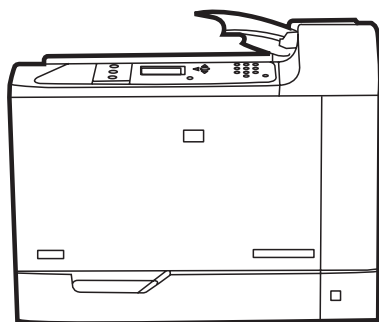


HP Color LaserJet CP6015 Series Printers

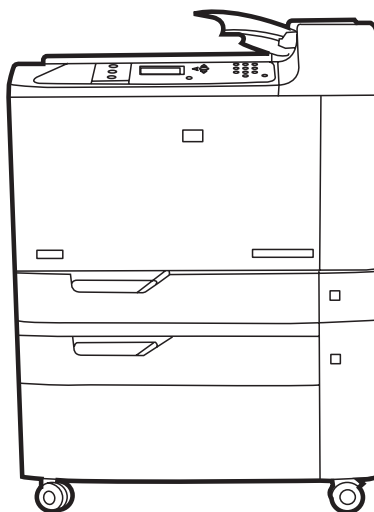
Service Manual



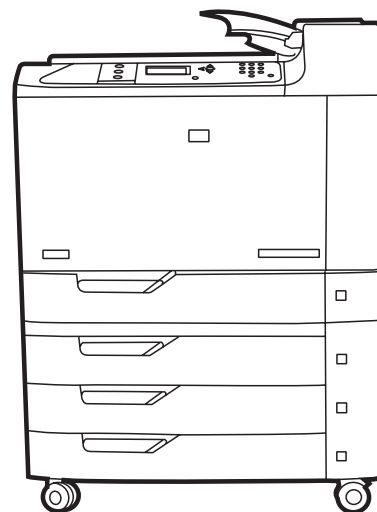
CP6015n
CP6015dn
CP6015de



CP6015x



CP6015xh



HP Color LaserJet CP6015 Series Printers

Service Manual



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1 Product basics

- [Quick access to product information](#)
- [Product comparison](#)
- [Product features](#)
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- [Supported operating systems](#)

Quick access to product information

Use the following Web sites to find information about the product:

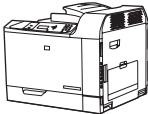
- www.hp.com/support/cljcp6015

Table 1-1 Product guides

Guide	Description
Getting Started Guide	Provides step-by-step instructions for installing and setting up the product.
User Guide	Provides detailed information for using the product and for problem solving. Available on the product CD or in Program Group if the software is installed on a computer.
HP Easy Printer Care	To check the product status and settings, and to view problem solving information and online documentation, use HP Easy Printer Care. You must have performed a recommended software installation in order to use HP Easy Printer Care. See the user guide for more information about software installation.
HP ToolboxFX (HP Color LaserJet CP6015 Series Printer)	To check the product status and settings, and to view problem solving information and online documentation, use HP ToolboxFX. You must have performed a recommended software installation in order to use HP ToolboxFX. See the user guide for more information about software installation.
Online Help	Provides information about options that are available in the printer drivers. To view a Help file, open the online Help through the printer driver.

Product comparison

Table 1-2 Product models

Model	Features
HP Color LaserJet CP6015n 	• 100-sheet multipurpose input tray (Tray 1) • 500-sheet input tray (Tray 2) • HP Jetdirect embedded print server for connecting to a 10/100Base-TX network • 512 megabytes (MB) of random access memory (RAM)
HP Color LaserJet CP6015dn 	• 100-sheet multipurpose input tray (Tray 1) • 500-sheet input tray (Tray 2) • HP Jetdirect embedded print server for connecting to a 10/100Base-TX network • 512 megabytes (MB) of random access memory (RAM) • Duplexer
HP Color LaserJet CP6015de 	• 100-sheet multipurpose input tray (Tray 1) • 500-sheet input tray (Trays 2) • HP Jetdirect embedded print server for connecting to a 10/100Base-TX network • 512 megabytes (MB) of random access memory (RAM) • Duplexer • Meets ENERGY STAR® guidelines, Version 1.0
HP Color LaserJet CP6015x 	• 100-sheet multipurpose input tray (Tray 1) • Two 500-sheet input trays (Trays 2 and 3) • HP Jetdirect embedded print server for connecting to a 10/100Base-TX network • 512 megabytes (MB) of random access memory (RAM) • Duplexer
HP Color LaserJet CP6015xh 	• 100-sheet multipurpose input tray (Tray 1) • Four 500-sheet input trays (Trays 2, 3, 4, and 5) • HP Jetdirect embedded print server for connecting to a 10/100Base-TX network • 512 megabytes (MB) of random access memory (RAM) • Duplexer • 40 gigabyte (GB) hard drive.

Product features

Table 1-3 Features

Speed and throughput	• Print up to 40 pages per minute (ppm) on letter-size paper and 41 ppm on A4-size paper. • Less than 11 seconds to print the first page • Recommended maximum monthly print volume of 4,000 to 17,000 pages • A 835 megahertz (MHz) microprocessor • Banner printing • Duplex at speed
Resolution	• 600 dots per inch (dpi) with Image Resolution Enhancement technology 4800 for optimum overall imaging • 1200 x 600 dpi for detailed line work and small text
Memory	• Models HP Color LaserJet CP6015n, HP Color LaserJet CP6015dn, and HP Color LaserJet CP6015de have 512 MB of random-access memory (RAM), expandable to 1 gigabyte (GB) by using 200-pin small outline dual inline memory modules (SODIMM) that support 128, 256, or 512 MB of RAM. Models HP Color LaserJet CP6015x and HP Color LaserJet CP6015xh have 512 MB of RAM, expandable to 1 GB. • Memory Enhancement technology (MEt) automatically compresses data to use RAM more efficiently.
User interface	• Four-line graphical display on the control panel • An embedded Web server to gain access to support and order supplies (for network-connected products) • HP Easy Printer Care software (a Web-based status and troubleshooting tool) • Internet-enabled supply-ordering capabilities through HP Easy Printer Care software and embedded Web server
Paper-handling	• Input ◦ Tray 1 (multipurpose tray): A multipurpose tray for paper, transparencies, labels, banner media, envelopes, and other paper types. See Supported paper types on page 56 for a list of paper types. The tray holds up to 100 sheets of paper, 50 transparencies, or 10 envelopes. See Supported paper and print media sizes on page 52. ◦ Trays 2, 3, 4, and 5: 500-sheet trays. These trays automatically detect common paper sizes and allow printing on custom-size paper. Tray 2 supports up to 279 x 432 mm (11 x 17 inches) and A3 paper sizes, and Trays 3, 4, and 5 support sizes up to 305 x 457 mm (12 x 18 inches), and SRA3. See Supported paper and print media sizes on page 52 for a list of supported paper sizes. For a list of supported paper types, see Supported paper types on page 56. ◦ Duplex printing: Provides automatic two-sided printing (printing on both sides of the paper). Not available on the HP Color LaserJet CP6015n model. This model cannot be upgraded to auto duplex.

Table 1-3 Features (continued)

	The paper size range for automatic duplex printing is 175 mm to 320 mm (6.9 to 12.6 inches) x 210 mm to 457 mm (8.3 to 18 inches). The media weight range is 60–220 g/m² (16–58 lb). ● Output ◦ Standard output bin: The standard output bin is located on the top of the product. This bin can hold up to 500 sheets of paper. The product has a sensor that indicates when the bin is full. ◦ Optional 3-bin stapler/stacker: Provides job separation in multiple output bins, convenient stapling (up to 50-sheet jobs), job offset capability, and additional output capacity. The stacker has three bins: a 100-sheet bin, a 500-sheet bin, and a 1000-sheet bin. ◦ Optional booklet maker finisher: Provides convenient stapling (up to 50-sheet jobs), saddle-stitching (up to 15-sheet booklets), single-sheet v-folding, job separation and offset capability, as well as additional output capacity. The booklet maker finisher has three bins: two 1000-sheet bins and one bin that can hold up to 25 saddle-stitched booklets. NOTE: The output bin capacities are based on 75 g/m² (20 lb) paper. Heavier paper decreases the capacity.
Languages and fonts	● HP Printer Control Language (PCL) 6 ● HP Universal Printer Driver (UPD) PCL 5 ● HP UPD postscript (PS) ● Printer Management Language ● 93 internal TrueType fonts scalable in HP PCL drivers. 93 internal scalable fonts in HP Postscript level 3 emulation (Euro symbols built in). Additional font solutions available via third-party flash memory products.
Print cartridges/image drums (4 of each)	● Two-part toner/imaging system ● Black print cartridges print up to 16,500 pages; Cyan, Magenta, or Yellow print cartridges print up to 21,000 pages each. Based on ISO standards. ● Image drums print up to 35,000 pages at 5% coverage ● Authentic HP print cartridge detection ● Automatic toner strip remover
Supported operating systems	● Microsoft® Windows® 2000, Windows® XP, and Windows Vista™ ● Macintosh OS X, V10.2.8 , V10.3, V10.4, V10.5, and later ● Novell NetWare ● Unix® ● Linux
Connectivity	● Local area network (LAN) connector (RJ-45) for the embedded HP Jetdirect print server ● Two enhanced input/output (EIO) slots ● USB 2.0 connection

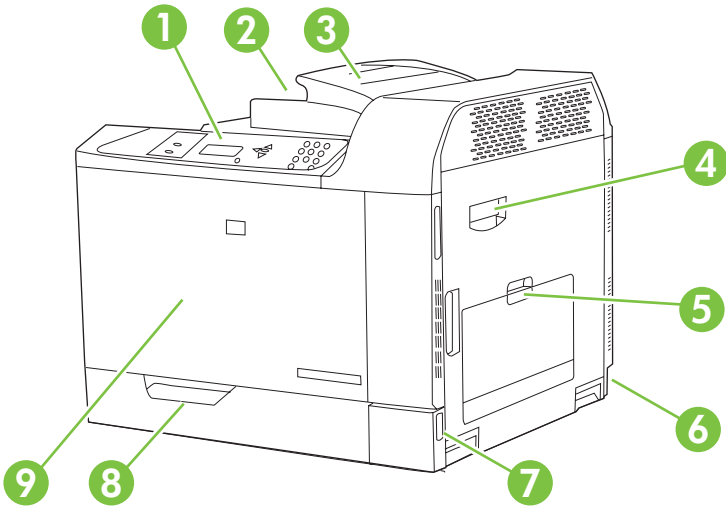
Table 1-3 Features (continued)

Environmental features	• Sleep setting saves energy
	• High content of recyclable components and materials
Security features	• Secure Disk Erase
	• Security lock (optional)
	• Job retention
	• User PIN authentication for stored jobs
	• IPv6 security

Product walkaround

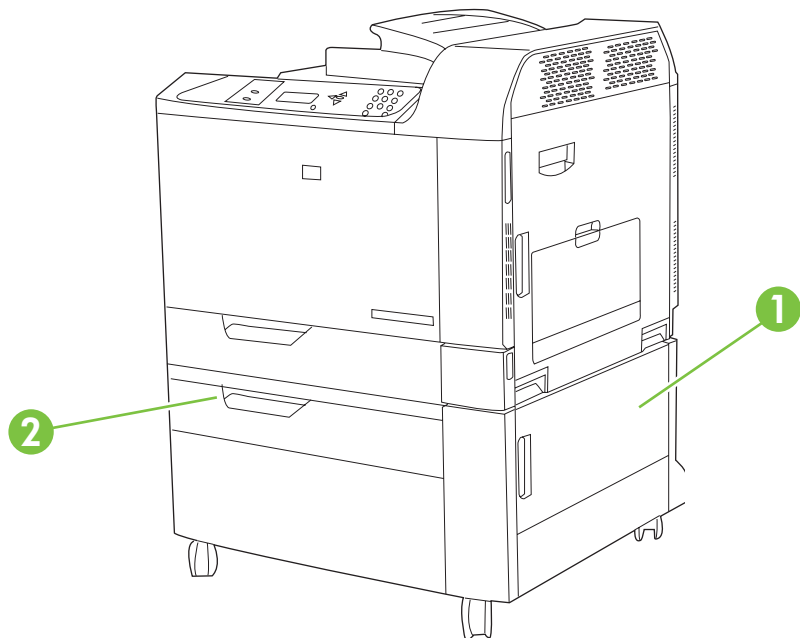
Front view

HP Color LaserJet CP6015n, HP Color LaserJet CP6015dn, and HP Color LaserJet CP6015de



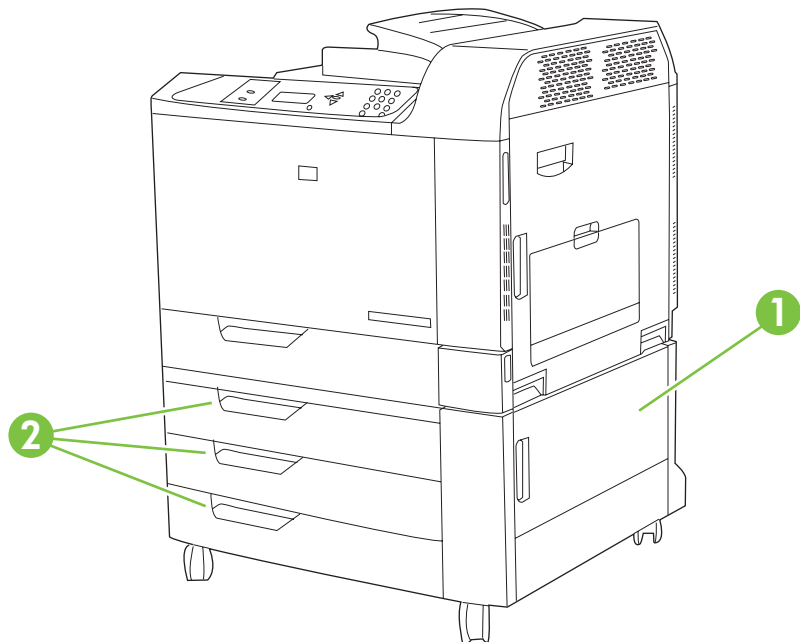
1	Control-panel display
2	Output bin (holds approximately 500 sheets of paper)
3	Duplex switchback tray (HP Color LaserJet CP6015dn and HP Color LaserJet CP6015de only)
4	Right door (provides access for clearing paper jams and replacing parts)
5	Tray 1 (100-sheet multi-purpose tray)
6	Power connection
7	On/Off switch
8	Tray 2 (500-sheet input tray)
9	Front cover (provides access to the print cartridges and image drums)

HP Color LaserJet CP6015x



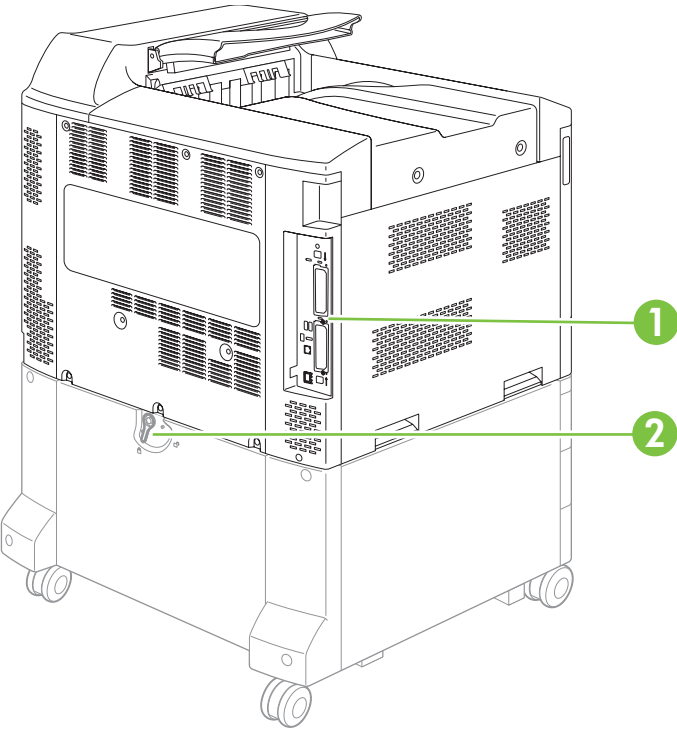
1	Lower right door
2	Tray 3 (500-sheet input tray)

HP Color LaserJet CP6015xh



1	Lower right door
2	Trays 3, 4, and 5 (500-sheet input trays)

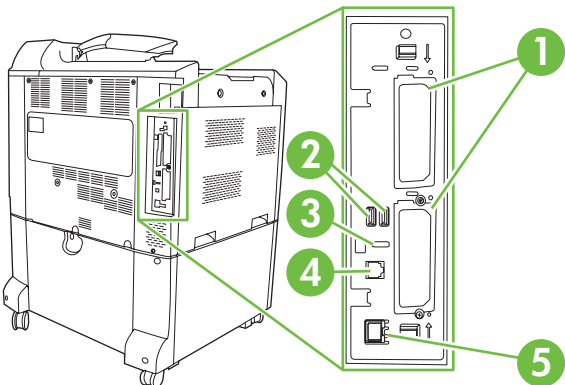
Back view



1	Interface ports
2	Lock lever for additional input bins (HP Color LaserJet CP6015x and HP Color LaserJet CP6015xh only)

Interface ports

The product has up to 4 ports (2 standard) for connecting to a computer or a network. The ports are at the left, rear corner of the product.

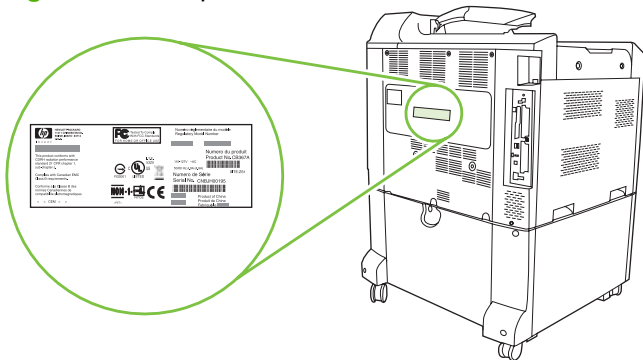


1	Two EIO interface expansion slots
2	Access port for Kensington lock
3	USB 2.0 port
4	Network connection (embedded HP Jetdirect print server)

Serial number and model number location

The model number and serial number are listed on identification labels located on the rear of the product. The serial number contains information about the country/region of origin, the product version, production code, and the production number of the product.

Figure 1-1 Sample model and serial number label



Model name	Model number
HP Color LaserJet CP6015n	Q3931A
HP Color LaserJet CP6015dn	Q3932A
HP Color LaserJet CP6015de	Q3935A
HP Color LaserJet CP6015x	Q3933A
HP Color LaserJet CP6015xh	Q3934A

Supported operating systems

The product supports the following operating systems:

- Windows XP (32-bit and 64-bit)
- Windows Server 2003 (32-bit and 64-bit)
- Windows 2000
- Windows Vista
- Mac OS X V10.2.8, V10.3, V10.4 and later

2 Control panel

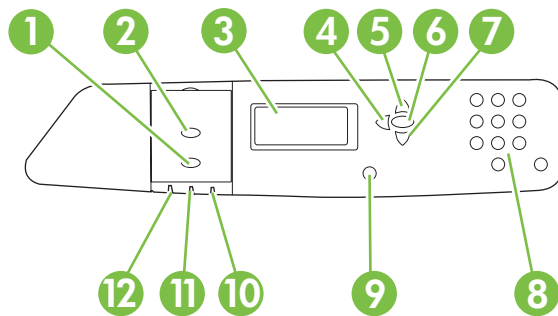
- [Use the control panel](#)
- [Control panel menus](#)
- [Menu hierarchy](#)
- [Show Me How menu](#)
- [Retrieve job menu](#)
- [Information menu](#)
- [Paper handling menu](#)
- [Configure device menu](#)
- [Diagnostics menu](#)
- [Service menu](#)

Use the control panel

The control panel has a text display that provides access to all product functions. Use the buttons and numeric keypad to control jobs and the product status. The lights indicate overall product status.

Control-panel layout

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



1	Stop button	Halts the current job, presents a choice to resume or cancel the current job, clears paper from the product, and clears any continuable errors that are associated with the halted job. If the product is not printing a job, pressing Stop pauses the product.
2	Menu button	Opens and closes menus.
3	Display	Shows status information, menus, help information, and error messages.
4	Back arrow (↶) button	Navigates backward in nested menus.
5	Up arrow (▲) button	Navigates menus and text, and increases the values of numerical items in the display.
6	Checkmark (✓) button	Makes selections, resumes printing after continuable errors, and overrides a non-HP print cartridge.
7	Down arrow (▼) button	Navigates menus and text, and decreases the values of numerical items in the display.
8	Numeric keypad	Allows you to type numeric values for PINs and other numeric values.
9	Help (?) button	Provides detailed information about product messages or menus.
10	Attention light	The Attention light indicates that the product has a condition that requires intervention. Examples include an empty paper tray or an error message on the display.
11	Data light	The Data light indicates that the product is receiving data.
12	Ready light	The Ready light indicates that the product is ready to begin processing any job.

Interpreting control panel indicator lights

Indicator	On	Off	Flashing
Ready (green)	Product is online (able to accept and process data).	Product is offline or is turned off.	Product is attempting to stop printing and go offline.
Data (green)	Processed data is present in the product, but more data is needed to complete the job.	Product is not processing or receiving data.	Product is processing and receiving data.
Attention (amber)	A critical error has occurred. Product requires attention.	No conditions exist that require attention.	An error has occurred. Product requires attention.

Control panel menus

You can perform most routine printing tasks from the computer through the printer driver or software application. This is the most convenient way to control the product, and will override the product control-panel settings. See the help files associated with the software.

You can also control the product by changing settings in the product's control panel. Use the control panel to access features not supported by the printer driver or software application, and to configure trays for paper size and type.

Getting started basics

- Enter the menus by pressing the **Menu** button.
- Select a menu item by using the checkmark button ✓.
- Use the up or down arrows ▲▼ to navigate through the menus. In addition to menu navigation, the up and down arrows can increase and decrease numerical value selections. Hold down the up or down arrows to scroll faster.
- The back button ↩ allows you to move back in menu selections as well as select numerical values when configuring the product.
- Exit all menus by pressing **Menu**.
- If no key is pressed for 60 seconds, the product returns to the **Ready** state.

Menu hierarchy

The following tables list the hierarchies of each menu.

Open the menus

Press **Menu**.

Press the up arrow ▲ or down arrow ▼ button to navigate the listings.

Press the checkmark button ✓ to select the appropriate option.

The following top-level menus are available:

- **SHOW ME HOW.** See [Show Me How menu on page 18](#) for more information.
- **RETRIEVE JOB.** See [Retrieve job menu on page 19](#) for more information.
- **INFORMATION.** See [Information menu on page 20](#) for more information.
- **PAPER HANDLING.** See [Paper handling menu on page 21](#) for more information.
- **CONFIGURE DEVICE.** See [Configure device menu on page 22](#) for more information.
- **DIAGNOSTICS.** See [Diagnostics menu on page 45](#) for more information.
- **SERVICE.** See [Service menu on page 49](#) for more information.

Show Me How menu

The **SHOW ME HOW** menu prints a page that provides more information about the product.

To display: Press **Menu**, and then select **SHOW ME HOW**.

Item	Explanation
PRINT HELP GUIDE	Prints a page that shows links to additional help on the Web.

Retrieve job menu

The **RETRIEVE JOB** menu allows you to view listings of all stored jobs.

To display: Press **Menu**, and then select **RETRIEVE JOB**.

Item	Sub-item	Options	Description
USER <X>			Each user who has stored jobs is listed by name. Select the appropriate user name to see a list of stored jobs.
	ALL PRIVATE JOBS		This message is displayed if a user has stored jobs that require a PIN.
	<JOB NAME>		Each job is listed by name.
		PRINT	Select this option to print a stored job. When printing a private job, the user is prompted to enter a PIN.
		COPIES	The number of copies of the job to be printed. The default is 1.
		DELETE	Select this option to delete a stored job. When deleting a private job, the user is prompted to enter a PIN.

Information menu

Use the **INFORMATION** menu to access and print specific product information.

To display: press **Menu**, and then select **INFORMATION**.

Item	Description
PRINT MENU MAP	Prints the control-panel menu map, which shows the layout and current settings of the control-panel menu items.
PRINT CONFIGURATION	Prints the product configuration pages, which show the printer settings and installed accessories.
PRINT SUPPLIES STATUS PAGE	Prints the estimated remaining life for the supplies; reports statistics on total number of pages and jobs processed, serial number, page counts, and maintenance information.
SUPPLIES STATUS	Displays the status of the print cartridges, image drums, fuser kit, roller kit, and transfer kit in a scrollable list.
PRINT USAGE PAGE	Prints a count of all paper sizes that have passed through the product; lists whether they were simplex, duplex, monochrome, or color; and reports the page count.
PRINT COLOR USAGE JOB LOG	Prints the color-use statistics for the printer.
PRINT DEMO	Prints a demonstration page.
PRINT RGB SAMPLES	Prints color samples for different RGB values. Use the samples as a guide for matching printed colors.
PRINT CMYK SAMPLES	Prints color samples for different CMYK values. Use the samples as a guide for matching printed colors.
PRINT FILE DIRECTORY	Prints the name and directory of files stored in the product.
PRINT PCL FONT LIST	Prints the available PCL fonts.
PRINT PS FONT LIST	Prints the available PS fonts.

Paper handling menu

Use this menu to configure input trays by size and type. It is important to correctly configure the trays with this menu before you print for the first time.

To display: Press **Menu**, and then select **PAPER HANDLING**.

 **NOTE:** If you have used other HP LaserJet product models, you might be accustomed to configuring Tray 1 to **First** mode or **Cassette** mode. On HP Color LaserJet CP6015 Series printers, setting Tray 1 to **ANY SIZE** and **ANY TYPE** is equivalent to **First** mode. Setting Tray 1 to a setting other than **ANY SIZE** or **ANY TYPE** is equivalent to **Cassette** mode.

Menu item	Value	Description
TRAY 1 SIZE	A list of available sizes appears.	Allows you to configure the paper size for Tray 1. The default is ANY SIZE . See Supported paper and print media sizes on page 52 for a complete list of available sizes.
TRAY 1 TYPE	A list of available types appears.	Allows you to configure the paper type for Tray 1. The default is ANY TYPE . See Supported paper types on page 56 for a complete list of available types.
TRAY X SIZE X = 2 or optional 3, 4, or 5	A list of available sizes appears.	Allows you to configure the paper size for Tray 2 or optional Trays 3, 4, or 5. The default size is LETTER or A4 , depending on your country/region. The paper size is detected by the guides in the tray. See Supported paper and print media sizes on page 52 for a complete list of available sizes.
TRAY X TYPE X = 2 or optional 3, 4, or 5	A list of available types appears.	Allows you to configure the paper type for Tray 2 or optional Trays 3, 4, or 5. The default is PLAIN . See Supported paper types on page 56 for a complete list of available types.

Configure device menu

The **CONFIGURE DEVICE** menu allows you to change the default printing settings, adjust the print quality, change the system configuration and I/O options, and reset the default settings.

Printing menu

These settings affect only jobs without identified properties. Most jobs identify all of the properties and override the values set from this menu.

To display: Press **Menu**, select **CONFIGURE DEVICE**, and then select **PRINTING**.

Menu item	Values	Description
COPIES	Range: 1 - 32000	Allows you to set the default number of copies for print jobs. The default number is 1 .
DEFAULT PAPER SIZE	A list of available sizes appears.	Allows you to set the default paper size.
DEFAULT CUSTOM PAPER SIZE		Allows you to set the default size for any custom print job. The default unit of measure is MILLIMETERS.
• UNIT OF MEASURE • X DIMENSION • Y DIMENSION		
OVERRIDE A4/LETTER	NO YES	Allows you to set the product to print an A4 job on letter-size paper when no A4 paper is loaded. The default is YES .
MANUAL FEED	OFF ON	The default is OFF . Setting it to ON makes MANUAL FEED the default for jobs that do not select a tray. You can override this setting in the printer driver.
COURIER FONT	REGULAR DARK	Allows you to select a version of the Courier font. The default is REGULAR .
WIDE A4	NO YES	Allows you to change the printable area of A4 paper so that eighty 10-pitch characters may be printed on a single line. The default is NO .
PRINT PS ERRORS	OFF ON	Allows you to select to print PS error pages. The default is OFF .
PRINT PDF ERRORS	OFF ON	Allows you to select to print PDF error pages. The default is OFF .

PCL sub-menu

This menu configures settings for the printer control language.

To display: Press **Menu**, select **CONFIGURE DEVICE**, select **PRINTING**, and then select **PCL SUBMENU**.

Item	Description
FORM LENGTH	Sets vertical spacing from 5 to 128 lines for default paper size.
ORIENTATION	Allows you to select default page orientation to portrait or landscape.
FONT SOURCE	Selects the font source.
FONT NUMBER	The product assigns a number to each font and lists the numbers on the PCL font list. The range is 0 to 999.
FONT PITCH	Selects the font pitch. This item might not appear, depending on the font selected. The range is 0.44 to 99.99.
SYMBOL SET	Selects any one of several available symbol sets at the product control panel. A symbol set is a unique grouping of all the characters in a font. PC-8 or PC-850 is recommended for line-draw characters.
APPEND CR TO LF	Select YES to append a carriage return to each line-feed that is encountered in backward-compatible PCL jobs (pure text, no job control). Some environments indicate a new line by only the line-feed control code. Use this option to append the required carriage return to each line feed.
SUPPRESS BLANK PAGES	When generating your own PCL, extra form feeds are included that would cause a blank page to be printed. Select YES for form feeds to be ignored if the page is blank.
MEDIA SOURCE MAPPING	The PCL5 MEDIA SOURCE MAPPING command selects an input tray by a number that maps to the various available trays and feeders.

Print Quality menu

To display: Press **Menu**, select **CONFIGURE DEVICE**, and then select **PRINT QUALITY**.

Item	Sub-item	Values	Description
ADJUST COLOR	HIGHLIGHTS	Range from +5 to -5 . Default is 0 .	Adjust the darkness or lightness of highlights on a printed page. Lower values represent lighter highlights on a printed page, and higher values represent darker highlights on a printed page.
	• CYAN DENSITY		
	• MAGNETA DENSITY		
	• YELLOW DENSITY		
	• BLACK DENSITY		
	MIDTONES	Range from +5 to -5 . Default is 0 .	Adjust the darkness or lightness of midtones on a printed page. Lower values represent lighter midtones on a printed page, and higher values represent darker midtones on a printed page.
	• CYAN DENSITY		
	• MAGNETA DENSITY		
	• YELLOW DENSITY		
	• BLACK DENSITY		
	SHADOWS	Range from +5 to -5 . Default is 0 .	Adjust the darkness or lightness of shadows on a printed page. Lower values represent lighter shadows on a printed page, and higher values represent darker shadows on a printed page.
	• CYAN DENSITY		
	• MAGNETA DENSITY		
	• YELLOW DENSITY		
	• BLACK DENSITY		
	RESTORE COLOR VALUES		Restore the color settings by resetting the density values of each color.
SET REGISTRATION			Setting the registration shifts 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.
	PRINT TEST PAGE		Print a test page for setting the registration.
	SOURCE	ALL TRAYS TRAY 1 TRAY 2 TRAY <X> (X = 3, 4, or 5)	Select the source input tray for printing the SET REGISTRATION test 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.
	• X1 SHIFT		When it creates an image, the product scans across the page from side to side as the sheet feeds from top to bottom into the product.
	• X2 SHIFT		
	• Y SHIFT		The scan direction is referred to as X. X1 is the scan direction for the first side of a 2-sided page. X2 is the scan direction for the second side of a 2-sided page. The feed direction is referred to as Y.

Item	Sub-item	Values	Description
AUTO SENSE MODE	TRAY 1 SENSING	FULL SENSING EXPANDED SENSING TRANSPARENCY ONLY	Sets the sensing option for Tray 1 for paper types using AUTO SENSE mode. When FULL SENSING is selected, the product recognizes plain paper, heavy paper, glossy paper, tough paper, and transparencies. The product's media sensor senses every page. When EXPANDED SENSING is selected, the product recognizes plain paper, heavy paper, glossy paper, tough paper, and transparencies. It senses the first page only other than transparencies for which is sensed every page. All trays (1-5) have this capability. When TRANSPARENCY ONLY is selected, the product recognizes only overhead transparency and non-overhead transparency types.
	TRAY <X> SENSING	EXPANDED SENSING TRANSPARENCY ONLY	Sets the sensing option for Tray 2 and optional Trays 3, 4, and 5 for paper types using AUTO SENSE mode. When EXPANDED SENSING is selected, the product recognizes plain paper, glossy paper, tough paper, and transparencies. It senses the first page only other than transparencies for which is sensed every page. All trays (1-5) have this capability. When TRANSPARENCY ONLY is selected, the product recognizes only overhead transparency and non-overhead transparency types.
ADJUST PAPER TYPES • <TYPE> — List of paper types			Sometimes you may need to adjust the product for a particular paper type or environment in order to improve print quality. To override the factory-default print-mode settings for a specific paper type, select it and apply any of the three adjustments described below. In addition, you can map non-HP media types to a different print mode, although this is not recommended.
	BEST GLOSS MODE	OFF (default) ON	Turn this setting ON to maintain stable gloss mode performance. This setting decreases the print speed.
	RESISTANCE MODE	NORMAL (default) UP DOWN	NORMAL is the default setting. The UP setting raises the secondary transfer bias. Use this setting if you are seeing faded images or scattered toner on certain paper types. These problems might be worse on the second side of a printed duplex page. These problems occur more often in high-temperature and high-humidity environments, or with coated paper. Use the DOWN setting if you are using light weight or thin media in a low-temperature and low-humidity environment and you are experiencing highly mottled, distorted, or grainy images, or

Item	Sub-item	Values	Description
			images with toner missing. This setting reduces the secondary transfer bias.
	DISCHARGE MODE	NORMAL (default) ON	Select ON if you are seeing clumps of toner or toner spatter on print jobs. These problems can occur in low-temperature and low-humidity environments, with lightweight or thin paper. The problems might happen more frequently with duplex jobs.
	PRINT MODES	AUTO SENSE MODE (default) NORMAL TRANSPARENCY MODE <ADDITIONAL PRINT MODES>	Allows you to change the print mode for non-HP paper types, which can affect print quality. When AUTO SENSE MODE is enabled, the product media sensor picks the best print mode.
RESTORE MODES			Use this feature to return all paper type-mode settings to the factory-default settings.
OPTIMIZE	PAPER CURL	NORMAL (default) REDUCED	To help reduce paper curl, set this option to REDUCED . This decreases full speed to 10 PPM (instead of 40 ppm) and 3/4 speed to 7.5 ppm (instead of 30 ppm).
	PRE-ROTATION	OFF (default) ON	Set this feature to ON if horizontal streaks appear on pages. Using this feature increases the warm-up time for the product.
	FUSER TEMP	NORMAL (default) ALTERNATE 1 ALTERNATE 2 ALTERNATE 3	Reduces the temperature of the fuser to prevent a hot offset. If you are seeing a faint image of the page repeated at the bottom of the page or on the following page, you should first make sure the Paper Type and Print Mode settings are correct for the type of paper you are using. If you continue to see ghost images on your print jobs, set the Fuser Temp feature to one of the Alternate settings. Try the Alternate 1 setting first and see if it solves the problem. If you continue to see the problem, try Alternate 2 and then Alternate 3. With the Alternate 2 and Alternate 3 settings you may see an extra delay between jobs.
	TRAY 1	NORMAL (default) ALTERNATE	If you are seeing marks on the back side of the paper when printing from Tray 1, set the mode to ALTERNATE . This increases the frequency of the cleaning cycle.
	GLOSS MODE	NORMAL (default) HIGH	Chosen when stable high gloss is required. Set this feature to HIGH for glossy print jobs, such as photos, if you notice the gloss finish decreasing after the first page is printed. This setting reduces the performance for all paper types.
	LIGHT MEDIA	AUTO (default) ON	Prevents the fuser from wrapping with light paper. Set this feature to ON if you are frequently seeing Fuser Delay Jam or Fuser Wrap Jam messages,

Item	Sub-item	Values	Description
			especially when printing on lightweight paper or on jobs with heavy toner coverage.
	MEDIA TEMP	NORMAL (default) REDUCED	Set this feature to REDUCED if you are having problems with paper sticking together in the output bin.
	ENVIRONMENT	OFF (default) ON	Optimizes performance in extreme low-temperature environments. Set this feature to ON if the product is operating in a low-temperature environment and you are having problems with print quality such as blisters in the printed image.
	LINE VOLTAGE	OFF (default) ON	Optimizes performance in low-voltage conditions. Set this feature to ON if the product is operating in a low-voltage environment and you are having problems with print quality such as blisters in the printed image.
	CLEANING FREQUENCY	NORMAL (default) ALTERNATE	Set this feature to ALTERNATE if you are seeing defects in the printed output that repeat at 38 mm (1.5 inch) intervals. This feature increases the frequency at which the C roller is cleaned. Setting this feature to Alternate might also reduce printing speed and increase the frequency of consumable replacement.
	D-BLADE BIAS	NORMAL (default) ALTERNATE	Set this feature to ALTERNATE if you are seeing short white vertical lines in the printed output. The Alternate setting might also cause dark spots in the printed output, so be sure to test this setting on a few print jobs.
	WASTE BIN	NORMAL (default) ALTERNATE	Try setting this feature to ALTERNATE if you are seeing lengthwise toner streaks in your printed output, especially in jobs with low toner coverage.
	BACKGROUND	OFF (default) ON	Select ON if pages are printing with a shaded background. Using this feature can reduce gloss levels.
	HEAVY MODE	30 PPM (default) 24 PPM	The default setting is 30 PPM . Select the 24 PPM option to reduce the speed and improve fusing on heavy paper.
	TRACKING CONTROL	ON (default) OFF	Improves color stability by adjusting the bias voltage. This setting should remain ON .
	RESTORE OPTIMIZE		Use this feature to return all the settings in the Optimize menu to the factory-default values.
	QUICK CALIBRATE NOW		Performs a partial product calibration.
	FULL CALIBRATE NOW		Performs all product calibrations.

Item	Sub-item	Values	Description
CALIBRATE NEUTRALS	CALIBRATION SOURCE	TRAY 1 <SIZE/TYPE> TRAY 2 <SIZE/TYPE> TRAY <X> <SIZE/TYPE>	This menu item affects the toner mixture in order to optimize neutral colors for color print jobs. A special sensor measures color on three specially printed pages from a selected tray and adjusts the color parameters. This corrects for too much or too little cyan, magenta, yellow, or black toner, which improves color consistency. Choose the source tray, paper type, and paper size for the calibration page. To run calibration on different paper types, load the desired paper type in a tray, select this menu item, and then specify the loaded tray.
	CALIBRATION TYPE	<TYPE>	This item is available only if the selected tray type is set to ANY TYPE.
	CALIBRATION SIZE	<SIZE>	This item is available only if the selected tray size is set to ANY SIZE or ANY CUSTOM.
	UNIT OF MEASURE	INCHES MILLIMETERS	The unit of measure to describe a custom paper size. This item is available only if the selected paper size is set to CUSTOM.
	X DIMENSION		The X dimension of the custom paper size. This item is available only if the selected paper size is set to CUSTOM.
	Y DIMENSION		The Y dimension of the custom paper size. This item is available only if the selected paper size is set to CUSTOM.
AUTO CALIBRATE NEUTRALS		ON OFF	This menu item controls whether the CALIBRATE NEUTRALS process is performed automatically. If you select ON, the product performs the calibration automatically whenever environmental conditions indicate that it is required. Three calibration pages are printed. You can recycle these pages when the calibration is complete.
RESOLUTION		Image REt 4800 (default) 1200x600 dpi	Sets the resolution at which the product prints. The default value is Image REt 4800. Try the 1200x600 dpi setting to improve printing for detailed line work or small text.
EDGE CONTROL		OFF LIGHT NORMAL (default) MAXIMUM	The Edge Control setting determines how edges are rendered. Edge control has two components: adaptive halftoning and trapping. Adaptive halftoning increases edge sharpness. Trapping reduces the effect of color-plane misregistration by overlapping the edges of adjacent objects slightly. • OFF turns off both trapping and adaptive halftoning. • LIGHT sets trapping at a minimal level, and adaptive halftoning is on.

Item	Sub-item	Values	Description
			NORMAL is the default trapping setting. Trapping is at a medium level and adaptive halftoning is on. MAXIMUM is the most aggressive trapping setting. Adaptive halftoning is on.
PROCESS CLEANING PAGE			Allows you to create and process a cleaning page for cleaning excess toner off the pressure roller in the fuser. When the cleaning process runs, a blank page is printed. This page can be discarded.

System setup menu

Use the **SYSTEM SETUP** menu to change product- configuration defaults such as sleep mode, product personality (language), and jam recovery.

To display: Press **Menu**, select **CONFIGURE DEVICE**, and then select **SYSTEM SETUP**.

Item	Sub-item	Values	Description
DATE/TIME	DATE	----/[MMM]/[YY] YEAR= [YYYY]/---/[DD] MONTH= [YYYY]/[MMM]/-- DAY=	Allows you to set the correct date.
	DATE FORMAT	YYYY/MMM/DD MMM/DD/YYYY DD/MMM/YYYY	Allows you to choose the order in which the year, month, and day appear in the date.
	TIME	--:[MM] [PM] HOUR= [HH]:-- [PM] MINUTE= [HH]:[MM] -- AM/PM=	Allows you to select from various configurations for the TIME format. Different wizards appear depending on the TIME FORMAT selected.
	TIME FORMAT	12 HOUR 24 HOUR	Allows you to select 12 HOUR or 24 HOUR format.
JOB STORAGE LIMIT		Continuous value Range: 1–100 Default = 32	Allows you to specify the number of Quick Copy jobs that can be stored on the product. The default value is 32. The maximum allowed value is 100.
JOB HELD TIMEOUT		OFF 4 HOURS 1 DAY 1 WEEK	Allows you to set the amount of time that Quick Copy jobs are kept before being automatically deleted from the queue. This menu item only appears when a hard disk is installed. The default value is OFF .
SHOW ADDRESS		AUTO OFF	This item determines whether the product's IP address is shown on the display with the READY message. The default is OFF .

Item	Sub-item	Values	Description
RESTRICT COLOR USE		ENABLE COLOR	Disables or restricts color use. The default is ENABLE COLOR . To use the COLOR IF ALLOWED setting, set up user permissions through the embedded Web server, HP Easy Printer Care, or Web Jetadmin. See Embedded Web server on page 78 , HP Easy Printer Care on page 75 , or Use HP Web Jetadmin software on page 81 .
		COLOR IF ALLOWED	
		DISABLE COLOR	
COLOR/BLACK MIX		AUTO	This menu item establishes how the product switches from color to monochrome (black and white) mode for maximum performance and print cartridge life. AUTO resets the product to the factory default setting. The default is AUTO . Select MOSTLY COLOR PAGES if nearly all of your print jobs are color with high page coverage. Select MOSTLY BLACK PAGES if you print mostly monochrome print jobs, or a combination of color and monochrome print jobs.
		MOSTLY COLOR PAGES	
		MOSTLY BLACK PAGES	
TRAY BEHAVIOR			Use this menu to control how the product handles paper trays and related prompts at the control panel.
	USE REQUESTED TRAY	EXCLUSIVELY FIRST	USE REQUESTED TRAY handles jobs that have specified a specific input tray. Two options are available: ● EXCLUSIVELY: The device never selects a different tray when the user has indicated that a specific tray should be used, even if that tray is empty. This is the factory default setting. ● FIRST: The device can pull from another tray if the specified tray is empty, even though the user specifically indicated a tray for the job.
	MANUALLY FEED PROMPT	ALWAYS UNLESS LOADED	This option controls whether a manual feed message should appear when the type or size for a job does not match the specified tray and the device pulls from the

Item	Sub-item	Values	Description
			multipurpose tray instead. Two options are available: ● ALWAYS: A prompt always appears before using the multipurpose tray. This is the factory default setting. ● UNLESS LOADED: A message appears only if the multipurpose tray is empty.
	PS DEFER MEDIA	ENABLE DISABLED	This option affects how paper is handled when printing from an Adobe PS print driver. ● ENABLED uses HP's paper handling model. ● DISABLED uses the Adobe PS paper handling model.
	SIZE/TYPE PROMPT	DISPLAY DO NOT DISPLAY	This option controls whether the tray configuration message appears whenever a tray is closed. Two options are available: ● DISPLAY: This option shows the tray configuration message when a tray is closed. You can configure the tray settings directly from this message. ● DO NOT DISPLAY: This option prevents the tray configuration message from automatically appearing.
	USE ANOTHER TRAY	ENABLE DISABLE	This option turns on or off the control-panel prompt to select another tray when the specified tray is empty. Two options are available: ● ENABLE: When this option is selected, the user is prompted either to add paper to the selected tray or to choose a different tray. This is the factory default setting. ● DISABLE: When this option is selected, the user is not given the option of selecting a different tray. The device prompts the user to add paper to the tray that was initially selected.
	DUPLEX BLANK PAGES	AUTO YES	This option controls how the device handles two-sided jobs

Item	Sub-item	Values	Description
			(duplexing). Two options are available: • AUTO enables Smart Duplexing, which instructs the device not to process both sides if the second side is blank. This can improve print speed. • YES disables Smart Duplexing and forces the duplexer to flip the sheet of paper even if it is printed on only one side. This might be preferable for certain jobs that use paper types such as letterhead or prepunched paper.
	IMAGE ROTATION	LEFT TO RIGHT RIGHT TO LEFT ALTERNATE	This option allows an image from an optional output accessory to be rotated 180 degrees, so that staples can be placed in the upper corner (usually narrow format devices).
SLEEP DELAY		1 MINUTE 15 MINUTES 30 MINUTES 45 MINUTES 60 MINUTES 90 MINUTES 2 HOURS 4 HOURS	Reduces power consumption when the product has been inactive for the selected period. The default is 60 MINUTES .
WAKE TIME	<DAY OF THE WEEK>	OFF CUSTOM	Allows you to configure the daily wake time for the product to avoid warm-up or calibration time. Select a day of the week and then select CUSTOM . Set the wake time for that day, and then choose whether the wake time should be applied to all days of the week.
OPTIMUM SPEED/ENERGY USAGE		FASTER FIRST PAGE SAVE ENERGY SAVE MOST ENERGY	Sets the fuser cooling behavior. If FASTER FIRST PAGE is selected, power to the fuser is not turned off between jobs. This causes no impact to the first-page-out time. If SAVE ENERGY is selected, power to the fuser is turned off after 55 minutes of idle time. This

Item	Sub-item	Values	Description
			causes minimal impact to the first-page-out time. If SAVE MOST ENERGY is selected, power to the fuser is turned off after each job. This causes the most impact to the first-page-out time.
DISPLAY BRIGHTNESS		Range is 1 through 10.	Sets the brightness of the control panel display. The default is 5 .
PERSONALITY		AUTO PCL PDF PS	Sets the default personality to automatic switching, PCL, PDF, or PS modes. The default is AUTO .
CLEARABLE WARNINGS		JOB ON	Sets whether a warning is cleared on the control panel or when another job is sent. The default is ON .
AUTO CONTINUE		OFF ON	Determines product behavior when the system generates an Auto Continuable error. The default is ON .
REPLACE SUPPLIES		STOP AT LOW STOP AT OUT OVERRIDE AT OUT 1 OVERRIDE AT OUT 2	Sets product behavior when a cartridge is low. The default is STOP AT LOW . This option allows the product to continue printing until a color supply is exhausted. When the product is set to STOP AT OUT , printing pauses until the color supply is replaced. The product displays an "Order supplies" message when a supply is running low and a "Replace supplies" message when a supply has been depleted. To ensure optimal print quality, HP recommends replacing a supply when the "Replace supplies" message is displayed. Replacing the supply at this point can help prevent waste of media or other supplies when one supply begins producing poor print quality. The Override options allow the product to continue using color supplies, such as print cartridges, the image drum, the image transfer kit, the roller kit, and the image fuser kit, that have reached their recommended replacement points.

Item	Sub-item	Values	Description
			CAUTION: Using an Override option may result in unsatisfactory print quality and unavailability of certain features (such as toner remaining information). CAUTION: All print defects or supply failures incurred when an HP supply is used in Override mode are not considered defects in materials or workmanship under the HP Print Cartridge and Image Drum Limited Warranty Statement. For Warranty information, see Print cartridge and image drum limited warranty statement on page 981. The Override options can be enabled or disabled at any time and do not have to be re-enabled for each color supply. The product automatically continues printing when a color supply reaches its recommended replacement point. The message, "Replace supply Override in use," displays on the control panel while a color supply is used in Override mode. When the color supply is replaced with a new one, Override mode is deactivated until another color supply reaches its recommended replacement point. OVERRIDE AT OUT 1 allows printing to continue when a color supply is out, but displays a warning. Printing stops if there is a risk of damage to product components. OVERRIDE AT OUT 2 allows printing to continue when the color supply is out, but displays a warning message. Printing is not stopped even if there is a risk of damage to product components.
SUPPLY INFORMATION	PAGES REMAINING	ON	
	ORDER MESSAGES	OFF	
	LEVEL GAUGE		
ORDER AT		RANGE=0-100%	The user can set the supply percentage remaining at which the ORDER AT message appears. The default is 5%.
COLOR SUPPLY OUT		STOP AUTOCONTINUE BLACK	Sets the COLOR SUPPLY OUT product behavior when a color supply is empty. When the product is set to AUTOCONTINUE BLACK , the product continues

Item	Sub-item	Values	Description
			printing with black toner only. The default is STOP .
JAM RECOVERY		AUTO OFF ON	Sets whether the product will attempt to reprint pages after a jam. The default is AUTO .
LANGUAGE		A listing of available languages appears.	Sets the default language. The default language is ENGLISH .

Output Setup menu

This menu and associated sub-items displays only when an optional output accessory is attached to the product.

To display: Press **Menu**, select **CONFIGURE DEVICE**, and then select **OUTPUT SETUP**.

Item	Sub-item	Values	Description
OUTPUT SETUP			This menu appears when the HP 3-bin Stapler/Stacker Accessory or the HP Booklet Maker/Finisher Accessory is attached.
MULTIFUNC FINISHER or MBM-3 BIN STAPLER	OPERATION MODE	MAILBOX STACKER	Allows you to set the default operation mode. MAILBOX assigns a user or group of users to each output bin. STACKER treats all of the output bins as a single large bin. When one bin gets full, jobs are automatically routed to the next bin.
	STAPLES	NONE ONE LEFT ANGLED ONE RIGHT ANGLED TWO LEFT TWO RIGHT TWO TOP	Sets the default staple selection for documents sent to the device when no staple value is specified.
	STAPLES OUT	STOP CONTINUE	Sets the default behavior when a job specifies stapling and the stapler is out of staples. STOP stops printing if the stapler runs out of staples. CONTINUE allows a job to continue printing even when the device is out of staples.
	OFFSET	OFF ON	Turns the job offset feature on or off. When job offset is on, each copy of a job is shifted to one side in the output bin in order to keep

Item	Sub-item	Values	Description
			each copy separate from the others.
	A4/LETTER STAPLE	NORMAL ALTERNATE 1 ALTERNATE 2	Controls the speed of the print engine to prevent paper jams by using the stapler buffer. With the NORMAL, the engine speed is normal, and the stapler buffer is used. If the ALTERNATE 1 setting is enabled, and the engine is in Autosense Mode, the engine slows down to prevent jams. If the product is NOT in Autosense Mode, the engine performs at normal speed, using the stapler buffer. If the ALTERNATE 2 setting is enabled, the engine always slows down to prevent jams, never using the stapler buffer.
	FOLD LTR-R & A4 - R	–4.0 mm –3.5 mm –3.0 mm –2.5 mm –2.0 mm –1.5 mm –1.0 mm –0.5 mm 0.0 mm 0.5 mm 1.0 mm 1.5 mm 2.0 mm 2.5 mm 3.0 mm 3.5 mm 4.0 mm	Adjusts the fold line for Letter and A4 size paper (booklet maker only).
	FOLD LEGAL & JISB4	–4.0 mm –3.5 mm –3.0 mm	Adjusts the fold line for Legal and JIS B4 size paper (booklet maker only).

Item	Sub-item	Values	Description
		-2.5 mm	
		-2.0 mm	
		-1.5 mm	
		-1.0 mm	
		-0.5 mm	
		0.0 mm	
		0.5 mm	
		1.0 mm	
		1.5 mm	
		2.0 mm	
		2.5 mm	
		3.0 mm	
		3.5 mm	
		4.0 mm	
	FOLD 11X17 & A3	-4.0 mm	Adjusts the fold line for Legal and 11x17 and A3 size paper (booklet maker only).
		-3.5 mm	
		-3.0 mm	
		-2.5 mm	
		-2.0 mm	
		-1.5 mm	
		-1.0 mm	
		-0.5 mm	
		0.0 mm	
		0.5 mm	
		1.0 mm	
		1.5 mm	
		2.0 mm	
		2.5 mm	
		3.0 mm	
		3.5 mm	
		4.0 mm	

I/O menu

Items on the I/O (input/output) menu affect the communication between the product and the computer. If the product contains an HP Jetdirect print server, you can configure basic networking parameters by using this submenu. You can also configure these and other parameters through HP Web Jetadmin or the embedded Web server.

To display: Press **Menu**, select **CONFIGURE DEVICE**, and then select **I/O**.

Item	Sub-item	Values	Description
I/O TIMEOUT		15 SECONDS Range: 5 - 300	Allows you to set the product I/O TIMEOUT in seconds. Use this setting to adjust timeout for the best performance. If data from other ports appears in the middle of your print job, increase the timeout value.

EMBEDDED JETDIRECT MENU See the next table for a list of options.

Table 2-1 Embedded Jetdirect and EIO <X> Jetdirect menus

Item	Sub-item	Values	Description
TCP/IP	ENABLE	OFF	OFF: Disable the TCP/IP protocol.
		ON	ON*: 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.
IPv4 SETTINGS		CONFIG METHOD	Specifies the method that TCP/IPv4 parameters will be configured on the HP Jetdirect print server.
		- BOOTP - DHCP - AUTO IP - MANUAL	Use BootP (Bootstrap Protocol) for automatic configuration from a BootP server. 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. Use Auto IP for automatic link-local IPv4 addressing. An address in the form 169.254.x.x is assigned automatically. Use the MANUAL SETTINGS menu to configure TCP/IPv4 parameters.
		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 - LEGACY	AUTO IP: A link-local IP address 169.254.x.x is set.

Table 2-1 Embedded Jetdirect and EIO <X> Jetdirect menus (continued)

Item	Sub-item	Values	Description
			LEGACY: The address 192.0.0.192 is set, consistent with older HP Jetdirect products.
		DHCP RELEASE	This menu appears if CONFIG METHOD was set to DHCP and a DHCP lease for the print server exists.
		• NO • YES	NO*: The current DHCP lease is saved. YES: The current DHCP lease and the leased IP address are released.
		DHCP RENEW	This menu appears if CONFIG METHOD was set to DHCP and a DHCP lease for the print server exists.
		• NO • YES	NO*: The print server does not request to renew the DHCP lease. YES: The print server requests to renew the current DHCP lease.
		MANUAL SETTINGS	(Available only if CONFIG METHOD is set to MANUAL) Configure parameters directly from the printer control panel:
		• IP ADDRESS • SUBNET MASK • SYSLOG SERVER • DEFAULT GATEWAY • IDLE TIMEOUT	IP ADDRESS: The unique IP address of the printer, where n is a value from 0 to 255. SUBNET MASK: The subnet mask for the printer, 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).
		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 • ON	OFF*: IPv6 is disabled. ON: IPv6 is enabled.
		ADDRESS	Use this item to manually configure an IPv6 address.
		• MANUAL SETTINGS • ADDRESS	Use the MANUAL SETTINGS menu to enable and manually configure a TCP/ IPv6 address. Select ENABLE 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 2-1 Embedded Jetdirect and EIO <X> Jetdirect menus (continued)

Item	Sub-item	Values	Description
		DHCPV6 POLICY - ROUTER SPECIFIED - ROUTER UNAVAILABLE - ALWAYS	ROUTER SPECIFIED: 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.
		SECONDARY DNS	Use this item to specify an IPv6 address for a secondary DNS server that the print server should use.
	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 might need to contact your Internet 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	OFF: Disable the IPX/SPX protocol.
		ON	ON*: Enable the IPX/SPX protocol.
	FRAME TYPE	AUTO	Selects the frame-type setting for your network.
		EN_8023	AUTO: Automatically sets and limits the frame type to the first one detected. EN_8023, EN_II, EN_8022, and EN_SNAP are frame-type selections for Ethernet networks
		EN_II	
		EN_8022	
		EN_SNAP	
APPLETALK	ENABLE	OFF	OFF: Disable the AppleTalk protocol.
		ON	ON*: Enable the AppleTalk protocol.
DLC/LLC	ENABLE	OFF	OFF: Disable the DLC/LLC protocol.
		ON	ON*: Enable the DLC/LLC protocol.
SECURITY	PRINT SEC PAGE	YES	YES: Prints a page that contains the current security settings on the HP Jetdirect print server.
		NO	NO*: A security settings page is not printed.

Table 2-1 Embedded Jetdirect and EIO <X> Jetdirect menus (continued)

Item	Sub-item	Values	Description
	SECURE WEB	HTTPS REQUIRED HTTP/HTTPS OPTIONAL	For configuration management, specify whether the embedded Web server will accept communications using HTTPS (Secure HTTP) only, or both HTTP and HTTPS. HTTPS REQUIRED: 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	KEEP DISABLE	Specify the IPsec or Firewall status on the print server. KEEP: IPsec/Firewall status remains the same as currently configured. DISABLE: IPsec/Firewall operation on the print server is disabled.
	RESET SECURITY	NO YES	Specify whether the current security settings on the print server will be saved or reset to factory defaults. NO*: The current security settings are maintained. YES: Security settings are reset to factory defaults.
DIAGNOSTICS	EMBEDDED TESTS	EXECUTE	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.
		DATA PATH TEST	This test helps to identify data path and corruption problems on an HP postscript level 3 emulation

Table 2-1 Embedded Jetdirect and EIO <X> Jetdirect menus (continued)

Item	Sub-item	Values	Description
			product. It sends a predefined PS 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.
		SELECT ALL TESTS	Select this item to run all the embedded tests. Select YES to run all tests, or select NO to not run all tests.
		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.
	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.
		DEST TYPE	Specify whether the target device is an IPv4 or IPv6 node.
		DEST IPV4	Type the IPv4 address.
		DEST 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.
	PING RESULTS		Use this item to view the ping test status and results using the control panel display.
		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.

Table 2-1 Embedded Jetdirect and EIO <X> Jetdirect menus (continued)

Item	Sub-item	Values	Description
		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 roundtrip- time (RTT), from 0 to 4096 milliseconds, for packet transmission and response.
		RTT MAX	Shows the maximum detected roundtrip- 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.
LINK SPEED		AUTO 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.	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*: 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.)
PRINT PROTOCOLS			Use this item to print a page that lists the configuration of the following protocols: IPX/SPX, Novell NetWare, AppleTalk, DLC/LLC.

Resets menu

The **RESETS** menu allows you to reset factory settings, disable and enable sleep mode, and update the product after new supplies are installed.

To display: Press **Menu**, select **CONFIGURE DEVICE**, and then select **RESETS**.

Item	Values	Description
RESTORE FACTORY SETTINGS		Allows you to clear the page buffer, remove all perishable personality data, reset the printing environment, and return all default settings to factory defaults.
RESET CALIBRATION		Resets calibration values on the formatter.
SLEEP MODE	OFF	If SLEEP MODE is OFF , the product will never enter power save mode and no asterisk will appear next to any item when the user enters the menu item SLEEP DELAY .
	LOW	
	HIGH	
		The LOW setting has a shorter wake-up time than the HIGH setting. The default setting is either LOW or HIGH , depending on your country/region.

Diagnostics menu

The **DIAGNOSTICS** menu allows you to run tests that can help you identify and solve problems with the product.

To display: Press **Menu** and then select **DIAGNOSTICS**.

Item	Sub-item	Values	Description
PRINT EVENT LOG			Prints a report containing the last 50 entries in the product's event log, starting with the most recent.
SHOW EVENT LOG			Displays the last 50 events, starting with the most recent.
PQ TROUBLESHOOTING			Prints a page that includes instructions, pages for each color, a demo page, and a configuration page. These pages can help isolate print-quality problems.
PRINT DIAGNOSTICS PAGE			Prints a page that can assist in diagnosing product problems.
DISABLE CARTRIDGE CHECK			This item allows you to remove a print cartridge to help determine which cartridge is the source of a problem.
PAPER PATH SENSORS			Performs a test on each of the product's sensors to determine if they are working correctly and displays the status of each sensor.
PAPER PATH TEST			Tests the paper-handling features of the product, such as the configuration of the trays.
	PRINT TEST PAGE		Generates a page for testing the paper-handling features. You must define the path for the test in order to test specific paper paths.
	SOURCE	ALL TRAYS TRAY 1 TRAY 2 (Additional trays are shown, if applicable.)	Specifies whether the test page is printed from all trays or from a specific tray.
	DESTINATION	ALL BINS (Additional bins are shown, if applicable.)	Appears if there is an optional output accessory connected to the product. Selects the output option for the test page. You can send the test page to all output bins or only to a specific bin.
	DUPLEX	OFF ON	Determines whether the duplexer is included in the test.

Item	Sub-item	Values	Description
	COPIES	1 10 50 100 500	Determines how many pages should be sent from the specified source as part of the test.
FINISHING PAPER PATH TEST			This item only appears if there is an optional stapler/stacker or booklet maker connected to the product. Tests the paper-handling features on the output accessory.
	STACK	DESTINATION BIN MEDIA SIZE MEDIA TYPE COPIES DUPLEX PRINT TEST PAGE	Sets up the options for testing the stapler/stacker or booklet maker paper path. After setting up all of the options, select PRINT TEST PAGE to run the test.
	STAPLES	FINISHING OPTIONS DESTINATION BIN MEDIA SIZE MEDIA TYPE COPIES DUPLEX PRINT TEST PAGE	Sets up the options for testing the stapler/stacker or booklet maker stapling functions. After setting up all of the options, select PRINT TEST PAGE to run the test.
	BOOKLET MAKER (booklet maker only)	MEDIA SIZE MEDIA TYPE COPIES DUPLEX PRINT TEST PAGE	Sets up the options for testing the booklet-making functions of the booklet maker. After setting up all of the options, select PRINT TEST PAGE to run the test.
MANUAL SENSOR TEST			Performs tests to determine whether the paper path sensors are operating correctly.
MANUAL SENSOR TEST 2			Performs additional tests to determine whether the paper path sensors are operating correctly.
COMPONENT TEST	TRANSFER MOTORS BELT ONLY IMAGE DRUM MOTORS		Activate individual parts independently to isolate noise, leaking, and other hardware issues.

Item	Sub-item	Values	Description
	BLACK LASER SCANNER		
	CYAN LASER SCANNER		
	MAGENTA LASER SCANNER		
	YELLOW LASER SCANNER		
	FUSER MOTOR		
	FUSER PRESSURE RELEASE MOTOR		
	BLACK ALIENATION MOTOR		
	CYAN ALIENATION MOTOR		
	MAGENTA ALIENATION MOTOR		
	YELLOW ALIENATION MOTOR		
	ITB CONTACT/ALIENATION		
	PAPER TRANSPORT MOTOR		
	TRAY 1 PICKUP SOLENOID		
	TRAY 2 PICKUP MOTOR		
	TRAY 2 PICKUP SOLENOID		
	TRAY 3 PICKUP MOTOR		
	TRAY 3 PICKUP SOLENOID		
	TRAY 4 PICKUP MOTOR		
	TRAY 4 PICKUP SOLENOID		
	TRAY 5 PICKUP MOTOR		
	TRAY 5 PICKUP SOLENOID		
	DUPLEXER REVERSE MOTOR		
	DUPLEXER REFEED MOTOR		
	REPEAT	ONCE (default) CONTINUOUS	Allows the user to specify the number of times the device sequences. To terminate the test at any time the user can press Stop .
PRINT/STOP TEST		Range is 0 - 60,000 milliseconds. The default is 0.	Isolates print quality faults more accurately by stopping the product in mid-print cycle, which allows you to see where the image begins to degrade. This causes a jam message that might need to be manually cleared. A service representative should perform this test.
COLOR BAND TEST	PRINT TEST PAGE		Prints a color band test page that is used to identify arcing in the high-voltage power supply.

Item	Sub-item	Values	Description
	COPIES	Range is 1 to 30. The default value is 1.	Allows the user to determine how many copies of the internal page are printed.
FINISHER TESTS			If the optional stapler/stacker or booklet maker is installed, this menu runs tests on specific sensors and components. Different values are displayed, based on the accessory installed.
	MANUAL SENSOR TEST	READ ALL ONCE CONTINUOUS READING	Initiates a diagnostic test of the sensors on the stapler/stacker or booklet maker.
	COMPONENT TESTS	M1 - DELIVER MOTOR (booklet maker only) M2 - FOLDING MOTOR (booklet maker only) M3 - GUIDE MOTOR (booklet maker only) M4 - GUIDE PLATE MOTOR (booklet maker only) M9 - INLET MOTOR (booklet maker only) M31 - ENTRANCE MOTOR M36 - SWING MOTOR M37 - TRAY 1 MOTOR M38 - TRAY 2 MOTOR M39 - PROCESS MOTOR SL1 - FLAPPER 1 SOLENOID (booklet maker only) SL2 - FLAPPER 2 SOLENOID (booklet maker only) SL4 - BOOKLET SOLENOID (booklet maker only) SL5 - SWITCH SOLENOID (booklet maker only) SL31 - ROLLER 1A SOLENOID SL32 - BUFFER SOLENOID SL33 - OUTPUT SOLENOID SL34 - GUIDE SOLENOID	Activates a diagnostic test for the selected motor or solenoid.

Service menu

The SERVICE menu is locked and requires a PIN for access. This menu is intended for use by authorized service personnel. See [Service mode functions on page 508](#).

3 Paper and print media

- [Supported paper and print media sizes](#)
- [Supported paper types](#)
- [Special paper or print media guidelines](#)
- [Load paper and print media](#)
- [Configure trays](#)
- [Choose an output location](#)

Supported paper and print media sizes

 **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	Tray 2	Trays 3, 4, 5
Letter	216 x 279 mm (8.5 x 11 in)	✓	✓ ¹	✓ ¹
Letter Rotated	279 x 216 mm (11 x 8.5 in)	✓	✓ ¹	✓ ¹
Legal	216 x 356 mm (8.5 x 14 in)	✓	✓ ¹	✓ ¹
A4	210 x 297 mm (8.27 x 11.69 in)	✓	✓ ¹	✓ ¹
A4 Rotated	297 x 210 mm (11.69 x 8.27 in)	✓	✓ ¹	✓ ¹
Executive	184 x 267 mm (7.24 x 10.51 in)	✓	✓ ¹	✓ ¹
Executive (JIS)	216 x 330 mm (8.5 x 13 in)	✓	✓	✓
A3	297 x 420 mm (11.69 x 16.54 in)	✓	✓ ¹	✓ ¹
A5	148 x 210 mm (5.83 x 8.27 in)	✓	✓ ¹	✓ ¹
11 x 17	279 x 432 mm (11 x 17 in)	✓	✓ ¹	✓ ¹
12 x 18	305 x 457 mm (12 x 18 in)	✓		✓
B4 (JIS)	257 x 364 mm (10.12 x 14.33 in)	✓	✓ ¹	✓ ¹
RA3	305 x 430 mm (12 x 16.93 in)	✓		✓
SRA3	320 x 450 mm (12.6 x 17.7 in)	✓		✓
B5 (JIS)	182 x 257 mm (7.17 x 10.12 in)	✓	✓ ¹	✓ ¹
8k	270 x 390 mm (10.63 x 15.35 in)	✓	✓	✓
16k	195 x 270 mm (7.68 x 10.63 in)	✓	✓	✓
8K	260 x 368 mm (10.2 x 14.5 in)	✓	✓	✓
16K	184 x 260 mm (7.2 x 10.2 in)	✓	✓	✓
8K	273 x 394 mm (10.7 x 15.5 in)	✓	✓	✓
16K	197 x 273 mm (7.75 x 10.7 in)	✓	✓	✓
Banner	99 to 320 mm x up to 915 mm (4 to 12.6 x up to 36 in)	✓		
Custom	148 x 210 mm to 297 x 432 mm (5.8 x 8.2 to 11.7 x 17 in) ²		✓	
Custom	148 x 210 mm to 297 x 457 mm (5.8 x 8.2 to 12.6 x 18 in) ³			✓

¹ Tray automatically detects paper size.

² Standard sizes within the custom range for Tray 2 are: 8.5 x 13, RA4, SRA4, 8K (270 x 390), 8K (260 x 368), 8K (7.75 x 10.75), 16K (195 x 270), 16K (184 x 260), and 16K (7.75 x 10.75)

³ Standard sizes within the custom range for Trays 3, 4, and 5 are: 8.5 x 13, RA4, SRA4, 8K (270 x 390), 8K (260 x 368), 8K (7.75 x 10.75), 16K (195 x 270), 16K (184 x 260), 16K (7.75 x 10.75), RA3, SRA3, and 12 x 18

Table 3-2 Supported envelopes and postcards

Size	Dimensions	Tray 1	Trays 2, 3, 4, 5
Envelope #9	98 x 225 mm (3.88 x 8.88 in)	✓	
Envelope #10	105 x 241 mm (4.13 x 9.49 in)	✓	
Envelope DL	110 x 220 mm (4.33 x 8.66 in)	✓	
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 C6	162 x 114 mm (6.4 x 4.5 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) ¹	✓	
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) ¹		
Postcard (European)	105 x 148 mm (4.13 x 5.83 in) ¹	✓	
US Index Cards	102 x 152 mm (4 x 6 in), 127 x 177 mm (5 x 7 in), and 127 x 203 mm (5 x 8 in)	✓	

¹ Weights greater than 160 g/m² may not perform well, but will not harm the product.

The following paper sizes are supported with the optional HP 3-bin Stapler/Stacker and HP Booklet Maker/Finisher accessories.

Table 3-3 Supported paper and print media sizes for the optional HP 3-bin Stapler/Stacker and HP Booklet Maker/Finisher accessories

Size	Dimensions	Stacking ²	Angled staple (left-angled)	Angled staple (right-angled)	Two staples (top or side)	Folding	Saddle stitch
Letter	216 x 279 mm (8.5 x 11 in)	✓	✓	✓	✓		
Letter Rotated	279 x 216 mm (11 x 8.5 in)	✓	✓	✓		✓ ¹	✓ ¹
Legal	216 x 356 mm (8.5 x 14 in)	✓	✓	✓		✓ ¹	✓ ¹
A4	210 x 297 mm (8.27 x 11.69 in)	✓	✓	✓	✓		
A4 Rotated	297 x 210 mm (11.69 x 8.27 in)	✓	✓	✓		✓ ¹	✓ ¹
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)	✓	✓	✓	✓	✓ ¹	✓ ¹

Table 3-3 Supported paper and print media sizes for the optional HP 3-bin Stapler/Stacker and HP Booklet Maker/Finisher accessories (continued)

Size	Dimensions	Stacking ²	Angled staple (left-angled)	Angled staple (right-angled)	Two staples (top or side)	Folding	Saddle stitch
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 (Ledger)	279 x 432 mm (11 x 17 in)	✓	✓	✓	✓	✓ ¹	✓ ¹
12 x 18	305 x 457 mm (12 x 18 in)	✓					
B4 (JIS)	257 x 364 mm (10.12 x 14.33 in)	✓	✓	✓	✓	✓ ¹	✓ ¹
RA3	305 x 430 mm (12 x 16.93 in)	✓					
SRA3	320 x 450 mm (12.6 x 17.7 in)	✓					
B5 (JIS)	257 x 182 mm (10.12 x 7.17 in)	✓					
B6 (JIS)	(128 x 182 mm) (5.04 x 7.2 in)	✓					
8K	270 x 390 mm (10.63 x 15.35 in)	✓					
16K	195 x 270 mm (7.68 x 10.63 in)	✓					
8K	260 x 368 mm (10.2 x 14.5 in)	✓					
16K	184 x 260 mm (7.2 x 10.2 in)	✓					
8K	273 x 393.7 mm (10.75 x 15.5 in)	✓					
16K	196.8 x 273 mm (7.75 x 10.75 in)	✓					
Banner	(99 to 320 x up to 915 mm) (12.9 x 36 in)	✓					
Envelope 9#	98.4 x 225.4 mm (3.88 x 8.88 in)	✓					
Envelope 10#	104.77 x 241.3 mm (4.12 x 9.5 in)	✓					
Envelope DL	110 x 220 mm (4.33 x 8.66 in)	✓					
Envelope C5	162 x 229 mm (6.38 x 9.02 in)	✓					

Table 3-3 Supported paper and print media sizes for the optional HP 3-bin Stapler/Stacker and HP Booklet Maker/Finisher accessories (continued)

Size	Dimensions	Stacking ²	Angled staple (left-angled)	Angled staple (right-angled)	Two staples (top or side)	Folding	Saddle stitch
Envelope B5	176 x 250 mm (6.93 x 9.84 in)	✓					
Envelope C6	114 x 162 mm (4.49 x 6.38 in)	✓					
Envelope Monarch	98.42 x 190.5 mm (3.88 x 7.5 in)	✓					
Double Post Card	148 x 200 mm (5.83 x 7.87 in)	✓					

¹ Booklet maker only

² Stacking uses bins 1, 2, and 3 in the stapler/stacker, or bins 1 and 2 in the booklet maker.

Supported paper types

Table 3-4 Tray 1 paper information

Type	Specifications	Quantity	Driver settings	Paper orientation
Paper and cardstock, standard sizes	Range: 60 g/m ² (16 lb) bond to 220 g/m ² (58 lb) bond	Maximum stack height: 10 mm (0.6 in) Equivalent to 100 sheets of 75 g/m ² (20 lb) bond.	Plain or unspecified	Load preprinted or prepunched paper facing down, with the bottom edge leading into the tray, or toward the front of the product
Envelopes	Less than 60 g/m ² (16 lb) bond to 90 g/m ² (24 lb) bond	Up to 10 envelopes	Envelope	Short edge leading, flap toward the back of the product, facing up
Labels	Maximum 0.23 mm (0.009 in) thick	Maximum stack height: 10 mm (0.6 in)	Labels	Side to be printed on facing down
Transparencies	Minimum 0.13 mm (0.005 in) thick	Maximum stack height: 10 mm (0.6 in)	Transparencies	Side to be printed on facing down
Heavy	0.13 mm (0.005 in) thick	Maximum stack height: 10 mm (0.6 in)	Light glossy, glossy, or heavy glossy	Side to be printed on facing down
Glossy	Range: 75 g/m ² (20 lb) bond to 220 g/m ² (58 lb) bond	Maximum stack height: 10 mm (0.6 in)	Light glossy, glossy, or heavy glossy	Side to be printed on facing down
Photo media	60 g/m ² (16 lb) bond to 220 g/m ² (58 lb) bond	Maximum stack height: 10 mm (0.6 in)	Light glossy, glossy, or heavy glossy	Side to be printed on facing down
Cut sheet paper	60 g/m ² (16 lb) bond to 220 g/m ² (58 lb) bond	Maximum stack height: 10 mm (0.6 in)	Plain or unspecified	Side to be printed on facing down
Tough paper	60 g/m ² (16 lb) bond to 220 g/m ² (58 lb) bond	Maximum stack height: 10 mm (0.6 in)	HP Tough paper	Side to be printed on facing down
Banner paper	Range: 75 g/m ² (20 lb) bond to 220 g/m ² (58 lb) bond	Maximum stack height: 10 mm (0.6 in)	Plain or unspecified	Side to be printed on facing down

△ **CAUTION:** Do not use banner media heavier than 120 g/m² with the optional 3-bin stapler/stacker or the optional booklet maker finisher. Heavy banner media is not supported for these products.

Table 3-5 Trays 2, 3, 4, and 5 paper information

Type	Specifications	Quantity	Driver Settings	Paper orientation
Paper and cardstock, standard sizes	Range: 60 g/m ² (16 lb) bond to 220 g/m ² (58 lb) bond	500 sheets of 75 g/m ² (20 lb) bond.	Plain or unspecified	Load preprinted or prepunched paper facing up, with the top toward the front of the tray or toward the left-hand side of the tray.
Labels	Maximum 0.13 mm (0.005 in) thick	Maximum stack height: 54 mm (2.1 in)	Labels	Side to be printed on facing up
Transparencies	Minimum 0.13 mm (0.005 in) thick	Maximum stack height: 54 mm (2.1 in)	Transparencies	Side to be printed on facing up

Table 3-5 Trays 2, 3, 4, and 5 paper information (continued)

Type	Specifications	Quantity	Driver Settings	Paper orientation
Heavy	0.13 mm (0.005 in) thick	Maximum stack height: 54 mm (2.1 in)	Light glossy, glossy, or heavy glossy	Side to be printed on facing up
Glossy	Range: 75 g/m ² (20 lb) bond to 220 g/m ² (58 lb) bond	Maximum stack height: 54 mm (2.1 in)	Light glossy, glossy, or heavy glossy	Side to be printed on facing up
Photo media	60 g/m ² (16 lb) bond to 220 g/m ² (58 lb) bond	Maximum stack height: 54 mm (2.1 in)	Light glossy, glossy, or heavy glossy	Side to be printed on facing up
Cut sheet paper	60 g/m ² (16 lb) bond to 220 g/m ² (58 lb) bond	Maximum stack height: 54 mm (2.1 in)	Plain or unspecified	Side to be printed on facing up
Tough paper	60 g/m ² (16 lb) bond to 220 g/m ² (58 lb) bond	Maximum stack height: 54 mm (2.1 in)	HP Tough paper	Side to be printed on facing up

Trays 2, 3, 4, and 5 capacity: 54 mm (2.126 in) height or 500 sheets of paper, whichever is less. Supported media types include: Cut sheet paper, labels, OHT, glossy paper, glossy film, photo media, and tough paper. Basis Weight: 60-220 g/m² (16-58 lb).

Duplex printing: Provides automatic two-sided printing (printing on both sides of the paper). Not available on the HP Color LaserJet CP6015n model, which cannot be upgraded to duplex printing. The paper size range for automatic duplex printing is 175 to 320 mm (7.2 to 12.6 in) x 210 to 457 mm (8.3 to 18 in). The media weight range is 60 to 220 g/m² (16 to 58 lb)



NOTE: HP Color Laser Presentation Paper, Glossy (Q2546A, Q2547A) is not supported with this product. Using this type of paper can cause a fuser jam that might require the replacement of the fuser. Two recommended alternatives are HP Color LaserJet Presentation Paper, Soft Gloss (Q6541A) and HP Color LaserJet Brochure Paper, Glossy (Q6611A, Q6610A).

NOTE: For a complete list of specific HP-brand paper that this product supports, go to www.hp.com/sbso/product/supplies.

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.

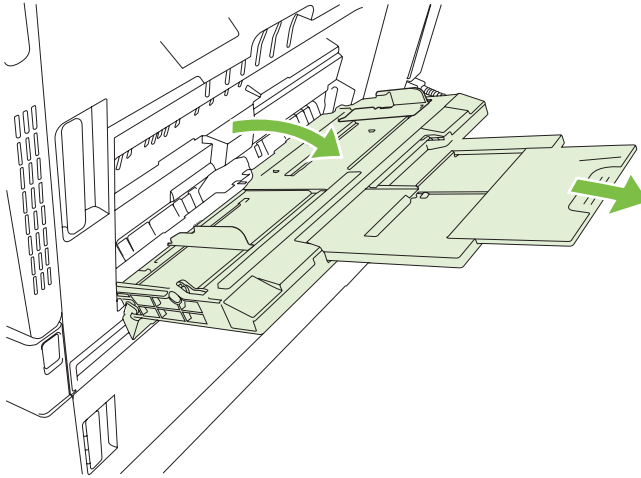
Load paper and print media

You can load different media in the trays and then request media by type or size by using the control panel.

Load Tray 1

△ **CAUTION:** To avoid jams, never add or remove paper from Tray 1 during printing.

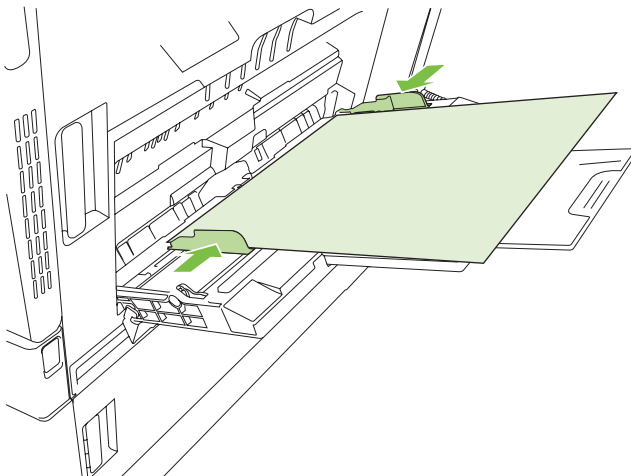
1. Open Tray 1.



2. Set the side guides to the correct width, and pull out the tray extensions to support paper.
3. Load paper in the tray with the side to be printed on face down and the top of the paper or non-postage end facing the front of the printer.

 **NOTE:** For Letter Rotated and A4 Rotated sizes, place the side to be printed on face down, with the top of the page facing into the printer.

4. Make sure the stack fits under the tabs on the guides and does not exceed the load-level indicators.
5. Adjust the side guides so that they lightly touch the paper stack but do not bend it.



Print envelopes

If your software does not automatically format an envelope, specify **Landscape** for page orientation in your software program or printer driver. Use the following guidelines to set margins for return and destination addresses on Commercial #10 or DL envelopes:

Address type	Left margin	Top margin
Return	15 mm (0.6 in)	15 mm (0.6 in)
Destination	102 mm (4 in)	51 mm (2 in)

For envelopes of other sizes, adjust the margin settings accordingly.

Load banner paper into Tray 1

You can print banners from 457 mm (18 in) to 915 mm (36 in) in length and from 99 mm (4 in) to 320 mm (12.6 in) in width.

△ **CAUTION:** Do not use banner media heavier than 120 g/m² with the optional 3-bin stapler/stacker or the optional booklet maker finisher. Heavy banner media is not supported for these products.

Load Trays 2, 3, 4, or 5

Trays 2, 3, 4, and 5 each hold up to 500 sheets of standard paper or a 54 mm (2.13 in) stack of labels or other thick paper.

Load standard-sized paper into Trays 2, 3, 4, or 5

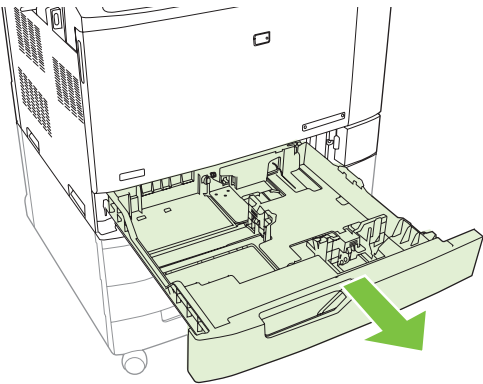
The product automatically detects the following standard sizes of paper in the 500-sheet trays: Letter, Letter Rotated, Legal, Executive, 11x17, A3, A4, A4 Rotated, A5, B4 (JIS), and B5 (JIS).

△ **CAUTION:** Do not print envelopes or unsupported sizes of paper from the 500-sheet trays. Print on these types of paper only from Tray 1.

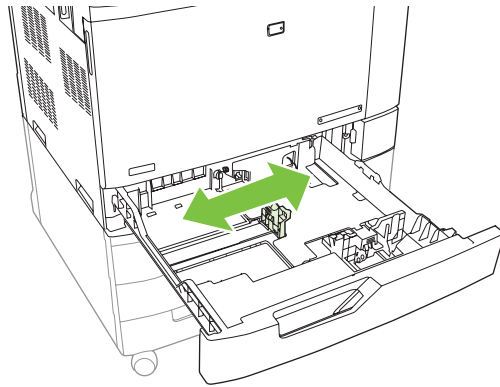
1. Slide the tray from the product.



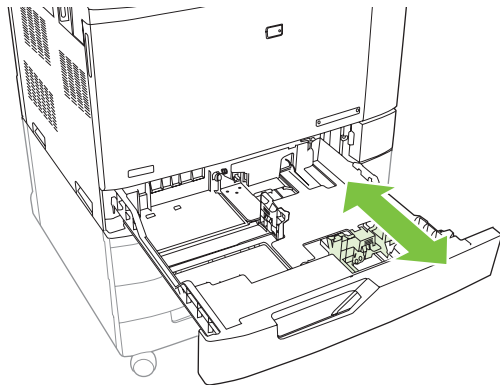
NOTE: Do not open the input tray while it is in use. Doing so can cause jams in the product.



2. Adjust the paper-width guide by squeezing the adjustment latch and sliding the guide to the size of the paper being used.

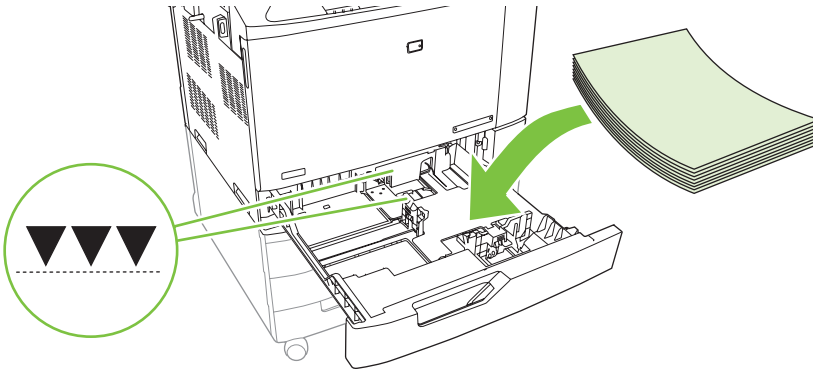


3. Adjust the paper-length guide by squeezing the adjustment latch and sliding the guide to the size of the paper being used.



4. Load paper into the tray face up. Check the paper to verify the guides lightly touch the stack, but do not bend it.

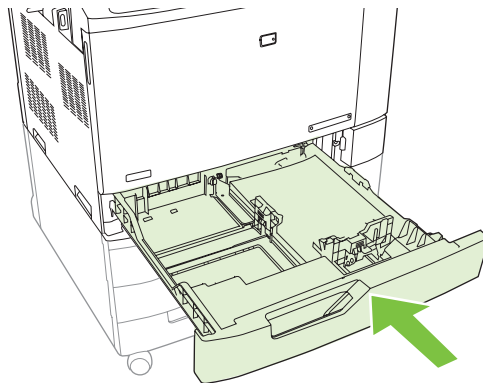
 **NOTE:** To prevent jams, do not overfill the input tray. Be sure the top of the stack is below the tray full indicator.



 **NOTE:** For best performance, fill the tray completely without splitting the ream of paper. Splitting the ream can cause a multifeed problem. The capacity of the paper tray can vary. For example, if you are using 75 g/m² (20 lb) paper, the tray holds a full ream of 500 sheets. If the media is heavier, the tray will not hold a full ream. Do not overfill the tray.

NOTE: If the tray is not adjusted correctly, an error message might appear or the media might jam.

5. Slide the tray into the product. The control panel shows the tray's media type and size. If the configuration is not correct, press the checkmark button ✓ on the control panel. If the configuration is correct, press the back arrow ↶.



Load undetectable standard-sized paper into Trays 2, 3, 4, and 5

The following undetectable standard-sized media is supported in the 500-sheet trays:

- Executive (JIS) (8.5 x 13)
- 12 x 18 (Trays 3, 4, or 5 only)
- B4 (ISO)
- RA3 (Trays 3, 4, or 5 only)

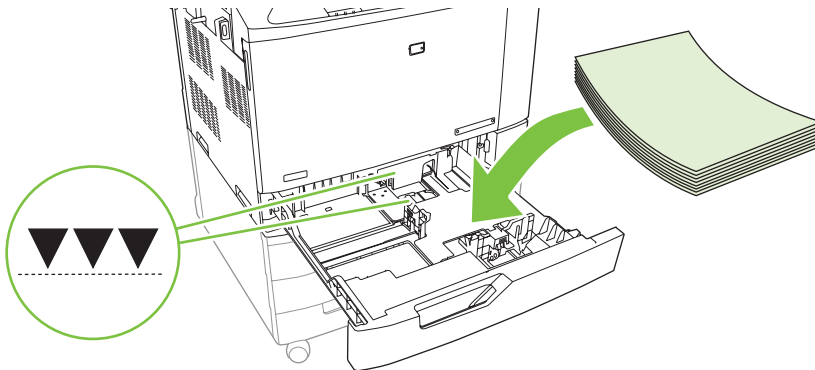
- SRA3 (Trays 3, 4, or 5 only)
- B5 (ISO)
- RA4
- SRA4
- 8K 270 x 390 mm
- 16K 195 x 270 mm
- 8K 260 x 368 mm
- 16K 184 x 260 mm
- 8K 273 x 394 mm
- 16K 197 x 273 mm

△ **CAUTION:** Do not print envelopes or unsupported sizes of paper from the 500-sheet trays. Print on these types of paper only from Tray 1. Do not overfill the input tray or open it while it is in use. Doing so can cause paper jams.

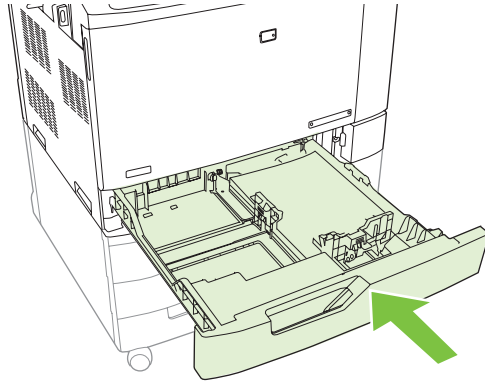
Load custom-size paper into Tray 2, 3, 4, or 5

To use custom media, change the size setting on the control panel to **CUSTOM** and set the unit of measure, X dimension, and Y dimension. See [Configure a tray to match print job settings on page 66](#) for more information.

1. Slide open the tray from the product.
2. Load the print media as described in steps 2 through 4 of the “Load detectable (standard-size) media into Tray 2, 3, 4, or 5” section. Then proceed to step 3 in this procedure.

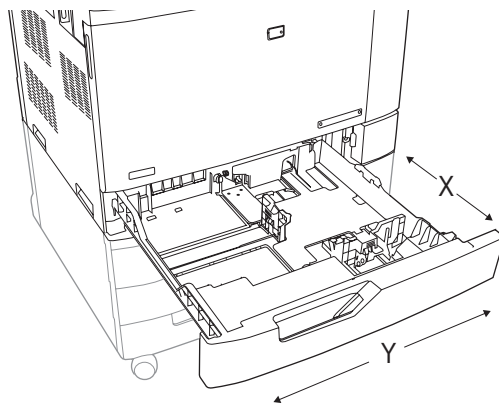


3. Slide the tray into the product. The control panel shows the tray type and size configuration. To specify custom dimensions, or if the type is not correct, press the checkmark button ✓ when the control panel prompts to change the size or type.



4. Select **CUSTOM**, and then input the X and Y dimensions of the custom paper size.

 **NOTE:** Refer to the label in the paper tray, or to the figure below, to determine the X and Y dimensions.

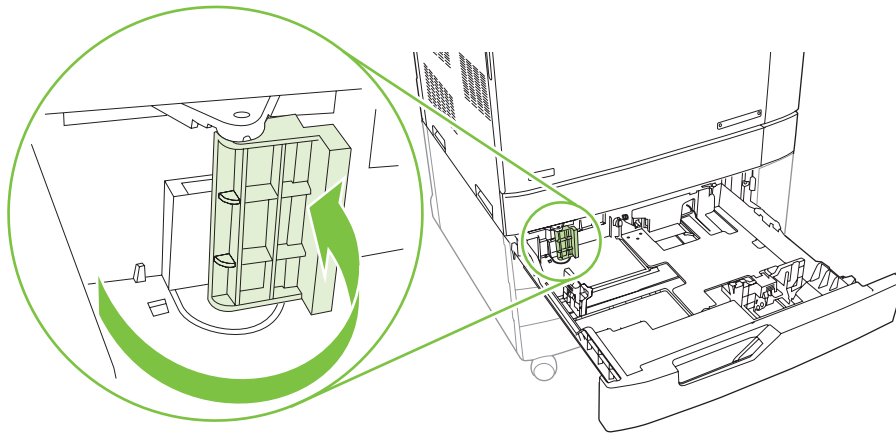


5. If the configuration is correct, press the back arrow ↩.

Load large-size paper into Tray 3, 4, or 5

Use the following instructions if you are loading 11x17, RA3, SRA3, or 12 x 18-sized paper into Tray 3, 4, or 5.

1. Slide open Tray 3, 4, or 5.
2. Adjust the paper width guide by squeezing the adjustment latch and sliding the guide to the size of the paper being used.
3. Load the paper into the tray.
4. Move the paper stop lever to the correct position for the paper being used.



- For SRA3-sized paper, rotate the lever all the way to the left.
 - For A3- or 11x17-sized paper, rotate the lever down into the center position.
 - For RA3- or 12x18-sized paper, rotate the lever all the way to the right.
5. Slide the tray into the product. The control panel shows the tray's media type and size. If the configuration is not correct, press the checkmark button ✓. If the configuration is correct, press the back arrow ↩.

Configure trays

The product automatically prompts you to configure a tray for type and size in the following situations:

- When you load paper into the tray
- When you specify a particular tray or media type for a print job through the printer driver or a software program and the tray is not configured to match the print-job's settings

The following message appears on the control panel: **Tray <X> [type] [size] To change size or type press the checkmark button ✓. To accept settings press the back arrow ↵.**

 **NOTE:** The prompt does not appear if you are printing from Tray 1 and it is configured for **ANY CUSTOM** and **ANY TYPE**.

NOTE: If you have used other HP LaserJet product models, you might be accustomed to configuring Tray 1 to **First** mode or **Cassette** mode. For this product, setting Tray 1 size to **ANY CUSTOM** is equivalent to **First** mode. Setting size for Tray 1 to a setting other than **ANY CUSTOM** is equivalent to **Cassette** mode.

Configure a tray when loading paper

1. Load paper in the tray. Close the tray if you are using Tray 2, 3, 4, or 5.
2. The tray configuration message appears.
3. Press the back arrow ↵ to accept the detected size, or press the checkmark button ✓ to choose a different paper size.
4. If you are modifying the tray configuration, press the down arrow ▼ to highlight the correct size, and then press the checkmark button ✓.

 **NOTE:** The product automatically detects most paper sizes in Trays 2, 3, 4, and 5.

5. If you are modifying the tray configuration, press the down arrow ▼ to highlight the correct type, and then press the checkmark button ✓.

Configure a tray to match print job settings

1. In the software program, specify the source tray, the paper size, and the paper type.
2. Send the job to the product.

If the tray needs to be configured, the **LOAD TRAY X <TYPE> <SIZE>** message appears.

3. Load the tray with the specified type and size of paper, and then close the tray. Press the down arrow ▼ to highlight the correct size, or highlight **CUSTOM**.

To specify a custom size, first press the down arrow ▼ to highlight the correct unit of measure. Then use the numeric keypad to set the X and Y dimensions.

4. When the **TRAY<X> SIZE=<SIZE>** message appears, press the checkmark button ✓ to confirm the size.
5. When the **TRAY<X> TYPE=<TYPE>** message appears, press the checkmark button ✓ to confirm the type and continue with the job.

Configure a tray by using the Paper Handling menu

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

1. Press **Menu**.
2. Press the down arrow ▼ to highlight **PAPER HANDLING**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight the size or type setting for the desired tray, and then press the checkmark button ✓.
4. Press the up arrow ▲ or the down arrow ▼ to highlight the size or type. If you select a custom size, select the unit of measure, and then use the numeric keypad to set the X dimension and the Y dimension.
5. Press the checkmark button ✓ to save your selection.
6. Press the back arrow ↵.
7. Press the back arrow ↵ again.

Automatic media type sensing (auto sense mode)

The automatic media type sensor functions only when that tray is configured to ANY TYPE. Configuring a tray to any other type, such as Bond or Glossy, deactivates the media sensor in that tray.

The HP Color LaserJet CP6015 Series printers can automatically classify many paper types into one of the following categories:

- Plain
- Transparency
- Glossy
- Glossy film (tough paper)
- Heavy

For more control, a specific type must be selected in the job or configured in a tray.

Auto-sense settings

Full sensing

- The product recognizes plain and heavy paper, transparencies, glossy paper, and tough paper.
- The product stops every page to sense the type.
- This is the slowest mode.
- Only available for Tray 1

Expanded sensing (default)

- The product recognizes plain and heavy paper, transparencies, glossy paper, and tough paper.
- Each time the product begins a print job, it stops the first page to sense the type.

- The product assumes that the second and all subsequent pages are of the same media type as the first page.
- This is the second-fastest mode, and is useful for using stacks of the same media type.
- Available for all trays

Transparency only

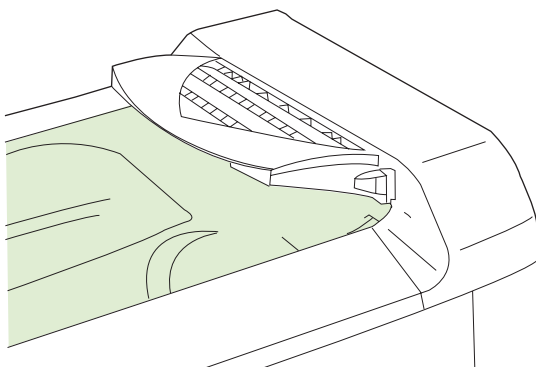
- The product does not stop any pages for sensing but distinguishes between transparencies (Transparency mode) and paper (Normal mode).
- This is the fastest mode and is useful for high-volume printing in Normal mode.
- This mode is active automatically all the time in all trays even if one of the other two modes is selected.

For more information about setting these options, see [Print Quality menu on page 24](#)

Choose an output location

Standard output bin

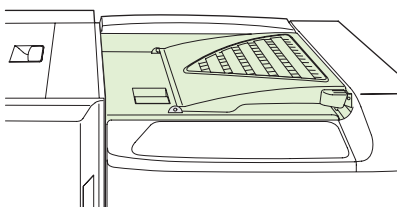
The product has a standard output bin for printed pages.



When you send print jobs to the product from a computer, the output is routed to the standard output bin or to one of the output bins on the optional 3-bin stapler/stacker or booklet maker finisher.

Optional output accessories

An optional stapler/stacker or booklet maker can be installed with the product. When an accessory is installed, an output accessory bridge is also added on top of the product in order to route the print jobs to the accessory output bins.



3-bin stapler/stacker features

Table 3-6 3-bin stapler/stacker features

Job offset	Each copy of a job is shifted to one side in the output bin in order to keep each copy separate from the others. (Supported paper sizes: A3, A4, A4 rotated, A5, B4, B5, Ledger, Legal, Letter, Letter rotated, Statement.)
Two operation modes	Mailbox Mode assigns each bin to a user or group of users, and Stacker Mode uses all three output bins for all print jobs — when one bin is full, jobs are routed to the next bin.
Stapler	Built-in stapler staples jobs up to 50 sheets in size. Pages can be stapled in one position at the front, in one position at the back, or at two positions at the side or top.
Large-capacity output bins	The stacker has three bins: a 100-sheet bin, a 500-sheet bin, and a 1000-sheet bin.

Booklet maker finisher features

Table 3-7 Booklet-maker finisher features

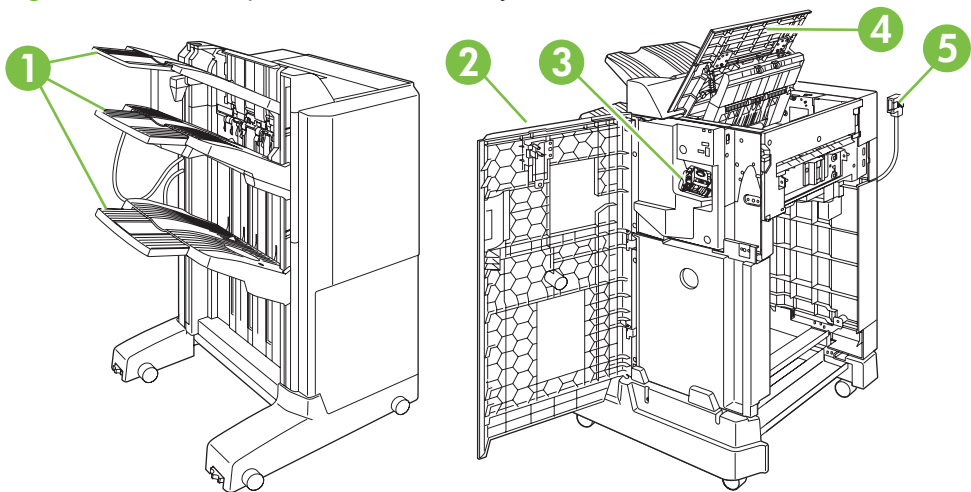
Booklet-making	The booklet-making feature staples and folds print jobs of 2 to 15 pages into a booklet.

Table 3-7 Booklet-maker finisher features (continued)

Folding	Single-sheet print jobs can be automatically folded in the center.
Job offset	Each copy of a job is shifted to one side in the output bin in order to keep each copy separate from the others. (Supported paper sizes: A3, A4, A4 rotated, A5, B4, B5, Ledger, Legal, Letter, Letter rotated, Statement.)
Two operation modes	Mailbox Mode assigns each bin to a user or group of users, and Stacker Mode uses both output bins for all print jobs — when the top bin is full, jobs are routed to the next bin.
Stapler	Built-in stapler staples jobs up to 50 sheets in size. Pages can be stapled in one position at the front, in one position at the back, or at two positions at the side or top.
Large-capacity output bins	The stacker has three bins: two 1000-sheet bins and one bin that can hold up to 25 saddle-stitched booklets.

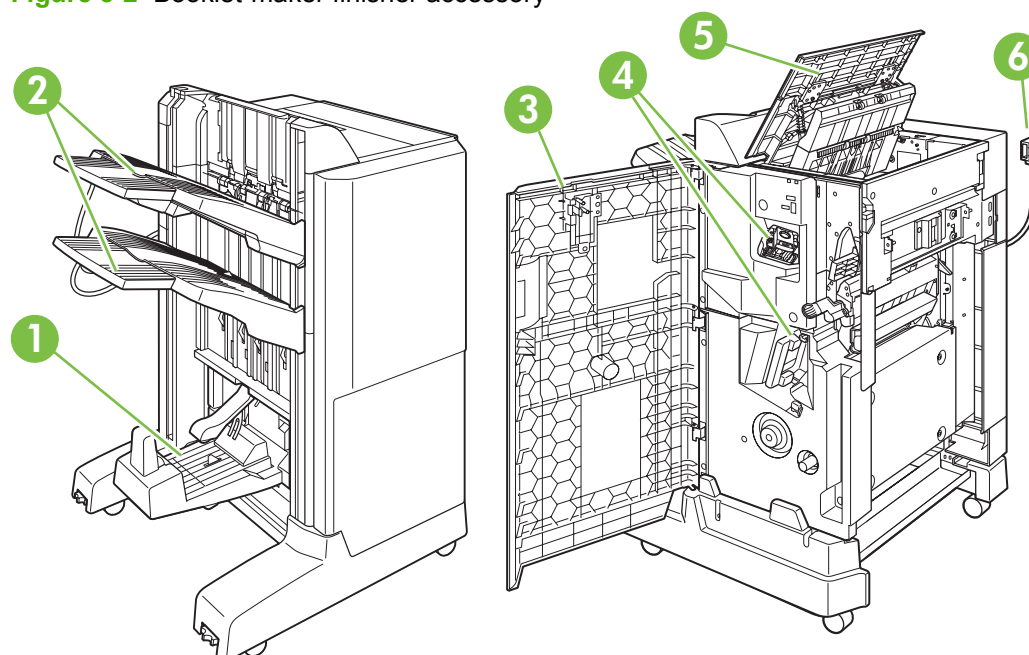
Accessory walkaround

Figure 3-1 3-bin stapler/stacker accessory



1	Output bins
2	Front door
3	Stapler unit
4	Top cover
5	Connection cable

Figure 3-2 Booklet-maker finisher accessory



1	Booklet output bin
2	Stacking output bins
3	Front door
4	Stapler units
5	Top cover
6	Connection cable

Configure the accessory operation mode

Select the operating mode at the control panel

You can set the operating mode for the 3-bin stapler/stacker or the booklet maker finisher at the product control panel.

1. At the control panel, press **Menu**.
2. Press the down arrow ▼ to highlight the **CONFIGURE DEVICE** menu, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight the **MBM-3 BIN STAPLER** menu or **MULTIFUNCT FINISHER**, and then press the checkmark button ✓.

4. Press the down arrow ▼ to highlight **OPERATION MODE**, and then press the checkmark button ✓.
5. Select the operation mode that you want to use.
 - When Mailbox Mode is used, each bin is assigned to a user or group of users. Every time a user sends a print job, the job is routed to the assigned bin.
 - When Stacker Mode is used and the optional 3-bin stapler/stacker is installed, the three bins act as a single bin. When one bin is full, jobs are automatically routed to the next bin. When Stacker Mode is used and the booklet maker finisher is installed, the two upper bins act as a single bin, and the third bin is reserved for booklets.



NOTE: Use the product embedded Web server to assign output bins to users or groups of users. For more information see [Embedded Web server on page 78](#)

Select the operating mode in the printer driver (Windows)

1. Click the **Start** button, point to **Settings**, and then click **Printers** (for Windows 2000) or **Printers and Faxes** (for Windows XP).
2. Right-click the HP product icon, and then click **Properties** or **Printing Preferences**.
3. Click the **Device Settings** tab.
4. Perform one of the following actions:

For automatic configuration: under **Installable Options**, click **Update Now** in the **Automatic Configuration** list.

-or-

For manual configuration: under **Installable Options**, select the appropriate operation mode in the **Accessory Output Bin** list.
5. Click **Apply** to save the settings.

Select the operating mode in the printer driver (Mac OS X)

1. In the **Apple** menu, click **System Preferences**.
2. In the **System Preferences** box, click **Print and Fax**.
3. Click **Set Up Printers**. A **Printer List** displays.
4. Select the HP product, and then click **Show Info** on the **Printers** menu.
5. Select the **Installable Options** panel.
6. In the **Accessory Output Bins** list, select correct accessory.
7. In the **Mailbox Mode** list, select the appropriate operational mode, and then click **Apply Changes**.

4 Manage and maintain the product

- [Information pages](#)
- [HP Easy Printer Care](#)
- [Embedded Web server](#)
- [Use HP Web Jetadmin software](#)
- [Security features](#)
- [Manage supplies](#)
- [Replace supplies](#)
- [Clean the product](#)
- [Upgrade the firmware](#)
- [Set the real-time clock](#)

Information pages

Information pages provide details about the product and its current configuration. Use the following procedure to print the information pages.

1. Press **Menu**.
2. Press the down arrow ▼ to highlight INFORMATION, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight the required information, and then press the checkmark button ✓ to print.

For more information about the available information pages, see [Information menu on page 20](#).

HP Easy Printer Care

Open the HP Easy Printer Care software

Use one of the following methods to open the HP Easy Printer Care software:

- On the **Start** menu, select **Programs**, select **Hewlett-Packard**, select **HP Easy Printer Care**, and then click **Start HP Easy Printer Care**.
- In the Windows system tray (in the lower-right corner of the desktop), double-click the HP Easy Printer Care icon.
- Double-click the desktop icon.

HP Easy Printer Care software sections

HP Easy Printer Care software can provide information about multiple HP products that are on your network as well as any products that are directly connected to your computer. Some of the items that are in the following table might not be available for every product.

The Help button (?) in the upper-right corner of each page provides more detailed information about the options on that page.

Section	Options
Device List tab When you open the software, this is the first page that appears. NOTE: To return to this page from any tab, click My HP Printers in the left side of the window.	• Devices list: Shows the products that you can select. NOTE: The product information appears either in list form or as icons, depending on the setting for the View as option. • The information on this tab includes current alerts for the product. • If you click a product in the list, the HP Easy Printer Care opens the Overview tab for that product.
Compatible Printers	Provides a list of all the HP products that support HP Easy Printer Care software.
Find Other Printers window Add more products to the My HP Printers list	Click the Find Other Printers link in the Devices list to open the Find Other Printers window. The Find Other Printers window provides a utility that detects other network printers so that you can add them to the My HP Printers list and then monitor those products from your computer.
Overview tab Contains basic status information for the device	• Device Status section: This section shows product-identification information and the product status. It indicates product-alert conditions, such as an empty print cartridge. After you correct a problem with the product, click the refresh button  in the upper-right corner of the window to update the status. • Supplies Status section: Shows detailed supplies status, such as the percentage of toner remaining in the print cartridge and the status of the paper that is loaded in each tray. • Supplies Details link: Opens the supplies status page to view more detailed information about product supplies, ordering information, and recycling information.

Section	Options
Support tab Provides links to support information	• Device Status section: This section shows product-identification information and the product status. It indicates product-alert conditions, such as an empty print cartridge. After you correct a problem with the product, click the refresh button  in the upper-right corner of the window to update the status. • Device Management section: Provides links to information about HP Easy Printer Care, to advanced product settings, and to product usage reports. • Troubleshooting and Help: Provides links to tools that you can use to resolve problems, to online product support information, and to online HP experts.
Settings tab Configure product settings, adjust print-quality settings, and find information about specific product features NOTE: This tab is not available for some products.	• About: Provides general information about this tab. • General: Provides information about the product, such as the model number, serial number, and the settings for date and time, if they are available. • Information Pages: Provides links to print the information pages that are available for the product. • Capabilities: Provides information about product features, such as duplexing, the available memory, and the available printing personalities. Click Change to adjust the settings. • Print Quality: Provides information about print-quality settings. Click Change to adjust the settings. • Trays / Paper: Provides information about the trays and how they are configured. Click Change to adjust the settings. • Restore Defaults: Provides a way to restore the product settings to the factory defaults. Click Restore to restore the settings to the defaults.
HP Proactive Support NOTE: This item is available from the Overview and Support tabs.	When enabled, HP Proactive Support routinely scans your printing system to identify potential problems. Click the more info link to configure how frequently the scans occur. This page also provides information about available updates for product software, firmware, and HP printer drivers. You can accept or decline each recommended update.
Supplies Ordering button Click the Supplies Ordering button on any tab to open the Supplies Ordering window, which provides access to online supplies ordering. NOTE: This item is available from the Overview and Support tabs.	• Ordering list: Shows the supplies that you can order for each product. To order a certain item, click the Order check box for that item in the supplies list. You can sort the list by product, or by the supplies that need to be ordered the soonest. The list contains supplies information for every product that is in the My HP Printers list. • Shop Online for Supplies button: Opens the HP SureSupply Web site in a new browser window. If you have checked the Order check box for any items, the information about those items can be transferred to the Web site, where you will receive information on options for purchasing your selected supplies. • Print Shopping List button: Prints the information for the supplies that have the Order check box selected.
Alert Settings link NOTE: This item is available from the Overview and Support tabs.	Click Alert Settings to open the Alert Settings window, in which you can configure alerts for each product. • Alerting is on or off: Activates or deactivates the alerts feature. • Printer Alerts: Select the option to receive alerts for critical errors only, or for any error. • Job Alerts: For products that support it, you can receive alerts for specific print jobs.
Color Access Control	Use this feature to permit or restrict color printing.

Section	Options
NOTE: This item is available only for HP color products that support Color Access Control.	
NOTE: This item is available from the Overview and Support tabs.	

Embedded Web server

Use the embedded Web server to view product status, configure product network settings, and to manage printing functions from your computer instead of from the product control panel. The following are examples of what you can do using the embedded Web server:

 **NOTE:** When the product is directly connected to a computer, use the HP Easy Printer Care to view the product status instead of the embedded Web server.

- View product status information.
- Determine the remaining life for all supplies and order new ones.
- 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.

To use the embedded Web server, you must have Microsoft Internet Explorer 5.01 or later or Netscape 6.2 or later for Windows, Mac OS, and Linux (Netscape only). Netscape Navigator 4.7 is required for HP-UX 10 and HP-UX 11. The embedded Web server works when the product is connected to an IP-based network. The embedded Web server does not support IPX-based product connections. You do not have to have Internet access to open and use the embedded Web server.

When the product is connected to the network, the embedded Web server is automatically available.

 **NOTE:** For complete information about using the embedded Web server, see the *Embedded Web Server User Guide*, which is on the CD that came with the product.

Open the embedded Web server by using a network connection

1. In a supported Web browser on your computer, type the product 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 74](#).

 **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 the following tabs that contain settings and information about the product:
 - **Information** tab
 - **Settings** tab
 - **Networking** tab

See [Embedded Web server sections on page 79](#) 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, click Shop for Supplies in the Other Links area on the left side of the window. • 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. • Diagnostics page: Allows you to name the product, show the company name, assign an asset number to the product, and name the primary contact who manages the product. An HP-authorized support person might ask for this information. • Device Information: Shows the product network name, address, and model information. To customize these entries, click Device Information on the Settings tab. • Control Panel: Shows messages from the control panel, such as Ready or Sleep mode on. • Print: Allows you to send print-ready jobs to the product.
Settings tab Provides the ability to configure the product from your computer	• Configure Device: Allows you to configure product default settings. This page contains the traditional menus found on the control-panel display. • E-mail Server: Network only. Used in conjunction with the Alerts page to set up 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. • 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.

Tab or section	Options
	• Wake Time: Allows you to set or edit a wake time for the product to become ready. • Restrict Color: Allows you to permit or restrict color printing. You can specify permissions for individual users or for jobs that are sent from specific software programs. 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.
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.
Other links Contains links that connect you to the Internet	• HP Instant Support™: Connects you to the HP Web site to help you find solutions to product problems. • Shop for Supplies: Connects to the HP SureSupply Web site, where you will receive information on options for purchasing original HP supplies, such as print cartridges and paper. • Product Support: Connects to the support site for the product, from which you can search for help regarding various topics. • Show Me How: Connects to information that demonstrates specific tasks for the product. NOTE: You must have Internet access in order to use any of these links. If you use a dial-up connection and did not connect when you first opened the embedded Web server, you must connect before you can visit these Web sites. Connecting might require that you close the embedded Web server and reopen it.

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.

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.

Security features

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

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

Secure the embedded Web server

Assign a password for access to the embedded Web server so that unauthorized users cannot change the product settings.

1. Open the embedded Web server. See [Embedded Web server on page 78](#).
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

To protect deleted data from unauthorized access on the product hard drive, use the Secure Disk Erase feature in the HP Web Jetadmin software. This feature can securely erase print 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. Access to the file is removed, but actual data is retained on the disk until it is overwritten by subsequent data-storage operations. This is the fastest mode. Non-Secure Fast Erase is the default erase mode.
- **Secure Fast Erase.** Access to the file is removed, and the data is overwritten with a fixed identical character pattern. This is slower than Non-Secure Fast Erase, but all data is overwritten. Secure Fast Erase meets the 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 mode. In addition, data is repetitively overwritten by using an algorithm that prevents any residual data persistence. This mode will impact performance. Secure Sanitizing Erase meets the U.S. Department of Defense 5220-22.M requirements for the sanitization of disk media.

Data affected

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



NOTE: Stored jobs will be 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 will 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.

Additional Information

For additional information about the HP Secure Disk Erase feature, see the HP support flyer or go to www.hp.com/go/webjetadmin.

Job storage

To securely print a private job, use the personal job feature. The job can only be printed when the correct PIN is entered at the control panel.

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 81](#).)

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.

Manage supplies

Use genuine HP print cartridges for the best printing results.

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.

HP policy on non-HP print cartridges

Hewlett-Packard Company cannot recommend the use of non-HP print cartridges, either new or remanufactured.

 **NOTE:** Any damage caused by a non-HP print cartridge is not covered under the HP warranty and service agreements.

To install a new HP print cartridge, see [Change print cartridges on page 86](#). To recycle the used cartridge, follow the instructions included with the new cartridge.

HP fraud hotline and Web site

Call the HP fraud hotline (1-877-219-3183, toll-free in North America) or go to www.hp.com/go/anticounterfeit when you install an HP print cartridge and the control-panel message says the cartridge is non-HP. HP will help determine if the cartridge is genuine and take steps to resolve the problem.

Your print cartridge might not be a genuine HP print cartridge if you notice the following:

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

Replace supplies

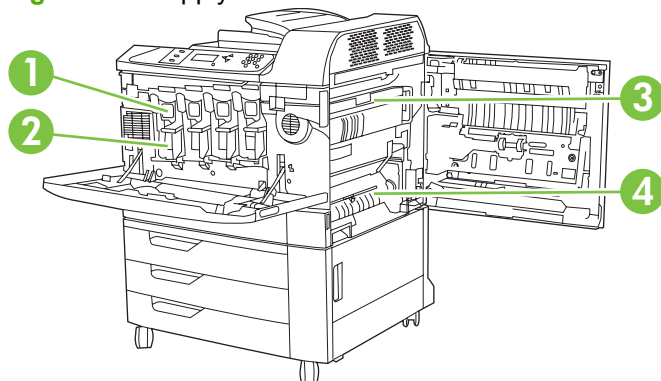
When you use genuine HP supplies, the product automatically notifies you when supplies are nearly depleted. The notification to order supplies allows ample time to order new supplies before they need to be replaced.

Locate supplies

Supplies are identified by their labeling and their blue plastic handles.

The following figure illustrates the location of each supply item.

Figure 4-1 Supply item locations



1	Print cartridges
2	Image drums
3	Fuser
4	Transfer unit
5	Transfer roller

Supply replacement guidelines

To facilitate the replacement of supplies, keep the following guidelines in mind when setting up the product.

- Allow sufficient space in the front and on the right side of the product for removing supplies.
- The product should be located on a flat, sturdy surface.

For instructions on installing supplies, see the installation guides provided with each supply item or see more information at www.hp.com/go/cljcp6015_software. When you connect, select **Solve a Problem**.

△ **CAUTION:** Hewlett-Packard recommends the use of genuine HP products in this product. Use of non-HP products may cause problems requiring service that is not covered by the Hewlett-Packard extended warranty or service agreements.

Approximate replacement intervals for supplies

The following table lists the estimated replacement intervals for supplies and the control panel messages that prompt when to replace each item. Usage conditions and print patterns may cause results to vary.

Item	Printer message	Page count	Approximate time period
Print cartridges	REPLACE <COLOR> CARTRIDGE	Black: 16,500 pages ¹	Black: 3 months
		Cyan, magenta, or yellow: 21,000 pages ¹	Cyan, magenta, or yellow: 4 months
Image drums	REPLACE <COLOR> DRUM	35,000 pages ¹	
Image transfer kit	REPLACE TRANSFER KIT	150,000 pages ²	36 months
Image fuser kit	REPLACE FUSER KIT	100,000 pages	25 months
Roller kit	REPLACE ROLLER KIT	150,000 pages	36 months
Stapler cartridge	REPLACE STAPLE CARTRIDGE	5000 staples	
Booklet maker staple cartridges	REPLACE STAPLE CARTRIDGES 2 AND 3	2,000 booklets	

¹ Cartridge yield figures are based on ISO standard testing.

² Approximate life is based on 4,000 pages per month.

Change print cartridges

When a print cartridge approaches the end of its useful life, the control panel displays a message recommending that you order a replacement. The product can continue to print using the current print cartridge until the control panel displays a message instructing you to replace the cartridge.

The product uses four colors and has a different print cartridge for each color: black (K), magenta (M), cyan (C), and yellow (Y).

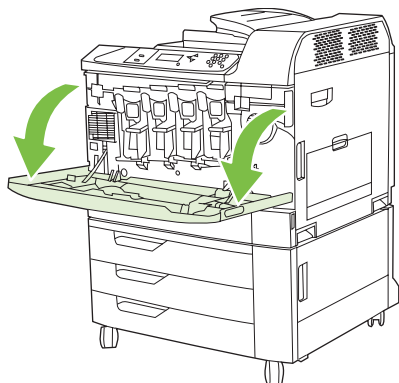
Replace a print cartridge when the control panel displays a **REPLACE <COLOR> CARTRIDGE** message. The control panel display will also indicate the color that should be replaced (if a genuine HP cartridge is currently installed). Replacement instructions are included in the print-cartridge box.

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

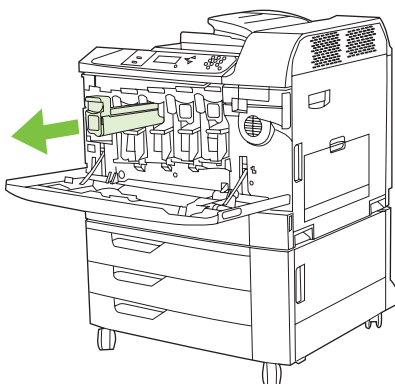
📄 **NOTE:** Information about recycling used print cartridges is on the print-cartridge box.

Replace print cartridges

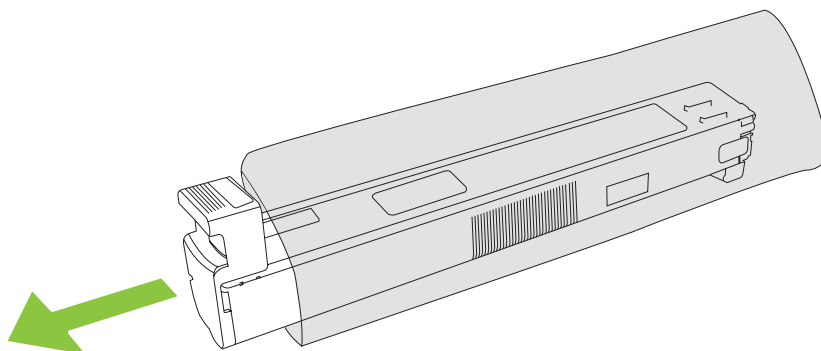
1. Grasp the grips on the sides of the front door and pull down to open.



2. Grasp the handle of the used print cartridge and pull out to remove.

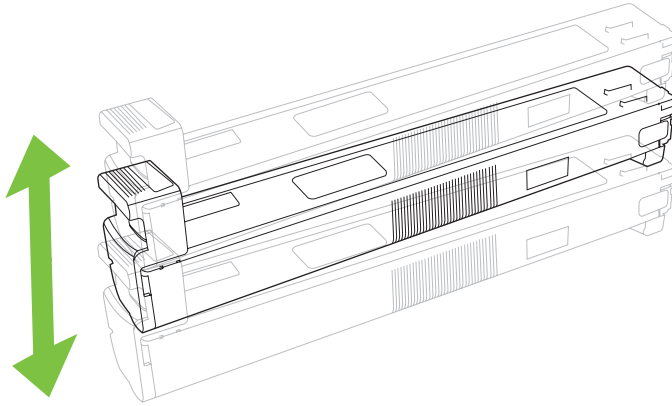


3. Store the used print cartridge in a protective bag. Information about recycling used print cartridges is on the print-cartridge box.
4. Remove additional print cartridges in the same manner.
5. Remove the new print cartridge from its protective bag.

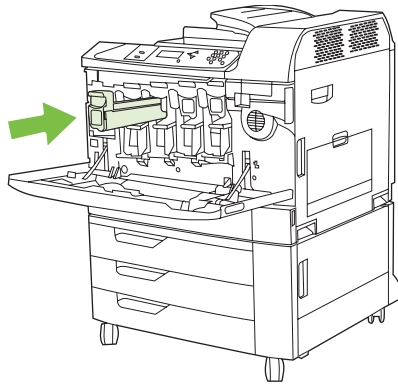


 **NOTE:** Store the protective bag in a secure place for future use.

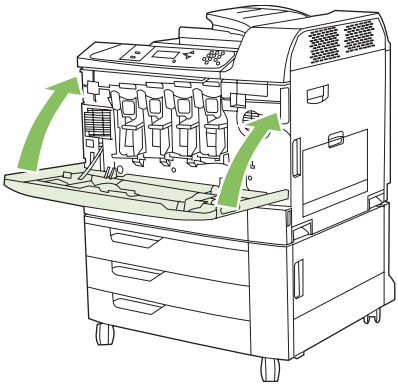
6. Hold both sides of the cartridge and shake up and down 5-6 times.



