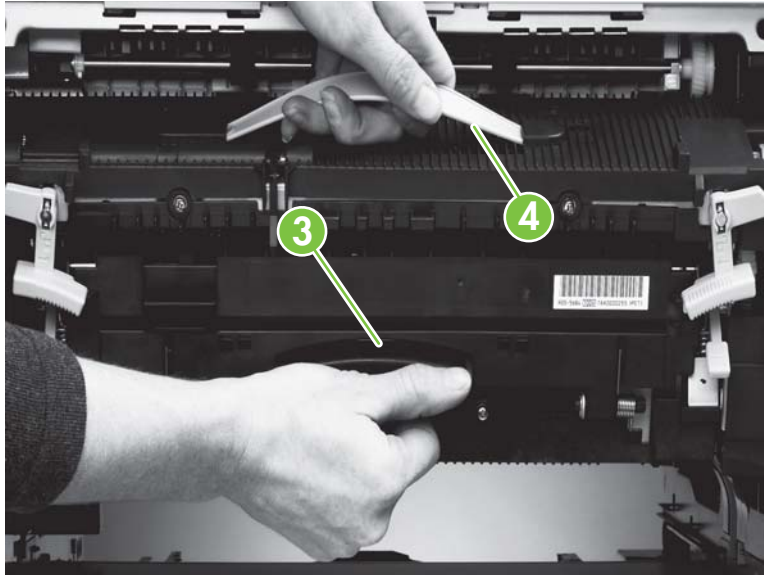
Figure 6-172 Remove the fuser assembly (1 of 2)



4. Pull the center handle (callout 3) to rotate the fuser assembly upward slightly, and then slide it outward until it stops.

⚠ WARNING! The fuser assembly is heavy. Grasp the blue handle firmly before attempting to lift it.

Figure 6-173 Remove the fuser assembly (2 of 2)



5. Firmly grasp the blue handle (callout 4), and lift the fuser assembly up.

Back assemblies

Gain access to the following assemblies from the back of the product:

- Formatter
- Low-voltage power supply
- High-voltage power supply
- DC controller
- Toner-sensor contact assembly
- Cartridge memory PCA
- Drum motor
- Feed-drive assembly
- Power-supply fan (fan 1)
- Cartridge fan (fan 5)
- Controller fan (fan 2)

Formatter



CAUTION:



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

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

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

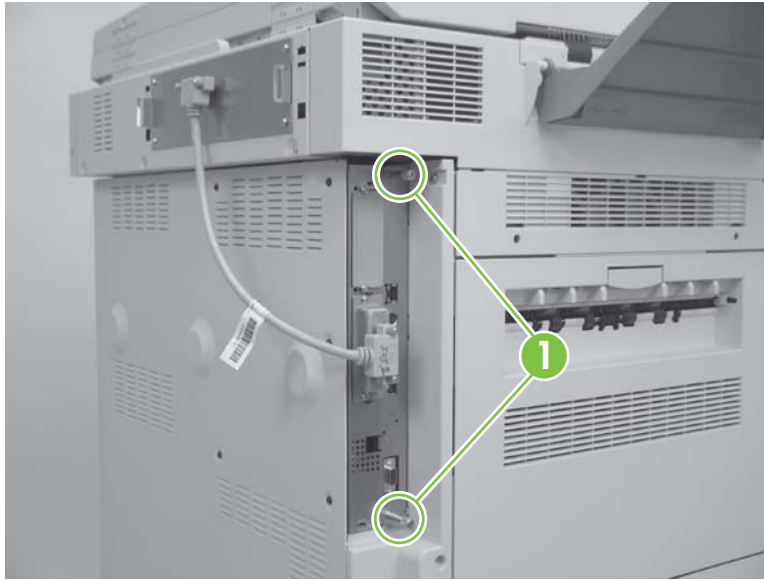


WARNING! The formatter has sharp edges.

1. Turn the product off.
2. Disconnect all cables from the formatter.

3. Loosen the two screws (callout 1). The screws stay with the formatter.

Figure 6-174 Remove the formatter

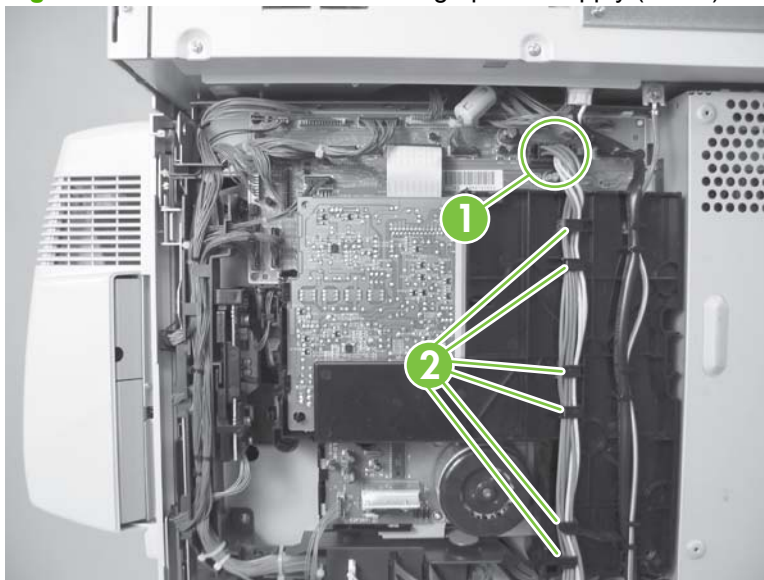


4. Grasp the screws, and slide the formatter out of the product.
5. Place the formatter on an ESD mat.

Low-voltage power supply

1. Remove the back cover. See [Back cover on page 237](#).
2. Remove the large cable connector (callout 1) from the DC controller.

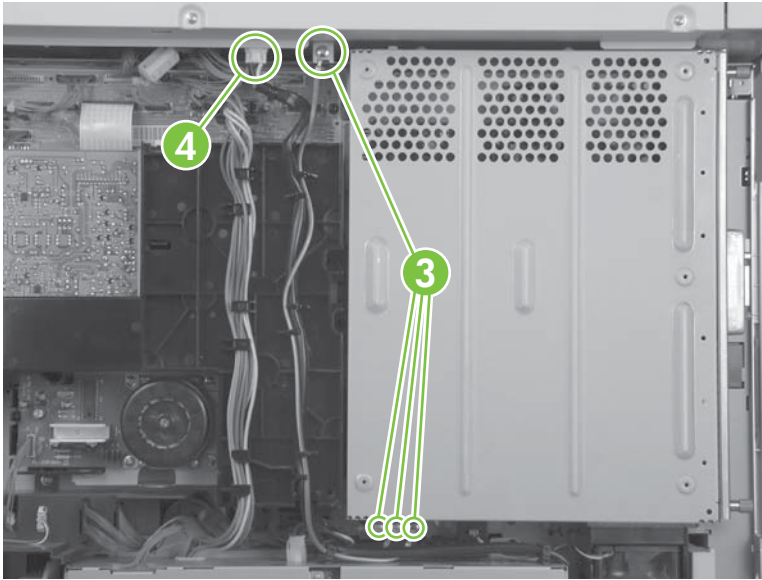
Figure 6-175 Remove the low-voltage power supply (1 of 3)



3. Unroute the cable from the cable guides (callout 2).

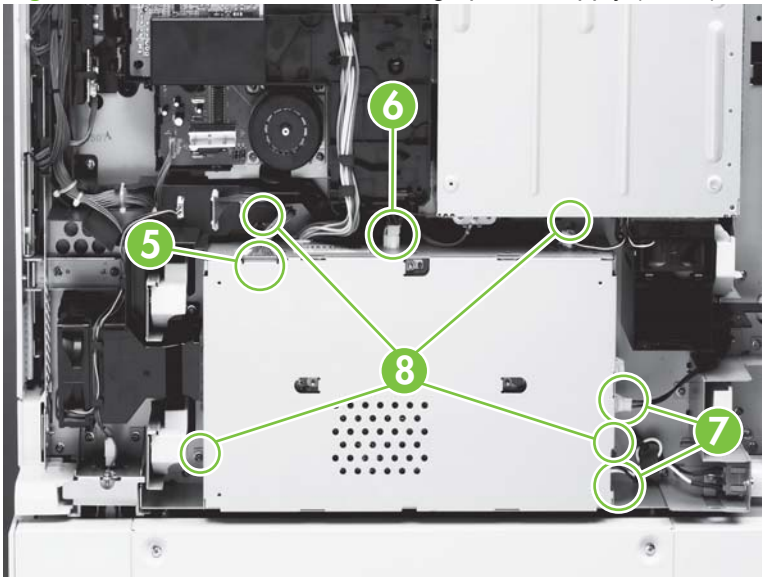
4. Remove four ground screws (callout 3).

Figure 6-176 Remove the low-voltage power supply (2 of 3)



5. Remove the scan engine power cable (callout 4).
6. Unplug one cable connector (callout 5) from the low-voltage power supply.

Figure 6-177 Remove the low-voltage power supply (3 of 3)



7. Unplug one cable connector (callout 6) by pulling and releasing the tab on the side of the connector.
8. Unplug two cable connectors (callout 7) by pressing and releasing the tabs on the sides of the connectors.
9. Remove four screws (callout 8).
10. Remove the low-voltage power supply.

High-voltage power supply

1. Remove the back cover. See [Back cover on page 237](#).

⚠ **WARNING!** The flat ribbon cable is fragile. Do not bend or fold it.

⚠

CAUTION:



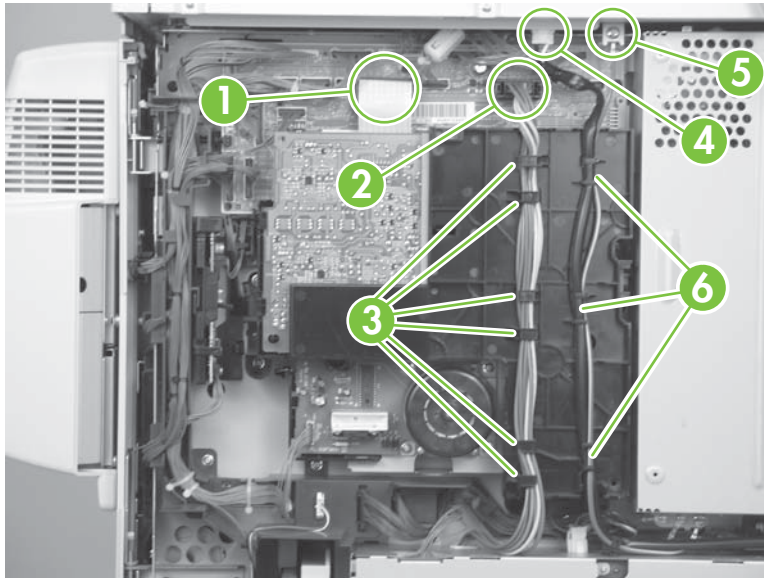
Some parts are sensitive to electrostatic discharge (ESD). Look for the

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

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

2. Remove the flat ribbon cable connector (callout 1) from the DC controller.

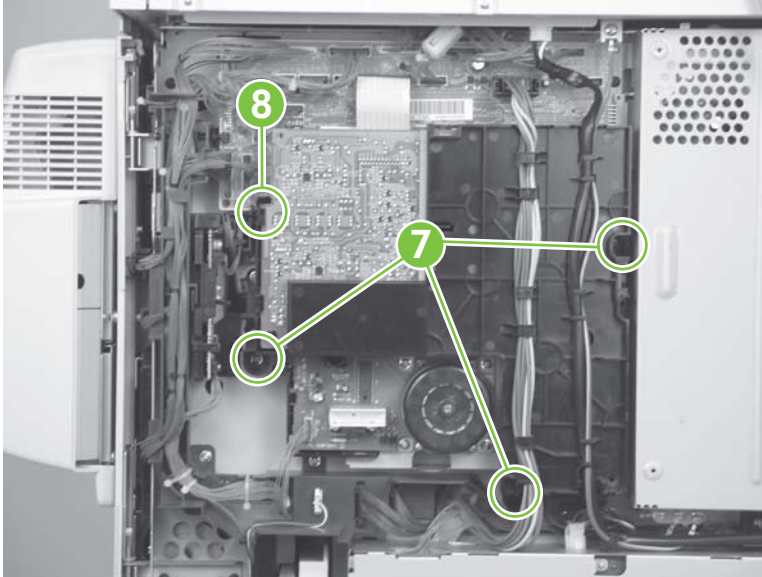
Figure 6-178 Remove the high-voltage power supply (1 of 2)



3. Unplug the low-voltage power-supply cable connector (callout 2) from the DC controller, and unroute the cable from the cable guides (callout 3).
4. Unplug the scanner power cable (callout 4), remove the ground cable screw (callout 5), and then unroute the cables from the cable guides (callout 6).
5. Remove three screws (callout 7).

6. Push the black locking tab (callout 8) away from the high-voltage power supply, and remove the high-voltage power supply.

Figure 6-179 Remove the high-voltage power supply (2 of 2)



DC controller



CAUTION:



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

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

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

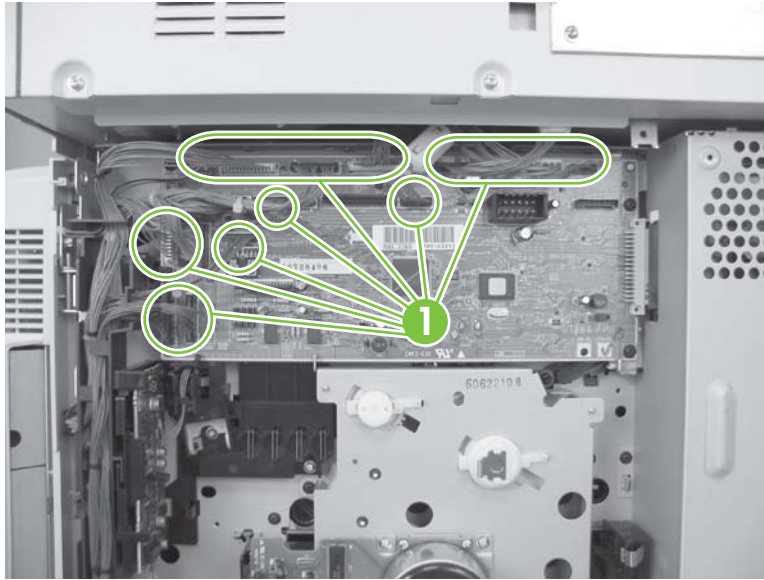
1. Remove the following components:

- Back cover. See [Back cover on page 237](#).
- Formatter. See [Formatter on page 256](#).
- High-voltage power supply. See [High-voltage power supply on page 259](#).

- △ **CAUTION:** Use caution when removing cable connectors J-215, J-219, and J-213. Do not bend or break the component that is adjacent to these cable connectors.

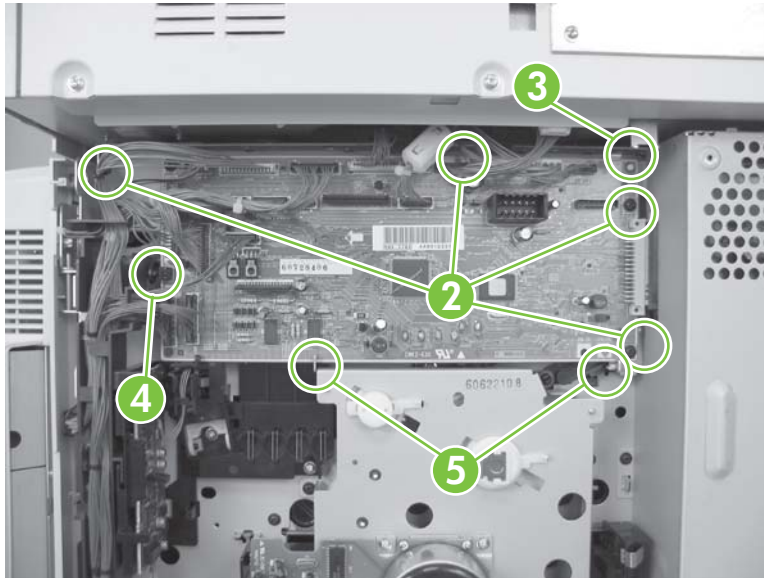
2. Remove 17 cable connectors (callout 1).

Figure 6-180 Remove the DC controller (1 of 2)



3. Remove four screws (callout 2).

Figure 6-181 Remove the DC controller (2 of 2)

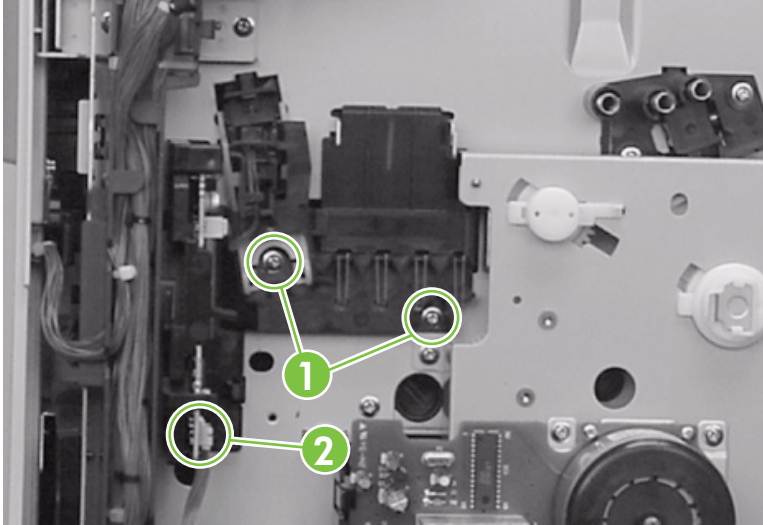


4. Release two small tabs (callout 3 and callout 4), and rotate the top edge of the DC controller away from the product.
5. Remove the DC controller from the two metal holders (callout 5).

Toner-sensor contact assembly

1. Remove the following components:
 - Back cover. See [Back cover on page 237](#).
 - High-voltage power supply. See [High-voltage power supply on page 259](#).
 - DC controller. See [DC controller on page 260](#).
2. Remove two screws (callout 1).

Figure 6-182 Remove the toner-sensor contact assembly

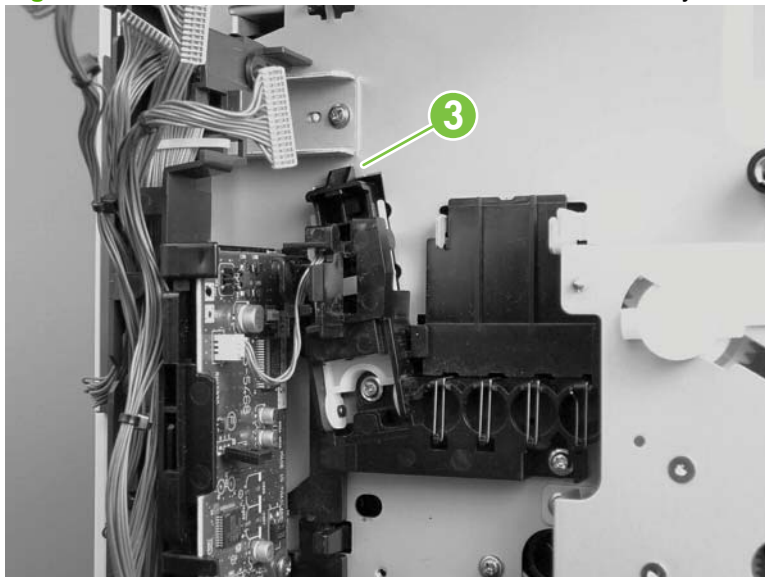


3. Unplug one cable connector (callout 2).
4. Remove the toner-sensor contact assembly.

Reinstall the toner-sensor contact assembly

Make sure that the top tab (callout 3) is on the outside of the chassis.

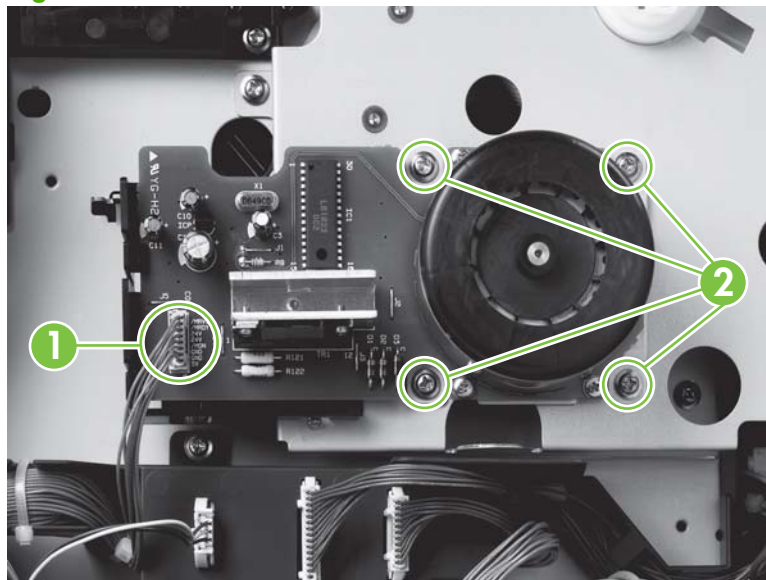
Figure 6-183 Reinstall the toner-sensor contact assembly



Drum motor

1. Remove the back cover. See [Back cover on page 237](#).
2. Remove the high-voltage power supply. See [High-voltage power supply on page 259](#).
3. Unplug one cable connector (callout 1).

Figure 6-184 Remove the drum motor

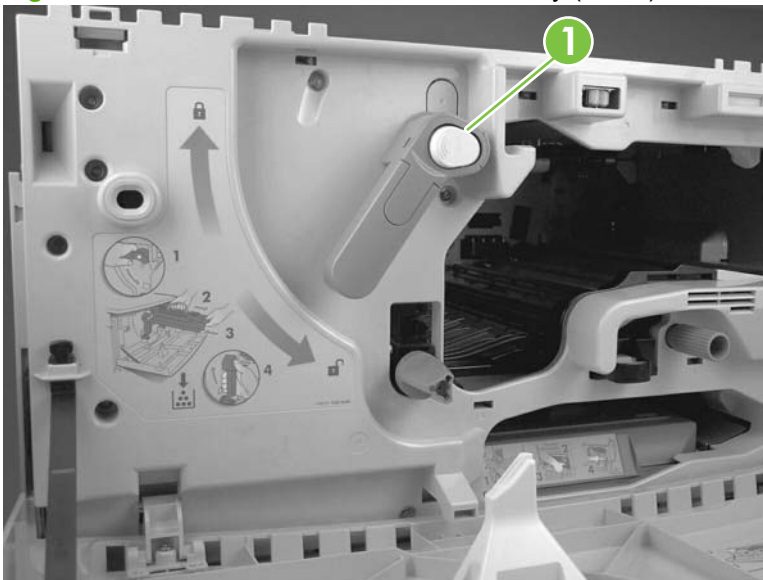


4. Remove four screws (callout 2).
5. Pull the drum motor away from the product.

Feed-drive assembly

1. Remove the following components:
 - Back cover. See [Back cover on page 237](#).
 - High-voltage power supply. See [High-voltage power supply on page 259](#).
 - DC controller. See [DC controller on page 260](#).
2. Remove the drum motor.
3. Open the front cover.
4. Press the white button on the cartridge release lever (callout 1), and then leave it in a loose position to enable access to the activation lever on the other side of the product.

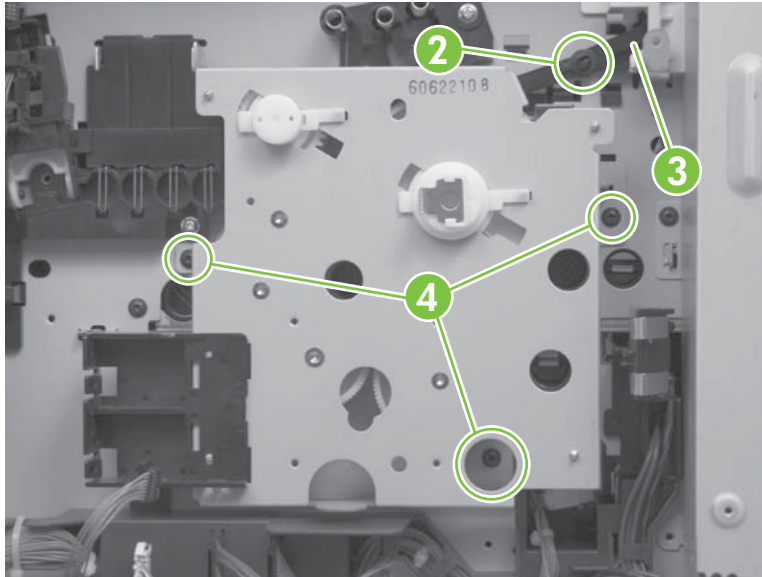
Figure 6-185 Remove the feed-drive assembly (1 of 2)



5. Face the back of the product.

6. Pinch the two black tabs (callout 2) together with needle-nose pliers to release the activation lever (callout 3).

Figure 6-186 Remove the feed-drive assembly (2 of 2)



7. Remove three screws (callout 4).
8. Remove the feed-drive assembly.

Reinstall the feed-drive assembly

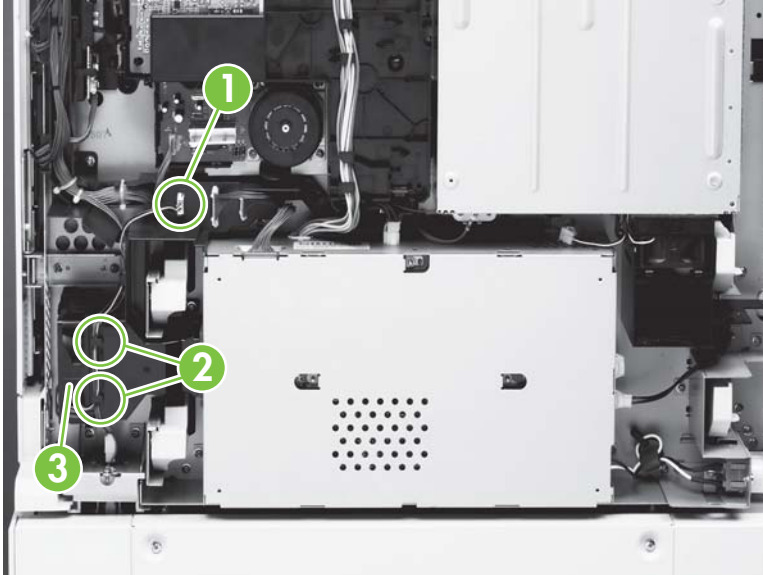
 **NOTE:** Be sure to reconnect the activation lever.

Power-supply fan (fan 1)

1. Remove the back cover. See [Back cover on page 237](#).

2. Unplug the fan cable connector (callout 1), and carefully unwind the fan cables from the cable guides (callout 2).

Figure 6-187 Remove the power-supply fan

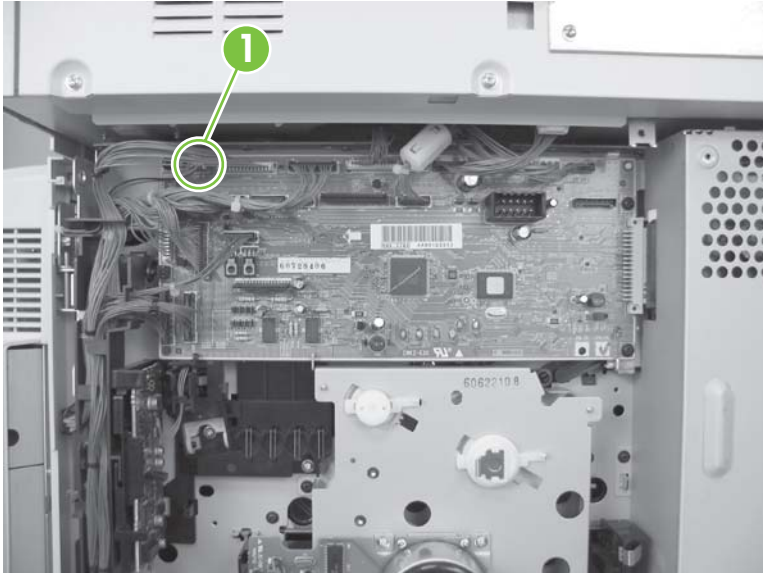


3. Slide the power supply fan (callout 3) out of the product.

Cartridge fan (fan 5)

1. Remove the back cover. See [Back cover on page 237](#).
2. Remove the J-216 cable connector (callout 1) from the DC controller.

Figure 6-188 Remove the cartridge fan (1 of 4)

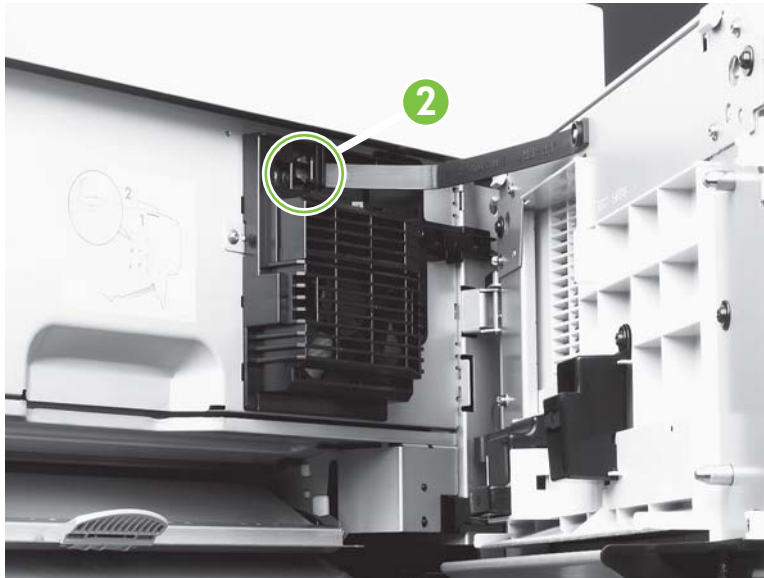


3. Open the right door.
4. Remove Tray 1 if it is installed. See [Tray 1 on page 246](#).

5. Release the strap by pinching and then pushing the two tabs (callout 2) on the end of the black strap.

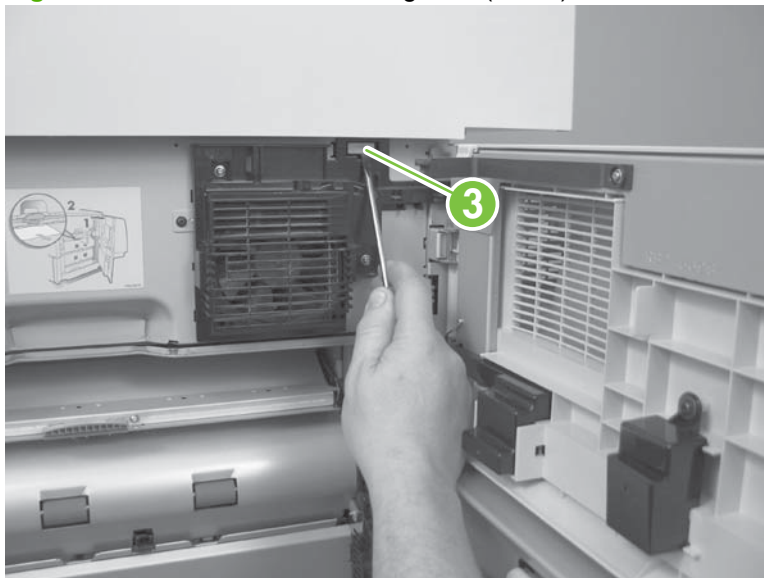
 **NOTE:** You might wish to remove the right door. See [Right door on page 233](#)

Figure 6-189 Remove the cartridge fan (2 of 4)



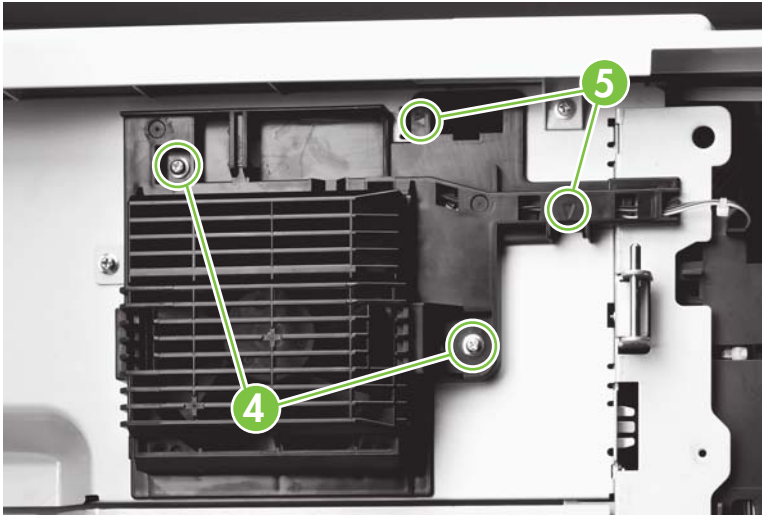
6. Remove the scanner engine locking tab (callout 3).

Figure 6-190 Remove the cartridge fan (3 of 4)



7. Remove two screws (callout 4) from the cartridge fan.

Figure 6-191 Remove the cartridge fan (4 of 4)



8. Locate the two arrow-marked tabs (callout 5), and then press the arrow-marked area in the direction that the arrow indicates.
9. Slide the cartridge fan to the right to remove it.

Reinstall the cartridge fan

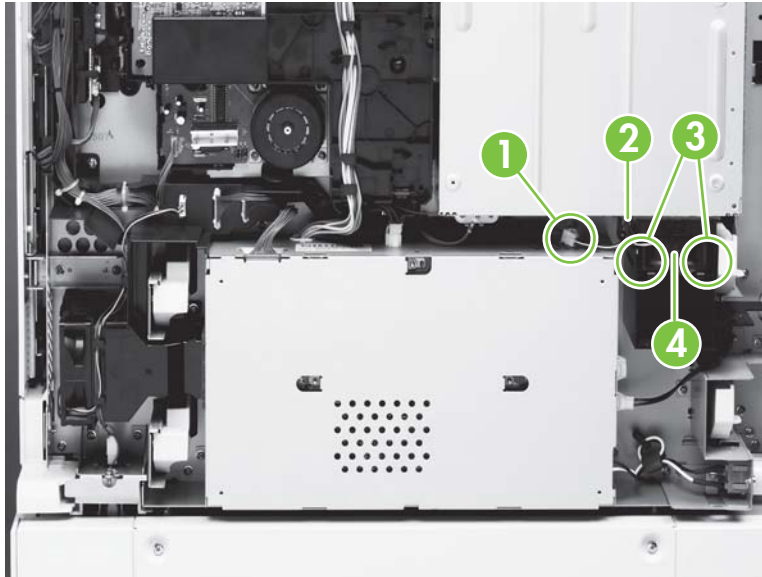
Slide the tabs into the product before you snap the fan into place.

Controller fan (fan 2)

1. Remove the back cover. See [Back cover on page 237](#).
2. Locate the controller fan below the formatter.

3. Unplug the fan cable connector (callout 1), and carefully unwind the fan cables from the cable guides (callout 2).

Figure 6-192 Remove the controller fan

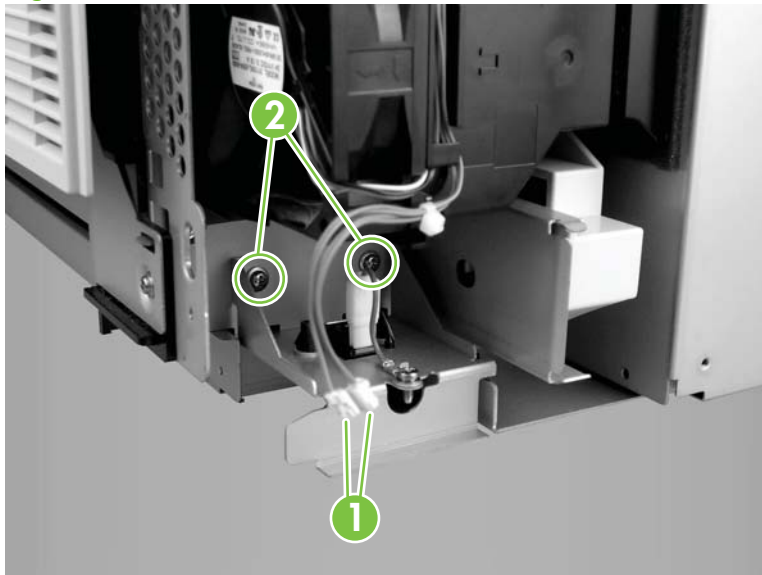


4. Release two black tabs (callout 3).
5. Slide the controller fan (callout 4) out of the product.

Jetlink connector

1. Remove the back cover. See [Back cover on page 237](#).
2. Disconnect two cables (callout 1) that are connected to the Jetlink connector behind the white ground connector.

Figure 6-193 Remove the Jetlink connector

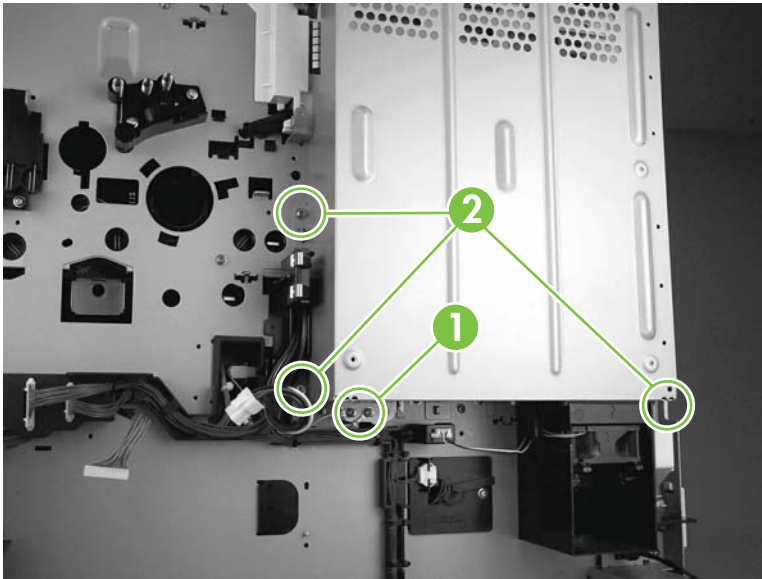


3. Remove two screws (callout 2).
4. Remove the Jetlink connector.

Duplexer connector holder assembly

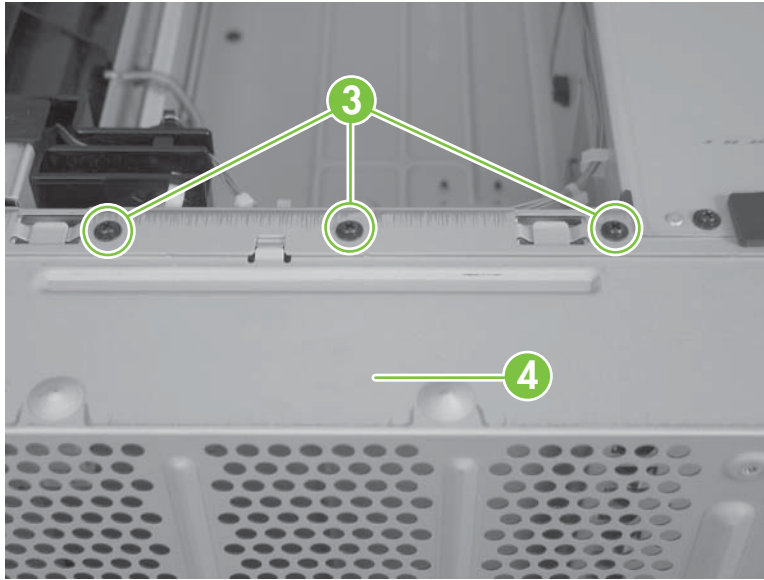
1. Remove the following components:
 - Formatter. See [Formatter on page 256](#).
 - Back cover. See [Back cover on page 237](#).
 - Scan engine assembly. See [Scan engine on page 223](#).
 - Low-voltage power supply. See [Low-voltage power supply on page 257](#).
 - High-voltage power supply. See [High-voltage power supply on page 259](#).
 - Drum motor. See [Drum motor on page 263](#).
 - Feed-drive assembly. See [Feed-drive assembly on page 264](#).
 - Duplexer. See [Duplexer on page 253](#).
 - Fuser assembly. See [Fuser assembly on page 254](#).
 - Left back cover. See [Left back cover on page 236](#).
2. Remove two ground screws (callout 1) and three additional screws (callout 2).

Figure 6-194 Remove the duplexer connector holder assembly (1 of 3)



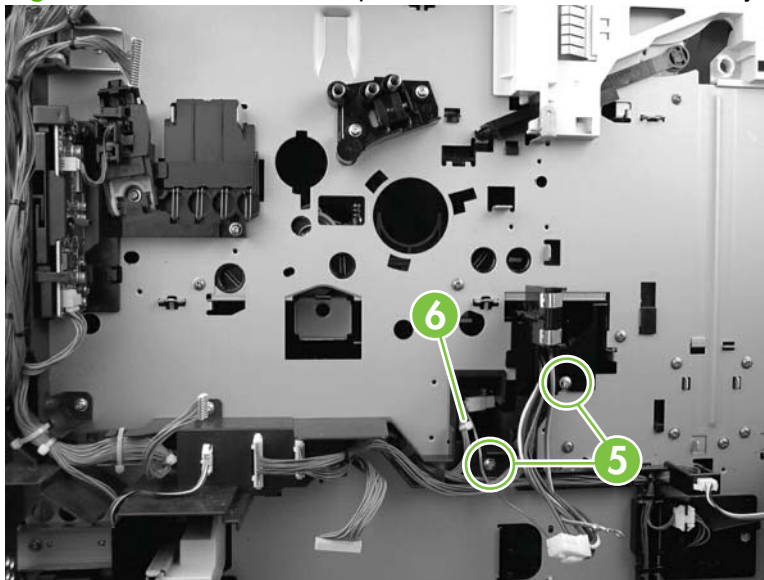
3. Remove three screws (callout 3), and then remove the formatter cage (callout 4).

Figure 6-195 Remove the duplexer connector holder assembly (2 of 3)



4. Remove two screws (callout 5), and then pull the fuser-conductor holder assembly toward you.

Figure 6-196 Remove the duplexer connector holder assembly (3 of 3)



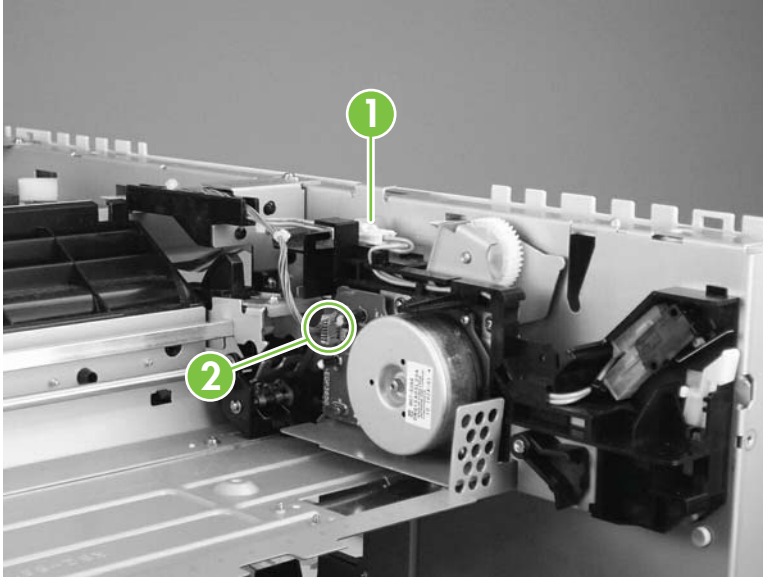
5. Unroute the cables, and carefully cut the cable clips (callout 6) as necessary.
6. Remove the assembly.

Fuser delivery-drive assembly

1. Remove the scanner/ADF engine assembly. See [Scan engine on page 223](#).
2. Open the left door.
3. Remove the delivery fan assembly. See [Delivery fan assembly on page 229](#).

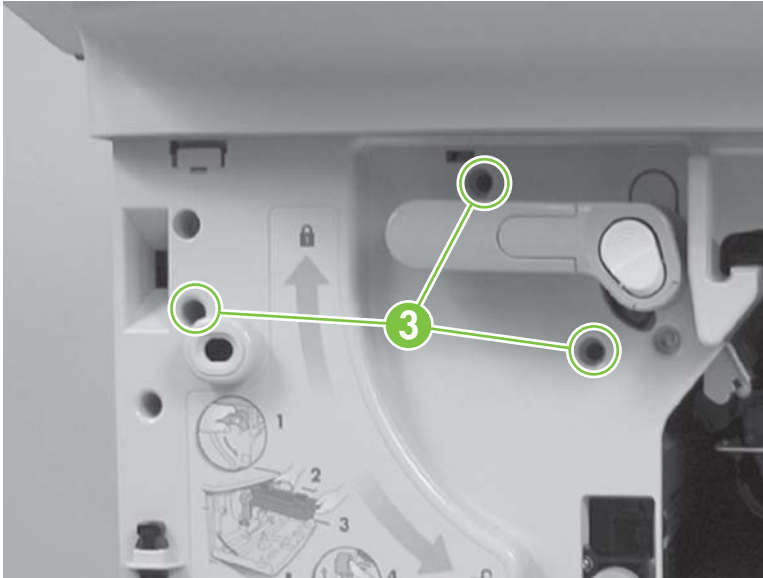
4. Disconnect one cable (callout 1) and one connector (callout 2).

Figure 6-197 Remove the fuser delivery-drive assembly (1 of 3)



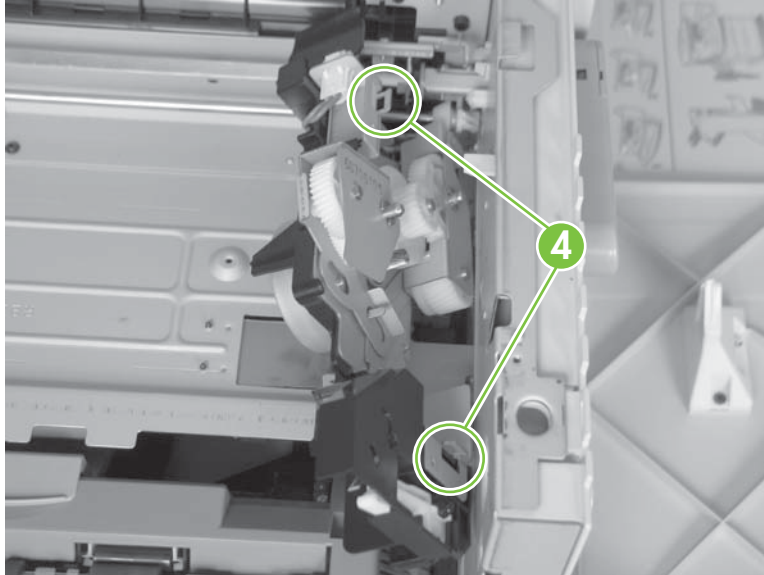
5. Remove three screws (callout 3).

Figure 6-198 Remove the fuser delivery-drive assembly (2 of 3)



6. Disengage the two locking tabs (callout 4) on the fuser delivery drive assembly by pulling up and away from the inside of the product.

Figure 6-199 Remove the fuser delivery-drive assembly (3 of 3)



7. Rotate the assembly to the left, and then lift it out of the product.

Reinstall the fuser delivery assembly

Place the green handle in the locked position.

Tray 4

The following covers and assemblies can be removed from Tray 4:

- Left side cover
- Right side cover
- Back covers
- Tray assembly
- Tray 4 rollers (pickup, feed, and separation)
- Registration assembly
- Drive motor
- Drive assembly
- Controller board
- Paper-size detection switch PCA
- Power supply
- Pickup assembly
- Paper connecting unit

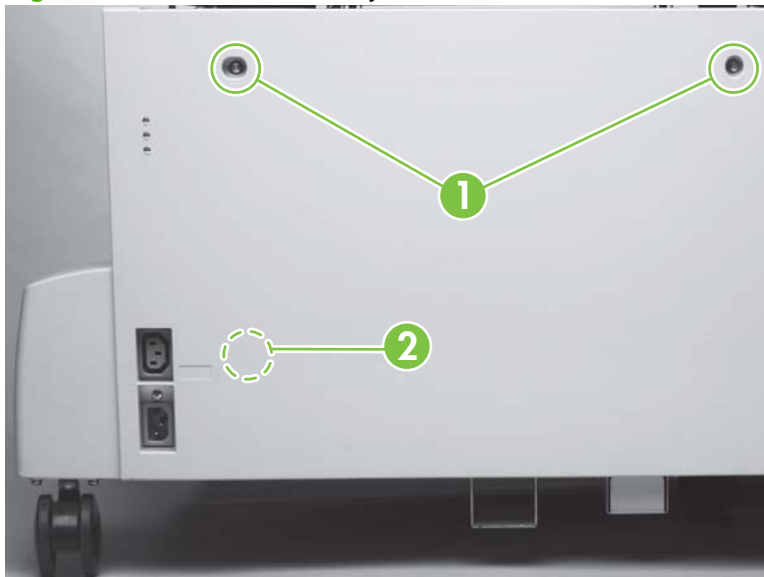
Orientation

See [Product orientation on page 152](#).

Tray 4 left side cover

1. Remove two screws (callout 1) from the left side cover.

Figure 6-200 Remove the Tray 4 left side cover



2. Pull the top edge of the cover outward.
3. Lift the left side cover up and outward to remove it.

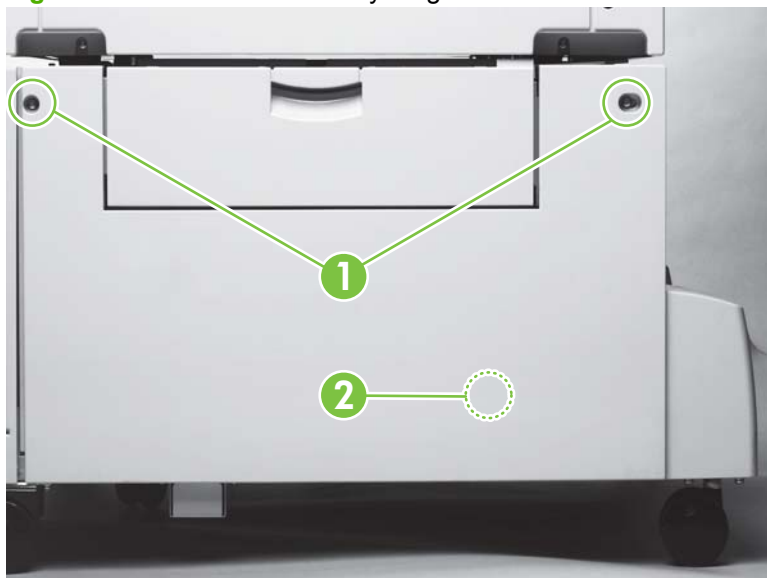
Reinstall the Tray 4 left side cover

Be sure the hook (callout 2) on the inside of the cover connects correctly.

Tray 4 right side cover

1. Remove two screws (callout 1) from the right side cover.

Figure 6-201 Remove the Tray 4 right side cover



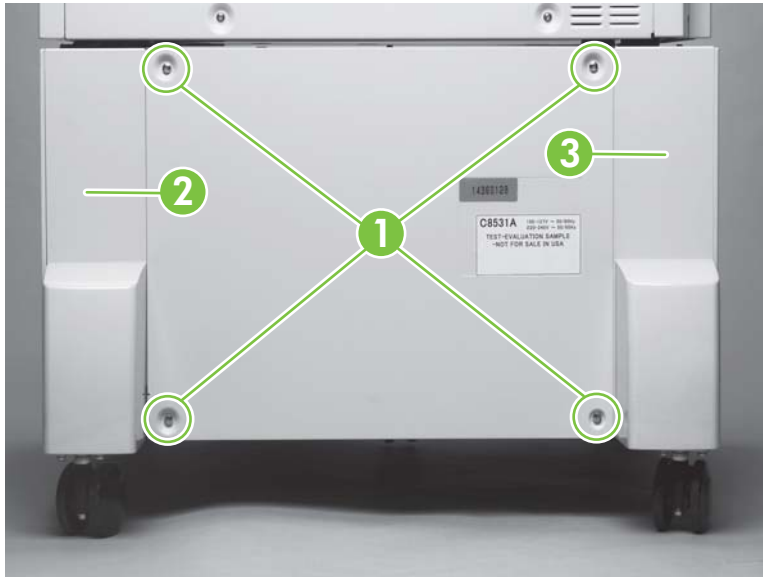
2. Pull the top edge of the cover outward.
3. Lift the right side cover up and out to remove it.

Reinstall the Tray 4 right side cover

Be sure the hook (callout 2) on the inside of the cover connects correctly.

Tray 4 back covers

Figure 6-202 Remove the Tray 4 back covers



Callout 1 shows the screws to remove for removal of the center back cover.

Callout 2 is the back right cover.

Callout 3 is the back left cover.

Tray 4 center back cover

1. Remove four screws (callout 1).
2. Remove the cover.

Tray 4 right back cover

1. Remove the center back cover.
2. Slide the right back cover (callout 2) toward the center to release an interior tab.
3. Lift the right back cover straight up to release another interior tab.

 **NOTE:** Be sure to keep the right back cover aligned vertically with Tray 4. Otherwise, the second interior tab will not release.

4. Pull the right back cover out to remove it.

Tray 4 left back cover

1. Remove the center back cover.
2. Slide the left back cover (callout 3) toward the center to release an interior tab.
3. Lift the left back cover straight up to release the second interior tab.

 **NOTE:** Be sure to keep the left back cover aligned vertically with Tray 4. Otherwise, the second interior tab will not release.

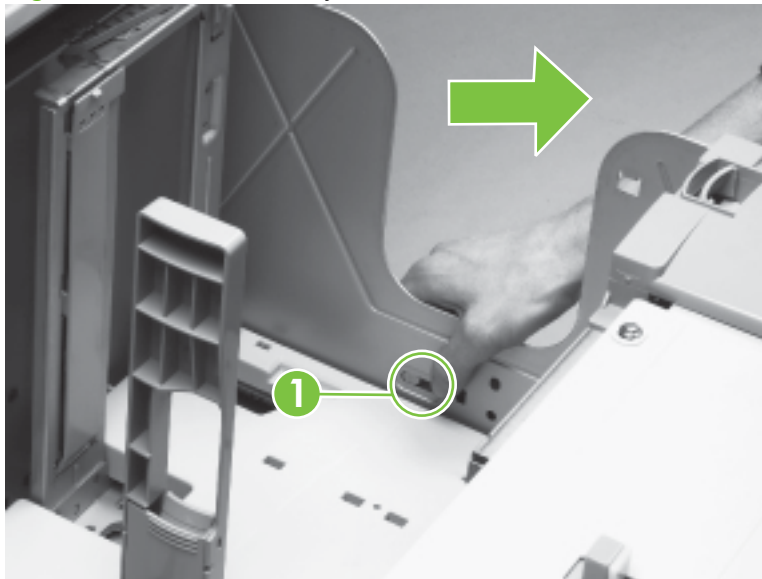
4. Pull the left back cover out to remove it.

Tray 4

△ **CAUTION:** Tray 4 is heavy and can be damaged if dropped. Use both hands to remove it.

1. Open Tray 4 until it stops, and then remove all of the paper.
2. Press the two release buttons (callout 1), one on each side of the tray.

Figure 6-203 Remove Tray 4



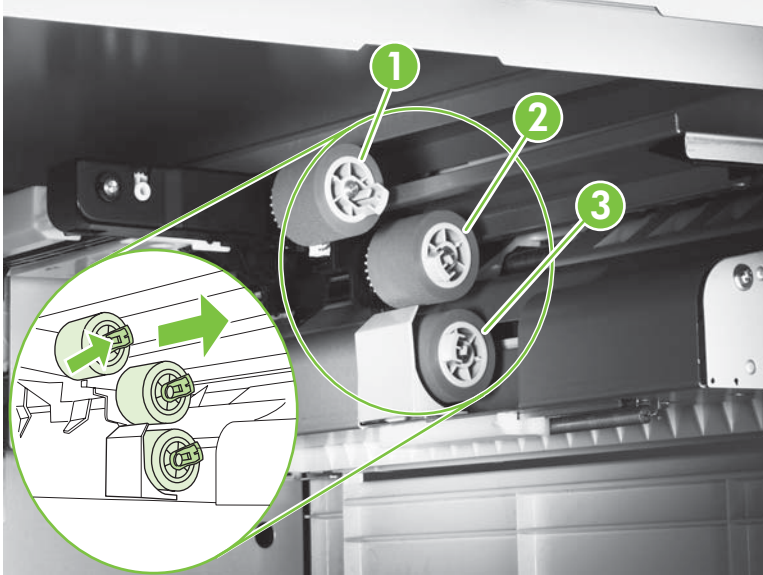
3. Continue to press the two release buttons while pulling the tray out to remove it.

Tray 4 rollers (pickup, feed, and separation)

1. Remove Tray 4. See [Tray 4 on page 277](#).

2. Locate the appropriate roller at the upper right side of the tray cavity. The pickup roller (callout 1), the feed roller (callout 2), and the separation roller (callout 3) are type 2 rollers.

Figure 6-204 Remove the Tray 4 rollers



 **NOTE:** To gain access to the separation roller, slide the blue roller shield toward the back of the tray (as shown).

3. To release a roller, pinch the tab on the end of it.
4. Slide the roller off of the shaft.

Reinstall the Tray 4 rollers

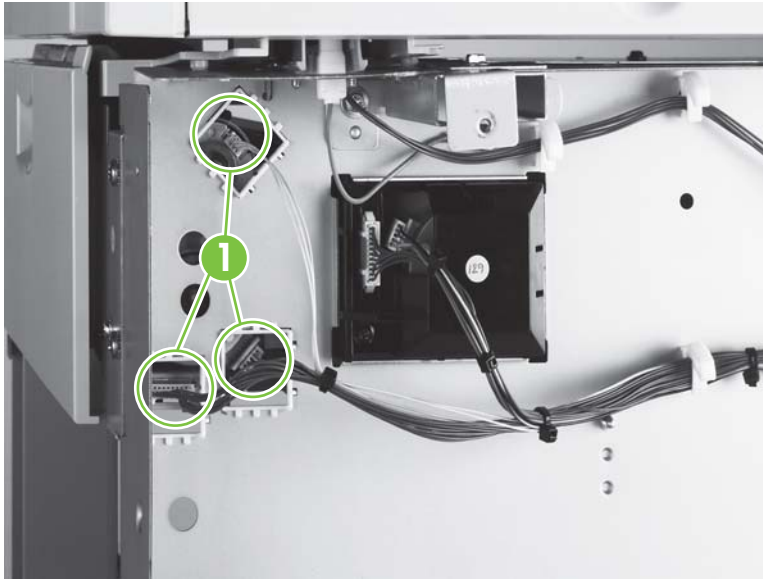
- The blue shield will automatically reset into place.
- Pull back on each roller to be sure it is locked in place.

Tray 4 registration assembly

1. Remove the Tray 4 right side cover. See [Tray 4 right side cover on page 275](#).
2. Remove the Tray 4 center back cover. See [Tray 4 center back cover on page 276](#).
3. Remove the Tray 4 right back cover. See [Tray 4 right back cover on page 276](#).

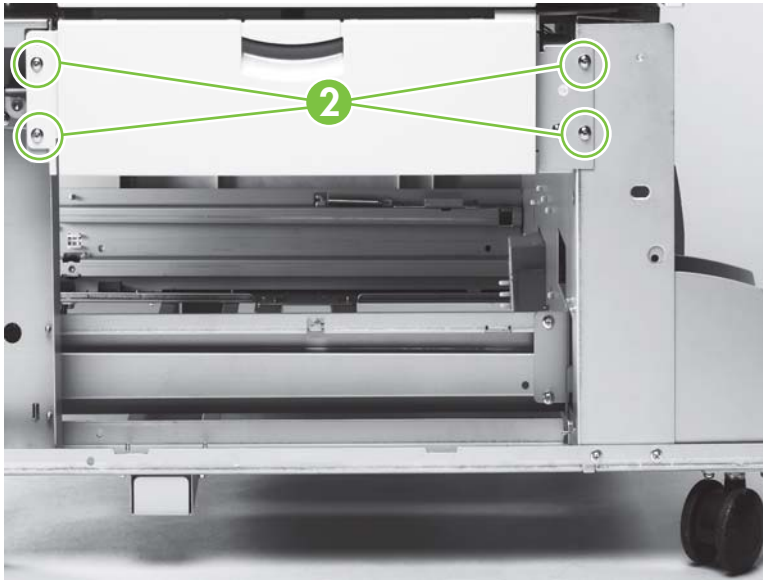
4. Unplug three connectors (callout 1).

Figure 6-205 Remove the registration assembly (1 of 2)



5. Remove four screws (callout 2).

Figure 6-206 Remove the registration assembly (2 of 2)



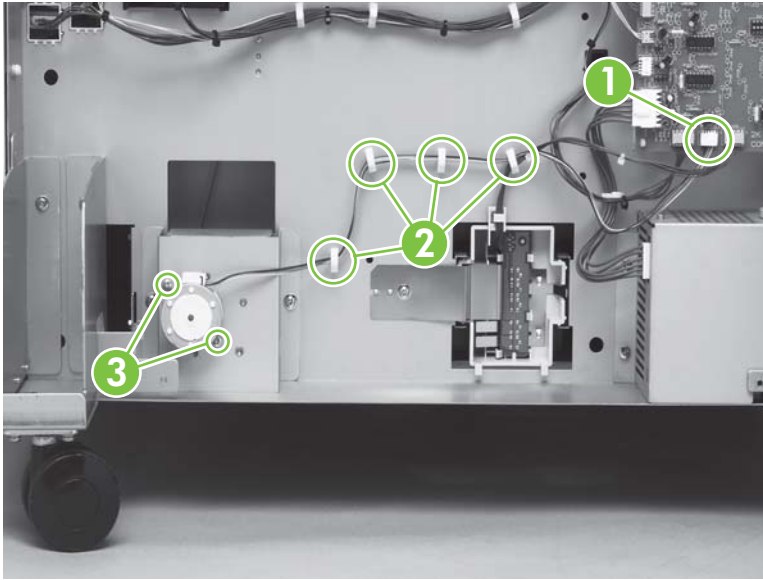
6. Gently lift the registration assembly off of Tray 4.

Tray 4 drive motor

1. Remove the Tray 4 center back cover. See [Tray 4 center back cover on page 276](#).

2. Unplug the cable connector (callout 1) from the controller board.

Figure 6-207 Remove the drive motor

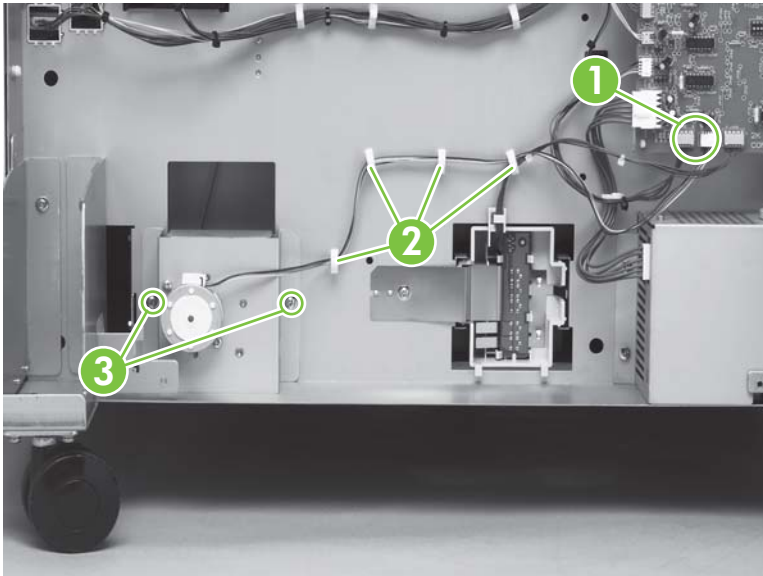


3. Carefully unwind the cable from the cable guides (callout 2).
4. Remove two screws (callout 3).
5. Remove the drive motor.

Tray 4 drive assembly

1. Remove the Tray 4 center back cover. See [Tray 4 center back cover on page 276](#).
2. Unplug the cable connector (callout 1) from the controller board.

