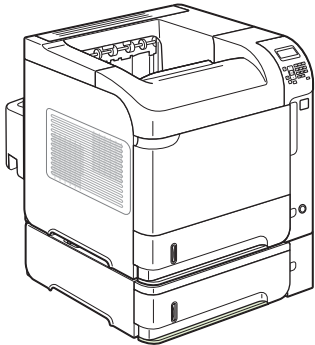
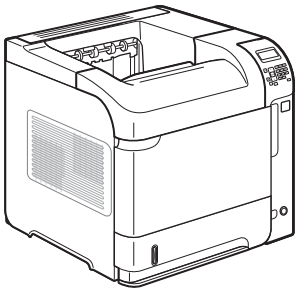
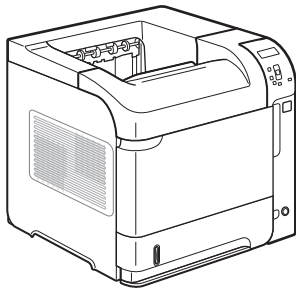




# LASERJET ENTERPRISE 600 M601, M602, AND M603 SERIES PRINTER

## Service Manual







# HP LaserJet Enterprise 600 M601, M602, and M603 Series Printer

Service Manual

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## Conventions used in this guide

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 **TIP:** Tips provide helpful hints or shortcuts.

 **NOTE:** Notes provide important information to explain a concept or to complete a task.

 **CAUTION:** Cautions indicate procedures that you should follow to avoid losing data or damaging the product.

 **WARNING!** Warnings alert you to specific procedures that you should follow to avoid personal injury, catastrophic loss of data, or extensive damage to the product.

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# 1 Theory of operation

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- [Engine-control system](#)
- [Image-formation system](#)
- [Laser/scanner system](#)
- [Pickup, feed, and delivery system](#)
- [1x500-sheet paper feeder](#)
- [1x1500-sheet paper deck](#)
- [Envelope feeder](#)
- [Duplexer](#)

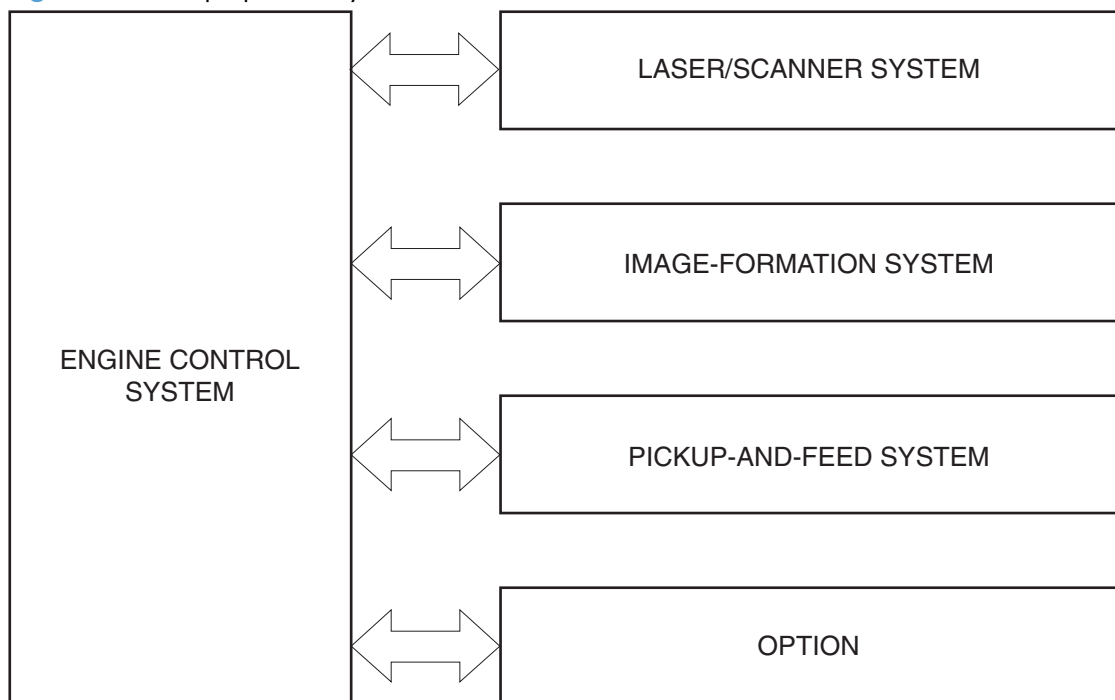
# Basic operation

## Major print systems

Operation can be divided into the following systems:

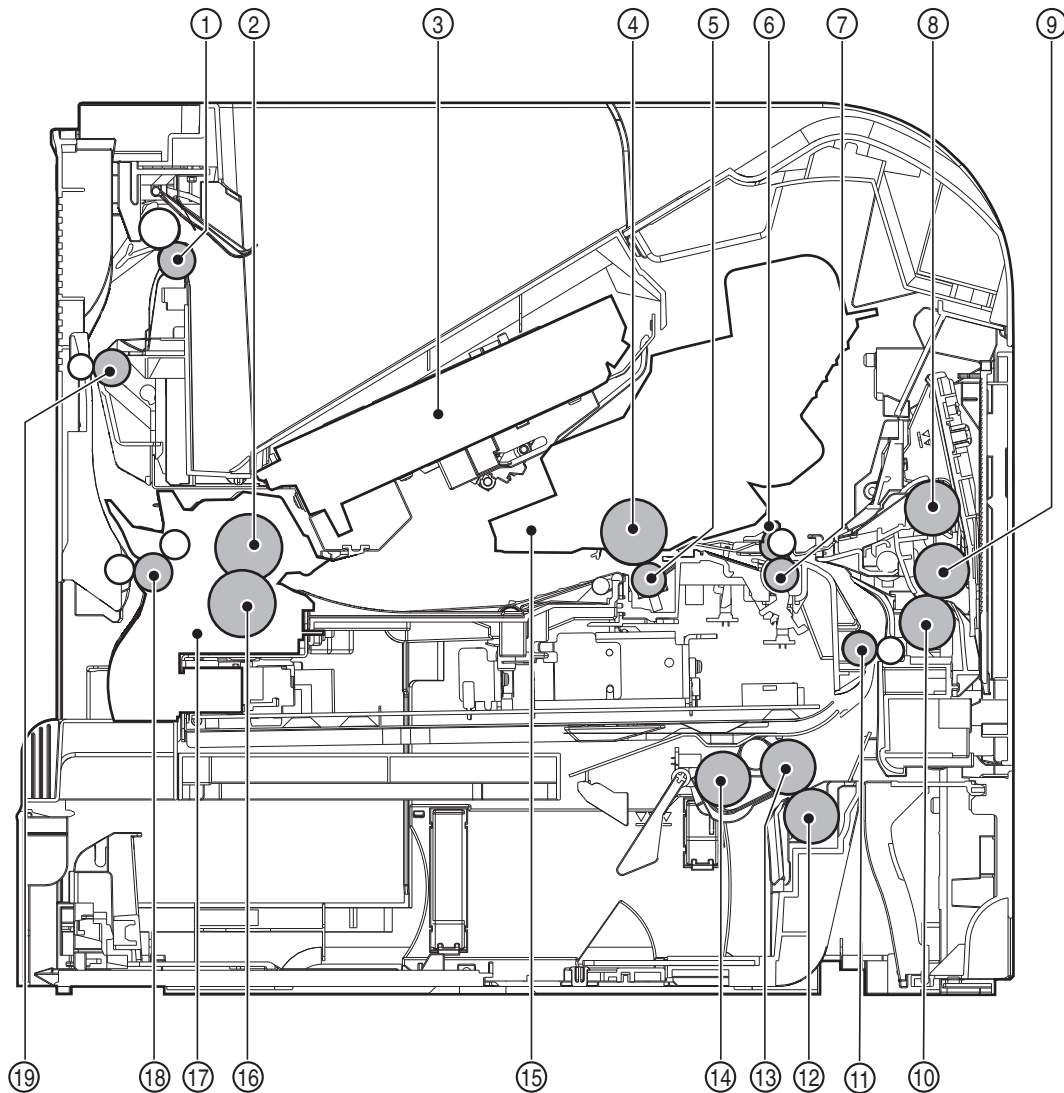
- Engine-control system (which includes the power supply and DC controller PCA)
- Laser/scanner system (which forms the latent image on a photosensitive drum)
- Image-formation system (which transfers a toner image onto the print media)
- Pickup, feed, and delivery system (which consists of various rollers and transports the media through the product)
- Options

**Figure 1-1** Major product systems



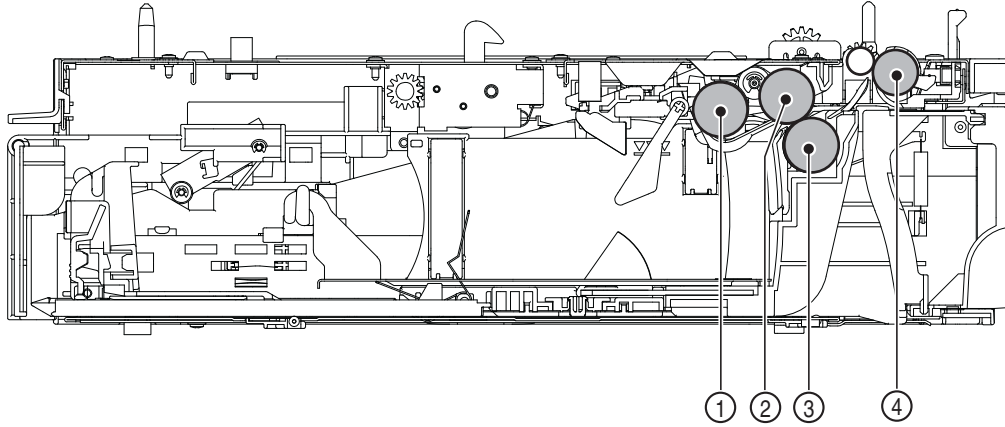
## Internal components

Figure 1-2 Internal components, product base



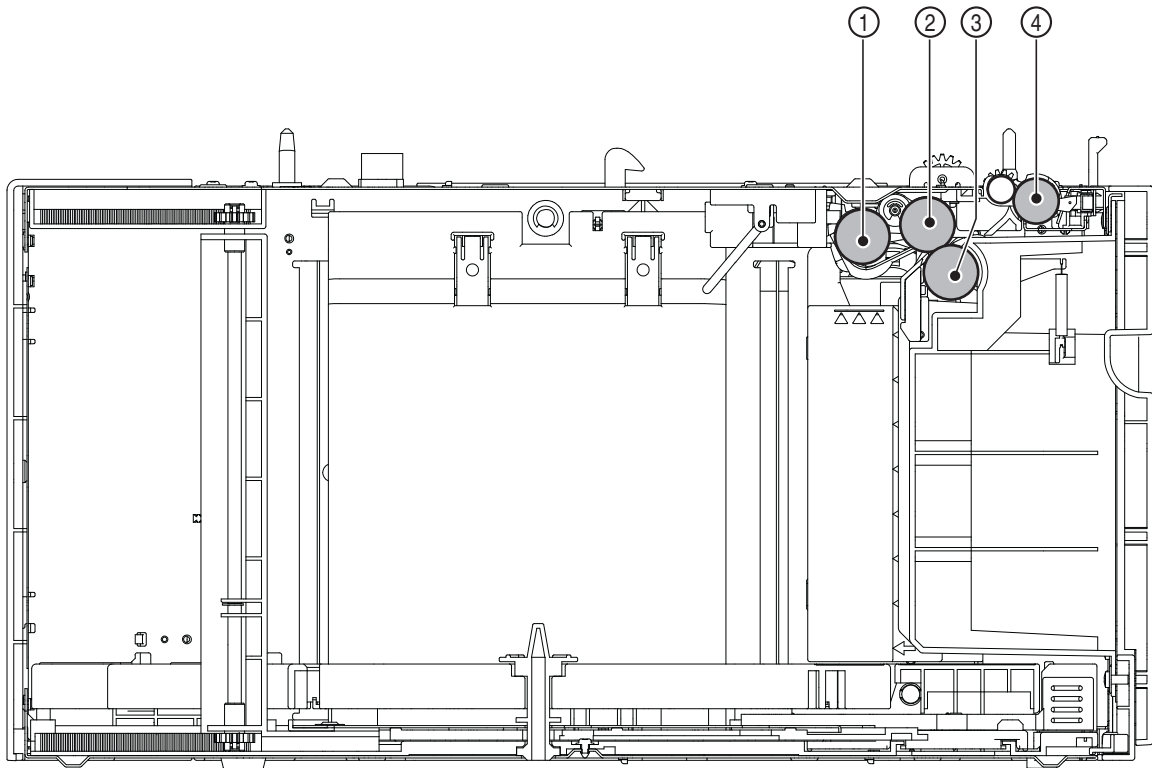
<b>1</b>	Face-down delivery roller	11	Feed roller
<b>2</b>	Fuser sleeve unit	12	Tray 2 separation roller
<b>3</b>	Laser/scanner unit	13	Tray 2 feed roller
<b>4</b>	Photosensitive drum	14	Tray 2 pickup roller
<b>5</b>	Transfer roller	15	Print cartridge
<b>6</b>	Registration shutter	16	Pressure roller
<b>7</b>	Pre-transfer roller	17	Fuser
<b>8</b>	Tray 1 pickup roller	18	Fuser delivery roller
<b>9</b>	Tray 1 feed roller	19	Intermediate delivery roller
<b>10</b>	Tray 1 separation roller		

**Figure 1-3** Internal components, 1x500-sheet feeder



<b>1</b>	Pickup roller
<b>2</b>	Feed roller
<b>3</b>	Separation roller
<b>4</b>	Feed roller

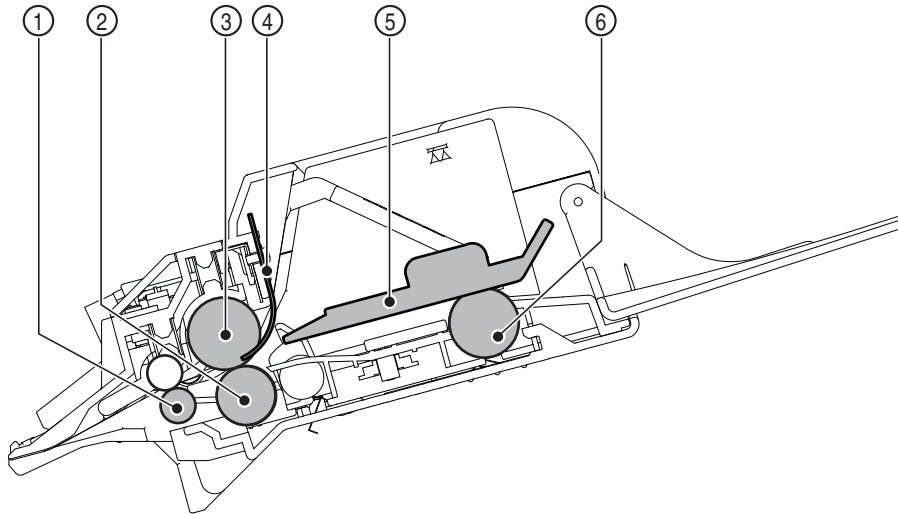
**Figure 1-4** Internal components, 1,500-sheet paper deck



<b>1</b>	Pickup roller
<b>2</b>	Feed roller

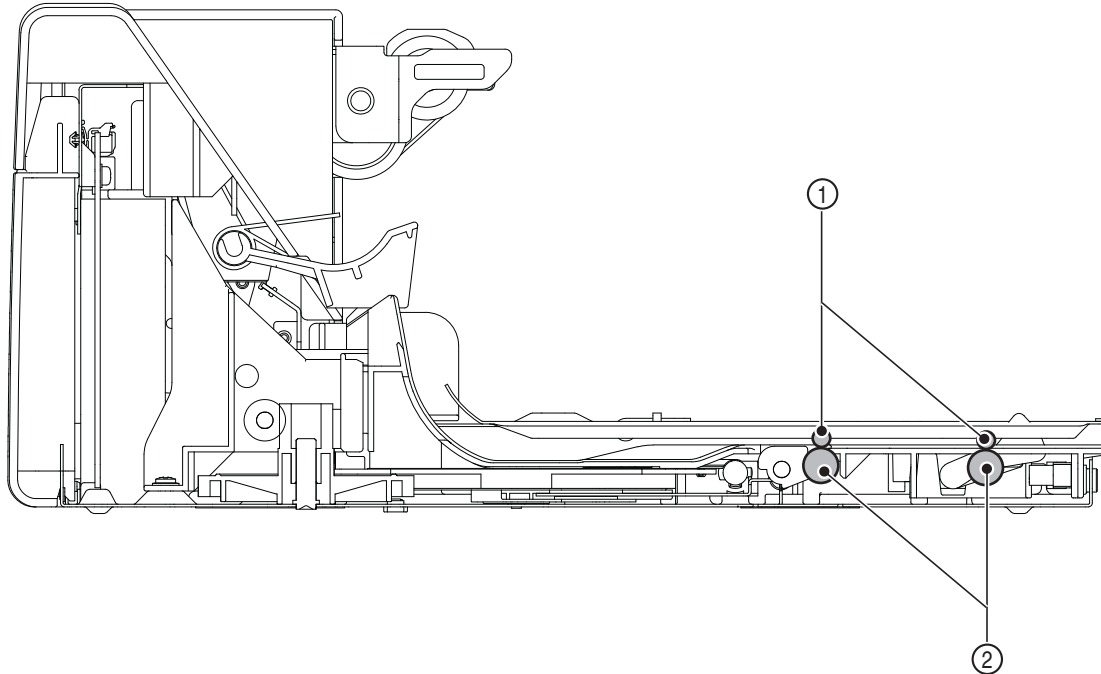
<b>3</b>	Separation roller
<b>4</b>	Feed roller

**Figure 1-5** Internal components, envelope feeder



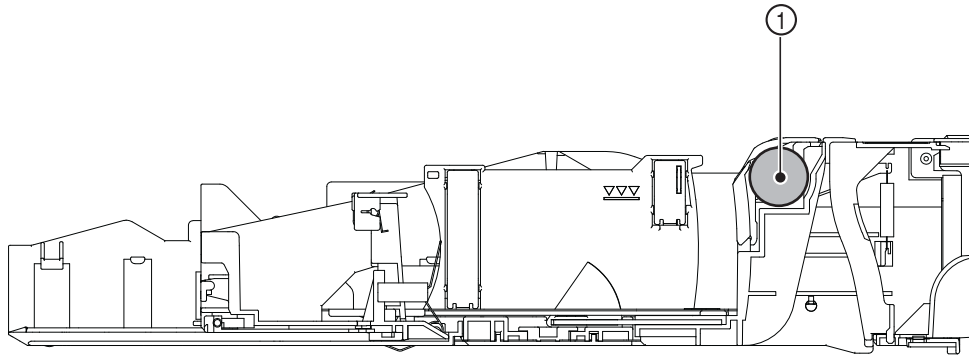
<b>1</b>	Feed roller
<b>2</b>	Upper separation roller
<b>3</b>	Lower separation roller
<b>4</b>	Separation guide
<b>5</b>	Weight
<b>6</b>	Pickup roller

**Figure 1-6** Internal components, duplexer



<b>1</b>	Oblique rollers
<b>2</b>	Re-pickup rollers

**Figure 1-7** Internal components, custom media cassette



<b>1</b>	Separation roller
----------	-------------------

## Operating sequence

A microprocessor on the DC controller PCA controls the product operating sequence. The following table describes the basic operating sequence from when the product power is turned on until the final printed page is delivered to an output bin.

 **NOTE:** The product takes about two minutes and twenty seconds to initialize.

**Table 1-1 Product operating sequence**

Period	Duration	Operation
WAIT	From the time the power is turned on, the door is closed or Sleep mode is released until the product gets ready for a print operation.	<ul style="list-style-type: none"><li>• Brings the product to standby condition.</li><li>• Pressurizes the fuser pressure roller.</li><li>• Detects the print cartridge.</li></ul>
STBY (Standby)	From the end of WAIT or LSTR period until either the print command is received from the formatter or the power button is turned off.	<ul style="list-style-type: none"><li>• Maintains the product in printable condition.</li><li>• Puts the product in Sleep mode when the formatter sends a sleep command.</li></ul>
INTR (Initial rotation period)	From the time the print command is received from the formatter until the media is picked up.	Starts up each high-voltage bias, laser/scanner unit, and fuser for printing.
PRINT	From the end of INTR period until the last paper completes the fixing operation.	<ul style="list-style-type: none"><li>• Forms the image on the photosensitive drum based on the signals from the formatter.</li><li>• Transfers and fuses the toner image to the print media.</li></ul>
LSTR (Last rotation period)	From the end of PRINT period until the motors stop rotating.	<ul style="list-style-type: none"><li>• Moves the last printed sheet out of the product.</li><li>• Stops the laser/scanner unit operation and high-voltage biases.</li></ul> <p>The product enters the INTR period as soon as the LSTR period is completed, if the formatter sends another print command.</p>

# Formatter system

The formatter is involved in the following procedures.

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

The formatter receives a print job from 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 the memory DIMM and the hard-disk (hard disk drive or solid state drive).

## Sleep mode

When the product is in Sleep mode, the control-panel backlight is dimmed, but the product retains all product settings, downloaded fonts, and macros. The default setting is a 30-minute idle time. Sleep mode also can be turned off from the **Administration** menu on the control panel.

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

- A print job, valid data, or a PML or PJL command is received at the serial port.
- A control panel key is pressed.
- The top cover is opened.
- The engine-test button is pressed.



---

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

---

## Input/output

The following sections discuss the input and output features of the product.

### USB

The product includes a universal serial bus (USB) 2.0 connection.



## Embedded print server

For all models except the HP LaserJet 4014 base model, the product includes an HP Jetdirect embedded print server for connecting to a 10/100Base-TX network.

## Hard-disk

The hard-disk is mounted on the formatter cage door. The hard disk is used for creating multiple original prints (mopies) and storing forms, fonts, and signatures.



**NOTE:** All models have a solid state module (SSM) installed except the HP LaserJet Enterprise 600 M603xh.

---

## CPU

The product formatter incorporates a 800 MHz RISC processor.

## Memory

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

## Random-access memory

The formatter has one DIMM slot. All models come with 512MB of memory installed. Additional memory can be added up to a maximum of 1GB.

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 DIMMs to the formatter. Note that adding memory (DIMMs) might also increase the print speed for complex graphics.

## Nonvolatile memory

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

## DIMM slot

The DIMM slot can be used to add product memory.

## PJL overview

Printer job language (PJL) is an integral part of configuration, in addition to the standard printer command language (PCL). With standard cabling, use PJL to perform a variety of functions.

- Two-way communication with the host computer through a bidirectional parallel connection. The product can send the host computer information about such things as the control panel settings, and the control panel settings can be changed from the host through two-way communication.
- Dynamic I/O switching. The product can be configured with a host on each I/O by using dynamic I/O switching. Even when the product is offline, it can receive data from more than one I/O simultaneously, until the I/O buffer is full.
- Context-sensitive switching. The product can automatically recognize the personality (PS or PCL) of each job and configure itself in 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 are printed in landscape mode only if they are formatted for it.

## PML

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

## Control panel

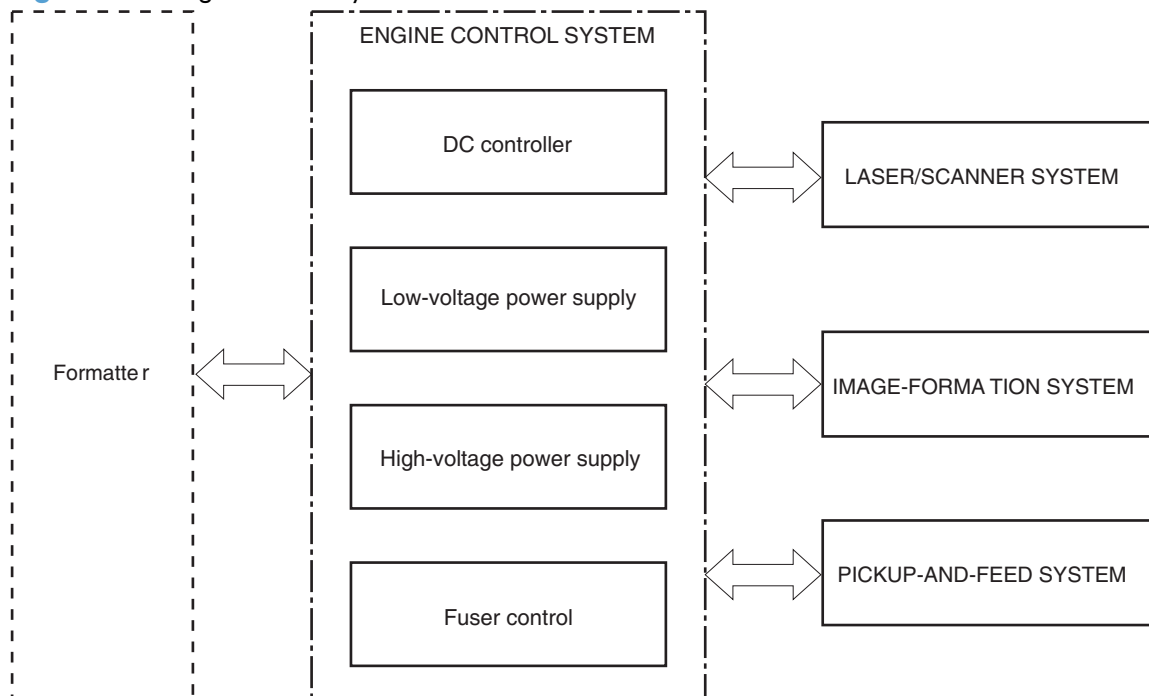
The formatter sends and receives product status and command data to and from a control-panel PCA.