7. Align the print cartridge with its slot and insert the print cartridge until it clicks into place.



8. Insert additional print cartridges in the same manner.
9. Grasp the grips on the sides of the front door and lift up to close.



To recycle the used print cartridge, follow the instructions included with the new print cartridge.

Change image drums

When an image drum approaches the end of its useful life, the control panel displays a message recommending that you order a replacement. The product can continue to print using the current image drum until the control panel displays a message instructing you to replace the image drum.

The product uses four colors and has a different image drums for each color: black (K), magenta (M), cyan (C), and yellow (Y).

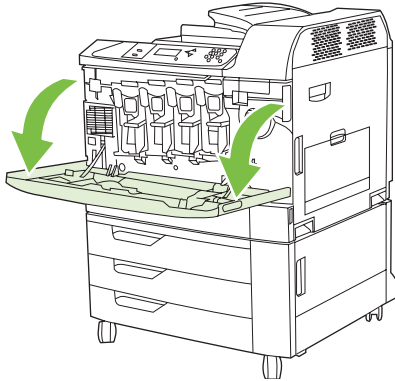
Replace an image drum when the control panel displays **REPLACE <COLOR> DRUM** message. The control-panel display also indicates the color that should be replaced (if a genuine HP cartridge is currently installed). Replacement instructions are included in the image drum box.

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

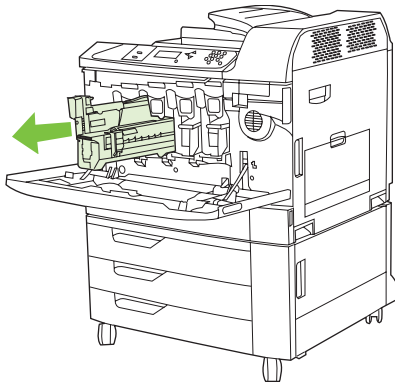
NOTE: Information about recycling used image drums is on the image drum box.

Replace image drums

1. Grasp the grips on the sides of the front door and pull down to open.



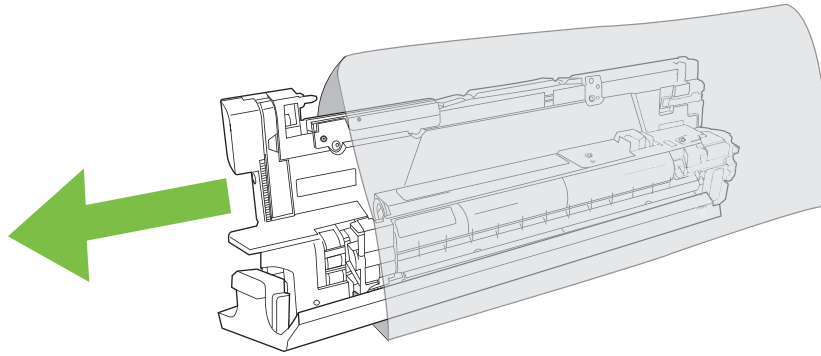
2. With one hand, lift and slowly pull the used image drum out of the product. Grasp the blue handle with your other hand when accessible.



 **NOTE:** If reusing the same image drum, do not touch the green cylinder on the bottom of the drum because it can damage the drum.

3. Store the used image drum in a protective bag. Information about recycling used image drums is on the image drum box.
4. Remove additional image drums in the same manner.

5. Remove the new image drum from its protective bag.

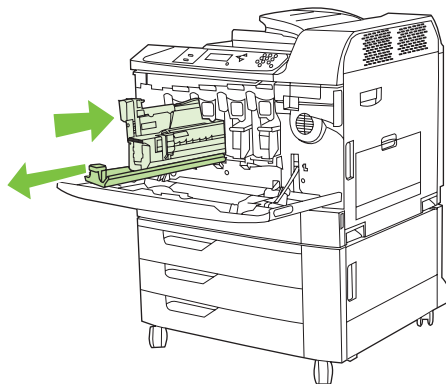


 **NOTE:** Store protective bag in a secure place for future use.

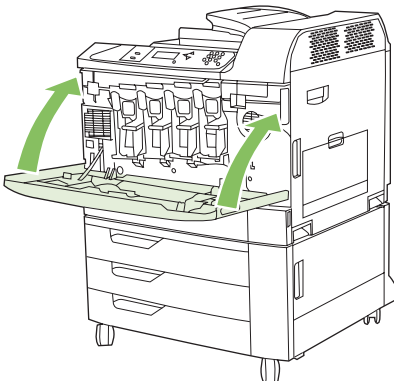
NOTE: Do not shake the image drum.

NOTE: Do not touch the green cylinder on the bottom of the image drum because it can damage the drum.

6. Align the image drum with the correct slot and insert the image drum until it clicks into place. The gray protective cover on the bottom of the drum automatically slides off as the image drum is inserted. You can discard this cover.



7. Insert additional image drums in the same manner.
8. Grasp the grips on the sides of the front door and lift up to close.



To recycle the used image drum, follow the instructions included with the new image drum.

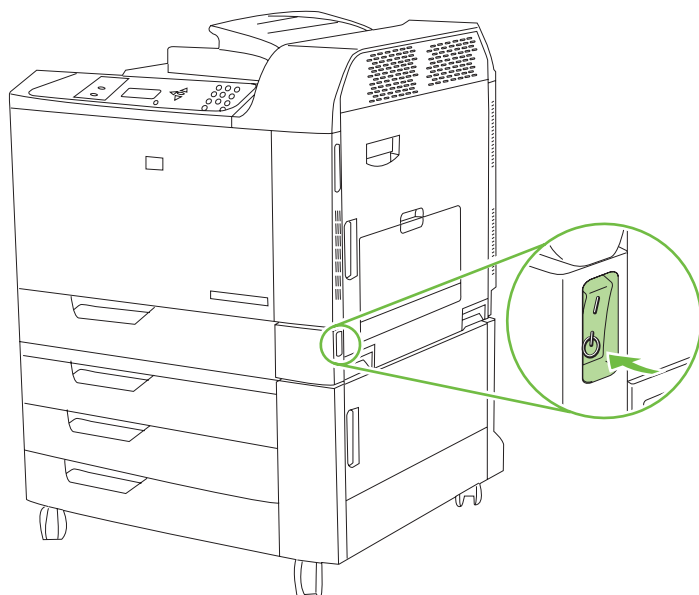
Install memory

You can install more memory for the product by adding a dual inline memory module (DIMM).

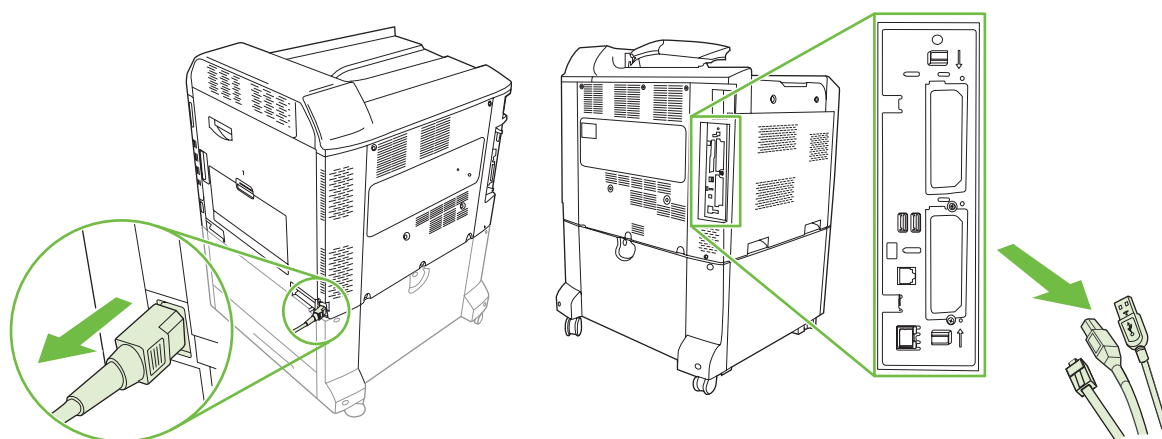
- △ **CAUTION:** Static electricity can damage DIMMs. When handling DIMMs, either wear an antistatic wrist strap, or frequently touch the surface of the DIMM antistatic package and then touch bare metal on the product.

Install DDR memory DIMMs

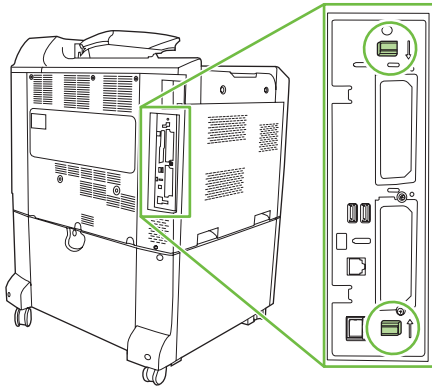
1. Turn the product off.



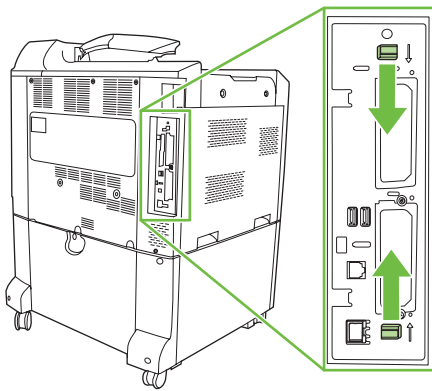
2. Disconnect all power and interface cables.



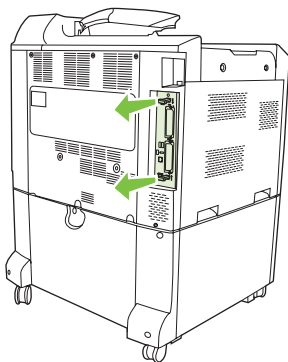
3. Locate the black formatter pressure release tabs on the formatter board in the rear of the product.



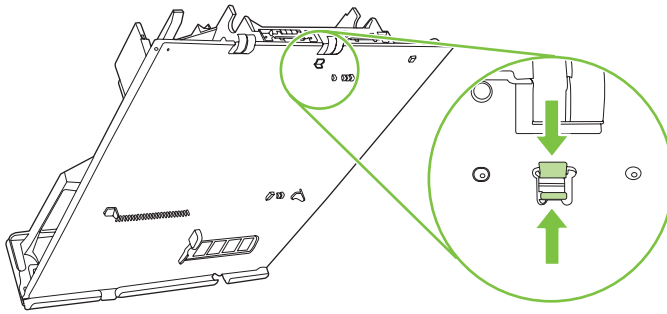
4. Gently press the black tabs toward each other.



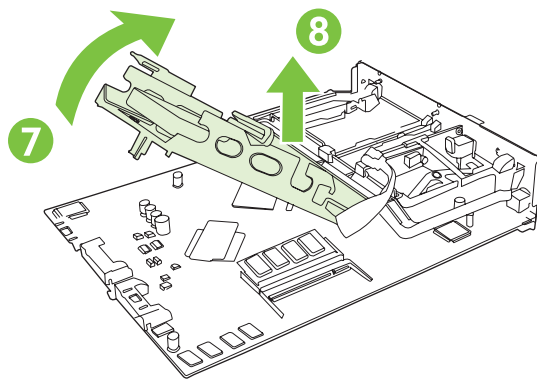
5. Gently pull on the black tabs to pull the formatter board from the product. Place the formatter board on a clean, flat, grounded surface.



6. If you are adding a DIMM to slot 2, locate the hard disk release tab on the bottom of the formatter board, and then pinch the tab to release the end of the hard disk assembly.

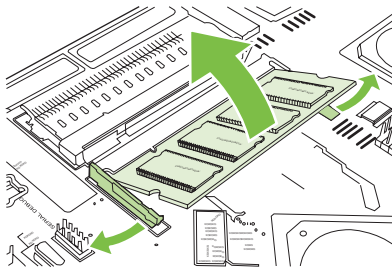


7. Rotate the end of the hard disk assembly upward until you can disengage the hinge tabs at the other end.

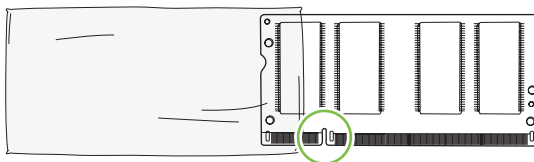


8. Leaving the hard disk assembly plugged in, lay it to the side to allow space to add or replace the DIMM in slot 2.

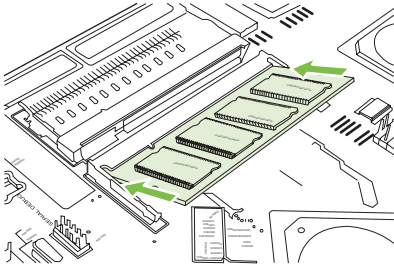
9. To replace a DIMM that is currently installed in either slot, spread the latches apart on each side of the DIMM, lift the DIMM up at an angle, and pull it out.



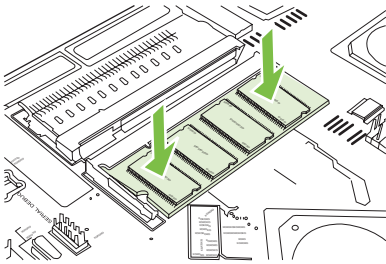
10. Remove the new DIMM from the antistatic package. Locate the alignment notch on the bottom edge of the DIMM.



11. Holding the DIMM by the edges, align the notch on the DIMM with the bar in the DIMM slot at an angle and firmly press the DIMM into the slot until it is fully seated. When installed correctly, the metal contacts are not visible.



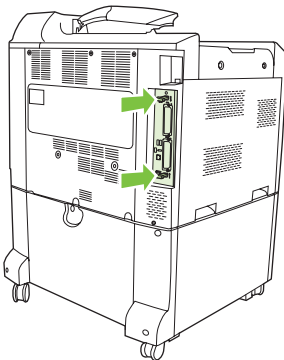
12. Push down on the DIMM until both latches engage the DIMM.



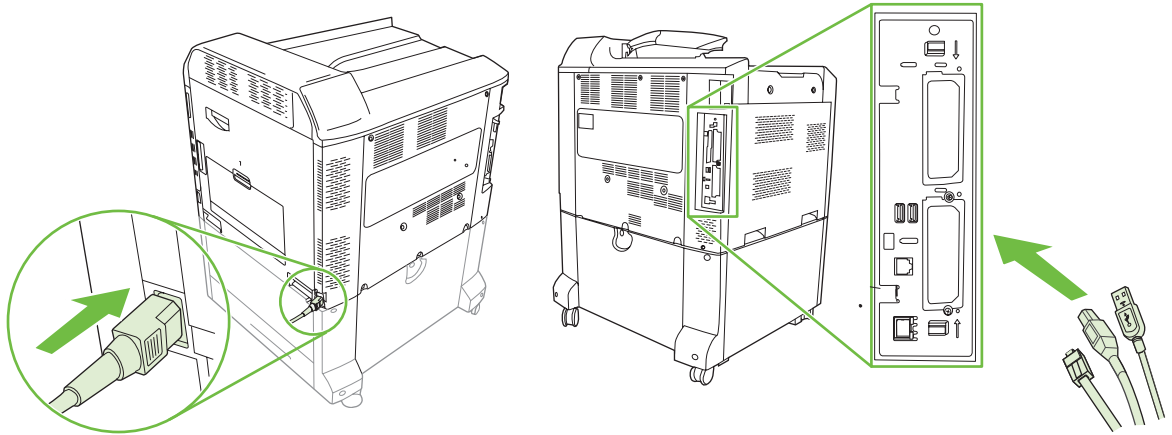
 **NOTE:** If you have difficulty inserting the DIMM, make sure the notch on the bottom of the DIMM is aligned with the bar in the slot. If the DIMM still does not go in, make sure you are using the correct type of DIMM.

13. If you had moved the hard disk assembly to access slot 2, re engage the hinge taps, and snap the release tab back into place on the formatter board.
14. Align the formatter board in the tracks at the bottom of the slot, and then slide the board back into the product. Be sure the pressure release tabs snap back into place.

 **NOTE:** To prevent damage to the formatter board, ensure the formatter board is aligned in the tracks.



15. Reconnect the power cable and interface cables, and turn the product on.



16. To enable the new memory, see the following section.

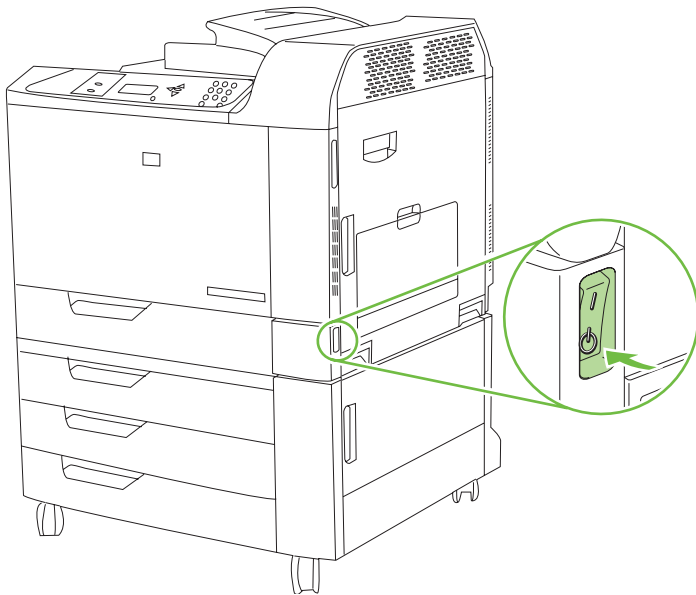
Enable memory for Windows

1. **Windows XP and Windows Server 2003 (using the default Start menu view):** Click **Start**, click **Settings**, and then click **Printers and Faxes**.
-or-
Windows 2000, Windows XP, and Windows Server 2003 (using the Classic Start menu view): Click **Start**, click **Settings**, and then click **Printers**.
-or-
Windows Vista: Click **Start**, click **Control Panel**, and then in the category for **Hardware and Sound** click **Printer**.
2. Right-click the driver icon, and then select **Properties**.
3. Click the **Device Settings** tab.
4. Expand the area for **Installable Options**.
5. Next to **Printer Memory**, select the total amount of memory that is installed.
6. Click **OK**.

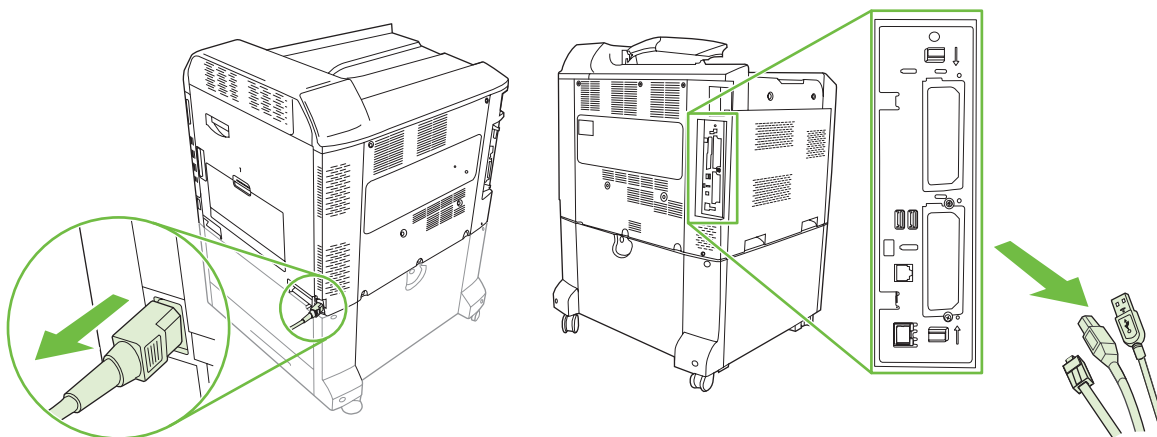
Install an HP Jetdirect or EIO print server card or EIO hard disk

This product is equipped with two external I/O (EIO) slots. For example, you can install an additional HP Jetdirect print server card or a hard disk in the available slots.

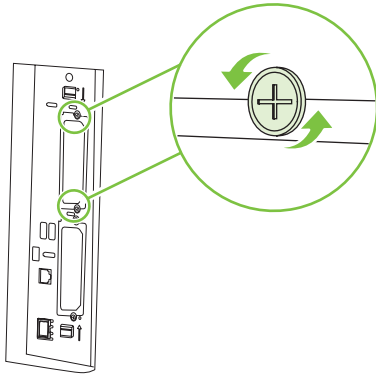
1. Turn the product off.



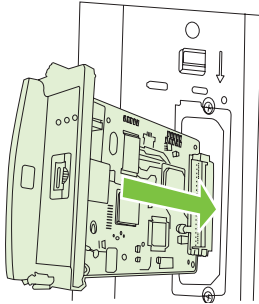
2. Disconnect all power and interface cables.



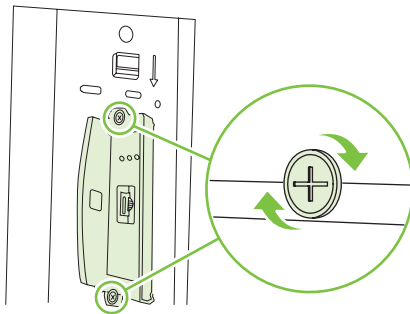
3. Locate an open EIO slot. Loosen and remove the two retaining screws holding the cover for the EIO slot, and then remove the cover. You will not need these screws and the cover again. They can be discarded.



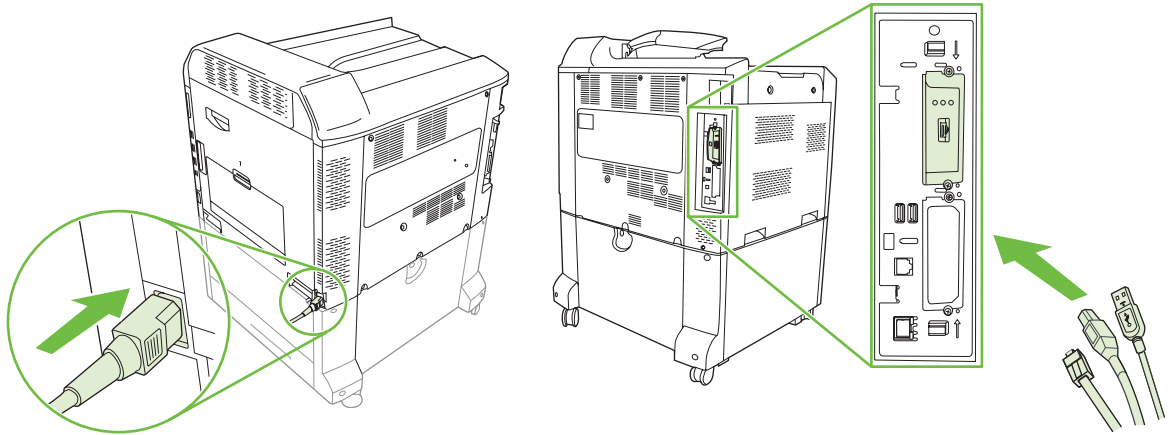
4. Firmly insert the HP Jetdirect print server card into the EIO slot.



5. Insert and tighten the retaining screws that came with the print server card.



6. Reconnect the power cable and remaining interface cables, and turn the product on.



7. Print a configuration page. An HP Jetdirect configuration page that contains network configuration and status information should also print.

If it does not print, turn the product off, and then uninstall and reinstall the print server card to ensure that it is completely seated in the slot.

8. Perform one of these steps:

- Choose the correct port. See the computer or operating system documentation for instructions.
- Reinstall the software, choosing the network installation this time.

Replace the staple cartridge

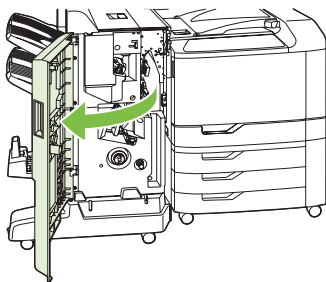
If the optional HP 3-bin Stapler/Stacker Accessory or HP Booklet Maker/Finisher Accessory runs out of staples while it is stapling a print job, the product automatically stops, if set to stop when out. If the product is set to continue when out, the product will continue to print without stapling.

NOTE: Only replace the staple cartridge unit when the stapler/stacker or booklet maker has run out of staples. Removing the staple cartridge at other times can cause an error to occur.

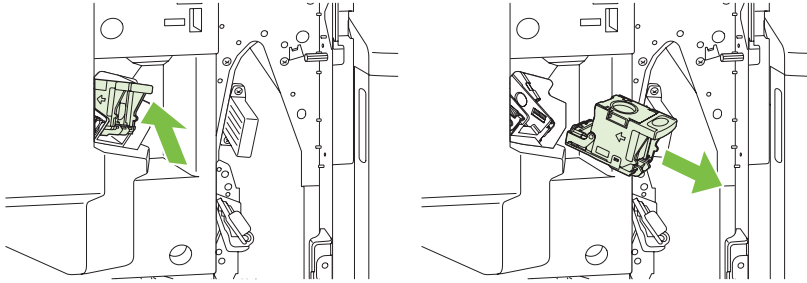
NOTE: When the stapler/stacker or booklet maker runs out of staples, the stapler unit will return to its default position automatically.

Replace the staple cartridge

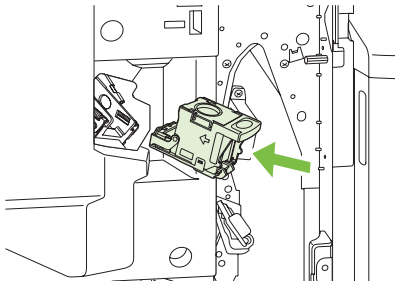
1. Open the front door of the booklet maker or stapler/stacker.



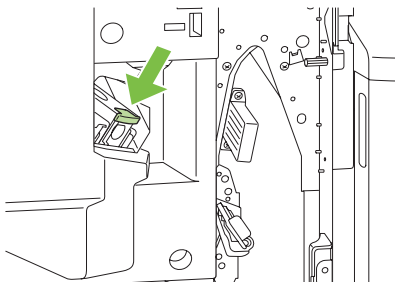
2. Push up to on the staple cartridge to remove it from the booklet maker or stapler/stacker.



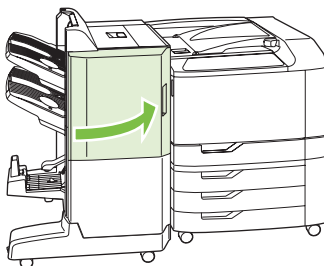
3. Insert the replacement staple cartridge unit into the stapler unit.



4. Push the staple cartridge unit into the stapler unit until it clicks into position.

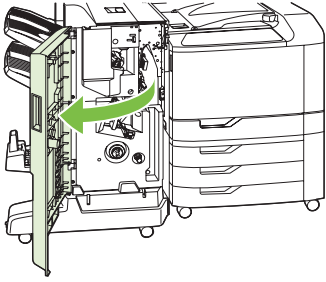


5. Close the front door.

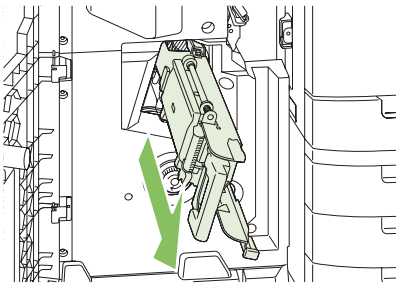


Replace saddle stitch staple cartridges in the booklet maker

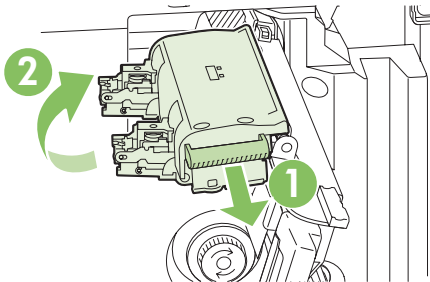
1. Open the front door of the booklet maker.



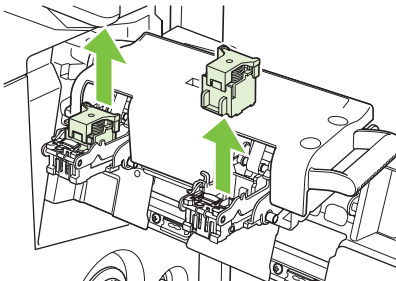
2. Grasp the blue handle and pull the staple carriage out of the booklet maker.



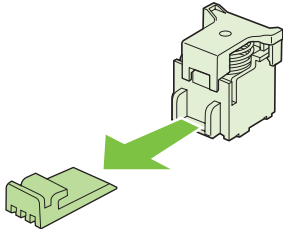
3. Grasp the small blue handle on the staple cartridge unit and pull it toward you, then swing the staple cartridge unit into an upright position.



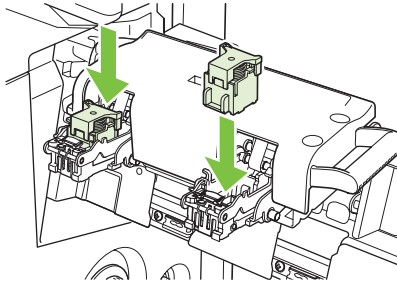
4. Grasp the edges of each staple cartridge and pull up firmly to remove the staple cartridges from the staple cartridge unit.



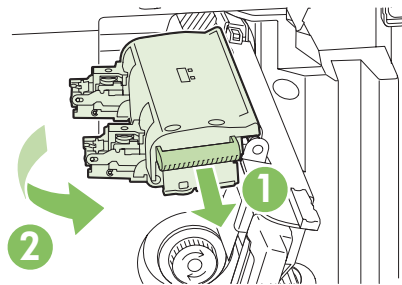
5. Unpack the new cartridges and remove the plastic packing lock from each one.



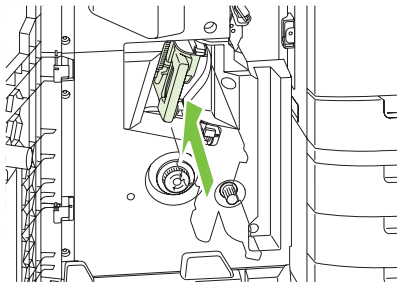
6. Hold the new cartridges so that the arrows on the cartridges align with the arrows on the staple cartridge unit and insert them into the unit.



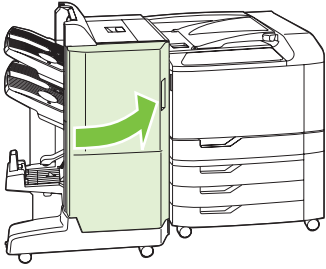
7. Pull the handle of the staple cartridge unit toward you and rotate it downward to its original position. Lock it into position by pushing in the handle.



8. Push the staple carriage back into the booklet maker finisher.



9. Close the front door of the booklet maker.



Clean the product

Over time, particles of toner and paper accumulate inside the product. This can cause print-quality problems during printing. Cleaning the product eliminates or reduces these problems.

Clean the paper path and print-cartridge areas every time that you change the print cartridge or whenever print-quality problems occur. As much as possible, keep the device from dust and debris.

Clean spilled toner

If you get any toner on your clothes or hands, wash them in *cold* water. Hot water will set the toner into the fabric.

Clean the product exterior

Use a soft, damp, lint-free cloth to wipe dust, smudges, and stains off of the exterior of the device.

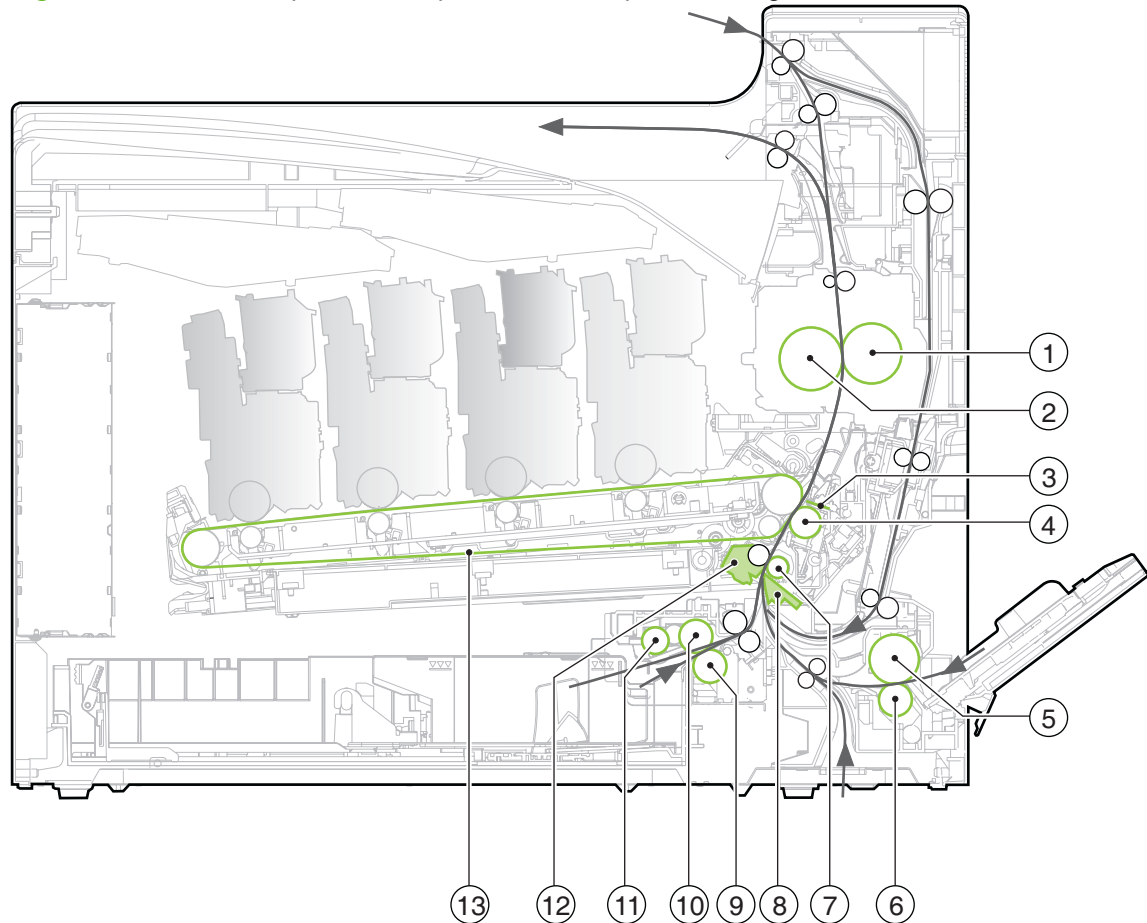
Clean the product interior

Component	Cleaning method
Guide for media path	Wipe with a lint-free cloth. If dirt cannot be removed, dampen the lint-free cloth with alcohol.
Pickup roller, separation roller, feed roller, MP tray pickup roller, MP tray separation roller, registration roller	Wipe with a lint-free cloth. If dirt cannot be removed, dampen the lint-free cloth with alcohol.
Static charge eliminator	Clean with the brush that is attached to the upper left of the right cover inside.



NOTE: When the secondary transfer roller unit is opened, do not touch the ITB or media sensor unit in the ITB unit, while cleaning the component.

Figure 4-2 Location of product components that require cleaning

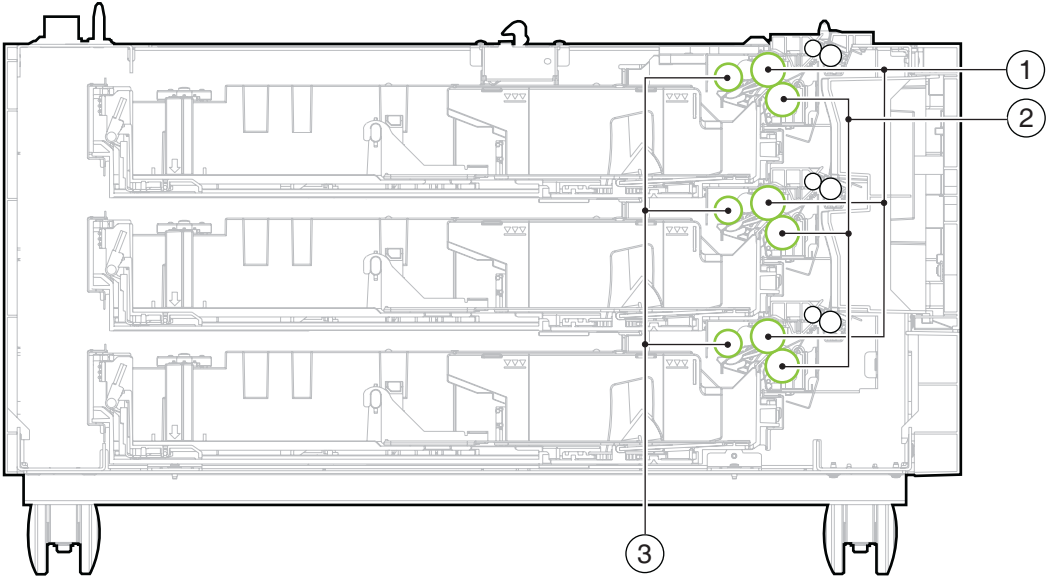


1	Pressure roller
2	Fuser roller
3	Static charge eliminator
4	Secondary transfer roller
5	MP tray pickup roller
6	MP tray separation roller
7	Front registration roller
8	Correction plate
9	Separation roller
10	Feed roller
11	Pickup roller
12	Media sensor roller
13	ITB

Clean the 3X500 sheet input tray

Component	Cleaning method
Guide for the paper path	Wipe with a lint-free cloth. If dirt cannot be removed, dampen the lint-free cloth with alcohol.
Cassette pickup roller, cassette separation roller, and cassette feed roller	Wipe with a lint-free cloth. If dirt cannot be removed, dampen the lint-free cloth with alcohol.

Figure 4-3 Location of components that require cleaning

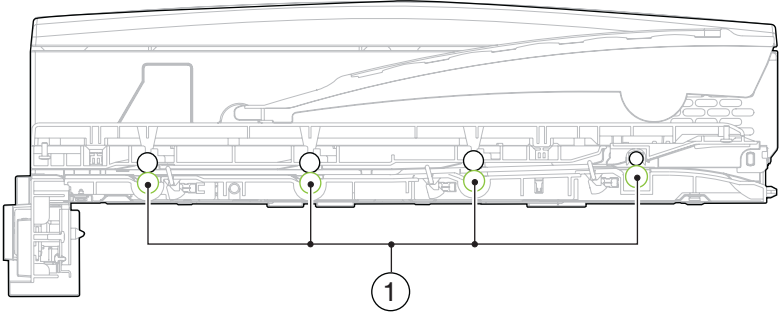


1	Cassette feed roller
2	Cassette separation roller
3	Cassette pickup roller

Clean the IPTU

Component	Cleaning method
Guide for the paper path	Wipe with a lint-free cloth. If dirt cannot be removed, dampen the lint-free cloth with alcohol.
IPTU feed roller	Wipe with a lint-free cloth. If dirt cannot be removed, dampen the lint-free cloth with alcohol.

Figure 4-4 Location of IPTU components that require cleaning



1	IPTU feed roller

Upgrade the firmware

The product has remote firmware update (RFU) capability. Use the information in this section to upgrade the product firmware.

Determine the current firmware version

1. Press **Menu**.
2. Press the down arrow ▼ to highlight **INFORMATION**, and then press the checkmark button ✓
3. Press the down arrow ▼ to highlight **PRINT CONFIGURATION**, and then press the checkmark button ✓ to print.

The firmware datecode is listed on the Configuration page in the section called **Printer Information**. The firmware datecode has this format: YYYYMMDD XX.XXX.X. The first string of numbers is the date, where YYYY represents the year, MM represents the month, and DD represents the date. For example, a firmware datecode of that begins with 20061125 represents November 25, 2006.

Download new firmware from the HP Web site

To find the most recent firmware upgrade for the product, go to www.hp.com/go/cljcp6015_software. This page provides instructions for downloading the new firmware version.

Transfer the new firmware to the product

 **NOTE:** The product can receive an .RFU file update when it is in a "ready" state.

The elapsed time for an update depends on the I/O transfer time, as well as the time that it takes for the product to re-initialize. The I/O transfer time depends on a number of things, including the speed of the host computer that is sending the update. If the remote firmware update process is interrupted before the firmware is downloaded (while **Receiving Upgrade** appears on the control-panel display), the firmware file must be sent again. If power is lost during the update (while the **Performing Upgrade** message appears on the control-panel display), the update is interrupted and the message **Resend Upgrade** appears (in English only) on the control-panel display. In this case, you must send the upgrade by using the USB port. Finally, any jobs that are ahead of the RFU job in the queue are completed before the update is processed.

Use FTP to upload the firmware through a browser

 **NOTE:** The firmware update involves a change in the format of nonvolatile random-access memory (NVRAM). Any menu settings that are changed from the default settings might return to default settings and must be changed again if you want settings that are different from the defaults.

1. Print a configuration page and note the TCP/IP address shown on the EIO Jetdirect page.
2. Open a browser window.
3. In the address line of the browser, type `ftp://<ADDRESS>`, where <ADDRESS> is the address of the product. For example, if the TCP/IP address is 192.168.0.90, type `ftp://192.168.0.90`.
4. Locate the downloaded .RFU file for the product.
5. Drag and drop the .RFU file onto the **PORT** icon in the browser window.

 **NOTE:** The product turns off and then on automatically to activate the update. When the update process is complete, a **READY** message displays on the product control panel.

Use FTP to upgrade the firmware on a network connection using Microsoft Windows

 **NOTE:** The firmware update involves a change in the format of nonvolatile random-access memory (NVRAM). Any menu settings that are changed from the default settings might return to default settings and must be changed again if you want settings that are different from the defaults.

1. Take note of the IP address on the HP Jetdirect page. The HP Jetdirect page is the second page that prints when you print the configuration page.

 **NOTE:** Before upgrading the firmware, make sure that the product is not in Sleep mode. Also make sure that any error messages are cleared from the control-panel display.

2. Open an MS-DOS command prompt on your computer.
3. Go to the folder where the firmware file is stored.
4. Type: `ftp TCP/IP ADDRESS>`. For example, if the TCP/IP address is 192.168.0.90, type `ftp 192.168.0.90`.
5. Press **Enter** on the keyboard.
6. When prompted for the user name, press **Enter**.
7. When prompted for the password, press **Enter**.
8. Type `bin` at the command prompt.
9. Press **Enter**. The message **200 Types set to I, Using binary mode to transfer files** appears in the command window.
10. Type `put` and then the file name (for example, if the file name is CP6015.rfu, type `CP6015.rfu`).
11. The download process begins and the firmware is updated on the product. This can take several minutes. Let the process finish without further interaction with the product or computer.

 **NOTE:** The product automatically turns off and then on again after processing the upgrade.

12. At the command prompt, type: `bye` to exit the ftp command.
13. At the command prompt, type: `exit` to return to the Windows interface.

Use HP Web Jetadmin to upgrade the firmware

This procedure requires that you install HP Web Jetadmin Version 7.0 or later on your computer. See [Use HP Web Jetadmin software on page 81](#). Complete the following steps to update a single product through HP Web Jetadmin after downloading the .RFU file from the HP Web site.

1. Start HP Web Jetadmin.
2. Open the **Device Management** folder in the drop-down list in the **Navigation** panel. Navigate to the **Device Lists** folder.
3. Expand the **Device Lists** folder and select **All Devices**. Locate the product in the list of devices, and then click to select it.

If you need to upgrade the firmware for multiple HP Color LaserJet CP6015 series products, select all of them by pressing the **Ctrl** key as you click the name of each product.

4. Locate the drop-down box for **Device Tools** in the upper-right corner of the window. Select **Update Printer Firmware** from the action list.
5. If the name of the .RFU file is not listed in the **All Available Images** box, click **Browse** in the **Upload New Firmware Image** dialog box and navigate to the location of the .RFU file that you downloaded from the Web at the start of this procedure. If the filename is listed, select it.
6. Click **Upload** to move the .RFU file from your hard drive to the HP Web Jetadmin server. After the upload is complete, the browser window refreshes.
7. Select the .RFU file from the **Printer Firmware Update** drop-down menu.
8. Click **Update Firmware**. HP Web Jetadmin sends the selected .RFU file to the product. The control panel shows messages that indicate the progress of the upgrade. At the end of the upgrade process, the control panel shows the **READY** message.

Use MS-DOS commands to upgrade the firmware for USB connections

To update the firmware by using a network connection, follow these instructions.

1. From a command prompt or in an MS-DOS window, type the following copy /B FILENAME> \ \COMPUTERNAME>\SHARENAME>, where <FILENAME> is the name of the .RFU file (including the path), <COMPUTERNAME> is the name of the computer from which the product is being shared, and <SHARENAME> is the product share name. For example: C:\>copy /b C:\6015FW.RFU \\YOUR_Computer\c ljcp6015.

 **NOTE:** If the file name or path includes a space, you must enclose the file name or path in quotation marks. For example, type: C:\>copy /b "C:\MY DOCUMENTS\6015FW.RFU" \\YOUR_computer\c ljcp6015.

2. Press **Enter** on the keyboard. The control panel shows a message that indicates the progress of the firmware upgrade. At the end of the upgrade process, the control panel shows the **READY** message. The message **One File Copied** appears on the computer screen.

Upgrade the HP Jetdirect firmware

The HP Jetdirect network interface in the product has firmware that can be upgraded separately from the product firmware. This procedure requires that you install HP Web Jetadmin Version 7.0 or later on your computer. See [Use HP Web Jetadmin software on page 81](#). Complete the following steps to update the HP Jetdirect firmware by using HP Web Jetadmin.

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 that you want to update.
4. In the **Device Tools** drop-down list, select **Jetdirect Firmware Update**.
5. Under **Jetdirect firmware version** the HP Jetdirect model number and current firmware version are listed. Make a note of these.
6. Go to www.hp.com/go/wja_firmware.

7. Scroll down to the list of HP Jetdirect model numbers and find the model number you wrote down.
8. Look at the current firmware version for the model, and see if it is later than the version you wrote down. If it is, right-click on the firmware link, and follow the instructions on the Web page to download the new firmware file. The file must be saved into the <drive>:\PROGRAM FILES\HP WEB JETADMIN\DOC\PLUGINS\HPWJA\FIRMWARE\JETDIRECT folder on the computer that is running the HP Web Jetadmin software.
9. In HP Web Jetadmin, return to the main product list and select the digital sender again.
10. In the **Device Tools** drop-down list, select **Jetdirect Firmware Update** again.
11. On the HP Jetdirect firmware page, the new firmware version is listed under **Jetdirect Firmware Available on HP Web Jetadmin**. Click the **Update Firmware Now** button to update the Jetdirect firmware.

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, so you can identify the most recent versions.

Set the real-time clock

Set the date	1. Press Menu. 2. Press the down arrow ▼ to highlight CONFIGURE DEVICE, and then press the checkmark button ✓. 3. Press the down arrow ▼ to highlight SYSTEM SETUP, and then press the checkmark button ✓. 4. Press the checkmark button ✓ to select DATE/TIME. 5. Press the down arrow ▼ to highlight DATE, and then press the checkmark button ✓. 6. Select the correct month, date of the month, and the year, and then press the checkmark button ✓ to save.
Set the date format	1. Press Menu. 2. Press the down arrow ▼ to highlight CONFIGURE DEVICE, and then press the checkmark button ✓. 3. Press the down arrow ▼ to highlight SYSTEM SETUP, and then press the checkmark button ✓. 4. Press the checkmark button ✓ to select DATE/TIME. 5. Press the down arrow ▼ to highlight DATE FORMAT, and then press the checkmark button ✓. 6. Select the month, date of the month, and year, and then press the checkmark button ✓ to save.
Set the time	1. Press Menu. 2. Press the down arrow ▼ to highlight CONFIGURE DEVICE, and then press the checkmark button ✓. 3. Press the down arrow ▼ to highlight SYSTEM SETUP, and then press the checkmark button ✓. 4. Press the checkmark button ✓ to select DATE/TIME. 5. Press the down arrow ▼ to highlight TIME, and then press the checkmark button ✓. 6. Select the correct hour, minute, and AM/PM setting, and then press the checkmark button ✓ to save.
Set the time format	1. Press Menu. 2. Press the down arrow ▼ to highlight CONFIGURE DEVICE, and then press the checkmark button ✓. 3. Press the down arrow ▼ to highlight SYSTEM SETUP, and then press the checkmark button ✓. 4. Press the checkmark button ✓ to select DATE/TIME.

-
5. Press the down arrow ▼ to highlight **TIME FORMAT**, and then press the checkmark button ✓.
 6. Select the appropriate **TIME FORMAT**, and then press the checkmark button ✓ to save.
-

5 Theory of operation

- [Basic operation](#)
- [Formatter system](#)
- [Engine-control system](#)
- [Laser/scanner system](#)
- [Image-formation system](#)
- [Pickup, feed, and delivery system](#)
- [Jam detection](#)
- [Optional input trays](#)

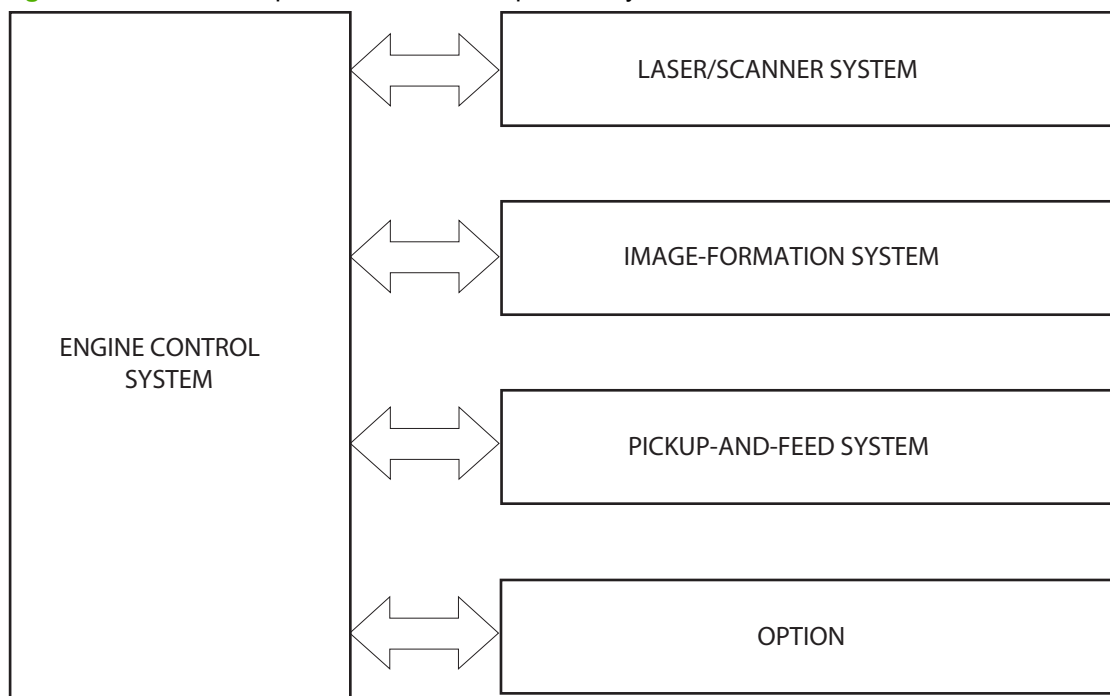
Basic operation

All high-level processes are routed through the formatter, which stores font information, processes the print image, and communicates with the host computer.

Basic product operation can be divided into the following systems:

- The engine-control system, which includes the power supply and the DC controller printed circuit assembly (PCA)
- The laser/scanner system, which forms the latent image on the photosensitive drum
- The image-formation system, which transfers a toner image onto the paper
- The paper pickup and feed system, which uses a system of rollers and belts to transport the paper through the product

Figure 5-1 Relationship between the main product systems



Sequence of operation

The DC controller PCA controls the operating sequence, as described in the following table. For detailed information about the timing of the processes, see [General timing chart on page 545](#).

Table 5-1 Sequence of operation

Period	Duration	Description
Waiting	From the time the power is turned on or when the product exits Sleep mode until the product is ready for printing	• Pressurizes the fuser pressure roller • Detects the print cartridges and imaging drums

Table 5-1 Sequence of operation (continued)

Period	Duration	Description
		• Detects the home position for the intermediate-transfer belt (ITB) and the developing unit • Cleans waste toner from the ITB
Standby	From the end of the waiting sequence or the last rotation until the formatter receives a print command or until the product is turned off	• The product is in the READY state. • The product enters Sleep mode after the specified length of time. • The product calibrates if it is time for an automatic calibration.
Initial rotation	From the time the formatter receives a print command until the paper enters the paper path	• Activates the high-voltage power supply • Prepares each laser/scanner unit • Warms the fuser to the appropriate temperature
Printing	From the time the first sheet of paper enters the paper path until the last sheet has passed through the fuser	• Forms the image on the photosensitive drums • Transfers the toner to the paper • Fuses the toner image onto the paper • Performs calibration after a specified number of pages
Last rotation	From the time the last sheet of paper exits the fuser until the motors stop rotating	• Moves the last printed sheet into the output bin • Stops each laser/scanner unit • Discharges the bias from the high-voltage power supply

Formatter system

The formatter is responsible for the following procedures:

- Controlling Sleep mode
- Receiving and processing print data from the various product interfaces
- Monitoring control-panel functions and relaying product-status information (through the control panel and the network or the bidirectional interface)
- Developing and coordinating data placement and timing with the DC controller PCA
- Storing font information
- Communicating with the host computer through the network or the bidirectional interface

The formatter receives a print job from the network or the bidirectional interface and separates it into image information and instructions that control the printing process. The DC controller PCA synchronizes the image-formation system with the paper-input and -output systems, and then signals the formatter to send the print-image data.

The formatter also provides the electrical interface and mounting locations for two EIO cards and an additional DIMM.

Sleep mode

This feature conserves power after the product has been idle for an adjustable period of time. When the product is in Sleep mode, the control-panel backlight is turned off, but the product retains all settings, downloaded fonts, and macros. The default setting is for Sleep mode to be enabled, and the product enters the Sleep mode after a 60-minute idle time. The HP Color LaserJet CP6015de energy star bundle enters sleep mode after one minute. The Sleep mode can also be turned off from the **RESETS** menu on the control panel.

The product exits Sleep mode and enters the warm-up cycle when any of the following events occurs:

- A print job, valid data, or a PML or PJJL command is received
- A control-panel button is pressed
- A cover is opened
- A paper tray is opened
- The engine-test switch is pressed



NOTE: Product error messages override the Sleep message. The product enters Sleep mode at the appropriate time, but the error message continues to appear.

Resolution

RESOLUTION	Image REt 4800 (default) 1200X600 dpi	Sets the resolution at which the product prints. The default value is Image REt 4800 . Try the 1200X600 dpi setting to improve printing for detailed line work or small text.
EDGE CONTROL	OFF LIGHT NORMAL MAXIMUM	The Edge Control setting determines how edges are rendered. Edge control has two components: adaptive halftoning and trapping. Adaptive halftoning increases edge sharpness. Trapping reduces the effects of color-plane • OFF turns off both trapping and adaptive halftoning. • LIGHT sets trapping at a minimal level, and adaptive halftoning is on.

 **NOTE:** The REt settings that are sent from software programs or printer drivers override the control-panel settings.

Input/output

The product receives print data primarily from the embedded HP Jetdirect print server. The product also has a USB 2.0 port for connecting directly to a computer.

CPU

The formatter incorporates a 835 MHz RISC processor.

Memory

The formatter system contains the product memory. All bundles support up to two RAM DIMMs up to 1 GB.

 **NOTE:** If the product encounters a problem when managing available memory, a clearable warning message appears on the control panel.

Hard disk

The HP Color LaserJet CP6015xh model comes standard with a 40 GB hard disk. The hard disk can permanently store fonts and forms. It can also be used for making multiple original prints and for job-storage features.

Random-access memory

The random-access memory (RAM) contains the page, I/O buffers, and the font storage area. It stores printing and font information received from the host system, and can also serve to temporarily store a full page of print-image data before the data is sent to the print engine. Memory capacity can be increased by adding a DIMM to the formatter. Note that adding memory might also increase the print speed for complex graphics.

DIMM slot

The DIMM slot can be used to add memory or fonts. There are two memory DIMM slots. Slot 1 is closest to the outside of the formatter. Slot 2 is closest to the hard disk.

Firmware

The firmware is contained on NAND flash memory soldered on the formatter board. A remote firmware upgrade process is available, which overwrites the firmware in the NAND flash.

Nonvolatile memory

The product uses nonvolatile memory (NVRAM) to store I/O and print-environment-configuration information. The contents of NVRAM are retained when the product is turned off or disconnected.

PJL overview

The printer job language (PJL) is an integral part of configuration, in addition to the standard printer command language (PCL). With standard cabling, the product can use PJL to perform a variety of functions, such as these:

- Two-way communication with the host computer through a network connection or a USB connection. The product can inform the host about such things as the control-panel settings, and the control-panel settings can be changed from the host.
- Dynamic I/O switching. The product uses this switching to be configured with a host on each I/O. The product can receive data from more than one I/O simultaneously, until the I/O buffer is full. This can occur even when the product is offline.
- Context-sensitive switching. The product can automatically recognize the personality (PS or PCL) of each job and configure itself to serve that personality.
- Isolation of print environment settings from one print job to the next. For example, if a print job is sent to the product in landscape mode, the subsequent print jobs print in landscape only if they are formatted for landscape printing.

PML

The printer management language (PML) allows remote configuration and status readback through the I/O ports.

Control panel

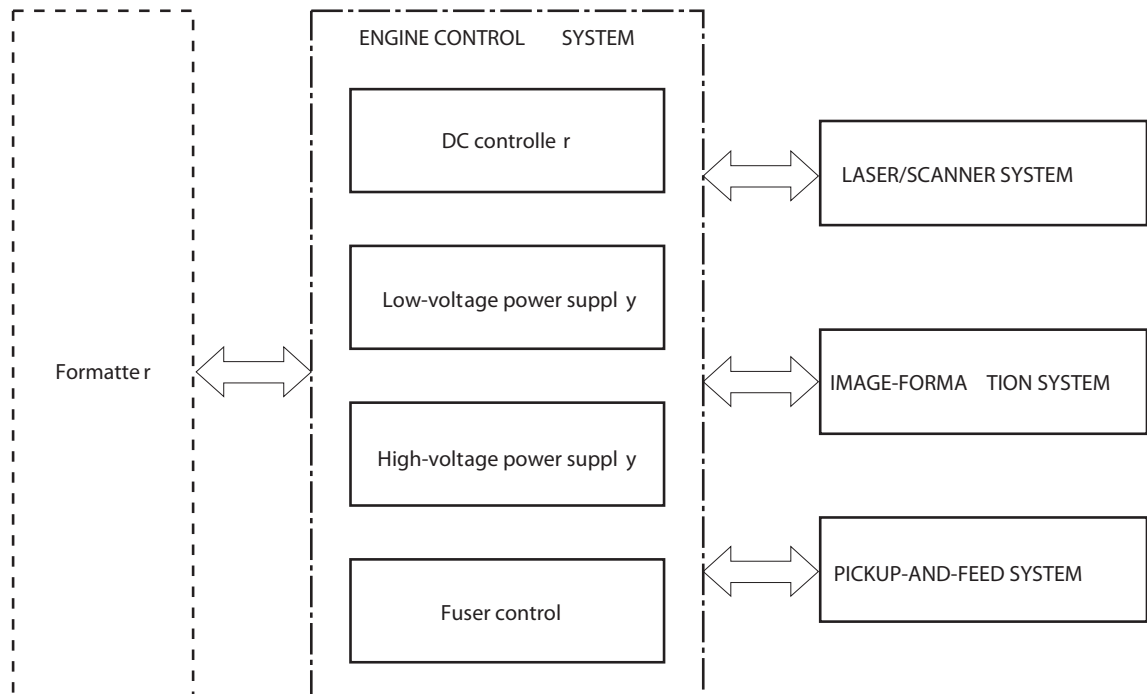
The formatter sends and receives product status and command data to and from a control-panel PCA.

Engine-control system

The engine-control system receives commands from the formatter and interacts with the other main systems to coordinate all product functions. It consists of the following components:

- DC controller
- Low-voltage power supply
- High-voltage power supply
- Fuser control

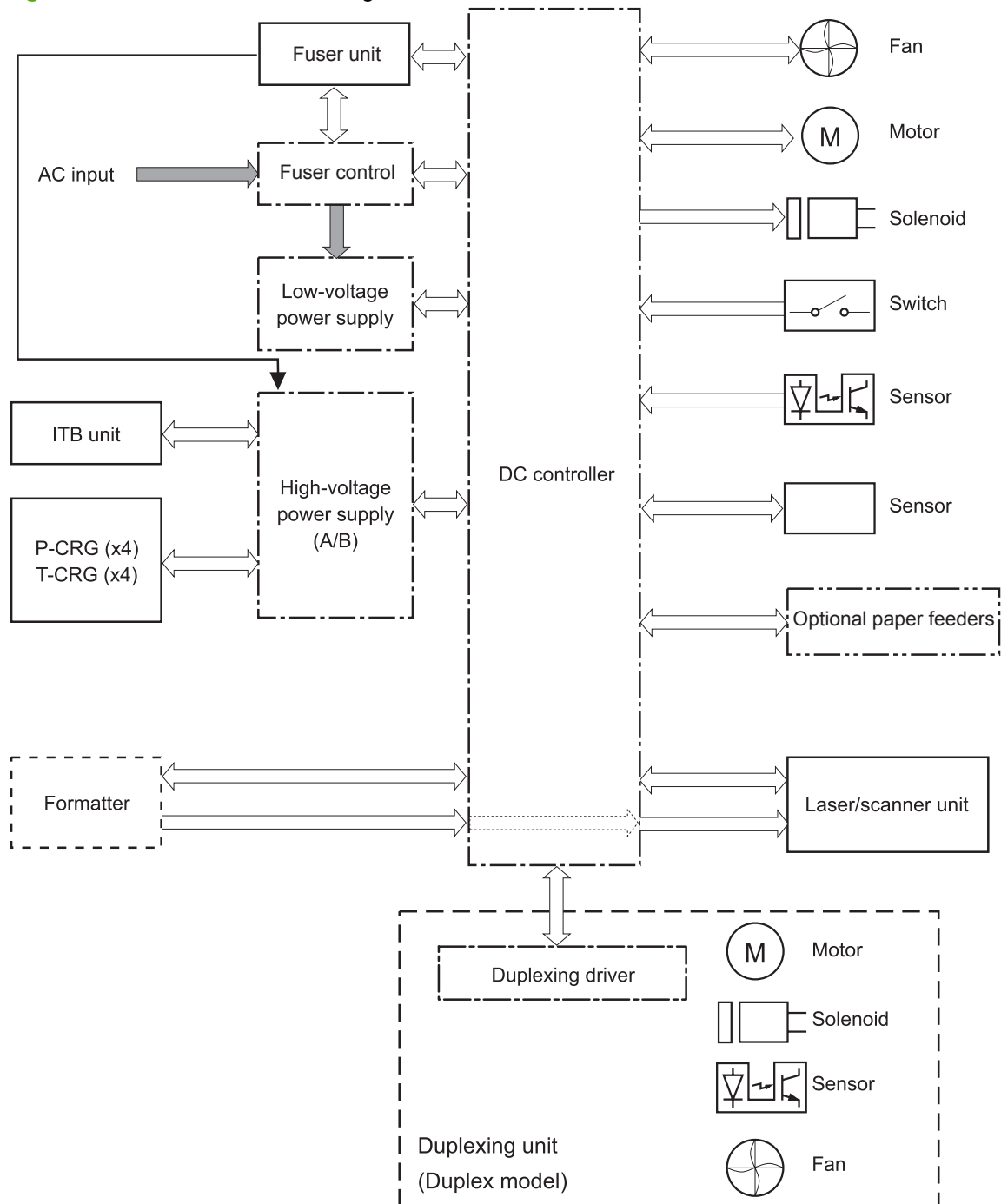
Figure 5-2 Engine-control system



DC controller

The DC controller provides operational commands to each of the product components, and it interacts with the other engine-control systems and product systems to control the product operational sequence.

Figure 5-3 DC controller block diagram



Solenoids

See [Solenoids on page 531](#).

Table 5-2 Solenoids

Component abbreviation	Component name
SL1	Cassette pickup solenoid
SL2	Multipurpose-tray pickup solenoid
SL4	Toner-feed solenoid (yellow)
SL5	Toner-feed solenoid (magenta)
SL6	Toner-feed solenoid (cyan)
SL7	Toner-feed solenoid (black)
SL301	Duplexing-flapper solenoid (duplex models only)

Switches

See [Switches on page 534](#).

Table 5-3 Switches

Component abbreviation	Component name
SW1	Door-open detection switch
SW4	Cassette end-plate-position detection switch
SW5	Cassette side-plate-position detection switch
SW11	Main switch
	Test print switch

Sensors

See [Sensors on page 518](#).

Table 5-4 Sensors

Component abbreviation	Component name
CN1	Environment sensor
CS	Color sensor (duplex models only)
MS	Media sensor
	Color misregistration/image density sensor
	ITB sensor-mark detection sensor
SR0	Vertical synchronous-position sensor
SR1	Cassette media-presence sensor
SR2	Cassette media-stack surface sensor
SR4	Cassette media-level sensor
SR5	Cassette media-feed sensor
SR6	Multipurpose-tray (MP tray) media-presence sensor
SR7	MP tray media-feed sensor
SR8	MP tray last-media sensor
SR10	ITB home-position sensor
SR11	Right door-open-detection sensor
SR13	Loop sensor
SR15	Fuser-delivery media-feed sensor
SR16	Output-bin media-full sensor
SR17	Drum home-position sensor (yellow)
SR18	Drum home-position sensor (magenta)
SR19	Drum home-position sensor (cyan)
SR20	Drum home-position sensor (black)
SR21	Developing home-position sensor (yellow and magenta)
SR22	Developing home-position sensor (cyan and black)
SR23	Toner-feed-motor rotational-count sensor (yellow, magenta, and cyan)
SR24	Toner-feed-motor rotational-count sensor (black)
SR26	Fuser home-position sensor
SR31	ITB waste-toner-full sensor
SR32	Front door-open-detection sensor
SR33	Secondary-transfer-unit cover-open-detection sensor
SR34	Fuser cover-open-detection sensor

Table 5-4 Sensors (continued)

Component abbreviation	Component name
SR301	Color-sensor-disengagement sensor (duplex models only)
SR302	Duplexing media re-pickup sensor (duplex models only)
SR303	Duplexing media-feed sensor (duplex models only)
SR304	Duplexing media-reverse sensor (duplex models only)
SCN-TH1	Laser/scanner temperature sensor 1
SCN-TH2	Laser/scanner temperature sensor 2
	Print-cartridge presence sensor (yellow)
	Print-cartridge presence sensor (magenta)
	Print-cartridge presence sensor (cyan)
	Print-cartridge presence sensor (black)
	Imaging-drum waste-toner-full sensor (yellow)
	Imaging-drum waste-toner-full sensor (magenta)
	Imaging-drum waste-toner-full sensor (cyan)
	Imaging-drum waste-toner-full sensor (black)
	Imaging-drum toner-level sensor (yellow)
	Imaging-drum toner-level sensor (magenta)
	Imaging-drum toner-level sensor (cyan)
	Imaging-drum toner-level sensor (black)

Motors and fans

The product has 17 motors that drive the components in the paper-feed and image-formation systems. See [Motors on page 526](#). It also has nine fans that cool the interior of the product. See [Fans on page 525](#).

The DC controller can sense failure for all the fans and several of the motors. When this occurs, the DC controller notifies the formatter so it can halt the printing process and provide an alert on the control-panel display.

Table 5-5 Motors

Abbreviation	Name	Purpose	Type	Failure detection
M5	Pickup motor	Drives the cassette pickup roller, the cassette feed roller, and the MP tray pickup roller	Stepping motor	No
M6	Registration motor	Drives the registration roller	Stepping motor	No
M7	Cassette lifter motor	Drives the cassette-lifter mechanism	DC motor	No

Table 5-5 Motors (continued)

Abbreviation	Name	Purpose	Type	Failure detection
M9	Primary-transfer-roller disengagement motor	Engages or disengages the primary transfer roller	Stepping motor	No
M10	ITB motor	Drives the ITB and the secondary transfer roller	DC motor	Yes
M11	Fuser motor	Drives the fuser roller, the delivery roller, and the fuser pressure roller	DC motor	Yes
M12	Drum motor (Y)	Drives the photosensitive drum and the primary charging roller in the yellow imaging drum	DC motor	Yes
M13	Drum motor (M)	Drives the photosensitive drum and the primary charging roller in the magenta imaging drum	DC motor	Yes
M14	Drum motor (C)	Drives the photosensitive drum and the primary charging roller in the cyan imaging drum	DC motor	Yes
M15	Drum motor (K)	Drives the photosensitive drum and the primary charging roller in the black imaging drum	DC motor	Yes
M16	Toner-feed motor (K)	Drives the black toner feed screws and waste-toner feed screws	Stepping motor	No
M17	Toner-feed motor (C, M, Y)	Drives the yellow, magenta, and cyan toner feed screws and waste-toner feed screws	Stepping motor	No
M18	Developing disengagement motor (C, K)	Engages and disengages the developing rollers in the cyan- and black-imaging drums	Stepping motor	No
M19	Developing disengagement motor (Y, M)	Engages and disengages the developing rollers in the yellow- and magenta-imaging drums	Stepping motor	No
M301	Duplexing feed motor	Drives the duplexing paper-feed roller	Stepping motor	No
Duplex models only				

Table 5-5 Motors (continued)

Abbreviation	Name	Purpose	Type	Failure detection
M302 Duplex models only	Duplexing reverse motor	Drives the duplexing paper-reverse roller	Stepping motor	No
M303 Duplex models only	Duplexing re-pickup motor	Drives the duplexing paper re-pickup roller and engages or disengages the color sensor	Stepping motor	No

Table 5-6 Fans

Abbreviation	Name	Cooling area	Type	Speed
FM1	Laser/scanner cooling fan	Laser/scanner area and formatter	Intake	Full/half
FM2	Fuser cooling fan	Fuser	Intake	Full/half
FM3	Cartridge-area cooling fan	Print-cartridge and imaging-drum area	Exhaust	Full
FM4	VOC fan	Fuser	Exhaust	Full/half
FM5	Low-voltage power-supply cooling fan	Low-voltage power-supply unit	Exhaust	Full/half
FM6	Cartridge front-area cooling fan	Print-cartridge and imaging-drum area	Intake	Full/half
FM7	Delivery unit cooling fan	Delivery unit	Intake	Full
FM301 Duplex models only	Duplexing unit cooling fan 1	Duplexing driver PCA	Intake	Full
FM302 Duplex models only	Duplexing unit cooling fan 2	Output bin area	Exhaust	Full/half

Fuser control

The fuser-control circuit controls the fuser temperature. The heaters provide the high temperatures that melt the toner to bond it to the paper. The thermistors and thermopiles monitor the temperature inside the fuser. The thermostats control the current to the heaters. If the thermistors and thermopiles

detect abnormally high temperatures, the thermostwitches interrupt the power to the heaters to prevent overheating.

Figure 5-4 Fuser components

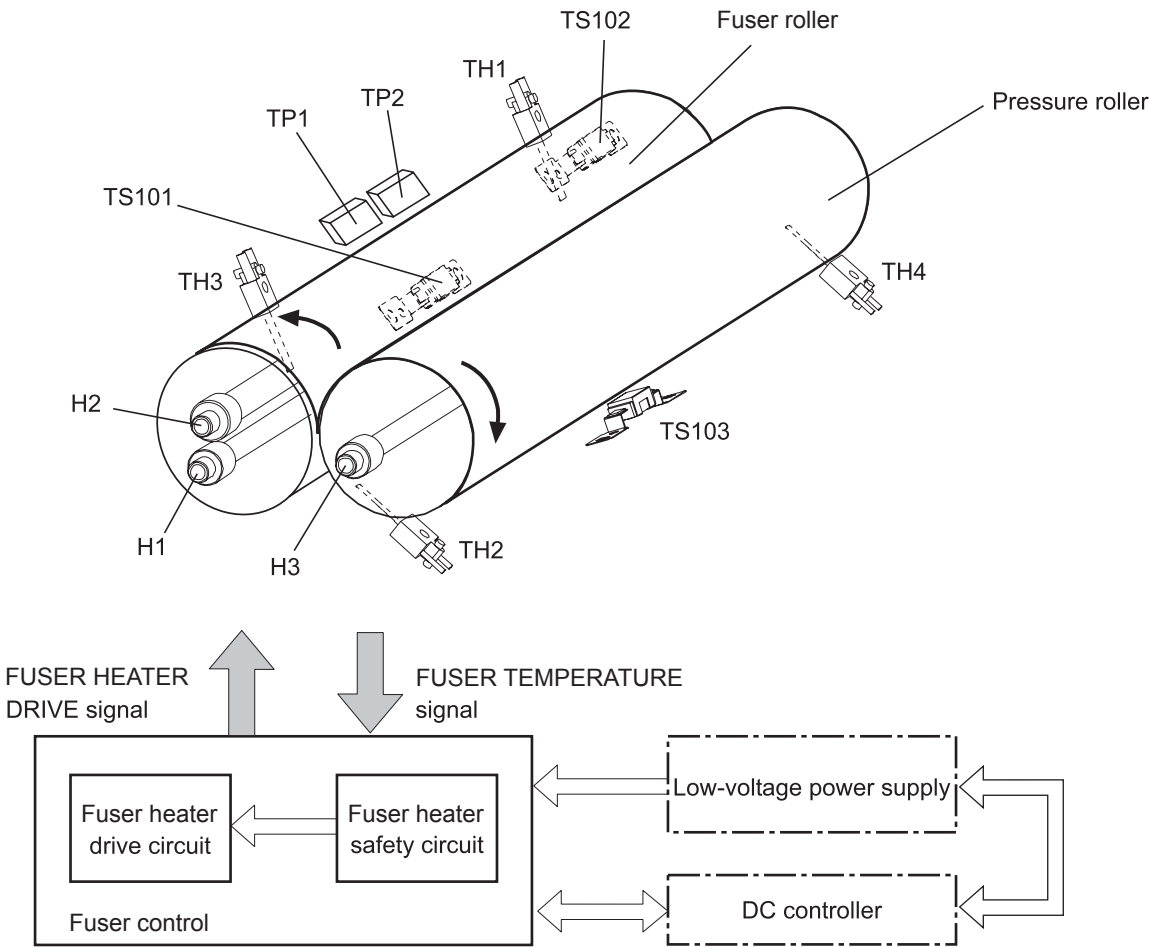


Table 5-7 Fuser components

Type of component	Abbreviation	Name	Function
Heaters	H1	Fuser-roller main heater	Heats the center area of the fuser roller
	H2	Fuser-roller sub heater	Heats both ends of the fuser roller
	H3	Pressure-roller heater	Heats the pressure roller
Thermistors (Contact type)	TH1	Fuser-roller end thermistor	Each thermistor detects the temperature on one end of the fuser roller.
	TH3		
	TH2	Pressure-roller end thermistor	Each thermistor detects the temperature on one end of the pressure roller.
	TH4		
Thermopiles (Non-contact type)	TP1	Main thermopile	Detects the temperature at the center of the fuser roller
	TP2	Sub thermopile	Detects the temperature at the center of the pressure roller

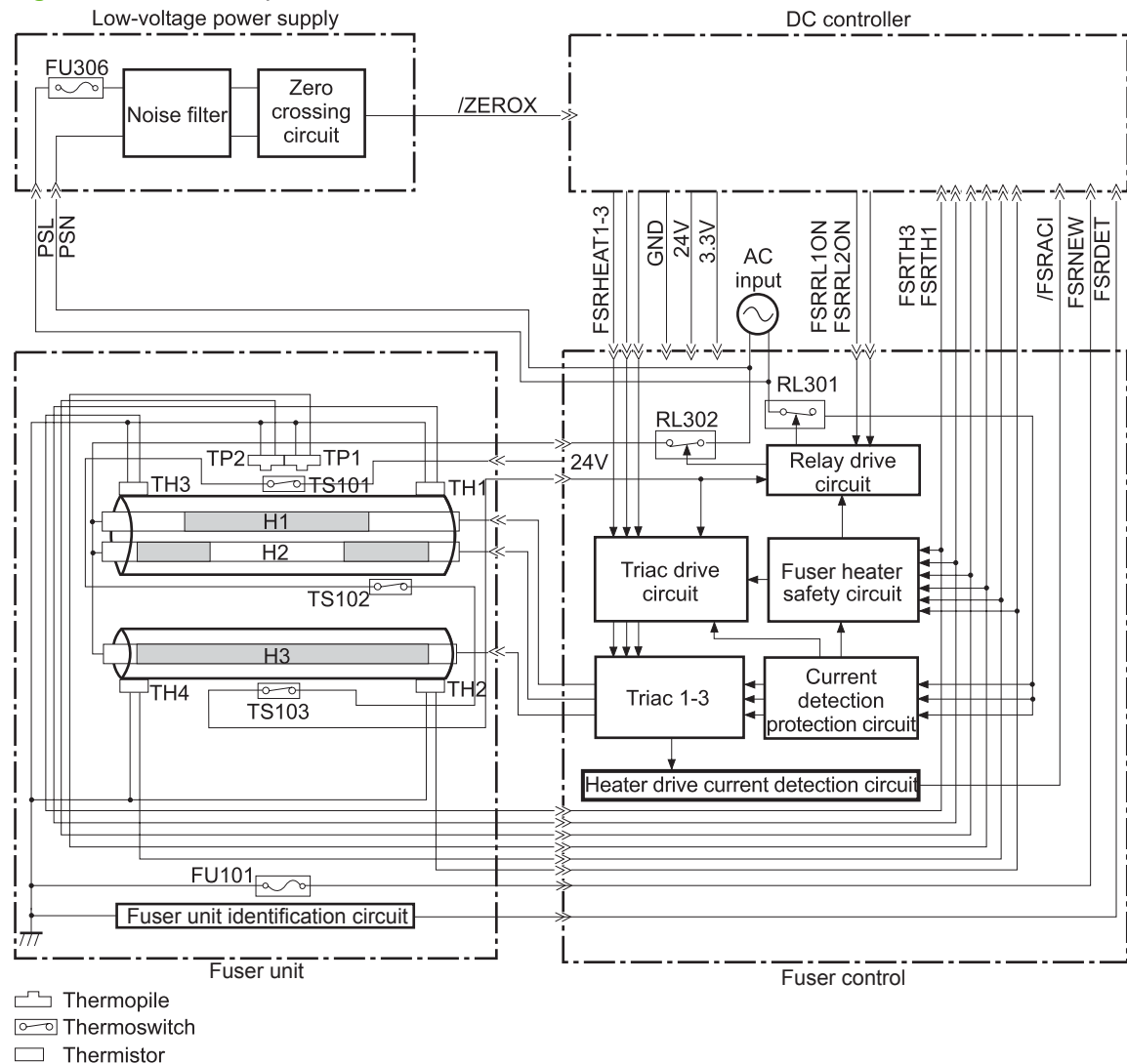
Table 5-7 Fuser components (continued)

Type of component	Abbreviation	Name	Function
Thermoswitches (Non-contact type)	TS101	Fuser-roller main thermoswitch	Controls the fuser-roller main heater
	TS102	Fuser-roller sub thermoswitch	Controls the fuser-roller sub heater
	TS103	Pressure-roller thermoswitch	Controls the pressure-roller heater

Fuser temperature-control circuit

The temperatures of the two rollers in the fuser fluctuate according to the stage of the printing process. The DC controller sends commands to the fuser-control circuit to adjust the temperatures accordingly.

Figure 5-5 Fuser temperature-control circuit



Fuser over-temperature protection

To protect the fuser from excessive temperatures, the product has four layers of protective functions. If one function fails, the subsequent functions should detect the problem.

- **DC controller:** When a thermistor or thermopile detects a temperature above a certain threshold, the DC controller interrupts power to the appropriate heater. Following are the thresholds for each component:
 - TH1: 223° C (433° F) or higher
 - TH2: 195° C (383° F) or higher
 - TH3: 223° C (433° F) or higher
 - TH4: 195° C (383° F) or higher
 - TP1: 240° C (464° F) or higher
 - TP2: 240° C (464° F) or higher
- **Fuser-heater safety circuit:** If the DC controller fails to interrupt the power to the heaters at the prescribed temperatures, the fuser-heater safety circuit deactivates the triac-drive circuit and releases the relay, which causes the heaters to stop at slightly higher temperature thresholds.
 - TH1: 230° C (446° F) or higher
 - TH2: 200° C (392° F) or higher
 - TH3: 230° C (446° F) or higher
 - TH4: 200° C (392° F) or higher
 - TP1: 250° C (482° F) or higher
 - TP2: 250° C (482° F) or higher
- **Current-detection protection circuit:** If current flowing in each triac exceeds a specific value, the current-detection protection circuit deactivates the triac-drive circuit and releases the relay, which interrupts the power supply to the heaters.
- **Thermoswitch:** If the temperature in the heaters is abnormally high, and the temperature the thermoswitches exceeds a pre-specified value, the contact to the thermoswitch is broken. Breaking this contact deactivates the triac-drive circuit and releases the relay, which interrupts the power supply to the heaters. Following are the thresholds for each thermoswitch:
 - TS101: 200° C (392° F) or higher
 - TS102: 200° C (392° F) or higher
 - TS103: 200° C (392° F) or higher

 **NOTE:** When the thermoswitches reach this temperature, the actual temperature on the fuser rollers is approximately 370° C (698° F).

Fuser-failure detection

When the DC controller detects any of the following conditions, it determines that the fuser has failed. It then interrupts power to the fuser heaters and notifies the formatter.

- **Abnormally high temperatures:** Temperatures are too high for any of the following components, at any time:
 - TH1: 223° C (433° F) or higher
 - TH2: 195° C (383° F) or higher
 - TH3: 223° C (433° F) or higher
 - TH4: 195° C (383° F) or higher
 - TP1: 240° C (464° F) or higher
 - TP2: 240° C (464° F) or higher
- **Abnormally low temperatures:** Temperatures are too low at any of the following components after the product has initialized.
 - TH1 or TH3: 120° C (248° F) or lower
 - TP1 or TP2: 140° C (284° F) or lower

Or, the temperature drops in either of the thermopiles (TP1 and TP2) by 30° C (86° F) or more within a specified length of time.
- **Abnormal temperature rise:** The temperature-detection sensors do not reach a predefined temperature within a specified length of time after the fuser heaters are turned on.
- **Temperature-detection-sensor failure 1:** The converted analog-to-digital value of each temperature detection sensor is abnormal.
- **Temperature-detection-sensor failure 2:** The difference in temperature between pairs of thermistors or thermopiles is greater than a predetermined amount. Following are the temperature differences for each pair:
 - Between TP1 and TP2: 20° C (68° F) or more
 - Between TH1 and TH3 (fuser-roller ends): 30° C (86° F) or more
 - Between TH2 and TH4 (pressure-roller ends): 25° C (70° F) or more
- **Drive-circuit failure:** The power-supply frequency is out of the specified range when the product is initializing or in standby mode. The specified range is between 40 and 70Hz.
- **Fuser discrepancy:** The fuser-ID voltage does not match the power-supply voltage when the product is turned on or when the right door is closed.

Fuser identification

Whenever the product is turned on or when the right door is closed, the DC controller detects whether the fuser is present and whether the fuser is for a 110-volt model or a 220-volt model.

Fuser-life detection

The fuser is rated to print a certain number of pages. When a new fuser is installed, the DC controller receives a signal and directs the formatter to set the fuser count to zero. As pages are printed, the formatter increments the fuser count. When the page count reaches a certain threshold, the formatter sends a message to the control panel to alert the customer to order a new fuser. When the maximum number of pages has printed, the formatter sends a message to the control panel to prompt the customer to replace the fuser.

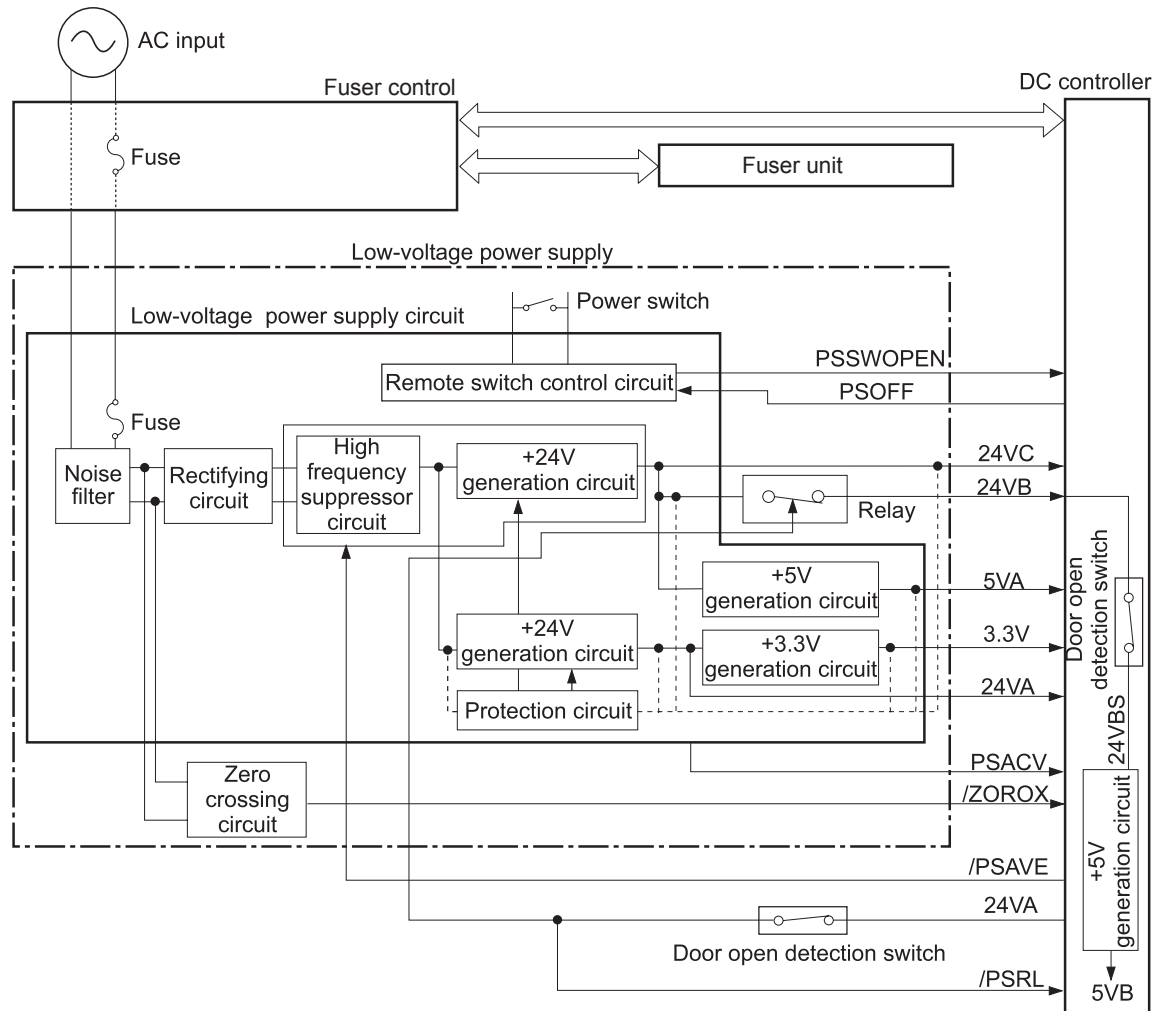
Relay-failure detection

If a fuser relay fails, the DC controller detects the failure and notifies the formatter. The DC controller checks for signals from the relays when the product is turned on or when it comes out of Sleep mode.

Low-voltage power supply

The low-voltage power-supply circuit converts the AC power from the wall receptacle into the DC voltage that the product components use. This is a universal power supply that accepts 110 Volt or 220 Volt input.

Figure 5-6 Low-voltage power-supply circuit



The low-voltage power supply converts the AC power into three DC voltages, which are then subdivided, as described in the following table.

Table 5-8 Converted DC voltages

Main DC voltage	Sub-voltage	Behavior
+24 V	+24VA	Constantly supplied
	+24VB	Interrupted when the front door or right door is opened
	+24VC	Stopped during Sleep (powersave) mode
+5 V	+5VA	Stopped during Sleep (powersave) mode
	+5VB	Interrupted when the front door or right door is opened
		Stopped during Sleep (powersave) mode
+3.3 V	none	Constantly supplied

Overcurrent/overvoltage protection

The low-voltage power supply stops supplying the DC voltage to the product components whenever it detects excessive current or abnormal voltage from the power source.

Safety

For personal safety, the low-voltage power supply interrupts power to the fuser, the high-voltage power supply, and the motors whenever the front door or right door is opened.

Voltage detection

The DC controller monitors the input voltage from the power source so it can control the voltage to the fuser. If the input voltage is out of range, the DC controller notifies the formatter that the low-voltage power supply has failed.

Sleep (powersave) mode

Sleep mode conserves energy by stopping the power to several components when the product is idle. If the DC controller detects voltage that is too high when the product is in Sleep mode, it determines that the low-voltage power supply has failed, and it notifies the formatter.

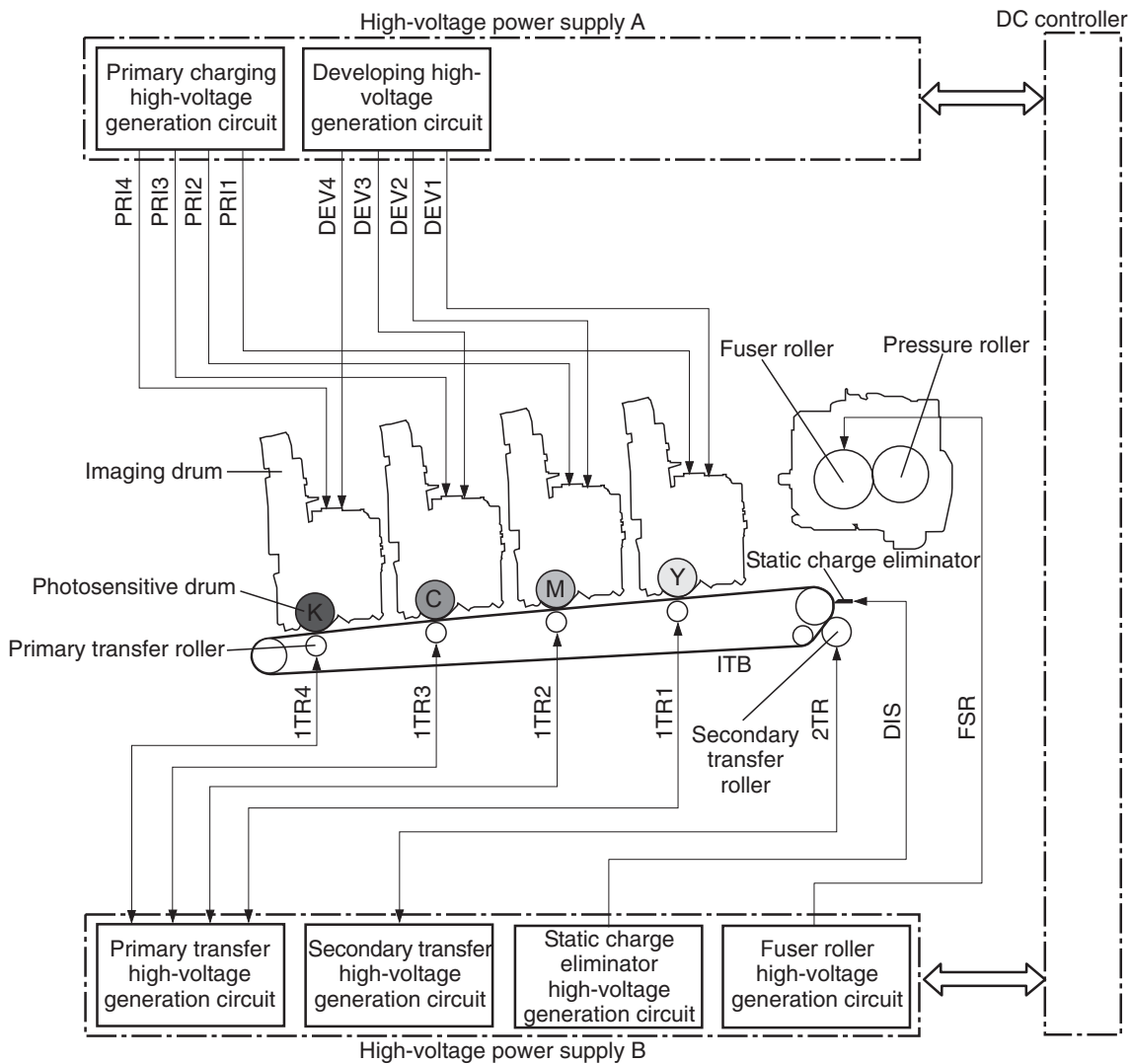
High-voltage power supply

The high-voltage power supply delivers the high-voltage biases to the following components that are used to transfer toner during the image-formation process:

- Primary-charging roller
- Developing roller

- Primary-transfer roller
- Secondary-transfer roller
- Fuser roller
- Static-charge eliminator

Figure 5-7 High-voltage power supply circuits



The high-voltage power supply contains several separate circuits.

Table 5-9 High-voltage power supply circuits

Circuit	Description
Primary-charging-bias generation	DC negative bias is applied to the surface of the photosensitive drum in each imaging drum to prepare it for image formation.
Developing-bias generation	DC negative bias is used to adhere the toner to each photosensitive drum during the image-formation process.
Primary-transfer-bias generation	DC positive bias is used to transfer the latent toner image from each photosensitive drum onto the ITB.

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

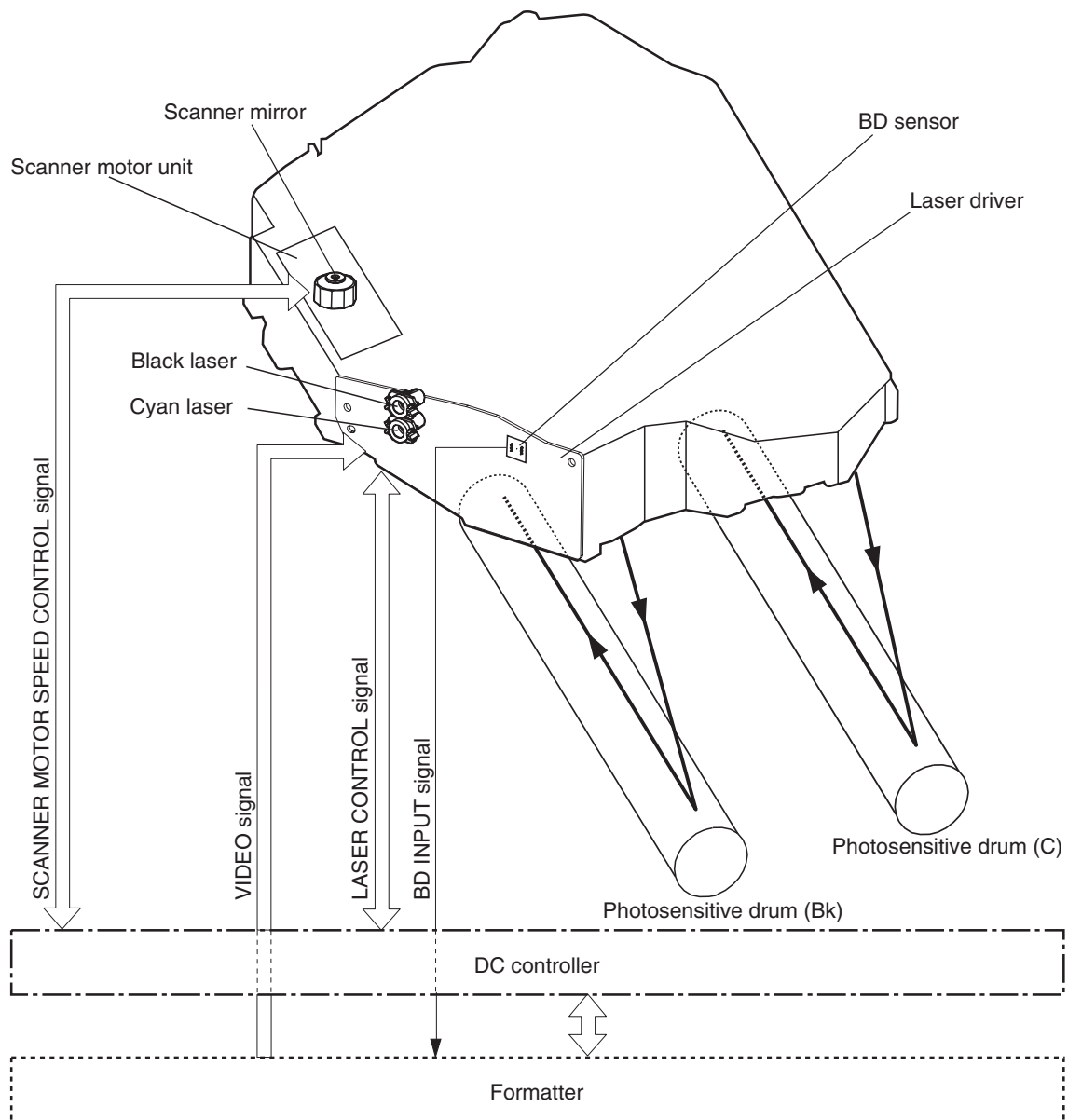
Circuit	Description
Secondary-transfer-bias generation	Two DC biases, one positive and one negative, are used to transfer the toner from the ITB onto the paper.
Static-charge-eliminator-bias generation	DC negative bias is used to reduce the electrical charge on the paper after the secondary-transfer process.
Fuser-roller-bias generation	DC negative bias is applied to the fuser roller to remove any toner that adheres to the roller after fusing.

Laser/scanner system

The laser/scanner system forms the latent electrostatic image on the photosensitive drums inside each of the imaging drums. The product has two laser/scanners: one for yellow and magenta and the other for cyan and black.

The DC controller receives instructions from the formatter regarding the image of the page to be printed. The DC controller signals the lasers to emit light, and the laser beams pass through lenses and onto the scanner mirror, which rotates at a constant speed. The mirror reflects the beam onto the photosensitive drum in the pattern required for the image, exposing the surface of the drum so it can receive toner.

Figure 5-8 Laser/scanner system



The DC controller determines that a laser/scanner has failed when any of the following conditions occurs:

- **Laser failure:** The detected laser intensity does not match a specified value when the product initializes.
- **Beam-detect (BD) failure:** The BD interval is outside of a specified range during printing.
- **Scanner-motor failure:** The scanner motor does not reach a specified rotation speed within a certain time after it begins rotating.

Image-formation system

The image-formation system creates the printed image on the paper. It consists of the laser/scanners, print cartridges, imaging drums, ITB, and fuser.

Figure 5-9 Image-formation system

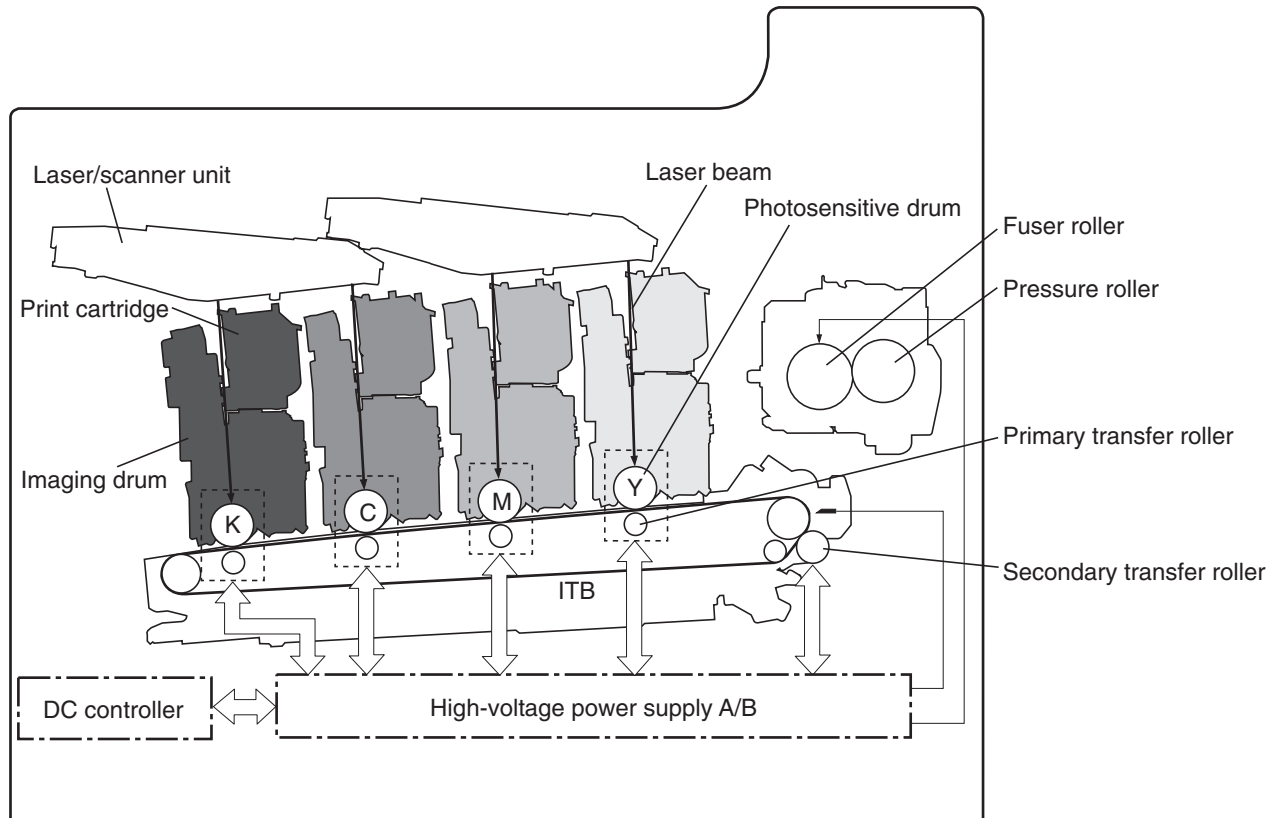
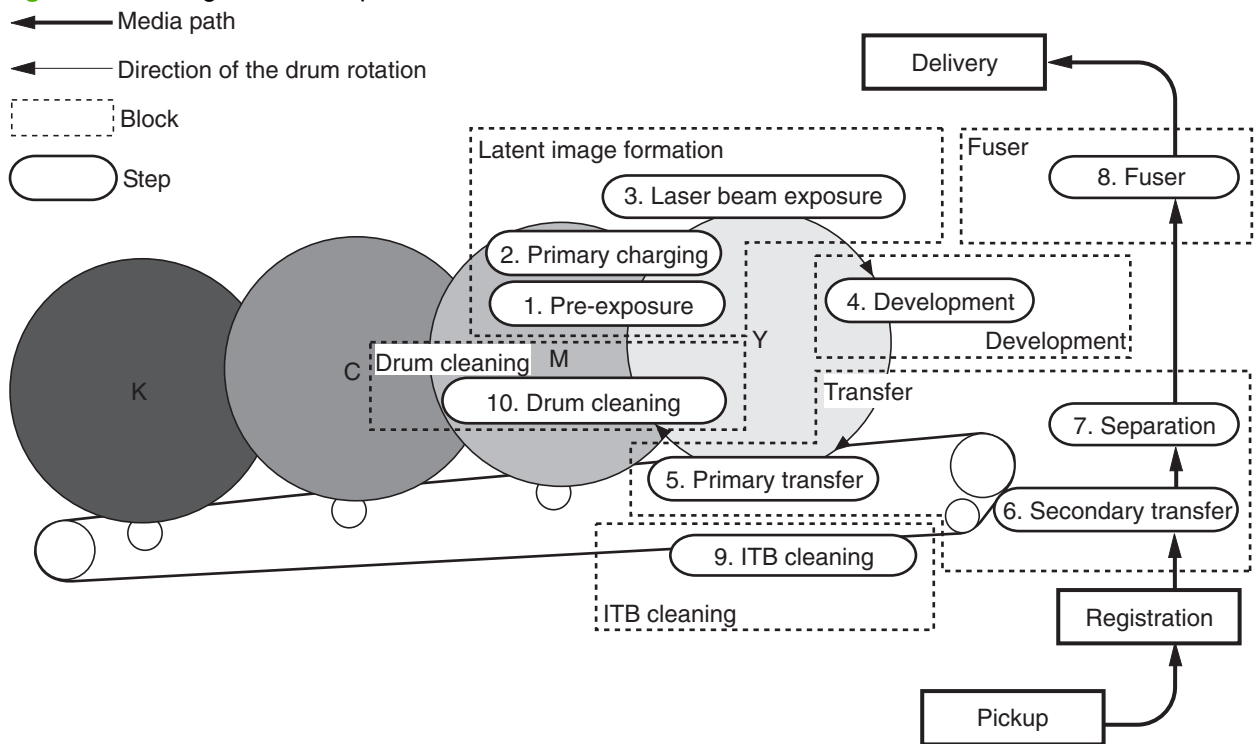


Image-formation process

The image-formation system consists of ten steps that are divided into six functional blocks.

Figure 5-10 Image-formation process

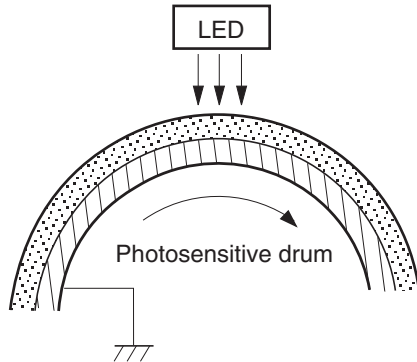


Functional block	Steps	Description
Latent image formation	1. Pre-exposure 2. Primary charging 3. Laser-beam exposure	An invisible latent image is formed on the surface of the photosensitive drums.
Development	4. Development	Toner adheres to the electrostatic latent image on the photosensitive drums.
Transfer	5. Primary transfer 6. Secondary transfer 7. Separation	The toner image is transferred to the ITB and subsequently to the paper.
Fusing	8. Fusing	The toner is fused to the paper to make a permanent image.
ITB cleaning	9. ITB cleaning	Residual toner is removed from the ITB.
Drum cleaning	10. Drum cleaning	Residual toner is removed from the photosensitive drums.

Step 1: Pre-exposure

Light from the pre-exposure LED strikes the surface of the photosensitive drum to remove any residual electrical charges from the drum surface.

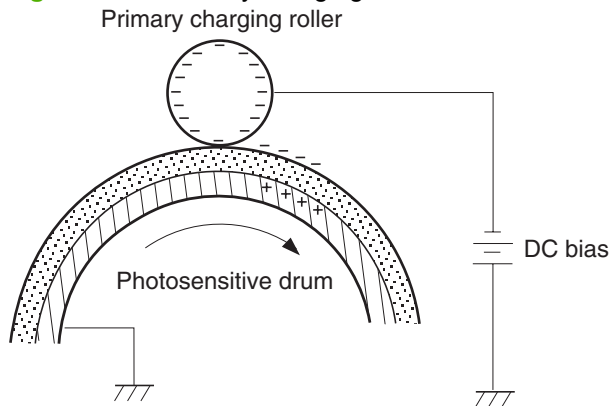
Figure 5-11 Pre-exposure



Step 2: Primary charging

The primary-charging roller contacts the photosensitive drum and charges the drum with negative potential.

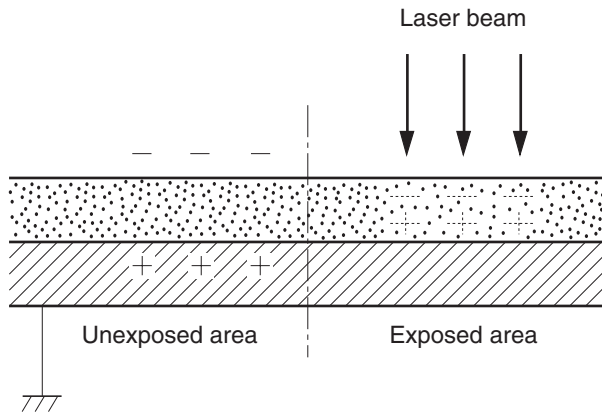
Figure 5-12 Primary charging



Step 3: Laser-beam exposure

The laser beam strikes the surface of the photosensitive drum in the areas where the image will be formed. The negative charge is neutralized in those areas, which are then ready to accept toner.

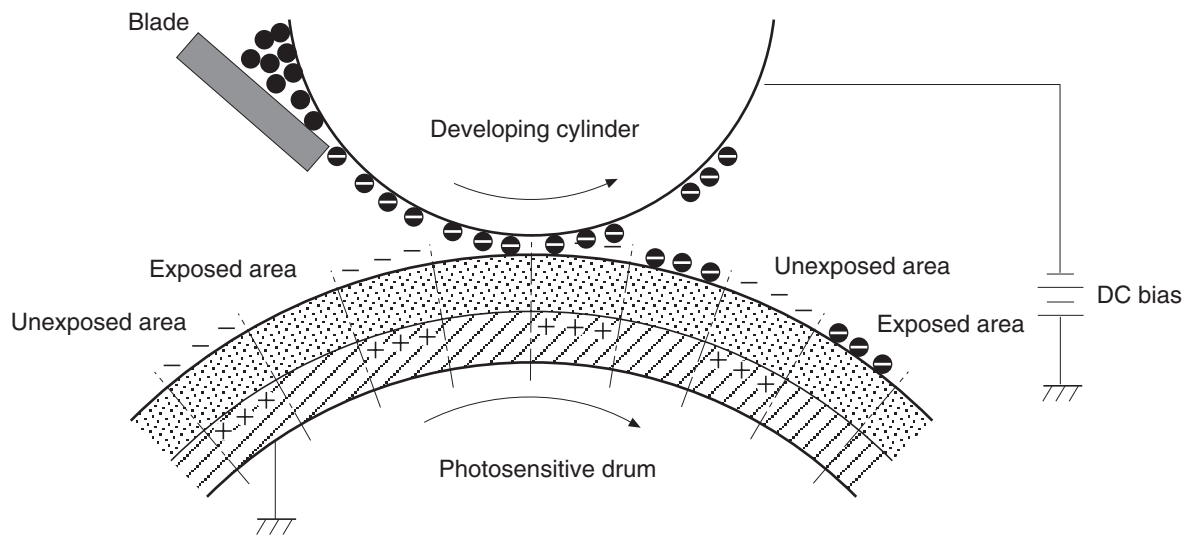
Figure 5-13 Laser-beam exposure



Step 4: Development

Toner inside the image drum acquires a negative charge as the developing cylinder contacts the developing blade. Because the negatively charged surface of the photosensitive drums have been neutralized where they have been struck by the laser beam, the toner adheres to those areas on the drums. The latent image becomes visible on the surface of each drum.

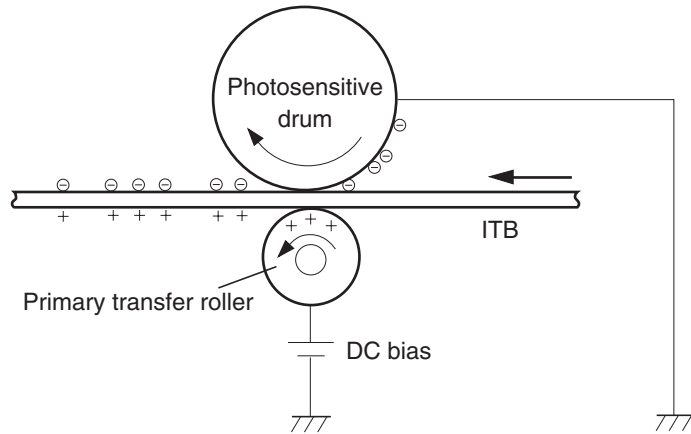
Figure 5-14 Development



Step 5: Primary transfer

The positively charged primary-transfer rollers contact the ITB, giving the ITB a positive charge. The ITB attracts the negatively charged toner from the surface of each photosensitive drum, and the complete toner image is transferred onto the ITB, beginning with yellow, then magenta, cyan, and black.

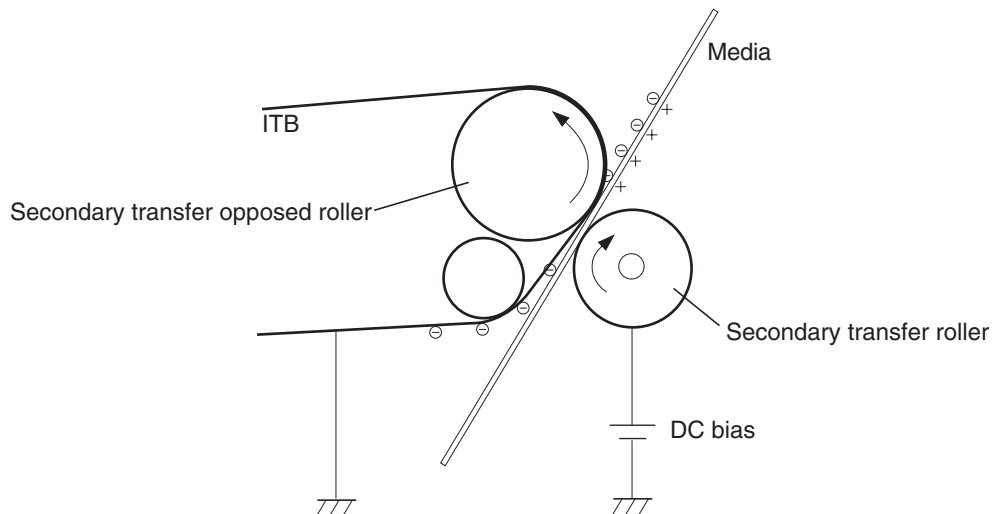
Figure 5-15 Primary transfer



Step 6: Secondary transfer

The paper acquires a positive charge from the secondary-transfer roller, and so it attracts the negatively charged toner from the surface of the ITB. The complete toner image is transferred onto the paper.

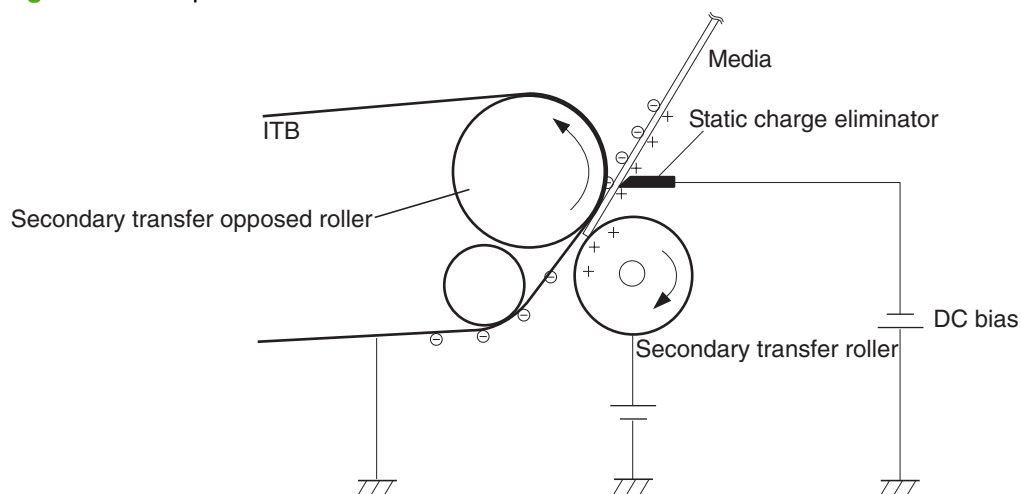
Figure 5-16 Secondary transfer



Step 7: Separation

The stiffness of the paper causes it to separate from the ITB as the ITB bends. The static-charge eliminator removes excess charge from the paper to ensure that the toner is fused correctly.

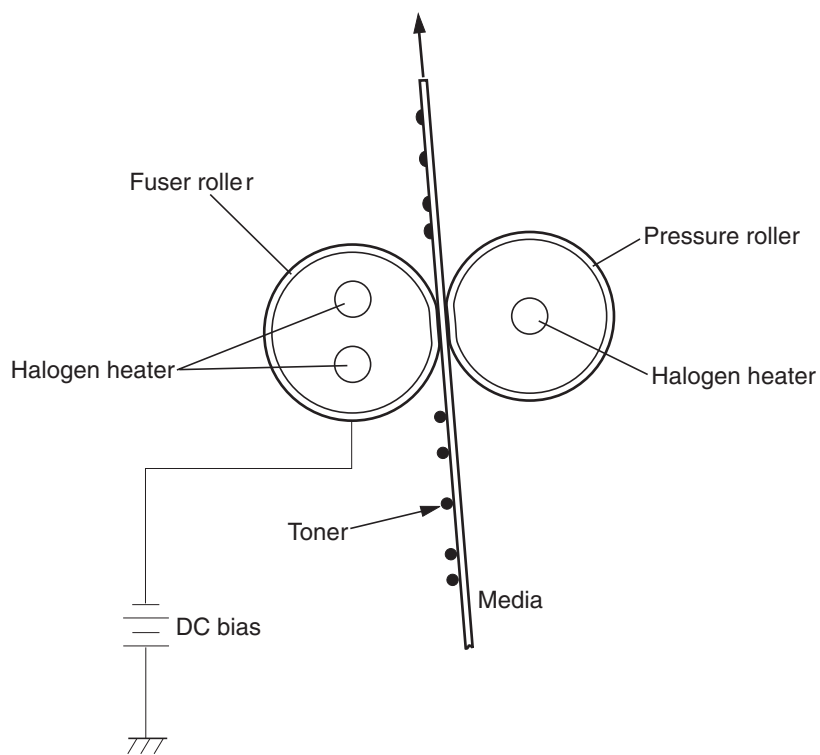
Figure 5-17 Separation



Step 8: Fusing

To create the permanent image, the paper passes through a set of heated, pressurized rollers to melt the toner onto the page. The fuser roller has a negative DC bias to prevent the negatively charged toner from being attracted to the roller, which would decrease print quality.

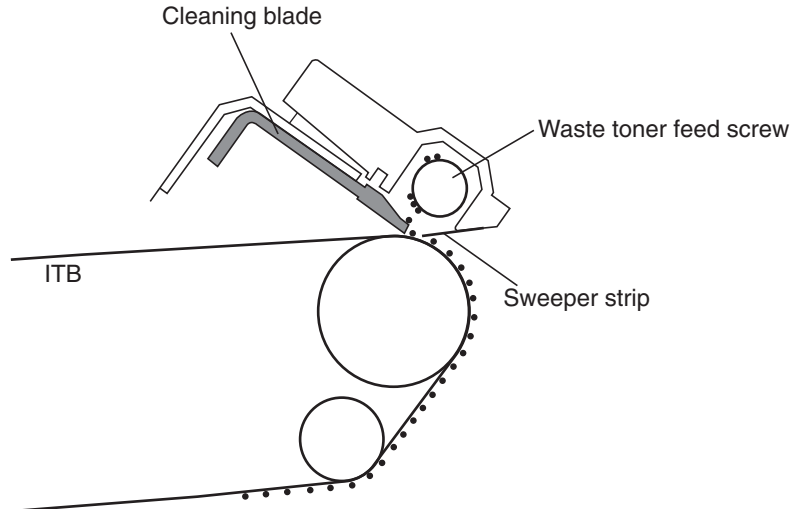
Figure 5-18 Fusing



Step 9: ITB cleaning

After the paper separates from the ITB, the cleaning blade scrapes the residual toner from the surface of the ITB, preparing it for the next image. The waste-toner feed screw picks up the residual toner and deposits it in the waste-toner container inside the imaging drum.

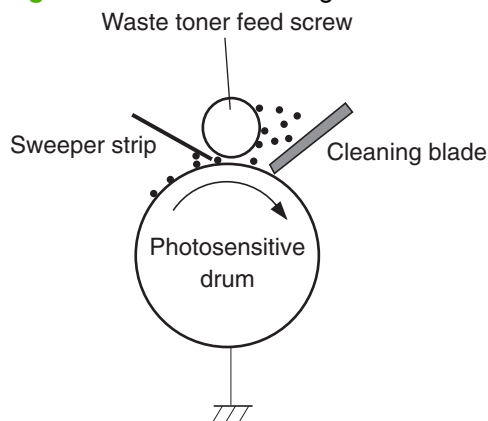
Figure 5-19 ITB cleaning



Step 10: Drum cleaning

Inside the imaging drum, the cleaning blade removes the residual toner from the surface of the photosensitive drum to prepare it for the next image. The waste-toner-feed screw picks up the residual toner and deposits it in the waste-toner container inside the imaging drum.

Figure 5-20 Drum cleaning

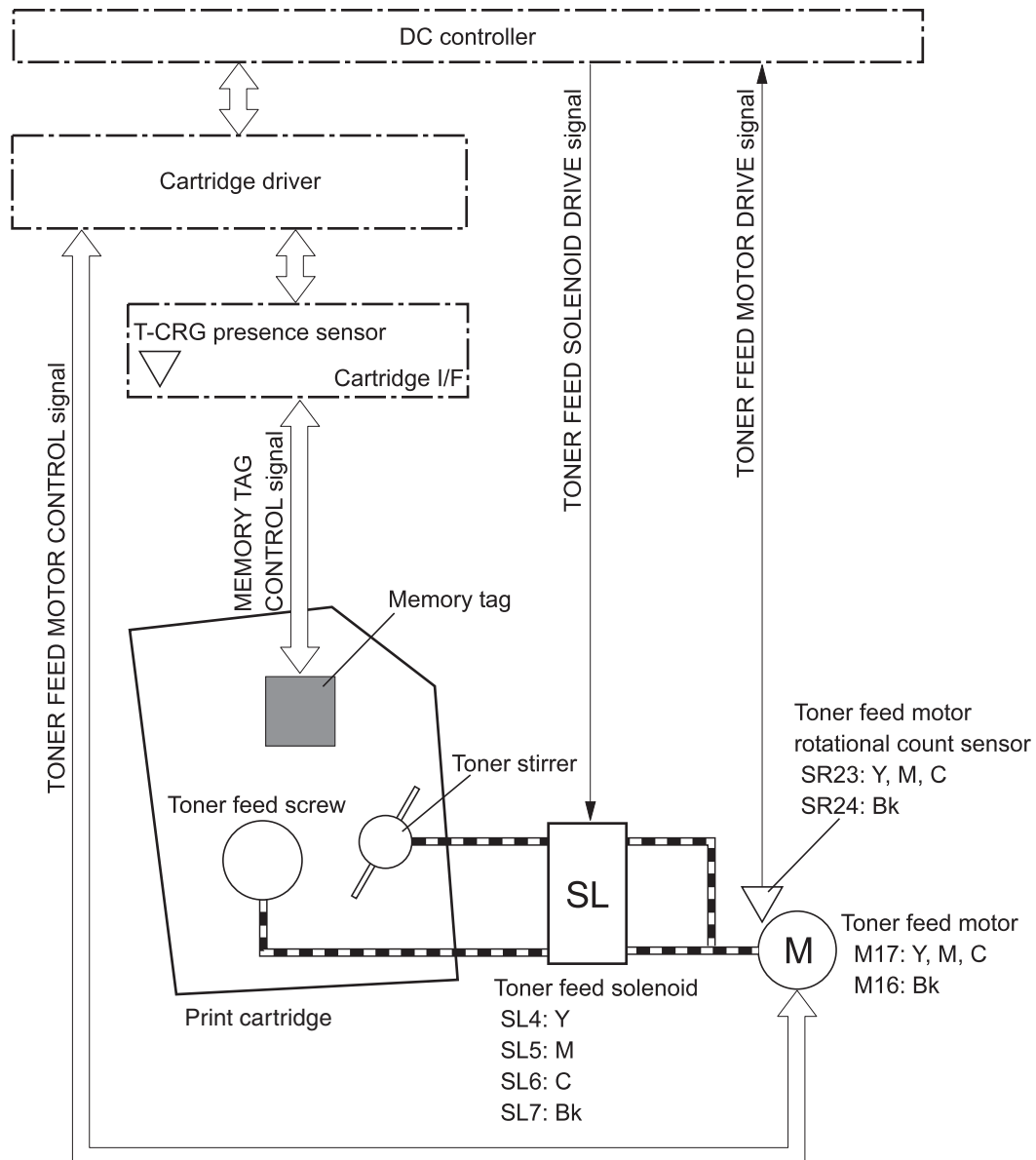


Print cartridge

The product has four print cartridges, one for each color. Each print cartridge contains a reservoir of toner and the following components:

- Toner-feed screw
- Toner stirrer
- Memory tag

Figure 5-21 Print-cartridge system



The toner-feed screw rotates, picks up the toner particles, and transports them into the imaging drum. The toner stirrer rotates at the same time as the toner-feed screw to keep the toner particles from sticking to each other.