Figure 6-208 Remove the drive assembly



3. Carefully unwind the cable from the cable guides (callout 2).

4. Remove two screws (callout 3).
5. Remove the drive assembly.

Tray 4 controller board

1. Remove the following components:
 - Tray 4 center back cover. See [Tray 4 center back cover on page 276](#).
 - Tray 4 left back cover. See [Tray 4 left back cover on page 276](#).
2. Unplug 11 connectors (callout 1).



CAUTION:

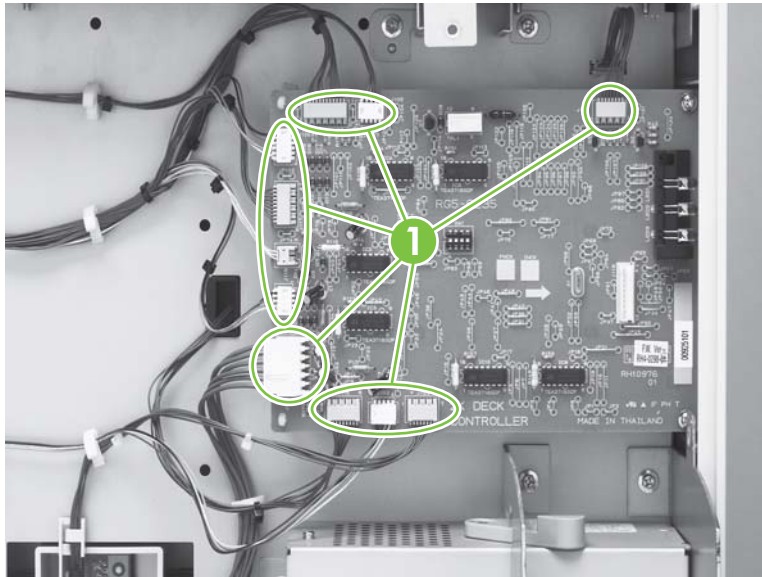


Some parts are sensitive to electrostatic discharge (ESD). Look for the

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

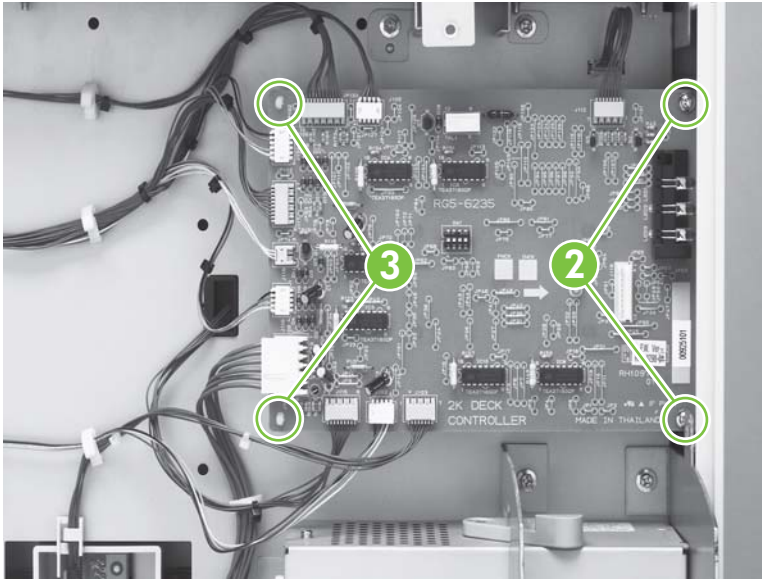
Protect the ESD-sensitive parts by placing them in ESD pouches when they are out of the product.

Figure 6-209 Remove the controller board (1 of 2)



3. Remove two screws (callout 2).

Figure 6-210 Remove the controller board (2 of 2)

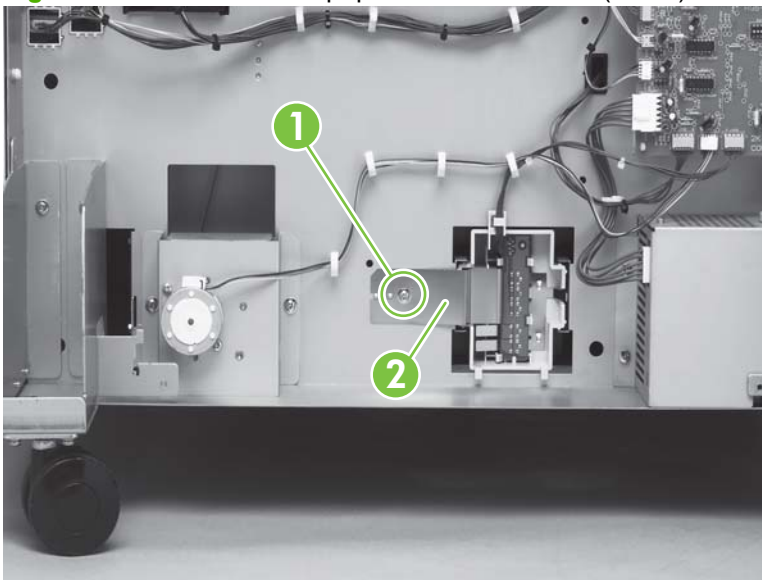


4. Release two holding pins (callout 3).
5. Remove the controller board.

Paper-size detection switch PCA

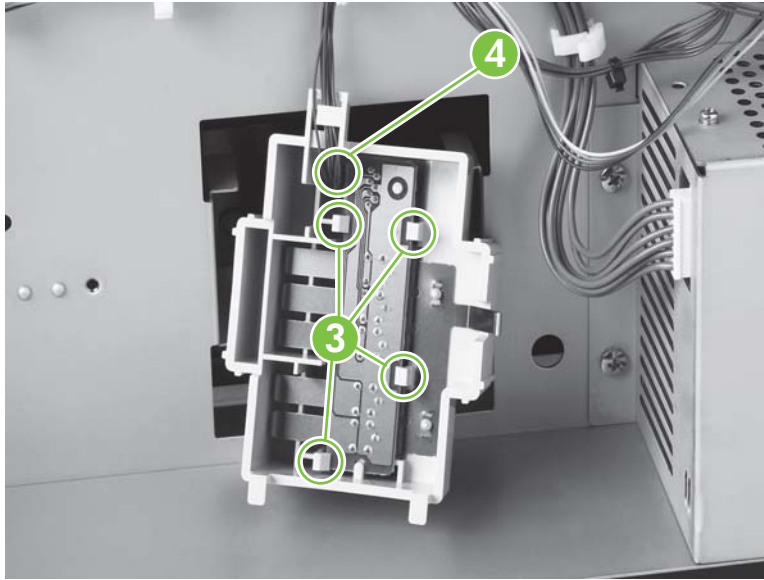
1. Remove the Tray 4 center back cover. See [Tray 4 center back cover on page 276](#).
2. Remove one screw (callout 1) to remove the leaf spring (callout 2).

Figure 6-211 Remove the paper-size switch PCA (1 of 2)



3. Release four tabs (callout 3), and remove the PCA from the casing.

Figure 6-212 Remove the paper-size switch PCA (2 of 2)



4. Unplug the cable connector (callout 4).

Reinstall the paper-size switch PCA

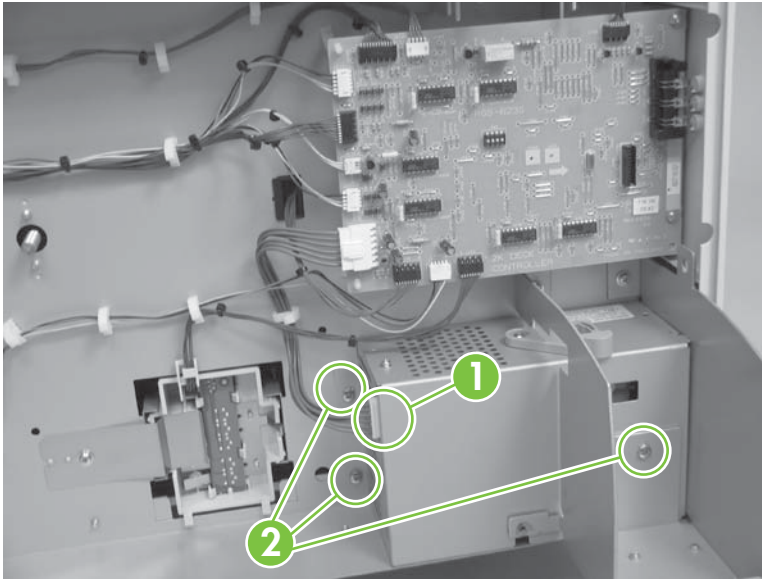
Open Tray 4 slightly to relieve the pressure on the casing.

Tray 4 power supply

1. Remove the following components:
 - Tray 4 center back cover. See [Tray 4 center back cover on page 276](#).
 - Tray 4 left back cover. See [Tray 4 left back cover on page 276](#).

2. Unplug one connector (callout 1).

Figure 6-213 Remove the power supply



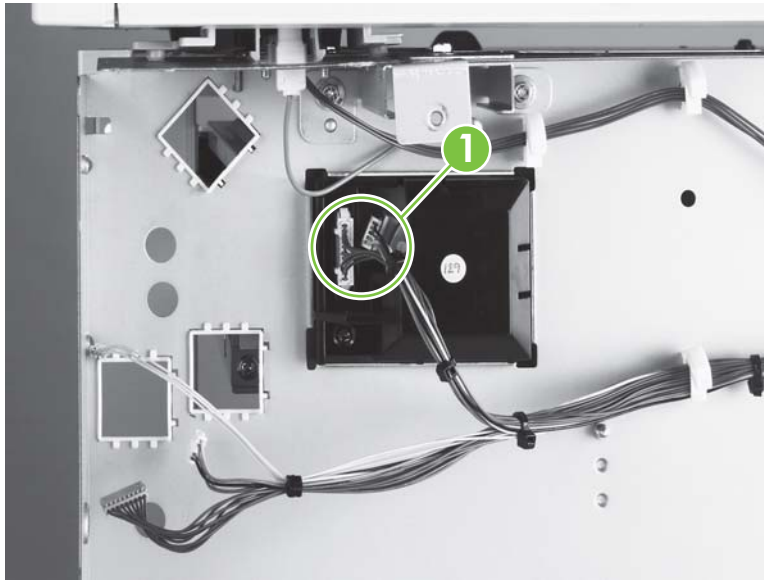
3. Remove three screws (callout 2).
4. Slide the power supply to the left to remove it.

Tray 4 pickup assembly

1. Remove the following components:
 - Tray 4 right side cover. See [Tray 4 right side cover on page 275](#).
 - Tray 4 center back cover. See [Tray 4 center back cover on page 276](#).
 - Tray 4 right back cover. See [Tray 4 right back cover on page 276](#).
 - Tray 4 assembly. See [Tray 4 on page 277](#).
 - Tray 4 registration assembly. See [Tray 4 registration assembly on page 278](#).

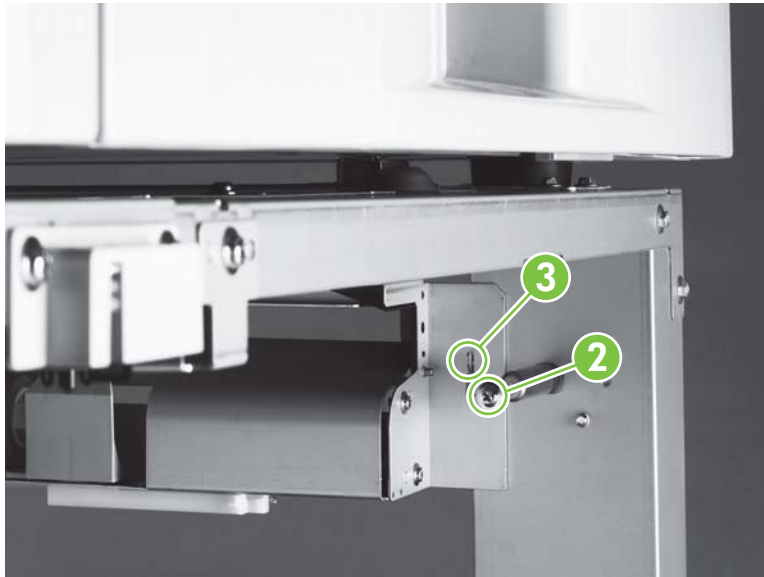
2. From the back of Tray 4, unplug two connectors (callout 1).

Figure 6-214 Remove the pickup assembly (1 of 2)



3. From the front of Tray 4, remove one screw (callout 2).

Figure 6-215 Remove the pickup assembly (2 of 2)

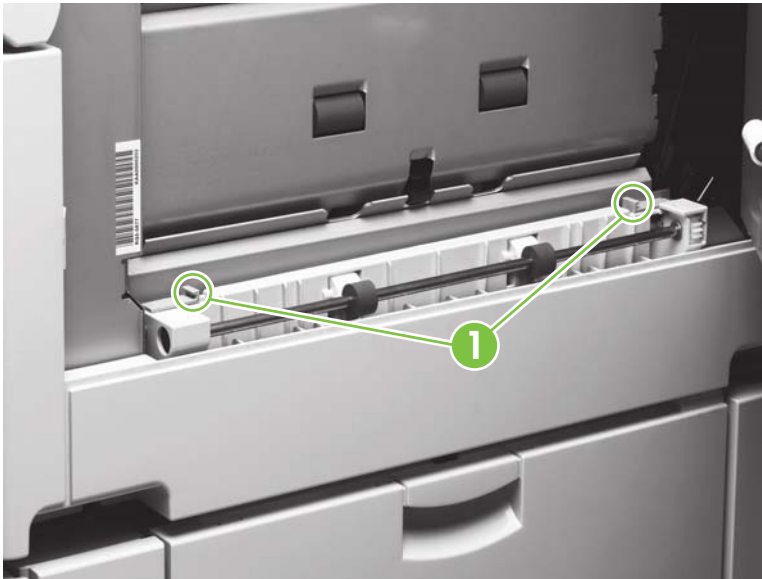


4. Lift the pickup assembly off the hook (callout 3) to remove it.

Tray 4 paper-connecting unit

1. Release the two levers (callout 1) by pulling them toward the center of the paper connecting unit.

Figure 6-216 Remove the paper-connecting unit



2. Open the right door.
3. Lift the paper connecting unit straight up and remove it.

7 Solve problems

- [Troubleshooting process](#)
- [General troubleshooting information](#)
- [Power-on checks](#)
- [Malfunction troubleshooting](#)
- [Troubleshooting by using control-panel messages](#)
- [Control-panel error messages](#)
- [User- and service-level diagnostics](#)
- [Service-level diagnostics](#)
- [Other diagnostics](#)
- [Tray 4 diagnostics](#)
- [Clear jams](#)
- [Image-formation troubleshooting](#)
- [Media troubleshooting](#)
- [Communication troubleshooting](#)
- [Wiring diagrams](#)

Troubleshooting process

The troubleshooting process is a systematic approach that addresses the primary problems first and then other problems to discover the causes of malfunctions and errors. One answer to a question leads to the next step in the process.

Some answers indicate the need for additional testing and correction. After completing the additional testing and correcting the problem, proceed to the next primary step.

Table 7-1 Primary steps toward troubleshooting

Power-on checks on page 293	Does the product perform the initialization and power-on sequence? This section contains the procedures for correcting power-supply problems.
Control-panel error messages on page 297	Does the control panel indicate an error condition? This section contains the procedures for clearing control-panel messages.
Paper-path test on page 324	Is it possible to perform a paper-path test? This section contains information about troubleshooting paper-path and print-media problems.
Image-formation troubleshooting on page 372	Does the print quality meet customer expectations? This section contains print-cartridge checks, information about Economode, image-defect examples, and the repeating-defect ruler.
Media troubleshooting on page 391	Is the media acceptable for this product? This section contains information about how to determine print-media problems and correct them.
Communication troubleshooting on page 393	Can the customer print from the host system successfully? This section describes how to determine whether the product is communicating correctly with the host system.

Preliminary operating checks

Check that these conditions are met before troubleshooting a specific product problem.

Installation environment

- The product is plugged in, and the specified power is being delivered.
- The selected tray contains media that is correctly loaded and adjusted.
- The print cartridge is installed correctly.
- The product receives maintenance on a regular basis.
- I/O devices are installed correctly.
- All cable connectors are fully seated.
- The scan engine is installed correctly.
- Appropriate media is being used.
- The product is positioned on a solid, level surface.
- The line voltage does not vary more than 10% from the nominal rated value that is specified on the power-rating label.
- The operating environment meets temperature and humidity specifications.

- The product is not exposed to direct sunlight.
- Non-HP components (such as refilled print cartridges, font DIMMs, and memory DIMMs) are removed from the product.



NOTE: Sudden changes in environment can cause image defects and media-handling problems. Always make sure that the product is not exposed to direct sunlight or to heating or cooling vents. Allow time for the product and media to acclimate whenever changing environments (for example, moving from a cold environment to a warm one). Acclimation can take 3 to 24 hours depending on conditions.

Media checks

- Make sure that the selected tray contains media that has been properly loaded and adjusted.
- Make sure that the selected tray contains the correct amount of media.
- Make sure that the recommended print media is in use.
- Make sure that the document is not damp.
- Make sure that the document is not dirty.

Scanner and ADF checks

- Make sure that the ADF feeder is closed.
- Make sure that the ADF unit is closed.

General troubleshooting information

The following lists symptoms and typical solutions to miscellaneous problems.

Abnormal noises are evident, such as grinding or chattering when the main motor is turned on

Print cartridge area:

- If the print cartridge is new, automatic seal roll-up will cause noise until seal removal is complete.
- If the print cartridge is not new, replace it.

Fuser area:

- Remove and reinstall the fuser.

Tray 2 or Tray 3:

- Inspect the fingers to ensure correct paper size detection.

Tray 4:

- Verify that the tray is loaded correctly with acceptable media.
- Replace the Tray 4 paper path connection unit (PPCU).
- Replace the Tray 4 main-drive assembly.

Media does not feed from Tray X when printing from a software program; the paper-path test is successful

- Verify software media settings.
- Check that the correct media size is loaded from the control panel.
- Tray 2, 3, or 4: Remove and reseal the paper guides in the correct position.
- Verify the correct custom-size-switch setting.

Media does not print from Tray 4

- Verify software media settings.
- Make sure that power is supplied to Tray 4.
- Print a configuration page to make sure that Tray 4 is listed in the paper-handling options section.
- Run a paper-path test from Tray 4. If successful, the paper-size-detection switches might have failed or an incorrect size might be specified in the software program.
- Verify that the custom-size-switch setting is correct.

The product stops printing and hangs on certain jobs

- Resend the job.
- Remove all non-HP memory DIMMs, and retry the job.
- Send the job from a different software application.

Envelopes are wrinkling

- Verify that only Tray 1 is used for envelopes.
- Verify that the output destination is the face-up bin.
- Place the fuser levers in the up position and retry the job.
- Try different envelopes.
- Verify that the envelopes meet media specifications.

Fusing is poor

- Make sure that the fuser levers are in the down position for cut-sheet media.
- Make sure that all packing spacers are removed from inside of the product.
- Try different media (make sure that the media is within specifications).
- Make sure that the correct fusing mode is configured in the control panel for the media.
- Make sure that the AC power does not fluctuate out of range during the print cycle.

The product feeds from an incorrect tray when different media is selected for the first page of the job

- Determine whether the problem is with hardware or with software. Run a paper-path test from each paper tray, and troubleshoot the error codes.
- Make sure that the latest print driver is installed (click the **Print Quality** tab on the print driver, and then click **About**).
- Verify that the custom-size-switch setting is correct.
- If the paper-path test is successful, the problem might be software- or customer-related. Check the media types in each tray. This can be done from HP Web Jetadmin or from the control panel. Use the appropriate procedure from the following choices.

HP Web Jetadmin:

1. Click the **Trays** tab.
2. Select the correct media type for each tray that is listed.
3. Click **OK** to save the changes.

Control panel:

Configure the tray when loading media.

1. Load media into the tray.
2. If the tray configuration message displays, touch **OK** to accept the detected size, or touch **Modify** to choose a different size.
3. If you selected **Modify**, select a size and a paper type.



NOTE: The product detects most media sizes for Tray 2, 3, and 4.

4. Touch **Exit**.

Configure the tray using the control-panel touch screen.

1. Scroll to touch **Supplies Status**.
2. Touch to select the desired tray.
3. Touch **Modify**.
4. Select the size and type that you want. If you select a custom type, use the numeric keypad to enter the dimensions, and then touch **OK**.
5. Touch **OK**.
6. Touch **OK** again.

Power-on checks

The product control panel should be functional as soon as possible in the troubleshooting process so that the product diagnostics can assist in locating printing errors.

Power-on defects or a blank display

Problem	Action
Is AC power available at the product power receptacle?	Make sure that power is available.
Is the product on/off switch set to on?	Turn the product on.
Are the product fans on?	Touch the touchscreen to put the product in the Ready state. NOTE: Fan operation is significant because the fans are all controlled by the DC controller PCA. Fans 1 through 6 operate at full speed for 30 seconds during the WAIT period. Fans 1 through 5 slow to half-speed, and fan 6 stops during the STBY period and during PowerSave mode. Make sure that the product is not in PowerSave mode. Operational fans indicate that the following conditions are met: 1. AC power is present. 2. The DC power supply is functional (24 Vdc and 5 Vdc). 3. The DC controller PCA microprocessor is functional.
NO	If the fans are not working, turn the product off, and remove the formatter PCA. Disconnect all of the paper-handling options. Then, turn the product on, and check the fans again. If the fans are still not working, do the following: 1. Make sure that all of the fans are connected to the DC controller PCA. 2. Perform an engine test.
YES	If the fans are working but the product control panel is blank, print an engine test. If the engine test is successful, perform the following steps. 1. Reseat or replace the control panel cable and the scanner engine cable. 2. Replace the control-panel assembly. 3. Make sure that the latest firmware is installed. 4. Replace the formatter PCA. If the engine test fails, make sure that no media is in the paper path. Retry the engine test. If the engine test still fails, perform the following steps: 1. Make sure that the latest firmware is installed. 2. Replace the DC controller PCA.

Malfunction troubleshooting

Table 7-2 Malfunction troubleshooting

Cause	Solution
No AC power	
Defective power supply assembly	• Make sure that the wall receptacle has the appropriate voltage. • If a power strip is being used, remove it, and plug the product directly into the wall receptacle. • Make sure that the product is plugged into a dedicated circuit and that the circuit meets specifications. • Make sure that the print engine power supply is functioning correctly. • Replace the power supply assembly.
The over-current/over-voltage detection circuit is activated.	Turn the product off, wait approximately two minutes, and then turn it on. If the problem persists, find the cause of the overcurrent/overvoltage detection circuit activation in the power supply assembly.
Defective power supply assembly	Replace the power supply assembly.
Defective wiring, DC loads, or scanner controller PCA	Turn the product off. Check the wiring ahead of the scanner controller PCA and the DC loads. If you discover the problem, replace the wiring and DC loads. If no problem exists, replace the scanner controller PCA.

Troubleshooting by using control-panel messages

Ready, **Paused**, or **PowerSave On** should appear on the control panel. For information about error messages, see the event log.

Event log page

Use the event log to diagnose and troubleshoot product errors and intermittent failures.

The event log is a last in-first out (LIFO) ordered listing of the last 50 entries. The printed event log includes columns for the event number, the page count, the error code, and the description or personality.

The description or personality provides detail about the error messages. The information is useful for troubleshooting.

The following items should be listed in the event log.

- Critical errors
- Jams
- Sensors sensing out-of-range conditions
- Deleted jobs
- Unexpected media size
- Complex page
- Buffer overflow
- NVRAM changes
- Diagnostics tests

Print the event log

The product internal event log stores the 50 most recent events, and can be printed at any time. Use these steps to print the event log:

1. Touch **Administration**.
2. Scroll, and then touch **Troubleshooting**.
3. Touch **Event Log**.
4. Touch **Print**.

Interpret the event log

Each individual entry in the log is called an error, while all errors that occur at the same page count are called events. Events usually conclude with a time-out or no response from the product (error 66.XY in the event log). Turn the product off, and then on.

Use the event log tables in this section to associate the event log errors with the control-panel error messages. Follow the recommended action.

1. Check the event log for specific error trends in the last 10,000 printed pages.
2. Ask users for error trends (for example, if jams tend to occur in a specific area).
3. Follow the actions recommended in the event log tables.

Sample event log

Figure 7-1 Sample event log (HP LaserJet 9000 series page shown)

Event Log Page

HP LaserJet M9050 MFP Series

Page 1

Device Information

Current Engine Cycles: 10

Printer Serial Number: XXXXXXXXXX

Number	Date and Time	Engine Cycles	Event	Firmware	Description or Personality
1	2008-JAN-15 10:47 AM	0	10.50.09	50.002.0	New Maintenance Kit

View the event log

You can scroll through the contents of the event log from the control panel. The control panel shows 50 events, starting with the most recent. If the event log is empty, the control panel shows the message **Event Log is Empty**.

1. Touch **Administration**.
2. Touch **Troubleshooting**.
3. Touch **Event Log**.
4. Scroll through **Events** to view.

 **TIP:** Whenever a 13.XX message displays on the control panel, clear the jammed media, and then print the event log. If you cannot print the event log, view it on the control panel.

Control-panel error messages

Table 7-3 Control-panel error messages

Control panel message	Description	Recommended action
10.10 Supply Memory error	The product is unable to read the cartridge data. This message indicates that the product has determined that it cannot read or write to at least one e-label or at least one e-label is determined missing. This error can cause the supplies status feature to become disabled.	1. Open the front door, lower the green handle, and remove the print cartridge. 2. Reinsert the cartridge, push the release button, and rotate the green handle to the locked position. 3. Close the front door. 4. If the message reappears, turn the product off then on. 5. If this problem still appears again, record the message and contact your dealer for support. 6. Press Start to continue printing. 7. Touch OK from the Help menu to continue printing.
10.32.00 Unauthorized supply	This error message displays when a supply (or supplies) has been inserted into the product and the product has determined that HP is in the OEM field, but the supply (or supplies) does not pass the new authentication test. (In other words, it means that another company is misusing HP's name.) The error will only be shown if the product currently has all genuine supplies.	• Choose to continue past this error by touching OK. • If you believe you purchased a genuine HP supply, go to www.hp.com/go/anticounterfeit. Any product repair required as a result of using non-HP or unauthorized supplies is not covered under warranty.
11. Internal clock error To continue, touch "OK"	This message indicates a problem with the formatter's real time clock. When this error occurs, the time and date will accrue based upon the processor clock until the product is turned off. The product will prompt for the date and time whenever it is turned off and turned on.	• If the error persists, replace the formatter.
13.01.00 Jam in Tray 1	A paper path jam is located in the Tray 1 feed area.	• Clear the jam in the area indicated. • Close the door to allow the product to attempt to clear the jam. • Run a service test. • If the error persists, replace the paper-input unit. • Replace the Tray 1 pickup rollers. • Replace Tray 1.

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
13.01.00 Jam in Tray X	A page is jammed in the paper path at a tray feed area. Tray 2: The media failed to reach the Tray 2 feed sensor (PS1402) within the specified time. Tray 3: The media failed to reach the Tray 3 feed sensor (PS1404) within the specified time.	• Clear the jam in the indicated area. • Close the door to allow the product to attempt to clear the jam. • Make sure that the pickup roller is installed in Tray 2 or Tray 3. • Replace the pickup rollers. • If the errors persists, replace the paper-input unit.
13.01.00 Jam inside right door	A page is jammed in the paper path at the feed area.	• Clear the jam in the area indicated. • Close the door to allow the product to attempt to clear the jam. • Run a service test. • If the error persists, replace the paper-input unit. • Replace the Tray 1 pickup rollers. • Replace Tray 1.
13.03.00 Jam in Tray 1	A jam is in the Tray 1 feed area. The media failed to reach the registration sensor (PS2) within the specified time.	• Clear the jam in the area indicated. • Close the door to allow the product to attempt to clear the jam. • Run a service test. • Replace the Tray 1 pickup rollers. • Replace Tray 1.
13.03.00 Jam in Tray X	A jam is in a tray feed area. The media failed to reach the registration sensor (PS2) within the specified time.	• Clear the jam in the area indicated. • Close the door to allow the product to attempt to clear the jam. • Run a service test. • Replace the paper input unit for the tray indicated.
13.03.00 Jam inside right door	A jam is in the feed area.	• Clear the jam in the area indicated. • Close the door to allow the product to attempt to clear the jam. • Run a service test. • Replace the paper input unit. • Replace the Tray 1 pickup rollers. • Replace Tray 1.

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
13.05.00 Jam inside front door	A jam is in the fuser area. The leading edge of the media failed to reach the fuser delivery sensor (PS502) within the specified time.	• Clear the jam in the area indicated. • Close the door to allow the product to attempt to clear the jam. • Replace the print cartridge. • Replace the transfer roller assembly. • Replace the fuser.
13.05.00 Jam inside right door	A jam is in the fuser area. The leading edge of the media failed to reach the fuser delivery sensor (PS502) within the specified time.	• Clear the jam in the area indicated. • Close the door to allow the product to attempt to clear the jam. • Replace the print cartridge. • Replace the transfer roller assembly. • Replace the fuser.
13.06.00 Jam inside front door	A jam is in the fuser area.	• Clear the jam in the area indicated. • Close the door to allow the product to attempt to clear the jam. • Replace the fuser.
13.06.00 Jam inside left door	A jam is in the fuser area.	• Clear the jam in the area indicated. • Close the door to allow the product to attempt to clear the jam. • Replace the fuser.
13.09.00 Jam inside front door	A jam is in the face-down bin. The leading edge of the media failed to reach the face-down bin delivery sensor (PS1451) within the specified time.	• Clear the jam in the area indicated. • Close the door to allow the product to attempt to clear the jam. • Reseat the connections to the DC controller. • Make sure that the delivery flags move smoothly. • Run a service test. • Replace the delivery unit. • Replace the DC controller.

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
13.09.00 Jam inside left door	A jam is in the face-down bin. The leading edge of the media failed to reach the face-down bin delivery sensor (PS1451) within the specified time.	• Clear the jam in the area indicated. • Close the door to allow the product to attempt to clear the jam. • Reseat the connections to the DC controller. • Make sure that the delivery flags move smoothly. • Run a service test. • Replace the delivery unit. • Replace the DC controller.
13.0A.00 Jam in top output bin	A jam is in the face-down bin area. The trailing edge of the media failed to leave the face-down bin delivery sensor (PS1451) within the specified time.	• Clear the jam in the area indicated. • Close the door to allow the product to attempt to clear the jam. • Replace the delivery unit. • Replace the diverter.
13.0A.00 Jam inside left door	A jam is in an area accessible through the left door. The trailing edge of the media failed to leave the face-down bin delivery sensor (PS1451) within the specified time.	• Clear the jam in the area indicated. • Close the door to allow the product to attempt to clear the jam. • Replace the delivery unit. • Replace the diverter.
13.10.00 Jam inside duplexer	A jam is in the reversing area. The leading edge of the media failed to reach the reversed paper sensor (PS2002) in the duplexer within the specified time.	• Clear the jam in the area indicated. • Close the door to allow the product to attempt to clear the jam. • Reseat the connections to the DC controller. • Replace the duplexer.
13.10.00 Jam inside left door	A jam is in the reversing area. The leading edge of the media did not reach the reversed paper sensor (PS2002) in the duplexer within the specified time.	• Clear the jam in the area indicated. • Close the door to allow the product to attempt to clear the jam. • Reseat the connections to the DC controller. • Replace the duplexer.
13.11.00 Jam inside duplexer	A jam is in the reversing area. The leading edge of the media did not reach the reversed paper sensor (PS2002) in the duplexer within the specified time.	• Clear the jam in the area indicated. • Close the door to allow the product to attempt to clear the jam. • Reseat the connections to the DC controller. • Replace the duplexer.

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
13.11.00 Jam inside left door	A jam is in the reversing area. The leading edge of the media did not reach the reversed paper sensor (PS2002) in the duplexer within the specified time.	• Clear the jam in the area indicated. • Close the door to allow the product to attempt to clear the jam. • Reseat the connections to the DC controller. • Replace the duplexer.
13.11.05 Jam in input accessory	A pickup delay jam is in the registration area.	• Clear the jam in the area indicated. • Close the door to allow the product to attempt to clear the jam. • Run a paper path test. • Replace the paper pickup assembly.
13.11.06 Pickup stationary jam	A jam is in the pickup area of the input accessory.	• Clear the jam in the area indicated. • Remove the media from the right door of the product engine.
13.11.07 Jam in input accessory	A jam is in the right door area. A page stopped in the registration area.	• Clear the jam in the area indicated. • Close the door to allow the product to attempt to clear the jam. • Replace the vertical transfer unit.
13.11.08 Jam in input accessory	A paper delivery jam is in the vertical transfer unit registration area.	• Clear the jam in the area indicated. • Close the door to allow the product to attempt to clear the jam. • Check the function of the vertical transfer sensor. • Replace the vertical transfer sensor. • Replace the vertical transfer unit.
13.11.09 Jam in input accessory	A paper-delivery stationary jam is in the right door area.	• Clear the jam. • Close the door to allow the product to attempt to clear the jam. • Check the function of the vertical transfer sensor. • Replace the paper path connection unit. • Replace the vertical registration assembly. • Replace the diverter.
13.11.0A Jam in input device	A jam occurs in the input device as the product is turned on.	• Clear the jam. • Turn the product off, and then on.

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
13.11.10 Residual jam in delivery area	A jam occurs in the delivery area when the product is turned on or as the front door is closed.	● Clear the jam. ● Turn the product off, and then on. ● Replace the paper path connection unit. ● Replace the VRA.
13.12.<XX> Jam in finishing device	The following list identifies specific jams in the finishing device (depending on the finishing device model). 11, 30–31 is a jam in the stapler. 21–23 or 01–05 is a jam in the flipper area. 20–25 is a jam in the accumulator area (stacker/stapler). 31–33 or 10–13 is a jam in the paper path. 34 is a ejectors jam. 40–42 is jam in the offset area (stacker). 41–43 is a jam in the folding area (multifunction finisher). 51–53 is a jam in the booklet area (multifunction finisher). 50–54 is a jam in the exit area (multi-bin mailbox)	● Follow instructions in online help. ● Remove the jam from the finisher area. ● Remove, realign, and reinstall the finishing device. ● Turn the product off and turn it on. If the error continues, look for more jammed material. ● See the Output finishing device service manual (Q5693–90002) for more detailed instructions.
13.13.00 Jam inside duplexer door	A jam is in the duplexer area. The trailing edge of the media did not leave the duplexer paper sensor (PS2004) within a specified time.	● Clear the jam. ● Close the door to allow the product to attempt to clear the jam. ● Replace the duplexer.
13.13.00 Jam inside left door	A jam is in the duplexer area. The trailing edge of the media did not leave the duplexer paper sensor (PS2004) within a specified time.	● Clear the jam. ● Close the door to allow the product to attempt to clear the jam. ● Replace the duplexer.

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
13.20.00 Jam inside front door	A jam is in the paper path.	• Clear the jam.
	Media is detected inside the product. NOTE: The media was detected as the product was turned on or as any door was open and closed. Media might be detected by the following sensors: • Registration sensor (PS2) • Fusing-unit jam sensor (PS501) • Fusing-unit delivery sensor (PS502) • Tray 2 paper-feed sensor (PS1402) • Tray 3 paper-feed sensor (PS1403) • Face-down-bin delivery sensor (PS1451) • The duplexer residual paper sensor (PS2005)	• Close the door to allow the product to attempt to clear the jam. • Run a paper path test. • Check the seating of the leaf springs under the high voltage power supply. • Remove the duplexer and check for media in the paper path. • Check the function of the duplexer residual paper sensor. • Replace the fuser.
13.20.00 Jam inside left door	A jam is in the paper path.	• Clear the jam.
	Media is detected inside the product. NOTE: The media was detected as the product was turned on or as any door was open and closed. Media might be detected by the following sensors: • Registration sensor (PS2) • Fusing-unit jam sensor (PS501) • Fusing-unit delivery sensor (PS502) • Tray 2 paper-feed sensor (PS1402) • Tray 3 paper-feed sensor (PS1403) • Face-down-bin delivery sensor (PS1451) • The duplexer residual paper sensor (PS2005)	• Close the door to allow the product to attempt to clear the jam. • Run a paper path test. • Check the seating of the leaf springs under the high voltage power supply. • Replace the fuser.
13.21.00 Jam inside front door	A door is open.	• Clear the jam. • Close the door to allow the product to attempt to clear the jam. • Run a paper path test. • Run a service test. • Check the function of the interlock switches. • Replace the front door.

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
13.21.00 Jam inside left door	A door is open.	• Clear the jam. • Close the door to allow the product to attempt to clear the jam. • Run a paper path test. • Run a service test. • Check the function of the interlock switches. • Replace the left door.
13.30.00 Jam in Tray 1 For help press	A jam is in the Tray 1 pickup area.	• Clear the jam. • Close the door to allow the product to attempt to clear the jam. • Run a service test. • Replace the paper input unit. • Replace the Tray 1 pickup rollers. • Replace Tray 1.
13.30.00 Jam in Tray 1 For help press	A jam is in the Tray 1 pickup area.	• Clear the jam. • Close the door to allow the product to attempt to clear the jam. • Run a service test. • Replace the paper input unit. • Replace the pickup rollers in the indicated tray. • Replace the indicated tray.
13.30.00 Jam inside right door	A jam is in the pickup area of Tray 1.	• Clear the jam. • Close the door to allow the product to attempt to clear the jam. • Run a service test. • Replace the paper input unit. • Replace the Tray 1 pickup rollers. • Replace Tray 1.
13.31.00 Jam inside front door	A jam is in the fuser area. The leading edge of the media reached the fuser delivery sensor (PS502) within the specified time, but the trailing edge of the media failed to reach the fuser-jam sensor (PS501) within the specified time.	• Clear the jam. • Close the door to allow the product to attempt to clear the jam. • Replace the fuser.

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
13.31.00 Jam inside left door	A jam is in the fuser area. The leading edge of the media reached the fuser delivery sensor (PS502) within the expected time, but the trailing edge of the media failed to reach the fuser-jam sensor (PS501) within the expected time.	• Clear the jam. • Close the door to allow the product to attempt to clear the jam. • Replace the fuser.
13.32.00 Jam inside right door	A jam is in the feed area. The media failed to leave the registration sensor (PS2) within the expected time.	• Clear the jam. • Close the door to allow the product to attempt to clear the jam. • Replace the registration assembly. • Replace the paper-input unit.
20 - Insufficient memory To continue, touch "OK"	The product does not have enough memory to print the page.	• Touch OK print a partial page. • Reduce the page complexity. • Add memory.
22 - Embedded I/O buffer overflow To continue, touch "OK"	The embedded Jetdirect has overflowed during a busy state. Touching OK resumes printing but results in a loss of data.	• Turn the product off, and then on. • Move the EIO card to a different slot. • Replace the EIO card.
30.01.02 ADF paper jam	A jam has occurred in the ADF.	• Open the ADF feeder and remove the jammed media. Close the ADF feeder. • Reload the document and press Start. • If the error persists, run a sensors diagnostic test to verify that the skew front and skew back sensors are functioning correctly. • Verify that the pickup roller, the feed roller assembly, the separation belt assembly, and the registration roller assembly are clean and undamaged.
30.01.03 Pick error	The document feeder sensors failed to detect a successful pick.	• Open the ADF feeder and remove the jammed media. Close the ADF feeder. • Reload the document and press Start. • If the error persists, run a sensors diagnostic test to verify that the skew front and skew back sensors are functioning correctly. • Verify that the pickup roller, the feed roller assembly, the separation belt assembly, and the registration roller assembly are clean and undamaged.

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
30.01.11 ADF skew error	A skew is detected in the ADF feeder.	- Remove the skewed media in the ADF feeder, and close the ADF feeder. - Reload the document, and then press Start. - If the error persists, run the sensors diagnostic test to verify that the skew front and skew back sensors are functioning correctly. - Verify that J112 on the scanner control board, J701 and J704 on the ADF intermediate PCA, and J801 on the ADF sensor PCA are seated correctly. - Verify that the pickup roller, the feed roller assembly, the separation belt assembly, and the registration roller assembly are clean and undamaged.
30.01.34 Scan failure	Scanner initialization failed, and the copy-processor board (CPB) is not communicating with the scanner-controller board (SCB).	- Turn the product off, and then on. - Check the scanner controller board LEDs. - Check the connections to the scanner controller board. - Replace the scanner controller board.
30.1.06 Scan failure	The scanner lamp fan has failed.	- Verify that the product is turned on and that the fan is not functioning. - Check for loose connections and broken, frayed, or pinched wires. - Reseat the fan connector on the scanner control board and the connector on the fan. - Replace the fan.
30.1.07 Scan failure	The product has experienced a communication error.	- Print a configuration page to verify that the CPB firmware is loaded. - Turn the product off, and then disconnect the power cord. - Connect the power cord, and then turn the product on.
30.1.08 Scan failure	The product has experienced a flatbed motor failure.	- Run the flatbed motor diagnostic test to verify that the flatbed motor is functioning correctly. - Check for loose connections and broken, frayed, or pinched wires. - Reseat the flatbed motor connector at the SCB location J108. - Replace the flatbed motor.

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
30.1.09 Scan failure	The pickup roller home position sensor is not detecting the pickup roller home position.	• Run the ADF INPUT diagnostic test to verify that the pickup roller assembly is functioning correctly. • Check for loose connections and broken, frayed, or pinched wires. • Reseat connector J112 on the SCB, connectors J701 and J703 on the ADF intermediate PCA, and connector J716 on the pickup roller home position detection sensor. • Check the pickup roller home position detection sensor and the pickup roller assembly for disengagement or damage. • Replace the SCB.
30.1.10 Scan failure	The product has experienced an ADF fan error.	• Verify that the fan is not functioning while the product is turned on. • Check for loose connections and broken, frayed, or pinched wires. • Reseat the fan connector at scanner control PCA location J109, and connector J156 on the ADF fan. • Replace the ADF fan. • Replace the SCB.
30.1.12 Scan failure	The ADF has experienced an ASIC error.	• Turn the product off, and then disconnect the power cord. • Connect the power cord, and then turn the product on. • Reconnect connectors J158 and J159 on the ADF inverter PCA, and reconnect connector J104 on the SCB. • Reconnect connector J102 on the ADF inverter PCA, connectors J301 and J304 on the ADF analog processor board, and J601 on the ADF CCD driver PCA. • Reconnect connector J303 on the ADF analog processor PCA and connector J602 on the ADF CCD driver PCA. • Replace the ADF analog processor PCA. • Replace the SCB. • Replace the ADF optical assembly.

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
30.1.13 Scan failure	The scanner has experienced an ASIC error.	• Turn the product off, and then disconnect the power cord. • Connect the power cord, and then turn the product on. • Reconnect connector J161 and J162 on the flatbed inverter PCA, and connector J205 on the SCB. • Reconnect connector J103 on the SCB, J504 and J503 on the flatbed intermediate PCA, J201 and J202 on the flatbed analog processor PCA, and J601 on the flatbed CCD driver PCA. • Reconnect connector J105 on the SCB, J502 and J501 on the flatbed intermediate PCA, J203 and J204 on the flatbed analog processor PCA, and J602 on the flatbed CCD driver PCA. • Replace the SCB. • Replace the flatbed optical assembly.
30.1.14 Scan failure	The product has experienced an EEPROM error.	• Replace the SCB.
30.1.15 Scan failure	A condition has prevented the scan engine from initializing.	• Verify that all covers are installed correctly and that the ADF and the ADF feeder are closed. • Turn the product off, and then on. • If the error persists, run the sensors diagnostic test to verify that the sensors are functioning correctly. • Check the LED status on the control panel. Follow the troubleshooting instructions if the LEDs are not in the ready state.
30.1.16 Scan failure	The product has detected incorrect ADF width sensor values.	• Calibrate the ADF width sensor.
30.1.18 Scan failure	The product has experienced an ASIC error.	• Turn the product off, and then disconnect the power cord. • Connect the power cord, and then turn the product on. • Check connections to the SCB. • Check connections to the intermediate PCA, the analog processor PCA, and the CCD driver PCA. • Replace the SCB. • Replace the flatbed optical assembly.

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
30.1.19 Scan failure	Lamp error	• Turn the product off, and then on. • Check to see that the scanner lamp illuminates while the product is turned on. • Check the connections to the SCB. • Replace the SCB. • Replace the flatbed optical assembly.
30.1.22 Scan failure	CP processing error.	• Turn the product off, and then disconnect the power cord. • Connect the power cord, and then turn the product on. • •
30.1.25 Scan failure	Copy processor board error.	• Turn the product off, and then disconnect the power cord. • Connect the power cord, and then turn the product on. • Check the copy processor LED. • Check connections to the copy processor board. • Check the scan engine cable connection. • Replace the copy processor board.
30.1.29 ADF output bin full	The ADF output bin is full.	• Empty the ADF output bin. • Check the connection to the ADF output bin full sensor. • Check the connection to the scanner controller board. • Replace the ADF output bin full sensor. • Replace the scanner controller board.
30.1.30 Scan failure	DC FIFO overrun.	• Turn the product off, and then on. • Check the connection to the scanner controller board. • Replace the scanner controller board. • Turn the product off, and then on.

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
30.1.31 Scan failure	SSI FIFO overrun.	• Turn the product off, and then on. • Check the connection to the scanner controller board. • Check the scan engine cable connection. • Replace the copy processor board.
30.1.32 Scan failure	Corrupt scan.	• Restart the scan job. • Turn the product off, and then on. • Check the scan engine cable connection.
30.1.32 Scan failure	Swath overflow.	• Turn the product off, and then on. • Check copy processor board connection.
40 - EIO <X> bad transmission To continue, touch "OK"	A connection with the card in EIO slot X has been abnormally broken.	• To continue printing, touch OK. • Turn the product off, and then on.
40 - Embedded I/O Bad Transmission To Continue, Touch "OK"	This error indicates that a connection with the embedded Jetdirect has been abnormally broken.	• To continue printing, touch OK. • No other action necessary. • Move the EIO card to a different slot. • Replace the EIO card.
41.3 – Load Tray <X>: [Type], [Size] To Use another Tray, Touch "OK"	The product detected an unexpected paper size.	• Load the tray with the requested paper, or touch OK to select another tray. • If another tray is available, touch OK to use it.
41.<X> Error To Continue, Touch "OK"	Printing stopped due to an error. 41.2 is a beam detect error. 41.4 is a no video sync error.	• To clear, touch OK. • If error does not clear, turn the product off, and then on. • Resend the print job. • Reseat the connection to the DC controller and the laser scanner. • Replace the laser/scanner. • Replace the upper cable guide assembly. • Replace the DC controller.

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
49.<XX>.<XX> Error To continue turn off then on	A critical firmware error has occurred. This type of error can be caused by invalid print commands, corrupt data, or invalid firmware operations. In many cases, turning the product off and turning it on permanently clears the error, and the product continues without issues. In some cases, electrical noise over the cables can corrupt data during transmission. Faulty USB cables, poor connections, and specific software issues can also cause these errors. The formatter can also cause these errors; however such an error is usually a 79 code. Replacing the formatter rarely solves repetitive 49 errors.	• Turn the product off, and then on. • Upgrade the firmware. • Try printing from a different software application to determine whether the application is causing the problem. Go back to the original application and try printing a different file. If the problem seems to be with the software application, contact the vendor. Try the following actions: 1. Disconnect all connections to networks and computers. 2. Turn the product off. 3. Remove the DIMM. 4. Remove all EIO devices. 5. Turn the product on. 6. If error disappears, reinstall the EIO devices one at a time to see if the error returns (turn the product off, install the EIO device, and turn it on). If the error returns replace the faulty EIO device. 7. If the error still does not reappear, reconnect each connection to computers or networks until the error reappears. 8. Replace the component that causes the error message.
50.<X> Fuser To continue turn off then on	A fuser error has occurred. • 50.1 is low fuser temperature. • 50.2 is fuser warm up service. • 50.3 is high fuser temperature. • 50.4 is faulty fuser. • 50.5 is inconsistent fuser. • 50.6 is faulty fuser.	• Turn the product off, and then on. • Reseat the connection to the fuser and the DC controller. • Replace the fuser. • Replace the upper cable guide assembly. • Replace the low voltage power supply. • Replace the DC controller.
51.<XY> Error	A fuser error has occurred. 51.1 is a beam detect error.	• Turn off the product, and turn it on. • Reseat the connections to the DC controller and the laser scanner. • Replace the laser/scanner. • Replace the upper cable guide assembly. • Replace the DC controller.

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
52.<XY> Error	A product error occurred.	Turn the product off and turn it on.
To continue turn off then on	52.00 is a laser/scanner error. 52.20 is a laser/scanner rotation error.	- Reseat the connection to the DC controller and the laser scanner. - Replace the laser/scanner. - Replace the DC controller.
53.<XY>.<ZZ>	This problem is with the product memory.	Reinstall the specified DIMM.
Check Ram DIMM Slot <X>	The DIMM involved will not be used.	Replace the specified DIMM.
To continue turn off then on	- Slot 0 is onboard memory. - Slot 1 is DIMM slot 1.	If the problem continues, replace the formatter.
55.05 Engine Firmware RFU Error	An issue caused the firmware upgrade to fail.	Turn the product off, and then on.
To continue turn off then on		- Restart the firmware upgrade. - If the problem continues, try a different firmware file.
55.<XX><YY> DC Controller Error	This error includes 55.1, 55.2, and 55.3. The engine is not communicating with the formatter. The communication link between the formatter and DC controller was lost. This can occur due to a timing error or intermittent connection between the formatter and DC controller.	- Turn the product off and turn it on. - Check the life remaining on the maintenance kit. - Reseat the formatter, DIMMs, and EIO cards. - Perform the engine test. - Perform the service test. - Replace the DC controller. - Replace the formatter.
56.<XX> Error	A product error occurred.	Turn the product off and turn it on.
To continue turn off then on	56.01 is Illegal input selection. 56.02 is duplexer was removed while the product is turned on.	- Check the product configuration. - Check the program settings. - Turn the product off, and then reinstall the duplexer.
57.<XX> Error	A product error occurred.	Turn the product off and turn it on.
To continue turn off then on	57.01 is a cartridge fan error (fan 5). 57.03 is a power supply fan error (fan 1). 57.04 is a formatter/controller fan error (fan 2). 57.05 is a delivery fan error (front fan 4). 57.06 is a face-down bin error. 57.07 is a delivery fan error (back fan 3). 57.08 is a duplexer fan error.	- Reseat connections to the DC controller and to the specified fan. - Replace the specified fan. - Replace the DC controller.

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
58.<XX> Error	A product error occurred.	• Turn the product off and turn it on.
To continue turn off then on	58.04 is a power supply error. 58.03 is a CPU error.	• Check the configuration. • Replace the print cartridge. • Replace the toner sensor contact assembly. • Replace the DC controller.
59.<XY> Printer Error	A product error occurred.	• Turn the product off, and then on.
To continue turn off then on	59.10 is a motor startup error. 59.20 is a motor rotation error. 59.30 is a fuser motor startup error. 59.40 is a fuser motor rotation error.	• Check connections from the specified motor to the DC controller. • Reseat or reconnect the specified motor. • Replace the print cartridge if the problem is with its motors. • Run a service test. • Replace the specified motor. • Replace the fuser. • Replace the DC controller.
60.<X> Tray <X> lifting error	This message displays when the tray is in the process of lifting the paper to the top of the tray for proper feeding and some obstruction prevents the tray from lifting properly. 60.02 is a lifting error in Tray 2. 60.03 is a lifting error in Tray 3. 60.04 is a lifting error in Tray 4.	• Check the tray for obstructions. • Remove and reseat the tray. • Perform a service test. • Remove the two trays and swap their positions. If the error changes, the tray might be defective. • Replace the paper input unit.
62 No System.	A problem with the product firmware has occurred.	• Turn the product off, and then on.
To continue turn off then on		• Upgrade the firmware if possible. • Replace compact flash firmware component CC395-67913. • If the problem continues, replace the formatter.
65.12.99 - Output Accessory Disconnected	An external paper handling accessory connection was interrupted.	• Turn the product off. • Make sure that the external paper handling accessory is clear of all packing material and other obstructions. • Check the external paper handling accessory connection, ensuring it is properly seated. If the accessory uses cables, disconnect and reconnect them. • Turn the product on.

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
66.00.15 - External device failure To continue turn off then on	This error occurs under the following conditions: • An external device was disconnected and a different external device (different model or same model with different firmware) was reconnected. • The external device begins to restart while the product is already running. This can happen due to interruptions with the power on signal. • An upgrade to the external device is not completed within a specified time. This can cause the PHC to crash, requiring the upgrade to be restarted.	• Make sure that the stacker bin area is clear of all packing material and other obstructions. • Turn the product off, and then on. • Check the external paper handling accessory connection to see that it is properly seated. If the accessory uses cables, disconnect them, and reconnect them.
66.11.00 Input Device Failure Turn Off, Check Connection, Turn On	A failure in an external input device occurred. A lifting operation was not completed within the allotted time.	• Make sure that the tray on the left side of the lift deck is empty. • Check the connections. • Turn off the product and turn it on. • Print two pages as a paper path test. • Reseat the input device. • Replace the input device.
66.11.01 – Input Device Failure	The paper path connection unit is not installed.	• Install the paper path connection unit.

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
66.12.<ZZ> Output accessory failure	This error is caused by failures in the output accessories. Each error code specifies the output device that is installed. 66.12.06 is flipper encoder error in the multi bin mailbox. 66.12.11 is a stapler carriage motor failure in the multi functional finisher. 66.12.20 is a timeout failure on the retainer sensor (it was never reached) in the stapler stacker. 66.12.21 is a bearing bracket failure (damage) in the stapler stacker. 66.12.31 is a home position timeout failure in the multi functional finisher. 66.12.32 is a home position timeout failure in the aligning paddles on the multi functional finisher. 66.12.33 is a delivery motor failure (motor 6) in the multi functional finisher. 66.12.34 is a front paper alignment motor failure (motor 3) in the multi functional finisher. 66.12.35 is a rear paper alignment motor failure (motor 4) in the multi functional finisher. 66.12.36 is a stacker bin motor failure (motor 5) in the multi functional finisher. 66.12.41 is a stapling folder motor failure (motor 7) in the multi functional finisher. 66.12.50 is a stack holder failure (damage) in the stapler stacker. 66.12.51 is a booklet bin motor failure (motor 10) in the multi functional finisher. 66.12.60 is an EEPROM error in the stapler stacker or an initial slider operation error in the multi bin mailbox. 66.12.61 is a slider operation error in the multi bin mailbox. 66.12.86 is a belt encoder error in the multi bin mailbox. 66.12.95 is a PCA check error in the multi bin mailbox.	- Follow the instructions in online help. - Turn the product off and turn it on. - If the error continues, see the Output finishing device service manual (Q5693–90002) for detailed instructions.

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
68.<X> Permanent storage full	The NVRAM or the hard disk is full.	Check the configuration.
Permanent storage write fail.	The storage device is failing to write.	Turn off the product and turn it on.
To continue, touch "OK"	Touching OK to clear the message brings up 0 for the NVRAM or a 1 for the hard disk. Printing can continue, but it might produce unexpected responses. 68.0 is an NVRAM error. 68.1 is a removable disk error.	- Reseat the hard disk. - Replace the hard disk.
79.<XX>.<XX> Error	A critical formatter error occurred.	Turn the product off, and then on.
To continue turn off then on		- Upgrade the firmware. - Replace the formatter.
80.XXX Embedded Jetdirect error	An embedded Jetdirect error occurred.	- Turn the product off, and then on. - See Embedded LAN troubleshooting on page 393
80.XXXX EIO error	The EIO accessory card in slot X encountered a critical error.	- Turn the product off, and then on. - Reseat the EIO card. - Move the EIO card to a different slot. - Replace the EIO card.
81 Service	A temporary error occurred while testing the product.	- Turn the product off, and then on. - Replace the formatter.
88.XXXX	Service test is initialized. 0000 indicates that the test passed.	See Service test on page 324.
<binname> full	The specified output bin is full. The error happens only after a job is sent. This message starts out as a warning.	Empty the bin.
Remove all paper from bin.		- Make sure that the flag moves smoothly. - If the error persists, run the service test.
?-2420	The scanner was locked during the boot-up sequence.	Follow the instructions in the online help.
Bad duplexer connection	This message indicates that the duplexer is not connected properly or has been pulled out and must be reinserted before printing can continue.	- Turn the product off, and then on. - Reconnect the duplexer. - Replace the duplexer.

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
Check copy connect card	The product has experienced an error with the copy connect EIO card, the copy processor board, or the scanner cable.	• Verify that the scanner cable is securely connected. • Verify that the copy connect EIO card LEDs are lit. See Copy processor LEDs on page 322. • If the error persists, replace the scanner cable. • If the error persists, replace the copy processor. • If the error persists, replace the copy connect EIO.
Checking engine	The engine is performing an internal test.	• No action necessary.
Checking paper path	The engine is performing a paper path test.	• No action necessary.
Chosen personality not available To continue, touch "OK"	PJL encountered a request for a personality that is not listed. The job is cancelled, and no pages are printed.	• Change the font request. • Install more fonts. • Try reprinting job using PCL or PS.
Cleaning...	The product is processing a cleaning page.	• No action necessary.
Clearing paper path	Media is detected in the paper path. The product will attempt to eject it.	• No action necessary. • If a jam is not cleared, remove the media.
Close front or left door To continue turn off then on	The front door or the left door is open	• Close the door. • Move the left accessory if attached. • Reattach the left accessory. • This problem affects printing, but some scan functions might still be available. Touch Hide to remove this message and use other features • Turn the product off, and then on.
Close right door To continue turn off then on	The right door is open.	• Close the door. • This problem affects printing, but some scan functions might still be available. Touch Hide to remove this message and use other features.
Digital send server is not responding, Contact administrator.	This error displays when the user chooses a feature that requires the Digital Send Server, but the product cannot communicate with the server.	• Check with the system administrator.
E-mail Gateway did not accept the job because the attachment was too large.	The network e-mail configuration does not allow large attachments.	• Send smaller attachments. • Contact network administrator.

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
E-mail gateway did not respond. Job failed	This error occurs when in the process of sending the job, the e-mail gateway stopped responding and the product was unable to finish sending the job.	• Check send gateway. • Contact network administrator.
E-mail Gateway rejected the job because of the addressing information. Job failed.	The e-mail gateway failed to recognize the addressing information.	• Check the e-mail address. • Contact the network administrator.
EIO <x> Buffer Overflow To Continue, Touch "OK"	The EIO card in slot X has overflowed its I/O buffer during a busy state Touching OK resumes printing but results in a loss of data.	• Turn the product off, and then on. • Move the EIO card to a different slot. • Replace the EIO card.
Error executing Digital Send job. Job failed.	A digital send job failed.	• Resend the job.
Front side optical system error	The product has experienced a front-side optical system error.	• No help available.
Hard disk not installed	The product is not detecting the hard disk.	• Install a hard disk. • Remove and replace the hard disk. • Initialize the hard disk. • Turn the product off, and then on. • If the problem persists, replace the hard disk.
HP digital sending: delivery error	The HP digital send service failed to deliver the job.	• Check HP digital sending service settings. • Resend the job.
Incompatible Cartridge	A print cartridge that is not designed for this product is installed.	Check to ensure that the print cartridge is a valid HP print cartridge with product number CE266C. This product does not support the HP print cartridge with product number C8543X.
Insert or close tray <XX>	This message occurs when a tray is open that interferes with the paper path of another tray, usually the trays below. If a print job requires the tray to be closed to print from the tray below, the Tray X open warning will be replaced by this Insert or close tray <XX> error message.	• Close the specified tray. • This problem affects printing, but some scan functions might still be available. Touch Hide to remove this message and use other features.
Install black cartridge This supply is missing or not seated.	The print cartridge is either not installed or not correctly installed.	• To correct this error, insert the cartridge or make sure that the installed cartridge is fully seated. • Open the front door and lower the green handle. Insert the print cartridge. Push the release button, and rotate the green handle to the locked position. Close the front door. • Part number: CE266C

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
Insufficient memory to load fonts/data <device> To continue, touch OK.	The product has insufficient memory to store the data being loaded. This error generates by loading fonts and/or other data entities such as macros.	• Clear unwanted data from memory. • This product does not have enough memory to load the data (e.g., fonts or macros) from the location specified in the message. To use this product without the data, touch OK. To solve this problem, add more memory to the product.
LED is on To continue, touch OK	This message displays during the execution of a component test when the component being tested is an LED.	• No action necessary.
Load Tray 1: [Type], [Size] To continue, touch “OK” To use another tray, touch “OK” Recommend move tray switch to STANDARD	Tray 1 is configured for a specific type and size and is empty.	• Load the specified type and size media into the tray. • Select a different tray. • If the specified media is already loaded in Tray 1, touch OK to continue. • If appropriate paper is in another tray, remove the paper from Tray 1 and then touch OK.
Load Tray <XX>: [type] [size] Recommend move tray switch to CUSTOM	The tray is a cassette tray with a tray switch but it needs to be moved to the Custom position.	• Load the tray with the specified media, or confirm the guides are in the correct position. • Verify the switch position. • If the specified media is already loaded in Tray 1, touch OK to continue. • If appropriate paper is in another tray, remove the paper from Tray 1 and then touch OK.
Load Tray <XX>: [type] [size] Recommend move tray switch to STANDARD	The tray is a cassette tray with a tray switch but it needs to be moved to the Standard position.	• Load the tray with the specified media, or confirm the guides are in the correct position. • Verify the switch position. • If the specified media is already loaded in Tray 1, touch OK to continue. • If appropriate paper is in another tray, remove the paper from Tray 1 and then touch OK.
Manually feed output stack Then touch “OK” to print second sides	Manual duplex printing is selected, and the first side is finished.	• Load the printed media into the ADF, and touch OK. • Maintaining the same orientation, remove the document from the output bin. Do not discard blank pages. Flip the document over so it is face down. Load Tray 1 with the face-down document. To continue printing, touch OK.

Table 7-3 Control-panel error messages (continued)

Control panel message	Description	Recommended action
Manually feed: [Type], [Size] Touch OK to continue To use another tray, touch "OK"	A job with specified media size and type is sent to the product, but the specified media is not loaded in a tray.	- Load the tray with the specified media. - If the specified media is already loaded in Tray 1, touch OK to continue. - If appropriate paper is in another tray, remove the paper from Tray 1 and then touch OK.
Non-HP supply in use Economode disabled.	A non-HP supply is detected. This message displays for 30 seconds, and then the product returns to a ready state. The product does not provide supply status messages for non-HP supplies.	Press OK to continue.
Output bin 01 full	This messages displays when the stacker or stapler/stacker output device is in use and one of the following errors has occurred: Face up Bin Full, Stacker Bin Full, or Stacker Bin Overload.	Empty the specified bin.
Output paper path open.	A breach is detected in the output paper path.	- Realign and reattach the output device. - Run the paper path test.
Performing Service Test....	The product is in the process of the service test.	No action necessary (do not turn product off during this operation).
Please turn device off and install hard disk	The hard disk is not installed.	Install hard disk.
Printing engine test...	An engine test is printing.	No action necessary.
Reinsert duplexer	The product is not detecting the duplexer.	- Reinstall the duplexer. - Turn product off, and turn it on. - Replace the duplexer.
Replace Black Cartridge To continue, touch OK	The specified supply has run low or out (depending on settings)	Replace the specified supply.
RFU Load Error Send Full RFU on <X> Port	This message displays before the firmware is loaded at startup when an error has occurred during a firmware upgrade.	Restart the firmware upgrade.
Rotating black motor To exit press STOP	This message displays during the execution of a black motor component test.	No action necessary.
Scan carriage locked	The scanner carriage lock is engaged.	Unlock the scan carriage.
Stapler out of staples	The staple supply is out.	Replace the staple cartridge.
The print end time cannot be earlier than the print start time	The time configured to end printing is earlier than the time configured to start printing.	Choose a print end time that is later than the print start time.
The print start time cannot be later than the print end time	The time configured to start printing is later than the time configured to end printing.	Choose a print start time that is earlier than the print end time.
Tray <X> [type] [size]	The media in the specified tray is detected as the specified size and type. The custom switch was not changed.	If the media is a custom size or type, change the custom switch accordingly.