# Engine-control system

The engine control system coordinates all product functions and controls all the other systems according to commands from the formatter. The engine control system contains the following components:

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

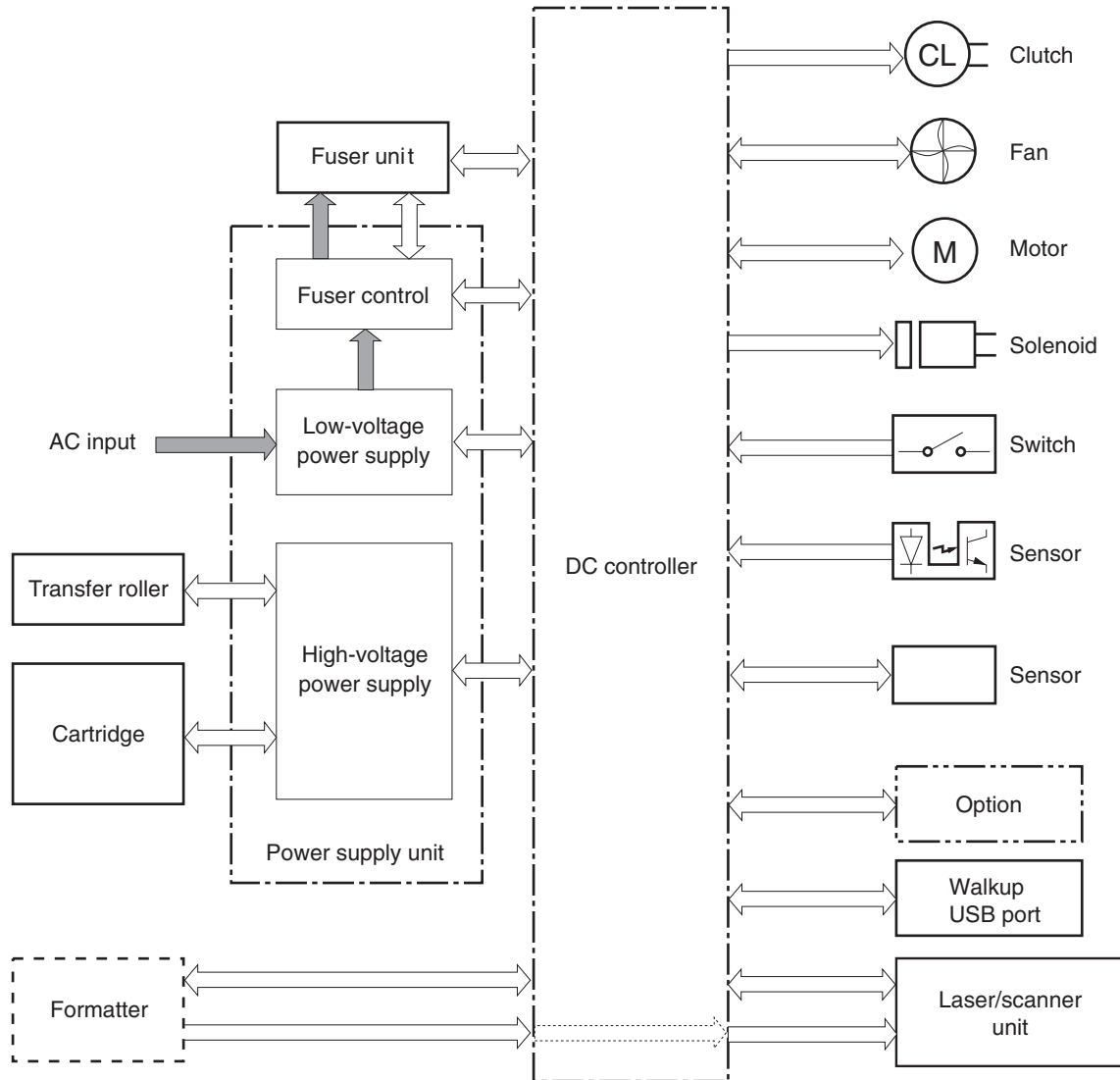
**Figure 1-8** Engine-control system



## DC controller PCA

The DC controller PCA controls the operation of the product and its components. The DC controller PCA starts product operation when the power is turned on and the power supply sends DC voltage to the DC controller PCA. After the product enters the standby sequence, the DC controller PCA sends out various signals to operate motors, solenoids, and other components based on the print command and image data that the host computer sends.

**Figure 1-9** DC controller PCA



## Sensors, solenoids, and switches

The product has twelve sensors, two solenoids, and three switches. Sensors are used for remote detection of various functions during product operation. Solenoid and switches are used for product operation control.

**Table 1-2 Sensors, solenoids, and switches**

Description	Item	Component
Sensors	PS101	Cassette media presence sensor
	PS102	Pre-feed sensor
	PS103	Top-of-page sensor
	PS104	Face-down tray media full sensor
	PS105	MP tray (Tray 1) media presence sensor
	PS106	Media width sensor 1
	PS107	Media stack surface sensor 1
	PS108	Media width sensor 2
	PS699	Fixing (fuser) pressure release sensor
	PS700	Fixing (fuser) delivery sensor
	PS907	Media stack surface sensor 2
	TH3	Environmental sensor
Solenoids	SL101	Cassette pickup solenoid
	SL102	MP tray (Tray 1) pickup solenoid
Switches	SW101	Door open detection switch
	SW102	Cassette media size switch
	SW800	Test print switch

## Motors and fans

The product has four motors and four fan motors. The motors are used for the media feeding and image formation. The fan motors are used for preventing a temperature rise inside the product.

**Table 1-3 Fans**

Description	Cooling area	Type	Speed
Cooling fan FN101	Cartridge area and power supply area	Intake	Full/Half <sup>1</sup>
Cooling fan FN102	Cartridge area	Intake	Full <sup>2</sup>
Cooling fan FN103	Cartridge area	Intake	Full <sup>2</sup>
Cooling fan FN301	Cartridge area and laser/scanner	Intake	Full <sup>2</sup>

<sup>1</sup> Cooling fan FN101 rotates at full speed for eight seconds when the product is turned on, and then decreases to half-speed for approximately 10 minutes. After that time period, if there is no print job in the print queue, the fan will stop completely. The fan rotates at full speed during a print job.

<sup>2</sup> This fan operates at full speed only during a print job. Otherwise, it does not rotate.

**Table 1-4 Motors**

Description	Driving parts	Type	Failure detection
Paper feed motor (M101)	Drives the Tray 1 pickup roller, Tray 2 pickup roller, and feed roller	DC	Yes
Drum motor (M102)	Drives the photosensitive drum, primary charging roller, and transfer roller	DC	Yes
Fuser motor (M299)	Drives the pressure roller and feed roller—when rotated counterclockwise it releases the fusing pressure for easier jam removal	DC	Yes
Lifter motor (M103)	Drives the lifting plate of the tray	DC	No

## Failure detection

### Motor failure

The DC controller determines a motor failure and notifies the formatter when it encounters the following conditions:

- **Motor start-up failure:** The motor does not reach a specified speed within a specified period from when each motor starts up.
- **Motor rotational failure:** The rotational speed of the motor is out of a specified range for a specified period from when it once reaches a specified speed.

### Fan motor failure

The DC controller determines a fan motor failure and notifies the formatter when the fan locks for a specified period from when each fan starts up.

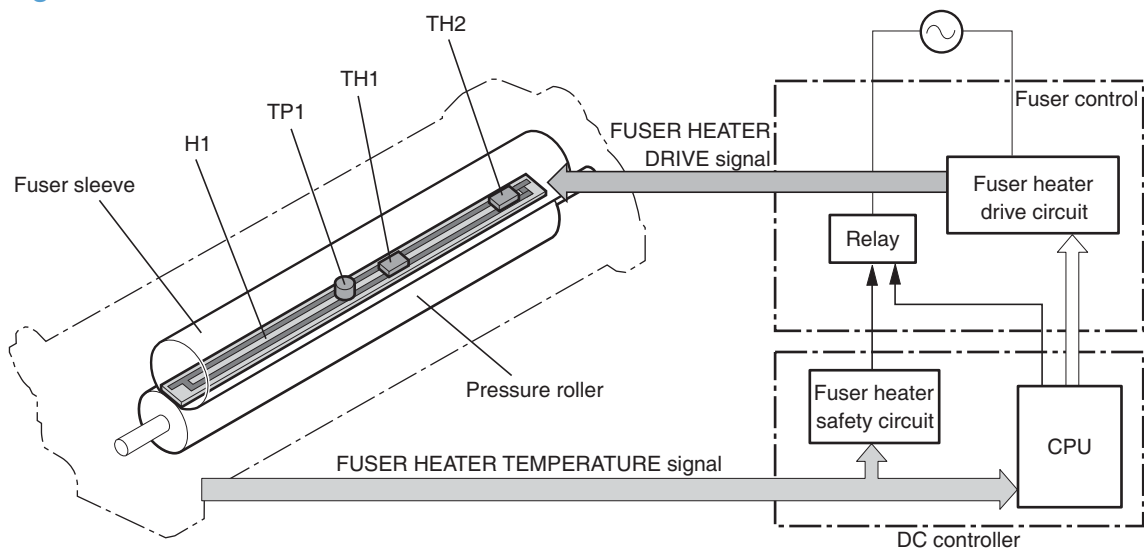
## Engine power supply

The power supply consists of the fuser-control circuit, the high-voltage circuit, and the low-voltage circuit. The fuser-control and high-voltage circuits control the temperature of the fuser and generate high-voltage according to signals from the DC controller PCA. The low-voltage circuit generates the DC voltages that other components in the product use (for example the DC controller PCA, the motors, and fans).

### Fuser-control circuit

The fuser-control circuit controls the fuser components. The two fuser heaters provide the high temperatures that cause the toner to permanently bond to the media. The fuser thermistor monitors the fuser temperatures. The thermal switch detects abnormally high fuser temperatures and interrupts the supply of voltage to the fuser if the temperature is too high.

**Figure 1-10** Fuser control

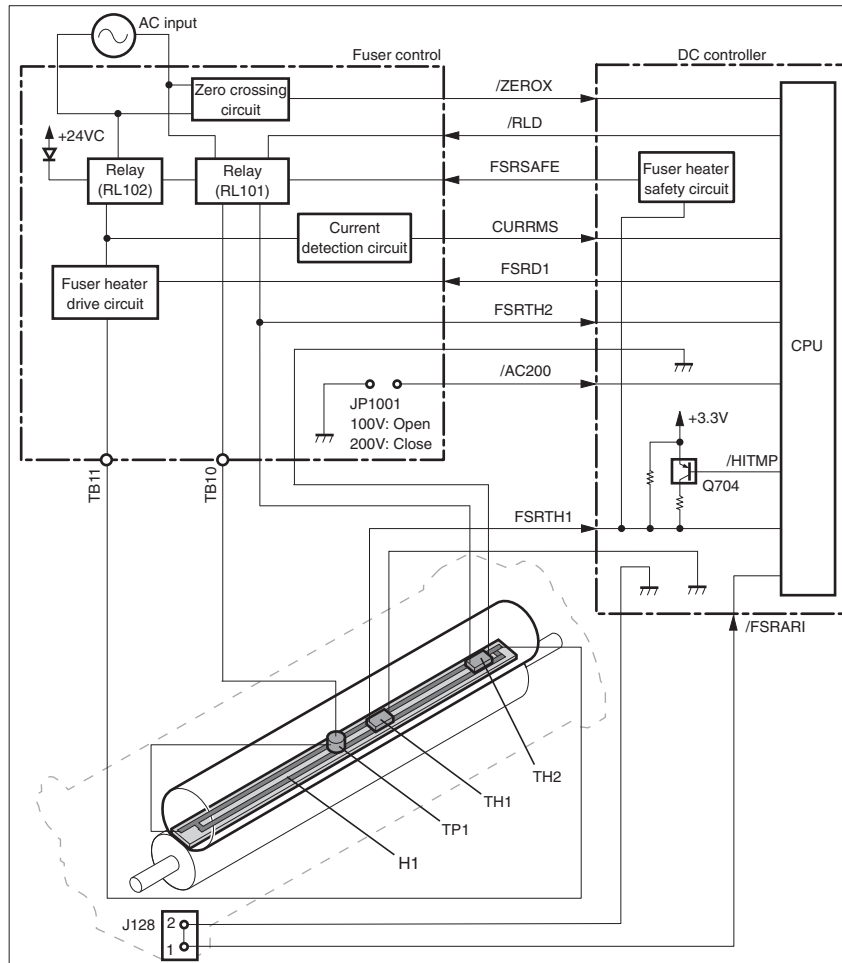


## Fuser temperature control

The fuser temperature control detects the temperature of the fuser heater surface, and then controls the FUSER HEATER DRIVE (FSRD1) signal to the fuser heater until the fuser heater temperature reaches the target temperature.

The DC controller controls the FSRD1 signal by monitoring the detected fuser heater temperature—using the thermistor (TH3)—and then holds the heater at the target temperature.

**Figure 1-11** Fuser temperature control

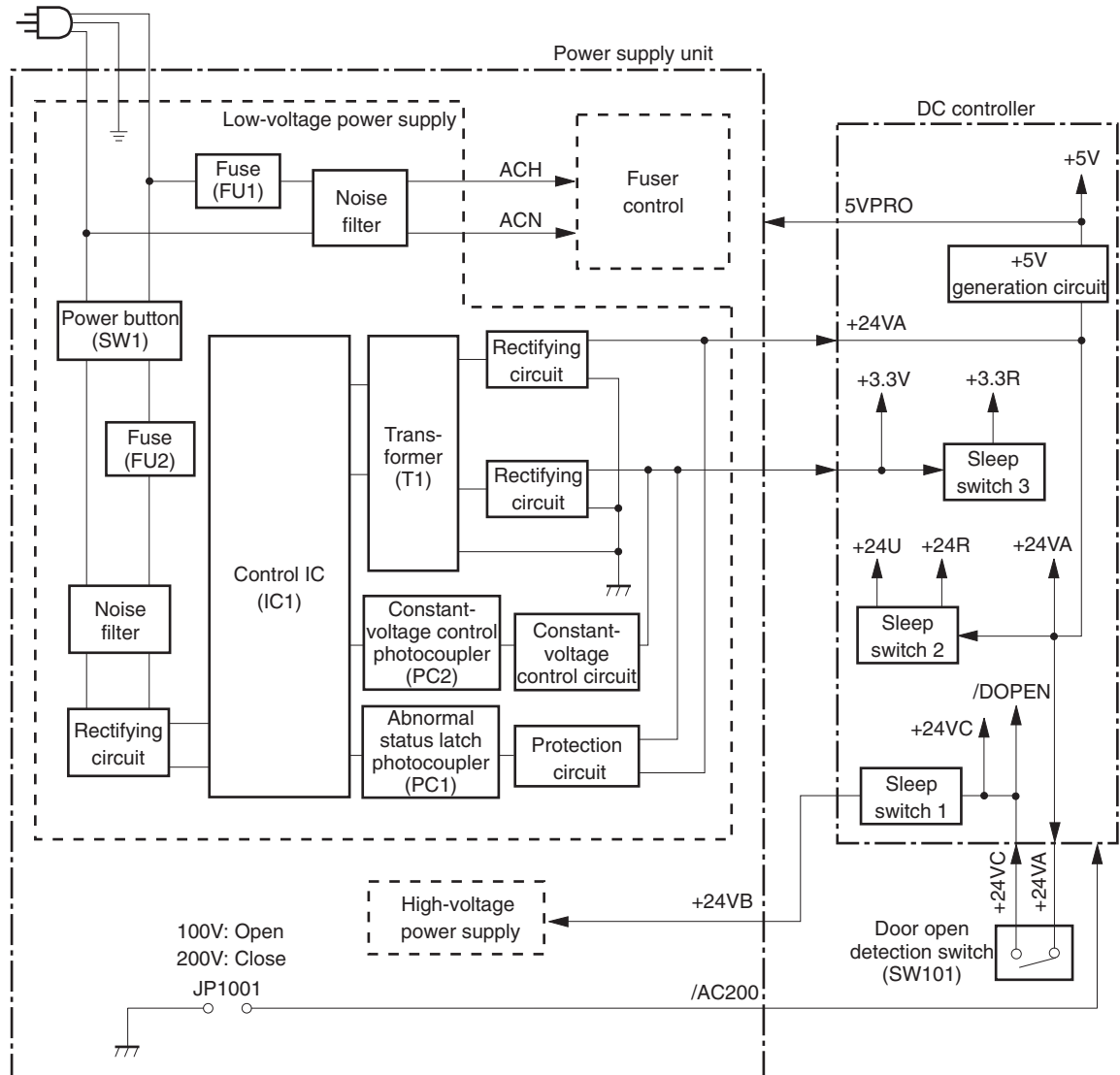




## Low-voltage power supply

The low-voltage power supply converts AC power from the power receptacle into DC power to cover the DC loads.

**Figure 1-12** Low-voltage power supply

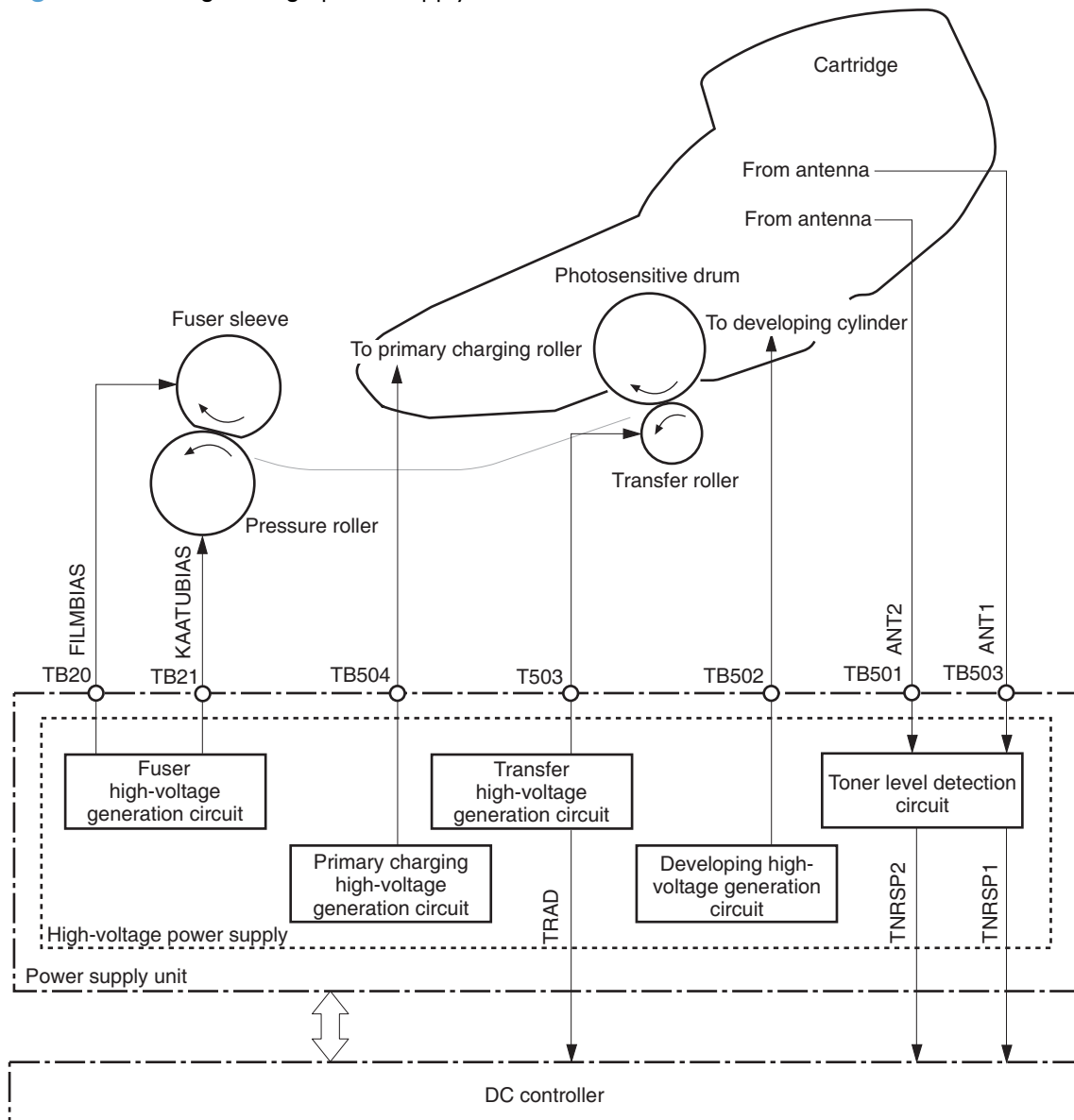


## High-voltage power supply

The high-voltage power supply applies the high-voltage biases to the following components:

- Primary charging roller
- Developing roller
- Transfer roller
- Fuser sleeve
- Pressure roller

**Figure 1-13** High-voltage power supply



## Overcurrent/overvoltage protection

If a short-circuit or other problem on the load side causes an excessive current flow or generates abnormal voltage, the overcurrent/overvoltage protection systems automatically cut off the output voltage to protect the power-supply circuit.

If the overcurrent or overvoltage protection system are activated and the power-supply circuit does not generate DC voltage, turn the power off, correct the problem, and then turn the product on again.

The circuit has two fuses (FU1, FU2), which break and cut off the output voltage if overcurrent flows through the alternating current (AC) line.

## Image-formation system

The image-formation system is the central hub of the product. It forms the toner image on the media. The following are the main components of the image-formation system:

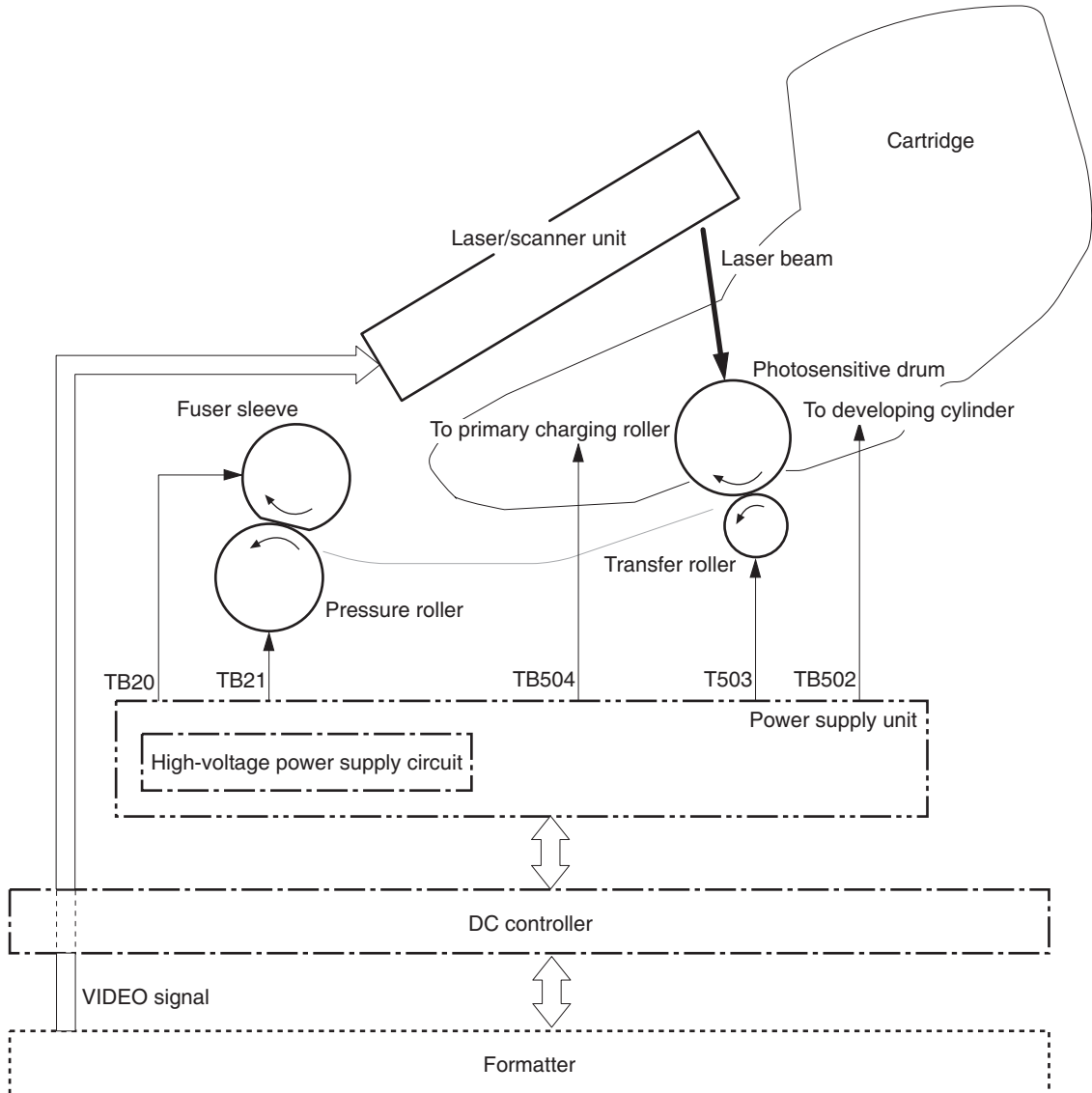
- Cartridge
- Transfer roller
- Fuser

The DC controller controls the laser/scanner unit and high-voltage power supply to form an image on the media according to the VIDEO signals.