The memory tag is a non-volatile memory chip that stores information about the usage for the print cartridge.

The DC controller notifies the formatter of an error if any of the following conditions exist:

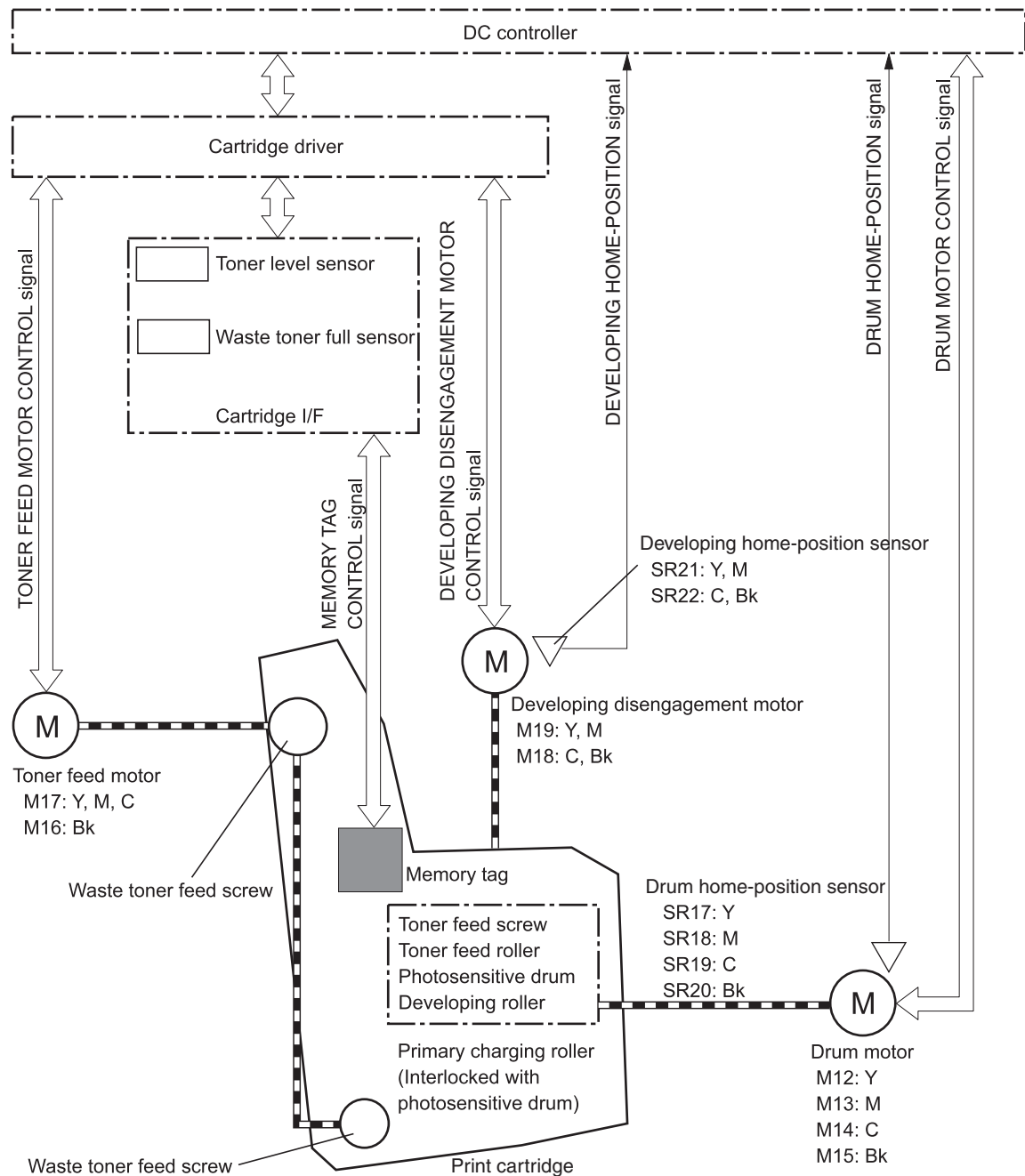
- The memory tag fails to either read to or write from the DC controller
- A print-cartridge-presence sensors fails to detect the presence of the print cartridge
- The toner level in any of the print cartridges drops below a certain level
- The toner feed motor is rotating but the rotational-count sensor does not increment the rotation count after a specified length of time. This condition indicates a failure in the toner-feed motor.

Imaging drum

The product has four imaging drums, one for each color. Each imaging drum contains the following components:

- Photosensitive drum
- Primary-charging roller
- Developing roller
- Toner-feed roller

Figure 5-22 Imaging-drum system



The drum motor causes the photosensitive drum to rotate. That rotation causes the primary-charging roller to rotate. The drum motor also drives the toner feed screw, the toner-feed roller, and the developing roller to transfer toner from the print cartridge into the imaging drum.

The toner feed motor drives the waste-toner-feed screw, which removes the waste toner and transports it to the waste toner container.

The memory tag is a non-volatile memory chip that stores information about the usage for the imaging drum.

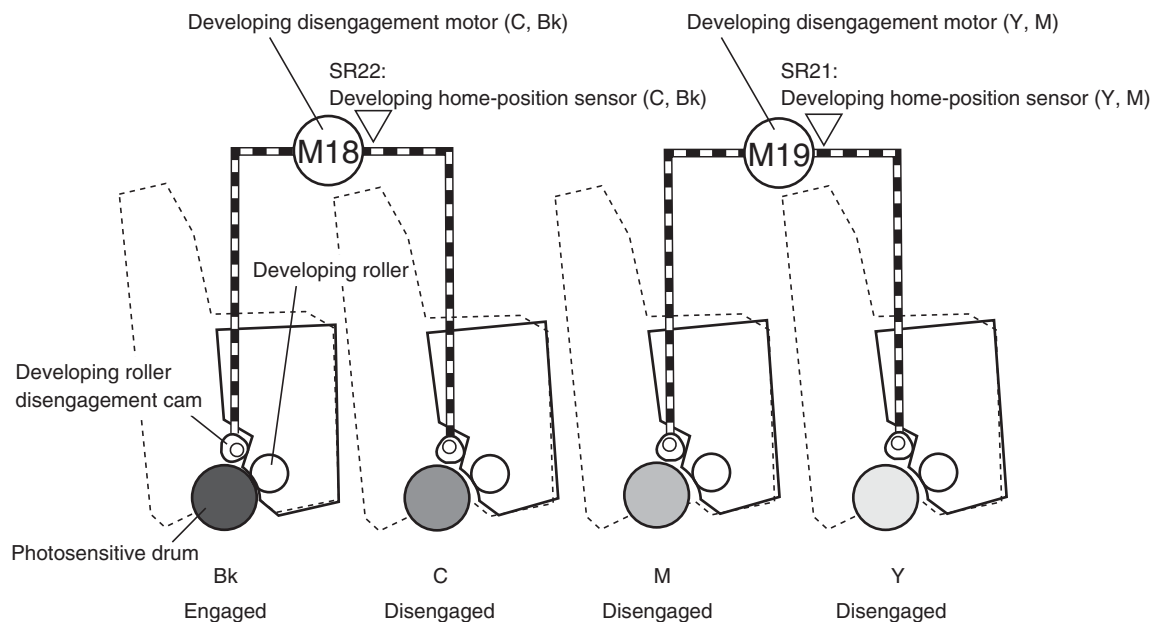
The DC controller notifies the formatter of an error if any of the following conditions exist:

- The memory tag fails to either read to or write from the DC controller
- The toner level in any of the waste toner containers reaches a certain level
- A drum-presence sensors fails to detect the presence of the imaging drum by monitoring the color misregistration/image density output.
- An imaging drum is installed incorrectly.
- The number of pages printed with the current imaging drum reaches a predetermined level
- The level of toner in the imaging drum is not at a predetermined level while the print cartridge is feeding toner to the imaging drum. This indicates a toner feed failure.
- The toner-level sensor detects a level of toner that is outside of a certain range during the print operation. This indicates a toner-level sensor failure.

Developing roller engagement and disengagement

The product can print in full-color mode or in black-only mode. To print in black only, the developing rollers in the cyan, magenta, and yellow imaging drums are disengaged. This maximizes the life of those three imaging drums.

Figure 5-23 Developing-roller engagement and disengagement control



The DC controller rotates the developing disengagement motor and changes the direction of the cam according to the instructions from the formatter for each print job.

When the product is turned on and at the end of each print job, all four of the developing rollers disengage from the photosensitive drums. If the next print job is full-color, each of the developing rollers engage. If the next print job is black-only, only the black developing roller engages.

If the DC controller does not detect any output from the developing home-position sensor, it determines that the developing-disengagement motor has failed.

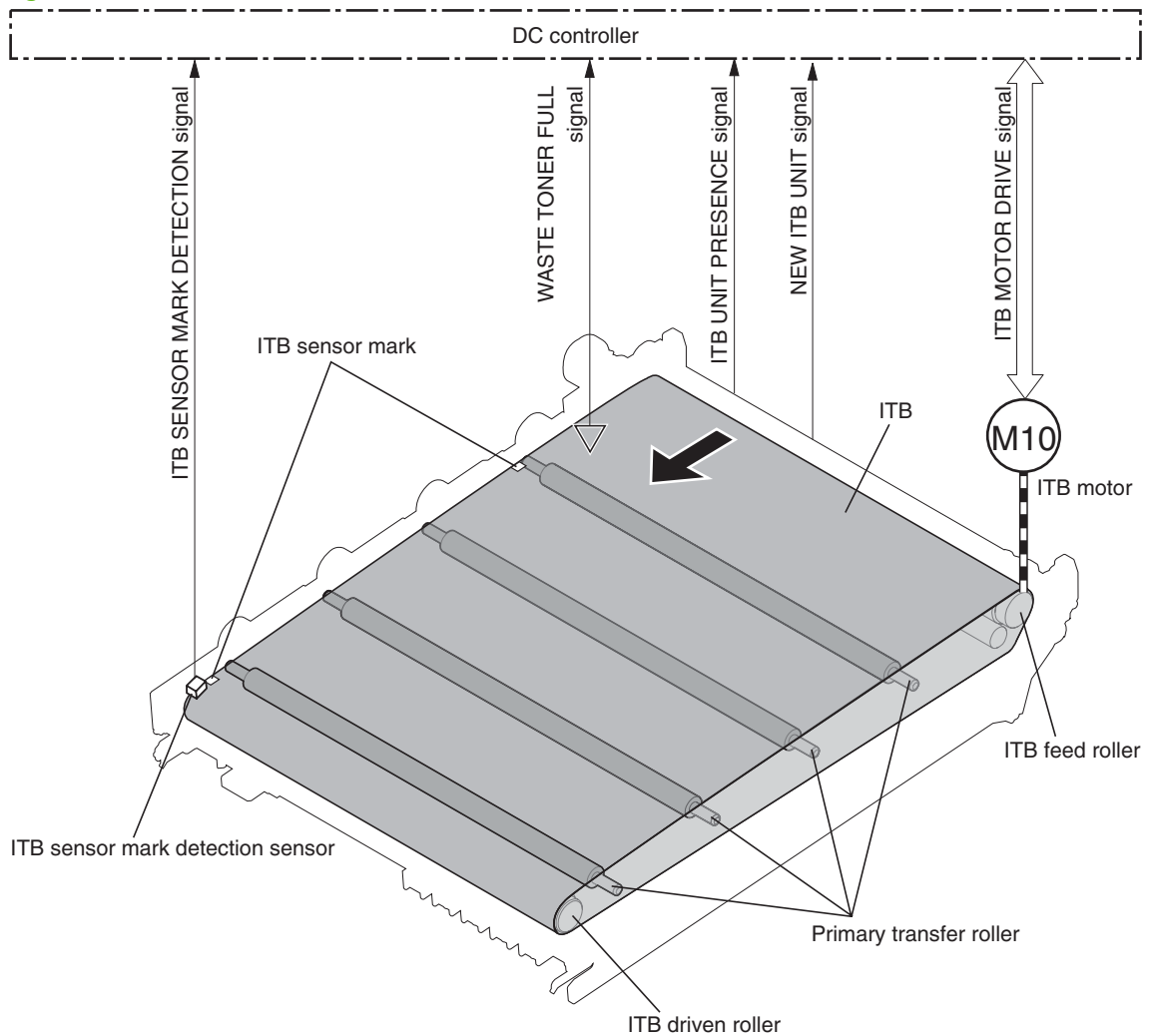
Intermediate transfer belt (ITB) unit

The ITB unit accepts the toner images from the photosensitive drums and transfers the completed image to the paper. The ITB unit has these main components:

- ITB
- ITB feed roller
- ITB-driven roller
- Primary-transfer rollers

The ITB motor drives the ITB feed roller, which rotates the ITB. The motion of the ITB causes the primary transfer rollers to rotate.

Figure 5-24 ITB unit



Primary-transfer-roller engagement and disengagement

Depending on the requirements of the print job, the primary-transfer rollers engage with the ITB so it can receive toner from the photosensitive drums. There are three states of roller engagement.

Table 5-10 Primary-transfer-roller engagement states

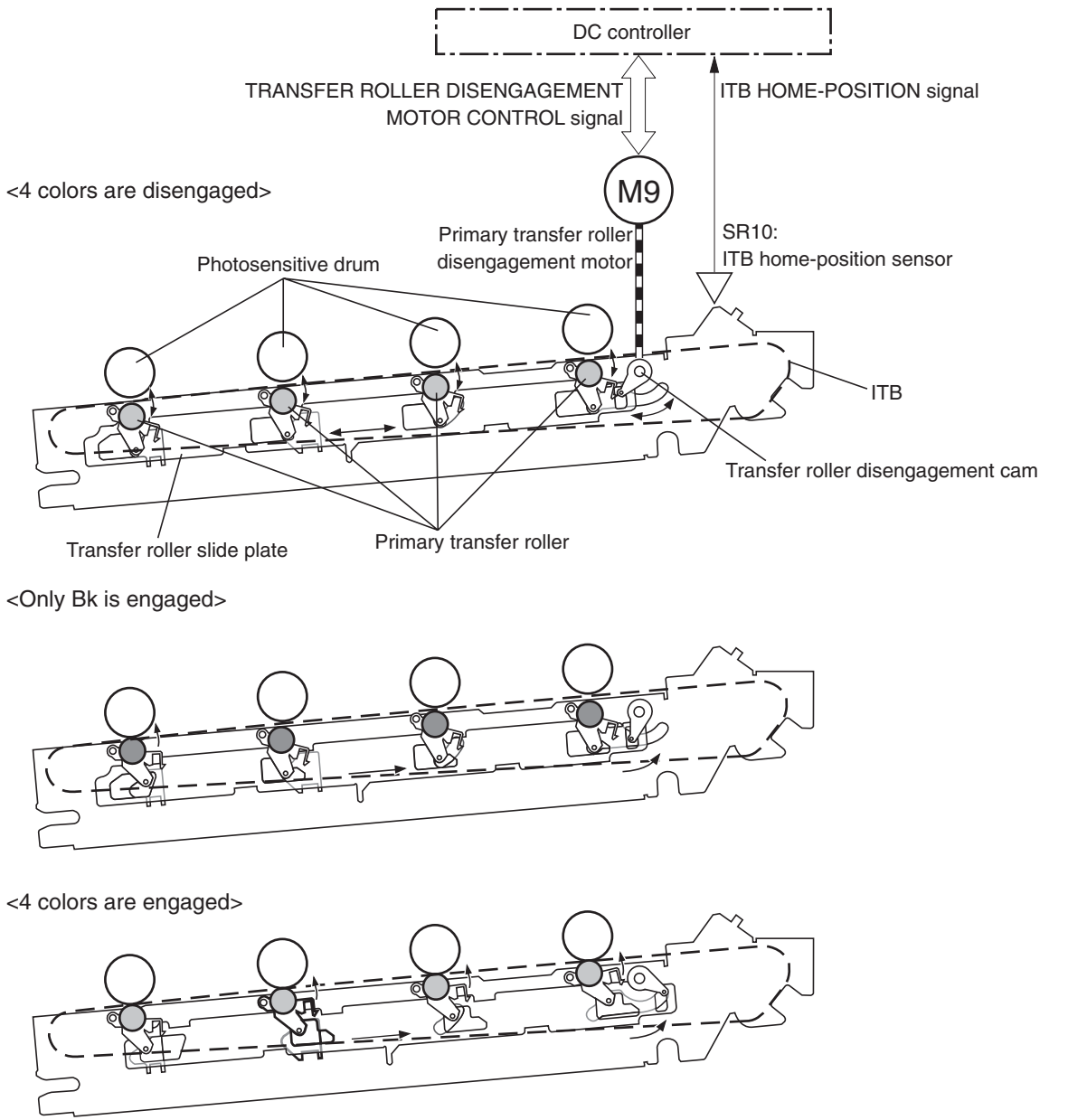
All rollers disengaged	This is the home position for the ITB unit.
Black roller engaged	This is the state for a black-only print job.
All rollers engaged	This is the state for a full-color print job.

The primary-transfer-roller-disengagement motor rotates or reverses to place the primary-transfer-roller-disengagement cam into one of three positions. The cam causes the transfer roller slide plate to move to the right or left, which causes the primary-transfer rollers to move up to engage the ITB with the photosensitive drum or down to disengage it.

If the DC controller does not receive the expected signal from the ITB home-position sensor during the primary-transfer-roller-engagement or disengagement operation, but the primary-transfer-roller-

disengagement motor is rotating, it determines that the primary-transfer-disengagement mechanism has failed, and it notifies the formatter.

Figure 5-25 Three states of primary-transfer-roller engagement and disengagement



ITB unit detection

The DC controller monitors several signals from the ITB unit to detect status.

Table 5-11 ITB unit detection

ITB unit life detection	When a specified number of pages have been printed since an ITB unit was installed, the DC controller alerts the formatter that the ITB unit is at the end of its life.
ITB unit waste toner full detection	When a waste-toner container collects a specified level of toner, the DC controller alerts the formatter that the imaging drum needs to be replaced.
ITB unit presence detection	

Table 5-11 ITB unit detection (continued)

ITB perimeter detection	To ensure that the toner image is placed correctly on each page, the DC controller uses the ITB sensor marks on the surface of the ITB. It adjusts the paper re-pickup timing based on this position.
ITB sensor-mark detection-sensor-failure detection	If the DC controller cannot detect the ITB sensor marks, it notifies the formatter that the ITB sensor-mark detection-sensor has failed.

Secondary-transfer-roller unit

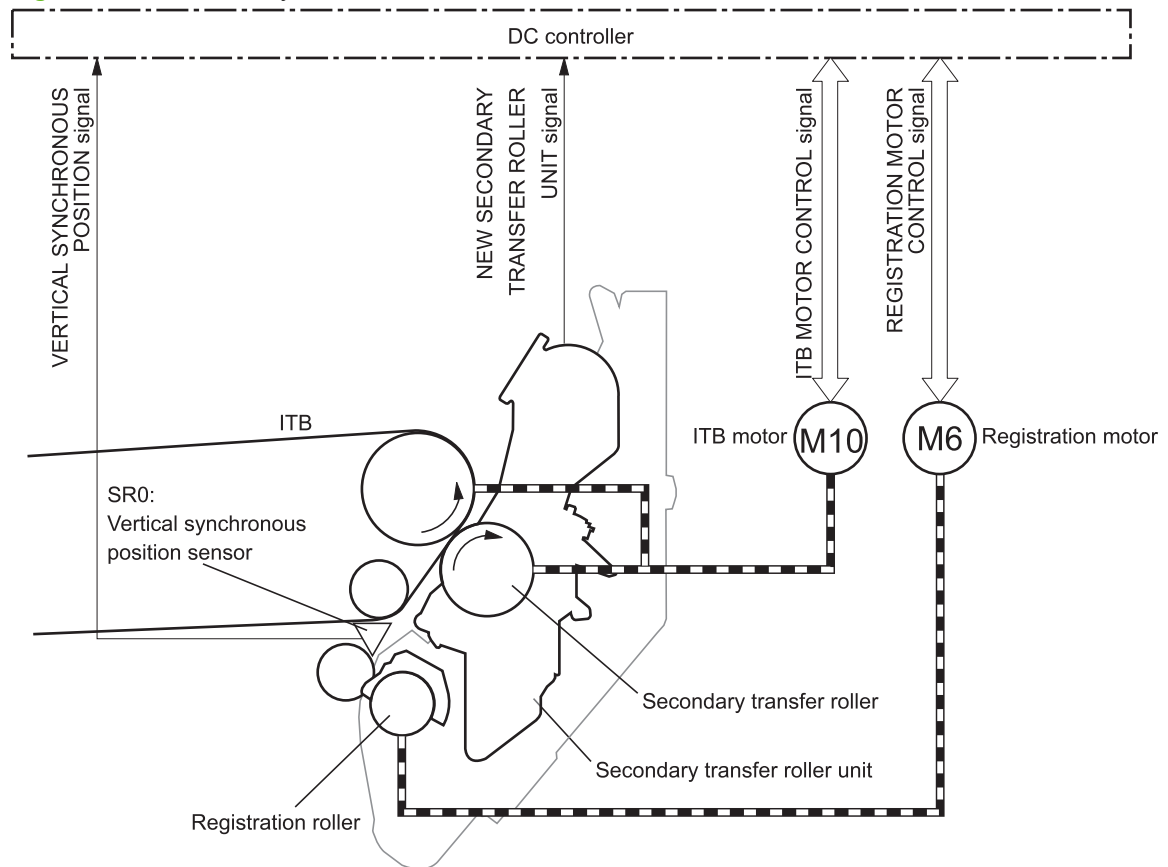
The secondary-transfer-roller unit transfers the toner image from the ITB surface onto the paper. The ITB motor drives the secondary transfer roller, and the registration motor drives the registration roller.

To ensure that the toner image is placed correctly on each page, the DC controller stops the registration motor when the leading edge of the paper passes the vertical synchronous position sensor. It holds the paper in this position until the ITB is in the correct position, according to the ITB perimeter detection, to align the toner image with the paper.

When the product is turned on, when it is coming out of Sleep mode, or after a door has been closed, DC bias is applied to the secondary transfer roller. If no current is detected, the DC controller notifies the formatter that the secondary-transfer-roller unit is not present.

The DC controller can detect when a new secondary-transfer-roller unit has been installed. After a specified number of pages have been printed since a new secondary-transfer-roller unit has been installed, the DC controller notifies the formatter that the secondary-transfer-roller unit is reaching the end of its life.

Figure 5-26 Secondary-transfer-roller unit

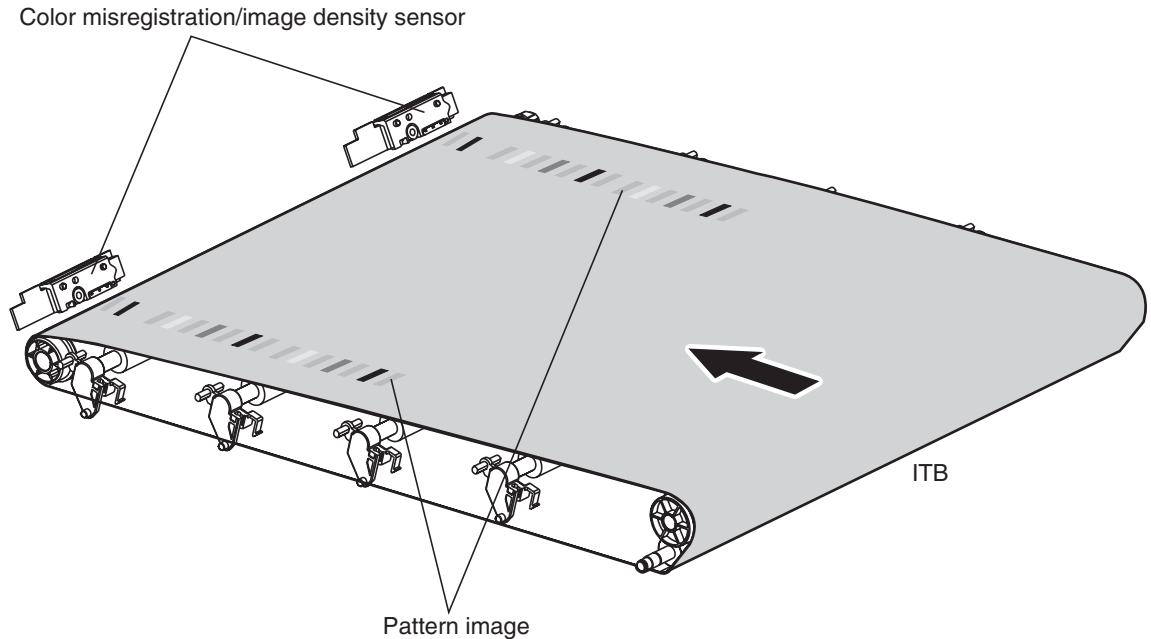


Calibration

The product calibrates itself to maintain excellent print quality. It corrects color-misregistration and color-density variation.

During calibration, the product places a specific pattern of toner on the surface of the ITB. Sensors at the end of the ITB read the toner pattern to determine if adjustments are necessary.

Figure 5-27 Toner patterns for calibration



Color-misregistration control

Internal variations in the imaging drums or the laser/scanners can cause the toner images to become misaligned. The color-misregistration control corrects the following problems:

- Horizontal scanning start position
- Horizontal scanning magnification
- Vertical scanning start position

This calibration occurs at these times:

- The product is turned on or the front door is closed, after replacing an imaging drum.
- The product is turned on or the right door is closed, after replacing the ITB.
- A specified number of pages have been printed.
- The temperature in the laser/scanner unit area changes, which is a predictor of color misregistration.
- The user requests a calibration by using the control-panel menus.

If data from the color-misregistration and image-density sensors is outside a specified range when the product is turned on or when it is beginning the calibration sequence, the DC controller determines that these sensors have failed, and it notifies the formatter.

Image-stabilization control

Environmental changes or deterioration of the photosensitive drums and toner can cause variations in the image density. The image-stabilization control reduces these fluctuations. There are three kinds of image-stabilization controls.

Table 5-12 Image-stabilization controls

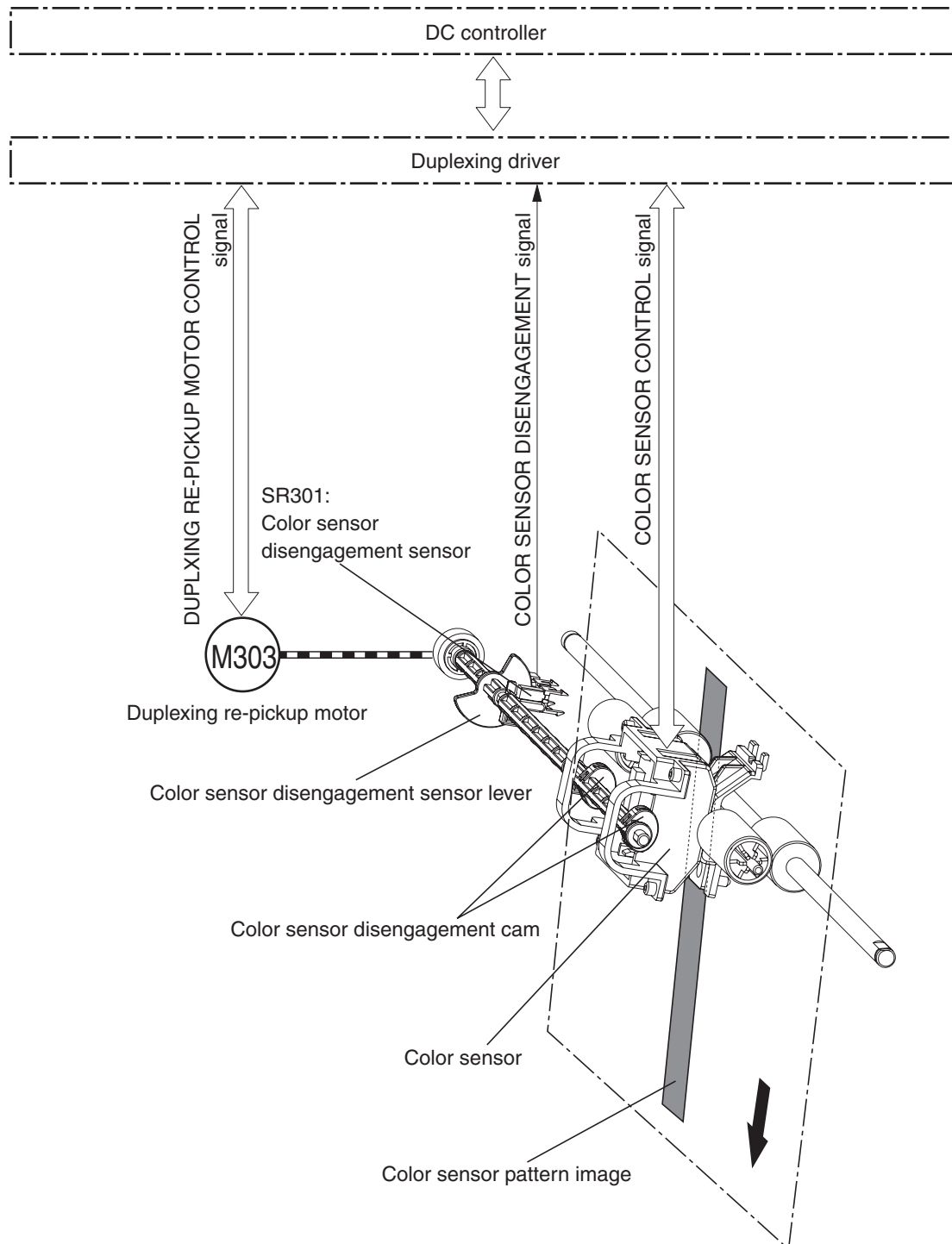
Environment change control	The DC controller monitors environmental information from internal temperature and humidity sensors. It adjusts the high-voltage bias to accommodate environmental changes. This control is performed under the following circumstances: • The product is turned on. • The imaging drum is replaced. • A change in environmental conditions occurs.
Image density control (DMAX)	This control corrects variations in image density that are related to deterioration of the photosensitive drum or the toner. The DC controller adjusts the high-voltage biases to correct the problem under the following conditions: • The thermopile detects a temperature that is too low when the product is turned on. • The product is turned on, or the front door is closed after replacing an imaging drum. • The product is turned on, or the right door is closed after replacing the ITB. • A specified number of pages have been printed. • A prescribed environmental change occurs • The product is recovered from sleep mode • After a specific period of the completion of a print operation
Image halftone control (DHALF)	The formatter performs this control to calibrate the halftone, based on the halftone-density measurements, under the following conditions: • The thermopile detects a temperature that is too low when the product is turned on. • The product is turned on, or the front door is closed after replacing an imaging drum. • The product is turned on, or the right door is closed after replacing the ITB. • A specified number of pages have been printed. • A prescribed environmental change occurs • The product is recovered from sleep mode • After a specific period of the completion of a print operation

Color-sensor control (duplex models only)

The image halftone control measures the color halftones of the toner image on the ITB. However, this control cannot adjust halftone variations that occur because of differences in types of paper. To accommodate differences in paper, the product has a color-sensor-control mechanism, which is located

in the duplex paper path. The product adjusts the color halftones based on measurements from a test pattern that is printed on a page and passed through the duplexer after fusing.

Figure 5-28 Color-sensor control



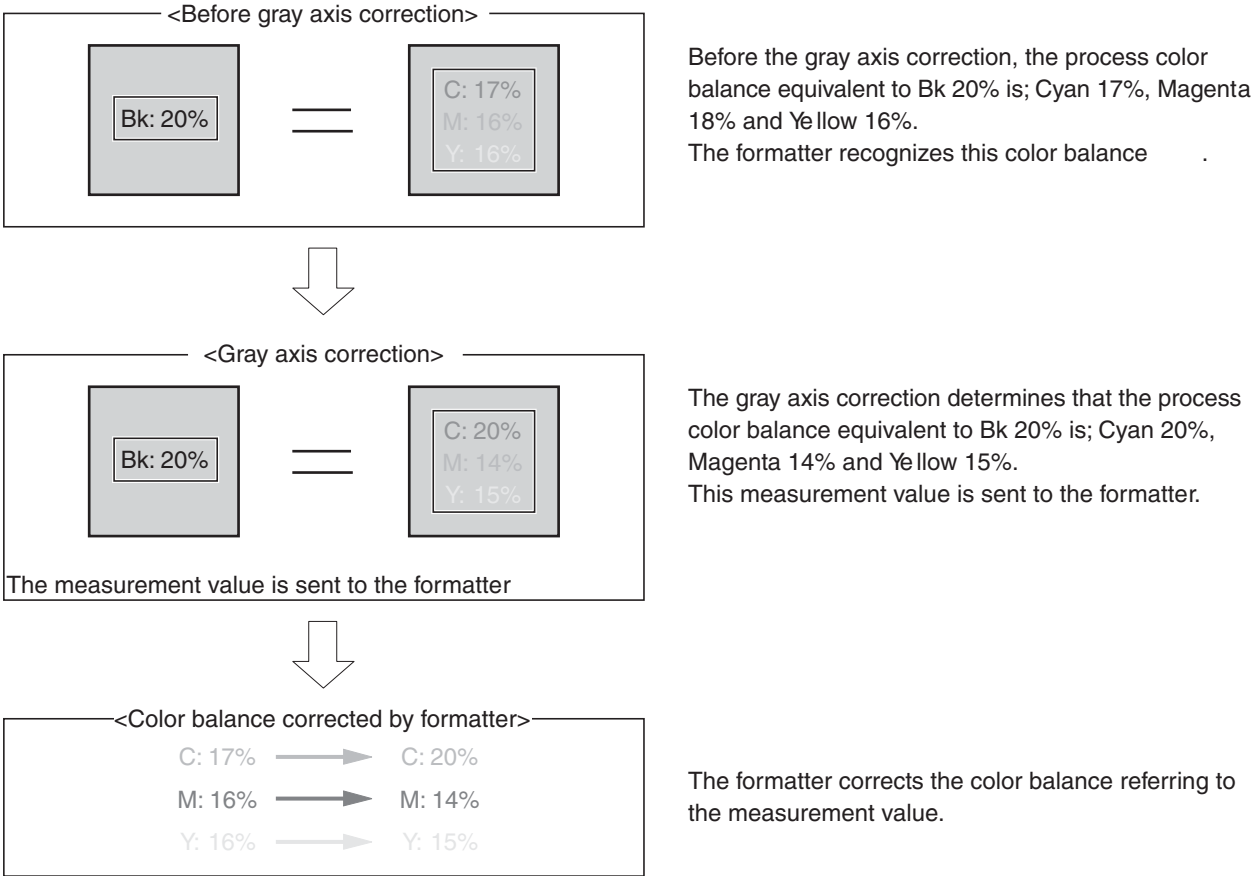
The color sensor engages or disengages based on the position of the color-sensor disengagement cam, which is driven by reversing the duplexing re-pickup motor.

If the DC controller receives no signal from the color-sensor disengagement sensor during a color-sensor control operation, it determines that the duplexing paper feed mechanism has failed.

Gray-axis correction

The gray axis correction adjusts for differences in the process-gray color that is designated by the formatter. The formatter adjusts the color balance for cyan, magenta, and yellow based on measurements from this control.

Figure 5-29 Gray-axis correction
Flow of gray axis correction



Pickup, feed, and delivery system

The pickup, feed, and delivery system uses a series of rollers to move the paper through the product.

The duplexing flapper solenoid (SL301) controls the position of the duplexing flapper to feed the paper into the duplexing unit.

Figure 5-30 Switches and sensors for the pickup, feed, and delivery system

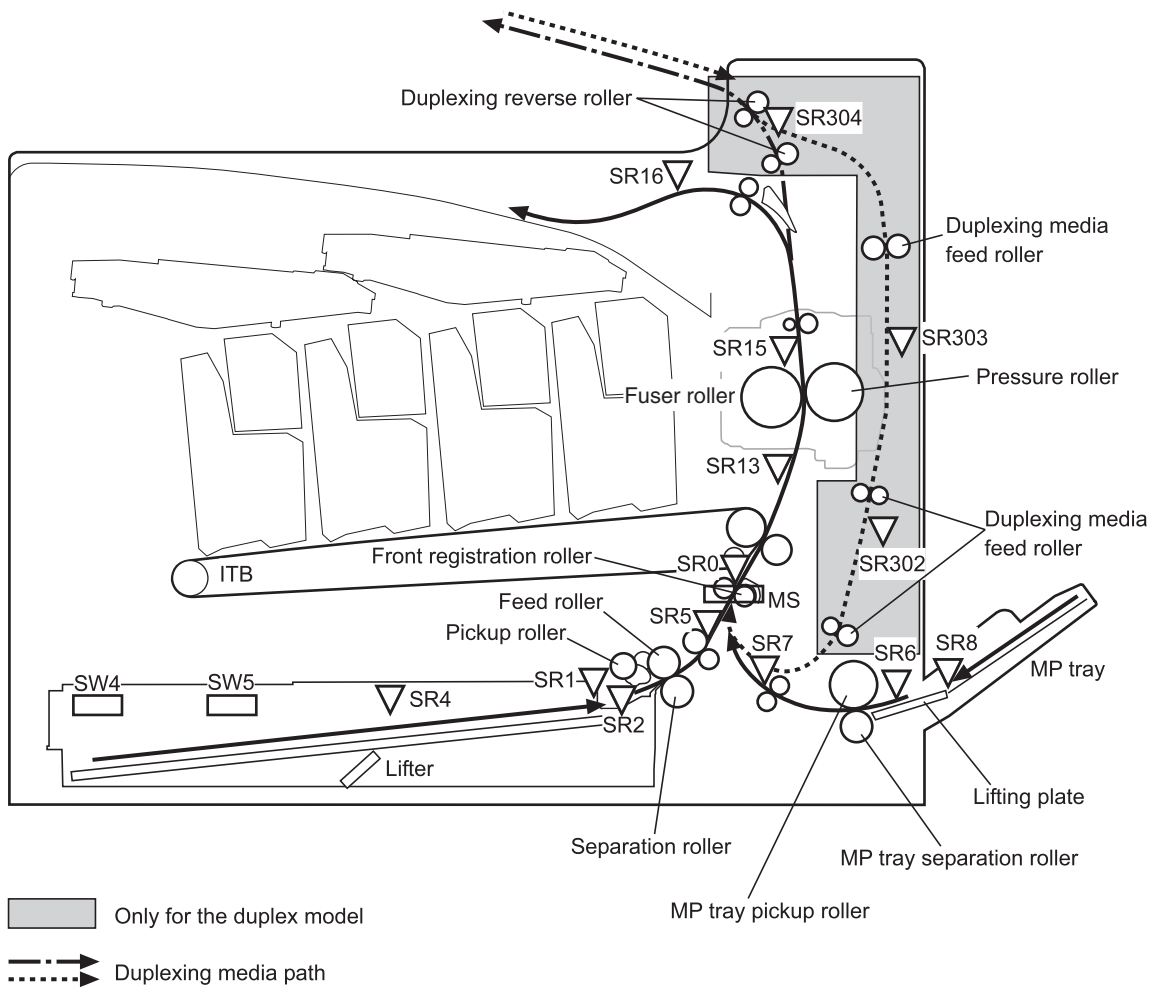


Table 5-13 Switches and sensors for the pickup, feed, and delivery system

Abbreviation	Component
SR0	Vertical synchronous position sensor
SR1	Cassette paper-presence sensor
SR2	Cassette paper-stack surface sensor
SR4	Cassette paper-level sensor
SR5	Cassette paper-feed sensor
SR6	Multipurpose tray paper-presence sensor
SR7	Multipurpose tray paper-feed sensor

Table 5-13 Switches and sensors for the pickup, feed, and delivery system (continued)

Abbreviation	Component
SR8	Multipurpose tray last paper sensor
SR13	Loop sensor
SR15	Fuser delivery paper-feed sensor
SR16	Output-bin full sensor
SR302	Duplexing paper re-pickup sensor
SR303	Duplexing paper-feed sensor
SR304	Duplexing paper-reverse sensor
SW4	Cassette end-plate position switch
SW5	Cassette side-plate position switch
MS	Paper sensor

Figure 5-31 Motors and solenoids for the pickup, feed, and delivery system

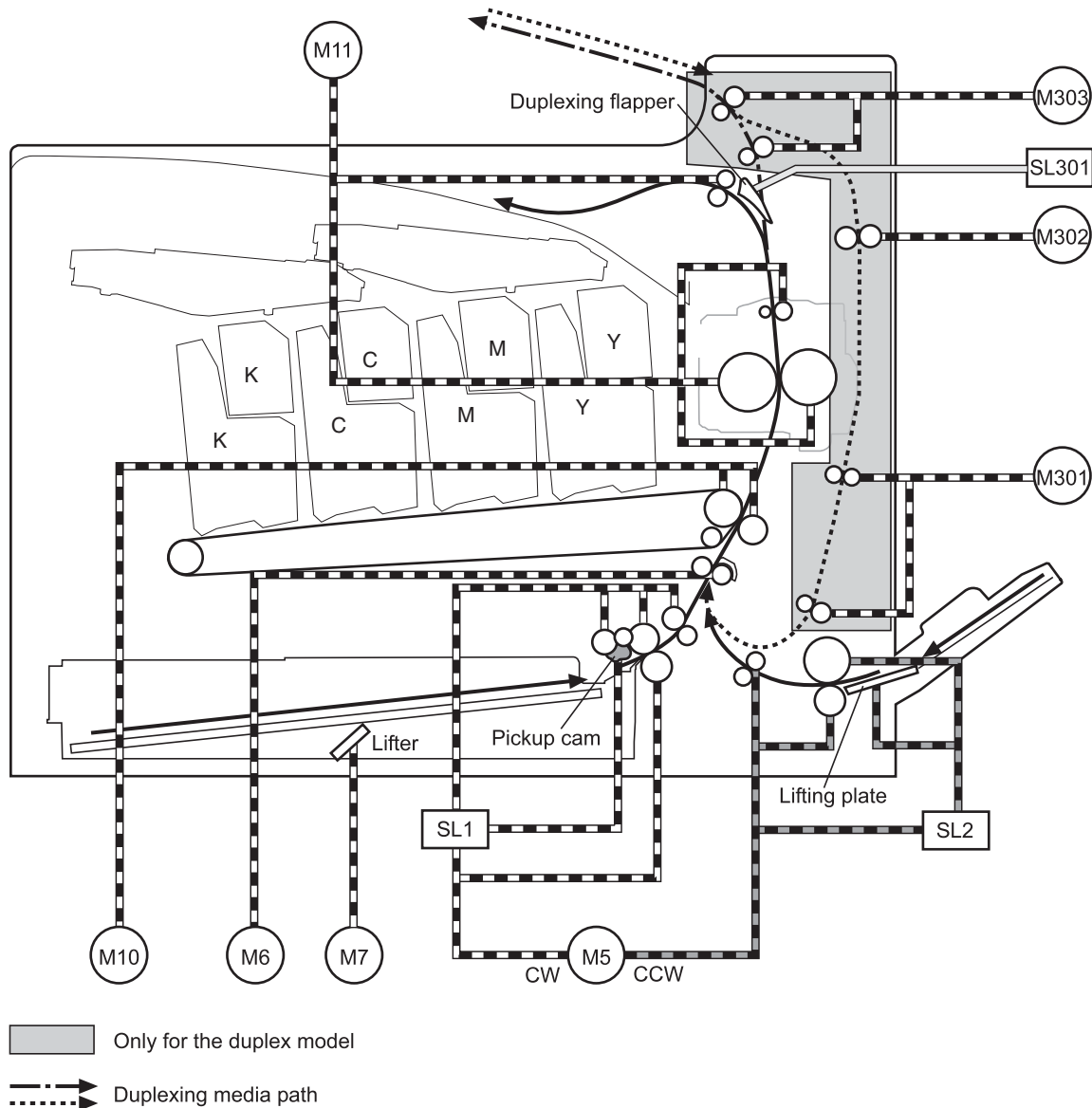


Table 5-14 Motors and solenoids for the pickup, feed, and delivery system

Abbreviation	Component
M5	Pickup motor
M6	Registration motor
M7	Cassette lifter motor
M10	ITB motor
M11	Fuser motor
M301	Duplexing re-pickup motor
M302	Duplexing feed motor
M303	Duplexing reverse motor

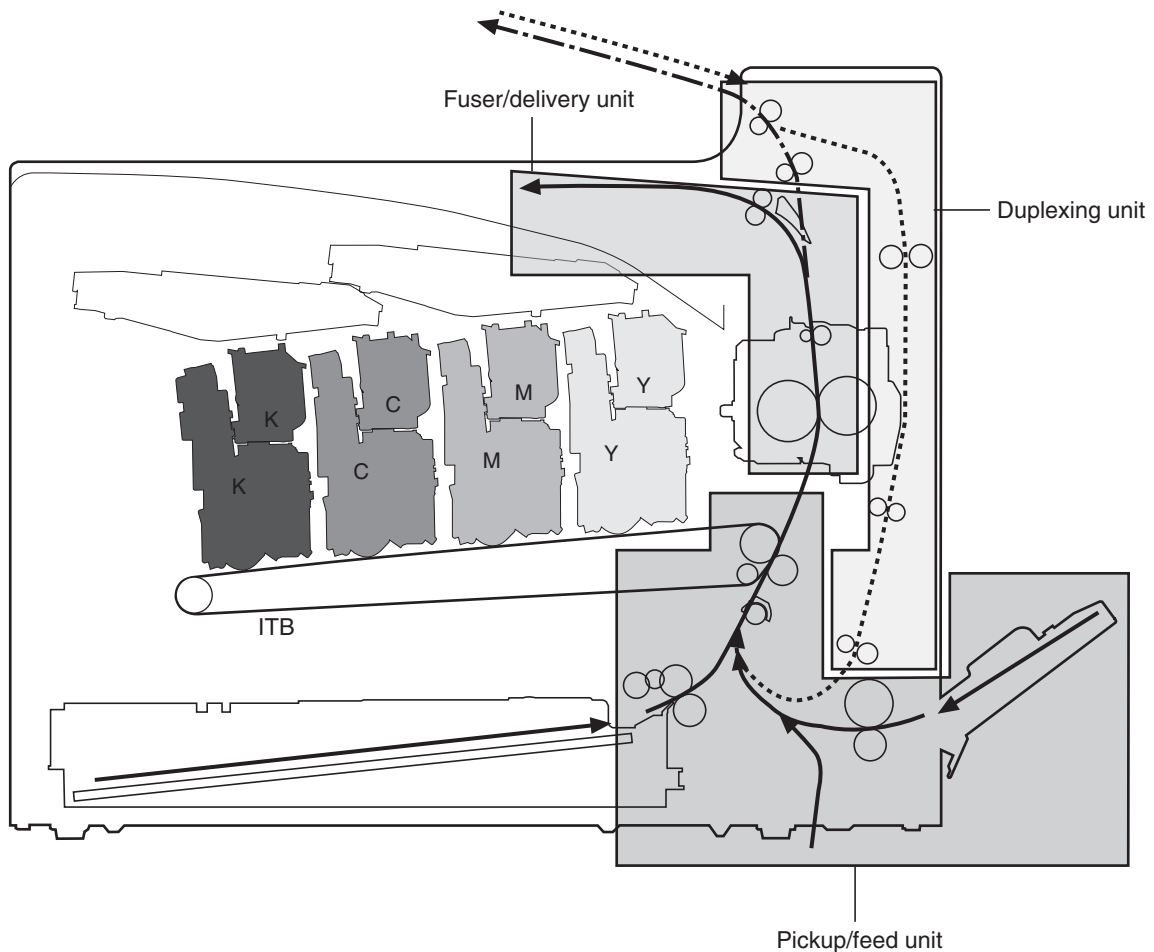
Table 5-14 Motors and solenoids for the pickup, feed, and delivery system (continued)

Abbreviation	Component
SL1	Cassette pickup solenoid
SL2	Multipurpose tray pickup solenoid
SL301	Duplexing flapper solenoid

The pickup, feed, and delivery system can be divided into three units:

- Pickup-and-feed unit
- Fuser and delivery unit
- Duplexing unit

Figure 5-32 Three main units of the pickup, feed, and delivery system



Pickup-and-feed unit

The pickup-and-feed unit picks an individual sheet of paper from the multipurpose tray or the cassettes, carries it through the secondary-transfer unit, and feeds it into the fuser.

Table 5-15 Main operations within the pickup-and-feed system

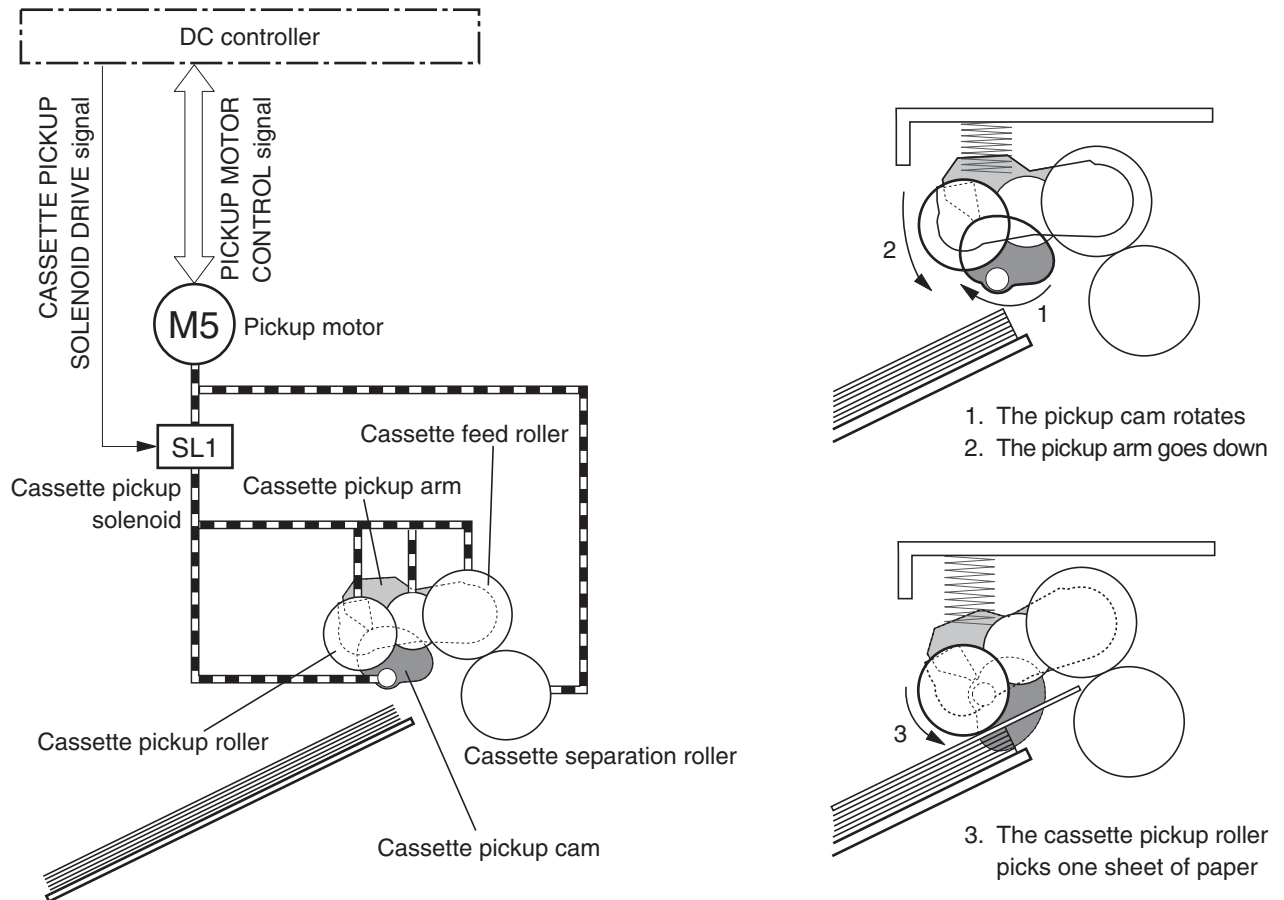
Operation	Steps
Cassette pickup	1. Paper-size and cassette-presence detection
	2. Lift operation
	3. Paper-level and paper-presence detection
	4. Multiple-feed prevention
Multipurpose tray pickup	1. Paper-presence detection
	2. Last paper detection
Paper feed	1. Skew-feed prevention
	2. Paper detection
	3. Feed-speed control

Cassette pickup

The sequence of steps for the cassette tray pickup operation is the following:

1. When the product is turned on or the tray is pushed closed, the lifting mechanism lifts the paper stack so it is ready.
2. After receiving a print command from the formatter, the DC controller rotates the pickup motor, which causes the cassette pickup roller, cassette feed roller, and cassette separation roller to rotate.
3. The DC controller drives the cassette pickup solenoid, which rotates the cassette pickup cam. As the pickup cam rotates, the pickup arm moves down, the cassette pickup roller touches the surface of the paper stack, and it picks up one sheet of paper.

Figure 5-33 Cassette-pickup mechanism



Cassette paper-size and cassette-presence detection

The cassette end-plate detection switch and the cassette side-plate detection switch detect the size of the paper that is loaded in the cassette. Each of these switches contains three sub-switches.

The DC controller compares the paper length that is detected by the vertical-synchronous-position sensor to the detected size and to the size that is specified for the print job. If they do not match, the DC controller notifies the formatter.

The cassette end-plate detection switch also detects whether the cassette is present. If all three of its switches are off, the DC controller determines that the cassette is absent.

Figure 5-34 Cassette paper-size detection switches

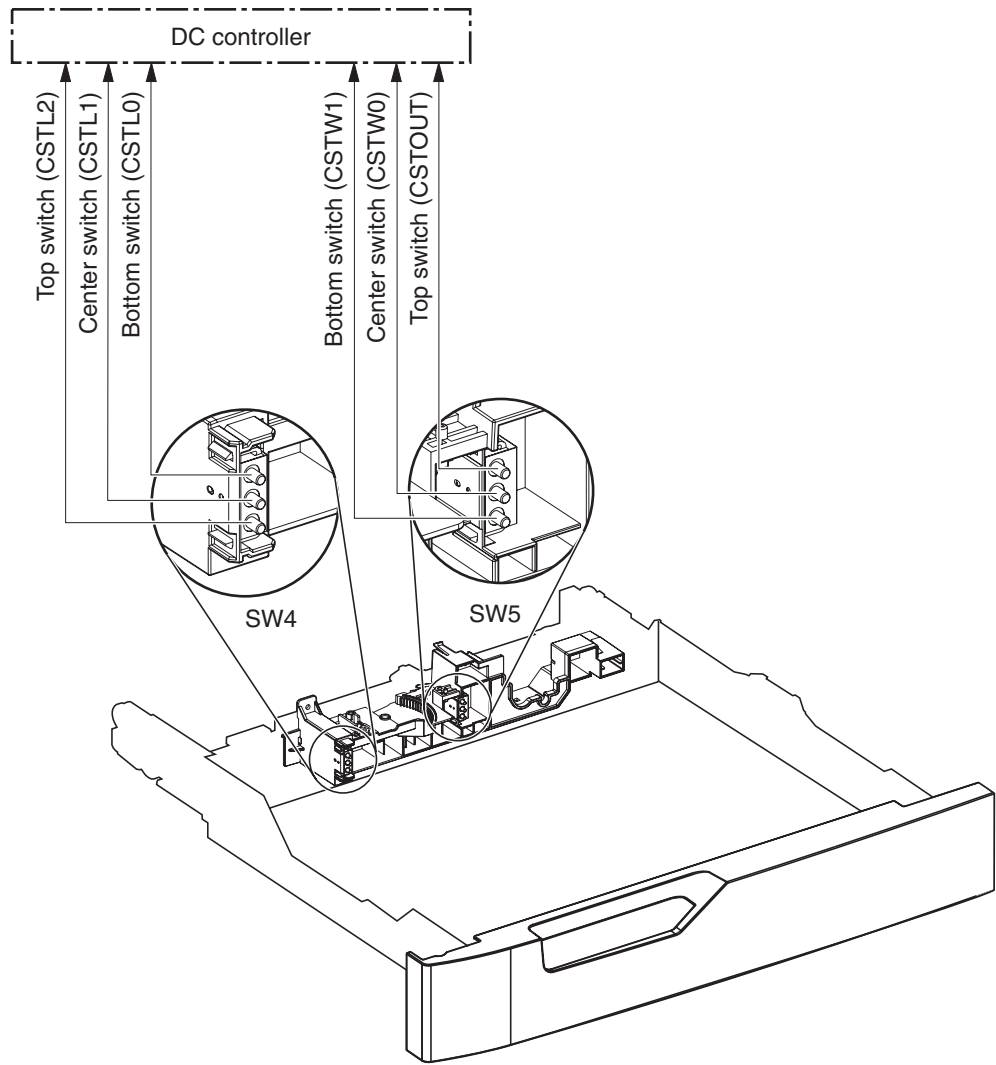


Table 5-16 Switch states for paper-size detection

Paper size	Cassette end-plate detection switch (SW4)			Cassette side-plate detection switch (SW5)		
	Top switch	Center switch	Bottom switch	Top switch ¹	Center switch	Bottom switch
A5	On	On	Off	On or off	Off	On
A4	On	On	Off	On or off	Off	Off
Letter	On	On	Off	On or off	On	Off
B5	Off	On	Off	On or off	Off	On
Executive	Off	On	Off	On or off	Off	On
Letter-R	Off	Off	On	On or off	Off	On
A4-R	On	Off	On	On or off	Off	On

Table 5-16 Switch states for paper-size detection (continued)

Legal	On	Off	Off	On or off	Off	On
B4	On	Off	Off	On or off	On	On
A3	On	Off	Off	On or off	Off	Off
Ledger	On	Off	Off	On or off	On	Off
Cassette absence	Off	Off	Off			

¹ The top side-plate detection switch controls the lifter mechanism. When the switch is on, the lifting plate moves up. When it is off, the lifting plate moves down. Its position has no effect on paper-size detection.

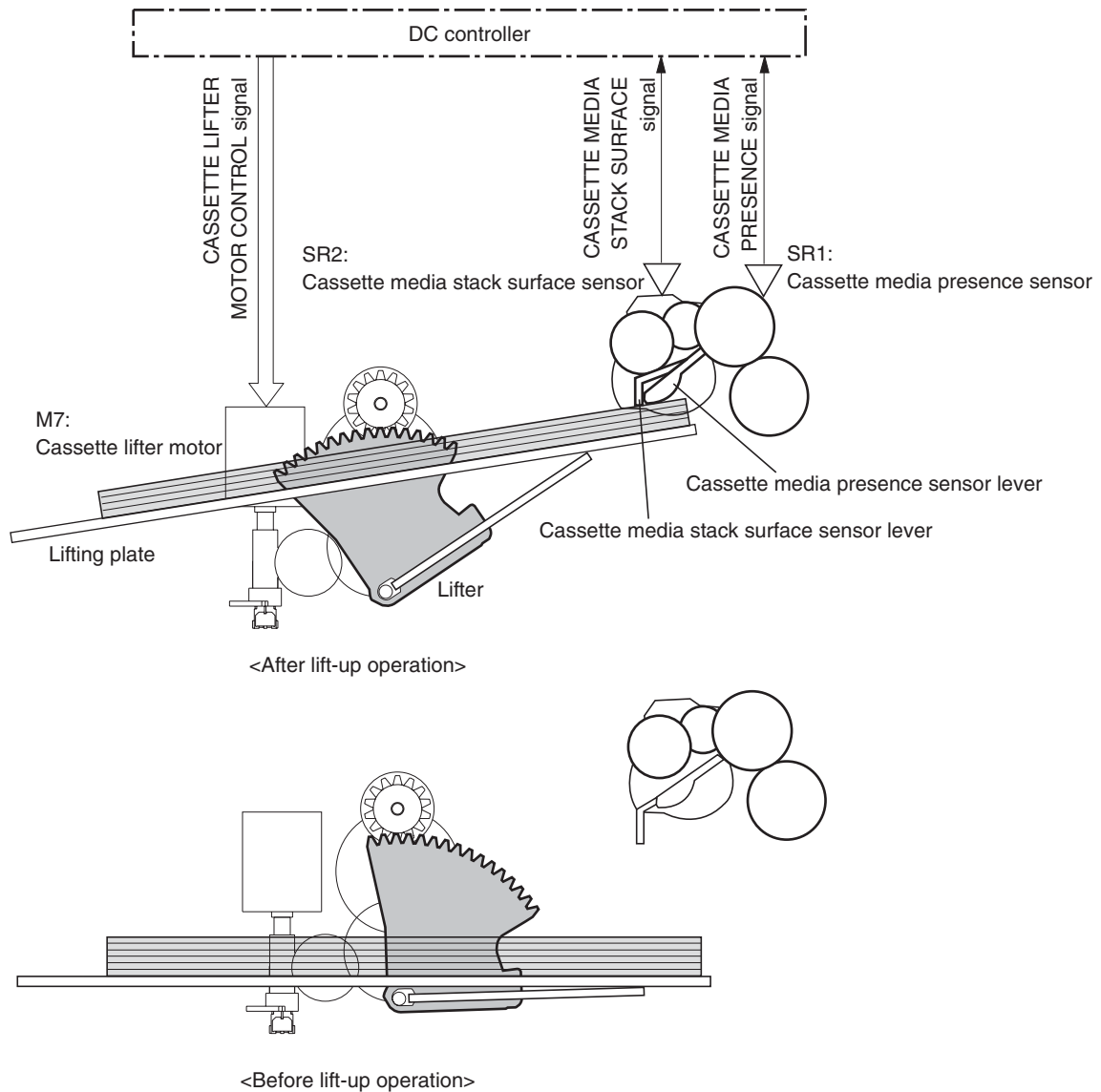
Cassette lift operation

When the product is turned on, when the cassette is inserted, or as the paper level in the cassette decreases, the cassette lift mechanism raises the plate to keep the surface of the stack high enough so the pickup roller can reach it.

1. The DC controller rotates the cassette-lifter motor to raise the lift plate.
2. When the paper-stack surface sensor detects the paper surface, the DC controller stops rotating the cassette-lifter motor. If the sensor no longer detects paper, the DC controller begins rotating the motor again.

If the paper-stack surface sensor does not detect the paper within a specified time after the lifter motor begins rotating, the DC controller notifies the formatter that the lifter motor has failed.

Figure 5-35 Cassette lift mechanism



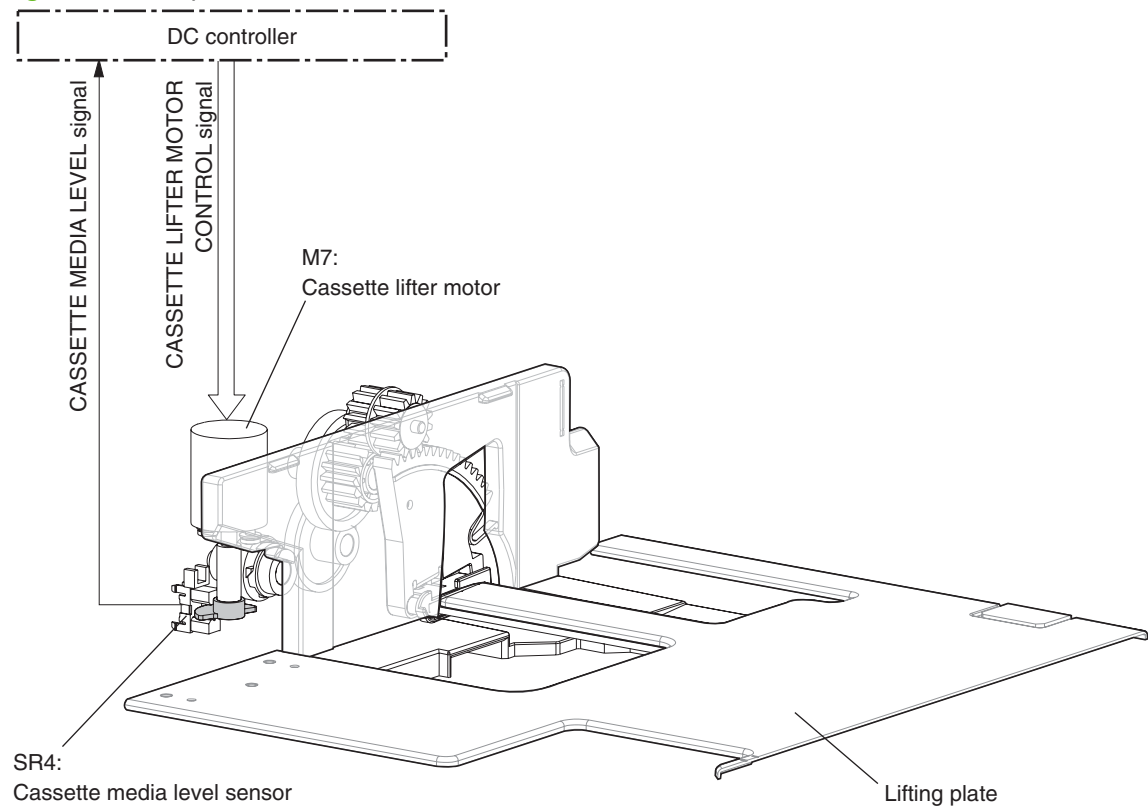
Cassette paper-level and paper-presence detection

The height of the paper-lift plate in the cassette indicates the paper level. The paper-level sensor, which is at the end of the lifter motor, monitors the rotations of the motor and calculates the paper level. It reports the paper level to the DC controller in the following increments:

- No paper
- Less than 10%
- Between 10% and 20%
- Between 20% and 40%
- More than 40%

The cassette media-presence sensor detects whether paper is in the cassette.

Figure 5-36 Paper-level-detection mechanism

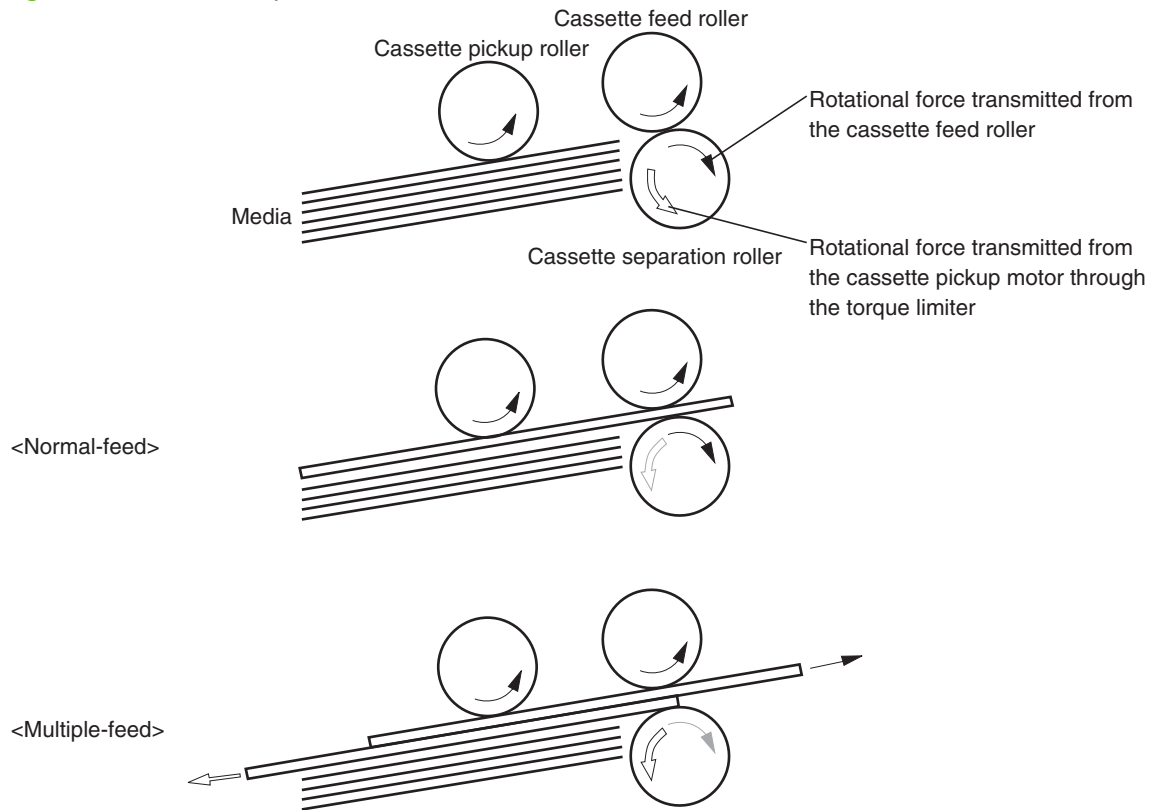


Multifeed prevention

In each of the cassettes and in the multipurpose tray, a separation roller prevents multiple sheets of paper from entering the paper path. The separation roller is driven by the rotation of the feed roller, but

it is equipped with a torque limiter that counteracts this rotation when more than one sheet of paper is between the two rollers.

Figure 5-37 Multifeed prevention



Multipurpose tray pickup

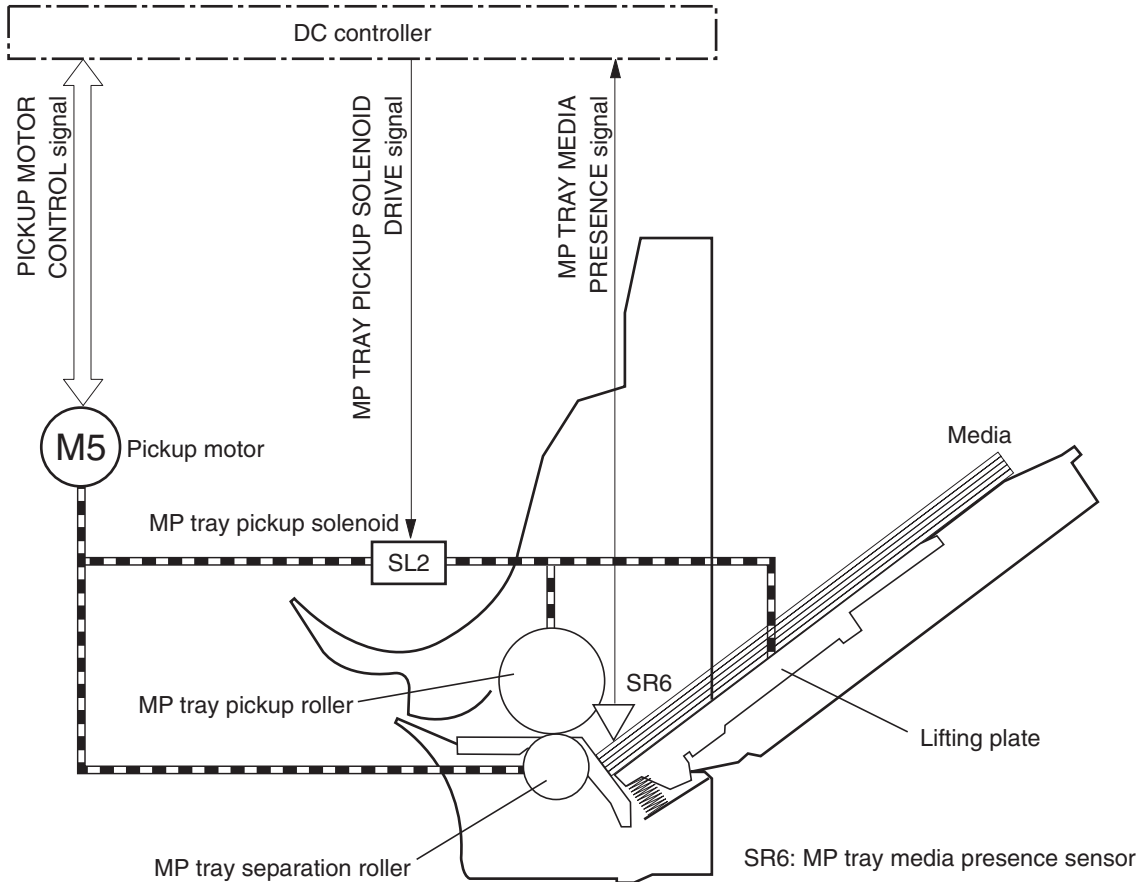
The multipurpose tray paper-presence sensor detects whether paper is in the tray. If no paper is present, the DC controller notifies the formatter. The print operation is not performed until paper is in the tray.

The sequence of steps for the multipurpose tray pickup operation as follows:

1. After receiving a print command from the formatter, the DC controller reverses the pickup motor, which causes the multipurpose tray separation roller to rotate.
2. The DC controller turns on the multipurpose tray pickup solenoid, causing the multipurpose tray pickup roller to rotate.

3. The lifting plate rises to meet the rotating pickup roller, and paper is picked from the stack.
4. The multipurpose tray separation roller isolates a single sheet of paper in case more than one sheet was picked. The single sheet of paper is fed into the product. This mechanism is the same as for the cassette pickup operation.

Figure 5-38 Multipurpose tray pickup mechanism



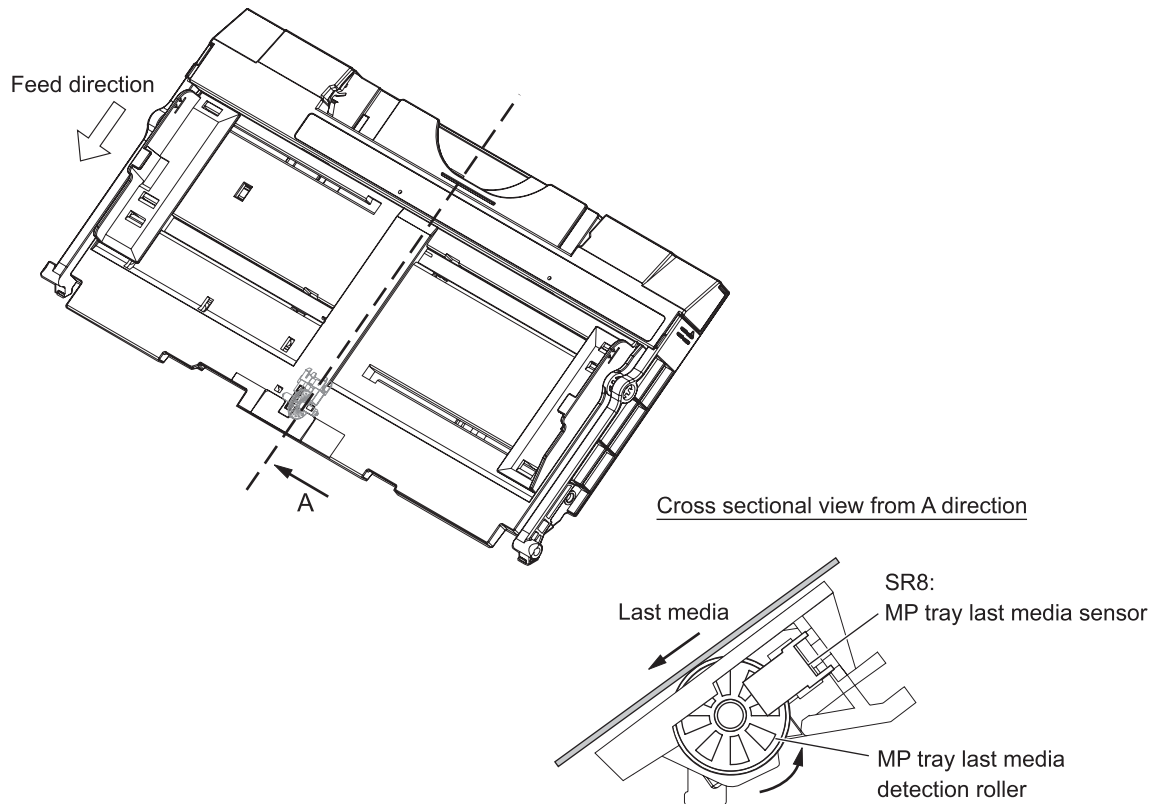
Multipurpose tray last-paper detection

Because the paper path between the multipurpose tray paper-presence sensor and the registration roller is short, the product attempts to form the next image before the DC controller detects that the tray is empty. To prevent the image from being formed on the photosensitive drum and wasting toner, the multipurpose tray last-paper sensor detects the empty tray before the image-formation process begins.

As the last sheet of paper is picked up, the multipurpose tray last-paper detection roller rotates. It does not rotate if two or more sheets are in the tray. The multipurpose tray last-paper sensor detects the

moving roller, and it sends a signal to the DC controller. The DC controller notifies the formatter so it can temporarily disable the image-formation process.

Figure 5-39 Multipurpose tray last-paper detection



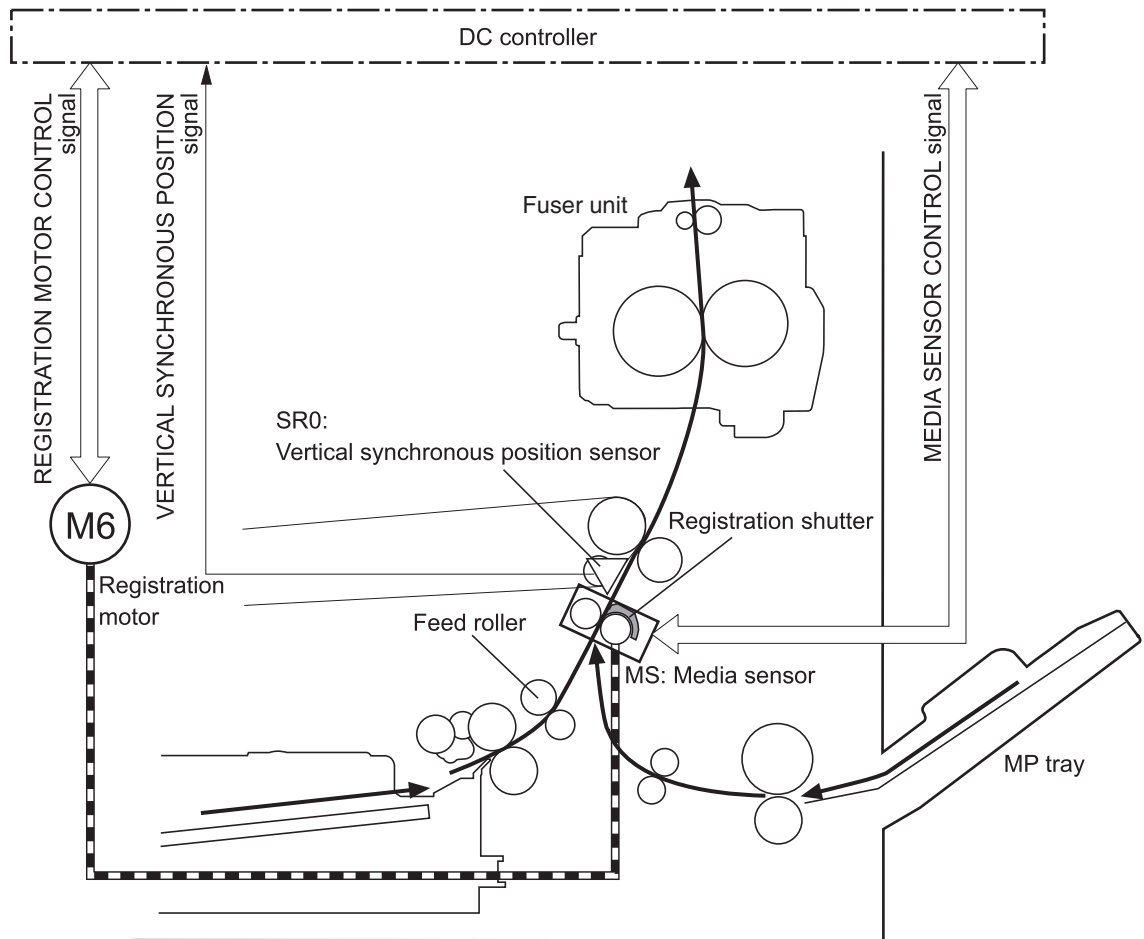
Paper feed

After the pickup operation, the paper is fed through the product and into the fuser.

1. The paper passes through the feed rollers. The registration shutter aligns the paper correctly to prevent skewed printing.
2. When the vertical synchronous position sensor detects the leading edge of the paper, the registration motor stops, and the paper movement pauses while the image on the ITB is timed to align with the leading edge of the paper.

3. While the paper is paused, the media sensor detects the type of paper.
4. When the timing is correct, the registration motor begins rotating again to feed the paper through the secondary transfer unit and into the fuser.

Figure 5-40 Paper-feed mechanism

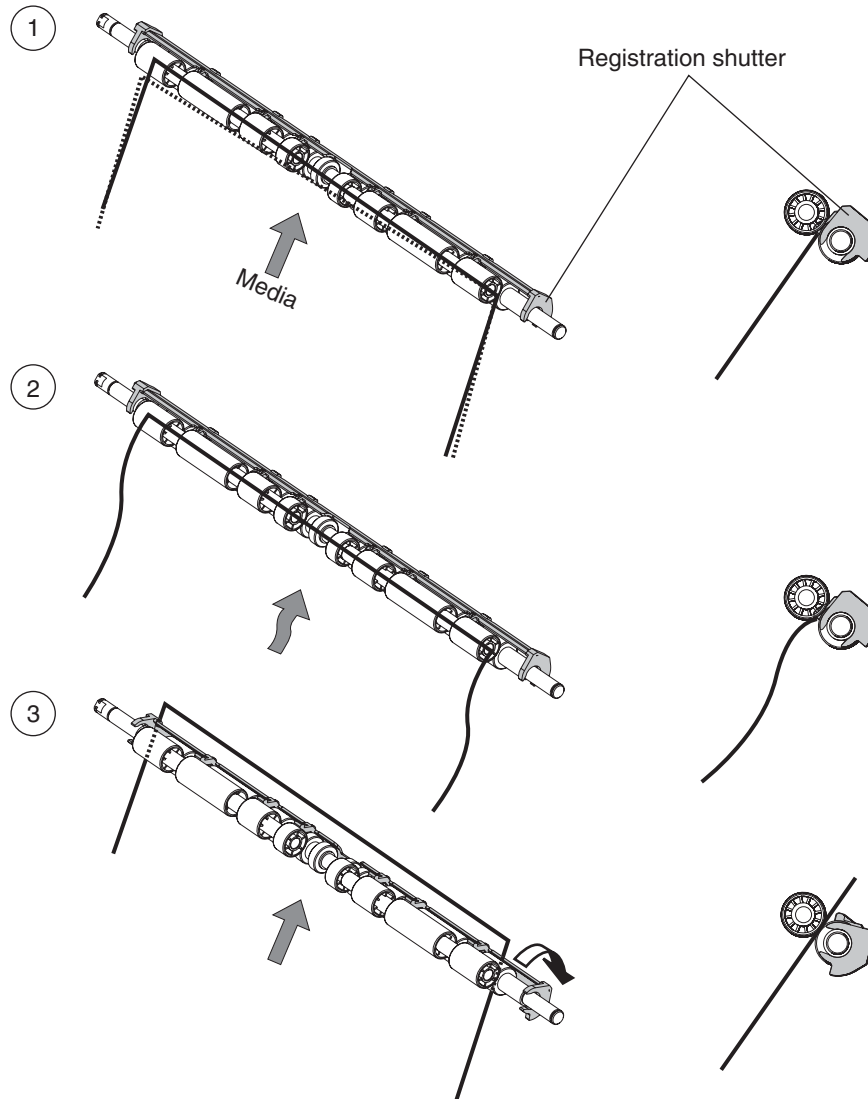


Skew-feed prevention

The product can straighten the paper without slowing the feed operation.

1. As the paper enters the paper path, the leading edge strikes the registration shutter, but the paper does not pass through the shutter, so it is straightened.
2. The feed rollers keep pushing the paper, creating a force on the leading edge against the registration shutter.
3. When the force is great enough, the registration shutter opens and the paper passes through.

Figure 5-41 Skew-feed prevention

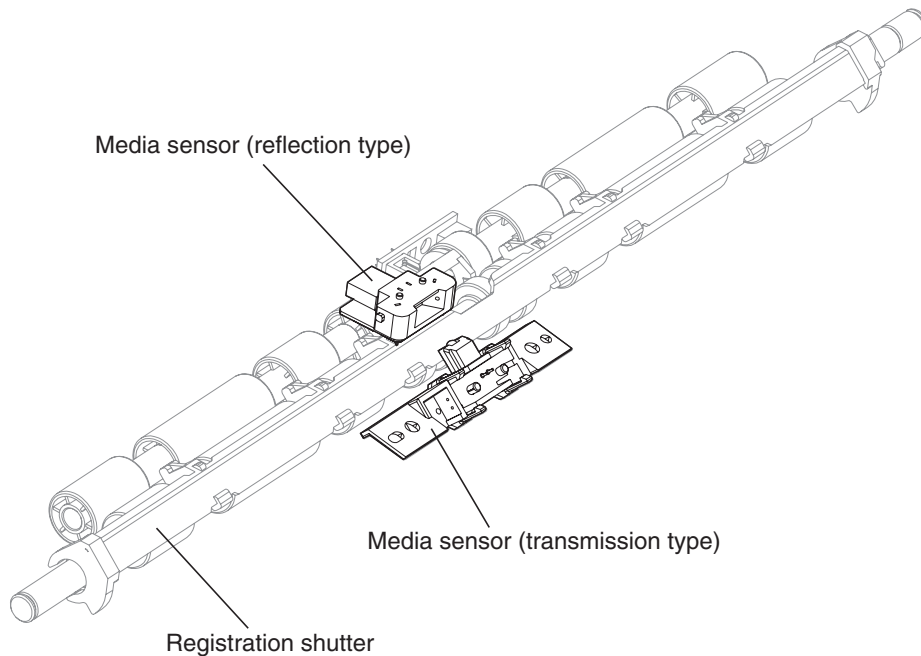


Paper-type detection

The product can detect the type of paper in the paper path, and it adjusts the print mode accordingly. The product uses two types of media sensors:

- **Reflection:** Detects the glossiness of the paper
- **Transmission:** Detects the thickness of the paper

Figure 5-42 Media sensor unit



The DC controller uses the information from the media sensors to determine the paper type, and it notifies the formatter. The DC controller notifies the formatter of a paper-type mismatch if any of the following conditions exist:

- **Simplex printing:**
 - The mode specified for the print job is Transparency, but the media sensor detects another type.
 - The mode specified for the print job is something other than Auto or Transparency, but the media sensor detects a transparency.
- **Duplex printing:** The mode specified for the print job is compatible with duplex printing, but the media sensor detects a transparency.

When the product is turned on or when it comes out of Sleep mode, it tests the media sensor by turning on the LED. If the intensity of the light does not match the specified value, the DC controller determines that the sensor has failed.

Feed-speed control

Depending on the type of paper, the product adjusts the feed speed to obtain the best print quality. For paper types that the media sensor cannot detect, the product adjusts the feed speed according to the print mode specified by the formatter for the print job.

Paper type (Control panel)	Print mode	Recommended paper weight range	Feed speed	Media-sensor detection
BOND	Normal	75–90 g/m ²	Full	Yes
COLORED				
HP MATTE 90g				
INTERMEDIATE 85-95g				
LETTERHEAD				
PLAIN				
PREPRINTED				
PREPUNCHED				
RECYCLED				
HEAVY 111–125g	Heavy 1	91–120 g/m ²	3/4	Yes
HP MATTE 105g				
HP MATTE 120g				
MID-WEIGHT 96-110g				
EXTRA HEAVY 126-175	Heavy 2	121–163 g/m ²	1/2	Yes
HP MATTE 160g				
CARDSTOCK 176-220g	Heavy 3	164–220 g/m ²	1/3	Yes
HP MATTE 200g				
HP MATTE 220g				
LIGHT 60-74g	Light 1	60–74 g/m ²	Full	No
HP GLOSSY 120g	Glossy 1	90–120 g/m ²	3/4	Yes
HP SOFT GLOSS 120g				
HVY GLOSSY 111g-125g				
MID-WTGLOSSY 96g-110g				
HP GLOSSY 160g	Glossy 2	121–150 g/m ²	1/2	Yes
XHVYGLOSSY 126-175g				
CARD GLOSSY 176-220	Glossy 3	151–220 g/m ²	1/3	Yes
HP GLOSSY 220g				
HP TOUGH PAPER	Glossy film	5 mil	1/10	Yes
OPAQUE FILM				
	Envelope	Envelope	Full	No
COLOR TRANSPARENCY	Transparency	5 mil	1/10	Yes
	Label	Label	1/2	No

Fusing and delivery unit

The fusing and delivery unit fuses the toner onto the paper and delivers the printed page into the output bin. It has the following controls to ensure optimum print quality:

- Loop control
- Pressure roller pressurization/depressurization control

A sensor detects when the output bin is full, and the DC controller notifies the formatter.

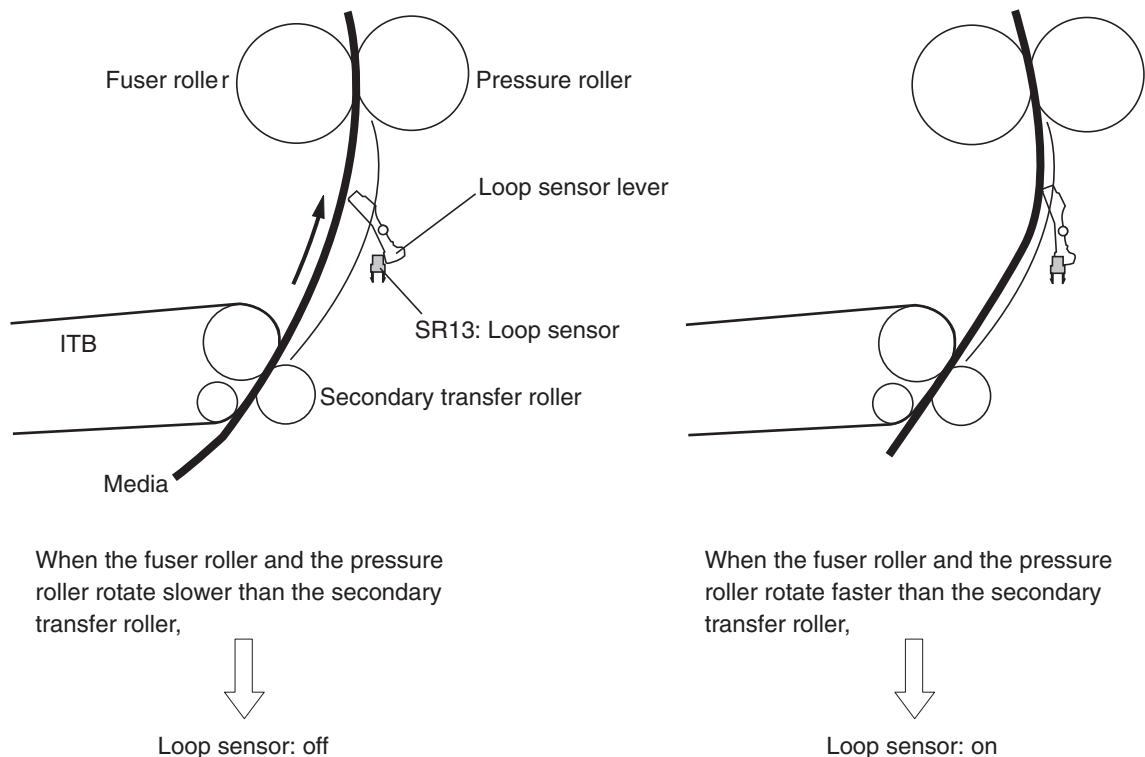
Loop control

The loop control maintains even tension on the paper while it is moving through the fuser to prevent print-quality defects and paper-handling defects.

- If the fuser rollers rotate more slowly than the secondary transfer rollers, the paper warp increases and an image defect or paper crease occurs.
- If the fuser rollers rotate faster than the secondary transfer rollers, the paper warp decreases and the toner image is not transferred to the paper correctly, causing color misregistration.

To prevent these problems, the loop sensor, located between the secondary transfer rollers and the fuser rollers, detects whether the paper is sagging or is too taut. The DC controller adjusts the speed of the fuser motor accordingly.

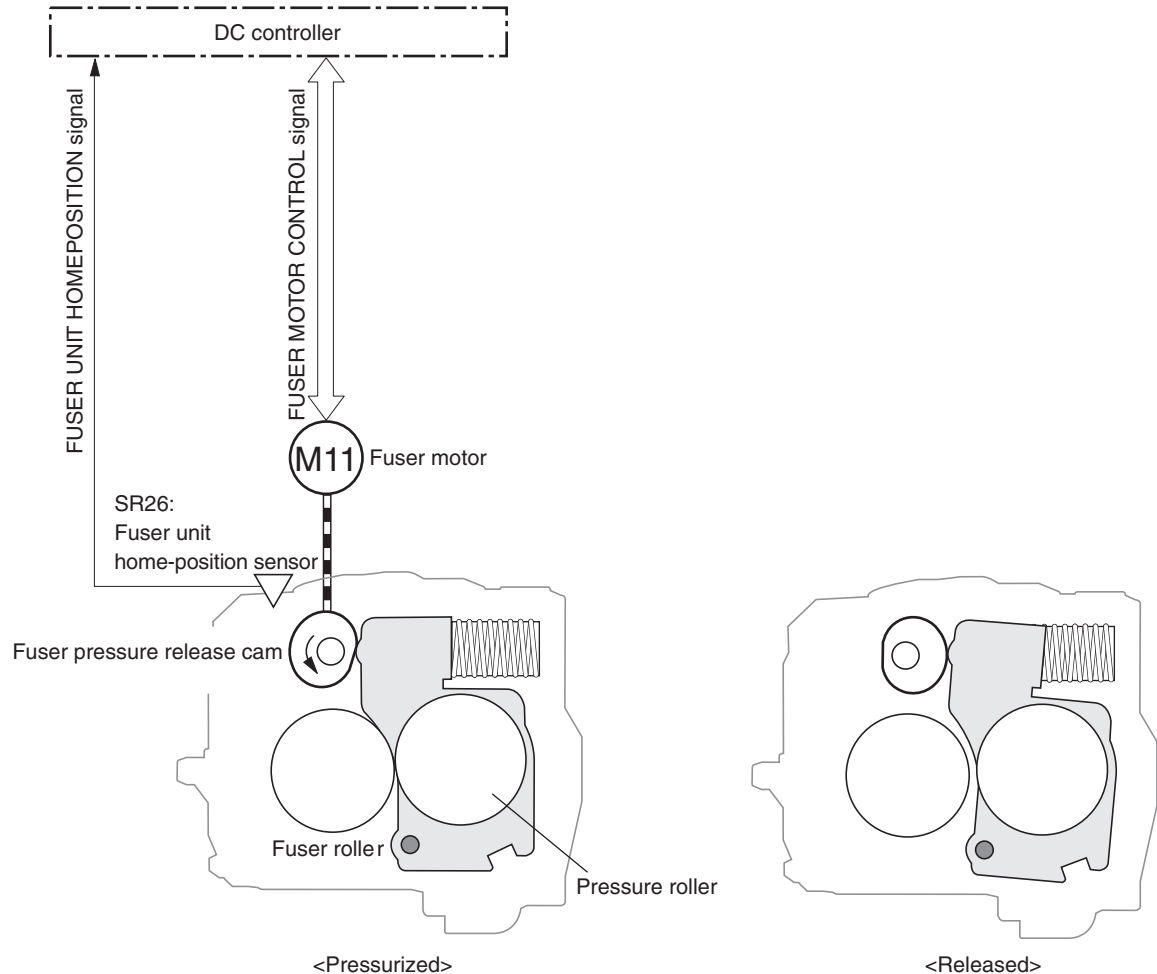
Figure 5-43 Loop-control mechanism



Pressure-roller pressurization control

To prevent excessive wear on the pressure roller and to facilitate jam-clearing procedures, the pressure roller is not pressurized except during printing. The DC controller reverses the fuser motor, which rotates the fuser pressure-release cam.

Figure 5-44 Pressure-roller pressurization control



The pressure roller is depressurized under the following conditions:

- The product is turned off with the on/off switch.
- After a specific time period from entering the standby period
- During powersave mode
- When a paper jam is detected.

 **NOTE:** The fuser remains pressurized if the power is interrupted by removing the power cord or turning off a surge protector, or if the fuser is removed without turning off the product.

Duplexing unit

For supported models, the duplexing unit reverses the paper and feeds it through the paper path to print the second side. It consists of the following components:

- **Duplexing-reverse unit:** Installed on top of the product
- **Duplexing-feed unit:** Inside the product, along the right side

Figure 5-45 Duplexing unit

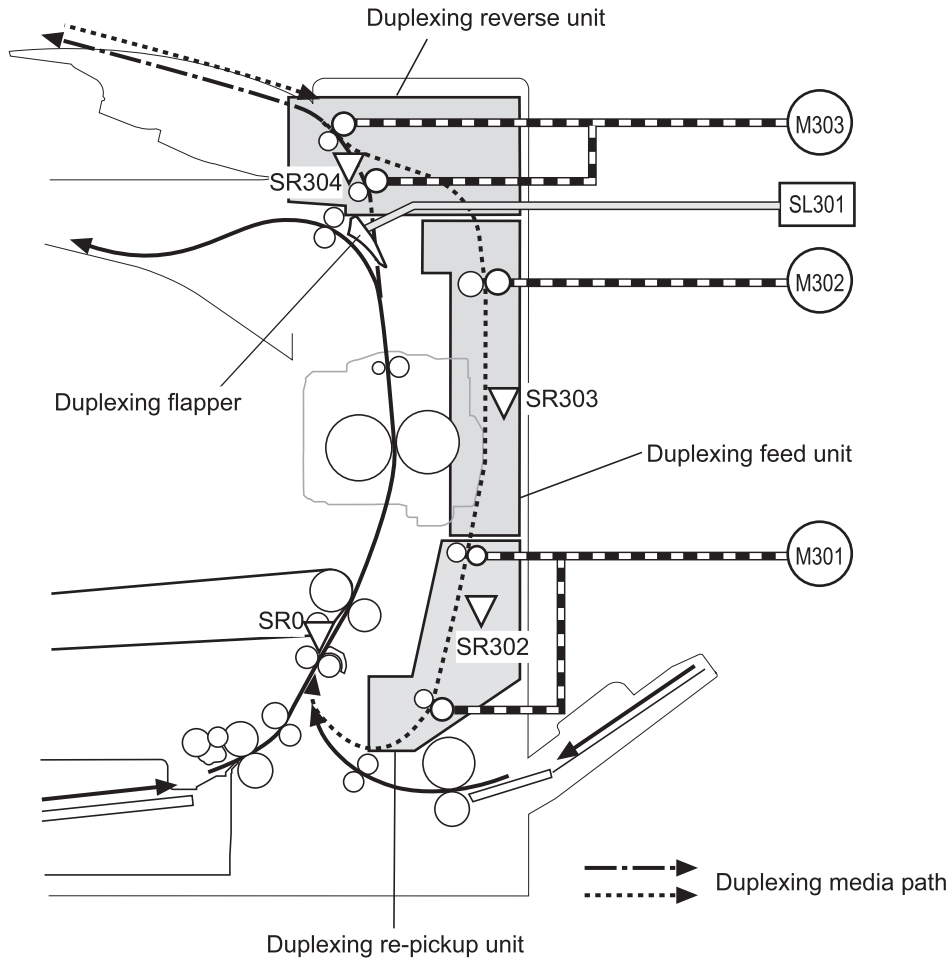


Table 5-17 Duplexing-unit components

Abbreviation	Component
M301	Duplexing re-pickup motor
M302	Duplexing feed motor
M303	Duplexing reverse motor
SL301	Duplexing flapper solenoid
SR302	Duplexing paper re-pickup sensor
SR303	Duplexing paper-feed sensor
SR304	Duplexing paper-reverse sensor

All these components are driven by the duplexing driver, according to signals from the DC controller. If the DC controller cannot communicate with the duplexing driver, it notifies the formatter that the duplexing unit has failed.

Duplexing reverse and feed control

The duplexing reverse procedure pulls the paper into the duplexing unit after it exits the fuser, and the duplexing feed procedure moves the paper through the duplexer so it can enter the product paper path to print the second side of the page.

1. After the first side has printed, the duplexing flapper solenoid is opened, which creates a paper path into the duplexing-reverse unit.
2. After the paper has fully entered the duplexing-reverse unit, the duplexing-reverse motor reverses and directs the paper into the duplexing-feed unit.
3. The duplexing re-pickup motor and duplexing feed motor move the paper into the duplexing re-pickup unit.
4. To align the paper with the toner image on the ITB, the duplexing re-pickup motor stops and the paper pauses until the specified time.
5. The paper re-enters the paper path, and the second side is printed.

Jam detection

The product uses the following sensors to detect the paper as it moves through the paper path and to report to the DC controller if the paper has jammed.

- Vertical synchronous position sensor
- Cassette paper-feed sensor
- Multipurpose tray paper-feed sensor
- Loop sensor
- Fuser delivery paper-feed sensor
- Output-bin full sensor
- Duplexing paper re-pickup sensor
- Duplexing paper-feed sensor
- Duplexing paper-reverse sensor
- Media sensor

The product determines that a jam has occurred if one of these sensors detects paper at an inappropriate time. The DC controller stops the print operation and notifies the formatter.

Table 5-18 Jams that the product detects

Jam	Description
Pickup delay jam 1	Cassette pickup: The cassette paper-feed sensor does not detect the leading edge of the paper within a specified period after the cassette pickup solenoid has turned on. Multipurpose tray pickup: The multipurpose tray paper-feed sensor does not detect the leading edge of the paper within a specified period after the multipurpose tray solenoid has turned on.
Pickup delay jam 2	The vertical synchronous position sensor does not detect the leading edge of the paper within a specified period after the paper-feed sensor (for either the cassette or the multipurpose tray) detects the leading edge.
Pickup stationary jam	The media sensor does not detect the trailing edge of the paper within a specified period after the registration motor begins rotating to re-feed the paper.
Fuser delivery delay jam	The fuser delivery paper-feed sensor does not detect the leading edge of the paper within a specified period after the registration motor begins rotating to re-feed the paper.
Fuser delivery stationary jam	The fuser delivery paper-feed sensor does not detect the trailing edge of the paper within a specified period after it detects the leading edge.
Wrapping jam	After it has detected the leading edge of the paper, the fuser delivery paper-feed sensor detects the absence of paper, and it has not yet detected the trailing edge.
Delivery delay jam 3	The output bin full sensor does not detect the leading edge of the paper within a specified period after the fuser delivery paper-feed sensor has detected the leading edge.

Table 5-18 Jams that the product detects (continued)

Jam	Description
Residual paper jam	One of the following sensors detects paper presence during the initialization sequence: • Fuser delivery paper-feed sensor • Loop sensor • Duplexing paper-reverse sensor
Door open jam	A door is open while paper is moving through the product.
Duplexing reverse jam 1	The duplexing paper-feed sensor does not detect the leading edge of the paper within a specified period after the paper-reverse operation starts.
Duplexing reverse jam 2	The duplexing paper-reverse sensor does not detect the trailing edge of the paper within a specified period after it detects the leading edge.
Duplexing re-pickup jam 1	The vertical synchronous position sensor does not detect the leading edge of the paper within a specified period after the paper is re-picked up from the duplexing pickup position.
Duplexing re-pickup jam 2	The duplexing paper re-pickup sensor does not detect the leading edge of the paper within a specified period after the paper-reverse operation starts.

After a jam, some sheets of paper might remain inside the product. If the DC controller detects residual paper after a door is closed or after the product is turned on, the product automatically clears itself of those residual sheets.

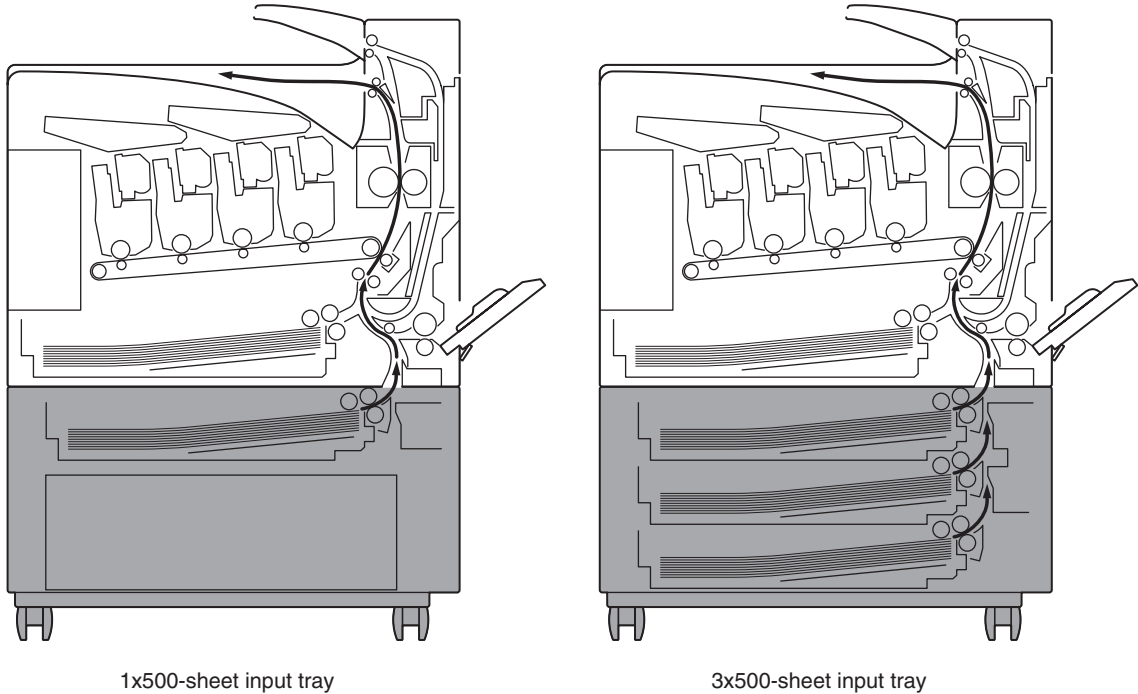
Optional input trays

The product is configured with either the additional 1x500-sheet input tray or 3x500-sheet input tray depending on which bundle was purchased.

- The 1x500-sheet input tray has one tray (Tray 3) and a storage compartment.
- The 3x500-sheet input tray has three trays (Trays 3, 4, and 5).

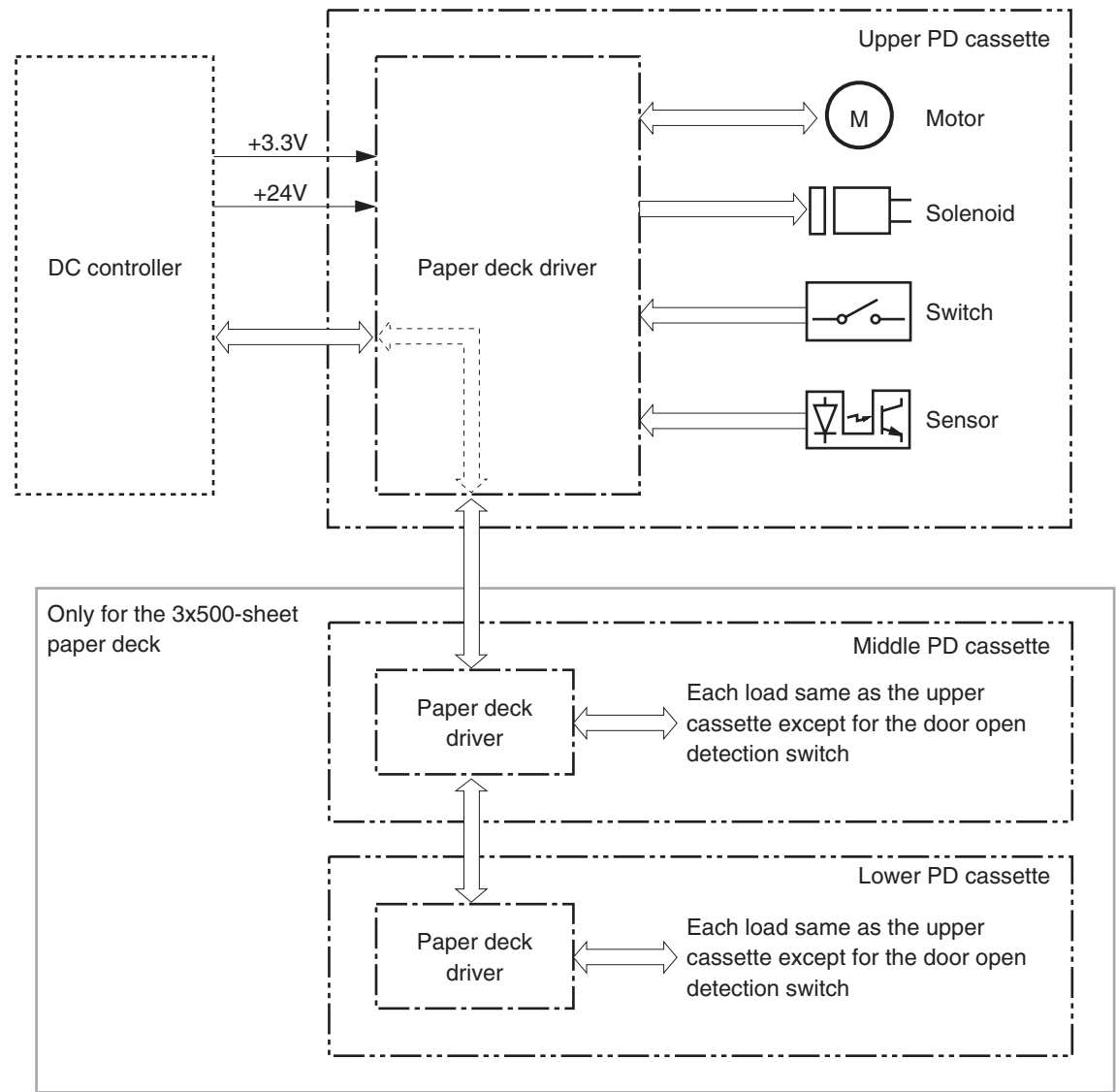
 **NOTE:** These optional trays are *not* identical to the main cassette (Tray 2).

Figure 5-46 Optional input trays



These additional trays are each controlled by paper-deck drivers, which contain a microcomputer. The paper-deck drivers receive commands from the DC controller. If the DC controller is unable to communicate with a paper-deck driver, it notifies the formatter that the optional input tray is not connected correctly.

Figure 5-47 Signals for the input trays



The input trays contain several motors, solenoids, sensors, and switches, as described in the following table.

Table 5-19 Electrical components for the optional input trays

Component type	Abbreviation	Component name
Motors	M101	Upper paper-feeder cassette pickup motor
	M102	Upper paper-feeder lifter cassette motor
	M111	Middle paper-feeder cassette pickup motor (3x500-sheet input tray only)
	M112	Middle paper-feeder cassette lifter motor (3x500-sheet input tray only)
	M121	Lower paper-feeder cassette pickup motor (3x500-sheet input tray only)
	M122	Lower paper-feeder cassette lifter motor (3x500-sheet input tray only)

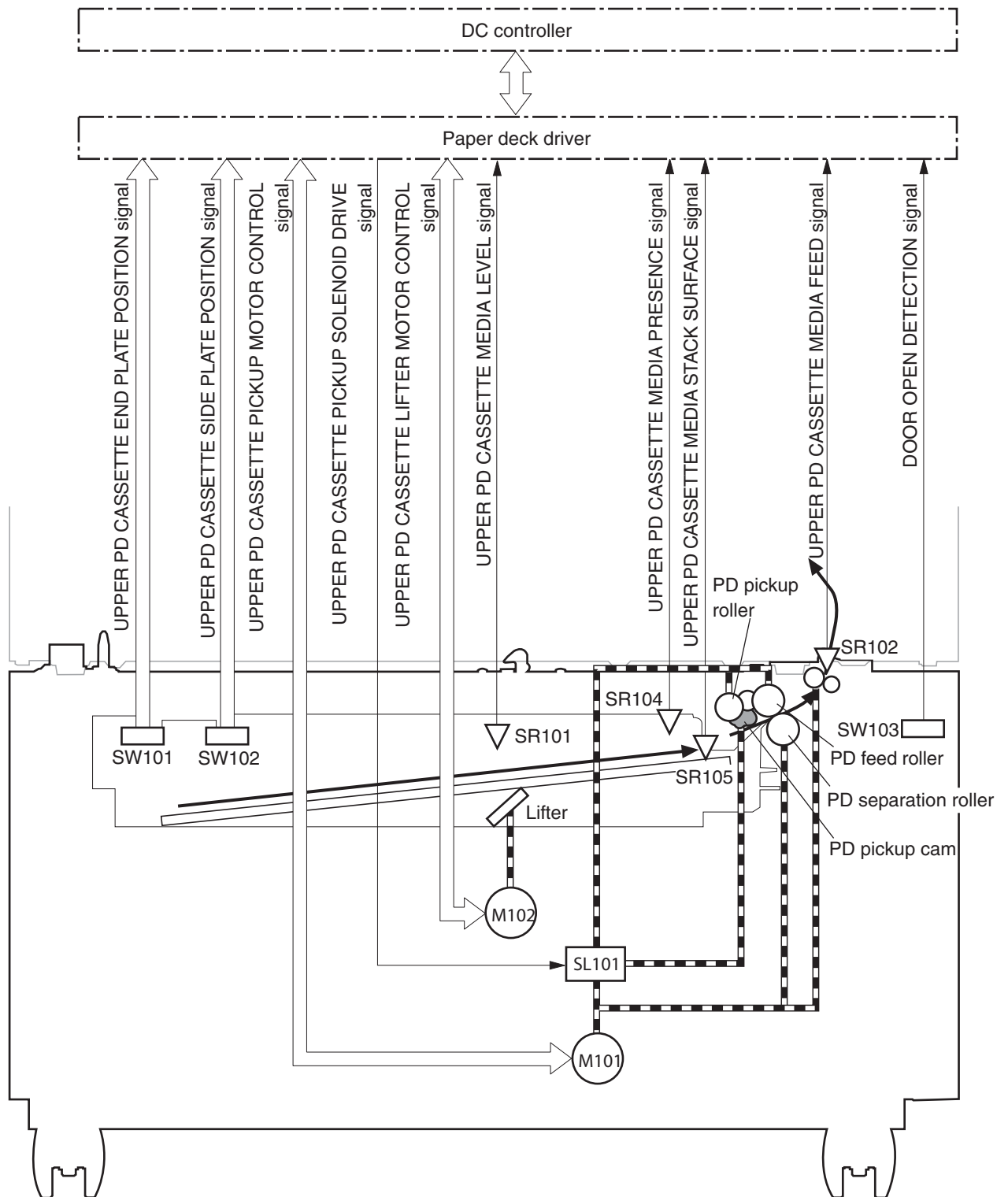
Table 5-19 Electrical components for the optional input trays (continued)

Component type	Abbreviation	Component name
Solenoids	SL101	Upper paper-feeder cassette pickup solenoid
	SL111	Middle paper-feeder cassette pickup solenoid (3x500-sheet input tray only)
	SL121	Lower paper-feeder cassette pickup solenoid (3x500-sheet input tray only)
Sensors	SR101	Upper paper-feeder cassette paper-level sensor
	SR102	Upper paper-feeder cassette paper-feed sensor
	SR104	Upper paper-feeder cassette paper-presence sensor
	SR105	Upper paper-feeder cassette paper-stack surface sensor
	SR111	Middle paper-feeder cassette paper-level sensor (3x500-sheet input tray only)
	SR112	Middle paper-feeder cassette paper-feed sensor (3x500-sheet input tray only)
	SR114	Middle paper-feeder cassette paper-presence sensor (3x500-sheet input tray only)
	SR115	Middle paper-feeder cassette paper-stack surface sensor (3x500-sheet input tray only)
	SR121	Lower paper-feeder cassette paper-level sensor (3x500-sheet input tray only)
	SR122	Lower paper-feeder cassette paper-feed sensor (3x500-sheet input tray only)
	SR124	Lower paper-feeder cassette paper-presence sensor (3x500-sheet input tray only)
	SR125	Lower paper-feeder cassette paper-stack surface sensor (3x500-sheet input tray only)
Switches	SW101	Upper paper-feeder cassette end-plate position switch
	SW102	Upper paper-feeder cassette side-plate position switch
	SW103	Door open detection switch
	SW111	Middle paper-feeder cassette end-plate position switch (3x500-sheet input tray only)
	SW112	Middle paper-feeder cassette side-plate position switch (3x500-sheet input tray only)
	SW121	Lower paper-feeder cassette end-plate position switch (3x500-sheet input tray only)
	SW122	Lower paper-feeder cassette side-plate position switch (3x500-sheet input tray only)

Paper-feeder pickup and feed operation

The pickup and feed operation is the same for each of the trays.

Figure 5-48 Paper-feeder pickup and feed operation



The methods for all the following operations are the same as for the main cassette (Tray 2):

- Paper-size detection and cassette-presence detection
- Lift operation
- Paper-level and paper-presence detection
- Multiple feed prevention
- Jam detection

6 Removal and replacement

- [Removal and replacement strategy](#)
- [User-replaceable parts](#)
- [Removal sequence 1](#)
- [Removal sequence 2](#)
- [Removal sequence 3](#)
- [Removal sequence 4](#)
- [Removal sequence 4 Sub-1](#)
- [Removal sequence 5](#)
- [Removal sequence 6](#)
- [Removal sequence 7](#)
- [Optional input trays](#)

Removal and replacement strategy

Introduction

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

Replacing FRUs is generally the reverse of removal. Notes are included to provide directions for difficult or critical replacement procedures.

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

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

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



CAUTION:

Some parts are sensitive to electrostatic discharge (ESD). Look for the ESD reminder when removing printer 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 printer.

CAUTION: Do not bend or fold the flat flexible cables (FFCs) during removal or installation.



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

Required tools

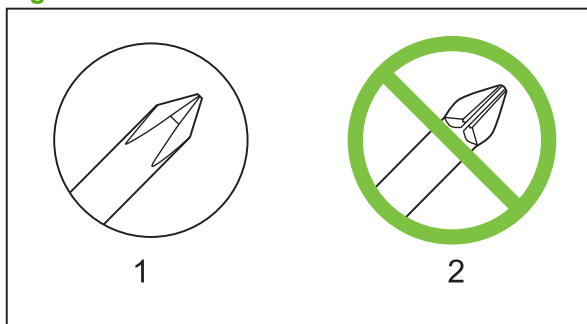
- #2 Phillips screwdriver with a magnetic tip and a 152-mm (6-inch) shaft length

 **NOTE:** For the best fit, use a JIS #2 Phillips screwdriver for the stapler/stacker.

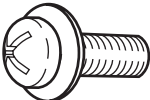
- Small, flat-blade screwdriver
- Needle-nose pliers
- ESD strap (if one is available)
- Penlight

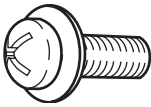
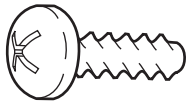
△ **CAUTION:** Always use a Phillips screwdriver (callout 1). Do not use a pozidrive screwdriver (callout 2) or any motorized screwdriver. These can damage screws or screw threads.

Figure 6-1 Screwdrivers



Types of screws

Illustration	Description	Size	Use
	Screw with washer	M3X8	Used to secure metal components to metal components (for example, a ground wire to the frame)
	Screw, RS	M3X6 M3X10	Used to secure metal to metal
	Screw, tapping	M3X6	
	Screw	M3X8	

	Screw	P3X8	
	Screw, tapping, truss head	M4X10	Used to secure anything to plastic



Service approach

The HP Color LaserJet CP6015 Series use a field repair strategy. Defective parts are diagnosed and replaced at the field-replaceable unit (FRU) assembly level. Printer repair normally begins by using the printer internal diagnostics and the following two-step process:

1. Isolate the problem to the major system (for example, the network or server, or the printer).
2. Troubleshoot the problem by using the procedures in the troubleshooting chapter.

After you locate a faulty part, the product can usually be repaired at the assembly level by replacing FRUs. Some mechanical assemblies might need to be repaired at the subassembly level. Hewlett-Packard Company does not support replacement of components on the printed circuit assemblies.

Before performing service

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

1. Remove all media.
2. Place the product on an ESD mat (if available). If an ESD workstation or mat is not available, ground yourself by touching the sheet-metal chassis *before* touching an ESD-sensitive part.
3. Remove the print cartridge.
4. Remove the trays.

After performing service

1. Reinstall the print cartridge.
2. Reinstall the trays.
3. Return all media to the trays.
4. Plug in the power cable and turn on the printer.

Parts removal sequences

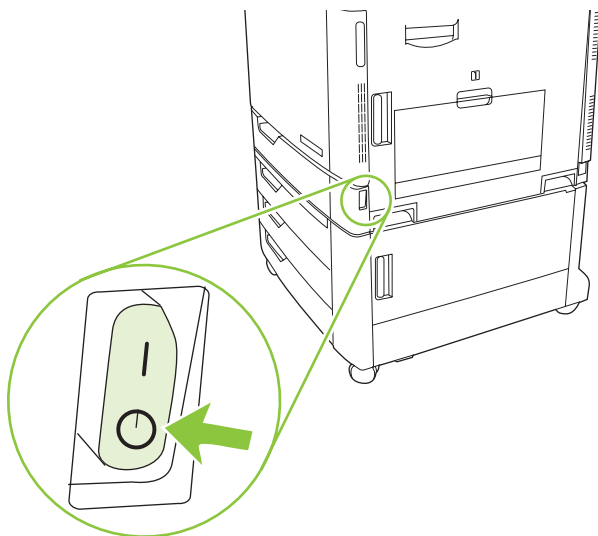
Removal and replacement procedures for FRUs of the product are grouped into seven sequences based on their logical removal order. Each sequence begins with a flowchart that shows the FRUs in the order they must be removed and reinstalled. When multiple FRUs can be removed at the same point in the sequence, the sequence is divided into subsequences. Some FRU removal procedures are repeated in multiple sequences.

User-replaceable parts

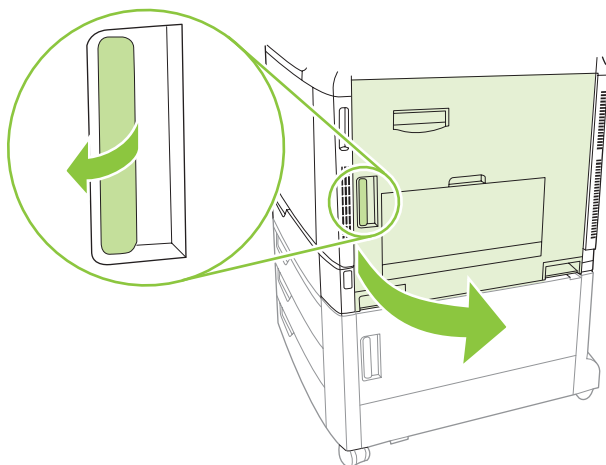
When you use genuine HP supplies, the product automatically notifies you when supplies are nearly depleted. The notification to order supplies allows ample time to order new supplies before they need to be replaced.

Fuser

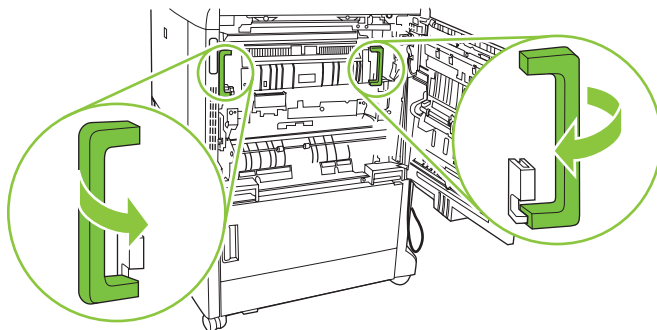
1. Turn the power off.