Table 7-3 Control-panel error messages (continued)

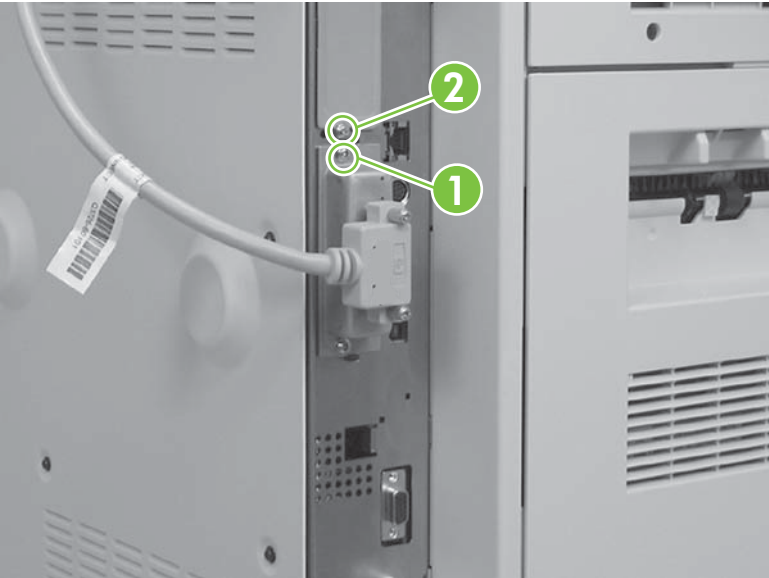
Control panel message	Description	Recommended action
Tray <X> [type] [size] To change size or type, touch “Modify”. To accept, touch “OK”. To change touch NEXT. To use touch “OK”.	This message displays when the tray is closed if the Size/Type Prompt menu is set to Display. This message also displays when a user touches the key on a paper mount “load tray” message.	● Touch Modify to change the media type or size, or touch OK to accept.
Unable to connect	The product is unable to connect with a receiving device.	● No help available.
Use tray <XX> To change touch NEXT. To use touch “OK”.	This message displays when a user touches the key on a paper mount “load tray” message.	● The current job specified a type or size that does not match a tray. Print current job by selecting another tray from the list. If a tray has a size or type other than what is shown, consider configuring the tray to reflect what is actually inside.
Wait For Printer to Reinitialize	This message displays when the user has changed the RAMDISK settings before the product automatically reboots. It also displays when auto power cycling has been performed after changing external device modes and when the user exits diagnostics mode.	● No action necessary.

User- and service-level diagnostics

Copy processor LEDs

The copy processor board is an EIO attachment located on the formatter assembly. It has two LEDs (LED 1 callout 1; LED 2 callout 2) that illuminate in specific patterns to indicate the status of the copy processor board.

Figure 7-2 LEDs on the copy processor board



The table below explains the LED patterns.

LED 1	LED 2	Status
0	1	Product power turned on. If LED 2 is not illuminated, the copy processor board (EIO) is not seated correctly, or the copy processor board (EIO) has failed.
1	1	The copy processor board (EIO) FPGA programming has started. If the copy processor board (EIO) does not process past this stage, the copy processor board (EIO) has experienced a programming error, or the FPGA integrated circuit on the copy processor board (EIO) has failed. A check cables error will appear on the control-panel display.
0	1	The copy processor board (EIO) FPGA programming has finished. If the copy processor board (EIO) does not process past this stage, the FPGA integrated circuit on the copy processor board (EIO) has failed. A check cables error will appear on the control-panel display.
1	1	The copy connect board (in the scanner) FPGA programming has started. If the copy processor board (EIO) does not process past this stage, check the wire harness connectors at the copy processor board (EIO) and the copy connect board (in the scanner). Make sure that the cable is not frayed, pinched, or broken. If the error persists, the FPGA integrated circuit on the copy connect board (in the scanner) has failed.
0	1	The copy connect board (in the scanner) FPGA programming has finished. If the copy processor board (EIO) does not process past this stage, check the wire harness connectors at the copy processor board (EIO) and the copy connect board (in the scanner). Make sure that the cable is not frayed, pinched, or broken. If the error persists, the FPGA integrated circuit on the copy connect board (in the scanner) has failed.

0	0	The firmware is being downloaded and confirmed. If the copy processor board (EIO) does not process past this stage, one or more of the following occurred. • The memory on the copy processor board (EIO) has failed. • The operating system did not start. • The copy processor board (EIO) is locked up.
0	1	The operating system has successfully started and the copy processor board (EIO) application has started. If the copy processor board (EIO) does not process past this stage, the copy processor board (EIO) is locked up, or the copy processor board (EIO) application failed to complete the startup processes.
0	0	The copy processor board (EIO) is initializing the scanner. LED 2 does not illuminate if communication between the formatter and the scanner fails, or if a fatal error in the scanner occurs.
0	1	The copy processor board (EIO) successfully established communication between the formatter and the scanner. If the copy processor board (EIO) does not process past this stage, a problem exists with the Copy Send application (UI).
1	1	The copy processor board (EIO) successfully established communication with the Copy Send application (UI). If the copy processor board (EIO) does not process past this stage, the copy processor board (EIO) heart beat signal did not start, or the signal is not being sent.
blinking	1	• LED 1 displays the copy processor board (EIO) LED heartbeat, indicating copy processor board (EIO) normal operation. • If LED 1 stops in the off state, the copy processor board (EIO) application has failed. • If LED 2 is off, a fatal error has occurred in the scanner, or the copy processor board (EIO) to scanner connection has failed.

Troubleshooting menu

The control panel **Troubleshooting** menu, which is on the **Administration** menu, includes a variety of logs and tests to help identify issues:

- **Event log**
Prints or displays a list of recent errors and other events
- **Paper path test**
Operates selected paper path and scan engine components isolated from the formatter to demonstrate whether they are functioning
- **Service test**
Operates the entire paper path system and produces error codes to diagnose problems
- **Print/Stop test**
Stops the printing process at a specified moment to allow for diagnostics
- **Scanner tests**
Operates selected scanner components isolated from the formatter to demonstrate whether they are functioning
- **Control panel**

Provides tests to manually check the operation of each control panel component

Paper-path test

The paper-path test can be used to verify that various paper paths are working correctly or to troubleshoot problems with tray configuration.

Print a paper-path test

1. Touch **Administration**.
2. Touch **Troubleshooting**.
3. Touch **Paper Path Test**.
4. Touch **Source**, and then choose a tray.
5. Touch **Duplex**, if desired, and then choose an option.
6. Touch **Copies**, and then choose the number of copies.
7. Touch **Test Page**, and then touch **Print** to print the page via the paper path that you selected.

Service test

The service test verifies that the print engine is functioning correctly. It is useful for isolating product problems. It can be performed with paper-handling accessories attached, but it will not activate any of the accessory motors, switches, or sensors.

Perform a service test

1. Turn the product on.
2. When the product is at a ready state, touch **Administration**.
3. Touch **Troubleshooting**.
4. Touch **Service Test**.
5. Follow the prompts on the control panel.

The product will display **Performing Service Test** for a few minutes. When it is finished, either **Service Test Passed** will display, or a series of service test abnormality codes will display. If codes appear, record them and compare them to the error message tables.

Table 7-4 Service test abnormality codes

Code	Description	FRU
0101	Cassette pickup rod motor	Paper input unit
0102	Cassette feed motor	Paper input unit
0103	Cassette lifter motor	Paper-input unit
0104	Tray 1 feed motor	Tray 1
0105	Switchback motor	Duplexer
0106	Duplex feed motor	Duplexer

Table 7-4 Service test abnormality codes (continued)

Code	Description	FRU
0107	Duplex feed motor 2	Duplexer
0108	Side registration motor	Duplexer
0109	Pre-registration roller clutch	Registration assembly
0110	Registration roller clutch	Registration assembly
0111	Tray 1 feed roller clutch	Tray 1
0112	Coil jam sensor solenoid	Fuser assembly
0113	Face-up flapper solenoid	Delivery assembly
0114	Tray 1 pickup solenoid	Tray 1
0115	Duplex deflector solenoid	Duplexer
0116	Duplex flapper solenoid	Duplexer
0117	Upper cassette paper out solenoid	Paper-input unit
0118	Upper cassette lifter position sensor	Paper-input unit
0119	Upper cassette paper level sensor A	Paper-input unit
0120	Upper cassette paper level sensor B	Paper-input unit
0121	Upper cassette feed sensor A	Paper-input unit
0122	Upper cassette feed sensor B	Paper-input unit
0123	Lower cassette paper out sensor	Paper-input unit
0124	Lower cassette lifter position sensor	Paper-input unit
0125	Lower cassette paper level sensor A	Paper-input unit
0126	Lower cassette paper level sensor B	Paper-input unit
0127	Lower cassette feed sensor A	Paper-input unit
0128	Lower cassette feed sensor B	Paper-input unit
0129	Registration paper sensor	Registration assembly
0130	Pickup rod home position sensor	Paper-input unit
0131	Fusing unit delivery sensor A	Fuser assembly
0132	Fusing unit delivery sensor B	Fuser assembly
0133	Face-down bin delivery sensor	Delivery assembly
0135	Tray feed sensor	Tray 1
0136	Switchback sensor	Duplexer
0137	Duplex feed sensor	Duplexer
0138	Duplexer reaming paper sensor	Duplexer
0139	Face-down bin paper-full sensor	Delivery assembly
0140	Right door sensor	Paper input unit
0141	Duplex feed roller 1 home-position sensor	Duplexer

Table 7-4 Service test abnormality codes (continued)

Code	Description	FRU
0142	Side registration guide home-position sensor	Duplexer
0143	OHT sensor	Registration assembly
0144	Coil jam sensor	Fuser assembly

Service-level diagnostics

Engine test

The engine test verifies that the print engine is functioning correctly. This test bypasses the formatter completely and is useful for isolating product problems. The engine test prints a full page of horizontal lines across the printable area.

 **NOTE:** Media can be picked up from Tray 2 or Tray 3 if the formatter is installed. If the formatter is removed, open the tray that you do not want to test. Also, make sure that the print cartridge is installed.

Service menu

The **Service** menu product commands should be used only by authorized service personnel. It is PIN protected using the following format for the PIN: the first two digits are the month the product was released; the next 4 digits are the product number; the last 2 digits are the year released.

You can access the **Service** menu using PIN code 04905008 for the HP LaserJet M9059 MFPs. While in the **Service** menu, you can perform the following tasks:

- Clear the event log.
- Verify and set the page count and serial number (these appear on the configuration page).
- Change the maintenance intervals.
- Set the cold-reset media size.

If a stapler/stacker is installed you can also perform these tasks:

- Calibrate the staple position.
- Review and edit the serial number of the output device.
- Review and edit the page count of the output device.

Table 7-5 Service menu

Item	Explanation
Clear event log	Clear all events in the product event log.
Engine cycle count	The engine cycle count, which is stored in NVRAM and displayed on the configuration page, is considered the product mileage. It is the number of pages the formatter has processed not including engine test prints. Certain types of repairs, such as replacement of the controller PCA, can cause this number to be reset. Thus, this number can be configured to ensure that it represents the actual number of product pages processed rather than the number since a repair.

Table 7-5 Service menu (continued)

Item	Explanation
Refurbish cycle count	The refurbish cycle count is the number of pages to which the product is set when it is refurbished. This number is documented for legal purposes. It is reset to reflect the actual age of the product rather than the number of pages since it was refurbished. Set the page count before sending the product for refurbishment. The number is stored in memory so that the correct service ID can be restored after the product is refurbished.
Maintenance kit count	The maintenance kit count is factory set at 0. It can be reset if the value is lost. Users can set the number anywhere up to the maintenance interval. If a user sets New Maintenance Kit to Yes in the Resets menu, the value is reset to zero. Set the number of pages that have been printed since the latest maintenance kit was installed or, if a maintenance kit has not yet been installed, the total number of pages since the product was new.
Maintenance kit interval	Set this value to the page count for the next scheduled service. Once the product prints the number of pages specified by this setting, the control panel displays an alert stating that maintenance is required.
ADF count	The ADF count is the number of pages that have been through the ADF. Select this item to set the number of pages that have been fed through the ADF.
Flatbed count	The flatbed count is number of pages that have been scanned on the flatbed scanner. Select this item to set the number of pages that have been scanned on the glass.
ADF simplex count	The ADF simplex count is the number of single sided pages that have been through the ADF. Select this item to set the number of single sided pages that have been fed through the ADF.
ADF duplex count	The ADF duplex count is the number of two sided pages that have been through the ADF. Select this item to set the number of two sided pages that have been fed through the ADF.
Copy scan count	The copy scan count is the number of pages that have been scanned for copying. Select this item to set the number of pages that have been scanned for copying.
Send scan count	The send scan count is the number of pages, such as e-mail and fax, that have been scanned for sending. Select this item to set the number of pages that have been scanned for sending.
Copy pages count	The copy pages count is the number of pages that have been printed as copies. Select this item to set the number of scanned pages that have been printed.
Scanner settings	The scanner settings are all calibration settings that are unique to the specific product. They have no defaults and are changed only when support personnel calibrate the product. CAUTION: The scanner settings are meant for factory adjustments and should not be used by service personnel. Calibrate the product to adjust these settings rather than changing them in the Service menu.
ADF settings submenu	The ADF settings submenu includes the following settings: • Leading edge front • Leading edge back • Left side front • Left side back • ADF plain scaling • ADF heavy scaling • Motor speed plain • Motor speed heavy Use these settings to calibrate ADF scans. Calibrate the scanner before adjusting these settings.

Table 7-5 Service menu (continued)

Item	Explanation
Glass settings submenu	The glass settings submenu includes the following settings: - Leading edge glass - Left side glass - Glass scaling Use these settings to calibrate scans on the flatbed. Calibrate the scanner before adjusting these settings.
Clock/density settings	The clock/density settings include the following: - XP1 clock setup 1 - XP1 clock setup 2 - XP2 clock setup 1 - XP2 clock setup 2 - XCP clock setup 1 - XCP clock setup 2 - XRS clock setup 1 - XRS clock setup 2 - Density setup 1 - Density setup 1 Use these settings to calibrate the clocks and the density settings.
CCD settings	The CCD settings include a dialog with options to select values for the scanner CCD settings. These values are used to calibrate the CCDs in the scanner. They can be adjusted to fix the vertical line defect caused the dust removal algorithm. These settings include 32 values labeled No. 1 through No. 8 for each of the following: FB1, FB2, ADF1, and ADF2.
SCB flash upgrade	This setting is for upgrading the SCB flash.
ADF tray width	This setting is for calibrating the ADF tray width.
Save settings	Select this menu item to save all of the scanner settings for restoration after the scanner control board is replaced. Touch Save to back up the scanner settings for restoration after the scanner control board is replaced.
Restore settings	Select this menu item to restore all of the scanner settings that were saved from the scanner board. Touch Restore to restore all of the scanner settings to the values that were saved from the old scanner control board using the Save Settings function.
Serial number	This item is the factory configured product serial number. If you replace the formatter, you can reset this number accordingly.
Service ID	Set this item to the date on which the product was first used if the formatter is replaced.

Table 7-5 Service menu (continued)

Item	Explanation
Cold reset paper	Select this item to reset the default paper size to letter or A4 after you replace the formatter or restore factory settings. Set this item to A4 wherever it is the standard.
Restore data for accessory	This item displays when more than one external device is attached to the print engine. Choose from a list of devices for which to restore data. This setting is meant for restoring data after an external device is repaired. Note that the data is backed up on the product NVRAM and on the Compact Flash memory. No action is necessary to save the data. Be sure to restore the data before 10 pages are printed, or it will be overwritten.

Other diagnostics

Boot-up key sequences

Use boot-up key sequences to accomplish the following service functions:

- **Select language.**
- **Cold reset.** A cold reset unlocks menus that have been previously locked and sets all control panel menu items (including EIO settings) back to the factory defaults. However, it *does not* clear the values in the **Service** menu (such as the serial number and page counts).

 **NOTE:** Before performing a cold reset, print a configuration page. Use the information on the configuration page to reset any customer-set product configuration values that the cold reset procedure changes.

- **Embedded LAN enable.**
- **Embedded LAN disable.**
- **Initialize disks.**

⚠ **WARNING!** To avoid loss of data, remove all USB storage devices before initializing disks. The product might have such storage devices providing fonts or third-party solutions. The information on these storage devices might be erased if they remain connected during disk initialization.

⚠ **CAUTION:** A hard-disk initialization erases and reformats the product hard disk. Perform a hard-disk initialization only if an error code on the control panel indicates a disk error. Always try initializing the hard disk before replacing it.

 **NOTE:** Before performing a hard-disk initialization, print a configuration page. Use the information on the configuration page to reset any customer-set product configuration values that the hard-disk initialization procedure changes.

- **Skip disk-load:** When the power is turned on the product begins the power-on sequence. By performing a skip disk-load, you can cause the product to resume the power-on sequence but not to recognize the hard disk. This can be helpful in isolating hard-disk errors.
- **NVRAM init**

⚠ **CAUTION:** Initializing the NVRAM resets the event log, the page counts, and embedded EIO and resets **Service** menu values to factory defaults. NVRAM initialization does *not* reset the model number, serial number, service ID (born-on date), usage data, or the error log.

Use the **Service** menu to restore the serial number and page counts. Also reconfigure any computers that print to this product so that the computers can recognize the product. Initialize the NVRAM only when absolutely necessary. In most situations, use a cold reset rather than a NVRAM initialization to reset product settings and retain the values in the **Service** menu.

 **NOTE:** Before performing a NVRAM initialization, print a configuration page. Use the information on the configuration page to reset any customer-set product configuration values that the NVRAM initialization procedure changes. Take special note of the *total page count*, *maintenance count*, and the *serial number*.

- **Skip calibration**

Low-level boot-up key sequence for selecting a language, performing a cold reset, and enabling and disabling embedded LAN

1. Turn off the product.
2. Turn on the product.
3. When the control-panel display shows that the product has begun to count the memory, press and hold the **6** key.
4. When the LED lights turn on, release the **6** key.
5. Use the **3** and **9** keys to scroll through the options (select language, cold reset, embedded LAN enable, and embedded LAN disable) and then press the **6** key to select the option you want.

The product continues the power-on sequence.

Medium-level boot-up key sequence for initializing disks

1. Turn off the product.
2. Turn on the product.
3. When the control-panel display shows that the product has begun to count the memory, press and hold the **Start** key.
4. When the LED lights turn on, release the **Start** key.



NOTE: **Initialize Disks** is the only option available when using the medium-level boot-up key sequence.

5. Press the **6** key to select **Initialize Disks**.

The product continues the power-on sequence.

High-level boot-up key sequence for NVRAM initialization, manufacturing, and skipping disk-load and calibration

1. Turn off the product.
2. Turn on the product.
3. When the control-panel display shows that the product has begun to count the memory, press and hold the **9** key.
4. When the LED lights turn on, release the **9** key.
5. Press the **3** key, and then press the **Start** key.
6. Use the **3** and **9** keys to scroll through the options (skip disk-load, NVRAM init, manufacturing, and skip calibration) and then press the **6** key to select the option you want.

The product continues the power-on sequence.

Drum rotation functional check

The print process requires the photosensitive drum in the print cartridge to rotate. The photosensitive drum is driven from the main drive assembly. This procedure tests that it rotates:

- 1. Open the front cover.
- 2. Remove the print cartridge.
- 3. Mark the position of the print cartridge drive gear using a felt tip marker.
- 4. Reinstall the print cartridge, and close the front cover.

This product startup sequence should turn the photosensitive drum enough to change the position of the drive gear.

- 5. Remove the print cartridge and note the position of the gear mark. If it has moved, the main drive assembly is working correctly. If it did not move, make sure that the main drive assembly is contacting the drive gear correctly. If the drive gear appear to be working correctly, replace the print cartridge.

 **NOTE:** This test is important especially when using refilled print cartridges.

Calibrations

The product requires calibrations after some components are replaced. The following table lists the required calibrations for each component replacement.

△ **CAUTION:** Replacing these components without running the associated calibrations can cause damage to the product and can cause image quality problems.

Component replaced	Required calibration
Glass	• Leading edge glass • Left side glass • Leading edge front • Left side front • ADF plain scaling (ADF heavy scaling if necessary) • Glass scaling
ADF width sensor	ADF tray width calibration
ADF optical unit	• Leading edge back • Left side back
Flatbed optical unit	• Leading edge glass • Left side glass • Leading edge front • Left side front

Control panel touchscreen calibration

If the touch screen seems unresponsive, try calibrating it:

1. Turn the product off.
2. Press and hold the number key (#) and the clear key (C) while turning the product on. A dot will display in the upper left corner of the screen.
3. Release the # and C keys.
4. Touch the dot with a blunt object, such as a pencil eraser, and another one will display in the lower right corner.
5. Touch that dot. The product will continue the startup sequence.

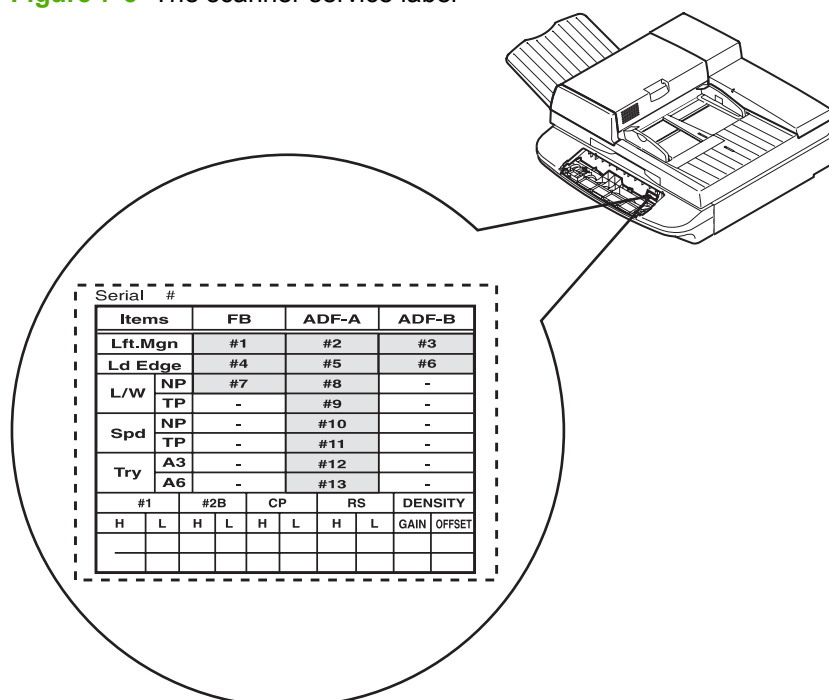
Simplified scanner and ADF calibration

This calibration adjusts the location of the leading edge, the location of the left edge, and the scaling (stretch) of the image. This is a simplified version of the original calibration procedure, which is recommended when full edge to edge scanning is desired.

 **NOTE:** Always back up the scanner settings before performing any scan engine calibration. Then you can restore the settings and start over if you encounter problems.

NOTE: A service label is located inside the flatbed lower front cover to record the calibration values. If you enter new calibration values, download an new service label, record the new values, and place the new label over the old one.

Figure 7-3 The scanner service label



1. Copy the following table to use as a worksheet:

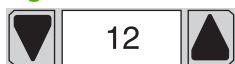
Measurement	Item	Copy image too far	Original value	Action
ADF front side	Leading edge (top border)	High Low ____mm x 10 = ____ units		If low, press the UP arrow the number of units indicated by the formula. If high, press the DOWN arrow the number of units indicated by the formula.
	Left side	Left Right ____mm x 12 = ____ units		If left, press the DOWN arrow. If right, press the UP arrow.
	Scaling plain (bottom border)	High Low ____mm x 3 = ____ units		If left, press the DOWN arrow. If right, press the UP arrow.
ADF back side	Leading edge back (top border)	High Low ____mm x 10 = ____ units		If low, press the UP arrow. If high, press the DOWN arrow.
	Left side back	Left Right ____mm x 12 = ____ units		If left, press the UP arrow. If right, press the DOWN arrow.
Glass	Leading edge (top border)	High Low ____mm x 24 = ____ units		If low, press the UP arrow. If high, press the DOWN arrow.
	Left side	Left Right ____mm x 12 = ____ units		If left, press the DOWN arrow. If right, press the UP arrow.
	Scaling	High Low ____mm x 3 = ____ units		If low, press the UP arrow. If high, press the DOWN arrow.

2. Perform the set registration procedure for all trays (this calibration must be performed using letter or A4 sized media). Follow the instructions on the printed set registration sheet to perform the tray registration.
3. In the **Administration** menu, touch **Default Copy Options**, then touch **Edge-To-Edge**, and then touch **Edge-To-Edge Output**.
4. Print a supplies usage page.

In the **Administration** menu, touch **Information**, then touch **Configuration Page**, and then touch **Usage Page**.
5. Use colored ink to write "ORIGINAL" across the top of the test page.
6. Place the usage page into the ADF with the top of the page (short edge) first (letter-rotated or A4-rotated).
7. Make sure that the media in Tray 3 is loaded in the letter-rotated or A4-rotated position.
8. Make a 100% scaled simplex copy selecting Tray 3 as the source.
9. Align the top edges of the original and the copied page. Measure the difference between the top image borders in millimeters. Record the difference in the ADF Front leading edge (top border) column on the worksheet.

10. Align the left edges of the original and the copied page. Use measure the difference in the left image borders. Record the difference in the ADF Front left side border column in table 63.
11. Align the top border of the copy image with the top border of the original. Measure the difference in the bottom borders in millimeters. Record the difference in the ADF plain scaling (bottom) column.
12. Place the original page into the ADF face up. Make sure that the top of the page (short edge) goes into the ADF first.
13. Use the control panel to describe the original as 2-sided.
14. Use the control panel to describe the copy as 1-sided, and then press the **Start** button.
15. Align the top edges of the original and the copied page. Measure the difference between the top image borders. Record the difference in the ADF Leading edge back (top border) column.
16. Align the left edges of the original and the copied page. Measure the difference in the left image borders. Record the difference in the ADF Left side back border column.
17. Open the scanner and place the original on the glass. Make sure that the original is loaded with the top edge of the page (short edge) towards the left paper guide (the same orientation as it was loaded in the ADF).
18. Make a copy from Tray 3.
19. Align the top edges of the original and the copied page. Measure the difference between the top image borders. Record the difference in the Glass leading edge (top border) column.
20. Align the left edges of the original and the copied page. Measure the difference in the left image borders. Record the difference in the Glass left side border column.
21. Align the top borders of the copy image with the top border of the original. Measure the difference in the bottom borders. Record the difference in the Glass scaling (bottom) column.
22. Open the **Service** menu (PIN: 04905008).
23. Open the **Scanner Settings** submenu.
24. Touch **ADF Settings**, and then touch **Leading edge front**. Record the value in the worksheet.
25. Using the calculated value from the worksheet, adjust the position of the image by the number of units using the up or down arrows. For example, to move the ADF Left side back setting 1 mm to the right, press the Down arrow on the control panel 12 times.

Figure 7-4 A scanner setting with the up and down arrows



26. Repeat these steps for each setting to be adjusted.
27. After adjusting the settings, copy the image again to make sure that the image is centered on the copy. If not, repeat this procedure.
28. Reconfigure the copy settings to the preferred operational state.

 **NOTE:** Heavy scaling adjustment values for the ADF can be obtained by using heavy media (supplied by the customer) to print the paper path test page.

ADF calibrations

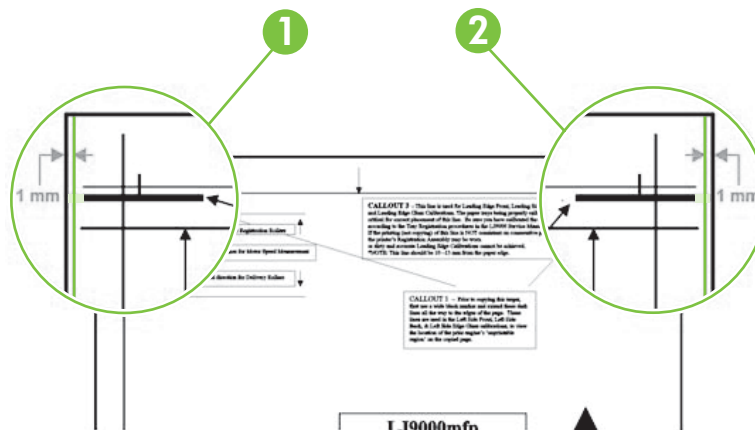
Left side front calibration

 **NOTE:** Before beginning the left side front calibration, perform the tray registration calibration on the print engine. Touch **Administration**, then touch **Print Quality**, then touch **Set Registration**, then touch **Source**, and then select a source. Touch **Test Page**, and then touch **Print**. Follow the instructions on the printed registration page to complete the registration setting.

Repeat this procedure for all trays.

1. Download the calibration target and the calibration values chart. Calibration targets are available at the HP service information Web site.
2. On the product to be calibrated, print the calibration target on ledger or A3 paper.
3. Print two copies of the calibration values chart on ledger or A3 paper.
4. On the calibration target page, extend the wide line (callout 1) on the top, left corner and the wide line on the top, right corner (callout 2) to the edge of the paper.

Figure 7-5 Extend the wide lines to the edges of the page, and add lines 1 mm to the inside of the right and left edges.

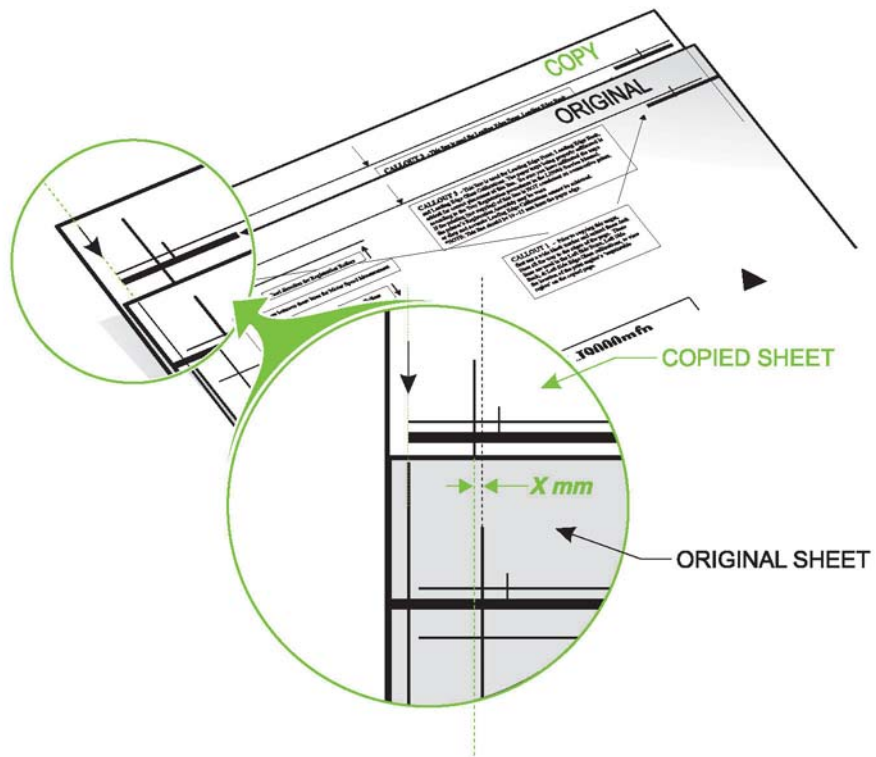


5. Using a straight edge, draw a line 1 mm (0.04 in) in from the top left edge of the page (callout 1) and from the top right edge of the page (callout 2). Make the lines approximately 30 mm (1.2 in) long.
6. Load the calibration target face down, and copy it using the ADF front-side optical unit.
7. Align the edge of the thick, black lines on the copy to the lines drawn 1 mm (0.04 in) from each edge on the original calibration target.

 **NOTE:** Be sure you can see white on both sides of the calibration target. If not, you cannot perform the necessary measurements.

8. On the calibration target, compare the line on the left side of the original to the line on the left side of the copy.

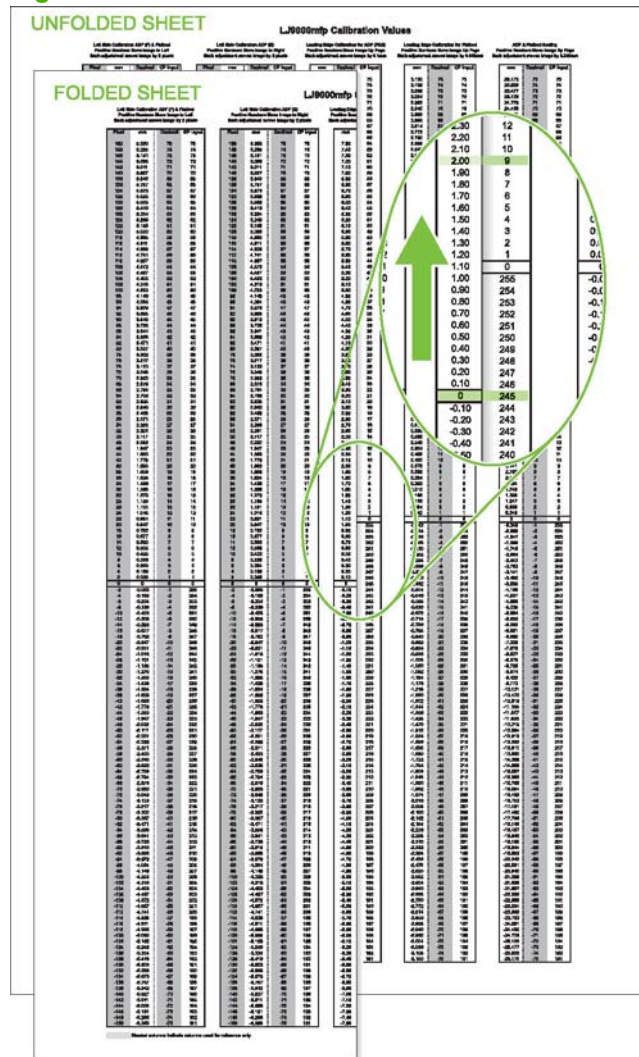
Figure 7-6 Align the copy with the original



9. Determine whether the copied page should be shifted to the left or to the right and by what distance in millimeters. If the copied page needs to be shifted, determine the required distance in millimeters.

- Using the two calibration values charts, determine the value for the left side front to enter into the **Service** menu.

Figure 7-7 Determine the values



Left side back calibration

NOTE: Before beginning the left side back calibration, perform the tray registration calibration on the print engine. Touch **Administration**, then touch **Print Quality**, then touch **Set Registration**, then touch **Source**, and then select a source. Touch **Test Page**, and then touch **Print**. Follow the instructions on the printed registration page to complete the registration setting.

Perform this procedure for all trays.

- Download the calibration target and the calibration values chart. Calibration targets are available at the HP service information Web site.
- Print the calibration target on ledger or A3 paper (use the product you are calibrating).
- Print two copies of the calibration values chart on ledger or A3 paper.
- On the calibration target page, extend the wide line on the top, left corner and the wide line on the top, right corner to the edge of the paper.

5. Using a straight edge, draw a line 1 mm (0.04 in) in from the top, left edge of the page and from the top, right edge of the page. Make the lines approximately 30 mm (1.2 in) long.
6. Load the calibration target face up, and choose **two-sided original to a one-sided copy** to eliminate the possibility of duplexing issues.
7. Copy the calibration target using the ADF backside optical unit.
8. Align the edge of the thick black lines on the copied calibration target to the lines 1 mm (0.04 inch) from the edges drawn on the original calibration target.

 **NOTE:** Make sure that you can see white on both sides of the calibration target. If not, you cannot perform the necessary measurements.

9. On the calibration target, compare the line on the left side of the original to the line on the left side of the copy.
10. Determine whether the copied page should to be shifted to the left or to the right and by what distance in millimeters.
11. Determine the value for the left side front to enter into the **Service** menu.

Leading edge front calibration

 **NOTE:** Before beginning the leading edge front calibration, perform the tray registration calibration on the print engine. Touch **Administration**, then touch **Print Quality**, then touch **Set Registration**, then touch **Source**, and then select a source. Touch **Test Page**, and then touch **Print**. Follow the instructions on the printed registration page to complete the registration setting.

Perform this procedure for all trays.

1. Download the MFP calibration target and the MFP calibration values chart. Calibration targets are available at the HP service information Web site.
2. Using the product to be calibrated, print the calibration target on ledger or A3 paper.
3. Print two copies of the calibration values chart on ledger or A3 paper.
4. Load the calibration target face down, and copy it using the ADF front-side optical unit.
5. Align the top edge of the copied calibration target to the top edge of the original calibration target.

 **TIP:** Be sure to align the paper edges and not the lines.

6. On the calibration target, compare the line at the top edge of the original to the line at top edge of the copy.
7. Determine whether the copied page needs to be shifted up or down and by what distance in millimeters.
8. Using the two calibration values charts, determine the value for the leading edge front to enter into the **Service** menu.

Leading edge back calibration

 **NOTE:** Before beginning the leading edge back calibration, you must perform the tray registration calibration on the print engine. Touch **Administration**, then touch **Print Quality**, then touch **Set Registration**, then touch **Source**, and then select a source. Touch **Test Page**, and then touch **Print**. Follow the instructions on the printed registration page to complete the registration setting.

Perform this procedure for all trays.

1. Download the MFP calibration target and the MFP calibration values chart. Calibration targets are available at the HP service information Web site.
2. On the product to be calibrated, print the calibration target on ledger or A3 paper.
3. Print two copies of the calibration values chart on ledger or A3 paper.
4. Load the calibration target face up, and choose “two-sided original to a one-sided copy” to eliminate any print engine duplexing issues.
5. Copy the calibration target using the ADF backside optical unit.
6. Align the top edge of the copied calibration target to the top edge of the original calibration target.

 **TIP:** Align the paper edges and not the lines.

7. On the calibration target, compare the line at the top edge of the original to the line at top edge of the copy.
8. Determine whether the copied page should to be shifted up or down and by what distance in millimeters.
9. Using the two calibration values charts, determine the value for the leading edge back to enter into the **Service** menu.

ADF plain scaling calibration

 **NOTE:** Before beginning the ADF plain scaling calibration, perform the tray registration calibration on the print engine. Touch **Administration**, then touch **Print Quality**, then touch **Set Registration**, then touch **Source**, and then select a source. Touch **Test Page**, and then touch **Print**. Follow the instructions on the printed registration page to complete the registration setting.

Perform this procedure for all trays.

1. Download the MFP calibration target and the MFP calibration values chart. Calibration targets are available at the HP service information Web site.
2. On the product to be calibrated, print the calibration target on ledger or A3 paper.
3. Print two copies of the calibration values chart on ledger or A3 paper.
4. Load the calibration target face down, and copy it using the ADF front-side optical unit.
5. Align the top line of the copied calibration target to the top line of the original calibration target.

 **TIP:** Be sure to align the lines and not the edges.

6. On the calibration target, compare the line at the bottom edge of the original to the line at bottom edge of the copy.

7. Determine whether the copied page should to be lengthened (line shifted down) or shortened (line shifted up) and by what distance in millimeters.
8. Using the two calibration values charts, determine the value for the ADF plain scaling to enter into the **Service** menu.

ADF heavy scaling calibration



NOTE: This calibration only needs to be performed if the product is using heavy media.

NOTE: Before beginning the calibration, perform the tray registration calibration on the print engine. Touch **Administration**, then touch **Print Quality**, then touch **Set Registration**, then touch **Source**, and then select a source. Touch **Test Page**, and then touch **Print**. Follow the instructions on the printed registration page to complete the registration setting.

Perform this procedure for all trays.

1. Download the MFP calibration target and the MFP calibration values chart. Calibration targets are available at the HP service information Web site.
2. On the product to be calibrated, print the calibration target on ledger or A3 paper.
3. Print two copies of the calibration values chart on ledger or A3 paper.
4. Load the calibration target face down, and copy it using the ADF front-side optical unit.
5. Align the top line of the copied calibration target to the top line of the original calibration target.



TIP: Be sure to align the lines and not the edges.

6. On the calibration target, compare the line at the bottom edge of the original to the line at bottom edge of the copy.
7. Determine whether the copied page should to be lengthened (line shifted down) or shortened (line shifted up) and by what distance in millimeters.
8. Using the two calibration values charts, determine the value for the ADF plain scaling to enter into the **Service** menu.

Glass calibrations

Left side glass calibration



NOTE: Before beginning the calibration, perform the tray registration calibration on the print engine. Touch **Administration**, then touch **Print Quality**, then touch **Set Registration**, then touch **Source**, and then select a source. Touch **Test Page**, and then touch **Print**. Follow the instructions on the printed registration page to complete the registration setting.

Perform this procedure for all trays.

1. Download the MFP calibration target and the MFP calibration values chart. Calibration targets are available at the HP service information Web site.
2. On the product to be calibrated, print the calibration target on ledger or A3 paper.
3. Print two copies of the calibration values chart on ledger or A3 paper.
4. On the calibration target page, extend the wide line on the top, left corner and the wide line on the top, right corner to the edge of the paper.

5. Using a straight edge, draw a line 1 mm (0.04 in) in from the top, left edge of the page and from the top, right edge of the page. Make the lines approximately 30 mm (1.2 in) long.
 6. Load the calibration target face down on the glass with the left edge of the calibration target toward the back of the glass.
 7. Copy the calibration target.
 8. Align the edge of the thick, black lines on the copy to the lines drawn on the original calibration target that are 1 mm (0.04 in) from the edges.
-
-  **NOTE:** Make sure that you can see white on both sides of the calibration target. If not, you cannot perform the necessary measurements.
-
9. On the calibration target, compare the line on the left side of the original to the line on the left side of the copy.
 10. Determine whether the copied page should be shifted to the left or to the right and by what distance in millimeters.
 11. Using the two calibration values charts, determine the value for the left side glass to enter into the **Service** menu.

Leading edge glass calibration

-  **NOTE:** Before beginning the calibration, perform the tray registration calibration on the print engine. Touch **Administration**, then touch **Print Quality**, then touch **Set Registration**, then touch **Source**, and then select a source. Touch **Test Page**, and then touch **Print**. Follow the instructions on the printed registration page to complete the registration setting.

Perform this procedure for all trays.

1. Download the MFP calibration target and the MFP calibration values chart. Calibration targets are available at the HP service information Web site.
 2. On the product to be calibrated, print the calibration target on ledger or A3 paper.
 3. Print two copies of the calibration values chart on ledger or A3 paper.
 4. Load the calibration target face down on the glass with the left edge of the calibration target toward the back of the glass.
 5. Copy the calibration target.
 6. Align the top edge of the copied calibration target to the top edge of the original calibration target.
-
-  **TIP:** Be sure to align the lines and not the edges.
-
7. On the calibration target, compare the line on the left side of the original to the line on the left side of the copy.
 8. Determine whether the copied page should be shifted up or down and by what distance in millimeters.
 9. Using the two calibration values charts, determine the value for the leading edge glass to enter into the **Service** menu.

Glass scaling calibration

 **NOTE:** Before beginning the calibration, perform the tray registration calibration on the print engine. Touch **Administration**, then touch **Print Quality**, then touch **Set Registration**, then touch **Source**, and then select a source. Touch **Test Page**, and then touch **Print**. Follow the instructions on the printed registration page to complete the registration setting.

Perform this procedure for all trays.

1. Download the MFP calibration target and the MFP calibration values chart. Calibration targets are available at the HP service information Web site.
2. On the product to be calibrated, print the calibration target on ledger or A3 paper.
3. Print two copies of the calibration values chart on ledger or A3 paper.
4. Load the calibration target face down on the glass with the left edge of the calibration target toward the back of the glass.
5. Copy the calibration target.
6. Align the top line of the copied calibration target to the top line of the original calibration target.

 **TIP:** Be sure to align the lines and not the edges.

7. On the calibration target, compare the line at the bottom of the original to the line at the bottom of the copy.
8. Determine whether the copied page should be lengthened (line shifted down) or shortened (line shifted up) and by what distance in millimeters.
9. Using the two calibration values charts, determine the value for the glass scaling to enter into the **Service** menu.

Plain motor speed calibration

 **NOTE:** Perform this procedure after replacing either of the ADF motors to ensure that the media feeds through the ADF at a uniform speed. After performing this procedure, immediately perform the ADF front and backside scaling procedure.

ADF motor speed calibration reduces speed variations to produce high-quality copy and scan images. This section describes the procedure for calibrating the ADF motor speed for plain media. This procedure requires the use of the A3 or Ledger motor speed calibration target. The correct target must be printed on the correct corresponding media size; otherwise, ADF motor speed timing issues can occur.

 **TIP:** Download the calibration motor speed target page from your technical support ASP Web site. Calibration targets are available at the HP service information Web site.

1. Perform the set tray calibration procedure for Tray 3 (you can use letter- or A4-size media for this step).
2. Load Tray 3 with A3 or 11x17 media.
3. Print the calibration motor speed target page from Tray 3.
4. Place the target original face down in the ADF tray with the arrow pointing towards the paper feed direction.
5. Make a 100% scaled simplex copy (make sure that you print from Tray 3).

6. Measure the space between the upper left corner of the target page (callout 2) and the lower right corner of the target page lines (callout 5). Make these measurements on the printed copy. For example, callout 5 is wider than callout 2 by XX mm, or callout 5 is narrower than callout 2 by XX mm.

Figure 7-8 The distance to measure for callout 2

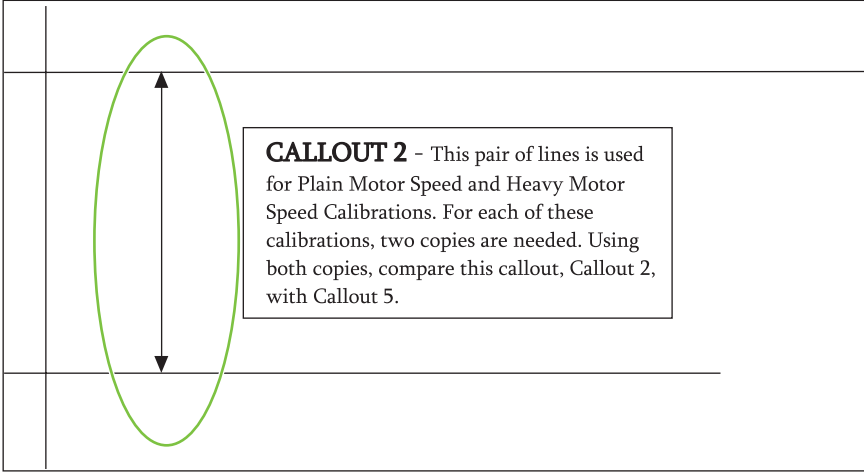
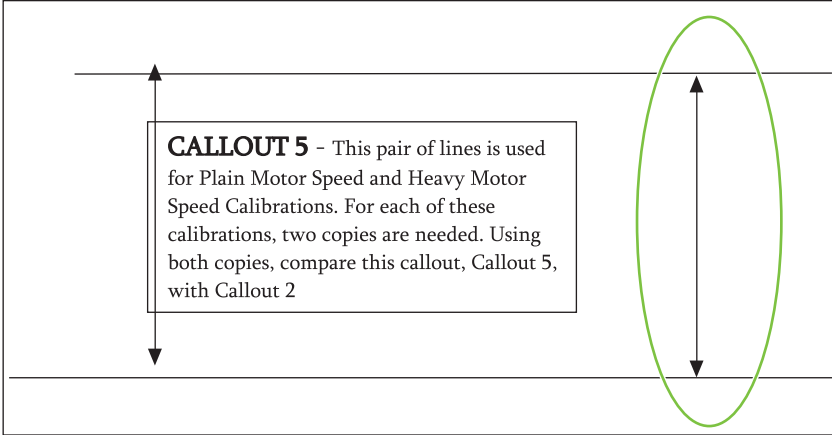


Figure 7-9 The distance to measure for callout 5



7. Record the difference in line spacing in a copy of the following table.

Measurement	Setting	Alignment	Current setting	Action
ADF motor speed	Motor speed plain	Wide Narrow ___mm x 25 = ___ units		If low, press the UP arrow the number of units indicated by the formula. If high, press the DOWN arrow the number of units indicated by the formula.

8. Open the **Service** menu (PIN: 04905008).
9. Touch **Scanner Settings**, touch **ADF Settings**, and then touch **Motor Speed Plain**.
10. Record the setting in the table.
11. Follow the instructions in the action column of the table to make adjustments to the motor speed.

 **NOTE:** The scale column in the table is the number of times to press the indicated button to move the image 1 mm. For example, if the spacing between the parallel lines on the copy page is 1 mm narrower than on the target calibration page, you would press the down arrow 25 times.

12. Repeat this procedure to verify the correct motor speed. Make additional changes as necessary.
13. After performing this calibration, you must perform the ADF front and back side calibration checks. To set the heavy media motor speed, repeat this procedure using the customer's heavy media for the target calibration and copy pages.

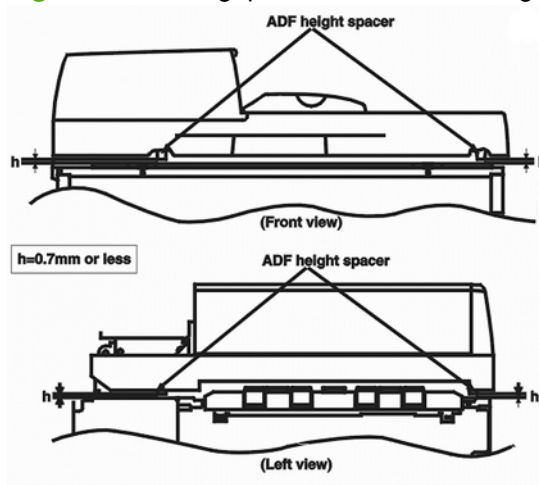
Measurement and adjustment

ADF unit height adjustment

If the height between the ADF and the glass is not properly adjusted, a transport defect might occur. If a transport defect occurs, check the height between the ADF unit and the glass according to the following procedures and then adjust the gap within the specifications.

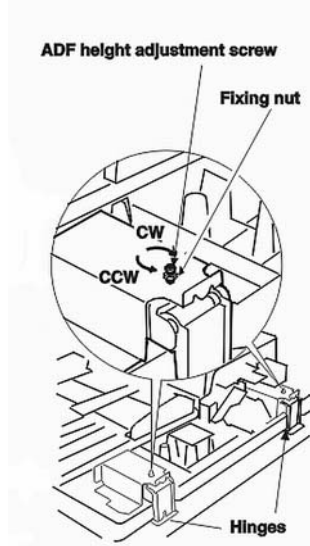
1. Remove the following covers:
 - ADF back cover
 - Flatbed back cover
 - Flatbed right cover
2. Close the ADF unit.
3. Measure the gap between the four ADF height spacers and the glass. Make sure that the gap is within the ADF unit height adjustment specification (h) of 0.7 mm (0.03 in) or less.

Figure 7-10 The gap between the ADF height spacers and the glass



4. If the gap is not within specifications, loosen the fixing nut and turn the two ADF height adjust screws. Turn the screws clockwise (CW) to increase the gap, or counterclockwise (CCW) to decrease the gap.

Figure 7-11 The height adjusting screws



 **NOTE:** Each rotation of the screw increases or decreases the gap by 0.7 mm (0.03 inch).

NOTE: Be sure to loosen the fixing nut before making adjustments, and then tighten it.

ADF skew adjustment

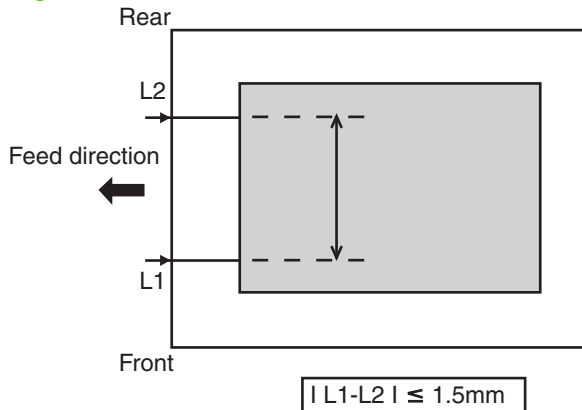
If the ADF unit is not properly aligned on the flatbed, a scanned image skew might occur from the ADF front optics. If an image skew occurs, check the amount of ADF skew and adjust it within specifications.

1. Make a copy in the ADF simplex mode by loading a test page face down in the ADF input tray.

 **TIP:** Use a sheet of paper that allows you to measure at least 257 mm (10.1 inches).

2. Measure the L1 distance and the L2 distance with a ruler. If the difference between the two distances is equal to or less than 1.5 mm (0.06 inch), the skew is within the ADF skew adjustment specifications.

Figure 7-12 The distance to measure



3. If the distance is not within the ADF skew adjustment specifications, loosen the bracket fixing screw (callout 1) and turn the ADF skew adjusting screw (callout 2). Turn the screw clockwise (CW) to decrease the distance of L1 (increase L2), and counterclockwise to increase the distance of L1 (decrease L2).

Figure 7-13 The bracket fixing screw

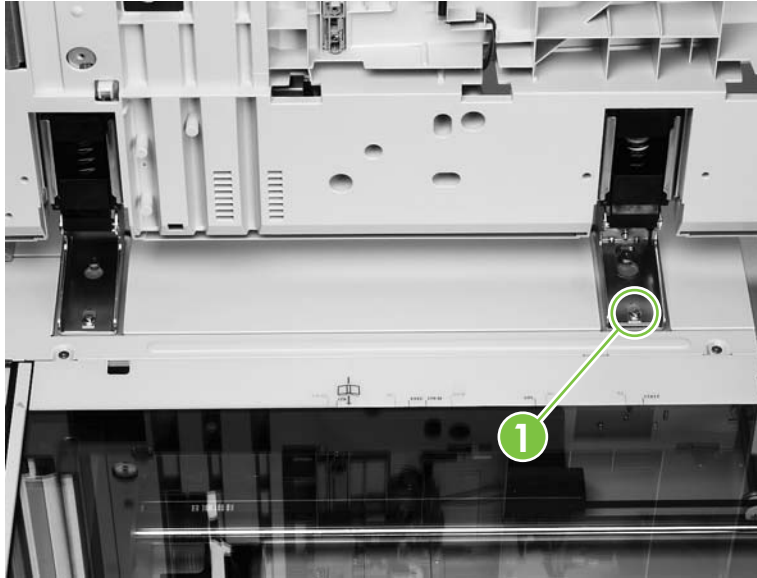
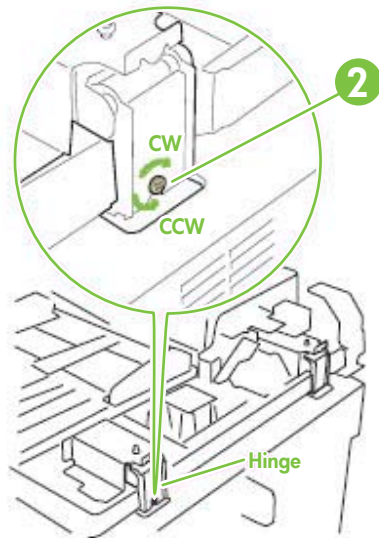


Figure 7-14 The ADF skew adjustment screw



NOTE: The skew adjusts 0.7 mm (0.03 inch) with each rotation of the ADF skew adjusting screw.

NOTE: Loosen the bracket fixing screw (callout 1) before turning the ADF adjusting screw. Be sure to tighten the it after the adjustment.

ADF width sensor adjustment

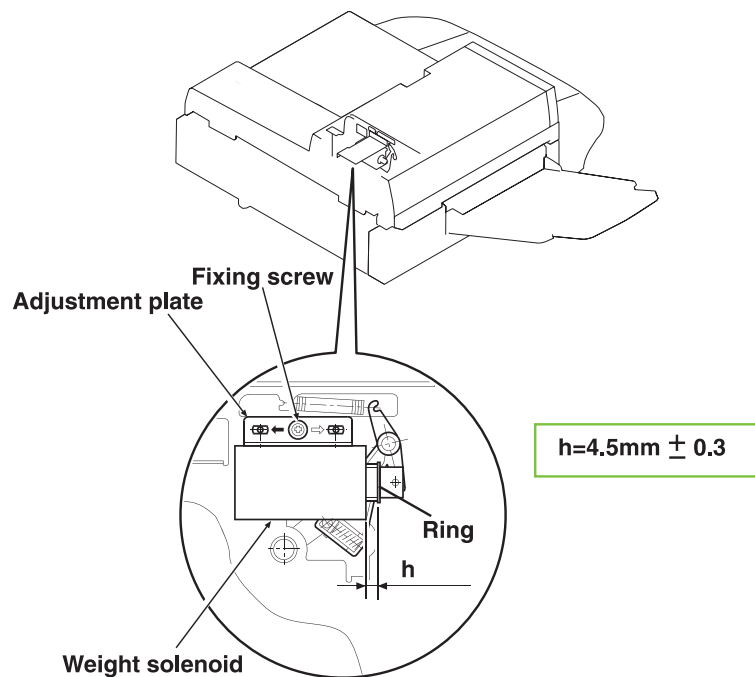
1. Touch **Administration** and open the **Service** menu (PIN: M9059 MFP: 04905008).
2. Touch **Scanner Settings**, and then touch **ADF tray width**.
3. Follow the instructions on the control panel.

4. Move the ADF width guides to A3.
5. Touch **OK**.
6. Move the ADF width guides to A6R (designated by a black triangle on the ADF).
7. Touch **OK**. The new values are stored.

Weight solenoid stroke adjustment

Measure the distance “h” with the weight arm lowered. If the distance of “h” is not 4.5 mm (0.18 inch) $\pm$ 0.3 mm (0.012 inch), then loosen the fixing screw and slide the adjustment plate to the left or to the right until the distance “h” is within specifications.

Figure 7-15 The location of the weight solenoid stroke adjustments



Tray 4 diagnostics

Tray 4 can run standalone diagnostics to test the product motors, functionality, and sensors. You need one power cord, one #2 Phillips screwdriver, and a small flatblade screwdriver for the DIP switches.

Motor test

This test verifies that the three motors on Tray 4 are functioning correctly.

1. Identify the back cover (opposite from the tray door). Remove the four screws in the back cover. Remove the back cover.
2. Pull open the tray.
3. Set the DIP switches on the controller PCA to the motor-test mode as shown on the diagnostics label inside the Tray 4 back cover.
4. To turn the power-supply switch to the diagnostic mode, pull out on the blue handle.
 - If the motors are working correctly, you will hear them as they rotate continuously.
 - If the motors do not rotate, replace the corresponding FRU: either the paper pickup assembly or the paper-deck drive assembly.
5. To stop the test, return the power switch to the operational mode (push it in), and reset the DIP switches on the controller PCA to the off position.

Standalone running test

This test verifies that Tray 4 is functioning correctly. For this test, use the LED that is located on the controller PCA on Tray 4.

 **NOTE:** If Tray 4 is mounted underneath the product, jams might occur because the product will not pick up the media. To prevent excessive jams during this test, feed only six to eight pages.

1. Make sure that media is in the tray.
2. Set the DIP switches on the controller PCA for the standalone running mode as shown on the diagnostics label inside the Tray 4 back cover.
3. To set the power-supply switch to diagnostic mode, pull the blue power-supply switch outward. The motors start. Media should be lifted from the tray. If the unit does not work correctly, the lower service LED on the controller PCA flashes in a pattern that indicates the problem. (See [User- and service-level diagnostics on page 322](#) for an interpretation of the LED patterns.)
4. To stop the test, return the power-supply switch to the operational mode, and set the DIP switches on the controller PCA to the off position (see [Table 7-6 DIP switch settings on page 350](#)). Open Tray 4, and remove any media from the paper path.

Sensor test

This test manually activates the sensors on Tray 4 to test whether they are working correctly.

1. Set the DIP switches on the controller PCA for the sensor-test mode as shown on the diagnostics label inside the Tray 4 back cover.
2. For each paper sensor, perform the following actions:
 - Pull open the paper tray.
 - Remove the metal spring that holds the sensor unit in place (secured by one screw).
 - Pull out the sensor unit.
3. To set the power-supply switch to the diagnostic mode, pull the blue power-supply switch outward.
4. To manually activate each sensor, press it in.
 - When you activate the sensor, the bottom service LED on the controller PCA illuminates. When you release the sensor, the LED turns off.
 - If the LED does not come on, a problem exists with the sensor. Replace the corresponding FRU.
5. To stop the test, return the power-supply switch to the operational mode, and set the DIP switches on the controller PCA to the off position (see table).

Table 7-6 DIP switch settings

DIP switch	Normal	Motor test	Stand-alone running test	Sensor test
1	Off	On	On	Off
2	Off	On	Off	Off
3	Off	Off	Off	On
4	Off	On	On	On

 **NOTE:** Make sure that you turn the power supply off and set all the DIP switches to the off position (normal settings) when you finish the diagnostics, or the unit will not work correctly. Then, replace the back cover.

Light-pattern interpretation

If Tray 4 is working correctly, it picks up media from the tray and feeds it to the product, and the bottom service light flashes regularly every 0.5 seconds.

Table 7-7 Tray 4 light-pattern interpretation

Long (1 sec.)	Short (0.03 sec.)	Error number and meaning	Recommended action
3	1	66.11.01 lifter malfunction	Lift the tray by hand to make sure that it lifts smoothly. Make sure that the paper-size plates are correctly installed (in the same corresponding slots) and are not bent. If neither of these is the problem, replace Tray 4.
2	1	13.11.11 registration-sensor delay jam	If the media does not reach the sensor, open the door and remove the media. Replace the paper pickup assembly.
2	2	13.11.3B registration-sensor station jam/initial jam	Open the door, and remove the media. Check the sensors, and replace the corresponding FRU.
2	3	13.11.31 jam-sensor delay jam	If the media did not reach the sensor, open the door and remove the media. Replace the paper pickup assembly.
2	4	13.11.21 13.11.2B jam-sensor stationary jam/initial jam	Open the door and remove the media.
1	1	paper-path door open	Close the door.
1	2	tray open or wrong media size loaded	Close the tray. Load the correct size of media, or check the sensors.
1	3	no media in tray	Load the media, or check the sensors.

 **NOTE:** If the LED does not illuminate, replace the paper-deck PCA or the universal-power-supply assembly.

Clear jams

If a jam message displays on the control panel, look for media in the locations indicated in the following illustration. You might look for jammed media in locations other than those that are indicated in the jam message. If the location of the jam is not obvious, start looking in the front door area.

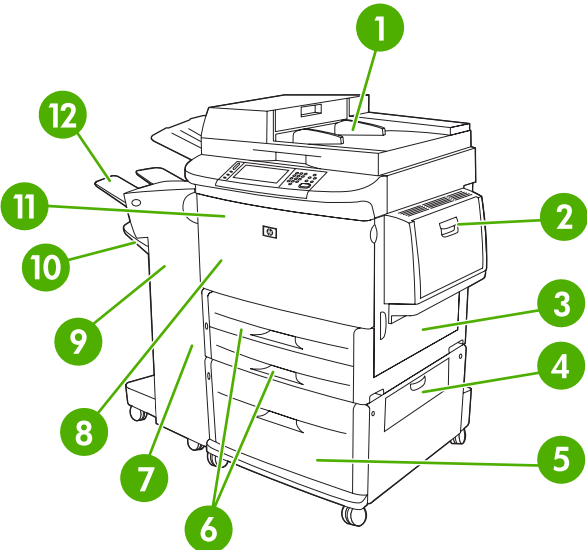
After looking at the illustration, you can go to the procedure for clearing the jam. When clearing jams, be careful to avoid tearing the media. If a small piece of media remains in the product, it could cause additional jams. If jams are a recurring problem, see [Solve repeated jams on page 371](#).

 **NOTE:** Loose toner might remain in the product after a jam and cause output quality problems. These should clear up within a few pages.

 **WARNING!** Surfaces in and around the product can be hot. Turn off the product and allow it to cool before attempting to clear jams.

Jam locations

Figure 7-16 HP LaserJet M9059 MFP with the 3000-sheet stapler/stacker



1	ADF
2	Tray 1
3	Right door
4	Vertical transfer door
5	Tray 4
6	Trays 2 and 3
7	Left door (behind the output device)
8	Duplexer (inside the product)
9	Output device
10	Lower bin
11	Front door and print-cartridge area
12	Upper bin

ADF jams

ADF jams occur when media either does not reach or does not clear a sensor along the paper path in a specific amount of time. If a jam occurs in the scan engine, the product control panel shows an ADF paper jam error.

Jams can occur most often when the following conditions exist:

- Paper trays are not loaded correctly.
- Media fails to meet specifications.
- Media is in poor condition.
- The product is not clean.