## Image-formation process

The image formation system is the central hub of the product. It also forms the toner image on the media.

**Figure 1-14** Image-formation system



The image-formation process contains eight steps divided among five functional blocks:

- Block 1: Latent image formation
  - Step 1: Primary charging
  - Step 2: Laser-beam exposure
- Block 2: Developing
  - Step 3: Developing
- Block 3: Transfer

Step 4: Transfer

Step 5: Separation

- Block 4: Fusing

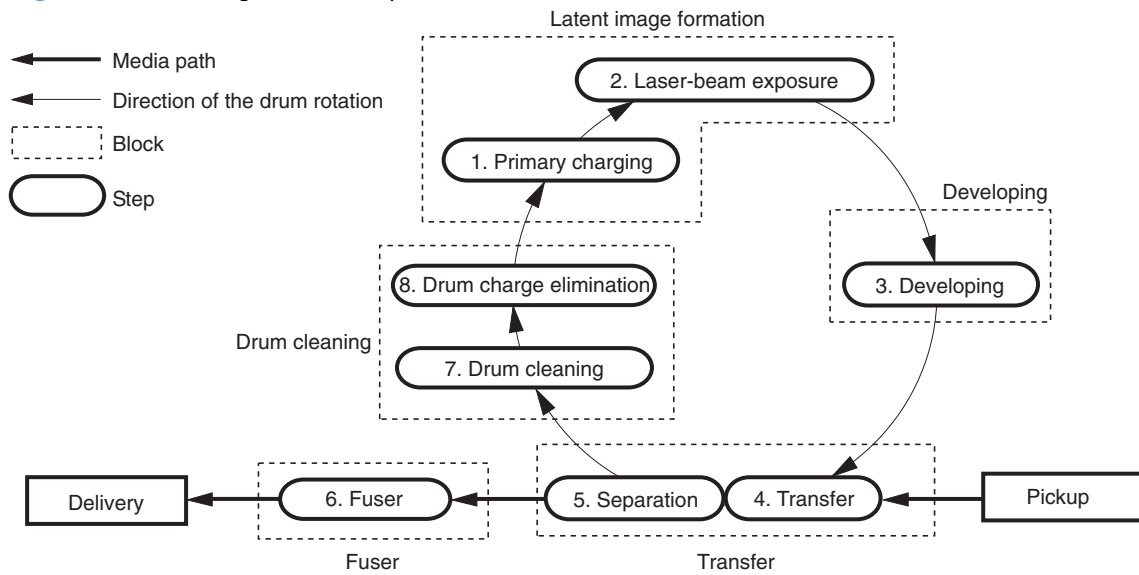
Step 6: Fusing

- Block 5: Drum cleaning

Step 7: Drum cleaning

Step 8: Drum charge elimination

**Figure 1-15** Image-formation process



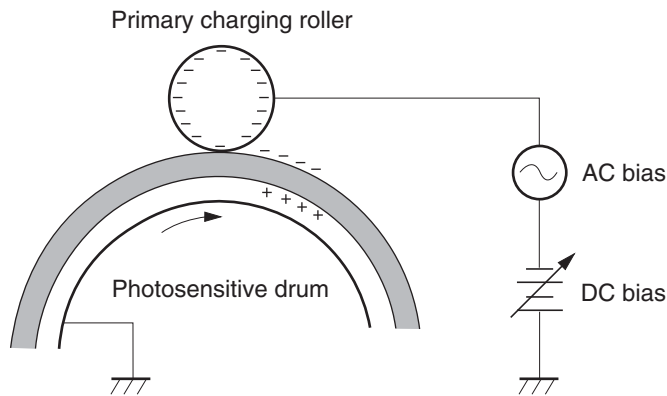
## Block 1: Latent image formation

During the two steps that comprise this block, an invisible latent image is formed on the photosensitive drum.

### Step 1: Primary charging

To prepare for latent image formation, the surface of the photosensitive drum is charged with a uniform negative potential. The product charges the photosensitive drum surface directly from the primary charging roller. The DC bias and AC bias are applied to the primary charging roller to maintain a constant charge on the drum surface.

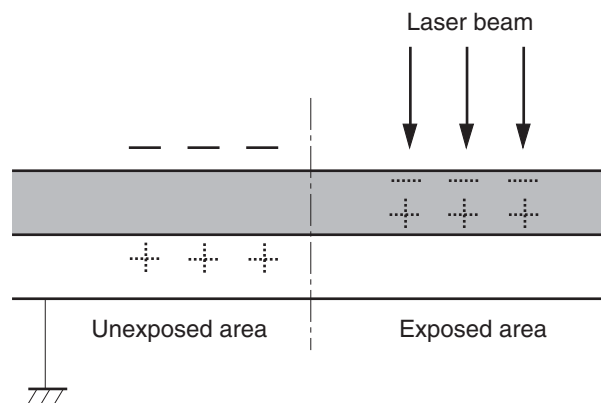
**Figure 1-16** Primary charging



### Step 2: Laser-beam exposure

The laser beam scans the photosensitive drum to neutralize the negative charge on portions of the drum surface. An electrostatic latent image forms where the negative charge was neutralized.

**Figure 1-17** Laser-beam exposure



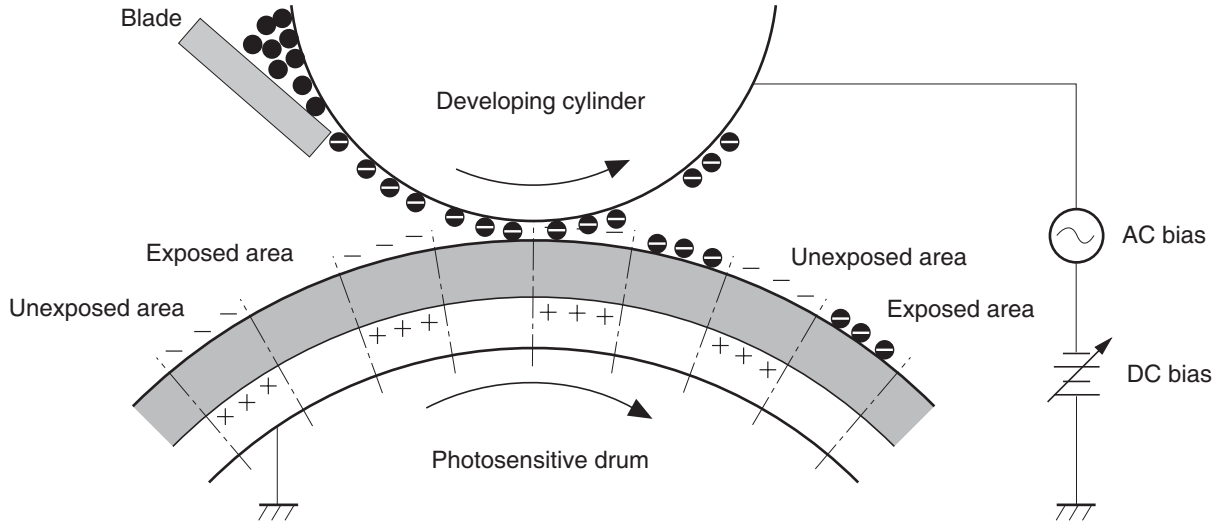
## Block 2: Developing

Toner adheres to the electrostatic latent image on the photosensitive drum.

### Step 3: Developing

Toner acquires a negative charge from the friction that occurs when the developing cylinder rotates against the developing blade. The negatively charged toner is attracted to the latent image on the photosensitive drum surface because the drum surface has a higher potential. The AC bias that is superimposed with the developing negative DC bias is applied to the developing cylinder.

**Figure 1-18** Developing





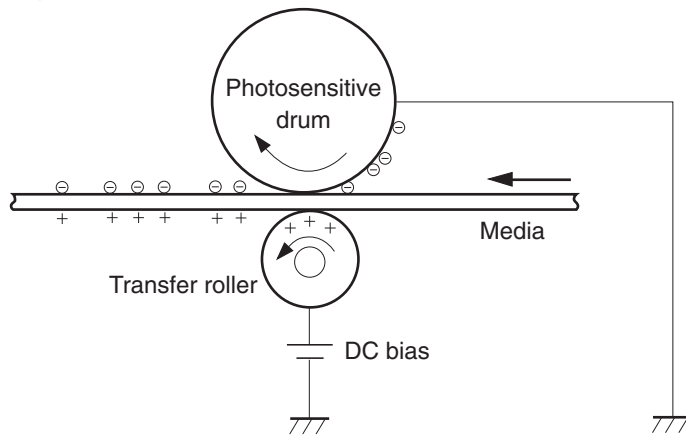
### Block 3: Transfer

During the steps that comprise this block, a toner image on the photosensitive drum is transferred to the print media.

#### Step 4: Transfer

The positive DC bias is applied to the transfer roller to charge the media positive. The positively charged media attracts the negatively charged toner from the photosensitive drum surface.

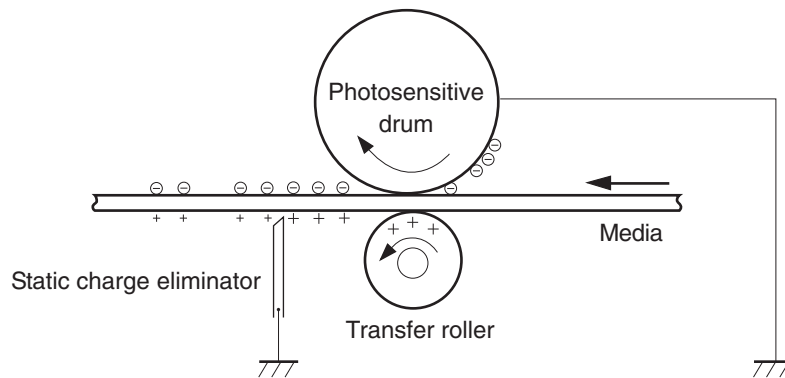
**Figure 1-19** Transfer



#### Step 5: Separation

The curvature elasticity of the print media causes it to separate from the photosensitive drum surface. The static charge eliminator reduces back side static discharge of the media for stable media feed and image quality.

**Figure 1-20** Separation



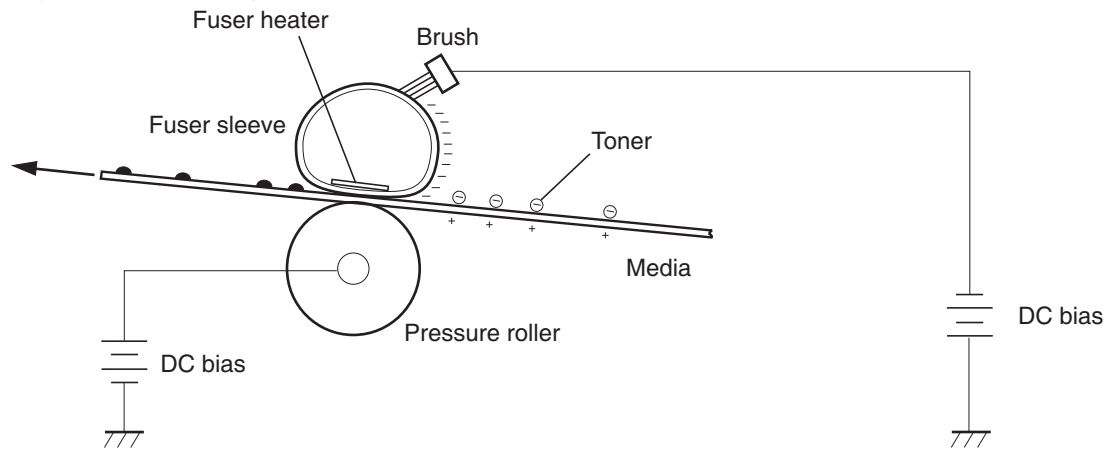
## Block 4: Fusing

The toner image is fixed onto the print media.

### Step 6: Fusing

The product uses the on-demand fixing method to fix the toner image onto the media. The image is permanently affixed to the print media by the heat and pressure.

**Figure 1-21** Fusing



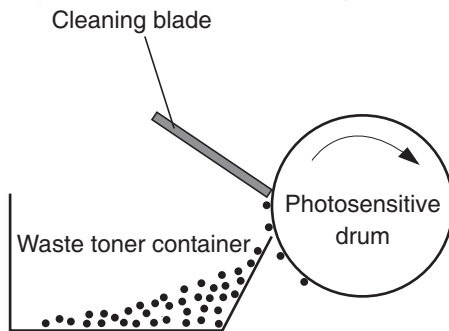
## Block 5: Drum cleaning

The residual (waste) toner is cleared from the photosensitive drum surface to prepare for the next latent image formation.

### Step 7: Drum cleaning

The cleaning blade scrapes the residual toner off the surface of the photosensitive drum and deposits it in the waste toner container.

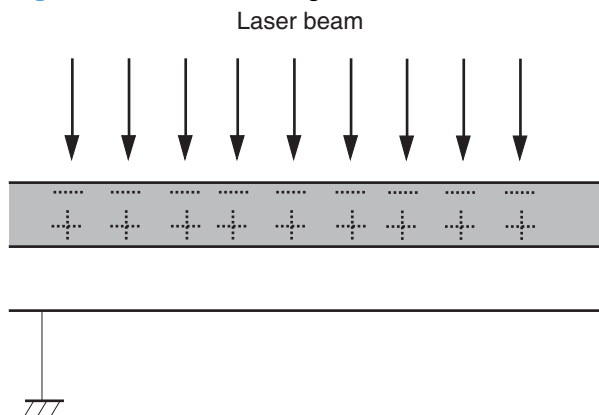
**Figure 1-22** Drum cleaning



### Step 8: Drum charge elimination

The residual charge on the photosensitive drum surface is eliminated to avoid uneven image. The residual charge of the previous image is left on the drum surface after the transfer operation and this affects the following image formation. The product eliminates this residual charge by emitting a laser beam to the drum surface. The drum charge elimination is operated only during the last rotation period.

**Figure 1-23** Drum charge elimination

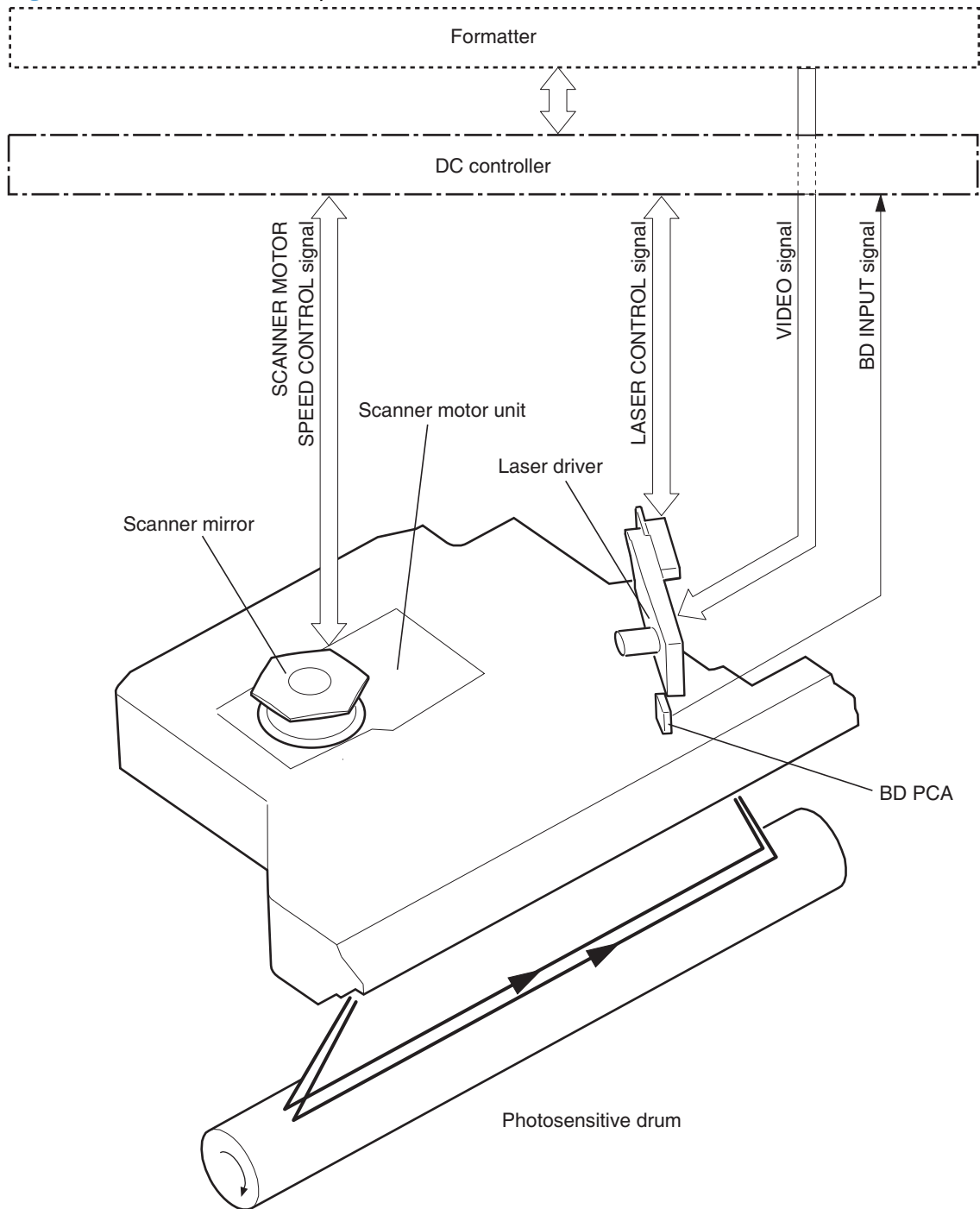


## Laser/scanner system

The laser/scanner system forms a latent image on the photosensitive drum according to the VIDEO signals sent from the formatter. The main components, such as the laser driver and scanner motor, are assembled as a laser/scanner unit and controlled by the DC controller. The DC controller allows the laser to emit light according to the VIDEO signals. The laser beam passes through the lenses and enters

the scanner mirror that is rotating at constant speed. The laser beam is reflected by the scanner mirror, passes through the lenses, and scans on the photosensitive drum.

**Figure 1-24** Laser/scanner system



The laser scanner uses two laser diodes to scan two lines simultaneously, producing high-speed laser scanning. After receiving the print command from the host computer, the DC controller PCA activates the scanner motor, which rotates the six-sided scanner mirror. The laser-driver PCA emits light from the two laser diodes according to signals from the DC controller PCA. The two laser beams strike the six-sided scanning mirror and are directed through the focusing lenses and onto the photosensitive drum.

The modulated laser beams generate the latent electrostatic image on the photosensitive drum according to the image data signals that the DC controller PCA sends.

1. As it receives a print command from the formatter, the dc controller outputs the SCANNER MOTOR SPEED CONTROL signal (/ACC) and rotates the scanner motor in order to rotate the six-sided mirror.
2. As the scanner motor starts rotating, the dc controller uses a LASER CONTROL signal (CNT0, CNT1, CNT2) to receive the /BD INPUT signal (/BDI) and force the laser to emit light . The dc controller detects the rotational speed of the scanner motor based on the timing the /BD1 signal is input and controls the speed to keep it constant.
3. While the scanner motor rotates at a constant speed, the dc controller passes the VIDEO signals from the formatter on to the laser driver PCA. The laser driver PCA emits light from the two laser diodes according to these signals: VDO1, /VDO1, VDO2, /VDO2.
4. The two laser beams pass through the collimator lens and cylindrical lens and strike the six-sided mirror that is rotating at a constant speed.
5. The laser beams, that are reflected off of the six-sided mirror pass through the focus lens and reflective mirror and focus on the photosensitive drum. The laser beams scan the drum surface at a constant speed.
6. As the six-sided mirror rotates and the laser beam scans the drum surface at a constant speed, a latent image forms on the drum surface.

## Laser failure detection

The DC controller determines a laser/scanner unit failure and notifies the formatter, if the laser/scanner unit encounters the following conditions:

- **Laser failure:** The laser intensity is not detected for a specified value when the laser is turned on for a specified period during the scanner unit start-up period.
- **BD failure:** The BD interval is out of a specified value during a print operation.
- **Scanner motor start-up failure:** The scanner motor does not reach a specified rotation within a specified period from when the scanner motor starts rotation.

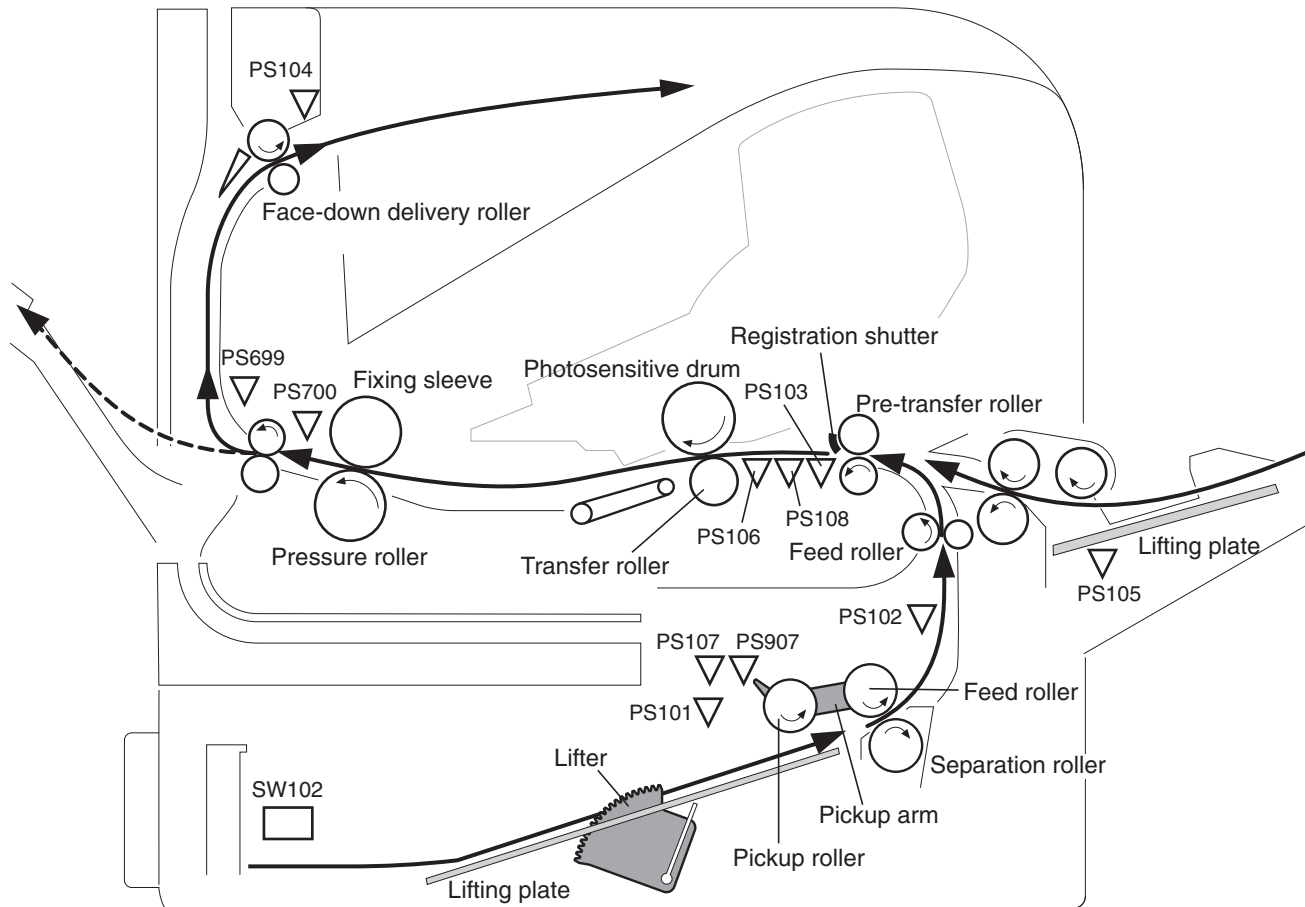
# Pickup, feed, and delivery system

The pickup, feed, and delivery system consists of various rollers that the product motors drive. The product uses Tray 1 (the manual feeding tray) and a cassette in Tray 2 as media sources. The printed media is delivered to either the rear output bin (straight-through printing) or the top output bin (the default destination). A number of 1x500-sheet feeders and one 1,500-sheet paper deck can be added to certain models. These accessories are discussed later in this chapter. The Tray 1 paper sensor (on the Tray 1 pickup assembly; PS105) detects media in Tray 1. The Tray 2 paper sensor (PS101) detects media in Tray 2. The paper-size switch (SW102) detects the media size that is loaded in Tray 2.

Two motors, a clutch, and a solenoid that are controlled by the DC controller PCA drive all of the rollers in the product.