2. Open the right door.

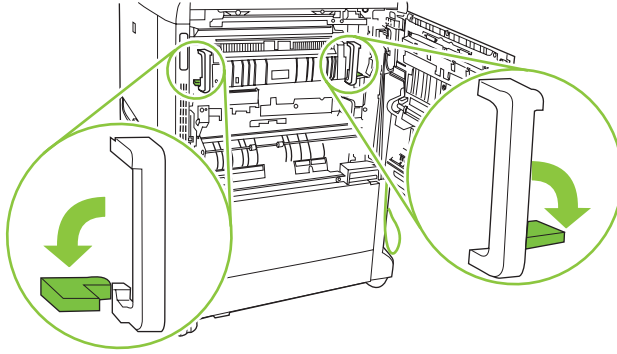


3. Pull the two blue fuser handles forward.

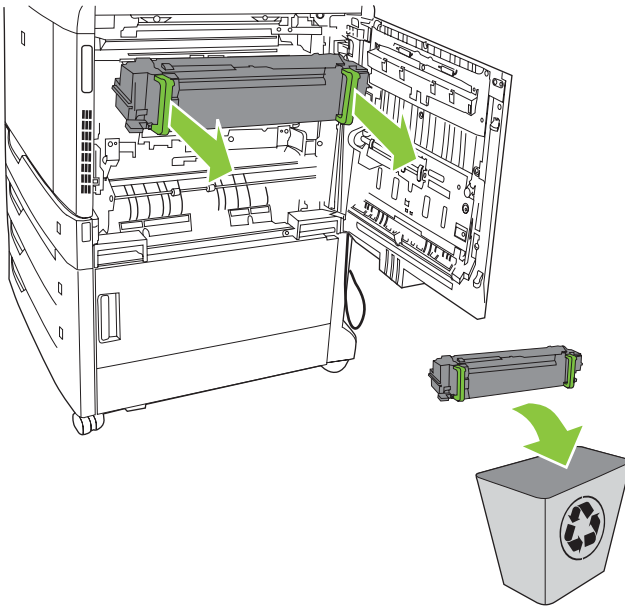


△ **CAUTION:** The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it.

4. Rotate the fuser-release levers down to open them.

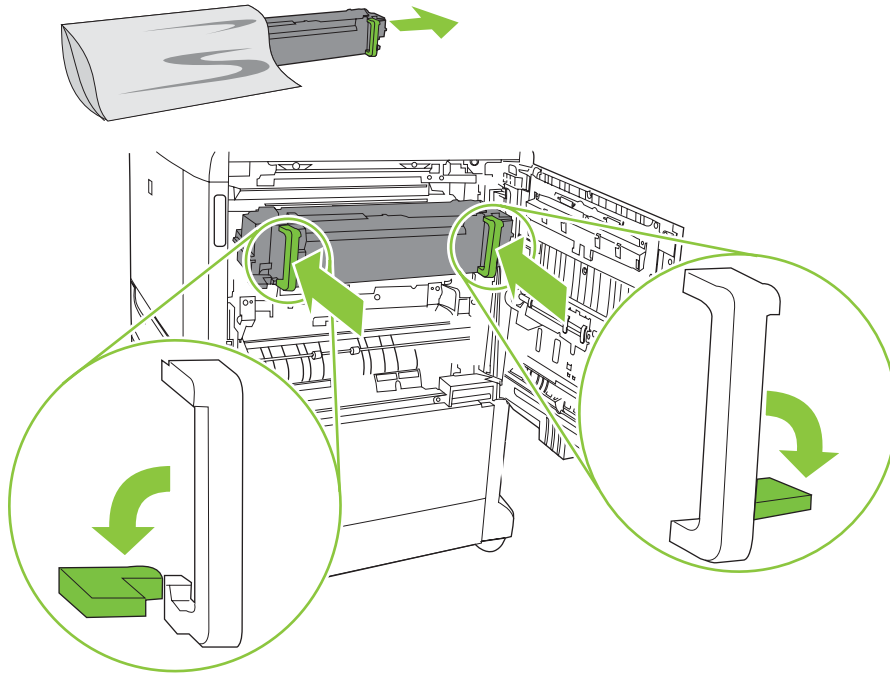


5. Grasp the fuser handles and pull straight out to remove the fuser. Recycle the used fuser following the instructions included with the new fuser.

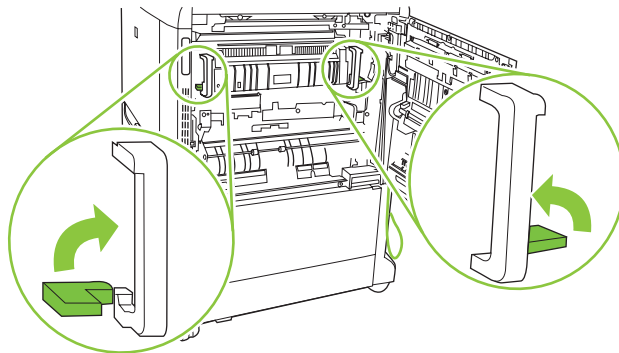


△ **CAUTION:** The fuser weighs 5 kg (11 lbs). Be careful not to drop it.

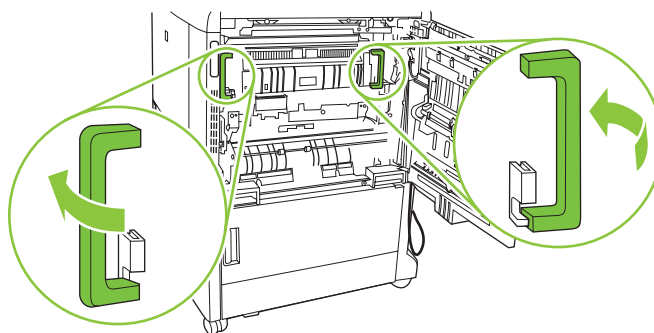
6. Remove the new fuser from its protective bag. Make sure the fuser-release levers are in the down and open position. Align the fuser with the arrows on the product. Push the fuser completely into the printer.



7. Rotate the fuser-release levers up to lock the fuser into place.



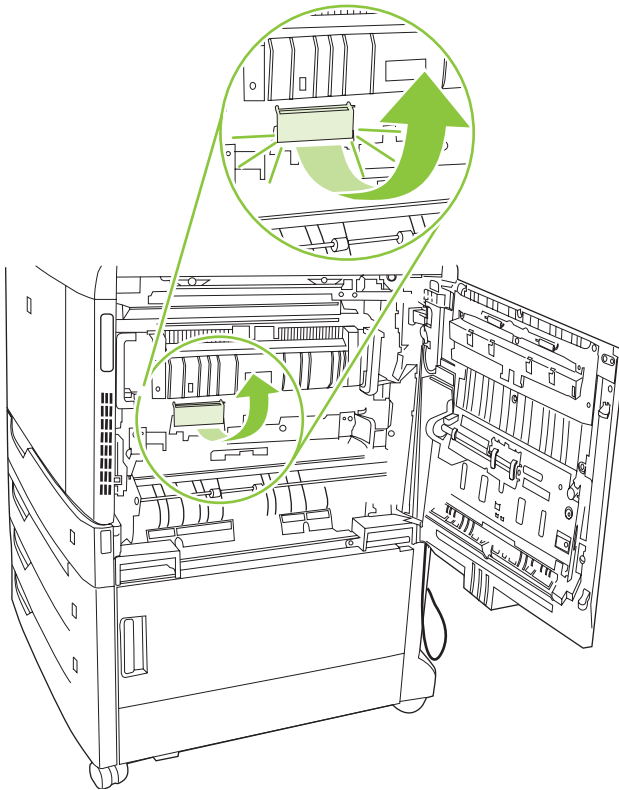
8. Push the fuser handles back to close them.



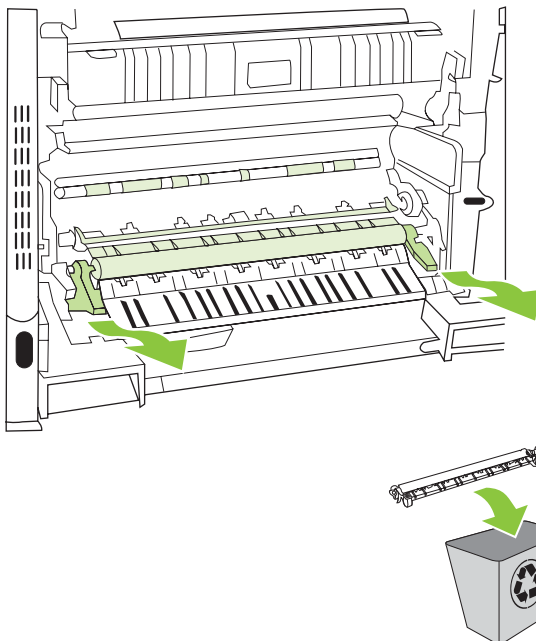
9. Close the right door and turn the power on.

Transfer roller

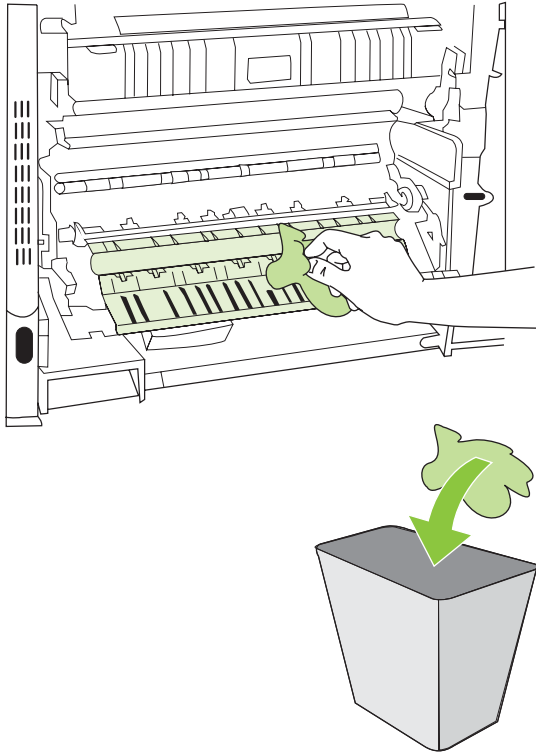
1. Turn the power off, and then open the right door.
2. Lift the green handle on the transfer assembly, and then open the panel.



3. Remove the transfer roller, and then recycle it.



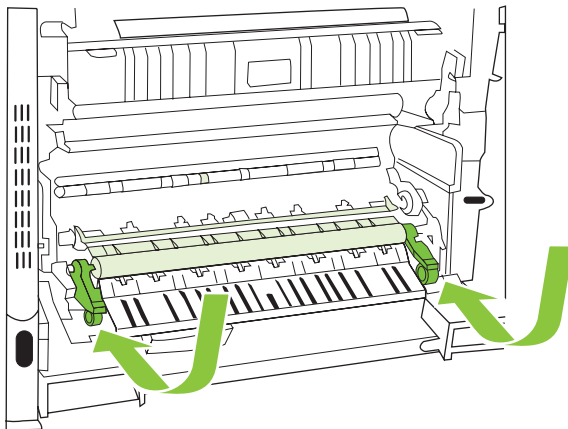
4. Wipe roller area.



5. Remove the new transfer roller from its protective bag.

△ **CAUTION:** Do not touch the sponge part of the new transfer roller or clean the roller. Contaminants or scratching may result in poor print quality.

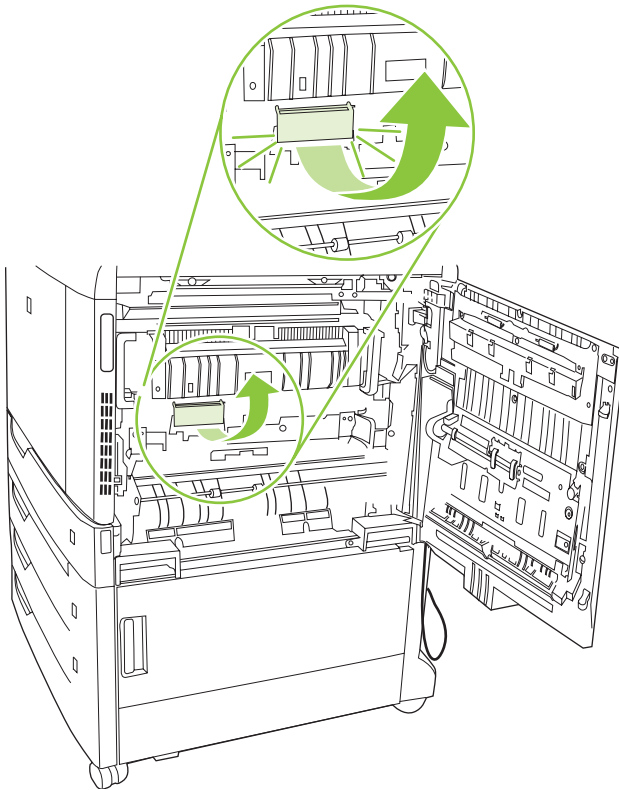
6. Align the transfer roller with the slots in the product and push until it clicks into place.



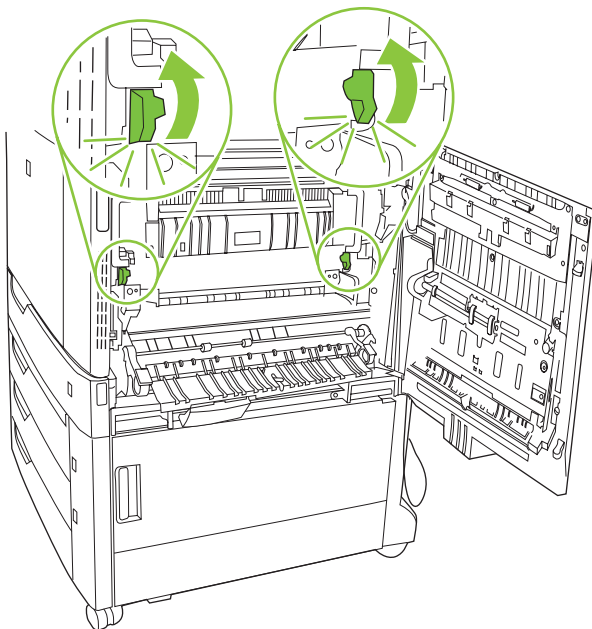
7. Close the transfer assembly.
8. Close the right door, and then turn the power on.

Intermediate-transfer belt (ITB)

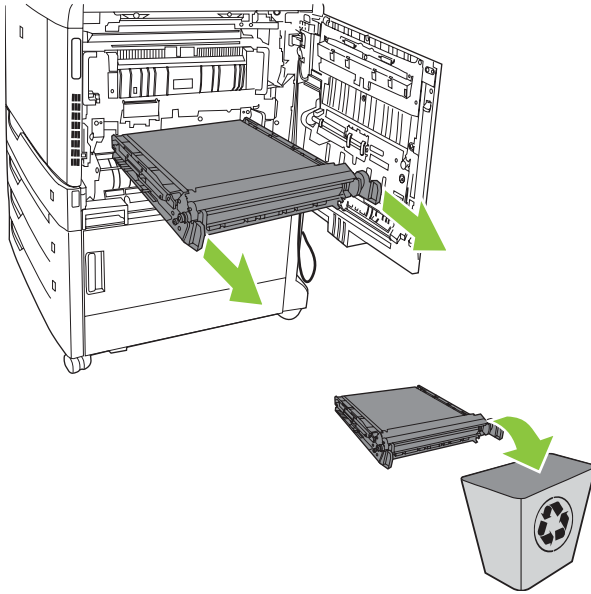
1. Turn the power off and open the right door.
2. Lift the green handle on the transfer assembly, and then open the panel.



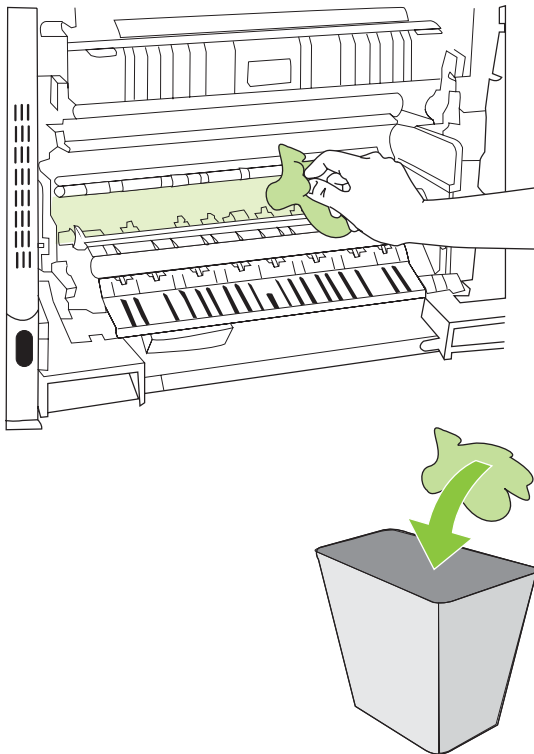
3. Raise the ITB levers.



4. Remove the ITB.



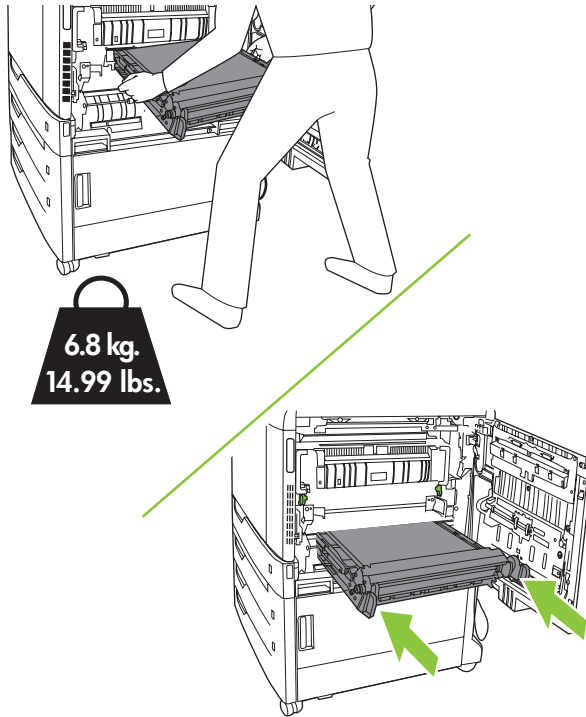
5. Wipe the ITB area.



6. Remove the new ITB from its protective bag.

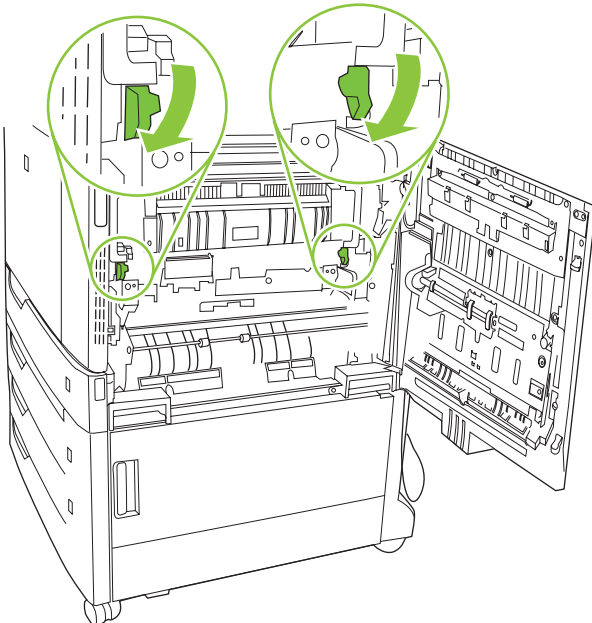
△ **CAUTION:** Contaminants or scratching may result in poor print quality.

7. Install the new ITB.



△ **CAUTION:** Only push on the side handles of the ITB as indicated. Do not push on the center because it could scratch the ITB or leave fingerprints.

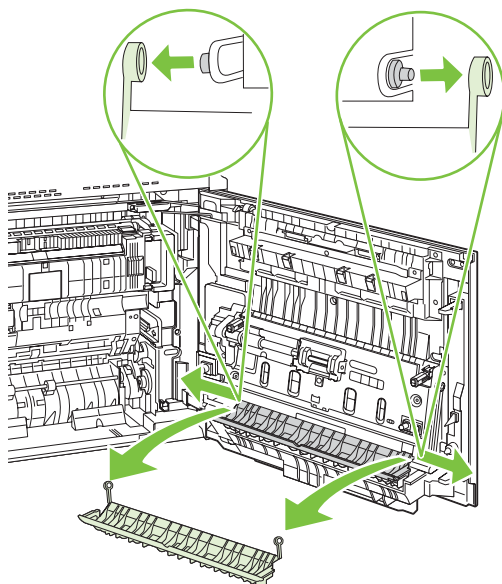
8. Lower the ITB levers.



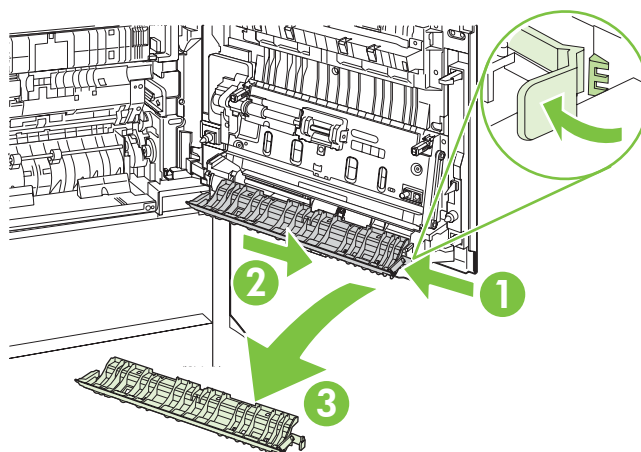
9. Close the transfer assembly.
10. Close the right door, and then turn the power on.

Tray-1 pickup and separation rollers

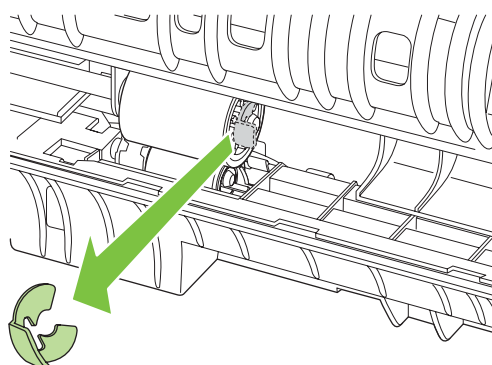
1. Turn the power off, and then open the right door.
2. Remove the paper-feed cover.



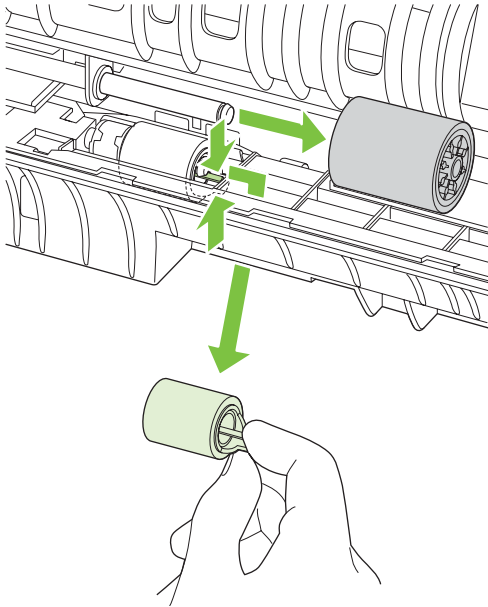
3. Remove the multipurpose upper-feed guide.



4. Remove one plastic clip.



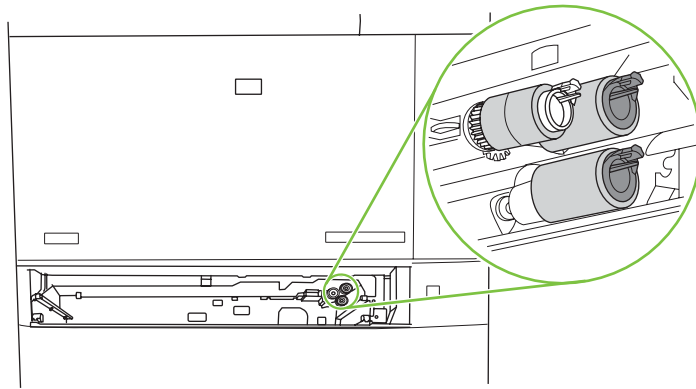
5. Remove the upper roller by sliding it to the right. Rotate the lower roller and then grasp the blue plastic tab and pull the roller off the rod.



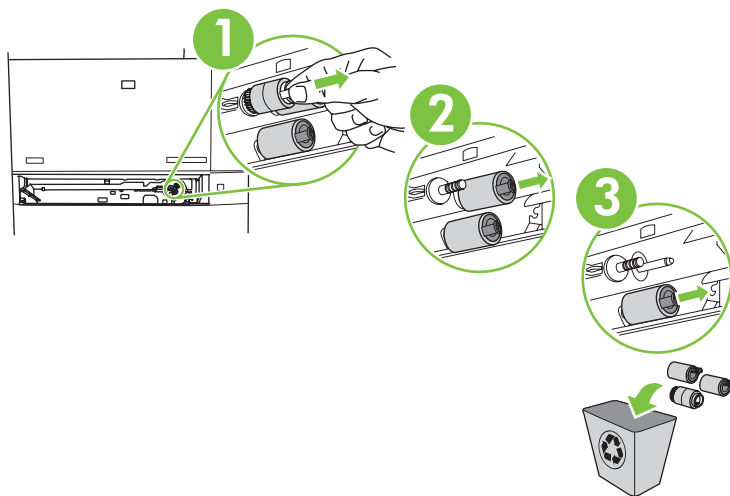
6. Recycle the used rollers, following the instructions included with the new roller.
 7. Remove the new rollers from the protective bag and install.
-
- △ **CAUTION:** Do not touch the rubber part of the new roller. Contaminants or scratching may result in poor print quality.
-
8. Attach paper-feed cover and multi-purpose upper feed guide, and then close the right door.
 9. Turn the power on.

Tray-2, -3, -4, and -5 pickup rollers

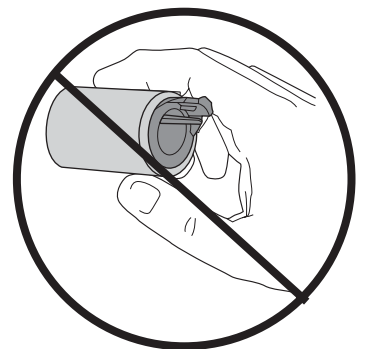
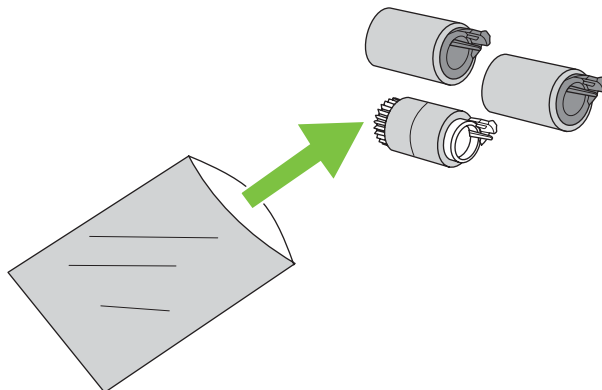
1. Turn the power off, and then remove the paper tray.
2. Locate the rollers.



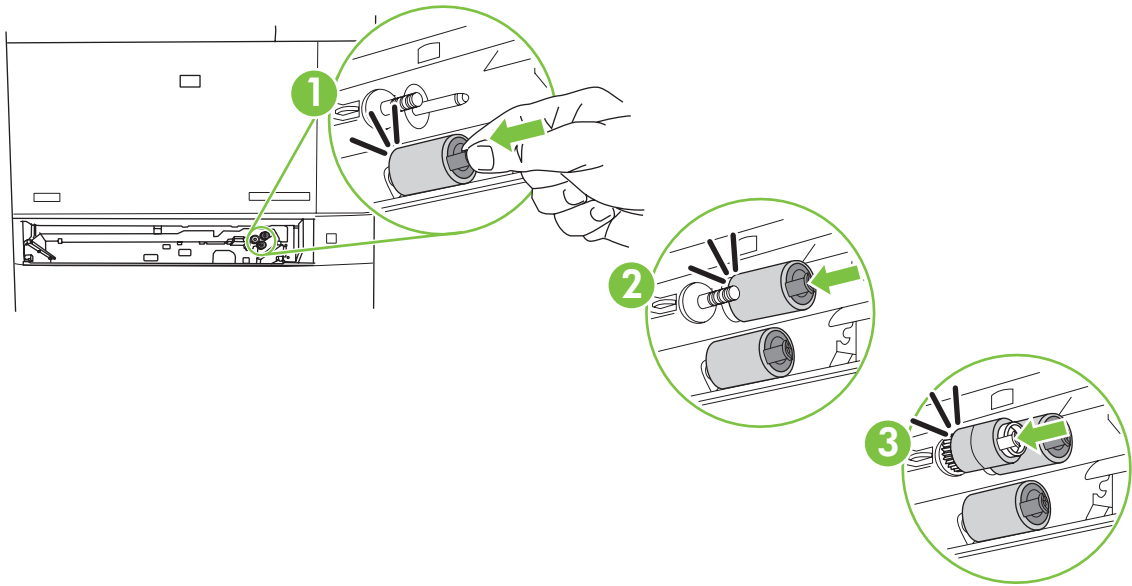
3. Turn the roller, and then grasp the plastic tab and pull the roller off the rod. Repeat the process for the other rollers. Recycle the used rollers.



4. Remove each roller from its protective bag. Do not touch the rubber part of the new roller. Contaminants or scratching may result in poor print quality.



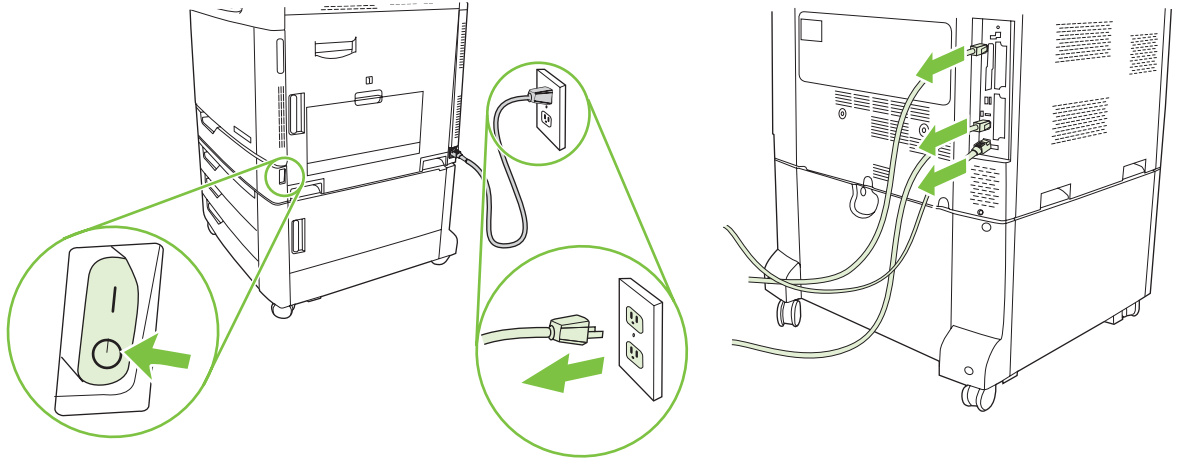
5. Attach the new roller, sliding the new roller onto the rod until it clicks in place. Repeat the process for the other rollers.



6. Reinstall the paper tray, and then turn the power on.

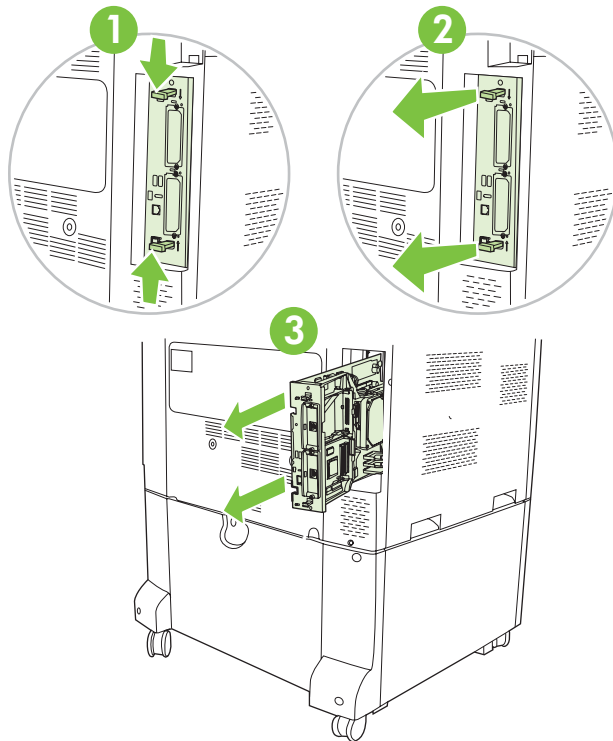
Formatter

1. Turn the product off, and then disconnect all power and interface cables.



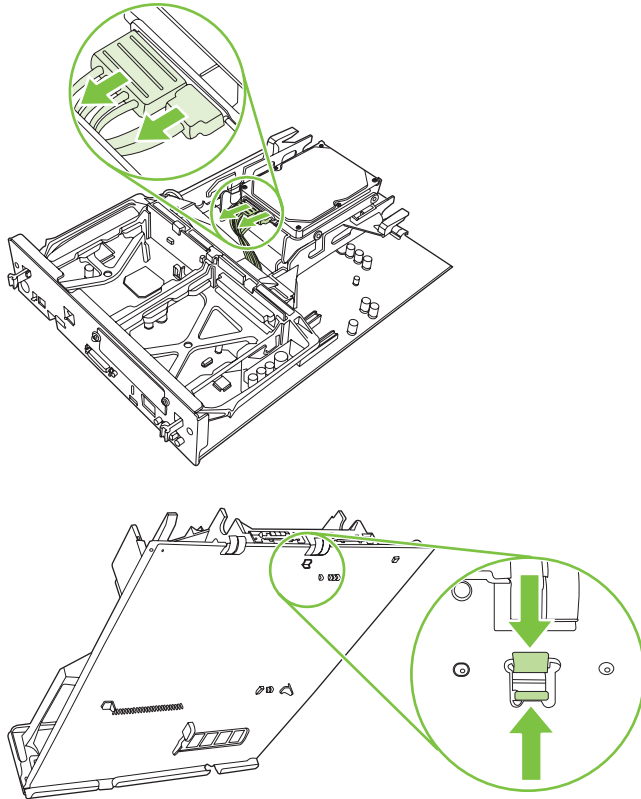
NOTE: Some parts are sensitive to electrostatic discharge (ESD). Look for the ESD reminder when removing printer parts. Always perform service work at an ESD-protected workstation or mat. If an ESD workstation or mat is not available, ground yourself by touching the sheet-metal chassis *before* touching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

2. Locate the black formatter-pressure-release tabs on the formatter board in the rear of the product, and then gently press the black tabs (callout 1) toward each other. Gently pull on the black tabs (callout 2) to pull the formatter board from the product (callout 3).

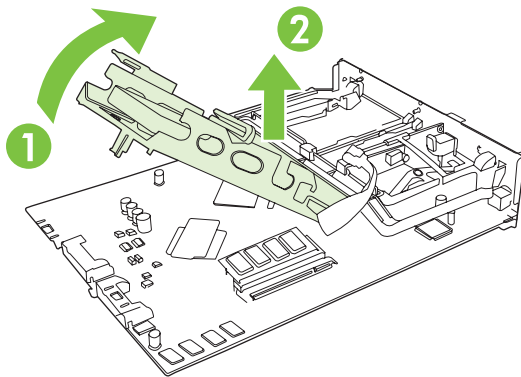


3. Place the formatter board on a clean, flat, grounded surface.
4. Remove the DDR memory DIMM. See [Install DDR memory DIMMs on page 91](#).

5. Disconnect all connectors to the hard-drive, and then release the hard-drive cage.

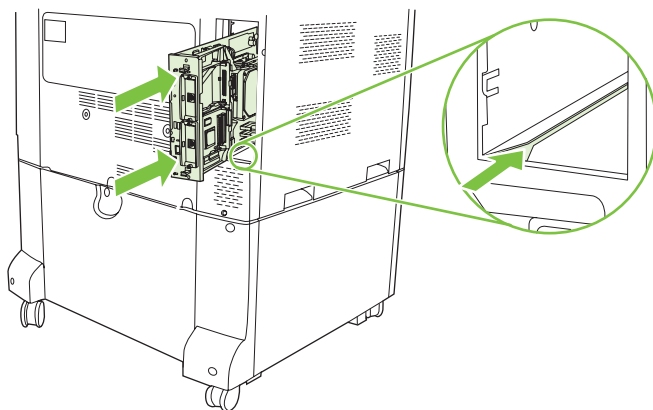


6. Remove the hard-drive cage.



7. Recycle the used formatter.
8. Remove the formatter from its protective bag, and then place it on a clean, flat, grounded surface.
9. Install the DDR memory DIMM and hard-drive cage to the new formatter.

10. Align the formatter board in the tracks at the bottom of the slot, and then slide the board back into the product. Attach all power and interface cables, and then turn the power on.



1 x 500-sheet input tray installation

1. Lock the wheels.
2. Turn the power off.
3. Set the product on the 1 x 500-sheet input tray.

△ **CAUTION:** The product weights approximately 66.5 kg (143 lb) and requires at least 4 people to lift and carry. Do not attempt to lift by yourself .

4. Turn the lever to lock the product into position.
5. Turn the product on.

3 x 500-sheet input tray installation

1. Lock the wheels on the 3 x 500-sheet input tray.
2. Turn the power to the product off.
3. Set the product on the 3 x 500-sheet input tray.

△ **CAUTION:** The product weights approximately 66.5 kg (143 lb) and requires at least 4 people to lift and carry. Do not attempt to lift it by yourself .

4. Turn the lever to lock the product into position.
5. Turn the product on.

Tray 2

1. Pull the old tray completely out of the product by pulling and lifting it up slightly. Recycle the used tray following the instructions included with the new tray.
2. Attach the front cover to the tray.
3. Reinsert the tray by aligning the side rollers and pushing it back into the product.

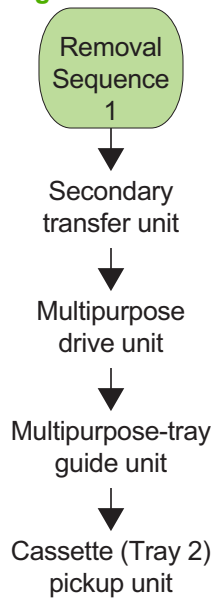
Trays 3, 4, and 5

1. Pull the tray completely out of the product by pulling and lifting it up slightly.
2. Recycle the used tray following the instructions included with the new tray.
3. Reinsert the tray by aligning the side rollers and pushing it back into the product.

Removal sequence 1

Use the flowchart below to determine the sequence of part removal and reinstallation. For information about using removal sequences, see [Parts removal sequences on page 189](#).

Figure 6-2 Removal sequence 1 flowchart



Secondary transfer unit

 **NOTE:** To begin, see [Removal sequence 1 on page 209](#).

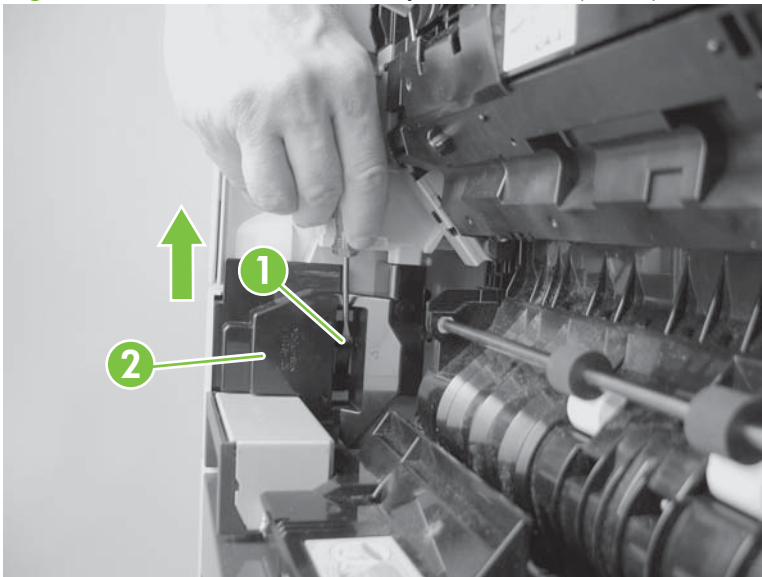
1. Remove the following user-replaceable parts.
 - Transfer roller. See [Transfer roller on page 194](#).
 - Intermediate-transfer belt. See [Intermediate-transfer belt \(ITB\) on page 196](#).
2. With a flatblade screwdriver, release two tabs along the bottom edge, and then remove the right ITB guide.

Figure 6-3 Remove the secondary transfer unit (1 of 9)



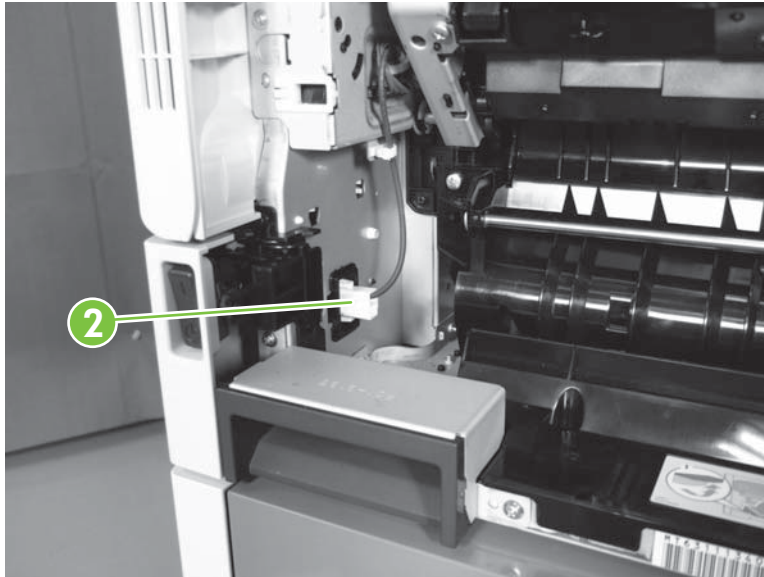
3. Close the secondary transfer unit. On the left side, release one tab (callout 1), and then lift the connector cover (callout 2) to remove it.

Figure 6-4 Remove the secondary transfer unit (2 of 9)



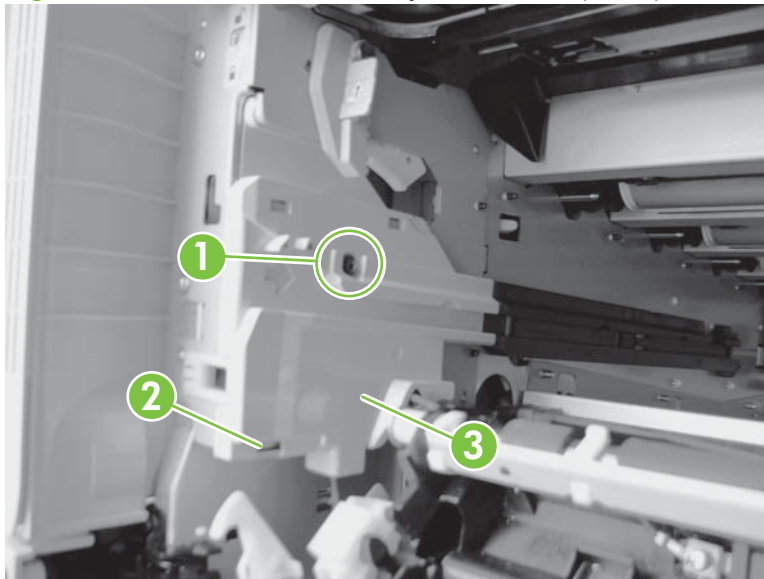
4. Disconnect one connector (callout 1). To disconnect, push the front of the connector toward the product, and then pull out.

Figure 6-5 Remove the secondary transfer unit (3 of 9)



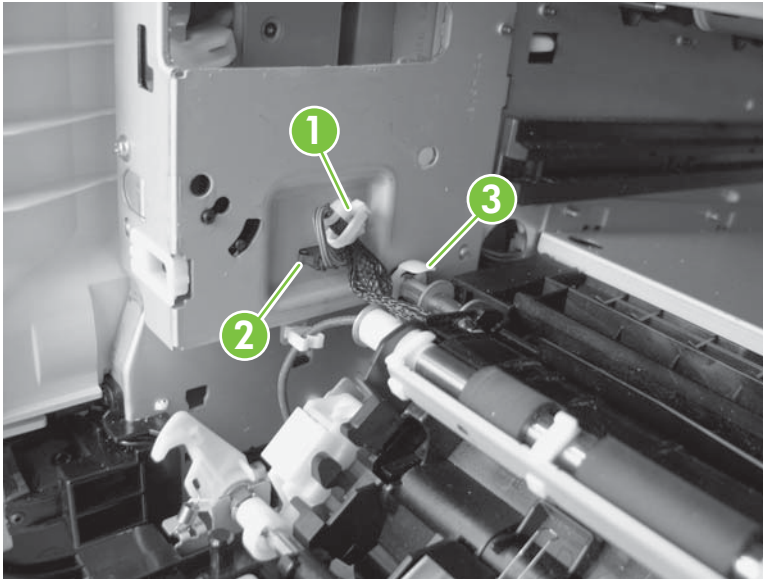
5. Remove one screw (callout 1), release one tab (callout 2), and then lift the left ITB guide (callout 3) to remove it.

Figure 6-6 Remove the secondary transfer unit (4 of 9)



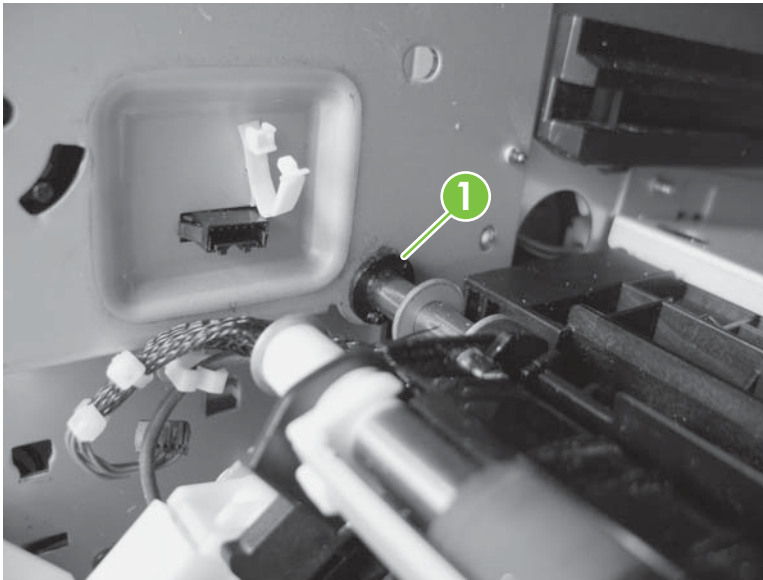
6. Release one wire retainer (callout 1), one connector (callout 2), and one c-clip (callout 3).

Figure 6-7 Remove the secondary transfer unit (5 of 9)



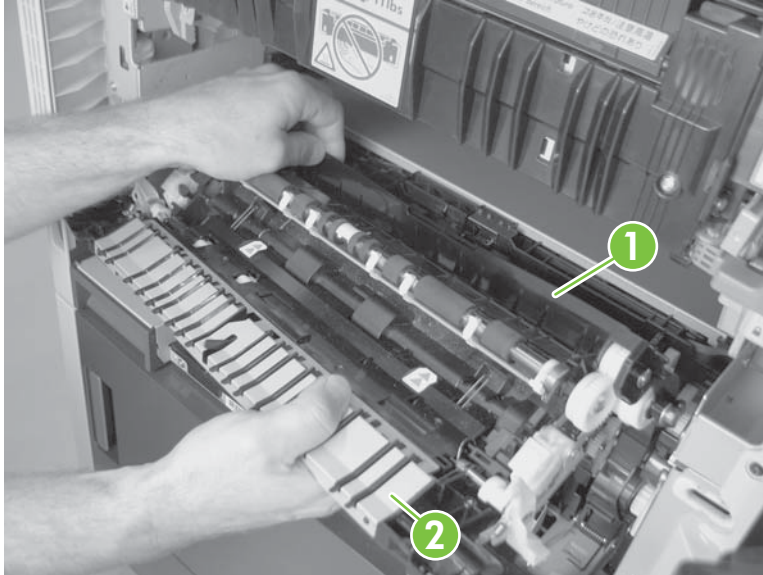
7. Slide the bushing (callout 1) out onto the rod.

Figure 6-8 Remove the secondary transfer unit (6 of 9)



8. While tilting the feed guide (callout 1) backward, grasp the secondary transfer unit (callout 2) and slide it to the left. Release the right guide bar, and then remove the secondary transfer unit.

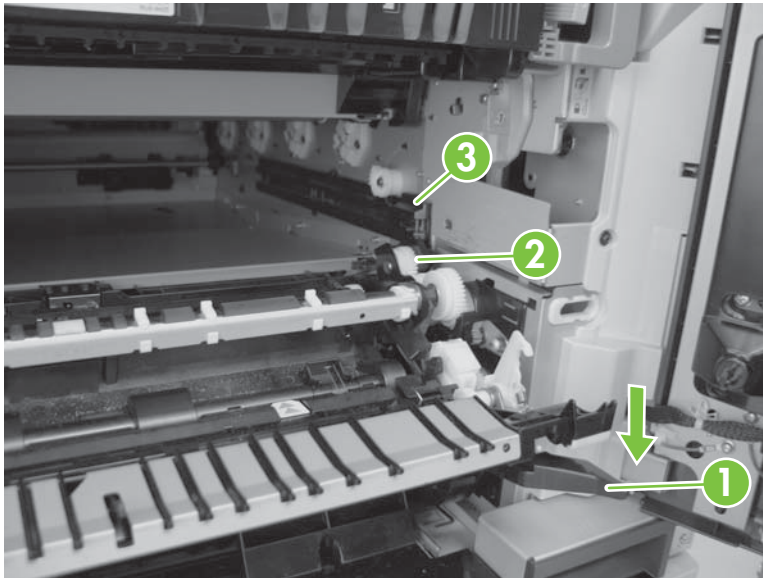
Figure 6-9 Remove the secondary transfer unit (7 of 9)



 **NOTE:** When reassembling the secondary transfer unit, make sure to position it correctly.

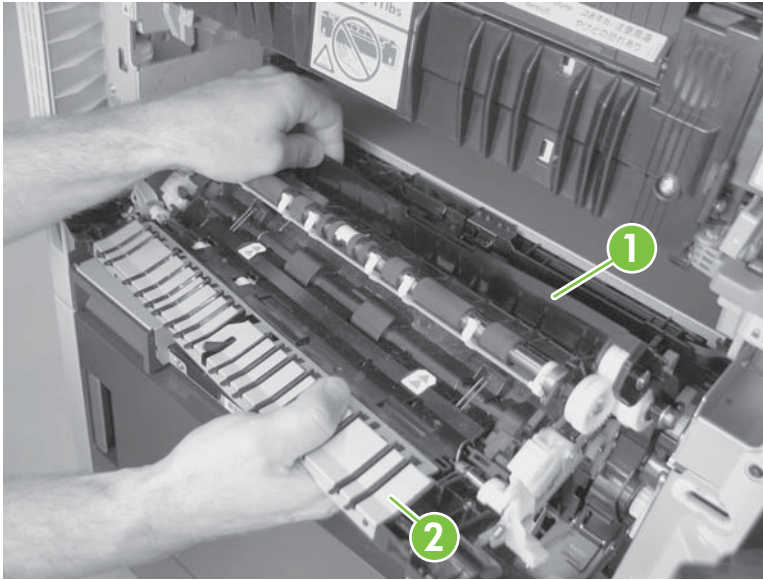
- Push down the secondary transfer unit stopper (callout 1). Place the gear unit (callout 2) under the ITB rail (callout 3).

Figure 6-10 Remove the secondary transfer unit (8 of 9)



- Lift and place the feed guide (callout 1) on the upper part of the secondary transfer unit (callout 2).

Figure 6-11 Remove the secondary transfer unit (9 of 9)



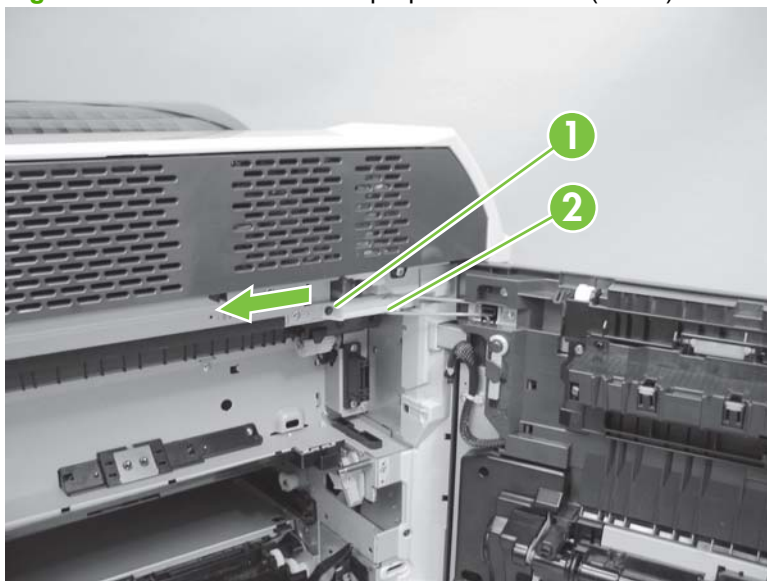
 **NOTE:** Be sure to calibrate the media sensor from the **SERVICE** menu on the control panel after the secondary transfer unit has been replaced.

Multipurpose drive unit

 **NOTE:** To begin, see [Removal sequence 1 on page 209](#).

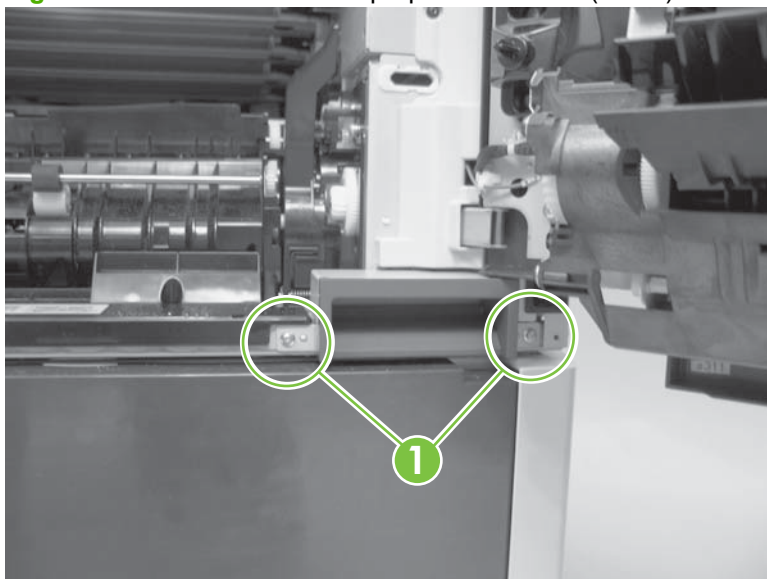
1. Remove the fuser. See [Fuser on page 191](#).
2. Remove one screw (callout 1) and release the door hinge (callout 2).

Figure 6-12 Remove the multipurpose drive unit (1 of 7)



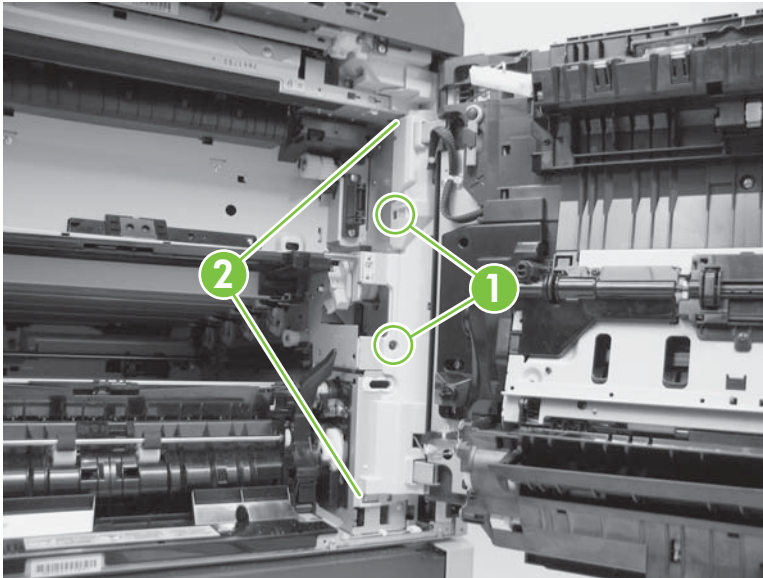
3. Remove two screws (callout 1) and the handle.

Figure 6-13 Remove the multipurpose drive unit (2 of 7)



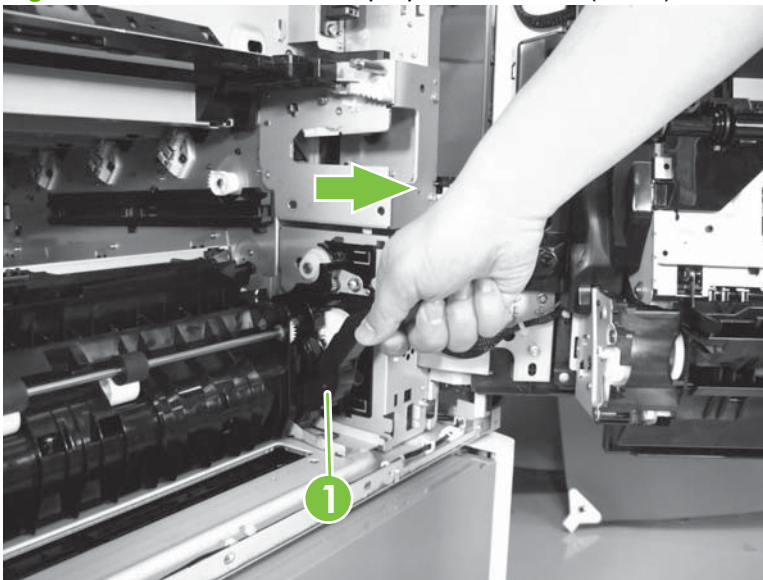
4. Remove two screws (callout 1), release two tabs (callout 2), and then remove the right inner cover.

Figure 6-14 Remove the multipurpose drive unit (3 of 7)



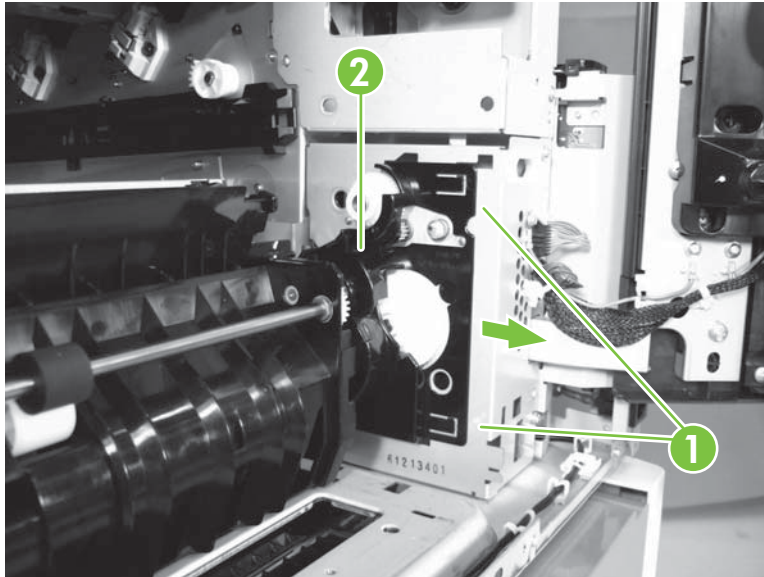
5. Lift the secondary transfer unit stopper (callout 1), and then pull it forward to remove it.

Figure 6-15 Remove the multipurpose drive unit (4 of 7)



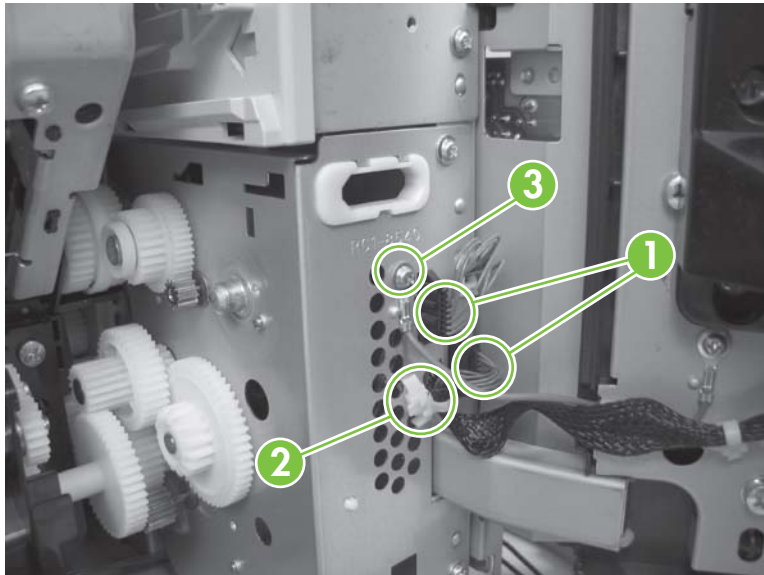
6. Release the two tabs (callout 1), and then slide the gear cover (callout 2) in the direction indicated to remove it.

Figure 6-16 Remove the multipurpose drive unit (5 of 7)



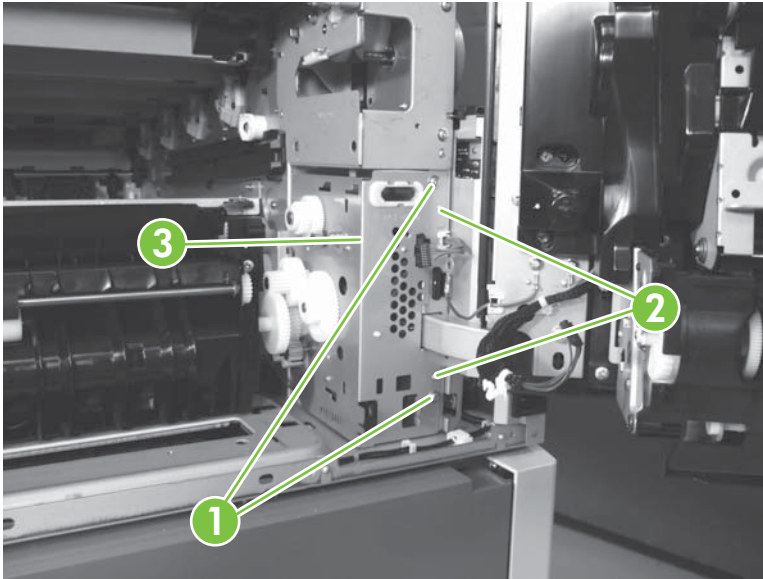
7. Remove two connectors (callout 1), one wire retainer (callout 2), and one ground screw (callout 3).

Figure 6-17 Remove the multipurpose drive unit (6 of 7)



8. Remove two screws (callout 1), two pins (callout 2), and then remove the multipurpose tray drive unit.

Figure 6-18 Remove the multipurpose drive unit (7 of 7)

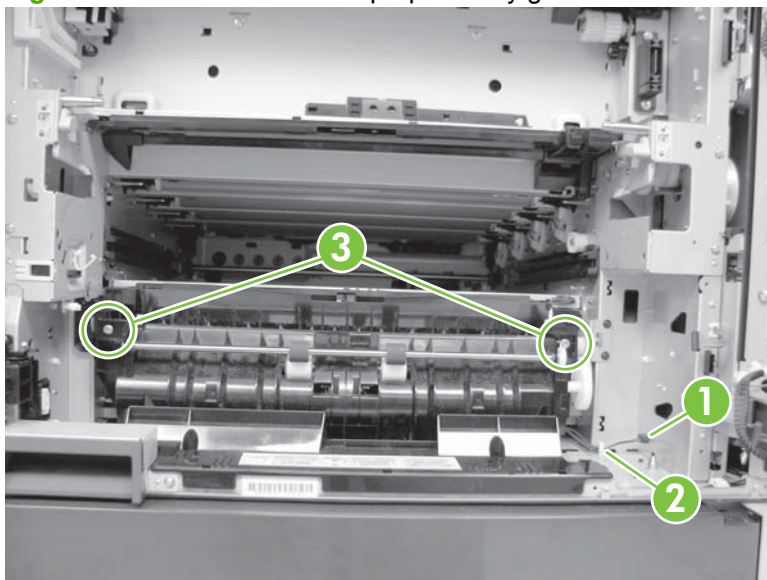


Multipurpose-tray guide (Tray 1) unit

 **NOTE:** To begin, see [Removal sequence 1 on page 209](#).

- Disconnect one connector (callout 1), release one wire retainer (callout 2), remove two screws (callout 3), and then remove the multipurpose-tray guide (Tray-1) unit.

Figure 6-19 Remove the multipurpose-tray guide unit

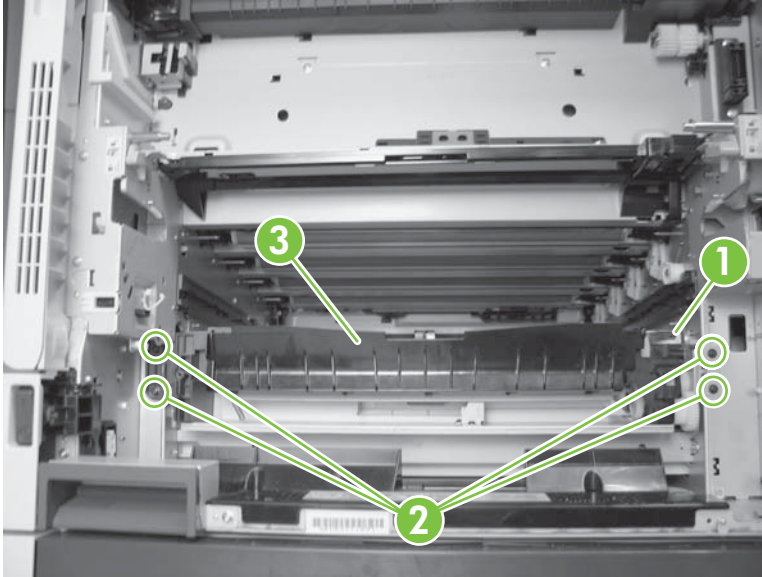


Cassette (Tray-2) pickup unit

 **NOTE:** To begin, see [Removal sequence 1 on page 209](#).

- Disconnect one connector (callout 1), remove four screws (callout 2), and then the Tray-2 pickup unit (callout 3).

Figure 6-20 Remove the cassette (Tray-2) pickup unit

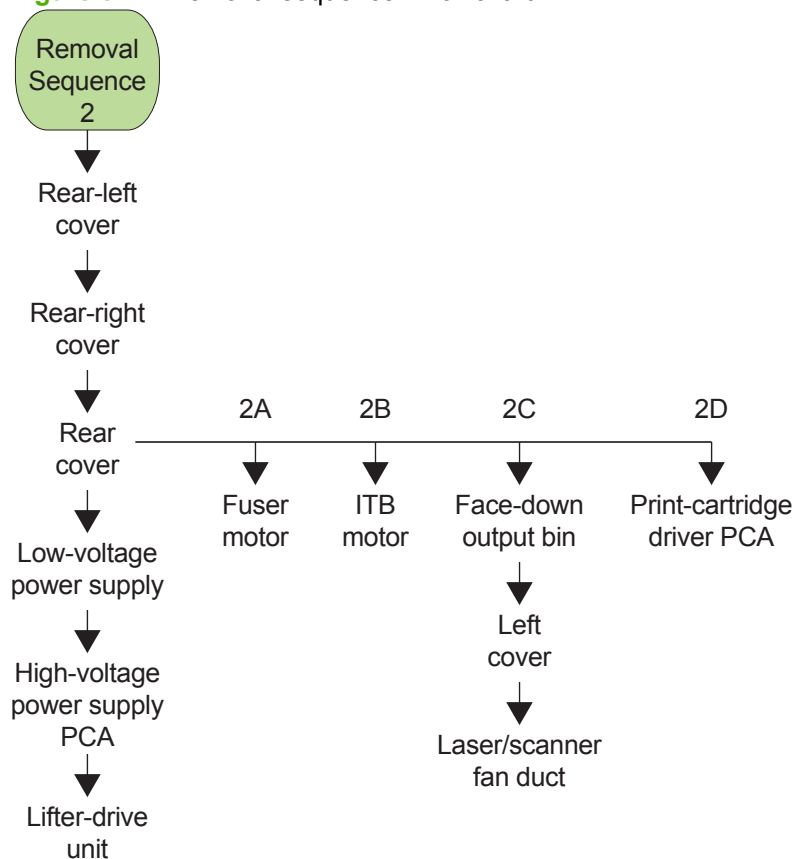


 **NOTE:** Removal sequence 1 is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

Removal sequence 2

Use the flowchart below to determine the sequence of part removal and reinstallation. For information about using removal sequences, see [Parts removal sequences on page 189](#).

Figure 6-21 Removal sequence 2 flowchart

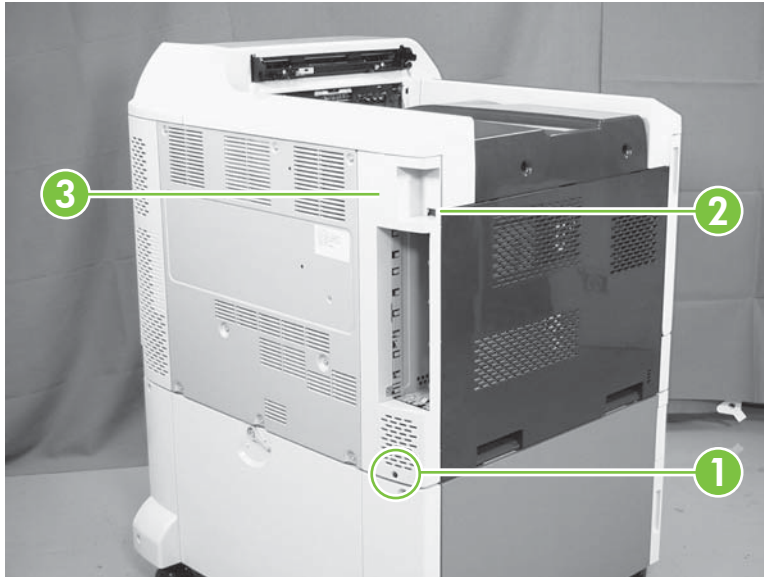


Rear-left cover

 **NOTE:** To begin, see [Removal sequence 2 on page 221](#).

- ☐ Remove one screw (callout 1), release one tab (callout 2), and then remove the rear-left cover (callout 3).

Figure 6-22 Remove rear-left cover

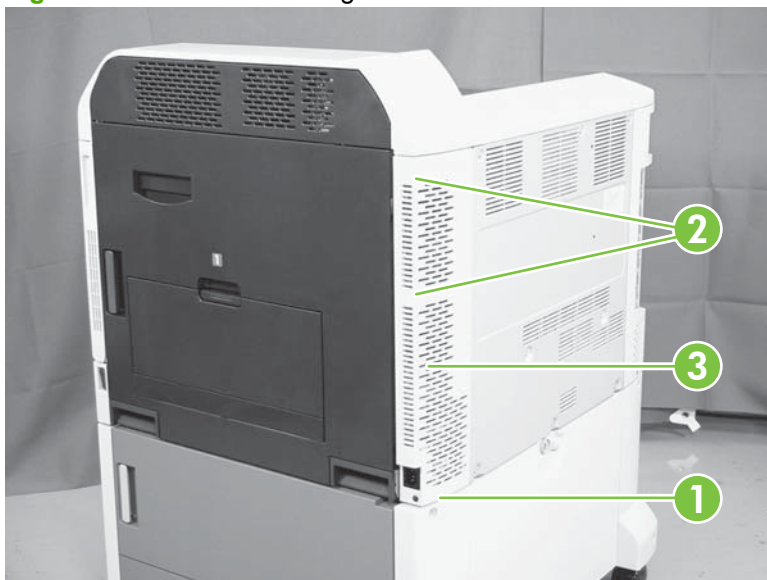


Rear-right cover

 **NOTE:** To begin, see [Figure 6-21 Removal sequence 2 flowchart on page 221](#).

- Remove one screw (callout 1), release two tabs (callout 2), and then remove the rear-right cover (callout 3).

Figure 6-23 Remove rear-right cover

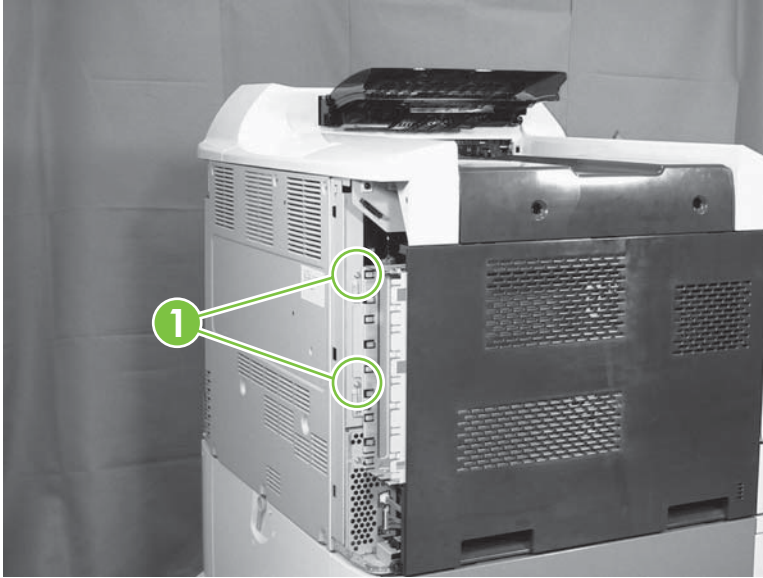


Rear cover

 **NOTE:** To begin, see the [Removal sequence 2 on page 221](#).

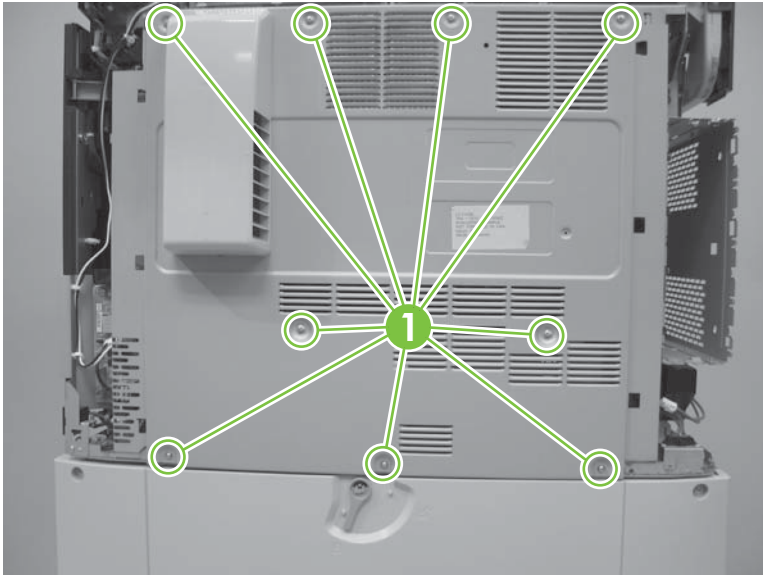
1. Remove two screws (callout 1).

Figure 6-24 Remove rear cover (1 of 2)



2. Remove nine screws (callout 1), and then remove the rear cover (callout 2).

Figure 6-25 Remove rear cover (2 of 2)



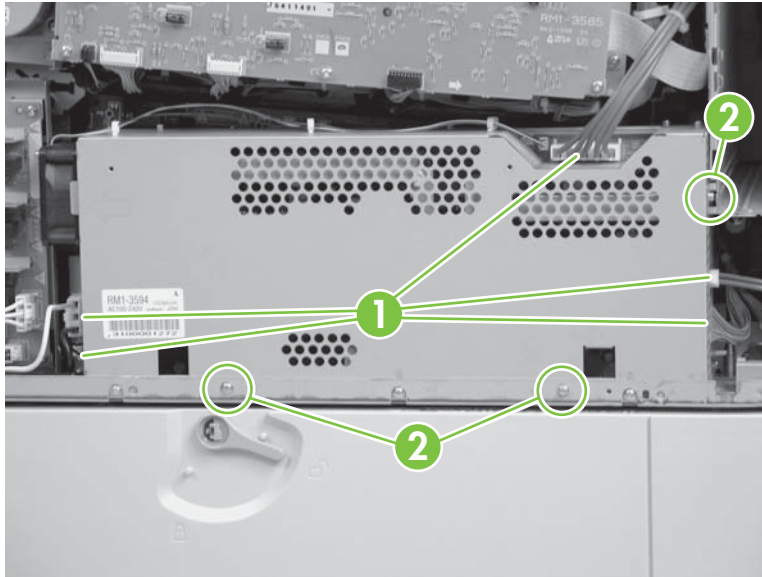
- For sequence 2A, see [Removal sequence 2A on page 230](#).
- For sequence 2B, see [Removal sequence 2B on page 231](#).
- For sequence 2C, see [Removal sequence 2C on page 232](#).
- For sequence 2D, see [Removal sequence 2D on page 236](#).

Low-voltage power supply unit

 **NOTE:** To begin, see the [Removal sequence 2 on page 221](#).

- Disconnect five connectors (callout 1), remove three screws (callout 2), and then remove the low-voltage power supply unit.

Figure 6-26 Remove the low-voltage power supply unit

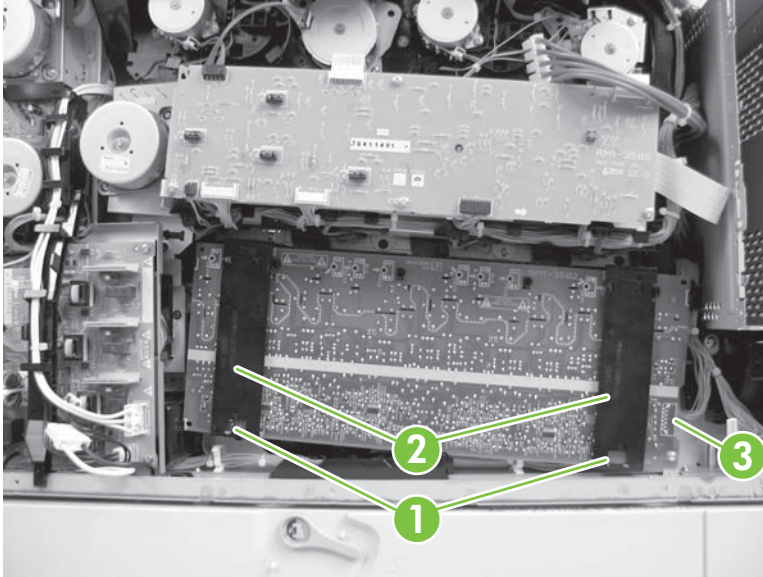


High-voltage power supply PCA (A)

 **NOTE:** To begin, see [Removal sequence 2 on page 221](#).

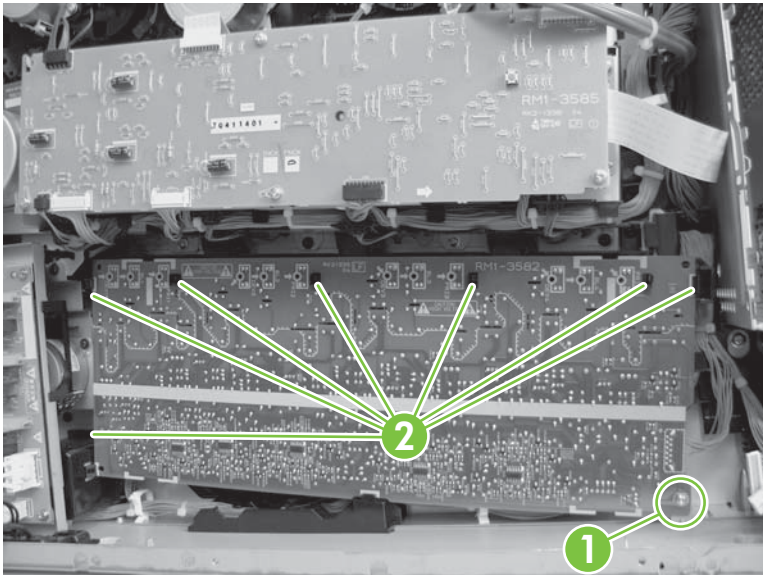
1. Release the two tabs (callout 1), remove the two PCA holders (callout 2), and then remove one connector (callout 3).

Figure 6-27 Remove the high-voltage power supply PCA (A) (1 of 3)



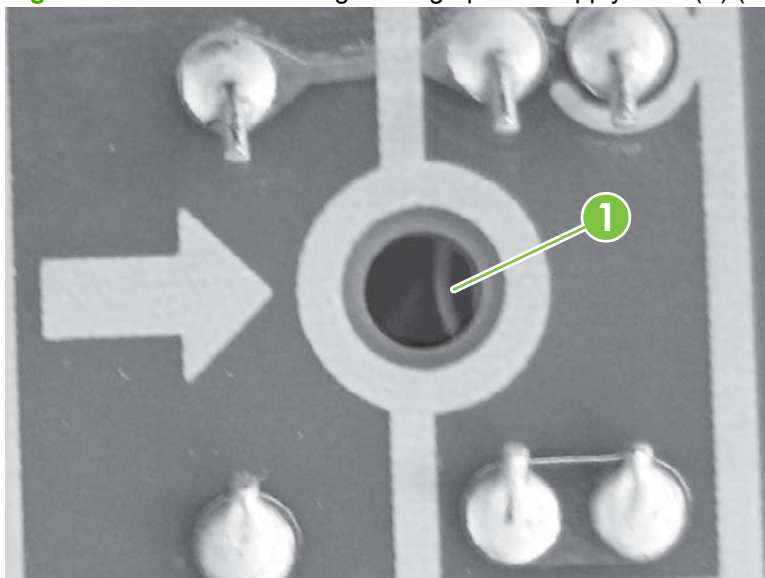
2. Remove one screw (callout 1), release seven tabs (callout 2), and then remove the high-voltage power supply PCA (A).

Figure 6-28 Remove the high-voltage power supply PCA (A) (2 of 3)



 **NOTE:** When reassembling, set the bottom tab of the high-voltage power supply PCA (A) first. Ensure that the contact spring (callout 1) can be seen from the twelve confirmation windows.

Figure 6-29 Remove the high-voltage power supply PCA (A) (3 of 3)

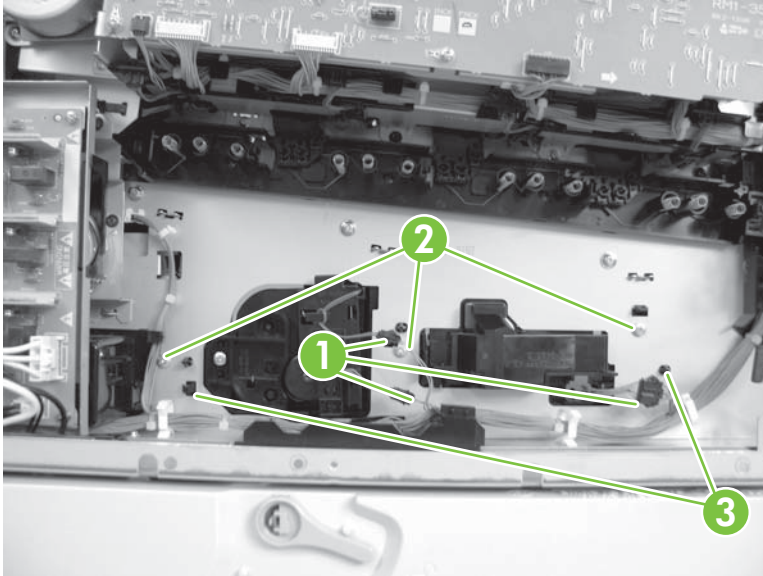


Lifter drive unit

 **NOTE:** To begin, see [Removal sequence 2 on page 221](#).

1. Remove Tray 2. See [Tray 2 on page 208](#).
2. Disconnect three connectors (callout 1), remove three screws (callout 2), and then release two tabs (callout 3).

Figure 6-30 Remove the lifter drive unit (1 of 2)



3. Remove the lifter drive unit through the front of the product.

Figure 6-31 Remove the lifter drive unit (2 of 2)



 **NOTE:** When reassembling, ensure that the lifter drive unit is unlocked (callout 1). If the lifter is locked (callout 2), the lifter will not function correctly.

Figure 6-32 Unlocked position of the lifter drive unit (correct)

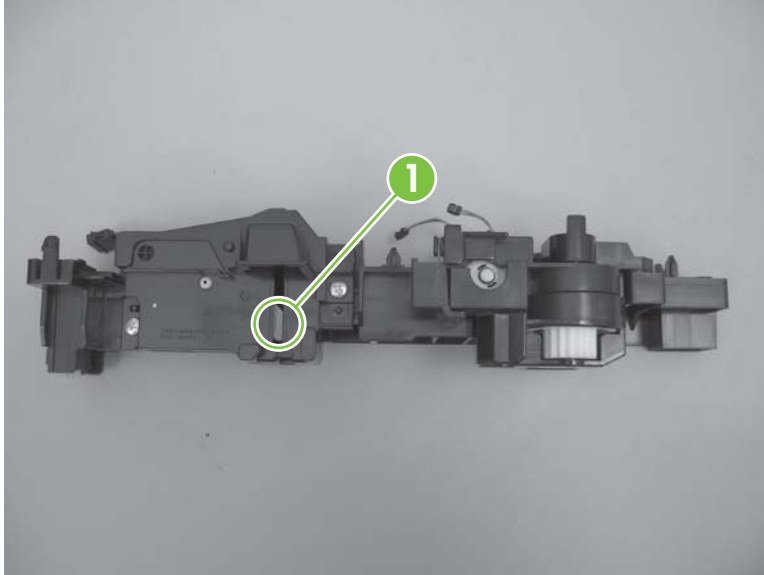
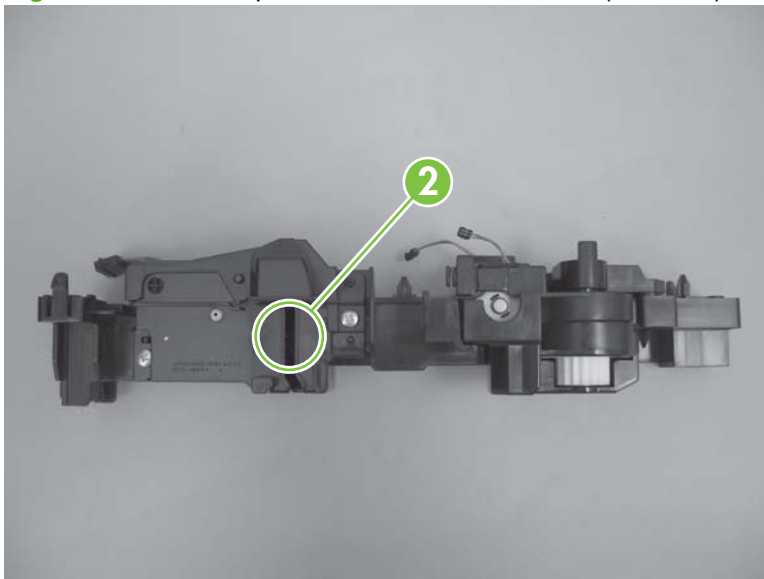


Figure 6-33 Locked position of the lifter drive unit (incorrect)



 **NOTE:** Removal sequence 2 is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

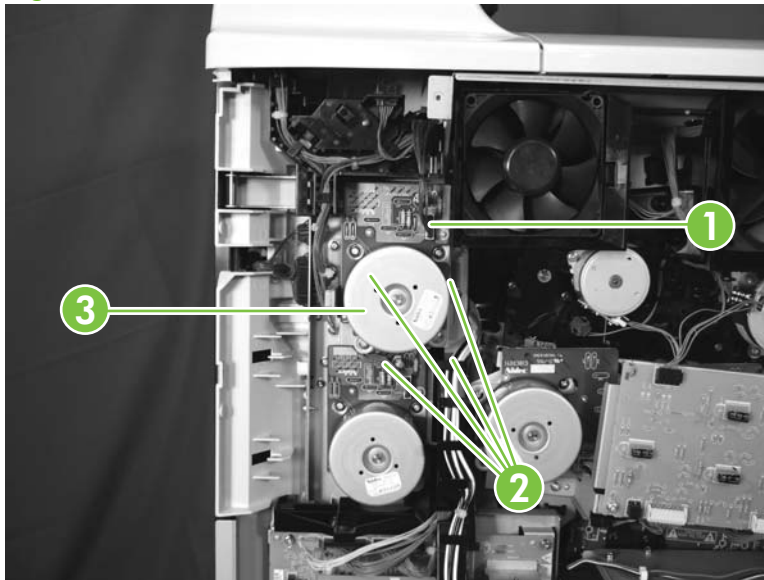
Removal sequence 2A

See [Removal sequence 2 on page 221](#) for procedures to remove prerequisite parts.

Fuser motor

1. Disconnect one connector (callout 1).
2. Remove four screws (callout 2), and then remove the fuser motor (callout 3).

Figure 6-34 Remove the fuser motor



 **NOTE:** Removal sequence 2A is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

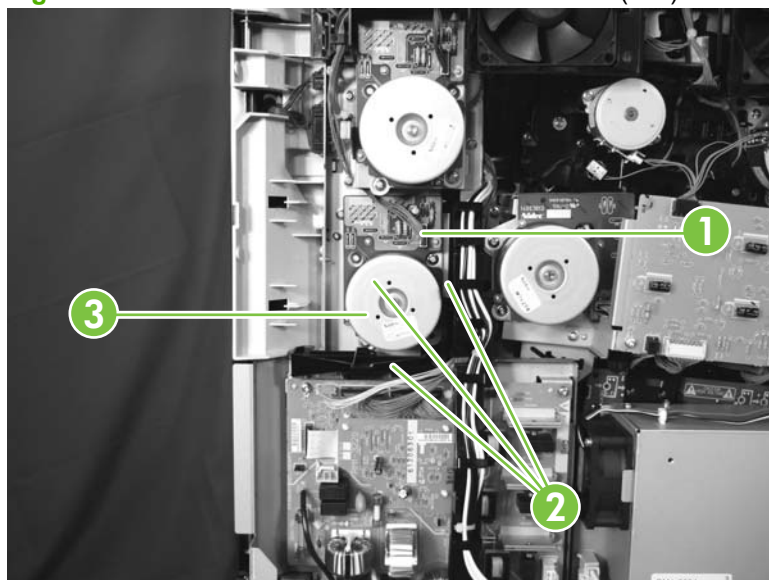
Removal sequence 2B

See [Removal sequence 2 on page 221](#) for procedures to remove prerequisite parts.

Intermediate-transfer belt (ITB) motor

- Disconnect one connector (callout 1). Remove three screws (callout 2), and then remove the ITB motor (callout 3).

Figure 6-35 Remove the intermediate-transfer belt (ITB) motor



 **NOTE:** Removal sequence 2B is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

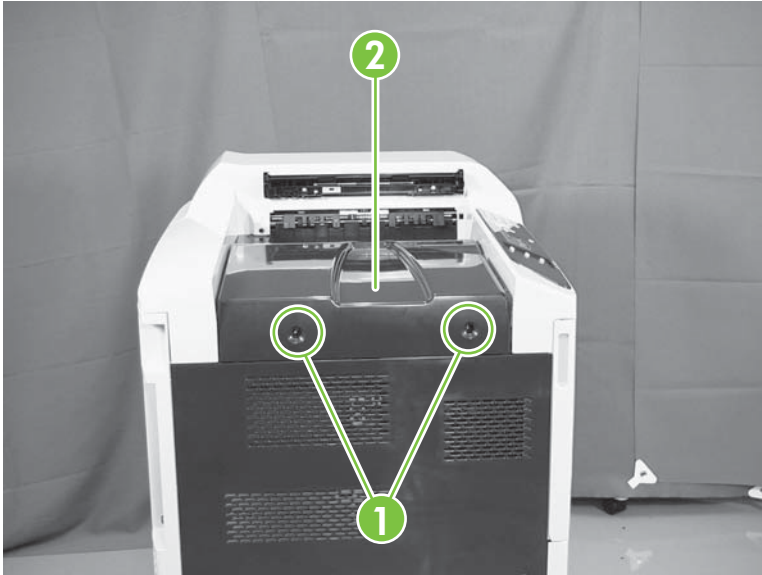
Removal sequence 2C

See [Removal sequence 2 on page 221](#) for procedures to remove prerequisite parts.

Face-down output bin

- Remove two screws (callout 1), and then remove the face-down output bin (callout 2).

Figure 6-36 Remove face-down output bin

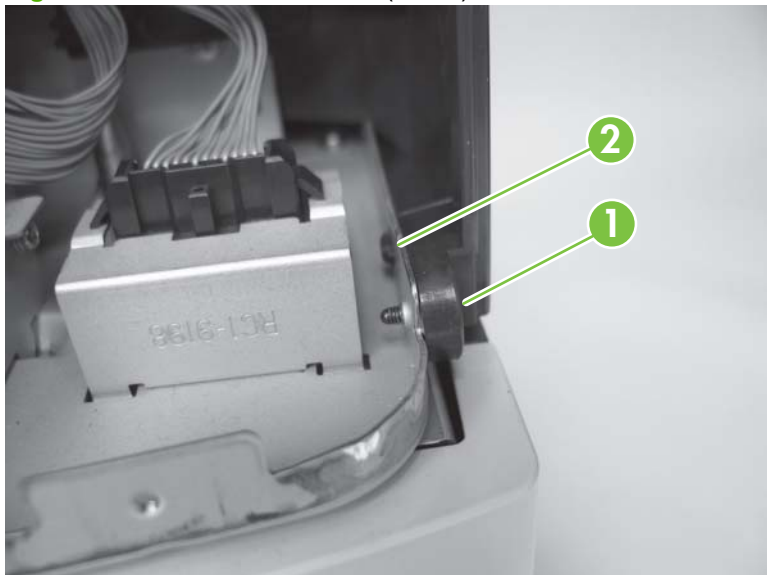


Left cover

 **NOTE:** To begin, see [Removal sequence 2 on page 221](#).

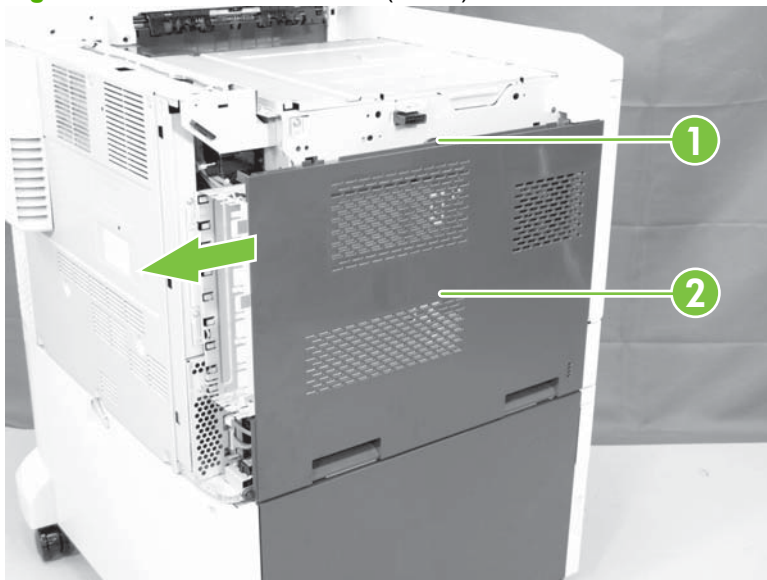
1. Remove one screw (callout 1), and then release one pin (callout 2).

Figure 6-37 Remove left cover (1 of 2)



2. Release one tab (callout 1) while pulling out on the bottom left corner (callout 2). Slide the left cover (callout 3) in the direction that the arrow indicates.

Figure 6-38 Remove left cover (2 of 2)

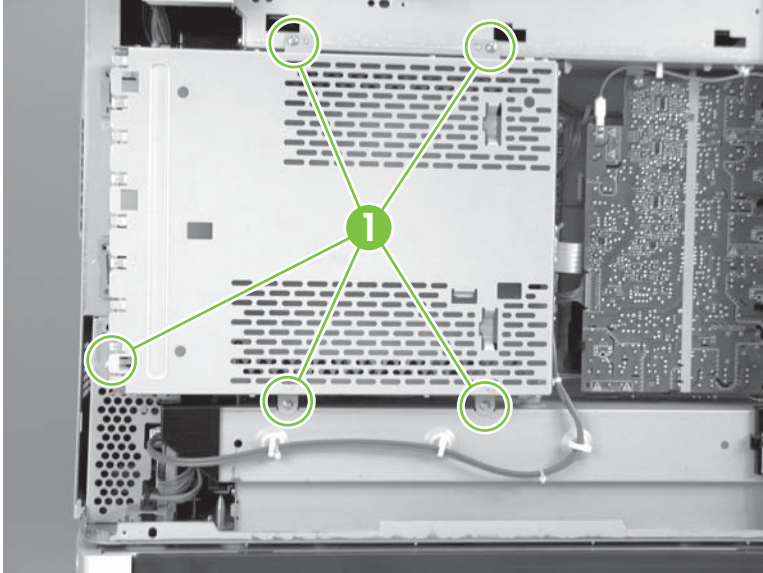


Laser/scanner-fan duct

 **NOTE:** To begin, see [Removal sequence 2 on page 221](#).

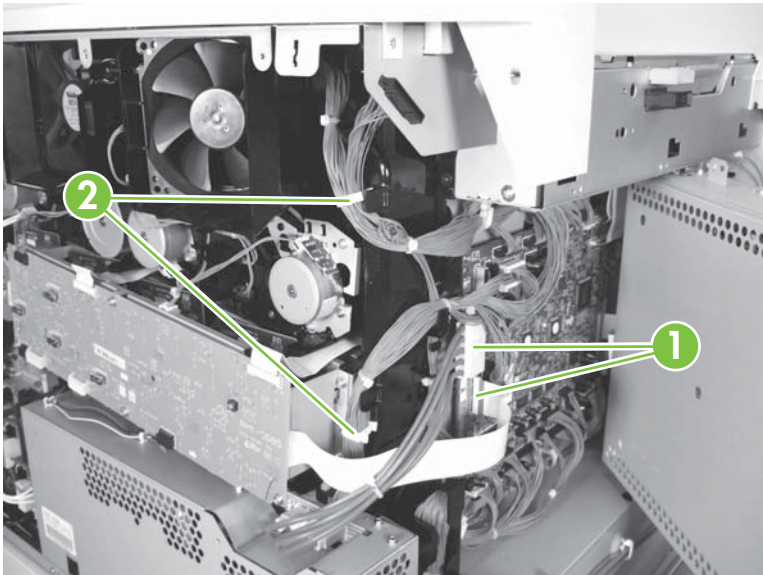
1. Remove five screws (callout 1), and then swing the formatter case to the right.

Figure 6-39 Remove the laser/scanner-fan duct (1 of 3)



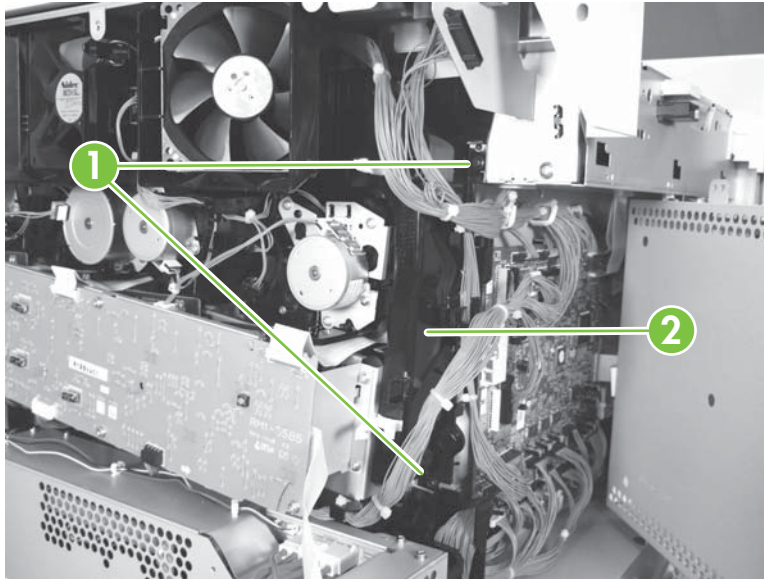
2. Disconnect the two connectors (callout 1), and then release two wire retainers (callout 2).

Figure 6-40 Remove the laser/scanner-fan duct (2 of 3)



3. Remove two screws (callout 1), and then remove the laser/scanner-fan duct (callout 2).

Figure 6-41 Remove the laser/scanner-fan duct (3 of 3)



 **NOTE:** Removal sequence 2C is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

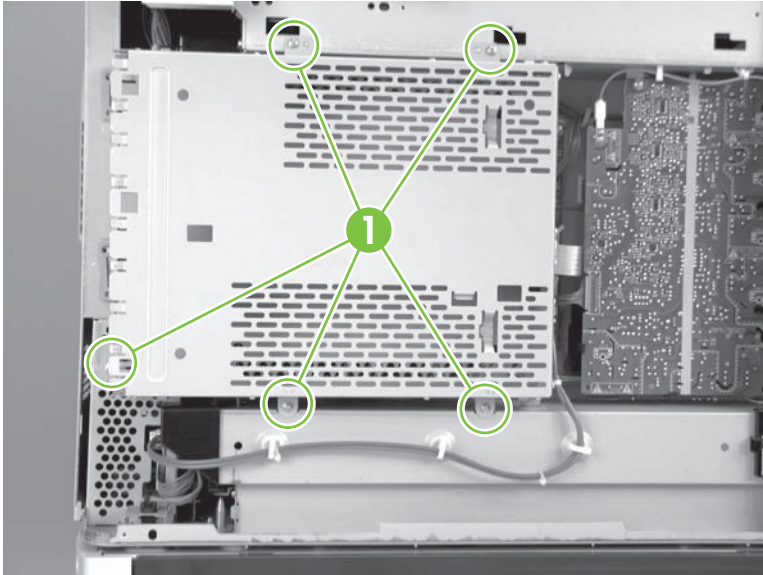
Removal sequence 2D

See [Removal sequence 2 on page 221](#) for procedures to remove prerequisite parts.

Print-cartridge driver PCA

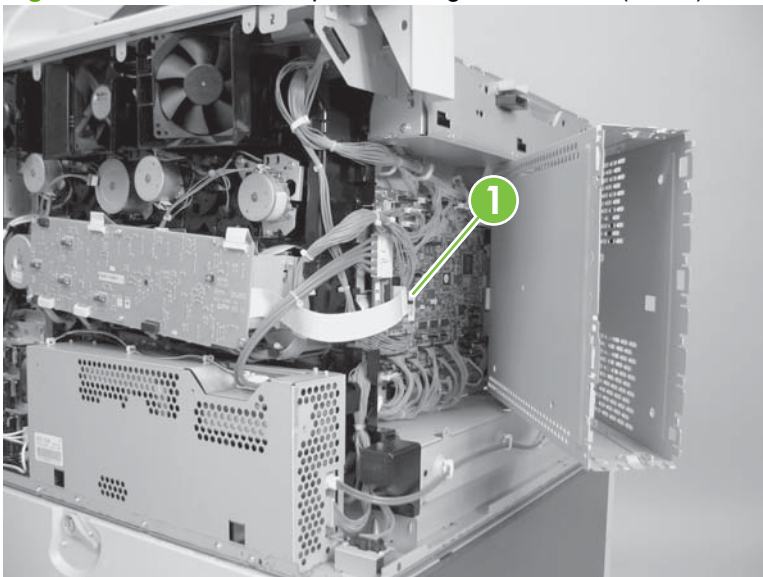
1. Remove four screws (callout 1), and then swing the formatter case to the right.

Figure 6-42 Remove the print-cartridge driver PCA (1 of 3)



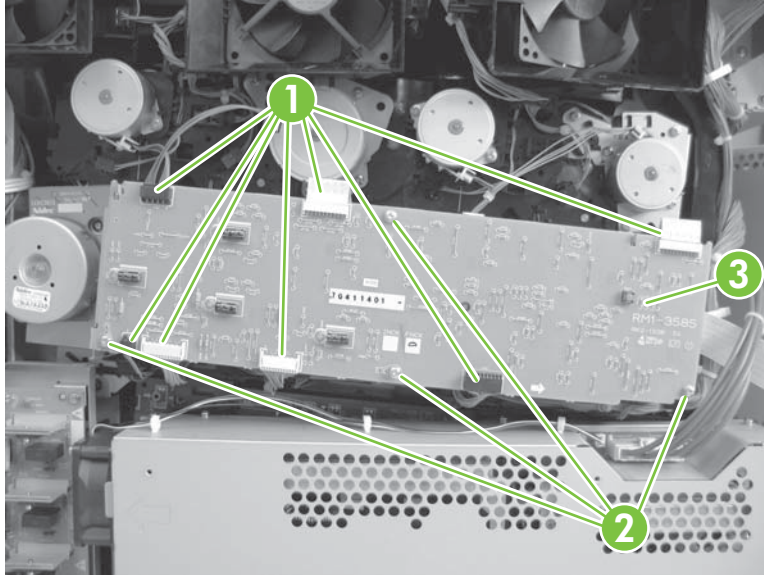
2. Disconnect one connector from the DC controller (callout 1).

Figure 6-43 Remove the print-cartridge driver PCA (2 of 3)



3. Disconnect seven connectors (callout 1), four screws (callout 2), and the print-cartridge driver PCA (callout 3).

Figure 6-44 Remove the print-cartridge driver PCA (3 of 3)

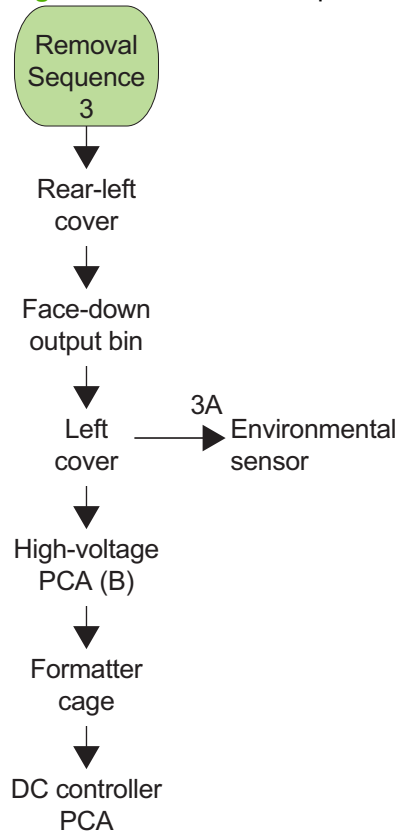


 **NOTE:** Removal sequence 2D is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

Removal sequence 3

Use the flowchart below to determine the sequence of part removal and reinstallation. For information about using removal sequences, see [Parts removal sequences on page 189](#).

Figure 6-45 Removal sequence 3 flowchart

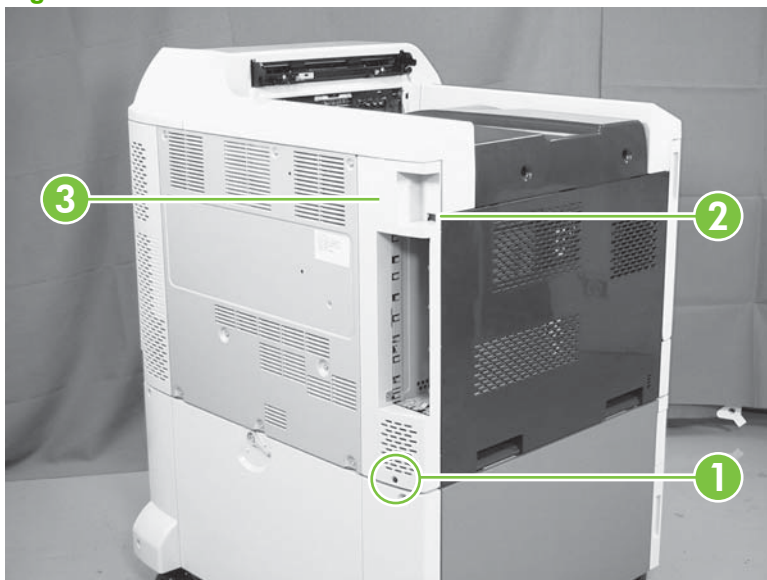


Rear-left cover

 **NOTE:** To begin, see [Removal sequence 3 on page 238](#).

- Remove one screw (callout 1), release one tab (callout 2), and then remove the rear-left cover (callout 3).

Figure 6-46 Remove rear-left cover

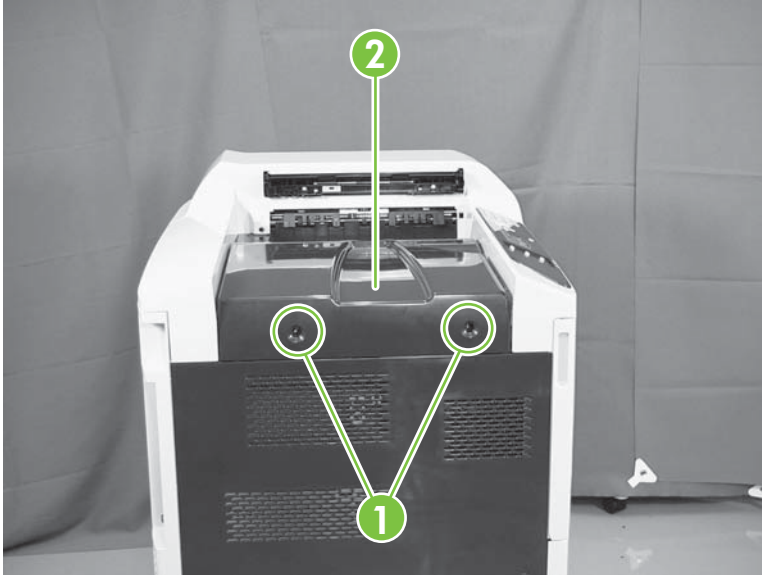


Face-down output bin

 **NOTE:** To begin, see [Removal sequence 3 on page 238](#).

- Remove two screws (callout 1), and then remove the face-down output bin (callout 2).

Figure 6-47 Remove face-down output bin

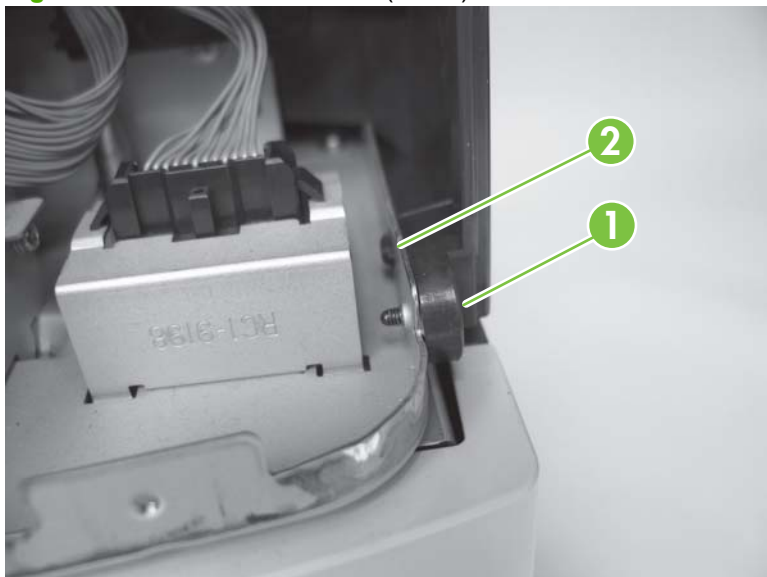


Left cover

 **NOTE:** To begin, see [Removal sequence 3 on page 238](#).

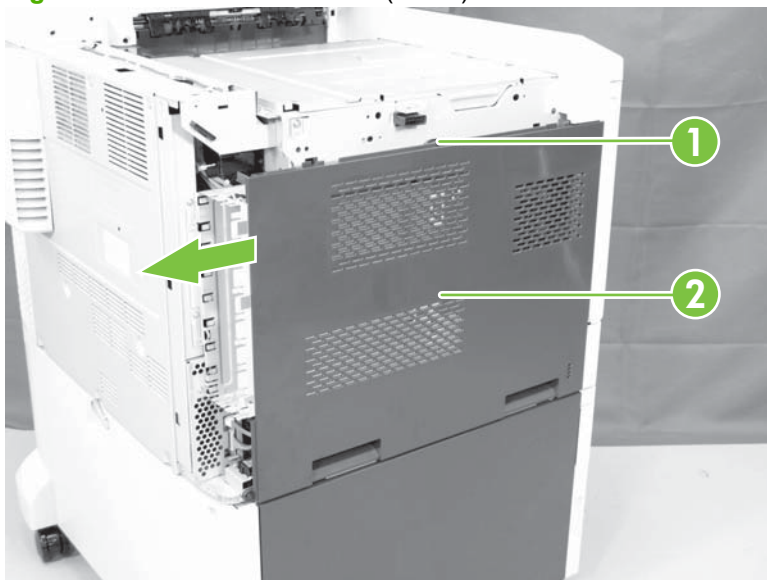
1. Remove one screw (callout 1), and then release one pin (callout 2).

Figure 6-48 Remove left cover (1 of 2)



2. Release one tab (callout 1), and then slide the left cover (callout 2) in the direction that the arrow indicates.

Figure 6-49 Remove left cover (2 of 2)



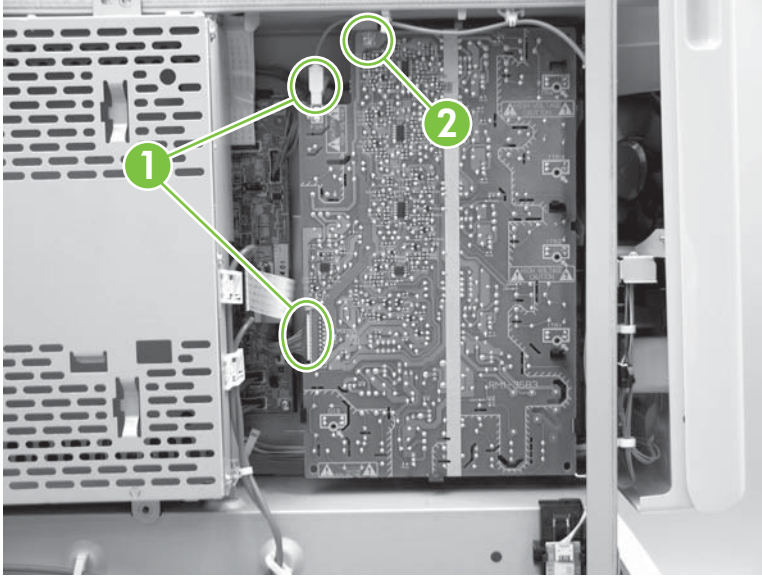
For Removal sequence 3A, see [Removal sequence 3A on page 248](#).

High-voltage power supply PCA (B)

 **NOTE:** To begin, see the [Removal sequence 3 on page 238](#).

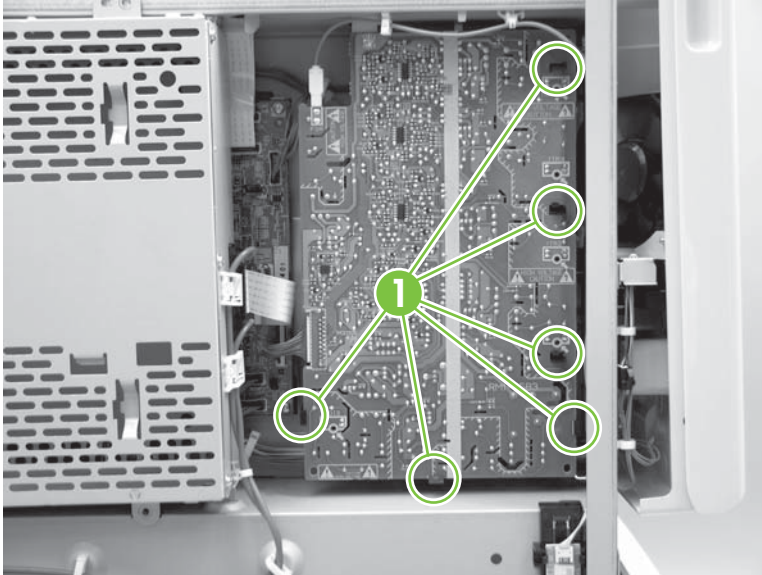
1. Disconnect two connectors (callout 1), and then remove one screw (callout 2).

Figure 6-50 Remove the high-voltage power supply PCA (B) (1 of 3)



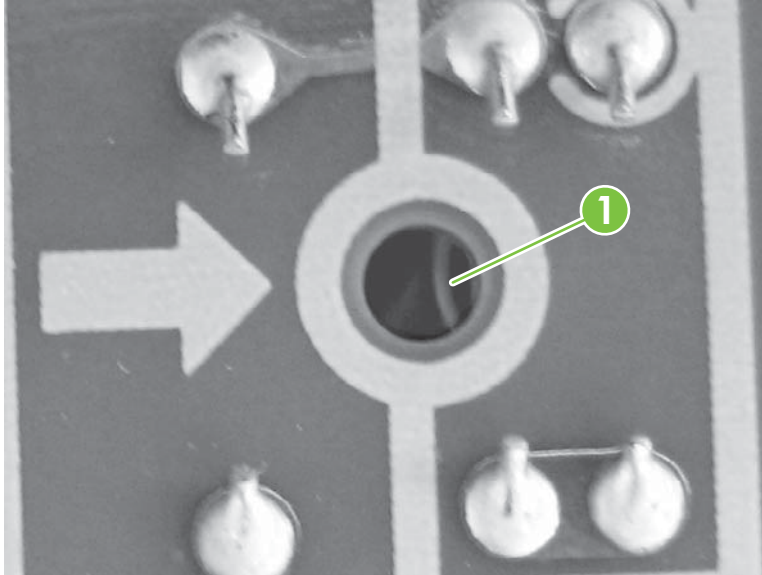
2. Release six tabs (callout 1), and then remove the high-voltage power supply PCA (B)

Figure 6-51 Remove the high-voltage power supply PCA (B) (2 of 3)



 **NOTE:** When reassembling, ensure that the contact springs (callout 1) can be seen from the five confirmation windows. Failure to do so can cause print-quality issues.

Figure 6-52 Remove the high-voltage power supply PCA (B) (3 of 3)

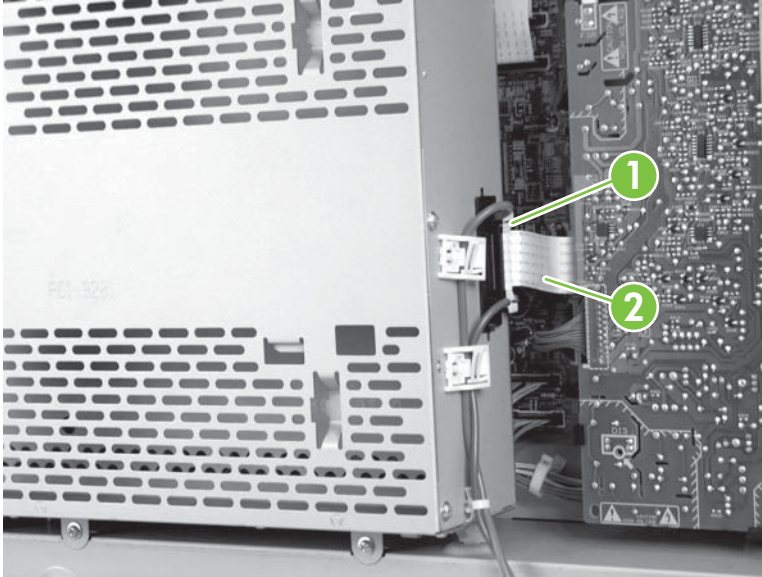


Formatter case

 **NOTE:** To begin, see the [Removal sequence 3 on page 238](#).

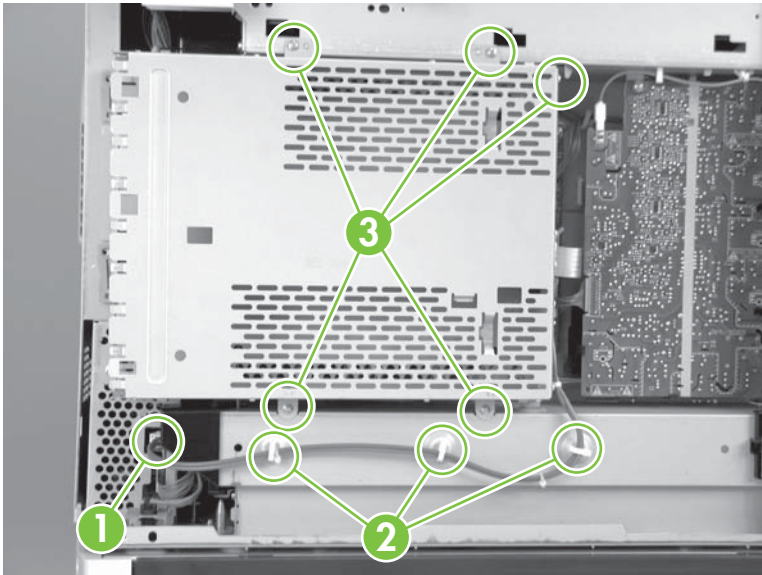
1. Remove the wire-harness holder (callout 1), and then disconnect the flat cable (callout 2) from the formatter case.

Figure 6-53 Remove the formatter case (1 of 3)



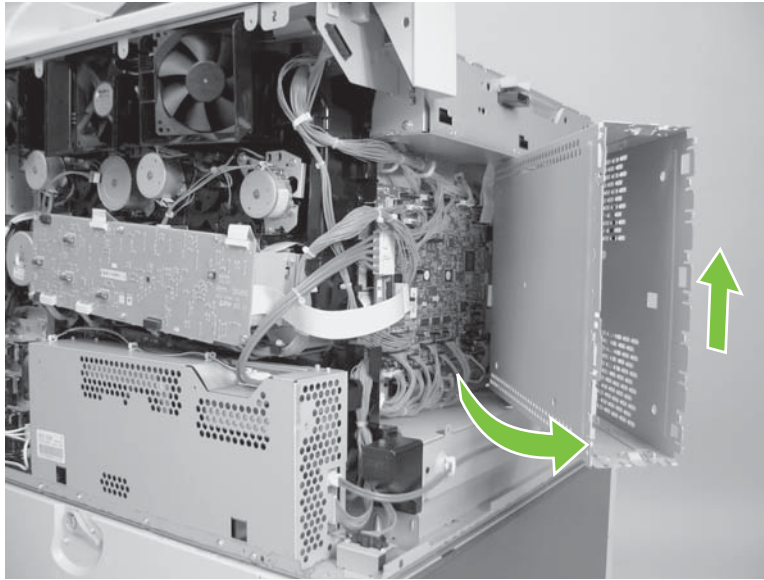
2. Disconnect one connector (callout 1), release three wire retainers (callout 2), and then remove five screws (callout 3).