Table 7-8 ADF jam troubleshooting

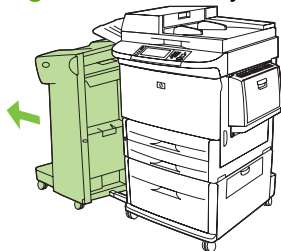
Cause	Solution
Improper action of the document shutter.	If the spring or arm for the document shutter is out of place, reset it.
Defective shutter solenoid.	Replace the shutter solenoid.
Dirty, worn, or deformed weight solenoid.	If the weight solenoid is worn or deformed, replace it.
Dirty, worn, or deformed pickup roller.	If the pickup roller is dirty, clean it water dampened lint-free cloth.
	If the pickup roller is worn or deformed, replace it.
Dirty, worn, or deformed feed roller assembly.	If the feed roller assembly is dirty, clean it water dampened lint-free cloth.
	If the feed roller assembly is worn or deformed, replace it.
Dirty, worn, or deformed upper or lower registration roller assembly.	If the registration roller assembly is dirty, clean it water dampened lint-free cloth.
	If the registration roller assembly is worn or deformed, replace it.
Dirty, worn, or deformed upper or lower delivery rollers.	If the delivery rollers are dirty, clean them water dampened lint-free cloth.
	If the delivery rollers are worn or deformed, replace them.
Cause	Solution
Multiple feed	
Dirty, worn, or deformed separation belts.	If the separation belts are dirty, clean them water dampened lint-free cloth.
	If the separation belts are worn or deformed, replace them.
Dirty, worn, or deformed feed roller assembly.	If the feed roller assembly is dirty, clean it water dampened lint-free cloth.
	If the feed roller assembly is worn or deformed, replace it.
Wrinkles/folded leading edge	

Cause	Solution
Dirty, worn, or deformed separation belts.	If the separation belts are dirty, clean them water dampened lint-free cloth. If the separation belts are worn or deformed, replace them.
Dirty, worn, or deformed feed roller assembly.	If the feed roller assembly is dirty, clean it water dampened lint-free cloth. If the feed roller assembly is worn or deformed, replace it.
Dirty, worn, or deformed registration roller assembly.	If the registration roller assembly is dirty, clean it water dampened lint-free cloth. If the registration roller assembly is worn or deformed, replace it.
Dirty, worn, or deformed delivery rollers.	If the registration roller assembly is dirty, clean it water dampened lint-free cloth. If the registration roller assembly is worn or deformed, replace it.
Skew	
Paper dust or dirt in the feed roller, registration roller, and/or feed guide.	Clean the dirty area water dampened lint-free cloth.
Deformed registration roller or feed roller.	Replace the deformed roller.

Clear jams from the duplexer

1. Move the output device away from the product to gain access to the left door.

Figure 7-17 Clear jams in the duplex printing accessory (1 of 6)



2. Open the left door and carefully pull out any paper from area.

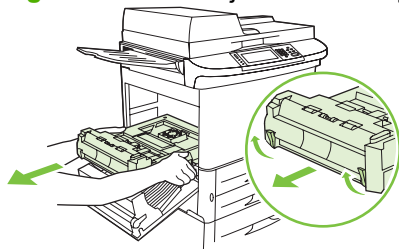
⚠ **WARNING!** Avoid touching the adjacent fusing area. It can be hot.

Figure 7-18 Clear jams in the duplex printing accessory (2 of 6)



3. Remove the duplex printing accessory by pressing the green lever and pulling the unit out until it stops.

Figure 7-19 Clear jams in the duplex printing accessory (3 of 6)



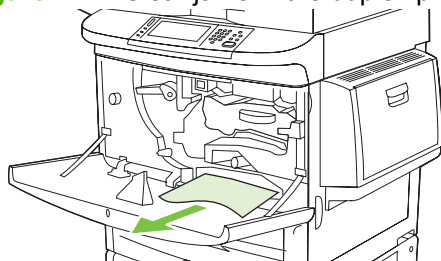
4. Remove any paper by lifting the two green levers in the duplex printing accessory.
5. Open the front door.

Figure 7-20 Clear jams in the duplex printing accessory (4 of 6)



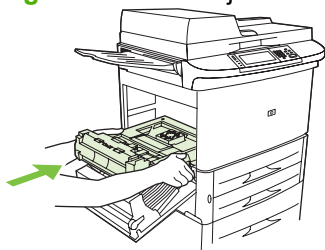
6. Check for paper in the duplex printing accessory area, and remove any paper by pulling it out of the product. Be careful not to tear the paper.

Figure 7-21 Clear jams in the duplex printing accessory (5 of 6)



7. Reinstall the duplex printing accessory by sliding it back into the slot until it locks into place.

Figure 7-22 Clear jams in the duplex printing accessory (6 of 6)



8. Close all open doors. Push the output device back into place.

Clear jams from the input-tray areas

Clear jams in Tray 1

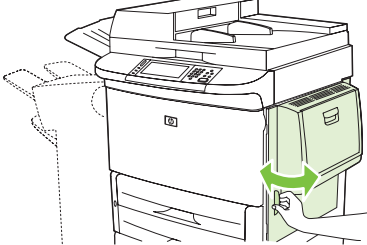
1. Check for media in the Tray 1 area, and remove any media from this area. Carefully check to be sure you have removed all pieces of torn media.

Figure 7-23 Clear jams in Tray 1 (1 of 2)



2. Open and close the right door to reset the product.

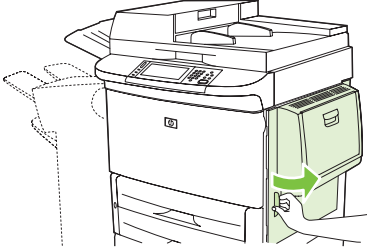
Figure 7-24 Clear jams in Tray 1 (2 of 2)



Clear jams inside the right door

1. Open the right door.

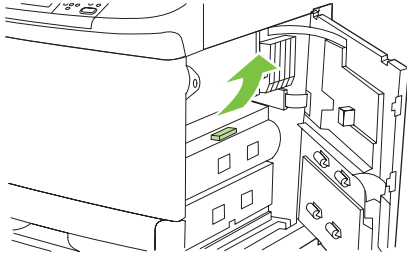
Figure 7-25 Clear jams inside the right door (1 of 3)



2. Check for media in the right door area, and remove any media from this area. Carefully check to be sure you have removed all pieces of torn media.

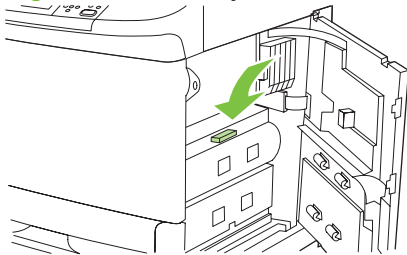
3. Open the jam access cover. Pull out and lift the green tab.

Figure 7-26 Clear jams inside the right door (2 of 3)



4. Remove any media from this area by pulling it out of the product.
5. Push the green lever down to the original position.

Figure 7-27 Clear jams inside the right door (3 of 3)



6. Close the right door.

Clear jams in Trays 2 and 3

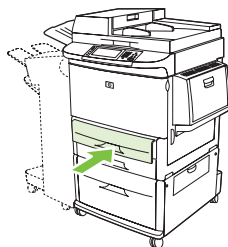
1. Open the tray until it stops.

Figure 7-28 Clear jams in Trays 2 and 3 (1 of 3)



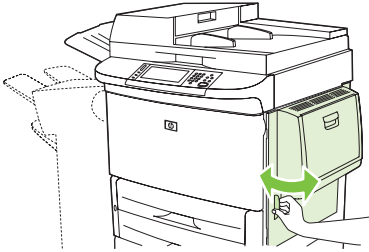
2. Check for media in the tray area, and remove any media from this area. Carefully check to be sure you have removed all pieces of torn media.
3. Close the tray.

Figure 7-29 Clear jams in Trays 2 and 3 (2 of 3)



4. Open the right door, remove any visible media, and close the right door. This resets the product.

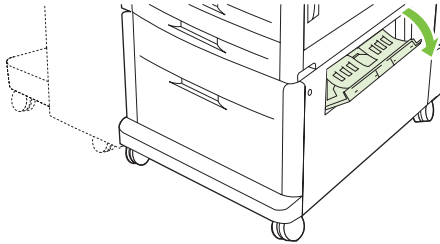
Figure 7-30 Clear jams in Trays 2 and 3 (3 of 3)



Clear jams in Tray 4

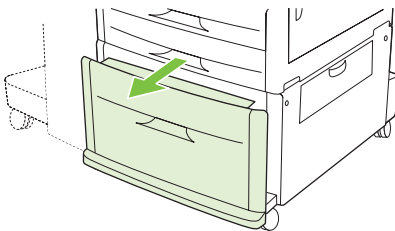
1. Open the vertical transfer door on Tray 4.

Figure 7-31 Clear jams in Tray 4 (1 of 4)



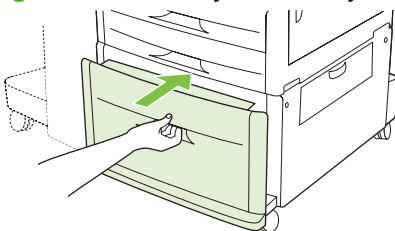
2. Check for paper in this area, and remove any paper from this area. Carefully check to be sure that you have removed all pieces of torn paper.
3. If you did not see any paper in the vertical transfer door, open Tray 4.

Figure 7-32 Clear jams in Tray 4 (2 of 4)



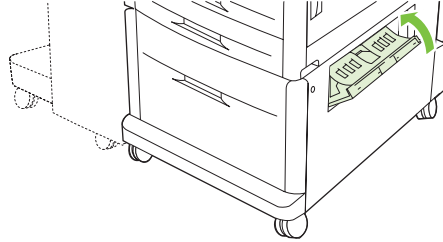
4. Check for paper in the tray area, and remove any paper from this area. Carefully check to be sure you have removed all pieces of torn paper.
5. Close Tray 4.

Figure 7-33 Clear jams in Tray 4 (3 of 4)



6. Close the vertical transfer door.

Figure 7-34 Clear jams in Tray 4 (4 of 4)

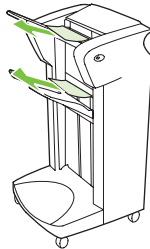


Clear jams from the output areas

Clear jams in the stacker or stapler/stacker

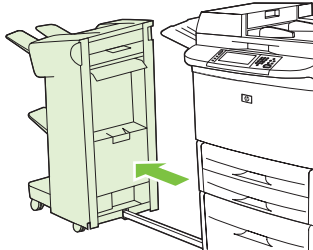
1. If the jam extends into the output bins, slowly and carefully pull the media straight out of the product so that it does not tear.

Figure 7-35 Clear jams in the stacker or stapler/stacker (1 of 7)



2. Move the output device away from the product.

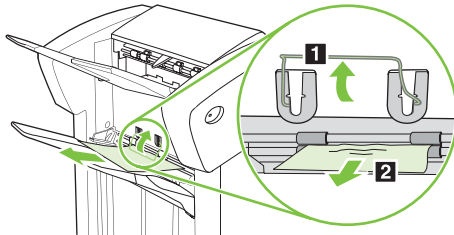
Figure 7-36 Clear jams in the stacker or stapler/stacker (2 of 7)



3. On the stacker, lift the wire on the lower bin of the product, and carefully pull out any media from this area. On the stapler/stacker, carefully pull out any media that might be protruding from the accumulator area.

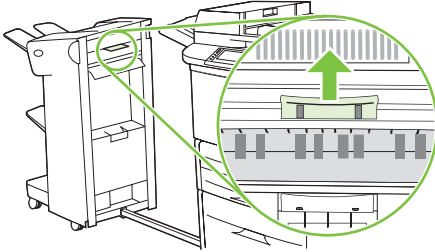
 **NOTE:** Only the stacker has the wire on the lower bin.

Figure 7-37 Clear jams in the stacker or stapler/stacker (3 of 7)



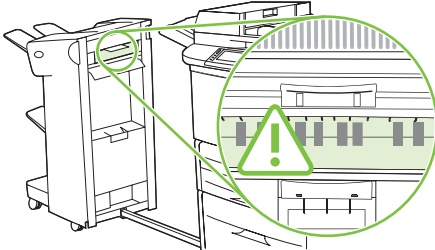
4. Locate the green handle in the flipper area and lift the handle.

Figure 7-38 Clear jams in the stacker or stapler/stacker (4 of 7)



5. Carefully pull out any media from the flipper area.

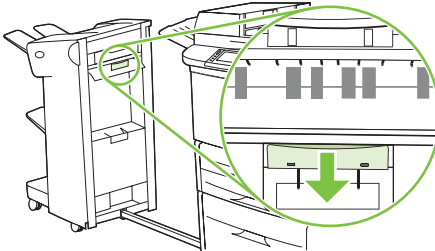
Figure 7-39 Clear jams in the stacker or stapler/stacker (5 of 7)



⚠ WARNING! Avoid touching the flipper area. It can be hot.

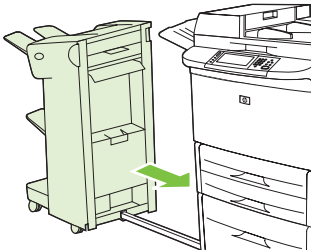
6. Locate the green handle in the paper path module, and then pull down on the handle.

Figure 7-40 Clear jams in the stacker or stapler/stacker (6 of 7)



7. Carefully pull out any media from the paper path module.
8. Close all open doors. Push the output device back into place.

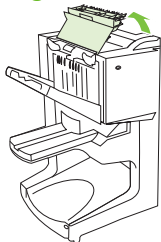
Figure 7-41 Clear jams in the stacker or stapler/stacker (7 of 7)



Clear jams in the paper-path area of the multifunction finisher

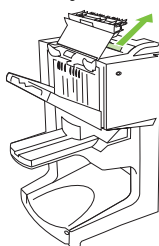
1. Open the top cover.

Figure 7-42 Clear jams in the paper-path area of the multifunction finisher (1 of 3)



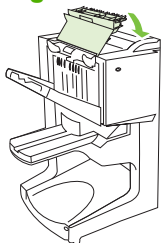
2. Slowly and carefully pull the paper straight out of the finisher so that it does not tear.

Figure 7-43 Clear jams in the paper-path area of the multifunction finisher (2 of 3)



3. Close the finisher cover.

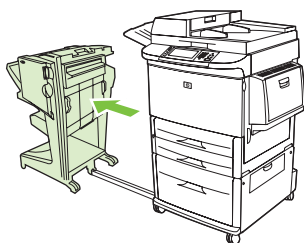
Figure 7-44 Clear jams in the paper-path area of the multifunction finisher (3 of 3)



Clear jams in between the multifunction finisher and the product

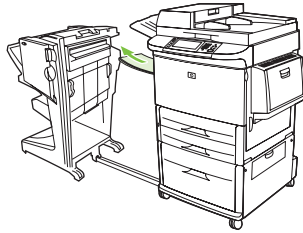
1. Move the finisher away from the product.

Figure 7-45 Clear jams in between the multifunction finisher and the product (1 of 4)



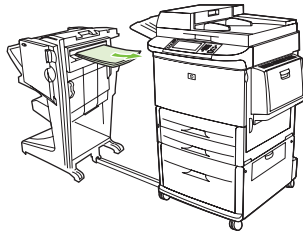
2. Carefully remove any paper from the product output area.

Figure 7-46 Clear jams in between the multifunction finisher and the product (2 of 4)



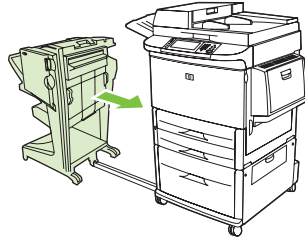
3. Carefully remove any paper from the finisher input area.

Figure 7-47 Clear jams in between the multifunction finisher and the product (3 of 4)



4. Push the multifunction finisher back into place.

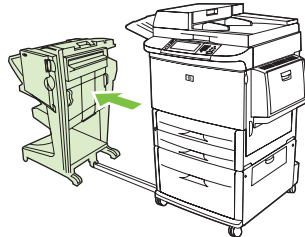
Figure 7-48 Clear jams in between the multifunction finisher and the product (4 of 4)



Clear booklet jams in the multifunction finisher

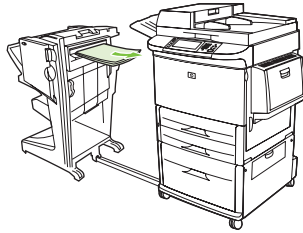
1. Move the finisher away from the product.

Figure 7-49 Clear booklet jams in the multifunction finisher (1 of 7)



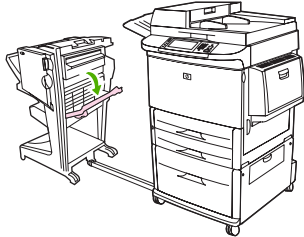
2. If paper is jammed in the finisher input area but has not entered the folding rollers, carefully remove the paper from the input area and then skip to step 7.

Figure 7-50 Clear booklet jams in the multifunction finisher (2 of 7)



3. Open the back door on the finisher. If jammed paper inside the finisher has not entered the folding rollers, remove the paper and then skip to step 7. If the paper has entered the folding rollers, proceed to step 4.

Figure 7-51 Clear booklet jams in the multifunction finisher (3 of 7)



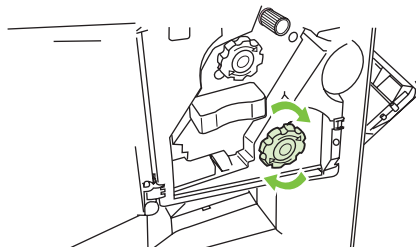
4. Open the stapler-unit door.

Figure 7-52 Clear booklet jams in the multifunction finisher (4 of 7)



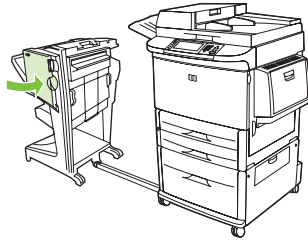
5. Turn the bottom green knob clockwise to advance the jammed paper through the folding rollers and into the booklet bin.

Figure 7-53 Clear booklet jams in the multifunction finisher (5 of 7)



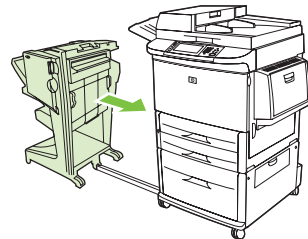
6. Close the stapler-unit door.

Figure 7-54 Clear booklet jams in the multifunction finisher (6 of 7)



7. Push the multifunction finisher back into place.

Figure 7-55 Clear booklet jams in the multifunction finisher (7 of 7)



Clear a staple jam from the multifunction finisher

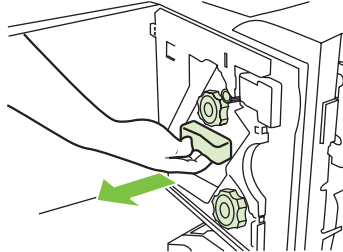
1. Open the stapler-unit door.

Figure 7-56 Clear a staple jam from the multifunction finisher (1 of 11)



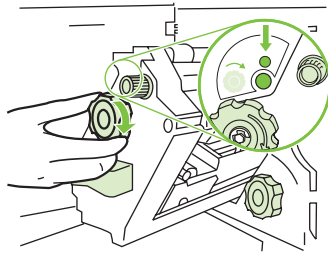
2. Slide the stapler unit toward you.

Figure 7-57 Clear a staple jam from the multifunction finisher (2 of 11)



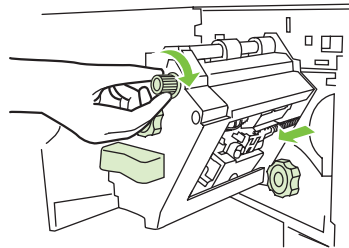
3. Turn the large green knob until you see the blue dot (this indicates that the stapler is fully open).

Figure 7-58 Clear a staple jam from the multifunction finisher (3 of 11)



4. Turn the small green knob at the top of the stapler unit clockwise until the staple cartridge moves to the left of the stapler unit.

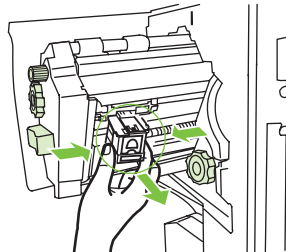
Figure 7-59 Clear a staple jam from the multifunction finisher (4 of 11)



△ **CAUTION:** The blue dot must appear in the window of the stapler unit before you remove the staple cartridge. If you try to remove the staple cartridge before the blue dot appears in the window, you could damage the product.

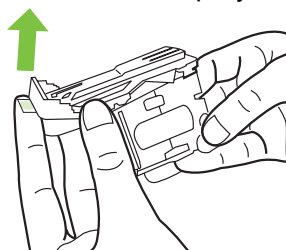
5. Remove the staple cartridge.

Figure 7-60 Clear a staple jam from the multifunction finisher (5 of 11)



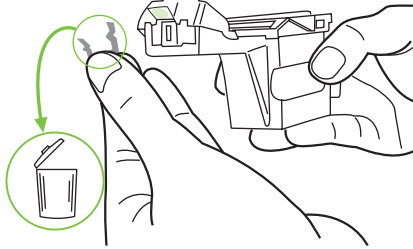
6. Pull up on the lever labeled with a green dot.

Figure 7-61 Clear a staple jam from the multifunction finisher (6 of 11)



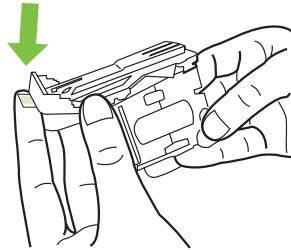
7. Remove the damaged staple.

Figure 7-62 Clear a staple jam from the multifunction finisher (7 of 11)



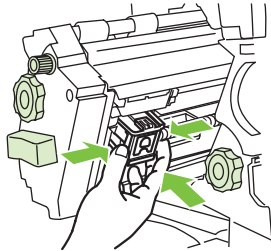
8. Press down on the lever labeled with a green dot.

Figure 7-63 Clear a staple jam from the multifunction finisher (8 of 11)



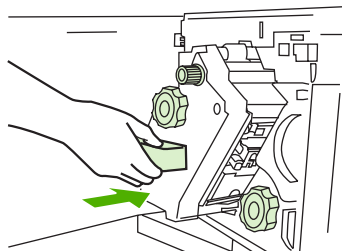
9. Reinstall the staple cartridge.

Figure 7-64 Clear a staple jam from the multifunction finisher (9 of 11)



10. Slide the stapler unit into the product.

Figure 7-65 Clear a staple jam from the multifunction finisher (10 of 11)



11. Close the stapler-unit door.

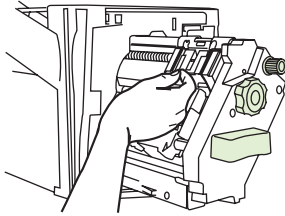
Figure 7-66 Clear a staple jam from the multifunction finisher (11 of 11)



Clear a jam in the upper half of the stapler head in the multifunction finisher

1. Follow steps 1 through 4 of the procedure to clear a staple jam from the multifunction finisher.
2. Locate the damaged staple at the back of the stapler head, and remove the staple.

Figure 7-67 Clear a jam in the upper half of the stapler head in the multifunction finisher

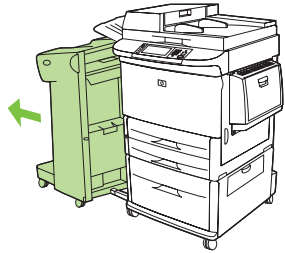


3. Follow steps 10 through 11 from the procedure to clear a staple jam from the multifunction finisher.

Clear a staple jam from the stapler/stacker

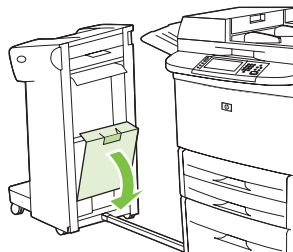
1. Move the stapler/stacker away from the product.

Figure 7-68 Clear a staple jam from the stapler/stacker (1 of 9)



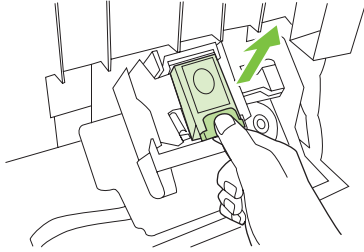
2. Open the stapler unit door.

Figure 7-69 Clear a staple jam from the stapler/stacker (2 of 9)



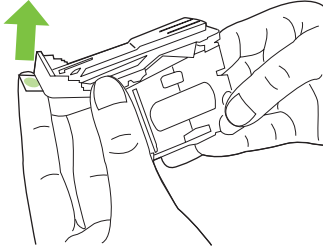
3. Pull the cartridge out.

Figure 7-70 Clear a staple jam from the stapler/stacker (3 of 9)



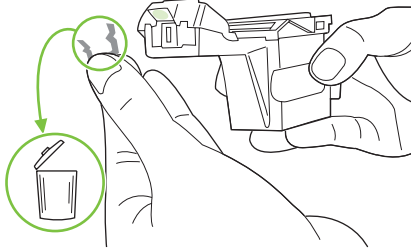
4. Pull up on the lever labeled with a green dot.

Figure 7-71 Clear a staple jam from the stapler/stacker (4 of 9)



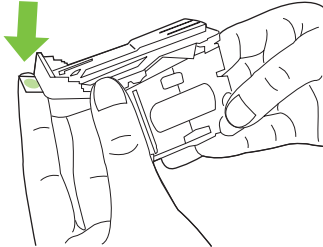
5. Remove the damaged staple.

Figure 7-72 Clear a staple jam from the stapler/stacker (5 of 9)



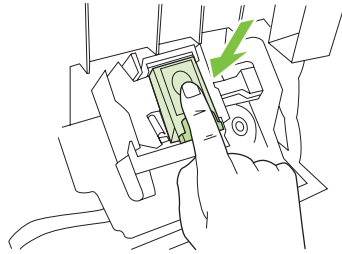
6. Press down on the lever labeled with a green dot.

Figure 7-73 Clear a staple jam from the stapler/stacker (6 of 9)



7. Reinstall the staple cartridge.

Figure 7-74 Clear a staple jam from the stapler/stacker (7 of 9)



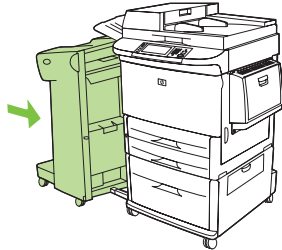
8. Close the stapler unit door.

Figure 7-75 Clear a staple jam from the stapler/stacker (8 of 9)



9. Push the stapler/stacker back into place.

Figure 7-76 Clear a staple jam from the stapler/stacker (9 of 9)

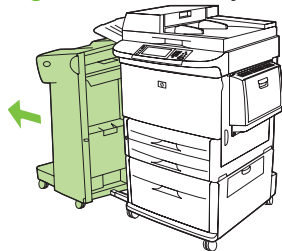


 **NOTE:** The stapler needs to reload after clearing a staple jam, so the first few documents (no more than five) might not be stapled. If a print job is sent and the stapler is jammed or is out of staples, the job will still print as long as the path to the output bin is not blocked.

Clear jams in the left door (fuser area)

1. Move the output device away from the product to gain access to the left door.

Figure 7-77 Clear jams in the left door (1 of 4)



2. Open the left door.

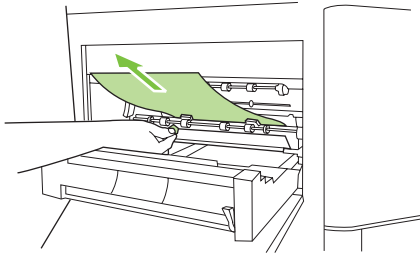
⚠ **WARNING!** Avoid touching the adjacent fusing area. It can be hot.

Figure 7-78 Clear jams in the left door (2 of 4)



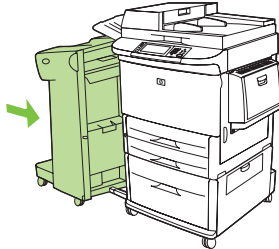
3. Remove any jammed or damaged media from this area by pulling it out of the product.
4. Press down on the green tab and carefully check for media. Be sure to remove all pieces of torn media.

Figure 7-79 Clear jams in the left door (3 of 4)



5. Close the left door. Push the output device back into place.

Figure 7-80 Clear jams in the left door (4 of 4)



Clear jams in the 8-bin mailbox

1. Move the 8-bin mailbox away from the product. To do this, stand on the left side of the product and pull the 8-bin mailbox straight toward you.

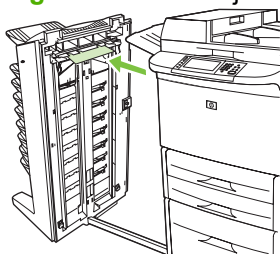
Figure 7-81 Clear jams in the 8-bin mailbox (1 of 3)



2. Carefully remove the upper (face-up) bin.

3. Pull down the handle on the output paper module and remove any jammed paper from this area.

Figure 7-82 Clear jams in the 8-bin mailbox (2 of 3)



4. Push the 8-bin mailbox back into place, and then reattach the upper bin.

Figure 7-83 Clear jams in the 8-bin mailbox (3 of 3)



 **NOTE:** Check that the paper used is not thicker than the 8-bin mailbox supports.

Solve repeated jams

Situation	Solution
General repeated jam problems	1. Verify that the media is correctly loaded in the trays and that all width guides are correctly set. 2. Verify that the paper tray is set for the size of media installed and that the tray is not overloaded. 3. Try turning over the stack of media in the tray. If you are using pre-punched or letterhead paper, try printing from Tray 1. 4. Do not use previously printed media or torn, worn, or irregular media. 5. Check the media specifications. If media is outside of the recommended specifications, problems can occur. 6. The product might be dirty. Clean the product as described in the English version of this service manual. 7. Check that all damaged or jammed media is removed from product.
Repeated jams in the ADF	The ADF might be dirty. Clean the ADF as described in the English version of this service manual.

 **NOTE:** If jams continue, contact your dealer for support.

Image-formation troubleshooting

Try to obtain a print sample of an image formation issue to help with troubleshooting the product. Get an idea of the quality expected from the product.

Image-formation problems are often linked to media that fails to meet specifications.

Table 7-9 Image-quality checks

Image-quality checks	Action
Does the problem repeat on the page?	Use the repeating defect ruler. See Repeating defect ruler on page 390
Is the print cartridge full and is it manufactured by HP?	See Print image defects on page 372 .
Does the media meet specifications?	See media specifications in the English version of this manual.
Is the print sample similar to those in the image defect tables?	Compare the sample to the tables, and then perform the recommended actions.
Is the problem on the print cartridge or the transfer charging roller?	If a dark and distinct toner image is present on the drum surface, assume that the first four functions of the electrophotographic process are functioning (cleaning, conditioning, writing, and developing), and troubleshoot the failure as a transfer or fusing problem.
Are the appropriate settings used to describe the originals?	Check the settings in the Default Options for Originals sub-menu in the Default Job Options menu.
Is the print quality problem associated with the ADF or the glass?	Compare the sample to the tables and perform the recommended actions.

Print image defects

Image-formation defects often result from problems with the print cartridge. Use the following list to verify that the print cartridge is operating correctly.

Perform all of the following checks before replacing the print cartridge.

- Make sure that the print cartridge contains toner.
 - The full print cartridge weight is approximately 4,220 g (9.28 lb).
 - The empty weight is approximately 2,700 g (5.94 lb).
- Check the print cartridge to see if it is disassembled or refilled.
- Make sure that the print cartridge is seated correctly in the product cavity.
- Inspect the cartridge for toner leaking through worn seals (manual rotation of the drum can cause internal damage and toner spills).



NOTE: The print cartridge is rated for 30,000 images at 5% coverage for two-page jobs. Check the surface of the photosensitive drum in the cartridge to see if it is damaged or scratched. Touching the drum contaminates the photosensitive surface and might cause spotting and defects during printing.

- White areas on the page might indicate that the drum was exposed to light for too long. If white areas appear, stop the product and wait a few minutes. This should eliminate most defective

images. If not, the print cartridge might be placed in a dark environment for several days, which might restore some life to the drum.

Print/stop test

The print/stop test allows you to print a test page and stop the print engine at the specified time. This allows you to remove the media and verify the image formation processes.

1. Touch **Administration**, and then touch **Troubleshooting**.
2. Touch **Print/Stop Test**, and then use the numeric keys to enter a stop time.
3. Touch **Administration**, and then touch **Troubleshooting**.
4. Touch **Paper Path Test**, touch **Source**, and then touch **Tray 4**.
5. Touch **Duplex**, and then touch **On**.
6. Touch **Test Page**, and then touch **Print**.

To end the print/stop test, remove the stopped media from the product, and then touch **OK**. The **Stop** button is inactive.

The table below shows print/stop test results with the following conditions:

- Letter/A4 size paper was used in Tray 4.
- The paper path test **Duplex** setting was set to **On**.
- The paper path test **Source** setting was set to **Tray 4**.
- The paper path test **Destination** setting was set to the default setting.

Table 7-10 Print/stop test measurements

Time	Media stop
0 msec	The media stops at the registration assembly.
700 msec	The media stops under the print cartridge, allowing the verification of the page 2 print quality.
2,000 msec	Side 2 has printed and media is entering the duplexer.
3,000 msec	The media stops in the duplexer.
5,000 msec	The media is leaving the duplexer before the printing of page 1.
6,700 msec	The media stops under the print cartridge, allowing the verification of the page 1 print quality.

Economode

Economode creates draft-quality printing by reducing the amount of toner on the printed page by up to 50%. Advise the customer to turn Economode on or off, either from the print driver or a software program.

Skew

Use the following information to gauge skew specifications.

- 2 mm over 260 mm (simplex and duplex)
- Leading edge plus or minus 2.5 mm (cut sheet media)
- Plus or minus 4.5 mm (envelopes)
- Left margin plus or minus 2.5 mm (cut sheet)

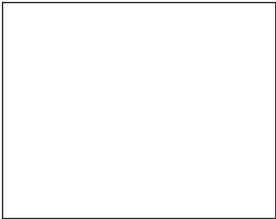
Copy-image defects

The first step in isolating a possible copy-image defect is to eliminate the print engine as the cause. Print several pages from a remote computer. Use print images that show the defect. If the defect appears on the printed pages, the problem might be with the print engine.

If the image defect does not appear on the printed pages, isolate the defect to a scan location or to the source of the copies. An image defect can be caused in the following scan locations:

- ADF front side (simplex)
- ADF back side (duplex, second side)
- Flatbed glass
- All of the above scan locations

Use the corresponding tables in this section to determine the type of defect (for example, blank pages or vertical lines) and then to identify the component that is likely the cause.

Defect	Cause	Solution
Blank page	Defective ADF inverter PCA.	Replace the ADF optical assembly.
	Defective ADF analog processor PCA.	Replace the ADF optical assembly.
	Defective ADF scanning lamp.	Replace the ADF optical assembly.
	Defective ADF CCD driver.	Replace the ADF optical assembly.

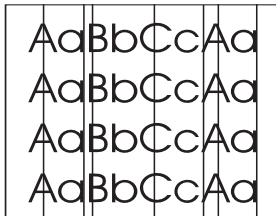
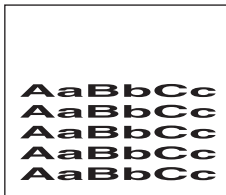
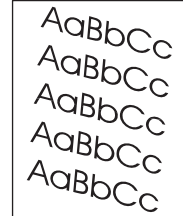
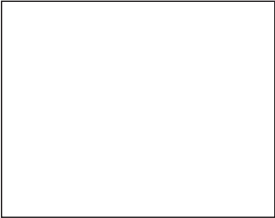
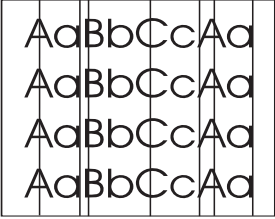
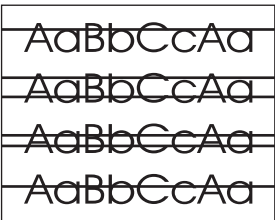
Vertical lines	Scars on the white calibration strips on the back of the glass.	Clean the white calibration strips on the back of the glass.
	Foreign substances deposited on the pickup roller.	Clean the pickup roller. If the problem persists, replace the pickup roller.
	Foreign substances deposited on the weight plate.	Clean the weight plate. If the problem persists, replace the weight plate.
	Foreign substances deposited on the feed rollers.	Clean the feed rollers. If the problem persists, replace the feed rollers.
	Foreign substances deposited on the registration rollers.	Clean the registration roller (upper and lower). If the problem persists, replace the registration rollers.
	Defective ADF analog processor PCA.	Replace the ADF optical assembly.
	Defective ADF CCD driver.	Replace the ADF optical assembly.
	Defective scanner controller board.	Replace scanner controller board.
Horizontal lines	Dirty ADF glass (flip-down).	Open the ADF. Release the blue flipdown glass latch (located toward the control panel end of the glass), and clean both sides of the flip-down glass.
	Scars on the white calibration strips on the delivery cover.	Clean the white calibration strip on the delivery roller cover. If the problem persists, replace the delivery roller cover.
	Defective ADF analog processor PCA.	Replace the ADF optical assembly.
	Defective ADF inverter PCA.	Replace the ADF optical assembly.
	Defective ADF scanning lamp.	Replace the ADF optical assembly.
	Defective ADF CCD driver.	Replace the ADF optical assembly.
	Defective scanner controller board.	Replace scanner controller board.
	Stretched/shrunk image	Incorrect motor speeds driving the registration rollers and delivery motors.
		
Skewed image	Paper dust or dirt in the feed roller, the registration roller, or the feed guide.	Clean with water-dampened lint-free cloth.
	Deformed registration roller or feed roller.	Replace the deformed roller.

Table 7-11 All scan locations

Blank page 	Defective scanner controller board.	Replace scanner controller board.
	Defective copy processor.	Replace the copy processor EIO.
Vertical lines 	Defective scanner controller board.	Replace scanner controller board.
	Defective copy processor.	Replace the copy processor EIO.
Horizontal lines 	Defective scanner controller board.	Replace scanner controller board.
	Defective copy processor.	Replace the copy processor EIO.
Moire patter	The default copy settings might not be optimal for some half-toned images.	Copy using the Printed picture setting (use the control panel to open the Copy menu, and then touch Optimize Text/Picture).

Scanner controller PCA

The product scan engine calibrations are stored on the scanner controller board (SCB). If the SCB needs to be replaced, back up the calibrations by copying the settings to the hard drive:

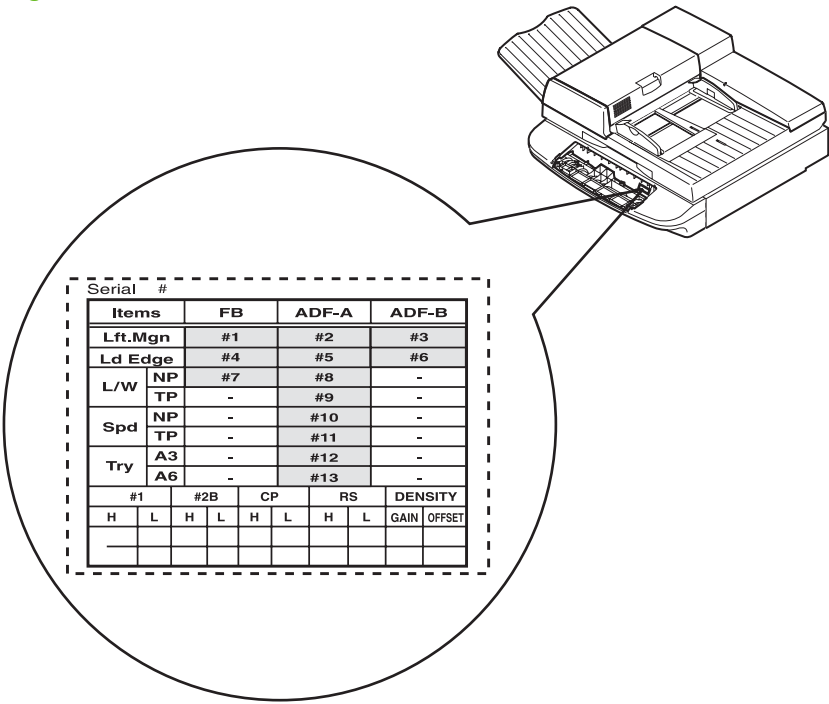
1. Touch **Administration**.
2. Touch **Service**, and enter the PIN (M9059 MFP: 04905008)
3. Touch **Scanner Settings**.
4. Touch **Save Settings**.



NOTE: Always back up the scanner settings before performing any scan engine calibration. Then you can restore the settings and start over if you encounter problems.

NOTE: A service label is located inside the flatbed lower front cover to record the calibration values. If you enter new calibration values, download an new service label, record the new values, and place the new label over the old one.

Figure 7-84 The scanner service label



Connector locations

Figure 7-85 Scanner engine connector locations (1 of 2)

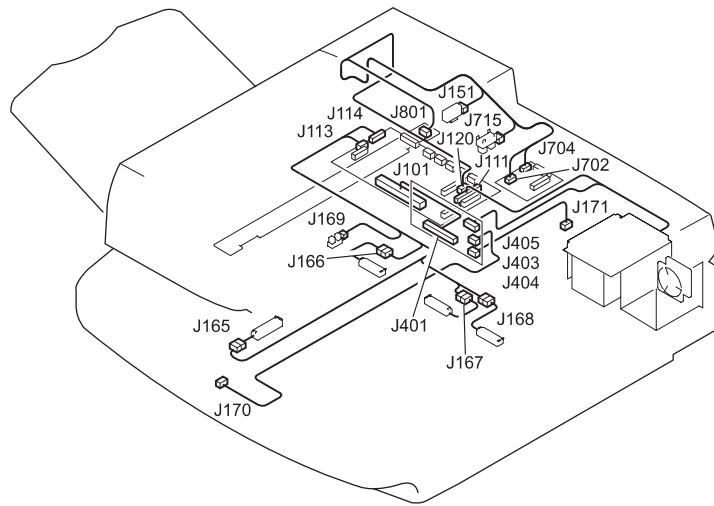
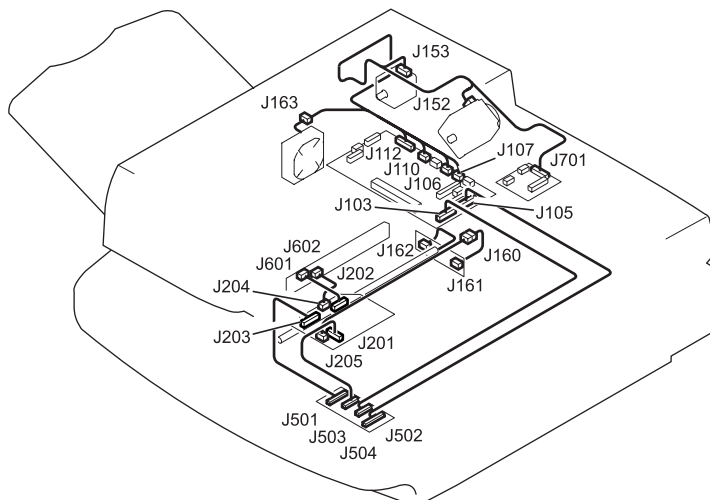
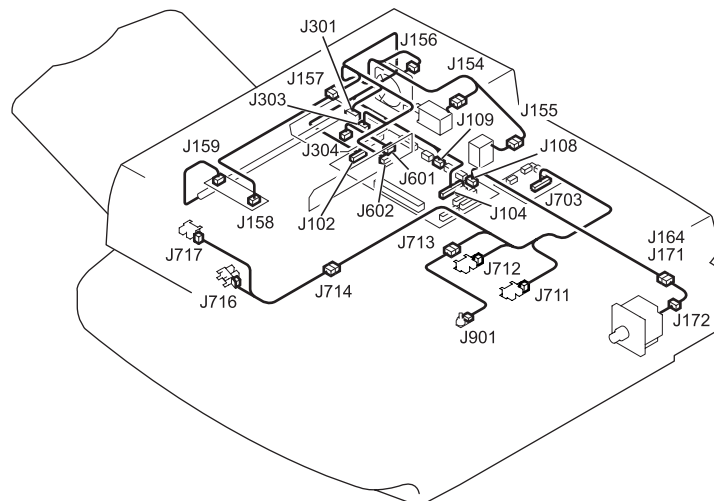


Figure 7-85 Scanner engine connector locations (1 of 2)



Electrical structure

Table 7-12 Scanner engine sensors, locations, and types

Sensor	Location	Type	Quantity
ADF angle (detects when ADF is 30°)	ADF	optical/flag	1
ADF document length detection	ADF	optical/flag	2
ADF feeder switch	ADF feeder	optical/flag	1
ADF open/closed	ADF	optical/flag	1
Document detection	flatbed	optical/reflective	1
Document size	flatbed	optical/reflective	3
Document width	ADF	potentiometer	1
Flatbed carriage home position	flatbed	optical/flag	1
Paper loaded (empty)	ADF feeder	optical/flag	1
Pickup roller home position	ADF feeder	optical/flag	1
Registration detections	ADF feeder	optical/flag	1
Skew detection	ADF feeder	optical flag	2
Timing	ADF feeder	optical flag	1

Wiring diagrams

Figure 7-86 Circuit diagram 1

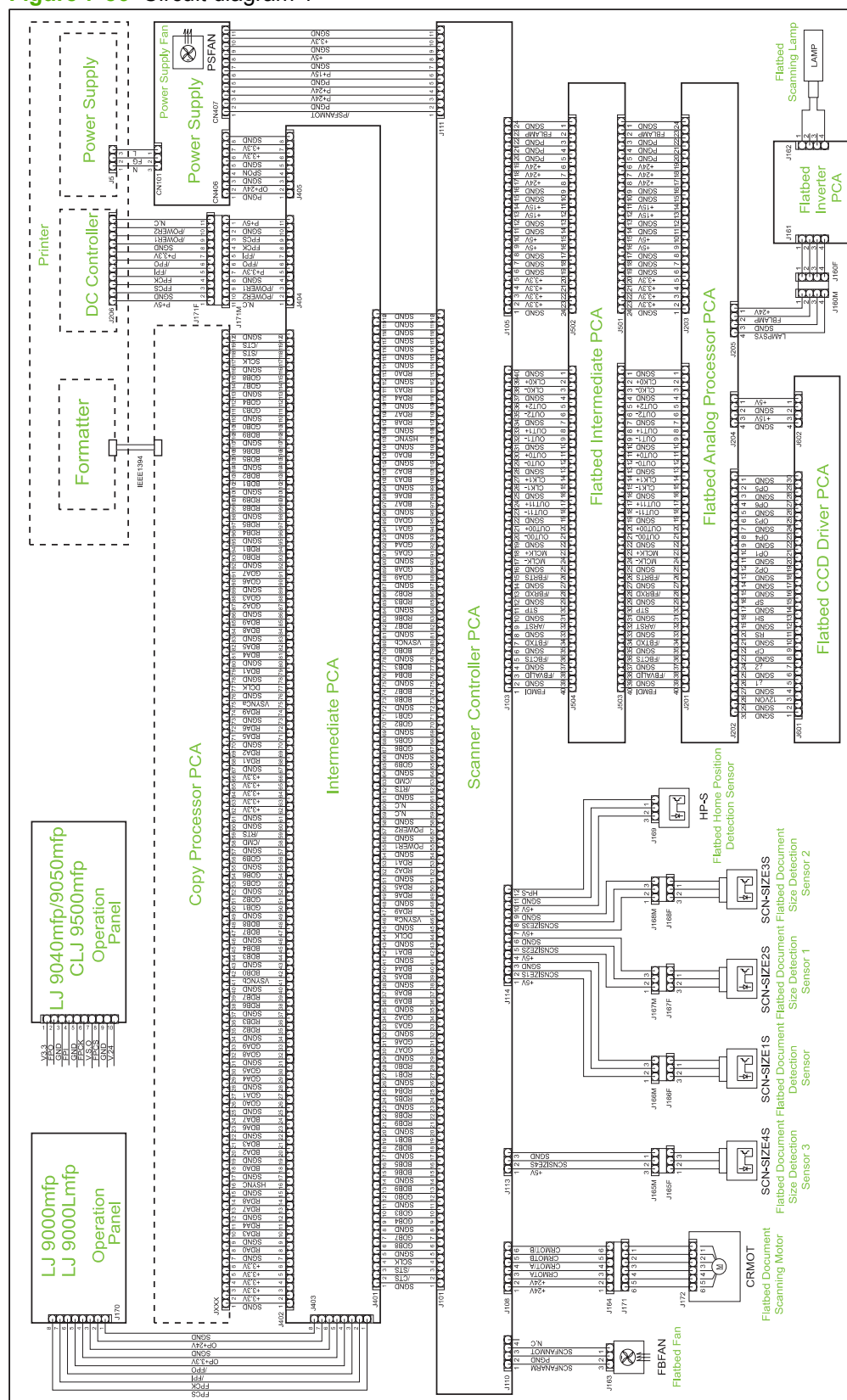


Figure 7-87 Circuit diagram 2

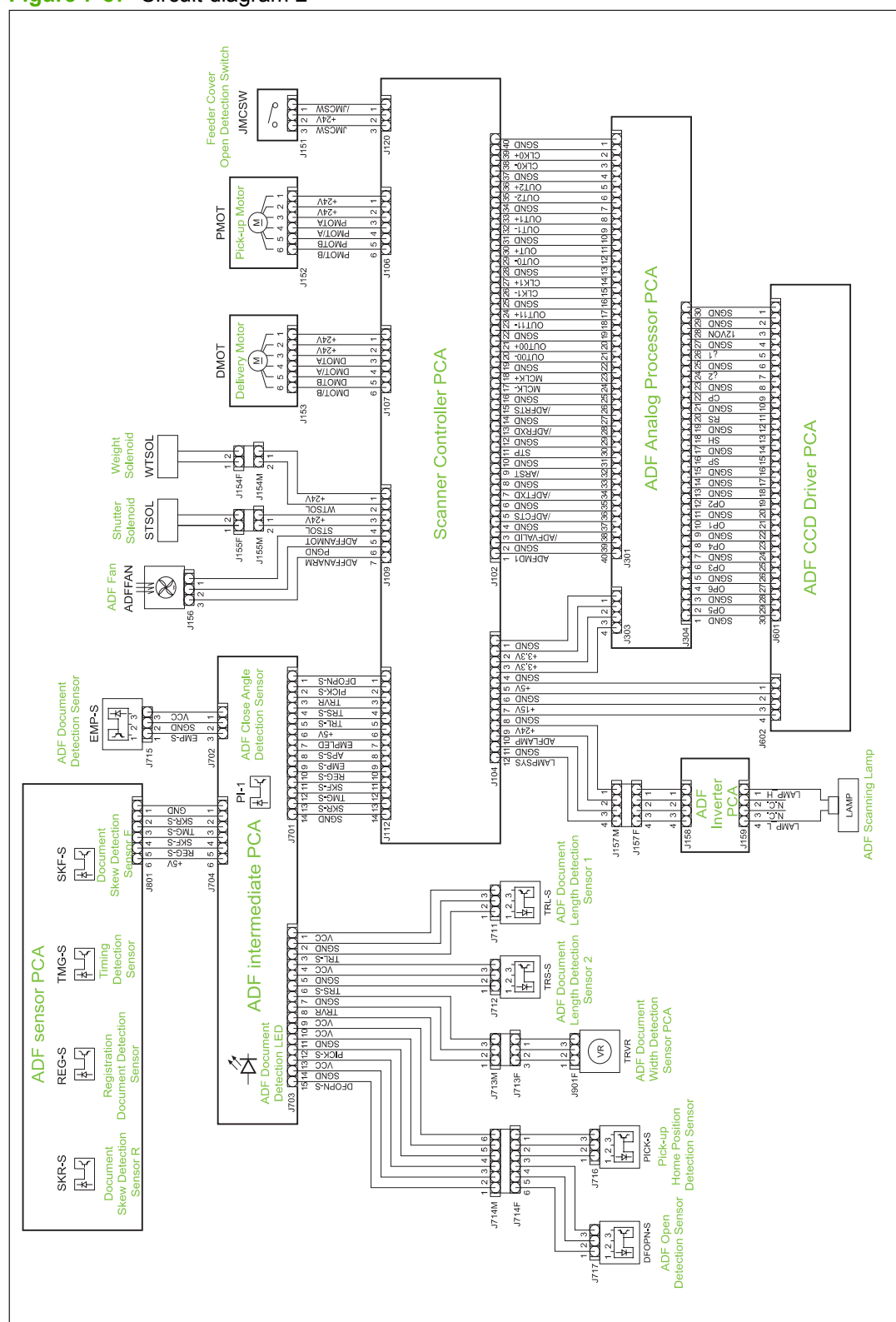


Image-defect tables

The product output quality is subject to customer judgment. This section helps define print-quality defects and the factors that affect print quality.

The print samples shown illustrate some print-quality defects. Keep copies of print-quality defects that you encounter in the field, and an explanation of their causes, to use for future reference.

Table 7-13 Image defects

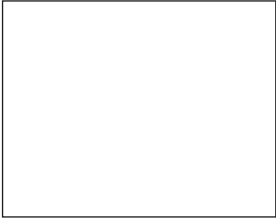
Problem	Cause	Solution
Black page 	The high-voltage power supply connections are contaminated. The high-voltage power supply is installed incorrectly. NOTE: If the high-voltage power supply was removed and replaced, it might not be seated correctly.	● Clean the high-voltage power supply terminals. ● Clean the high-voltage springs where they contact the print cartridge. ● Remove the high-voltage power supply and check the connectors and ribbon cable for damage. ● Reseat the high-voltage power supply, and make sure to fully seat the connectors and ribbon cable correctly.
	Defective primary charging roller.	● Replace the print cartridge.
	The laser drive circuitry is damaged on the DC controller board so that the laser is always on.	● Replace the laser/scanner assembly and DC controller board, and the formatter, if necessary.
White page 	The print cartridge is out of toner. The laser shutter is defective.	● Replace the print cartridge. ● Check the laser shutter for correct operation when closing the front door with the print cartridge installed.
	Transfer charging roller voltage does not exist.	● Replace the transfer roller assembly if necessary.
	Developing bias does not exist.	● Clean the high-voltage power supply contacts. ● Replace the high-voltage power supply.
	The laser/scanner cable assembly is defective.	● Replace the laser/scanner cable assembly.

Table 7-13 Image defects (continued)

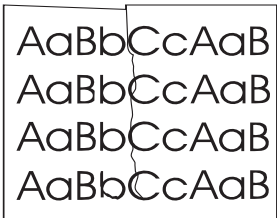
Problem	Cause	Solution
Blank spots 	The media does not meet product specifications or is stored incorrectly.	- Print a few more pages to see if the problem corrects itself. - Turn over the stack of media in the tray. Also try rotating the media 180°. If the media does not meet HP specifications, replace the media.
	The transfer charging roller is contaminated or deformed.	Replace the transfer charging roller.
	The print cartridge is defective.	Replace the print cartridge.
Wrinkles or creases 	The media fails to meet product specifications or is stored improperly.	- Print a few more pages to see if the problem persists. - Turn the stack over in the tray, or rotate the stack 180°. - Use media that meets product specifications.
	The operating environment fails to meet product specifications.	Place the product in an environment that meets product specifications.
	The media is loaded incorrectly	Load the media correctly, and be sure the guides are set correctly.
	The product is drawing media from the wrong tray.	Use a different tray. Tray 1 is meant for a wide range of media types.
	The product is sending the media to the wrong bin.	Set the product to use a different bin (face up or face down).
	The paper path is obstructed.	Check the paper path for debris. Check the paper path for damaged components.
	The fuse levers are in an incorrect position.	Set the levers in the down position for all media other than envelopes. Set the levers in the up position for envelopes only.

Table 7-13 Image defects (continued)

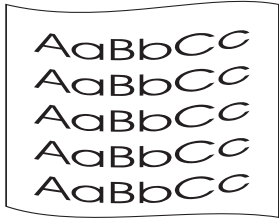
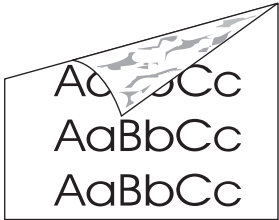
Problem	Cause	Solution
Curl or wave 	The media fails to meet product specifications or is stored improperly.	- Print a few more pages to see if the problem persists. - Turn the stack over in the tray, or rotate the stack 180°. - Use media that meets product specifications.
	The operating environment fails to meet product specifications.	Place the product in an environment that meets product specifications.
	The product is sending the media to the wrong bin.	Set the product to use a different bin (face up or face down).
	The fuser is configured with the wrong setting	Change the fuser mode setting in the control panel Print Quality menu, or select another media type in the print driver.
Contamination on back 	Parts of the product are contaminated. For example: tray separation roller, feed roller, transfer charging roller, fuser, or print cartridge.	- Print about 10 pages to see if the problem goes away. - Print a cleaning page. - Identify and clean the contaminated part. - Check for toner leaks.
	The media fails to meet product specifications or is stored improperly.	Print a few more pages to see if the problem persists. Turn the stack over in the tray, or rotate the stack 180° Use media that meets product specifications.
	The product requires a preventative maintenance kit.	If the product has printed about 350,000 pages, install a preventative maintenance kit.
Dropouts 	The media is too smooth.	Check the media type and quality.
	The operating environment fails to meet product specifications.	Place the product in an environment that meets product specifications.
	The toner density setting is incorrect.	Adjust the toner density setting in the control panel Print Quality menu (turn off Economode).
	The fuser is configured with the wrong setting	Change the fuser mode setting in the control panel Print Quality menu, or select another media type in the print driver.
	The product requires a preventative maintenance kit.	If the product has printed about 350,000 pages, install a preventative maintenance kit.

Table 7-13 Image defects (continued)

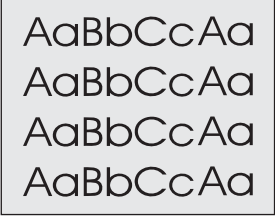
Problem	Cause	Solution
Bubbles 	The drum ground path is missing.	Check the drum ground spring, and reconnect it. Replace the high voltage power supply. NOTE: When the ground is interrupted, the drum cannot discharge. This causes the drum to repel the toner leaving the bubble print pattern.
Gray background 	The media fails to meet product specifications or is stored improperly.	Print a few more pages to see if the problem persists. Turn the stack over in the tray, or rotate the stack 180° Use media that meets product specifications.
	The operating environment fails to meet product specifications.	Place the product in an environment that meets product specifications.
	The toner density setting is incorrect.	Adjust the toner density setting in the control panel Print Quality menu (turn off Economode).
	The print cartridge is faulty.	Replace the print cartridge.
Horizontal black lines 	The print cartridge is defective.	Replace the print cartridge.
	The laser/scanner assembly is defective.	Reseat the connectors on the laser/scanner and the DC controller. Replace the laser/scanner if necessary.
	The DC controller is defective.	Reseat the connectors on the DC controller and the laser/scanner assembly. Replace the DC controller if necessary.
See the Repeating defect ruler.		
Horizontal smudges 	The paper path is contaminated or damaged.	Replace the print cartridge if necessary. Check the fuser, and replace it if necessary.
See the Repeating defect ruler.		

Table 7-13 Image defects (continued)

Problem	Cause	Solution
Horizontal white lines 	The paper path is contaminated or damaged.	Replace the print cartridge if necessary. Check the fuser, and replace it if necessary. Replace the laser/scanner assembly and the DC controller if necessary.
Light print, dark print, or fade 	The toner density setting is incorrect. The transfer charging roller is defective. The media fails to meet product specifications or is stored improperly.	Adjust the toner density setting in the control panel Print Quality menu (turn off Economode). Replace the transfer charging roller. Print a few more pages to see if the problem persists. Turn the stack over in the tray, or rotate the stack 180° Use media that meets product specifications.
	Poor contact with the high voltage power supply	Make sure that the drum ground spring is connected to the high voltage power supply. Clean the contacts if they are contaminated. If the problem persists, or if parts are damaged or deformed, replace them. Replace the high voltage power supply.
	The laser/scanner assembly is defective.	Reseat the connectors on the laser/scanner and the DC controller. Replace the laser/scanner if necessary.
	The DC controller is defective.	Reseat the connectors on the DC controller and the laser/scanner assembly. Replace the DC controller if necessary.
	The laser shutter is defective.	Check the laser shutter for correct operation while installing the print cartridge.

Table 7-13 Image defects (continued)

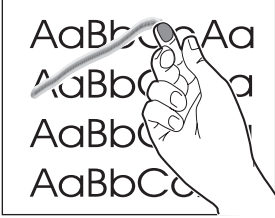
Problem	Cause	Solution
Loose toner 	Contamination exists in the product.	Print a few more pages to see if the problem persists. Clean the inside of the product, or use a cleaning page.
	The print cartridge is defective.	Replace the print cartridge.
	The media is too smooth.	Check the media type and quality.
	The fuser is configured with the wrong setting	Change the fuser mode setting in the control panel Print Quality menu, or select another media type in the print driver.
	The fuser is defective.	Check to see if maintenance is due by printing the supplies status page. Replace the fuser.
	The envelope levers are set incorrectly.	Set the envelope levers correctly for the media type.
Repeating defects 	A roller is defective or contaminated.	See the Repeating defect ruler.
Page skew 	The media fails to meet product specifications or is stored improperly.	Print a few more pages to see if the problem persists. Turn the stack over in the tray, or rotate the stack 180° Use media that meets product specifications.
	The media is not loaded correctly or the trays are not adjusted correctly.	Load the media correctly and set the guides correctly.
	The registration assembly is installed incorrectly.	Reinstall the registration assembly.
Toner smears 	Contamination exists in the product.	Print a few more pages to see if the problem persists. Clean the inside of the product, or use a cleaning page.
	The media is too smooth.	Check the media type and quality.
	The print cartridge is defective.	Replace the print cartridge.
	The fuser is configured with the wrong setting	Change the fuser mode setting in the control panel Print Quality menu, or select another media type in the print driver.

Table 7-13 Image defects (continued)

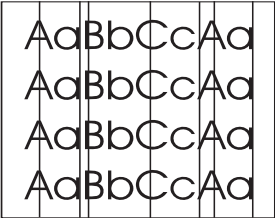
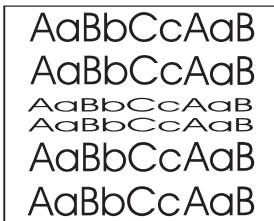
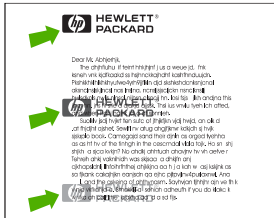
Problem	Cause	Solution
Toner specks 	Contamination exists in the product.	Print a few more pages to see if the problem persists. Clean the inside of the product, or use a cleaning page.
	The media fails to meet product specifications or is stored improperly.	Print a few more pages to see if the problem persists. Turn the stack over in the tray, or rotate the stack 180° Use media that meets product specifications.
	The product is printing alternating small and standard media.	To alternate small and standard media, from the paper Print Quality menu, set Small Paper Mode to Slow .
Vertical black lines 	The print cartridge is defective.	Replace the print cartridge.
	The fuser entrance guide is contaminated.	Clean the guide.
	The fuser is scratched.	Replace the fuser.
	The fuser film is worn.	Set the fuser to a lower temperature mode. Replace the fuser.
Vertical dots 	The static charge eliminator teeth are contaminated.	Clean the static charge eliminator.
	Bad connection between the static charge eliminator and the high voltage power supply.	Clean the contacts. If the problem persists, or if parts are damaged or deformed, replace them.
	The transfer charging roller is deformed or deteriorated.	Replace the transfer charging roller.
	The high voltage power supply is defective.	Replace the high voltage power supply.
Vertical white lines 	The print cartridge is defective.	Replace the print cartridge.
	The laser path is contaminated.	Clean the laser path by removing the laser/scanner assembly and clean the lens. Replace the laser/scanner assembly.
	The fuser is defective.	Check to see if maintenance is due by printing the supplies status page. Replace the fuser.