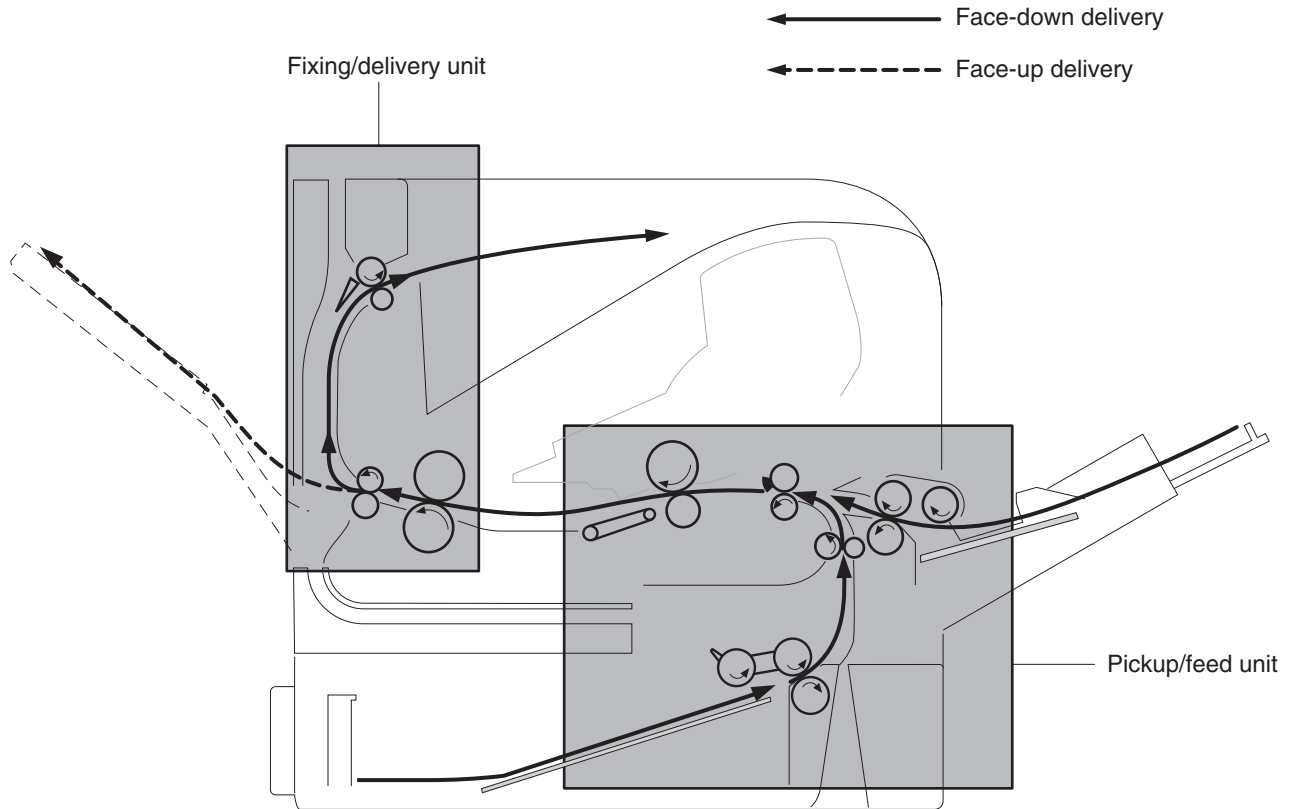
The pre-feed, top-of-page, and fuser-assembly delivery sensors (PS102, PS103, PS700) detect media arriving and passing along the paper path. If the media does not reach or pass these sensors within a specific amount of time, the microprocessor on the DC controller PCA halts the product functions and a jam error message appears on the control-panel display.

**Figure 1-25** Pickup, feed, and delivery system



The pickup-and-feed system is divided into two blocks: The pickup-and-feed block and the fuser/delivery block.

**Figure 1-26** Pickup, feed, and delivery blocks



## Pickup-and-feed block

The following functions take place in the pickup-and-feed block:

- Detection of media
- Detection of media-size
- Detection of media entering the paper path from Tray 1 or Tray 2
- Lifting of the Tray 2 paper plate
- Prevention of multiple-feeds
- Correction of page skew

When it receives a print command from the host computer, the DC controller PCA turns on the feed motor (M101) power. The motor drives the Tray 2 pickup, feed, and separation rollers. The drum motor power also turns on. The laser/ scanner motor power turns on.

The DC controller PCA then activates the feed clutch (CL101) to rotate the feed roller. The Tray 2 pickup solenoid is activated (SL101) and the pickup arm descends. The pickup roller touches the media and a sheet is fed into the product. The separation roller prevents multiple sheets of media from being fed at one time.

As the pre-feed sensor (PS102) detects the media, the dc controller PCA turns off the clutch, which stops the media. When the DC controller PCA detects that the laser/scanner is ready it activates the feed



clutch again. The feed roller moves the media farther into the product. The registration shutter corrects page skew and the media is transported to the fuser/delivery block.

## Fuser/delivery block

The fuser/delivery block consists of rollers, sensors, the fuser, and the output delivery assembly. The rollers transport the media through the fuser/delivery block paper path. The fuser applies heat and pressure to the media to permanently bond the toner image to the media. The output delivery assembly sends the printed media either to the rear output bin (if the rear output door is open) or to the top output bin (the default output delivery bin). Sensors along the paper path detect media movement, jams, and the top output-bin capacity.

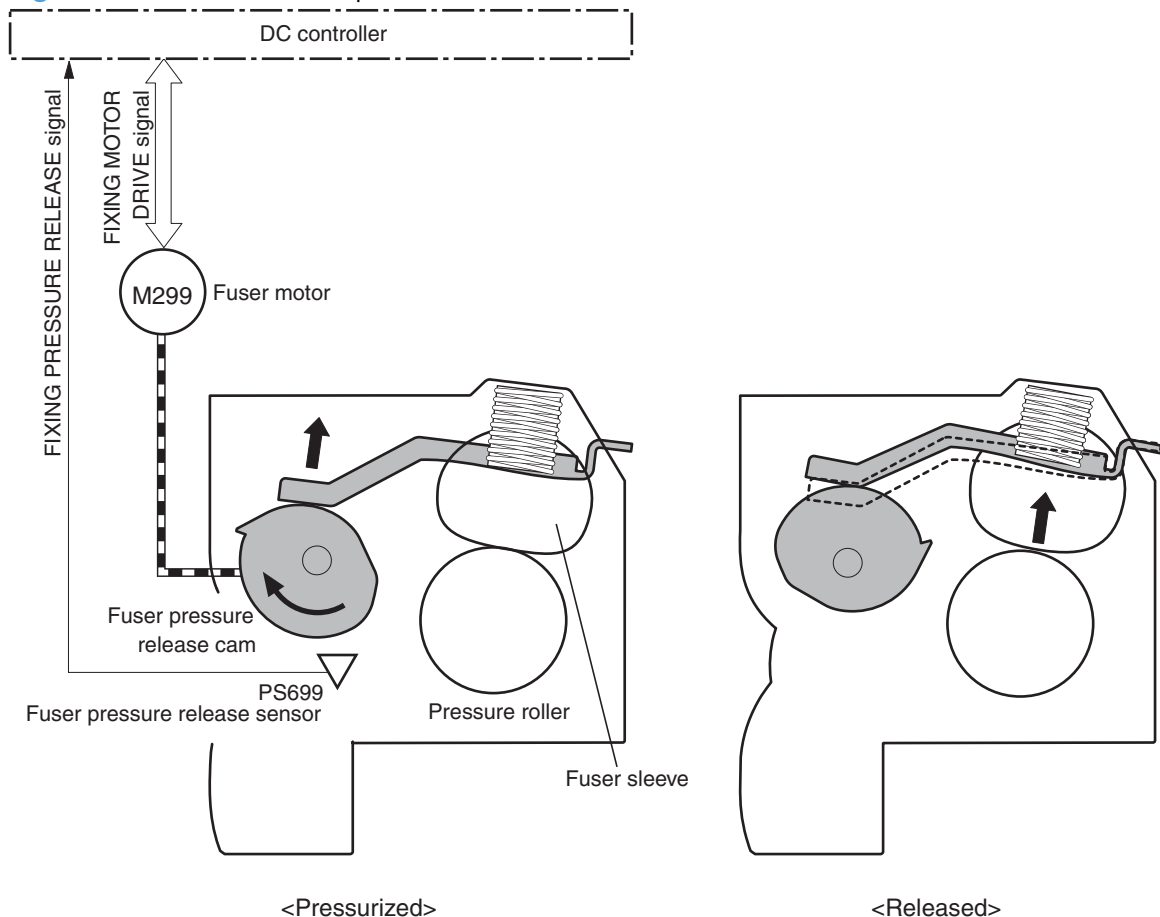
## Pressure roller pressure release control

The product releases the pressure roller except during a print operation to improve usability for jammed paper removal.

The DC controller reverses the fuser motor (M299) to rotate the fuser pressure release cam. The pressure roller is pressurized or depressurized due to the shape of the cam.

The DC controller reverses the fuser motor to control the pressure roller pressurize or depressurize state according to the signal sent from the fuser pressure release sensor (PS699).

**Figure 1-27** Pressure roller pressure release control



The pressure roller pressure is released under the following conditions:

- A paper jam is detected
- Factory shipment

The DC controller determines a fuser pressure release mechanism failure and notifies the formatter if the fuser roller release control is not completed within a specified period when it reverses the fuser motor.

## Paper trays

### Printing from Tray 1

The Tray 1 paper sensor (PS105) detects the presence of media in Tray 1. When the DC controller PCA receives the print command, the product starts the initial rotation phase, which consists of feed motor warm-up, scanner motor warm-up, high-voltage control sequence, and fuser warm-up. When the initial rotation phase ends, the Tray 1 pickup solenoid (SL102) is activated.

The cam rotates, the paper-tray lifter rises, and the media comes in contact with the Tray 1 pickup roller. At the same time, the Tray 1 pickup roller rotates twice and picks up a sheet of media from Tray 1. The separation pad prevents additional sheets from feeding with the first sheet.

The sheet then reaches the registration assembly, where its skew is corrected. The sheet then passes through the transfer, separation, and fusing stages; through the delivery unit; and is to the output bin.



**NOTE:** If media is removed from Tray 1 after the initial rotation phase, but before the pickup roller pulls the media from the tray, the Tray 1 pickup roller might continue to rotate up to six times, after which a jam is detected.

### Printing from Tray 2

When the DC controller PCA receives the print command, the feed motor (M101) and scanner motor start their rotation. When the feed motor reaches its prescribed speed, the feed roller clutch (CL101) and Tray 2 pickup solenoid (SL101) are activated. (The feed motor rotation drives the Tray 2 pickup roller, Tray 2 feed roller, Tray 2 separation roller, and paper-feed rollers.)

The Tray 2 pickup roller, which the pickup solenoid activates, rotates once and picks up the media in the tray. The separation roller prevents additional sheets from feeding with the first sheet, and the media is fed to the pre-feed sensor (PS102).

The sheet then reaches the registration assembly, where its skew is corrected. The sheet then passes through the transfer, separation, and fusing stages; through the delivery unit; and to the output bin.

### Cassette media size detection and cassette presence detection

The media size detection switch (SW102) detects the size of media loaded in the cassette and the presence of the cassette.

The media size detection switch—comprised of three switches: upper, center, and lower—is active when the cassette media size plate is correctly positioned to the loaded paper size and the cassette is installed in the product. The DC controller determines the paper size by monitoring the switch conditions.

the DC controller determines a size mismatch and sends a signal to the formatter if the switches detect a paper size that is different from the size specified by the formatter.

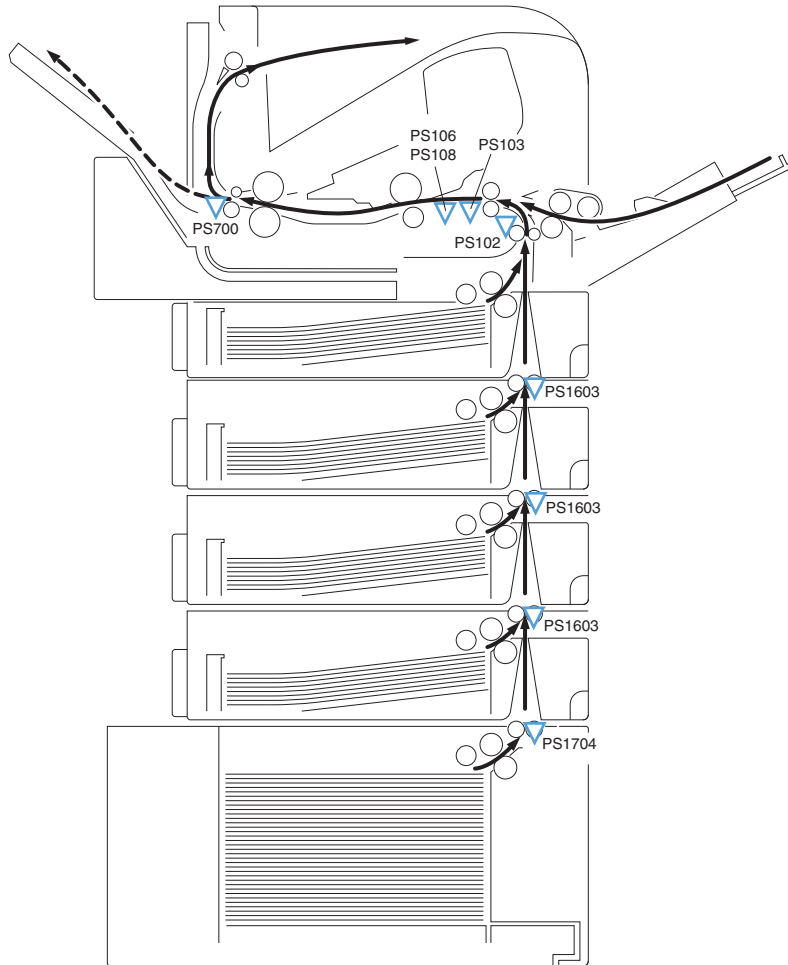
**Table 1-5 Cassette media size detection and cassette presence detection (Tray 2 and 1x500-sheet feeder)**

Media size	Media size switch settings		
	Upper	Center	Lower
No cassette	Off	Off	Off
A4	Off	Off	On
B5	Off	On	On
A5	On	Off	Off
Legal	On	On	Off
Letter	Off	On	Off
Executive	On	Off	On
Universal	On	On	On

## Jam detection

The product uses the following sensors to detect the presence of media and to check whether media is being fed correctly or has jammed

**Figure 1-28** Jam detection sensors



PS102: Pre-feed sensor	PS108: Media width sensor 2	PS1704: Media path sensor (paper deck)
PS103: Top of page sensor	PS700: Fuser delivery sensor	
PS106: Media width sensor 1	PS1603: Media path sensor (paper feeder)	

The product determines a jam if the sensor detects paper presence at a specified timing stored in the DC controller.

The DC controller stops a print operation and notifies the formatter when it determines a jam occurrence.

The product detects the following jams.

## Pickup delay jam 1

**a.** Standard equipped cassette

The top of page sensor (PS103) does not detect the leading edge of media within a specified period from when the pre-feed sensor (PS102) detects the leading edge.

**b.** Pickup option

The top of page sensor (PS103) does not detect the leading edge of media within a specified period from when the feed clutch (CL101) is turned on.

**c.** MP tray (Tray 1)

The top of page sensor (PS103) does not detect the leading edge of media within a specified period from when the MP tray pickup solenoid (SL102) is turned on.

## Pickup delay jam 2

**a.** Standard equipped cassette

The pre-feed sensor (PS102) does not detect the leading edge of media within a specified period from when a pickup operation starts.

**b.** Top pickup source of pickup option

The PF media path sensor (PS1603) for the top PF cassette or the PD media path sensor (PS1704) does not detect the leading edge of media within a specified period from when a pickup operation starts.

**c.** Lower pickup sources of pickup option

The PF media path sensor (PS1603) for the top PF cassette does not detect the leading edge of media within a specified period from when the PF media path sensor (PS1603) or the PD media path sensor (PS1704), either one of that equipped to the pickup source that picks up the media, detects the leading edge of media.

## Pickup delay jam 3

The PF media path sensor (PS1603) or PD media path sensor (PS1704), either one of that equipped to the pickup source that picks up the media, does not detect the leading edge of media within a specified period from when a pickup operation from the lower pickup sources of the pickup option.

## Pickup stationary jam

**a.** Top of page sensor detection

The top of page sensor (PS103) does not detect the trailing edge of media within a specified period from when it detects the leading edge.

**b.** Media width sensors detection

Both of the media width sensors (PS106, PS108) do not detect the trailing edge of media within a specified period from when the top of page sensor (PS103) detects the trailing edge.

## Delivery delay jam

The fuser delivery sensor (PS700) does not detect the leading edge of media within a specified period from when the top of page sensor (PS103) detects the leading edge.

## Delivery stationary jam

The fuser delivery sensor (PS700) does not detect the trailing edge of media within a specified period from when the top of page sensor (PS103) detects the trailing edge.

## Residual media jam 1

- a. Either one of the following sensors detects media presence when the wait sequence starts:
  - Top of page sensor (PS103)
  - Media width sensors (PS106, PS108)
  - Fixing delivery sensor (PS700)
- b. The fuser delivery sensor (PS700) detects media presence before the top of page sensor (PS103) or the media width sensor (PS106, PS108) detects leading edge of media during an automatic delivery operation.



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**NOTE:** The automatic delivery delivers the deliverable residual media automatically during the initial rotation period when the power is turned on or when the door is closed. The DC controller sends an automatic delivery request to the formatter and stops a print operation when it determines that there is deliverable residual media. Then the formatter sends an automatic delivery command and the DC controller drives media feed system to deliver the residual media out of the product.

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- c. Either one of the following sensors detects media presence during an automatic delivery operation:
  - Pre-feed sensor (PS102)
  - Top of page sensor (PS103)
  - Media width sensors (PS106, PS108)
  - Fuser delivery sensor (PS700)
  - PF media path sensor (PS1603)
  - PD media path sensor (PS1704)

- d.** The door open is detected when either one of the following sensors detects media presence during an automatic delivery operation:
  - Top of page sensor (PS103)
  - Media width sensors (PS106, PS108)
  - Fuser delivery sensor (PS700)
- e.** A stop control command is received when either one of the following sensors detects media presence during an automatic delivery operation:
  - Pre-feed sensor (PS102)
  - Top of page sensor (PS103)
  - Media width sensors (PS106, PS108)
  - Fuser delivery sensor (PS700)
  - PF media path sensor (PS1603)
  - PD media path sensor (PS1704)

### Residual media jam 2

- a.** Either one of the following sensors detects media presence when a print operation completes:
  - Pre-feed sensor (PS102)
  - Top of page sensor (PS103)
  - Media width sensors (PS106, PS108)
  - Fuser delivery sensor (PS700)
  - PF media path sensor (PS1603)
  - PD media path sensor (PS1704)
- b.** A stop control command is received from the formatter after a pickup operation has started.

### Door open jam

The door open is detected after a pickup operation has started.

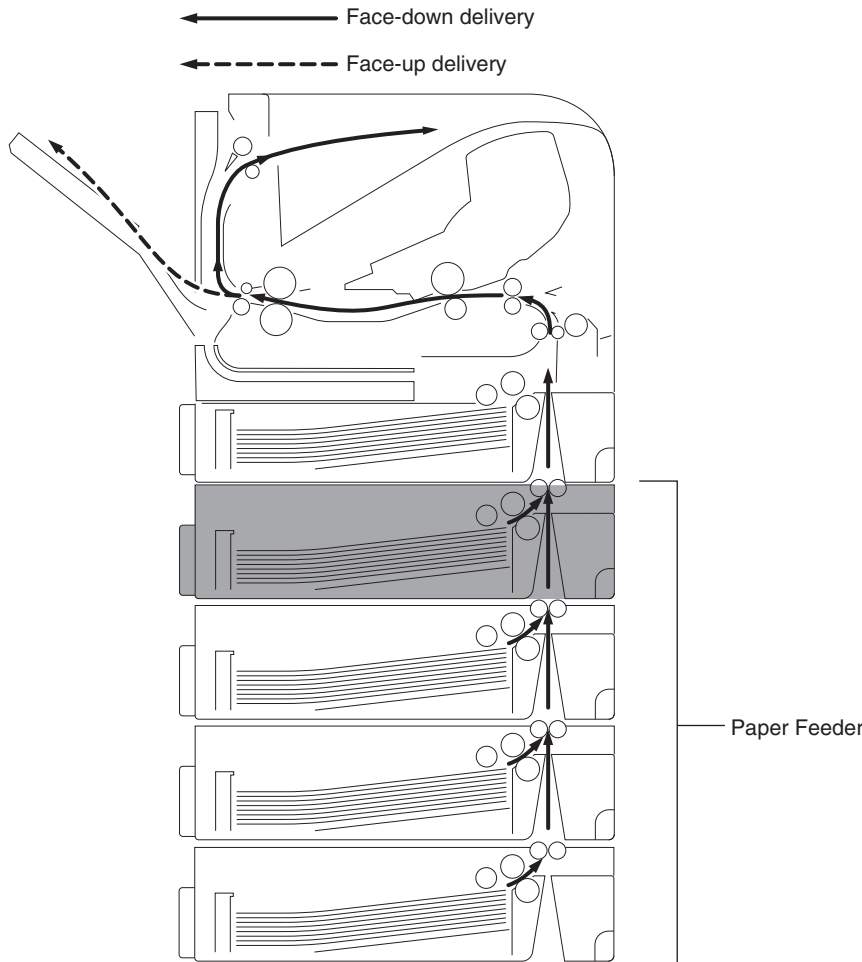
### Wrapping jam

The fuser delivery sensor (PS700) detects media absence before it detects the trailing edge of media after a specified period from when it detects the leading edge.

# 1x500-sheet paper feeder

The 1x500-sheet paper feeder (PF) is optionally installed at the bottom of the product. It features paper pickup and paper feeding to the product. The product supports up to four optional paper feeders.

**Figure 1-29** 1x500-sheet paper feeder



The paper feeder driver controls the operational sequence of the paper feeder and the serial communication with the DC controller of the product.

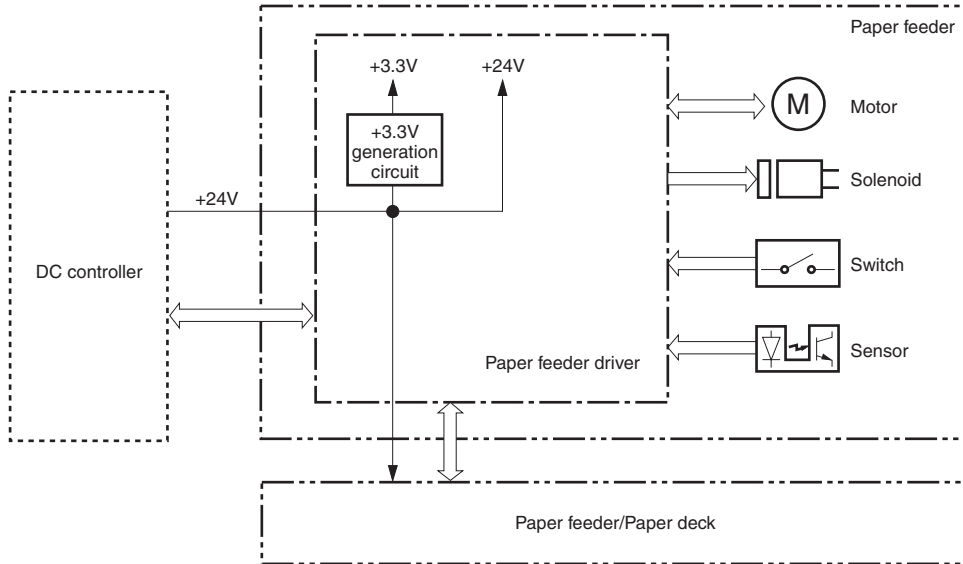
The DC controller sends several commands to the paper feeder driver at necessary timing. The paper feeder driver drives each load, such as motor and solenoid, according to the commands. The paper feeder driver responds the status information of the paper feeder to the DC controller.

The DC controller determines a paper feeder illegal connection and notifies the formatter if it does not make the serial communication with the paper feeder driver during the pre-rotation period when the product is turned on, when recovering from the Sleep mode or when the door is closed.

The product supplies DC24V to the paper feeder. The DC3.3V for sensors and ICs is generated from the DC24V in the paper feeder driver.



**Figure 1-30** 1x500-sheet paper feeder circuit diagram



Component		Description
Motor	M1600	Paper feeder lift motor
Sensor	PS1600	Paper feeder media presence sensor
	PS1601	Paper feeder media stack surface sensor 1
	PS1602	Paper feeder media stack surface sensor 2
	PS1603	Paper feeder media path sensor
Solenoid	SL1600	Paper feeder pickup solenoid
Switch	SW1600	Paper feeder media size switch

## Pickup-and-feed operation (PF)

The paper feeder uses same mechanism of the product for the pickup-and-feed operation. The rollers used in the paper feeder are driven by the feed motor (M101) of the product through the gears.