Figure 6-54 Remove the formatter case (2 of 3)



3. Rotate and lift the formatter case to remove it.

Figure 6-55 Remove the formatter case (3 of 3)



 **NOTE:** When reassembling, insert the C-shaped hinge on the top of the formatter case into the round hole.

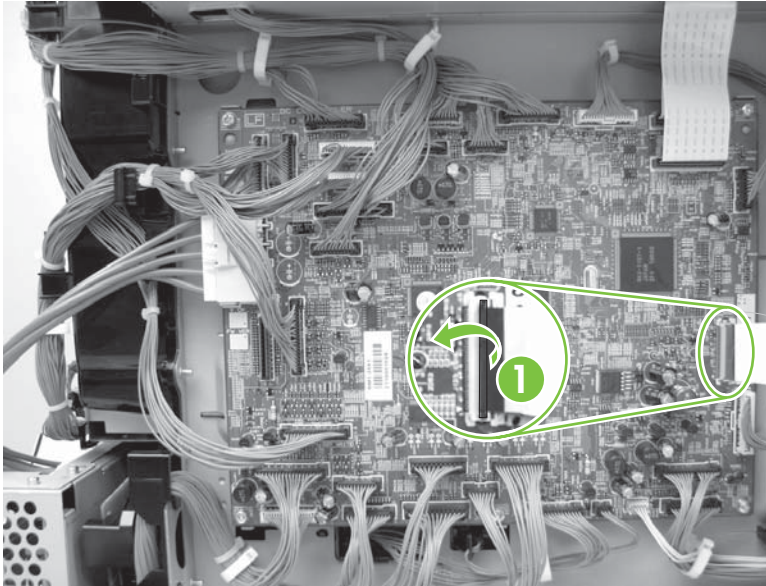
DC controller PCA

 **NOTE:** To begin, see the [Removal sequence 3 on page 238](#).

1. Disconnect all connectors on the DC controller PCA.

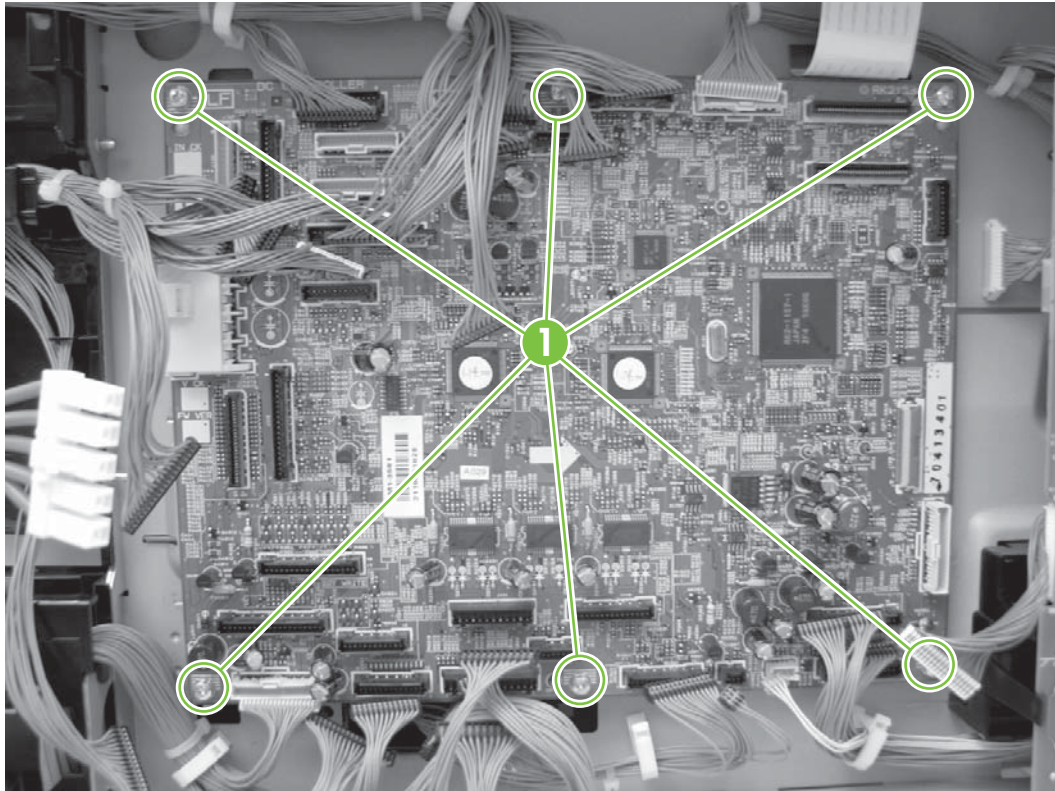
△ **CAUTION:** Use care when removing the flat cable that comes from the formatter case (callout 1). Gently lift the black latch to release the cable.

Figure 6-56 Remove the DC controller PCA (1 of 2)



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

Figure 6-57 Remove the DC controller PCA (2 of 2)



 **NOTE:** Removal sequence 3 is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

Removal sequence 3A

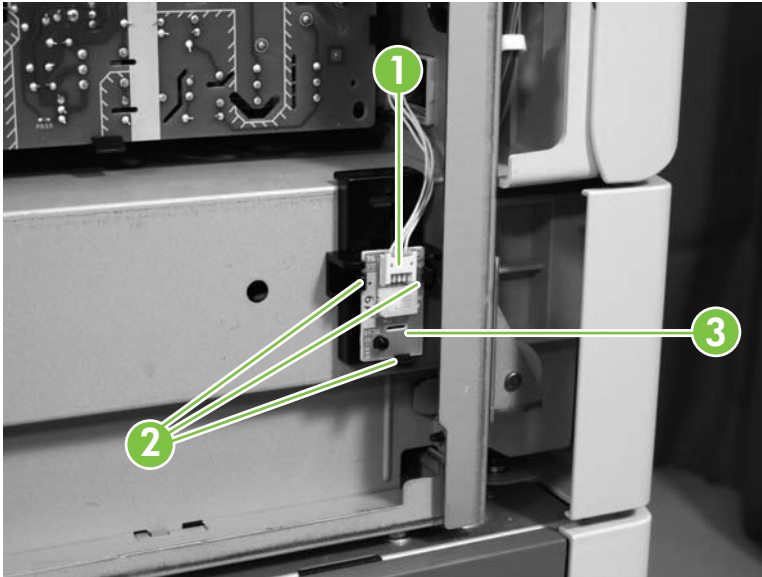
See [Removal sequence 3 on page 238](#) for procedures to remove prerequisite parts.

Environmental sensor

 **NOTE:** To begin, see [Removal sequence 3A on page 248](#).

- Disconnect one connector (callout 1). Release three tabs (callout 2), and then remove the environmental sensor (callout 3).

Figure 6-58 Remove the environmental sensors

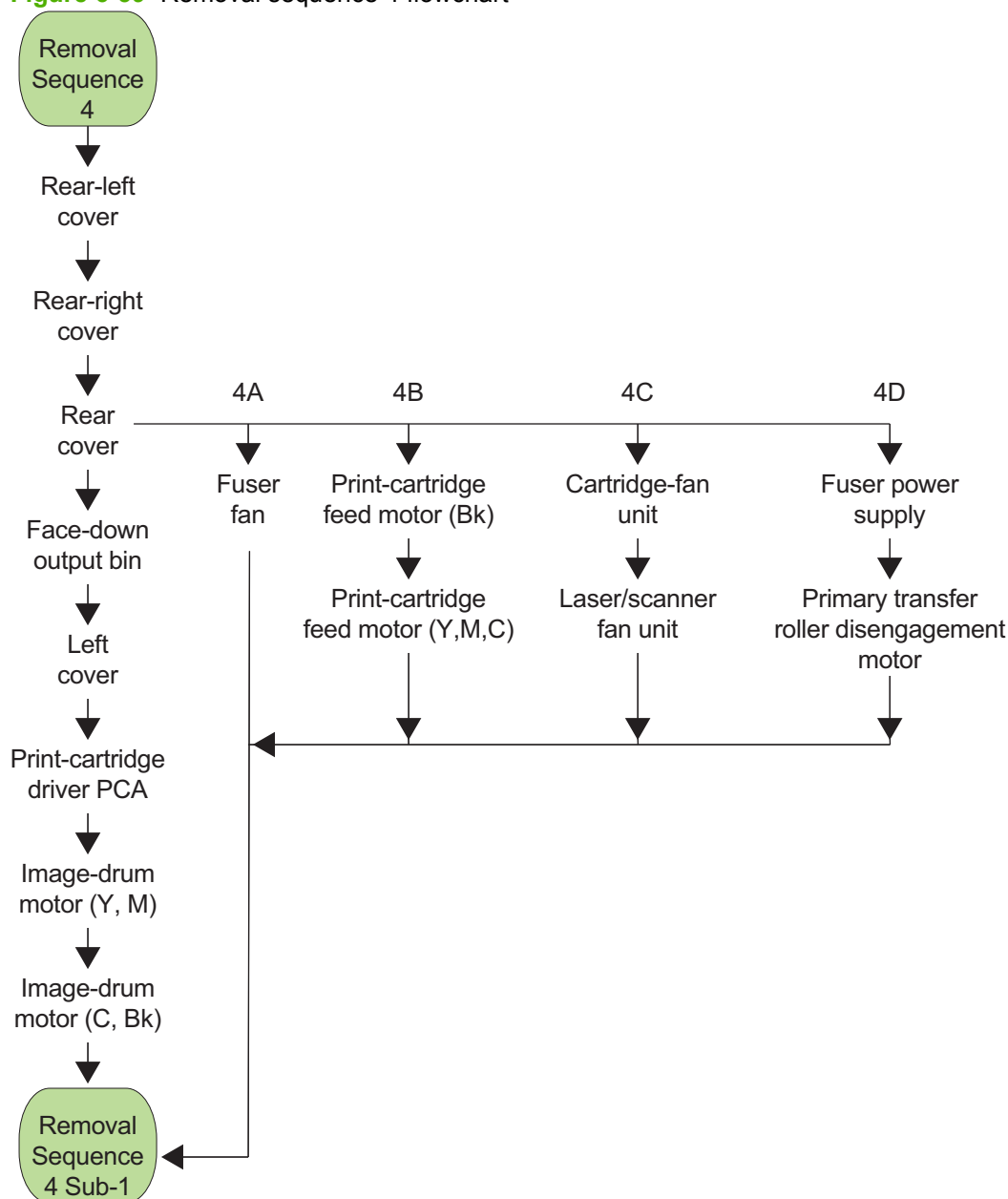


 **NOTE:** Removal sequence 3A is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

Removal sequence 4

Use the flowchart below to determine the sequence of part removal and reinstallation. For information about using removal sequences, see [Parts removal sequences on page 189](#).

Figure 6-59 Removal sequence 4 flowchart

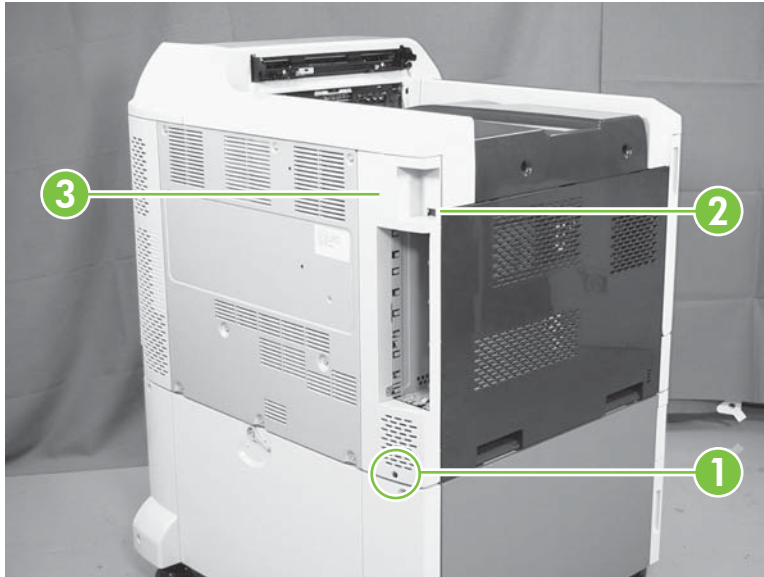


Rear-left cover

 **NOTE:** To begin, see [Removal sequence 4 on page 249](#).

- ☐ Remove one screw (callout 1), release one tab (callout 2), and then remove the rear-left cover (callout 3).

Figure 6-60 Remove rear-left cover

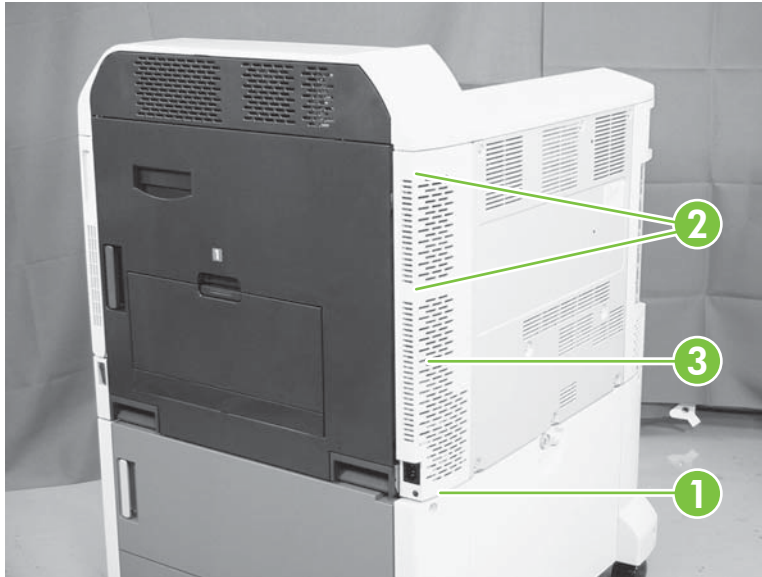


Rear-right cover

 **NOTE:** To begin, see [Removal sequence 4 on page 249](#).

- Remove one screw (callout 1), release two tabs (callout 2), and then remove the rear-right cover (callout 3).

Figure 6-61 Remove rear-right cover

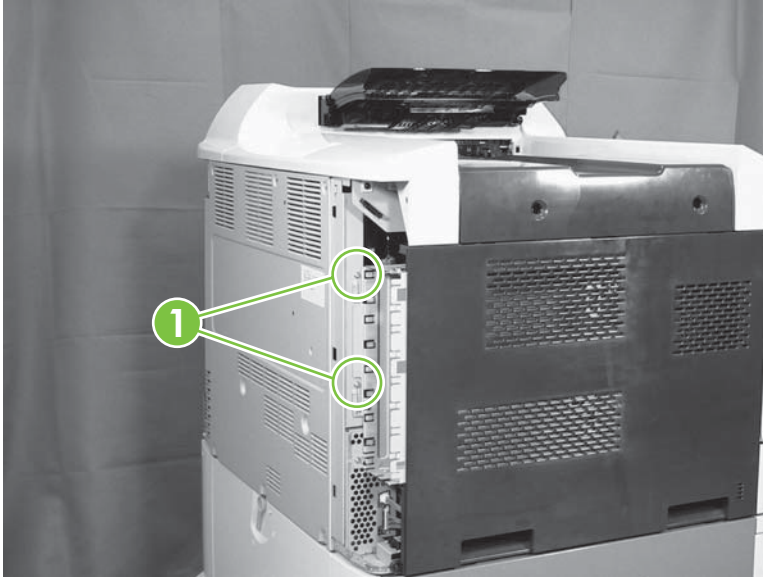


Rear cover

 **NOTE:** To begin, see [Removal sequence 4 on page 249](#).

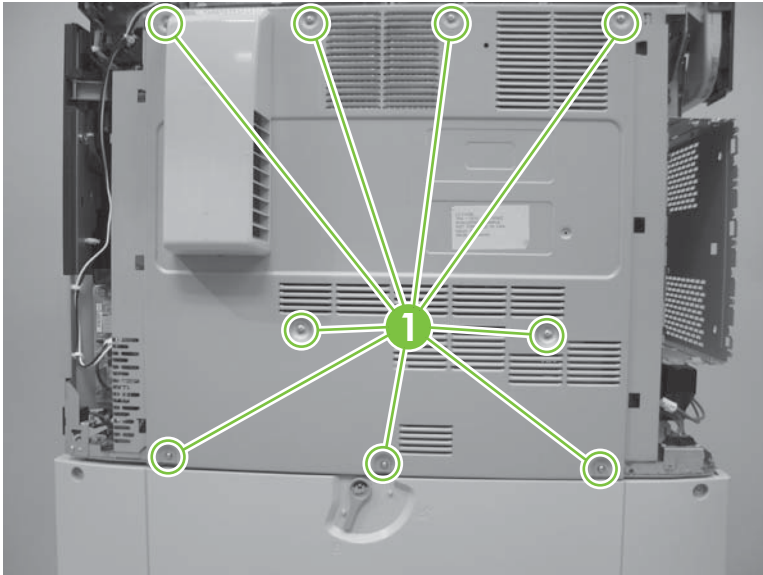
1. Remove two screws (callout 1).

Figure 6-62 Remove rear cover (1 of 2)



2. Remove nine screws (callout 1), and then remove the rear cover (callout 2).

Figure 6-63 Remove rear cover (2 of 2)



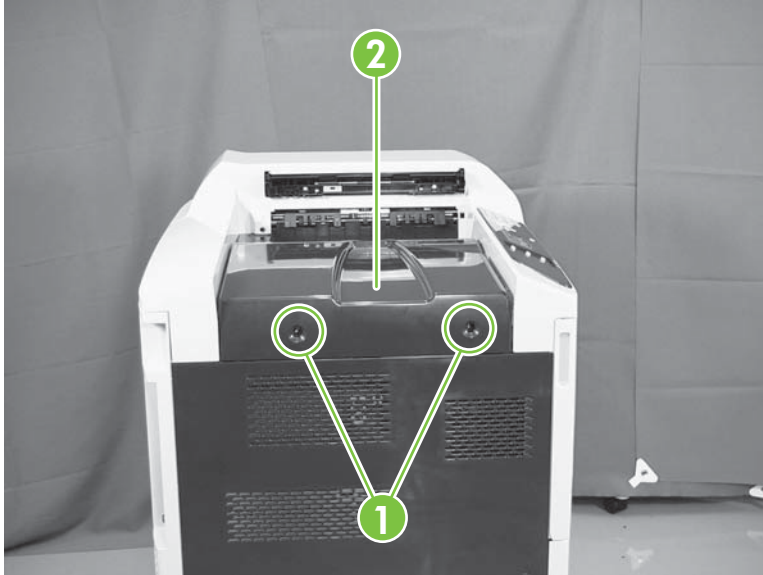
- For removal sequence 4A, see [Removal sequence 4A on page 259](#).
- For removal sequence 4B, see [Removal sequence 4B on page 260](#).
- For removal sequence 4C, see [Removal sequence 4C on page 262](#).
- For removal sequence 4D, see [Removal sequence 4D on page 264](#).

Face-down output bin

 **NOTE:** To begin, see [Removal sequence 4 on page 249](#).

- Remove two screws (callout 1), and then remove the face-down output bin (callout 2).

Figure 6-64 Remove face-down output bin

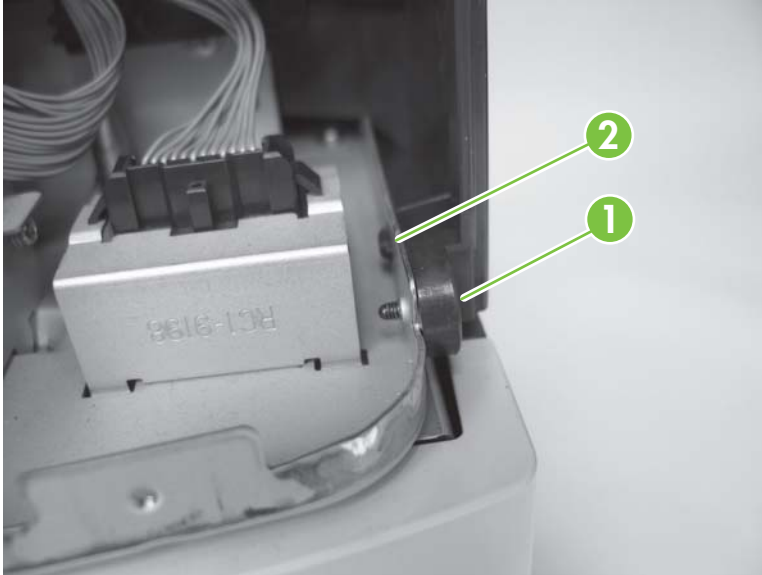


Left cover

 **NOTE:** To begin, see [Removal sequence 4 on page 249](#).

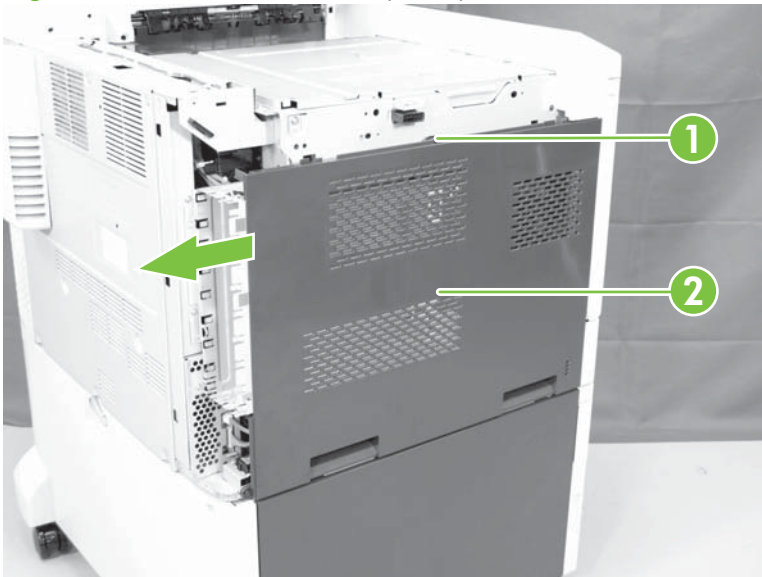
1. Remove one screw (callout 1), and then release one pin (callout 2).

Figure 6-65 Remove left cover (1 of 2)



2. Release one tab (callout 1), and then slide the left cover (callout 2) in the direction that the arrow indicates.

Figure 6-66 Remove left cover (2 of 2)

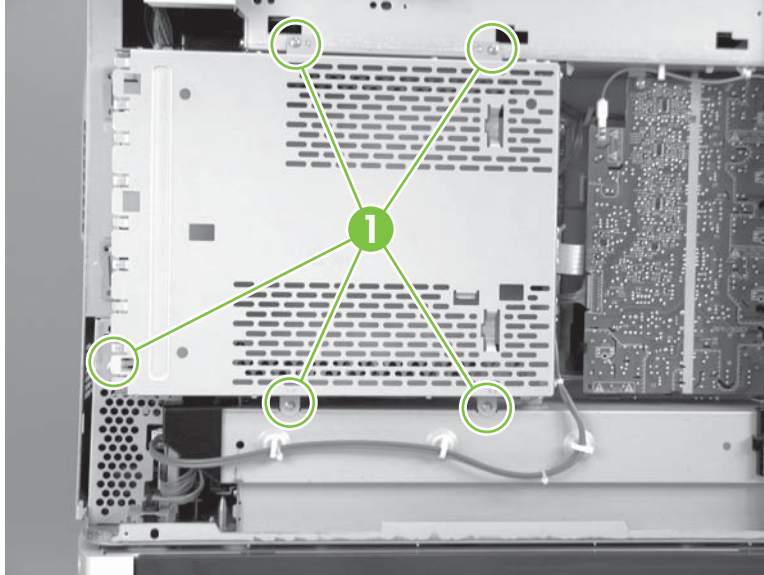


Print-cartridge driver PCA

 **NOTE:** To begin, see [Removal sequence 4 on page 249](#).

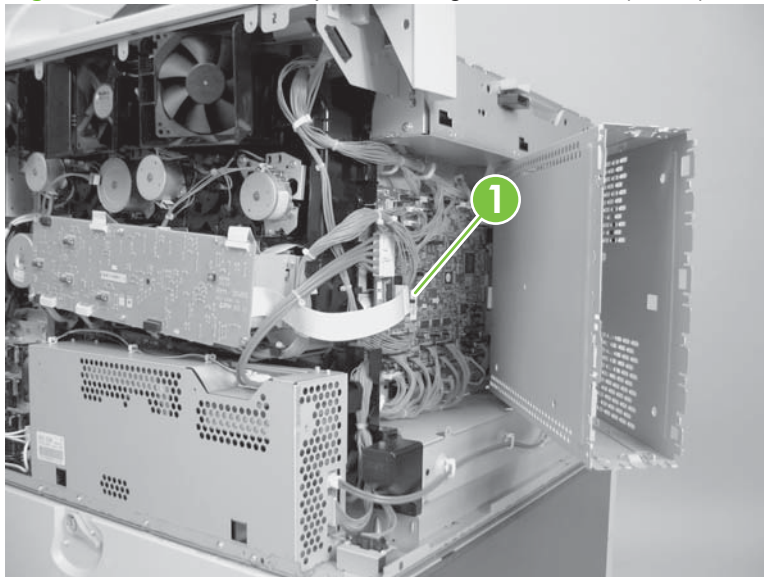
1. Remove five screws (callout 1) and swing the formatter case to the right.

Figure 6-67 Remove the print-cartridge driver PCA (1 of 3)



2. Disconnect one connector from the DC controller (callout 1).

Figure 6-68 Remove the print-cartridge driver PCA (2 of 3)



3. Disconnect seven connectors (callout 1), four screws (callout 2), and the print-cartridge driver PCA (callout 3).

Figure 6-69 Remove the print-cartridge driver PCA (3 of 3)

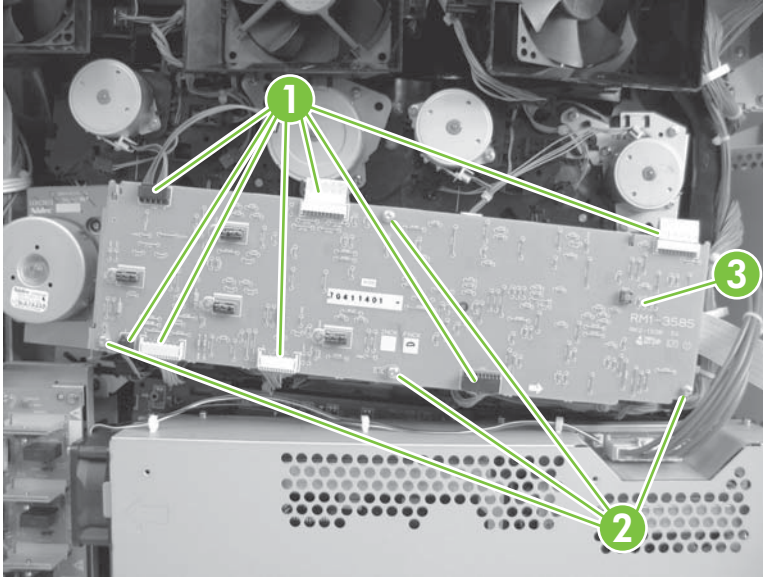
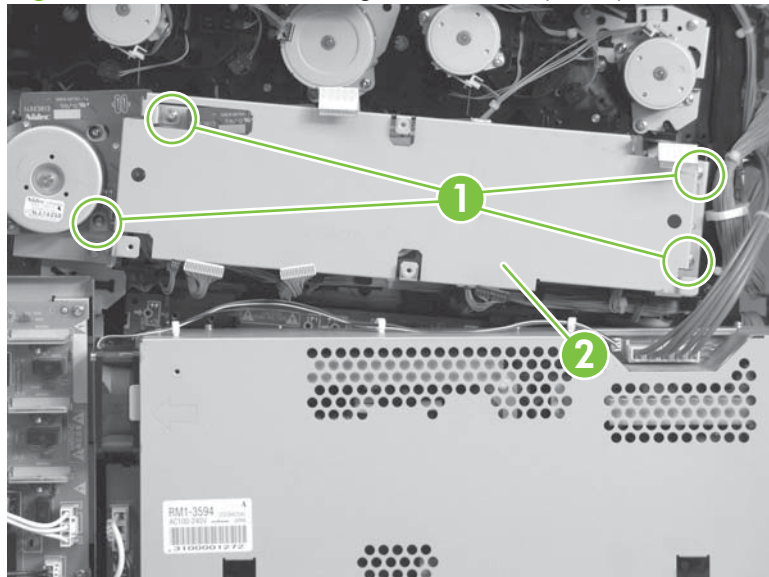


Image-drum motor

 **NOTE:** To begin, see [Removal sequence 4 on page 249](#).

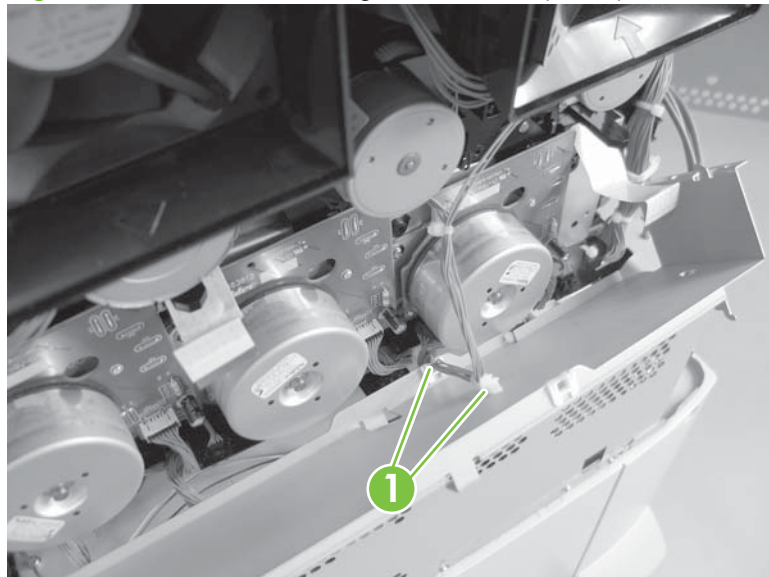
1. Remove four screws (callout 1), and then remove the cartridge driver PCA mount (callout 2).

Figure 6-70 Remove the image-drum motor (1 of 3)



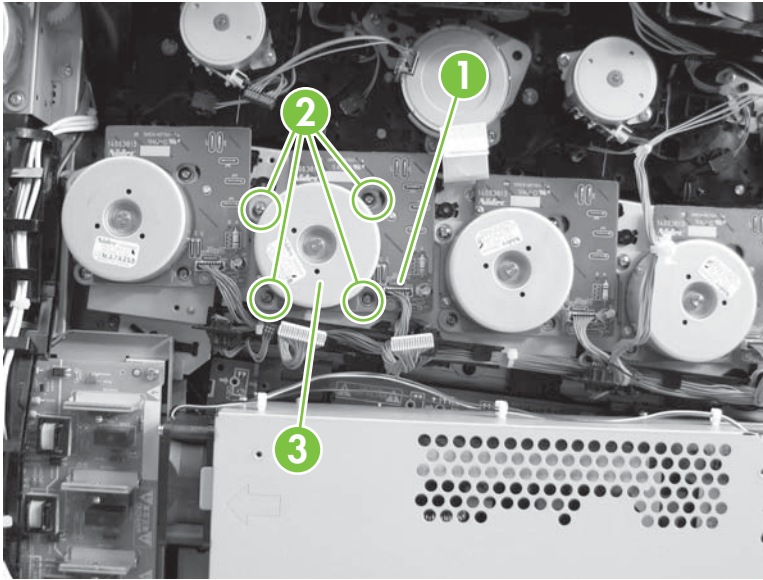
2. Disconnect two wire retainers (callout 1).

Figure 6-71 Remove the image-drum motor (2 of 3)



3. Remove one connector, four screws (callout 2), and the image-drum motor (callout 3).

Figure 6-72 Remove the image-drum motor (3 of 3)



 **NOTE:** Repeat this procedure for all drum motors.

NOTE: Removal sequence 4 is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

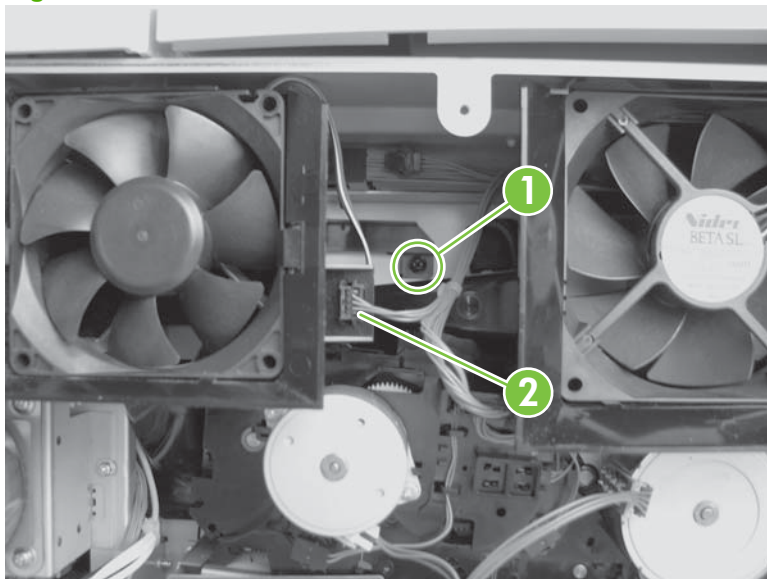
Removal sequence 4A

See [Removal sequence 4 on page 249](#) for procedures to remove prerequisite parts.

Fuser fan

- Remove one screw (callout 1), disconnect one connector (callout 2), and then remove the fuser fan.

Figure 6-73 Remove the fuser fan



 **NOTE:** Removal sequence 4A is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

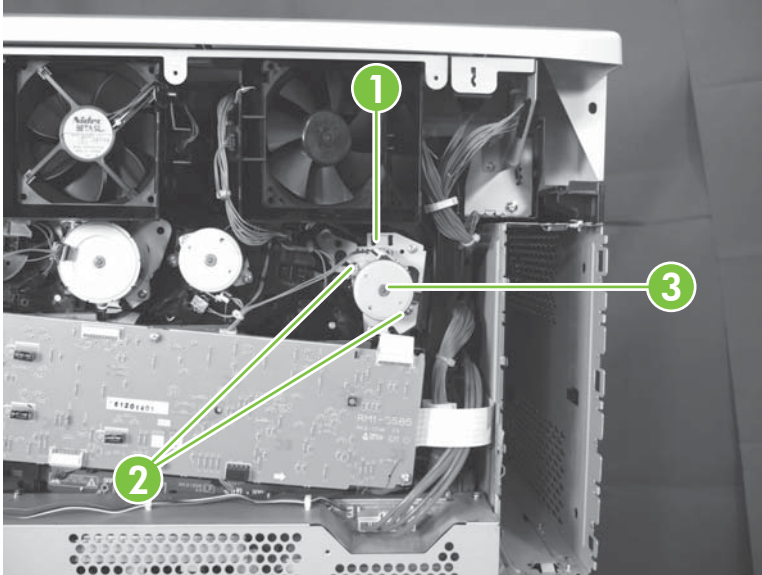
Removal sequence 4B

See [Removal sequence 4 on page 249](#) for procedures to remove prerequisite parts.

Print-cartridge feed motor (black)

- Disconnect one connector (callout 1). Remove two screws (callout 2), and then remove the print-cartridge feed motor (black) (callout 3).

Figure 6-74 Remove the print-cartridge feed motor (black)

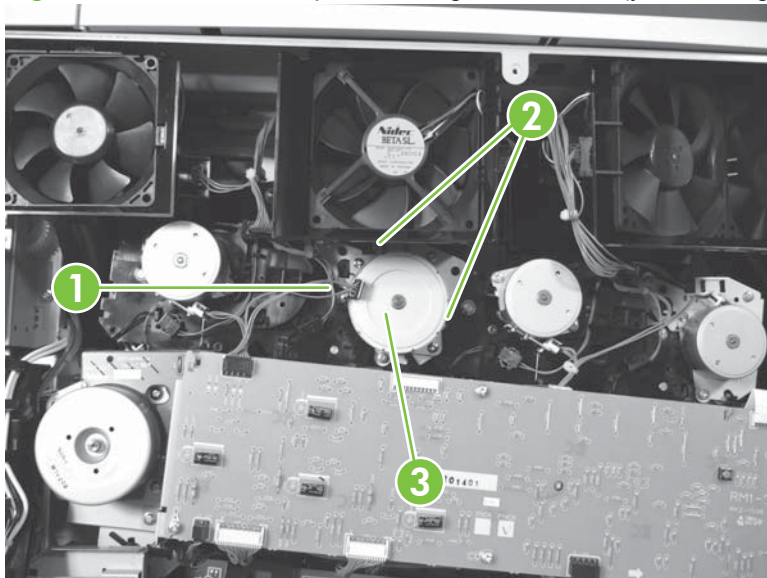


Print-cartridge feed motor (yellow, magenta, and cyan)

 **NOTE:** To begin, see [Removal sequence 4 on page 249](#).

- Disconnect one connector (callout 1). Remove two screws (callout 2), and then remove the print-cartridge feed motor (yellow, magenta, and cyan) (callout 3).

Figure 6-75 Remove the print-cartridge feed motor (yellow, magenta, and cyan)



 **NOTE:** Removal sequence 4B is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

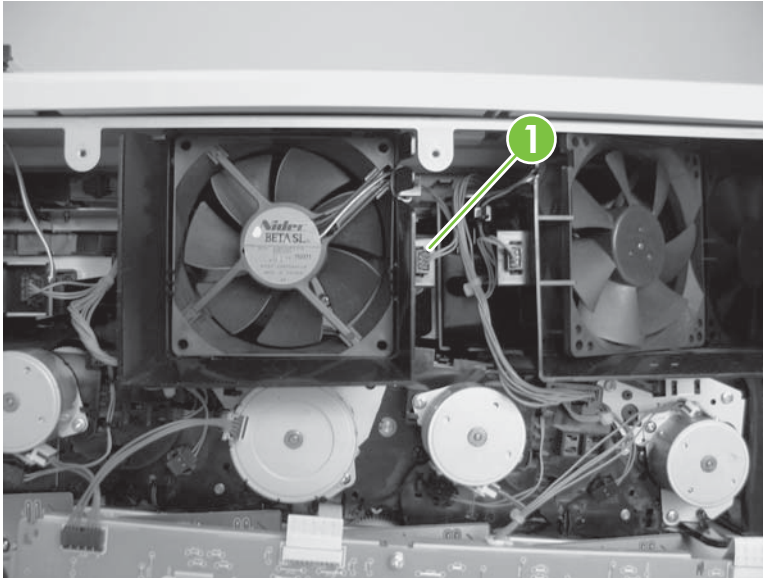
Removal sequence 4C

See [Removal sequence 4 on page 249](#) for procedures to remove prerequisite parts.

Cartridge fan unit

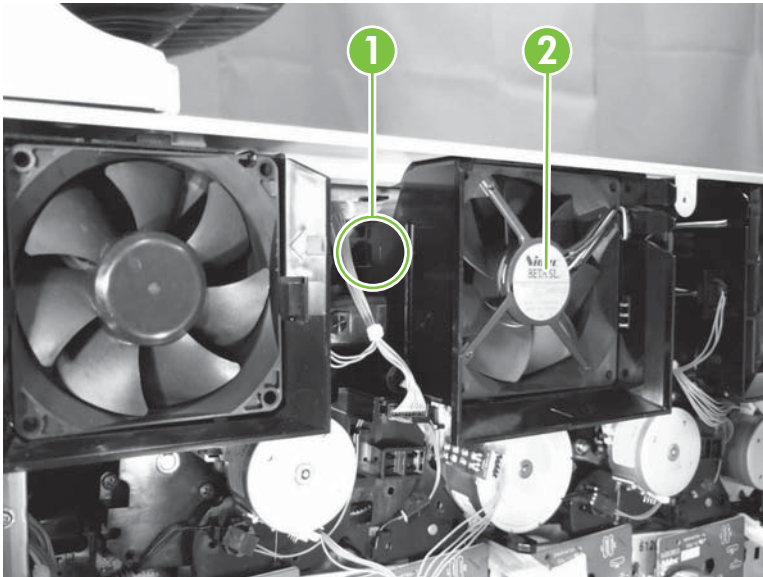
1. Disconnect one connector (callout 1).

Figure 6-76 Remove the cartridge fan unit (1 of 2)



2. Release one tab (callout 1), and then remove the cartridge fan unit (callout 2).

Figure 6-77 Remove the cartridge fan unit (2 of 2)

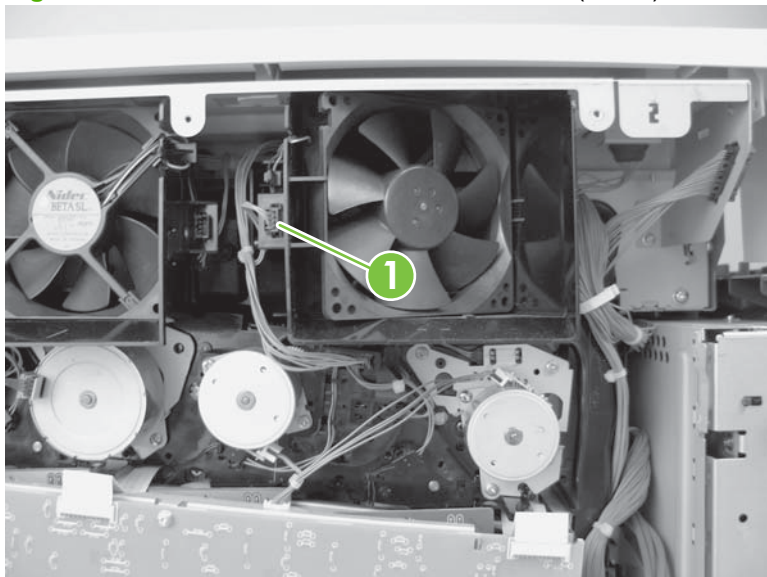


Laser/scanner fan unit

 **NOTE:** To begin, see [Removal sequence 4 on page 249](#).

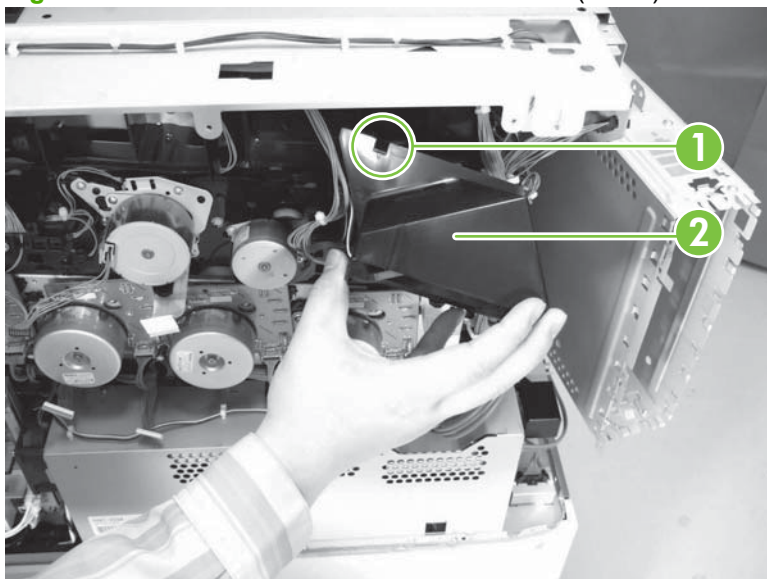
1. Disconnect one connector (callout 1).

Figure 6-78 Remove the laser/scanner fan unit (1 of 2)



2. Release one tab (callout 1), and then remove the laser/scanner fan unit (callout 2).

Figure 6-79 Remove the laser/scanner fan unit (2 of 2)



 **NOTE:** Removal sequence 4C is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

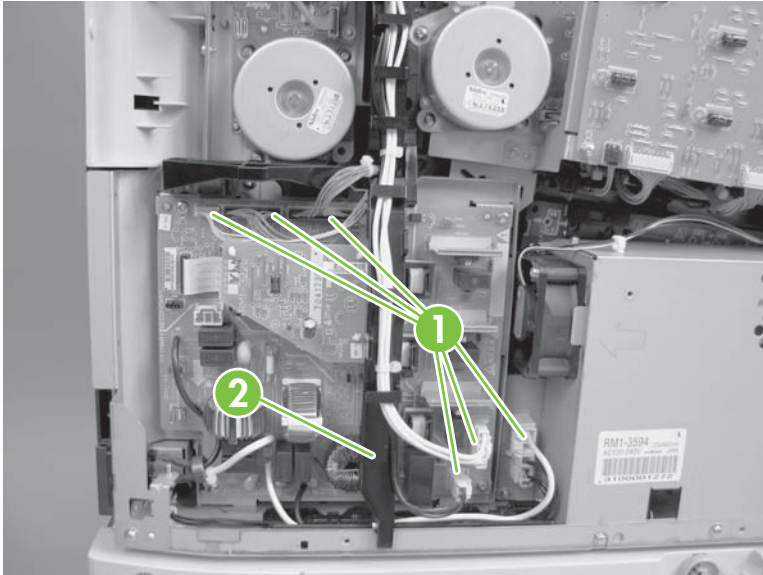
Removal sequence 4D

See [Removal sequence 4 on page 249](#) for procedures to remove prerequisite parts.

Fuser power-supply unit

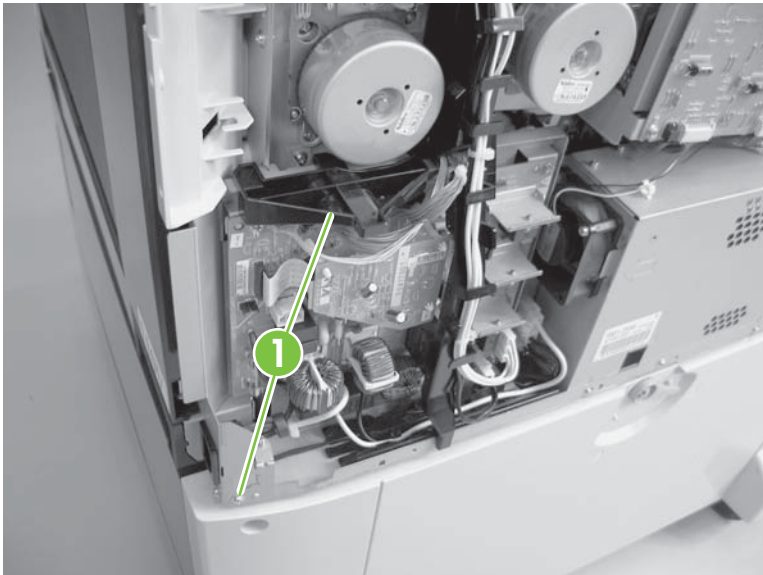
1. Disconnect six connectors (callout 1), and then remove one cable guide (callout 2).

Figure 6-80 Remove the fuser power-supply unit (1 of 2)



2. Remove two screws (callout 1), and then remove the fuser power-supply unit.

Figure 6-81 Remove the fuser power-supply unit (2 of 2)

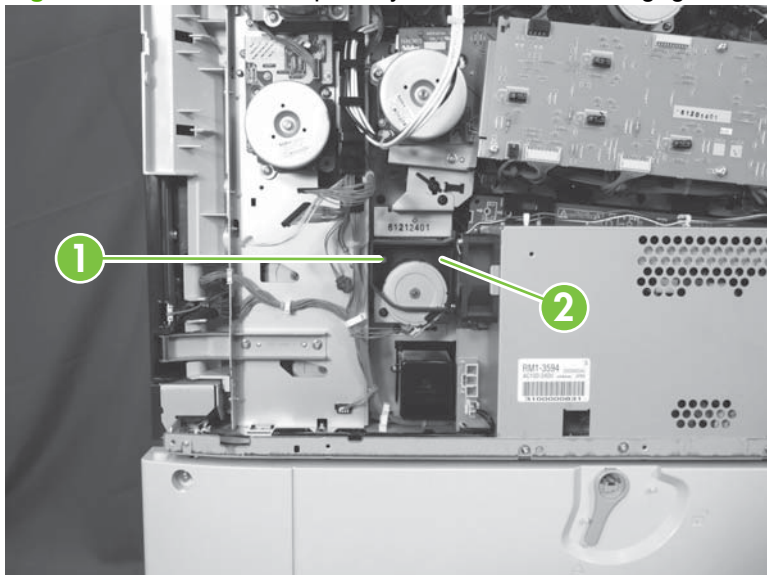


Primary-transfer-roller disengagement motor

 **NOTE:** To begin, see [Removal sequence 4 on page 249](#).

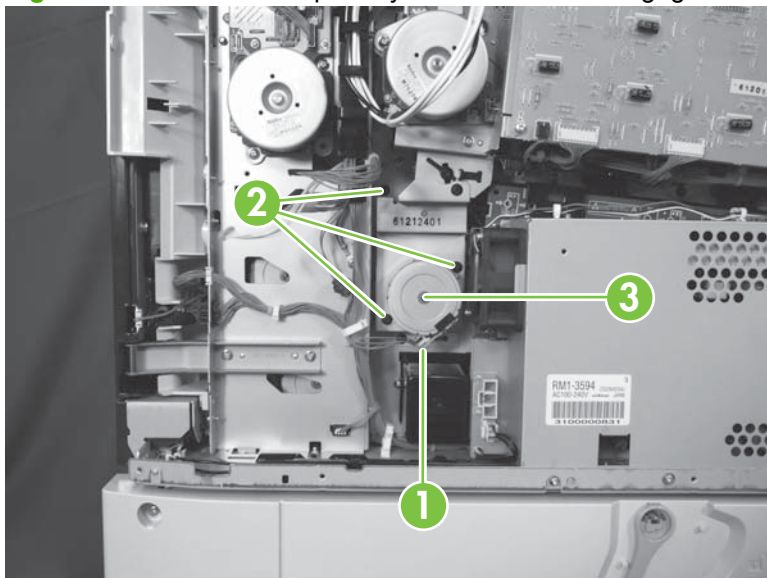
1. Remove one screw (callout 1), and then remove the motor cover (callout 2).

Figure 6-82 Remove the primary-transfer-roller disengagement motor (1 of 2)



2. Disconnect one connector (callout 1). Remove three screws (callout 2), and then remove the primary-transfer roller disengagement motor (callout 3).

Figure 6-83 Remove the primary-transfer-roller disengagement motor (2 of 2)



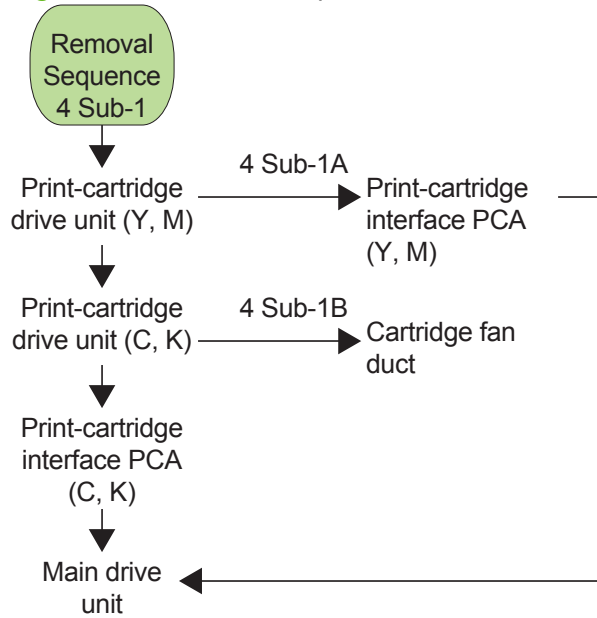
 **NOTE:** Removal sequence 4D is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

Removal sequence 4 Sub-1

Before starting removal sequence 4 Sub-1, you must complete removal sequence 4. See [Removal sequence 4 on page 249](#).

Use the flowchart below to determine the sequence of part removal and reinstallation. For information about using removal sequences, see [Parts removal sequences on page 189](#).

Figure 6-84 Removal sequence 4 Sub-1 flowchart

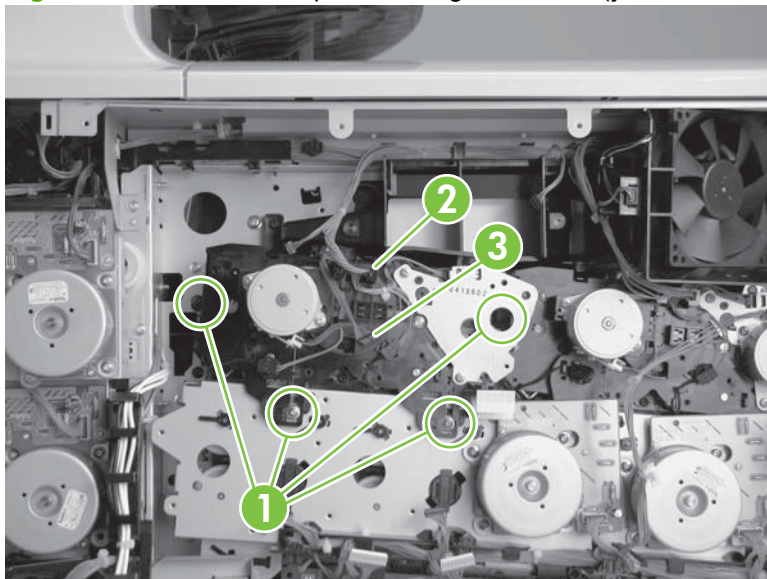


Print-cartridge drive unit (yellow and magenta)

 **NOTE:** Do not remove the print-cartridge drive unit (yellow and magenta) without having the alignment pins required for reinstallation.

- Remove four screws (callout 1), disconnect one connector (callout 2), and then remove the print-cartridge drive unit (yellow and magenta) (callout 3).

Figure 6-85 Remove the print-cartridge drive unit (yellow and magenta)



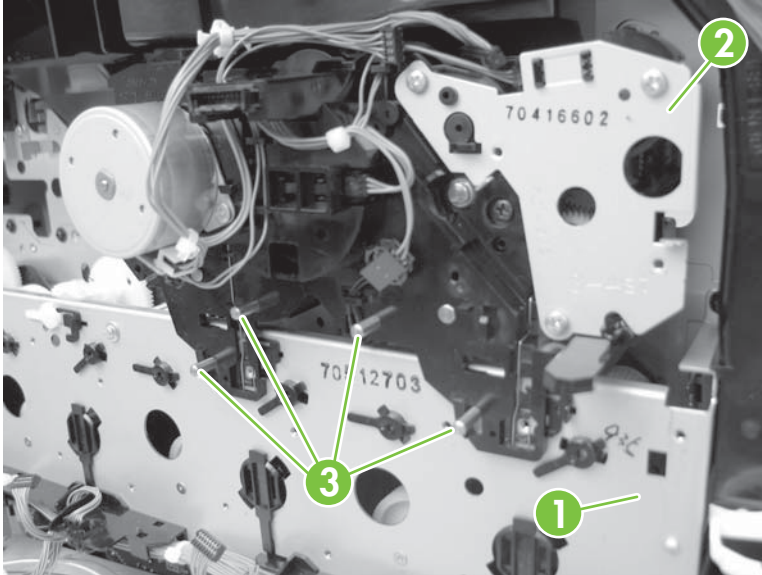
- For removal sequence 4 Sub-1A, see [Removal sequence 4 Sub-1A on page 276](#).

 **NOTE:** Follow the gear alignment procedures when reassembling the print-cartridge drive units and main drive unit.

Gear alignment

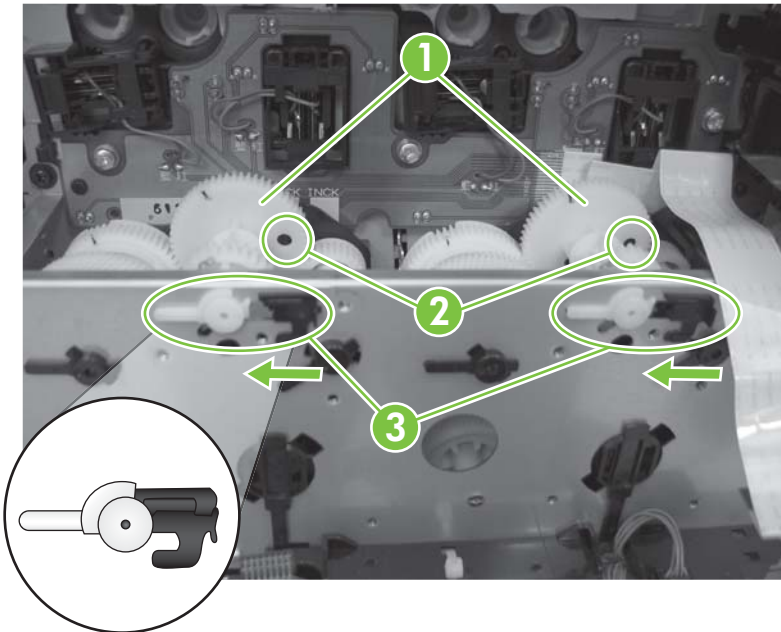
1. This procedure correctly aligns the gears of the main drive unit (callout 1) and the print-cartridge drive unit(s) (callout 2). Use the four pins (callout 3) supplied with the replacement units to align the gears.

Figure 6-86 Gear alignment (1 of 7)



2. Reinstall the main drive unit. Push the black locks (callout 3) to the left while rotating the top gears (callout 1) on the main drive unit until they lock into position. The large holes (callout 2) should point to the right (3 o'clock position).

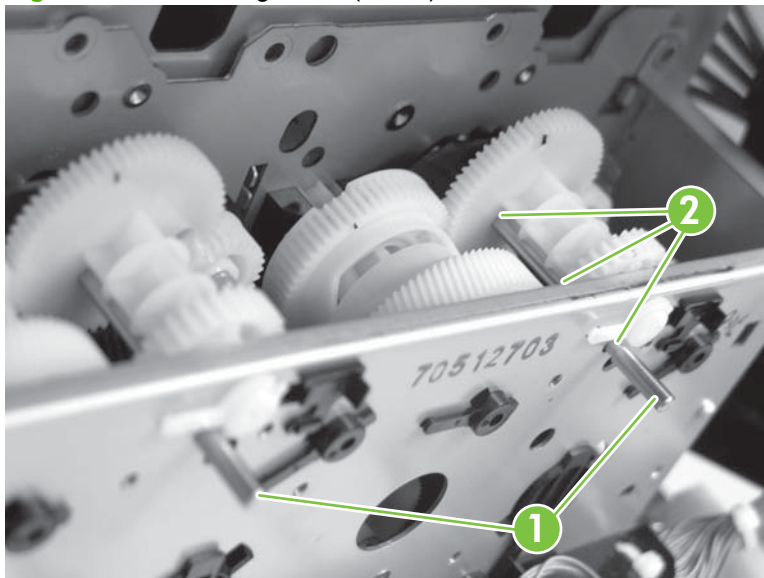
Figure 6-87 Gear alignment (2 of 7)



3. Insert the long alignment pins (callout 1) through the gears (callout 2) in the main drive unit.

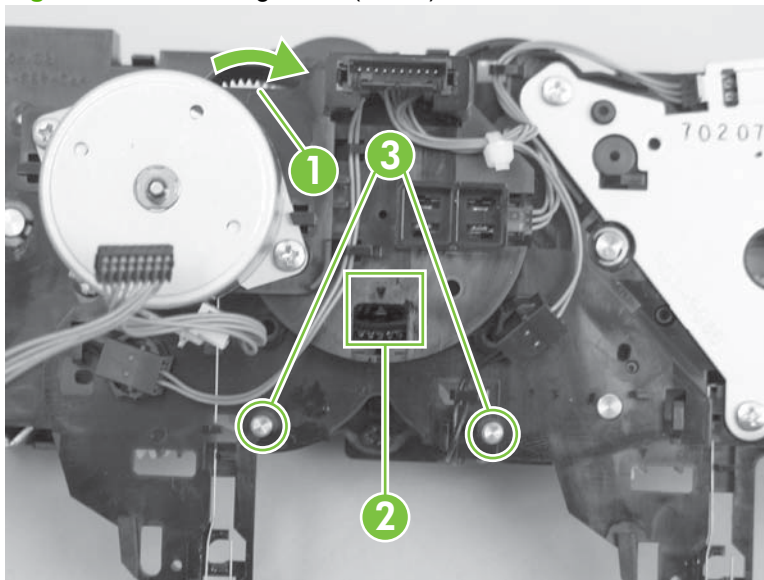
 **NOTE:** This step is not required. Gears can be held in position with the locks.

Figure 6-88 Gear alignment (3 of 7)



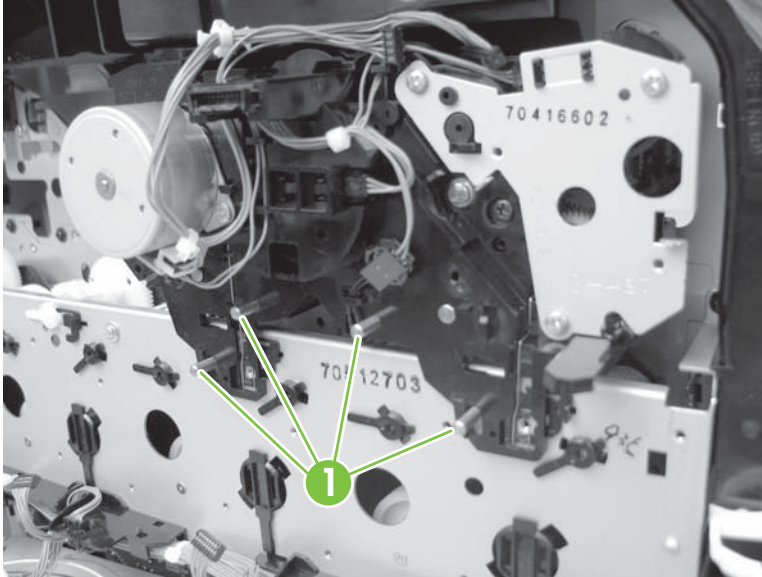
4. On the print-cartridge drive unit, rotate the top gear (callout 1) clockwise until the arrows align (callout 2). Insert the two short pins (callout 3).

Figure 6-89 Gear alignment (4 of 7)



5. Install the print-cartridge drive unit over the long pins in the main drive unit. Remove all pins (callout 1), disengage locks, and reinstalled screws.

Figure 6-90 Gear alignment (5 of 7)



△ **CAUTION:** Be sure to remove all pins (callout 1). Failure to do so can damage the product.

6. Ensure that the print-cartridge drive unit is installed correctly. The unit should be flush against the product (callout 1). Incorrect installation (callout 2) will cause the product to function incorrectly.

Figure 6-91 Correct position of print-cartridge drive unit (6 of 7)

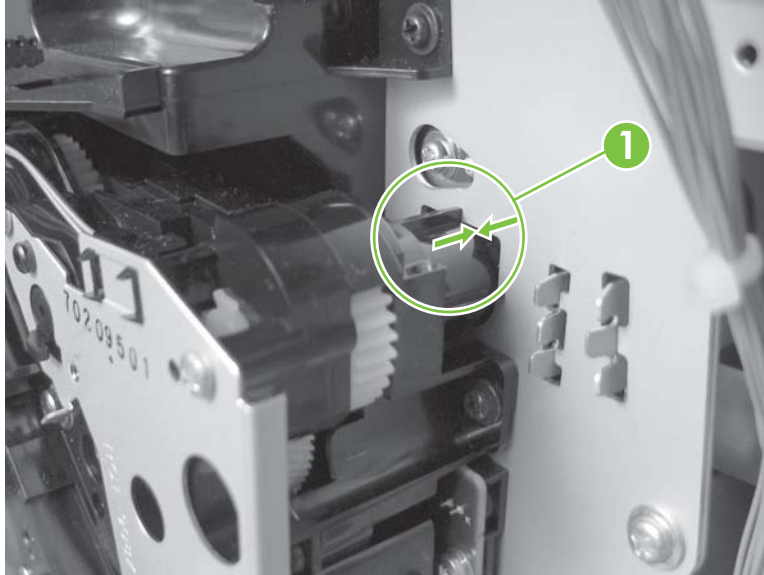
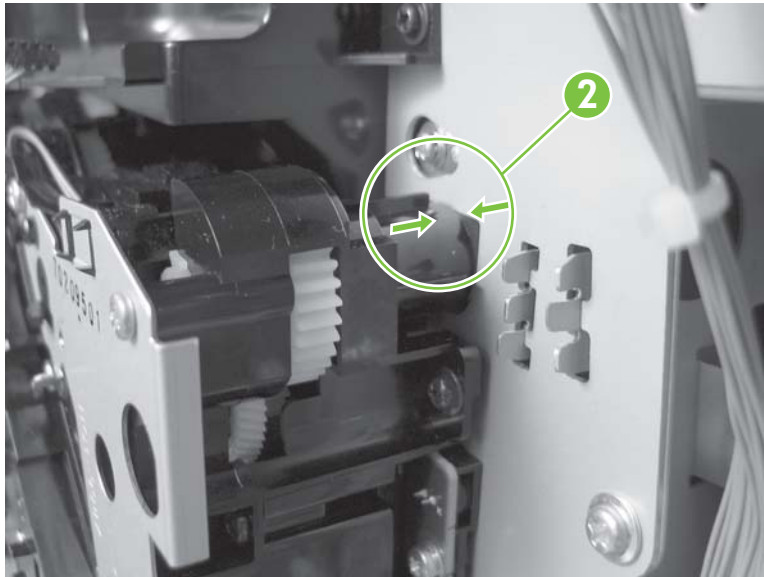


Figure 6-92 Incorrect position of print-cartridge drive unit (7 of 7)



Print-cartridge drive unit (cyan and black)

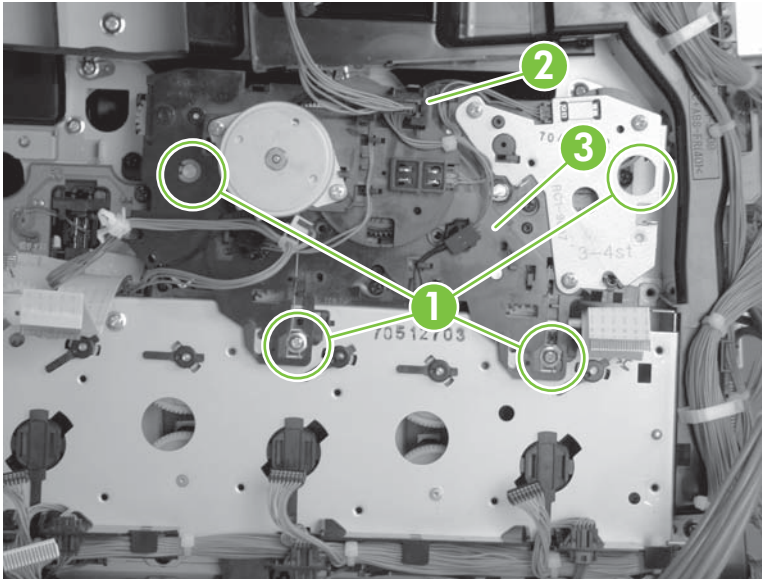
 **NOTE:** To begin, see [Removal sequence 4 Sub-1 on page 266](#).

NOTE: Do not remove the print-cartridge drive unit (cyan and black) without having the alignment pins required for reinstallation.

- ☐ Remove four screws (callout 1), disconnect one connector (callout 2), and then remove the print-cartridge drive unit (cyan and black) (callout 3).

 **NOTE:** Follow the gear alignment procedures for the drive unit when reassembling. See [Gear alignment on page 268](#).

Figure 6-93 Remove the print-cartridge drive unit (cyan and black)



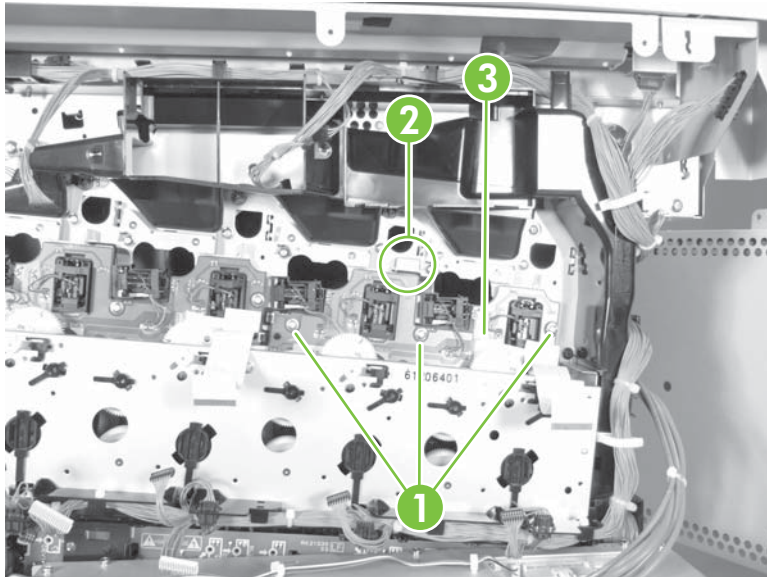
For sequence 4 Sub-1B, see [Removal sequence 4 Sub-1B on page 277](#).

Print-cartridge interface PCA (cyan and black)

 **NOTE:** To begin, see [Removal sequence 4 Sub-1 on page 266](#).

- Remove three screws (callout 1) and release one tab (callout 2), and then remove the print-cartridge interface PCA (cyan and black) (callout 3).

Figure 6-94 Remove the print-cartridge interface PCA (cyan and black)



 **NOTE:** When reassembling, some assemblies in this sequence require gear alignment. See [Gear alignment on page 268](#).

Main drive unit

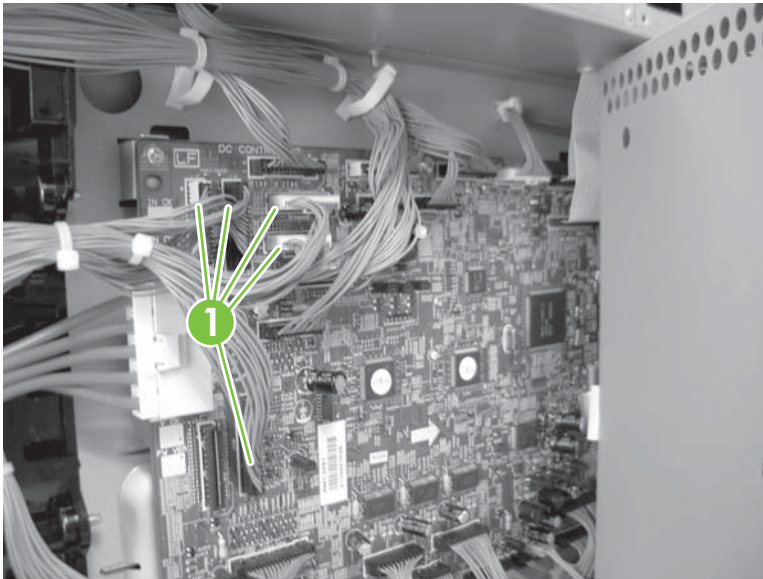
 **NOTE:** To begin, see [Removal sequence 4 Sub-1 on page 266](#).

NOTE: Do not remove the main drive unit without having the alignment pins required for reinstallation. See [Gear alignment on page 268](#).

NOTE: Remove all image drums before removing the main drive unit. See. [Change image drums on page 88](#)

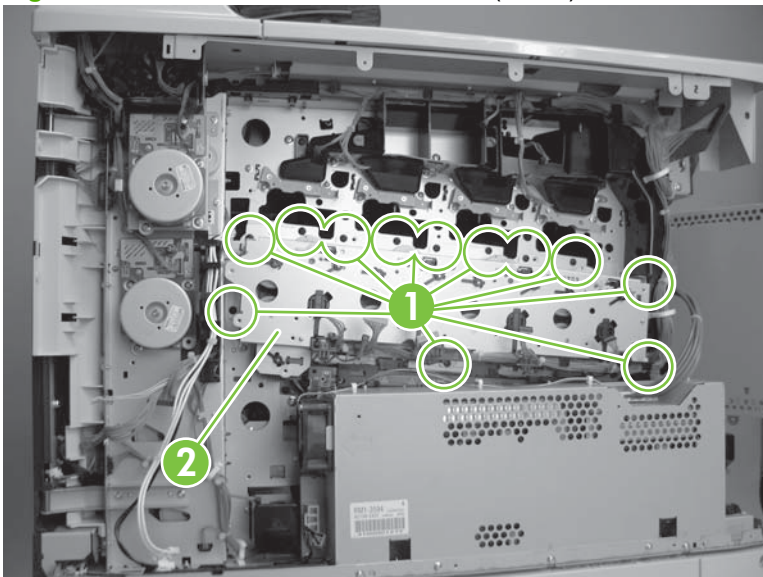
1. Disconnect five connectors (J113, J138, J139, J141, and J142) (callout 1) on the DC Controller PCA, behind the formatter case.

Figure 6-95 Remove the main drive unit (1 of 3)



2. Remove twelve screws (callout 1), and then the main drive unit (callout 2).

Figure 6-96 Remove the main drive unit (2 of 3)



 **CAUTION:** Do not remove screws that hold the main drive unit together.

 **NOTE:** Follow the gear adjustment procedures when reassembling the main drive unit. See [Gear alignment on page 268](#).

NOTE: Removal sequence 4 Sub-1 is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

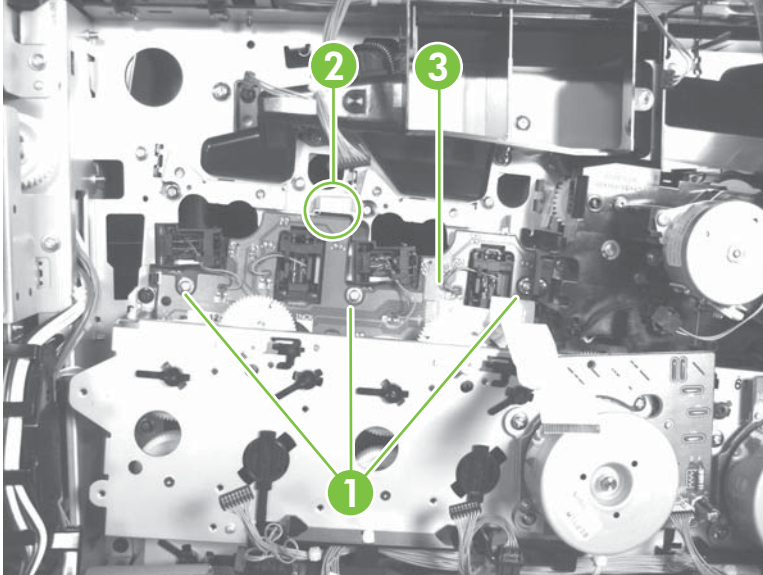
Removal sequence 4 Sub-1A

See [Removal sequence 4 Sub-1 on page 266](#) for procedures to remove prerequisite parts.

Print-cartridge interface PCA (yellow and magenta)

- Remove three screws (callout 1) and release one tab (callout 2), and then remove the print-cartridge interface PCA (yellow and magenta) (callout 3).

Figure 6-97 Print-cartridge interface PCA (yellow and magenta)



 **NOTE:** When reassembling, some assemblies in this sequence require gear alignment. See [Gear alignment on page 268](#).

NOTE: Removal sequence 4 Sub-1A is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

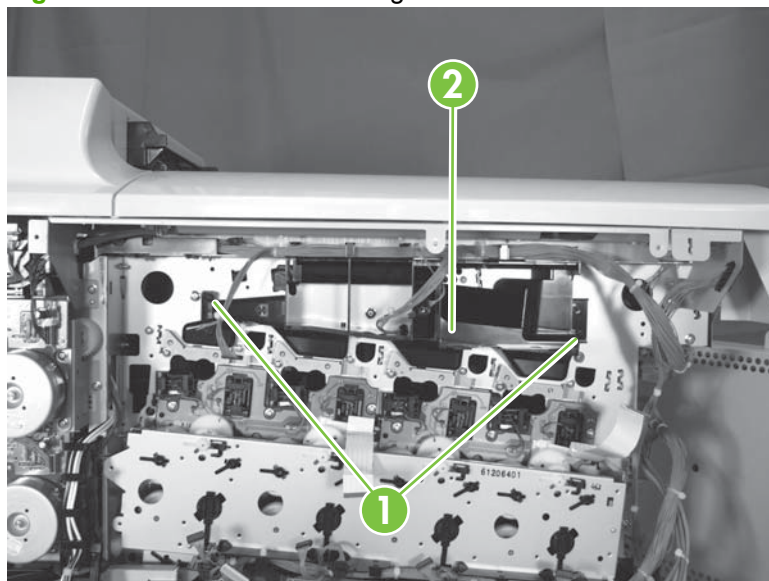
Removal sequence 4 Sub-1B

See [Removal sequence 4 Sub-1 on page 266](#) for procedures to remove prerequisite parts.

Cartridge-fan duct

- Remove two screws (callout 1), and then remove the cartridge-fan duct (callout 2).

Figure 6-98 Remove the cartridge-fan duct



 **NOTE:** Removal sequence 4 Sub-1B is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

Removal sequence 5

Use the flowchart below to determine the sequence of part removal and reinstallation. For information about using removal sequences, see [Parts removal sequences on page 189](#).

Figure 6-99 Removal sequence 5 flowchart

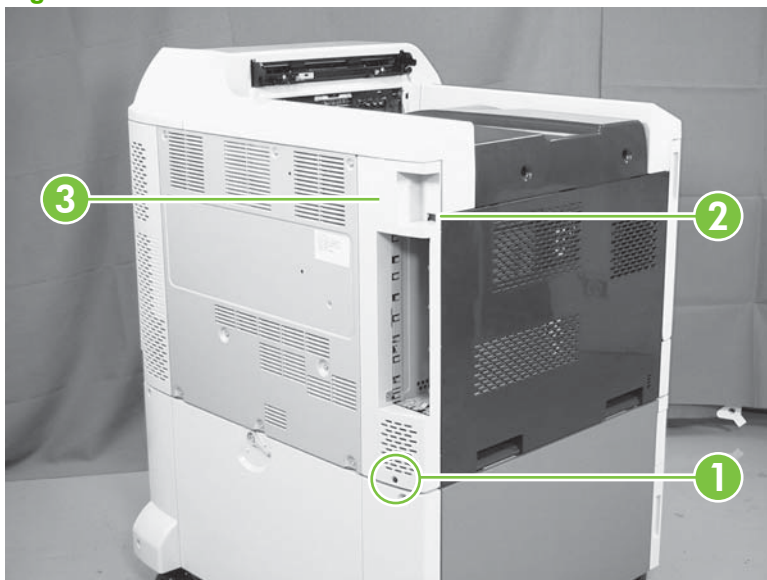


Rear-left cover

 **NOTE:** To begin, see [Removal sequence 5 on page 278](#).

- Remove one screw (callout 1), release one tab (callout 2) and then remove the rear-left cover (callout 3).

Figure 6-100 Remove rear-left cover

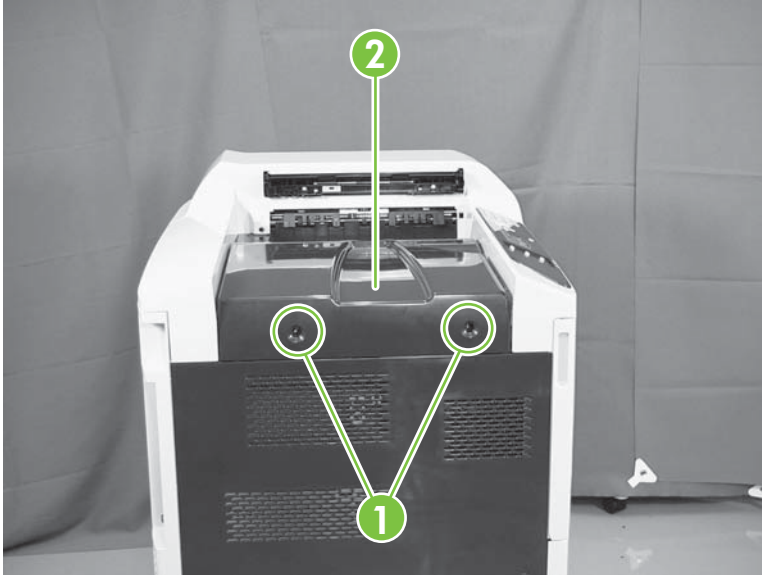


Face-down output bin

 **NOTE:** To begin, see [Removal sequence 5 on page 278](#).

- Remove two screws (callout 1), and then the face-down output bin (callout 2).

Figure 6-101 Remove face-down output bin

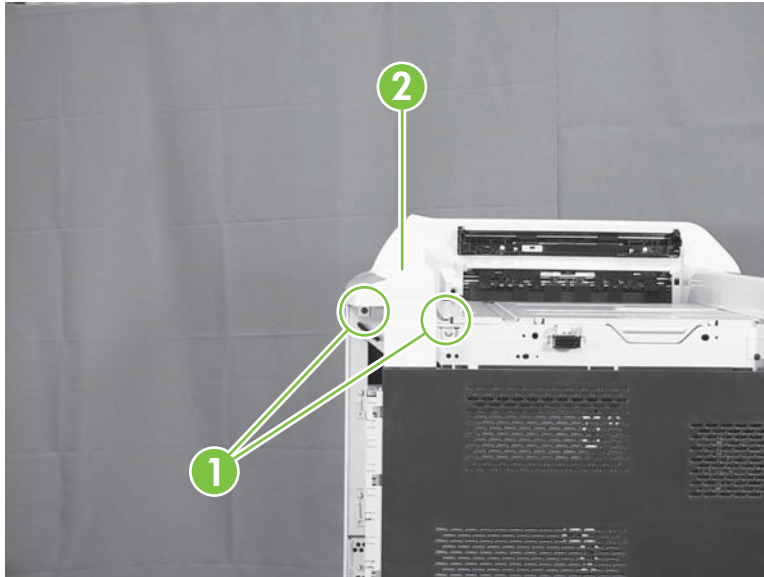


Rear-upper cover

 **NOTE:** To begin, see [Removal sequence 5 on page 278](#).

- Remove two screws (callout 1), and then remove the rear-upper cover (callout 2).

Figure 6-102 Remove rear-upper cover

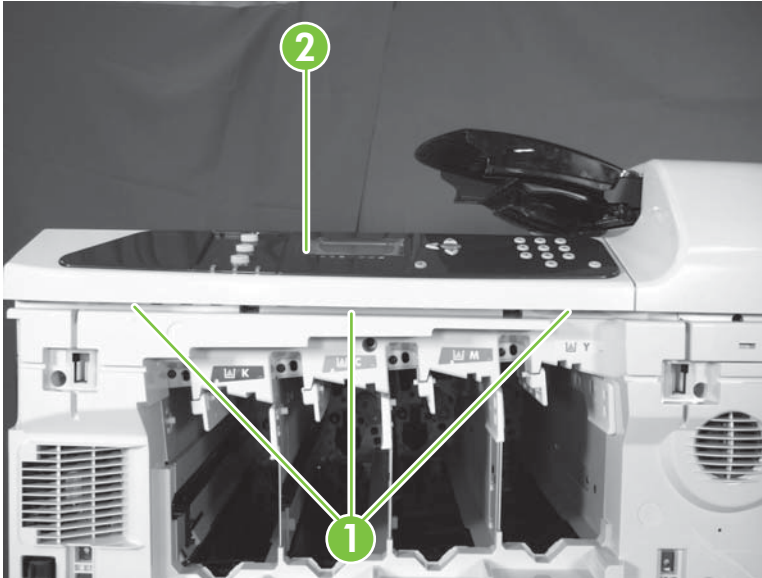


Control panel

 **NOTE:** To begin, see [Removal sequence 5 on page 278](#).

1. Open the front door.
2. Remove the control panel overlay and save it for reinstallation with the replacement control panel.
3. Release three tabs (callout 1), and then push the control panel (callout 2) up at a 45 degree angle to remove.

Figure 6-103 Remove the control panel (1 of 2)

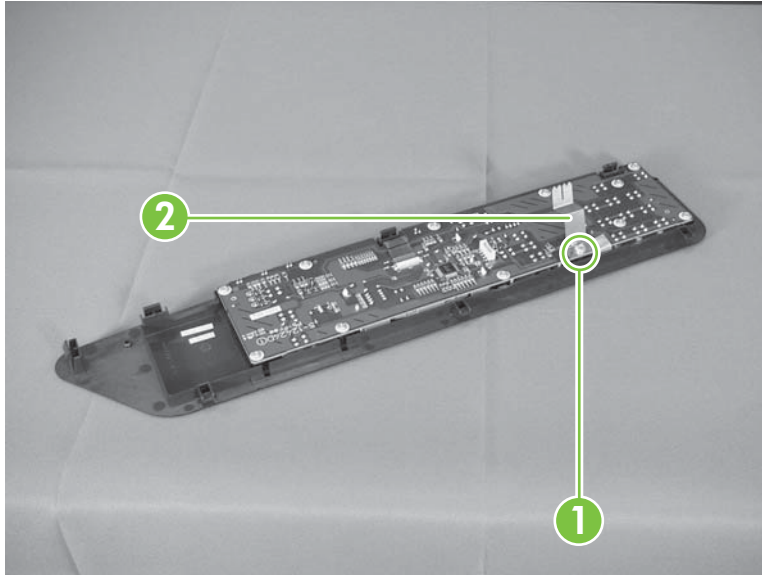


4. Disconnect one connector inside the control panel.

5. Remove one screw (callout 1), and then the grounding spring (callout 2).

 **NOTE:** Be careful not to damage the grounding spring. The service parts for the control panel do not include the grounding spring and the screw. Install the grounding spring when replacing the control panel.

Figure 6-104 Remove the control panel (2 of 2)

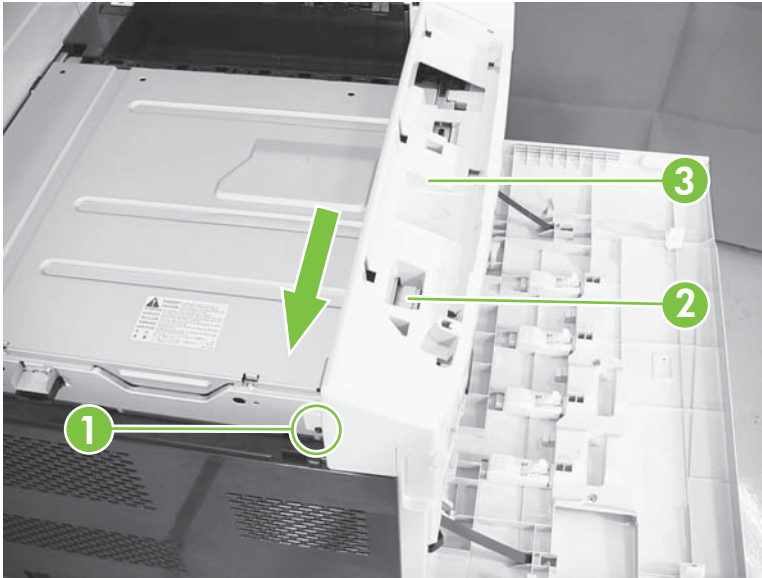


Front-upper cover

 **NOTE:** To begin, see [Removal sequence 5 on page 278](#).

1. Open the front door.
2. Remove one screw (callout 1) and lift one tab (callout 2). Slide the front-upper cover (callout 3) in the direction indicated.

Figure 6-105 Front-upper cover



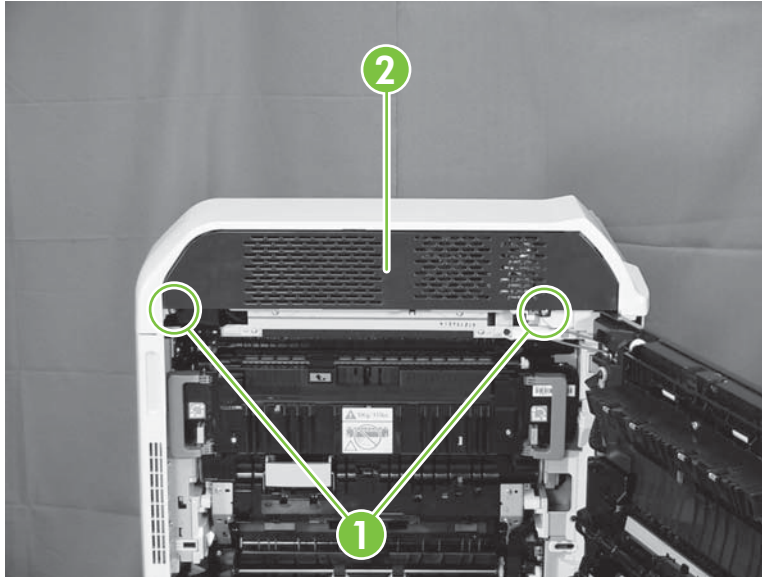
3. This procedure is complete. To continue, see the following:
 - For sequence 5A, see [Removal sequence 5A on page 294](#).

Right-upper cover

 **NOTE:** To begin, see [Removal sequence 5 on page 278](#).

1. Open the right door.
2. Remove two screws (callout 1), and then remove the right-upper cover (callout 2).

Figure 6-106 Remove right-upper cover



Duplex switchback tray

 **NOTE:** To begin, see [Removal sequence 5 on page 278](#).

1. Press the release button (callout 1).

Figure 6-107 Remove and replace the duplex switchback tray



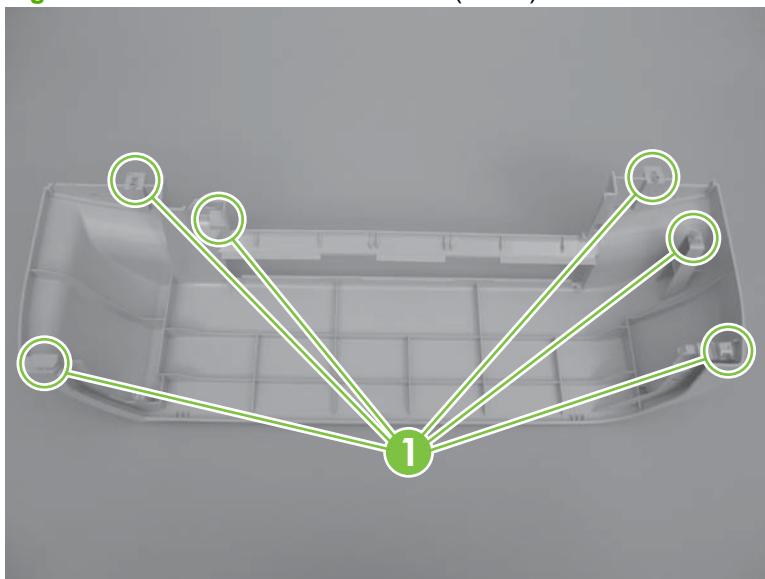
2. Remove the duplex switchback tray (callout 2).

Reverse cover

 **NOTE:** To begin, see [Removal sequence 5 on page 278](#).

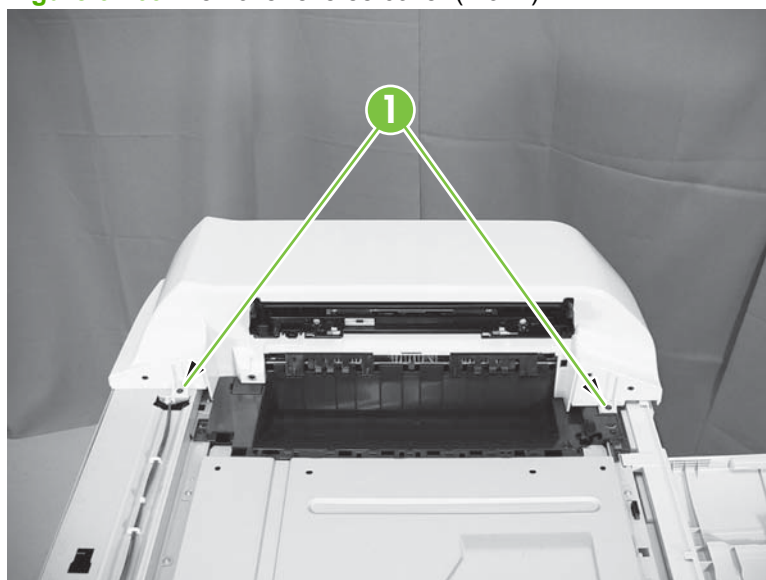
The reverse cover is difficult to remove and replace. The cover has six tabs (callout 1) that must clear the product when being removed. Not all the tabs are visible upon first inspection, so the first time removing the cover may be difficult.

Figure 6-108 Remove reverse cover (1 of 4)



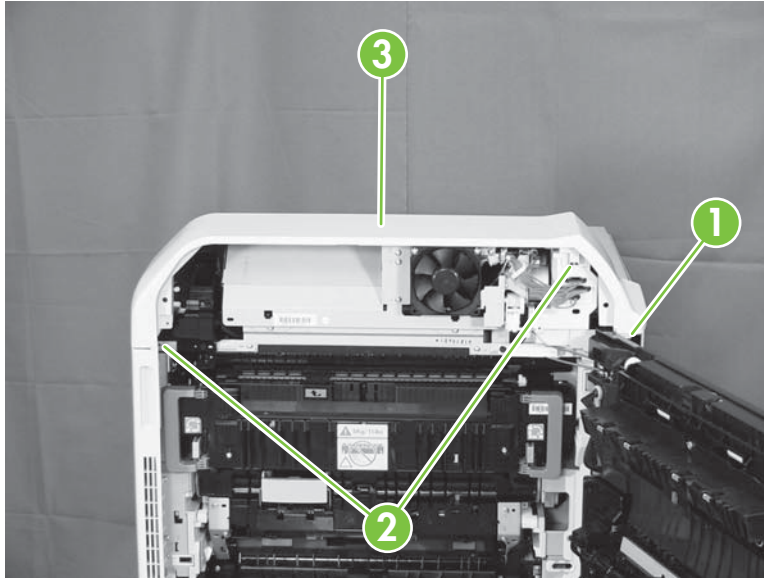
1. Remove two screws (callout 1) and then lift to clear tabs.

Figure 6-109 Remove reverse cover (2 of 4)



2. Push in on the lower-right corner (callout 1) and then pull out on the lower-right and upper-right tabs (callout 2). Move to the other side of the product, and then carefully move one side of the cover at a time to remove. If you feel resistance, make sure you are clearing the black plastic part on the lower-right side. Lift the cover up and over this part, and then continue to move each side of the cover to remove.

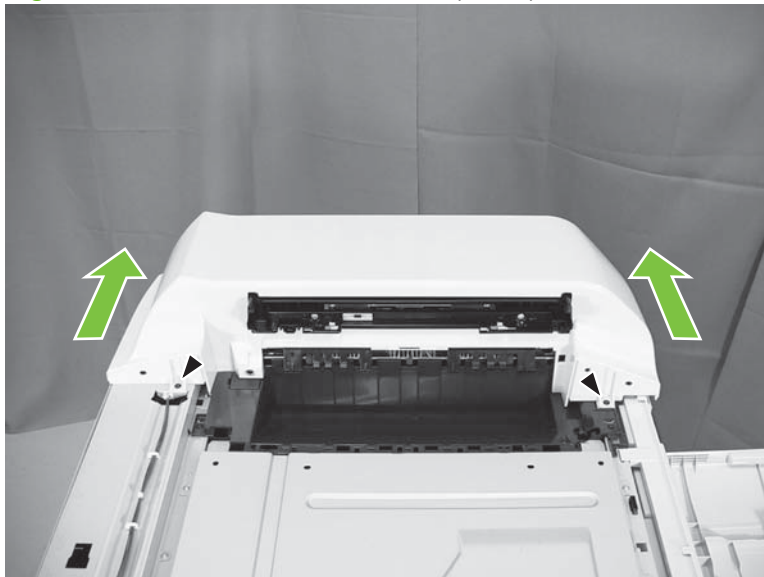
Figure 6-110 Remove reverse cover (3 of 4)



 **NOTE:** When reassembling, slowly slide the reverse cover onto the product until the tabs are in place.

3. Slide the reverse cover slowly in the direction indicated ensuring that it clears all underlying parts.

Figure 6-111 Remove reverse cover (4 of 4)



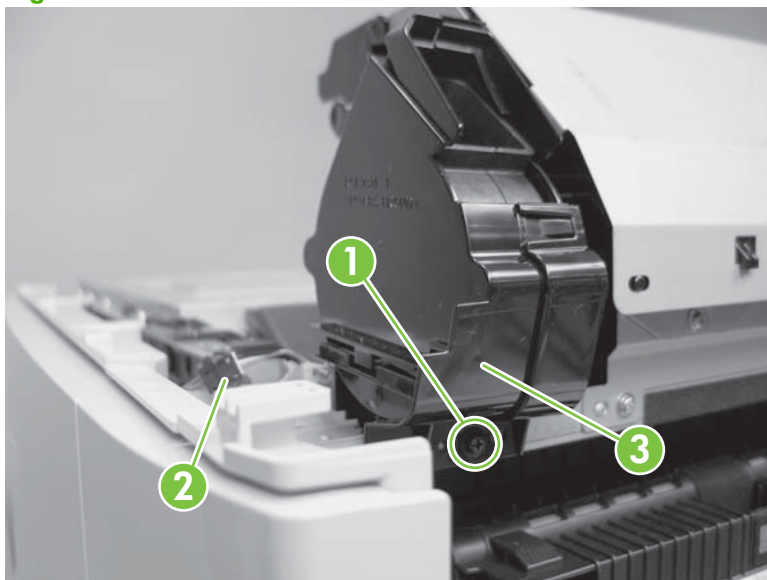
- For sequence 5B, see [Removal sequence 5B on page 299](#).
- For sequence 5C, see [Removal sequence 5C on page 301](#).

VOC fan

 **NOTE:** To begin, see [Removal sequence 5 on page 278](#).

- Remove one screw (callout 1), disconnect one connector (callout 2), and then remove the VOC fan (callout 3).

Figure 6-112 Remove the VOC fan

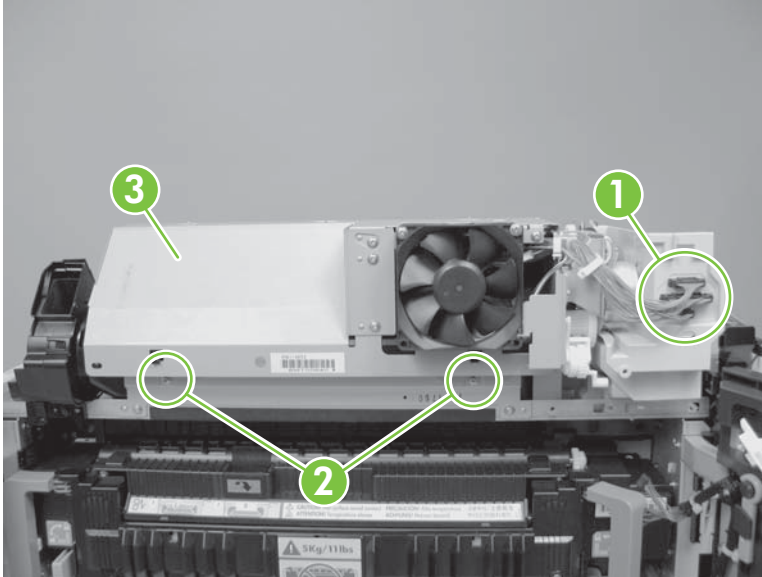


Duplexing reverse unit

 **NOTE:** To begin, see [Removal sequence 5 on page 278](#).

- Disconnect three connectors (callout 1), remove two screws (callout 2), and then the duplexing reverse unit (callout 3).

Figure 6-113 Remove the duplexing reverse unit

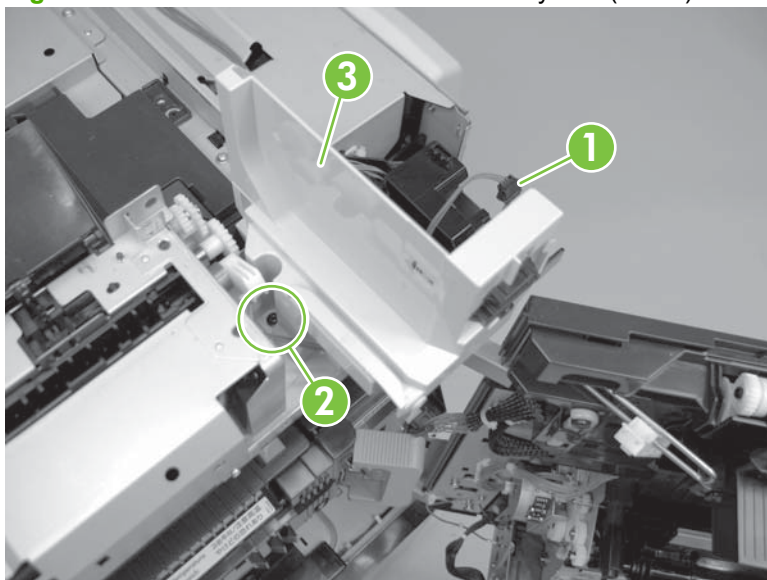


Face-down delivery unit

 **NOTE:** To begin, see [Removal sequence 5 on page 278](#).

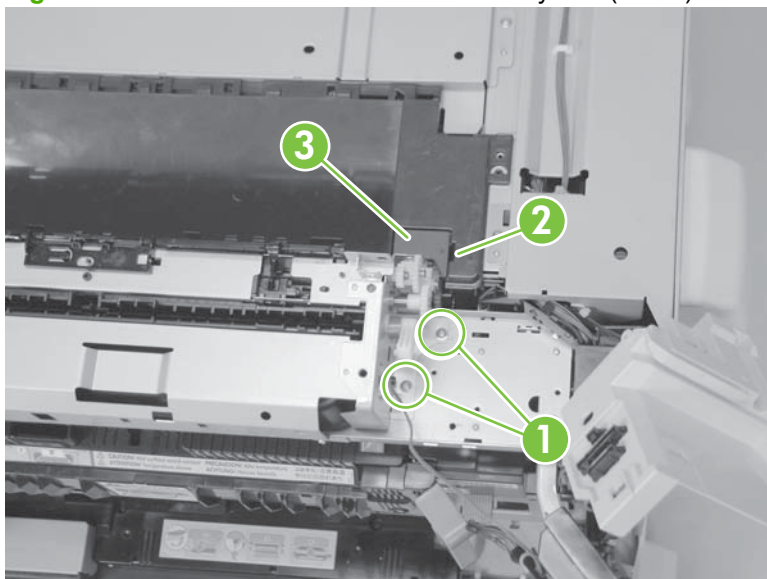
1. Disconnect one connector (callout 1), remove one screw (callout 2), and then move the inner cover (callout 3) to the side.

Figure 6-114 Remove the face-down delivery unit (1 of 3)



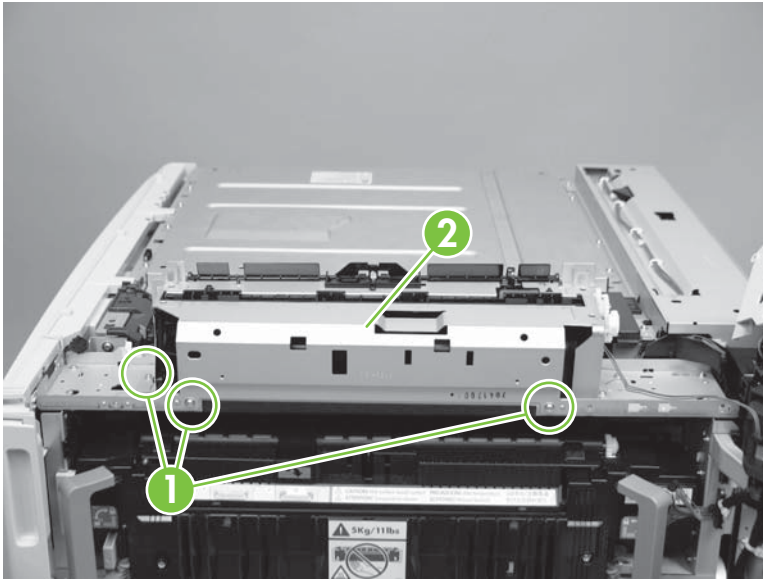
2. Remove two screws (callout 1), release one tab (callout 2), and then remove the gear cover (callout 3).

Figure 6-115 Remove the face-down delivery unit (2 of 3)



3. Remove three screws (callout 1), and then the face-down delivery unit (callout 2).

Figure 6-116 Remove the face-down delivery unit (3 of 3)

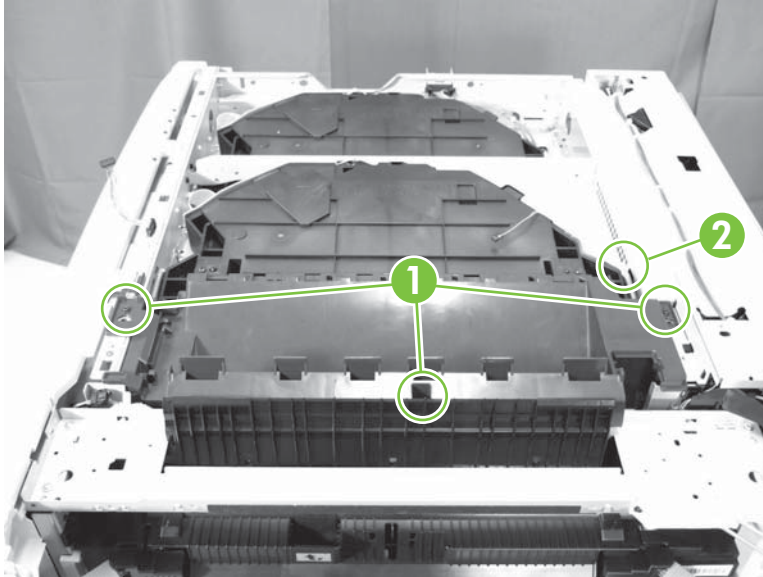


Face-down cover

 **NOTE:** To begin, see [Removal sequence 5 on page 278](#).

- Remove three screws (callout 1), disconnect one connector (callout 2), and then remove the face-down cover.

Figure 6-117 Remove face-down cover

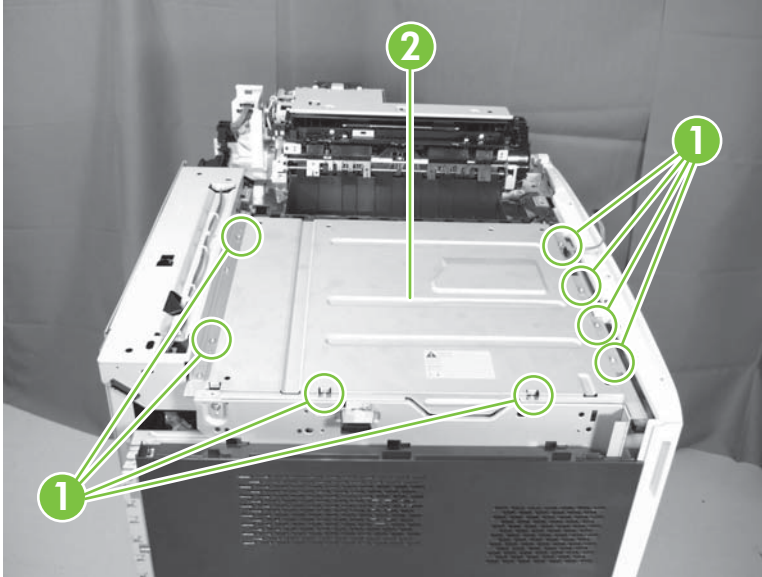


Removal sequence 5A

See [Removal sequence 5 on page 278](#) for procedures to remove prerequisite parts.

Scanner cover

- Remove eight screws (callout 1) and then remove the scanner cover (callout 2).

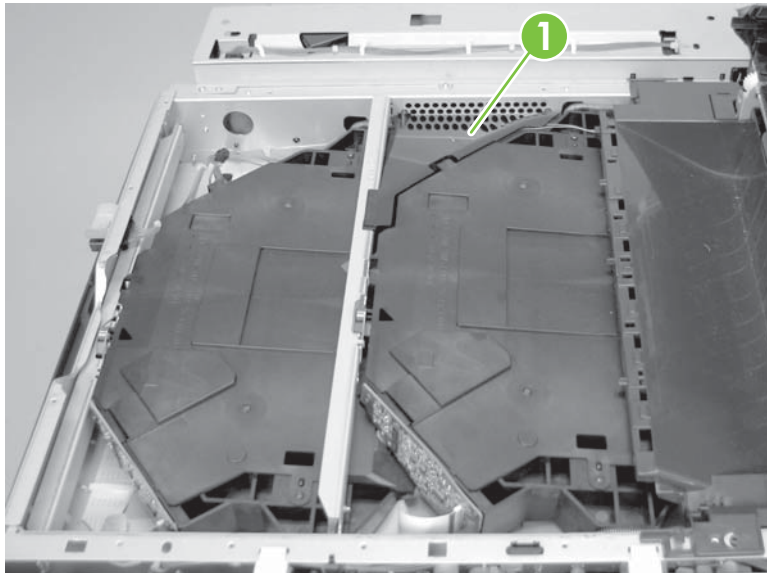


Laser/scanner assembly (yellow and magenta)

 **NOTE:** To begin, see [Removal sequence 5 on page 278](#).

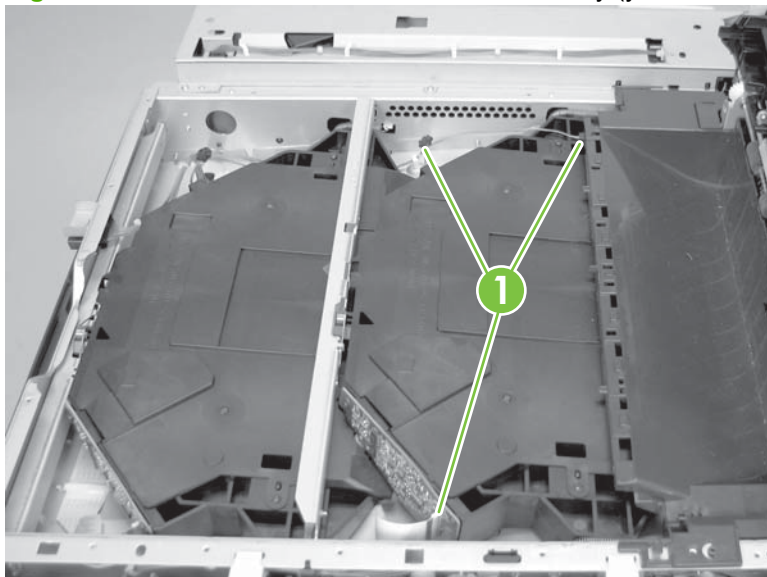
1. Remove the cover (callout 1).

Figure 6-118 Remove the laser/scanner assembly (yellow and magenta) (1 of 3)



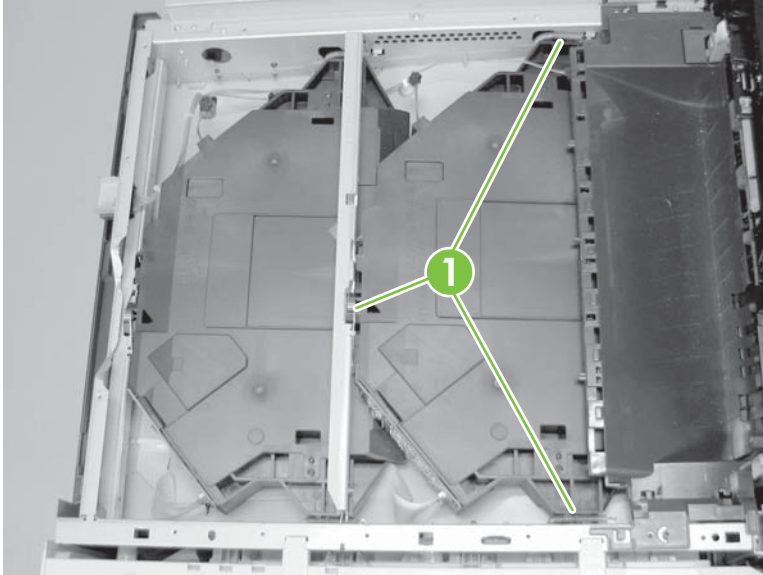
2. Disconnect three connectors (callout 1).

Figure 6-119 Remove the laser/scanner assembly (yellow and magenta) (2 of 3)

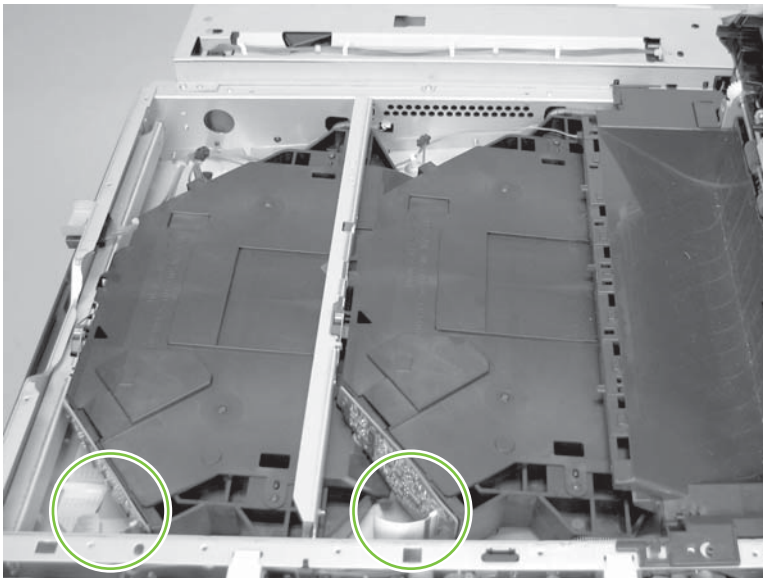


3. Unhook three springs (callout 1). Slide the laser/scanner assembly to the right, and then lift to remove it.

Figure 6-120 Remove the laser/scanner assembly (yellow and magenta) (3 of 3)



△ **CAUTION:** Use care when replacing the cables for the laser/scanner assemblies. The traces on the cable ends can be damaged when reinserted.

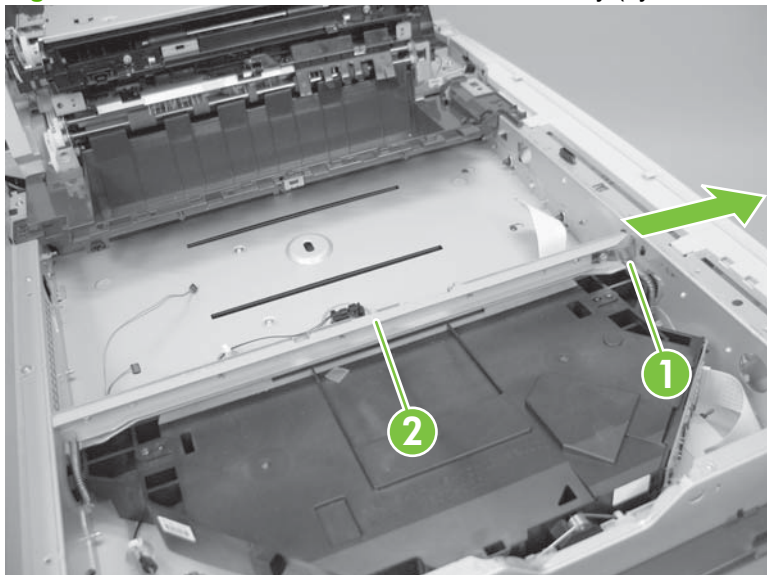


Laser/scanner assembly (cyan and black)

 **NOTE:** To begin, see [Removal sequence 5 on page 278](#).

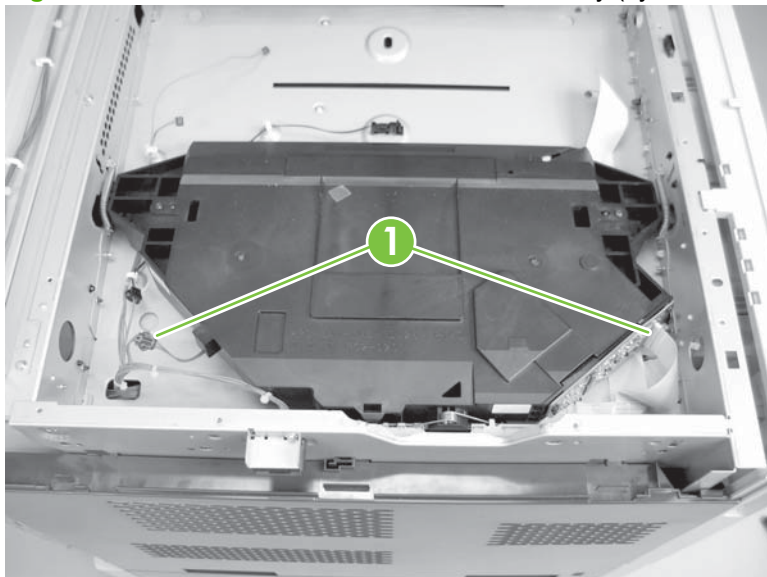
1. Push the tab (callout 1), and then slide the rod (callout 2) in the direction indicated to remove it.

Figure 6-121 Remove the laser/scanner assembly (cyan and black) (1 of 3)



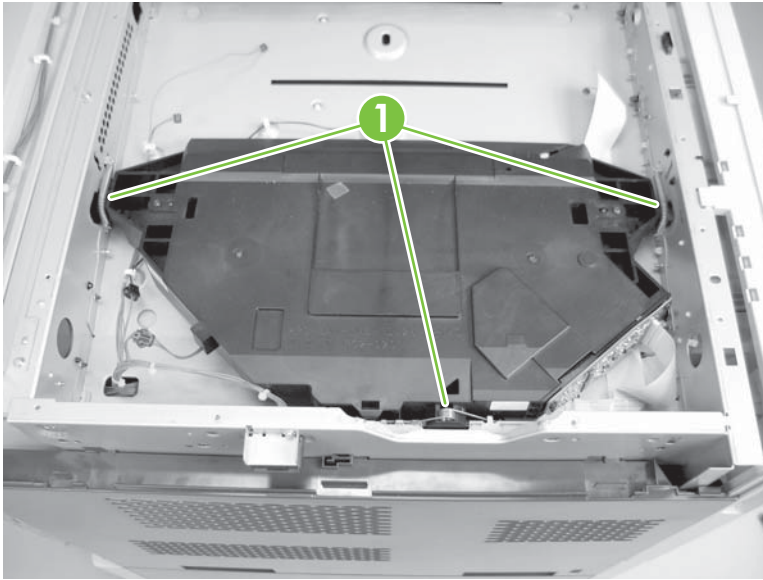
2. Disconnect two connectors (callout 1).

Figure 6-122 Remove the laser/scanner assembly (cyan and black) (2 of 3)

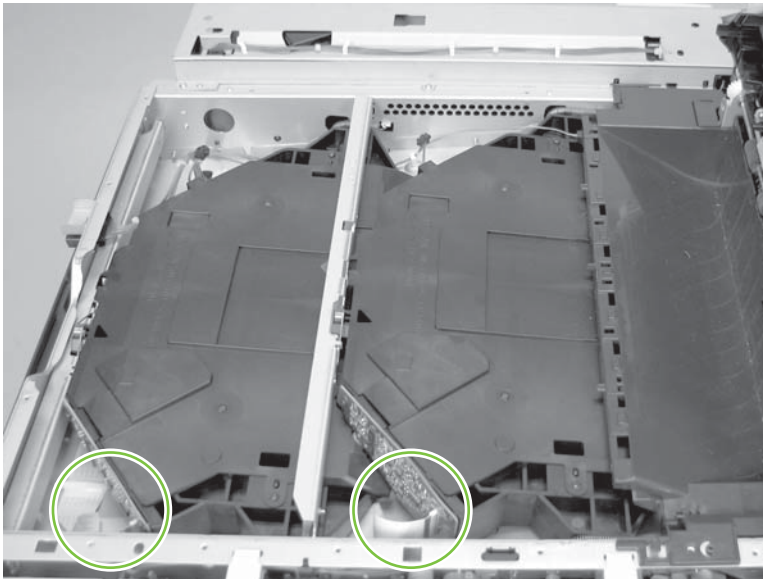


3. Unhook three springs (callout 1), and then remove the laser/scanner assembly.

Figure 6-123 Remove the laser/scanner assembly (cyan and black) (3 of 3)



△ **CAUTION:** Use care when replacing the cables for the laser/scanner assemblies. The traces on the cable ends can be damaged when reinserted.



📝 **NOTE:** Removal sequence 5A is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

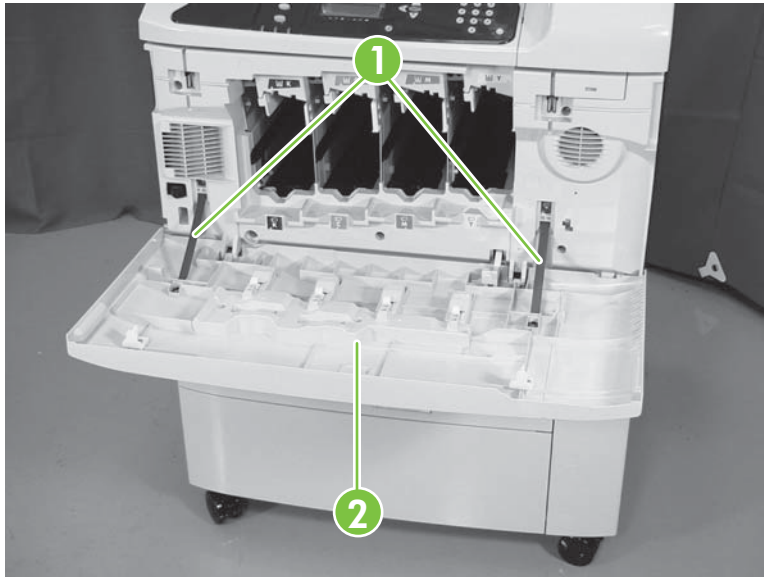
Removal sequence 5B

See [Removal sequence 5 on page 278](#) for procedures to remove prerequisite parts.

Front door

1. Open the front door, and then remove the print cartridges and image drums.
2. Use a small flat-blade screwdriver to release the two arms (callout 1), and then remove the front door (callout 2).

Figure 6-124 Remove front door

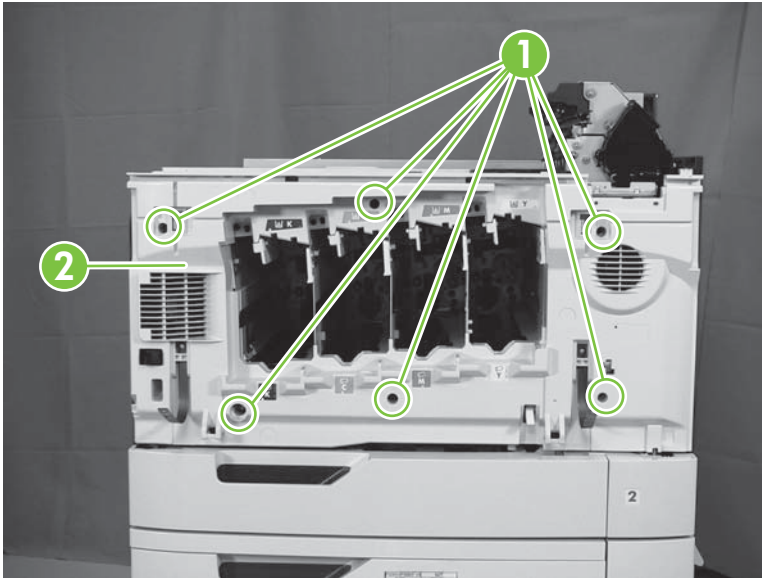


Front-inner cover

 **NOTE:** To begin, see [Removal sequence 5 on page 278](#).

- Remove six screws (callout 1), and then pull the bottom of the front-inner cover (callout 2) to remove.

Figure 6-125 Remove front-inner cover



 **NOTE:** Removal sequence 5B is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

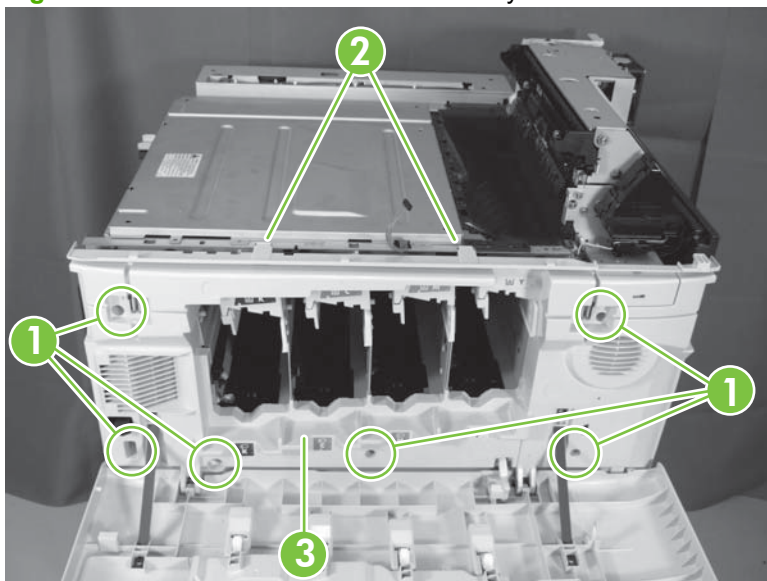
Removal sequence 5C

See [Removal sequence 5 on page 278](#) for procedures to remove prerequisite parts.