Table 7-13 Image defects (continued)

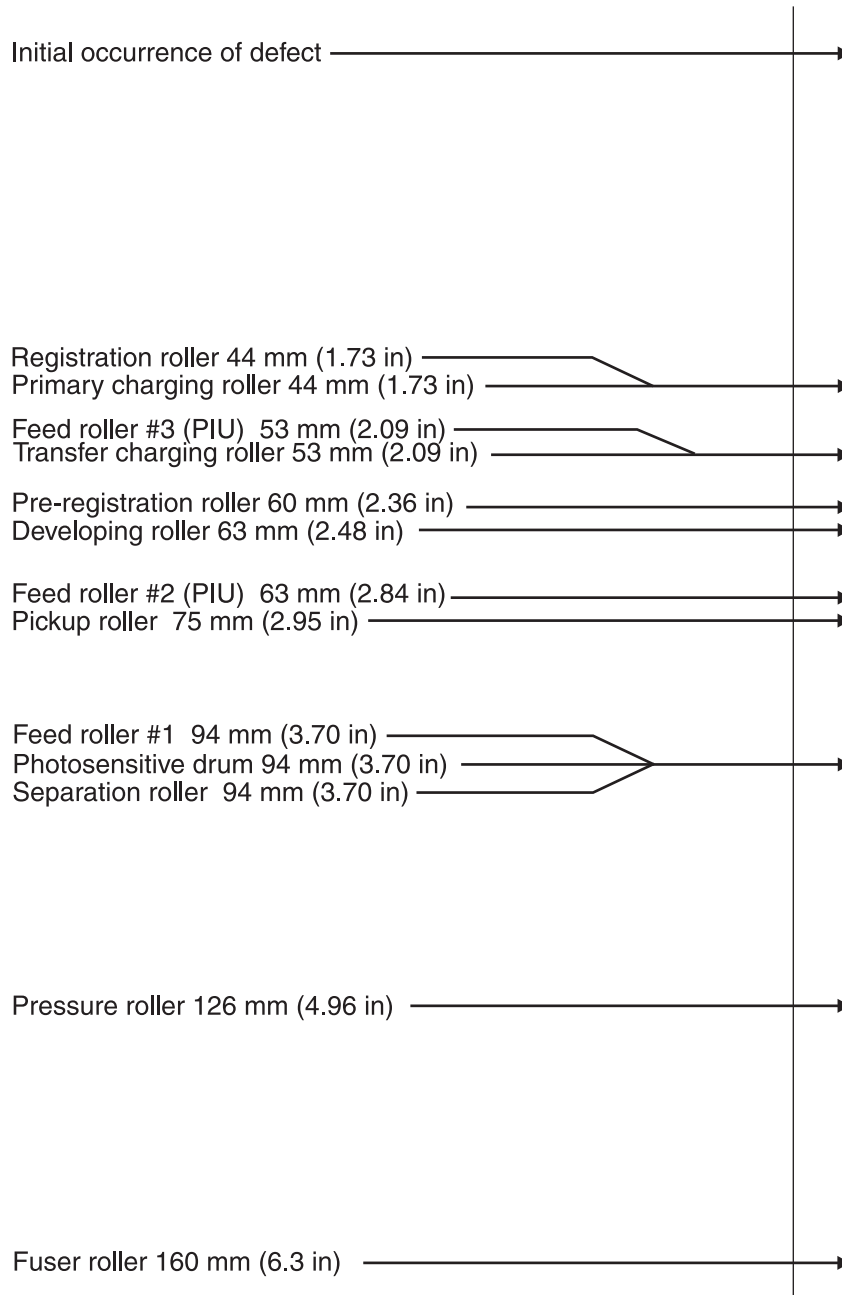
Problem	Cause	Solution
Repeating images	Use of preprinted forms. User of large quantities of narrow media. Fuser mode set too high for the media. Maintenance is due.	Print a few more pages to see if the problem persists. Use media that meets product specifications. If this problem occurs on wide media just after printing on narrow media, on the paper Print Quality menu, set the set Small Paper Mode to Slow. Adjust the fuser mode. Install a preventative maintenance kit.
Misformed characters	The operating environment fails to meet product specifications. The product requires a preventative maintenance kit.	Place the product in an environment that meets product specifications. If the product has printed about 350,000 pages, install a preventative maintenance kit.



Repeating defect ruler

Repeating image defects are usually caused by one roller in the paper path or by the print cartridge. Use the following figure as a ruler to help identify the component that is causing an image defect. Do this by aligning the first appearance of the defect with the top of the ruler, and measure to the beginning of the next occurrence of the defect. Replace the indicated roller.

Figure 7-88 The repeating defect ruler



Media troubleshooting

Media defects can cause jams and image defects. If other measures fail to correct a printing problem, consider media defects.

Determine the problem source

First determine whether the problem is with the media or the product. Try the following to eliminate media as the cause:

1. Turn the media over in the tray to print on the opposite side.
2. Rotate the media 180° in the tray to feed it with the opposite leading edge.
3. Try printing.

If the symptoms stop or change in any way, the problems are likely due to the media. Try a different type of media.

Isolate the paper path

Try using the straightest paper path

The straightest possible paper path feeds from Tray 1 and exits to a face up bin. This path is recommended for media such as envelopes and labels.

Check the duplexing path

Sometimes media coming out of the paper path can be curled causing pickup and stacking problems. This is the reason for some of the product media specifications. When a page makes the second pass for duplexing, it might no longer meet the product media specifications for moisture and curl. It can hold static charges that affect print quality and stacking capability. It can also shrink causing misalignments.

Isolate the source of a jam

Identify the source of media that tends to jam.

Determine the location of a jam

Locate the point where media stops and jams occur.

Determine whether the product is experiencing misfeeds or multifeed jams

The following are some possible causes of misfeeds or multifeed jams:

- The media might be too heavy. Check basis weight and measure caliper.
- The media might be too smooth. Check the finish.
- The media might be too heavy or too light. Check basis weight.
- The customer might be attempting to print embossed media, pre-printed forms, or perforated media that does not meet HP specifications.
- The media might be loaded incorrectly. Turn over the sheets in the media tray to determine if inream curl is causing misfeeds.

- The customer might be fanning media before loading it into the tray.
- The customer might be adding media in small amounts. Do not add small amounts of media or mix types of media in the tray.
- The product or media storage environment might be too humid or too dry.

Isolate a media brand

If the product jams with only one brand of media, try the following:

- Switch brands.
- If the media ream appears to be old, open a fresh ream of the same type, and load it correctly into the product. If the problem disappears, investigate storage and handling conditions.

Isolate a media type

When jams and other problems occur frequently, it is often because the customer is using a special media. Customers must only use media that conforms to all Hewlett-Packard specifications, and should always test media before purchasing large quantities. Media should be tested before storage to verify quality printing results. Then, if problems occur, storage or handling conditions can isolate the most likely cause.

- Adhesive labels
- Envelopes
- Transparencies
- Preprinted forms and letterhead
- Embossed media
- Perforated media
- Chemically treated media
- Synthetic media
- Coated media
- Other special media

See "Media specifications" in chapter 2 for further information concerning these types of media.

Communication troubleshooting

Communications check

 **NOTE:** Communication problems are normally the customer's responsibility. Time spent attempting to resolve these problems might not be covered by the Hewlett-Packard warranty. Refer the customer to the network administrator for assistance in troubleshooting network problems.

EIO troubleshooting

The Jetdirect configuration page shown in figure 125 on page 230 contains valuable information about the current status of the EIO accessories. Before attempting to troubleshoot a network problem or notifying your network consultant of a problem, always print a configuration page. If an EIO accessory is installed, the Jetdirect configuration page also prints.

See the HP Jetdirect Network Interface Configuration Guide for detailed explanations of network issues.

Jetdirect configuration

- If the EIO Jetdirect print server has successfully turned on and completed its internal diagnostics, the **I/O card ready** message will display. If communication is lost, an **I/O not ready** message displays followed by a two digit error code. Consult the HP Jetdirect Network Interface Configuration Guide for further details and recommended action.
- The "Network Statistics" column indicates the status of network activity. Bad packets, framing errors, un-sendable packets, and collisions should be minimal. If a high percentage (greater than 1%) of these occur, contact the network administrator. All of the statistics are set to zero when the product is powered off.
- A "Novell Status" block should state the Novell printer server name to which the product is connected. If the Node Name reads "NPIxxxxxx" (xxxxxx = last six digits of the EIO LAN address), the EIO card has not been configured for a Novell server. This could indicate that the card is operating under an IPX protocol other than Novell. Consult with the network administrator if the Node Name is not present.
- In the TCP/IP protocol block, the default IP address is "192.0.0.192." It is acceptable to operate the product with this default address. The error message ARP DUPLICATE IP ADDRESS might appear in this block. This is also an acceptable error code if the TCP/IP protocol is not being used. Please check with the network administrator to determine the correct IP address for the product.

Embedded LAN troubleshooting

Although networking is integrated, the embedded LAN has additional features to assist in troubleshooting. These include the following features:

- The ability to turn on and turn off the embedded networking.
- An internal diagnostic to check the networking hardware.
- The ability to initiate communication from the product to other network devices to check communication paths.
- The ability to upgrade the embedded LAN separately from the product firmware.

- Procedures to upgrade the embedded LAN by installing new product firmware (through the parallel port and the networking port).
- A Save + Restore capability for formatter exchanges.

Error codes

Some embedded LAN error codes are the same as those for an EIO card. In these cases, the embedded LAN is identified as EIO 4. In other cases, because the embedded LAN is part of the product firmware, the LAN error codes are within the 49.X series.

If the product cannot print a configuration page, open the **Initial Setup** menu and then open the **Networking and I/O** menu. If the **Embedded Jetdirect** menu does not appear or if the JDI is disabled or is not installed, do not look at the LEDs on the back of the product next to the RJ-45 connector (10/100 LEDs). These LEDs are controlled by hardware and are active regardless of the state of the embedded LAN (enabled or disabled).

LAN diagnostics

Two diagnostic menus are available on the control-panel display. One of the menus is unique to the product diagnostics and the other is unique to the embedded LAN in the **Embedded Jetdirect** menu. The **Diagnostics** menu item in the **Embedded Jetdirect** menu includes the following tests.

- Loopback test
- Ping test

Loopback test

Perform a loopback test to check for hardware errors in the embedded LAN. The loopback test is designed to operate for a few hours, overnight, or during the weekend. When it is operating, the product cannot accept network traffic such as print jobs.

Use the loopback test to help detect product problems and embedded LAN problems that might be caused by hardware or basic firmware problem. This is done by eliminating the network as a variable in the troubleshooting process.

If a loopback test fails, product and/or embedded LAN updates might be required, or the formatter might need to be replaced.

 **NOTE:** If the product fails before you open the **LAN HW Test** menu, remove the LAN cable, perform a product cold reset, and then perform a loopback test.

Ping test

Perform a ping test to check for network connectivity.

A ping test is designed to troubleshoot TCP/IP network connectivity issues by taking key parts of the functionality from the ping utility on Microsoft Windows systems. All Jetdirect products can respond to ping requests, but the embedded LAN can initiate ping requests. All TCP/IP implementations, such as ICMP Echo Response, are required to respond to ping requests.

- Destination IP address type: IPv4 or IPv6
- Destination IP address: the IP address that you want to contact
- Packet size: how many octets of data to send

- Timeout: the number of seconds to wait for a response
- Count: the number of packets to send
- Print results: a printed page of the results

The following are the recommended settings for a ping test:

- Destination IP address: use the local router and then use the remote nodes
- Packet Size: 64 bytes and then 1,460
- Count: 4
- Timeout: 1 second (more time if using a WAN connection)
- Print results: yes (to have a record of what succeeded and what failed)

The ping test includes the following information:

- Packets Sent: The total number of ICMP packets that were sent to the remote host during the test (or during the most recent test)
- Packets Received: The total number of ICMP packets that were received from the remote host during the test (or during the most recent test)
- Percent Lost: The percentage of ICMP packets that were sent but not received from the remote host during the test (or during the most recent test)
- RTT Min: The minimum time (in milliseconds) from when an ICMP packet is sent until it is returned from the remote host
- RTT Max: The maximum time (in milliseconds) from when an ICMP packet is sent until it is returned from the remote host
- RTT Average: The average time (in milliseconds) from when an ICMP packet is sent until it is returned from the remote host (total time/number of packets).



NOTE: HP recommends printing a page with the ping-test results when working on network connectivity issues.

Enable or disable the embedded LAN

1. Turn off the product.
2. Turn on the product.
3. Wait until the product begins counting memory.
4. Press and hold the 6 key.
5. When all three LEDs are illuminated, release the 6 key.
6. Use the 9 key or the 3 key to scroll to the appropriate selection (Cold Reset, Select Language, New Maintenance Kit, or Enable/Disable Embedded Lan).



NOTE: Other functions are available in this menu, but are not applicable to the LAN.

7. Press 6 key. The product continues the boot sequence.

Hard-failure troubleshooting for the embedded LAN

If a 49, 79, or 8X error or equivalent occurs, determine if the environment outside of the product is causing the problem or if the problem is in the product.



NOTE: HP recommends printing a network configuration page to use if you lose the network configuration.

1. Turn off the product.
2. Remove the network cable.
3. Turn on the product and disable the embedded LAN. (If the test fails, a hardware problem exists. If the test succeeds, go to step 4.)
4. Turn off the product.
5. Turn on the product and enable the embedded LAN. (If the test fails, go to step 6. If the test succeeds, go to step 8).
6. Turn off the product.
7. Turn on the product and perform a cold reset. (If the test fails, a hardware problem exists. If the test succeeds, go to step 8.)
8. Open the **Initial Setup** menu, and then touch **Embedded Jetdirect**.
9. Touch **Diagnostics**, and then touch **LAN HW Test**.
10. Touch **Execute**. This begins a continuous diagnostic that is only stopped by using a power-cycle. A failure is reported on a diagnostic page or with an error message. (If the test fails, a hardware problem exists. If the test succeeds, go to step 11).
11. Turn off the product.
12. Install the network cable.
13. Turn on the product.
14. Restore the network configuration (if necessary).

If the test succeeds, the problem has not been diagnosed. If the test fails, the problem might be a network firmware issue. Perform a standard Jetdirect firmware troubleshooting procedure, and disable all of the unused network protocols and services.

If the product fails when the embedded LAN is enabled and the network cable is unplugged, disable the embedded LAN and upgrade the product by installing the .RFU file and the parallel port. Sending the .RFU file by using the product results in the embedded LAN firmware being reprogrammed.

When enabled, the embedded LAN supports the traditional methods of upgrading a Jetdirect device (FTP, HTTP, HP Download Manager, and Web Jetadmin). In addition, .RFU upgrades when the embedded LAN is enabled or disabled.

Connectivity problems

Use the following procedure if the product and the network configuration page are correct, but the network connectivity is not working.

1. Print a network configuration page.
2. Open the **Initial Setup** menu, and then touch **Embedded Jetdirect**.
3. Touch **Diagnostics**, and then touch **LAN HW Test**.
4. Touch **Execute**. If the test fails, a hardware problem exists. If the test succeeds, go to step 5.
5. Turn off the product.
6. Turn on the product.
7. Re-enter the network information.
8. Open the **Initial Setup** menu, and then open the **Embedded Jetdirect** menu.
9. On the **Diagnostics** menu, touch **Ping Test**.
10. Specify the destination IP (the default is 127.0.0.1).
11. Specify the packet size (64 to 2,048, with a default of 64).
12. Specify the timeout (1 to 100 seconds, with a default of 1).
13. Specify the count (0 to 100, with a default of 4).



NOTE: Use different IP addresses to test the network connectivity.

The embedded Jetdirect and EIO cards can work together simultaneously (just like two EIO cards in the same product). Or, if necessary as a part of troubleshooting, the embedded Jetdirect can be disabled and an EIO card can be installed.

Save + Restore

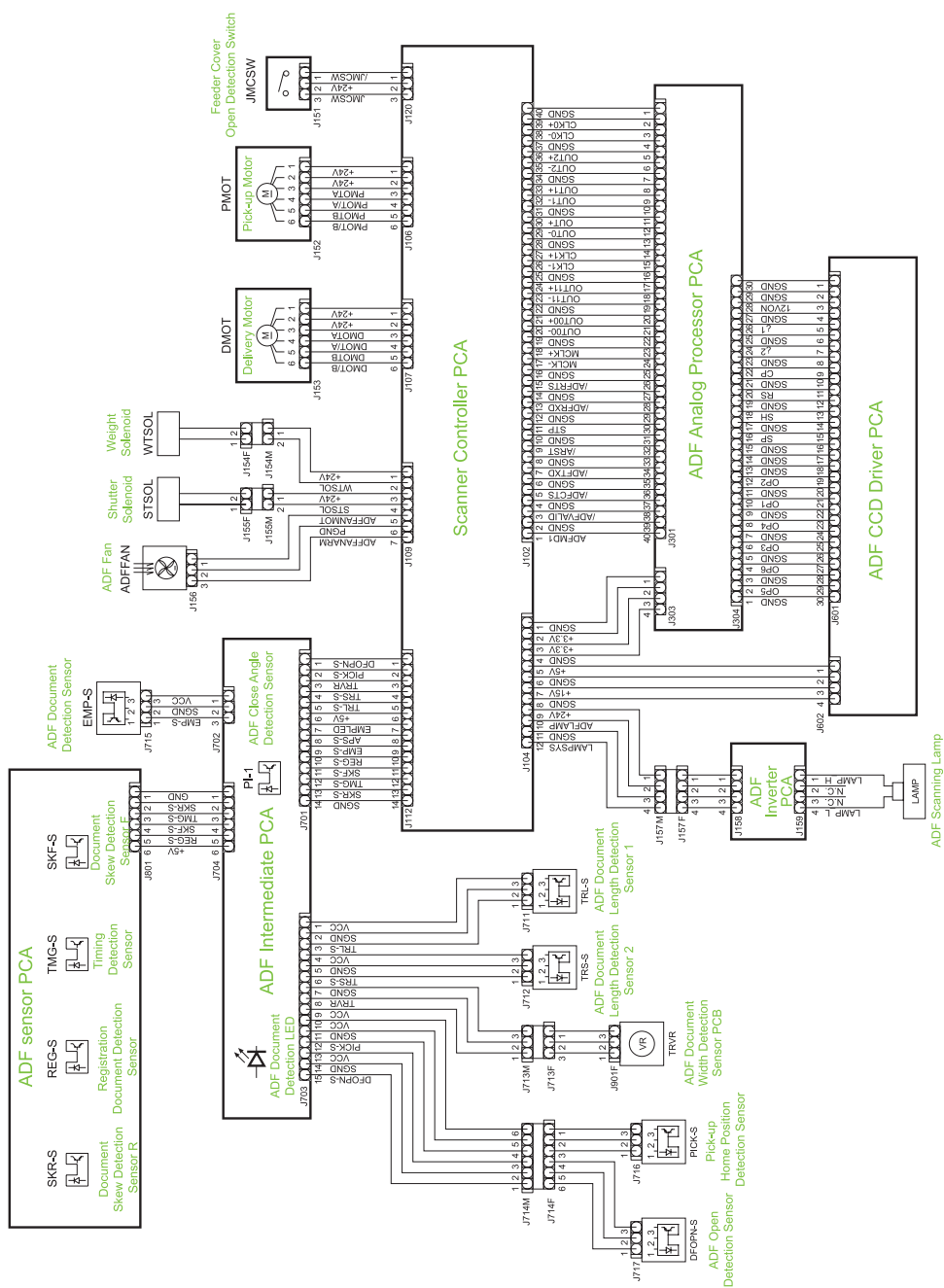
- △ **CAUTION:** Do not replace the formatter, Compact Flash firmware, and/or the DC controller at the same time. The product will not work if the formatter, Compact Flash firmware, and/or the DC controller are replaced at the same time. After you replace the formatter, Compact Flash firmware, and/or the DC controller, leave the product in the ready state for at least 10 minutes so that the formatter, Compact Flash firmware, and/or the DC controller update each other.

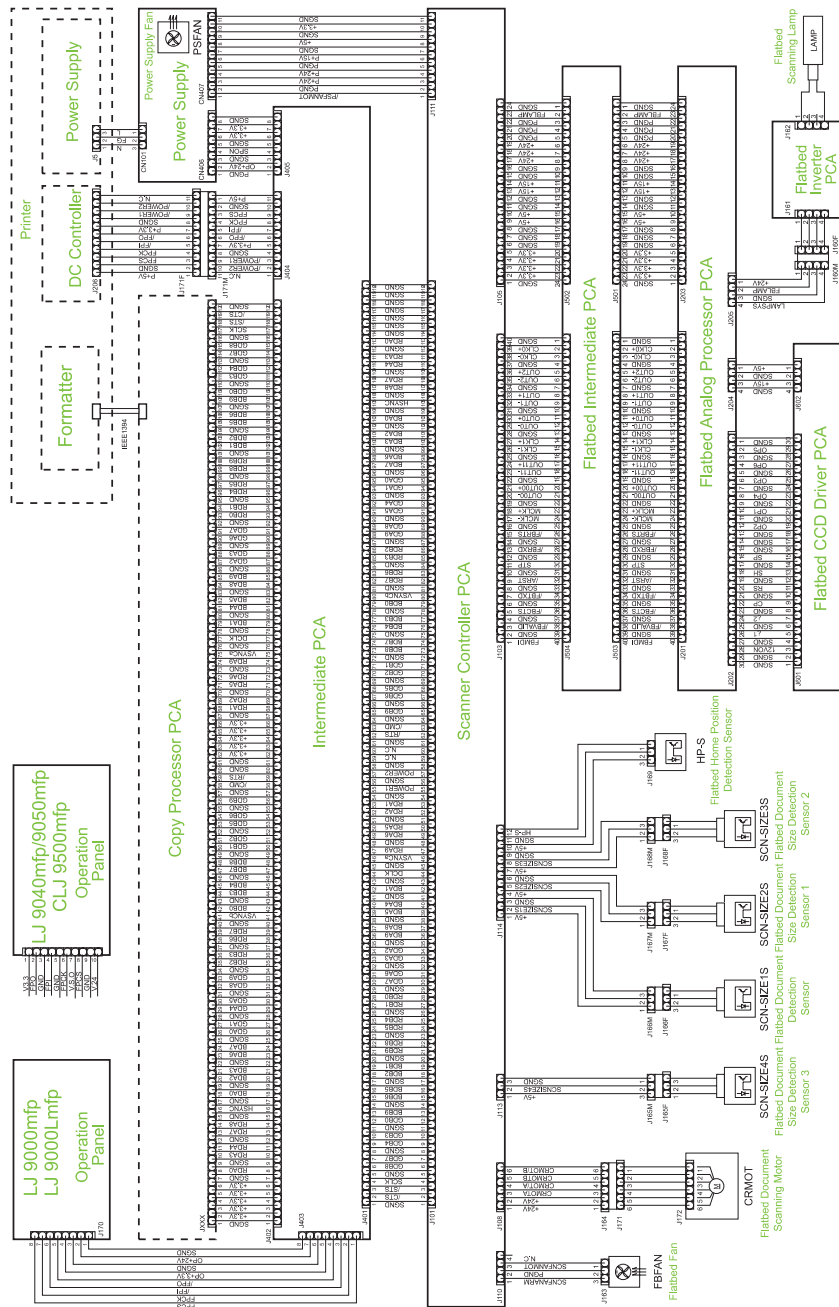
Do not perform a cold reset.

- △ **WARNING!** The formatter has sharp edges.

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8 Parts and diagrams

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Order parts, accessories, and supplies

To order parts, accessories, and supplies, contact your dealer.

Supplies part numbers

Consumables, supplies, accessories, FRUs, and documents

Table 8-1 Consumables, supplies, accessories, FRUs, and documents

Product number	Service number	Exchange number	Description
Consumables			
CE266C		CE266-67901	Toner HP LaserJet M9059 MFP
C8091A	Q7829-67921		Staple cartridge (3000-sheet stapler/stacker)
C8091A	C8088-60541		Staple cartridge (Multifunction finisher)
Supplies			
C9152A	C9152-67907	C9152-69007	PM kit/110 V
C9153A	C9153-67907	C9153-67907	PM kit/220 V
FRUs			
	CC395-67902		Formatter assembly NOTE: Do not replace the formatter and the compact flash firmware at the same time.
RG5-5750-270CN		C8519-69035	Fuser assembly, 110 V
RG5-5751-270CN		C8519-69036	Fuser assembly, 220 V
RG5-5681-030CN			Paper input unit (PIU)
RG5-7780-060CN			DC controller
RG5-5728-000CN		C8519-69037	High-voltage power supply
RG5-7778-030CN			Low-voltage power supply, 110 V
RG5-7779-030CN			Low-voltage power supply, 220 V
	CC395-67913		Firmware compact flash NOTE: Do not replace the formatter and the compact flash firmware at the same time.
RG5-5663-060CN			Registration assembly
		Q6005-67901	Kit, copy processor EIO card
		Q6006-67901	Kit, copy connect card (in scanner)
	Q3729-60101		Scanner cable, LVDS cable
	Q3701-60012		Fax card accessory

Table 8-1 Consumables, supplies, accessories, FRUs, and documents (continued)

Product number	Service number	Exchange number	Description
Accessories			
RG5-5663-060CN	CC395-60103		Control panel overlay, English
	CC395-60104		Control panel overlay, French (European)
	CC395-60105		Control panel overlay, Italian
	CC395-60106		Control panel overlay, German
	CC395-60107		Control panel overlay, Spanish (Castilian)
	CC395-60108		Control panel overlay, Dutch
	CC395-60109		Control panel overlay, Portuguese (Brazilian)
	CC395-60110		Control panel overlay, Norwegian
	CC395-60111		Control panel overlay, Swedish
	CC395-60112		Control panel overlay, Finnish
	CC395-60113		Control panel overlay, Danish
	CC395-60114		Control panel overlay, Polish
	CC395-60115		Control panel overlay, Russian
	CC395-40016		Control panel overlay, Czech
	CC395-60117		Control panel overlay, Hungarian
	CC395-60118		Control panel overlay, Chinese, traditional
	CC395-60119		Control panel overlay, Chinese, simplified
	CC395-60120		Control panel overlay, Korean
	CC395-60121		Control panel overlay, Japanese
	CC395-60122		Control panel overlay, Turkish
	CC395-60123		Control panel overlay, Hebrew
	CC395-60124		Control panel overlay, Greek
	CC395-60125		Control panel overlay, Arabic
	CC395-60126		Control panel overlay, Thai
	CC395-60127		Control panel overlay, Croatian

Table 8-1 Consumables, supplies, accessories, FRUs, and documents (continued)

Product number	Service number	Exchange number	Description
	CC395-60128		Control panel overlay, Romanian
	CC395-60129		Control panel overlay, Slovak
	CC395-60130		Control panel overlay, Slovenian
	CC395-60135		Control panel overlay, Catalan
	CC395-60136		Control panel overlay, Bahasa Indonesian
Accessories			
Q7718A	Q7718-67901		128 MB DIMM
Q7719A	Q7719-67901		256 MB DIMM
0950-4653			Hard disk
C8568A	C8568-67902		Tray 1
C8531A	C8531-67908	C8531-69018	2,000-sheet feeder (Tray 4)
RG5-6212-320CN		C8531-69019	2,000-sheet feeder (Tray 4) cassette only
RG5-6225-100CN			Vertical transfer assembly
RG5-6228-060CN			Paper deck drive assembly
RG5-6228-080CN		C8531-69013	Paper pickup assembly
C8085A			3,000-sheet stapler/stacker
C8088B			Multifunction finisher
Q8532A			8-bin mailbox
C8532A	C8532-67903	C8532-69003	Duplexer
Documentation			
CC395-67901			LJ M9050 Service Manual Bundle
CE800-90928			LJ M9059 Service Manual (only available by download)
C8088-90902			HP Multifunction Finisher Service Guide
Q5693-90902			Output finishing devices service manual
C9152-90901			PM kit installation guide

Common hardware

Figure 8-1 Measurements

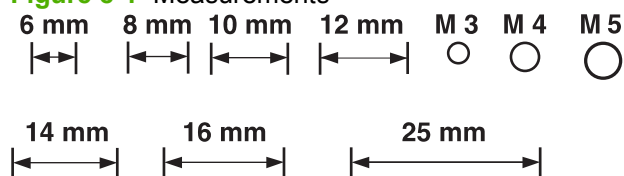


Table 8-2 Hardware table

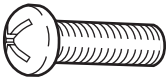
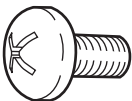
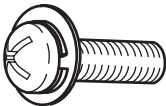
Example	Description	Sizes	Uses
	Screw	M3x6 mm M3x8 mm M4x8 mm M4x10 mm	Various
	Screw, tapping	M3x6 mm M3x8 mm M3x30 mm M4x6 mm M4x12 mm	To hold plastic to metal (excluding the control panel)
	Screw, pan head	M3x6 mm	To hold plastic to plastic
	Screw, w/washer	M3x6 mm M3x8 mm M3x7 mm M4x6 mm M4x12 mm	To hold plastic to metal (excluding the covers)
	E-ring	XD9-0136-000CN XD9-0134-000CN	To hold gears in place

Table 8-3 Common torque values

Material	Recommended torque value
Plastic to metal	5.5 lb-in
Metal to metal	10 lb-in
PCBA	5.5 lb-in
Plastic to plastic	5.5 lb-in

Illustrations and parts lists

The following illustrations and parts tables list the FRUs for this product. Two tables at the end list the parts: Alphabetical parts list, and Numerical parts list.



NOTE: Parts that have no part numbers or item numbers are not available.

Scanner assembly

Figure 8-2 Scanner assembly

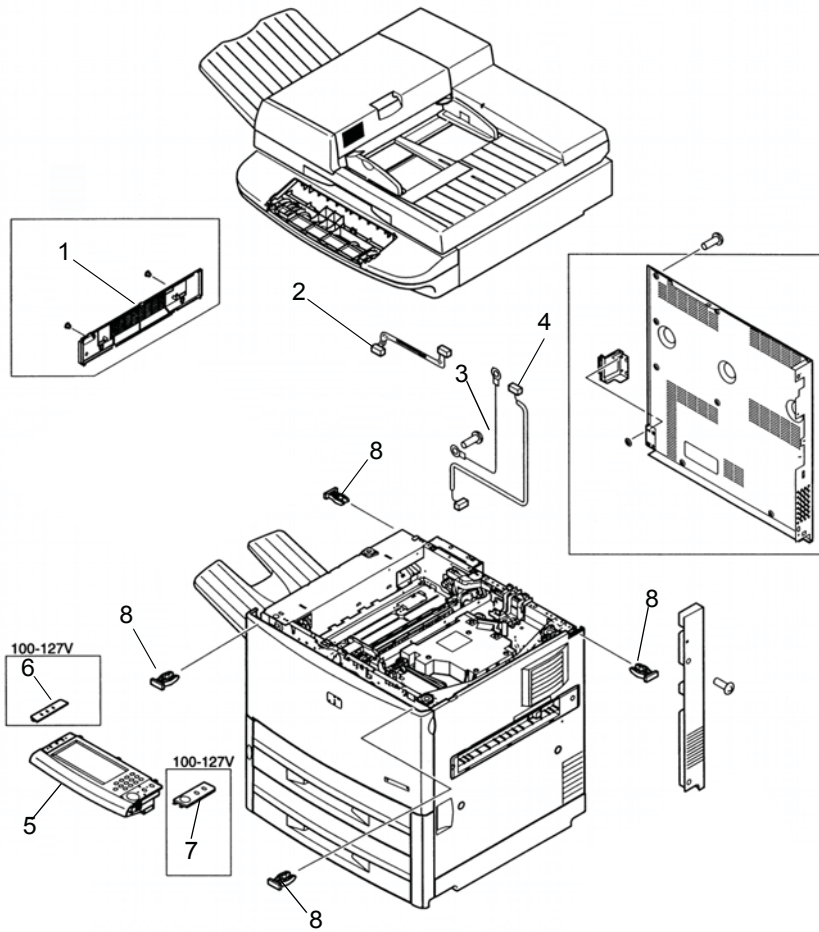


Table 8-4 Scanner assembly

Ref	Description	Part number	Qty
1	Left upper cover assembly	RG5-5706-000CN	1
2	Control panel cable	RG5-5752-000CN	1
3	Grounding cable	RG5-5736-000CN	1
4	Power supply cable	RG5-5735-000CN	1
5	Control panel assembly	CC395-60102	1
6	Control panel overlay, left	See Table 8-1 Consumables, supplies, accessories, FRUs, and documents on page 406.	1
7	Control panel overlay, right	See Table 8-1 Consumables, supplies, accessories, FRUs, and documents on page 406.	1
8	Holder lock	RB2-6495-000CN	4

Scanner engine covers and panels

Figure 8-3 Scanner engine covers and panels (1 of 2)

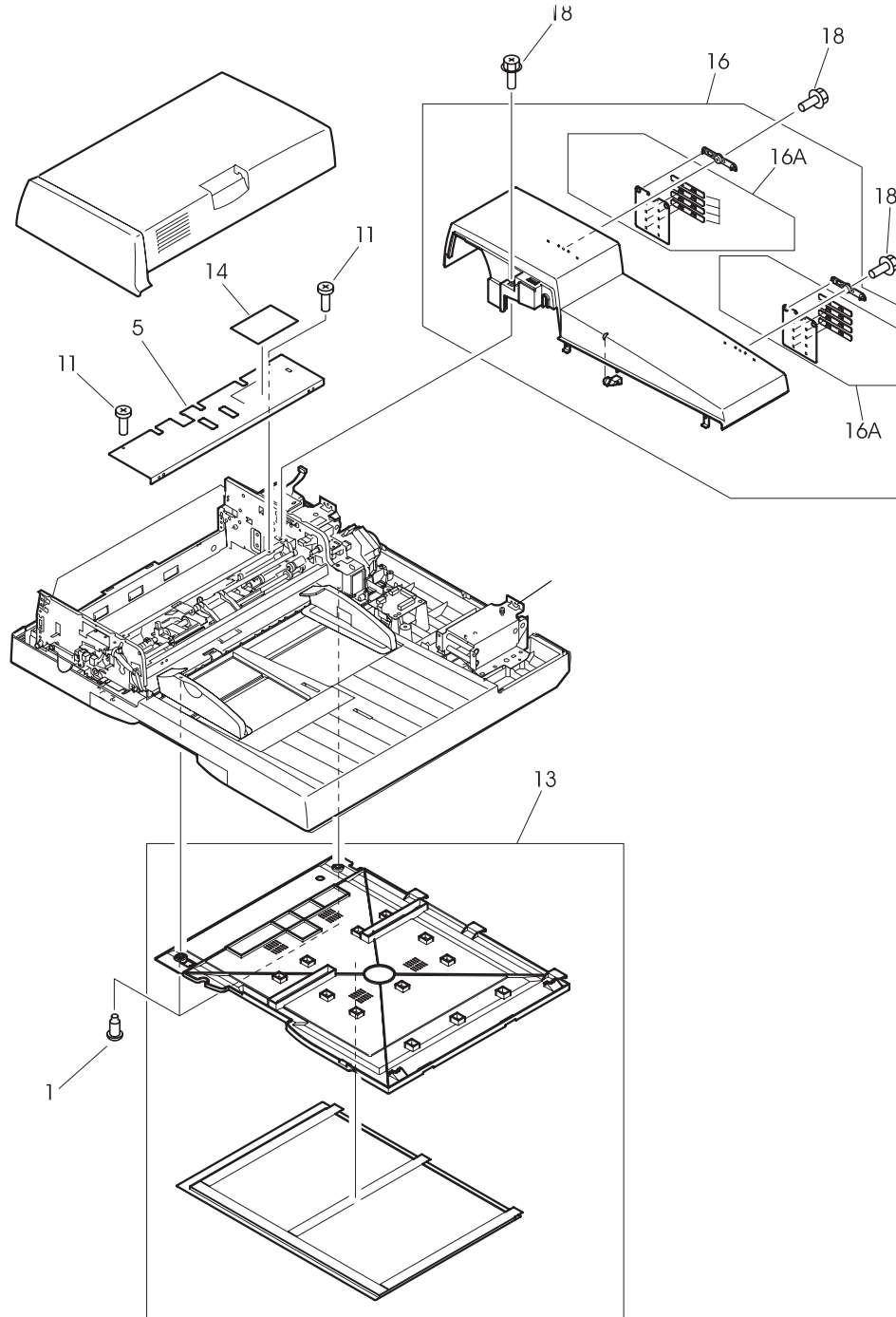


Figure 8-4 Scanner engine covers and panels (2 of 2)

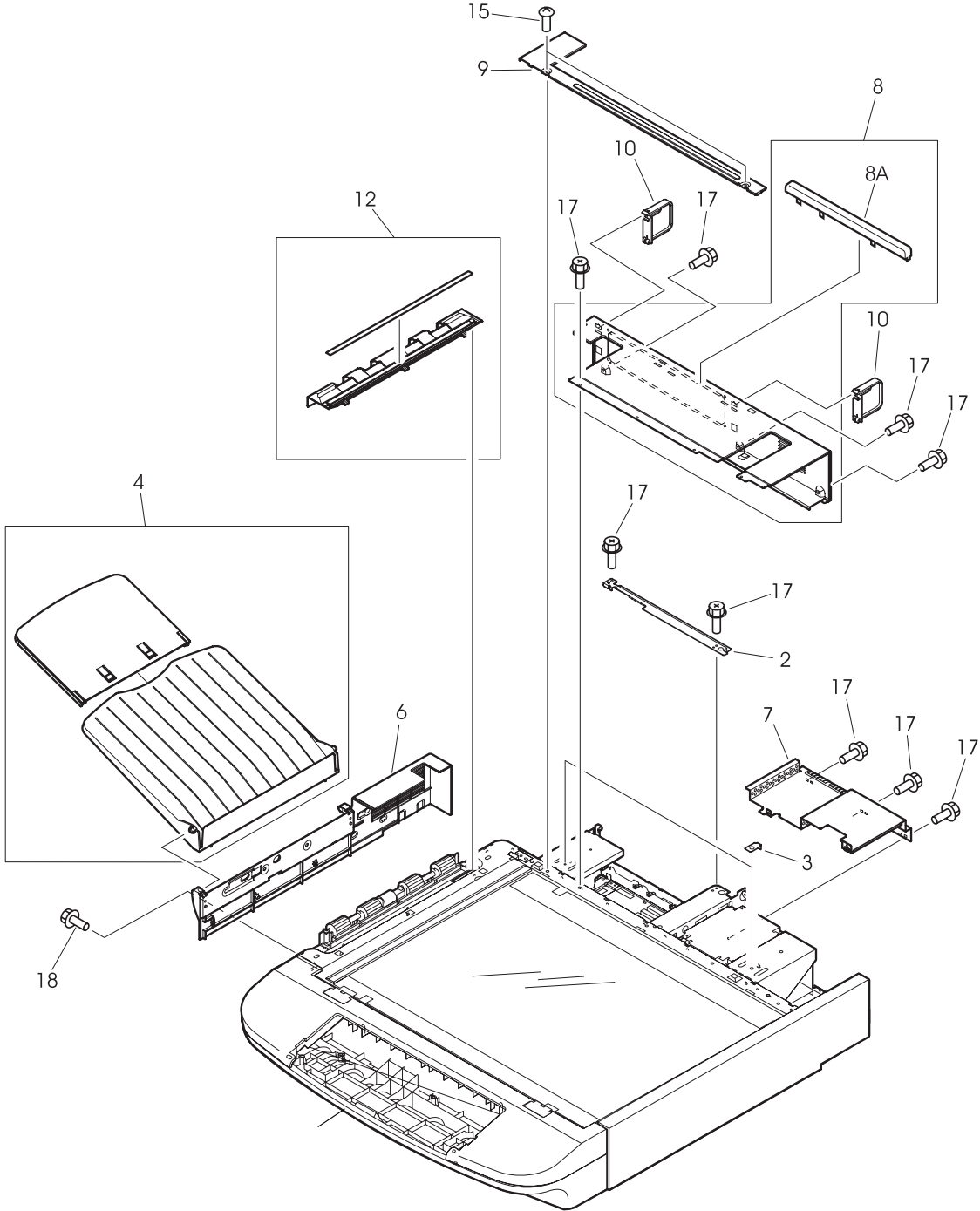


Table 8-5 Scanner engine covers and panels

Ref	Description	Part number	Qty
1	Screw, stepped M4x3.2	Not orderable	2
2	Plate, crossmember	Not orderable	1
3	Bracket, mount	Not orderable	2
4	Delivery tray assembly	RG5-6316-000CN	1
5	Plate, cover upper	Not orderable	1
6	Cover, left	RB2-8054-000CN	1
7	Plate, protect	Not orderable	1
8	Rear cover assembly	Not orderable	1
8A	Holder, document stop	Not orderable	1
9	Plate, rear sub	Not orderable	1
10	Cover, connector	RB2-8060-000CN	2
11	Screw, M3x5	Not orderable	4
12	Guide, delivery unit	RF5-3674-000CN	1
13	Cover, copyboard unit	RF5-3695-000CN	1
14	Label, jam clearing	Not orderable	1
15	Screw, TP M4x8	Not orderable	2
16	ADF rear cover assembly	RG5-6315-000CN	1
16A	Hinge cover assembly	RG5-6317-000CN	2
17	Screw, RS M3x6	Not orderable	16
18	Screw, RS M3x8	Not orderable	7

Print engine covers and panels

Figure 8-5 Print engine covers and panels

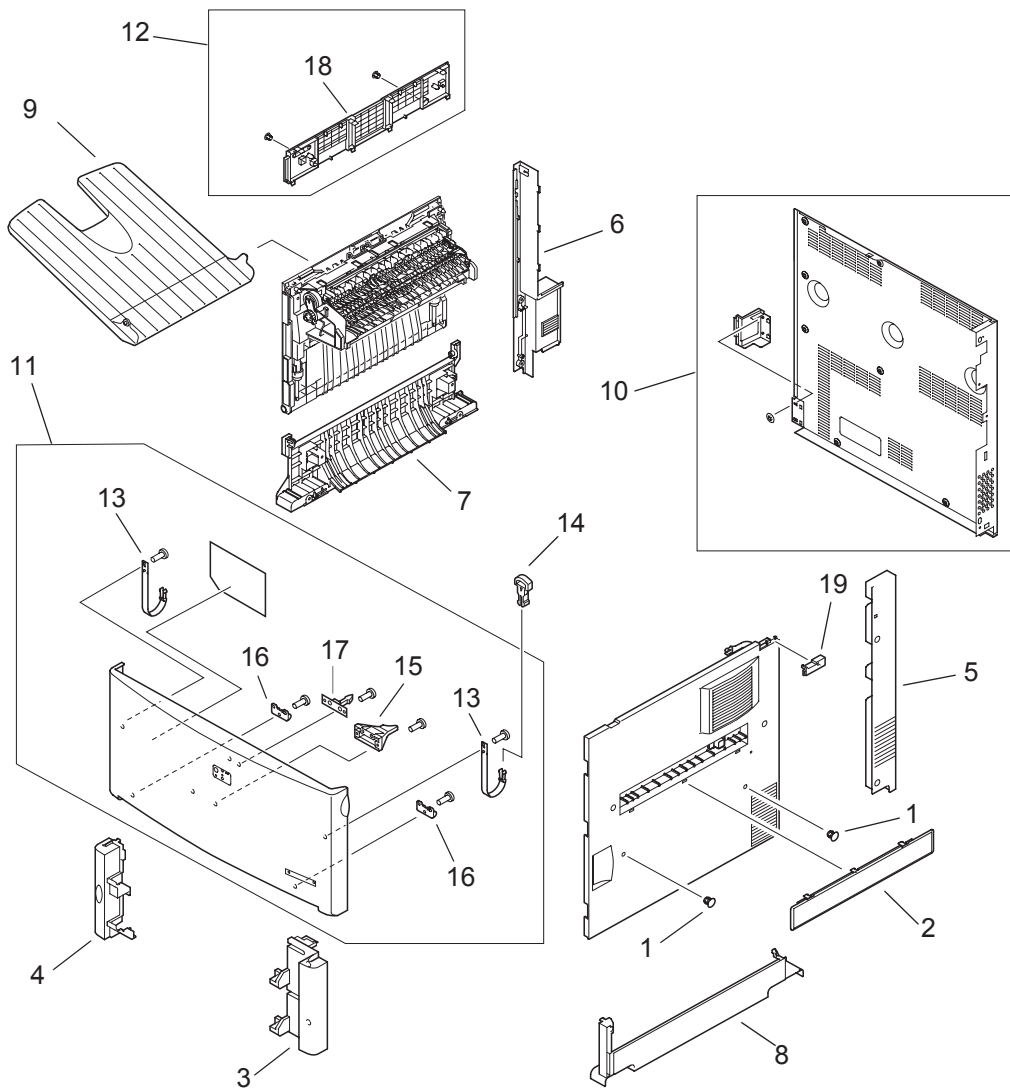


Table 8-6 Print engine covers and panels

Ref	Description	Part number	Qty
1	Cap, right cover	RB2-5675-000CN	2
2	Cover, tray 1 blanking	RB2-5676-000CN	1
3	Cover, right rail	RB2-5682-000CN	1
4	Cover, left rail	RB2-5683-000CN	1
5	Cover, right back	RB2-5684-000CN	1
6	Cover, left back	RB2-5687-000CN	1
7	Cover, left lower	RB2-5687-000CN	1
8	Cover, right lower	RB2-5689-000CN	1
9	Tray, face-up	RB2-5690-000CN	1
10	Back cover assembly	RG5-5701-000CN	1
11	Front cover assembly	RG5-5702-050CN	1
12	Left upper cover assembly	RG5-5705-030CN	1
13	Tape, cover (retaining strap)	RB2-5653-000CN	2
14	Strap, rock block, retaining clip	RB2-5655-000CN	2
15	Pin	RB2-5656-000CN	1
16	Bushing	RB2-5652-000CN	2
17	Latch, roller-action	RB2-5700-000CN	1
18	Cover, left upper	RB2-6491-000CN	1
19	Plate, lock, right side	RB2-5679-000CN	1

Flatbed scanner assembly

Figure 8-6 Flatbed scanner assembly (1 of 3)

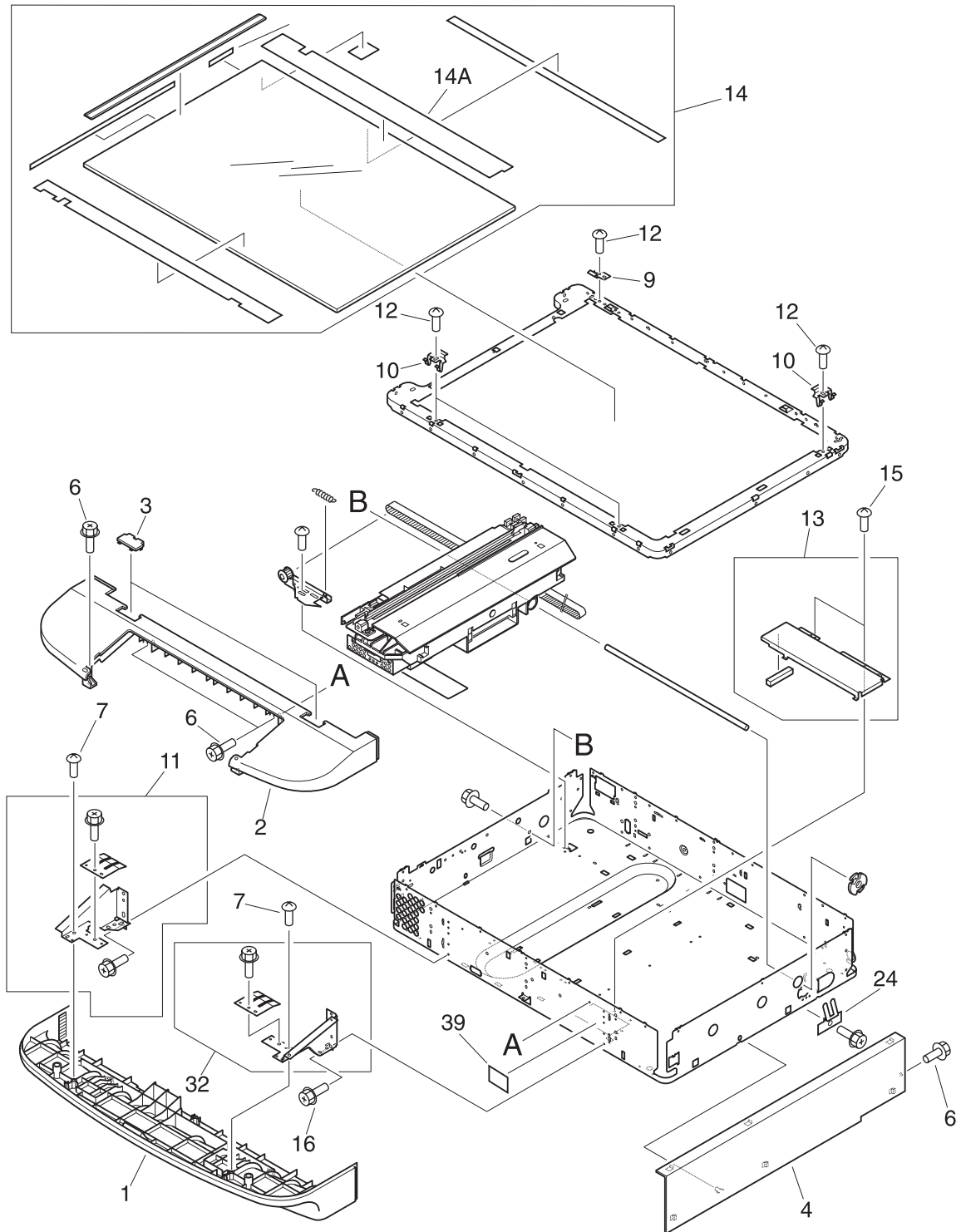


Figure 8-7 Flatbed scanner assembly (2 of 3)

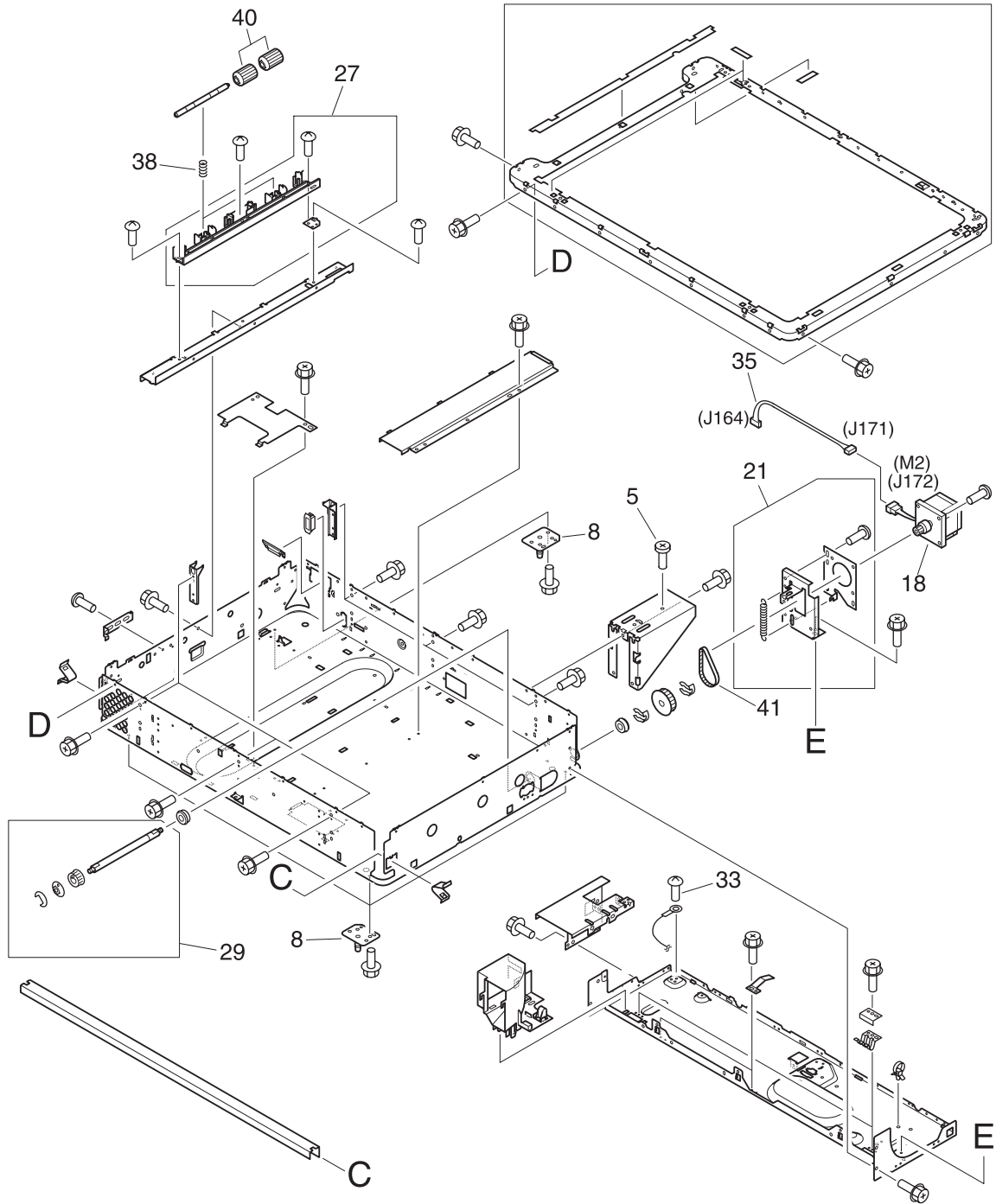


Table 8-7 Flatbed scanner assembly

Ref	Description	Part number	Qty
1	Cover, front lower	RB2-7933-000CN	1
2	Cover, front upper	RB2-7934-000CN	1
3	Cover, glass mount	RB2-7935-000CN	2
4	Cover, right	RB2-8063-000CN	1
5	Screw	Not orderable	6
6	Screw, RS M3x8	Not orderable	6
7	Screw, M4x10	Not orderable	5
8	Pivot, positioning	Not orderable	4
9	Mount, glass 3	RB2-7927-000CN	1
10	Mount, glass 13	RB2-7928-000CN	3
11	Reinforcement plate assembly	Not orderable	1
12	Screw, M3x5	Not orderable	4
13	Plate, base	Not orderable	1
14	Copyboard glass unit	RF5-3676-000CN	1
14A	Plate, width index	Not orderable	1
15	Screw, TP M3x6	Not orderable	2
16	Screw, RS M3x6	Not orderable	6
17	Power supply assembly	RG1-4153-000CN	1
17A	Fuse, 250V, 5A	VD7-0645-001CN	1
18	Motor, 24vdc	RH7-1485-000CN	1
19	Left hinge assembly	Not orderable	1
20	Cable, guide assembly	Not orderable	1
21	Motor bracket assembly	Not orderable	1
22	Scanner controller cable	RG5-6257-000CN	1
23	Sensor crossmember assembly	RG5-6258-000CN	1
23A	Sensor, document size	Not orderable	Not applicable
23B	Photo interrupter, TLP1241	Not orderable	Not applicable
24	Plate, slide shaft	RB2-7920-000CN	1
25	Flatbed sensor assembly	RG5-7806-000CN	1
25A	Sensor, document size	Not orderable	Not applicable
26	Intermediate PCA case	Not orderable	Not applicable
26A	Intermediate PCA	RH5-7807-000CN	1

Table 8-7 Flatbed scanner assembly (continued)

Ref	Description	Part number	Qty
27	Delivery roller assembly	RG5-6266-000CN	1
28	Ground cable	Not orderable	1
29	Cartridge drive assembly	Not orderable	1
30	Fan assembly	RG5-6318-000CN	1
30A	Fan	Not orderable	1
31	Cable, fan	Not orderable	1
32	Reinforcement plate assembly	Not orderable	1
33	Screw, M4x6	Not orderable	1
34	Flatbed intermediate PCA	RH5-3073-030CN	1
35	Scanner motor cable	Not orderable	1
36	DC controller cable	Not orderable	1
37	Scanner controller PCA	RH5-3075-090CN	1
38	Spring, compression	RS6-2492-020CN	2
39	Label, adjustment	Not orderable	1
40	Lower delivery roller	RB2-7884-000CN	4
41	Belt, timing	Not orderable	1
42	Guide, slide	Not orderable	1

Flatbed optical assembly

Figure 8-9 Flatbed optical assembly

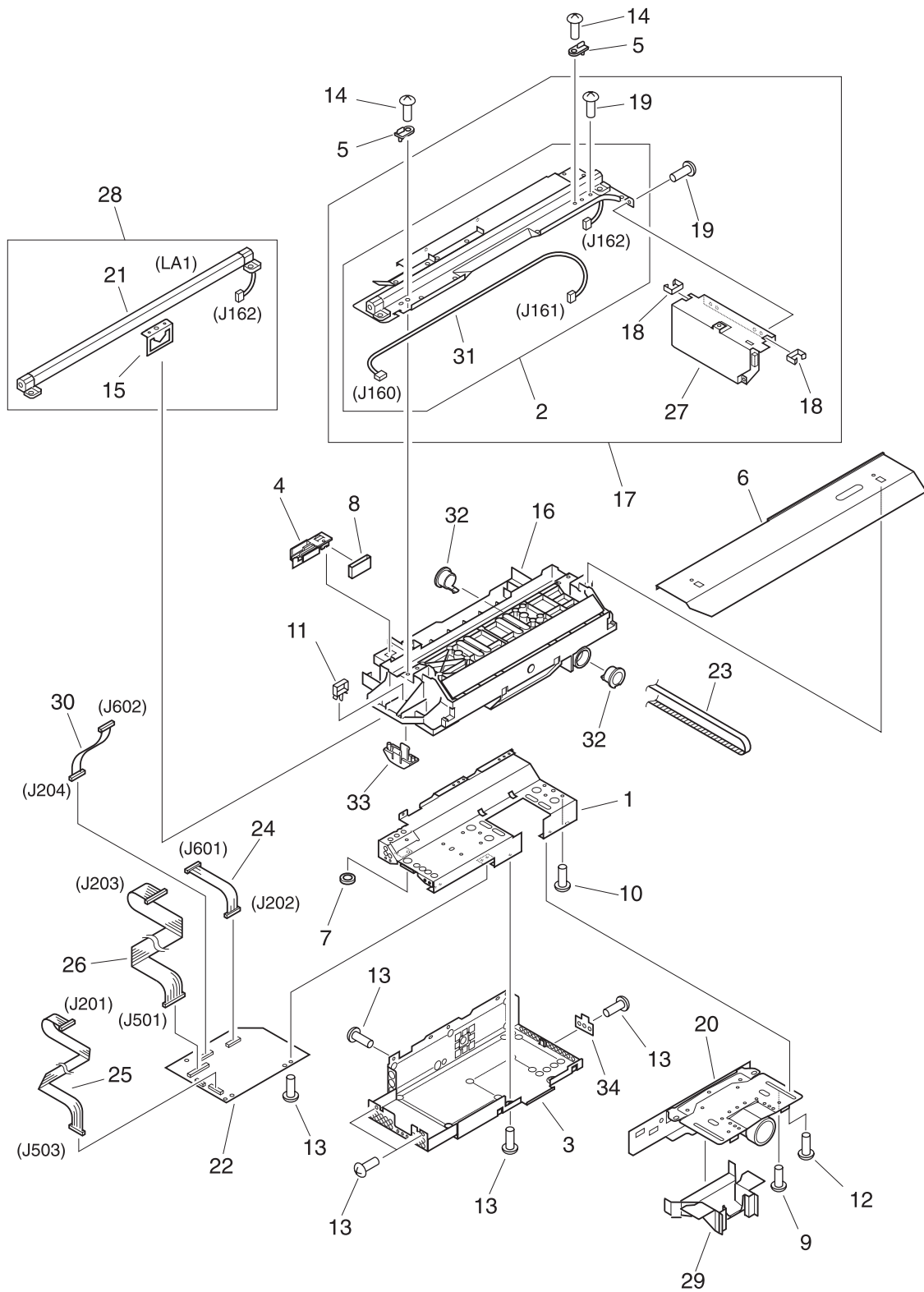


Table 8-8 Flatbed optical assembly

Ref	Description	Part number	Qty
Complete assembly	Flatbed optical assembly	RG5-6263-070CN	1
1	Cover, shield	Not orderable	1
2	Lamp assembly	Not orderable	1
3	Plate, shield	Not orderable	1
4	Holder FFC	Not orderable	1
5	Spindle	Not orderable	2
6	Guide, cartridge	Not orderable	1
7	Edge, cable	Not orderable	1
8	Ferrite core	Not orderable	1
9	Screw, w/washer M4x6	Not orderable	2
10	Screw, M3x12	Not orderable	4
11	Clamp, cable	Not orderable	1
12	Screw, w/washer M3x12	Not orderable	4
13	Screw, TP M3x6	Not orderable	8
14	Screw, M4x10	Not orderable	2
15	Plate, shading	Not orderable	1
16	Flatbed sub frame assembly	Not orderable	1
17	Flatbed lamp assembly	Not orderable	1
18	Clip, cable	Not orderable	2
19	Screw, TP M3x6	Not orderable	3
20	CCD lens assembly	Not orderable	1
21	Lamp	Not orderable	1
22	Flatbed analog processor	Not orderable	1
23	Belt, timing	Not orderable	1
24	Cable, CCD	Not orderable	1
25	Cable, flatbed	Not orderable	1
26	Cable, power	Not orderable	1
27	Inverter PCA	Not orderable	1
28	Flatbed lamp assembly	Not orderable	1
29	Cover, lens	Not orderable	1
30	Cable, scanner	Not orderable	1
31	Cable, lamp	Not orderable	1
32	Bushing	Not orderable	2

Table 8-8 Flatbed optical assembly (continued)

Ref	Description	Part number	Qty
33	Block, slide	Not orderable	1
34	Sheet, cover	Not orderable	1

ADF scanner assembly

Figure 8-10 ADF scanner assembly

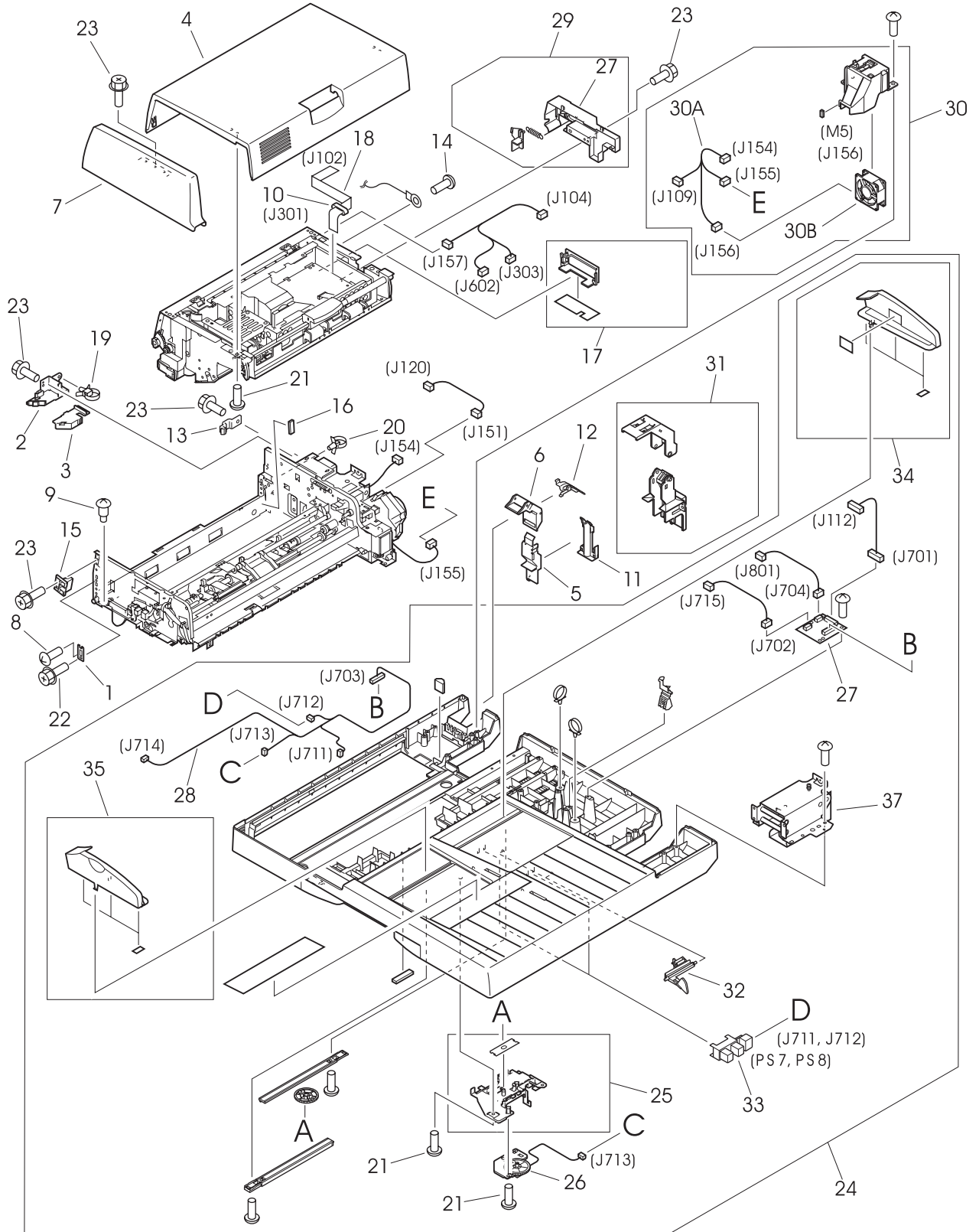


Table 8-9 ADF scanner assembly

Ref	Description	Part number	Qty
1	Plate, support	Not orderable	1
2	Guide, harness 1	Not orderable	1
3	Guide, harness 2	Not orderable	1
4	Cover, jam	RB2-8040-000CN	1
5	Guide, I/F 1	RB2-8046-000CN	1
6	Guide, I/F 4	RB2-8047-000CN	1
7	Cover, front	RB2-8048-000CN	1
8	Cover, front	Not orderable	2
9	Screw, stepped M4x12	Not orderable	2
10	Ferrite core	RB2-8678-000CN	1
11	Guide, I/F 5	RB2-8681-000CN	1
12	Guide, I/F 6	RB2-8682-000CN	1
13	Guide, harness	Not orderable	1
14	Screw, w/washer M4x6	Not orderable	1
15	Holder, stop	RB2-8693-000CN	1
16	Cushion	Not orderable	1
17	Cover, lamp right	RF5-3850-000CN	1
18	Processing PCA cable	RH2-5456-000CN	1
19	Clamp, cable	Not orderable	1
20	Clamp, cable	Not orderable	1
21	Screw, M4x10	Not orderable	7
22	Screw, RS M3x6	Not orderable	1
23	Screw, RS M3x8	Not orderable	5
24	Base, cover assembly	RG5-6272-050CN	1
25	Back cover assembly	Not orderable	1
26	ADF width sensor assembly	RG5-6274-000CN	1
27	ADF intermediate PCA	RH5-3078-030CN	1
28	ADF sensor cable	Not orderable	1
29	Cable, guide assembly	RG5-6311-000CN	1
30	ADF fan assembly	RG5-6312-030CN	1
30A	ADF solenoid cable	Not orderable	1
30B	Fan	RH7-1486-020CN	1
31	I/F cable guide assembly	RG5-6313-030CN	1
32	Lever, sensor	RB2-7943-000CN	1

Table 8-9 ADF scanner assembly (continued)

Ref	Description	Part number	Qty
33	Photo-interrupter, TLP1241	WG8-5624-000CN	2
34	Guide, rear tray	RF5-3682-000CN	1
35	Guide, front tray	RF5-3698-000CN	1
36	Tray, rack	RB2-7939-000CN	1
37	ADF right hinge	RB2-7974-000CN	1
NOTE: The ADF paper pickup assembly (RG5-6275-060CN) includes the ADF left hinge.			