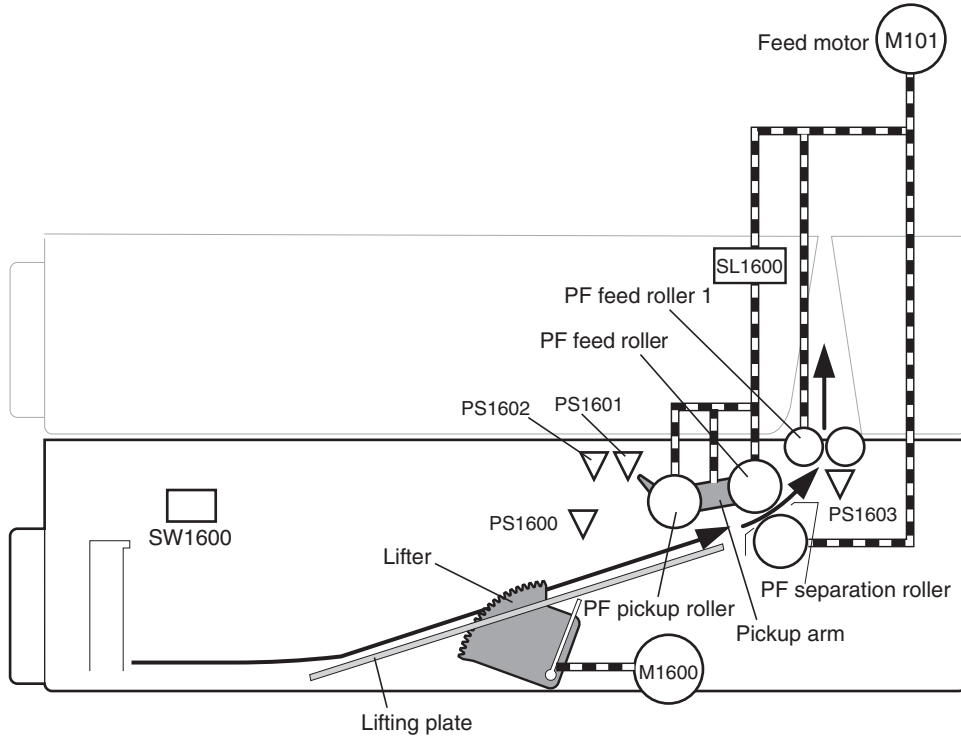
### Pickup and feed sequence of operation (PF)

1. The lifting plate moves up to the position where the paper can be picked up after the product is turned on or the paper feeder cassette is installed.
2. The DC controller drives the feed motor (M101) when it receives a print command from the formatter.
3. The DC controller outputs a pickup command to the paper feeder driver.
4. The paper feeder driver turns on the PF pickup solenoid (SL1600) when it receives a pickup command. Accordingly the PF pickup roller, PF feed roller and PF feed roller 1 rotate to pick up

media in the PF cassette. (PF cassette pickup mechanism and PF lift-up operation are the same way as that of the product).

5. The PF separation roller holds back any multiple-fed sheets and one sheet of media is fed into the product. (PF multiple-feed prevention mechanism is the same way as that of the product).

**Figure 1-31** 1x500-sheet paper feeder block diagram



Description		Signal	Driver
PF lifter motor	M1600	PF LIFTER MOTOR DRIVE signal	PF driver
PF media presence sensor	PS1600	PF MEDIA PRESENCE signal	PF driver
Paper feeder media stack surface sensor 1	PS1601	PF MEDIA STACK SENSOR 1 signal	PF driver
Paper feeder media stack surface sensor 2	PS1602	PF MEDIA STACK SENSOR 2 signal	PF driver
Paper feeder media path sensor	PS1603	PF MEDIA PATH signal	PF driver
Paper feeder pickup solenoid	SL1600	PF PICKUP SOLENOID signal	PF driver
Paper feeder media size switch	SW1600	PF MEDIA SIZE signal	PF driver

## Cassette lift operation (PF)

The lift-up operation keeps the stack surface of media in the paper feeder cassette at a specified position to perform stable pickup operation.

The paper feeder driver drives the PF lifter motor (M1600) to move up the lifter plate in which media is stacked. The cassette lift-up operation for the paper feeder is operated in the same way as that of the product base.

The paper feeder driver monitors the PF media stack surface sensors (PS1601, PS1602) when the product is turned on, when the PF cassette is installed or during a print operation to perform the lift-up operation.

### Cassette lift operation (PF)

#### 1. Initial lift-up operation

The initial lift-up operation is performed if either one of the PF media stack surface sensors (PS1601, PS1602) does not detect the media surface when the power is turned on or when the PF cassette is installed. The paper feeder driver drives the PF lifter motor for a specified period after both of the PF stack surface sensors detect media and lifts the stack surface to the pickup position.

The paper feeder driver determines a PF lifter motor failure and notifies the DC controller if both of the PF media stack surface sensors do not detect media within a specified period from when a lift-up operation is started.

#### 2. During print lift-up operation

The during print lift-up operation is performed when the media surface is lowered for a specified level due to a pickup operation. The paper feeder driver drives the PF lifter motor for a specified period and lifts the stack surface to the pickup position when the PF media stack surface 1 (PS1601) detects media absence during a print operation.

## Cassette media size detection and cassette presence detection (PF)

The cassette media size and cassette presence for the paper feeder are detected in the same way as that of the product base.

## Cassette multiple-feed prevention (PF)

The cassette multiple-feed prevention for the paper feeder is operated in the same way as that of the product base.

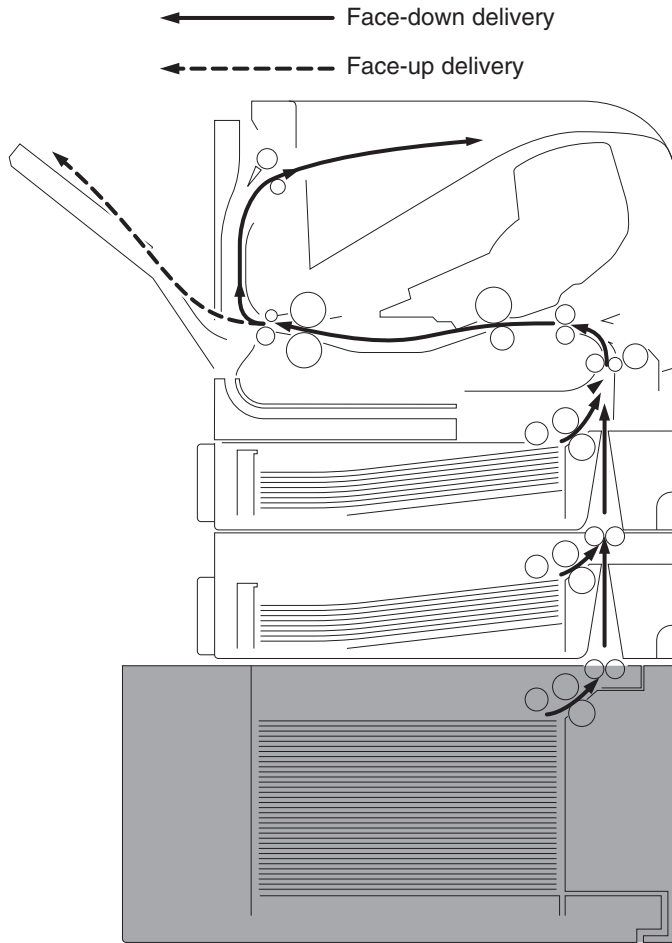
## Jam detection (PF)

The paper jam for the paper feeder is detected by the DC controller of the product base.

# 1x1500-sheet paper deck

The 1x1500-sheet paper feeder (PD) is optionally installed at the bottom of the product. It features paper pickup and paper feeding to the product. The product supports one paper deck and up to three paper feeders between the product and the paper deck.

**Figure 1-32** 1x500-sheet paper feeder



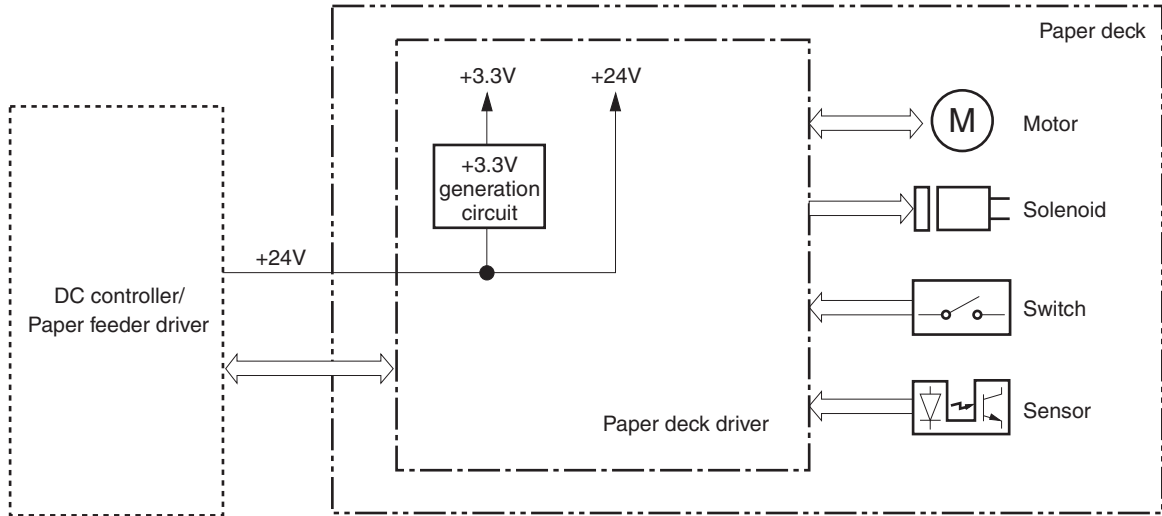
The paper deck driver controls the operational sequence of the paper deck and the serial communication with the DC controller of the product.

The DC controller sends several commands to the paper deck driver at necessary timing. The paper deck driver drives each load, such as motor and solenoid, according to the commands. The paper deck driver responds the status information of the paper deck to the DC controller.

The DC controller determines a paper deck illegal connection and notifies the formatter if it does not make the serial communication with the paper deck driver during the pre-rotation period when the product is turned on, when recovering from the sleep mode or when the door is closed.

The product supplies DC24V to the paper deck. The DC3.3V for sensors and ICs is generated from the DC24V in the paper deck driver.

**Figure 1-33** 1x500-sheet paper feeder circuit diagram



Component		Description
Motor	M1700	Paper deck lift motor
Sensor	PS1700	Paper deck media presence sensor
	PS1701	Paper deck media stack surface sensor 1
	PS1702	Paper deck media stack surface sensor 2
	PS1703	Door open detection sensor
	PS1704	Paper deck media path sensor
Solenoid	SL1700	Paper deck pickup solenoid
Switch	SW1700	Paper deck media size switch


## Pickup-and-feed operation (PD)

The paper deck uses same mechanism of the product for the pickup-and-feed operation. The rollers used in the paper feeder are driven by the feed motor (M101) of the product through the gears.

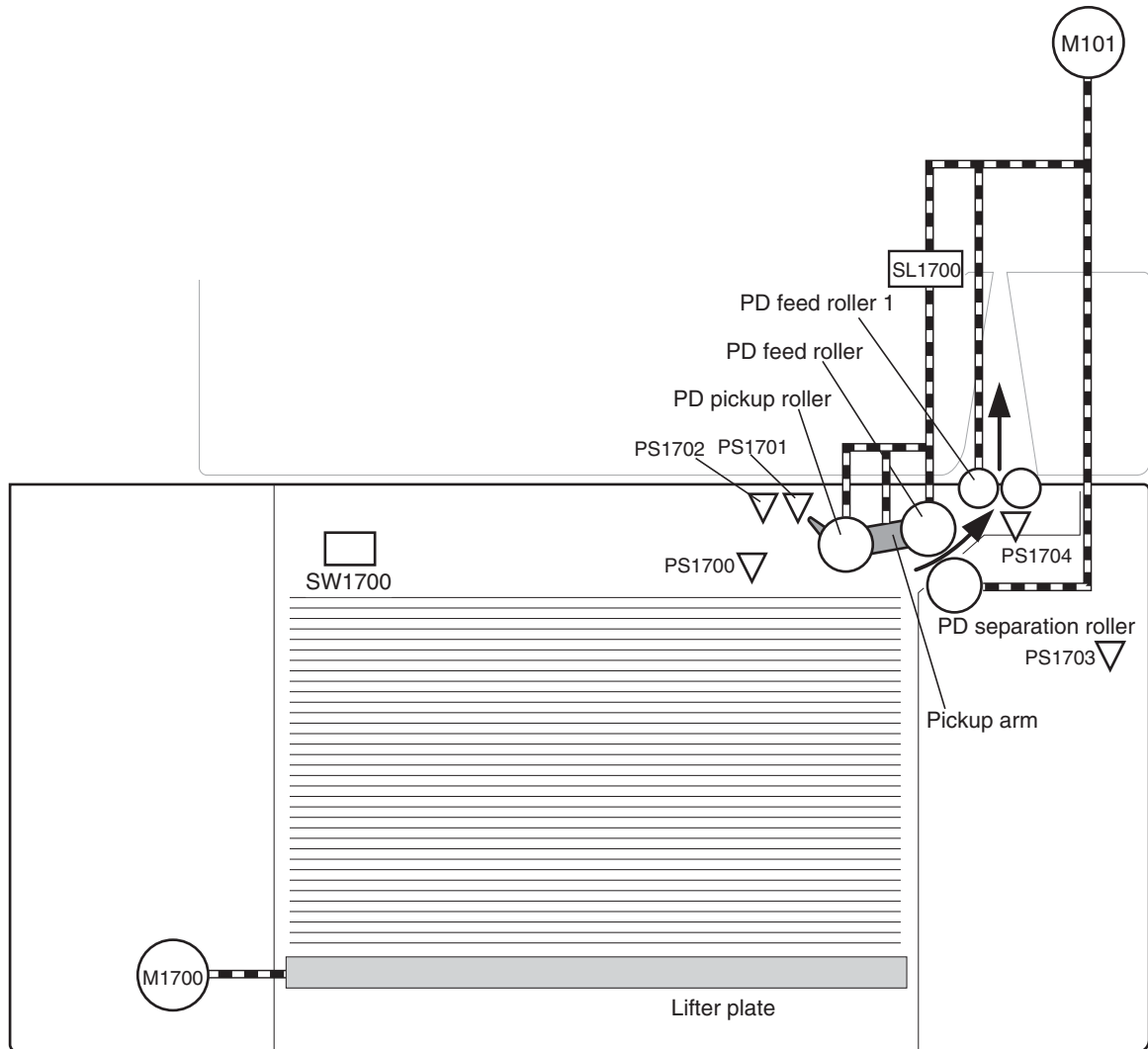
### Pickup and feed sequence of operation (PD)

1. The lifter plate moves up to the position where the paper can be picked up after the product is turned on or the PD front door is closed.
2. The DC controller drives the feed motor (M101) when it receives a print command from the formatter.
3. The DC controller outputs a pickup command to the paper deck driver.

4. The paper deck driver turns on the PD pickup solenoid (SL1700) when it receives a pickup command. Accordingly the PD pickup roller, PD feed roller and PD feed roller 1 rotate to pick up media in the paper deck. (PD pickup mechanism is the same way as that of the product).
5. The PD separation roller holds back any multiple-fed sheets and one sheet of media is fed in to the product. (PD multiple-feed prevention mechanism is the same way as that of the product).

 **NOTE:** The paper deck media size switch (SW1700) detects a media size in the paper deck.

**Figure 1-34** 1x1500-sheet paper deck block diagram



Description		Signal	Driver
PD lifter motor	M1700	PD LIFTER MOTOR DRIVE signal	PD driver
PD media presence sensor	PS1700	PD MEDIA PRESENCE signal	PD driver
PD media stack surface sensor 1	PS1701	PD MEDIA STACK SENSOR 1 signal	PD driver

Description		Signal	Driver
PD media stack surface sensor 2	PS1702	PD MEDIA STACK SENSOR 2 signal	PD driver
PD door open detection sensor	PS1703	PD DOOR OPEN DETECTION signal	PD driver
PD media path sensor	PS1704	PF MEDIA PATH signal	PD driver
PD pickup solenoid	SL1700	PF PICKUP SOLENOID signal	PD driver
PD media size switch	SW1700	PF MEDIA SIZE signal	PD driver

## Cassette lift operation (PD)

The lift-up operation keeps the stack surface of media in the paper deck at a specified position to perform stable pickup operation.

The paper deck driver drives the PD lifter motor (M1700) to move up the lifter plate in which media is stacked. The PD lifter motor uses four pulleys to wind the wire cables and two wire cables lift the lifter plate. When the PD front door is opened, the pulley gears and the motor gear are disengaged and the lifter plate lowers under its own weight.

The paper deck driver monitors the PD media stack surface sensors (PS1701, PS1702) when the product is turned on, when the PD front door is closed or during a print operation to perform the lift-up operation.

### Lift operation (PD)

#### 1. Initial lift-up operation

The initial lift-up operation is performed if either one of the PD media stack surface sensors (PS1701, PS1702) does not detect the media surface when the power is turned on or when the PD front door is closed. The paper deck driver drives the PD lifter motor for a specified period after both of the PD media stack surface sensors detect media and lifts the stack surface to the pickup position.

The paper deck driver determines a paper deck lifter motor failure and notifies the DC controller if both of the PD media stack surface sensors do not detect media within a specified period from when a lift-up operation is started.

#### 2. During print lift-up operation

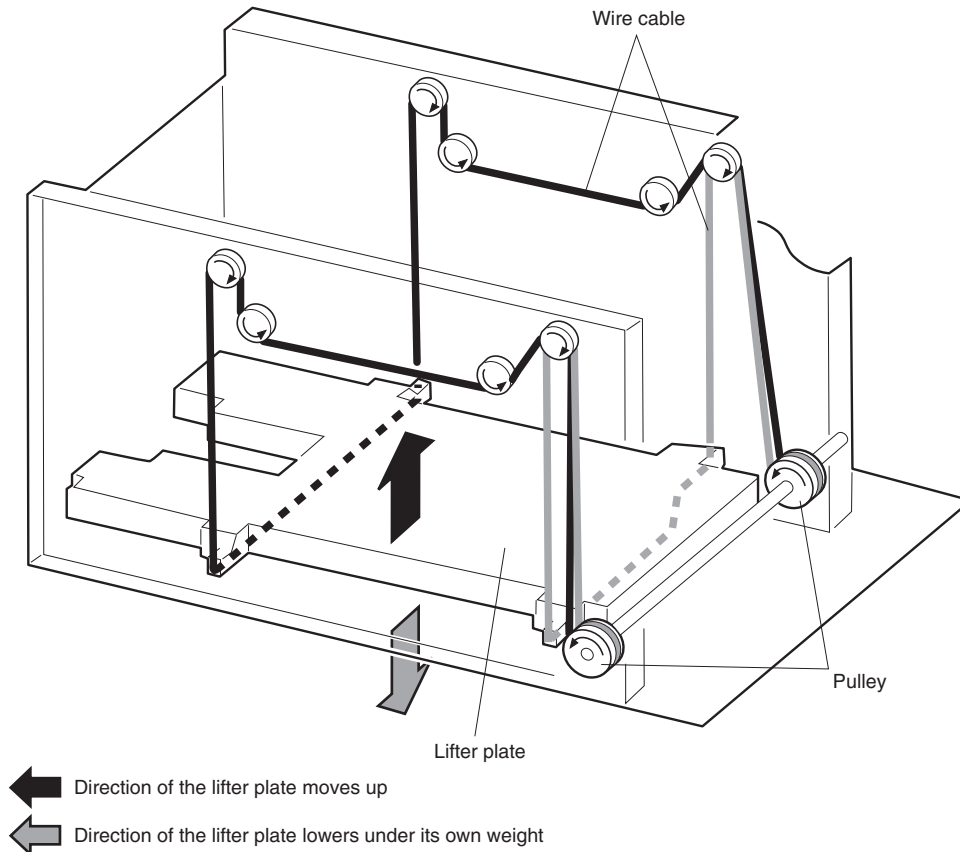
The during print lift-up operation is performed when the media surface is lowered for a specified level due to a pickup operation. The paper deck driver drives the PD lifter motor for

a specified period and lifts the stack surface to the pickup position when the PD media stack surface sensor 1 (PS1701) detects media absence during a print operation.

### 3. Pickup retry lift-up operation

The pickup retry lift-up operation is performed when the first pickup retry is failed to pick up media. The paper deck driver drives the PD lifter motor for a specified period to lift the stack surface and performs second pickup retry.

**Figure 1-35** 1x1500-sheet paper deck lift



## Media size detection (PD)

The combination of the switches for the paper deck media size detection differs from the product cassette.

## Multiple-feed prevention (PD)

The multiple-feed prevention for the paper deck is operated in the same way as that of the product.

## Jam detection (PF)

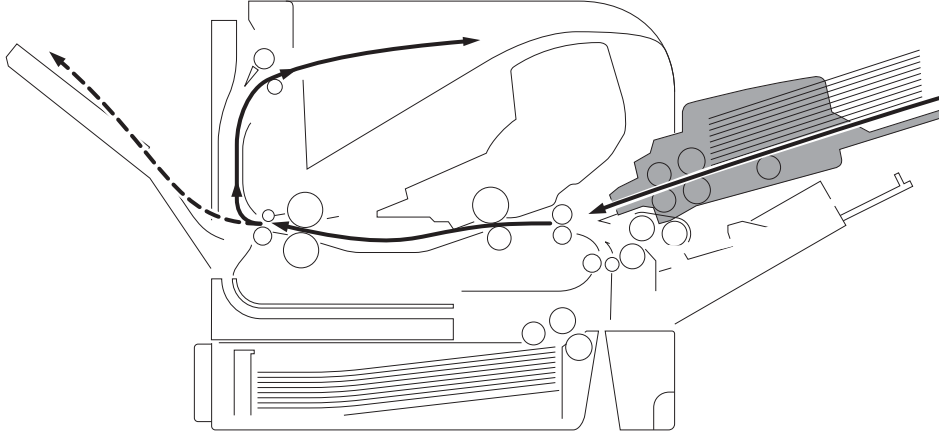
The paper jam for the paper deck is detected by the DC controller of the product.



# Envelope feeder

The envelope feeder (EF) is optionally installed on Tray 1, front side of the product. It features envelope pickup and envelope feed to the product.

**Figure 1-36** Envelope feeder

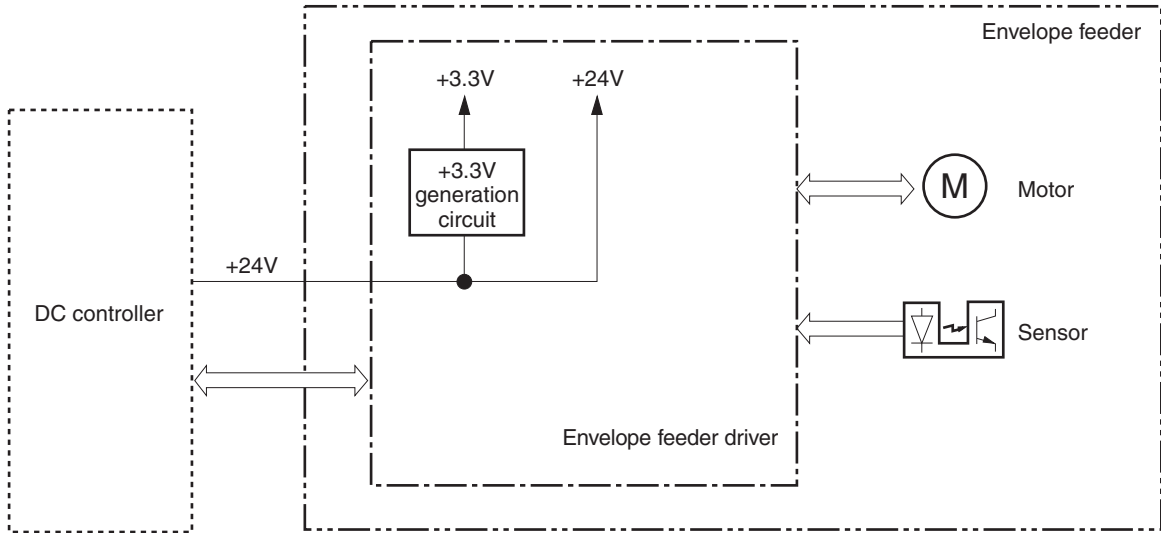


The envelope feeder driver controls the operational sequence of the envelope feeder and the serial communication with the DC controller of the product.

The DC controller sends several commands to the envelope feeder driver at necessary timing. The envelope feeder driver drives the motor according to the commands. The envelope feeder driver responds the status information of the envelope feeder to the DC controller.

The product supplies DC24V to the envelope feeder. The DC3.3V for sensors and ICs is generated from the DC24V in the envelope feeder driver.

**Figure 1-37** Envelope feeder circuit diagram



Component		Description
Motor	M1800	Envelope pickup motor

Component		Description
Sensor	PS1800	Envelope presence sensor
	PS1802	Envelope multiple feed sensor

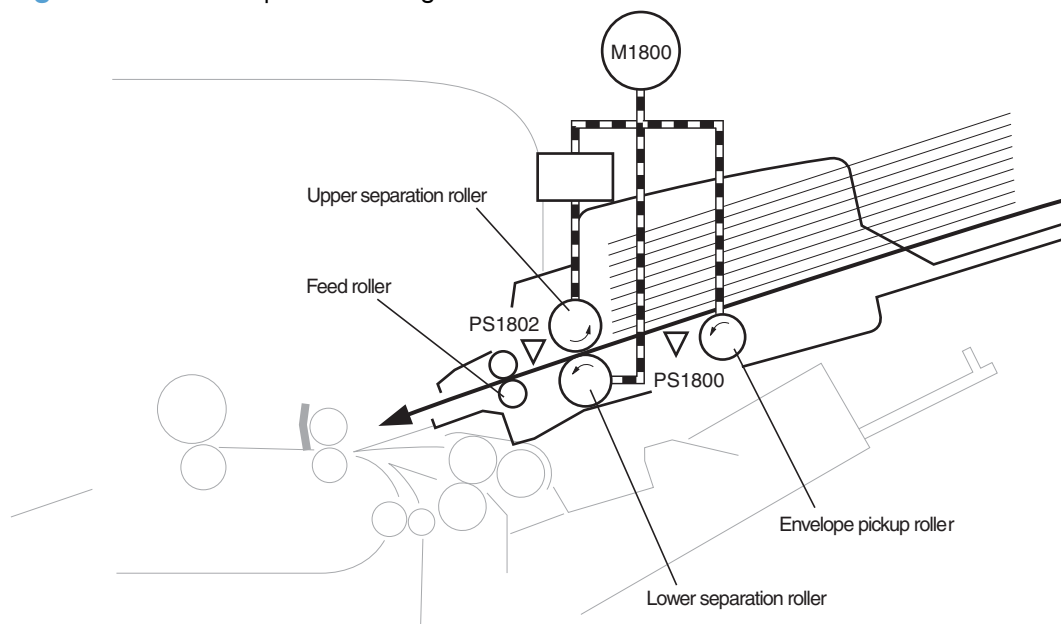
## Pickup-and-feed operation (EF)

The envelope in the envelope feeder is fed into the product individually.