Front-door assembly

1. Open the front door.
2. Remove six screws (callout 1), release the two tabs (callout 2), and then remove the front-door assembly (callout 3).

Figure 6-126 Remove front-door assembly



Removal sequence 5C is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

- For sequence 5D, see [Removal sequence 5D on page 302](#).
- For sequence 5E, see [Removal sequence 5E on page 304](#).

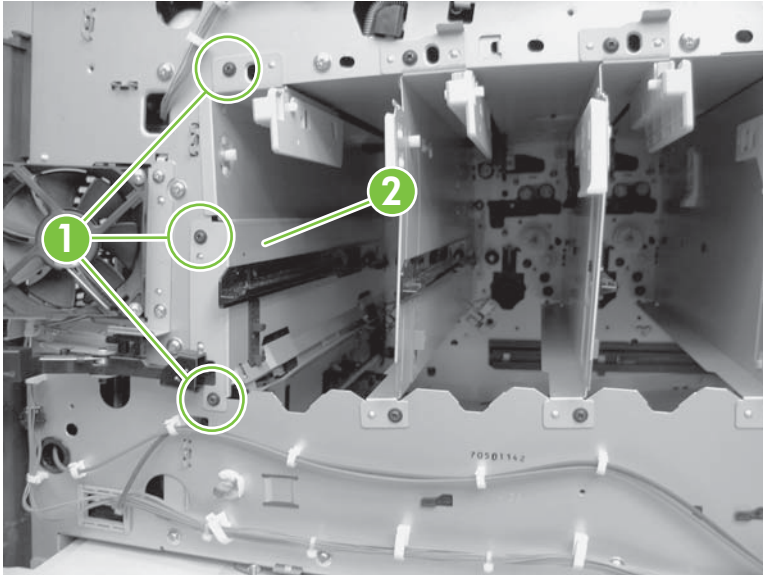
Removal sequence 5D

See [Removal sequence 5 on page 278](#) for procedures to remove prerequisite parts.

Color-misregistration and image-density sensor unit

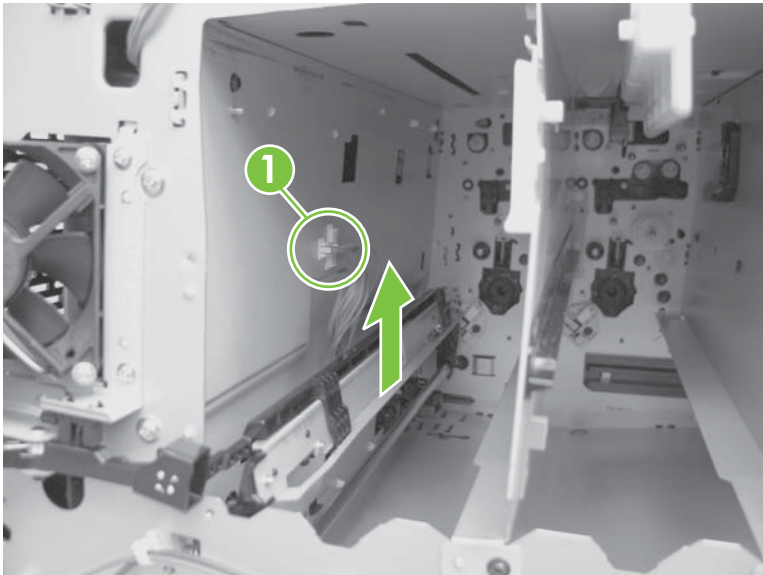
1. Remove three screws (callout 1) and the print-cartridge guide (callout 2).

Figure 6-127 Remove the color-misregistration and image-density sensor unit (1 of 3)



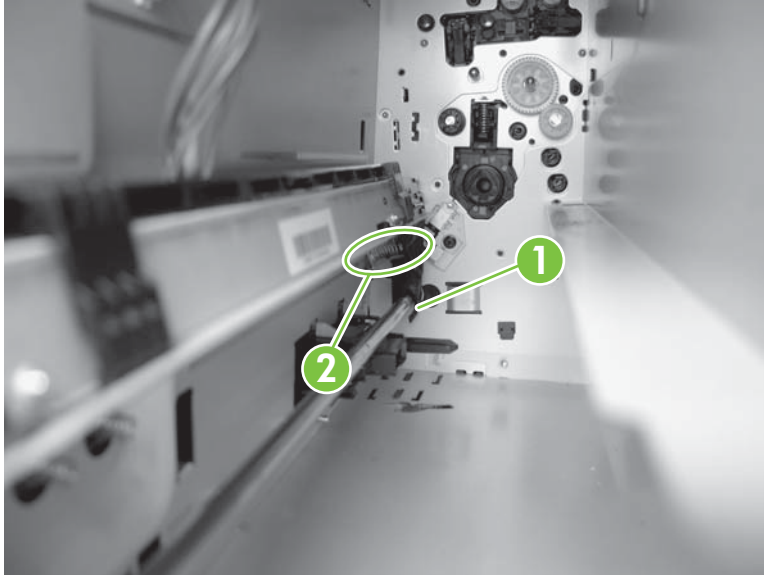
2. Disconnect the two connectors (callout 1) and lift the color-misregistration/image-density sensor unit to remove it.

Figure 6-128 Remove the color-misregistration and image-density sensor unit (2 of 3)



 **NOTE:** When reassembling, snap the sensor on the rod (callout 1) and align the springs (callout 2).

Figure 6-129 Remove the color-misregistration and image-density sensor unit (3 of 3)



 **NOTE:** Removal sequence 5D is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

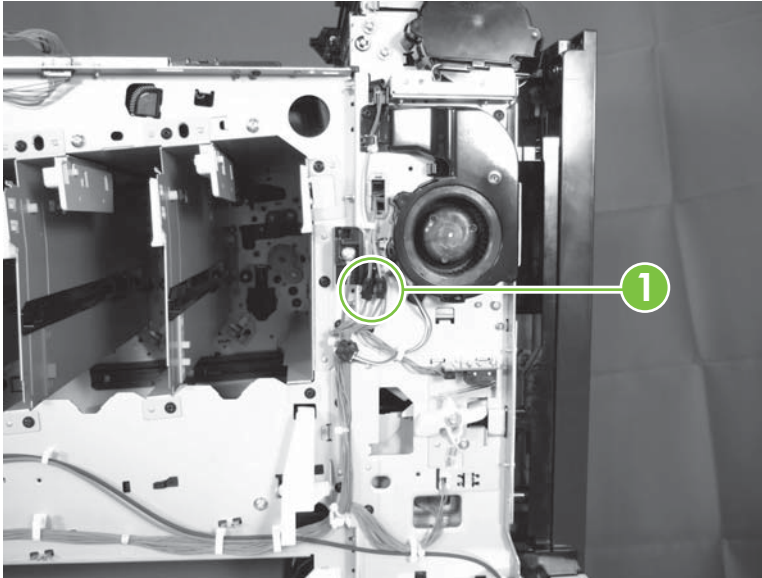
Removal sequence 5E

See [Removal sequence 5 on page 278](#) for procedures to remove prerequisite parts.

Pressure-release sensor unit

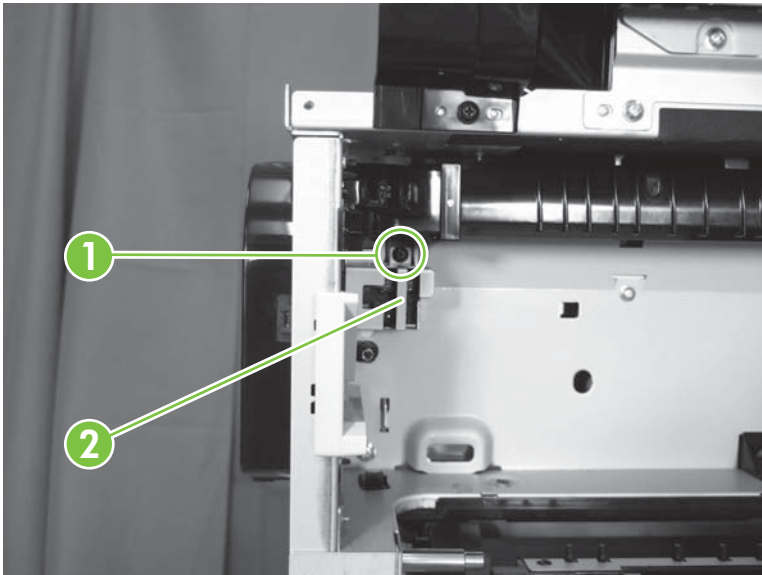
1. From the front of the product, disconnect the two connectors (callout 1).

Figure 6-130 Remove the pressure-release sensor unit (1 of 2)



2. From the right side of the product, remove one screw (callout 1), and then the pressure-release sensor unit (callout 2).

Figure 6-131 Remove the pressure-release sensor unit (2 of 2)

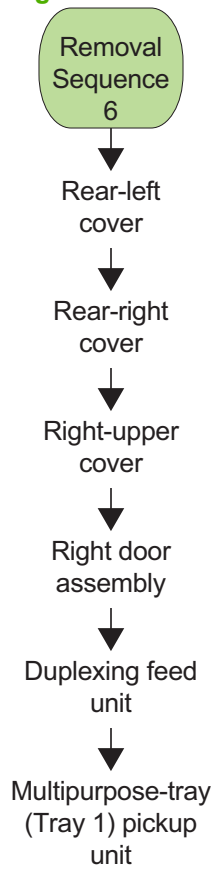


 **NOTE:** Removal sequence 5E is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

Removal sequence 6

Use the flowchart below to determine the sequence of part removal and reinstallation. For information about using removal sequences, see [Parts removal sequences on page 189](#).

Figure 6-132 Removal sequence 6 flowchart

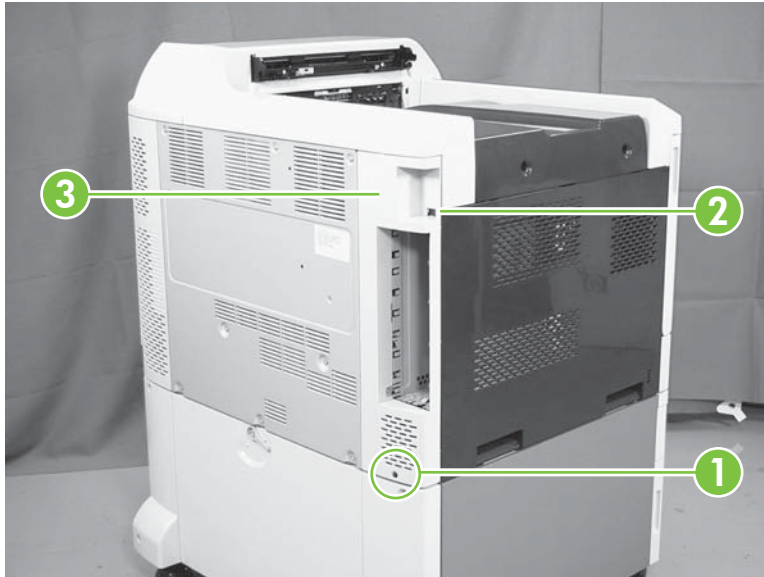


Rear-left cover

 **NOTE:** To begin, see [Removal sequence 6 on page 305](#).

- ☐ Remove one screw (callout 1), release one tab (callout 2) and remove the rear-left cover (callout 3).

Figure 6-133 Remove rear-left cover

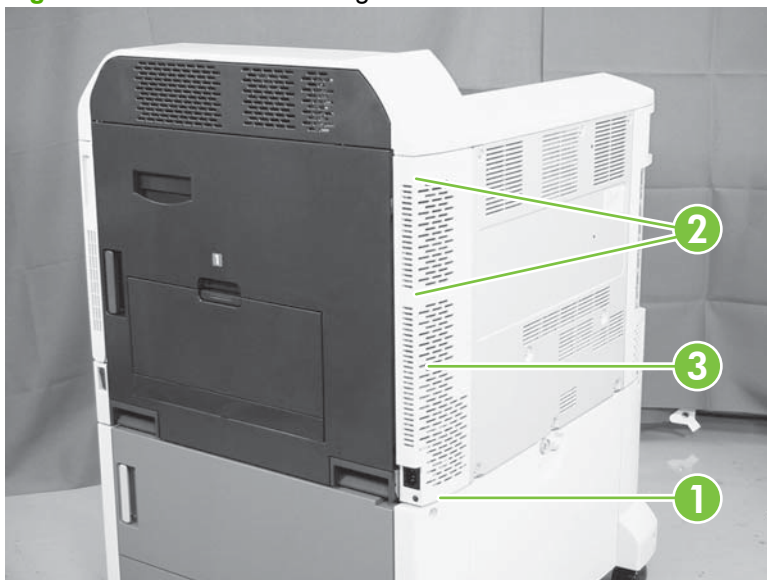


Rear-right cover

 **NOTE:** To begin, see [Removal sequence 6 on page 305](#).

- Remove one screw (callout 1), release two tabs (callout 2), and then remove the rear-right cover (callout 3).

Figure 6-134 Remove rear-right cover

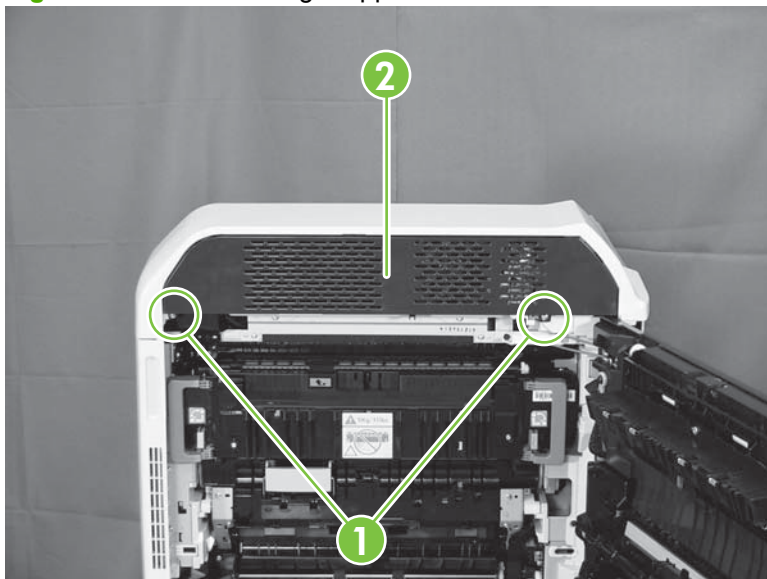


Right-upper cover

 **NOTE:** To begin, see [Removal sequence 6 on page 305](#).

1. Open the right door.
2. Remove two screws (callout 1), and then the right-upper cover (callout 2).

Figure 6-135 Remove right-upper cover

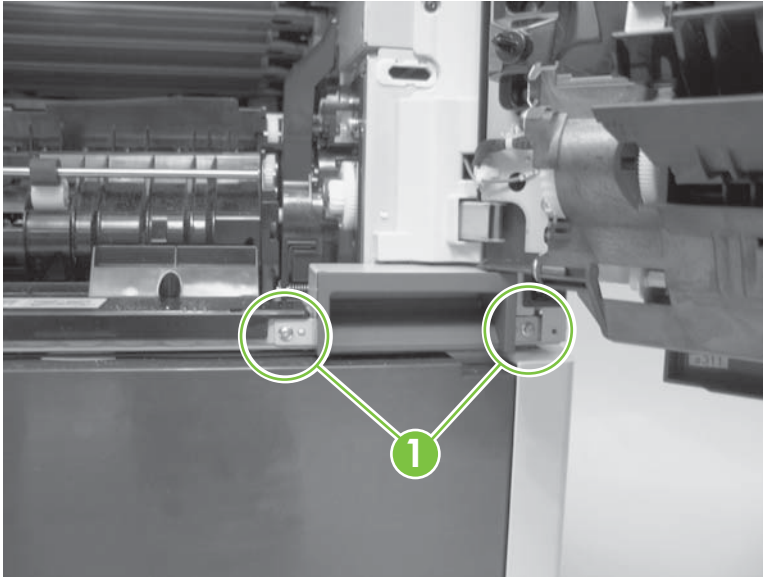


Right-door assembly

 **NOTE:** To begin, see [Removal sequence 6 on page 305](#).

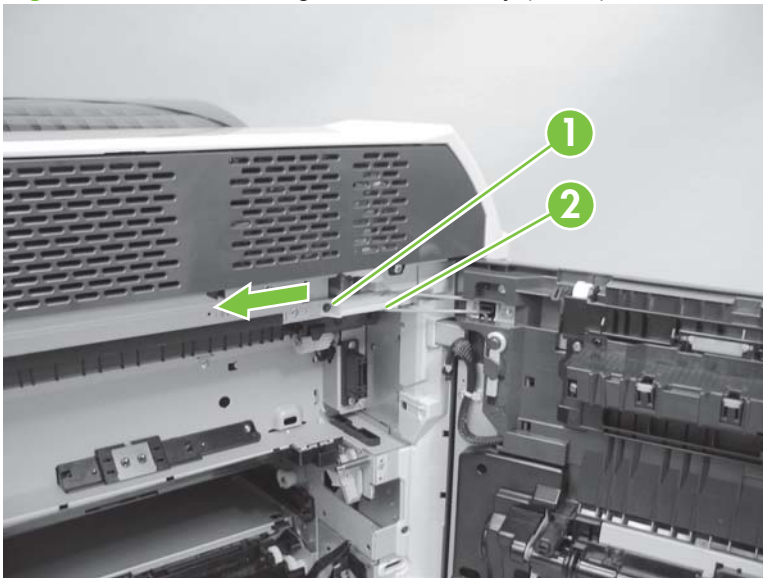
1. Open the right door.
2. Remove two screws (callout 1), and then lift the handle.

Figure 6-136 Remove right-door assembly (1 of 4)



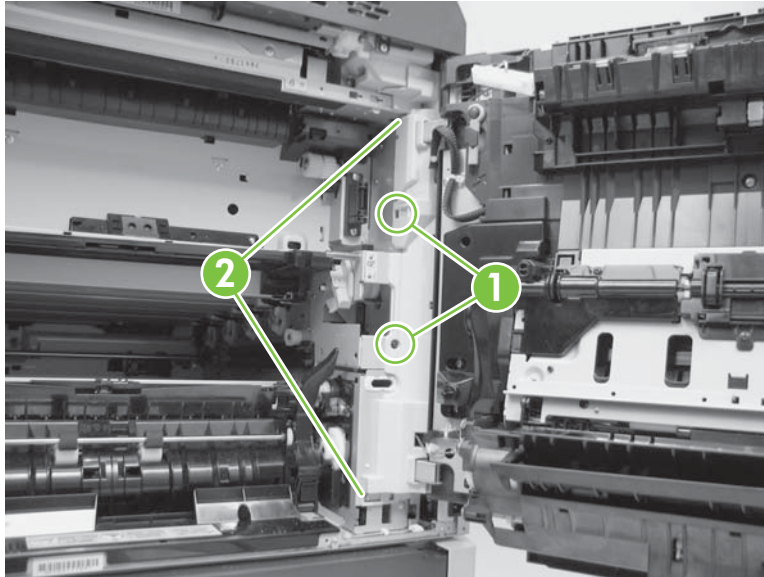
3. Remove one screw (callout 1). Slide the right door arm (callout 2) in the direction indicated to remove it.

Figure 6-137 Remove right-door assembly (2 of 4)



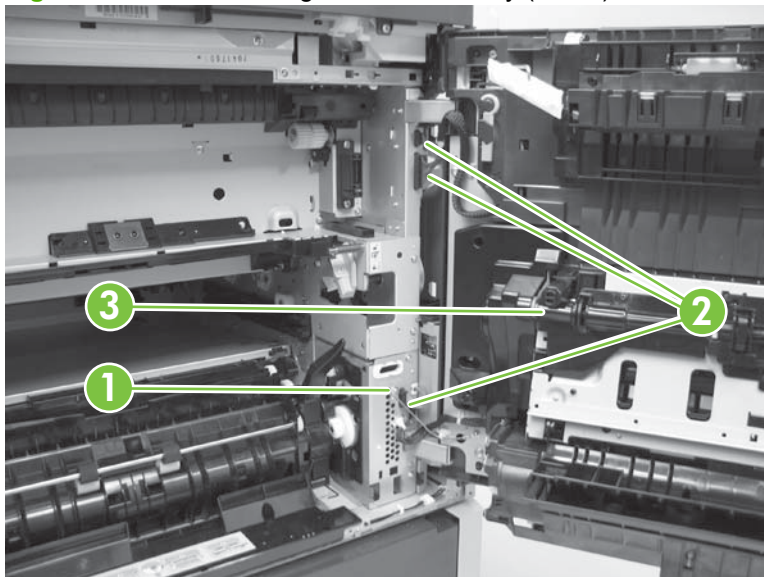
4. Remove two screws (callout 1), release the two tabs (callout 2), and then remove the right inner cover.

Figure 6-138 Remove right-door assembly (3 of 4)



5. Remove one grounding screw (callout 1), disconnect three connectors (callout 2), and then lift the right-door assembly (callout 3) to remove it.

Figure 6-139 Remove right-door assembly (4 of 4)

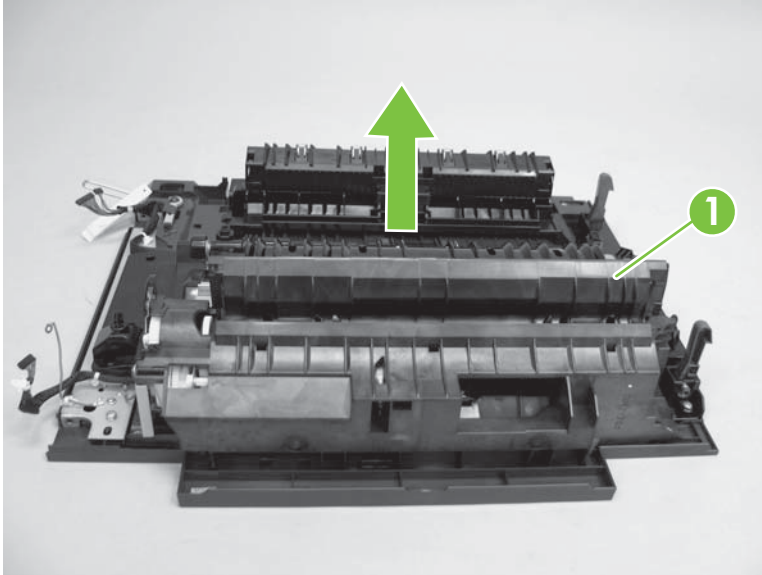


Duplexing feed unit

 **NOTE:** To begin, see [Removal sequence 6 on page 305](#).

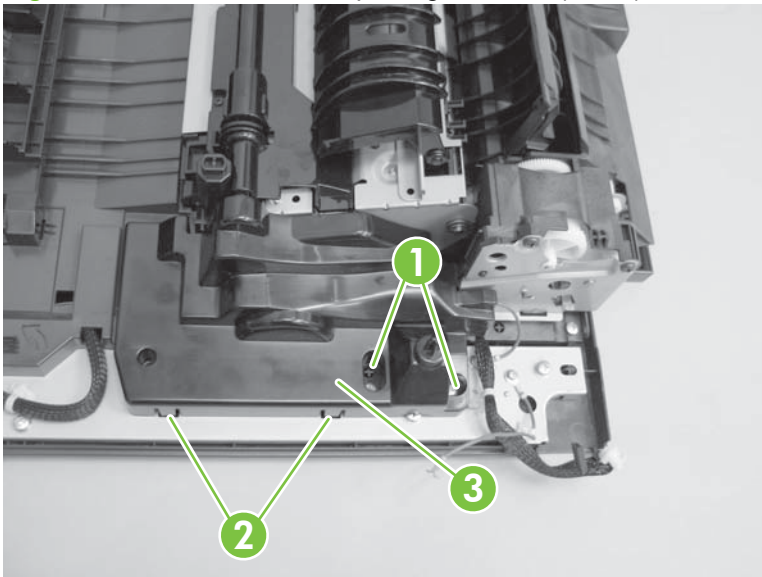
1. Lift the duplexing feed upper guide (callout 1) in the direction indicated to remove.

Figure 6-140 Remove the duplexing feed unit (1 of 3)



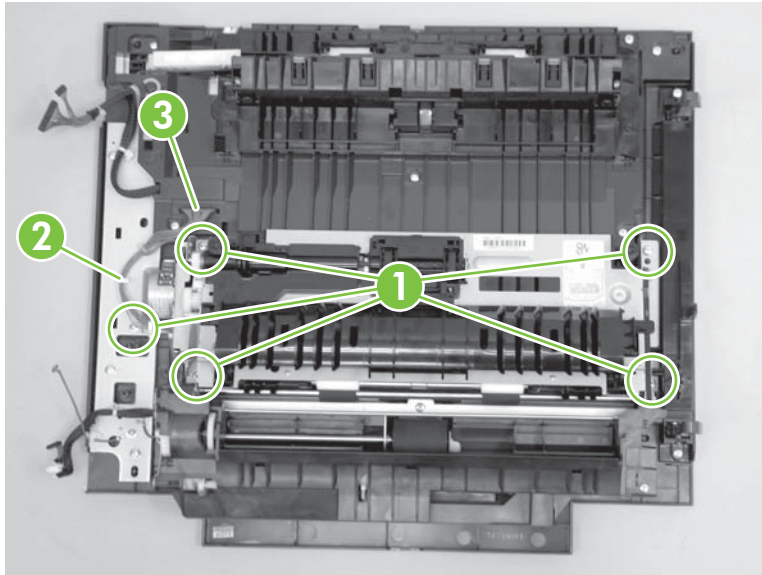
2. Remove two screws (callout 1), release two tabs (callout 2), and then remove the cover (callout 3).

Figure 6-141 Remove the duplexing feed unit (2 of 3)



3. Remove five screws (callout 1), one wire retainer (callout 2), one connector (callout 3), and then remove the duplexing feed unit.

Figure 6-142 Remove the duplexing feed unit (3 of 3)



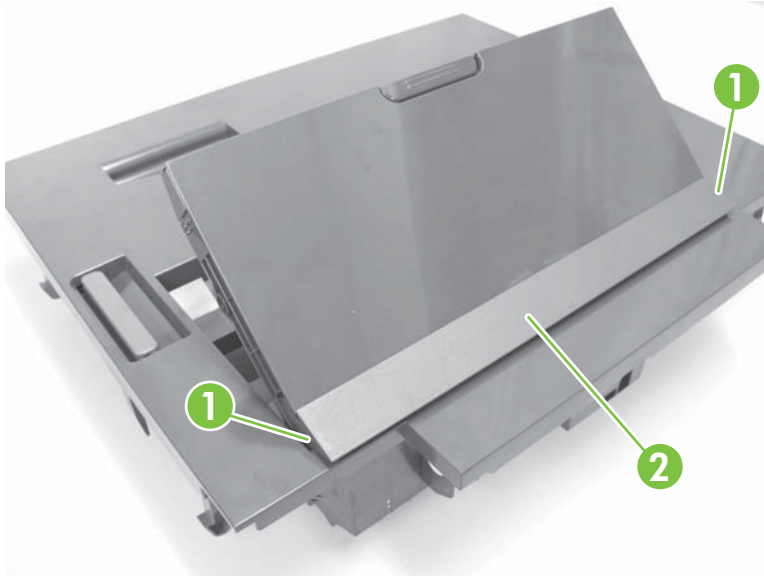
Multipurpose-tray (Tray-1) pickup unit

 **NOTE:** To begin, see [Removal sequence 6 on page 305](#).

1. Spread two tabs (callout 1) and remove the MP tray lower cover (callout 2). Close Tray 1.

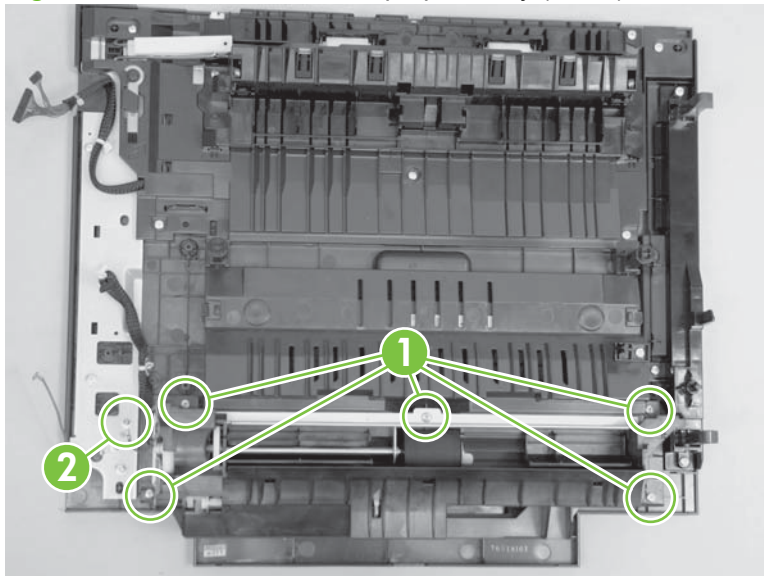
 **NOTE:** Push down on the back of the Tray 1 so it is flat against itself. Close Tray 1 completely so that it is flush.

Figure 6-143 Remove the multipurpose tray (1 of 5)



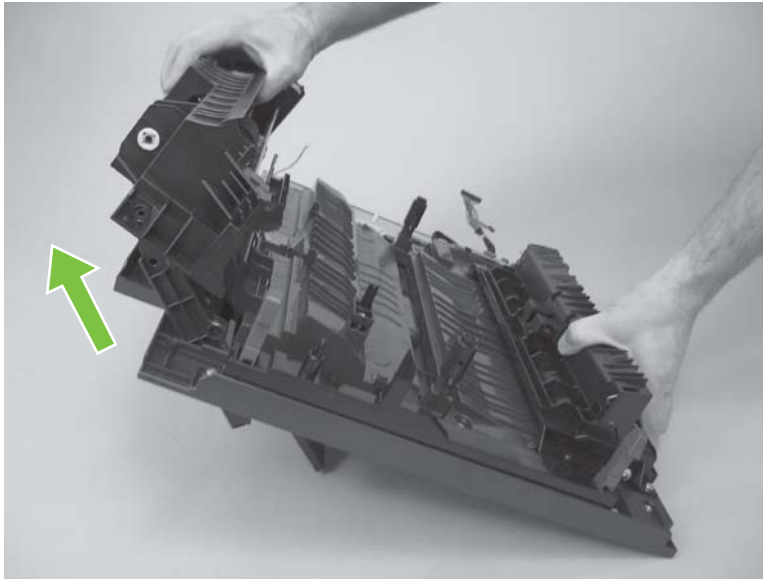
2. Remove five screws (callout 1), and then one grounding screw (callout 2).

Figure 6-144 Remove the multipurpose tray (2 of 5)



3. Remove the MP-tray pickup unit and the MP tray together.

Figure 6-145 Remove the multipurpose tray (3 of 5)



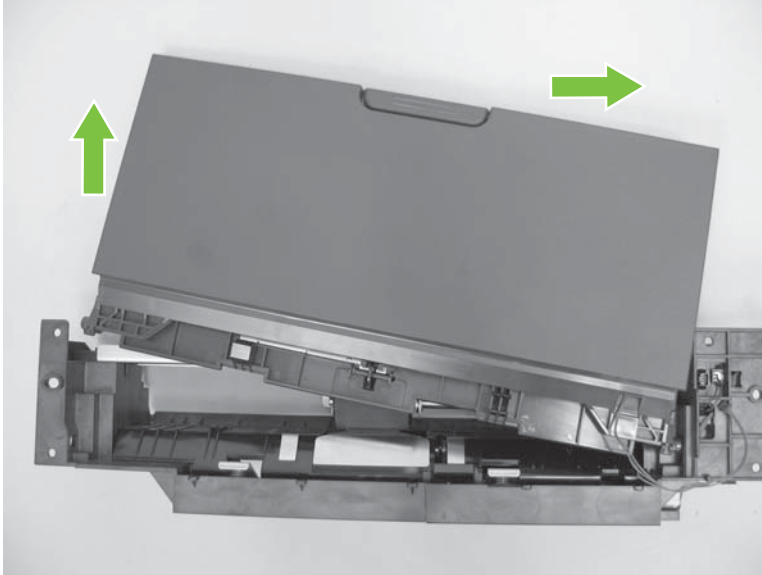
4. Disconnect one connector (callout 1).

Figure 6-146 Remove the multipurpose tray (4 of 5)



5. With the door closed, use a flat blade screw driver to pry the left side out. Pull the tray in the directions indicated to remove.

Figure 6-147 Remove the multipurpose tray (5 of 5)

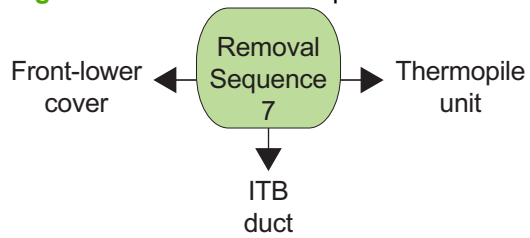


 **NOTE:** Removal sequence 6 is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

Removal sequence 7

Use the flowchart below to determine the sequence of part removal and reinstallation. For information about using removal sequences, see [Parts removal sequences on page 189](#).

Figure 6-148 Removal sequence 7 flowchart

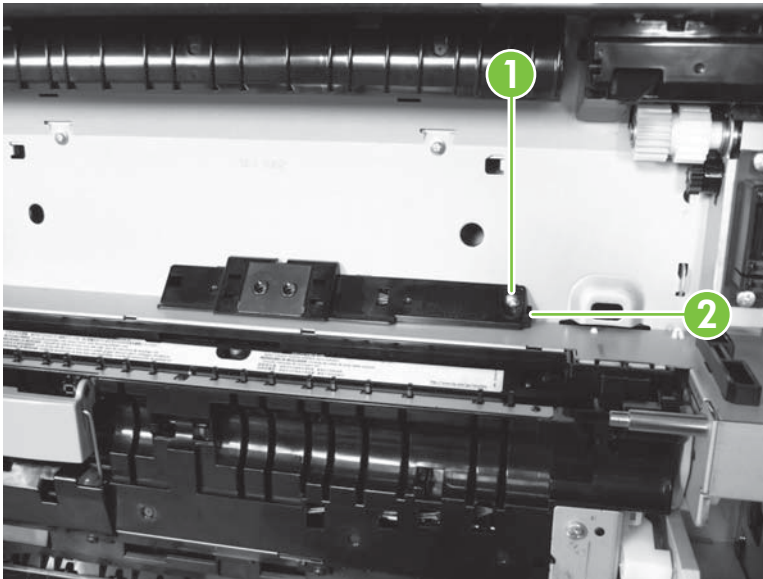


Thermopile unit

 **NOTE:** To begin, see [Removal sequence 7 on page 315](#).

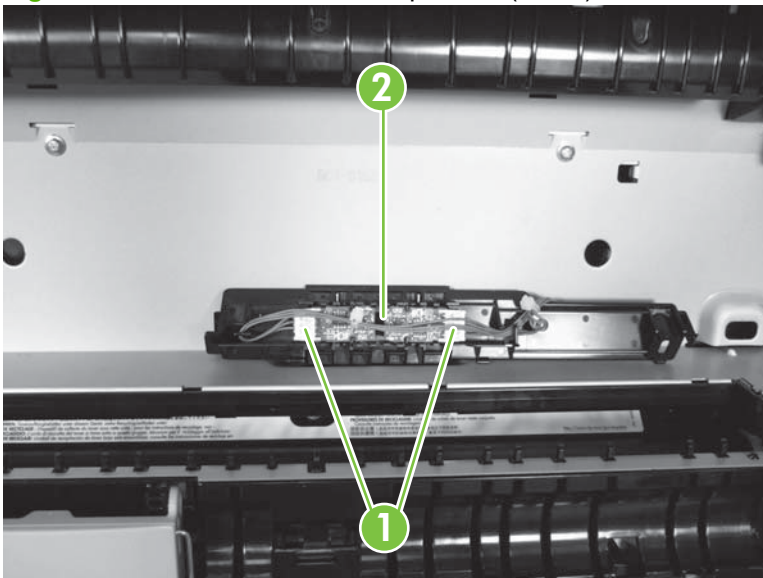
1. Remove the following user replaceable parts:
 - Fuser. See [Fuser on page 191](#).
2. Remove one screw (callout 1), and then release one tab (callout 2).

Figure 6-149 Remove the thermopile unit (1 of 2)



3. Disconnect two connectors (callout 1), and then remove the thermopile unit (callout 2).

Figure 6-150 Remove the thermopile unit (2 of 2)



Front-lower cover

 **NOTE:** To begin, see [Removal sequence 7 on page 315](#).

1. Remove the following user replaceable parts:
 - Tray 2. See [Tray 2 on page 208](#).
2. Remove one screw (callout 1), and then remove the front-lower cover (callout 2).

Figure 6-151 Remove front-lower cover

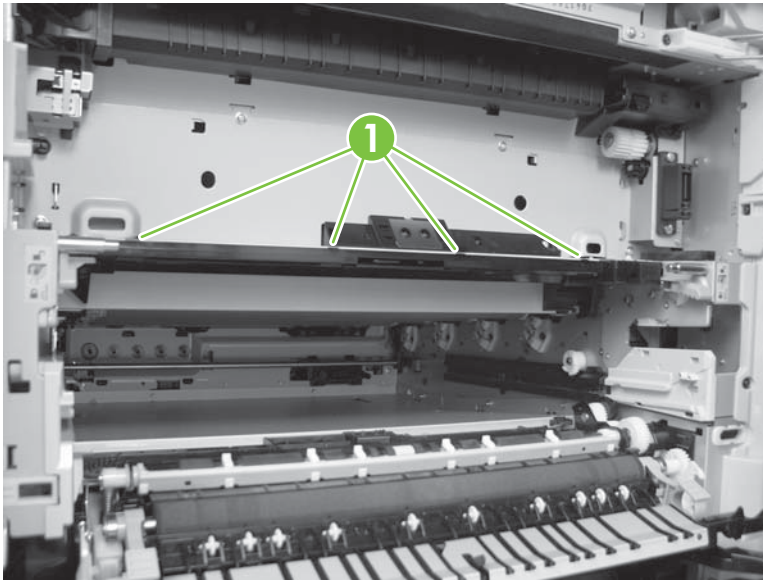


ITB duct

 **NOTE:** To begin, see [Removal sequence 7 on page 315](#).

1. Remove the following user replaceable parts:
 - Fuser unit. See [Fuser on page 191](#).
2. Release four tabs (callout 1).

Figure 6-152 Remove the ITB duct (1 of 2)



3. Remove the ITB duct.

Figure 6-153 Remove the ITB duct (2 of 2)



 **NOTE:** Removal sequence 7 is complete. To reassemble, reverse the steps in this procedure and all previous procedures of this sequence.

Optional input trays

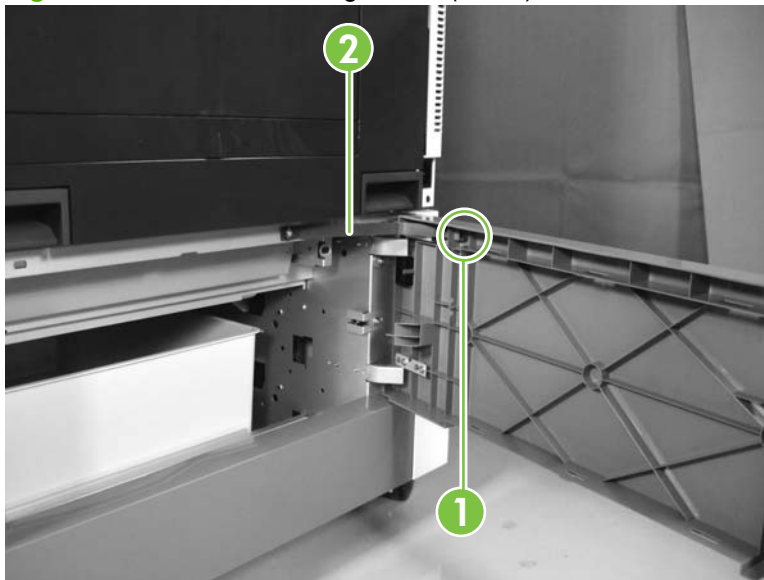
This section provides procedures for removal and replacement of field-replaceable units (FRUs) for optional input trays.

1 x 500-sheet input tray

Right door

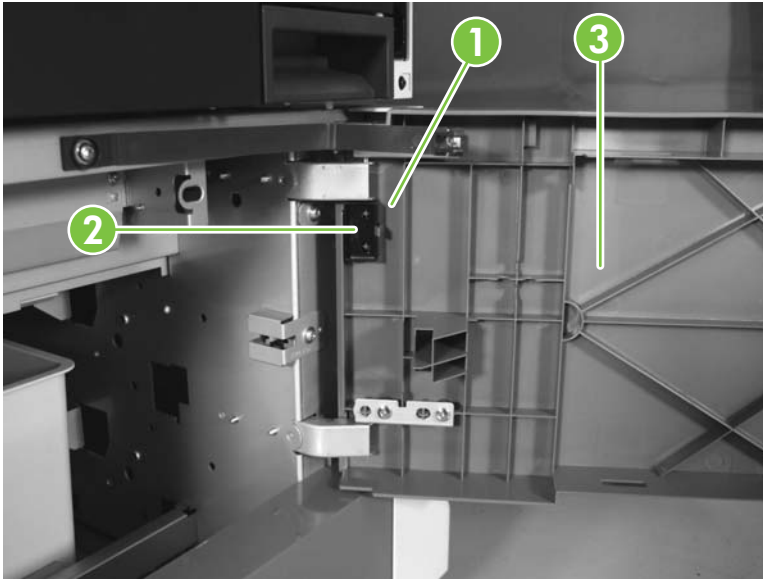
1. Open the right door.
2. Release one tab (callout 1), and then remove the arm (callout 2).

Figure 6-154 Remove the right door (1 of 2)



3. Release one tab (callout 1), and then remove the stopper (callout 2). Lift the right door (callout 3) to remove it.

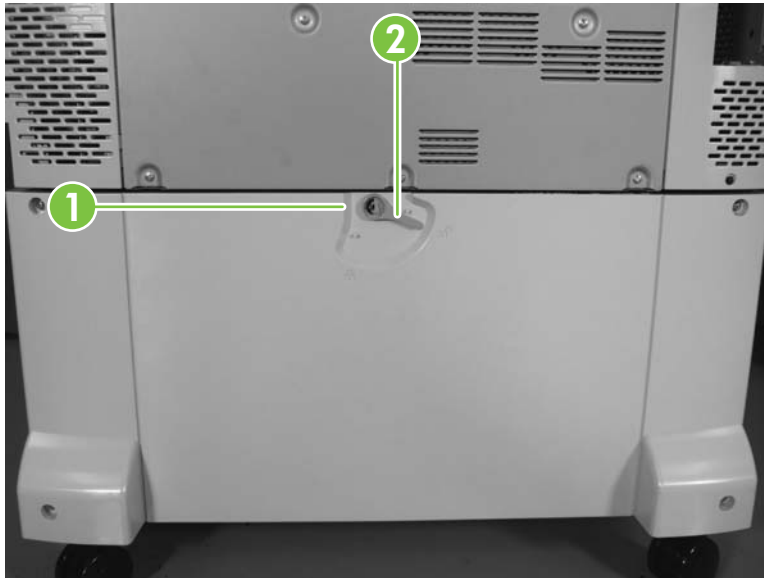
Figure 6-155 Remove the right door (2 of 2)



Lower-rear cover

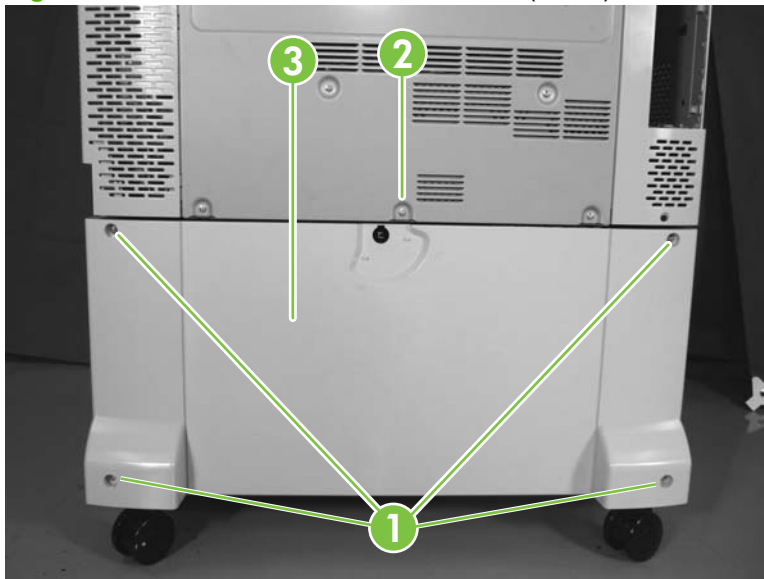
1. Release one tab (callout 1), and then remove the lever (callout 2).

Figure 6-156 Remove the lower-rear cover (1 of 2)



2. Remove four screws (callout 1). Release one tab (callout 2), and then remove the rear cover (callout 3).

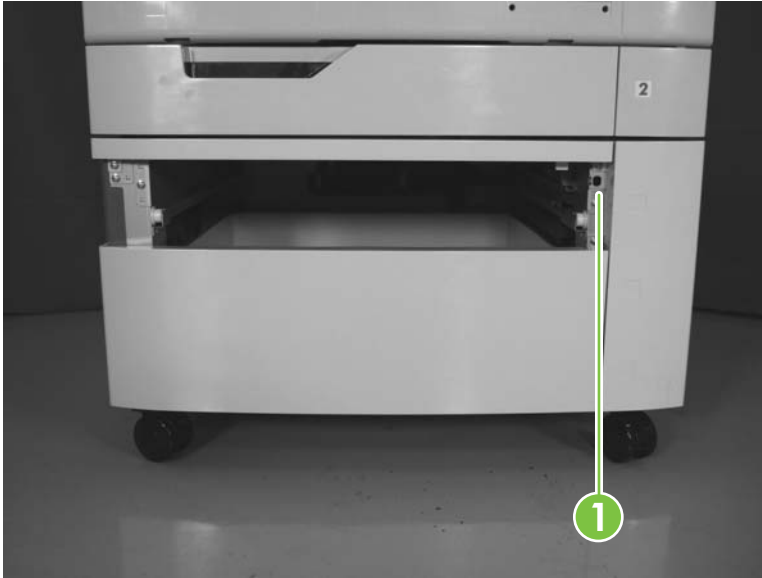
Figure 6-157 Remove the lower rear cover (2 of 2)



Front-right cover

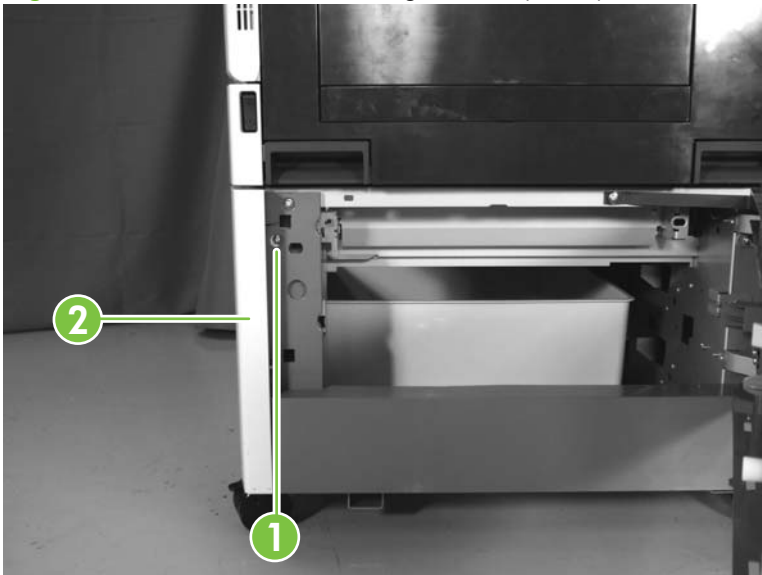
1. Remove the following:
 - Tray 2. See [Tray 2 on page 208](#).
2. Remove one screw (callout 1).

Figure 6-158 Remove the front-right cover (1 of 2)



3. Open the right door. Remove one screw (callout 1). Lift the front-right cover (callout 2) to remove it.

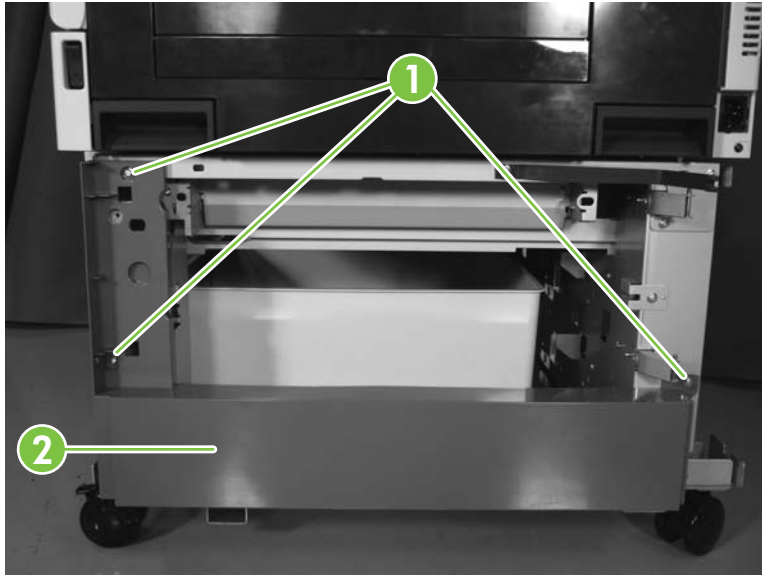
Figure 6-159 Remove the front-right cover (2 of 2)



Right cover

1. Remove the following:
 - Right door. See [Right door on page 319](#).
 - Front-right cover. See [Front-right cover on page 322](#).
 - Rear cover. See [Lower-rear cover on page 321](#).
2. Remove three screws (callout 1) and then remove the right cover (callout 2).

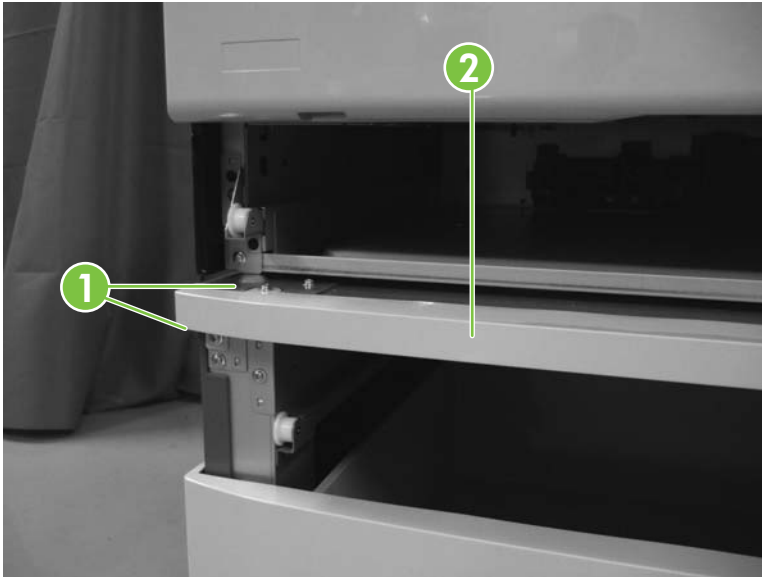
Figure 6-160 Remove the right cover



Front-upper cover

1. Remove the following:
 - Tray 2. See [Tray 2 on page 208](#).
 - Tray 3. See [Trays 3, 4, and 5 on page 208](#).
 - Front-right cover. See [Front-right cover on page 322](#).
2. Remove two screws (callout 1), and then remove the front-upper cover (callout 2).

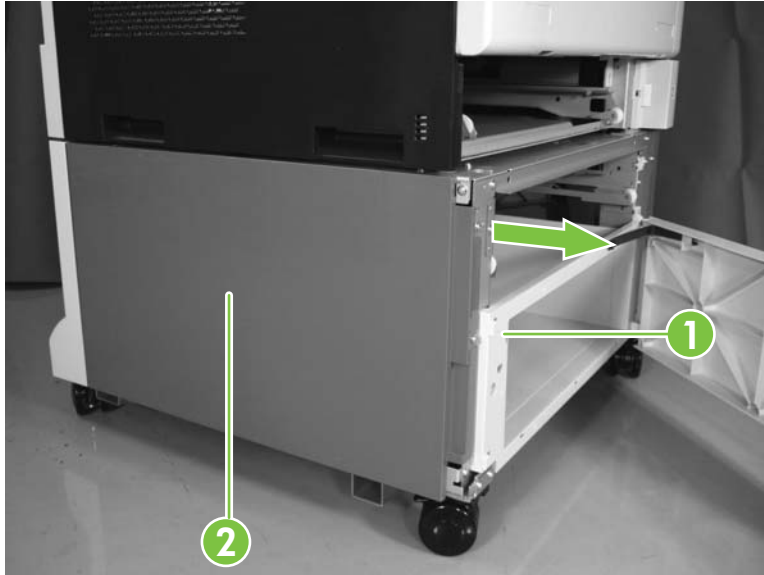
Figure 6-161 Remove the front-upper cover



Lower-left cover

1. Remove the following:
 - Front-upper cover. See [Front-upper cover on page 324](#).
2. Remove one screw (callout 1). Slide the left cover (callout 2) in the direction indicated to remove it.

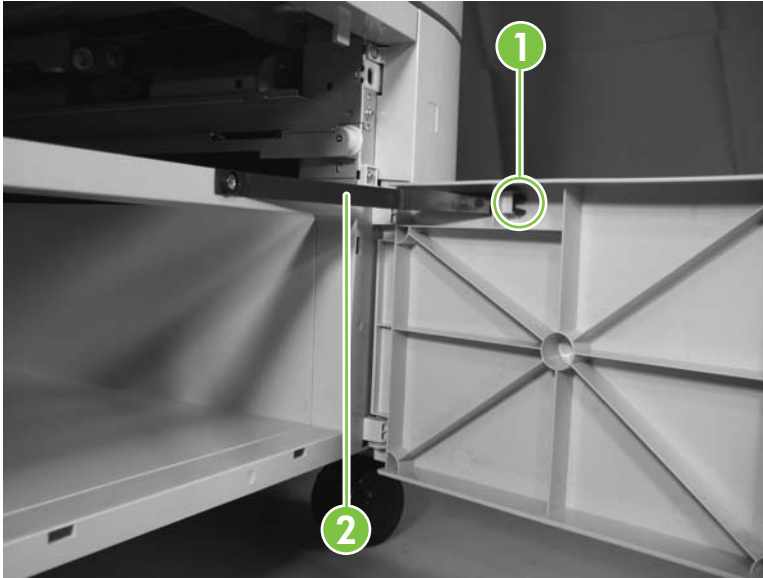
Figure 6-162 Remove the lower-left cover



Front-lower door

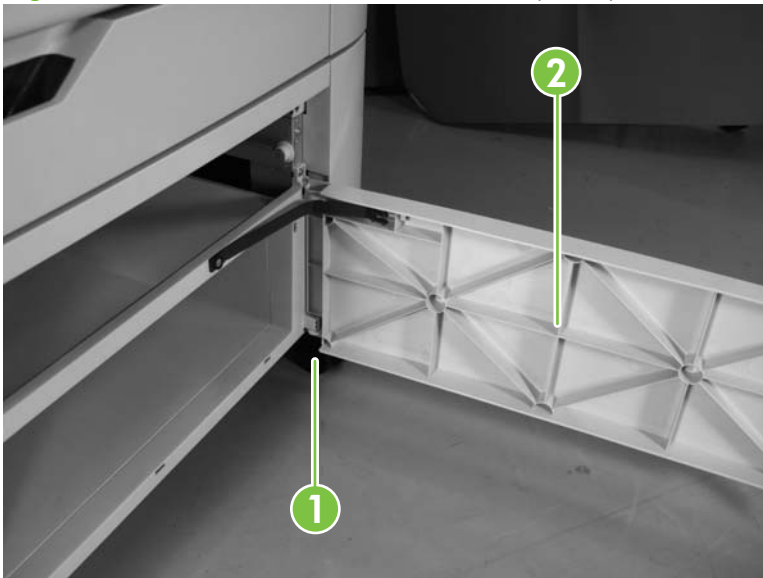
1. Remove the following:
 - Tray 3. See [Trays 3, 4, and 5 on page 208](#).
2. Release one tab (callout 1), and then remove the arm (callout 2).

Figure 6-163 Remove the front-lower cover (1 of 2)



3. Clear the bottom pin (callout 1), and then lift the front-lower door (callout 2) to remove it.

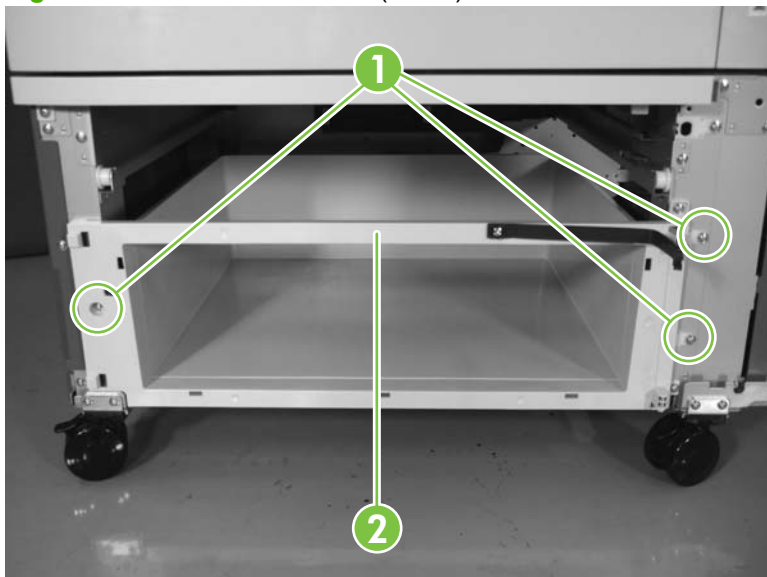
Figure 6-164 Remove the front-lower cover (2 of 2)



Box

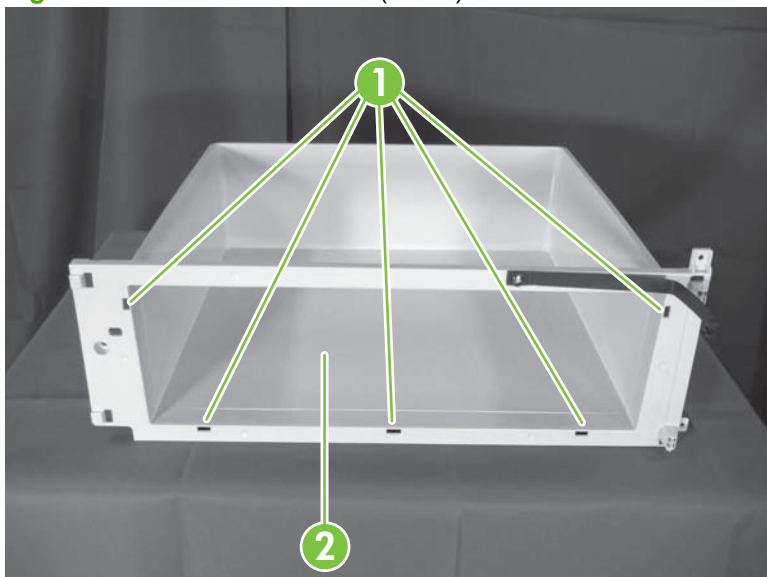
1. Remove the following:
 - Front-lower door. See [Front-lower cover on page 317](#).
 - Front-right cover. See [Front-right cover on page 322](#).
2. Remove three screws (callout 1), and then remove the box with the inner cover (callout 2).

Figure 6-165 Remove the box (1 of 2)



3. Release the five tabs (callout 1), and then remove the box (callout 2).

Figure 6-166 Remove the box (2 of 2)



Pickup unit

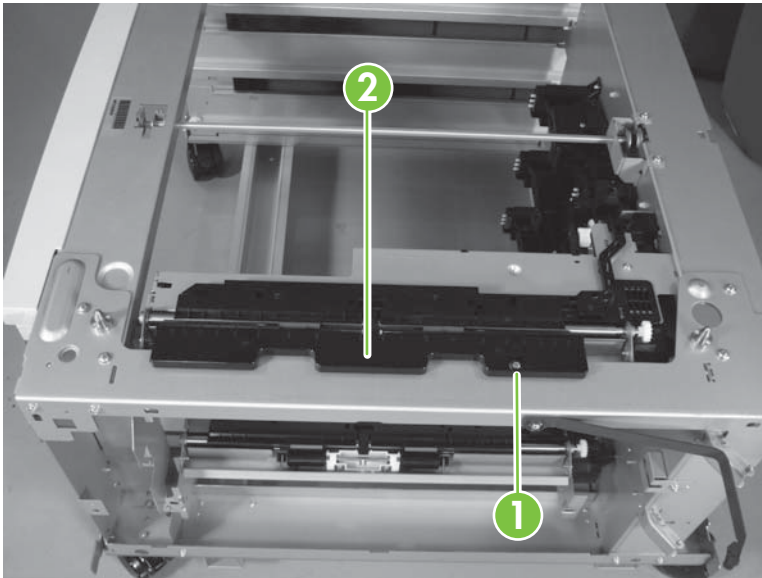
The procedure varies depending on whether the input tray is attached to the product.

- Remove the following:
 - Tray 3. See [Trays 3, 4, and 5 on page 208](#).
 - Lower-rear cover. See [Lower-rear cover on page 321](#).
 - Right cover. See [Right cover on page 323](#).

Input tray is not attached

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

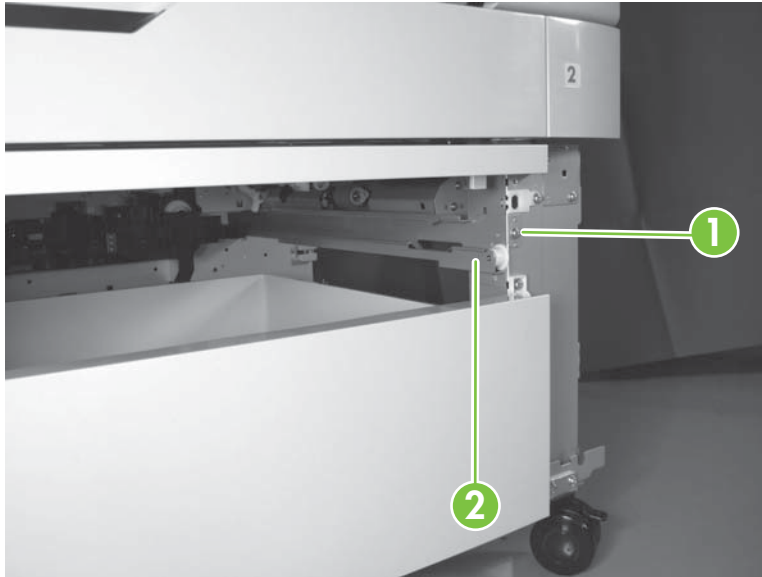
Figure 6-167 Remove the pickup unit (1 of 3)



Input tray is attached

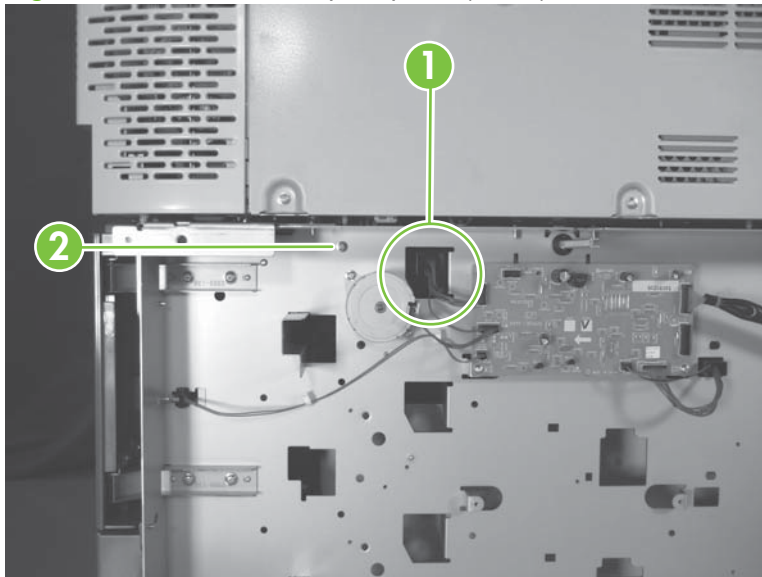
1. Remove one screw (callout 1), and then remove the cassette guide rail (callout 2).

Figure 6-168 Remove the pickup unit (1 of 3)



2. Disconnect three connectors (callout 1), and then remove one screw (callout 2).

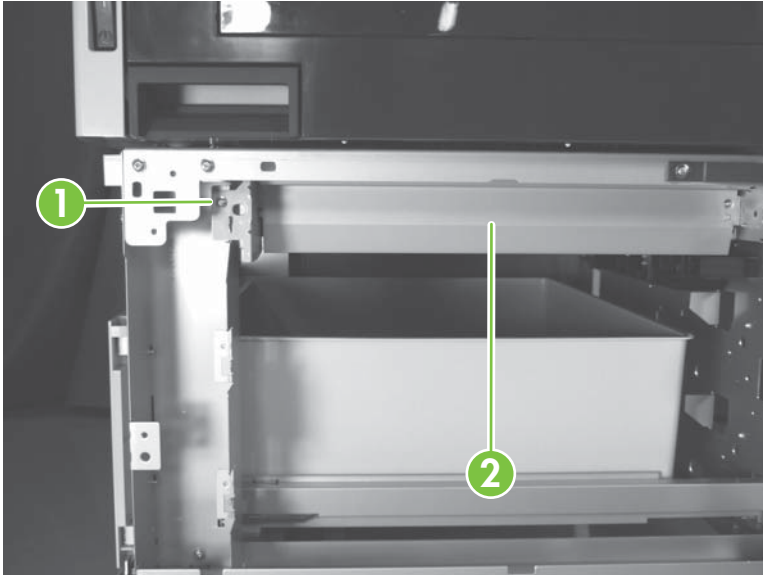
Figure 6-169 Remove the pickup unit (2 of 3)



3. Remove one screw (callout 1). Grasp the pickup unit (callout 2), pull the left end off the sheet metal tab, and shift it left to release the right shaft. Pull the pickup unit forward to remove it.

 **NOTE:** If the pickup unit does not come out easily, gently slide a flat screwdriver over the top of the pickup unit to clear any interference with the feed guide.

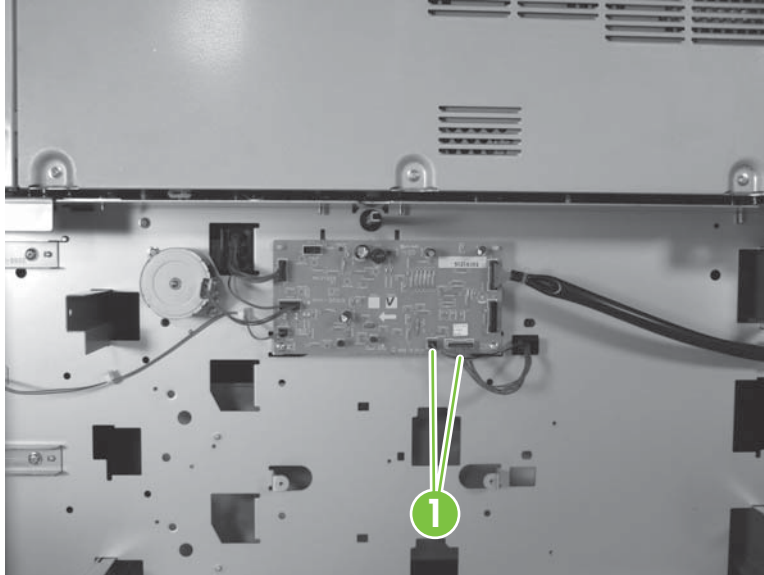
Figure 6-170 Remove the pickup unit (2 of 3)



Auto-close unit

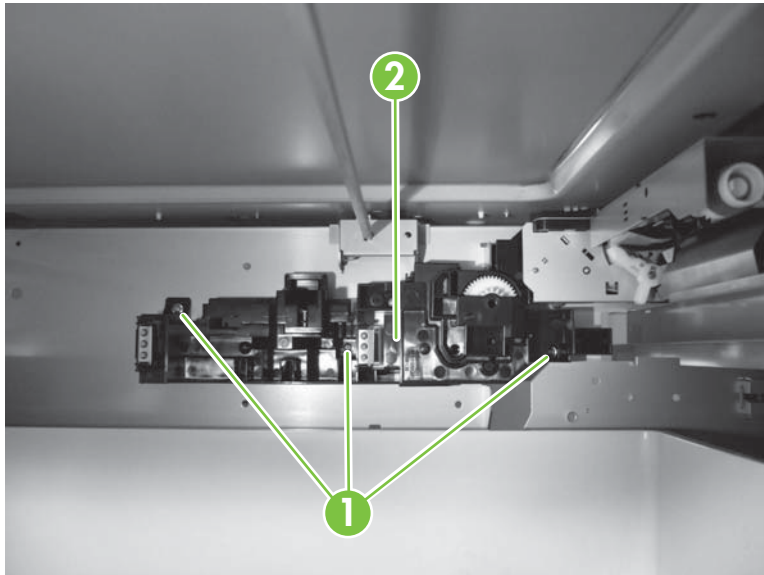
1. Remove the following:
 - Tray 3. See [Trays 3, 4, and 5 on page 208](#).
 - Lower rear cover. See [Lower-rear cover on page 321](#).
2. Disconnect the two connectors (callout 1).

Figure 6-171 Remove the auto-close unit (1 of 2)



3. Remove three screws (callout 1), and then remove the auto-close unit (callout 2).

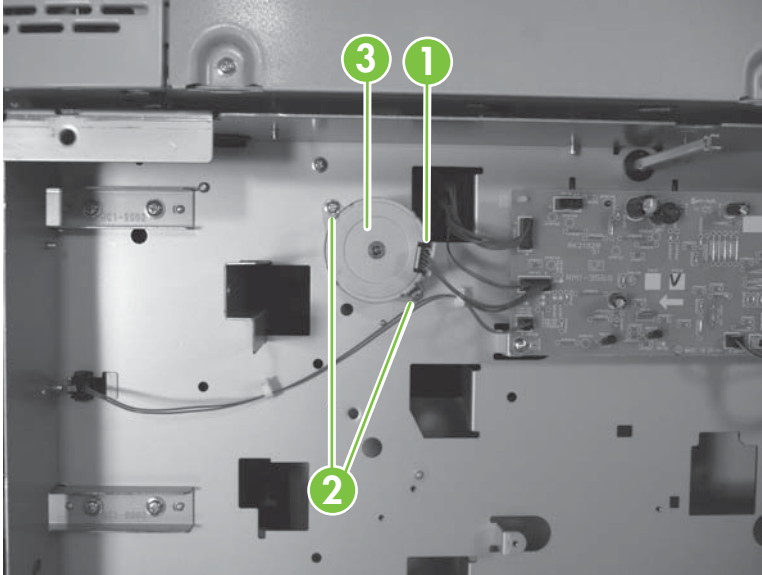
Figure 6-172 Remove the auto-close unit (2 of 2)



Pickup motor

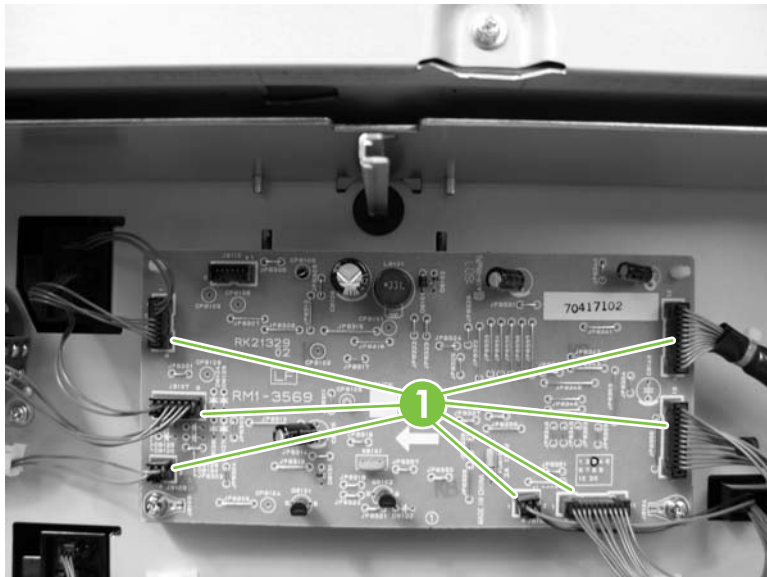
1. Remove the following:
 - Rear cover. See [Lower-rear cover on page 321](#).
2. Disconnect one connector (callout 1).
3. Remove two screws (callout 2), and then remove the pickup motor (callout 3).

Figure 6-173 Remove the pickup motor



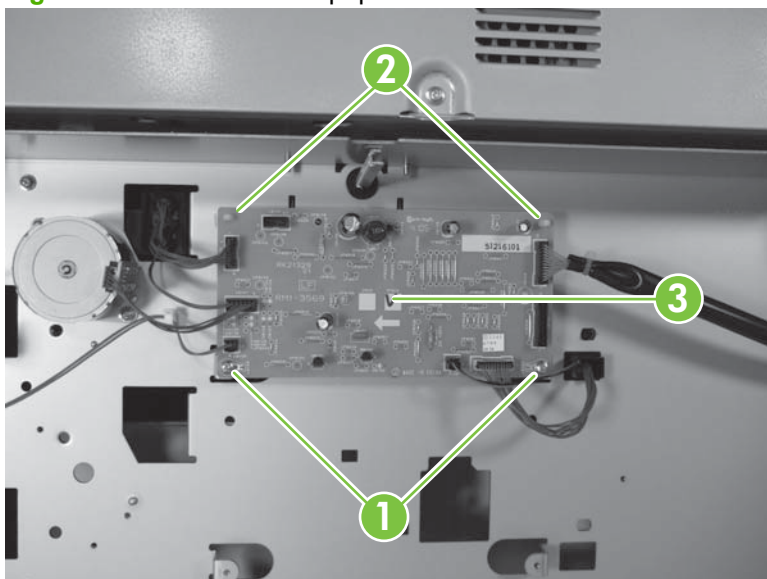
Paper-feeder driver PCA

1. Remove the following:
 - Rear cover. See [Lower-rear cover on page 321](#).
2. Disconnect seven connectors on the paper-feeder driver PCA.



3. Remove two screws (callout 1), release two tabs (callout 2), and then remove the paper-feeder driver PCA (callout 3).

Figure 6-174 Remove the paper-feeder driver PCA



3 x 500-sheet input tray

Right door

To remove use the same procedure as with the 1 x 500 input tray. See [Right door on page 319](#).

Lower-rear cover

To remove use the same procedure as with the 1 x 500-sheet input tray. See [Lower-rear cover on page 321](#).

Front-right cover

To remove use the same procedure as with the 1 x 500-sheet input tray. See [Front-right cover on page 322](#).

Right cover

To remove use the same procedure as with the 1 x 500-sheet input tray. See [Right cover on page 323](#).

Front-upper cover

To remove use the same procedure as with the 1 x 500-sheet input tray. See [Front-upper cover on page 284](#).

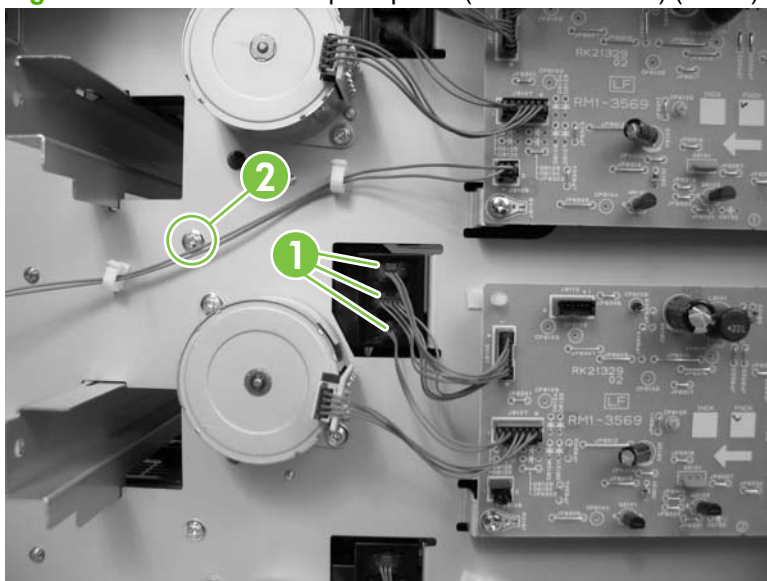
Left cover

To remove use the same procedure as that found with the 1 x 500-sheet input tray. See [Lower-left cover on page 325](#).

Pickup unit (middle cassette)

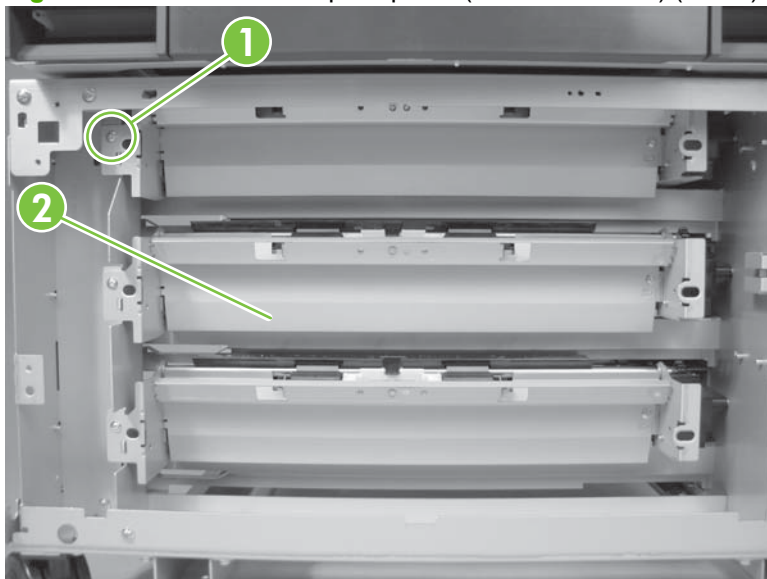
1. Remove the following:
 - Tray 4. See [Trays 3, 4, and 5 on page 208](#).
 - Lower-rear cover. See [Lower-rear cover on page 321](#).
 - Right cover. See [Right cover on page 323](#).
2. Disconnect the three connectors (callout 1), and then remove one screw (callout 2).

Figure 6-175 Remove the pickup unit (middle cassette) (1 of 2)



3. Remove one screw (callout 1). Grasp the pickup unit (callout 2), and then shift to the left to release the right shaft. Pull the unit forward to remove it.

Figure 6-176 Remove the pickup unit (middle cassette) (2 of 2)



Pickup unit (lower cassette)

To remove use the same procedure as with the pickup unit (middle cassette). See [Pickup unit \(middle cassette\) on page 335](#).

Pickup unit (upper cassette)

The procedure varies depending on whether the input tray is attached to the product.

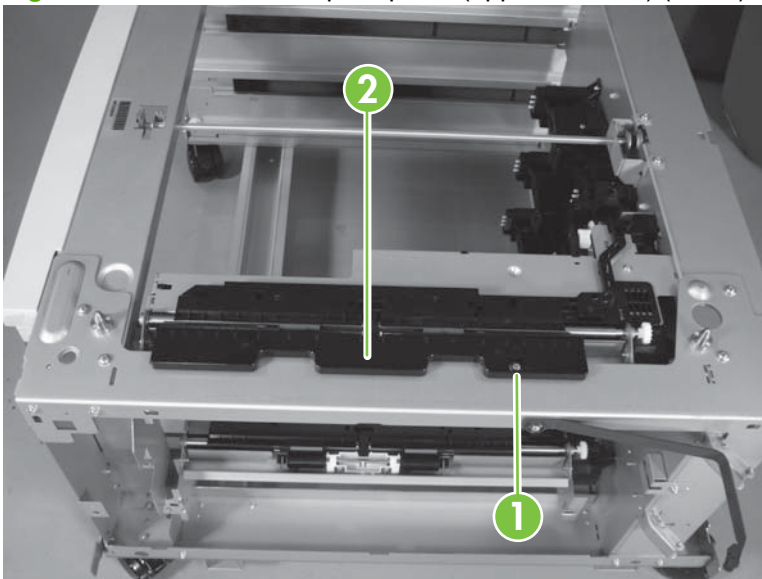
☐ Remove the following:

- Pickup unit (middle cassette). See [Pickup unit \(middle cassette\) on page 335](#).

Input tray is not attached

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

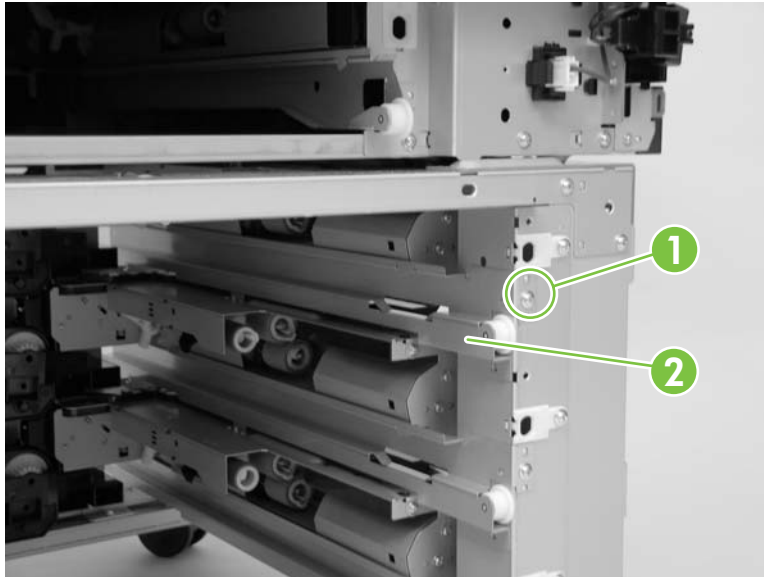
Figure 6-177 Remove the pickup unit (upper cassette) (1 of 3)



Input tray is attached

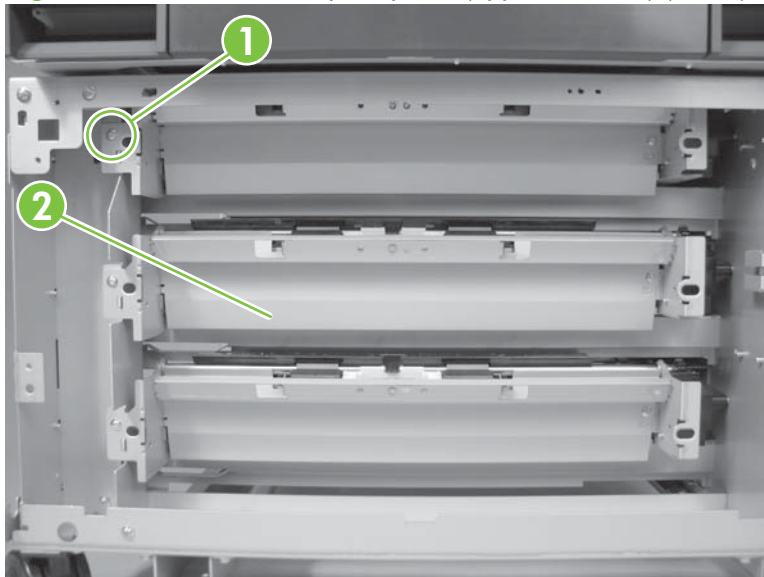
1. Remove one screw (callout 1), and then remove the cassette guide rail (callout 2).

Figure 6-178 Remove the pickup unit (upper cassette) (1 of 3)



2. Disconnect three connectors (callout 1), and then remove one screw (callout 2).

Figure 6-179 Remove the pickup unit (upper cassette) (2 of 3)

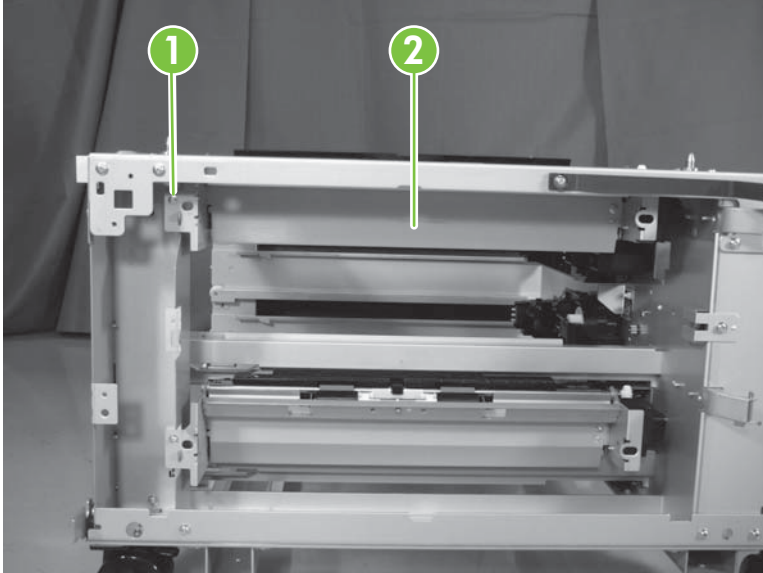


3. Remove one screw (callout 1).

4. Grasp the pickup unit (callout 2), pull the left end off the sheet metal tab, and shift to the left to release the right shaft. Pull the unit forward to remove it.

 **NOTE:** If the pickup unit does not come out easily, gently slide a flat screwdriver over the top of the pickup unit to clear any interference with the feed guide.

Figure 6-180 Remove the pickup unit (upper cassette) (3 of 3)



Auto-close unit

To remove use the same procedure as with the 1 x 500-sheet input tray. See [Auto-close unit on page 331](#).

Pickup motor

To remove use the same procedure as with the 1 x 500-sheet input tray. See [Pickup motor on page 332](#).

Paper-feeder driver PCA

To remove use the same procedure as with the 1 x 500-sheet input tray. See [Paper-feeder driver PCA on page 333](#).

7 Solve problems

- [Troubleshooting process](#)
- [Tools for troubleshooting](#)
- [Solve performance problems](#)
- [Solve connectivity problems](#)
- [Control-panel message types](#)
- [Control-panel messages](#)
- [Event log messages](#)
- [Paper-handling problems](#)
- [Solve image-quality problems](#)
- [Interface troubleshooting](#)
- [Engine diagnostics](#)
- [Service mode functions](#)
- [Diagrams](#)
- [Signals](#)

Troubleshooting process

Determine the problem source

When the product malfunctions or encounters an unexpected situation, the product control panel alerts you to the situation. This section contains a pre-troubleshooting checklist to filter out many possible causes of the problem. A troubleshooting flowchart helps you diagnose the root cause of the problem. The remainder of this chapter provides steps for correcting problems.

- Use the pre-troubleshooting checklist to evaluate the source of the problem and to reduce the number of steps that are required to fix the problem.
- Use the troubleshooting flowchart to pinpoint the root cause of hardware malfunctions. The flowchart guides you to the appropriate section of this chapter that provides steps for correcting the malfunction.

Before beginning any troubleshooting procedure, check the following conditions:

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



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

Pre-troubleshooting checklist

The list below describes basic questions to ask the customer to help quickly define the problem(s).

Table 7-1 Pre-troubleshooting checklist

Environment	● Is the product installed on a solid, level surface? ● Is the product exposed to particle matter or dust? ● Is the power-supply voltage within ± 10 volts of the specified power source? ● Is the power supply plug inserted in the product and directly to the wall outlet (not a power strip)? ● Is the operating environment within the specified parameters, as listed in chapter 1 of this manual? ● Is the product exposed to ammonia gas, such as that produced by diazo copiers or office cleaning materials? ● Is the product exposed to direct sunlight?
Media	● Does the customer use only supported media? ● Is the media in good condition (contains no curls, folds, and so forth)? ● Is the media stored correctly and within environmental limits?
Input trays	● Is the amount of media in the tray within specifications? ● Is the media placed in the tray correctly?

Table 7-1 Pre-troubleshooting checklist (continued)

	• Are the paper guides aligned with the media? • Is the paper tray correctly installed in the product?
Print cartridges	• Is each print cartridge correctly installed? • Are original HP print cartridges installed? • Are the cartridges damaged?
ITB and fuser	• Are the ITB and fuser correctly installed? • Is the ITB or fuser damaged?
Covers	• Are the top cover and front cover closed?
Condensation	• Does condensation occur following a temperature change (particularly in winter following cold storage)? If so, wipe the affected area dry or leave the product on for 10 to 20 minutes. • Was a print cartridge installed soon after being moved from a cold to a warm room? If so, allow the product to sit at room temperature for one to two hours.
Miscellaneous	• Check for and remove any non-HP components (print cartridges, memory modules, and EIO cards) from the product. • If hardware or software configuration has not changed, or the problem is not associated with any specific software, contact the Customer Care Center (see chapter 1). • Remove the product from the network, and ensure that the failure is associated with the product before beginning troubleshooting. • For any print-quality issues, calibrate the product. See Calibrate the product on page 479.

Troubleshooting checklist

If the product is not responding correctly, complete the steps in the following checklist, in order. If the product does not pass a step, follow the corresponding troubleshooting suggestions. If a step resolves the problem, you can stop without performing the other steps on the checklist.

1. Make sure one of the following messages display on the control panel: **READY**, **PAUSED**, or **SLEEP MODE ON**. If no lights are on or the display does not say **READY**, **PAUSED**, or **SLEEP MODE ON**, see [Power-on checks on page 345](#).
2. Check the cabling.
 - a. Check the cable connection between the product and the computer or network port. Make sure that the connection is secure.
 - b. Make sure that the cable itself is not faulty by using a different cable, if possible.
 - c. Check the network connection. See [Solve network printing problems on page 354](#).
3. Ensure that the print media that you are using meets specifications.

4. Print a configuration page (see [Information pages on page 74.](#)) If the product is connected to a network, an HP Jetdirect page also prints.
 - a. If the pages do not print, check that at least one tray contains print media.
 - b. If the page jams in the product, see [Jams on page 428.](#)
5. If the configuration page prints, check the following items.
 - a. If the page prints correctly, then the product hardware is working. The problem is with the computer that you are using, with the printer driver, or with the program.
 - b. If the page does not print correctly, the problem is with the product hardware.
6. Does the image quality meet the user's requirements? If yes, go to step 7. If no, check the following items:
 - Print the print-quality troubleshooting pages. See [Example print quality problems on page 476](#) in this chapter.
 - Solve the print-quality problems, and then go to step 7.
7. At the computer, check to see if the print queue is stopped, paused, or set to print offline.

Windows: Click **Start**, click **Settings**, and then click **Printers** or **Printers and Faxes**. Double-click **HP Color LaserJet CP6015**.

-or-

Mac OS X: Open **Printer Setup Utility**, and then double-click the line for the **HP Color LaserJet CP6015**.
8. Verify that you have installed the HP Color LaserJet CP6015 Series printer driver. Check the program to make sure that you are using the HP Color LaserJet CP6015 Series printer driver.
9. Print a short document from a different program that has worked in the past. If this solution works, then the problem is with the program that you are using. If this solution does not work (the document does not print) complete these steps:
 - a. Try printing the job from another computer that has the product software installed.
 - b. If you connected the product to the network, connect the product directly to a computer with a USB cable. Redirect the product to the correct port, or reinstall the software, selecting the new connection type that you are using.

Troubleshooting flowchart

This flowchart highlights the general processes that you can follow to quickly isolate and solve product hardware problems.

Each row depicts a major troubleshooting step. A “yes” answer to a question allows you to proceed to the next major step. A “no” answer indicates that additional testing is needed. Proceed to the appropriate section in this chapter, and follow the instructions there. After completing the instructions, proceed to the next major step in this troubleshooting flowchart.

Table 7-2 Troubleshooting flowchart

1 Power on	Is the product on and does a readable message display?		Follow the power-on troubleshooting checks. See Power-on checks on page 345 .
	Yes ↓	No →	After the control panel display is functional, go to step 2.
2 Control panel messages	Does the message READY display on the control panel?		If an error message displays, see Control-panel messages on page 357 .
	Yes ↓	No →	After the errors have been corrected, go to step 3.
3 Event log	Open the DIAGNOSTICS menu and print an event log to see the history of errors with this product.		If the event log does not print, see Print an event log on page 422 .
	Does the event log print?		If paper jams inside the product, see Jams on page 428 .
	Yes ↓	No →	If error messages display on the control panel when you try to print an event log, see Control-panel messages on page 357 . After successfully printing and evaluating the event log, go to step 4.
4 Information pages	Open the INFORMATION menu and print the configuration pages to verify that all of the accessories are installed.		If accessories that are installed are not listed on the configuration page, remove the accessory and reinstall it.
	Are all of the accessories installed?		For more information about optional output devices, see Output accessories and intermediate paper-transfer unit (IPTU) on page 579 .
	Yes ↓	No →	After evaluating the configuration pages, go to step 5.
5 Image quality	Does the print quality meet the customer's requirements?		Compare the images with the sample defects in the image defect tables. See Image-quality issues on page 487 .
	Yes ↓	No →	After the print quality is acceptable, go to step 6.
6 Interface	Can the customer print successfully from the host computer?		Verify that all I/O cables are connected correctly and that a valid IP address is listed on the Jetdirect configuration page.
	Yes. This is the end of the troubleshooting process.	No →	See HP embedded Jetdirect page on page 350 . If error messages display on the control panel, see Control-panel messages on page 357 . When the customer can print from the host computer, this is the end of the troubleshooting process.

Power subsystem

Power-on checks

The basic product functions should start up as soon as the product is plugged into an electrical outlet and the power switch is pushed to the *on* position. If the product does not start, use the information in this section to isolate and solve the problem.

Power-on troubleshooting overview

Turn on the product power. If the control panel display remains blank, random patterns display, or asterisks remain on the control panel display, perform power-on checks to locate the cause of the problem.

During normal operation, the main cooling fan begins to spin briefly after the product power is turned on. Place your hand over the holes in the rear cover, above the formatter. If the fan is operating, you will feel air passing out of the product. You can also lean close to the product and hear the fan operating. When this fan is operational, the DC side of the power supply is functioning correctly.

After the fan is operating, the main motor turns on (unless the top cover is open, a jam condition is sensed, or the paper-path sensors are damaged). You should be able to visually and audibly determine if the main motor is turned on.

If the fan and main motor are operating correctly, the next troubleshooting step is to isolate print engine, formatter, and control panel problems. Perform an engine test (see [Engine-test button on page 495](#)). If the formatter is damaged, it might interfere with the engine test. If the engine-test page does not print, try removing the formatter and then performing the engine test again. If the engine test is then successful, the problem is almost certainly with the formatter, the control panel, or the cable that connects them.

If the control panel is blank when you turn on the product, check the following items.

1. Make sure that the product is plugged directly into an active electrical outlet (not a power strip) that delivers the correct voltage.
2. Make sure that the power switch is in the *on* position.
3. Make sure that the fan runs briefly, which indicates that the power supply is operational.
4. Make sure that the control panel display wire harness is connected. See [Control panel on page 282](#).
5. Make sure that the formatter is seated and operating correctly.
6. Remove any HP Jetdirect or other EIO cards, and then try to turn the product on again.

 **NOTE:** If the control panel display is blank, but the main cooling fan runs briefly after the product power is turned on, try printing an engine-test page to determine whether the problem is with the control-panel display, formatter, or other product components.

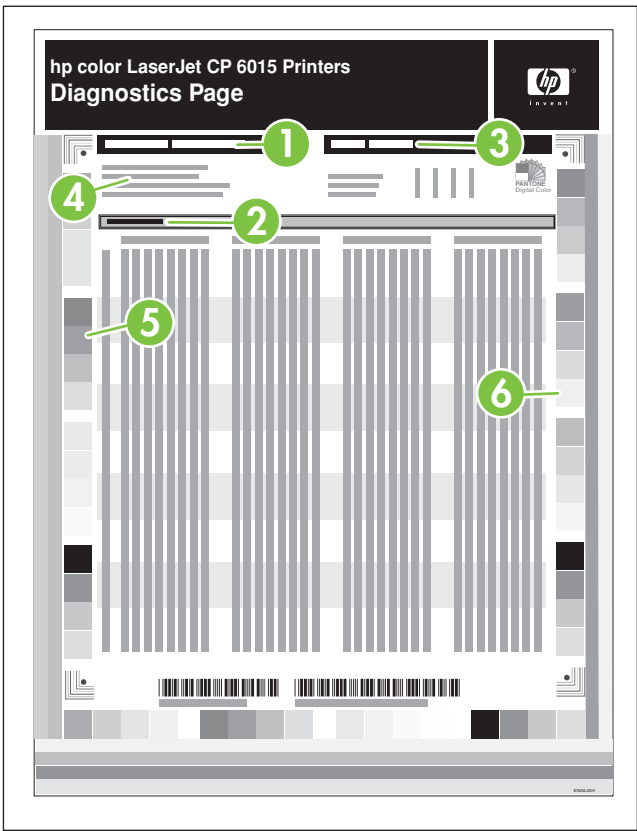
Tools for troubleshooting

Internal print-quality test pages

Diagnostics page

Use the diagnostics page to evaluate problems with color plane registration, EP parameters, and print quality.

1. Press **Menu**.
2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **PRINT DIAGNOSTICS PAGE**, and then press the checkmark button ✓ to print the page.



1	Calibration information
2	Parameters
3	Color density
4	Color plane registration
5	Primary colors
6	Secondary colors
7	Horizontal banding

8	Temperature values (22M)
9	Humidity values (22N)

Configuration pages

Depending on the model, up to three pages print when you select **PRINT CONFIGURATION**. In addition to the main configuration page, an embedded Jetdirect configuration page prints as well as a page for the stapler/stacker.

Configuration page

Use the configuration page to view current product settings, to help troubleshoot product problems, or to verify installation of optional accessories, such as memory (DIMMs), paper trays, and printer languages.

1. Press **Menu**.
2. Press the down arrow ▼ to highlight **INFORMATION**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **PRINT CONFIGURATION**, and then press the checkmark button ✓.

The message **PRINTING CONFIGURATION** displays on the control panel until the product finishes printing the configuration page. The product returns to the **READY** state after printing the configuration page.

 **NOTE:** If the product is configured with EIO cards (for example, an HP Jetdirect Print Server) or an optional hard-disk drive, an additional configuration page will print that provides information about those devices.

Figure 7-1 Configuration page



1	Printer information
2	Installed personalities and options
3	Color density
4	Calibration information
5	Memory
6	Event log
7	Security
8	Paper trays and options

HP embedded Jetdirect page

The second configuration page is the HP embedded Jetdirect page, which contains the following information:

Figure 7-2 HP embedded Jetdirect page



1	HP Jetdirect Configuration indicates the product status, model number, hardware firmware version, port select, port configuration, auto negotiation, manufacturing identification, and manufactured date.
2	Security Settings information
3	Network Statistics indicates the total packets received, unicast packets received, bad packets received, framing errors received, total packets transmitted, unsendable packets, transmit collisions, and transmit late collisions.
4	TCP/IP information, including the IP address
5	IPX/SPX information
6	Novell/NetWare information
7	AppleTalk information
8	DLC/LLC information

Always make sure the status line under the HP Jetdirect configuration lines indicates "I/O Card Ready".

Embedded protocol page

The embedded protocol page contains the following information:

Figure 7-3 Embedded protocol page



1	IPX/SPX
2	Novell/NetWare
3	AppleTalk
4	DLC/LLC

Finding important information on the configuration pages

Certain information, such as the firmware date codes, the IP address, and the e-mail gateways, is especially helpful while servicing the product. This information is on the various configuration pages. [Table 7-3 Important information on the configuration pages on page 352](#) describes where to look for this information.

Table 7-3 Important information on the configuration pages

Type of information	Specific information	Configuration page
Firmware date codes When you use the remote firmware upgrade procedure, all of these firmware components are upgraded.	DC controller	Look on the main configuration page, under "Device Information."
	Firmware datecode	Look on the main configuration page, under "Device Information."
	Stapler/stacker firmware datecode	Look on the paper handling configuration page, under "Product Name."
	Embedded Jetdirect firmware version	Look on the embedded Jetdirect page, under "HP Jetdirect Configuration."
Accessories and internal storage All optional devices that are installed on the product should be listed on the main configuration page. In addition, separate pages print for the optional paper handling devices and the fax accessory. These pages list more-detailed information for those devices.	Internal disk (4700ph+ model only)	Look on the main configuration page, under "Installed Personalities and Options." Shows model and capacity.
	Embedded HP Jetdirect	Look on the main configuration page, under "Installed Personalities and Options." Shows model and ID.
	Total RAM	Look on the main configuration page, under "Memory."
	Duplex unit	Look on the main configuration page, under "Paper Trays and Options."
Additional 500-sheet feeders and optional output devices	Additional 500-sheet feeders and optional output devices	Look on the main configuration page, under "Paper Trays and Options."
Engine cycles and event logs Total page counts and maintenance kit counts are important for ongoing product maintenance. The configuration page lists only the three most recent errors. To see a list of the 50 most recent errors, print an event log from the DIAGNOSTICS menu.	Engine cycles	Look on the main configuration page, under "Device Information."
Pages since last maintenance (print engine maintenance count)	Pages since last maintenance (print engine maintenance count)	Look on the main configuration page, under "Device Information."
Event-log information	Event-log information	Look on the main configuration page, under "Event log."

Solve performance problems

Problem	Cause	Solution
Pages print but are totally blank.	The sealing tape might still be in the print cartridges.	Verify that the sealing tape has been completely removed from the print cartridges.
	The document might contain blank pages.	Check the document that you are printing to see if content appears on all of the pages.
	The product might be malfunctioning.	To check the product, print a configuration page.
Pages print very slowly.	Heavier media types can slow the print job.	Print on a different type of media.
	Complex pages can print slowly.	Proper fusing may require a slower print speed to ensure the best print quality.
	If printed in large batches, narrow paper can slow the print job.	Print on a different paper size or in smaller batches.
Pages did not print.	The product might not be pulling media correctly.	Make sure paper is loaded in the tray correctly. If the problem persists, you might need to replace the pickup rollers and the separation pad. See Tray-1 pickup and separation rollers on page 199 .
	The media is jamming in the product.	Clear the jam. See Jams on page 428 .
	The USB cable or network cable might be defective or incorrectly connected.	• Disconnect the cable at both ends and reconnect it. • Try printing a job that has printed in the past. • Try using a different cable.
	Other devices are running on your computer.	The product might not share a USB port. If you have an external hard drive or network switchbox that is connected to the same port as the product, the other device might be interfering. To connect and use the product, you must disconnect the other device or you must use two USB ports on the computer.

Solve connectivity problems

Solve direct-connect problems

If you have connected the product directly to a computer, check the USB cable.

- Verify that the cable is connected to the computer and to the product.
- Verify that the cable is not longer than 2 meters (6 feet). Replace the cable if necessary.
- Verify that the cable is working correctly by connecting it to another product. Replace the cable if necessary.

Solve network connectivity problems

If the product is having problems communicating with the network, use the information in this section to resolve the problem.

Solve network printing problems

 **NOTE:** HP recommends that you use the product CD to install and set up the product on a network.

- Make sure that the network cable is securely seated into the product's RJ45 connector.
- Make sure that the Link LED on the formatter is lit. See [Understand lights on the formatter on page 494](#).
- Make sure that the I/O card is ready. Print a configuration page (see [Information pages on page 74](#)). If an HP Jetdirect print server is installed, printing a configuration page also prints a second page that shows the network settings and status.

 **NOTE:** The HP Jetdirect print server supports various network protocols (TCP/IP, IPX/SPX, Novell NetWare, AppleTalk, and DCL/LLC). Make sure that the correct protocols and network parameters are set correctly.

On the HP Jetdirect configuration page, verify the following items for your protocol:

- Under HP Jetdirect Configuration, the status is "I/O Card Ready."
- Protocol status is "Ready."
- An IP address is listed.
- The configuration method (Config by:) is listed correctly. See the network administrator if you are not sure which method is correct.
- Try printing the job from another computer.
- To verify that a product works with a computer, use a USB cable to connect it directly to a computer. You will have to reinstall the printing software. Print a document from a program that has printed correctly in the past. If this works, a problem with the network might exist.
- Contact your network administrator for assistance.

Verify communication over the network

If the HP Jetdirect configuration page shows an IP address for the product, use this procedure to verify that you can communicate with the product over the network.

1. **Windows:** Click **Start**, click **Run**, and then type `cmd`. An MS-DOS command prompt opens.

-or-

Mac: Click **Applications**, click **Utilities**, and then open the Terminal application. The terminal window opens.

2. Type `ping` followed by the IP address. For example, type `ping XXX.XXX.XXX.XXX` where "XXX.XXX.XXX.XXX" is the IPv4 address that is shown on the HP Jetdirect configuration page. If the product is communicating over the network, the response is a list of replies from the product.
3. Verify that the IP address is not a duplicate address on the network by using the address resolution protocol (`arp -a`) command. At the prompt, type `arp -a`. Find the IP address in the list and compare its physical address to the hardware address that is listed on the HP Jetdirect configuration page in the section called HP Jetdirect Configuration. If the addresses match, all network communications are valid.
4. If you cannot verify that the product is communicating over the network, contact the network administrator.

Control-panel message types

Four types of control-panel messages can indicate the status of or problems with the product.

Message type	Description
Status messages	Status messages reflect the current state of the product. They inform you of normal product operation and require no interaction to clear them. They change as the state of the product changes. Whenever the product is ready, not busy, and has no pending warning messages, the status message READY appears if the product is online.
Warning messages	Warning messages inform you of data and print errors. These messages typically alternate with the READY or status messages and remain until you press the checkmark button ✓. Some warning messages are clearable. If CLEARABLE WARNINGS is set to JOB , the next print job clears these messages.
Error messages	Error messages communicate that some action must be performed, such as adding paper or clearing a jam. Some error messages are auto-continuable. If AUTO CONTINUE is set on the menus, the product will continue normal operation after an auto-continuable error message appears for 10 seconds. NOTE: Pressing any button during the 10-second auto-continuable error message overrides the AUTO CONTINUE setting, and a button function takes precedence. For example, pressing the Stop button pauses printing with an option to cancel the print job.
Critical-error messages	Critical error messages inform you of a product failure. Some of these messages can be cleared by turning the product off and then on. These messages are not affected by the AUTO CONTINUE setting. If a critical error persists, service is required.

Control-panel messages

Table 7-4 Control-panel messages

Control panel message	Description	Recommended action
10.32.00 Unauthorized Supply For help press ? (Help button)	An unauthorized print cartridge has been installed.	1. Press the checkmark button ✓ to continue with this print cartridge.
10.90.XY REPLACE <COLOR> CARTRIDGE	A toner replenishment malfunction has occurred.	Replace the print cartridge. If replacing the print cartridge does not fix the problem, replace the corresponding image drum.
10.91.00 PRINT CARTRIDGE ERROR For help press ? (Help button) REPLACE BLACK PRINT CARTRIDGE To continue turn off then on	There is an error with the black-toner feed motor.	The black print cartridge is defective and needs to be replaced. Please record message and contact support. After replacing the defective cartridge turn the power off then on to continue. 1. Reconnect the connectors for the black-toner feed-motor rotational-count sensor (J2024), intermediate (J1930), and the DC controller PCA (J131). 2. Reconnect the connectors for the color/black I/F PCA (J2201B), cartridge driver PCA (J403, J404, and J405), and the DC controller PCA (J141). 3. Replace the black-toner feed motor.
10.91.09 PRINT CARTRIDGE ERROR For help press ? (Help button) REPLACE BLACK PRINT CARTRIDGE To continue turn off then on	There is an error with the color-toner feed motor.	One of the cyan, magenta, or yellow print cartridges is defective and needs to be replaced. Please record the message and contact support. After replacing the defective cartridge, turn the power off then on to continue. 1. Reconnect the connectors for the color-toner feed-motor rotational-count sensor (J2023), intermediate (J1929), and the DC controller PCA (J131). 2. Reconnect the connectors for the yellow/magenta cartridge I/F PCA (J2201A), the cyan/black cartridge I/F PCA (J2201B), the cartridge driver PCA (J402, J403, J406, and J408), and the DC controller PCA (J142). 3. Replace the color-toner feed motor.
10.XX.YY SUPPLY MEMORY ERROR For help press ? (Help button)	The product cannot read or write to at least one print cartridge e-label or an e-label is missing from a print cartridge.	Reinstall the print cartridge, or install a new print cartridge.
10.XX.YY SUPPLY MEMORY ERROR For help press ? (Help button)	The product cannot read or write to at least one image drum. 10.10.00-10.10.03 = Missing e-label on print cartridge	1. Open the front door. 2. Replace the specified image drum. 3. Close the front door.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
	10.10.05-10.10.08 = Missing e-label on image drum 10.00.00-10.00.03 = Defective e-label on print cartridge 10.00.05-10.00.08 = Defective e-label on image drum	
11.XX Internal clock error To continue press ✓ (Checkmark button)	The product real time clock has experienced an error.	Whenever the product is turned off and then turned on again, set the time and date at the control panel. See Use the control panel on page 14. If the error persists, replace the formatter.
13.12.11	Finisher stay jam at either PI33 or PI34 when engine powered on. When the engine is powered on, the finisher's upper-feed-path-entry sensor (PI33) or the upper-feed-path-exit sensor (PI34) is activated suggesting that there is paper in the upper paper path of the finisher at sensors PI33 or PI34.	Signal generated from PI33 (upper-feed-path-entry sensor) and PI34 (upper-feed-path-exit sensor) To locate these sensors, see Detect jams in the stacker unit on page 636. 1. Open the top door and remove any media in the paper path (media detected at PI33). 2. Raise the upper paper path (exit) delivery rollers and remove any media in the paper path (media detected at PI34). 3. Check these sensors for obstructions. Verify that the sensor flags are not damaged, move freely, and are correctly aligned with the sensor body and properly mounted. Also check wiring and connectors for damage or loose connections. 4. Carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris. 5. Verify that the sensor connectors (J708 and J707) are fully seated on the stacker controller PCA. 6. Replace sensor PI33 and PI34. 7. Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
13.12.12	Finisher delay jam at PI33. The engine signals the finisher that paper is about to enter the finisher from the IPTU. The finisher's upper-feed-path-entry sensor (PI33), which detects paper entering the finisher, does not detect the paper within the expected time period triggering the error.	To locate this sensor, see Detect jams in the stacker unit on page 636.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		Open the IPTU and the finisher top door and check the following items: • If media is found in the IPTU but has not reached the finisher, perform the following steps: ◦ Remove and then reinstall the IPTU. Make sure that the connector is fully seated and that the IPTU is securely fastened. ◦ If the error persists, replace the IPTU. See IPTU on page 646. • If media is jammed at the exit point of the IPTU (prior to entering the finisher), perform the following steps: ◦ Verify that the finisher is securely fastened to the engine. ◦ Make sure that the finisher and IPTU are correctly aligned. Adjust the finisher castors to obtain a uniform gap between the finisher and the engine. The engine-to-finisher gap must be the same at the bottom and the top so that the finisher is parallel to the engine. With the engine-to-finisher gap correct, make sure that the finisher paper path entry point is aligned with the IPTU exit point. ◦ Check the finisher entry point guides for damage. ◦ Verify that the finisher rollers are turning before the media leaves the IPTU. If the rollers are not turning, test motor M9 by using the finisher component test from the control-panel display. If the motor does not activate during the test, check the connectors for motor M9 (inlet motor). Make sure that connector J705 is fully seated on the stacker controller PCA. If the error persists, replace motor M9 or the saddle paper-feeder assembly. Only if the error persists and the previous steps fail to correct the problem, replace the stacker

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		controller PCA. See Stacker controller PCA on page 737. • If media is found in the finisher but has not reached sensor PI33, perform the following steps: ◦ Check the upper and lower guides and rollers in the paper path for damage. ◦ Make sure that the media diverter gate (saddle-stitch flapper) is not blocking the paper path. • If media is found in the finisher covering sensor PI33 (the sensor is not detecting the media), perform the following steps: ◦ Check the sensor for obstructions. Verify that the sensor flag is not damaged, moves freely, and is correctly aligned with the sensor body. Make sure that the lower end of the flag is not damaged and is correctly positioned to activate the sensor. ◦ Make sure that the sensor is securely fastened to the chassis. ◦ Carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris. ◦ Verify that the wiring at the sensor is not damaged and that the intermediate connector J1007 and connector J708 on the stacker controller PCA are fully seated. Replace the sensor if necessary. ◦ Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
13.12.13	Finisher stay jam at PI33. Finisher's upper-feed-path-entry sensor (PI33) is remaining activated longer than expected, suggesting that paper has jammed at the sensor.	Control panel diagnostics: none To locate this sensor, see Detect jams in the stacker unit on page 636. 1. Remove any media in the upper paper path that might be activating sensor PI33. 2. Verify that the sensor flag is not damaged, moves freely, and is correctly aligned with the sensor body.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		- Carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris. - Verify that the wiring at the sensor is not damaged and that the connector J708 on the stacker controller PCA is fully seated.
13.12.14	Finisher delay jam at PI34. Upper-paper-path-entry sensor (PI33) has signaled that paper has passed but upper-paper-path exit sensor PI34 does not actuate within the expected time, suggesting that the paper has jammed between PI33 and PI34 in the upper paper path.	Control panel diagnostics: none To locate these sensors, see Detect jams in the stacker unit on page 636. - Remove any media jammed in the upper paper path between sensor PI33 and sensor PI34. - Check the paper path between sensor PI33 and sensor PI34 for obstructions that may be preventing the media from reaching PI34. - Verify that the PI34 sensor flag is not damaged, moves freely, and is correctly aligned with the sensor body. - Make sure that sensor PI34 is securely fastened to the chassis and wiring is properly connected to sensor. NOTE: Sensor PI34 is located on the front frame of the finisher, directly over the primary stapler. - Verify that the wiring at the sensor is not damaged and that the connector J707 on the stacker controller PCA is fully seated. - Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
13.12.15	Finisher stay jam at PI34 Finisher's upper-paper-path-exit sensor (PI34) remains activated longer than expected suggesting that paper has jammed at the sensor.	Control panel diagnostics: M31 (entrance motor), SL32 (buffer roller solenoid), and SL33 (output roller solenoid) To locate this sensor, see Detect jams in the stacker unit on page 636. PI34 is located on the front frame of the finisher, above the main stapler unit. - Remove any media in the upper paper path that might be activating sensor PI34. - Carefully clean the sensor body, by gently blowing clean air across the sensor to remove dust and debris.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		3. Verify that the sensor flag is not damaged, moves freely, and is correctly aligned with the sensor body. 4. Lift-swing-guide assembly at the paper-exit area to output bins and inspect for jammed paper, obstructions, or damage. 5. Run a diagnostic through the engine control panel and turn on M31 (entrance motor) to observe gear rotations on the upper-rear frame of the finisher. Ensure that the first-delivery rollers and buffer rollers that pass paper to and from PI34 are rotating. 6. Test SL32 (buffer-roller solenoid) and SL33 (output-roller solenoid) using the control panel diagnostics. 7. Check wiring from sensor PI34 to stacker-control board connector J707 for damage. 8. Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
13.12.16	Finisher jam: door opened during staple/stacking operation While the machine is printing, upper-door (open/close) sensor (PI31) or front-door (open/close) sensor (PI32) or the front-door (open/close) switch (MSW31) has signaled that one of the doors has been opened, suggesting that there may now be paper found in the upper paper path.	Control panel diagnostics: PI31 (top-door sensor), PI32 (front door sensor) Booklet maker only: check PI3 (Booklet Door 1 Sensor) (booklet-delivery door) 1. Make sure that the doors properly open and close and stay in the fully closed position. If the front door is not closing tightly at the top, it will not activate the door switch. If necessary, adjust the alignment of the front door by opening the door and carefully twisting it. 2. Verify that the sensor-activation arms on the doors are not damaged. 3. Make sure that the front-door sensor PI32 and switch MSW31 and top-door sensor PI31 are not obstructed. 4. Make sure that the arm on front-door switch MSSW31 is not bent or damaged. 5. Make sure that sensor PI32 and switch MSSW31 are securely fastened to the chassis. 6. Test sensor PI31 (upper-door sensor) and sensor PI32 (front-door sensor) by

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		using the finisher component tests from the control-panel display. NOTE: For finishers with a booklet maker, also test sensor PI3 (booklet-door-1 sensor).
13.12.17	Engine to finisher timing jam: unexpected arrival of paper to finisher Upper-paper-path entry sensor (PI33) has detected paper before a signal from the engine has been received, indicating that paper is being delivered from the IPTU to the finisher.	Control panel diagnostics: none To locate this sensor, see Detect jams in the stacker unit on page 636. 1. Verify that the latest firmware updates are installed for the engine and finisher. 2. Remove any media in the upper paper path that might be activating sensor PI33. If no media is found at PI33, proceed to step 3. If media is found at PI33, perform the following steps: ◦ Make sure that the power/communication cable from the IPTU to the finisher is properly connected. ◦ Make sure that the IPTU is properly connected to the engine and that the mounting screws are tight. ◦ Make sure that the finisher is properly grounded. ● Ensure that the finisher is latched and locked to the engine by tightening the thumbscrew inside the front door. ● Ensure that the grounding-frame assembly (the bar with the wheel located between the engine and the finisher) is in the “down” position with the wheel touching the floor and that the grounding plate is not damaged. NOTE: The grounding-frame assembly is in the “up” position when the finisher is shipped. It must be lowered when the finisher is installed. ◦ If the error persists, replace the IPTU. See IPTU on page 646. 3. Check for media at the finisher entrance point and at sensor PI33.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		If no media is found at PI33, perform the following steps: ◦ Make sure that the finisher is properly grounded. ● Ensure that the finisher is latched and locked to the engine by tightening the thumbscrew inside the front door. ● Ensure that the grounding-frame assembly (the bar with the wheel located between the engine and the finisher) is in the down position with the wheel touching the floor and that the grounding plate is not damaged. NOTE: The grounding-frame assembly is in the up position when the finisher is shipped. It must be lowered when the finisher is installed. ◦ Carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris. ◦ Verify that the sensor flag is not damaged, moves freely, and is correctly aligned with the sensor body. ◦ Verify that the wiring at the sensor is not damaged and that the connector J708 on the stacker controller PCA is fully seated. 4. Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
13.12.21	Finisher upper stapler (stapler 1) staple jam. When the staple motor (M41) is rotated forward, the staple home-position sensor (PI5) does not turn back on after the prescribed time has elapsed after it goes off, and the staple home-position sensor (PI50) turns on within the prescribed time after the staple motor (M41) is rotated backwards.	Control panel diagnostics: none 1. Check the stapler unit for jammed staples. 2. Check the stapler unit for loose staples and paper dust. 3. Inspect the stapler unit for damage. 4. Remove the stapler cartridge and make sure HP-approved staples are being used. 5. Verify that the wiring at the stapler unit and the connector are not damaged.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		6. Install new staple cartridge and retest. 7. If the error persists, replace the stapler unit. See Stapler on page 683.
13.12.41	Finisher: Paper detected in the booklet-making portion of the finisher at engine power on. Occurs when paper is detected by one of the sensors on the paper-sensor board (PI18, PI19, PI20), vertical-path-paper sensor (PI17), booklet-delivery sensor (PI11), paper-positioning-plate-paper sensor (PI8), or booklet-making paper-entry sensor (PI22) when engine is turned on.	Control panel diagnostics: none To locate these sensors, see Detect jams in the booklet maker unit on page 636. 1. Remove media from the booklet-maker paper path. 2. Verify that the sensor flags are not damaged, move freely, and are correctly aligned with the sensor bodies. 3. Carefully clean each sensor body by gently blowing clean air across each sensor to remove dust and debris. 4. Make sure that connectors J6, J9, J10, J13, and J21 are fully seated on the saddle-stitcher controller PCA. 5. Only if the error persists and the previous steps fail to correct the problem, replace the saddle-stitcher controller PCA. See Saddle-stitcher controller PCA (booklet maker only) on page 738.
13.12.42	Finisher delay jam at booklet-making paper-entry sensor (PI22) Occurs when booklet making function is selected and after the engine signals the finisher that it is delivering paper to the finisher. The booklet-making-paper entry sensor (PI22) is not activated within the expected time period after receiving the engine's delivery signal, suggesting that a paper jam has occurred somewhere between the output accessory bridge (IPTU) and sensor PI22.	Control panel diagnostics: M9 (inlet motor), SL5 (inlet-switch solenoid) Signal generated from: PI22 (booklet-making-paper entry sensor) To locate this sensor, see Detect jams in the booklet maker unit on page 636.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		Open the IPTU and the finisher top door and locate the media jam. Check the following items: • If media is found in the IPTU but has not reached the finisher entrance point, perform the following steps: ◦ Remove and then reinstall the IPTU. Make sure that the connector is fully seated and that the IPTU is securely fastened. ◦ If the error persists, replace the IPTU. • If media is jammed at the entrance point of the finisher, perform the following steps: ◦ Verify that the finisher is securely fastened to the engine. ◦ Make sure that the finisher and IPTU are correctly aligned. Adjust the finisher castors to obtain a uniform gap between the finisher and the engine. The engine-to-finisher gap must be the same at the bottom and the top so that the finisher is parallel to the engine. With the engine-to-finisher gap correct, make sure that the finisher paper path entry point is aligned with the IPTU exit point. ◦ Check the finisher entry point guides for damage. ◦ Verify that the finisher rollers are turning before the media leaves the IPTU. If the rollers are not turning, test motor M9 by using the finisher component test from the control-panel display. If the motor does not activate during the test, check the connectors for motor M9 (inlet motor). Make sure that connector J705 is fully seated on the stacker controller PCA. If the error persists, replace motor M9 or the saddle paper-feeder assembly for the type finisher you are working on. Only if the error persists and the previous steps fail to correct the

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		problem, replace the stacker controller PCA. See Stacker controller PCA on page 737. • If media is found in the finisher but has not reached sensor PI22, perform the following steps: ◦ Check the upper and lower guides and rollers in the paper path for damage. ◦ Make sure that the media diverter gate (saddle-stitch flapper) is functioning properly. ◦ Test solenoid SL5 (inlet-switch solenoid) by using the finisher component test from the control-panel display. SL5 should be opening and closing the media diverter gate (saddle stitch flapper). • If media is found in the finisher cover sensor PI22 (the sensor is not detecting the media), perform the following steps: ◦ Check the sensor for obstructions. Verify that the sensor flag is not damaged, moves freely, and is correctly aligned with the sensor body. Make sure that the lower end of the flag is not damaged and is correctly positioned to activate the sensor. ◦ Make sure that the sensor is securely fastened to the chassis. ◦ Carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris. ◦ Verify that the wiring at the sensor is not damaged and that the intermediate connectors between the sensor and connector J21 on the saddle-stitcher controller PCA are fully seated. Replace the sensor if necessary. If PI22 is determined to be the failure point, replace the saddle paper-feeder assembly, which includes PI22. ◦ Only if the error persists and the previous steps fail to correct the problem, replace the saddle-stitcher controller PCA. See Saddle-stitcher controller PCA (booklet maker only) on page 738.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
13.12.43	Finisher stay jam at booklet-making paper entry sensor (PI22) Occurs when the booklet-making paper entry sensor (PI22) remains activated longer than expected, suggesting that there is a paper jam at the sensor.	Control panel diagnostics: none To locate this sensor, see Detect jams in the stacker unit on page 636. 1. Remove any media in the upper paper path that might be activating sensor PI22. 2. Verify that the sensor flag is not damaged, moves freely, and is correctly aligned with the sensor body. 3. Carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris. 4. Verify that the wiring at the sensor is not damaged. Check the intermediate connectors between sensor PI22 and connector J21 on saddle-stitcher controller PCA for damage and proper connections. Replace the sensor if necessary.
13.12.44	Finisher delay jam at booklet making first paper sensor (PI18) Occurs when the first-paper sensor (PI18) is not activated within the expected time following the activation of the booklet-making-paper entry sensor (PI22), suggesting that there is a paper jam in the area between PI22 and PI18.	Control panel diagnostics: M1 (Delivery Motor) To locate these sensors, see Detect jams in the booklet maker unit on page 636. Open the IPTU and the finisher top door and locate the media jam. Check the following items: ● If media is found at sensor PI18, perform the following steps: ◦ Check the sensor PI18 for damage. Replace the sensor if necessary. ◦ Carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris. ◦ Verify that the wiring from sensor PI18 to connector J10 on the saddle-stitcher controller PCA is undamaged and the connectors are fully seated. ● If media is found at the roller prior to sensor PI18 in the paper path, perform the following steps: ◦ Test motor M1 (delivery motor) by using the finisher component test from the control-panel display. ◦ Remove the finisher rear cover. Activate motor M1 and verify that the drive gears and belts are moving.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		- If motor M1 does not rotate, verify that connector J5 on the saddle-stitcher controller PCA is fully seated. If the error persists, replace motor M1. If motor M1 still does not rotate, replace the saddle-stitcher controller PCA. See Saddle-stitcher controller PCA (booklet maker only) on page 738. - If motor M1 does rotate but the gears and belts connected to motor M1 do not move, check for damaged components. Replace damaged components as necessary.
13.12.45	Finisher stay jam at booklet making first paper sensor (PI18), flapper-1 paper sensor (PI19) or flapper-2 paper sensor (PI20) Occurs when PI18, PI19 or PI20 remain activated longer than expected, suggesting that there is a paper jam in the flapper 1 and 2 area of the booklet-maker section of the finisher.	Control-panel diagnostics: PI19 (flapper 1), PI20 (flapper 2), M1 (delivery motor), SL1 (flapper 1 solenoid), SL2 (flapper 2 solenoid) To locate these sensors, see Detect jams in the booklet maker unit on page 636. - Remove any media in the area around flapper 1 and flapper 2. - Check the flappers for damage. - Test sensor PI19 and sensor PI20 by using the finisher component test from the control-panel display. - If the sensors are faulty, perform the following steps: - Verify that the sensor flags are not damaged, move freely, and are correctly aligned with the sensor bodies. - Verify that the wiring at the sensors is not damaged and that the connector J10 on the saddle-stitcher controller PCA is fully seated. - If the error persist, replace the paper sensor PCA (which contains PI118, PI119, and PI20). - Test flapper 1 and flapper 2 by using the finisher component test from the control-panel display. NOTE: To verify the proper movement of the flappers, activate SL1 and SL2 in the finisher component test.
13.12.46	Finisher jam: door was opened during booklet-making operation.	Control-panel diagnostics: PI31 (top-door sensor), PI32 (front-door sensor), PI3

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
	Occurs while the machine is booklet making and the booklet delivery door sensor (PI3) or the booklet paper path open/close sensor (PI3) detects that the door or paper path has been opened. Also occurs when the finisher's front-door sensor (PI32) has been opened with paper remaining in the processing tray of the main stapler while the finisher is not operating.	(booklet door 1 sensor) (booklet-delivery door) To locate sensor PI31 and sensor PI32, see Detect jams in the booklet maker unit on page 636 . 1. Test sensor PI31, sensor PI32, and sensor PI3 by using the finisher component test from the control-panel display. 2. Make sure that the front door, top door, and booklet-delivery door properly open and close and stay in the fully closed position. If the front door is not closing tightly at the top, it will not activate the door switch. If necessary, adjust the alignment of the front door by opening the door and carefully twisting it into proper alignment. 3. Verify that the sensor-activation arms on the doors are not damaged. 4. Make sure that the sensors and front-door switch MSW31 are not obstructed. 5. Make sure that the arm on switch MSW31 is not bent or damaged. 6. Make sure that sensors PI31, PI32, PI9, and switch MSW31 are securely fastened to the chassis. 7. Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
13.12.51	Finisher jam: rear booklet stapler (SW5) When the rear-staple motor (M6) is rotated forward, the staple-home-position sensor (SW5) does not turn back on after the prescribed time has elapsed after it goes off (0.4 seconds).	Control panel diagnostics: none 1. Check the rear booklet-stapler unit for jammed staples. 2. Check the rear booklet-stapler unit for loose staples. 3. Inspect the rear booklet-stitch-stapler unit for damage. 4. Verify that HP approved staples for this stapler are being used. 5. Verify that the wiring at the stapler unit and the connector are not damaged. 6. Replace the staple cartridge.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		NOTE: Replace both the front and rear staple cartridges at the same time so that the staple low sensors will properly detect the level of staples in the cartridges. 7. Only if the error persists and the previous steps fail to correct the problem, replace the saddle-stapler assembly. See Saddle-stapler assembly (booklet maker only) on page 699.
13.12.52	Finisher jam: front-booklet stapler (SW7) When the rear-staple motor (M7) is rotated forward, the staple home-position sensor (SW7) does not turn back on after the prescribed time has elapsed after it goes off (0.4 seconds).	Control panel diagnostics: none 1. Check the front booklet-stapler unit for jammed staples. 2. Check the front booklet-stapler unit for loose staples. 3. Inspect the front booklet-stapler unit for damage. 4. Verify that HP approved staples for this stapler are being used. 5. Verify that the wiring at the stapler unit and the connector are not damaged. 6. Replace the staple cartridge. See Stapler on page 683. NOTE: Replace both the front and rear cartridges at the same time so that the staple low sensors will properly detect the level of staples in the cartridges. 7. Only if the error persists and the previous steps fail to correct the problem, replace the saddle-stapler assembly. See Saddle-stapler assembly (booklet maker only) on page 699.
13.12.61	Finisher delay jam at the booklet-delivery sensor (PI11) Occurs when the folded booklet exits the folding rollers and does not reach the booklet-delivery sensor (PI11) within the expected time.	Control panel diagnostics: none 1. Check the folder roller area for a jam or media wrapped around the rollers. 2. Check sensor PI11 for damage. 3. Make sure that the sensor is not obstructed. 4. Make sure that sensor PI11 is securely fastened to the chassis.
13.12.62	Finisher stay jam at the booklet-delivery sensor (PI11) or the vertical-paper-path sensor (PI17)	Control panel diagnostics: M2 (Folding motor) 1. Check the folder roller area for a jam. 2. Test the folding motor (M2) by using the finisher component test from the control-

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
	Occurs when the booklet-delivery sensor (PI11) remains activated longer than expected after sensing the arrival of the new booklet from the folding rollers. Also occurs when the vertical-paper-path sensor (PI17) remains activated longer than expected after the paper has already passed through the folding rollers and is now detected by the booklet-delivery sensor (PI11).	panel display. ◦ Remove the finisher rear cover before starting the test and make sure that the folding rollers are rotating when motor M2 is on. 3. Check sensor PI11 and PI17 for damage. 4. Make sure that the sensors are not obstructed. 5. Make sure that sensor PI11 and sensor PI17 are securely fastened to the chassis.
13.12.XX JAM IN LEFT ACCESSORY	There is a paper jam in the output accessory. See Jam locations on page 429 .	1. Follow the onscreen instructions to find and remove the jammed paper.
13.JJ.NT FUSER AREA JAM	A jam has occurred in the duplex and feed area. See Jam locations on page 429 .	CAUTION: The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it. 1. Open the right door. 2. Turn the blue levers on the fuser to unlock position. 3. Clear all paper. 4. Turn the blue levers to lock position. 5. Close the right door.
13.JJ.NT FUSER WRAP JAM	A jam has occurred in the fuser. See Jam locations on page 429 .	CAUTION: The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it. 1. Open the right door. 2. Turn the blue levers on the fuser to unlock position. 3. Clear all paper. 4. Turn the blue levers to lock position. 5. Close the right door. To prevent jam in future, set the print optimization mode LIGHT MEDIA to ON . See Print Quality menu on page 24 .
13.JJ.NT JAM ABOVE TOP OUTPUT BIN	A jam has occurred in the duplex area. See Jam locations on page 429 .	1. Clear all paper found in the duplex area above the output bin. 2. Press the checkmark button ✓.
13.JJ.NT JAM IN LOWER RIGHT DOOR	A jam has occurred in the lower-right door. See Jam locations on page 429 .	1. Open the lower-right door. 2. Clear all paper. 3. Close the lower-right door.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
13.JJ.NT JAM IN RIGHT DOOR	A jam has occurred in the duplex and feed area inside the right door. See Jam locations on page 429 .	1. Open the right door. 2. Clear all paper. 3. Close the right door.
13.JJ.NT JAM IN TOP COVER	A jam has occurred in the top cover. See Jam locations on page 429 .	1. Open the top cover. 2. Clear all paper. 3. Close the top cover.
13.JJ.NT JAM IN TRAY 1	A jam has occurred in Tray 1. See Jam locations on page 429 .	1. Clear all paper from Tray 1. 2. Press the checkmark button ✓.
13.JJ.NT JAM IN TRAY <X>	A jam has occurred in the indicated tray. See Jam locations on page 429 .	1. Open the indicated tray. 2. Clear all paper. 3. Press the checkmark button ✓.
13.JJ.NT TRANSFER AND FUSER JAM	A jam has occurred inside the right door in the transfer or fuser area. See Jam locations on page 429 .	CAUTION: The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it. 1. Open the right door. 2. Open the transfer-access panel and clear all paper found. 3. Remove the fuser and clear all paper found. 4. Reinstall the fuser and close the transfer-access panel. 5. Close the right door.
13.JJ.NT TRANSFER AREA JAM	A jam has occurred inside the right door in the image transfer area. See Jam locations on page 429 .	1. Open the right door. 2. Open the transfer-access panel. 3. Clear all paper found. 4. Close the transfer-access panel. 5. Close the right door.
20 INSUFFICIENT MEMORY To continue press ✓ (Checkmark button)	The product received more data than can fit in the available memory. You might have tried to transfer too many macros, soft fonts, or complex graphics.	Press the checkmark button ✓ to print the transferred data (some data might be lost), and then simplify the print job or install additional memory.
22 EIO X BUFFER OVERFLOW To continue press ✓ (Checkmark button)	Too much data was sent to the EIO card in the specified slot (x). An incorrect communications protocol might be in use.	Press the checkmark button ✓ to print the transferred data. (Some data might be lost.)
22 EMBEDDED I/O BUFFER OVERFLOW To continue press ✓ (Checkmark button)	Too much data was sent to the embedded HP Jetdirect print server.	Press the checkmark button ✓ to print the transferred data. (Some data might be lost.)
22 USB I/O BUFFER OVERFLOW	The product's USB buffer has overflowed.	Press the checkmark button ✓ to print the transferred data. (Some data might be lost.)