ADF paper pickup assembly

Figure 8-11 ADF paper pickup assembly (1 of 2)

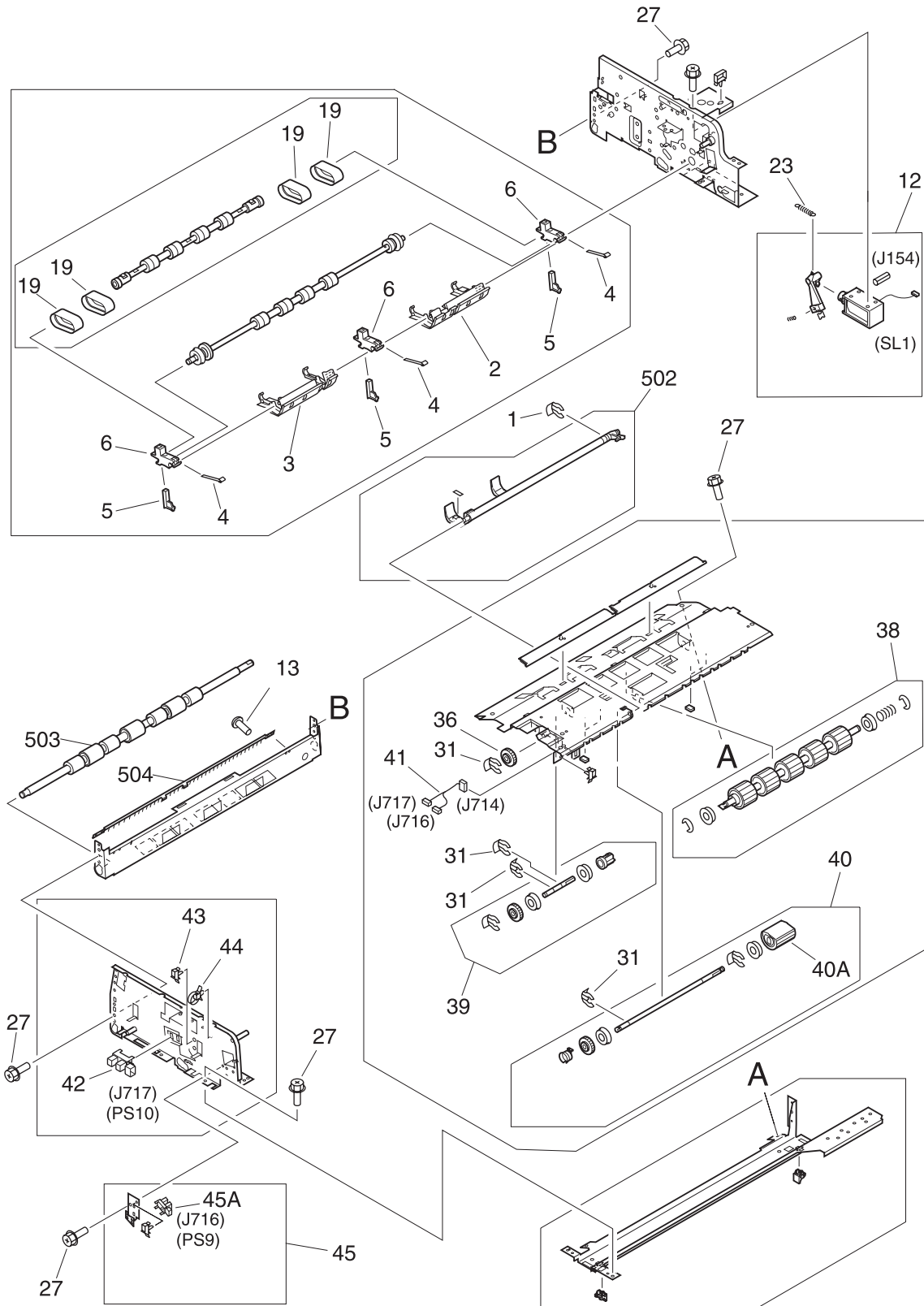


Figure 8-12 ADF paper pickup assembly (2 of 2)

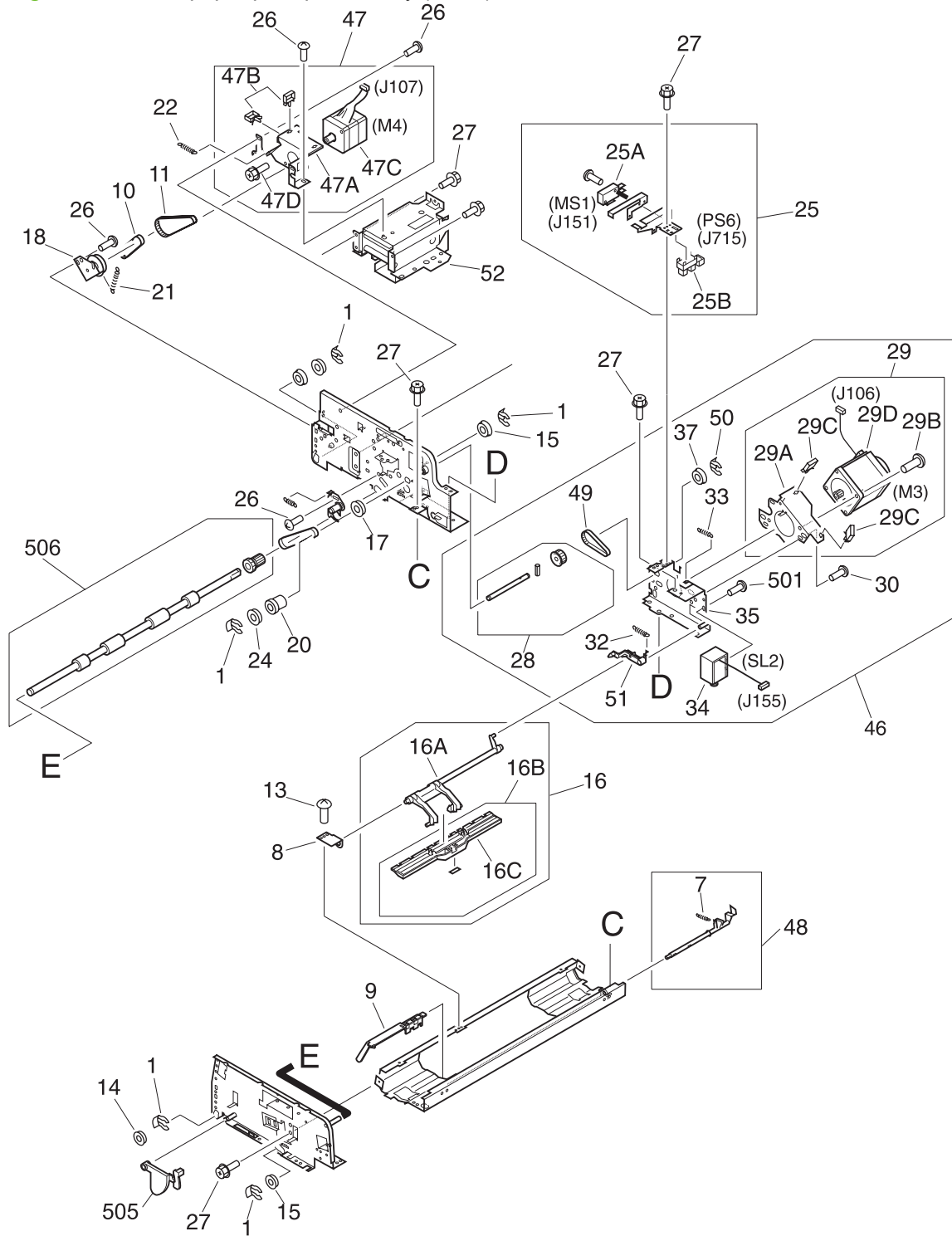


Table 8-10 ADF paper pickup assembly

Ref	Description	Part number	Qty
Entire assembly	ADF paper pickup assembly	RG5-6275-060CN	1
1	Clip	Not orderable	6
2	Arm, flapper rear	RF5-3689-020CN	1
3	Arm, flapper	RF5-3688-020CN	1
4	Spring, leaf	RB2-7991-000CN	3
5	Holder, spring	RB2-7990-000CN	3
6	Holder, separation	RB2-7989-000CN	3
7	Spring, tension	Not orderable	1
8	Plate, bracket	Not orderable	1
9	Lever, empty	RB2-8002-000CN	1
10	Belt, timing	Not orderable	1
11	Belt, timing	Not orderable	1
12	Weight solenoid assembly	RG5-6289-020CN	1
13	Screw, M3x5	Not orderable	3
14	Bushing	Not orderable	1
15	Bushing	Not orderable	2
16	Weight assembly	RG5-6298-000CN	1
16A	Arm, weight	Not orderable	1
16B	Weight holder assembly	Not orderable	1
16C	Holder, weight plate	RB2-7999-000CN	1
17	Bushing	Not orderable	1
18	Arm, tension	Not orderable	1
19	Belt, timing	RB2-7988-000CN	4
20	Pulley 17T	Not orderable	1
21	Spring, tension	Not orderable	1
22	Spring, tension	RS6-2496-000CN	1
23	Spring, tension	RS6-2498-000CN	1
24	Gear, 16T	Not orderable	1
25	Empty sensor bracket	Not orderable	1
25A	Micro-switch	WC4-5175-000CN	1
25B	Photo-interrupter, TLP1241	Not orderable	1
26	Screw, M3x8	Not orderable	6
27	Screw, RS M3x6	Not orderable	23
28	Gear shaft assembly	Not orderable	1

Table 8-10 ADF paper pickup assembly (continued)

Ref	Description	Part number	Qty
29	Drive tension bracket	Not orderable	1
29A	Bracket, tension	Not orderable	1
29B	Screw, M4x8	Not orderable	2
29C	Clamp	Not orderable	2
29D	Motor, 24vdc	RH7-1488-030CN	1
30	Screw, M3x8	Not orderable	3
31	Clip	Not orderable	4
32	Spring, tension	Not orderable	1
33	Spring, tension	RS6-2496-000CN	1
34	Solenoid	RH7-5312-020CN	1
35	Mount, motor	Not orderable	1
36	Gear, 28T	Not orderable	1
37	Bushing	Not orderable	1
38	Separation roller assembly	RG5-6281-030CN	1
39	Separation shaft assembly	Not orderable	1
40	Pickup roller assembly	RG5-6283-020CN	1
40A	Roller, pickup	RB2-7961-000CN	1
41	ADF sensor cable	Not orderable	1
42	Photo-interrupter, TLP1241	Not orderable	1
43	Clamp, cable	Not orderable	1
44	Clamp, cable	Not orderable	1
45	Pickup sensor assembly	RG5-6285-020CN	1
45A	Photo-interrupter, TLP1241	WG8-5624-000CN	1
46	Drive motor assembly	Not orderable	1
47	Feed motor assembly	Not orderable	1
47A	Plate, motor mount	Not orderable	1
47B	Clamp	Not orderable	3
47C	Motor, 24vdc	RH7-1487-020CN	1
47D	Screw, RS M3x6	Not orderable	2
48	Flag, empty	RB2-7978-000CN	1
49	Belt, timing	Not orderable	1
50	Clip	Not orderable	1
51	Lever, shutter	Not orderable	1

Table 8-10 ADF paper pickup assembly (continued)

Ref	Description	Part number	Qty
52	ADF left hinge NOTE: The ADF left hinge is included with the ADF paper pickup assembly (RG5-6275-060CN).	Not orderable	1
501	Screw, TP M3x4	Not orderable	1
502	Shutter assembly	RG5-6286-000CN	1
503	Roller delivery	RG5-6266-000CN	1
504	Static charge eliminator	RB2-7970-000CN	1
505	Lever, open	RB2-8002-000CN	1
506	Registration roller assembly	RG5-6277-000CN	1

ADF main assembly

Figure 8-13 ADF main assembly

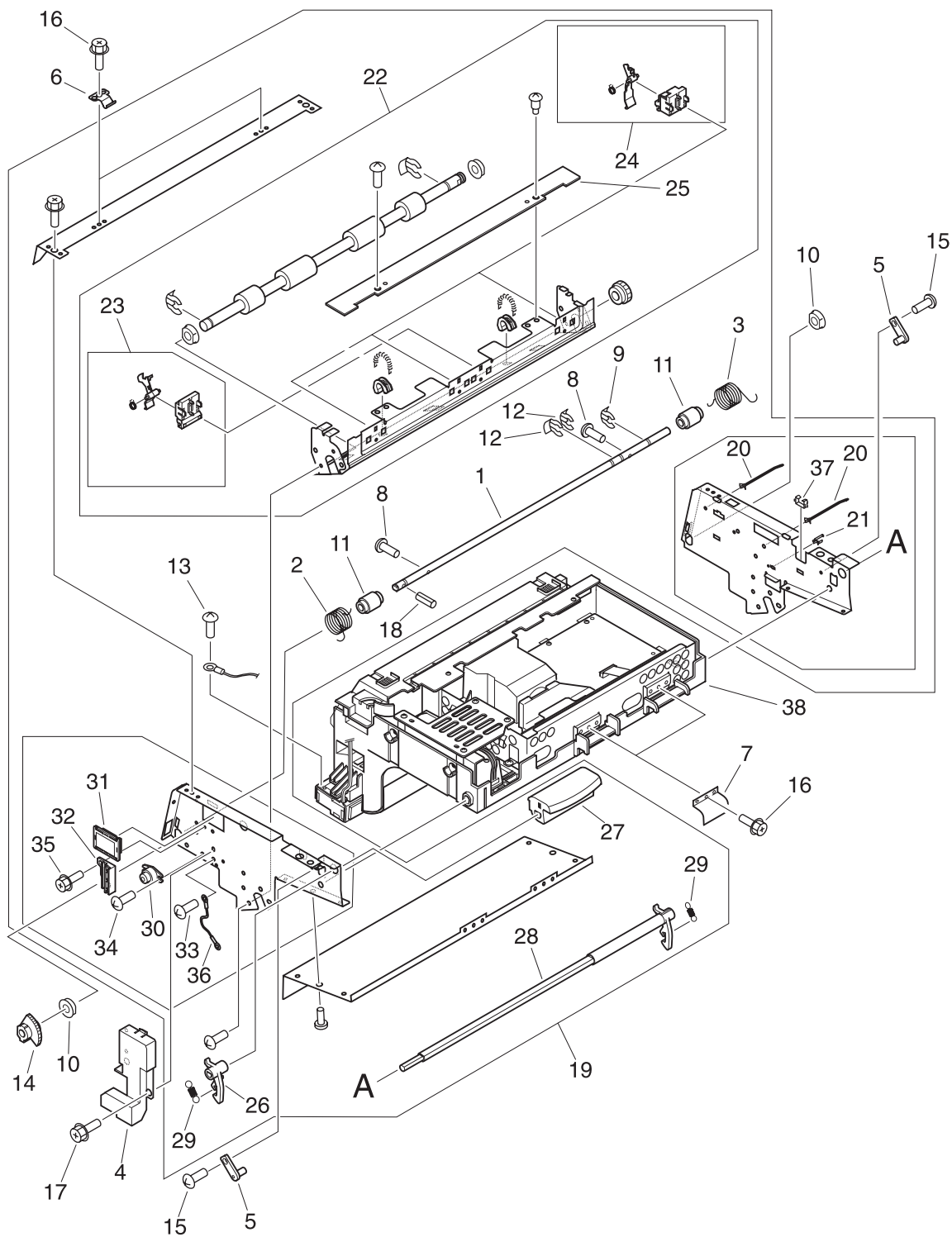


Table 8-11 ADF main assembly

Ref	Description	Part number	Qty
Entire assembly	ADF main assembly	RG5-7379-040CN	1
1	Shaft, support	Not orderable	1
2	Spring, torsion	Not orderable	1
3	Spring, torsion	Not orderable	1
4	Cover, cable	RB2-8031-000CN	3
5	Pin	Not orderable	2
6	Spring, leaf	Not orderable	2
7	Spring, leaf	Not orderable	2
8	Screw, M4x6	Not orderable	2
9	Ring, stop	Not orderable	1
10	Bushing	Not orderable	2
11	Collar	Not orderable	1
12	Clip	Not orderable	2
13	Screw, w/washer M4x6	Not orderable	1
14	Gear, 50T	Not orderable	1
15	Screw, M3x8	Not orderable	2
16	Screw, RS M3x6	Not orderable	6
17	Screw, RS M3x8	Not orderable	2
18	Pin, spring	Not orderable	1
19	Cartridge frame assembly	Not orderable	1
20	Clamp, cable	Not orderable	2
21	Clamp, cable	Not orderable	1
22	Registration guide assembly	RG5-6304-040CN	4
23	Registration sensor holder assy	RG5-6305-000CN	1
24	Timing sensor holder assembly	RG5-6306-020CN	3
25	ADF sensor PCA	RH5-3079-030CN	1
26	Lever, knob	RB2-8017-000CN	1
27	Knob	RB2-8015-000CN	1
28	Shaft, knob	RB2-8016-000CN	1
29	Spring, tension	RS6-2503-000CN	2
30	Gear damper unit	Not orderable	1
31	Guide, edge	Not orderable	1
32	Guide, cable	Not orderable	1
33	Screw, w/washer M4x6	Not orderable	1

Table 8-11 ADF main assembly (continued)

Ref	Description	Part number	Qty
34	Screw, M3x8	Not orderable	2
35	Screw, RS M3x8	Not orderable	1
36	Grounding cable	Not orderable	1
37	Guide, cable	Not orderable	1
38	ADF optical assembly	RG5-6307-020CN	1

ADF optical assembly

Figure 8-14 ADF optical assembly

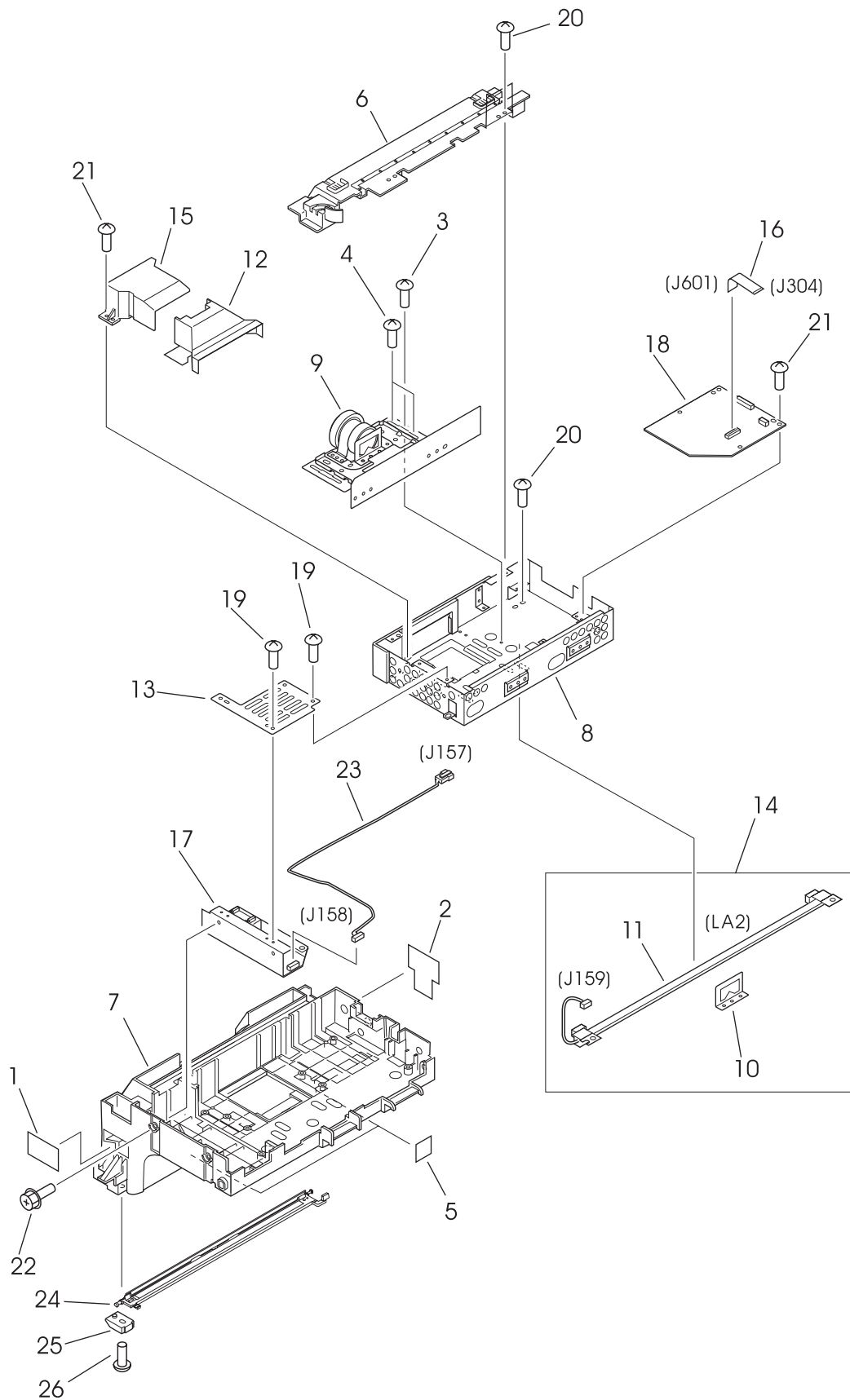


Table 8-12 ADF optical assembly

Ref	Description	Part number	Qty
Entire assembly	ADF optical assembly	RG5-6307-020CN	1
1	Sheet, front	Not orderable	1
2	Sheet, rear	Not orderable	1
3	Screw, w/washer M4x6	Not orderable	2
4	Screw, w/washer M3x12	Not orderable	4
5	Damper sheet	Not orderable	2
6	Cover, unit	Not orderable	1
7	ADF scanner assembly chassis	Not orderable	1
8	ADF shield box assembly	Not orderable	1
9	ADF Lens assembly	Not orderable	1
10	Plate, shading	Not orderable	1
11	Lamp	Not orderable	1
12	Cover, lens	Not orderable	1
13	Plate, heat sink	Not orderable	1
14	ADF lamp assembly	Not orderable	1
15	Cover, lens	Not orderable	1
16	Cable, CCD	Not orderable	1
17	Inverter PCA	Not orderable	1
18	ADF analog processor PCA	Not orderable	1
19	Screw, TP M3x6	Not orderable	4
20	Screw, M4x10	Not orderable	4
21	Screw, M3x8	Not orderable	8
22	Screw, RS M3x6	Not orderable	2
23	Cable, ADF inverter	Not orderable	1
24	Flip-down glass assembly	Not orderable	1
25	Plate, glass	Not orderable	2
26	Screw, TP M3x6	Not orderable	2

Scanner engine PCAs

Figure 8-15 Scanner engine PCAs

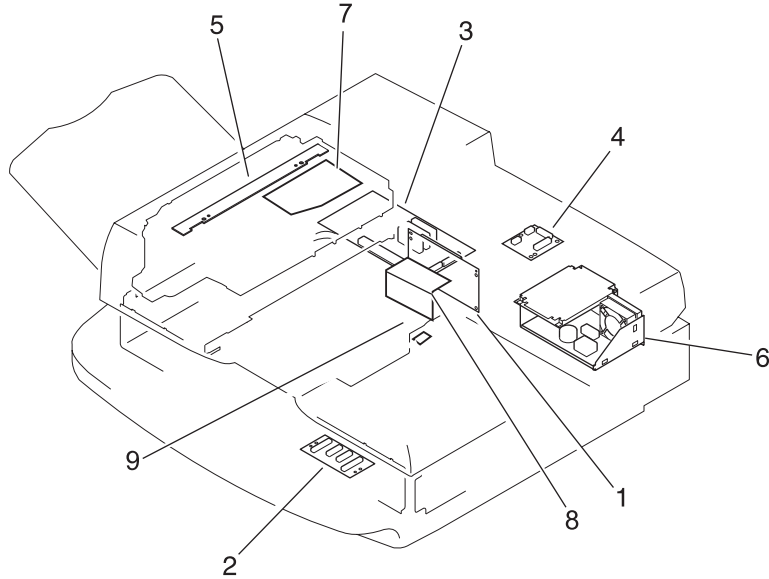


Table 8-13 Scanner engine PCAs

Ref	Description	Part number	Qty
1	Intermediate PCA	RH5-3165-030CN	1
2	Flatbed intermediate PCA	RH5-3073-000CN	1
3	Scanner controller PCA	RH5-3075-090CN	1
4	ADF intermediate PCA	RH5-3078-030CN	1
5	ADF sensor PCA	RH5-3079-030CN	1
6	Power supply assembly	RG1-4153-000CN	1
7	ADF analog processor PCA	Not orderable	1
8	Inverter PCA	Not orderable	1
9	ADF width sensor assembly	RG5-6274-000CN	1

Left door and diverter

Figure 8-16 Left door and diverter

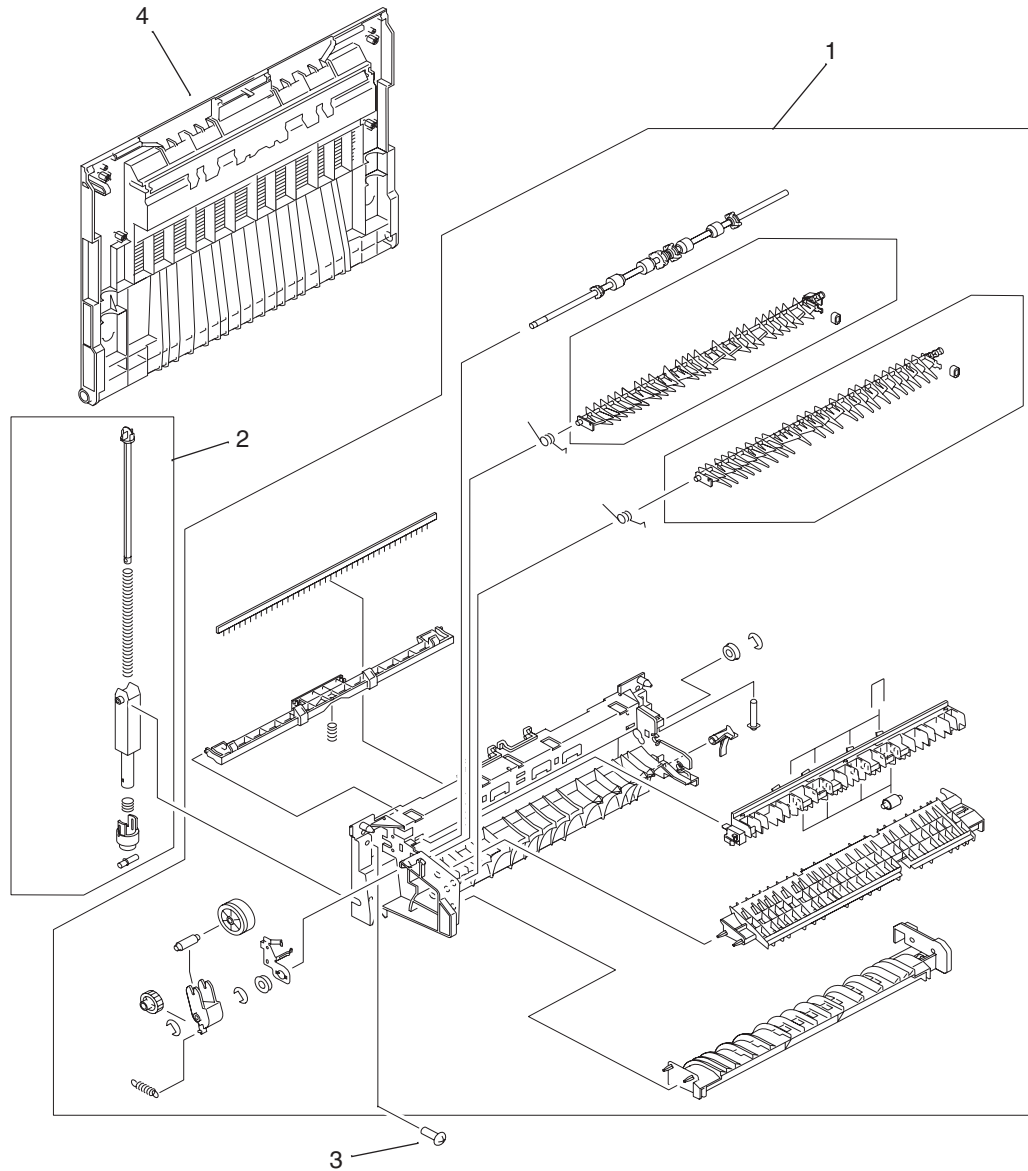


Table 8-14 Left door and diverter

Ref	Description	Part number	Qty
Entire assembly	Left door and diverter	RG5-5646-070CN	1
1	Diverter assembly	RG5-5647-070CN	1
2	Damper assembly	RG5-5648-020CN	2
3	Screw, M4x10	XB4-5401-009CN	
4	Cover, left (left door)	RB2-6007-000CN	1

Right cover assembly

Figure 8-17 Right cover assembly

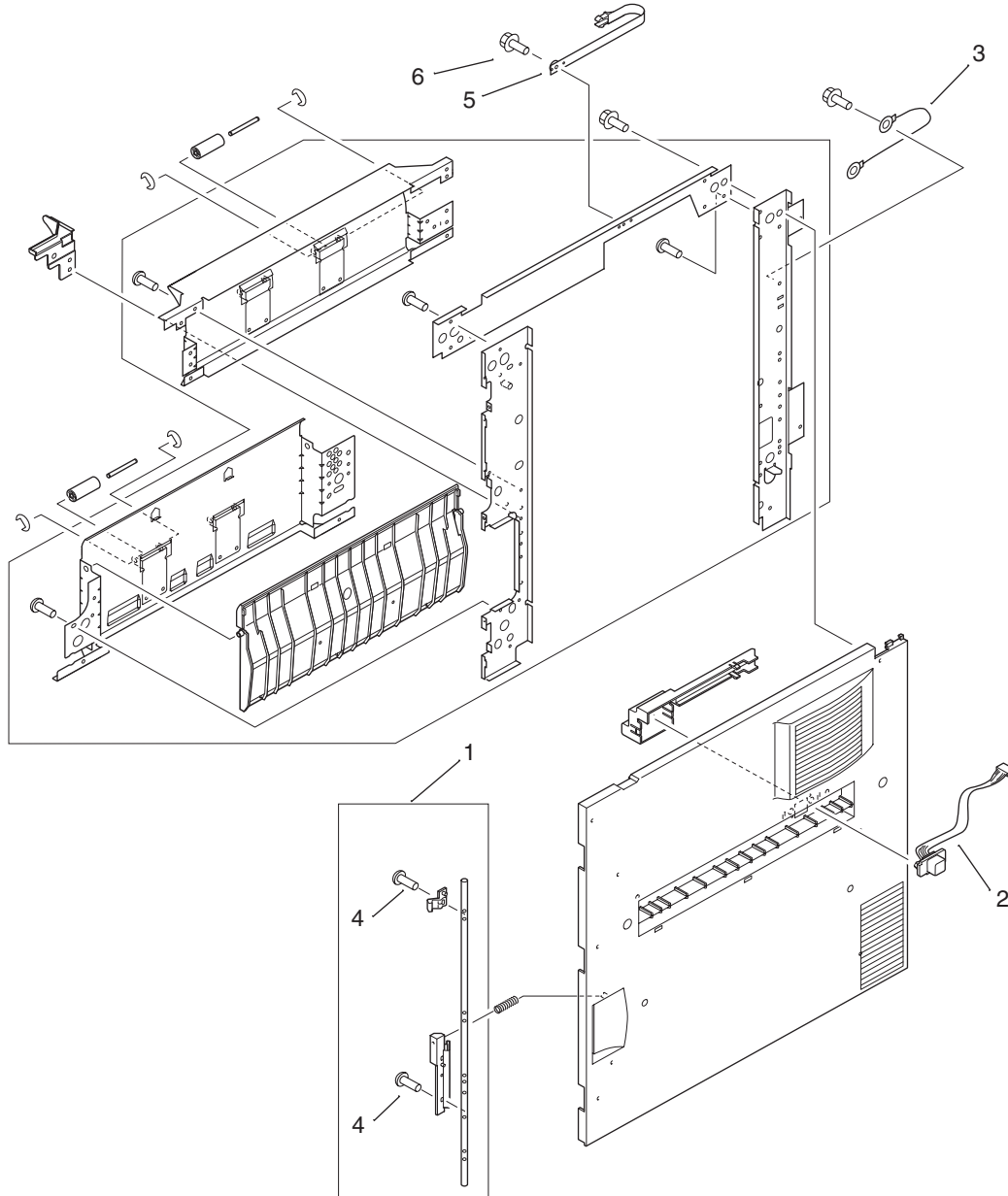


Table 8-15 Right cover assembly

Ref	Description	Part number	Qty
Entire assembly	Right cover assembly	RG5-5737-090CN	1
1	Right cover knob assembly	RG5-5740-020CN	1
2	Cable, tray 1	RG5-8038-000CN	1
3	Grounding cable, tray 1	RG5-5764-000CN	1
4	Screw, M3x8	XA9-1200-000CN	
5	Tape, cover (restraining strap)	RB2-5653-000CN	1
6	Screw, M3x8, RS	XA9-1500-000CN	

Print engine internal components

Figure 8-18 Print engine internal components (1 of 4)

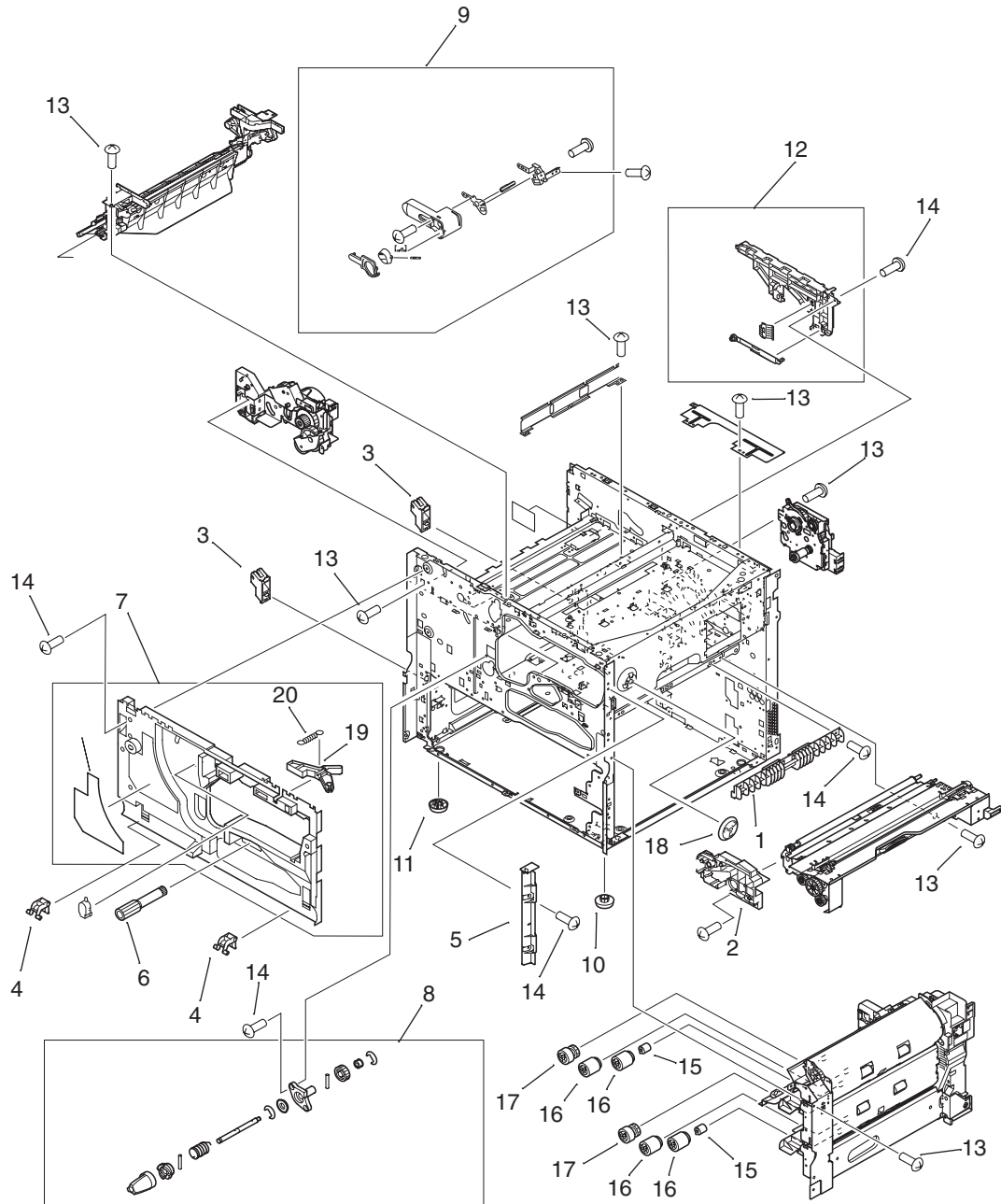


Table 8-16 Print engine internal components (1 of 4)

Ref	Description	Part number	Qty
1	Guide, pickup	RB2-5522-000CN	1
2	Guide, cartridge	RB2-5526-000CN	1
3	Hinge mount, damper	RB2-5570-020CN	2
4	Hinge arm, front cover	RB2-5654-000CN	2
5	Cover, right door, inside	RB2-5697-000CN	1
6	Knob, registration, jam removal	RB2-5845-000CN	1
7	Front inside cover assembly	RG5-5721-000CN	1
8	Jam clearing assembly, fuser	RG5-5700-030CN	1
9	Lever assembly, cartridge release	RG5-5746-030CN	1
10	Foot, right side	RB1-6421-000CN	2
11	Foot, left side	RB2-5529-000CN	2
12	Guide rail, cartridge	RG5-5718-000CN	1
13	Screw, M3x6, RS	XA9-1495-000CN	
14	Screw, M3x8, RS	XA9-1500-000CN	
15	Torque limiter, spacer	RB2-5759-000CN	2
16	Roller, feed/separation	RF5-3338-000CN	4
17	Roller, PICK	RF5-3340-000CN	2
18	Collar	RB2-5547-000CN	1
19	Link, connect	RB2-5528-000CN	1
20	Spring, tension	RS6-2285-000CN	1

Figure 8-19 Print engine internal components (2 of 4)

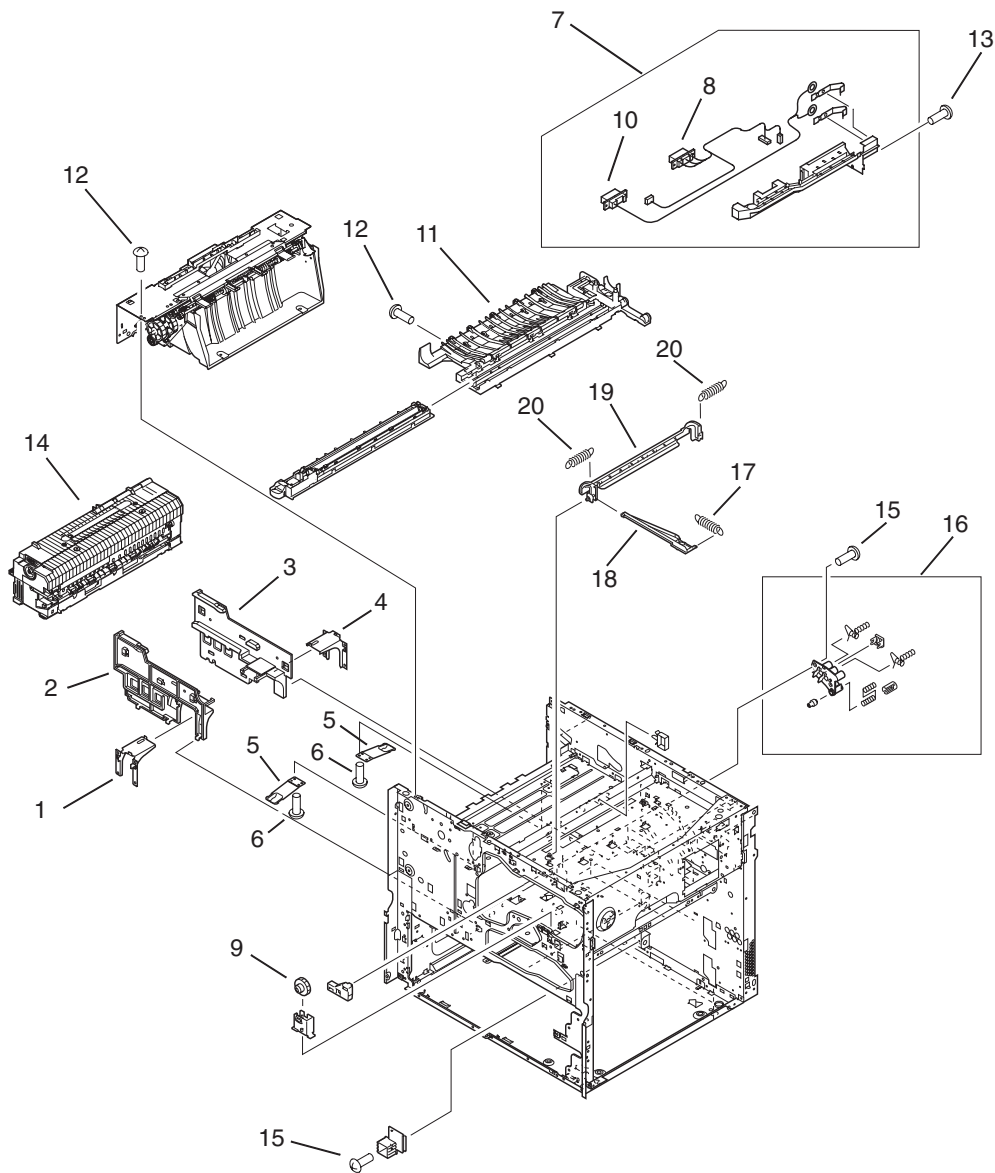


Table 8-17 Print engine internal components (2 of 4)

Ref	Description	Part number	Qty
1	Front fusing mount	RB2-5517-020CN	1
2	Front fusing rail	RB2-5515-000CN	1
3	Back fusing rail	RB2-5516-000CN	1
4	Back fusing mount	RB2-5518-020CN	1
5	Spring, leaf	RB2-5523-000CN	2
6	Screw, M3x6	XA9-1495-000CN	
7	Fuser connector holder assembly	RG5-5724-050CN	1
8	Fuser power cable	RG5-8025-000CN	1
9	Gear, 21T	RS5-0708-000CN	1
10	Fuser high-voltage cable	RG5-8034-000CN	1
11	Feed guide, transfer	RG5-5651-030CN	1
12	Screw, M3x6, RS	XA9-1495-000CN	
13	Screw, M3x8, RS	XA9-1500-000CN	
14	Fuser assembly, 110 V	RG5-5750-270CN	1
14	Fuser assembly, 220 V	RG5-5751-270CN (220V)	1
15	Screw, M3x8	XA9-1500-000CN	
16	Toner contact assembly	RG5-5717-020CN	1
17	Spring, tension	RS6-2299-000CN	
18	Arm, shutter	RB2-5639-000CN	1
19	Shutter, laser	RB2-5640-000CN	1
20	Spring, tension	RS6-2296-000CN	2

Figure 8-20 Print engine internal components (3 of 4)

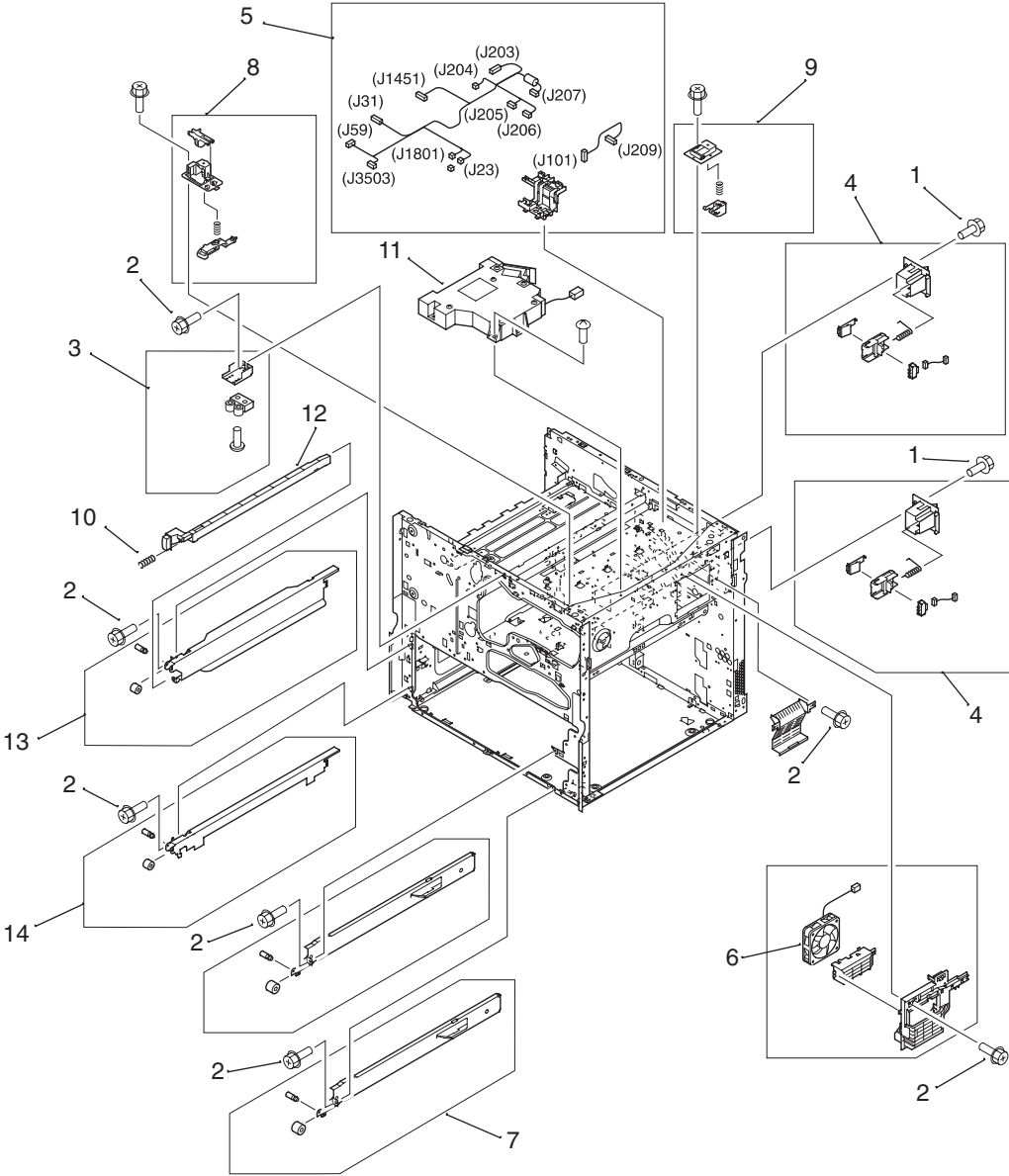


Table 8-18 Print engine internal components (3 of 4)

Ref	Description	Part number	Qty
1	Screw, M3x6, RS	XA9-1495-000CN	
2	Screw, M3x8, RS	XA9-1500-000CN	
3	Latch mount assembly	RG5-5704-040CN	1
4	End paper sensor assembly	RG5-5699-040CN	2
5	Upper cable guide assembly	RG5-7787-000CN	1
6	Fan, #5, cartridge fan	RH7-5306-000CN	1
7	Right rail assembly	RG5-5715-030CN	2
8	Cartridge, front pressure assembly	RG5-5709-000CN	1
9	Cartridge, back pressure assembly	RG5-5710-000CN	1
10	Spring, compression	RS6-2302-000CN	
11	Laser/scanner assembly	RG5-5826-090CN	1
12	Rod, switch, ON/OFF	RB2-5661-000CN	1
13	Left rail, upper	RG5-5713-020CN	1
14	Left rail, lower	RG5-5714-020CN	1

Figure 8-21 Print engine internal components (4 of 4)

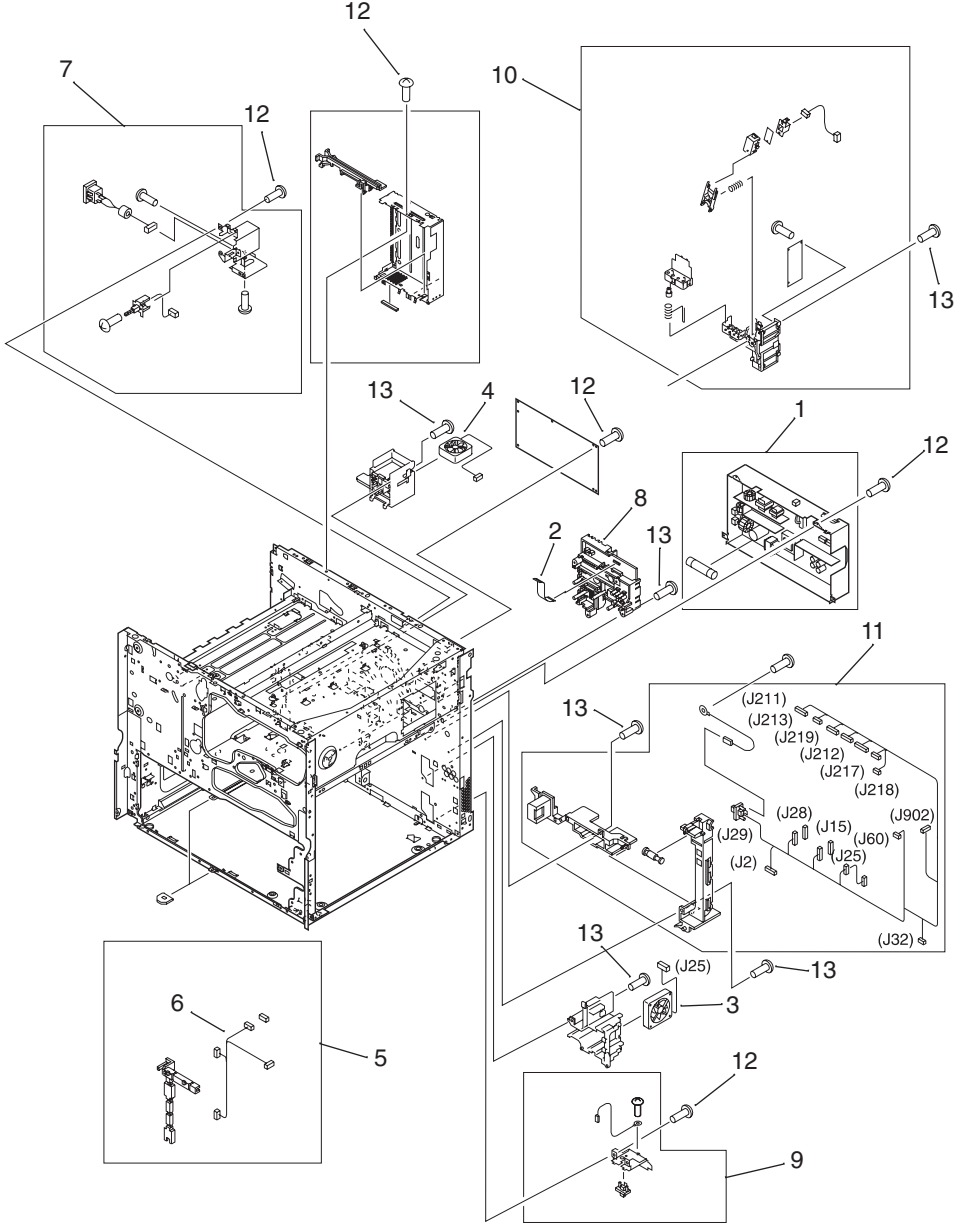


Table 8-19 Print engine internal components (4 of 4)

Ref	Description	Part number	Qty
1	Low voltage power supply assembly 110 V	RG5-7778-030CN	1
1	Low voltage power supply assembly 220 V	RG5-7779-030CN (220V)	1
2	Cable, HVPS flat ribbon	RH2-5445-000CN	1
3	Fan, #1, power supply	RH7-1657-000CN	1
4	Fan, #2, controller	RH7-1623-000CN	1
5	Back cable holder assembly	RG5-7786-000CN	1
6	Fan connecting cable	RG5-7783-000CN	1
7	Inlet assembly (Power SW 10)	RG5-5727-030CN	1
8	High voltage power supply (HVPS)	RG5-5728-100CN	1
9	Connector assembly	RG5-5779-030CN	1
10	Toner sensor contact with memory (antenna)	RG5-5719-100CN	1
11	Main cable harness assembly	RG5-5722-030CN	1
12	Screw, M3x6, RS	XA9-1495-000CN	
13	Screw, M3x8, RS	XA9-1500-000CN	

Drum feed drive assembly

Figure 8-22 Drum feed drive assembly

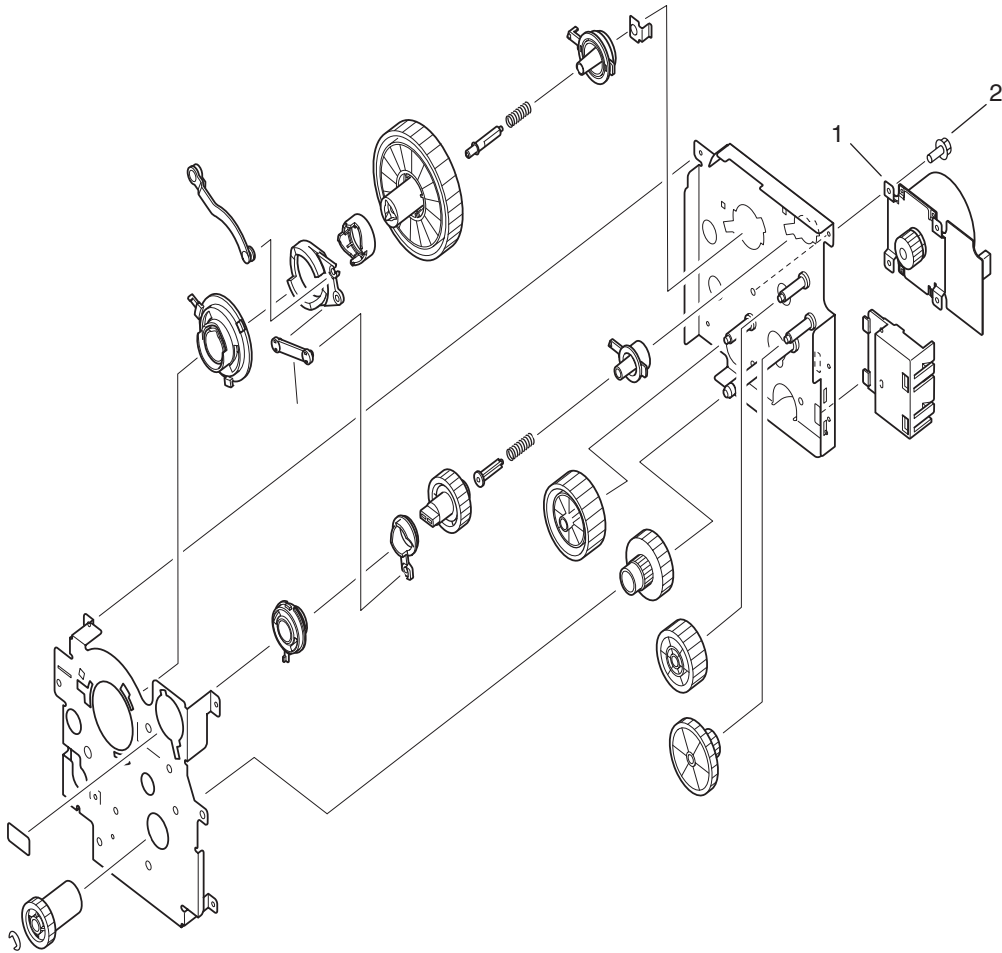


Table 8-20 Drum feed drive assembly

Ref	Description	Part number	Qty
Entire assembly	Drum feed drive assembly	RG5-5656-080CN	1
1	Main motor (M2)	RH7-1656-000CN	1
2	Screw, M3x6	XA9-1495-000CN	

Fuser delivery drive assembly

Figure 8-23 Fuser delivery drive assembly

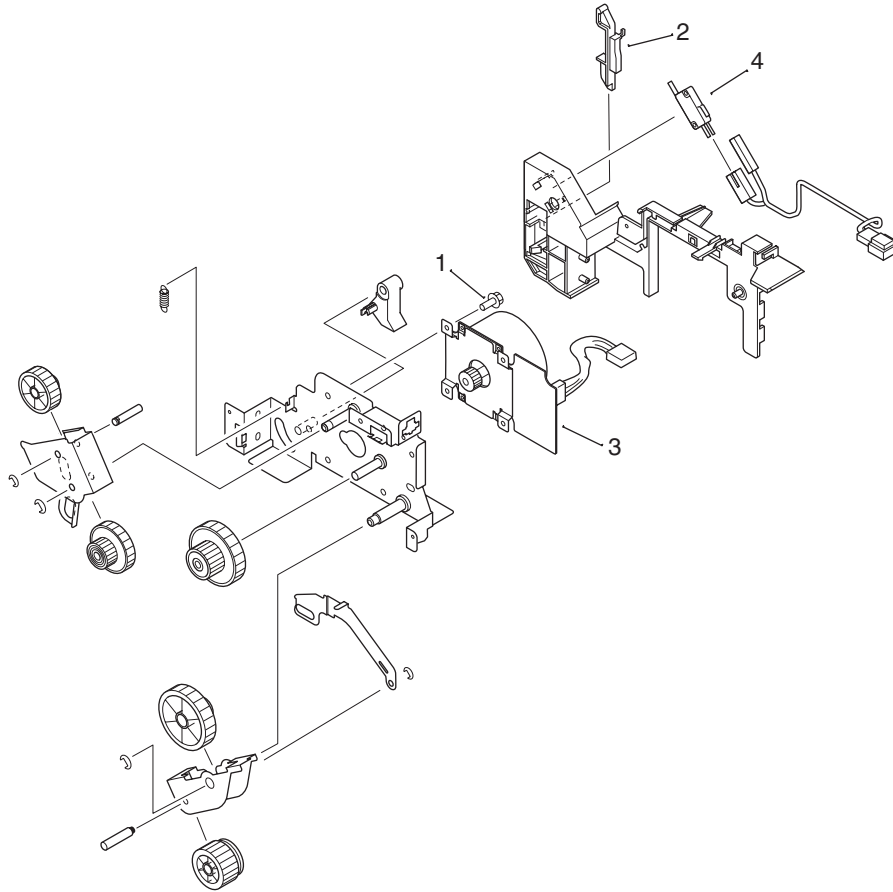


Table 8-21 Fuser delivery drive assembly

Ref	Description	Part number	Qty
Entire assembly	Fuser delivery drive assembly	RG5-7789-050CN	1
1	Screw, M3x6, RS	XA9-1495-000CN	
2	Lever, switch	RB2-6077-000CN	1
3	Motor, DC, 24V (M1)	RH7-1622-000CN	1
4	Microswitch (SW1)	WC4-5136-000CN	1

Cartridge lifter assembly

Figure 8-24 Cartridge lifter assembly

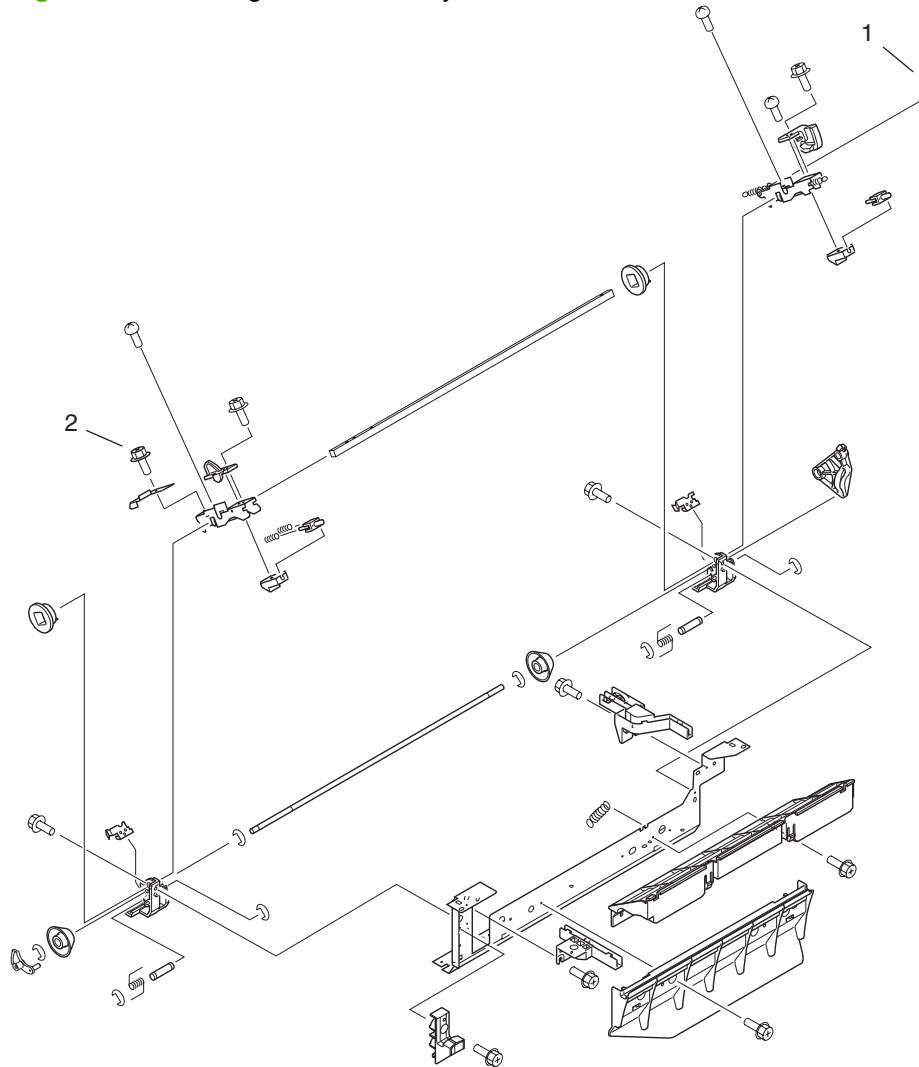


Table 8-22 Cartridge lifter assembly

Ref	Description	Part number	Qty
Entire assembly	Cartridge lifter assembly	RG5-5741-040CN	1
1	Spring, tension	RS6-2298-020CN	1
2	Screw, M3x6	XA9-1495-000CN	