### Pickup and feed sequence of operation (EF)

1. The envelope feeder driver drives the envelope pickup motor (M1800) when it receives a pickup command from the DC controller. Accordingly the envelope pickup roller, upper separation roller and lower separation roller rotate to pick up envelope.
2. The upper separation roller and lower separation roller remove any multiple-fed envelopes and one envelope is fed into the product.

**Figure 1-38** Envelope feeder diagram



Description		Signal	Driver
EF pickup motor	M1800	ENVELOPE PICKUP MOTOR DRIVE signal	EF driver
EF media presence sensor	PS1800	ENVELOPE PRESENCE signal	EF driver
EF multi feed sensor	PS1802	ENVELOPE MULTI FEED signal	EF driver

## Multiple-feed prevention (EF)


The multiple-feed prevention for the envelope feeder is operated in the same way as that of the product.

## Multiple-feed detection (EF)

The envelope feeder detects the multiple-feed of the envelopes to prevent the product damage from massive multiple-feed.

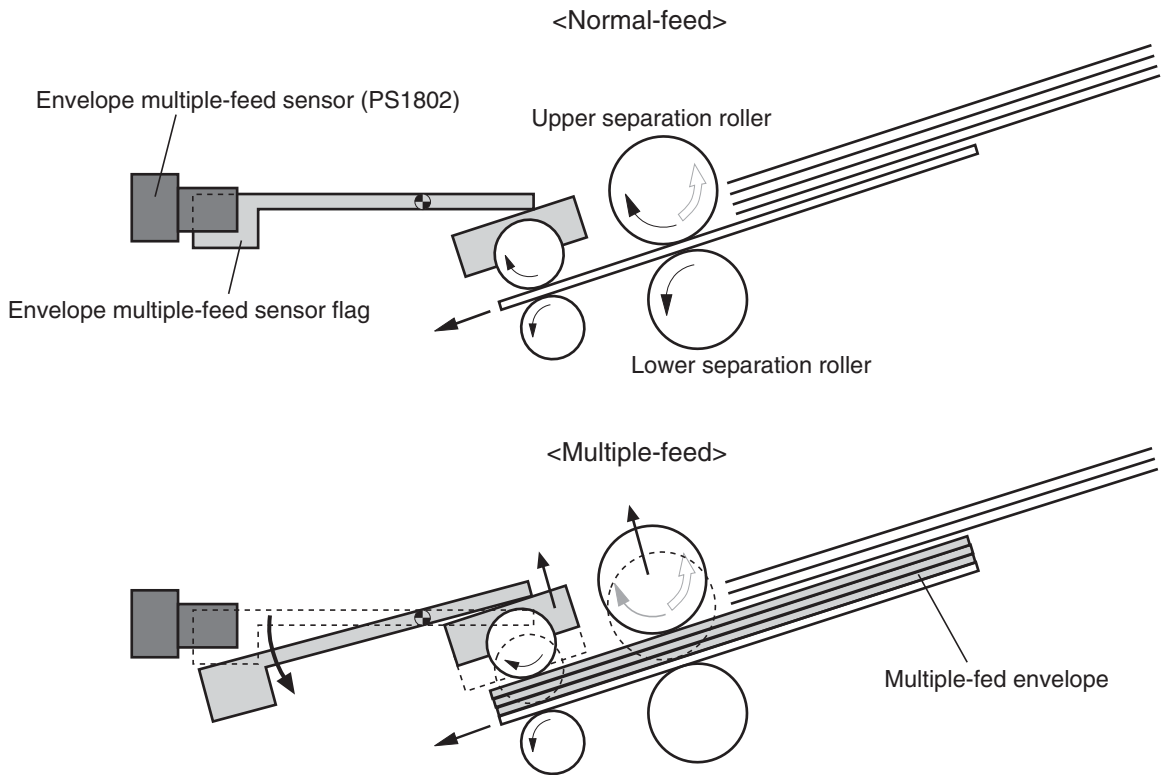
The envelope feeder driver monitors the envelope multiple-feed sensor (PS1802) to detect up and down motion of the upper separation roller.

During a normal-feed operation, the envelope multiple-feed sensor flag interrupts the multiple-feed sensor. If more than four multiple-fed envelopes are placed between the upper separation roller and the lower separation roller, the upper separation roller rises approximately 0.7mm (almost equivalent to the thickness of four envelopes). This causes the multiple-feed sensor flag not interrupting the sensor and the envelope feeder driver detects the multiple-feed of envelopes.

 **NOTE:** The multiple-feed detection mechanism is not able to detect less than four multiple-fed envelopes (approximately 0.7 mm), however, it does not affect the product damage.

The envelope feeder driver notifies the pickup jam to the DC controller when it determines a multiple feed.

**Figure 1-39** Envelope feeder multiple-feed detection



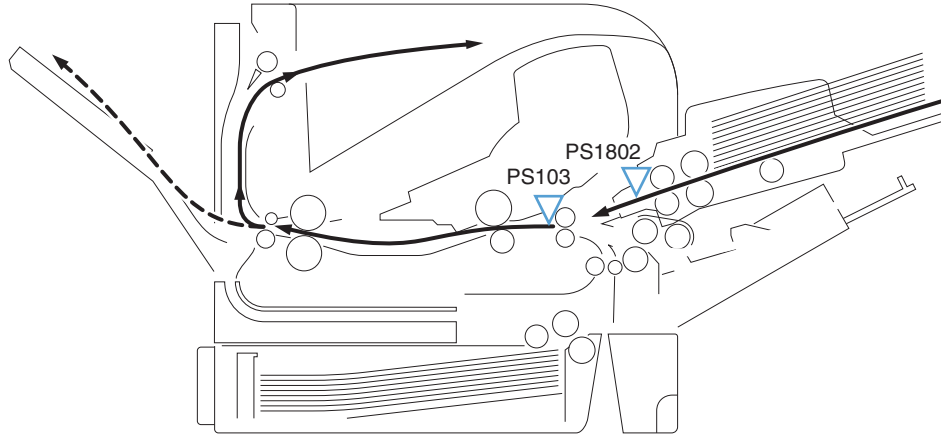
## Jam detection (EF)

The envelope feeder uses the following sensors to detect the presence of media and to check whether media is being fed correctly or has jammed

jam detection sensors (EF)

- PS1802: Envelope multiple-feed sensor
- PS103: Top of page sensor (in the product)

**Figure 1-40** Envelope feeder jam detection



The envelope feeder driver determines a jam if the sensor detects envelope presence at a specified timing stored in the envelope feeder driver. The envelope feeder driver stops a print operation and notifies the DC controller when it determines a jam has occurred.

#### **Envelope feeder pickup delay jam**

- The top of page sensor (PS103) does not detect the leading edge of envelope within a specified period from when a envelope pickup operation starts.

#### **Envelope feeder multiple-feed jam**

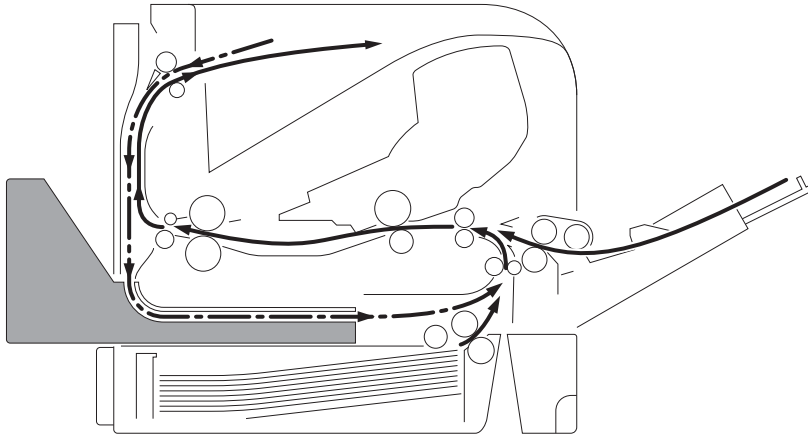
- The envelope multiple-feed sensor (PS1802) detects the multiple-fed envelopes after a pickup operation has started.

# Duplexer

The duplexer (DP) is installed at the back of the product. It features media reverse and media feed to the product to print two sides of media.

**Figure 1-41** Duplexer

- ← Face-down delivery
- ← Duplex print

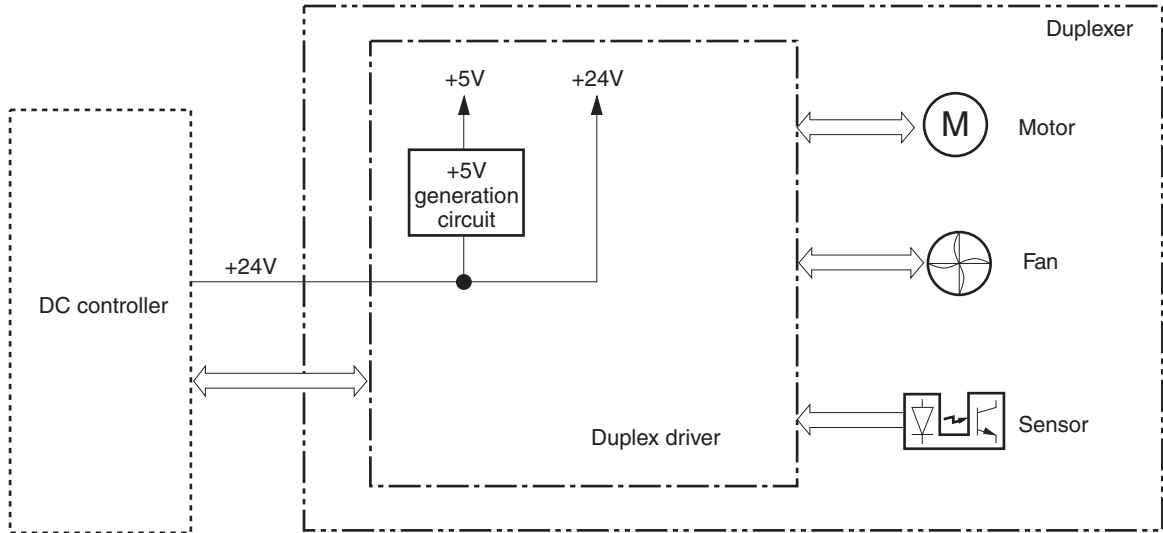


The duplex driver controls the operational sequence of the duplexer and the serial communication with the DC controller of the product.

The DC controller sends several commands to the duplex driver at necessary timing. The duplex driver drives the duplex reverse motor and the duplex re-pickup motor according to the commands. The duplex driver monitors the sensors and responds the status information of the duplexer to the DC controller.

The printer supplies DC24V to the duplexer. The DC5V for sensors and ICs is generated from the DC24V in the duplex driver.


**Figure 1-42** Duplexer circuit diagram



Component		Description
Fan	FM1501	Duplex cooling fan
Motor	M1501	Duplex reverse motor
	M1502	Duplex re-pick motor
Sensor	PS1501	Face up sensor
	PS1502	Duplex re-pick sensor
	PS1503	Side registration home-position sensor

## Motor and fan control (DP)

The duplexer has two motors and a fan. The motors are used for the media feeding and the fan is used for preventing a temperature rising inside the duplexer unit.

 **NOTE:** The paper deck media size switch (SW1700) detects a media size in the paper deck.

**Table 1-6 Fan (DP)**

Description	Cooling area	Type	Speed
Duplex cooling fan FM1501	Inside of the duplexer	Intake	Full

**Table 1-7 Motors (DP)**

Description	Component driven	Type	Failure detection
Duplex reverse motor M1501	Face-down delivery roller (in the product)	Stepping motor	No
Duplex re-pick motor M1502	Side registration guide, duplex feed roller	Stepping motor	No

## Failure detection (DP)

The duplex driver determines a fan failure and notifies the DC controller when the fan locks for a specified period after the fan starts up.

## Reverse-and-re-pickup operation (DP)

The duplexer has two motors: the duplex reverse motor (M1501) and the duplex re-pickup motor (M1502). The duplex driver controls forward and reverse the duplex re-pickup motor rotations. When the duplex re-pickup motor rotates, the rollers in the duplexer rotate and when it reverses, the side registration guide moves.

The duplex reverse motor rotates or reverses the face-down delivery roller of the product.

In addition, the duplexer has three photo interrupters: the face-up sensor (PS1501), duplex media re-pickup sensor (PS1502), and the side registration guide home-position sensor (PS1503). The face-up sensor is used for face-up tray open detection, the duplex media re-pickup sensor is used for jam detection, and the side registration guide home-position sensor is used for side registration guide home-position detection.

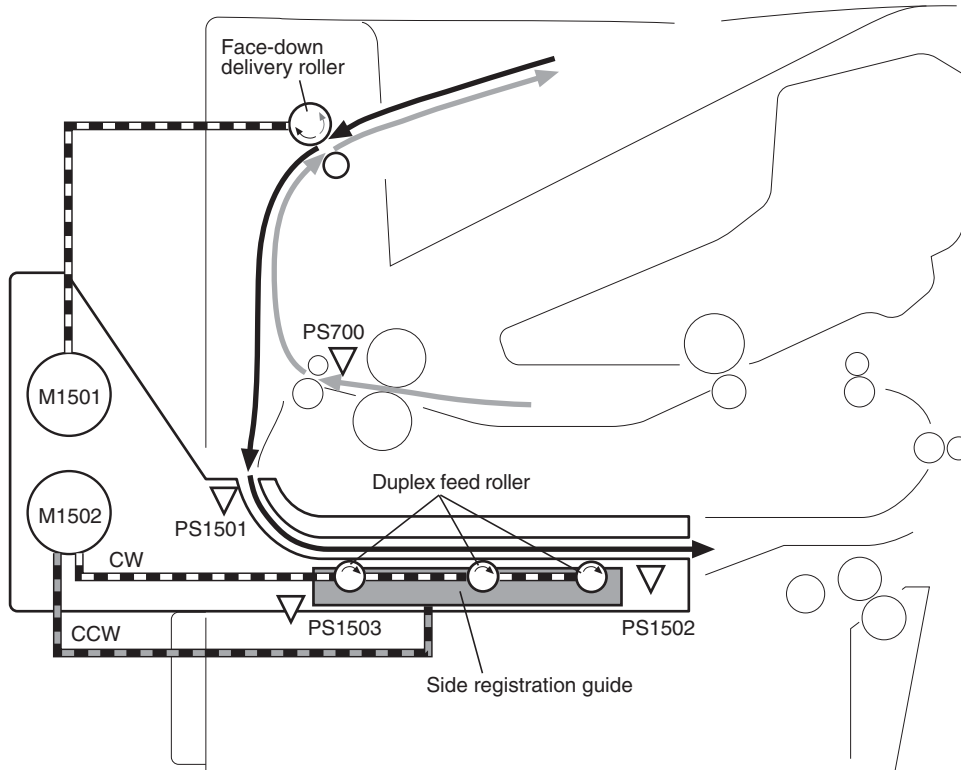
## Reverse-and-re-pickup operation (DP)

1. The duplex driver reverses the duplex re-pickup motor (M1502) when it receives a side registration adjustment command from the DC controller. See [Side registration adjustment operation \(DP\) on page 56](#).
2. The DC controller outputs a duplex reverse motor rotation command to the duplex driver after a specified period from when the fuser delivery sensor (PS700) of the product detects the leading edge of the page.
3. The duplex driver rotates the duplex reverse motor (M1501) and the page is fed to the face-down tray when the command is received.
4. The DC controller outputs a duplex reverse motor reverse command to the duplex driver after a specified period from when the fuser delivery sensor detects the trailing edge of a page.
5. The duplex driver reverses the duplex reverse motor and the page is fed to the duplexer along the side registration guide when the command is received.
6. The duplex driver rotates the duplex re-pickup motor after a specified period from when it reverses the duplex reverse motor. The media is fed by the oblique roller and the duplex feed rollers so that the edge contacts with the left plate to correct a skewed feed.
7. The duplex driver stops the duplex reverse motor after a specified period from when the DC controller reverses the duplex reverse motor.
8. The duplex driver stops the duplex re-pickup motor after a specified period from when the duplex media re-pickup sensor (PS1502) detects the leading edge of the page.

9. The duplex driver rotates the duplex re-pickup motor when it receives a duplex re-pickup command from the DC controller. The page is fed to the pre-feed sensor (PS102) of the product at the same product feed speed.
10. The duplex driver stops duplex re-pickup motor after a specified period from when the duplex media re-pickup sensor detects the trailing edge of the page.

The DC controller determines a print error and delivers media to the delivery tray without duplex printing if it encounters following conditions after the page is picked up for the first side printing.

**Figure 1-43** Duplexer block diagram



Description		Signal	Driver
DP reverse motor	M1501	DUPLEX REVERSE MOTOR DRIVE signal	DP driver
DP re-pick motor	M1502	DUPLEX RE-PICK MOTOR signal	DP driver
Face-up sensor	PS1501	FACE-UPsignal	DP driver
DP media re-pick sensor	PS1502	DUPLEX MEDIA RE-PICK signal	DP driver
Side registration guide home-position sensor	PS1503	SIDE REGISTRATION GUIDE HOMEPOSITION signal	DP driver

## Side registration adjustment operation (DP)

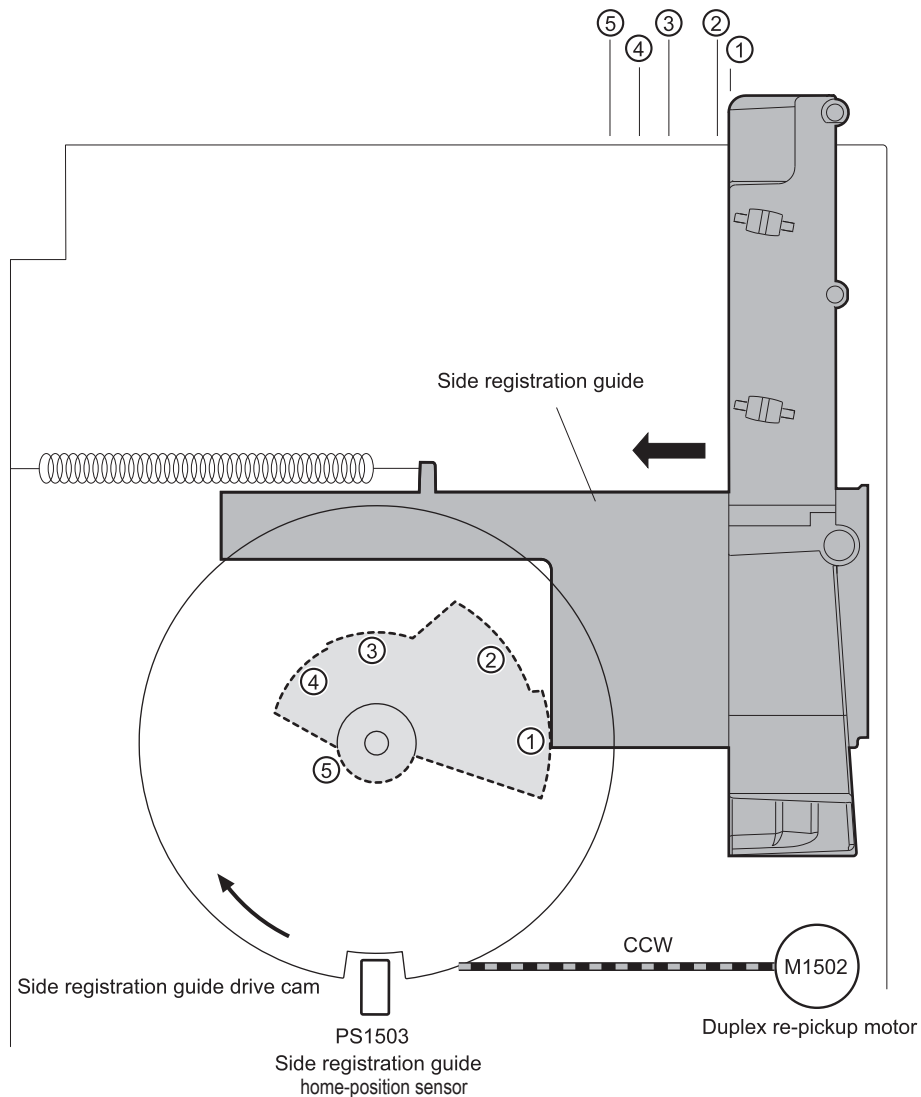
The product adjusts the side registration during a duplex print operation to align the center of the horizontal scanning on the second side with that of the print area on the photosensitive drum.



The side registration adjustment is made by moving the side registration guide to the designated page size of the side registration adjustment command. The side registration guide moves to the following five positions depending on the media size in order of numbers 1 to 5 and then back to 1.

1. Letter or Legal (home position)
2. A4
3. Executive
4. B5
5. A5

**Figure 1-44** Side registration adjustment operation (DP)



The sequence of the side registration adjustment operation is as follows:

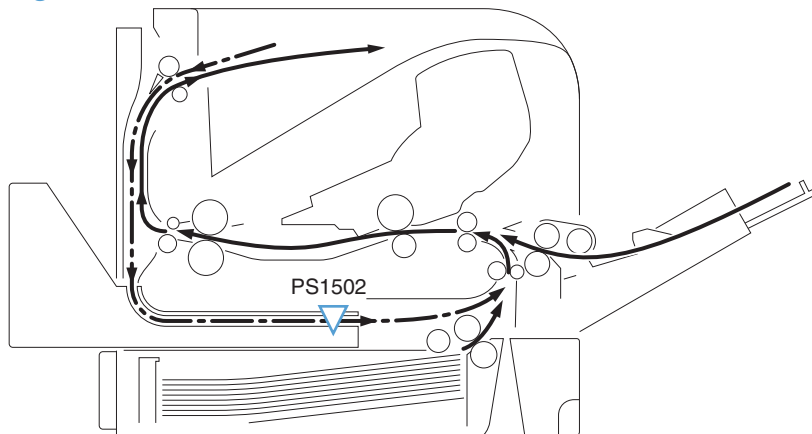
1. The duplex driver reverses the duplex re-pickup motor (M1502) when it receives a side registration adjustment command from the DC controller.
2. The side registration guide drive cam rotates and the side registration guide home-position sensor (PS1503) detects the home position of the side registration guide. Then the side registration guide moves depending on the media size.
3. The duplex driver stops the duplex re-pickup motor and completes the side registration guide movement.

The duplex driver determines a side registration guide failure and notifies the DC controller when the side registration guide home-position sensor does not detect the home position after the side registration guide drive cam rotates twice.

## Jam detection (DP)

The duplex unit uses the duplex media re-pickup sensor (PS1502) to detect the presence of media and to check whether media is being fed correctly or has jammed.

**Figure 1-45** Jam detection (DP)



The duplexer determines a jam if the sensor detects media presence at a specified timing stored in the duplex driver.

The duplex driver stops a print operation and notifies the DC controller when it determines a jam has occurred.

### Duplex media reverse delay jam

- The duplex media re-pickup sensor (PS1502) does not detect the leading edge of media within a specified period from when the duplex reverse motor starts reverse rotation.

### Duplex media re-pickup stationary jam

- The duplex media re-pickup sensor (PS1502) does not detect the trailing edge of media within a specified period from when the re-pickup operation starts.

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## 2 Removal and replacement

- [Introduction](#)
- [Removal and replacement strategy](#)
- [Electrostatic discharge](#)
- [Required tools](#)
- [Types of screws](#)
- [Service approach](#)
- [Customer replaceable units \(CRUs\)](#)
- [Covers](#)
- [Main assemblies](#)
- [1,500-sheet paper deck \(PD\)](#)



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**NOTE:** Your product might not appear exactly as the one shown in the photos in this chapter. Although details such as the color of the external panels and covers might be different than your product, the procedures in this chapter are appropriate for your product.

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# Introduction

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

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


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

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

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


## Removal and replacement strategy


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

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

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

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



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

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

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## Electrostatic discharge

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

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

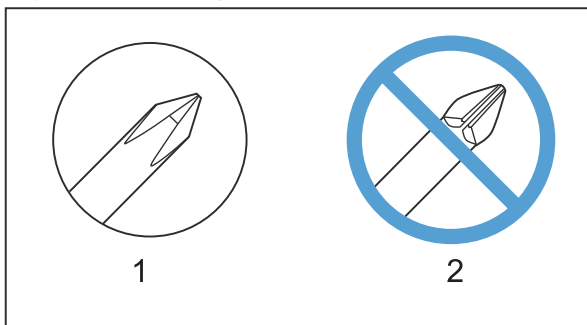
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## Required tools

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

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

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



# Types of screws

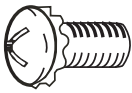
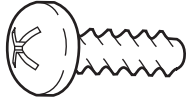
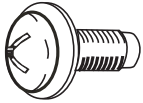

This table describes the screws that are used in the product and provides guidelines to help determine where each type of screw is used. The screws can vary in length depending on the thickness of the material that is being fastened.