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
To continue press ✓ (Checkmark button)		Check the host configuration.
40 BAD EIO X TRANSMISSION	The connection between the product and the EIO card in the specified slot has been broken.	Press the checkmark button ✓ to clear the error message and continue printing. Try to reinstall the EIO card.
40 BAD SERIAL TRANSMISSION	A serial data error (parity, framing, or line overrun) occurred as data was being sent by the computer.	Press the checkmark button ✓ to clear the error message. (Data will be lost.)
To continue press ✓ (Checkmark button)		
40 EMBEDDED I/O BAD TRANSMISSION	A temporary printing error has occurred.	Press the checkmark button ✓ to clear the error message. (Data will be lost.)
To continue press ✓ (Checkmark button)		
41.3 UNEXPECTED SIZE IN TRAY <XX>	The product detected a different paper size than expected.	Following the instructions on the screen, load the tray with the size and type of paper indicated, or use another tray.
For help press ? (Help button)		
LOAD TRAY <XX> [TYPE] [SIZE]		To use another tray press the checkmark button ✓.
To use another tray press ✓ (Checkmark button)		
41.3 UNEXPECTED SIZE IN TRAY <XX>	The product detected a different paper size than expected.	Load the tray with the size and type of paper indicated, or use another tray.
For help press ? (Help button)		
LOAD TRAY <XX> [TYPE] [SIZE]		
To use another tray press ✓ (Checkmark button)		
41.5 UNEXPECTED TYPE IN TRAY <XX>	The product detected a different paper type than expected.	Load the tray with the size and type of paper indicated, or use another tray if available.
For help press ? (Help button)		If the error persists:
LOAD TRAY <XX> [TYPE] [SIZE]		1. Reinstall the ITB unit.
To use another tray press ✓ (Checkmark button)		2. Reconnect the connectors for the media sensor (J901), intermediate-transfer belt (J1962, J2701, and J2702), and the DC controller PCA (J116).
		3. Replace the ITB unit. See Intermediate transfer belt (ITB) unit on page 147 .
41.7 ERROR	Paper was late arriving at the registration area and almost caused a paper jam. If this error reappears, use different media.	Press the Help button ? to see details.
To continue touch OK. ✓.		To clear, press the checkmark button ✓.
		If the error persists, turn the product off then on.
		See Paper-handling problems on page 428 .
41.<X> ERROR	A temporary printing error has occurred.	Press the Help button ? to see details.
For help press ? (Help button)		
To continue press ✓ (Checkmark button)		

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
48.01 TRANSFER UNIT ERROR For help press ? (Help button)	The transfer belt has dislocated during printing.	Turn product off then on.
49.XXXX PRINTER ERROR ✓ To continue turn off then on	A critical firmware error has occurred that caused the processor on the formatter to abort operation. This type of error can be caused by invalid print commands, corrupt data, or invalid operations. In some cases, electrical noise in the cable can corrupt data during transmission to the printer. Other causes include poor-quality USB cables, poor connections, or home-grown programs. On rare occasions, the formatter is at fault, which is usually indicated by a 79 Service Error.	1. Turn the product off then on. 2. Press Stop to clear the print job from the printer memory. 3. Turn the product off then on. 4. Try printing a job from a different software program. If the job prints, go back to the first program and try printing a different file. If the message displays only with a certain software program or print job, contact the software vendor for assistance. 5. If the message persists with different software programs and print jobs, disconnect all of the cables to the printer that connect it to the network or computer. 6. Turn the product off. 7. Remove all memory DIMMs or third-party DIMMs from the product. 8. Remove all EIO devices from the product. 9. Turn the product on. 10. If the error no longer exists, install each DIMM and EIO device one at a time, making sure to turn the printer off and on again as you install each device. 11. Replace a DIMM or EIO device if you determine that it causes the error.
50.1 FUSER ERROR	The fuser has experienced a low-temperature error.	1. Remove any paper jams from the fuser area. 2. Reinstall the fuser. Check the connector (J1901) between the fuser and the product. Replace the cable or fuser if the connector is damaged. 3. Reconnect the connectors of the thermopile (J1990), fuser control PCA (J302, J305, J306, J309) and the DC controller PCA (J107). 4. Replace the fuser. See Fuser on page 191. 5. Replace the fuser power-supply unit. See Fuser power-supply unit on page 264.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
50.10 FUSER ERROR	The fuser has experienced a low-temperature error.	1. Remove any paper jams from the fuser area. 2. Reinstall the fuser. Check the connector (J1901) between the fuser and the product. Replace the cable or fuser if the connector is damaged. 3. Reconnect the connectors of the fixing control PCA (J302, J303, J305) and the DC controller PCA (J107). 4. Replace the fuser. See Fuser on page 191. 5. Replace the fuser power-supply unit. See Fuser power-supply unit on page 264.
50.11 FUSER ERROR	The fuser has experienced a high-temperature error.	1. Reinstall the fuser. Check the connector (J1901) between the fuser and the product. Replace the cable or fuser if the connector is damaged. 2. Reconnect the connectors of the fixing control PCA (J302, J303, J305) and the DC controller PCA (J107). 3. Replace the fuser. See Fuser on page 191. 4. Replace the fuser power-supply unit. See Fuser power-supply unit on page 264.
50.2 FUSER ERROR	The fuser has experienced a warm-up error.	1. Reinstall the fuser. Check the connector (J1901) between the fuser and the product. Replace the cable or fuser if the connector is damaged. 2. Reconnect the connectors of the thermopile (J1990), fuser control PCA (J302, J305, J306, J309) and the DC controller PCA (J107). 3. Replace the fuser. See Fuser on page 191. 4. Replace the fuser power-supply unit. See Fuser power-supply unit on page 264.
50.3 FUSER ERROR	The fuser has experienced a high-temperature error.	1. Reinstall the fuser. Check the connector (J1901) between the fuser and the product. Replace the cable or fuser if the connector is damaged. 2. Reconnect the connectors of the thermopile (J1990), fuser control PCA (J302, J305, J306, J309) and the DC controller PCA (J107).

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		3. Replace the fuser. See Fuser on page 191. 4. Replace the fuser power-supply unit. See Fuser power-supply unit on page 264.
50.4 FUSER ERROR	The fuser driver circuit has experienced an error.	1. Reconnect the connectors of the fuser control PCA (J305) and the DC controller PCA (J107). 2. Check the power source. If a power generator is used, improve the situation. NOTE: If the product does not meet the power requirement of 40 to 70Hz frequency, the fuser temperature control will not work properly, which will cause a malfunction. 3. Replace the fuser power-supply unit. See Fuser power-supply unit on page 264.
50.5 FUSER ERROR	The fuser has experienced a type-mismatch error.	1. Reinstall the fuser. Check the connector (J1901) between the fuser and the product. Replace the cable or fuser if the connector is damaged. 2. Reconnect the connectors of the fuser control PCA (J303, J305), low-voltage power-supply unit (J6), and the DC controller PCA (J102, J207). 3. Replace the fuser. See Fuser on page 191.
50.7 FUSER ERROR	The fuser has experienced a pressure release mechanism error.	1. Reconnect the connectors of the fuser motor (J1720), fuser unit home-position sensor (J1965), intermediate (J1964), and the DC controller PCA (J105, J121). 2. Test the fuser pressure-release sensor by performing the paper-path test or the manual sensor test in the DIAGNOSTICS menu. 3. Check the sensor flag of the fuser pressure-release sensor. If the sensor flag is damaged, Replace the fuser. See Fuser on page 191. 4. Perform the fuser motor and fuser pressure-release-motor component tests in the DIAGNOSTICS menu. 5. Replace the fuser motor. 6. Replace the fuser. See Fuser on page 191.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
50.8 FUSER ERROR	The fuser has experienced a low-temperature error.	1. Remove any paper jams from the fuser area. 2. Reinstall the fuser. Check the connector (J1901) between the fuser and the product. Replace the cable or fuser if the connector is damaged. 3. Reconnect the connectors of the fixing control PCA (J302, J303, J305) and the DC controller PCA (J107). 4. Replace the fuser. See Fuser on page 191. 5. Replace the fuser power-supply unit. See Fuser power-supply unit on page 264.
50.9 FUSER ERROR	The fuser has experienced a high-temperature error.	1. Reinstall the fuser. Check the connector (J1901) between the fuser and the product. Replace the cable or fuser if the connector is damaged. 2. Reconnect the connectors of the fixing control PCA (J302, J303, J305) and the DC controller PCA (J107). 3. Replace the fuser. See Fuser on page 191. 4. Replace the fuser power-supply unit. See Fuser power-supply unit on page 264.
50.X FUSER ERROR	A fuser error has occurred.	Make sure you have the correct fuser. Reseat the fuser. Turn the product off, and then turn the product on. If this message persists, contact an HP-authorized service or support provider. (See the HP Support flyer, or go to www.hp.com/support/cljcp6015.)
51.20 ERROR To continue turn off then on 51.21 ERROR To continue turn off then on	The black laser (51.20) or cyan laser (51.21) has experienced an error.	1. Reconnect the connectors of the laser driver PCA (J501B) and the DC controller PCA (J127). 2. Replace the cyan/black laser-scanner unit. See Laser/scanner assembly (cyan and black) on page 297.
51.22 ERROR To continue turn off then on 51.23 ERROR To continue turn off then on	The magenta laser (51.22) or yellow laser (51.23) has experienced an error.	1. Reconnect the connectors of the laser driver PCA (J501A) and the DC controller PCA (J126). 2. Replace the yellow/magenta laser-scanner unit. See Laser/scanner assembly (yellow and magenta) on page 295.
51.<XY> ERROR For help press ? (Help button)	A printer error has occurred.	Turn power off then on.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
51.<XY> ERROR To continue turn off then on		
52.00 ERROR To continue turn off then on	The scanner has experienced a startup error.	1. Perform the laser scanner component tests in the DIAGNOSTICS menu. 2. Depending on the test results, perform one of the following steps: ◦ If the cyan or black component tests showed a startup failure, reconnect the connectors of the cyan/black scanner motor (J1702) and the DC controller PCA (J129). ◦ If the yellow or magenta component tests showed a startup failure, reconnect the connectors of the yellow/magenta scanner motor (J1701) and the DC controller PCA (J129). 3. Replace the cyan/black laser-scanner unit or the yellow/magenta laser-scanner unit. See Laser/scanner assembly (cyan and black) on page 297 or Laser/scanner assembly (yellow and magenta) on page 295.
52.20 ERROR To continue turn off then on	The scanner has experienced a rotational error.	1. Perform the laser scanner component tests in the DIAGNOSTICS menu. 2. Depending on the test results, perform one of the following steps: ◦ If the cyan or black component tests showed a rotational failure, reconnect the connectors of the cyan/black scanner motor (J1702) and the DC controller PCA (J129). ◦ If the yellow or magenta component tests showed a rotational failure, reconnect the connectors of the yellow/magenta scanner motor (J1701) and the DC controller PCA (J129). 3. Replace the cyan/black laser-scanner unit or the yellow/magenta laser-scanner unit. See Laser/scanner assembly (cyan and black) on page 297 or Laser/scanner assembly (yellow and magenta) on page 295.
52.<XY> ERROR To continue turn off then on	A printer error has occurred.	Turn power off then on.
53.XY.ZZ CHECK RAM DIMM SLOT <X>	A RAM DIMM error has occurred. X=1 slot toward the outside of the formatter board. X=2 is the slot closest to the hard disc.	Reseat the RAM DIMM in slot <X>. Replace the RAM DIMM if the error persists.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
54.01 ERROR To continue turn off then on	The environment sensor has experienced an error.	1. Reconnect the connector of the DC controller PCA (J115). 2. Replace the environment sensor. See Environmental sensor on page 248.
54.15 ERROR To continue turn off then on	The yellow-toner-level sensor has experienced an error.	1. Reconnect the connectors of the yellow/magenta-cartridge I/F PCA (J2201A), the cartridge driver PCA (J402), and the DC controller PCA (J109). 2. Replace the yellow/magenta-cartridge I/F PCA.
54.16 ERROR To continue turn off then on	The magenta-toner-level sensor has experienced an error.	1. Reconnect the connectors of the yellow/magenta-cartridge I/F PCA (J2201A), the cartridge driver PCA (J402), and the DC controller PCA (J109). 2. Replace the yellow/magenta-cartridge I/F PCA.
54.17 ERROR To continue turn off then on	The cyan-toner-level sensor has experienced an error.	1. Reconnect the connectors of the cyan/black-cartridge I/F PCA (J2201B), the cartridge driver PCA (J403), and the DC controller PCA (J109). 2. Replace the cyan/black-cartridge I/F PCA.
54.18 ERROR To continue turn off then on	The black-toner-level sensor has experienced an error.	1. Reconnect the connectors of the cyan/black-cartridge I/F PCA (J2201B), the cartridge driver PCA (J403), and the DC controller PCA (J109). 2. Replace the cyan/black-cartridge I/F PCA.
54.<XX> ERROR To continue turn off then on	Error requires that the product be turned off then on.	Turn the product off, and then turn the product on.
55.00.00 DC CONTROLLER ERROR To continue turn off then on	The DC controller has experienced a communication error.	1. Turn the product off, and then turn the product on. 2. If this message persists, replace the DC controller PCA. See DC controller PCA on page 246.
55.01.YY DC CONTROLLER ERROR To continue turn off then on	The DC controller has experienced a memory error.	1. Turn the product off, and then turn the product on. 2. If this message persists, replace the DC controller PCA. See DC controller PCA on page 246.
55.XX.YY DC CONTROLLER ERROR To continue turn off then on	The print engine is not communicating with the formatter.	Turn the product off, and then turn the product on. If this message persists, contact an HP-authorized service or support provider. (See the HP Support flyer, or go to www.hp.com/support/cljcp6015 .)

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
56.02 ERROR To continue turn off then on	The product has experienced an output error.	Follow the solutions for BAD DUPLEXER CONNECTION or BAD OPTIONAL TRAY CONNECTION.
56.X ERROR To continue turn off then on	A temporary printing error has occurred.	Turn the product off, and then turn the product on. If this message persists, contact an HP-authorized service or support provider. (See the HP Support flyer, or go to www.hp.com/support/cljcp6015.)
57.01 ERROR To continue turn off then on	The laser/scanner-unit cooling fan (FM1) has experienced an error.	- Reconnect the connectors of the laser/scanner-unit cooling fan (J1916) and the DC controller PCA (J132). - Measure the voltage between the connector J132-4 and J132-6 on the DC controller PCA right after the product is turned on. If the voltage changes from 0V to approximately 24V, replace the laser/scanner-unit cooling fan.
57.01 ERROR To continue turn off then on	The VOC fan (FM4) has experienced an error.	- Reconnect the connectors of the VOC fan (J1921) and the DC controller PCA (J103). - Measure the voltage between the connector J103-4 and J103-6 on the DC controller PCA right after the product is turned on. If the voltage changes from 0V to approximately 24V, replace the VOC fan.
57.03 ERROR To continue turn off then on	The fuser cooling fan (FM2) has experienced an error.	- Reconnect the connectors of the fuser cooling fan (J1917) and the DC controller PCA (J132). - Measure the voltage between the connector J132-7 and J132-9 on the DC controller PCA right after the product is turned on. If the voltage changes from 0V to approximately 24V, replace the cartridge area cooling fan.
57.04 ERROR To continue turn off then on	The cartridge area cooling fan (FM3) has experienced an error.	- Reconnect the connectors of the cartridge area cooling fan (J1915) and the DC controller PCA (J132). - Measure the voltage between the connector J132-1 and J132-3 on the DC controller PCA right after the product is turned on. If the voltage changes from 0V to approximately 24V, replace the cartridge area cooling fan.
57.05 ERROR To continue turn off then on	The low-voltage power supply cooling fan (FM5) has experienced an error.	- Reconnect the connectors of the low-voltage power supply cooling fan (J2), low-voltage power supply (J6) and the DC controller PCA (J102). - Measure the voltage between the connector J2-1 and J2-3 on the low-voltage power supply cooling fan right

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		after the product is turned on. If the voltage changes from 0V to approximately 24V, replace the low-voltage power supply cooling fan.
57.06 ERROR To continue turn off then on	The cartridge front area cooling fan (FM6) has experienced an error.	1. Reconnect the connectors of the cartridge front area cooling fan (J1934) and the DC controller PCA (J103). 2. Measure the voltage between the connector J103-1 and J103-3 on the DC controller PCA right after the product is turned on. If the voltage changes from 0V to approximately 24V, replace the cartridge front area cooling fan. See Cartridge fan unit on page 262.
57.07 ERROR To continue turn off then on	The laser/scanner-unit cooling fan (FM1) has experienced an error.	1. Reconnect the connectors of the laser/scanner-unit cooling fan (J1916) and the DC controller PCA (J132). 2. Measure the voltage between the connector J132-4 and J132-6 on the DC controller PCA right after the product is turned on. If the voltage changes from 0V to approximately 24V, replace the laser/scanner-unit cooling fan. See Laser/scanner fan unit on page 263.
57.08 ERROR To continue turn off then on	The delivery-unit cooling fan (FM7) has experienced an error.	1. Reconnect the connectors of the delivery-unit cooling fan (J1910) and the DC controller PCA (J103). 2. Measure the voltage between the connector J103-7 and J103-9 on the DC controller PCA right after the product is turned on. If the voltage changes from 0V to approximately 24V, replace the delivery-unit cooling fan.
57.09 ERROR To continue turn off then on	The IPTU feed-unit cooling fan (FM8) has experienced an error.	1. Reconnect the connectors of the IPTU media-feed-unit cooling fan (J7008), IPTU driver PCA (J7001), and the DC controller PCA (J130). 2. Reinstall the IPTU. 3. Measure the voltage between the connector J7008-1 and J7008-3 on the IPTU driver PCA right after the product is turned on. If the voltage changes from 0V to approximately 24V, replace the IPTU media-feed-unit cooling fan.
57.0A ERROR To continue turn off then on	The duplexing-unit cooling fan (FM1) has experienced an error.	1. Reconnect the connector (J4106) on the duplexing driver PCA. 2. Measure the voltage between the connector J4106-1 and J4106-3 on the duplexing driver PCA right after the product is turned on. If the voltage changes from 0V to approximately 24V, replace the duplexing-unit cooling fan 1.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
57.XX ERROR To continue turn off then on	A temporary printing error has occurred.	Turn the product off, and then turn the product on. If this message persists, contact an HP-authorized service or support provider. (See the HP Support flyer, or go to www.hp.com/support/cljcp6015.)
58.04 ERROR To continue turn off then on	The low-voltage power supply has experienced an error.	1. Reinstall the fuser. Check the connector (J1901) between the fuser and product. Replace the cable or fixing unit if the connector is damaged. 2. Reconnect the connectors of the fuser control PCA (J303, J305) and the DC controller PCA (J107). 3. Replace the fuser. See Fuser on page 191.
58.XX ERROR To continue turn off then on	A temporary printing error has occurred.	Turn the product off, and then turn the product on. If this message persists, contact an HP-authorized service or support provider. (See the HP Support flyer, or go to www.hp.com/support/cljcp6015.)
59.10 ERROR To continue turn off then on	The ITB motor has experienced a startup error.	1. Perform the transfer motors and belt-only component tests in the DIAGNOSTICS menu. 2. Reconnect the connectors for the ITB motor (J1710) and the DC controller PCA (J105). 3. Replace the ITB unit.
59.20 ERROR To continue turn off then on	The ITB motor has experienced a rotational error.	1. Perform the transfer motors and belt-only component tests in the DIAGNOSTICS menu. 2. Reconnect the connectors of the ITB motor (J1710) and the DC controller PCA (J105). 3. Replace the ITB unit.
59.30 ERROR To continue turn off then on	The fuser motor has experienced a startup error.	1. Perform the fuser motor component test in the DIAGNOSTICS menu. 2. Reconnect the connectors of the fixing motor (J1711), intermediate (J1720) and the DC controller PCA (J105). 3. Replace the fuser motor. See Fuser motor on page 230.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
59.40 ERROR To continue turn off then on	The fuser motor has experienced a rotational error.	1. Perform the fuser motor component test in the DIAGNOSTICS menu. 2. Reconnect the connectors of the fixing motor (J1711), intermediate (J1720) and the DC controller PCA (J105). 3. Replace the fuser motor. See Fuser motor on page 230.
59.50 ERROR To continue turn off then on	The black-image-drum motor has experienced a startup error.	1. Perform the image-drum-motors component test in the DIAGNOSTICS menu. 2. Reconnect the connectors of the black-image-drum motor (J1715) and the DC controller PCA (J139). 3. Replace the black-image-drum motor. See Image-drum motor on page 257.
59.51 ERROR To continue turn off then on	The cyan-image-drum motor has experienced a startup error.	1. Perform the image-drum-motors component test in the DIAGNOSTICS menu. 2. Reconnect the connectors of the cyan-image-drum motor (J1714) and the DC controller PCA (J139). 3. Replace the cyan-image-drum motor. See Image-drum motor on page 257.
59.52 ERROR To continue turn off then on	The magenta-image-drum motor has experienced a startup error.	1. Perform the image-drum-motors component test in the DIAGNOSTICS menu. 2. Reconnect the connectors of the magenta-image-drum motor (J1713) and the DC controller PCA (J138). 3. Replace the magenta-image-drum motor. See Image-drum motor on page 257.
59.53 ERROR To continue turn off then on	The yellow-image-drum motor has experienced a startup error.	1. Perform the image-drum-motors component test in the DIAGNOSTICS menu. 2. Reconnect the connectors of the yellow-image-drum motor (J1712) and the DC controller PCA (J138). 3. Replace the yellow-image-drum motor. See Image-drum motor on page 257.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
59.60 ERROR To continue turn off then on	The black-image-drum motor has experienced a rotational error.	1. Perform the image-drum-motors component test in the DIAGNOSTICS menu. 2. Reconnect the connectors of the black-image-drum motor (J1715) and the DC controller PCA (J139). 3. Replace the black-image-drum motor. See Image-drum motor on page 257.
59.61 ERROR To continue turn off then on	The cyan-image-drum motor has experienced a rotational error.	1. Perform the image-drum-motors component test in the DIAGNOSTICS menu. 2. Reconnect the connectors of the cyan-image-drum motor (J1714) and the DC controller PCA (J139). 3. Replace the cyan-image-drum motor. See Image-drum motor on page 257.
59.62 ERROR To continue turn off then on	The magenta-image-drum motor has experienced a rotational error.	1. Perform the image-drum-motors component test in the DIAGNOSTICS menu. 2. Reconnect the connectors of the magenta-image-drum motor (J1713) and the DC controller PCA (J138). 3. Replace the magenta-image-drum motor. See Image-drum motor on page 257.
59.63 ERROR To continue turn off then on	The yellow-image-drum motor has experienced a rotational error.	1. Perform the image-drum-motors component test in the DIAGNOSTICS menu. 2. Reconnect the connectors of the yellow-image-drum motor (J1712) and the DC controller PCA (J138). 3. Replace the yellow-image-drum motor. See Image-drum motor on page 257.
59.C0 ERROR To continue turn off then on	The developer-alienation motor has experienced a rotational error.	1. Perform the alienation-motor component tests in the DIAGNOSTICS menu. 2. Reconnect the connectors of the yellow/magenta-developing disengagement motor (J1719), cyan/black-developing disengagement motor (J1718), print cartridge PCA (J404, J405, J406, J408), and the DC controller PCA (J141, J142). 3. Check the print-cartridge drive unit if the adjustment pin sticks in. 4. Check the main drive unit if the lever locks. 5. Replace the developer-alienation motor.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
59.F0 ERROR To continue turn off then on	The transfer-roller alienation motor has experienced an error.	1. Check the ITB-alienation sensor (m) by performing either the manual sensor test or the paper-path sensors test in the DIAGNOSTICS menu. 2. Reconnect the connectors of the ITB home-position sensor (J2010), the cartridge driver PCA (J406, J407), and the DC controller PCA (J142). 3. Perform the ITB-contact/alienation component test in the DIAGNOSTICS menu. 4. Reconnect the connectors of the primary-transfer-roller disengagement motor (J1709) and the DC controller PCA (J110). 5. Replace the primary-transfer-roller-alienation motor. See Primary-transfer-roller disengagement motor on page 265.
59.XY ERROR To continue turn off then on	A temporary printing error has occurred.	Turn the product off, and then turn the product on. If this message persists, contact an HP-authorized service or support provider. (See the HP Support flyer, or go to www.hp.com/support/cljcp6015.)
60.03 ERROR To continue turn off then on	The Tray-2 lifter motor has experienced an error.	1. Check the Tray-2 paper-surface sensor (u) in the MANUAL SENSOR TEST 2 submenu in the DIAGNOSTICS menu. 2. Reconnect the connectors of the lifter motor (J1920) and the DC controller PCA (J112). 3. Replace the lifter drive unit. See Lifter drive unit on page 228.
60.04 ERROR To continue turn off then on	The Tray-3 lifter motor has experienced an error.	1. Check the Tray-3 paper-surface sensor (y) in the MANUAL SENSOR TEST 2 submenu in the DIAGNOSTICS menu. 2. Reconnect the connector of the upper-PD driver PCA (J8105A). 3. Replace the upper-PD-cassette-lifter drive unit.
60.05 ERROR To continue turn off then on	The Tray-4 lifter motor has experienced an error.	1. Check the Tray-4 paper-surface sensor (c) in the MANUAL SENSOR TEST 2 submenu in the DIAGNOSTICS menu. 2. Reconnect the connector of the middle-PD driver PCA (J8105B). 3. Replace the middle-PD-cassette-lifter drive unit.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
60.06 ERROR To continue turn off then on	The Tray-5 lifter motor has experienced an error.	1. Check the Tray-5 paper-surface sensor (g) in the MANUAL SENSOR TEST 2 submenu in the DIAGNOSTICS menu. 2. Reconnect the connector of the lower-PD driver PCA (J8105C). 3. Replace the lower-PD-cassette-lifter drive unit.
60.X ERROR To continue turn off then on	The tray specified by X is not lifting correctly.	Follow the instructions on the product control panel.
66.12.01	Finisher-to-engine communication error The communication between the print engine and the finisher has been interrupted or lost.	Control panel diagnostics: none 1. Verify that the latest firmware updates are installed for the engine and finisher. 2. Make sure that the finisher is properly grounded. ◦ Ensure that the finisher is latched and locked to the engine by tightening the thumbscrew inside the front door. ◦ Ensure that the grounding-frame assembly (the bar with the wheel located between the engine and the finisher) is in the down position with the wheel touching the floor and that the grounding plate is not damaged. NOTE: The grounding-frame assembly is in the up position when the finisher is shipped. It must be lowered when the finisher is installed. 3. Make sure that the communication cable from the engine to the finisher is correctly installed. 4. Verify that connectors J701 and J726 on the stacker controller PCA are fully seated and not damaged. 5. Remove and inspect the electrical connections for damage and then reinstall the IPTU. Make sure that the connector is fully seated and that the IPTU is securely fastened. 6. If the error persists, replace the IPTU. 7. Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
66.12.02	Finisher board communication error Occurs when the finisher's stacker controller board has had a internal communication problem between the two processors on the board.	Control panel diagnostics: none 1. Make sure that the finisher is properly grounded. ◦ Ensure that the finisher is latched and locked to the engine by tightening the thumbscrew inside the front door. ◦ Ensure that the grounding-frame assembly (the bar with the wheel located between the engine and the finisher) is in the down position with the wheel touching the floor and that the grounding plate is not damaged. NOTE: The grounding-frame assembly is in the up position when the finisher is shipped. It must be lowered when the finisher is installed. 2. Verify that the latest firmware updates are installed for the engine and finisher. 3. If the error persists, replace the stacker controller PCA. See Stacker controller PCA on page 737.
66.12.03	Finisher-control-board RAM error The checksum for the finisher stacker controller PCA has an error when the power is turned on.	Control panel diagnostics: none 1. Make sure that the finisher is properly grounded. ◦ Ensure that the finisher is latched and locked to the engine by tightening the thumbscrew inside the front door ◦ Ensure that the grounding-frame assembly (the bar with the wheel located between the engine and the finisher) is in the down position with the wheel touching the floor and that the grounding plate is not damaged. NOTE: The grounding-frame assembly is in the up position when the finisher is shipped. It must be lowered when the finisher is installed. 2. Turn the engine power off and then on to try clearing this error. 3. If the error persists, replace the stacker controller PCA. See Stacker controller PCA on page 737.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
66.12.11	Finisher error: swing motor (M36) and the swing-guide home-position sensor (PI35) Occurs when the swing guide does not leave its home position (swing-guide home-position sensor: PI35) after the swing motor (M36) is activated for 3 seconds. Also occurs when the swing guide does not return to its home position (swing-guide home-position sensor: PI35) after the swing motor (M36) is activated for 3 seconds.	Control panel diagnostics: M36 (Swing Motor) and PI35 (Swing Guide Home Position Sensor) - Test the swing motor M36 by using the finisher component test from the control-panel display. NOTE: When activated during the component test, the motor should rotate for about five seconds. While the motor is rotating, make sure that the swing guide is moving up or down at the exit area for stapling and stacking. - If the swing guide freely moves up and down, proceed to the next step (testing the swing-guide sensor PI35). - If the swing guide does not freely move up and down, remove the finisher rear cover and use your hand to turn the gear located to the right of motor M36 clockwise. - If the swing guide moves upward, the gears are properly working. Replace motor M36. If after replacing the motor the motor still does not turn on, replace the stacker controller PCA. See Stacker controller PCA on page 737. - If the swing guide does not move, inspect the gears and replace damaged components as necessary. - Test the swing-guide sensor PI35 by using the finisher component test from the control-panel display.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		NOTE: Manually lift the swing guide to the highest position, and then look at the control-panel display and verify a change in state for the sensor. ◦ If the sensor state does not change, perform the following steps: ● Verify that the connector J707 on the stacker controller PCA is fully seated and not damaged. ● Manually activate the sensor PI35 at the sensor body. If the control panel does not indicate a change of state, replace the sensor. ● If raising the swing guide does not activate the sensor but it can be manually activated at the sensor body, replace the swing-guide assembly. ◦ If the PI35 sensor state does change, check the drive gears for damage or obstructions. Replace components as necessary.
66.12.12	Finisher error - shutter movement malfunction Normal operation: When the shutter clutch (CL31) and stack ejection lower roller clutch (CL32) are on, the shutter moves up (closed) when the stack ejection motor (M32) turns forward and moves down (open, delivery enabled) when the motor turns backwards. Error occurs when the shutter home position sensor (PI45) indicates no change when the stack ejection motor (M32) is activated for 3 seconds, indicating that the shutter is not moving.	Control panel diagnostics: none 1. Inspect the shutter for damage. If the shutter cannot freely move, replace the shutter assembly. 2. Remove the lower guide (grate-shaped) and check sensor PI45 for damage. Make sure that the sensor is securely fastened to the chassis. 3. Check for proper alignment of the shutter mounted on the back of the grate-shaped lower guide and the lift mechanism on the finisher chassis. 4. Verify that connector J721 on the stacker controller PCA is fully seated and not damaged. 5. Check CL31 during operation, and verify that it is correctly functioning by activating prior to the error. Replace CL31 if necessary. 6. Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
66.12.13	Finisher error - stack trailing-edge motor (M39) In order to improve stacking performance when ejecting copies, a trailing edge assist guide is used in addition to the stack ejection roller to support the rear end of the stack during stack ejection. Error occurs when the stacker trailing-edge guide does not leave its home position (PI39) after the stack trailing-edge motor (M39) has been turned on for 3 seconds.	Control panel diagnostics: M39 process motor (stack trailing-edge assist motor) Test the swing motor M39 by using the finisher component test from the control-panel display. ● If the trailing-edge assist guide does not move, perform the following steps: ◦ Verify that connector J722 on the stacker controller PCA is fully seated and not damaged. Also check the wiring at motor M39 and sensor PI39. ◦ Replace the operation-tray assembly (processing tray). See Positioning plate unit (inner side-plate assembly) (booklet maker only) on page 700. ◦ Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737. ● If the trailing-edge assist guide does move, perform the following steps: ◦ Carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris. ◦ Verify that the sensor flag is not damaged, moves freely, and is correctly aligned with the sensor body. ◦ Verify that connector J722 on the stacker controller PCA is fully seated and not damaged. Also check the wiring at sensor PI39. ◦ Replace the operation-tray assembly (processing tray). See Positioning plate unit (inner side-plate assembly) (booklet maker only) on page 700. ◦ Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
66.12.14	Finisher stapling and offsetting front-aligning-plate motor failure In order to neatly align the paper stack for either stapling or offsetting to take place, the front and rear-aligning plates move to align each sheet when it enters the processing tray. The error occurs when the aligning plate either does not leave or when it does not return to the aligning-plate front-home-position sensor (PI36) when the front-aligning-plate motor (M33) has been driven for 4 seconds.	Control panel diagnostics: none 1. Verify that Offsetting is turned On in the Device Behavior menu. 2. Verify that connector J722 on the stacker controller PCA is fully seated and not damaged. Also check the wiring at sensor PI39 and motor M33. 3. Replace the operation-tray assembly (processing tray). See Positioning plate unit (inner side-plate assembly) (booklet maker only) on page 700. 4. Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
66.12.15	Finisher stapling or offsetting rear aligning plate motor failure (M34) In order to neatly align the paper stack for either stapling or offsetting to take place, the front and rear aligning plates move to align each sheet when it enters the processing tray. The error occurs when the aligning plate either does not leave or when it does not return to the aligning-plate-rear-home-position sensor (PI37) when the alignment plate rear motor (M34) has been driven for 4 seconds.	Control panel diagnostics: none 1. Verify that Offsetting is turned On in the Device Behavior menu. 2. Verify that connector J722 on the stacker controller PCA is fully seated and not damaged. Also check the wiring at sensor PI37 and motor M34. 3. Replace the operation-tray assembly (processing tray). See Positioning plate unit (inner side-plate assembly) (booklet maker only) on page 700. 4. Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
66.12.16	Finisher error - speed change motor (M40) The speed change motor M40 and sensor PI49 associated with this error have been removed from the output device prior to introduction to the field. This error message should never be seen in the field.	If error message appears, contact HP Support and report the error. HP Support: Report error to Technical Marketing.
66.12.21	Finisher upper-stapler-motor failure (M41) Error occurs either when the stapler does not leave stapler home position (PI50) after staple motor (M41) is driven for 0.4 seconds or when it does not return to stapler home position after the staple motor has detected a motor lock condition and the motor is driven backwards for 0.4 seconds, attempting to reach home position.	Control panel diagnostics: none 1. Check the stapler unit for jammed staples. 2. Check the stapler unit for loose staples and paper dust. 3. Make sure that the stapler unit is fully seated. 4. Verify that connector J717 on the stacker controller PCA is fully seated

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
	NOTE: PI50 and M41 are located on the stapler assembly and can only be replaced by replacing entire stapler assembly. M41 (staple motor) drives the insertion and crimping of the staple only (not location of the staple on paper). PI50 senses the home position of the stapler as it is inserting and crimping a staple only (not location of the staple on the paper). The stapler-safety switch (MS34) that assures that stapler motor (M41) is disabled when it senses a finger may be in the stapler.	and not damaged. Check the wiring at the stapler unit and the stapler PCA. 5. Replace the stapler. See Stapler on page 683.
66.12.22	Finisher upper stapler shift motor failure (M35) Error occurs when the stapler does not leave the stapler-shift home-position sensor (PI40) after the stapler-shift motor (M35) has driven for 5 seconds. Also occurs when the stapler fails to return to the stapler-shift home-position sensor (PI40) after the stapler-shift motor (M35) has been driven for 20 seconds.	Control panel diagnostics: M35 staple motor (stapler-shift motor) and PI140 stapler home sensor (stapler home-position sensor) 1. Test the upper-stapler-shift motor M35 by using the finisher component test from the control-panel display. ◦ If the stapler unit moves properly, proceed to the next step in this section. ◦ If the stapler unit does not move properly or moves erratically, perform the following steps: ● Check the flat-flexible cable (FFC) for damage (dents, folds, and/or tears). Replace the FFC if necessary. ● Check the FFC connectors and cable mounting areas. ● If the error persists, replace the stapler assembly. See Stapler assembly on page 685. 2. Test the stapler-shift home position sensor PI40 by using the finisher component test from the control-panel display. ◦ If the sensor does not change state when the stapler unit is moved from the home position, perform the following steps: ● Make sure that the sensor is securely fastened to the chassis. ● Carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris. ● Verify that connector J1040 on the stacker controller PCA

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		is fully seated and not damaged. Check the wiring at the sensor. If the error persists, replace the stapler assembly. See Stapler assembly on page 685. NOTE: The stapler assembly includes the stapler-shift home position sensor PI40, stapler unit, shift-position-plate assembly, and the flat-flexible cable (FFC).
66.12.23	Finisher upper-stapler failure Occurs when stapler alignment interference sensor (PI46) is activated, signaling that the stapler unit is not in its proper position for stapling to occur. This is to prevent damage to stapler from occurring when stapler is positioned over one of the three stoppers when the signal to staple has been sent.	Control-panel diagnostics: none - If the stapler unit does not move properly or moves erratically, check the flat-flexible cable (FFC) for damage (dents, folds, and/or tears). Replace the FFC if necessary. - If the stacker controller PCA was recently replaced, use the steps in this manual to adjust the staple alignment and staple position. See Adjust the staple position on page 768. - If the stapler is not positioned over a stopper when this error occurs, perform the following steps. - Make sure that the stapler unit is correctly mounted and securely fastened to the base. - Make sure that the sensor is not obstructed or damaged. Verify that the sensor flag is not damaged, moves freely, and is correctly aligned with the sensor body. - If the error persists, replace the stapler subassembly. See Stapler on page 683. NOTE: The stapler subassembly includes the stapler unit and base.
66.12.31	Finisher error - 1st tray lift/lower motor (M37) Occurs when the output bin 1 does not activate the home-position sensor (PI41) when the output-bin-1 shift motor (M37) is driven for 20 seconds. Also occurs when output bin 1 does not move when output-bin-1 shift motor (M37) is driven for 4 seconds.	Control panel diagnostics: M37 tray 1 (output bin 1 motor) NOTE: M37 moves both output bin 1 and the upper-output bin that is attached to output bin 1 on the stapler/stacker finisher, but only output bin 1 on the booklet-maker finisher. Manually release output bin 1, and position it at the mid point of its travel area. Test the output-bin-1 shift motor

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
	Also occurs when output-bin-1 switch (MSW33) is activated while output bin 1 is operating. NOTE: Output-bin-1 home position is detected using the top sheet of paper on the bin when paper is present and the edge of the bin itself when there is no paper on the bin.	M37 by using the finisher component test from the control-panel display. ◦ If output bin 1 moves during the test, perform the following steps. ● If the paper-surface sensor flag was recently removed or replaced, make sure that it is installed correctly. NOTE: The four tabs under the clips must be inserted into the slots behind the roller shaft of the lower-stack ejection roller. See Figure 8-188 Remove the operation-tray assembly (2 of 6) on page 704. ● Verify that the paper-surface sensor flag is not damaged, moves freely, and is correctly aligned with the PI41 sensor body. Also verify that when the top edge of the output bin engages the sensor arm that the sensor flag moves into sensor PI41. ● Make sure that the sensor is securely fastened to the chassis. ● Carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris. ● Verify that intermediate connector J1040 and J721 on the stacker controller PCA are fully seated and not damaged. Check the wiring at the sensor. ● If the error persist, replace sensor PI41. ● If the error persist, replace the output-bin-1 assembly. See Output-bin 1 on page 708.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		NOTE: The output-bin-1 assembly includes the output-bin-1 shift motor (M37), output-bin-1 switch (MSW33), output-bin-1 area sensors, and the output-bin-1 driver PCA. 2. If output bin 1 does not move during the test, perform the following steps. ◦ Check the output-bin tracks for damage. ◦ Replace the output-bin-1 assembly. See Output-bin 1 on page 708. NOTE: The output-bin-1 assembly includes the output-bin-1 shift motor (M37), output-bin-1 switch (MSW33), output-bin-1 area sensors, and the output-bin-1 driver PCA. ◦ Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
66.12.32	Finisher error: second-tray-lift/lower motor (M38) Occurs when the output bin 2 does not activate the home-position sensor (PI48) when the output-bin-1 shift motor (M38) is driven for 20 seconds. Also occurs when output bin 2 does not move when output-bin-1 shift motor (M38) is driven for 4 seconds. Also occurs when bin-2 upper limit is detected by PS983, PS982, PS981 on the Tray-2 shift PCA when no paper has been sensed by the output-bin-2 paper sensor (PI43). NOTE: Output-bin-2 home position is detected using the top sheet of paper on the bin when paper is present and the edge of the bin itself when there is no paper on the bin.	Control-panel diagnostics: M38 (output-bin-2 motor) and PI48 output-bin-2-paper-surface sensor 1. Manually release output bin 2, and position it at the mid point of its travel area. Test the output-bin-2 shift motor M38 by using the finisher component test from the control-panel display. ◦ If output bin 2 moves during the test, perform the following steps. ● Verify that the paper-surface sensor flag is not damaged, moves freely, and is correctly aligned with the PI48 sensor body. Also verify that when the top edge of the output bin engages the sensor arm that the sensor flag moves into sensor PI41. ● Make sure that the sensor is securely fastened to the chassis. ● Carefully clean by gently blowing clean air across the sensor to remove dust and debris.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		- Verify that intermediate connector J1040 and J721 on the stacker controller PCA are fully seated and not damaged. Check the wiring at the sensor. - If the error persist, replace sensor PI48. - If the error persist, replace the output-bin-2 assembly. See Output-bin 2 on page 710. NOTE: The output-bin-2 assembly includes the output-bin-2 shift motor (M38), output-bin-2 area sensors, and the output-bin-2 driver PCA. 2. If output bin 2 does not move during the test, perform the following steps. - Check the output-bin tracks for damage. - Replace the output-bin-2 assembly. See Output-bin 2 on page 710. NOTE: The output-bin-2 assembly includes the output-bin-2 shift motor (M38), output-bin-2 area sensors, and the output-bin-2 driver PCA. - Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
66.12.41	Finisher: folding-paper-positioning-plate motor (M4) The paper-positioning-plate motor (M4), located in the booklet-making area of the finisher, controls the up and down positioning of the stacked paper for stitch stapling and for folding. An error occurs when the paper-positioning-plate home-position sensor (PI7) does not turn on when the paper-positioning-plate motor (M4) has been driven for 1500 pulses. Also occurs when the paper-positioning-plate home-position sensor (PI7) does not turn off when the paper-positioning-plate motor (M4) has been driven for 300 pulses.	Control-panel diagnostics: M4-guide-plate motor (paper-positioning-plate motor) 1. Test the paper-position-plate motor M4 by using the finisher component test from the control-panel display. During the test, observe the movement of the booklet-maker-guide plate, and make sure it is not obstructed or damaged. 2. Remove the booklet-maker output bin to gain access to the paper-position-plate home-position sensor PI7 and delivery door. Remove the plate that holds PI7, and carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		3. Make sure that the sensor is securely fastened to the plate. 4. Check the wiring at the sensor. 5. If the error persists, replace sensor PI7 and the positioning-plate assembly together. 6. Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
66.12.42	Finisher error: folding-guide motor (M3) The guide motor (M3), located in the booklet-making area of the finisher, controls the position of the guide plate. The guide plate is positioned in front of the folding rollers as the paper stack is being stapled, allowing the bottom edge of the paper to smoothly pass by the folding rollers. When the stacked paper is lowered to the folding position, the guide motor (M3) lowers the guide plate out of the way to allow the paper stack to be pushed into the folding rollers. Error occurs when The guide-home-position sensor (PI13) does not turn on when the guide motor (M3) has been driven for 700 pulses. Also occurs when the guide-home-position sensor (PI13) does not turn off when the guide motor (M3) has been driven for 50 pulses.	Control panel diagnostics: M3 guide motor 1. Carefully clean the sensor body by gently blowing clean air across the sensor to remove dust and debris. 2. Make sure that the sensor is securely fastened to the plate. 3. Check the wiring at the sensor. 4. Check sensor PI13 for damage. 5. Check the guide, gears, and gear tracks on the front and rear frame for damage. Replace components as necessary. 6. If the error persists, replace the guide motor M3 and the guide home position sensor PI13 together.
66.12.43	Finisher error: paper-fold motor (M2) M2: paper-fold motor, located in the booklet making area of the finisher, drives the rotation of the folding rollers to create the desired fold in the paper. The error occurs when the number of pulses by the paper-fold-motor clock sensor (PI4) is less than expected standard value. Also occurs when the status of the paper-fold home-position sensor (PI21) does not change when the paper-fold motor (M2) has been driven for 3 seconds.	Control panel diagnostics: M2 folding motor (paper-fold motor) 1. Check the area around the folding rollers for a jam. 2. Test the paper-fold motor M2 by using the finisher component test from the control-panel display. ◦ If the folding rollers rotate properly, perform the following steps: ● Check sensor PI4 and sensor PI21 for damage. ● Verify that the sensor flags are not damaged, move freely, and are correctly aligned with the PI48 and PI21 sensor bodies. ● Make sure that the sensors are securely fastened to the chassis.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		- Carefully clean each sensor body with a clean, lint-free cloth, or gently blow clean air across each sensor to remove dust and debris. - Verify that connector J3 on the saddle-stitcher controller PCA is fully seated and not damaged. Check the wiring at the PI4 sensor. - Verify that connector J18 on the saddle-stitcher controller PCA is fully seated and not damaged. Check the wiring at the PI21 sensor. - If the error persists, replace sensor PI4 or PI21. - Only if the error persists and the previous steps fail to correct the problem, replace the saddle-stitcher controller PCA. See Saddle-stitcher controller PCA (booklet maker only) on page 738.
		- If the folding rollers do not rotate properly, perform the following steps: - Check the folding-roller gears and connecting gears between the paper-fold motor M2 and the folding rollers for damage. Replace components as necessary. - Check the folding rollers for wear and damage. Replace components as necessary. - Replace the motor-mount assembly. NOTE: The motor-mount assembly includes the paper-fold motor M2 and the paper-fold motor-clock sensor PI4. - Only if the error persists and the previous steps fail to correct the problem, replace the saddle-stitcher controller PCA. See Saddle-stitcher controller PCA (booklet maker only) on page 738.
66.12.44	Finisher - folding-paper-alignment motor (M5)	Control panel diagnostics: none

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
	M5: The alignment motor, located in the booklet making area of the finisher, drives the two alignment plates that adjust the side edges of the stacked paper so that the paper in the stack is perfectly aligned with one another. Error occurs when the aligning-plate home-position sensor (PI5) does not turn on when the aligning plate motor (M5) has been driven for 500 pulses. Also occurs when the aligning-plate home-position sensor (PI5) does not turn off when the aligning-plate motor (M5) has been driven for 50 pulses.	Observe the alignment plates during a booklet-maker stacking operation. • If the alignment plates move during the operation, perform the following steps: ◦ Check sensor PI5 for damage. ◦ Verify that the sensor flag is not damaged, moves freely, and is correctly aligned with the sensor body. ◦ Make sure that the sensor is securely fastened to the chassis. ◦ Carefully clean the sensor body by gently blowing clean air across the sensors to remove dust and debris. ◦ If the alignment plates or the alignment-plates drive gear has been removed or replaced, make sure that the plates are correctly aligned with each other on the drive gear. • If the alignment plates do not move during the operation, perform the following steps: ◦ Remove motor M5 and check the gears between the motor and alignment plates for damage. Replace components as necessary. ◦ Verify that connector J7 on the saddle-stitcher controller PCA is fully seated and not damaged. Check the wiring at the M5 motor. ◦ Replace the alignment motor M5. ◦ Only if the error persists and the previous steps fail to correct the problem, replace the saddle-stitcher controller PCA. See Saddle-stitcher controller PCA (booklet maker only) on page 738.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
66.12.45	Finisher: paper-pushing-plate motor (M8) Error occurs when the paper-pushing-plate home-position sensor (PI14) does not turn on when the paper-pushing-plate motor (M8) has been driven for 0.3 seconds. Also occurs when the paper-pushing-plate home-position sensor (PI14) does not turn off when the paper-pushing-plate motor (M8) has been driven for 80 ms. Also occurs when the paper pushing-plate leading-edge-position sensor (PI15) does not turn off when the paper-pushing-plate motor (M8) has been driven for 80 ms. Also occurs when the number of pulses detected by the paper-pushing-plate motor clock sensor (PI1) is less than expected standard value. Also occurs when the paper pushing-plate-leading-edge-position sensor (PI15) does not turn on when the paper-pushing-plate motor (M8) has been driven for 0.3 seconds.	Control panel diagnostics: none 1. Open the front-finishing door, and activate the front-door switch (MSW31) and front-door sensor (PI32) so that the finisher will operate with the front door open. Turn the engine and finisher power off to clear the error, and then turn the power on. WARNING! Operating the finisher with the front door open exposes moving parts that can cause serious injury. Be very careful operating the finisher with the front door open. 2. Use the control-panel menus to begin a booklet making operation. Observe the paper-pushing plate motor M8 (located in the lower-right front corner of the finisher), associated gears, and the paper-pushing plate for proper motion. ◦ If motor M8 does not rotate, replace the motor-mount assembly. NOTE: The motor-mount assembly includes the paper-pushing plate motor M8. ◦ If motor M8 does rotate but the paper-pushing plate does not move or moves erratically, check the drive gears and paper-pushing plate for wear or damage. Replace components as necessary. ◦ If motor M8 does rotate and the paper-pushing plate moves

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		properly, the plate movement sensors might have failed. - Inspect the paper-pushing plate home position sensor PI14, pushing-plate leading-edge position sensor PI15, and paper-pushing motor-clock sensor PI1. Make sure that the sensors are securely fastened to the chassis. Check sensor PI4, sensor PI15, and sensor PI1 for damage. - Verify that connectors J6, J9, and J23 on the saddle-stitcher controller PCA are fully seated and not damaged. Check the wiring at the sensors. - Only if the error persists and the previous steps fail to correct the problem, replace the saddle-stitcher controller PCA. See Saddle-stitcher controller PCA (booklet maker only) on page 738.
66.12.46	Finisher: communication lost with stitcher controller PCA Error occurs when communication between the stacker-controller board and the saddle-stitcher-controller board has been lost or interrupted.	Control-panel diagnostics: none - Make sure that the finisher is properly grounded. - Ensure that the finisher is latched and locked to the engine by tightening the thumbscrew inside the front door. - Ensure that the grounding-frame assembly (the bar with the wheel located between the engine and the finisher) is in the down position with the wheel touching the floor and that the grounding plate is not damaged. NOTE: The grounding-frame assembly is in the up position when the finisher is shipped. It must be lowered when the finisher is installed. - Verify that connector J730 on the stacker controller PCA and the wiring between connector J22 on the saddle-stitcher controller PCA are fully seated and not damaged.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		- Replace the saddle-stitcher controller PCA. See Saddle-stitcher controller PCA (booklet maker only) on page 738. - Only if the error persists and the previous steps fail to correct the problem, replace the stacker controller PCA. See Stacker controller PCA on page 737.
66.12.47	Finisher error: micro switches and doors There are three switches in the booklet-maker finisher: SW1 (saddle-guide switch also known as the inlet-door switch), SW3 the booklet-ejection door switch, and MS31 the front-door switch. The stapler/stacker finisher only has one switch, MS31 for the front door of the finisher. All three switches detect if the associated door or guide plate is open or closed. Each of the switches also have a sensor (SW1/PI9, SW3/PI3, and MS31/PI32) that acts as a backup and detects the same information as the switches. The error occurs when all the doors and guides are closed and there is a mismatch in readings between the sensors and the switches. For example, the front-finisher door is closed, PI32 senses the door is closed and MS31 senses the door is still open. Associated finisher door and guide switches and sensors are as follows: - Saddle-guide switch SW1 and saddle-guide sensor PI9 - Booklet-ejection-door switch SW3 and booklet-ejection-door sensor PI3 - Front-door switch MS31 and front-door sensor PI32	Control-panel diagnostics: PI32 (front-door-1 sensor), PI3 (booklet-door-1 sensor, also known as booklet-delivery door sensor), PI9 (front-door-2 sensor, also known as the saddle-guide-door sensor or inlet-door sensor), SW3 (booklet door 2) - Using the control-panel diagnostics, try to isolate which door or guide switch and sensor is causing the error. - Make sure that the sensors are securely fastened to the chassis. - Check the switches and sensors for damage and clean the sensors by gently blowing clean air into the sensor to remove dust and debris. - Check the wiring at the switches and sensors. - Check the tabs that activate the switches and sensors on the doors and guides for damage. Make sure that the tabs are aligned with the switches and sensors. Replace the doors and guides as necessary. - Verify that the following connectors are fully seated and not damaged: - Stacker controller PCA - J719 (MS31) - J707 (PI32) - Saddle-stitcher controller PCA - J4 (SW1) - J10 (PI9) - J4 (SW3) - J11 (PI3) - Only if the error persists and the previous steps fail to correct the problem, replace the PCA that is associated with the failed switch/sensor (stacker controller PCA or saddle-

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		stitcher controller PCA). See Stacker controller PCA on page 737 or Saddle-stitcher controller PCA (booklet maker only) on page 738 .
66.12.51	Finisher error- rear-booklet-stapler motor (M6) The booklet-maker stitch staplers do not move to different locations in relation to the paper like the main stapler. The only movement is through the movement of the rotary cam located on the stapler unit itself, during the actual stapling of the booklet. The stitch-home-position switch (SW5) is part of the rear stitch stapler unit and senses the stapler opening and closing during stapling by the motion of the rotary drive cam. Like SW5, the stitch motor (M6) is also part of the overall stitch-stapler unit and replacement requires the replacement of saddle-stapler assembly. Error occurs when the front booklet-maker-stapler stitching-home-position sensor (SW5) does not turn on when the stitch motor (rear) (M6) has been driven forward for 0.5 seconds. Also occurs when the front booklet-maker-stapler stitching-home-position sensor (SW5) does not turn off when the stitch motor (rear) (M6) has been driven forward for 0.5 seconds.	Control panel diagnostics: none 1. Check the rear-stitch stapler for jammed staples, and then perform the following steps: ◦ Clear jammed staples, and then check the staple unit for damage. Retest the stapler. • If the error continues, check the following items: - Make sure that HP-approved staples are used. - Replace the staple cartridge with one containing HP-approved staples. - If the error continues, replace the saddle-stapler assembly. See Saddle-stapler assembly (booklet maker only) on page 699. • If the error persists, but no damage is found, proceed to the next step. 2. If the error persists and no jammed staples are found, perform the following steps: ◦ Verify that connector J8 on the saddle-stitcher controller PCA is fully seated and not damaged. Check the wiring at the rear-saddle-stitch stapler and the saddle-stapler assembly for damage and proper seating. Also inspect the connector that the saddle-stitch stapler assembly engages inside finisher, for damage and foreign material in the connector as well as for proper seating with the saddle-stitch stapler assembly. ◦ Only if the error persists and the previous steps fail to correct the problem, replace the saddle-stitcher controller PCA. See Saddle-stitcher controller PCA (booklet maker only) on page 738.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
66.12.52	Finisher error - front booklet-stapler motor (M7) The booklet-maker stitch staplers do not move to different locations in relation to the paper like the main stapler. The only movement is through the movement of the rotary cam located on the stapler unit itself, during the actual stapling of the booklet. The stitch-home-position switch (SW7) is part of the front stitch stapler unit and senses the stapler opening and closing during stapling by the motion of the rotary drive cam. Like SW7, the stitch motor (M7) is also part of the overall stitch stapler unit and replacement requires the replacement of saddle-stapler assembly. Error occurs when the front booklet-maker stapler stitching home position sensor (SW7) does not turn on when the stitch motor (front) (M7) has been driven forward for 0.5 seconds. Also occurs when the front booklet-maker stapler-stitching home-position sensor (SW7) does not turn off when the stitch motor (front) (M7) has been driven forward for 0.5 seconds.	Control panel diagnostics: none 1. Check the front-stitch stapler for jammed staples, and then perform the following steps: ◦ Clear jammed staples, and then check the staple unit for damage. Retest the stapler. ● If the error continues, check the following items: - Make sure that HP-approved staples are used. - Replace the staple cartridge with one containing HP-approved staples. - If the error continues, replace the saddle-stapler assembly. See Saddle-stapler assembly (booklet maker only) on page 699. ● If the error persists, but no damage is found, proceed to the next step. 2. If the error persists and no jammed staples are found, perform the following steps: ◦ Verify that connector J8 on the saddle-stitcher controller PCA is fully seated and not damaged. Check the wiring at the rear-saddle-stitch stapler and the saddle-stapler assembly for damage and proper seating. Also inspect the connector that the saddle-stitch stapler assembly engages inside finisher, for damage and foreign material in the connector as well as for proper seating with the saddle-stitch stapler assembly. ◦ Only if the error persists and the previous steps fail to correct the problem, replace the saddle-stitcher controller PCA. See Saddle-stitcher controller PCA (booklet maker only) on page 738.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
66.XY.ZZ OUTPUT DEVICE FAILURE	An error occurred in an external paper-handling accessory.	• Turn the product power off. • Check that the accessory is properly seated on and connected to the product, without any gaps between the product and the accessory. If the accessory uses cables, disconnect and reconnect them. • Verify that there is no packaging material in or around the output device. • Turn the product power on. • If this message persists, contact an HP-authorized service or support provider. (See the HP Support flyer, or go to www.hp.com/support/cljcp6015.)
66.XY.ZZ SERVICE ERROR For help press ? (Help button) 66.XY.ZZ INPUT DEVICE ERROR For help press ? (Help button)	The external paper-handling controller has detected a failure.	1. Turn power off. 2. Disconnect cables to external paper handling devices, then reconnect them. 3. Turn power on. 4. Make sure there are no obstructions near the paper handling device that could prevent the output bins from raising or lowering. If the message persists, contact HP Support at www.hp.com/support/cljcp6015.
68.X PERMANENT STORAGE FULL To continue press ✓ (Checkmark button).	The product NVRAM is full. Some settings saved in the NVRAM might have been reset to the factory defaults. Printing can continue, but some unexpected functions might occur if an error occurred in permanent storage.	Press the checkmark button ✓ to clear the message. If the message is not cleared, turn the product off, and then turn the product on. If this message persists, contact an HP-authorized service or support provider. (See the HP support flyer, or go to www.hp.com/support/cljcp6015.)
68.X PERMANENT STORAGE WRITE FAIL To continue press ✓ (Checkmark button).	The product NVRAM is failing to write. Printing can continue, but some unexpected functions might occur if an error occurred in permanent storage.	Press the checkmark button ✓ to clear the message. If the message is not cleared, turn the product off, and then turn the product on. If this message persists, contact an HP-authorized service or support provider. (See the HP Support flyer, or go to www.hp.com/support/cljcp6015.)
68.X STORAGE ERROR SETTINGS CHANGED	One or more product settings are invalid and have been reset to the factory-default settings. Printing can continue, but some unexpected functions might occur if an error occurred in permanent storage.	Press the checkmark button ✓ to clear the message. If the message is not cleared, turn the product off, and then turn the product on. If this message persists, contact an HP-authorized service or support provider. (See the HP Support flyer, or go to www.hp.com/support/cljcp6015.)
69.X ERROR To continue turn off then on	A temporary printing error occurred.	Turn the product off, and then turn the product on.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		If this message persists, contact an HP-authorized service or support provider. (See the HP Support flyer, or go to www.hp.com/support/cljcp6015 .)
<Bin name> FULL Remove all paper from bin	The specified output bin is full.	Empty bin and continue printing. Output bins include the standard top bin, and, if you have an optional paper handling device, the upper-left bin, middle-left bin, lower-left bin, or lower-booklet bin
ACTION NOT CURRENTLY AVAILABLE FOR TRAY X TRAY SIZE CANNOT BE ANY SIZE/ANY CUSTOM Canceling...	The user attempted to set the registration for a tray that is set to ANY SIZE or ANY CUSTOM . Duplex registration is not available when the size is set to ANY SIZE or ANY CUSTOM .	Configure the tray to a specific size, and then set the registration for that tray.
BAD DUPLEXER CONNECTION	The duplexer is not functioning correctly.	1. Reconnect the connectors for the duplexing driver PCA (J4101), intermediate (J1902), and the DC controller PCA (J133). 2. Replace the duplexing reverse unit. See Duplexing reverse unit on page 290.
BAD OPTIONAL TRAY CONNECTION	The optional tray is not connected.	1. Turn the product off. 2. Remove and then reinstall optional tray or trays. 3. Reinstall the IPTU. 4. Reconnect the connectors for the IPTU driver PCA (J7001) and the DC controller PCA (J130). 5. Replace the IPTU driver PCA. IPTU driver PCA on page 663.
Calibrating...	Displays during calibration.	No action is necessary.
CALIBRATION RESET PENDING For help press ? (Help button) PROCESSING...	A calibration reset will occur when all jobs are processed.	To initiate the reset sooner, cancel all jobs by pressing the STOP button.
CARD SLOT <X> NOT FUNCTIONAL For help press ? (Help button)	The compact flash card in slot <X> is not working correctly.	Remove the card from the slot indicated, and replace with a new card.
CARD SLOT DEVICE FAILURE To clear press ✓ (Checkmark button)	The specified device has failed.	Press the checkmark button ✓ to clear.
CARD SLOT FILE OPERATION FAILED To clear press ✓ (Checkmark button)	A PJL file system command attempted to perform an illogical operation.	Press the checkmark button ✓ to clear.
CARD SLOT FILE SYSTEM IS FULL To clear press ✓ (Checkmark button)	A PJL file system command could not store something on the file system because the file system was full.	Press the checkmark button ✓ to clear.
CARD SLOT IS WRITE PROTECTED	The file system device is protected and no new files can be written to it.	Press the checkmark button ✓ to clear.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
To clear press ✓ (Checkmark button)		
CHECKING OUTPUT DEVICE	An error has occurred with the output device.	Remove and reinstall the output device.
Checking paper path	The product is checking for possible paper jams.	No action is necessary.
Checking printer	The product is conducting an internal test.	No action is necessary.
CHOSEN PERSONALITY NOT AVAILABLE. To continue press ✓ (Checkmark button)	A print job requested a product language (personality) that is not available for this product. The job will not print and will be cleared from memory.	Print the job by using a printer driver for a different printer language, or add the requested language to the product (if possible). To see a list of available personalities, print a configuration page. (See Information pages on page 74.)
CLEANING DISK <X>% COMPLETE Do not power off For help press ? (Help button)	The product is cleaning the hard disk or a compact flash disk.	Do not turn off. The product will automatically restart when cleaning is complete. Product functions are unavailable.
Cleaning...	A cleaning page is being processed.	No action is necessary.
Clearing event log	This message is displayed while the event log is cleared. The product will exit the menus once the event log has been cleared.	No action is necessary.
Clearing paper path	The product is attempting to eject jammed paper.	Check progress at the bottom of the display.
CLOSE LOWER RIGHT DOOR	The lower-right door is open.	1. Close the lower-right door. 2. If the message persists, check the right-door-open-detection sensor by the sensor monitor mode. 3. If the message persists, check the right-door sensor flag. Replace the right-door unit if the sensor flag is damaged. See Right-door assembly on page 308
CLOSE RIGHT DOOR For help press ? (Help button)	A door on the right side of the product is open.	1. Close the door. 2. If the message persists, check the right-door-open-detection sensor by the sensor monitor mode. 3. If the message persists, check the right-door sensor flag. Replace the right-door unit if the sensor flag is damaged. See Right-door assembly on page 308.
CLOSE TOP COVER	The top cover is open.	Close the top cover.
CODE CRC ERROR SEND FULL RFU ON <X> PORT	An error has occurred during a firmware upgrade.	If the message persists, contact HP Support at www.hp.com/support/cljcp6015 .
COLOR RFU FAILED SEND FULL RFU ON <X> PORT	An error has occurred during a firmware upgrade.	If the message persists, contact HP Support at www.hp.com/support/cljcp6015 .

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
CONNECT OUTPUT DEVICE	No external output device is installed.	1. Turn power off. 2. Connect output device product cable. 3. Turn power on. To continue without output device, turn power off, remove the output-accessory bridge (IPTU), and then turn power on. If error persists, contact an HP-authorized service or support provider. See the HP support flyer, or go to www.hp.com/support/cljcp6015
Cooling Device...	The product is adding additional pauses to the print cycle in order to cool down.	The product has recently experienced a period of heavy usage, so it has entered a cooling cycle in order to maintain a supported operating temperature. No action is necessary.
CORRUPT FIRMWARE IN EXTERNAL ACCESSORY For help press ? (Help button)	The product detected corrupt firmware in the input or output accessory.	An external accessory of the product requires a firmware upgrade. Printing can continue if other inputs or outputs are available, but jams may occur if the job uses the corrupt external accessory. To view the upgrade procedure and download the most recent firmware, go to www.hp.com/support/cljcp6015 .
DATA RECEIVED To print last page press ✓ (Checkmark button)	The product is waiting for the command to print the last page.	Press the checkmark button ✓ to print the last page.
DATE/TIME= YYYY/MMMM/DD HH:MM To change press ✓ (Checkmark button) To skip press STOP	The current date and time set for the product.	Press the checkmark button ✓ to set the date and time or press the stop button to skip setup.
Deleting private jobs	The product is deleting a private stored job.	No action is necessary.
Deleting...	The product is currently deleting the stored job.	No action is necessary.
Device shutting down...	Device is shutting down.	No action is necessary.
EIO <X> disk initializing	The specified EIO disk device is initializing.	No action is necessary.
EIO <X> disk is spinning up	EIO disk device in slot <X> is spinning up its platter. Jobs that require disk access must wait.	No action is necessary.
EIO <X> DISK NOT FUNCTIONAL For help press ? (Help button)	The EIO disk in slot <X> is not working correctly.	1. Turn product off. 2. Remove disk from the slot indicated. 3. Replace with new disk. 4. Turn product on.
EIO DEVICE FAILURE To clear press ✓ (Checkmark button)	The specified device has failed.	Press the checkmark button ✓ to clear.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
EIO FILE OPERATION FAILED To clear press ✓ (Checkmark button)	A P.J.L file system command attempted to perform an illogical operation.	Press the checkmark button ✓ to clear.
EIO FILE SYSTEM IS FULL To clear press ✓ (Checkmark button)	A P.J.L file system command could not store something on the file system because the file system was full.	Press the checkmark button ✓ to clear.
EIO IS WRITE PROTECTED To clear press ✓ (Checkmark button)	The file system device is protected and no new files can be written to it.	Press the checkmark button ✓ to clear.
EXTERNAL DEVICE INITIALIZING	The external paper handling device is initializing.	No action is necessary.
FINISHING PROCESS NOT FUNCTIONAL For help press ? (Help button)	A finishing process has failed.	Press the help button ? for help.
INCOMPATIBLE FUSER	The incorrect fuser was installed.	CAUTION: The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it. 1. Open right door. 2. Turn blue levers to unlock position. 3. Remove incompatible fuser. 4. Install correct fuser. 5. Turn blue levers to lock position. 6. Close the right door.
INCOMPATIBLE ROLLER KIT	Installed roller kit is incompatible.	1. Open right door. 2. Remove incompatible roller kit. 3. Install correct roller kit. 4. Close the right door.
Initializing permanent storage	Displayed when the product is turned on to show that permanent storage is being initialized.	No action is necessary.
INPUT PAPER PATH OPEN For help press ? (Help button)	The paper path between the product and the external paper handling input device is open and must be closed before printing can continue.	Close the paper path.
INSTALL <COLOR> CARTRIDGE For help press ? (Help button)	The print cartridge has been removed or has been installed incorrectly.	Replace or reinstall the print cartridge correctly to continue printing. Turn the product off then on to clear the message.
INSTALL <COLOR> DRUM For help press ? (Help button)	One or more of the <color> drums have been removed or installed incorrectly.	Replace or reinstall the image drum correctly to continue printing. Turn the product off then on to clear the message.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
INSTALL FUSER For help press ? (Help button)	The fuser has been removed or installed incorrectly.	CAUTION: The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it. 1. Open right door. 2. Turn blue levers to unlock position. 3. Install or adjust fuser. 4. Turn blue levers to lock position. 5. Close the right door. 6. If the message persists, replace the fuser with a unit that meets the product power supply specifications (110V or 220V). See Fuser on page 191.
INSTALL ROLLER UNIT For help press ? (Help button)	The roller unit has been removed or installed incorrectly.	1. Open the right door. 2. Open the transfer-access panel. 3. Install or adjust the roller unit. 4. Close the transfer-access panel. 5. Close the right door.
INSTALL SUPPLIES For status press ✓ (Checkmark button)	Press the checkmark button ✓ to identify which supplies need replaced.	Insert the supply item or make sure the installed supply item is fully seated.
INSTALL TRANSFER ROLLER	The secondary transfer roller has experienced an error.	1. Reinstall the secondary-transfer roller. 2. Reconnect the connectors of the high-voltage power-supply PCA B (J251) and the DC controller PCA (J122).
INSTALL TRANSFER UNIT	The transfer unit has been removed or installed incorrectly.	1. Open the right door. 2. Open the transfer-access panel. Push locks upward. 3. Install or transfer the unit. 4. Close the transfer-access panel. 5. Close the right door.
INSUFFICIENT MEMORY TO LOAD FONTS/DATA For help press ? (Help button) USB STORAGE <X> To continue press ✓ (Checkmark button).	The product does not have enough memory to load the data (for example, fonts or macros) from the location specified.	To continue without this information press the checkmark button ✓. If the message persists, add more memory.
INTERNAL DISK DEVICE FAILURE To clear press ✓ (Checkmark button)	The specified device has failed.	Press the checkmark button ✓ to clear.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
INTERNAL DISK FILE OPERATION FAILED To clear press ✓ (Checkmark button)	A P.J.L file system command attempted to perform an illogical operation.	Press the checkmark button ✓ to clear.
INTERNAL DISK FILE SYSTEM IS FULL To clear press ✓ (Checkmark button)	A P.J.L file system command could not store something on the file system because the file system was full.	Press the checkmark button ✓ to clear.
INTERNAL DISK IS WRITE PROTECTED To clear press ✓ (Checkmark button)	The file system device is protected and no new files can be written to it.	Press the checkmark button ✓ to clear.
INTERNAL DISK NOT FUNCTIONAL	The internal disk is not working correctly.	Turn product off and then on.
INTERNAL DISK SPINNING UP	The internal disk is spinning up its platter. Jobs that require disk access must wait.	No action is necessary.
INTERNAL DOOR X OPEN	One of the internal doors is open.	If X=1, close the fuser door. If X=2, close the transfer door.
JOB NOT STAPLED DUE TO MIXED SIZES	A job sent to the optional paper handling device was not stapled because it had mixed sizes of paper.	Resend the job using only one size of paper.
LOAD TRAY 1 [Type] [Size] For help press ? (Help button)	This message appears when Tray 1 is selected but is not loaded, and no other paper trays are available for use.	Load Tray 1 with requested paper and then press the checkmark button ✓ to continue.
LOAD TRAY 1 [Type] [Size] To continue press ✓ (Checkmark button) For help press ? (Help button)	Tray 1 is loaded and configured for a type and size other than the one specified in the job.	1. If the correct paper is loaded, press the checkmark button ✓. 2. Otherwise, remove the incorrect paper and load Tray 1 with the specified paper. 3. If prompted, confirm the size and type of paper loaded. 4. Confirm that the paper guides are in the correct position. 5. To use another tray, remove paper from Tray 1 and then press the checkmark button ✓.
LOAD TRAY 1 [Type] [Size] To use another tray press ✓ (Checkmark button) For help press ? (Help button)	This message appears when Tray 1 is selected but is not loaded, and other paper trays are available for use.	1. Load the correct paper in the tray. 2. If prompted, confirm the size and type of paper loaded. 3. Otherwise, press the ✓ checkmark button to select another tray.
Loading program <XX> Do not power off	Programs and fonts can be stored on the product's file system and are loaded into RAM when the product is turned on. The number XX specifies a sequence number indicating the current program being loaded.	No action necessary. Do not turn the product off.
MANUALLY FEED <TYPE> <SIZE> For help press ? (Help button)	This message appears when Tray 1 is selected but is not loaded, and other paper trays are available for use.	Load tray with requested paper. If paper is already in tray, press the help button ? to exit message and then press the checkmark button ✓ to print. To use another tray, clear paper from Tray 1, press the help button ? to

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		exit message and then press the checkmark button ✓.
MANUALLY FEED <TYPE> <SIZE> To continue press ✓ For help press ? (Help button)	This message appears when Tray 1 is selected but is not loaded, and other paper trays are available for use.	Load tray with requested paper. To override the message, press the checkmark button ✓ to use a type and size of paper that is available in another tray.
MANUALLY FEED <TYPE> <SIZE> To use another tray press ✓ (Checkmark button) For help press ? (Help button)	The specified job requires a manual feed.	Load tray with requested paper. If paper is already in tray, press the help button ? to exit message and then press the checkmark button ✓ to print. To use another tray, clear paper from Tray 1, press the help button ? to exit message and then press the checkmark button ✓.
MANUALLY FEED OUTPUT STACK Then press ✓ (Checkmark button) to print second sides	The product has printed the first side of a manual duplex job and is waiting for the user to insert the output stack to print the second side.	1. Maintaining the same orientation, remove document from the output bin. 2. Flip document printed side up. 3. Load document in Tray 1. 4. Press the ✓ (Checkmark button) to print.
Moving solenoid To exit press STOP	The solenoid is moving as part of a component test.	No action is necessary.
Moving solenoid and motor To exit press STOP	The solenoid and a motor are moving as part of a component test.	No action is necessary.
No stored jobs	Displayed when the user enters the RETRIEVE JOB menu and there are no jobs to retrieve.	No action is necessary.
NON HP SUPPLY IN USE For help press ? (Help button)	A non-HP supply is in use.	A user authorized the use of non-HP supplies when the HP supply was replaced. Any product repair required as a result of using non-HP supplies is not covered under warranty. Certain features may not be accurate or available.
Non-HP supply installed	A refilled color or a cloned color/mono cartridge has been installed, and the product previously used all genuine HP supplies. It can also appear when an unauthorized cartridge has been installed, and the product previously used all genuine supplies.	Install a genuine HP cartridge, or press the checkmark button ✓ to override the condition.
OPEN AND CLOSE TRAY 2 For help press ? (Help button)	The transfer unit has not been detensioned after shipping.	Open and close Tray 2.
ORDER <COLOR> CARTRIDGE	The identified print cartridge is nearing the end of its useful life. Printing will continue until a supply needs to be replaced.	Order a replacement print cartridge.
ORDER <COLOR> CARTRIDGE LESS THAN XXXX PAGES	The identified cartridge is nearing the end of its useful life. The product is ready and will	Order a replacement cartridge. Printing can continue until the cartridge must be replaced

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
	continue for the estimated number of pages indicated. Estimated pages remaining is based upon the historical page coverage of this product.	
ORDER <COLOR> DRUM	The identified drum is nearing the end of its useful life. Printing will continue until a supply needs to be replaced.	Order a replacement drum.
ORDER <COLOR> DRUM LESS THAN XXXX PAGES	The identified drum is nearing the end of its useful life. The product is ready and will continue for the estimated number of pages indicated. Estimated pages remaining is based upon the historical page coverage of this product.	Order a replacement drum. Printing can continue until the drum must be replaced.
ORDER FUSER KIT LESS THAN XXX PAGES For help press ?	The fuser is near end of life. The product is ready and will continue for the estimated number of pages indicated. Printing will continue until a supply needs to be replaced.	Order a replacement fuser kit.
ORDER ROLLER KIT LESS THAN XXX PAGES	The identified roller kit is nearing the end of its useful life. The product is ready and will continue for the estimated number of pages indicated. Estimated pages remaining is based upon the historical page coverage of this product.	Order a replacement roller kit.
ORDER STAPLE CARTRIDGE To continue press ✓ (Checkmark button)	The staple cartridge has reached the low threshold. Printing and stapling will continue until the staples need to be replaced.	Order a staple cartridge. Press the checkmark button ✓ to continue printing.
ORDER SUPPLIES	More than one supply needs to be replaced or is nearing the end of its useful life.	Order the necessary supplies.
ORDER TRANSFER KIT	The transfer kit is near end of life. Printing can continue.	Order a replacement transfer kit.
ORDER TRANSFER KIT LESS THAN XXX PAGES For help press ? (Help button)	The transfer unit is near end of life. The product is ready and will continue printing for the estimated number of pages.	Pages remaining for this supply have reached the low threshold. Printing will continue until a supply needs to be replaced.
OUTPUT ACCESSORY BRIDGE ATTACHED To continue turn power off then on	The output-accessory bridge was attached while the product was on. Printing cannot continue.	1. Turn the product off. 2. Attach the output device. 3. Turn the product on.
OUTPUT ACCESSORY BRIDGE DISCONNECTED For help press ? (Help button)	The output-accessory bridge was removed while the product was on. Printing cannot continue.	1. Turn power off. 2. Verify that the output-accessory bridge and output device are connected correctly. 3. Turn power on. To continue without the output-accessory bridge, turn power off, attach a standard output tray, and then turn power on.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
OUTPUT ACCESSORY BRIDGE FAILURE For help press ? (Help button)	The output-accessory bridge has failed.	1. Turn power off. 2. Verify that the output-accessory bridge is connected correctly. 3. Turn power on.
Password or name is incorrect. Please enter correct login.	The user name or password was typed incorrectly.	Retype the user name and password.
Paused To return to ready press STOP	The product is paused, and there are no error messages pending at the display. The I/O continues receiving data until memory is full.	Press the Stop key.
Performing COLOR BAND TEST	The color-band test is being performed.	No action is necessary.
Performing... PAPER PATH TEST	The product is performing a paper-path test.	No action is necessary.
Please wait	The product is in the process of clearing data.	No action is necessary.
PRINTING <REPORT>	The product is generating the specified report. The product will return to the online Ready state when the page is completed.	No action is necessary.
PRINTING STOPPED To continue press ✓ (Checkmark button)	Time has expired on the Print/Stop test.	Press the checkmark button ✓ to continue.
PROCESSING DUPLEX JOB Do not grab paper until job completes	Paper temporarily comes into the output bin while printing a duplex job. Do not attempt to remove the pages until the job is complete.	Do not grab paper as it temporarily comes into the output bin. The message will disappear when the job is finished.
Processing...	The product is currently processing a job but is not yet picking pages. When paper motion begins, this message will be replaced by a message that indicates which tray the job is being printed from.	No action is necessary.
Processing... from tray <X>	The product is actively processing a job from the designated tray.	No action is necessary.
Processing...copy <X> of <Y>	The product is currently processing or printing collated copies. The message indicates that copy X of Y total copies is currently being processed.	No action is necessary.
RAM DISK DEVICE FAILURE To clear press ✓ (Checkmark button)	The specified device has failed.	Press the checkmark button ✓ to clear.
RAM DISK FILE OPERATION FAILED To clear press ✓ (Checkmark button)	A PjL file system command attempted to perform an illogical operation.	Press the checkmark button ? to clear.
RAM DISK FILE SYSTEM IS FULL To clear press ✓ (Checkmark button)	A PjL file system command could not store something on the file system because the file system was full.	Press the checkmark button ✓ to clear.
RAM DISK IS WRITE PROTECTED To clear press ✓ (Checkmark button)	The file system device is protected and no new files can be written to it.	Press the checkmark button ✓ to clear.
READY	The product is online and ready for data. No status or device attendance messages are pending at the display.	No action is necessary.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
Ready <IP ADDRESS>	The product is online and ready.	No action is necessary.
Ready Diagnostics mode To exit press STOP	The product is in Diagnostics mode.	To stop Diagnostic mode, press the Stop button.
Receiving upgrade	A firmware upgrade is in progress.	Do not turn the product off until the product returns to READY.
REMOVE ALL CARTRIDGES AND DRUMS	Remove image drums during the component test.	1. Open the front door. 2. Remove image drums and cartridges. 3. Close the front door.
REMOVE ALL IMAGE DRUMS TO EXIT PRESS STOP	Remove image drums during the component test.	1. Open the front door. 2. Remove image drums. 3. Close the front door.
Remove or install cartridge/drum pairs	This message is displayed during the Disable Cartridge Check when the print cartridge and image drum of the same color are not removed. To exit press the Stop button.	Remove or install cartridge and drum of the same color together.
REPLACE <COLOR> CARTRIDGE	The identified print cartridge has reached the end of life. Printing can continue.	Replace the specified color cartridge.
REPLACE <COLOR> DRUM For help press ? (Help button)	The specified color drum has reached the end of life.	Replace image drum. 1. Open the front door. 2. Replace the specified image drum. 3. Close the front door.
REPLACE <COLOR> DRUM To continue press ✓ (Checkmark button).	The REPLACE SUPPLIES menu is set to STOP AT LOW. The specified image drum has passed the low threshold.	Replace image drum or press the checkmark button ✓ to continue until the image drum is at the end of life. 1. Open the front door. 2. Replace the specified image drum. 3. Close the front door.
REPLACE FUSER KIT	The fuser is nearing the end of its useful life. Printing can continue.	CAUTION: The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it. 1. Open the right door. 2. Turn blue levers to unlock position. 3. Install new fuser. 4. Remove the old fuser unit from the product.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
		- Turn blue levers to lock position. - Close the right door.
REPLACE FUSER KIT For help press ? (Help button) To continue press ✓ (Checkmark button).	The REPLACE SUPPLIES menu is set to STOP AT LOW. The fuser kit has reached the low threshold.	CAUTION: The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it. Press the checkmark button ✓ to continue printing until the fuser reached the end of life or replaced fuser. Replaced fuser - Open the right door. - Turn blue levers to unlock position. - Install new fuser. - Turn blue levers to lock position. - Close the right door.
REPLACE ROLLER KIT For help press ? (Help button)	Pages remaining for roller kit has reached the low threshold.	To continue printing without replacing the roller kit, press the checkmark button ✓. Replace roller kit. - Open the right door. - Open the transfer-access panel. - Replace the roller kit. - Close the transfer-access panel. - Close the right door.
REPLACE ROLLER KIT For help press ? (Help button) To continue press ✓ (Checkmark button)	The REPLACE SUPPLIES menu is set to STOP AT LOW. The roller kit is at end of life.	To continue printing without replacing the roller kit, press the checkmark button ✓. Replace roller kit. - Open the right door. - Open the transfer-access panel. - Replace roller kit. - Close the transfer-access panel. - Close the right door.
REPLACE SUPPLIES For status press ✓ (Checkmark button).	Two or more supplies are out and need to be replaced.	Press the checkmark button ✓ to see which supplies need to be replaced.
REPLACE SUPPLIES To continue press ✓ (Checkmark button).	Pages remaining for at least two supplies have reached the low threshold. The product was set to stop printing when a supply needs to be ordered.	Press the checkmark button ✓ to continue until the supply reaches the end of life.
REPLACE SUPPLIES - OVERRIDE IN USE	The product is set to continue printing even though a supply has reached end of life.	Press the down arrow ▼ to see step by step information.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
	CAUTION: Using the Override mode can result in unsatisfactory print quality. HP recommends replacing the supply when the REPLACE SUPPLIES - OVERRIDE IN USE message appears. The HP Supplies Premium Protection Warranty coverage ends when a supply is used in Override mode.	
REPLACE SUPPLIES - Using black only	A color supply (or supplies) has reached the out condition and the COLOR SUPPLY OUT menu item is set to AUTOCONTINUE BLACK .	No user input is required for printing to continue. Printing continues in black. For color printing, replace the needed color print cartridge or drum.
REPLACE TRANSFER KIT For help press ? (Help button)	The transfer kit has reached the end of life	Replace transfer kit. 1. Open the right door. 2. Open the transfer-access panel. 3. Push locks upward. 4. Install the transfer unit. 5. Push locks downward. 6. Close the transfer-access panel. 7. Close the right door.
REPLACE TRANSFER KIT For help press ? (Help button) To continue press ✓ (Checkmark button)	The REPLACE SUPPLIES menu is set to STOP AT LOW. The transfer kit has passed the low threshold.	Press the ✓ to continue printing until the transfer unit reaches the end of life or replace transfer kit. Replace transfer kit. 1. Open the right door. 2. Open the transfer-access panel. 3. Push locks upward. 4. Install the transfer unit. 5. Push locks downward. 6. Close the transfer-access panel. 7. Close the right door.
Request accepted please wait	The product has accepted a request to print an internal page, but the current job must finish printing before the internal page will print.	No action is necessary.
RESEND EXTERNAL ACCESSORY FIRMWARE	The product detected corrupt firmware in an input or output accessory.	Printing can continue from another source or to another destination, if available. If product attempts to use a corrupt accessory, there is a high probability it will jam.
Resend upgrade	The firmware upgrade was not completed successfully.	Attempt upgrade again.
Restoring	The product is restoring settings. This message is displayed during the execution of	No action is necessary.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
	a restore action, such as RESTORE COLOR VALUES.	
Restoring factory settings	The product is restoring factory settings.	No action is necessary.
Restoring... [ACCESSORY #]	The product is restoring external accessory settings in response to a user request.	No action is necessary.
RFU LOAD ERROR SEND FULL RFU ON <X> PORT	An error has occurred during a firmware upgrade.	If the message persists, contact HP Support at www.hp.com/support/cljcp6015 .
ROM DISK DEVICE FAILURE To clear press ✓ (Checkmark button)	The specified device has failed.	Press the checkmark button ✓ to clear.
ROM DISK FILE OPERATION FAILED To clear press ✓ (Checkmark button)	A PJL file system command attempted to perform an illogical operation.	Press the checkmark button ✓ to clear.
ROM DISK FILE SYSTEM IS FULL To clear press ✓ (Checkmark button)	A PJL file system command could not store something on the file system because the file system was full.	Press the checkmark button ✓ to clear.
ROM DISK IS WRITE PROTECTED To clear press ✓ (Checkmark button)	The file system device is protected and no new files can be written to it.	Press the checkmark button ✓ to clear.
Rotating <color> Motor To exit press STOP	A component test is in progress; the component selected is the <color> cartridge motor.	Press STOP when ready to stop this test.
Rotating Motor - To exit press STOP	The product is executing a component test and the component selected is a motor.	Press STOP when ready to stop this test.
SANITIZING DISK <X>% COMPLETE Do not power off CLEANING DISK <X>% COMPLETE For help press ? (Help button)	The hard disk is being cleaned.	Contact the network administrator.
Size mismatch in tray XX	The paper in the listed tray does not match the size specified for that tray.	1. Load the correct paper. 2. Verify the paper is positioned correctly.
Sleep mode on	The product is in sleep mode. A button press, receipt of printable data, or an error condition will clear this message.	No action is necessary.
TRAY <XX> [TYPE] [SIZE] To change size or type press ✓ (Checkmark button) To accept settings press ↶ (Back arrow)	This message states the current type and size configuration of the tray.	To change size or type press the checkmark button ✓ To accept settings press the back arrow ↶.
TRAY <XX> EMPTY [TYPE][SIZE]	The specified tray is empty and the current job does not need this tray to print.	Refill the tray at a convenient time.
TRAY <XX> OPEN For help press ? (Help button)	The specified tray is open or not closed completely.	Close the tray.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
Type Mismatch In Tray <XX>	The specified tray contains a paper type that does not match the configured type.	The specified tray will not be used until this condition is addressed. Printing can continue from other trays. 1. Load the correct paper in the specified tray. 2. Verify the type configuration.
Unable to store job	A job cannot be stored because of a memory or configuration problem.	Install additional memory in the product.
Unauthorized supply in use	The product is using a non-HP supply.	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. HP cannot ensure the accuracy or the availability of certain features.
USB ACCESSORY ERROR For help press ? (Help button)	This message appears when a connected USB accessory draws too much power. When this happens, the ACC port is disabled and printing stops.	Printing can continue. The USB device should be removed.
USB STORAGE <X> NOT FUNCTIONAL For help press ? (Help button)	A parameter in the USB storage is not working correctly.	1. Turn product off. 2. Disconnect the USB storage accessory, and replace with a new USB storage accessory.
USB STORAGE <X> REMOVED For help press ? (Help button)	A USB storage accessory has been disconnected.	1. Turn product off. 2. Reconnect the USB storage accessory. 3. Turn product on.
USB STORAGE DEVICE FAILURE To clear press ✓ (Checkmark button)	The specified device has failed.	Press the checkmark button ✓ to clear.
USB STORAGE FILE SYSTEM IS FULL To clear press ✓ (Checkmark button)	A P.J.L file system command could not store something on the file system because the file system was full.	Press the help button ? to clear.
USB STORAGE IS WRITE PROTECTED To clear press ✓ (Checkmark button)	The file system device is protected and no new files can be written to it.	Press the checkmark button ✓ to clear.
USB STORAGE] FILE OPERATION FAILED To clear press ✓ (Checkmark button)	A P.J.L file system command attempted to perform an illogical operation.	Press the checkmark button ✓ to clear.
Wait for printer to reinitialize	This message can appear for a variety of reasons: The RAM DISK settings changed before the product has rebooted. The product is auto power cycling after changing external device modes. The user has exited Diagnostics. A new formatter has been installed with an old engine or a new engine has been installed with an old formatter.	No action is necessary.

Table 7-4 Control-panel messages (continued)

Control panel message	Description	Recommended action
WAITING FOR TRAY <XX> TO LIFT	The specified tray is lifting paper for feeding.	No action is necessary.
WARMING UP	Product is coming out of powersave mode.	No action is necessary.

Event log messages

Print an event log

Use the event log to help diagnose and solve product problems.

1. Press **Menu**.
2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **PRINT EVENT LOG**, and then press the checkmark button ✓ to print the pages.

Show an event log

Use the control panel to view the event log.

1. Press **Menu**.
2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **SHOW EVENT LOG**, and then press the checkmark button ✓ to print the pages.

Sample event log

Figure 7-4 Sample event log

hp color LaserJet CP 6015 Printers

Event Log Page

1

2

3

4

5

6

7

1	Product information
2	Event number
3	Date and time
4	Engine cycles
5	Event log code
6	Firmware version number
7	Description of personality

Clear the event log

Use the **SERVICE** menu to clear the event log.

1. Press **Menu**.
2. Press the down arrow ▼ to highlight **SERVICE**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **CLEAR EVENT LOG**, and then press the checkmark button ✓ to print the pages.

Event log message

Event log message	Description	Recommended action
13.01.00 JAM IN TRAY N	A jam has occurred in the indicated tray.	1. Open the tray. 2. Clear all paper. 3. Press the checkmark button ✓. 4. See Jam locations on page 429. See areas 5, 6, and 7 for more troubleshooting information.
13.02.00 TRANSFER AREA JAM, TRANSFER AND FUSER JAM	A jam has occurred in the right door of the product in the transfer or fuser areas.	See Jam locations on page 429 . See areas 2 and 3 for more troubleshooting information.
13.05.00 FUSER OUTPUT, PAPER LATE JAM	Paper is late arriving at SR15 fuser-delivery media-feed sensor in the fuser.	See Jam locations on page 429 . See area 2 for more troubleshooting information.
13.06.00 FUSER OUTPUT, PAPER STOPPED JAM	Paper has stopped at SR15 fuser-delivery media-feed sensor in the fuser.	See Jam locations on page 429 . See area 2 for more troubleshooting information.
13.10.00 DUPLEX TURN AROUND, PAPER LATE JAM	Paper is late arriving at SR304 duplexing media-reverse sensor.	See Jam locations on page 429 . See area 4 for more troubleshooting information.
13.11.00 DUPLEX TURN AROUND, PAPER STOPPED JAM	Paper has stopped at SR304 duplexing media-reverse sensor.	See Jam locations on page 429 . See area 4 for more troubleshooting information.
13.12.00 DUPLEX PATH, PAPER LATE JAM	Paper is late arriving at SR303 duplexing media-feed sensor.	See Jam locations on page 429 . See area 4 for more troubleshooting information.
13.13.00 DUPLEX PATH, PAPER STOPPED JAM	Paper has stopped at SR303 duplexing media-feed sensor.	See Jam locations on page 429 . See area 4 for more troubleshooting information.
13.1C.00 FUSER ACCORDION JAM	Paper has stopped at SR15 fuser-delivery media-feed sensor.	See Jam locations on page 429 . See area 2 for more troubleshooting information.
13.20.00 PRINTER COULD NOT AUTOMATICALLY EJECT PAPER	Paper is still in the product and must be cleared.	See Jam locations on page 429 .
13.21.00 DOOR OPEN JAM	A door on the product is open.	See Jam locations on page 429 . Check the doors in areas 1-7.
13.2C.00 JAM IN TOP COVER, DELIVERY DELAY JAM 1	Paper has stopped in the output-bin area.	See Jam locations on page 429 . See area 1 for more troubleshooting information.
13.2D.00 JAM IN TOP COVER, DELIVERY DELAY JAM 2	Paper has stopped in the output-bin area.	See Jam locations on page 429 . See area 1 for more troubleshooting information..
13.2E.00 JAM IN RIGHT DOOR (FUSER/TRANSFER JAM)	Paper has stopped in the fuser area or transfer area.	See Jam locations on page 429 . See areas 2 and 3 for more troubleshooting information.
13.30.00 JAM IN LOWER RIGHT DOOR or JAM IN RIGHT DOOR (FUSER/TRANSFER JAM)	Paper has stopped in the lower-right door or the upper-right door of the product.	See Jam locations on page 429 . See areas 2, 3 and 7 for more troubleshooting information.

Event log message	Description	Recommended action
54.06	The DMAX density sensor is out of range.	1. Press Menu. 2. Press the down arrow ▼ to highlight CONFIGURE DEVICE, and then press the checkmark button ✓. 3. Press the down arrow ▼ to highlight PRINT QUALITY, and then press the checkmark button ✓. 4. Press the down arrow ▼ to highlight QUICK CALIBRATE NOW, and then press the checkmark button ✓.
54.0C.06	The engine reported a neutral calibration error.	1. Press Menu. 2. Press the down arrow ▼ to highlight CONFIGURE DEVICE, and then press the checkmark button ✓. 3. Press the down arrow ▼ to highlight PRINT QUALITY, and then press the checkmark button ✓. 4. Press the down arrow ▼ to highlight CALIBRATE NEUTRALS, and then press the checkmark button ✓.
54.0D.XX	• XX=00: Black density-measurement abnormality • XX=01: Cyan density-measurement abnormality • XX=02: Magenta density-measurement abnormality • XX=03: Yellow density-measurement abnormality	1. Press Menu. 2. Press the down arrow ▼ to highlight CONFIGURE DEVICE, and then press the checkmark button ✓. 3. Press the down arrow ▼ to highlight PRINT QUALITY, and then press the checkmark button ✓. 4. Press the down arrow ▼ to highlight QUICK CALIBRATE NOW, and then press the checkmark button ✓.
54.01	The humidity-environment sensor is abnormal.	Ensure the product is in a supported environment. If the error persists, replace the CN1 environment sensor.
54.0E.01 Media sensor replace registration-second-transfer assembly	The registration unit is abnormal.	Ensure the product is in a supported environment. If the error persists, replace the registration-second-transfer assembly. See Secondary transfer unit on page 210
54.0E.02 Replace transfer kit	The ITB unit is abnormal.	Ensure the product is in a supported environment. If the error persists, replace the ITB.
54.0E.03 Media sensor clean registration second-transfer assembly	The media-sensor window is contaminated.	Clean the media-sensor window. See Clean the registration second transfer assembly on page 482 .

Event log message	Description	Recommended action
54.0F.XX	• XX=00: Black misregistration is out of range. • XX=01: Cyan misregistration is out of range. • XX=02: Magenta misregistration is out of range. • XX=03: Yellow misregistration is out of range.	1. Press Menu. 2. Press the down arrow ▼ to highlight CONFIGURE DEVICE, and then press the checkmark button ✓. 3. Press the down arrow ▼ to highlight PRINT QUALITY, and then press the checkmark button ✓. 4. Press the down arrow ▼ to highlight FULL CALIBRATE NOW, and then press the checkmark button ✓.
54.14	The misregistration sensor is abnormal and has failed a self test.	1. Press Menu. 2. Press the down arrow ▼ to highlight CONFIGURE DEVICE, and then press the checkmark button ✓. 3. Press the down arrow ▼ to highlight PRINT QUALITY, and then press the checkmark button ✓. 4. Press the down arrow ▼ to highlight FULL CALIBRATE NOW, and then press the checkmark button ✓. 5. If the error persists, replace the C.P.R sensor assembly. 6. Replace the ITB. See Intermediate-transfer belt (ITB) on page 196.
54.19	The ITB sensor-mark detection sensor is abnormal.	1. Press Menu. 2. Press the down arrow ▼ to highlight CONFIGURE DEVICE, and then press the checkmark button ✓. 3. Press the down arrow ▼ to highlight PRINT QUALITY, and then press the checkmark button ✓. 4. Press the down arrow ▼ to highlight FULL CALIBRATE NOW, and then press the checkmark button ✓. 5. If the error persists, replace the C.P.R sensor assembly. 6. Replace the ITB. See Intermediate-transfer belt (ITB) on page 196.
54.22.00	The color sensor (CS) is out of range.	1. Press Menu. 2. Press the down arrow ▼ to highlight CONFIGURE DEVICE, and then press the checkmark button ✓.

Event log message	Description	Recommended action
		- Press the down arrow ▼ to highlight PRINT QUALITY, and then press the checkmark button ✓. - Press the down arrow ▼ to highlight CALIBRATE NEUTRALS, and then press the checkmark button ✓.
55.06.01	the DC controller NVRM has an abnormal read/write.	- Turn the product off then on. - If the error persists, replace the DC Controller. See DC controller PCA on page 246.
55.06.02	The DC controller NVRM is not accessible.	- Turn the product off then on. - If the error persists, replace the DC Controller. See DC controller PCA on page 246.

Paper-handling problems

Jams

Common causes of jams

The product is jammed.

Cause	Solution
The paper does not meet specifications.	Use only paper that meets HP specifications. See Supported paper and print media sizes on page 52 .
A component is installed incorrectly.	Verify that the transfer belt and transfer roller are correctly installed.
You are using paper that has already passed through a product or copier.	Do not use paper that has been previously printed on or copied.
An input tray is loaded incorrectly.	Remove any excess paper from the input tray. Make sure that the stack is below the maximum stack height mark in the tray. See Load paper and print media on page 59 .
The paper is skewed.	The input-tray guides are not adjusted correctly. Adjust them so they hold the stack firmly in place without bending it.
The paper is binding or sticking together.	Remove the paper, flex it, rotate it 180°, or flip it over. Reload the paper into the input tray.
When printing on lightweight paper or on jobs with heavy toner coverage, paper is wrapping on the fuser causing Fuser Delay Jam or Fuser Wrap Jam messages.	Set the LIGHT MEDIA optimize mode on the Print Quality menu to ON .
The paper is removed before it settles into the output bin.	Reset the product. Wait until the page completely settles in the output bin before removing it.
During two-sided printing, you removed the paper before the second side of the document was printed.	Reset the product and print the document again. Wait until the page completely settles in the output bin before removing it.
The paper is in poor condition.	Replace the paper.
The internal tray rollers are not picking up the paper.	If the paper is heavier than 220 g/m ² (58 lb), it might not be picked from the tray. The rollers are worn. Replace the rollers.
The paper has rough or jagged edges.	Replace the paper.
The paper is perforated or embossed.	Perforated or embossed paper does not separate easily. Feed single sheets from Tray 1.
Device supply items have reached the end of their useful life.	Check the product control panel for messages prompting you to replace supplies, or print a supplies status page to verify the remaining life of the supplies. See Information pages on page 74 .
Paper was not stored correctly.	Replace the paper in the trays. Paper should be stored in the original packaging in a controlled environment.
Not all product packing material was removed.	Verify that the packing tape, cardboard, and plastic shipping locks have been removed from the product.

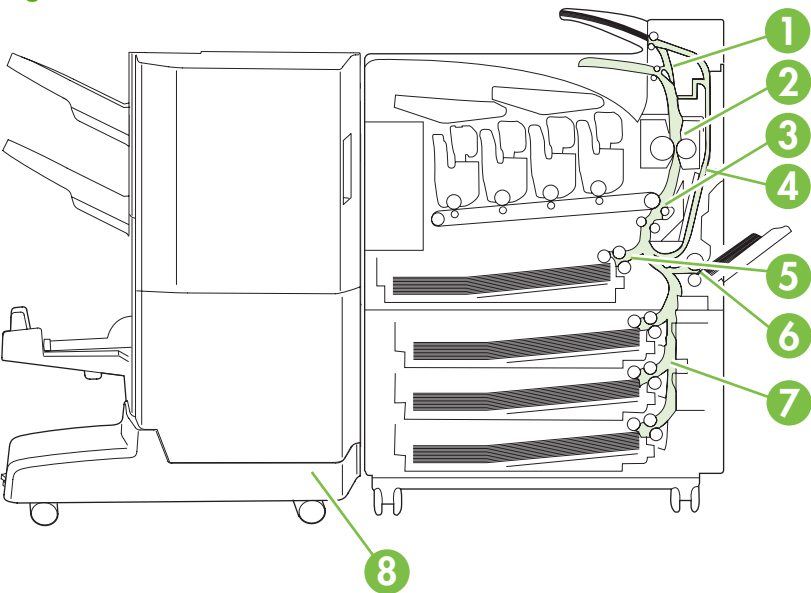
If the product still continues to jam, contact HP Customer Support or your authorized HP service provider.

Jam locations

Use this illustration to identify locations of jams. In addition, instructions appear on the control panel to direct you to the location of jammed paper and how to clear it.

 **NOTE:** Internal areas of the product that might need to be opened to clear jams have green handles or green labels.

Figure 7-5 Jam locations



1	AREA 1: Output-bin area
2	AREA 2: Fuser area
3	AREA 3: Transfer area
4	AREA 4: Duplexing area (for the HP Color LaserJet CP6015dn, x, and xh models only)
5	AREA 5: Tray–2 pickup area
6	AREA 6: Tray 1 area
7	AREA 7: Optional Trays 3, 4, and 5
8	AREA 8: Optional finishing device

Clear jams

When a jam occurs, a message appears on the control-panel display that describes the location of the jam. The following table lists the messages that can appear and provides links to the procedures for clearing the jam.

 **WARNING!** To avoid electrical shock, remove any necklaces, bracelets, or other metal items before reaching into the inside of the product.

Type of jam	Procedure
AREA 1: 13.XX.YY JAM ABOVE TOP OUTPUT BIN 13.XX.YY JAM IN TOP COVER	See AREA 1: Jams in the output bin on page 431 .
AREA 2 and 3: 13.XX.YY FUSER AREA JAM 13.XX.YY FUSER WRAP JAM 13.XX.YY TRANSFER AND FUSER JAM	See AREA 2 and 3: Jams in the fuser and transfer area on page 433 .
AREA 4: 13.XX.YY JAM IN RIGHT DOOR	See AREA 4: Jams in the duplex area on page 440 (for the HP Color LaserJet CP6015dn, x, and xh models only)
AREA 5: 13.XX.YY JAM IN TRAY 2 13.XX.YY TRANSFER AREA JAM	See AREA 5: Jams in Tray 2 and the internal paper path on page 445 .
AREA 6: 13.XX.YY JAM IN TRAY 1	See AREA 6: Clear jams in Tray 1 on page 449 .
AREA 7: 13.XX.YY JAM IN TRAY 3 13.XX.YY JAM IN TRAY 4 13.XX.YY JAM IN TRAY 5 13.XX.YY JAM IN LOWER RIGHT DOOR 13.XX.YY JAM IN INPUT ACCESSORY	See AREA 7: Jams in optional Trays 3, 4, and 5 on page 455
AREA 8: 13.XX.YY JAM IN LEFT ACCESSORY 13.XX.YY JAM INSIDE TOP DOOR	See AREA 8: Jams in the optional finishing devices on page 460 .

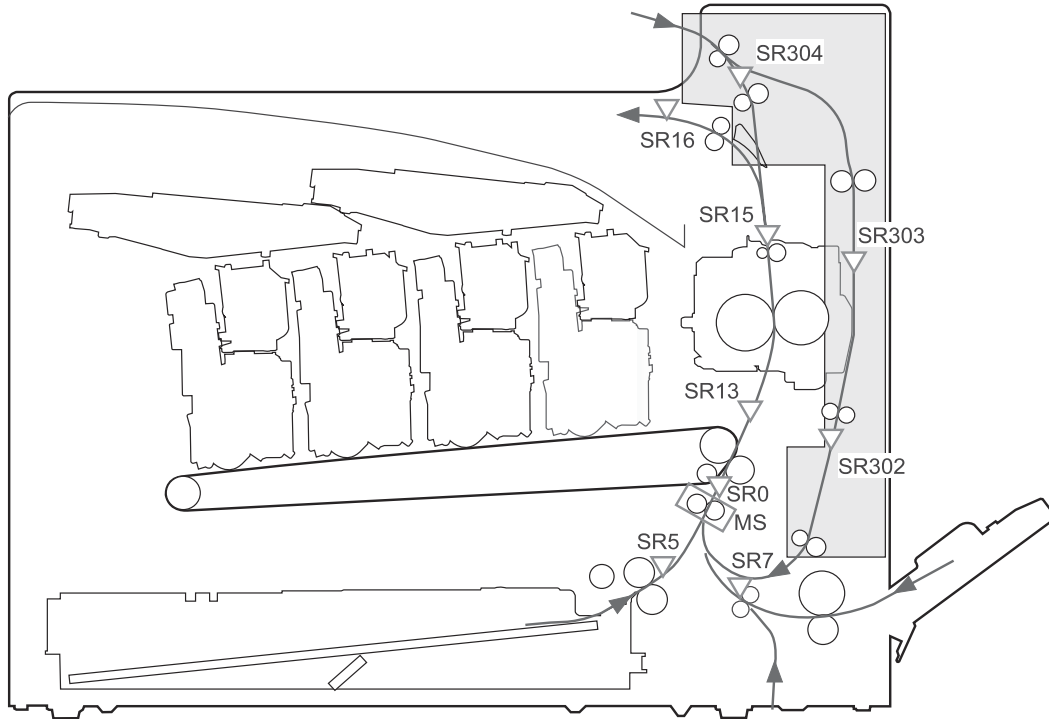
Jam sensors

Jams in areas 1-6 are detected by the paper sensors on the paper path. The product has the following sensors:

- Vertical-synchronous-position sensor (SR0)
- Cassette media-feed sensor (SR5)
- MP-tray media-feed sensor (SR7)
- Loop sensor (SR13)
- Fixing-delivery media-feed sensor (SR15)
- Face-down tray media-full sensor (SR16)

- Duplexing media-repickup sensor (SR302)
- Duplexing media-feed sensor (SR303)
- Duplexing media-reverse sensor (SR304)

Figure 7-6 Locations of Jam sensors



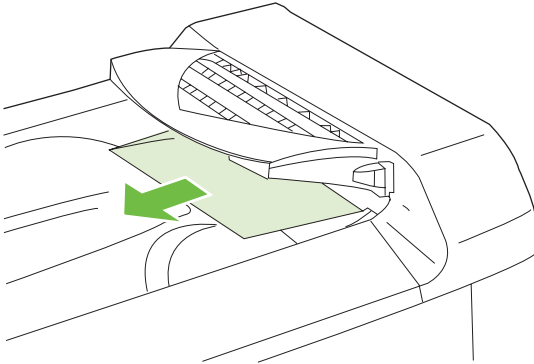
AREA 1: Jams in the output bin

Table 7-5 Causes and solutions for delivery delay jam

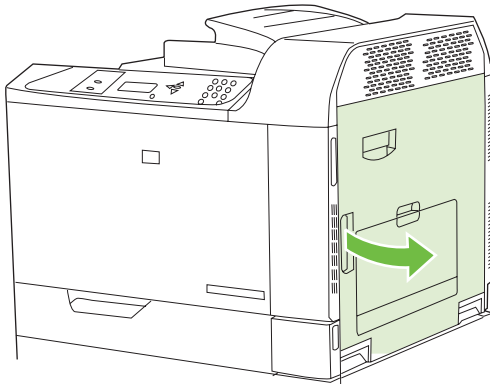
Cause	Solution
The face-down output-bin media-full sensor lever is damaged	Replace the face-down delivery unit.
Poor contact of the face-down output-bin media-full sensor connector	Reconnect the connectors of the face-down output-bin media-full sensor (J2016), intermediate (J1905) and the DC controller PCB (J108).
The face-down output-bin media-full sensor is defective	Check the face-down output-bin media-full sensor via the sensor monitor mode. If the sensor is defective, replace the face-down delivery unit.
Poor contact of the fuser-motor connector	Reconnect the connectors of the fuser motor (J1711), intermediate (J1720) and the DC controller PCA (J105).
The fuser motor is defective	Execute the fuser-motor driving test in the actuator drive mode. If the motor is defective, replace the fuser motor.

Area 1: Clear jams in the output bin

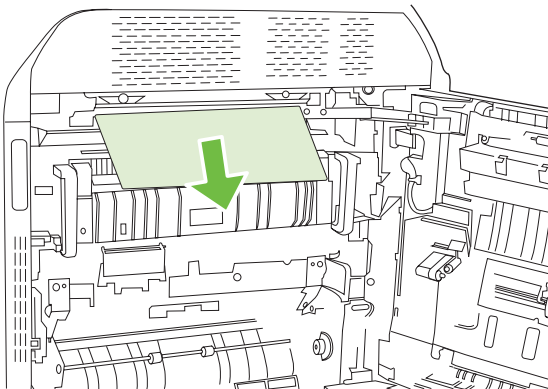
1. If jammed paper is visible in the output bin, gently pull the paper to remove it.



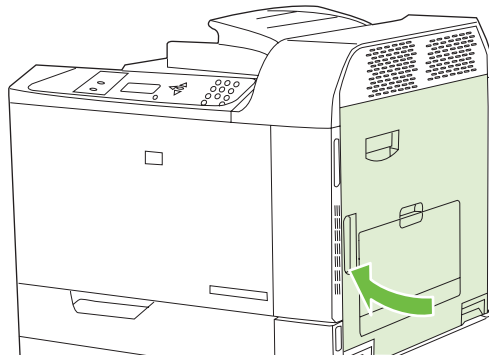
2. Open the right door.



3. If paper has jammed as it enters the output bin, gently pull the paper to remove it.



4. Close the right door.



AREA 2 and 3: Jams in the fuser and transfer area

Table 7-6 Causes and solutions for fuser delivery delay jams

Cause	Solution
The loop-sensor lever is not set correctly	Check the loop-sensor lever and place it in the correct position.
The spring of the fuser-delivery media-feed-sensor lever is unhooked	Check the spring of the fuser and right-door sensor levers and place it in the correct position.
The fuser-delivery media-feed-sensor lever is damaged	Replace the fuser or right door.
Poor contact of the fuser-delivery media-feed-sensor connector	Reconnect the connectors of the fuser-delivery media-feed sensor (J1945), intermediate (J1950, J1919) and the DC controller PCA (J108).
The fuser-delivery media-feed sensor is defective	Check the fuser-delivery media-feed sensor by the sensor monitor mode. If the sensor is defective, replace the right door.
Poor contact of the fuser-motor connector	Reconnect the connectors of the fuser motor (J1711), intermediate (J1720) and the DC controller PCA (J105).
The fuser motor is defective	Execute the fuser-motor driving test in the actuator drive mode. If the motor is defective, replace the fuser motor.

Table 7-7 Causes and solutions for wrapping jams

Cause	Solution
The fuser roller or pressure roller is dirty	Execute a fuser roller cleaning.
The guide of the fuser delivery unit is dirty	Clean the guide.
The fuser roller of the pressure roller is worn or deformed	Replace the fuser.

Table 7-8 Causes and solutions for fuser delivery stationary jams

Cause	Solution
The fuser roller or pressure roller is worn or deformed	Replace the fuser.
The fuser delivery roller is deformed	Replace the fuser.

Table 7-8 Causes and solutions for fuser delivery stationary jams (continued)

Cause	Solution
The gear of the fuser delivery roller is damaged	Replace the fuser.
The pressure roller is not within nip-width specifications	Check the nip-width specifications. If the pressure roller is not within the specifications, replace the fuser.

Table 7-9 Causes and solutions for residual media jams

Cause	Solution
The spring of the loop-sensor lever is unhooked	Check the spring and place it in the correct position.
The loop-sensor lever is damaged	Replace the right door.
Poor contact of the loop-sensor connector	Reconnect the connectors of the loop sensor (J2013), intermediate (J1954, J1955) and the DC controller PCA (J121).
The loop sensor is defective	Check the loop sensor via the sensor monitor mode. If the sensor is defective, replace the right-door unit.
The spring of the fuser-delivery media-feed-sensor lever is unhooked	Check the spring of the fuser and right door and place it in the correct position.
The fuser-delivery media-feed-sensor lever is damaged	Replace the fuser or right door.
Poor contact of the fuser-delivery media-feed-sensor connector	Reconnect the connectors of the fuser-delivery media-feed sensor (J1945), intermediate (J1950, J1919) and the DC controller PCA (J108).
The fuser-delivery media-feed sensor is defective	Check the fuser-delivery media-feed sensor via the sensor monitor mode. If the sensor is defective, replace the right door.
The spring of the duplexing media-reverse sensor lever is unhooked	Check the spring and place it in the correct position.
The duplexing media-reverse sensor lever is damaged	Replace the duplexing reverse unit.
Poor contact of the duplexing media-reverse sensor connector	Reconnect the connectors of the duplexing media-reverse sensor (J2305) and the duplexing driver PCA (J4103).
The duplexing media-reverse sensor is defective	Check the duplexing media-reverse sensor via the sensor monitor mode. If the sensor is defective, replace the duplexing reverse unit.

Table 7-10 Causes and solutions for pickup delay jams 2

Cause	Solution
The registration roller is worn or deformed	Replace the secondary-transfer unit.
The spring of the registration shutter is unhooked	Check the spring and place it in correct position.
Poor contact of the vertical-synchronous-position sensor	Reinstall the ITB unit.
The vertical-synchronous-position sensor is defective	Check the vertical-synchronous-position sensor by the sensor monitor mode. If the sensor is defective, replace the ITB unit.