500-sheet trays (Tray 2 and Tray 3)

Figure 8-25 Tray 2 or Tray 3 parts

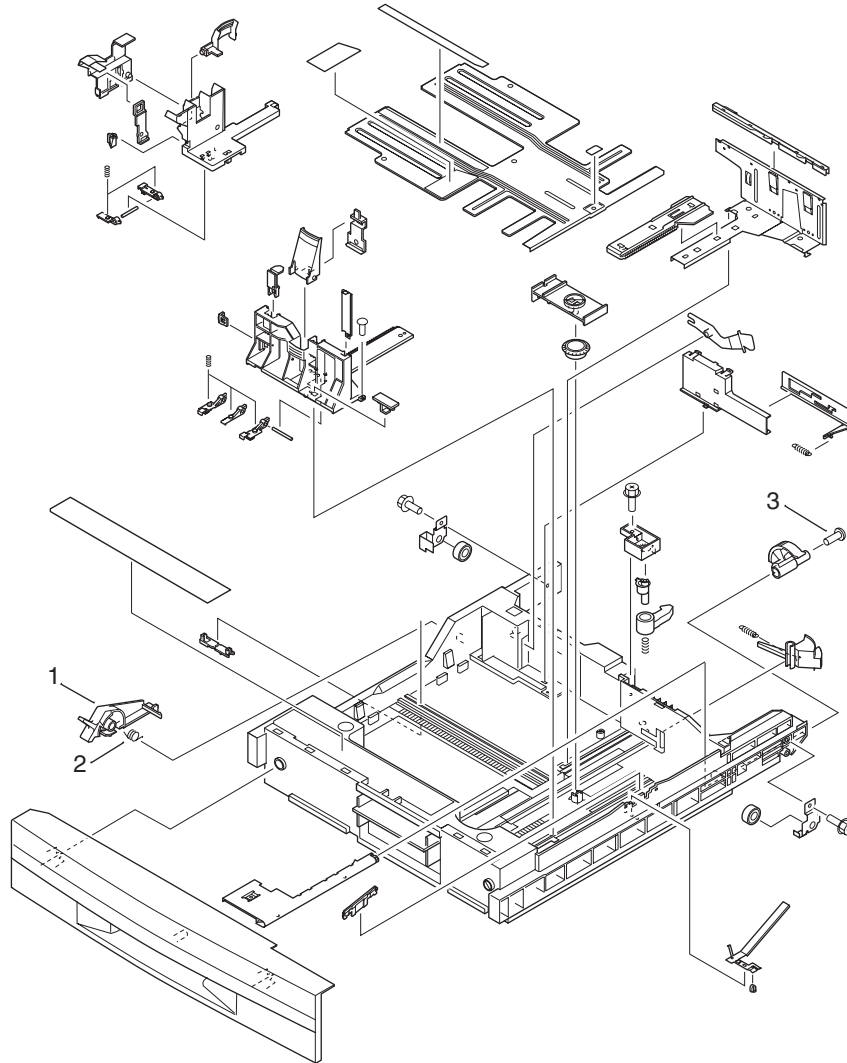


Table 8-23 Tray 2 or Tray 3 parts

Ref	Description	Part number	Qty
Entire assembly	500-sheet trays	RG5-5635-110CN	1
1	Custom/standard switch	RB2-5813-000CN	1
2	Spring, torsion	RB2-5816-000CN	1
3	Screw, W/W, M3x29.5	XA9-1466-000CN	

Paper input unit

Figure 8-26 Paper input unit

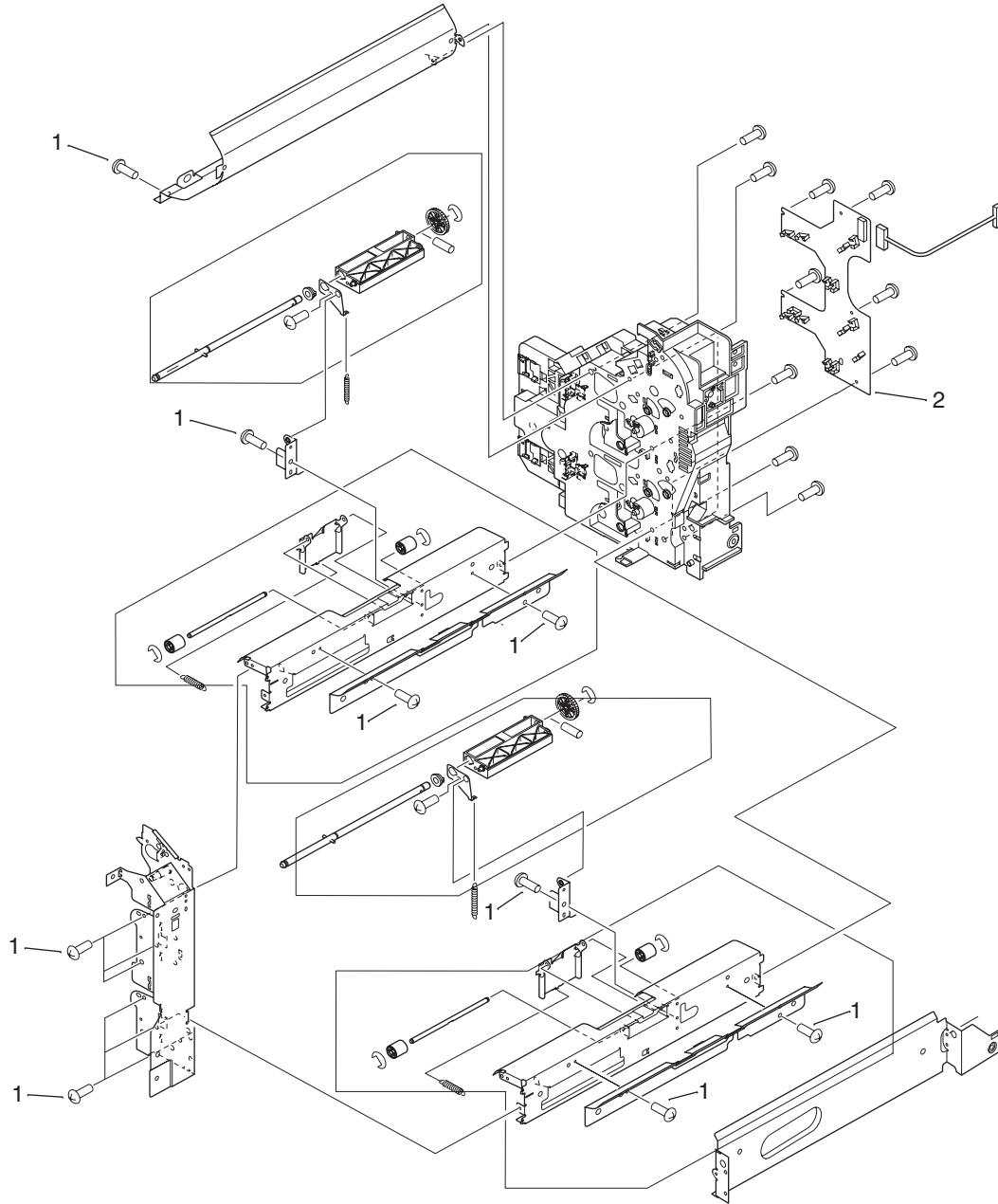


Table 8-24 Paper input unit

Ref	Description	Part number	Qty
Entire assembly	Paper input unit	RG5-5681-090CN	1
1	Screw, M3x6, RS	XA9-1495-000CN	
2	Paper pickup PCA	RG5-7896-000CN	1

Registration assembly

Figure 8-27 Registration assembly

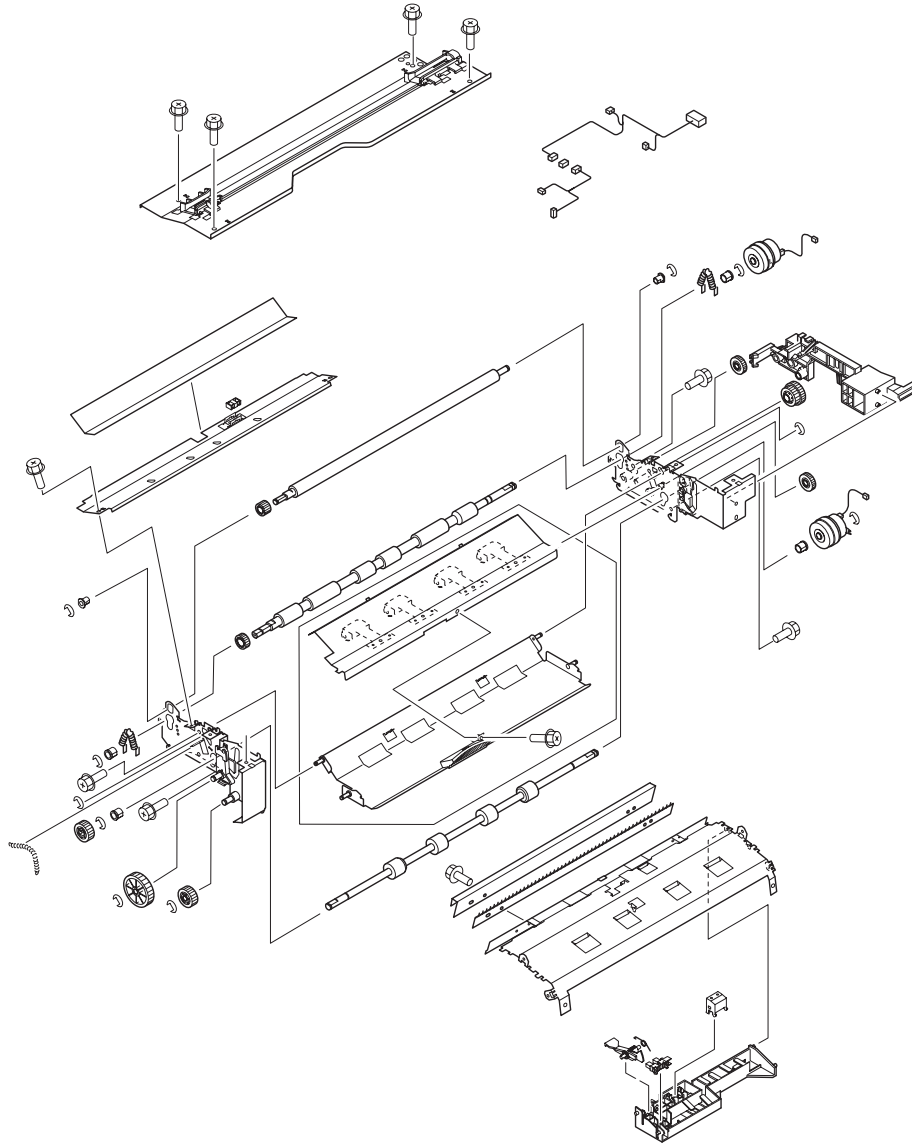


Table 8-25 Registration assembly

Ref	Description	Part number	Qty
Entire assembly	Registration assembly	RG5-5663-060CN	1

Transfer roller assembly

Figure 8-28 Transfer roller assembly

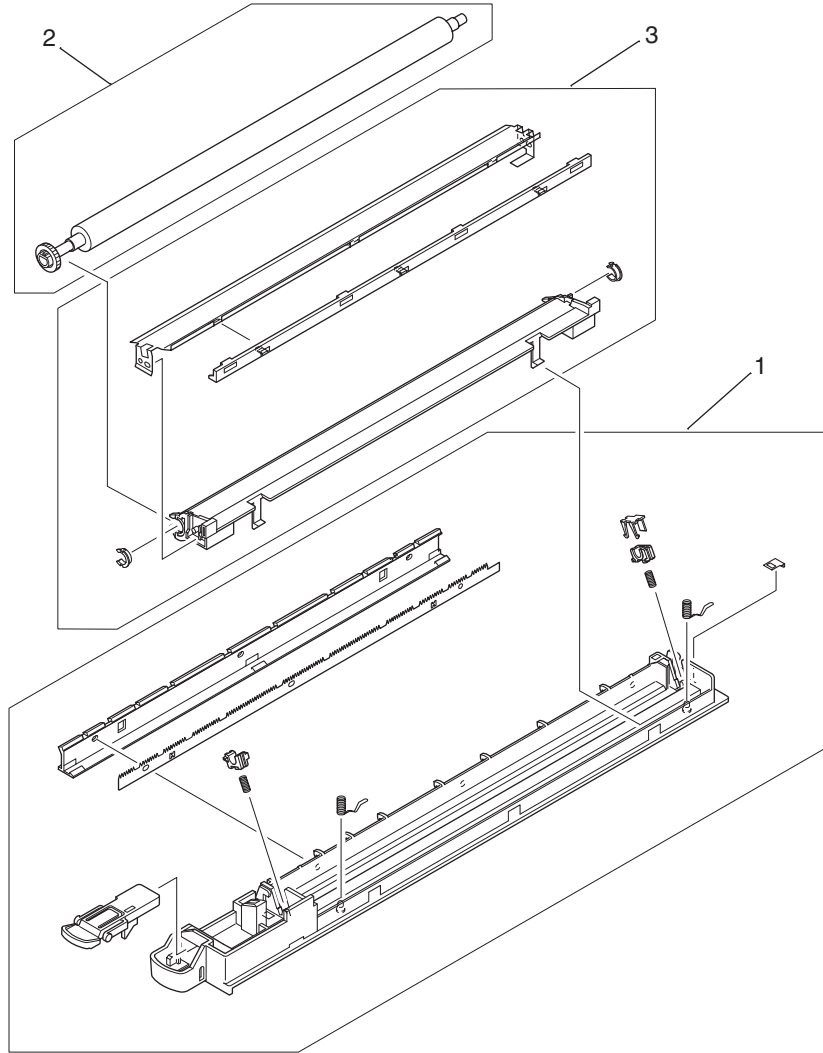


Table 8-26 Transfer roller assembly

Ref	Description	Part number	Qty
Entire assembly	Transfer roller assembly	RG5-5662-050CN	1
1	Holder, transfer	RG5-5653-030CN	1
2	Roller, transfer	RF5-3319-000CN	1
3	Guide, transfer/pre-transfer	RG5-5654-000CN	1

Delivery assembly

Figure 8-29 Delivery assembly

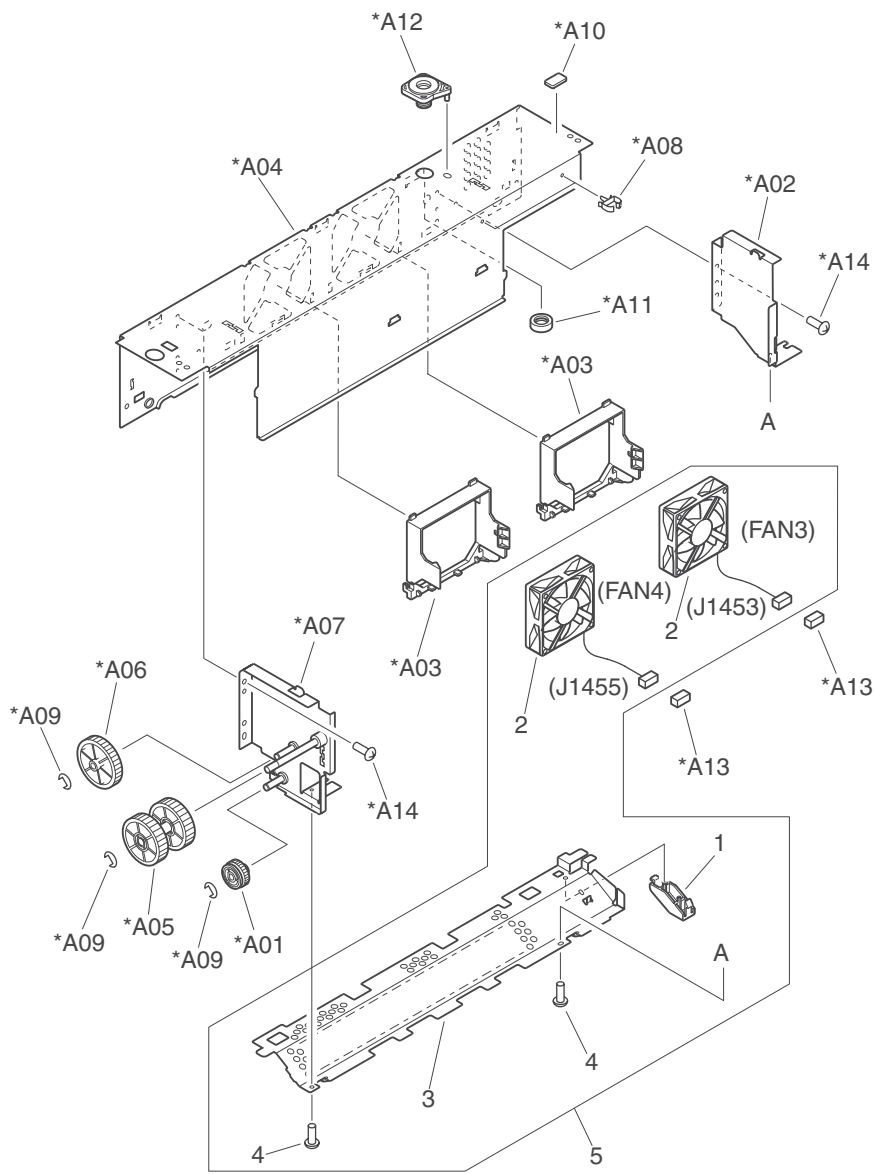


Table 8-27 Delivery assembly

Ref	Description	Part number	Qty
Entire assembly	Delivery assembly	RG5-5642-040CN	1
1	Flapper can	RB2-6494-000CN	1
2	Fan	RH7-1658-000CN	2
3	Fan cover	RB2-6490-000CN	1
4	M3x6 RS screw	XA9-1500-000CN	2
5	Left cross member assembly	RG5-5641-000CN	1
A01	29T gear	Not orderable	1
A02	Face down frame	Not orderable	1
A03	Fan holder	Not orderable	2
A04	Left upper cross member	Not orderable	1
A05	55T gear	Not orderable	1
A06	57T gear	Not orderable	1
A07	Drive plate	Not orderable	1
A08	Cable clip	Not orderable	2
A09	E ring	Not orderable	3
A10	B damper	Not orderable	1
A11	Spacer	Not orderable	1
A12	Upper spacer	Not orderable	1
A13	3P connector	Not orderable	2
A14	M3x6 RS screw	Not orderable	4

PCA locations

Figure 8-30 PCA locations

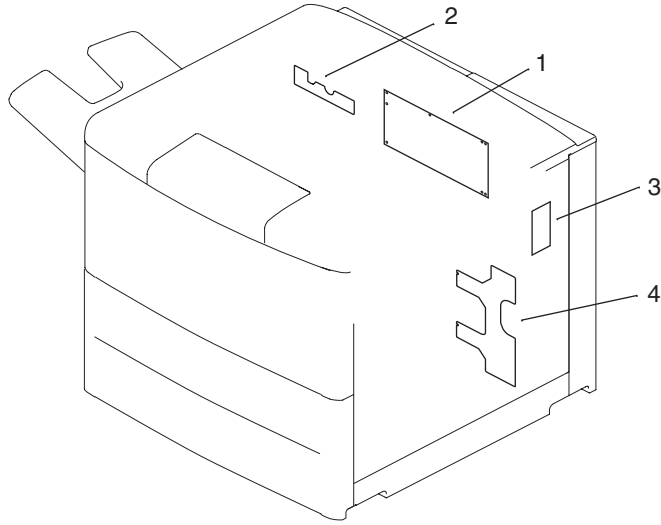


Table 8-28 PCA locations

Ref	Description	Part number	Qty
1	DC controller PCA	RG5-7780-060CN	1
2	Delivery PCA	RG5-8013-000CN	1
3	Print cartridge memory controller PCA	RG5-8009-000CN	1
4	Paper pickup (PIU) PCA	RG5-7896-000CN	1

Tray 4 main body

Figure 8-31 Tray 4 main body (1 of 2)

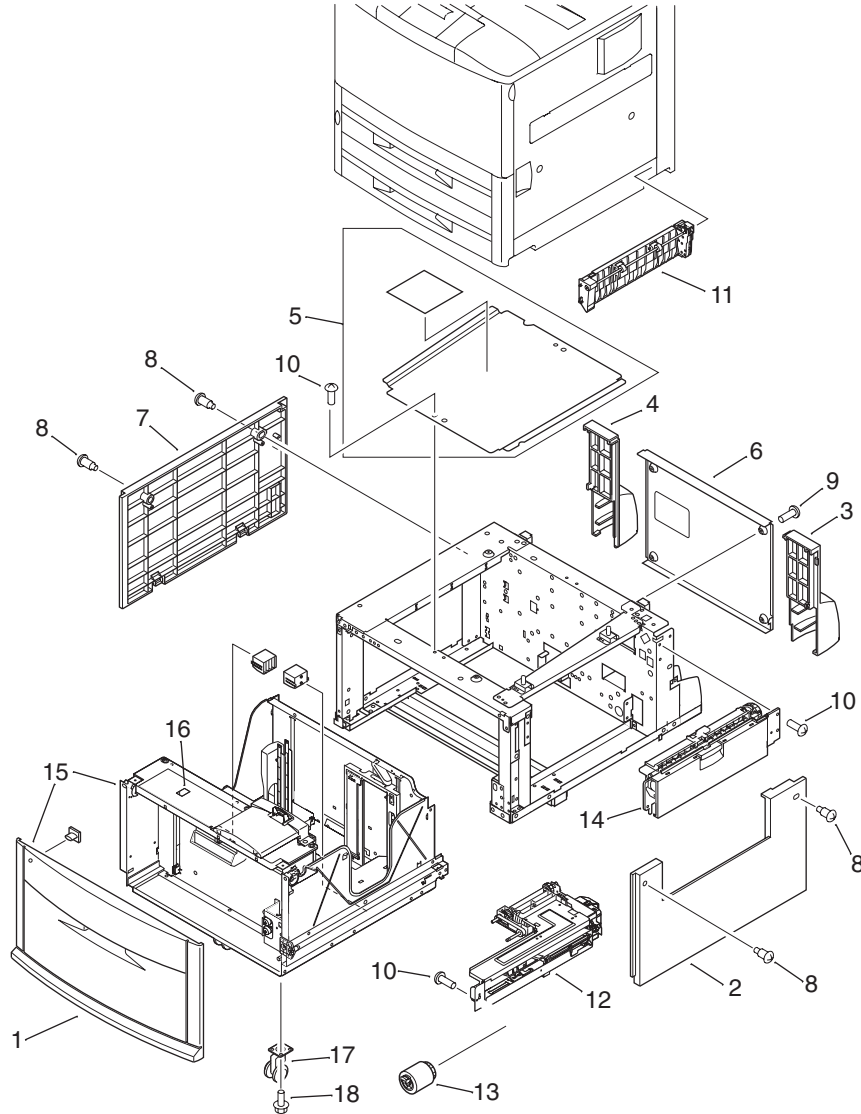


Table 8-29 Tray 4 main body (1 of 2)

Ref	Description	Part number	Qty
1	Cover, front	RB2-7648-040CN	1
2	Cover, right	RB2-7649-000CN	1
3	Cover, right back	RB2-7650-000CN	1
4	Cover, left back	RB2-7651-000CN	1
5	Cover, center	RB2-7652-000CN	1
6	Cover, back	RF5-3644-020CN	1
7	Cover, left	RF5-3645-000CN	1
8	Screw, stepped	RS5-9099-000CN	6
9	Screw, W/W, M4x6	XA9-0499-000CN	7
10	Screw, M4x6	XB6-7400-000CN	
11	Paper path connection unit (PPCU)	RG5-6227-040CN	1
12	Paper input unit (PIU)	RG5-6208-180CN	1
13	Feed/separation rollers	RF5-3338-000CN	3
14	Tray 4 vertical registration assembly (VTU/ VRA)	RG5-6225-100CN	1
15	Tray 4	C8531-67908	1
16	Lever, standard/custom	RB2-7762-020CN	1
17	Caster	RB2-7709-020CN	2
18	Screw, M4x8	XA9-1300-000CN	7
N/A	Tray 4-to-engine stabilizing screws	0515-4318	2

Figure 8-32 Tray 4 main body (2 of 2)

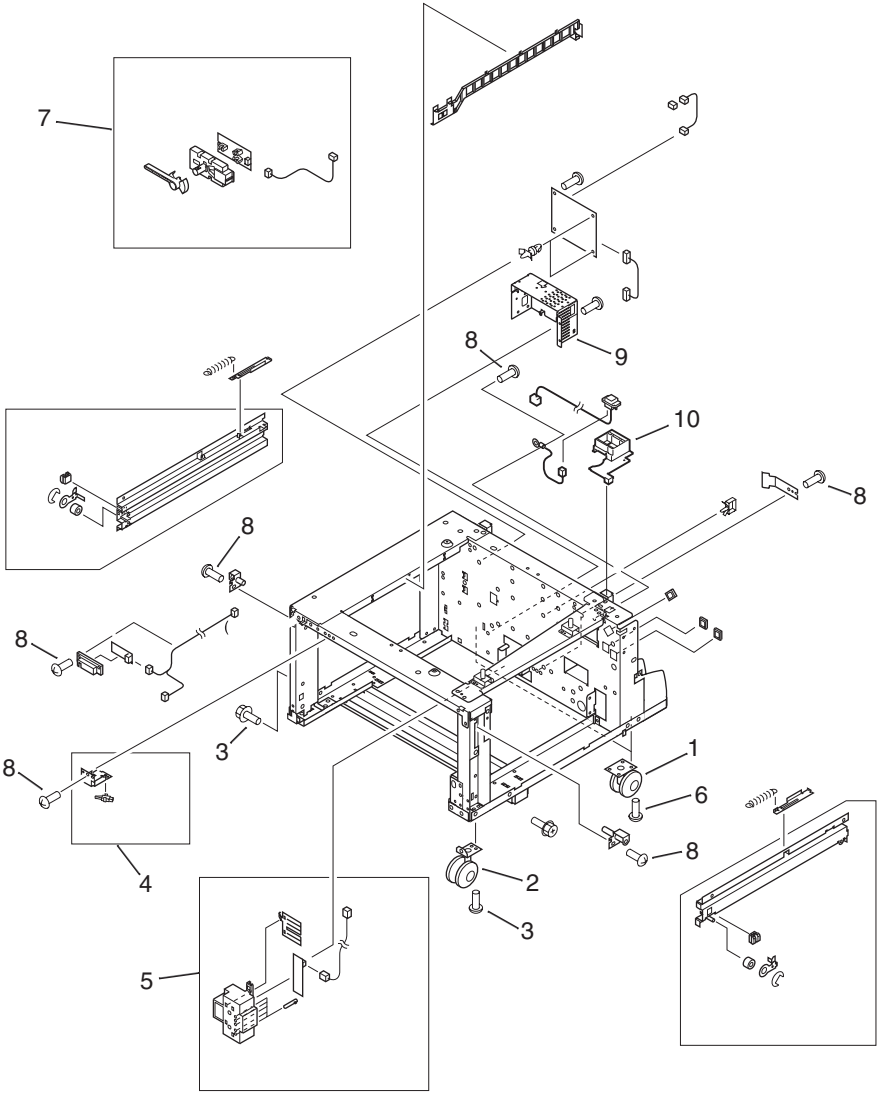


Table 8-30 Tray 4 main body (2 of 2)

Ref	Description	Part number	Qty
1	Caster, back	RB2-7678-030CN	2
1	Caster, front swivel	RB3-0304-050CN	2
3	Screw, M5x12	XA9-0912-000CN	14
4	Switch assembly (SW21)	RG5-6206-030CN	1
5	Paper size sensing assembly	RG5-6207-060CN	1
6	Screw, M4x8, RS	XA9-0732-000CN	4
7	Paper volume sensing assembly	RG5-6229-040CN	1
8	Screw, M4x6	XA9-0994-000CN	12
9	Power supply	RG5-6250-040CN	1
10	Jet-Link cable holder assembly (see 10a, 10b, and 10c)	N/A	
10a	Holder	RB2-7662-020CN	
10b	Cable assembly	RG5-6240-020CN	
10c	Grounding cable	RG5-6249-000CN	

Tray 4 drive assembly

Figure 8-33 Tray 4 drive assembly

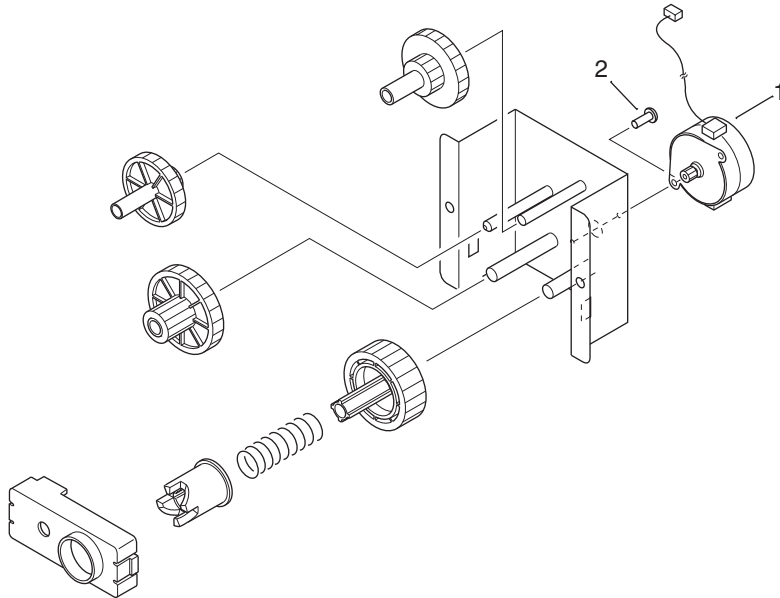


Table 8-31 Tray 4 drive assembly

Ref	Description	Part number	Qty
Entire assembly	Tray 4 deck drive assembly	RG5-6228-060CN	1
1	Motor	RH7-1481-020CN	1
2	Screw, M3x6 with washer	XB2-6300-180CN	2

Tray 4 PCA location

Figure 8-34 Tray 4 PCA location

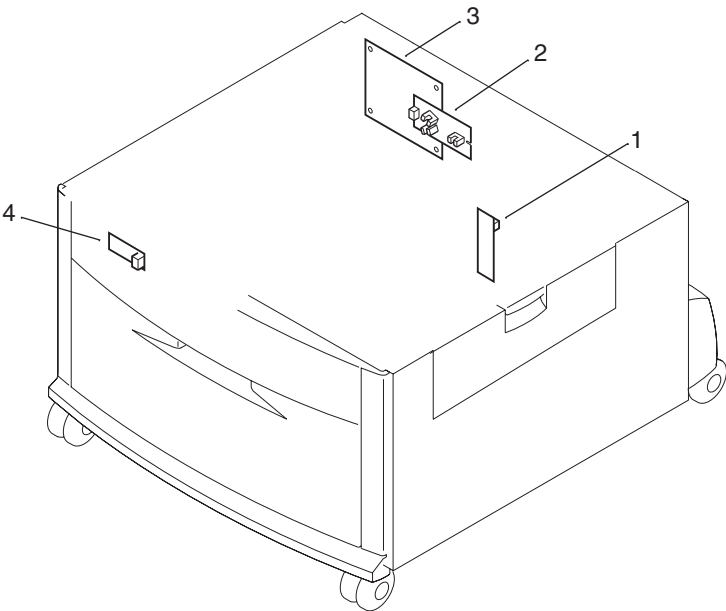


Table 8-32 Tray 4 PCA location

Ref	Description	Part number	Qty
1	Paper size PCA	RG5-6238-020CN	1
2	Paper volume PCA	RG5-6237-020CN	1
3	Deck controller PCA	RG5-6235-150CN	1
4	LED PCA	RG5-6239-020CN	1

Tray 1 assembly

Figure 8-35 Tray 1 assembly

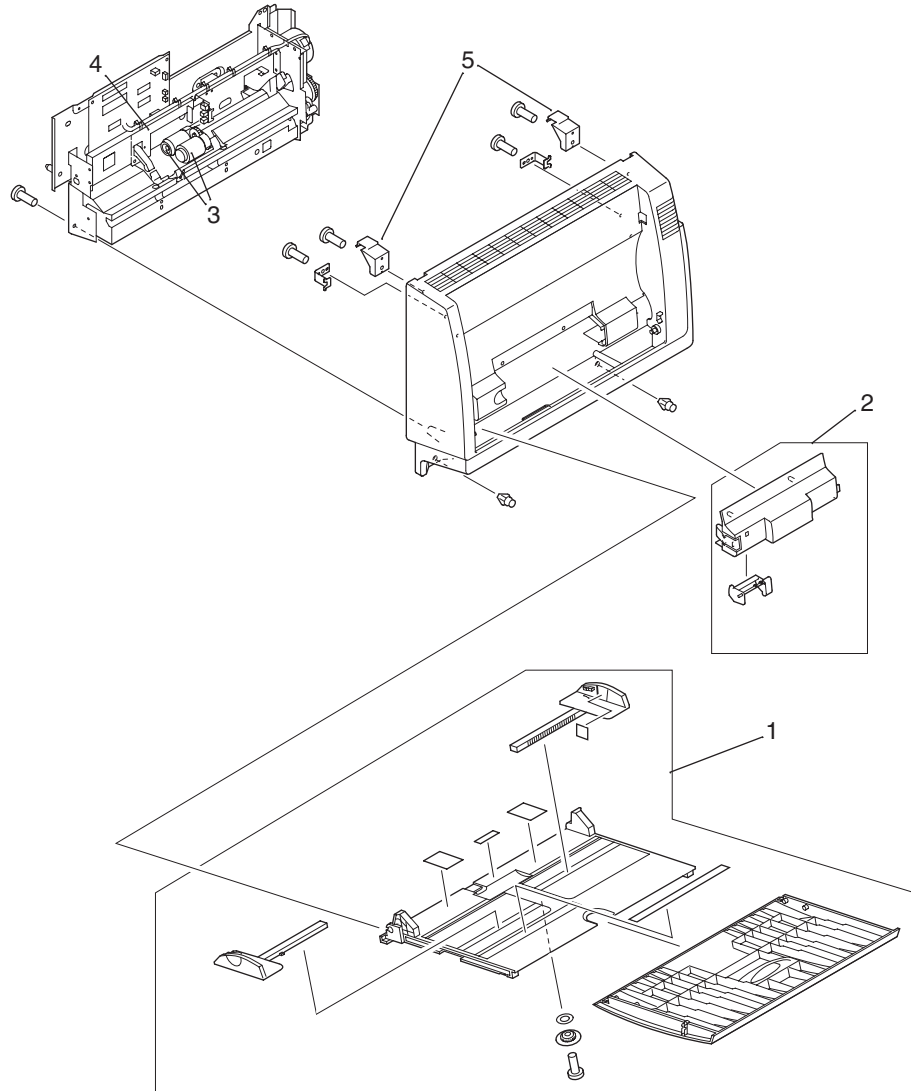


Table 8-33 Tray 1 assembly

Ref	Description	Part number	Qty
Entire assembly	Tray 1	C8568-67902	1
1	Tray assembly	RG5-5809-060CN	1
2	Service cover assembly	RG5-5811-040CN	1
3	Roller, pickup	RF5-3403-000CN	1
4	Roller, separation	RF5-3404-000CN	2
5	Cover hooks	RB2-6537-000CN	2

Alphabetical parts list

Table 8-34 Alphabetical parts list

Description	Part number	Table and page
29T gear	Not orderable	Delivery assembly on page 475
3P connector	Not orderable	Delivery assembly on page 475
500-sheet trays	RG5-5635-110CN	Tray 2 or Tray 3 parts on page 467
55T gear	Not orderable	Delivery assembly on page 475
57T gear	Not orderable	Delivery assembly on page 475
ADF analog processor PCA	Not orderable	ADF optical assembly on page 445
ADF analog processor PCA	Not orderable	Scanner engine PCAs on page 447
ADF fan assembly	RG5-6312-030CN	ADF scanner assembly on page 431
ADF intermediate PCA	RH5-3078-030CN	ADF scanner assembly on page 431
ADF intermediate PCA	RH5-3078-030CN	Scanner engine PCAs on page 447
ADF lamp assembly	Not orderable	ADF optical assembly on page 445
ADF left hinge	Not orderable	ADF paper pickup assembly on page 437
NOTE: The ADF left hinge is included with the ADF paper pickup assembly (RG5-6275-060CN).		
ADF Lens assembly	Not orderable	ADF optical assembly on page 445
ADF main assembly	RG5-7379-040CN	ADF main assembly on page 441
ADF optical assembly	RG5-6307-020CN	ADF main assembly on page 441
ADF optical assembly	RG5-6307-020CN	ADF optical assembly on page 445
ADF paper pickup assembly	RG5-6275-060CN	ADF paper pickup assembly on page 437
ADF rear cover assembly	RG5-6315-000CN	Scanner engine covers and panels on page 417
ADF right hinge	RB2-7974-000CN	ADF scanner assembly on page 431
NOTE: The ADF paper pickup assembly (RG5-6275-060CN) includes the ADF left hinge.		

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
ADF scanner assembly chassis	Not orderable	ADF optical assembly on page 445
ADF sensor cable	Not orderable	ADF scanner assembly on page 431
ADF sensor cable	Not orderable	ADF paper pickup assembly on page 437
ADF sensor PCA	RH5-3079-030CN	ADF main assembly on page 441
ADF sensor PCA	RH5-3079-030CN	Scanner engine PCAs on page 447
ADF shield box assembly	Not orderable	ADF optical assembly on page 445
ADF solenoid cable	Not orderable	ADF scanner assembly on page 431
ADF width sensor assembly	RG5-6274-000CN	ADF scanner assembly on page 431
ADF width sensor assembly	RG5-6274-000CN	Scanner engine PCAs on page 447
Arm, flapper	RF5-3688-020CN	ADF paper pickup assembly on page 437
Arm, flapper rear	RF5-3689-020CN	ADF paper pickup assembly on page 437
Arm, shutter	RB2-5639-000CN	Print engine internal components (2 of 4) on page 455
Arm, tension	Not orderable	ADF paper pickup assembly on page 437
Arm, weight	Not orderable	ADF paper pickup assembly on page 437
B damper	Not orderable	Delivery assembly on page 475
Back cable holder assembly	RG5-7786-000CN	Print engine internal components (4 of 4) on page 459
Back cover assembly	RG5-5701-000CN	Print engine covers and panels on page 419
Back cover assembly	Not orderable	ADF scanner assembly on page 431
Back fusing mount	RB2-5518-020CN	Print engine internal components (2 of 4) on page 455
Back fusing rail	RB2-5516-000CN	Print engine internal components (2 of 4) on page 455
Base, cover assembly	RG5-6272-050CN	ADF scanner assembly on page 431

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Belt, timing	Not orderable	Flatbed scanner assembly on page 423
Belt, timing	Not orderable	Flatbed optical assembly on page 427
Belt, timing	Not orderable	ADF paper pickup assembly on page 437
Belt, timing	Not orderable	ADF paper pickup assembly on page 437
Belt, timing	RB2-7988-000CN	ADF paper pickup assembly on page 437
Belt, timing	Not orderable	ADF paper pickup assembly on page 437
Block, slide	Not orderable	Flatbed optical assembly on page 427
Bracket, mount	Not orderable	Scanner engine covers and panels on page 417
Bracket, tension	Not orderable	ADF paper pickup assembly on page 437
Bushing	RB2-5652-000CN	Print engine covers and panels on page 419
Bushing	Not orderable	Flatbed optical assembly on page 427
Bushing	Not orderable	ADF paper pickup assembly on page 437
Bushing	Not orderable	ADF paper pickup assembly on page 437
Bushing	Not orderable	ADF paper pickup assembly on page 437
Bushing	Not orderable	ADF paper pickup assembly on page 437
Bushing	Not orderable	ADF main assembly on page 441
Cable assembly	RG5-6240-020CN	Tray 4 main body (2 of 2) on page 481
Cable clip	Not orderable	Delivery assembly on page 475
Cable, ADF inverter	Not orderable	ADF optical assembly on page 445
Cable, CCD	Not orderable	Flatbed optical assembly on page 427
Cable, CCD	Not orderable	ADF optical assembly on page 445
Cable, fan	Not orderable	Flatbed scanner assembly on page 423

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Cable, flatbed	Not orderable	Flatbed optical assembly on page 427
Cable, guide assembly	Not orderable	Flatbed scanner assembly on page 423
Cable, guide assembly	RG5-6311-000CN	ADF scanner assembly on page 431
Cable, HVPS flat ribbon	RH2-5445-000CN	Print engine internal components (4 of 4) on page 459
Cable, lamp	Not orderable	Flatbed optical assembly on page 427
Cable, power	Not orderable	Flatbed optical assembly on page 427
Cable, scanner	Not orderable	Flatbed optical assembly on page 427
Cable, tray 1	RG5-8038-000CN	Right cover assembly on page 451
Cap, right cover	RB2-5675-000CN	Print engine covers and panels on page 419
Cartridge drive assembly	Not orderable	Flatbed scanner assembly on page 423
Cartridge frame assembly	Not orderable	ADF main assembly on page 441
Cartridge lifter assembly	RG5-5741-040CN	Cartridge lifter assembly on page 465
Cartridge, back pressure assembly	RG5-5710-000CN	Print engine internal components (3 of 4) on page 457
Cartridge, front pressure assembly	RG5-5709-000CN	Print engine internal components (3 of 4) on page 457
Caster	RB2-7709-020CN	Tray 4 main body (1 of 2) on page 479
Caster, back	RB2-7678-030CN	Tray 4 main body (2 of 2) on page 481
Caster, front swivel	RB3-0304-050CN	Tray 4 main body (2 of 2) on page 481
CCD lens assembly	Not orderable	Flatbed optical assembly on page 427
Clamp	Not orderable	ADF paper pickup assembly on page 437
Clamp	Not orderable	ADF paper pickup assembly on page 437
Clamp, cable	Not orderable	Flatbed optical assembly on page 427

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Clamp, cable	Not orderable	ADF scanner assembly on page 431
Clamp, cable	Not orderable	ADF scanner assembly on page 431
Clamp, cable	Not orderable	ADF main assembly on page 441
Clamp, cable	Not orderable	ADF main assembly on page 441
Clamp, cable	Not orderable	ADF paper pickup assembly on page 437
Clamp, cable	Not orderable	ADF paper pickup assembly on page 437
Clip	Not orderable	ADF paper pickup assembly on page 437
Clip	Not orderable	ADF paper pickup assembly on page 437
Clip	Not orderable	ADF paper pickup assembly on page 437
Clip	Not orderable	ADF main assembly on page 441
Clip, cable	Not orderable	Flatbed optical assembly on page 427
Collar	Not orderable	ADF main assembly on page 441
Collar	RB2-5547-000CN	Print engine internal components (1 of 4) on page 453
Connector assembly	RG5-5779-030CN	Print engine internal components (4 of 4) on page 459
Control panel assembly	CC395-60102	Scanner assembly on page 413
Control panel cable	RG5-5752-000CN	Scanner assembly on page 413
Control panel overlay, left	See Table 8-1 Consumables, supplies, accessories, FRUs, and documents on page 406 .	Scanner assembly on page 413
Control panel overlay, right	See Table 8-1 Consumables, supplies, accessories, FRUs, and documents on page 406 .	Scanner assembly on page 413
Copyboard glass unit	RF5-3676-000CN	Flatbed scanner assembly on page 423
Cover hooks	RB2-6537-000CN	Tray 1 assembly on page 487

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Cover, back	RF5-3644-020CN	Tray 4 main body (1 of 2) on page 479
Cover, cable	RB2-8031-000CN	ADF main assembly on page 441
Cover, center	RB2-7652-000CN	Tray 4 main body (1 of 2) on page 479
Cover, connector	RB2-8060-000CN	Scanner engine covers and panels on page 417
Cover, copyboard unit	RF5-3695-000CN	Scanner engine covers and panels on page 417
Cover, front	RB2-8048-000CN	ADF scanner assembly on page 431
Cover, front	Not orderable	ADF scanner assembly on page 431
Cover, front	RB2-7648-040CN	Tray 4 main body (1 of 2) on page 479
Cover, front lower	RB2-7933-000CN	Flatbed scanner assembly on page 423
Cover, front upper	RB2-7934-000CN	Flatbed scanner assembly on page 423
Cover, glass mount	RB2-7935-000CN	Flatbed scanner assembly on page 423
Cover, jam	RB2-8040-000CN	ADF scanner assembly on page 431
Cover, lamp right	RF5-3850-000CN	ADF scanner assembly on page 431
Cover, left	RB2-8054-000CN	Scanner engine covers and panels on page 417
Cover, left	RF5-3645-000CN	Tray 4 main body (1 of 2) on page 479
Cover, left (left door)	RB2-6007-000CN	Left door and diverter on page 449
Cover, left back	RB2-5687-000CN	Print engine covers and panels on page 419
Cover, left back	RB2-7651-000CN	Tray 4 main body (1 of 2) on page 479
Cover, left lower	RB2-5687-000CN	Print engine covers and panels on page 419
Cover, left rail	RB2-5683-000CN	Print engine covers and panels on page 419
Cover, left upper	RB2-6491-000CN	Print engine covers and panels on page 419
Cover, lens	Not orderable	Flatbed optical assembly on page 427

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Cover, lens	Not orderable	ADF optical assembly on page 445
Cover, lens	Not orderable	ADF optical assembly on page 445
Cover, right	RB2-8063-000CN	Flatbed scanner assembly on page 423
Cover, right	RB2-7649-000CN	Tray 4 main body (1 of 2) on page 479
Cover, right back	RB2-5684-000CN	Print engine covers and panels on page 419
Cover, right back	RB2-7650-000CN	Tray 4 main body (1 of 2) on page 479
Cover, right door, inside	RB2-5697-000CN	Print engine internal components (1 of 4) on page 453
Cover, right lower	RB2-5689-000CN	Print engine covers and panels on page 419
Cover, right rail	RB2-5682-000CN	Print engine covers and panels on page 419
Cover, shield	Not orderable	Flatbed optical assembly on page 427
Cover, tray 1 blanking	RB2-5676-000CN	Print engine covers and panels on page 419
Cover, unit	Not orderable	ADF optical assembly on page 445
Cushion	Not orderable	ADF scanner assembly on page 431
Custom/standard switch	RB2-5813-000CN	Tray 2 or Tray 3 parts on page 467
Damper assembly	RG5-5648-020CN	Left door and diverter on page 449
Damper sheet	Not orderable	ADF optical assembly on page 445
DC controller cable	Not orderable	Flatbed scanner assembly on page 423
DC controller PCA	RG5-7780-060CN	PCA locations on page 477
Deck controller PCA	RG5-6235-150CN	Tray 4 PCA location on page 485
Delivery assembly	RG5-5642-040CN	Delivery assembly on page 475
Delivery PCA	RG5-8013-000CN	PCA locations on page 477
Delivery roller assembly	RG5-6266-000CN	Flatbed scanner assembly on page 423

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Delivery tray assembly	RG5-6316-000CN	Scanner engine covers and panels on page 417
Diverter assembly	RG5-5647-070CN	Left door and diverter on page 449
Drive motor assembly	Not orderable	ADF paper pickup assembly on page 437
Drive plate	Not orderable	Delivery assembly on page 475
Drive tension bracket	Not orderable	ADF paper pickup assembly on page 437
Drum feed drive assembly	RG5-5656-080CN	Drum feed drive assembly on page 461
E ring	Not orderable	Delivery assembly on page 475
Edge, cable	Not orderable	Flatbed optical assembly on page 427
Empty sensor bracket	Not orderable	ADF paper pickup assembly on page 437
End paper sensor assembly	RG5-5699-040CN	Print engine internal components (3 of 4) on page 457
Face down frame	Not orderable	Delivery assembly on page 475
Fan	Not orderable	Flatbed scanner assembly on page 423
Fan	RH7-1486-020CN	ADF scanner assembly on page 431
Fan	RH7-1658-000CN	Delivery assembly on page 475
Fan assembly	RG5-6318-000CN	Flatbed scanner assembly on page 423
Fan connecting cable	RG5-7783-000CN	Print engine internal components (4 of 4) on page 459
Fan cover	RB2-6490-000CN	Delivery assembly on page 475
Fan holder	Not orderable	Delivery assembly on page 475
Fan, #1, power supply	RH7-1657-000CN	Print engine internal components (4 of 4) on page 459
Fan, #2, controller	RH7-1623-000CN	Print engine internal components (4 of 4) on page 459

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Fan, #5, cartridge fan	RH7-5306-000CN	Print engine internal components (3 of 4) on page 457
Feed guide, transfer	RG5-5651-030CN	Print engine internal components (2 of 4) on page 455
Feed motor assembly	Not orderable	ADF paper pickup assembly on page 437
Feed/separation rollers	RF5-3338-000CN	Tray 4 main body (1 of 2) on page 479
Ferrite core	Not orderable	Flatbed optical assembly on page 427
Ferrite core	RB2-8678-000CN	ADF scanner assembly on page 431
Flag, empty	RB2-7978-000CN	ADF paper pickup assembly on page 437
Flapper can	RB2-6494-000CN	Delivery assembly on page 475
Flatbed analog processor	Not orderable	Flatbed optical assembly on page 427
Flatbed intermediate PCA	RH5-3073-030CN	Flatbed scanner assembly on page 423
Flatbed intermediate PCA	RH5-3073-000CN	Scanner engine PCAs on page 447
Flatbed lamp assembly	Not orderable	Flatbed optical assembly on page 427
Flatbed lamp assembly	Not orderable	Flatbed optical assembly on page 427
Flatbed optical assembly	RG5-6263-070CN	Flatbed optical assembly on page 427
Flatbed sensor assembly	RG5-7806-000CN	Flatbed scanner assembly on page 423
Flatbed sub frame assembly	Not orderable	Flatbed optical assembly on page 427
Flip-down glass assembly	Not orderable	ADF optical assembly on page 445
Foot, left side	RB2-5529-000CN	Print engine internal components (1 of 4) on page 453
Foot, right side	RB1-6421-000CN	Print engine internal components (1 of 4) on page 453
Front cover assembly	RG5-5702-050CN	Print engine covers and panels on page 419

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Front fusing mount	RB2-5517-020CN	Print engine internal components (2 of 4) on page 455
Front fusing rail	RB2-5515-000CN	Print engine internal components (2 of 4) on page 455
Front inside cover assembly	RG5-5721-000CN	Print engine internal components (1 of 4) on page 453
Fuse, 250V, 5A	VD7-0645-001CN	Flatbed scanner assembly on page 423
Fuser assembly, 110 V	RG5-5750-270CN	Print engine internal components (2 of 4) on page 455
Fuser assembly, 220 V	RG5-5751-270CN (220V)	Print engine internal components (2 of 4) on page 455
Fuser connector holder assembly	RG5-5724-050CN	Print engine internal components (2 of 4) on page 455
Fuser delivery drive assembly	RG5-7789-050CN	Fuser delivery drive assembly on page 463
Fuser high-voltage cable	RG5-8034-000CN	Print engine internal components (2 of 4) on page 455
Fuser power cable	RG5-8025-000CN	Print engine internal components (2 of 4) on page 455
Gear damper unit	Not orderable	ADF main assembly on page 441
Gear shaft assembly	Not orderable	ADF paper pickup assembly on page 437
Gear, 16T	Not orderable	ADF paper pickup assembly on page 437
Gear, 21T	RS5-0708-000CN	Print engine internal components (2 of 4) on page 455
Gear, 28T	Not orderable	ADF paper pickup assembly on page 437
Gear, 50T	Not orderable	ADF main assembly on page 441
Ground cable	Not orderable	Flatbed scanner assembly on page 423
Grounding cable	RG5-5736-000CN	Scanner assembly on page 413
Grounding cable	Not orderable	ADF main assembly on page 441

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Grounding cable	RG5-6249-000CN	Tray 4 main body (2 of 2) on page 481
Grounding cable, tray 1	RG5-5764-000CN	Right cover assembly on page 451
Guide rail, cartridge	RG5-5718-000CN	Print engine internal components (1 of 4) on page 453
Guide, cable	Not orderable	ADF main assembly on page 441
Guide, cable	Not orderable	ADF main assembly on page 441
Guide, cartridge	Not orderable	Flatbed optical assembly on page 427
Guide, cartridge	RB2-5526-000CN	Print engine internal components (1 of 4) on page 453
Guide, delivery unit	RF5-3674-000CN	Scanner engine covers and panels on page 417
Guide, edge	Not orderable	ADF main assembly on page 441
Guide, front tray	RF5-3698-000CN	ADF scanner assembly on page 431
Guide, harness	Not orderable	ADF scanner assembly on page 431
Guide, harness 1	Not orderable	ADF scanner assembly on page 431
Guide, harness 2	Not orderable	ADF scanner assembly on page 431
Guide, I/F 1	RB2-8046-000CN	ADF scanner assembly on page 431
Guide, I/F 4	RB2-8047-000CN	ADF scanner assembly on page 431
Guide, I/F 5	RB2-8681-000CN	ADF scanner assembly on page 431
Guide, I/F 6	RB2-8682-000CN	ADF scanner assembly on page 431
Guide, pickup	RB2-5522-000CN	Print engine internal components (1 of 4) on page 453
Guide, rear tray	RF5-3682-000CN	ADF scanner assembly on page 431
Guide, slide	Not orderable	Flatbed scanner assembly on page 423
Guide, transfer/pre-transfer	RG5-5654-000CN	Transfer roller assembly on page 473

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
High voltage power supply (HVPS)	RG5-5728-100CN	Print engine internal components (4 of 4) on page 459
Hinge arm, front cover	RB2-5654-000CN	Print engine internal components (1 of 4) on page 453
Hinge cover assembly	RG5-6317-000CN	Scanner engine covers and panels on page 417
Hinge mount, damper	RB2-5570-020CN	Print engine internal components (1 of 4) on page 453
Holder	RB2-7662-020CN	Tray 4 main body (2 of 2) on page 481
Holder FFC	Not orderable	Flatbed optical assembly on page 427
Holder lock	RB2-6495-000CN	Scanner assembly on page 413
Holder, document stop	Not orderable	Scanner engine covers and panels on page 417
Holder, separation	RB2-7989-000CN	ADF paper pickup assembly on page 437
Holder, spring	RB2-7990-000CN	ADF paper pickup assembly on page 437
Holder, stop	RB2-8693-000CN	ADF scanner assembly on page 431
Holder, transfer	RG5-5653-030CN	Transfer roller assembly on page 473
Holder, weight plate	RB2-7999-000CN	ADF paper pickup assembly on page 437
I/F cable guide assembly	RG5-6313-030CN	ADF scanner assembly on page 431
Inlet assembly (Power SW 10)	RG5-5727-030CN	Print engine internal components (4 of 4) on page 459
Intermediate PCA	RH5-7807-000CN	Flatbed scanner assembly on page 423
Intermediate PCA	RH5-3165-030CN	Scanner engine PCAs on page 447
Intermediate PCA case	Not orderable	Flatbed scanner assembly on page 423
Inverter PCA	Not orderable	Flatbed optical assembly on page 427
Inverter PCA	Not orderable	ADF optical assembly on page 445
Inverter PCA	Not orderable	Scanner engine PCAs on page 447

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Jam clearing assembly, fuser	RG5-5700-030CN	Print engine internal components (1 of 4) on page 453
Jet-Link cable holder assembly (see 10a, 10b, and 10c)	N/A	Tray 4 main body (2 of 2) on page 481
Knob	RB2-8015-000CN	ADF main assembly on page 441
Knob, registration, jam removal	RB2-5845-000CN	Print engine internal components (1 of 4) on page 453
Label, adjustment	Not orderable	Flatbed scanner assembly on page 423
Label, jam clearing	Not orderable	Scanner engine covers and panels on page 417
Lamp	Not orderable	Flatbed optical assembly on page 427
Lamp	Not orderable	ADF optical assembly on page 445
Lamp assembly	Not orderable	Flatbed optical assembly on page 427
Laser/scanner assembly	RG5-5826-090CN	Print engine internal components (3 of 4) on page 457
Latch mount assembly	RG5-5704-040CN	Print engine internal components (3 of 4) on page 457
Latch, roller-action	RB2-5700-000CN	Print engine covers and panels on page 419
LED PCA	RG5-6239-020CN	Tray 4 PCA location on page 485
Left cross member assembly	RG5-5641-000CN	Delivery assembly on page 475
Left door and diverter	RG5-5646-070CN	Left door and diverter on page 449
Left hinge assembly	Not orderable	Flatbed scanner assembly on page 423
Left rail, lower	RG5-5714-020CN	Print engine internal components (3 of 4) on page 457
Left rail, upper	RG5-5713-020CN	Print engine internal components (3 of 4) on page 457
Left upper cover assembly	RG5-5706-000CN	Scanner assembly on page 413
Left upper cover assembly	RG5-5705-030CN	Print engine covers and panels on page 419

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Left upper cross member	Not orderable	Delivery assembly on page 475
Lever assembly, cartridge release	RG5-5746-030CN	Print engine internal components (1 of 4) on page 453
Lever, empty	RB2-8002-000CN	ADF paper pickup assembly on page 437
Lever, knob	RB2-8017-000CN	ADF main assembly on page 441
Lever, open	RB2-8002-000CN	ADF paper pickup assembly on page 437
Lever, sensor	RB2-7943-000CN	ADF scanner assembly on page 431
Lever, shutter	Not orderable	ADF paper pickup assembly on page 437
Lever, standard/custom	RB2-7762-020CN	Tray 4 main body (1 of 2) on page 479
Lever, switch	RB2-6077-000CN	Fuser delivery drive assembly on page 463
Link, connect	RB2-5528-000CN	Print engine internal components (1 of 4) on page 453
Low voltage power supply assembly 110 V	RG5-7778-030CN	Print engine internal components (4 of 4) on page 459
Low voltage power supply assembly 220 V	RG5-7779-030CN (220V)	Print engine internal components (4 of 4) on page 459
Lower delivery roller	RB2-7884-000CN	Flatbed scanner assembly on page 423
M3x6 RS screw	XA9-1500-000CN	Delivery assembly on page 475
M3x6 RS screw	Not orderable	Delivery assembly on page 475
Main cable harness assembly	RG5-5722-030CN	Print engine internal components (4 of 4) on page 459
Main motor (M2)	RH7-1656-000CN	Drum feed drive assembly on page 461
Micro-switch	WC4-5175-000CN	ADF paper pickup assembly on page 437
Microswitch (SW1)	WC4-5136-000CN	Fuser delivery drive assembly on page 463
Motor	RH7-1481-020CN	Tray 4 drive assembly on page 483

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Motor bracket assembly	Not orderable	Flatbed scanner assembly on page 423
Motor, 24vdc	RH7-1485-000CN	Flatbed scanner assembly on page 423
Motor, 24vdc	RH7-1488-030CN	ADF paper pickup assembly on page 437
Motor, 24vdc	RH7-1487-020CN	ADF paper pickup assembly on page 437
Motor, DC, 24V (M1)	RH7-1622-000CN	Fuser delivery drive assembly on page 463
Mount, glass 13	RB2-7928-000CN	Flatbed scanner assembly on page 423
Mount, glass 3	RB2-7927-000CN	Flatbed scanner assembly on page 423
Mount, motor	Not orderable	ADF paper pickup assembly on page 437
Paper input unit	RG5-5681-090CN	Paper input unit on page 469
Paper input unit (PIU)	RG5-6208-180CN	Tray 4 main body (1 of 2) on page 479
Paper path connection unit (PPCU)	RG5-6227-040CN	Tray 4 main body (1 of 2) on page 479
Paper pickup (PIU) PCA	RG5-7896-000CN	PCA locations on page 477
Paper pickup PCA	RG5-7896-000CN	Paper input unit on page 469
Paper size PCA	RG5-6238-020CN	Tray 4 PCA location on page 485
Paper size sensing assembly	RG5-6207-060CN	Tray 4 main body (2 of 2) on page 481
Paper volume PCA	RG5-6237-020CN	Tray 4 PCA location on page 485
Paper volume sensing assembly	RG5-6229-040CN	Tray 4 main body (2 of 2) on page 481
Photo interrupter, TLP1241	Not orderable	Flatbed scanner assembly on page 423
Photo-interrupter, TLP1241	WG8-5624-000CN	ADF scanner assembly on page 431
Photo-interrupter, TLP1241	Not orderable	ADF paper pickup assembly on page 437
Photo-interrupter, TLP1241	Not orderable	ADF paper pickup assembly on page 437
Photo-interrupter, TLP1241	WG8-5624-000CN	ADF paper pickup assembly on page 437
Pickup roller assembly	RG5-6283-020CN	ADF paper pickup assembly on page 437

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Pickup sensor assembly	RG5-6285-020CN	ADF paper pickup assembly on page 437
Pin	RB2-5656-000CN	Print engine covers and panels on page 419
Pin	Not orderable	ADF main assembly on page 441
Pin, spring	Not orderable	ADF main assembly on page 441
Pivot, positioning	Not orderable	Flatbed scanner assembly on page 423
Plate, base	Not orderable	Flatbed scanner assembly on page 423
Plate, bracket	Not orderable	ADF paper pickup assembly on page 437
Plate, cover upper	Not orderable	Scanner engine covers and panels on page 417
Plate, crossmember	Not orderable	Scanner engine covers and panels on page 417
Plate, glass	Not orderable	ADF optical assembly on page 445
Plate, heat sink	Not orderable	ADF optical assembly on page 445
Plate, lock, right side	RB2-5679-000CN	Print engine covers and panels on page 419
Plate, motor mount	Not orderable	ADF paper pickup assembly on page 437
Plate, protect	Not orderable	Scanner engine covers and panels on page 417
Plate, rear sub	Not orderable	Scanner engine covers and panels on page 417
Plate, shading	Not orderable	Flatbed optical assembly on page 427
Plate, shading	Not orderable	ADF optical assembly on page 445
Plate, shield	Not orderable	Flatbed optical assembly on page 427
Plate, slide shaft	RB2-7920-000CN	Flatbed scanner assembly on page 423
Plate, support	Not orderable	ADF scanner assembly on page 431
Plate, width index	Not orderable	Flatbed scanner assembly on page 423
Power supply	RG5-6250-040CN	Tray 4 main body (2 of 2) on page 481

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Power supply assembly	RG1-4153-000CN	Flatbed scanner assembly on page 423
Power supply assembly	RG1-4153-000CN	Scanner engine PCAs on page 447
Power supply cable	RG5-5735-000CN	Scanner assembly on page 413
Print cartridge memory controller PCA	RG5-8009-000CN	PCA locations on page 477
Processing PCA cable	RH2-5456-000CN	ADF scanner assembly on page 431
Pulley 17T	Not orderable	ADF paper pickup assembly on page 437
Rear cover assembly	Not orderable	Scanner engine covers and panels on page 417
Registration assembly	RG5-5663-060CN	Registration assembly on page 471
Registration guide assembly	RG5-6304-040CN	ADF main assembly on page 441
Registration roller assembly	RG5-6277-000CN	ADF paper pickup assembly on page 437
Registration sensor holder assy	RG5-6305-000CN	ADF main assembly on page 441
Reinforcement plate assembly	Not orderable	Flatbed scanner assembly on page 423
Reinforcement plate assembly	Not orderable	Flatbed scanner assembly on page 423
Right cover assembly	RG5-5737-090CN	Right cover assembly on page 451
Right cover knob assembly	RG5-5740-020CN	Right cover assembly on page 451
Right rail assembly	RG5-5715-030CN	Print engine internal components (3 of 4) on page 457
Ring, stop	Not orderable	ADF main assembly on page 441
Rod, switch, ON/OFF	RB2-5661-000CN	Print engine internal components (3 of 4) on page 457
Roller delivery	RG5-6266-000CN	ADF paper pickup assembly on page 437
Roller, feed/separation	RF5-3338-000CN	Print engine internal components (1 of 4) on page 453
Roller, PICK	RF5-3340-000CN	Print engine internal components (1 of 4) on page 453