Always note where each type of screw is located and replace each one in its original location.

**⚠ WARNING!** Make sure that components are replaced with the correct screw type. Using the incorrect screw (for example, substituting a long screw for the correct shorter screw) can cause damage to the product or interfere with product operation. Do not intermix screws that are removed with one component with the screws that are removed from another component.

**💡 TIP:** When you are disassembling the product, place the screws into the chassis holes from which they were removed. This prevents their loss, and ensures that the proper type and length of screw for each location is used when the product is reassembled.

**Table 2-1 Common fasteners used in this product**

Screw type	Purpose
 <p>Phillips-head machine screw with captive star washer</p>	This screw is used to fasten metal to metal when good electrical contact is needed. This screw also provides high resistance to loosening.
 <p>Phillips-head screw with self-tapping threads</p> <p>Reinstallation 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 it. You will feel resistance and hear the screw click when it engages the existing threads in the hole. Do not overtighten the screw. If a self-tapping screw-hole becomes stripped, repair the screw-hole or replace the affected assembly.</p>	This screw is used to fasten sheet metal or plastic to plastic frames (the deep, coarsely spaced threads provide an increased holding capability while decreasing the possibility of stripping the target hole).
 <p>Phillips washer-head machine screw with a broad, flat washer attached to the screw head</p>	This screw is used to fasten sheet metal parts to the sheet-metal chassis. It spans large clearance holes and distributes the load by increasing the bearing surface.
<p><b>6 mm   8 mm   10 mm   12 mm   M 3   M 4</b>  Screw measurement guide</p>	

# Service approach

## Before performing service

- Remove all media from the product.
- Turn off the power using the power button.
- Unplug the power cable and interface cable or cables.
- Place the product on an ESD workstation or mat, or use an ESD strap (if one is available). If an ESD workstation, mat, or strap is not available, ground yourself by touching the sheet-metal chassis *before* touching an ESD-sensitive part.
- Remove the print cartridge. See [Print cartridge on page 64](#).
- Remove the tray cassette or cassettes.

## After performing service

- Connect the interface cables, and then plug in the power cable.
- Reinstall the print cartridge.
- Reinstall the tray cassette or cassettes.
- If the 500-sheet paper feeder(s) or optional 1500-sheet paper deck was removed for service, place the product on the feeder(s) or deck. If applicable, engage the feeder or deck locks to secure the feeder(s) or deck to the product.

## Post-service test

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

### Print-quality test

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

# Customer replaceable units (CRUs)

## Print cartridge

1. Open the print-cartridge door.

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



2. Firmly grasp the print cartridge and pull it up and out of the product.

**CAUTION:** Do not expose the print cartridge to bright light or direct sunlight for long periods of time. This can damage the cartridge, which will result in print-quality defects. If the cartridge must be removed from the product for an extended amount of time, cover it and keep it out of bright light or direct sunlight.

**Figure 2-3** Remove the print cartridge (2 of 2)

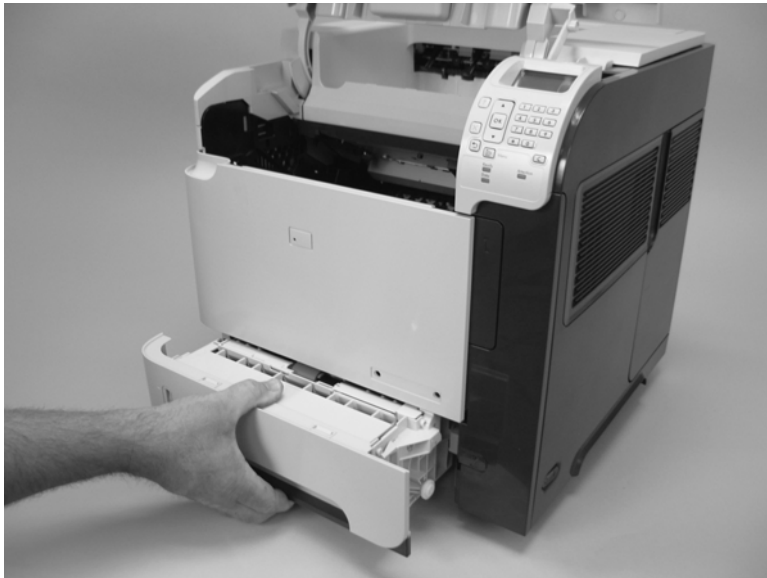




## Tray 2

Pull the tray out, slightly lift up, and then pull it completely out of the product to remove it.

**Figure 2-4** Remove Tray 2



## Tray 2 separation, pickup, and feed rollers

**⚠ CAUTION:** When handling the rollers, avoid touching the roller surfaces. Skin oils and fingerprints on a roller surface can cause print-quality problems.

1. Remove Tray 2 and place it on a level work surface. Locate and open the spring-loaded cover that is next to the roller in Tray 2.

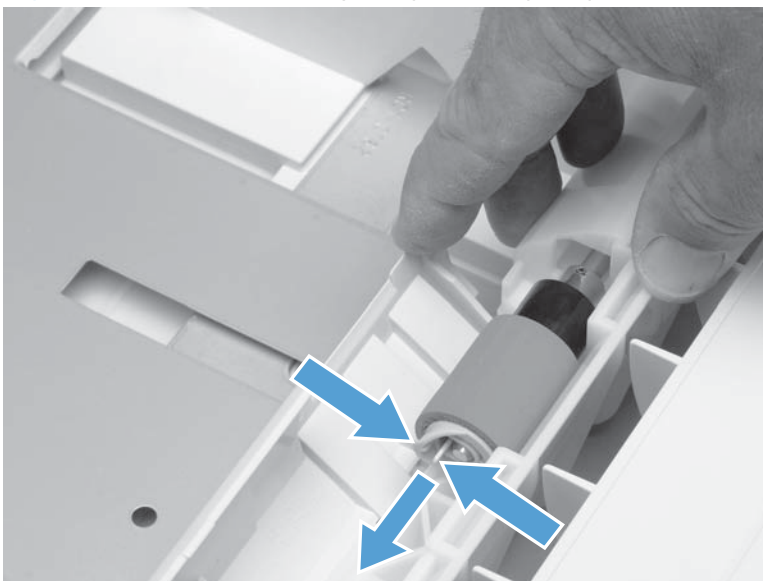
**⚠ CAUTION:** When you install this roller, make sure that it locks into place. Verify that the roller is correctly oriented, and that the torque limiter next to the roller is correctly positioned against the locking pin on the shaft.

**Figure 2-5** Remove the Tray 2 separation, pickup, and feed rollers (1 of 4)



2. Pinch the blue tab that is on the left side of the roller. Slide the roller off of the shaft.

**Figure 2-6** Remove the Tray 2 separation, pickup, and feed rollers (2 of 4)




3. Move the front of the product to the edge of the work surface for better access to the remaining pickup and feed rollers. To find the rollers, look up into the inside of the opening that was created when you removed Tray 2.


**⚠ WARNING!** Do not allow the front of the product to extend beyond the edge of the work surface. The product can become unbalanced and fall, which can cause damage to the product or personal injury to the service technician.

**Figure 2-7** Remove the Tray 2 separation, pickup, and feed rollers (3 of 4)

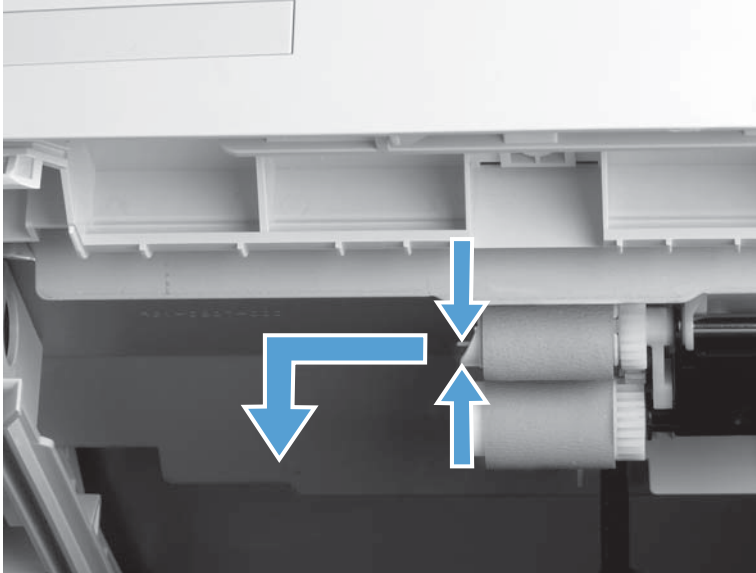


4. Pinch the locking tab on the left side of the feed roller (the front top roller below). Slide the roller off of the shaft. Repeat this step for the pickup roller (the bottom roller below).

 **Reinstallation tip** You might have to rotate the roller to gain access to the locking tab.

 **NOTE:** When you install these rollers, make sure that the rollers lock into place on the tabs that are on the drive gears.

**Figure 2-8** Remove the Tray 2 separation, pickup, and feed rollers (4 of 4)



## Transfer roller

**⚠ CAUTION:** Do not touch the black rubber on the roller. Skin oils on the roller can cause print-quality problems. The use of disposable gloves is recommended when you remove the transfer roller.

1. Open the front cover.

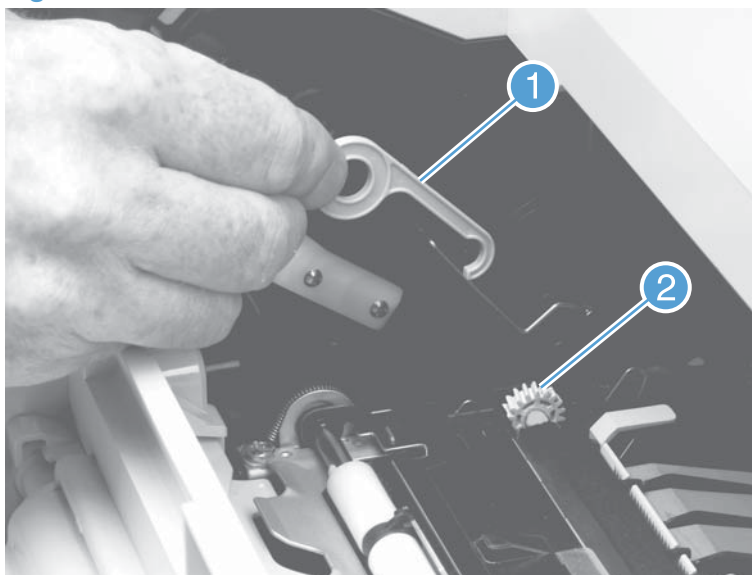
**📝 NOTE:** If the print cartridge was not removed prior to servicing the product, remove it now.

2. Use a transfer-roller removal hook (callout 1) to lift the left end of the metal shaft out of place near the blue gear (callout 2). If a removal hook is not available use a flatblade screwdriver. Slide the transfer roller to the left to remove it.

**⚠ CAUTION:** Be careful to release and lift the left side of the roller *first*, and then slide the roller out.

**📝 NOTE:** The transfer-roller removal hook is included with a transfer-roller replacement kit.

**Figure 2-9** Remove the transfer roller



**💡 Reinstallation tip** When you install the transfer roller, make sure that the black collar on the left side is oriented correctly, with the open end face-down (the solid end is face-up).

## Fuser

**⚠ WARNING!** The fuser might be very hot. After turning off the product power, allow the fuser to cool for at least 5 minutes before removing it.

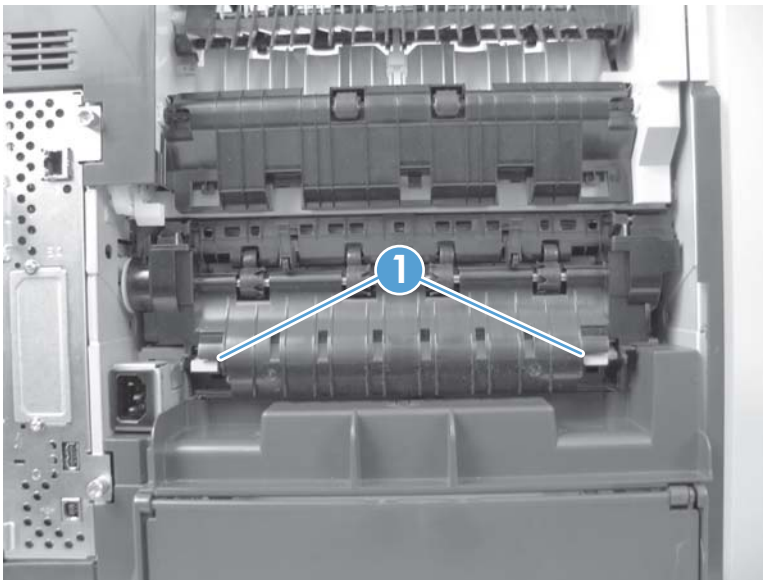
### Before proceeding, remove the following components:

- Rear output bin. See [Rear output bin on page 87](#).
- Duplex accessory or cover. See [Duplex accessory or cover on page 90](#).

### Remove the fuser

1. Squeeze the blue fuser-release tabs (callout 1).

**Figure 2-10** Remove the fuser (1 of 2)



2. Pull the fuser straight back and out of the product.

**⚠ CAUTION:** Do not drop or jar the fuser. It can easily be damaged if it is mishandled.

**💡 TIP:** When you replace the fuser, make sure that it is fully seated into the product. You should hear both sides snap into place.

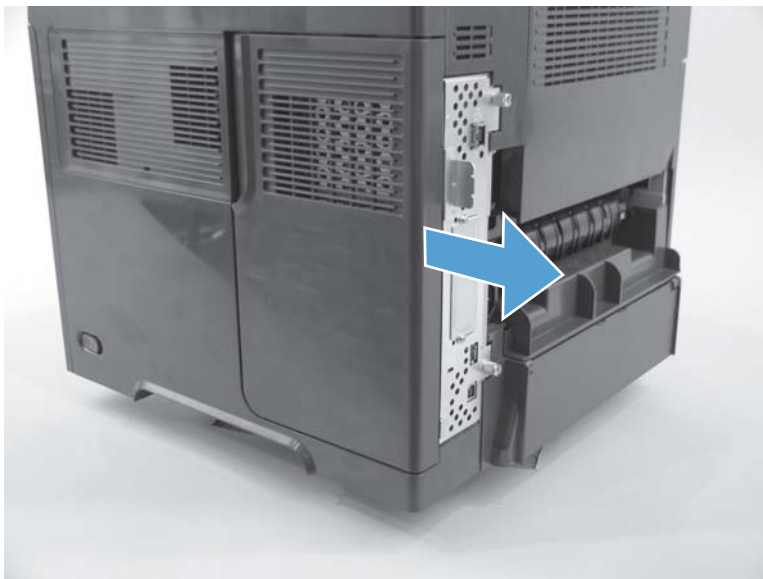
**Figure 2-11** Remove the fuser (2 of 2)



## Formatter cover and formatter cage

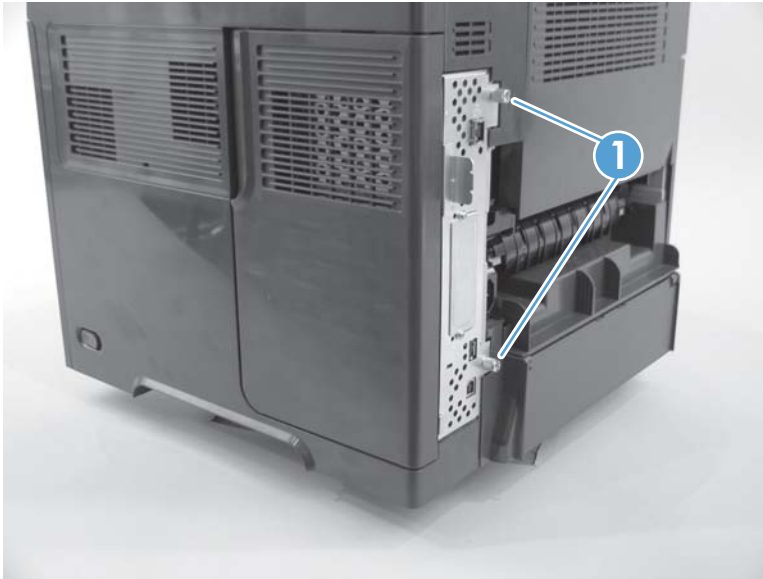
1. Grasp the formatter cover.
2. Pull the cover straight back and away from the product.

**Figure 2-12** Remove the formatter cover and formatter cage (1 of 3)




3. Remove two thumb screws (callout 1)

**Figure 2-13** Remove the formatter cover and formatter cage (2 of 3)



4. Carefully slide the formatter cage away from the product to remove it.

 **NOTE:** If you installing a replacement formatter, transfer the hard drive and memory DIMM (if installed) to the replacement formatter. See [Hard drive on page 74](#) and [Memory DIMM on page 80](#).

**Figure 2-14** Remove the formatter cover and formatter cage (3 of 3)





## Installing a new formatter

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 **CAUTION:** Do not replace the DC controller and the formatter at the same time.

---

1. Install the hard drive and memory DIMM from the discard formatter on the replacement formatter.
2. Turn the product on and then wait for five minutes after the product reaches the **Ready** state.

---

 **NOTE:** Five minutes is required to allow for NVRAM settings to be written.

---

3. Turn the product off.
4. Turn the product on and then wait for five minutes after the product reaches the **Ready** state.
5. Print a configuration page to verify against original settings.

## Hard drive

A solid state module (SSM) or a crypto hard-disk drive (HDD) device is installed depending on the product model.

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**CAUTION:**  ESD sensitive component.

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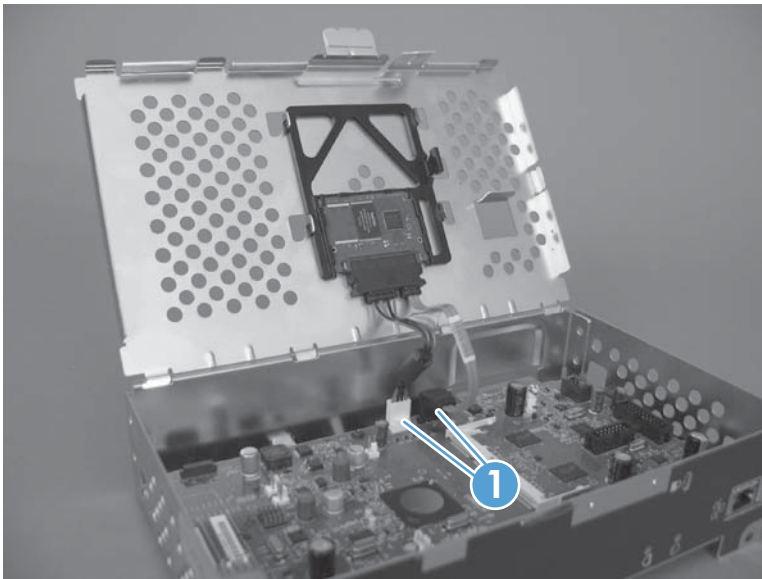
### Before proceeding, remove the following components:

- Formatter cover, formatter cage, and formatter PCA. See [Formatter cover and formatter cage on page 71](#).


### Remove the SSM

1. Open the formatter cage door, and then disconnect two connectors (callout 1).

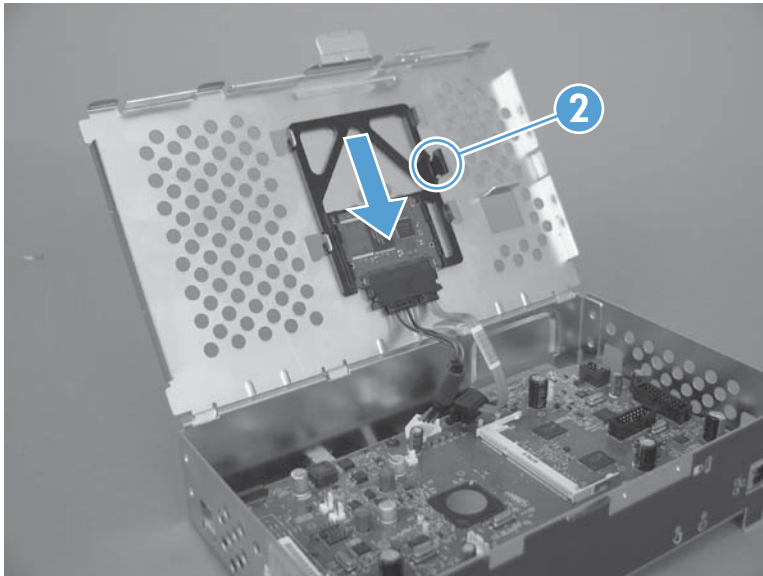
**Figure 2-15** Remove the SSM (1 of 3)




2. Release one tab (callout 2), and then slide the SSM toward the hinge side of the door.


 **TIP:** It might be easier to remove the SSM if you separate the formatter cage door from the cage. Slide the door toward the top of the cage, and then separate the components.

**Figure 2-16** Remove the SSM (2 of 3)

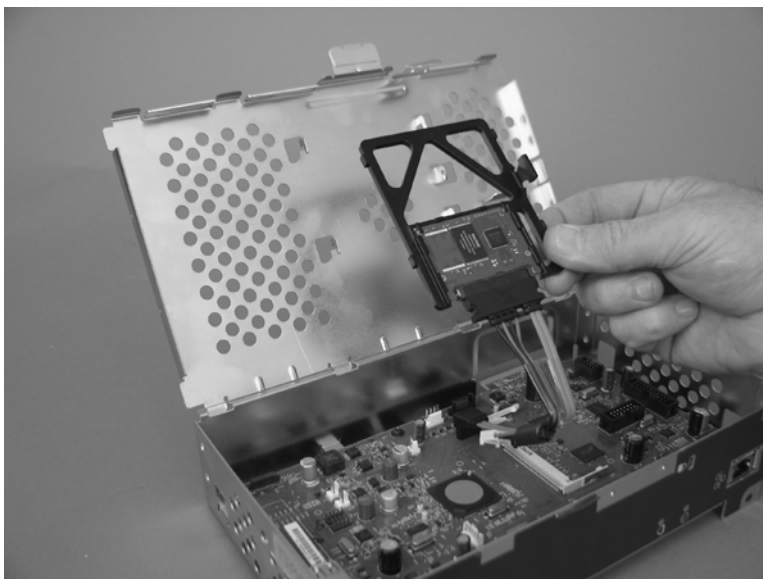


3. Remove the SSM from the cage door.

 **NOTE:** Slide the SSM out of the mounting cradle to separate the components. Do not lose the cradle while handling the SSM.

 **Reinstallation tip** Use the cradle to install a replacement SSM. After installing a replacement hard drive, you must reload the firmware by performing a firmware upgrade. See [Installing a replacement hard drive on page 78](#).

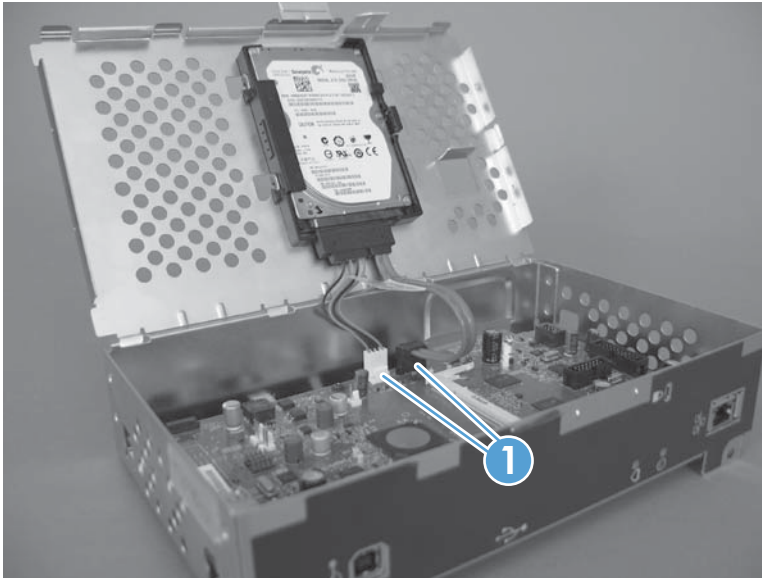
**Figure 2-17** Remove the SSM (3 of 3)



## Remove the encrypted HHD

1. Open the formatter cage door, and then disconnect two connectors (callout 1).

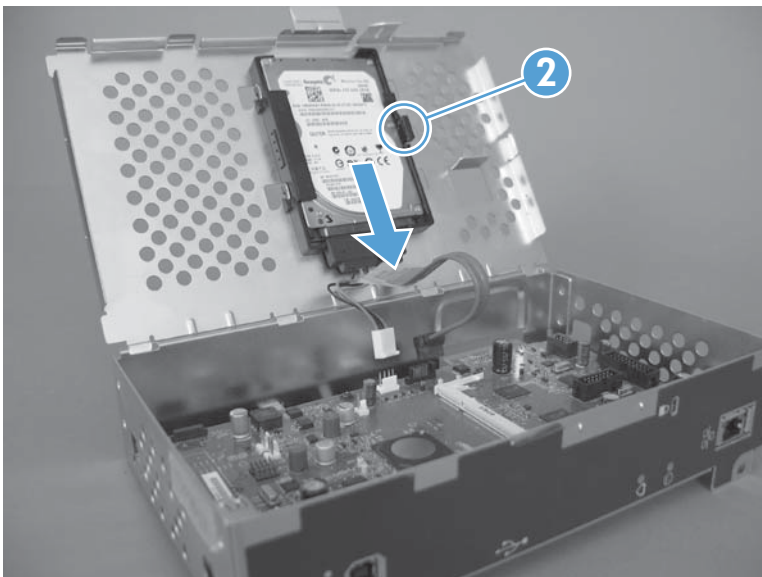
**Figure 2-18** Remove the encrypted HHD (1 of 4)




2. Release one tab (callout 2), and then slide the HHD toward the hinge side of the door.

**TIP:** It might be easier to remove the HHD if you separate the formatter cage door from the cage. Slide the door toward the top of the cage, and then separate the components.