Table 7-10 Causes and solutions for pickup delay jams 2 (continued)

Cause	Solution
Poor contact of the registration-motor drive connector	Reconnect the connectors of the registration motor (J1706), intermediate (J1924) and the DC controller PCA (J111).
The registration motor is defective	Execute the registration-motor driving test in the actuator drive mode. If the motor is defective, replace the multipurpose drive unit.

Table 7-11 Causes and solutions for pickup stationary jam

Cause	Solution
Multiple feed of media	Replace any worn or deformed parts (tray separation roller, tray feed roller, MP-tray pickup roller or MP-tray separation roller). Check the separation roller and MP-tray separation roller to see if they are firmly seated and coupled with the torque limiter. Replace the separation roller and feed roller. Replace the MP-tray pickup roller and MP-tray separation roller.
The secondary transfer roller is not set correctly	Place the secondary-transfer-roller unit in the correct position.
The secondary transfer roller is worn or deformed	Replace the secondary-transfer-roller unit.
Poor contact of the ITB-motor drive connector	Reconnect the connectors of the ITB motor (J1710) and the DC controller PCA (J105).
The ITB motor is defective	Execute the ITB-motor driving test in the actuator drive mode. If the motor is defective, replace the ITB motor.
The ITB does not rotate smoothly	Replace the ITB unit.

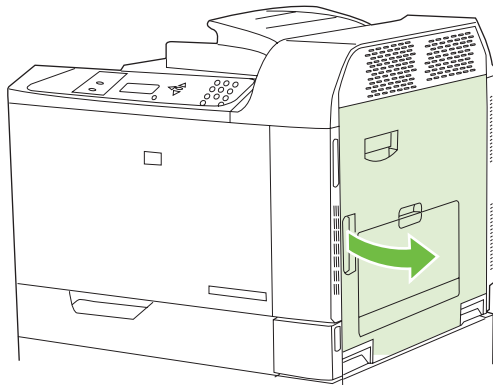
Table 7-12 Causes and solutions for fuser delivery stationary jam

Cause	Solution
The fuser roller or pressure roller is worn or deformed	Replace the fuser.
The fuser delivery roller is deformed	Replace the fuser.
The gear of the fuser delivery roller is damaged	Replace the fuser.
The pressure roller is not within nip-width specifications	If the pressure roller is not within the specifications, replace the fuser.

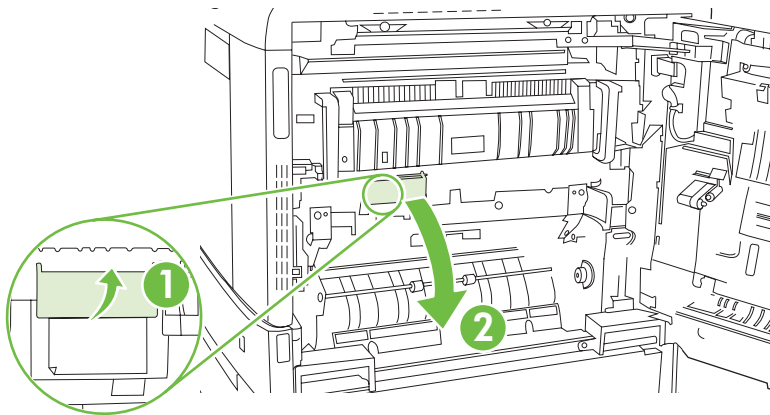
△ **CAUTION:** The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it.

AREA 2 and 3: Clear jams in the fuser and transfer area

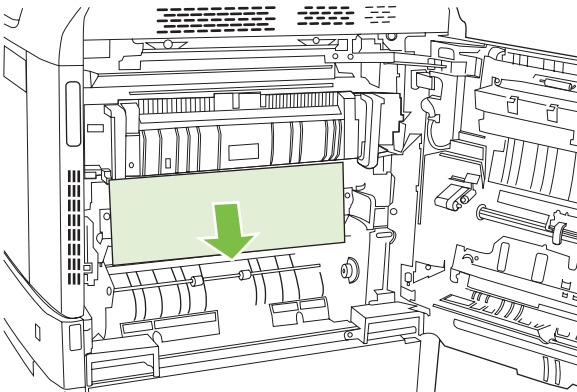
1. Open the right door.



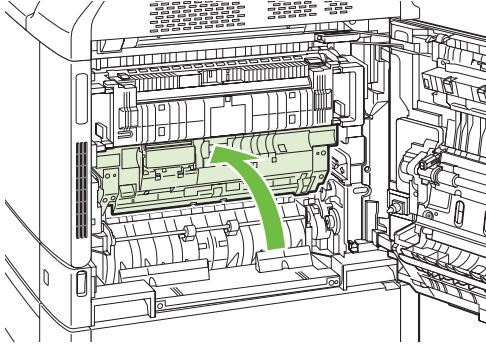
2. Lift the green handle on the transfer-access panel and open the panel.



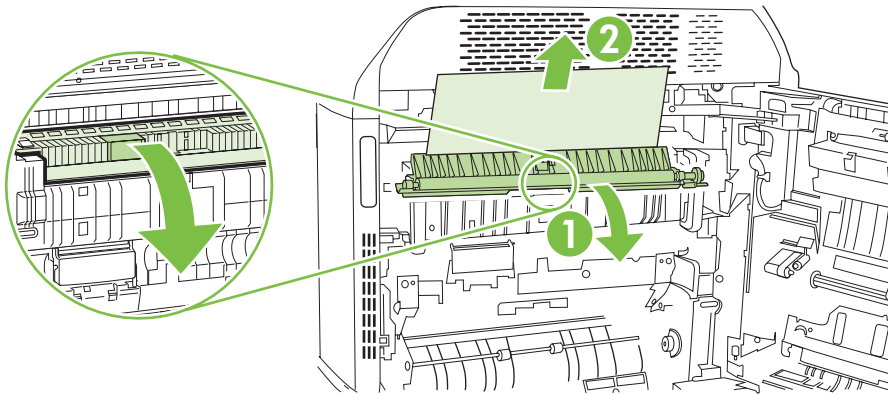
3. If paper is visible entering the bottom of the fuser, gently pull downward to remove it.



4. Close the transfer-access panel.



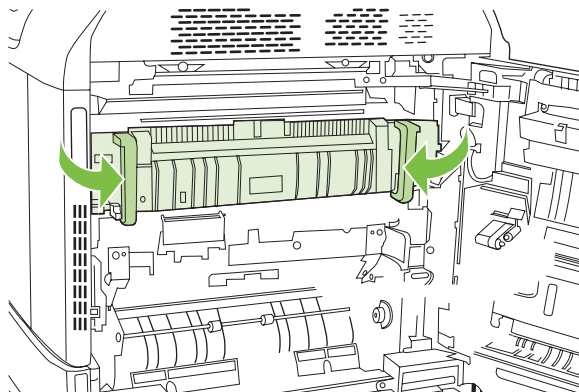
5. Open the fuser jam access door above the fuser and remove any paper that is visible. Then close the fuser jam access door.



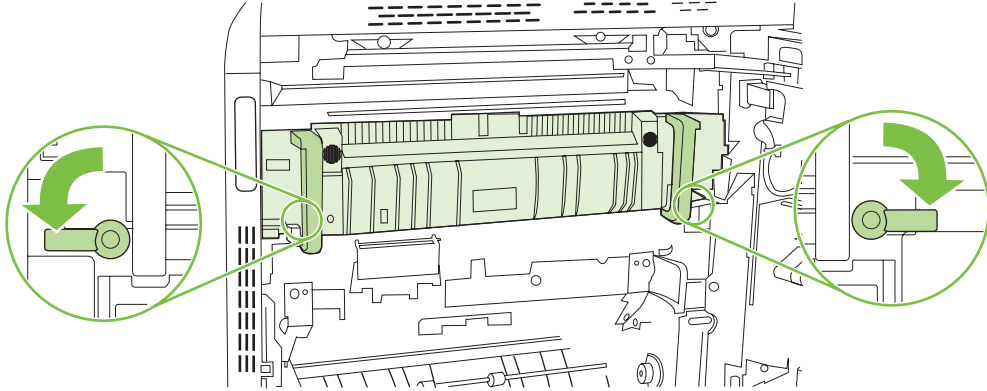
6. Paper could also be jammed inside the fuser where it would not be visible. Remove the fuser to check for jammed paper inside.

△ **CAUTION:** The fuser can be hot while the product is in use. Wait for the fuser to cool before handling it.

- a. Pull the two blue fuser handles forward.

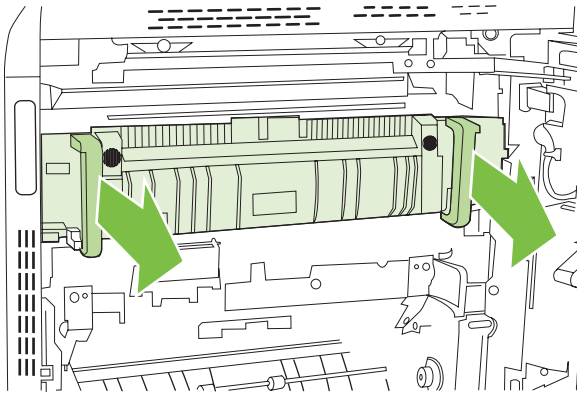


- b. Rotate the fuser-release levers down to open them.



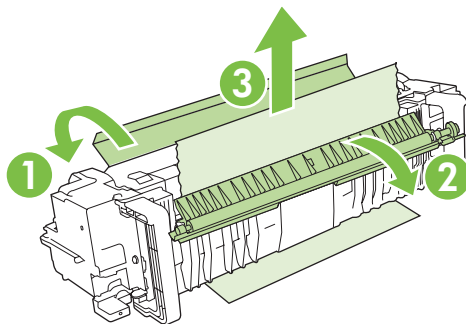
- c. Grasp the fuser handles and pull straight out to remove the fuser.

△ **CAUTION:** The fuser weighs 5 kg (11 lbs). Be careful not to drop it.

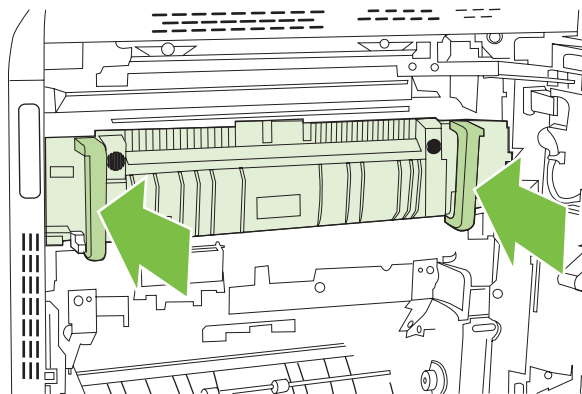


- d. Open the two fuser jam access doors by pushing and rotating the rear door backward, and pulling and rotating the front door forward. If paper is jammed inside the fuser, gently pull it straight up to remove it. If the paper tears, remove all paper fragments.

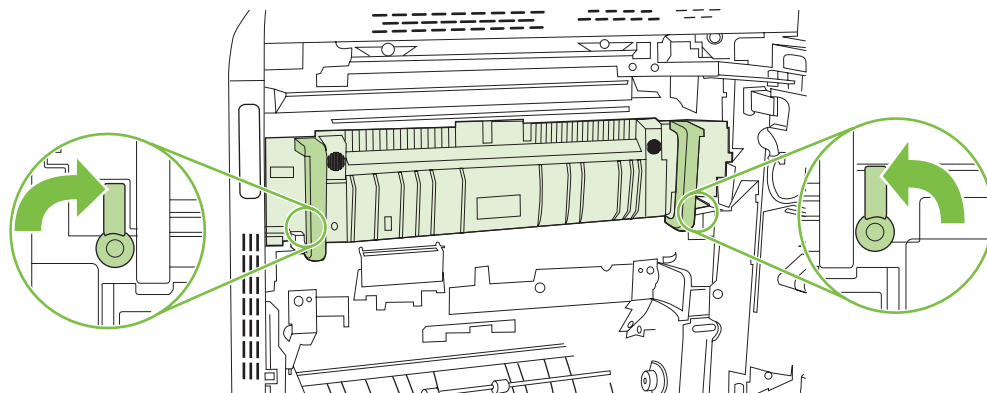
△ **CAUTION:** Even if the body of the fuser has cooled, the rollers that are inside could still be hot. Do not touch the fuser rollers until they have cooled.



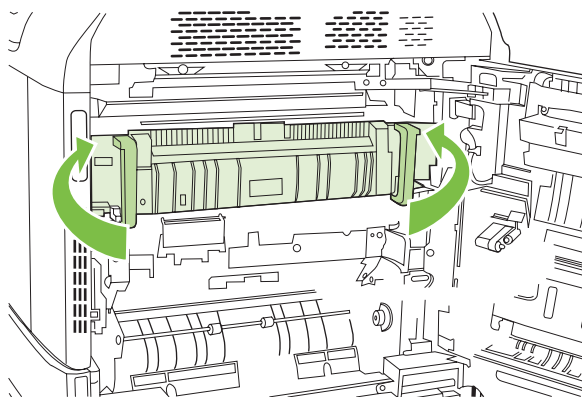
- e. Close both fuser jam-access doors and align the fuser with the arrows on the product. Push the fuser completely into the printer.



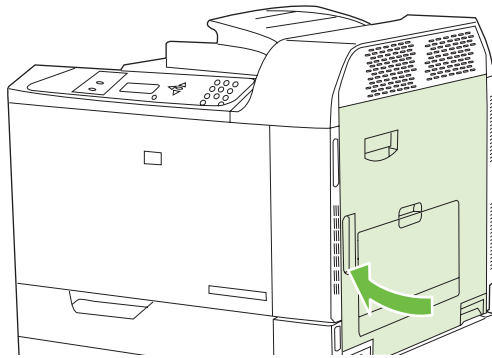
- f. Rotate the fuser-release levers up to lock the fuser into place.



- g. Push the fuser handles back to close them.



7. Close the right door.



AREA 4: Jams in the duplex area

Table 7-13 Causes and solutions for duplexing reverse jams 1

Cause	Solution
The spring of the duplexing media-feed sensor is unhooked	Check the spring and place it in the correct position.
The duplexing media-feed-sensor lever is damaged	Replace the right-door unit.
Poor contact of the duplexing media-feed-sensor connector	Reconnect the connectors of the duplexing media-feed sensor (J1945), intermediate (J1909, J1950) and the DC controller PCA (J4105).
The duplexing media-feed sensor is defective	Check the duplexing media-feed sensor via the sensor monitor mode. If the sensor is defective, replace the right door.
Poor contact of the duplexing feed-motor connector	Reconnect the connectors of the duplexing feed motor (J1772) and the duplexing driver PCA (J4108).
The duplexing feed motor is defective	Replace the duplexing reverse unit.

Table 7-14 Causes and solutions for duplexing reverse jams 2

Cause	Solution
Poor contact of the duplexing reverse-motor connector	Reconnect the connectors of the duplexing reverse motor (J1773) and the duplexing driver PCA (J4108).
The duplexing reverse motor is defective	Replace the duplexing reverse unit.

Table 7-15 Causes and solutions for duplexing repickup jams 1

Cause	Solution
The MP-tray upper guide or duplexing media-feed upper guide is not installed properly	Reinstall the MP-tray upper guide and duplexing media-feed upper guide.
The MP-tray upper guide or duplexing media-feed upper guide is scarred or deformed	Replace the MP-tray upper guide or duplexing media-feed upper guide.

Table 7-16 Causes and solutions for residual media jams

Cause	Solution
The spring of the loop-sensor lever is unhooked	Check the spring and place it in the correct position.
The loop-sensor lever is damaged	Replace the right door.
Poor contact of the loop-sensor connector	Reconnect the connectors of the loop sensor (J2013), intermediate (J1954, J1955) and the DC controller PCA (J121).
The loop sensor is defective	Check the loop sensor via the sensor monitor mode. If the sensor is defective, replace the right-door unit.
The spring of the fuser-delivery media-feed-sensor lever is unhooked	Check the spring of the fuser and right door and place it in the correct position.
The fuser-delivery media-feed-sensor lever is damaged	Replace the fuser or right door.
Poor contact of the fuser-delivery media-feed-sensor connector	Reconnect the connectors of the fuser-delivery media-feed sensor (J1945), intermediate (J1950, J1919) and the DC controller PCA (J108).
The fuser-delivery media-feed sensor is defective	Check the fuser-delivery media-feed sensor via the sensor monitor mode. If the sensor is defective, replace the right door.
The spring of the duplexing media-reverse-sensor lever is unhooked	Check the spring and place it in the correct position.
The duplexing media-reverse-sensor lever is damaged	Replace the duplexing reverse unit.
Poor contact of the duplexing media-reverse-sensor connector	Reconnect the connectors of the duplexing media-reverse sensor (J2305) and the duplexing driver PCA (J4103).
The duplexing media-reverse sensor is defective	Check the duplexing media-reverse sensor via the sensor monitor mode. If the sensor is defective, replace the duplexing reverse unit.

Table 7-17 Causes and solutions for duplexing repickup jams 2

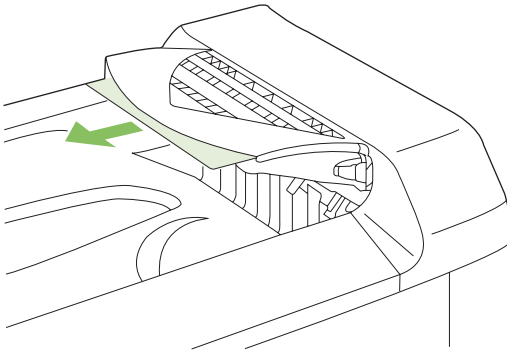
Cause	Solution
The spring of the duplexing media-repickup-sensor lever is unhooked	Check the spring and place it in the correct position.
The duplexing media-repickup-sensor lever is damaged	Replace the duplexing feed unit.
Poor contact of the duplexing media-repickup-sensor connector	Reconnect the connectors of the duplexing media-repickup sensor (J1945), intermediate (J1909, J1950) and the DC controller PCA (J4105).
The duplexing media-repickup sensor is defective	Check the duplexing media-repickup sensor by the sensor monitor mode. If the sensor is defective, replace the duplexing feed unit.
Poor contact of the duplexing repickup-motor connector	Reconnect the connectors of the duplexing repickup motor (J1771), intermediate (J1908, J1939, J1941) and the duplexing driver PCA (J4104).
The duplexing repickup motor is defective	Replace the duplexing feed unit.



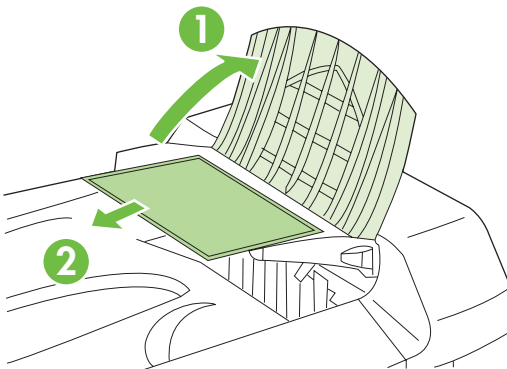
NOTE: This procedure is for the HP Color LaserJet CP6015, dn, de, x, and xh models only.

AREA 4: Clear jams in the duplex area

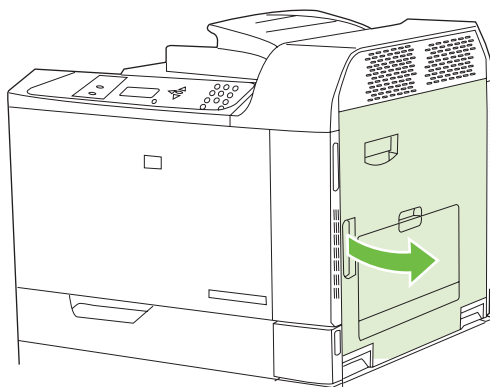
1. If jammed paper is visible in the duplex output area, gently pull it to remove it.



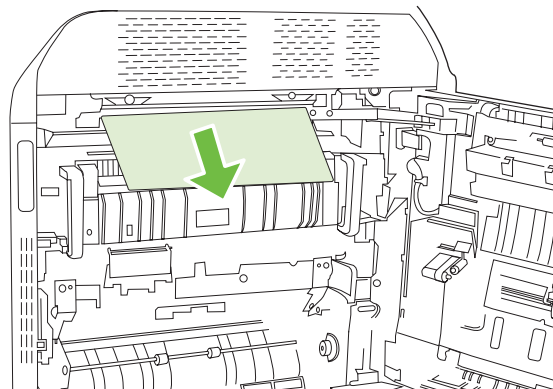
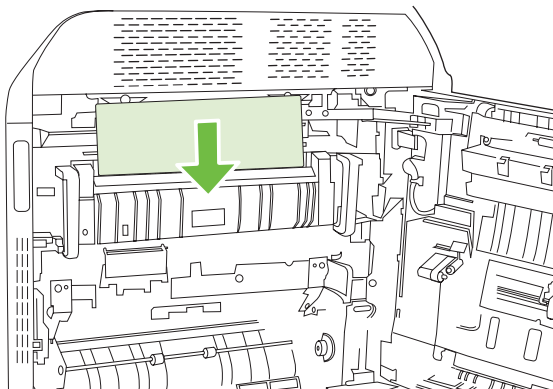
2. If no jammed paper is visible in the duplex output area, open the duplex switchback tray. Gently pull the jammed paper to remove it.



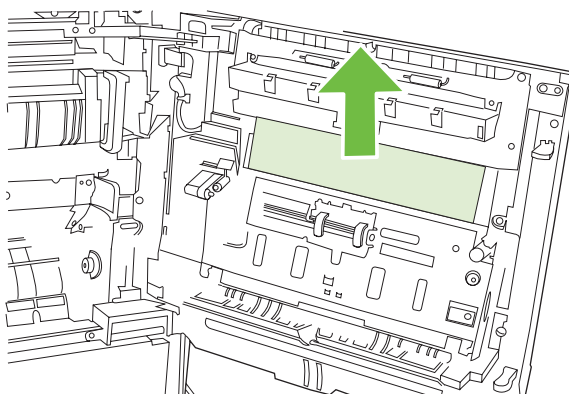
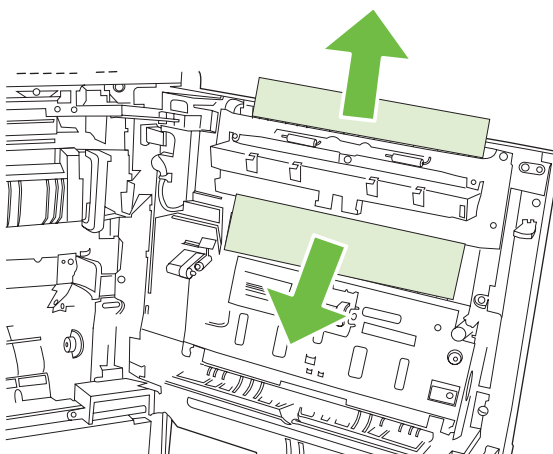
3. Check for jammed paper inside the product. Open the right door.



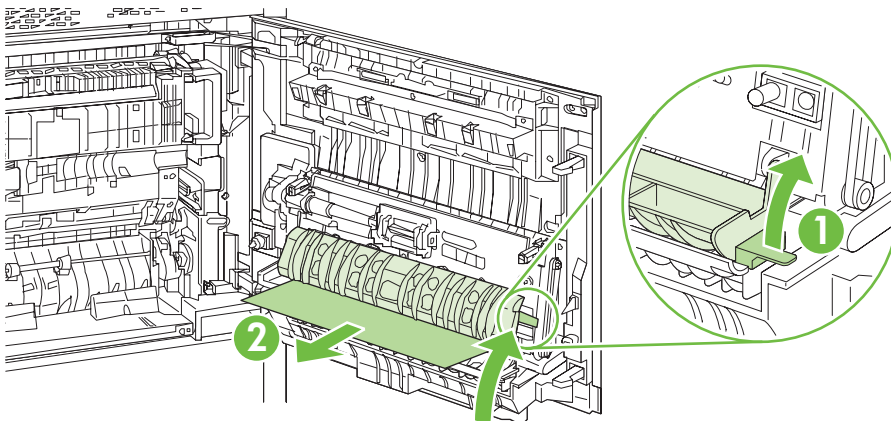
4. If paper is jammed below the duplexing unit, gently pull the paper downward to remove it.



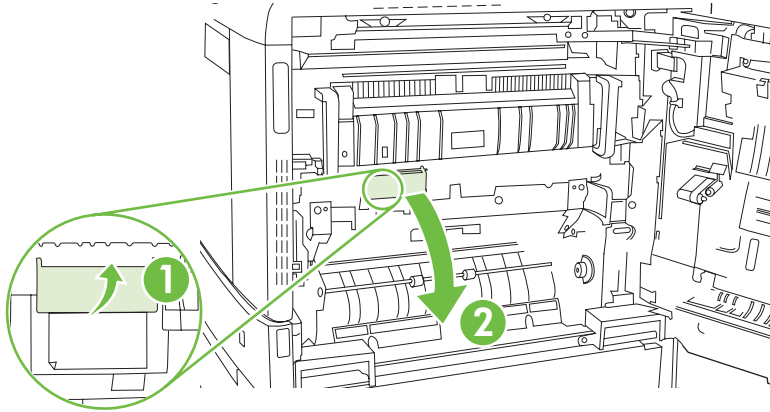
5. If paper is jammed inside the right door, gently pull the paper to remove it.



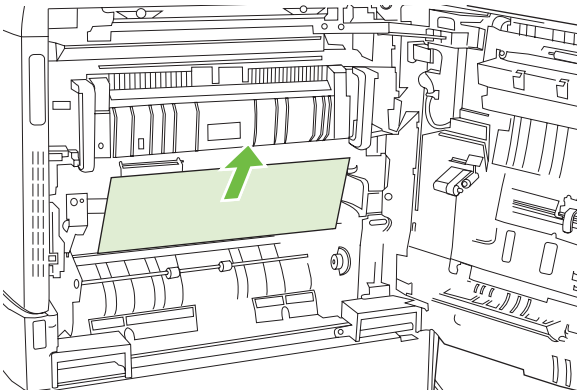
6. Lift the paper-feed cover on the inside of the right door. If jammed paper is present, gently pull the paper straight out to remove it.



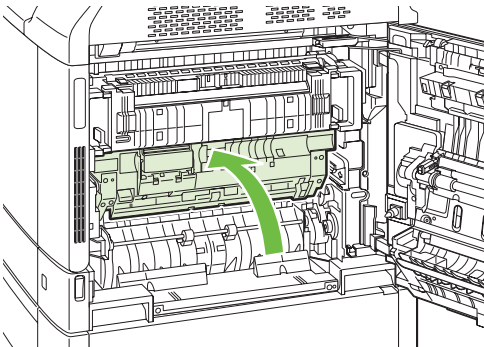
7. Lift the green handle on the transfer assembly and open the panel.



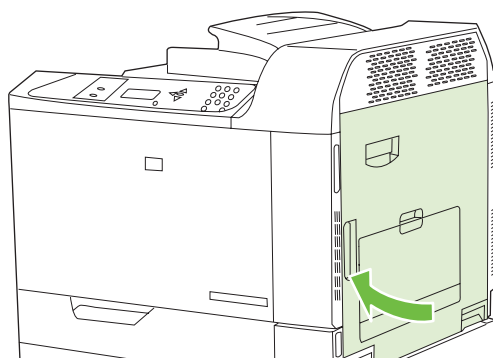
8. Gently pull the paper out of the paper path.



9. Close the transfer-access panel.



10. Close the right door.



AREA 5: Jams in Tray 2 and the internal paper path

Table 7-18 Causes and solutions for pickup delay jam 1: tray pickup

Cause	Solution
The tray separation roller or tray feed roller is worn or deformed	Replace the tray separation roller and tray feed roller.
Poor contact of the tray media-feed-sensor connector	Reconnect the connectors of the tray media-feed sensor (J2005), intermediate (J1922) and the DC controller PCA (J110).
The tray media-feed sensor is defective	Check the tray media-feed sensor by the sensor monitor mode. If the sensor is defective, replace the tray-pickup unit.
The arm spring of the tray pickup solenoid is unhooked	Check the spring and place it in the correct position.
Poor contact of the tray-pickup-solenoid drive connector	Reconnect the connectors of the tray pickup solenoid (J1923), intermediate (J1922) and the DC controller PCA (J110).
The tray pickup solenoid is defective	Execute the tray-pickup-solenoid driving test in the actuator drive mode. If the solenoid is defective, replace the tray-pickup unit.
Poor contact of the pickup-motor drive connector	Reconnect the connectors of the pickup motor (J1705), intermediate (J1924) and the DC controller PCA (J111).
The pickup motor is defective	Execute the pickup-motor driving test in the actuator drive mode. If the motor is defective, replace the multipurpose drive unit.

Table 7-19 Causes and solutions for pickup stationary jams

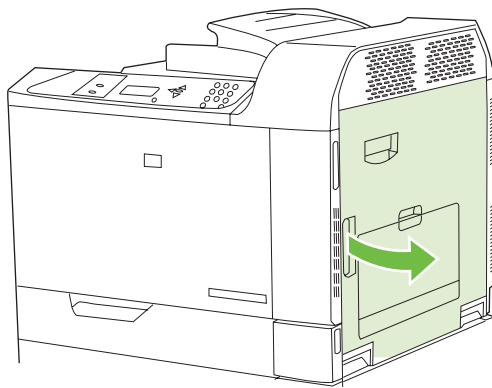
Cause	Solution
Multiple feed of media	Replace any worn or deformed parts (tray separation roller, tray feed roller, MP-tray pickup roller or MP-tray separation roller). Check the separation roller and MP-tray separation roller to see if they are firmly seated and coupled with the torque limiter. Replace the separation roller and feed roller. Replace the MP-tray pickup roller and MP-tray separation roller.
The secondary transfer roller is not set correctly	Place the secondary-transfer-roller unit in the correct position.

Table 7-19 Causes and solutions for pickup stationary jams (continued)

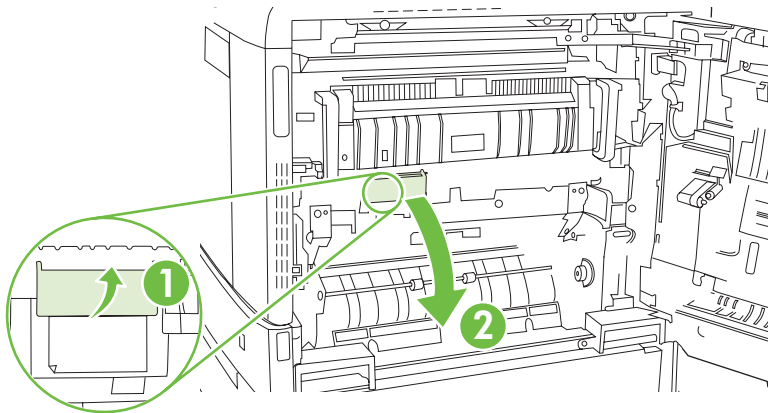
Cause	Solution
The secondary-transfer roller is worn or deformed	Replace the secondary-transfer-roller unit.
Poor contact of the ITB-motor drive connector	Reconnect the connectors of the ITB motor (J1710) and the DC controller PCA (J105).
The ITB motor is defective	Execute the ITB-motor driving test in the actuator drive mode. If the motor is defective, replace the ITB motor.
The ITB does not rotate smoothly	Replace the ITB unit.

AREA 5: Clear jams in Tray 2 and the internal paper path

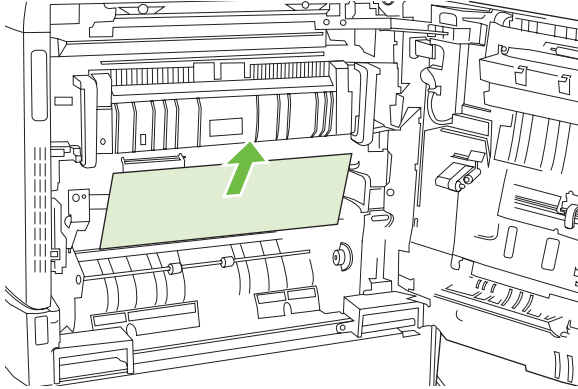
1. Open the right door.



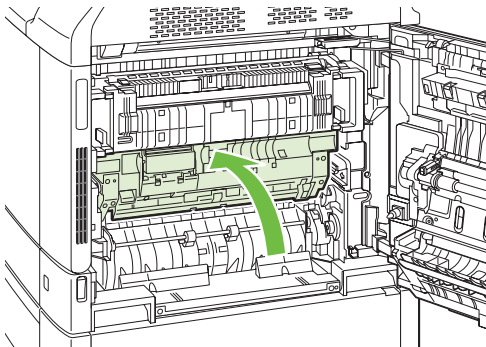
2. Lift the green handle on the transfer-access panel and open the panel.



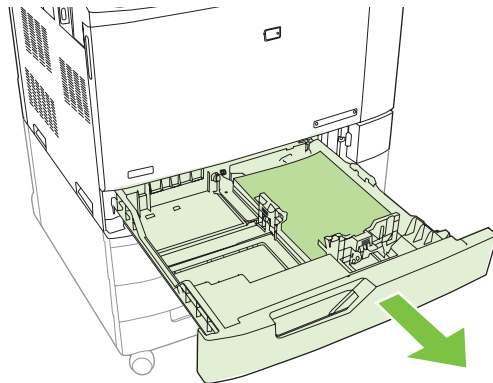
3. Gently pull the paper out of the paper path.



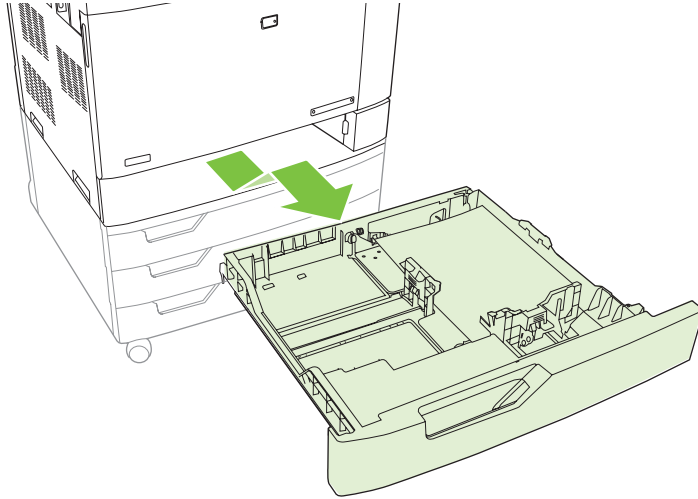
4. Close the transfer-access panel.



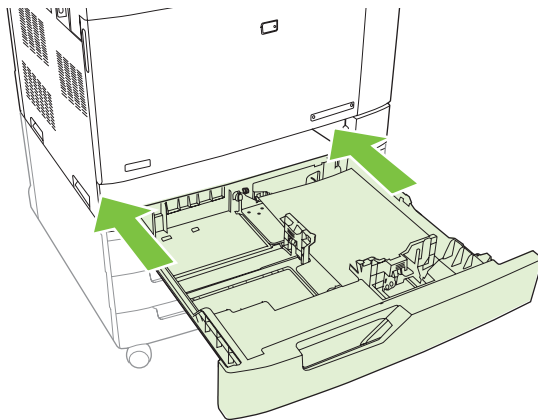
5. Open Tray 2 and make sure that the paper is stacked correctly.



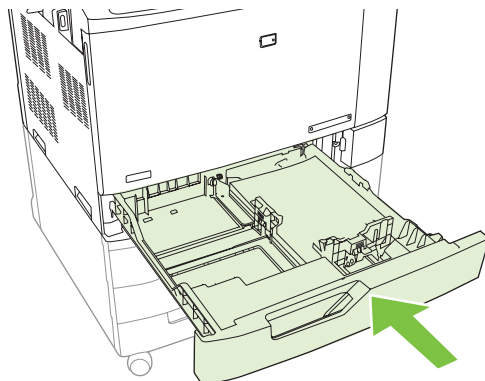
6. Pull the tray completely out of the product by pulling and lifting it up slightly.



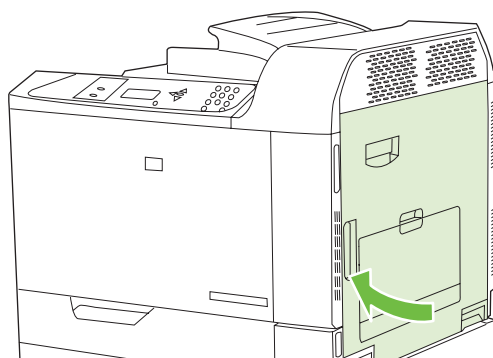
7. Remove any paper from the feeder rollers inside the product.
8. Reinsert Tray 2 by aligning the side rollers and pushing it back into the product.



9. Close the tray.



10. Close the right door.



AREA 6: Clear jams in Tray 1

Table 7-20 Causes and solutions for pickup delay jam 1; MP-tray pickup

Cause	Solution
The MP-tray pickup roller or MP-tray separation roller is worn or deformed	Replace the MP-tray pickup roller and MP-tray separation roller.
Poor contact of the MP-tray media-feed-sensor connector	Reconnect the connectors of the MP-tray media-feed sensor (J2007), intermediate (J1935) and the DC controller PCA (J111).
The MP-tray media-feed sensor is defective	Check the MP-tray media-feed sensor via the sensor monitor mode. If the sensor is defective, replace the MP-tray guide unit.
The arm spring of the MP-tray pickup solenoid is unhooked	Check the spring and place it in the correct position.
Poor contact of the MP-tray-pickup-solenoid drive connector	Reconnect the connectors of the MP-tray pickup solenoid (J1925), intermediate (J1926) and the DC controller PCA (J144).
The MP-tray pickup solenoid is defective	Execute the MP-tray-pickup-solenoid driving test in the actuator drive mode. If the solenoid is defective, replace the MP-tray-pickup unit.
Poor contact of the pickup-motor drive connector	Reconnect the connectors of the pickup motor (J1705), intermediate (J1924) and the DC controller PCA (J111).
The pickup motor is defective	Execute the pickup-motor driving test in the actuator drive mode. If the motor is defective, replace the multipurpose drive unit.

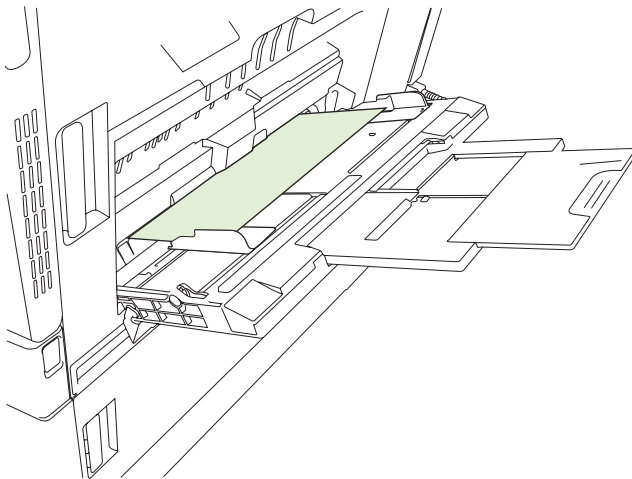
Table 7-21 Causes and solutions for pickup stationary jams

Cause	Solution
Multiple feed of media	Replace any worn or deformed parts (tray separation roller, tray feed roller, MP-tray pickup roller or MP-tray separation roller).
	Check the separation roller and MP-tray separation roller to see if they are firmly seated and coupled with the torque limiter.
	Replace the separation roller and feed roller.
	Replace the MP-tray pickup roller and MP-tray separation roller.
The secondary transfer roller is not set correctly	Place the secondary-transfer-roller unit in the correct position.

Table 7-21 Causes and solutions for pickup stationary jams (continued)

Cause	Solution
The secondary transfer roller is worn or deformed	Replace the secondary-transfer-roller unit.
Poor contact of the ITB-motor drive connector	Reconnect the connectors of the ITB motor (J1710) and the DC controller PCA (J105).
The ITB motor is defective	Execute the ITB-motor driving test in the actuator drive mode. If the motor is defective, replace the ITB motor.
The ITB does not rotate smoothly	Replace the ITB unit.

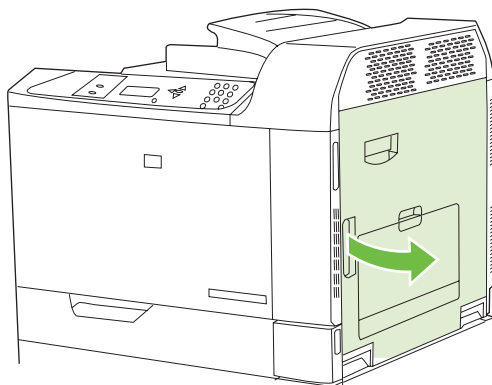
 **NOTE:** Even if jammed paper is visible in Tray 1, clear the jam from the inside of the product by opening the right door.



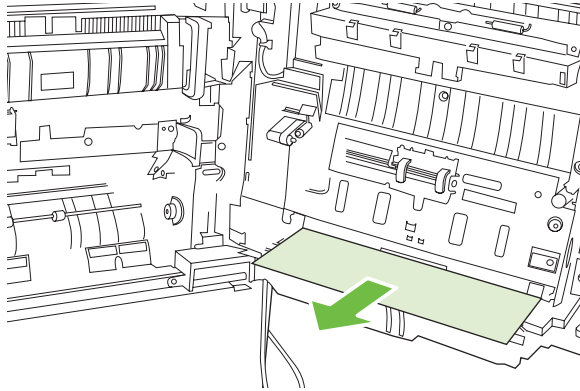
AREA 6: Clear jams in Tray 1

1. Open the right door.

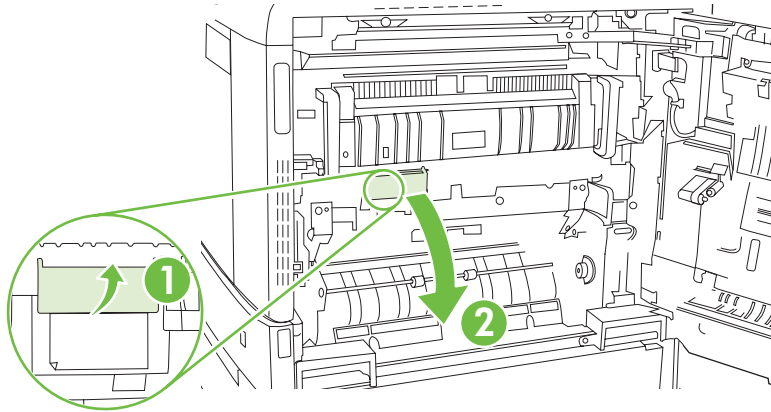
 **NOTE:** When clearing jams of long paper (11 x 17, 12 x 18, A3, and banners), it may be necessary to cut or tear the jammed paper before opening the right door.



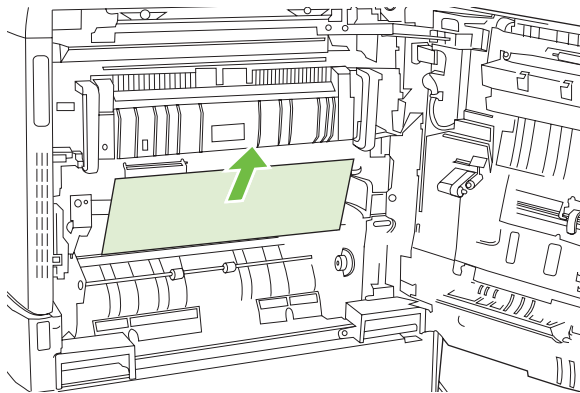
2. If paper is visible inside the right door, gently pull the paper downward to remove it.



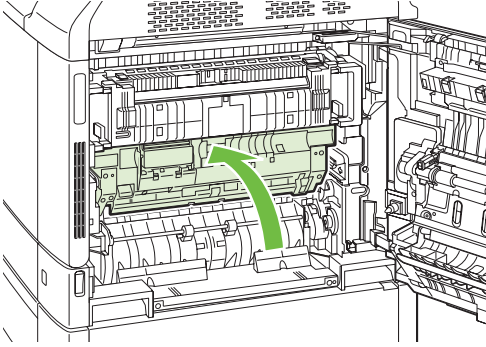
3. If paper has entered the internal paper path, lift the green handle on the transfer-access panel and open the panel.



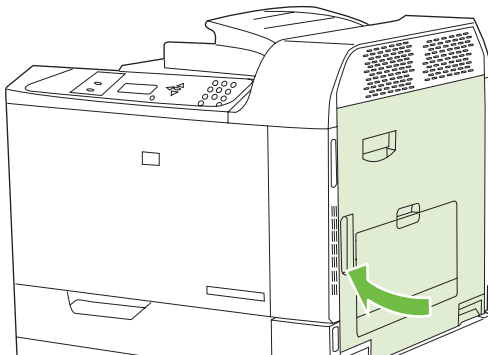
4. Gently pull the paper out of the paper path.



5. Close the transfer-access panel.



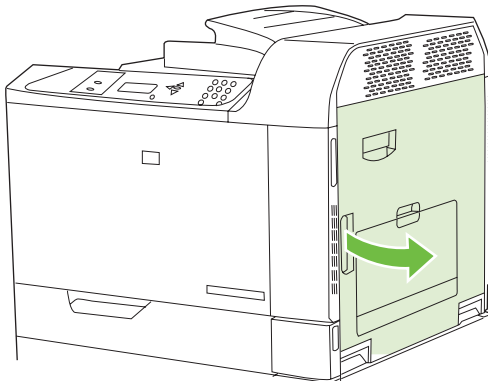
6. Close the right door.



Clear jams when printing banners

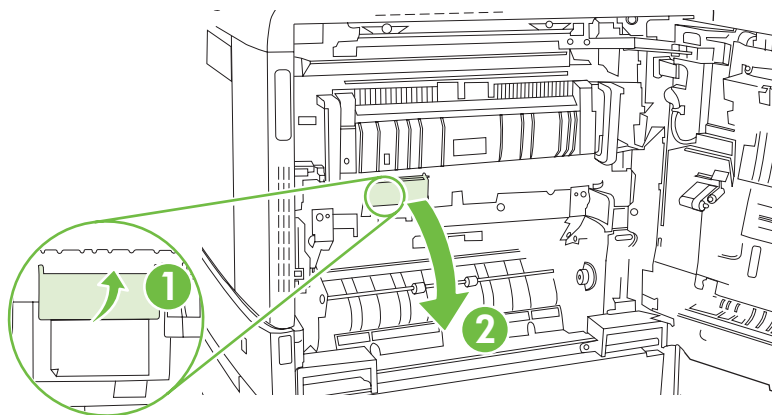
If a paper jam occurs while printing with banner paper, gently pull the paper forward through the output bin or back through Tray 1 to remove the paper from the paper path. After removing the paper, open and close the right door to clear the jam message from the control panel. If you cannot remove the paper, carry out the following steps:

1. Open the right door.

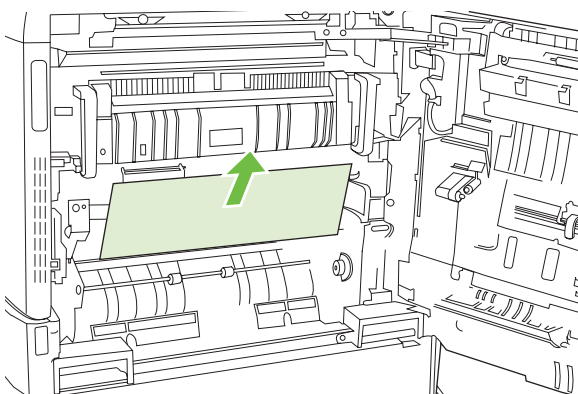


 **NOTE:** If you are printing to very heavy banner paper, and the paper is still feeding in through Tray 1, you may need to cut the paper at the base of Tray 1 in order to open the right door and pull the paper free of the Tray 1 rollers.

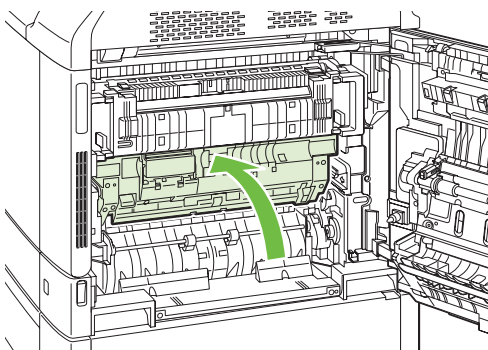
2. Lift the green handle on the transfer-access panel and open the panel.



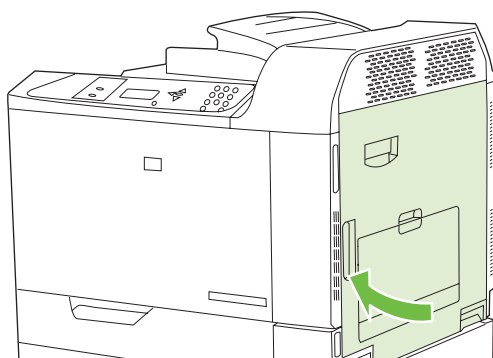
3. Gently pull the paper out of the paper path



4. Close the transfer-access panel.



5. Close the right door.



AREA 7: Jams in optional Trays 3, 4, and 5

Jams in AREA 7 are detected by paper sensors on the paper path:

- Upper-PD-cassette media-feed sensor (SR102)
- Middle-PD-cassette media-feed sensor (SR112)
- Lower-PD-cassette media-feed sensor (SR122)

Figure 7-7 Paper-deck sensors

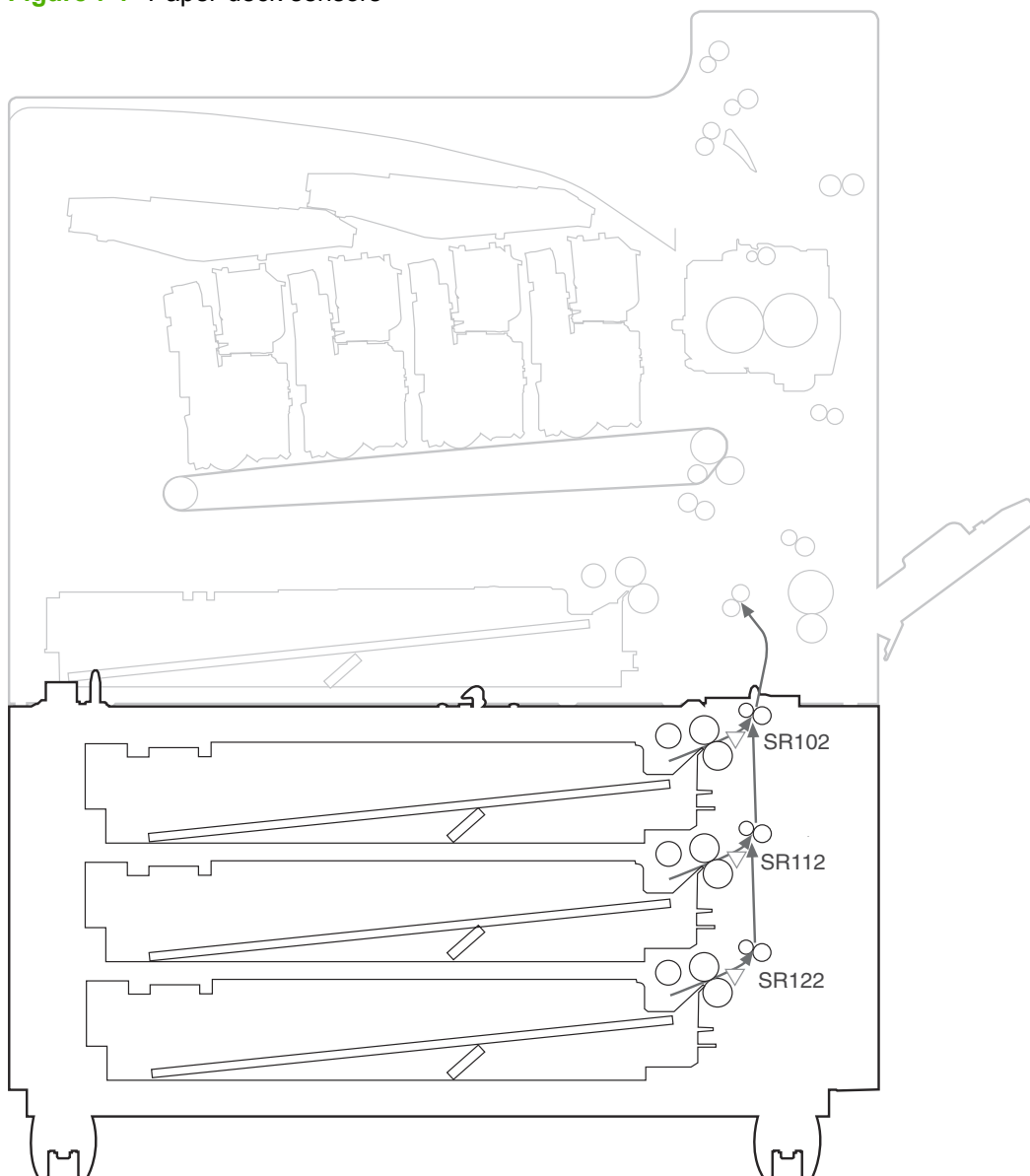


Table 7-22 Causes and solutions for pickup delay jam

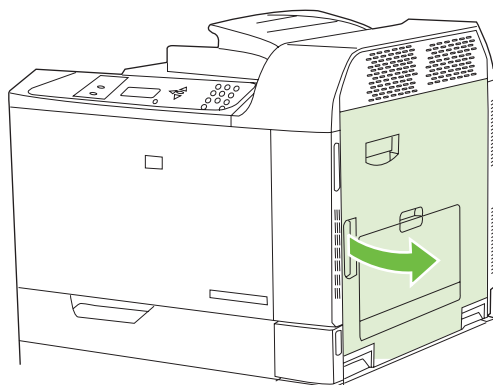
Cause	Solution
The separation roller or feed roller for optional Trays 3, 4, and 5 is worn or deformed	Replace the separation roller and feed roller for optional Trays 3, 4, and 5.

Table 7-22 Causes and solutions for pickup delay jam (continued)

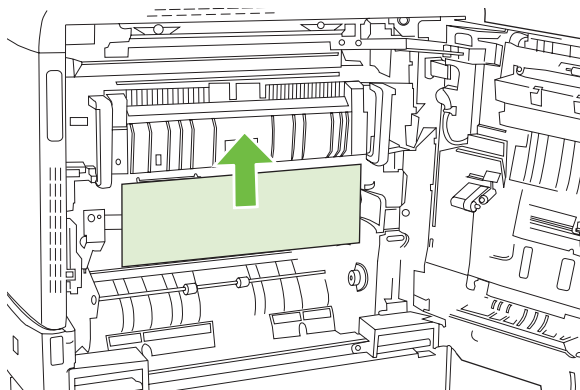
Cause	Solution
Poor contact of the Tray-3 media-feed-sensor connector	Reconnect the connectors of the Tray-3 media-feed sensor (J2102), intermediate (J1982) and the Tray-3 paper-deck driver PCA (J8106A).
The Tray-3 media-feed sensor for is defective	Check the Tray-3 media-feed sensor via the sensor monitor mode. If the sensor is defective, replace the pickup-plate unit.
The spring of the Tray-3-pickup-solenoid arm is unhooked	Check the spring and place it in the correct position.
Poor contact of the Tray-3-pickup-solenoid drive connector	Reconnect the connectors of the Tray-3 pickup solenoid (J1983) and the Tray-3 paper-deck driver PCA (J8107A).
The Tray-3 pickup solenoid is defective	Execute the Tray-3-pickup-solenoid driving test in the actuator drive mode. If the solenoid is defective, replace the pickup solenoid.
Poor contact of the Tray-3 pickup-motor drive connector	Reconnect the connectors of the Tray-3 pickup motor (J1751) and the Tray-3 paper-deck driver PCA (J8107A).
The Tray-3 pickup motor is defective	Execute the Tray-3-pickup-motor driving test in the actuator drive mode. If the motor is defective, replace the pickup motor.
Poor contact of the Tray-4 media-feed-sensor connector	Reconnect the connectors of the Tray-4 media-feed sensor (J2112), intermediate (J1985) and the Tray-4 paper-deck driver PCA (J8106B).
The Tray-4 media-feed sensor is defective	Check the Tray-4 media-feed sensor via the sensor monitor mode. If the sensor is defective, replace the pickup-plate unit.
The spring of the Tray-4-pickup-solenoid arm is unhooked	Check the spring and place it in the correct position.
Poor contact of the Tray-4-pickup-solenoid drive connector	Reconnect the connectors of the Tray-4 pickup solenoid (J1986) and the Tray-4 paper-deck driver PCA (J8107B).
The Tray-4 pickup solenoid is defective	Execute the Tray-4-pickup-solenoid driving test in the actuator drive mode. If the solenoid is defective, replace the pickup solenoid.
Poor contact of the Tray-4 pickup-motor drive connector	Reconnect the connectors of the Tray-4 pickup motor (J1752) and the Tray-4 paper-deck driver PCA (J8107B).
The Tray-4 pickup motor is defective	Execute the Tray-4-pickup-motor driving test in the actuator drive mode. If the motor is defective, replace the pickup motor.
Poor contact of the Tray-5 media-feed-sensor connector	Reconnect the connectors of the Tray-5 media-feed sensor (J2122), intermediate (J1988) and the Tray-5 paper-deck driver PCA (J8106C).
The Tray-5 media-feed sensor is defective	Check the Tray-5 media-feed sensor via the sensor monitor mode. If the sensor is defective, replace the pickup-plate unit.
The spring of the Tray-5-pickup-solenoid arm is unhooked	Check the spring and place it in the correct position.
Poor contact of the Tray- 5-pickup-solenoid drive connector	Reconnect the connectors of the Tray-5 pickup solenoid (J1989) and the Tray-5 paper-deck driver PCA (J8107C).
The Tray-5 pickup solenoid is defective	Execute the Tray-5-pickup-solenoid driving test in the actuator drive mode. If the solenoid is defective, replace the pickup solenoid.
Poor contact of the Tray-5 pickup-motor drive connector	Reconnect the connectors of the Tray-5 pickup motor (J1753) and the Tray-5 paper-deck driver PCA (J8107C).
The Tray-5 pickup motor is defective	Execute the Tray-5-pickup-motor driving test in the actuator drive mode. If the motor is defective, replace the pickup motor.

AREA 7: Clear jams in optional Trays 3, 4, and 5

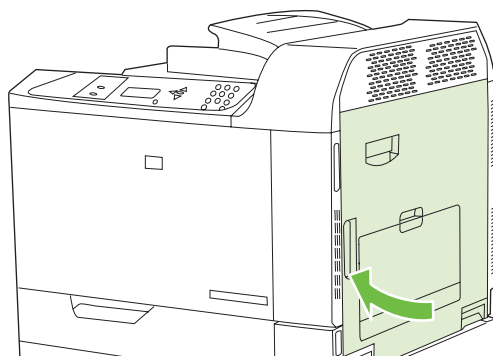
1. Open the right door.



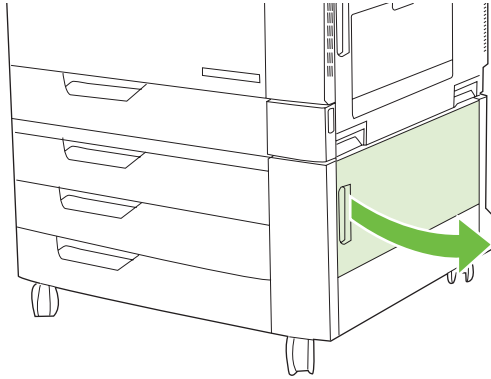
2. If paper is visible in the paper-input area, gently pull the jammed paper up to remove it.



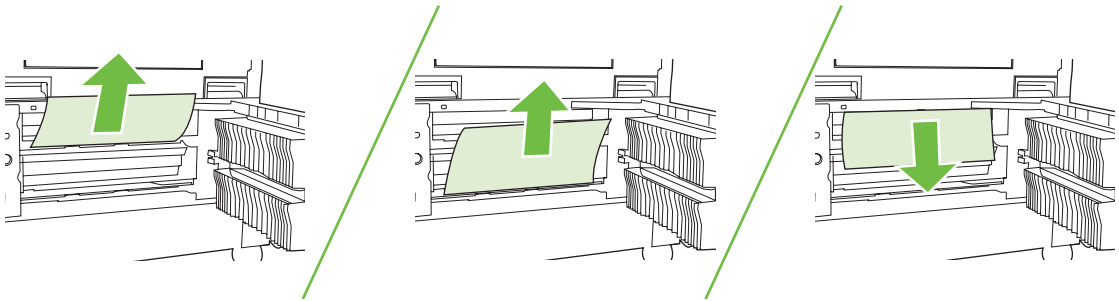
3. Close the right door.



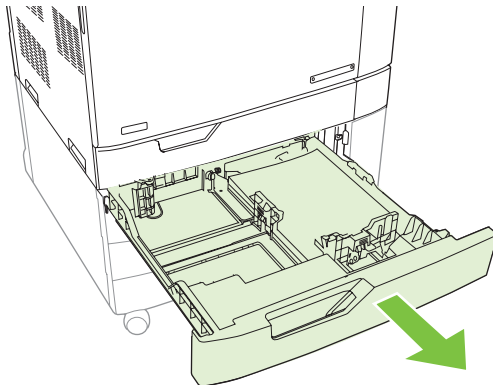
4. Open the lower-right door.



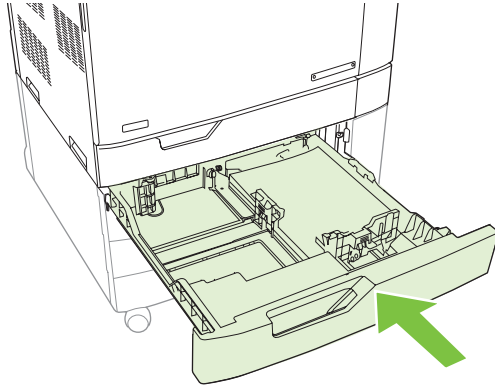
5. Gently pull the jammed paper to remove it.



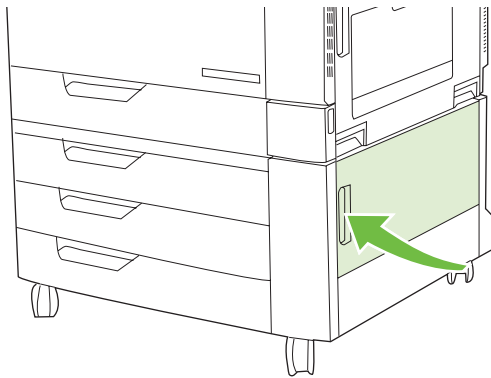
6. Open the tray that is indicated in the control-panel message, and make sure that the paper is stacked correctly.



7. Close the tray.



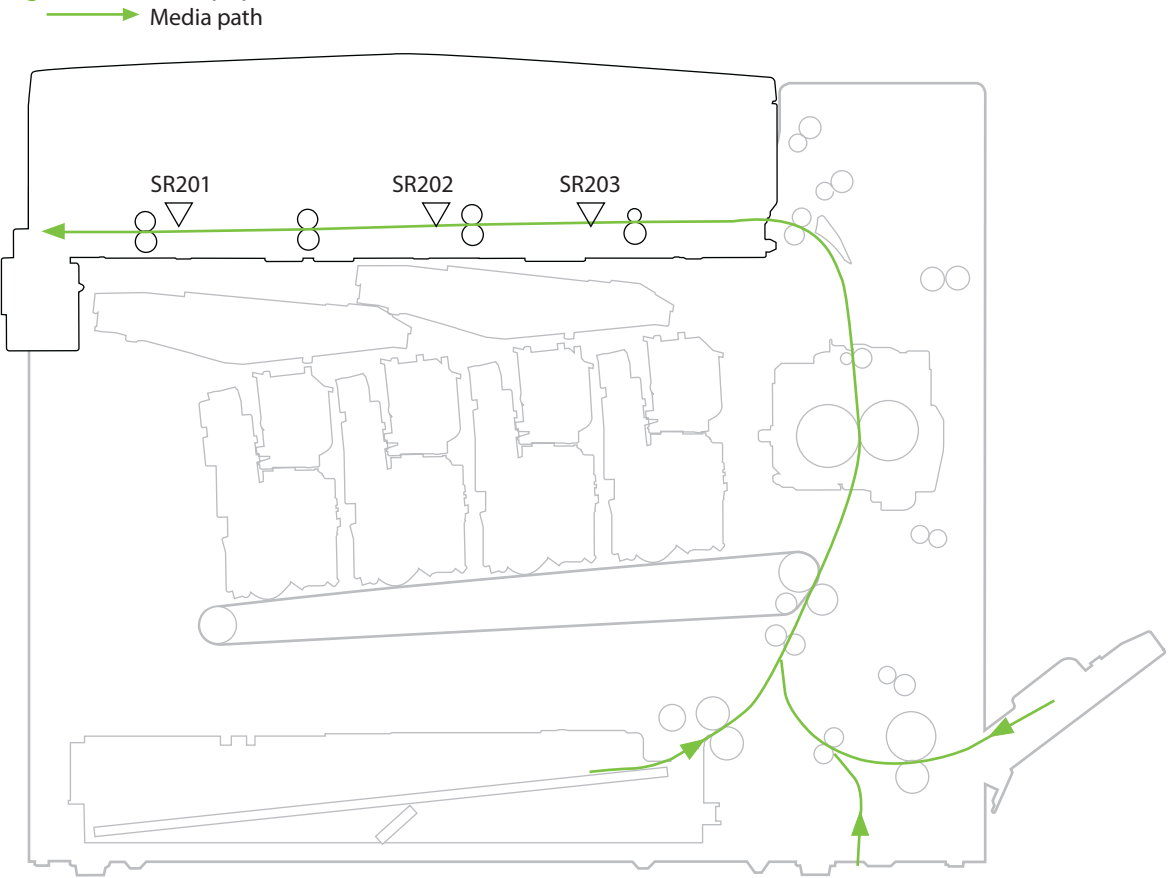
8. Close the lower-right door.



AREA 8: Jams in the optional finishing devices

Clear jams in the output-accessory bridge

Figure 7-8 IPTU paper sensors



Sensor	Description
SR201	IPTU paper-feed sensor 1
SR202	IPTU paper-feed sensor 2
SR203	IPTU paper-feed sensor 3

Table 7-23 Causes and solutions for delivery delay jams 1

Cause	Solution
The spring of the IPTU media-feed sensor-1 lever is unhooked	Check the spring and place it in the correct position.
The IPTU media-feed sensor-1 lever is damaged	Replace the lower-guide unit.
Poor contact of the IPTU media-feed sensor-1 connector	Reconnect the connectors of the IPTU media-feed sensor 1 (J12203) and the IPTU driver PCA (J7006).
The IPTU media-feed sensor 1 is defective	Check the IPTU media-feed sensor 1 by the sensor monitor mode. If the sensor is defective, replace the lower-guide unit.

Table 7-23 Causes and solutions for delivery delay jams 1 (continued)

Cause	Solution
Poor contact of the IPTU media-feed-motor-1 connector	Reconnect the connectors of the IPTU media-feed motor 1 (J7011) and the IPTU driver PCA (J7003).
The IPTU media-feed motor 1 is defective	Execute the IPTU-media-feed-motor driving test in the actuator drive mode. If the motor is defective, replace the IPTU media-feed motor 1.

Table 7-24 Causes and solutions for delivery delay jams 2

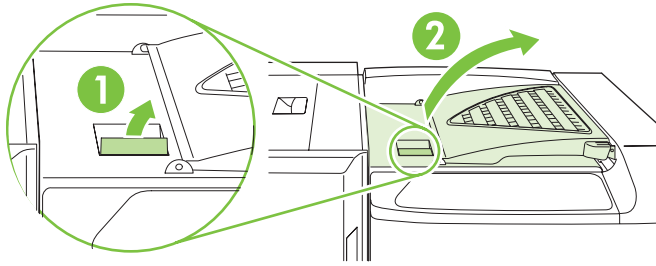
Cause	Solution
The spring of the IPTU media-feed sensor-2 lever is unhooked	Check the spring and place it in correct position.
The IPTU media-feed sensor-2 lever is damaged	Replace the lower-guide unit.
Poor contact of the IPTU media-feed sensor-2 connector	Reconnect the connectors of the IPTU media-feed sensor 2 (J12202) and the IPTU driver PCA (J7006).
The IPTU media-feed sensor 2 is defective	Check the IPTU media-feed sensor 2 via the sensor monitor mode. If the sensor is defective, replace the lower-guide unit.
The spring of the IPTU media-feed sensor-3 lever is unhooked	Check the spring and place it in the correct position.
The IPTU media-feed sensor-3 lever is damaged	Replace the lower-guide unit.
Poor contact of the IPTU media-feed sensor-3 connector	Reconnect the connectors of the IPTU media-feed sensor 3 (J12201) and the IPTU driver PCA (J7006).
The IPTU media-feed sensor 3 is defective	Check the IPTU media-feed sensor 3 via the sensor monitor mode. If the sensor is defective, replace the lower-guide unit.
Poor contact of the IPTU media-feed-motor-2 connector	Reconnect the connectors of the IPTU media-feed motor 2 (J7012) and the IPTU driver PCA (J7007).
The IPTU media-feed motor 2 is defective	Execute the IPTU-media-feed-motor driving test in the actuator drive mode. If the motor is defective, replace the IPTU media-feed motor 2.

Table 7-25 Causes and solutions for delivery stationary jams

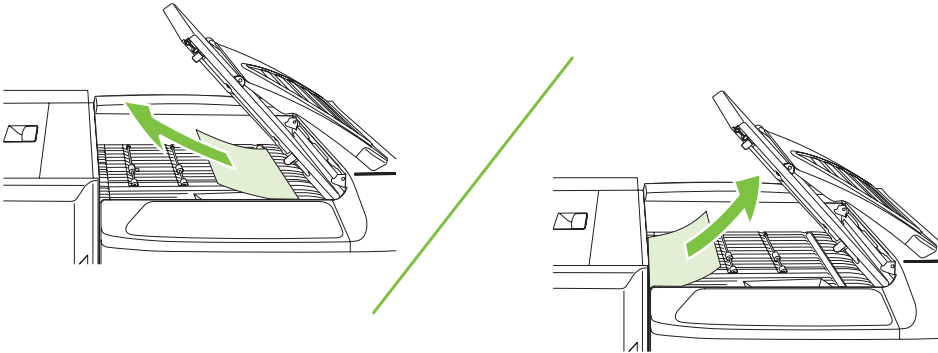
Cause	Solution
The IPTU feed roller is worn or deformed	Replace the upper-guide unit or lower-guide unit.
The spring of the IPTU feed subroller is unhooked	Check the spring and place it in the correct position.

Clear jams in the optional finishing devices

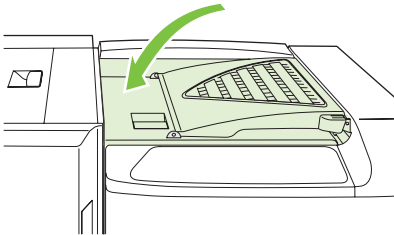
1. Lift the latch on the top cover of the output-accessory bridge and open the top cover.



2. Gently pull the jammed paper to remove it.



3. Close the top cover of the output-accessory bridge.

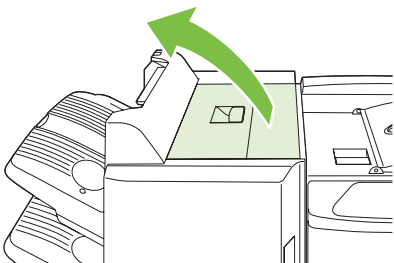


Clear jams in the sorter area

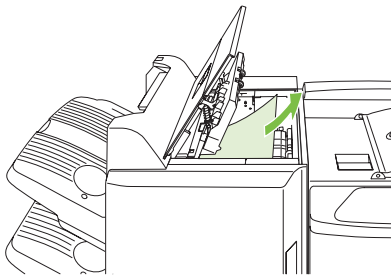
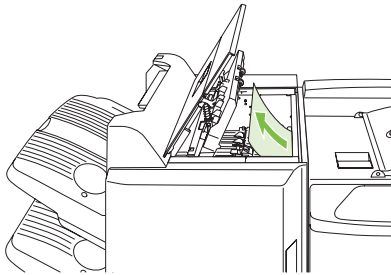
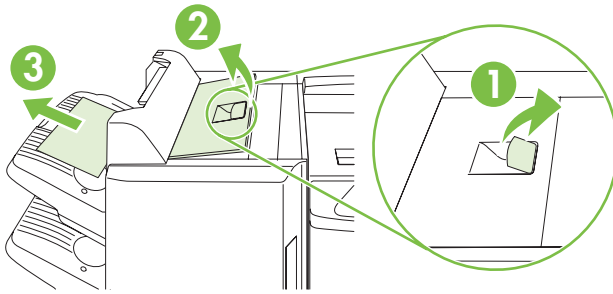
Clear jams in the sorter area

1. Lift the latch on the top cover of the finishing device, and open the top cover.

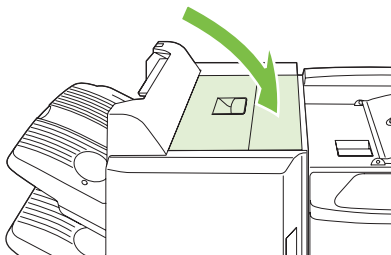
 **NOTE:** Opening the top cover releases pressure on the output-bin rollers.



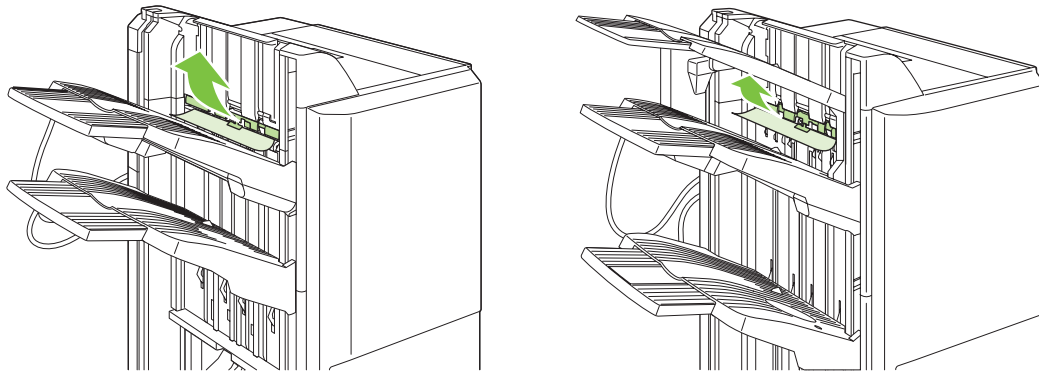
2. Remove jammed paper from the output bin or from the inside of the finishing device.



3. Close the top cover of the finishing device.



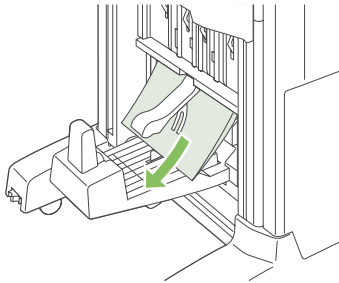
4. Lift the swing guide panel in the output bin. If you can see any jammed paper, gently pull it out.



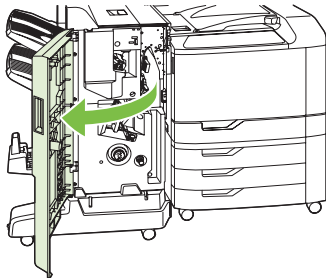
Clear jams in the booklet maker

Clear jams in the booklet maker

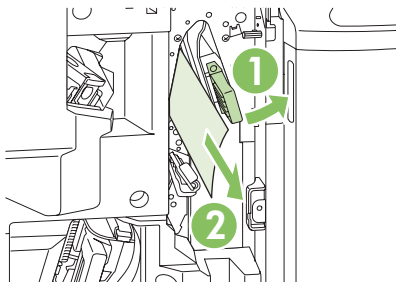
1. If the paper is visible in the booklet output bin, gently pull the paper to remove it.



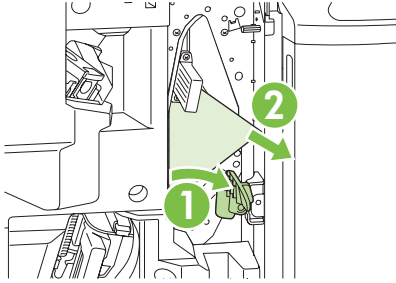
2. Open the front door of the booklet maker.



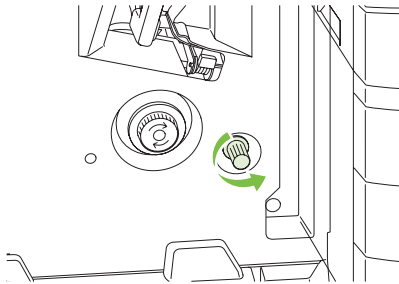
3. Push the upper delivery guide to the right, and remove any jammed paper.



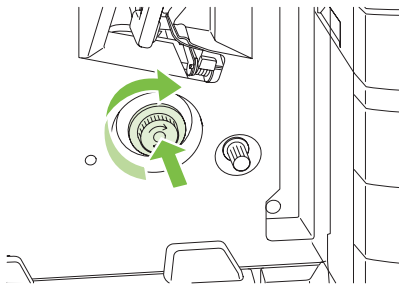
4. Push the lower delivery guide to the right, and remove any jammed paper.



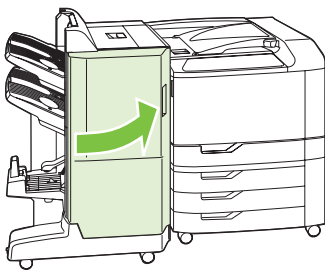
5. The positioning knob is the smaller, green dial on the right. Turn the positioning knob counterclockwise.



6. The jam-release knob is the larger, green dial on the left. Push in the jam-release knob, and then turn it clockwise to move any jammed paper into the output bin.



7. Close the front door of the booklet maker.

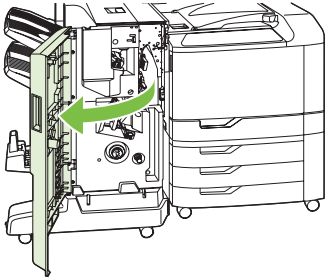


Clear staple jams

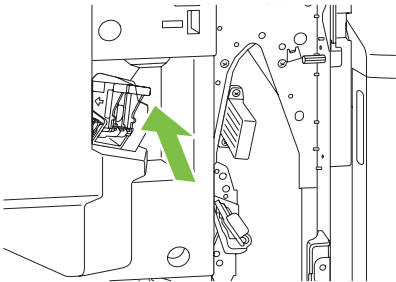
Clear staple jams in the main stapler

The HP 3-bin Stapler/Stacker and the HP Booklet maker/Finisher Accessory each have a main stapler, which is located near the top of the finishing device.

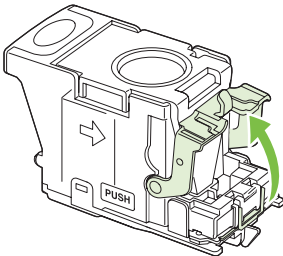
1. Open the front door of the finishing device.



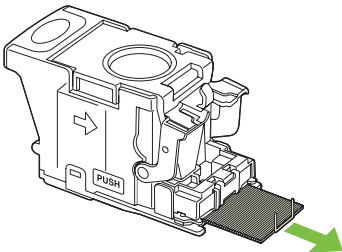
2. To remove the staple cartridge, pull up on the green handle and pull out the staple cartridge.



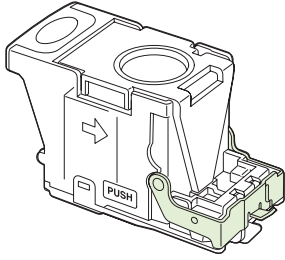
3. Lift up on the small lever at the back of the staple cartridge.



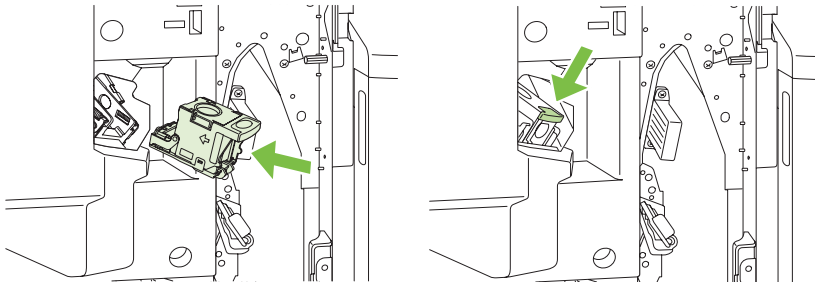
4. Remove the damaged staples that protrude from the staple cartridge. Remove the entire sheet of staples that the damaged staples were attached to.



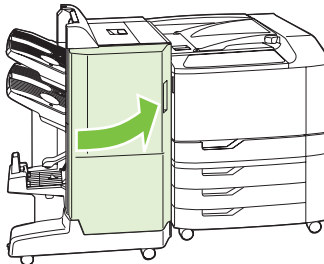
5. Close the lever at the back of the staple cartridge. Be sure that it snaps into place.



6. Reinsert the staple cartridge into the finishing device, and push down on the green handle until it snaps into place.



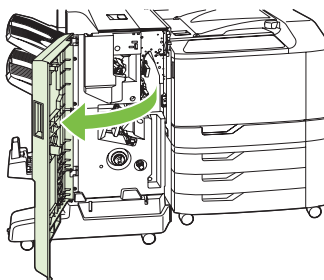
7. Close the front cover of the finishing device.



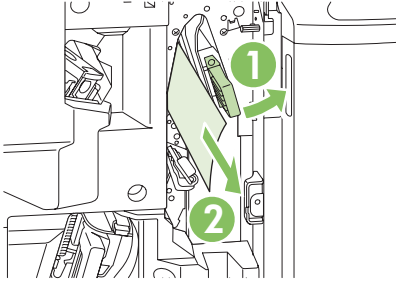
Clear staple jams in the booklet maker

The booklet maker has an additional saddle stitch stapler that is below the main stapler. The saddle stitch stapler has two staple cartridges.

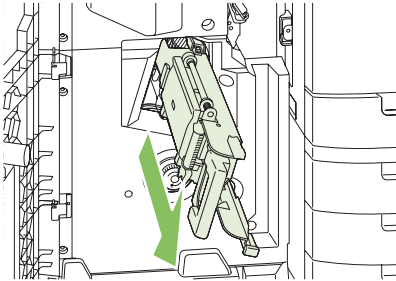
1. Open the front door of the booklet maker.



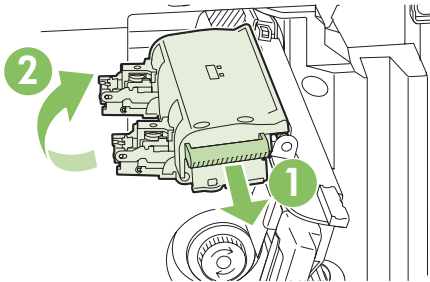
2. Push the upper delivery guide to the right, and remove any jammed paper.



3. Grasp the blue handle for the stapler carriage and pull it straight out.



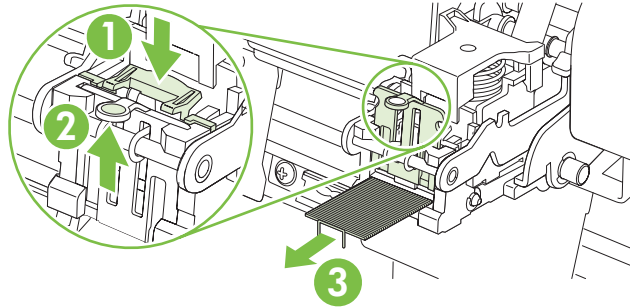
4. Grasp the handle of the blue staple cartridge unit and pull it toward you, then swing the staple cartridge unit into an upright position.



5. Check each staple cartridge for jammed staples.

- a. On each staple cartridge, press down on the green plastic tabs while lifting the jam clearance plate.

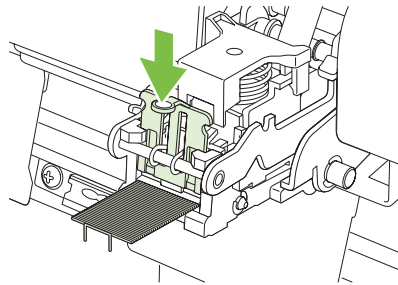
△ **CAUTION:** Do not place your fingers or hands underneath the staple cartridge during this procedure.



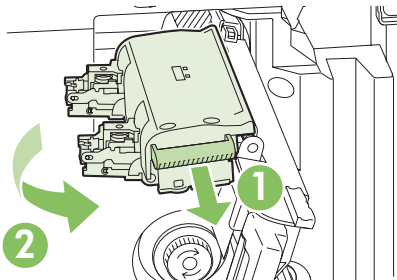
- b. Remove any jammed staples. Remove any damaged staples and the entire sheet of staples that the damaged staples were attached to.

- c. Press down on the jam clearance plate to close it.

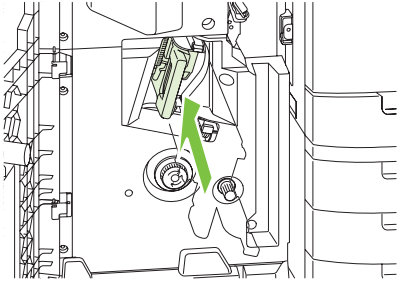
△ **CAUTION:** Do not place your fingers or hands underneath the staple cartridge during this procedure.



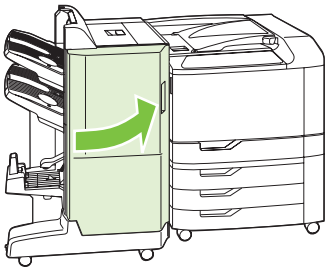
6. Pull the staple cartridge unit forward, and swing it downward to the original position. Push in on the handle to lock it into position.



7. Push the staple carriage back into the booklet maker.



8. Close the front door of the booklet maker.



Jam recovery

This product provides a jam recovery feature that reprints jammed pages. The following options are available:

- **AUTO** — The product attempts to reprint jammed pages when sufficient memory is available.
- **OFF** — The product does not attempt to reprint jammed pages. Because no memory is used to store the most recent pages, performance is optimal.

 **NOTE:** When using this option, if the product runs out of paper and the job is being printed on both sides, some pages can be lost.

- **ON** — The product always reprints jammed pages. Additional memory is allocated to store the last few pages printed. This might cause overall performance to suffer.

Set the jam recovery feature

1. Press **Menu**.
2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **SYSTEM SETUP**, and press the checkmark button ✓.
4. Press the down arrow ▼ to highlight **JAM RECOVERY**, and press the checkmark button ✓.
5. Press the down arrow or up arrow ▼/▲ to highlight the appropriate setting, and press the checkmark button ✓.
6. Press **Menu** to return to the **READY** state.

Product feeds multiple sheets

Product feeds multiple sheets

Cause	Solution
The input tray is overfilled. Open the tray and verify that the paper stack is below the maximum stack height mark.	Remove excess paper from the input tray.
Print paper is sticking together.	Remove paper, flex it, rotate it 180 degrees or flip it over, and then reload it into the tray. NOTE: Do not fan paper. Fanning can cause static electricity, which can cause paper to stick together.
Paper does not meet the specifications for this product.	Use only paper that meets HP paper specifications for this product.
Trays are not properly adjusted.	Make sure that the paper guides match the size of paper being used.

Product pulls from incorrect tray

Product pulls from incorrect tray

Cause	Solution
You are using a driver for a different product.	Use a driver for this product.
The specified tray is empty.	Load paper in the specified tray.
The paper size is not configured correctly for the input tray.	Print a configuration page or use the control panel to determine the paper size for which the tray is configured.
The guides in the tray are not against the paper.	Verify that the guides are touching the paper.

Product feeds incorrect page size

Product feeds incorrect page size

Cause	Solution
The correct size paper is not loaded in the input tray.	Load the correct size paper in the input tray.
The correct size paper is not selected in the software program or printer driver.	Confirm that the settings in the software program and printer driver are correct, because the software program settings override the printer driver and control panel settings, and the printer driver settings override the control panel settings. For more information, see user guide.
The correct size paper for the tray is not selected in the product control panel.	From the control panel, select the correct size paper for the tray.
The paper size is not configured correctly for the input tray.	Print a configuration page or use the control panel to determine the paper size for which the tray is configured.
The guides in the tray are not against the paper.	Verify that the paper guides are touching the paper.

Paper does not feed automatically

Paper does not feed automatically

Cause	Solution
Manual feed is selected in the software program.	Load Tray 1 with paper, or, if the paper is loaded, press the checkmark button ✓.
The correct size paper is not loaded.	Load the correct size paper.
The input tray is empty.	Load paper into the input tray.
Paper from a previous jam has not been completely removed.	Open the product and remove any paper in the paper path.
The paper size is not configured correctly for the input tray.	Print a configuration page or use the control panel to determine the paper size for which the tray is configured.
The guides in the tray are not against the paper.	Verify that the rear and width paper guides are touching the paper.
The manual-feed prompt is set to ALWAYS . The product always prompts for manual feed, even if the tray is loaded.	Open the tray, reload the media, and then close the tray. Or, change the manual-feed prompt setting to UNLESS LOADED , so that the product prompts for manual feed only when the tray is empty.
The USE REQUESTED TRAY setting on the product is set to EXCLUSIVELY , and the requested tray is empty. The product will not use another tray.	Load the requested tray. Or, change the setting from EXCLUSIVELY to FIRST on the CONFIGURE DEVICE menu. The product can use other trays if no media is loaded in the specified tray.

Paper does not feed from Tray 2, 3, 4, or 5

Paper does not feed from Tray 2, 3, 4, or 5

Cause	Solution
The correct size paper is not loaded.	Load the correct size paper.
The input tray is empty.	Load paper in the input tray.
The correct paper type for the input tray is not selected in the product control panel.	From the product control panel, select the correct paper type for the input tray.
Paper from a previous jam has not been completely removed.	Open the product and remove any paper in the paper path. Closely inspect the fuser area for jams.
None of the optional trays appear as input tray options.	The optional trays only display as available if they are installed. Verify that any optional trays are correctly installed. Verify that the printer driver has been configured to recognize the optional trays.
An optional tray is incorrectly installed.	Print a configuration page to confirm that the optional tray is installed. If not, verify that the tray is correctly attached to the product.
The paper size is not configured correctly for the input tray.	Print a configuration page or use the control panel to determine the paper size for which the tray is configured.
The guides in the tray are not against the paper.	Verify that the guides are touching the paper.

Transparencies or glossy paper will not feed

Transparencies or glossy paper will not feed

Cause	Solution
The correct paper type is not specified in the software or printer driver.	Verify that the correct paper type is selected in the software or printer driver.
The input tray is overfilled.	Remove excess paper from the input tray. Do not load more than 200 sheets of glossy paper or glossy film, or more than 100 transparencies in Tray 2, 3, 4, or 5. Do not exceed the maximum stack height marks for Tray 1.
Paper in another input tray is the same size as the transparencies, and the product is defaulting to the other tray.	Make sure that the input tray containing the transparencies or glossy paper is selected in the software program or printer driver. Use the product control panel to configure the tray to the paper type loaded.
The tray containing the transparencies or glossy paper is not configured correctly for type.	Make sure that the input tray containing the transparencies or glossy paper is selected in the software program or printer driver. Use the product control panel to configure the tray to the paper type loaded.
Transparencies or glossy paper might not meet supported paper specifications.	Use only paper that meets the HP paper specifications for this product.
High-humidity environments may cause glossy paper not to feed, or to feed too many sheets.	Print glossy paper from Tray 2, 3, 4, or 5 for best results. Avoid printing glossy paper in high humidity conditions. When printing glossy paper, removing the paper from the wrapper and letting it rest for a few hours can improve feeding into the product. However, letting paper rest in humid environments may also cause blisters.

- △ **CAUTION:** HP Color Laser Presentation Paper, Glossy (Q2546A) is not supported with this product. Using this type of paper can cause a fuser jam that might require the replacement of the fuser. Two recommended alternatives are HP Color LaserJet Presentation Paper, Soft Gloss (Q6541A) and HP Color LaserJet Brochure Paper, Glossy (Q6611A, Q6610A). For a list of supported paper types, see [Supported paper types on page 56](#).

Envelopes jam or will not feed in the product

Envelopes jam or will not feed in the product

Cause	Solution
Envelopes are loaded in an unsupported tray. Only Tray 1 can feed envelopes.	Load envelopes into Tray 1.
Envelopes are curled or damaged.	Try using different envelopes. Store envelopes in a controlled environment.
Envelopes are sealing because the moisture content is too high.	Try using different envelopes. Store envelopes in a controlled environment.
Envelope orientation is incorrect.	Verify that the envelope is loaded correctly.
This product does not support the envelopes being used.	Refer to the <i>HP LaserJet Printer Family Print Media Guide</i> .
Tray 1 is configured for a size other than envelopes.	Configure Tray 1 size for envelopes.

Output is curled or wrinkled

Output is curled or wrinkled

Cause	Solution
Paper does not meet the specifications for this product.	Use only paper that meets the HP paper specifications for this product.
Paper is damaged or in poor condition.	Remove paper from the input tray and load paper that is in good condition.
Product speed needs to be reduced.	Set the PAPER CURL option in the Print Quality menu to REDUCED to decrease full speed to 10 ppm (instead of 40 ppm) and 3/4 speed to 7.5 ppm (instead of 30 ppm).
Product is operating in an excessively humid environment.	Verify that the printing environment is within humidity specifications.
You are printing large, solid-filled areas.	Large, solid-filled areas can cause excessive curl. Try using a different pattern.
Paper used was not stored correctly and might have absorbed moisture.	Remove paper and replace it with paper from a fresh, unopened package.
Paper has poorly cut edges.	Remove paper, flex it, rotate it 180 degrees or turn it over, and then reload it into the input tray. Do not fan paper. If the problem persists, replace the paper.
The specific paper type was not configured for the tray or selected in the software.	Configure the software for the paper (see the software documentation). Configure the tray for the paper, see Load paper and print media on page 59 .
The paper has previously been used for a print job.	Do not re-use paper.

Product will not duplex or duplexes incorrectly

Product will not duplex (print 2-sided jobs) or duplexes incorrectly

Cause	Solution
You are trying to duplex on unsupported paper.	Verify that the paper is supported for duplex printing.
The printer driver is not set up for duplex printing.	Set up the printer driver to enable duplex printing.
The first page is printing on the back of preprinted forms or letterhead.	Load preprinted forms and letterhead in Tray 1 with the letterhead or printed side down, with the top of the page toward the back of the product. For Tray 2, 3, 4 and 5, load the paper printed side up with the top of the page toward the back of the product.
The product model does not support automatic 2-sided printing.	The HP Color LaserJet CP6015n does not support automatic 2-sided printing.
The product configuration is not set for duplexing.	In Windows, run the automatic configuration feature: 1. Click the Start button, point to Settings, and then click Printers (for Windows 2000) or Printers and Faxes (for Windows XP). 2. Right-click the HP product icon, and then click Properties or Printing Preferences.

Product will not duplex (print 2-sided jobs) or duplexes incorrectly

Cause	Solution
	3. Click the Device Settings tab. 4. Under Installable Options, click Update Now in the Automatic Configuration list.

Solve image-quality problems

This section helps you define print-quality problems and what to do to correct them. Often print-quality problems can be handled easily by making sure that the product is properly maintained, using paper that meets HP specifications, or running a cleaning page.

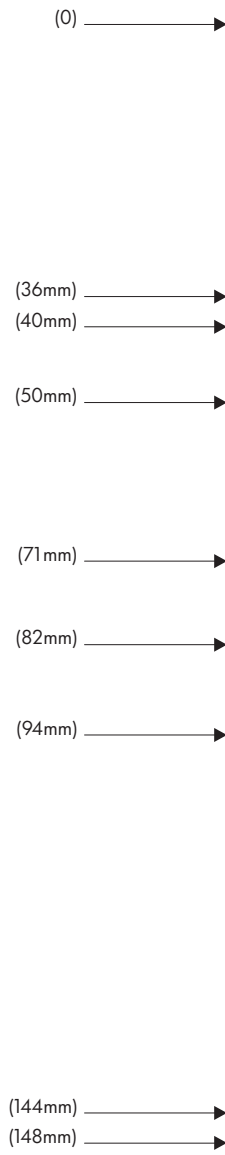
Example print quality problems

Some print quality problems arise from use of inappropriate paper.

- Use paper that meets HP paper specifications.
- The surface of the paper is too rough. Use paper that meets HP paper specifications.
- The printer driver setting or paper tray setting might be incorrect. Be sure that you have configured the paper tray at the product control panel and have also selected the correct driver setting for the paper that you are using.
- The print mode might be set incorrectly, or the paper might not meet recommended specifications.
- The transparencies you are using are not designed for proper toner adhesion. Use only transparencies designed for HP Color LaserJet products.
- The moisture content of the paper is uneven, too high, or too low. Use paper from a different source or from an unopened ream of paper.
- Some areas of the paper reject toner. Use paper from a different source or from an unopened ream of paper.
- The letterhead you are using is printed on rough paper. Use a smoother, xerographic paper. If this solves your problem, consult with the printer of your letterhead to verify that the paper used meets the specifications for this product.
- Several optimize print modes can be used to address print quality issues. See [Print Quality menu on page 24](#).

Repetitive defects ruler

If defects repeat at regular intervals on the page, use this ruler to identify the cause of the defect. Place the top of the ruler at the first defect. The marking that is beside the next occurrence of the defect indicates which component needs to be replaced.



36 mm	Developer roller in an image drum. The print quality defect will be in one of the four image drums (image drum).
40 mm	Charge roller in an image drum. The print quality defect will be spots or dots sometimes caused when feeding labels and will be in one of the four image drums (image drum).
50 mm	Transfer 1 roller in the transfer unit (transfer kit).
71 mm	Transfer 2 roller in the roller kit (transfer kit).
82 mm	Tension in the transfer unit (transfer kit).
94 mm	Image drum. The print quality defect will be in one of the four image drums (image drum).

144 mm	Pressure roller in the fuser (fuser kit).
148 mm	Fusing roller in the fuser (fuser kit).

To identify if the image drum is the problem, insert an image drum from another HP Color LaserJet CP6015 series, if one is available, before ordering a new image drum.

If the defect repeats at 94.0 mm (3.75 inch) intervals, try replacing the image drum before replacing the fuser.

Overhead transparency defects

Overhead transparencies might display any of the image quality problems that any other type of paper could display, as well as defects specific to transparencies. In addition, because transparencies are pliable while in the print path, they are subject to being marked by the paper-handling components.

 **NOTE:** Allow transparencies to cool at least 30 seconds before handling them.

- On the printer driver's **Paper** tab, select **Transparency** as the paper type. Also, make sure that the tray is correctly configured for transparencies.
- Check that the transparencies meet the specifications for this product.
- If transparencies are sticking together in the output bin, set **MEDIA TEMP** to **REDUCED** from the print quality menu. See [Use manual print modes on page 484](#).
- Handle transparencies by the edges. Skin oil on the surface of transparencies can cause spots and smudges.
- Small, random dark areas on the trailing edge of solid fill pages might be caused by transparencies sticking together in the output bin. Try printing the job in smaller batches.
- If the selected colors are undesirable when printed, select different colors in the software program or printer driver.
- If you are using a reflective overhead projector, use a standard overhead projector instead.

Print quality problems associated with the environment

If the product is operating in excessively humid or dry conditions, verify that the printing environment is within specifications. See [Environmental specifications on page 991](#). Several optimization modes can also help with environmental conditions. See [Use manual print modes on page 484](#).

Print quality problems associated with jams

- Make sure that all paper is cleared from the paper path.
- If the product recently jammed, print two to three pages to clean the product.
- The paper does not pass through the fuser, causing image defects to appear on subsequent documents. Print two to three pages to clean the product.

Optimize and improve image quality

The following procedures can be used to solve most image-quality problems.

If following the procedures do not improve print quality, go to www.hp.com/support/cljcp6015.

Use supported paper

Using unsupported paper or other media in the product can cause a wide variety of image-quality problems. For a list of supported paper types, see [Supported paper types on page 56](#).

Calibrate the product

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

1. Press **Menu**.
2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **PRINT QUALITY**, and then press the checkmark button ✓.
4. Press the down arrow ▼ to highlight **FULL CALIBRATE NOW**, and then press the checkmark button ✓.

If this calibration procedure does not fix the image-quality problems, perform the following additional calibration procedure.

1. Press **Menu**.
2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **PRINT QUALITY**, and then press the checkmark button ✓.
4. Press the down arrow ▼ to highlight **CALIBRATE NEUTRALS**, and then press the checkmark button ✓.

Specify the correct paper type



NOTE: The steps can vary; this procedure is most common.

When you load a different paper type into the product, specify the type of paper you are using.

1. After loading the paper tray, specify the paper type at the control panel by using the control panel buttons. For more information, see [Load Trays 2, 3, 4, or 5 on page 60](#). Use the table below to aid in selecting the best paper type. The same type is then selected in the printer driver at the time of printing.
2. When you send a print job from your computer, on the **File** menu in the software program, click **Print**.
3. Select the product, and then click **Properties** or **Preferences**.
4. Select the **Paper/Quality** tab.
5. In the **Paper Type** drop-down box, select **More...** and then select the paper type that best matches the paper that is loaded in the product.

If you are using the HP Color LaserJet CP6015 PCL 6 printer driver, select the **General Everyday Printing** shortcut and select **Paper Type**. If you are using the HP Universal Printing PS driver, select the **Paper/Quality** tab and then select **Paper Type**.

6. Select the paper type that best matches the paper that is loaded in the product.

Use the table below to help select the best type in the driver. The table maps the default settings for specific paper types to the types that are listed in the driver and on the product control panel. For example, if you are using glossy paper that is 125 g/m², the type that would be selected in the printer driver is XHVV Glossy 131-175 g/m².

Printer modes	Paper types that can be selected from the printer driver and control panel
- Normal - Heavy 1 - Heavy 2 - Heavy 3 - Glossy 1 - Glossy 2 - Glossy 3 - Gloss Film - OHT	Unspecified
Light 1 60-74 g/m ²	Light 60-74 g/m ²
Normal 75-90 g/m ²	Intermediate 85-95 g/m ²
Heavy 1 91-120 g/m ²	Heavy 111-130 g/m ²
Heavy 2 121-163 g/m ²	Extra Heavy 131-175 g/m ²
Heavy 3 164-220 g/m ²	Cardstock 176-220 g/m ²
Gloss 1 91-120 g/m ²	HVV Glossy 111-130 g/m ²
Gloss 2 121-160 g/m ²	XHVV Glossy 131-175 g/m ²
Gloss 3 161-220 g/m ²	Card Glossy 176-220 g/m ²
Gloss Film	HP Tough Paper
OHT	Color Laser Transparency
Label	Labels
Envelope	Envelope
Envelope 2	Heavy Envelope
Rough 1 60-90 g/m ²	Rough
Rough 2 >91 g/m ²	Heavy Rough

Clean the fuser

Use the cleaning page to keep the fuser free of toner and paper particles that can sometimes accumulate. Accumulation of toner and particles can cause specks to appear on the front or back side of print jobs.

HP recommends that you use the cleaning page when there is a print-quality issue.

A **CLEANING** message appears on the product control panel display while the cleaning is taking place.

In order for the cleaning page to work correctly, print the page on copier-grade paper (not bond, heavy, or rough paper). A blank page will be printed when the task is complete. Discard the page.

1. Press **Menu**.
2. Press the down arrow ▼ to highlight **CONFIGURE DEVICE**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **PRINT QUALITY**, and then press the checkmark button ✓.
4. Press the down arrow ▼ to highlight **PROCESS CLEANING PAGE**, and then press the checkmark button ✓.
5. Discard the printed page. The task is complete.

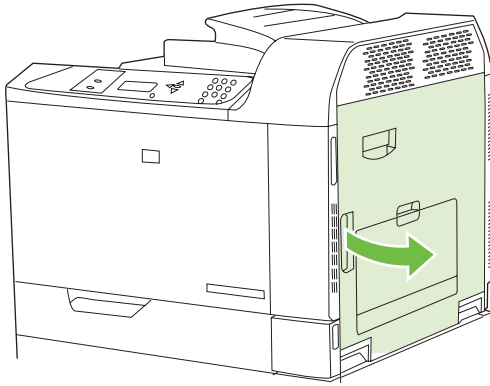
Respond to control panel error messages

If you see a **54.ERROR <XX>** message in the event log, you might need to perform some maintenance on the product to avoid more errors and to solve print-quality problems.

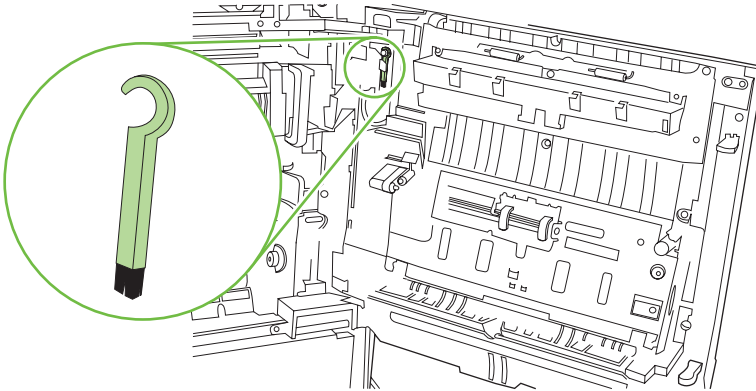
1. Open and then close the right door of the product to log a **54.ERROR <XX>** as the latest event in the event log.
2. Press **Menu**.
3. Press the down arrow ▼ to highlight **INFORMATION**, and then press the checkmark button ✓.
4. Press down arrow ▼ to highlight **DIAGNOSTICS**, and then press the checkmark button ✓.
5. Press the down arrow ▼ to highlight **PRINT EVENT LOG**, and then press the checkmark button ✓.
6. Find the most recent event in the log.
 - If the event is a **54.OE.01 MEDIA SENSOR** event, a service technician needs to replace the registration-second-transfer assembly. Contact HP Support at www.hp.com/support/cljcp6015 and provide them with this error code.
 - If the event is a **54.OE.02 MEDIA SENSOR** event, you need to replace the product transfer kit. Contact HP Support at www.hp.com/support/cljcp6015 and provide them with this error code.
 - If the event is a **54.OE.03 MEDIA SENSOR** event, clean the registration-second-transfer assembly media sensor using the following procedure.

Clean the registration second transfer assembly

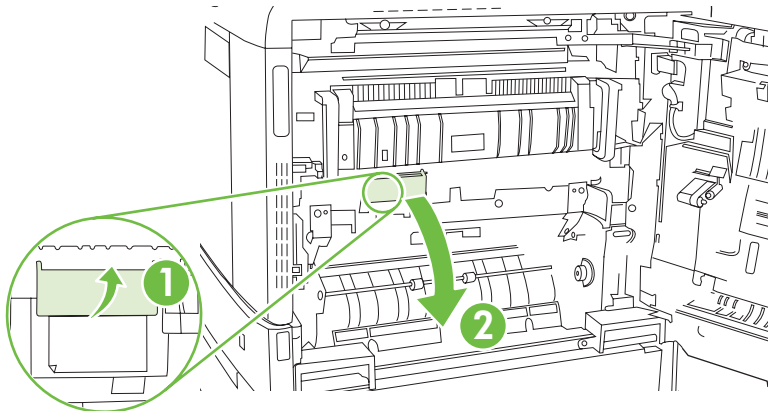
1. Open the right door.



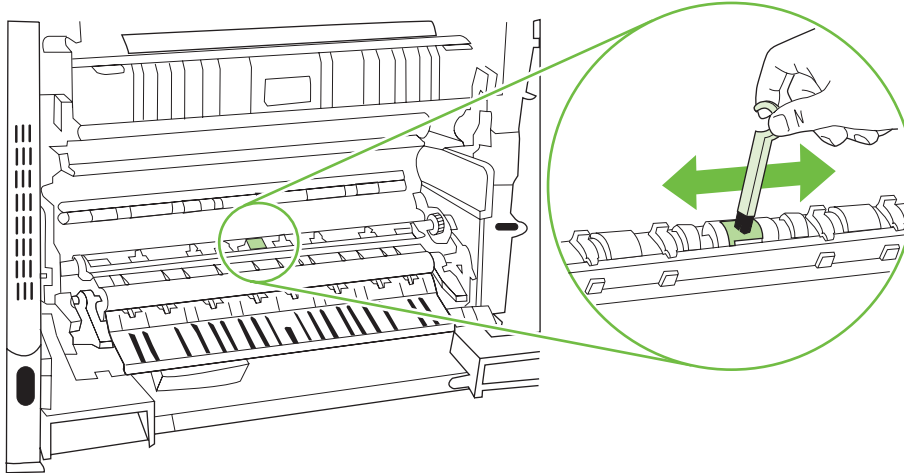
2. Locate and remove the cleaning brush.



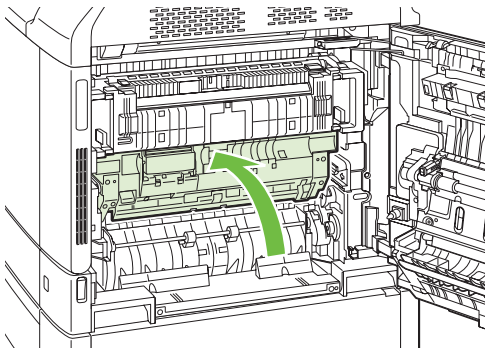
3. Lift the green handle on the transfer-access panel and open the panel.



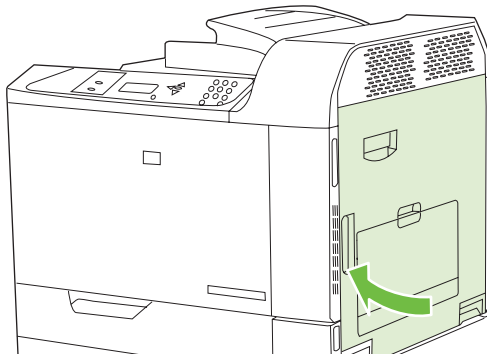
4. Clean the media sensor with the cleaning brush.



5. Close the transfer access panel, and replace the cleaning brush in its holder.



6. Close the right door.



Use manual print modes

Try the following manual print modes to see if they solve the image-quality problems. These options can be found in the Optimize submenu under the control-panel Print Quality menu. See [Print Quality menu on page 24](#).

- **PAPER CURL:** The **REDUCED** setting decreases full speed to 10 PPM (instead of 40 PPM) and 3/4 speed to 7.5 PPM (instead of 30 PPM) in order to reduce paper curl problems.
- **PRE-ROTATION:** Set this feature to **ON** if horizontal streaks appear on pages. Using this feature increases the warmup time for the product.
- **FUSER TEMP:** If you are seeing a faint image of the page repeated at the bottom of the page or on the following page, you should first make sure the Paper Type and Print Mode settings are correct for the type of paper you are using. If you continue to see ghost images on your print jobs, set the Fuser Temp feature to one of the Alternate settings. Try the **ALTERNATE 1** setting first and see if it solves the problem. If you continue to see the problem, try **ALTERNATE 2** and then **ALTERNATE 3**. With the **ALTERNATE 2** and **ALTERNATE 3** settings you may see an extra delay between jobs.
- **TRAY 1:** Set the mode to **ALTERNATE** if you are seeing marks on the back side of the paper when printing from Tray 1. This increases the frequency of the cleaning cycle.
- **GLOSS MODE:** Set this feature to **HIGH** for glossy print jobs, such as photos, if you notice the gloss finish decreasing after the first page is printed.
- **LIGHT MEDIA:** Set this feature to **ON** if you are frequently seeing Fuser Delay Jam or Fuser Wrap Jam messages, especially when printing on lightweight paper or on jobs with heavy toner coverage.
- **MEDIA TEMP:** Set this feature to **REDUCED** if you are having problems with paper sticking together in the output bin.
- **ENVIRONMENT:** Optimizes performance in extreme low temperature environments. Set this feature to **ON** if the product is operating in a low-temperature environment and you are having problems with print quality such as blisters in the printed image.
- **LINE VOLTAGE:** Optimizes performance in low-voltage conditions. Set this feature to **ON** if the product is operating in a low-voltage environment and you are having problems with print quality such as blisters in the printed image.
- **CLEANING FREQUENCY:** If you are seeing defects in the printed output that repeat at 38 mm (1.5 inch) intervals, set this feature to **ALTERNATE**. This feature increases the frequency at which the C roller is cleaned. Setting this feature to **ALTERNATE** might also reduce printing speed and increase the frequency of consumable replacement.
- **D-BLADE BIAS:** If you are seeing short white vertical lines in the printed output, set this feature to **ALTERNATE**. The **ALTERNATE** setting might also cause dark spots in the printed output, so be sure to test this setting on a few print jobs.
- **WASTE BIN:** Set this feature to **ALTERNATE** if you are seeing lengthwise toner streaks in your printed output, especially in jobs with low toner coverage.
- **BACKGROUND:** Turn this feature on if pages are printing with a shaded background. Using this feature can reduce gloss levels.
- **HEAVY MODE:** Sets speed to **30 PPM** or **24 PPM** in order to better feed heavy paper.
- **TRACKING CONTROL:** Improves color stability by adjusting the bias voltage. Make sure this mode is set to **ON**.

Print-quality-troubleshooting pages

Use the built-in print-quality-troubleshooting pages to help diagnose and solve print-quality problems.

1. Press **Menu**.
2. Press the down arrow ▼ to highlight **DIAGNOSTICS**, and then press the checkmark button ✓.
3. Press the down arrow ▼ to highlight **PQ TROUBLESHOOTING**, and then press the checkmark button ✓ to print the pages.

The product returns to the **READY** state after printing the print-quality-troubleshooting pages. Follow the instructions on the pages that print out.

Figure 7-9 Print-quality troubleshooting procedure

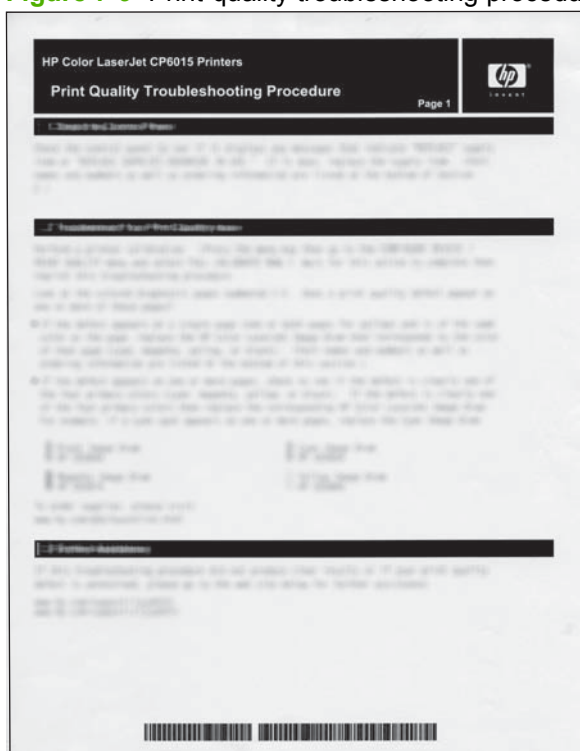


Figure 7-10 Yellow print-quality troubleshooting page

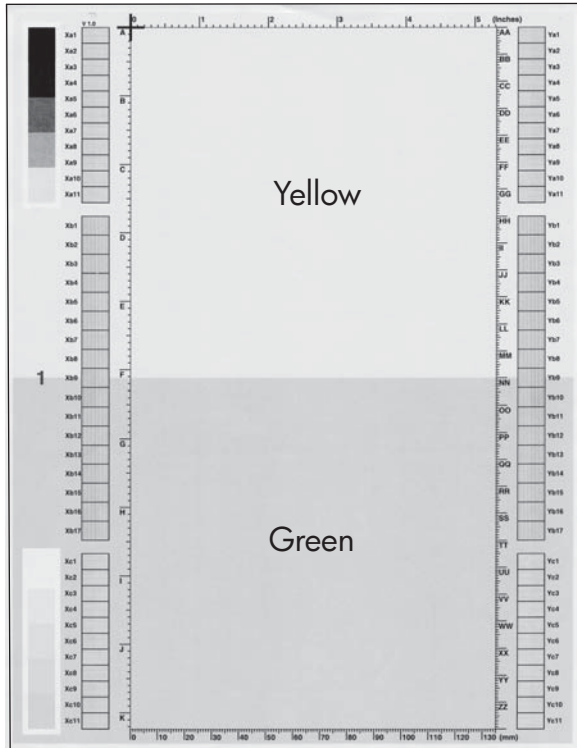
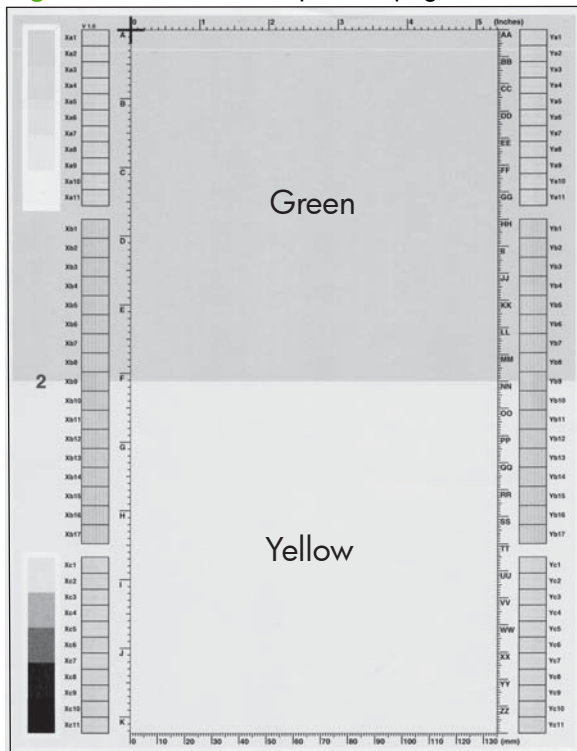
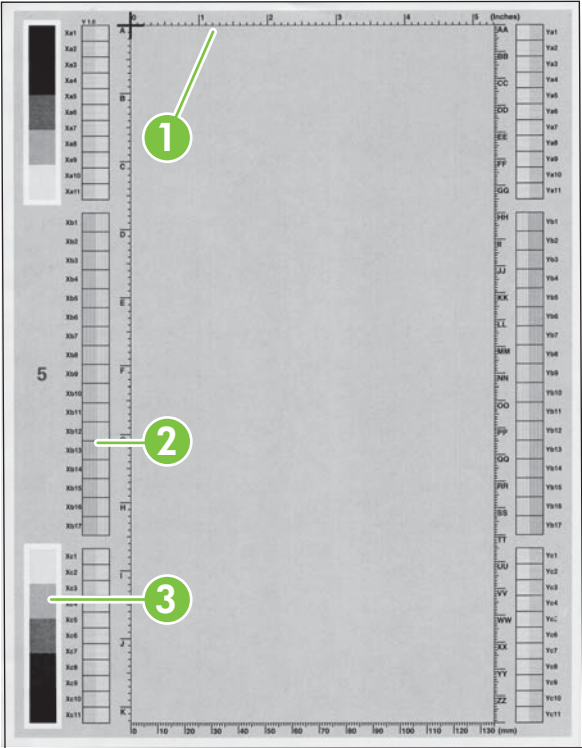


Figure 7-11 Yellow comparison page



Yellow cannot be easily seen unless combined with cyan, so half of each page is yellow and the other half is an amplified version of yellow problems (green half). Compare the yellow on page one with the corresponding green on page two for defects. You can also check the cyan page for defects.

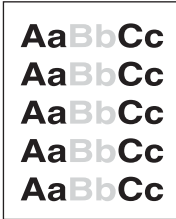
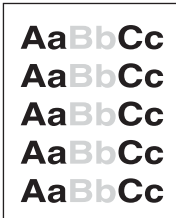
Figure 7-12 Black print-quality troubleshooting page

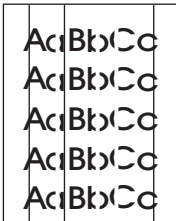


1. Grids	The grids are in inches and millimeters. They are label with letters and numbers so that defects can be described by position and by distance between repeats.
2. Color plane registration (CPR) bars	After printing, the box with no extra color in each area on each page shows how far off the CPR of that color is. Each page has two process direction areas and three scan direction areas that are labeled x and y and 1–11. The page should be fed by the long edge. Each square from the center equals 42 microns.
3. Color ramp patches	Used to detect offset for the OPC or developer in the image drum or offset in the fuser.

Image-quality issues

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

Problem	Cause	Solution
Print is light or faded on entire page. 	Poor contacts exist on the ITB unit and the product grounding unit. Poor secondary transfer contacts with exist on the secondary transfer roller and the ITB unit.	Clean the grounding contacts. If the problem remains after cleaning, check the contacts for damage. Replace any deformed or damaged parts. Clean the contacts. If the problem remains after cleaning, check the contacts for damage. Replace any deformed or damaged parts.
Print is light or faded in a particular color. 	Poor primary transfer bias contacts on the ITB unit and product. Poor primary charging bias contacts with the print cartridge and product. Poor developing bias contacts with the print cartridge and product.	Clean the contacts of the color that produces the light print. If the problem remains after cleaning, check the contacts for damage. Replace any deformed or damaged parts.
Image is too dark. 	The image-density sensor is defective.	Replace the color misregistration/image-density sensor unit.
Page is blank.	The high-voltage power-supply PCA is defective (no developing bias output).	Replace the high-voltage power-supply PCA A. See High-voltage power supply PCA (A) on page 226 .
The page is all black or a solid color.	Poor primary charging contacts or developing bias contacts from the high-voltage power-supply PCA A to print cartridge.	Clean each contact of the color that produces the all black or solid color. If the problem remains after cleaning, check the contacts for damage. Replace any deformed or damaged parts.
White spots appear in an image	The static charge eliminator is dirty. The primary transfer roller is deformed or has deteriorated. The secondary transfer roller is deformed or has deteriorated.	Clean the static charge eliminator. Replace the ITB. See Intermediate-transfer belt (ITB) on page 196 . Replace the secondary-transfer-roller unit. See Transfer roller on page 194 .

Problem	Cause	Solution
The back of the page is dirty.	The feed roller that makes contact with the back of the media is dirty.	Use the repetitive image defect ruler to identify the dirty roller. See Repetitive defects ruler on page 476 . Clean the dirty roller. If the dirt does not come off, replace the roller.
	The fuser inlet guide or separation guide is dirty.	Clean the dirty parts. If the dirt does not come off, replace the guide.
	The pressure roller is dirty.	Execute the cleaning page. If the dirt does not come off, replace the fuser. See Fuser on page 191 .
Vertical streaks or bands appear on the page. 	Scratches are present on the circumference of the photosensitive drum.	Replace the print cartridge of the color that matches the defect.
	Scratches are present on the circumference of the fuser roller.	Replace the fuser. See Fuser on page 191 .
	Scratches are present on the circumference of the ITB.	Replace the ITB unit. See Intermediate-transfer belt (ITB) on page 196 .
	The ITB drive roller is deformed or has deteriorated.	
	The ITB cleaning mechanism is malfunctioning.	
Vertical white lines appear in a particular color. 	The laser beam window is dirty.	Clean the window and remove any foreign substances.
	Scratches are present on the circumference of the developing cylinder or photosensitive drum.	Replace the image drum of the color that matches the defect. See Change image drums on page 88 .
	The laser/scanner-unit mirror is dirty.	Replace the laser/scanner unit.
Vertical white lines appear in all colors. 	Vertical scratches are present on the fuser roller.	Replace the fuser. See Fuser on page 191 .
	Scratches are present on the circumference of the ITB.	Replace the ITB. See Intermediate-transfer belt (ITB) on page 196 .
Horizontal lines appear on the page.	Horizontal scratches are present on the photosensitive drum.	Replace the image drum of the color that matches the defect. See Change image drums on page 88 .
	Horizontal scratches are present on the fuser roller.	Replace the fuser. See Fuser on page 191 .