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Roller, pickup	RB2-7961-000CN	ADF paper pickup assembly on page 437
Roller, pickup	RF5-3403-000CN	Tray 1 assembly on page 487
Roller, separation	RF5-3404-000CN	Tray 1 assembly on page 487
Roller, transfer	RF5-3319-000CN	Transfer roller assembly on page 473
Scanner controller cable	RG5-6257-000CN	Flatbed scanner assembly on page 423
Scanner controller PCA	RH5-3075-090CN	Flatbed scanner assembly on page 423
Scanner controller PCA	RH5-3075-090CN	Scanner engine PCAs on page 447
Scanner motor cable	Not orderable	Flatbed scanner assembly on page 423
Screw	Not orderable	Flatbed scanner assembly on page 423
Screw, M3x12	Not orderable	Flatbed optical assembly on page 427
Screw, M3x5	Not orderable	Scanner engine covers and panels on page 417
Screw, M3x5	Not orderable	Flatbed scanner assembly on page 423
Screw, M3x5	Not orderable	ADF paper pickup assembly on page 437
Screw, M3x6	XA9-1495-000CN	Print engine internal components (2 of 4) on page 455
Screw, M3x6	XA9-1495-000CN	Drum feed drive assembly on page 461
Screw, M3x6	XA9-1495-000CN	Cartridge lifter assembly on page 465
Screw, M3x6 with washer	XB2-6300-180CN	Tray 4 drive assembly on page 483
Screw, M3x6, RS	XA9-1495-000CN	Print engine internal components (1 of 4) on page 453
Screw, M3x6, RS	XA9-1495-000CN	Print engine internal components (2 of 4) on page 455
Screw, M3x6, RS	XA9-1495-000CN	Print engine internal components (3 of 4) on page 457
Screw, M3x6, RS	XA9-1495-000CN	Print engine internal components (4 of 4) on page 459

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Screw, M3x6, RS	XA9-1495-000CN	Fuser delivery drive assembly on page 463
Screw, M3x6, RS	XA9-1495-000CN	Paper input unit on page 469
Screw, M3x8	Not orderable	ADF paper pickup assembly on page 437
Screw, M3x8	Not orderable	ADF paper pickup assembly on page 437
Screw, M3x8	Not orderable	ADF main assembly on page 441
Screw, M3x8	Not orderable	ADF main assembly on page 441
Screw, M3x8	Not orderable	ADF optical assembly on page 445
Screw, M3x8	XA9-1200-000CN	Right cover assembly on page 451
Screw, M3x8	XA9-1500-000CN	Print engine internal components (2 of 4) on page 455
Screw, M3x8, RS	XA9-1500-000CN	Right cover assembly on page 451
Screw, M3x8, RS	XA9-1500-000CN	Print engine internal components (1 of 4) on page 453
Screw, M3x8, RS	XA9-1500-000CN	Print engine internal components (2 of 4) on page 455
Screw, M3x8, RS	XA9-1500-000CN	Print engine internal components (3 of 4) on page 457
Screw, M3x8, RS	XA9-1500-000CN	Print engine internal components (4 of 4) on page 459
Screw, M4x10	Not orderable	Flatbed scanner assembly on page 423
Screw, M4x10	Not orderable	Flatbed optical assembly on page 427
Screw, M4x10	Not orderable	ADF scanner assembly on page 431
Screw, M4x10	Not orderable	ADF optical assembly on page 445
Screw, M4x10	XB4-5401-009CN	Left door and diverter on page 449
Screw, M4x6	Not orderable	Flatbed scanner assembly on page 423
Screw, M4x6	Not orderable	ADF main assembly on page 441

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Screw, M4x6	XB6-7400-000CN	Tray 4 main body (1 of 2) on page 479
Screw, M4x6	XA9-0994-000CN	Tray 4 main body (2 of 2) on page 481
Screw, M4x8	Not orderable	ADF paper pickup assembly on page 437
Screw, M4x8	XA9-1300-000CN	Tray 4 main body (1 of 2) on page 479
Screw, M4x8, RS	XA9-0732-000CN	Tray 4 main body (2 of 2) on page 481
Screw, M5x12	XA9-0912-000CN	Tray 4 main body (2 of 2) on page 481
Screw, RS M3x6	Not orderable	Scanner engine covers and panels on page 417
Screw, RS M3x6	Not orderable	Flatbed scanner assembly on page 423
Screw, RS M3x6	Not orderable	ADF scanner assembly on page 431
Screw, RS M3x6	Not orderable	ADF paper pickup assembly on page 437
Screw, RS M3x6	Not orderable	ADF paper pickup assembly on page 437
Screw, RS M3x6	Not orderable	ADF main assembly on page 441
Screw, RS M3x6	Not orderable	ADF optical assembly on page 445
Screw, RS M3x8	Not orderable	Scanner engine covers and panels on page 417
Screw, RS M3x8	Not orderable	Flatbed scanner assembly on page 423
Screw, RS M3x8	Not orderable	ADF scanner assembly on page 431
Screw, RS M3x8	Not orderable	ADF main assembly on page 441
Screw, RS M3x8	Not orderable	ADF main assembly on page 441
Screw, stepped	RS5-9099-000CN	Tray 4 main body (1 of 2) on page 479
Screw, stepped M4x12	Not orderable	ADF scanner assembly on page 431
Screw, stepped M4x3.2	Not orderable	Scanner engine covers and panels on page 417
Screw, TP M3x4	Not orderable	ADF paper pickup assembly on page 437

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Screw, TP M3x6	Not orderable	Flatbed scanner assembly on page 423
Screw, TP M3x6	Not orderable	Flatbed optical assembly on page 427
Screw, TP M3x6	Not orderable	Flatbed optical assembly on page 427
Screw, TP M3x6	Not orderable	ADF optical assembly on page 445
Screw, TP M3x6	Not orderable	ADF optical assembly on page 445
Screw, TP M4x8	Not orderable	Scanner engine covers and panels on page 417
Screw, W/W, M3x29.5	XA9-1466-000CN	Tray 2 or Tray 3 parts on page 467
Screw, W/W, M4x6	XA9-0499-000CN	Tray 4 main body (1 of 2) on page 479
Screw, w/washer M3x12	Not orderable	Flatbed optical assembly on page 427
Screw, w/washer M3x12	Not orderable	ADF optical assembly on page 445
Screw, w/washer M4x6	Not orderable	Flatbed optical assembly on page 427
Screw, w/washer M4x6	Not orderable	ADF scanner assembly on page 431
Screw, w/washer M4x6	Not orderable	ADF main assembly on page 441
Screw, w/washer M4x6	Not orderable	ADF main assembly on page 441
Screw, w/washer M4x6	Not orderable	ADF optical assembly on page 445
Sensor crossmember assembly	RG5-6258-000CN	Flatbed scanner assembly on page 423
Sensor, document size	Not orderable	Flatbed scanner assembly on page 423
Sensor, document size	Not orderable	Flatbed scanner assembly on page 423
Separation roller assembly	RG5-6281-030CN	ADF paper pickup assembly on page 437
Separation shaft assembly	Not orderable	ADF paper pickup assembly on page 437
Service cover assembly	RG5-5811-040CN	Tray 1 assembly on page 487
Shaft, knob	RB2-8016-000CN	ADF main assembly on page 441

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Shaft, support	Not orderable	ADF main assembly on page 441
Sheet, cover	Not orderable	Flatbed optical assembly on page 427
Sheet, front	Not orderable	ADF optical assembly on page 445
Sheet, rear	Not orderable	ADF optical assembly on page 445
Shutter assembly	RG5-6286-000CN	ADF paper pickup assembly on page 437
Shutter, laser	RB2-5640-000CN	Print engine internal components (2 of 4) on page 455
Solenoid	RH7-5312-020CN	ADF paper pickup assembly on page 437
Spacer	Not orderable	Delivery assembly on page 475
Spindle	Not orderable	Flatbed optical assembly on page 427
Spring, compression	RS6-2492-020CN	Flatbed scanner assembly on page 423
Spring, compression	RS6-2302-000CN	Print engine internal components (3 of 4) on page 457
Spring, leaf	RB2-7991-000CN	ADF paper pickup assembly on page 437
Spring, leaf	Not orderable	ADF main assembly on page 441
Spring, leaf	Not orderable	ADF main assembly on page 441
Spring, leaf	RB2-5523-000CN	Print engine internal components (2 of 4) on page 455
Spring, tension	Not orderable	ADF paper pickup assembly on page 437
Spring, tension	Not orderable	ADF paper pickup assembly on page 437
Spring, tension	RS6-2496-000CN	ADF paper pickup assembly on page 437
Spring, tension	RS6-2498-000CN	ADF paper pickup assembly on page 437
Spring, tension	Not orderable	ADF paper pickup assembly on page 437
Spring, tension	RS6-2496-000CN	ADF paper pickup assembly on page 437

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Spring, tension	RS6-2503-000CN	ADF main assembly on page 441
Spring, tension	RS6-2285-000CN	Print engine internal components (1 of 4) on page 453
Spring, tension	RS6-2299-000CN	Print engine internal components (2 of 4) on page 455
Spring, tension	RS6-2296-000CN	Print engine internal components (2 of 4) on page 455
Spring, tension	RS6-2298-020CN	Cartridge lifter assembly on page 465
Spring, torsion	Not orderable	ADF main assembly on page 441
Spring, torsion	Not orderable	ADF main assembly on page 441
Spring, torsion	RB2-5816-000CN	Tray 2 or Tray 3 parts on page 467
Static charge eliminator	RB2-7970-000CN	ADF paper pickup assembly on page 437
Strap, rock block, retaining clip	RB2-5655-000CN	Print engine covers and panels on page 419
Switch assembly (SW21)	RG5-6206-030CN	Tray 4 main body (2 of 2) on page 481
Tape, cover (restraining strap)	RB2-5653-000CN	Right cover assembly on page 451
Tape, cover (retaining strap)	RB2-5653-000CN	Print engine covers and panels on page 419
Timing sensor holder assembly	RG5-6306-020CN	ADF main assembly on page 441
Toner contact assembly	RG5-5717-020CN	Print engine internal components (2 of 4) on page 455
Toner sensor contact with memory (antenna)	RG5-5719-100CN	Print engine internal components (4 of 4) on page 459
Torque limiter, spacer	RB2-5759-000CN	Print engine internal components (1 of 4) on page 453
Transfer roller assembly	RG5-5662-050CN	Transfer roller assembly on page 473
Tray 1	C8568-67902	Tray 1 assembly on page 487
Tray 4	C8531-67908	Tray 4 main body (1 of 2) on page 479

Table 8-34 Alphabetical parts list (continued)

Description	Part number	Table and page
Tray 4 deck drive assembly	RG5-6228-060CN	Tray 4 drive assembly on page 483
Tray 4 vertical registration assembly (VTU/ VRA)	RG5-6225-100CN	Tray 4 main body (1 of 2) on page 479
Tray 4-to-engine stabilizing screws	0515-4318	Tray 4 main body (1 of 2) on page 479
Tray assembly	RG5-5809-060CN	Tray 1 assembly on page 487
Tray, face-up	RB2-5690-000CN	Print engine covers and panels on page 419
Tray, rack	RB2-7939-000CN	ADF scanner assembly on page 431
Upper cable guide assembly	RG5-7787-000CN	Print engine internal components (3 of 4) on page 457
Upper spacer	Not orderable	Delivery assembly on page 475
Weight assembly	RG5-6298-000CN	ADF paper pickup assembly on page 437
Weight holder assembly	Not orderable	ADF paper pickup assembly on page 437
Weight solenoid assembly	RG5-6289-020CN	ADF paper pickup assembly on page 437

Numerical parts list

Table 8-35 Numerical parts list

Part number	Description	Table and page
0515-4318	Tray 4-to-engine stabilizing screws	Tray 4 main body (1 of 2) on page 479
C8531-67908	Tray 4	Tray 4 main body (1 of 2) on page 479
C8568-67902	Tray 1	Tray 1 assembly on page 487
CC395-60102	Control panel assembly	Scanner assembly on page 413
N/A	Jet-Link cable holder assembly (see 10a, 10b, and 10c)	Tray 4 main body (2 of 2) on page 481
Not orderable	Screw, stepped M4x3.2	Scanner engine covers and panels on page 417
Not orderable	Plate, crossmember	Scanner engine covers and panels on page 417
Not orderable	Bracket, mount	Scanner engine covers and panels on page 417
Not orderable	Plate, cover upper	Scanner engine covers and panels on page 417
Not orderable	Plate, protect	Scanner engine covers and panels on page 417
Not orderable	Rear cover assembly	Scanner engine covers and panels on page 417
Not orderable	Holder, document stop	Scanner engine covers and panels on page 417
Not orderable	Plate, rear sub	Scanner engine covers and panels on page 417
Not orderable	Screw, M3x5	Scanner engine covers and panels on page 417
Not orderable	Label, jam clearing	Scanner engine covers and panels on page 417
Not orderable	Screw, TP M4x8	Scanner engine covers and panels on page 417
Not orderable	Screw, RS M3x6	Scanner engine covers and panels on page 417
Not orderable	Screw, RS M3x8	Scanner engine covers and panels on page 417
Not orderable	Screw	Flatbed scanner assembly on page 423
Not orderable	Screw, RS M3x8	Flatbed scanner assembly on page 423
Not orderable	Screw, M4x10	Flatbed scanner assembly on page 423

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
Not orderable	Pivot, positioning	Flatbed scanner assembly on page 423
Not orderable	Reinforcement plate assembly	Flatbed scanner assembly on page 423
Not orderable	Screw, M3x5	Flatbed scanner assembly on page 423
Not orderable	Plate, base	Flatbed scanner assembly on page 423
Not orderable	Plate, width index	Flatbed scanner assembly on page 423
Not orderable	Screw, TP M3x6	Flatbed scanner assembly on page 423
Not orderable	Screw, RS M3x6	Flatbed scanner assembly on page 423
Not orderable	Left hinge assembly	Flatbed scanner assembly on page 423
Not orderable	Cable, guide assembly	Flatbed scanner assembly on page 423
Not orderable	Motor bracket assembly	Flatbed scanner assembly on page 423
Not orderable	Sensor, document size	Flatbed scanner assembly on page 423
Not orderable	Photo interrupter, TLP1241	Flatbed scanner assembly on page 423
Not orderable	Sensor, document size	Flatbed scanner assembly on page 423
Not orderable	Intermediate PCA case	Flatbed scanner assembly on page 423
Not orderable	Ground cable	Flatbed scanner assembly on page 423
Not orderable	Cartridge drive assembly	Flatbed scanner assembly on page 423
Not orderable	Fan	Flatbed scanner assembly on page 423
Not orderable	Cable, fan	Flatbed scanner assembly on page 423
Not orderable	Reinforcement plate assembly	Flatbed scanner assembly on page 423
Not orderable	Screw, M4x6	Flatbed scanner assembly on page 423
Not orderable	Scanner motor cable	Flatbed scanner assembly on page 423
Not orderable	DC controller cable	Flatbed scanner assembly on page 423

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
Not orderable	Label, adjustment	Flatbed scanner assembly on page 423
Not orderable	Belt, timing	Flatbed scanner assembly on page 423
Not orderable	Guide, slide	Flatbed scanner assembly on page 423
Not orderable	Cover, shield	Flatbed optical assembly on page 427
Not orderable	Lamp assembly	Flatbed optical assembly on page 427
Not orderable	Plate, shield	Flatbed optical assembly on page 427
Not orderable	Holder FFC	Flatbed optical assembly on page 427
Not orderable	Spindle	Flatbed optical assembly on page 427
Not orderable	Guide, cartridge	Flatbed optical assembly on page 427
Not orderable	Edge, cable	Flatbed optical assembly on page 427
Not orderable	Ferrite core	Flatbed optical assembly on page 427
Not orderable	Screw, w/washer M4x6	Flatbed optical assembly on page 427
Not orderable	Screw, M3x12	Flatbed optical assembly on page 427
Not orderable	Clamp, cable	Flatbed optical assembly on page 427
Not orderable	Screw, w/washer M3x12	Flatbed optical assembly on page 427
Not orderable	Screw, TP M3x6	Flatbed optical assembly on page 427
Not orderable	Screw, M4x10	Flatbed optical assembly on page 427
Not orderable	Plate, shading	Flatbed optical assembly on page 427
Not orderable	Flatbed sub frame assembly	Flatbed optical assembly on page 427
Not orderable	Flatbed lamp assembly	Flatbed optical assembly on page 427
Not orderable	Clip, cable	Flatbed optical assembly on page 427
Not orderable	Screw, TP M3x6	Flatbed optical assembly on page 427

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
Not orderable	CCD lens assembly	Flatbed optical assembly on page 427
Not orderable	Lamp	Flatbed optical assembly on page 427
Not orderable	Flatbed analog processor	Flatbed optical assembly on page 427
Not orderable	Belt, timing	Flatbed optical assembly on page 427
Not orderable	Cable, CCD	Flatbed optical assembly on page 427
Not orderable	Cable, flatbed	Flatbed optical assembly on page 427
Not orderable	Cable, power	Flatbed optical assembly on page 427
Not orderable	Inverter PCA	Flatbed optical assembly on page 427
Not orderable	Flatbed lamp assembly	Flatbed optical assembly on page 427
Not orderable	Cover, lens	Flatbed optical assembly on page 427
Not orderable	Cable, scanner	Flatbed optical assembly on page 427
Not orderable	Cable, lamp	Flatbed optical assembly on page 427
Not orderable	Bushing	Flatbed optical assembly on page 427
Not orderable	Block, slide	Flatbed optical assembly on page 427
Not orderable	Sheet, cover	Flatbed optical assembly on page 427
Not orderable	Plate, support	ADF scanner assembly on page 431
Not orderable	Guide, harness 1	ADF scanner assembly on page 431
Not orderable	Guide, harness 2	ADF scanner assembly on page 431
Not orderable	Cover, front	ADF scanner assembly on page 431
Not orderable	Screw, stepped M4x12	ADF scanner assembly on page 431
Not orderable	Guide, harness	ADF scanner assembly on page 431
Not orderable	Screw, w/washer M4x6	ADF scanner assembly on page 431

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
Not orderable	Cushion	ADF scanner assembly on page 431
Not orderable	Clamp, cable	ADF scanner assembly on page 431
Not orderable	Clamp, cable	ADF scanner assembly on page 431
Not orderable	Screw, M4x10	ADF scanner assembly on page 431
Not orderable	Screw, RS M3x6	ADF scanner assembly on page 431
Not orderable	Screw, RS M3x8	ADF scanner assembly on page 431
Not orderable	Back cover assembly	ADF scanner assembly on page 431
Not orderable	ADF sensor cable	ADF scanner assembly on page 431
Not orderable	ADF solenoid cable	ADF scanner assembly on page 431
Not orderable	Clip	ADF paper pickup assembly on page 437
Not orderable	Spring, tension	ADF paper pickup assembly on page 437
Not orderable	Plate, bracket	ADF paper pickup assembly on page 437
Not orderable	Belt, timing	ADF paper pickup assembly on page 437
Not orderable	Belt, timing	ADF paper pickup assembly on page 437
Not orderable	Screw, M3x5	ADF paper pickup assembly on page 437
Not orderable	Bushing	ADF paper pickup assembly on page 437
Not orderable	Bushing	ADF paper pickup assembly on page 437
Not orderable	Arm, weight	ADF paper pickup assembly on page 437
Not orderable	Weight holder assembly	ADF paper pickup assembly on page 437
Not orderable	Bushing	ADF paper pickup assembly on page 437
Not orderable	Arm, tension	ADF paper pickup assembly on page 437
Not orderable	Pulley 17T	ADF paper pickup assembly on page 437

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
Not orderable	Spring, tension	ADF paper pickup assembly on page 437
Not orderable	Gear, 16T	ADF paper pickup assembly on page 437
Not orderable	Empty sensor bracket	ADF paper pickup assembly on page 437
Not orderable	Photo-interrupter, TLP1241	ADF paper pickup assembly on page 437
Not orderable	Screw, M3x8	ADF paper pickup assembly on page 437
Not orderable	Screw, RS M3x6	ADF paper pickup assembly on page 437
Not orderable	Gear shaft assembly	ADF paper pickup assembly on page 437
Not orderable	Drive tension bracket	ADF paper pickup assembly on page 437
Not orderable	Bracket, tension	ADF paper pickup assembly on page 437
Not orderable	Screw, M4x8	ADF paper pickup assembly on page 437
Not orderable	Clamp	ADF paper pickup assembly on page 437
Not orderable	Screw, M3x8	ADF paper pickup assembly on page 437
Not orderable	Clip	ADF paper pickup assembly on page 437
Not orderable	Spring, tension	ADF paper pickup assembly on page 437
Not orderable	Mount, motor	ADF paper pickup assembly on page 437
Not orderable	Gear, 28T	ADF paper pickup assembly on page 437
Not orderable	Bushing	ADF paper pickup assembly on page 437
Not orderable	Separation shaft assembly	ADF paper pickup assembly on page 437
Not orderable	ADF sensor cable	ADF paper pickup assembly on page 437
Not orderable	Photo-interrupter, TLP1241	ADF paper pickup assembly on page 437
Not orderable	Clamp. cable	ADF paper pickup assembly on page 437
Not orderable	Clamp. cable	ADF paper pickup assembly on page 437

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
Not orderable	Drive motor assembly	ADF paper pickup assembly on page 437
Not orderable	Feed motor assembly	ADF paper pickup assembly on page 437
Not orderable	Plate, motor mount	ADF paper pickup assembly on page 437
Not orderable	Clamp	ADF paper pickup assembly on page 437
Not orderable	Screw, RS M3x6	ADF paper pickup assembly on page 437
Not orderable	Belt, timing	ADF paper pickup assembly on page 437
Not orderable	Clip	ADF paper pickup assembly on page 437
Not orderable	Lever, shutter	ADF paper pickup assembly on page 437
Not orderable	ADF left hinge NOTE: The ADF left hinge is included with the ADF paper pickup assembly (RG5-6275-060CN).	ADF paper pickup assembly on page 437
Not orderable	Screw, TP M3x4	ADF paper pickup assembly on page 437
Not orderable	Shaft, support	ADF main assembly on page 441
Not orderable	Spring, torsion	ADF main assembly on page 441
Not orderable	Spring, torsion	ADF main assembly on page 441
Not orderable	Pin	ADF main assembly on page 441
Not orderable	Spring, leaf	ADF main assembly on page 441
Not orderable	Spring, leaf	ADF main assembly on page 441
Not orderable	Screw, M4x6	ADF main assembly on page 441
Not orderable	Ring, stop	ADF main assembly on page 441
Not orderable	Bushing	ADF main assembly on page 441
Not orderable	Collar	ADF main assembly on page 441
Not orderable	Clip	ADF main assembly on page 441

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
Not orderable	Screw, w/washer M4x6	ADF main assembly on page 441
Not orderable	Gear, 50T	ADF main assembly on page 441
Not orderable	Screw, M3x8	ADF main assembly on page 441
Not orderable	Screw, RS M3x6	ADF main assembly on page 441
Not orderable	Screw, RS M3x8	ADF main assembly on page 441
Not orderable	Pin, spring	ADF main assembly on page 441
Not orderable	Cartridge frame assembly	ADF main assembly on page 441
Not orderable	Clamp, cable	ADF main assembly on page 441
Not orderable	Clamp, cable	ADF main assembly on page 441
Not orderable	Gear damper unit	ADF main assembly on page 441
Not orderable	Guide, edge	ADF main assembly on page 441
Not orderable	Guide, cable	ADF main assembly on page 441
Not orderable	Screw, w/washer M4x6	ADF main assembly on page 441
Not orderable	Screw, M3x8	ADF main assembly on page 441
Not orderable	Screw, RS M3x8	ADF main assembly on page 441
Not orderable	Grounding cable	ADF main assembly on page 441
Not orderable	Guide, cable	ADF main assembly on page 441
Not orderable	Sheet, front	ADF optical assembly on page 445
Not orderable	Sheet, rear	ADF optical assembly on page 445
Not orderable	Screw, w/washer M4x6	ADF optical assembly on page 445
Not orderable	Screw, w/washer M3x12	ADF optical assembly on page 445
Not orderable	Damper sheet	ADF optical assembly on page 445

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
Not orderable	Cover, unit	ADF optical assembly on page 445
Not orderable	ADF scanner assembly chassis	ADF optical assembly on page 445
Not orderable	ADF shield box assembly	ADF optical assembly on page 445
Not orderable	ADF Lens assembly	ADF optical assembly on page 445
Not orderable	Plate, shading	ADF optical assembly on page 445
Not orderable	Lamp	ADF optical assembly on page 445
Not orderable	Cover, lens	ADF optical assembly on page 445
Not orderable	Plate, heat sink	ADF optical assembly on page 445
Not orderable	ADF lamp assembly	ADF optical assembly on page 445
Not orderable	Cover, lens	ADF optical assembly on page 445
Not orderable	Cable, CCD	ADF optical assembly on page 445
Not orderable	Inverter PCA	ADF optical assembly on page 445
Not orderable	ADF analog processor PCA	ADF optical assembly on page 445
Not orderable	Screw, TP M3x6	ADF optical assembly on page 445
Not orderable	Screw, M4x10	ADF optical assembly on page 445
Not orderable	Screw, M3x8	ADF optical assembly on page 445
Not orderable	Screw, RS M3x6	ADF optical assembly on page 445
Not orderable	Cable, ADF inverter	ADF optical assembly on page 445
Not orderable	Flip-down glass assembly	ADF optical assembly on page 445
Not orderable	Plate, glass	ADF optical assembly on page 445
Not orderable	Screw, TP M3x6	ADF optical assembly on page 445
Not orderable	ADF analog processor PCA	Scanner engine PCAs on page 447

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
Not orderable	Inverter PCA	Scanner engine PCAs on page 447
Not orderable	29T gear	Delivery assembly on page 475
Not orderable	Face down frame	Delivery assembly on page 475
Not orderable	Fan holder	Delivery assembly on page 475
Not orderable	Left upper cross member	Delivery assembly on page 475
Not orderable	55T gear	Delivery assembly on page 475
Not orderable	57T gear	Delivery assembly on page 475
Not orderable	Drive plate	Delivery assembly on page 475
Not orderable	Cable clip	Delivery assembly on page 475
Not orderable	E ring	Delivery assembly on page 475
Not orderable	B damper	Delivery assembly on page 475
Not orderable	Spacer	Delivery assembly on page 475
Not orderable	Upper spacer	Delivery assembly on page 475
Not orderable	3P connector	Delivery assembly on page 475
Not orderable	M3x6 RS screw	Delivery assembly on page 475
RB1-6421-000CN	Foot, right side	Print engine internal components (1 of 4) on page 453
RB2-5515-000CN	Front fusing rail	Print engine internal components (2 of 4) on page 455
RB2-5516-000CN	Back fusing rail	Print engine internal components (2 of 4) on page 455
RB2-5517-020CN	Front fusing mount	Print engine internal components (2 of 4) on page 455
RB2-5518-020CN	Back fusing mount	Print engine internal components (2 of 4) on page 455

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
RB2-5522-000CN	Guide, pickup	Print engine internal components (1 of 4) on page 453
RB2-5523-000CN	Spring, leaf	Print engine internal components (2 of 4) on page 455
RB2-5526-000CN	Guide, cartridge	Print engine internal components (1 of 4) on page 453
RB2-5528-000CN	Link, connect	Print engine internal components (1 of 4) on page 453
RB2-5529-000CN	Foot, left side	Print engine internal components (1 of 4) on page 453
RB2-5547-000CN	Collar	Print engine internal components (1 of 4) on page 453
RB2-5570-020CN	Hinge mount, damper	Print engine internal components (1 of 4) on page 453
RB2-5639-000CN	Arm, shutter	Print engine internal components (2 of 4) on page 455
RB2-5640-000CN	Shutter, laser	Print engine internal components (2 of 4) on page 455
RB2-5652-000CN	Bushing	Print engine covers and panels on page 419
RB2-5653-000CN	Tape, cover (restraining strap)	Right cover assembly on page 451
RB2-5654-000CN	Hinge arm, front cover	Print engine internal components (1 of 4) on page 453
RB2-5655-000CN	Strap, rock block, retaining clip	Print engine covers and panels on page 419
RB2-5656-000CN	Pin	Print engine covers and panels on page 419
RB2-5661-000CN	Rod, switch, ON/OFF	Print engine internal components (3 of 4) on page 457
RB2-5675-000CN	Cap, right cover	Print engine covers and panels on page 419
RB2-5676-000CN	Cover, tray 1 blanking	Print engine covers and panels on page 419
RB2-5679-000CN	Plate, lock, right side	Print engine covers and panels on page 419

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
RB2-5682-000CN	Cover, right rail	Print engine covers and panels on page 419
RB2-5683-000CN	Cover, left rail	Print engine covers and panels on page 419
RB2-5684-000CN	Cover, right back	Print engine covers and panels on page 419
RB2-5687-000CN	Cover, left back	Print engine covers and panels on page 419
RB2-5687-000CN	Cover, left lower	Print engine covers and panels on page 419
RB2-5689-000CN	Cover, right lower	Print engine covers and panels on page 419
RB2-5690-000CN	Tray, face-up	Print engine covers and panels on page 419
RB2-5697-000CN	Cover, right door, inside	Print engine internal components (1 of 4) on page 453
RB2-5700-000CN	Latch, roller-action	Print engine covers and panels on page 419
RB2-5759-000CN	Torque limiter, spacer	Print engine internal components (1 of 4) on page 453
RB2-5813-000CN	Custom/standard switch	Tray 2 or Tray 3 parts on page 467
RB2-5816-000CN	Spring, torsion	Tray 2 or Tray 3 parts on page 467
RB2-5845-000CN	Knob, registration, jam removal	Print engine internal components (1 of 4) on page 453
RB2-6007-000CN	Cover, left (left door)	Left door and diverter on page 449
RB2-6077-000CN	Lever, switch	Fuser delivery drive assembly on page 463
RB2-6490-000CN	Fan cover	Delivery assembly on page 475
RB2-6491-000CN	Cover, left upper	Print engine covers and panels on page 419
RB2-6494-000CN	Flapper can	Delivery assembly on page 475
RB2-6495-000CN	Holder lock	Scanner assembly on page 413
RB2-6537-000CN	Cover hooks	Tray 1 assembly on page 487
RB2-7648-040CN	Cover, front	Tray 4 main body (1 of 2) on page 479

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
RB2-7649-000CN	Cover, right	Tray 4 main body (1 of 2) on page 479
RB2-7650-000CN	Cover, right back	Tray 4 main body (1 of 2) on page 479
RB2-7651-000CN	Cover, left back	Tray 4 main body (1 of 2) on page 479
RB2-7652-000CN	Cover, center	Tray 4 main body (1 of 2) on page 479
RB2-7662-020CN	Holder	Tray 4 main body (2 of 2) on page 481
RB2-7678-030CN	Caster, back	Tray 4 main body (2 of 2) on page 481
RB2-7709-020CN	Caster	Tray 4 main body (1 of 2) on page 479
RB2-7762-020CN	Lever, standard/custom	Tray 4 main body (1 of 2) on page 479
RB2-7884-000CN	Lower delivery roller	Flatbed scanner assembly on page 423
RB2-7920-000CN	Plate, slide shaft	Flatbed scanner assembly on page 423
RB2-7927-000CN	Mount, glass 3	Flatbed scanner assembly on page 423
RB2-7928-000CN	Mount, glass 13	Flatbed scanner assembly on page 423
RB2-7933-000CN	Cover, front lower	Flatbed scanner assembly on page 423
RB2-7934-000CN	Cover, front upper	Flatbed scanner assembly on page 423
RB2-7935-000CN	Cover, glass mount	Flatbed scanner assembly on page 423
RB2-7939-000CN	Tray, rack	ADF scanner assembly on page 431
RB2-7943-000CN	Lever, sensor	ADF scanner assembly on page 431
RB2-7961-000CN	Roller, pickup	ADF paper pickup assembly on page 437
RB2-7970-000CN	Static charge eliminator	ADF paper pickup assembly on page 437
RB2-7974-000CN	ADF right hinge	ADF scanner assembly on page 431
	NOTE: The ADF paper pickup assembly (RG5-6275-060CN) includes the ADF left hinge.	
RB2-7988-000CN	Belt, timing	ADF paper pickup assembly on page 437

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
RB2-7989-000CN	Holder, separation	ADF paper pickup assembly on page 437
RB2-7990-000CN	Holder, spring	ADF paper pickup assembly on page 437
RB2-7991-000CN	Spring, leaf	ADF paper pickup assembly on page 437
RB2-7999-000CN	Holder, weight plate	ADF paper pickup assembly on page 437
RB2-8002-000CN	Lever, empty	ADF paper pickup assembly on page 437
RB2-8002-000CN	Lever, open	ADF paper pickup assembly on page 437
RB2-8015-000CN	Knob	ADF main assembly on page 441
RB2-8016-000CN	Shaft, knob	ADF main assembly on page 441
RB2-8017-000CN	Lever, knob	ADF main assembly on page 441
RB2-8031-000CN	Cover, cable	ADF main assembly on page 441
RB2-8040-000CN	Cover, jam	ADF scanner assembly on page 431
RB2-8046-000CN	Guide, I/F 1	ADF scanner assembly on page 431
RB2-8047-000CN	Guide, I/F 4	ADF scanner assembly on page 431
RB2-8048-000CN	Cover, front	ADF scanner assembly on page 431
RB2-8054-000CN	Cover, left	Scanner engine covers and panels on page 417
RB2-8060-000CN	Cover, connector	Scanner engine covers and panels on page 417
RB2-8063-000CN	Cover, right	Flatbed scanner assembly on page 423
RB2-8678-000CN	Ferrite core	ADF scanner assembly on page 431
RB2-8681-000CN	Guide, I/F 5	ADF scanner assembly on page 431
RB2-8682-000CN	Guide, I/F 6	ADF scanner assembly on page 431
RB2-8693-000CN	Holder, stop	ADF scanner assembly on page 431
RB2-5653-000CN	Tape, cover (retaining strap)	Print engine covers and panels on page 419

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
RB2-7978-000CN	Flag, empty	ADF paper pickup assembly on page 437
RB3-0304-050CN	Caster, front swivel	Tray 4 main body (2 of 2) on page 481
RF5-3319-000CN	Roller, transfer	Transfer roller assembly on page 473
RF5-3338-000CN	Roller, feed/separation	Print engine internal components (1 of 4) on page 453
RF5-3338-000CN	Feed/separation rollers	Tray 4 main body (1 of 2) on page 479
RF5-3340-000CN	Roller, PICK	Print engine internal components (1 of 4) on page 453
RF5-3403-000CN	Roller, pickup	Tray 1 assembly on page 487
RF5-3404-000CN	Roller, separation	Tray 1 assembly on page 487
RF5-3644-020CN	Cover, back	Tray 4 main body (1 of 2) on page 479
RF5-3645-000CN	Cover, left	Tray 4 main body (1 of 2) on page 479
RF5-3674-000CN	Guide, delivery unit	Scanner engine covers and panels on page 417
RF5-3676-000CN	Copyboard glass unit	Flatbed scanner assembly on page 423
RF5-3682-000CN	Guide, rear tray	ADF scanner assembly on page 431
RF5-3688-020CN	Arm, flapper	ADF paper pickup assembly on page 437
RF5-3689-020CN	Arm, flapper rear	ADF paper pickup assembly on page 437
RF5-3695-000CN	Cover, copyboard unit	Scanner engine covers and panels on page 417
RF5-3698-000CN	Guide, front tray	ADF scanner assembly on page 431
RF5-3850-000CN	Cover, lamp right	ADF scanner assembly on page 431
RG1-4153-000CN	Power supply assembly	Flatbed scanner assembly on page 423
RG1-4153-000CN	Power supply assembly	Scanner engine PCAs on page 447
RG5-5635-110CN	500-sheet trays	Tray 2 or Tray 3 parts on page 467
RG5-5642-040CN	Delivery assembly	Delivery assembly on page 475

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
RG5-5646-070CN	Left door and diverter	Left door and diverter on page 449
RG5-5647-070CN	Diverter assembly	Left door and diverter on page 449
RG5-5648-020CN	Damper assembly	Left door and diverter on page 449
RG5-5651-030CN	Feed guide, transfer	Print engine internal components (2 of 4) on page 455
RG5-5653-030CN	Holder, transfer	Transfer roller assembly on page 473
RG5-5654-000CN	Guide, transfer/pre-transfer	Transfer roller assembly on page 473
RG5-5656-080CN	Drum feed drive assembly	Drum feed drive assembly on page 461
RG5-5662-050CN	Transfer roller assembly	Transfer roller assembly on page 473
RG5-5663-060CN	Registration assembly	Registration assembly on page 471
RG5-5681-090CN	Paper input unit	Paper input unit on page 469
RG5-5699-040CN	End paper sensor assembly	Print engine internal components (3 of 4) on page 457
RG5-5700-030CN	Jam clearing assembly, fuser	Print engine internal components (1 of 4) on page 453
RG5-5701-000CN	Back cover assembly	Print engine covers and panels on page 419
RG5-5702-050CN	Front cover assembly	Print engine covers and panels on page 419
RG5-5704-040CN	Latch mount assembly	Print engine internal components (3 of 4) on page 457
RG5-5705-030CN	Left upper cover assembly	Print engine covers and panels on page 419
RG5-5706-000CN	Left upper cover assembly	Scanner assembly on page 413
RG5-5709-000CN	Cartridge, front pressure assembly	Print engine internal components (3 of 4) on page 457
RG5-5710-000CN	Cartridge, back pressure assembly	Print engine internal components (3 of 4) on page 457
RG5-5713-020CN	Left rail, upper	Print engine internal components (3 of 4) on page 457

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
RG5-5714-020CN	Left rail, lower	Print engine internal components (3 of 4) on page 457
RG5-5715-030CN	Right rail assembly	Print engine internal components (3 of 4) on page 457
RG5-5717-020CN	Toner contact assembly	Print engine internal components (2 of 4) on page 455
RG5-5718-000CN	Guide rail, cartridge	Print engine internal components (1 of 4) on page 453
RG5-5719-100CN	Toner sensor contact with memory (antenna)	Print engine internal components (4 of 4) on page 459
RG5-5721-000CN	Front inside cover assembly	Print engine internal components (1 of 4) on page 453
RG5-5722-030CN	Main cable harness assembly	Print engine internal components (4 of 4) on page 459
RG5-5724-050CN	Fuser connector holder assembly	Print engine internal components (2 of 4) on page 455
RG5-5727-030CN	Inlet assembly (Power SW 10)	Print engine internal components (4 of 4) on page 459
RG5-5728-100CN	High voltage power supply (HVPS)	Print engine internal components (4 of 4) on page 459
RG5-5735-000CN	Power supply cable	Scanner assembly on page 413
RG5-5736-000CN	Grounding cable	Scanner assembly on page 413
RG5-5737-090CN	Right cover assembly	Right cover assembly on page 451
RG5-5740-020CN	Right cover knob assembly	Right cover assembly on page 451
RG5-5741-040CN	Cartridge lifter assembly	Cartridge lifter assembly on page 465
RG5-5746-030CN	Lever assembly, cartridge release	Print engine internal components (1 of 4) on page 453
RG5-5750-270CN	Fuser assembly, 110 V	Print engine internal components (2 of 4) on page 455

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
RG5-5751-270CN (220V)	Fuser assembly, 220 V	Print engine internal components (2 of 4) on page 455
RG5-5752-000CN	Control panel cable	Scanner assembly on page 413
RG5-5764-000CN	Grounding cable, tray 1	Right cover assembly on page 451
RG5-5779-030CN	Connector assembly	Print engine internal components (4 of 4) on page 459
RG5-5809-060CN	Tray assembly	Tray 1 assembly on page 487
RG5-5811-040CN	Service cover assembly	Tray 1 assembly on page 487
RG5-5826-090CN	Laser/scanner assembly	Print engine internal components (3 of 4) on page 457
RG5-6206-030CN	Switch assembly (SW21)	Tray 4 main body (2 of 2) on page 481
RG5-6207-060CN	Paper size sensing assembly	Tray 4 main body (2 of 2) on page 481
RG5-6208-180CN	Paper input unit (PIU)	Tray 4 main body (1 of 2) on page 479
RG5-6225-100CN	Tray 4 vertical registration assembly (VTU/ VRA)	Tray 4 main body (1 of 2) on page 479
RG5-6227-040CN	Paper path connection unit (PPCU)	Tray 4 main body (1 of 2) on page 479
RG5-6228-060CN	Tray 4 deck drive assembly	Tray 4 drive assembly on page 483
RG5-6229-040CN	Paper volume sensing assembly	Tray 4 main body (2 of 2) on page 481
RG5-6235-150CN	Deck controller PCA	Tray 4 PCA location on page 485
RG5-6237-020CN	Paper volume PCA	Tray 4 PCA location on page 485
RG5-6238-020CN	Paper size PCA	Tray 4 PCA location on page 485
RG5-6239-020CN	LED PCA	Tray 4 PCA location on page 485
RG5-6240-020CN	Cable assembly	Tray 4 main body (2 of 2) on page 481
RG5-6249-000CN	Grounding cable	Tray 4 main body (2 of 2) on page 481
RG5-6250-040CN	Power supply	Tray 4 main body (2 of 2) on page 481
RG5-6257-000CN	Scanner controller cable	Flatbed scanner assembly on page 423

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
RG5-6258-000CN	Sensor crossmember assembly	Flatbed scanner assembly on page 423
RG5-6263-070CN	Flatbed optical assembly	Flatbed optical assembly on page 427
RG5-6266-000CN	Delivery roller assembly	Flatbed scanner assembly on page 423
RG5-6272-050CN	Base, cover assembly	ADF scanner assembly on page 431
RG5-6274-000CN	ADF width sensor assembly	ADF scanner assembly on page 431
RG5-6274-000CN	ADF width sensor assembly	Scanner engine PCAs on page 447
RG5-6275-060CN	ADF paper pickup assembly	ADF paper pickup assembly on page 437
RG5-6277-000CN	Registration roller assembly	ADF paper pickup assembly on page 437
RG5-6281-030CN	Separation roller assembly	ADF paper pickup assembly on page 437
RG5-6283-020CN	Pickup roller assembly	ADF paper pickup assembly on page 437
RG5-6285-020CN	Pickup sensor assembly	ADF paper pickup assembly on page 437
RG5-6286-000CN	Shutter assembly	ADF paper pickup assembly on page 437
RG5-6289-020CN	Weight solenoid assembly	ADF paper pickup assembly on page 437
RG5-6298-000CN	Weight assembly	ADF paper pickup assembly on page 437
RG5-6304-040CN	Registration guide assembly	ADF main assembly on page 441
RG5-6305-000CN	Registration sensor holder assy	ADF main assembly on page 441
RG5-6306-020CN	Timing sensor holder assembly	ADF main assembly on page 441
RG5-6307-020CN	ADF optical assembly	ADF main assembly on page 441
RG5-6307-020CN	ADF optical assembly	ADF optical assembly on page 445
RG5-6311-000CN	Cable, guide assembly	ADF scanner assembly on page 431
RG5-6312-030CN	ADF fan assembly	ADF scanner assembly on page 431
RG5-6313-030CN	I/F cable guide assembly	ADF scanner assembly on page 431

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
RG5-6315-000CN	ADF rear cover assembly	Scanner engine covers and panels on page 417
RG5-6316-000CN	Delivery tray assembly	Scanner engine covers and panels on page 417
RG5-6317-000CN	Hinge cover assembly	Scanner engine covers and panels on page 417
RG5-6318-000CN	Fan assembly	Flatbed scanner assembly on page 423
RG5-7379-040CN	ADF main assembly	ADF main assembly on page 441
RG5-7778-030CN	Low voltage power supply assembly 110 V	Print engine internal components (4 of 4) on page 459
RG5-7779-030CN (220V)	Low voltage power supply assembly 220 V	Print engine internal components (4 of 4) on page 459
RG5-7780-060CN	DC controller PCA	PCA locations on page 477
RG5-7783-000CN	Fan connecting cable	Print engine internal components (4 of 4) on page 459
RG5-7786-000CN	Back cable holder assembly	Print engine internal components (4 of 4) on page 459
RG5-7787-000CN	Upper cable guide assembly	Print engine internal components (3 of 4) on page 457
RG5-7789-050CN	Fuser delivery drive assembly	Fuser delivery drive assembly on page 463
RG5-7806-000CN	Flatbed sensor assembly	Flatbed scanner assembly on page 423
RG5-7896-000CN	Paper pickup PCA	Paper input unit on page 469
RG5-7896-000CN	Paper pickup (PIU) PCA	PCA locations on page 477
RG5-8009-000CN	Print cartridge memory controller PCA	PCA locations on page 477
RG5-8013-000CN	Delivery PCA	PCA locations on page 477
RG5-8025-000CN	Fuser power cable	Print engine internal components (2 of 4) on page 455
RG5-8034-000CN	Fuser high-voltage cable	Print engine internal components (2 of 4) on page 455
RG5-8038-000CN	Cable, tray 1	Right cover assembly on page 451
RG5-5641-000CN	Left cross member assembly	Delivery assembly on page 475

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
RG5-6266-000CN	Roller delivery	ADF paper pickup assembly on page 437
RH2-5445-000CN	Cable, HVPS flat ribbon	Print engine internal components (4 of 4) on page 459
RH2-5456-000CN	Processing PCA cable	ADF scanner assembly on page 431
RH5-3073-000CN	Flatbed intermediate PCA	Scanner engine PCAs on page 447
RH5-3073-030CN	Flatbed intermediate PCA	Flatbed scanner assembly on page 423
RH5-3075-090CN	Scanner controller PCA	Flatbed scanner assembly on page 423
RH5-3075-090CN	Scanner controller PCA	Scanner engine PCAs on page 447
RH5-3078-030CN	ADF intermediate PCA	ADF scanner assembly on page 431
RH5-3078-030CN	ADF intermediate PCA	Scanner engine PCAs on page 447
RH5-3079-030CN	ADF sensor PCA	ADF main assembly on page 441
RH5-3079-030CN	ADF sensor PCA	Scanner engine PCAs on page 447
RH5-3165-030CN	Intermediate PCA	Scanner engine PCAs on page 447
RH5-7807-000CN	Intermediate PCA	Flatbed scanner assembly on page 423
RH7-1481-020CN	Motor	Tray 4 drive assembly on page 483
RH7-1485-000CN	Motor, 24vdc	Flatbed scanner assembly on page 423
RH7-1486-020CN	Fan	ADF scanner assembly on page 431
RH7-1487-020CN	Motor, 24vdc	ADF paper pickup assembly on page 437
RH7-1488-030CN	Motor, 24vdc	ADF paper pickup assembly on page 437
RH7-1622-000CN	Motor, DC, 24V (M1)	Fuser delivery drive assembly on page 463
RH7-1623-000CN	Fan, #2, controller	Print engine internal components (4 of 4) on page 459
RH7-1656-000CN	Main motor (M2)	Drum feed drive assembly on page 461

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
RH7-1657-000CN	Fan, #1, power supply	Print engine internal components (4 of 4) on page 459
RH7-5306-000CN	Fan, #5, cartridge fan	Print engine internal components (3 of 4) on page 457
RH7-5312-020CN	Solenoid	ADF paper pickup assembly on page 437
RH7-1658-000CN	Fan	Delivery assembly on page 475
RS5-0708-000CN	Gear, 21T	Print engine internal components (2 of 4) on page 455
RS5-9099-000CN	Screw, stepped	Tray 4 main body (1 of 2) on page 479
RS6-2285-000CN	Spring, tension	Print engine internal components (1 of 4) on page 453
RS6-2296-000CN	Spring, tension	Print engine internal components (2 of 4) on page 455
RS6-2298-020CN	Spring, tension	Cartridge lifter assembly on page 465
RS6-2299-000CN	Spring, tension	Print engine internal components (2 of 4) on page 455
RS6-2302-000CN	Spring, compression	Print engine internal components (3 of 4) on page 457
RS6-2492-020CN	Spring, compression	Flatbed scanner assembly on page 423
RS6-2496-000CN	Spring, tension	ADF paper pickup assembly on page 437
RS6-2496-000CN	Spring, tension	ADF paper pickup assembly on page 437
RS6-2498-000CN	Spring, tension	ADF paper pickup assembly on page 437
RS6-2503-000CN	Spring, tension	ADF main assembly on page 441
See Table 8-1 Consumables, supplies, accessories, FRUs, and documents on page 406.	Control panel overlay, left	Scanner assembly on page 413
See Table 8-1 Consumables, supplies, accessories, FRUs, and documents on page 406.	Control panel overlay, right	Scanner assembly on page 413

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
VD7-0645-001CN	Fuse, 250V, 5A	Flatbed scanner assembly on page 423
WC4-5136-000CN	Microswitch (SW1)	Fuser delivery drive assembly on page 463
WC4-5175-000CN	Micro-switch	ADF paper pickup assembly on page 437
WG8-5624-000CN	Photo-interrupter, TLP1241	ADF scanner assembly on page 431
WG8-5624-000CN	Photo-interrupter, TLP1241	ADF paper pickup assembly on page 437
XA9-0499-000CN	Screw, W/W, M4x6	Tray 4 main body (1 of 2) on page 479
XA9-0732-000CN	Screw, M4x8, RS	Tray 4 main body (2 of 2) on page 481
XA9-0912-000CN	Screw, M5x12	Tray 4 main body (2 of 2) on page 481
XA9-0994-000CN	Screw, M4x6	Tray 4 main body (2 of 2) on page 481
XA9-1200-000CN	Screw, M3x8	Right cover assembly on page 451
XA9-1300-000CN	Screw, M4x8	Tray 4 main body (1 of 2) on page 479
XA9-1466-000CN	Screw, W/W, M3x29.5	Tray 2 or Tray 3 parts on page 467
XA9-1495-000CN	Screw, M3x6, RS	Print engine internal components (1 of 4) on page 453
XA9-1495-000CN	Screw, M3x6	Print engine internal components (2 of 4) on page 455
XA9-1495-000CN	Screw, M3x6, RS	Print engine internal components (2 of 4) on page 455
XA9-1495-000CN	Screw, M3x6, RS	Print engine internal components (3 of 4) on page 457
XA9-1495-000CN	Screw, M3x6, RS	Print engine internal components (4 of 4) on page 459
XA9-1495-000CN	Screw, M3x6	Drum feed drive assembly on page 461
XA9-1495-000CN	Screw, M3x6, RS	Fuser delivery drive assembly on page 463
XA9-1495-000CN	Screw, M3x6	Cartridge lifter assembly on page 465
XA9-1495-000CN	Screw, M3x6, RS	Paper input unit on page 469

Table 8-35 Numerical parts list (continued)

Part number	Description	Table and page
XA9-1500-000CN	Screw, M3x8, RS	Right cover assembly on page 451
XA9-1500-000CN	Screw, M3x8, RS	Print engine internal components (1 of 4) on page 453
XA9-1500-000CN	Screw, M3x8, RS	Print engine internal components (2 of 4) on page 455
XA9-1500-000CN	Screw, M3x8	Print engine internal components (2 of 4) on page 455
XA9-1500-000CN	Screw, M3x8, RS	Print engine internal components (3 of 4) on page 457
XA9-1500-000CN	Screw, M3x8, RS	Print engine internal components (4 of 4) on page 459
XA9-1500-000CN	M3x6 RS screw	Delivery assembly on page 475
XB2-6300-180CN	Screw, M3x6 with washer	Tray 4 drive assembly on page 483
XB4-5401-009CN	Screw, M4x10	Left door and diverter on page 449
XB6-7400-000CN	Screw, M4x6	Tray 4 main body (1 of 2) on page 479

A Service and support

- [Hewlett-Packard limited warranty statement](#)

Hewlett-Packard limited warranty statement

HP PRODUCT	DURATION OF LIMITED WARRANTY
HP LaserJet M9059 MFP	90-day parts-only limited warranty to dealer

HP warrants to the initial purchaser that HP hardware and accessories will be free from defects in materials and workmanship after the date of purchase, for the period specified above. If HP receives notice of such defects during the warranty period, HP will, at its option, either provide component parts or replace entire products which prove to be defective. Replacement parts or products may be either new or equivalent in performance to new.

These replacement parts or products must be installed by an HP qualified service technician. HP may replace the entire product only if, in HP's discretion, service history, diagnosis and troubleshooting indicate that replacement is warranted. This warranty is limited to replacement parts only. Cost of labor is not covered under this warranty.

HP warrants to you that HP software will not fail to execute its programming instructions after the date of purchase, for the period specified above, due to defects in material and workmanship when properly installed and used. If HP receives notice of such defects during the warranty period, HP will replace software which does not execute its programming instructions due to such defects.

HP does not warrant that the operation of HP products will be uninterrupted or error free.

HP products may contain remanufactured parts equivalent to new in performance or may have been subject to incidental use.

Warranty does not apply to defects resulting from (a) improper or inadequate maintenance or calibration, (b) software, interfacing, parts or supplies not supplied by HP, (c) unauthorized modification or misuse, (d) operation outside of the published environmental specifications for the product, or (e) improper site preparation or maintenance.

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B Specifications

- [Physical specifications](#)
- [Considerations for "pre-fighting" a LaserJet](#)
- [Electrical specifications](#)
- [Acoustic emissions](#)
- [Operating environment](#)

Physical specifications

Table B-1 Dimensions

Model	Height	Depth	Width	Weight ¹
HP LaserJet M9059 MFP	1219 mm (48 in.)	1085 mm (43 in.)	1334 mm (53 in.)	143 kg (317 lb)

¹ Without print cartridge

Table B-2 Dimensions with all doors and trays fully opened

Model	Height	Depth	Width
HP LaserJet M9059 MFP	1664 mm (66 in.)	1296 mm (52 in.)	2501 mm (98.5 in.)

Considerations for "pre-flighting" a LaserJet

HP designs LaserJet products for fast and easy packaging removal and product setup. This can usually be completed at the customer site, eliminating preflight setup. If preflight setup is required, complete the following steps:

1. Repackage the product if shipping a long distance after preflight. If not repackaging, ship using a padded van or similar approach.
2. Remove finishing accessories, print cartridges, and toner-collection bottles and ship separately.
3. Re-use foam packaging between the ADF and flatbed glass during shipment.
4. Lock the flatbed scanner-carriage scanner lock before transport.
5. Lock the castors during shipment and unlock the castors when rolling to the final location.
6. Keep the number of pages printed during preflight to a minimum (CM6049f MFP only). Under 50 pages is recommended. This keeps the toner collection path relatively free of toner waste toner.
7. After the product is turned on, either during pre-flight or at the customer's location, confirm that the firmware version is current. Apply a firmware upgrade (RFU) if needed.

Electrical specifications

⚠ WARNING! Power requirements are based on the country/region where the product is sold. Do not convert operating voltages. This can damage the product and void the product warranty.

Table B-3 Power requirements

Specification	110-volt models	220-volt models
Power requirements	100 to 127 Vac	220 to 240 Vac
	50/60 Hz	50/60 Hz
Rated current	12 Amps	5.3 Amps

Table B-4 Power consumption (average, in watts)¹

Model	Printing ²	Copying ²	Ready or standby ⁴	Sleep 1 ^{3, 5}	Sleep 2	Off
HP LaserJet M9059 MFP	1070 W	1160 W	305 W	221 W	59 W	0.9 W

¹ Values are based on preliminary data. See www.hp.com/go/ljm9059mfp/regulatory for current information.

² Power numbers are the highest values measured using all standard voltages.

³ Default time from Ready mode to Sleep 1 = 15 minutes, and to Sleep 2 = 60 minutes.

⁴ Heat dissipation in Ready mode = 1045 BTU/hour.

⁵ Recovery time from Sleep to start of printing = 20 seconds, and from Sleep 2 to start of printing = 145 seconds.

Acoustic emissions

Table B-5 Sound power level^{1, 2}

Sound power level	Declared per ISO 9296
Printing ³	$L_{WA} = 7.4$ Bels (A) [74 dB(A)]
Ready	Essentially Inaudible

¹ Values are based on preliminary data. See www.hp.com/go/ljm9059mfp/regulatory for current information.

² Configuration tested: Base unit printing and scanning continuous with ADF on A4 paper with no output device.

³ Print speed is 50 ipm.

Table B-6 Sound pressure level^{1, 2}

Sound pressure level	Declared per ISO 9296
Printing/Copying ³	$L_{pAm} = 58$ dB (A)
Ready	Essentially Inaudible

¹ Values subject to change. See www.hp.com/support/ljm9059mfp for current information.

² Configuration tested: Base unit printing and scanning continuous with ADF on A4 paper with no output device.

³ Print speed is 50 ipm.

Operating environment

Table B-7 Necessary conditions

Environmental condition	Recommended	Allowed
Temperature (product and print cartridge)	17.5° to 25.0°C (63° to 77°F)	0° to 40°C (32° to 104°F)
Relative humidity	30% to 70%	0% to 95%

 **NOTE:** Optimum performance of the product is assured under the recommended temperature and humidity specifications. Print quality might deteriorate and occurrences of paper jams might increase when the product is operated within the allowed temperature and humidity specifications.

C Regulatory information

- [FCC regulations](#)
- [Declaration of conformity](#)
- [Certificate of volatility](#)
- [Safety statements](#)

FCC regulations

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

 **NOTE:** Any changes or modifications to the printer that are not expressly approved by HP could void the user's authority to operate this equipment.

Use of a shielded interface cable is required to comply with the Class A limits of Part 15 of FCC rules.

Declaration of conformity



Declaration of Conformity

according to ISO/IEC 17050-1 and EN 17050-1

Manufacturer's Name: Hewlett-Packard Company
DoC#: BOISB-0403-01-rel.3.0
Manufacturer's Address: 11311 Chinden Boulevard,
Boise, Idaho 83714-1021, USA

declares, that the product

Product Name: HP LaserJet 9040MFP / 9050MFP / M9059MFP series
Accessories⁴⁾: 2000 sheet input feed unit (C8531A); Multifunction finisher (C8088A); 3000 sheet stacker (C8084A); 3000 sheet stacker/stapler (C8085A)
8-bin mailbox (Q5693A)(GUADA-0401-00)
BOISB-0308-00 – Fax Module
Regulatory Model²⁾: BOISB-0403-01
Product Options: All
Toner Cartridge C8543X, CE266C

conforms to the following Product Specifications:

Safety: IEC 60950-1:2001 / EN60950-1: 2001 + A11
IEC 60825-1:1993 +A1 +A2 / EN 60825-1:1994 +A1 +A2 (Class 1 Laser/LED Product)
GB4943-2001
EMC: CISPR22:2005 / EN 55022:2006 - Class A^{1, 3)}
EN 61000-3-2:2006
EN 61000-3-3:1995 +A1
EN 55024:1998 +A1 +A2
FCC Title 47 CFR, Part 15 Class A / ICES-003, Issue 4
GB9254-1998, GB17625.1-2003
Telecom: TBR-21:1998, EG 201 121:1998

Supplementary Information:

The product herewith complies with the requirements of the R&TTE Directive 1999/5/EC Annex II, EMC Directive 2004/108/EEC and the Low Voltage Directive 2006/95/EEC, and carries the CE-Marking  accordingly.

This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two Conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesirable operation.

1) The product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems.

2) For regulatory purposes, this product is assigned a Regulatory model number. This number should not be confused with the product name or the product number(s).

3) The product meets the requirements of EN55022 & CNS13438 Class A in which case the following applies: "Warning – This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures".

4) All worldwide module approvals for analog fax accessory obtained by Hewlett-Packard under the regulatory model number BOISB-0308-00 incorporate the Multi-Tech Systems MT5634SMI Socket Modem Module.

Boise, Idaho , USA

March 2009

For regulatory topics only,

European Contact: Your Local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department HQ-TRE / Standards Europe, Herrenberger Straße 140,, D-71034 Böblingen, Germany, (FAX: +49-7031-14-3143), www.hp.com/go/certificates

USA Contact: Product Regulations Manager, Hewlett-Packard Company,, PO Box 15, Mail Stop 160,, Boise, Idaho 83707-0015, USA, (Phone: 208-396-6000)

Certificate of volatility

This is a statement regarding the volatility of customer data stored in memory. It also outlines how to erase secure data from the product.

Types of memory

Volatile memory

The product utilizes volatile memory (384 MB installed) to store customer data during the printing and copying process. When the product is powered off, this volatile memory is erased.

Non-volatile memory

The product utilizes non-volatile memory (EEPROM) to store system control data and user preference settings. No customer print or copy data is stored in non-volatile memory. This non-volatile memory can be cleared and restored to factory defaults by performing a cold reset or by restoring factory defaults from the control panel.

Hard-disk-drive memory

The product contains an internal hard disk drive (40GB or larger) that may retain data after the product is powered off. The product also may contain an additional optional external EIO hard disk. Data stored in these devices may be from incoming/outgoing fax or e-mail files, stored copy or print jobs, fax or e-mail address books, or third-party solutions. Some of this data can be erased from the product control panel, but most must be erased using the Secure Storage Erase features available within HP Web Jetadmin. Secure Storage Erase features comply with U.S. Department of Defense (DOD) specification 5220–22.M.

Safety statements

Laser safety

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration has implemented regulations for laser products manufactured since August 1, 1976. Compliance is mandatory for products marketed in the United States. The device is certified as a “Class 1” laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. Since radiation emitted inside the device is completely confined within protective housings and external covers, the laser beam cannot escape during any phase of normal user operation.

⚠ **WARNING!** Using controls, making adjustments, or performing procedures other than those specified in this user guide may result in exposure to hazardous radiation.

Canadian DOC regulations

Complies with Canadian EMC Class A requirements.

« Conforme à la classe A des normes canadiennes de compatibilité électromagnétiques. « CEM ». »

VCCI statement (Japan)

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Power cord statement (Japan)

製品には、同梱された電源コードをお使い下さい。
同梱された電源コードは、他の製品では使用出来ません。

EMC statement (Korea)

A급 기기 (업무용 방송통신기기)	이 기기는 업무용(A급)으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이점을 주의하시기 바라며, 가정 외의 지역에서 사용하는 것을 목적으로 합니다.
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EMI statement (Taiwan)

警告使用者：
這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Laser statement for Finland

Luokan 1 laserlaite

Klass 1 Laser Apparat

HP LaserJet M9059, laserkirjoitin on käyttäjän kannalta turvallinen luokan 1 laserlaite. Normaalissa käytössä kirjoittimen suojakotelointi estää lasersäteen pääsyn laitteen ulkopuolelle. Laitteen turvallisuusluokka on määritetty standardin EN 60825-1 (1994) mukaisesti.

VAROITUS !

Laitteen käyttäminen muulla kuin käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING !

Om apparaten används på annat sätt än i bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

HUOLTO

HP LaserJet M9059 - kirjoittimen sisällä ei ole käyttäjän huollettavissa olevia kohteita. Laitteen saa avata ja huoltaa ainoastaan sen huoltamiseen koulutettu henkilö. Tällaiseksi huoltotoimenpiteeksi ei katsota väriainekasetin vaihtamista, paperiradan puhdistusta tai muita käyttäjän käsikirjassa lueteltuja, käyttäjän tehtäväksi tarkoitettuja ylläpitotoimia, jotka voidaan suorittaa ilman erikoistyökaluja.

VARO !

Mikäli kirjoittimen suojakotelo avataan, olet alttiina näkymättömälle lasersäteilylle laitteen ollessa toiminnassa. Älä katso säteeseen.

VARNING !

Om laserprinterns skyddshölje öppnas då apparaten är i funktion, utsättas användaren för osynlig laserstrålning. Betrakta ej strålen. Tiedot laitteessa käytettävän laserdiodin säteilyominaisuuksista: Aallonpituus 775-795 nm Teho 5 m W Luokan 3B laser.

Substances table (China)

有毒有害物质表

根据中国电子信息产品污染控制管理办法的要求而出台

部件名称	有毒有害物质和元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
打印引擎	X	0	X	X	0	0
复印机组件	X	0	0	0	0	0
控制面板	0	X	0	0	0	0
塑料外壳	0	0	0	0	0	0
格式化板组件	X	0	0	0	0	0
碳粉盒	X	0	0	0	0	0

3046

0：表示在此部件所用的所有同类材料中，所含的此有毒或有害物质均低于 SJ/T11363-2006 的限制要求。

X：表示在此部件所用的所有同类材料中，至少一种所含的此有毒或有害物质高于 SJ/T11363-2006 的限制要求。

注：引用的“环保使用期限”是根据在正常温度和湿度条件下操作使用产品而确定的。

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