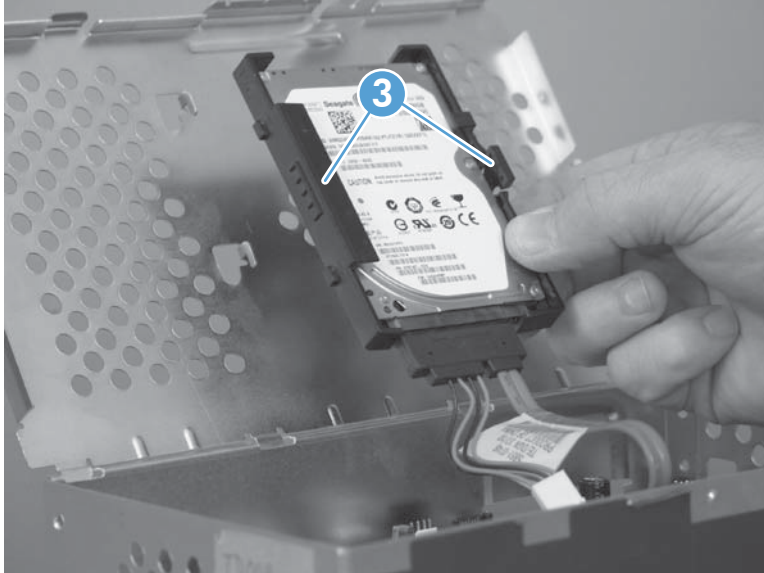
**Figure 2-19** Remove the encrypted HHD (2 of 4)




3. Remove the HDD from the cage door.

 **NOTE:** The HDD rails (callout 3) are not captive and can be easily separated from the component. Do not lose the rails while handling the HDD.

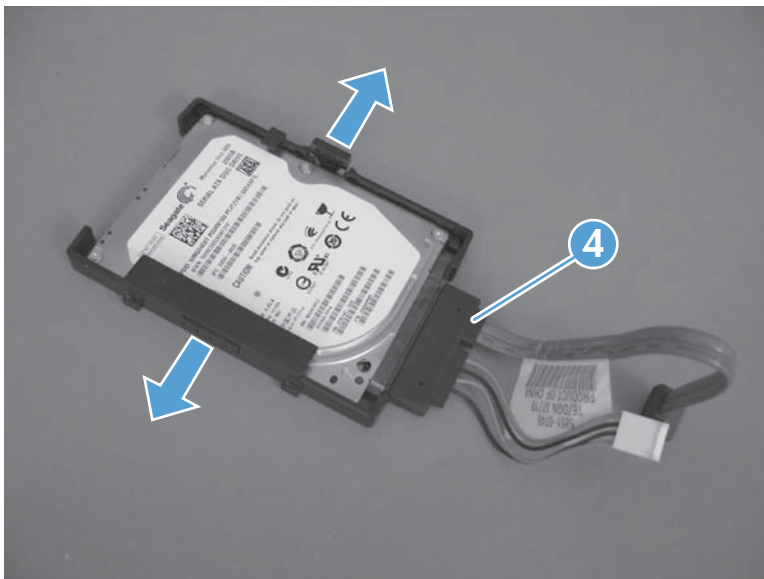
**Figure 2-20** Remove the encrypted HDD (3 of 4)



4. Disconnect one connector (callout 4), and then remove the HDD mounting rails. Do not lose the rails while handling the HDD.

 **Reinstallation tip** Use the rails to install a replacement HDD. After installing a replacement hard drive, you must reload the firmware by performing a firmware upgrade. See [Installing a replacement hard drive on page 78](#).

**Figure 2-21** Remove the encrypted HDD (4 of 4)




## Installing a replacement hard drive

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

### Perform a firmware upgrade

1. Go to [www.hp.com/support/lj600Series](http://www.hp.com/support/lj600Series) and follow the on screen steps to download the most recent firmware upgrade files for this product.
2. Copy the firmware upgrade file to the root directory of a USB storage accessory. The firmware upgrade file has a .bdl extension.

---

 **NOTE:** Use a standard USB storage accessory that uses File Allocation Table (FAT) file systems and that does not have a CD-ROM partition.

---

3. Insert the USB storage accessory into the USB port on the bottom edge of the control panel.
4. SSM: see [SSM firmware upgrade on page 78](#).


**-or-**

HDD: see [HDD firmware upgrade on page 79](#).

### SSM firmware upgrade

1. Turn the product on. The message **Error 99.09.67 Disk Not Bootable** appears on the control-panel display. Press the **OK** button to continue.
2. Wait for the **Preboot** menu to appear on the control-panel display, and then press the **down arrow ▼** button to scroll to **Administrator**. Press the **OK** button to select it.
3. Press the **down arrow ▼** button to scroll to **Download**. Press the **OK** button to select it.
4. Press the **down arrow ▼** button to scroll to **USB Thumbdrive**. Press the **OK** to select it.
5. Several .bdl files might be listed. Press the **down arrow** button to scroll to the firmware upgrade file that you downloaded earlier. Press the **OK** button to select it.


---

 **NOTE:** If no .bdl files are listed, try saving the file to a different USB storage accessory.

---

6. Wait while the file transfers. When the transfer is complete, the message **Complete** appears on the screen.
7. Turn the product off, remove the USB storage accessory, and then turn the product on. Wait for several minutes while the product initializes.

---

 **NOTE:** If the upgrade is unsuccessful, try sending the firmware upgrade file again.

---

## HDD firmware upgrade

1. Turn the product on. The message **Error 99.09.63 Incorrect Disk** appears on the control-panel display. Press the **OK** button to continue.
2. Wait for the **Preboot** menu to appear on the control-panel display, and then press the **down arrow ▼** button to scroll to **Administrator**. Press the **OK** button to select it.
3. Press the **down arrow ▼** button to scroll to **Manage Disk**. Press the **OK** button to select it.
4. Press the **down arrow ▼** button to scroll to **Clear Disk Pass**. Press the **OK** button to select it.
5. The message **Proceed With Requested Action** appears. Press the **OK** button to select it.
6. Press the **#** button to return to the **Preboot** home menu screen.
7. Press the **down arrow ▼** button to scroll to **Administrator**. Press the **OK** button to select it.
8. Press the **down arrow ▼** button to scroll to **Download**. Press the **OK** button to select it.
9. Press the **down arrow ▼** button to scroll to **USB Thumbdrive**. Press the **OK** button to select it.
10. Several **.bdl** files might be listed. Press the **down arrow ▼** button to scroll to the firmware upgrade file that you downloaded earlier. Press the **OK** button to select it.



---

**NOTE:** If no **.bdl** files are listed, try saving the file to a different USB storage accessory.

---

11. Wait while the file transfers. When the transfer is complete, the message **Complete** appears on the screen.
12. Turn the product off, remove the USB storage accessory, and then turn the product on. Wait for several minutes while the product initializes.



---

**NOTE:** If the upgrade is unsuccessful, try sending the firmware upgrade file again.

---

## Memory DIMM

**CAUTION:**  ESD sensitive component.

**NOTE:** Depending on the model, a memory DIMM might not be installed. To increase the product memory, install a memory DIMM. See [Install the memory DIMM on page 81](#).

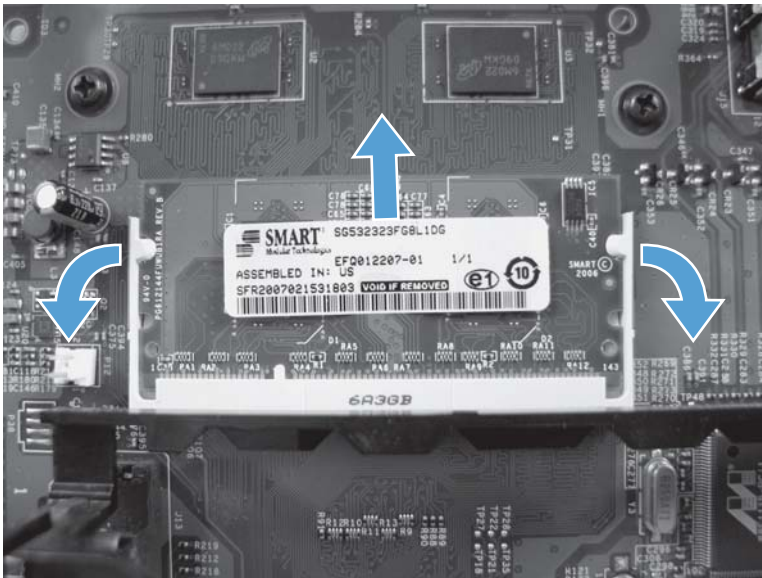
**Before proceeding, remove the following components:**

- Formatter cover. See [Formatter cover and formatter cage on page 71](#).

### Remove the memory DIMM

1. Open the formatter cage door.
2. Push the DIMM-locking arms away from the DIMM to release it, and then pull the DIMM out of the DIMM slot.

**Figure 2-22** Remove the memory DIMM





## Install the memory DIMM

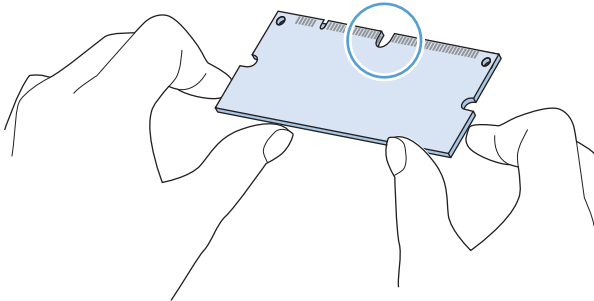
**⚠ CAUTION:**  ESD sensitive component.

Turn the product off. Disconnect the power cord and interface cables.

### Before proceeding, remove the following components:

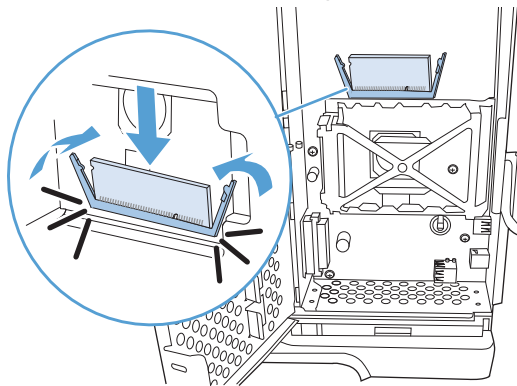
- Formatter cover. See [Formatter cover and formatter cage on page 71](#).
1. Open the formatter cage door.
  2. Remove the DIMM from the antistatic packadge.
  3. Hold the DIMM by the edges, and align the notches on the DIMM with the DIMM slot. (Check that the locks on each side of the DIMM slot are open.)

**Figure 2-23** Install the memory DIMM (1 of 2)



4. Press the DIMM straight into the slot, and press firmly. Make sure the locks on each side of the DIMM snap into place.

**Figure 2-24** Install the memory DIMM (2 of 2)



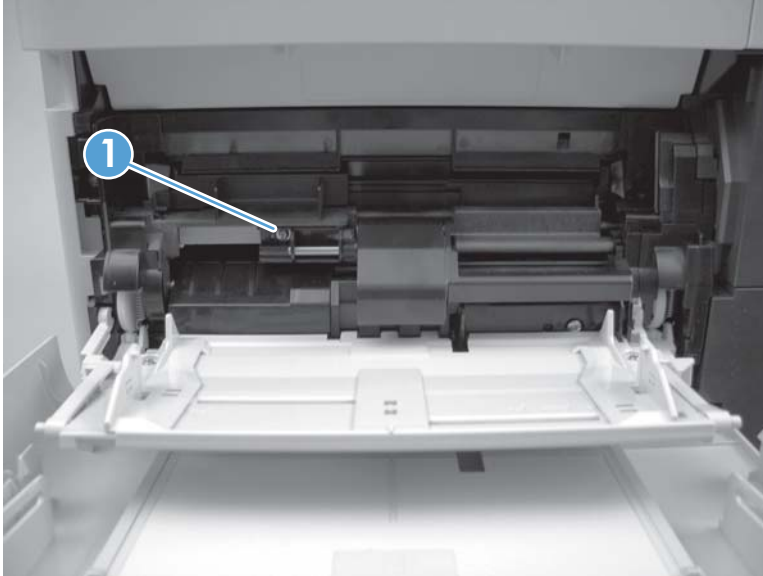
## Tray 1 pickup and feed rollers

**CAUTION:** When handling the rollers, avoid touching the roller surfaces. Skin oils and fingerprints on a roller surface can cause print-quality problems.

The Tray 1 pickup and feed rollers are also user-replaceable components.

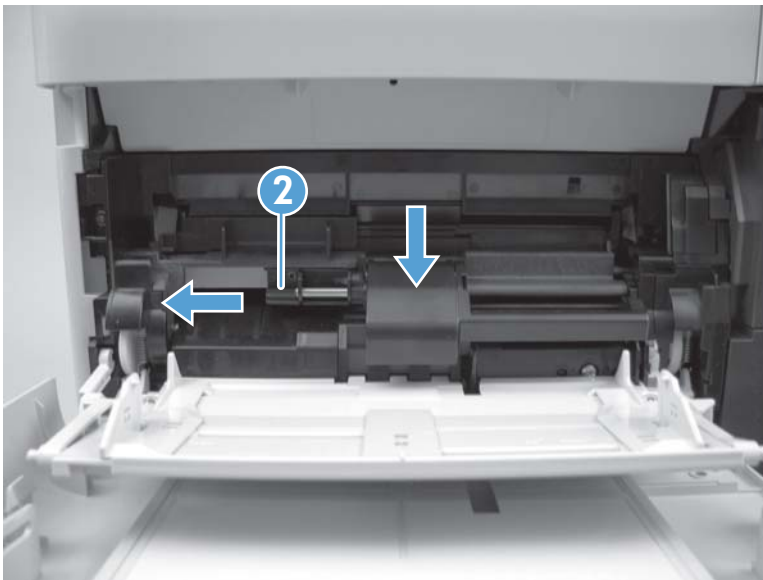
1. Open the front cover.
2. Remove one screw (callout 1) with a short screwdriver.

**Figure 2-25** Remove the Tray 1 pickup and feed rollers (1 of 4)



3. Push down on the roller-shaft bushing (callout 2) to release two alignment pins, and then slide the bushing to the left and off of the shaft to remove it.

**Figure 2-26** Remove the Tray 1 pickup and feed rollers (2 of 4)



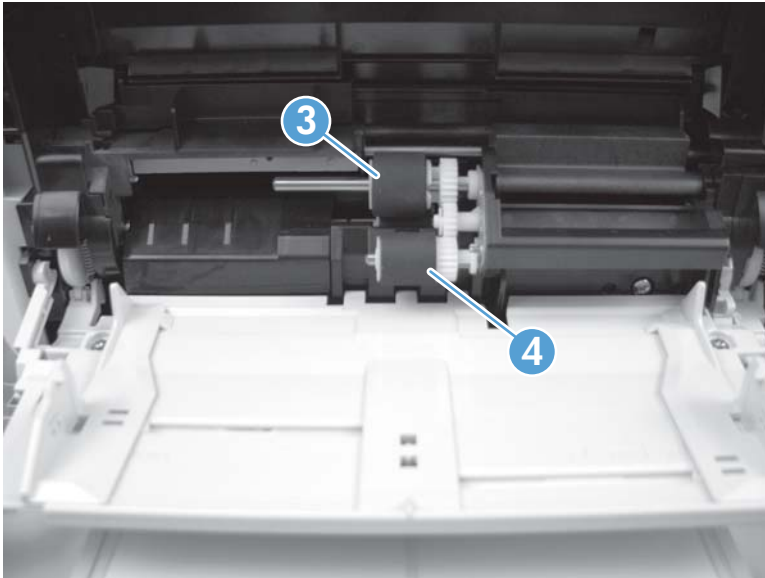
4. Slide the Tray 1 pickup and feed rollers cover slightly to the left to release it, and then lift the cover up to remove it.


**Figure 2-27** Remove the Tray 1 pickup and feed rollers (3 of 4)

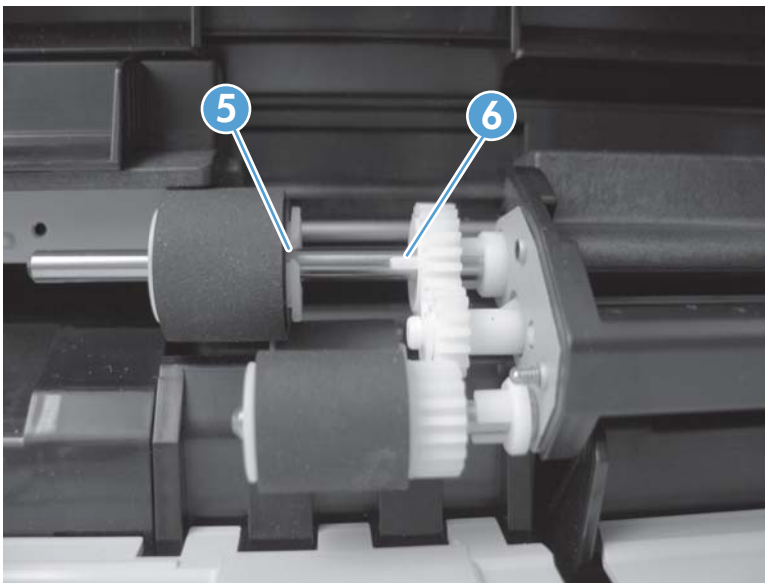


5. Slide the Tray 1 pickup roller (callout 3) and the feed roller (callout 4) to the left and off of the shafts to remove them.

**Figure 2-28** Remove the Tray 1 pickup and feed rollers (4 of 4)



 **TIP:** The pickup roller must fit over the drive tabs (callout 5) on the roller-drive gear (callout 6).



## Tray 1 separation roller

**⚠ CAUTION:** When handling the roller, avoid touching the roller surface. Skin oils and fingerprints on a roller surface can cause print-quality problems.

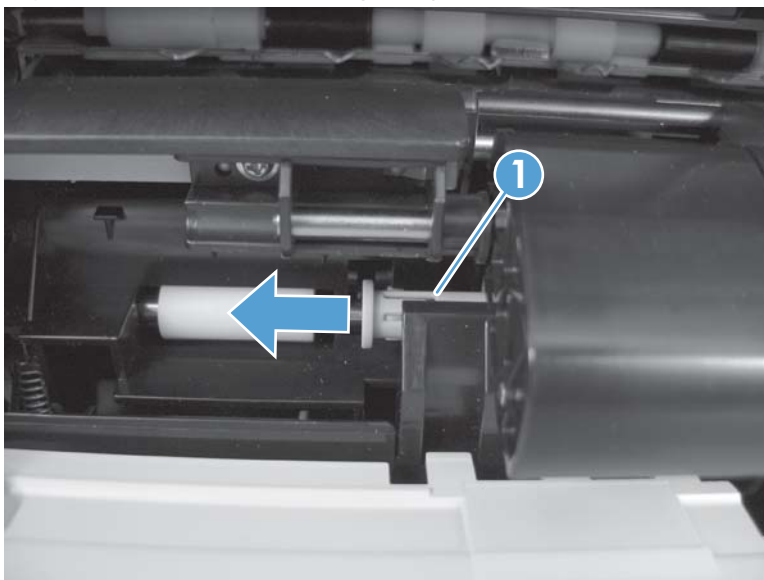
1. Open the front cover.
2. Rotate the spring-loaded cover downward to gain access to the roller.

**Figure 2-29** Remove the Tray 1 separation roller (1 of 3)



3. Slide the separation roller (callout 1) to the left to remove it.

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




4. Remove the roller.

**Figure 2-31** Remove the Tray 1 separation roller (3 of 3)

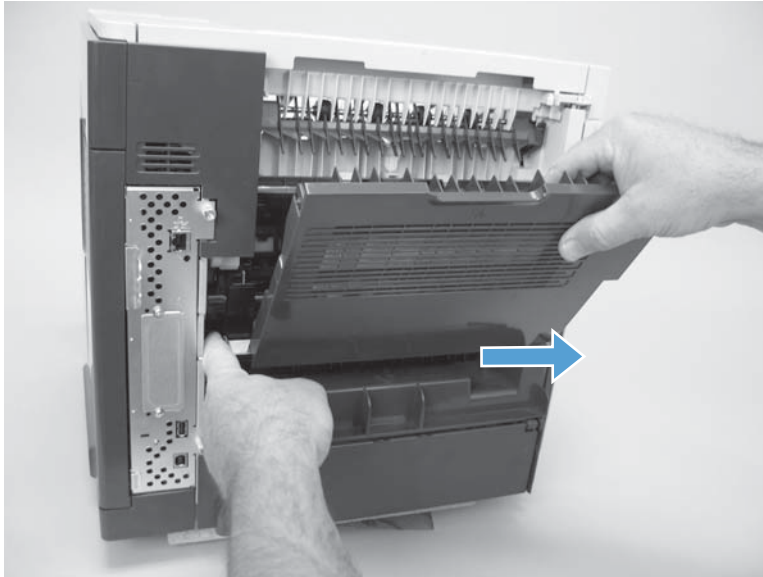


## Rear output bin

 **NOTE:** If the duplexer is installed, lift it up slightly and pull it away from the product to remove it.

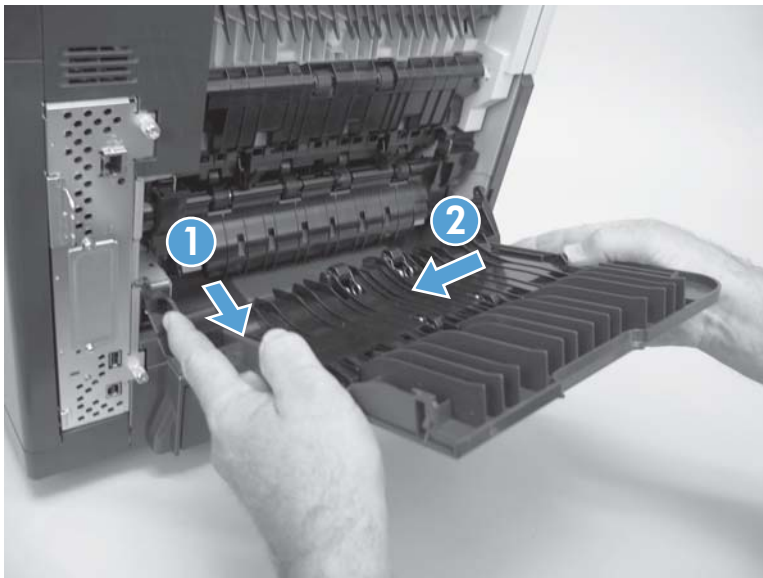
1. Open the rear output bin.
2. Squeeze the hinge pin out of its mounting hole.

**Figure 2-32** Remove the rear output bin (1 of 2)



3. Rotate the output bin away from the product until the right hinge pin is released, and then remove the output bin.

**Figure 2-33** Remove the rear output bin (2 of 2)

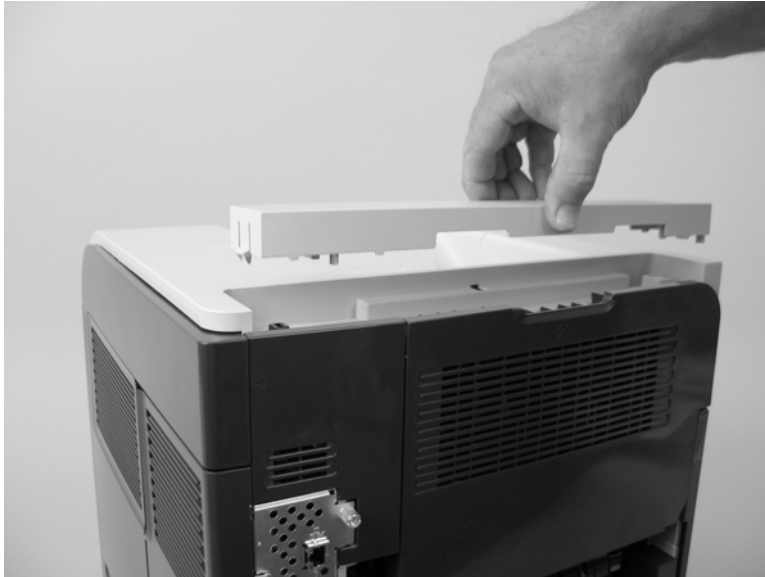


# Covers

## Top-accessory cover

Lift the top-accessory cover up and off the product.

**Figure 2-34** Remove the top-accessory cover





## Envelope feed accessory covers

1. Open the front cover. Grasp the inner front accessory cover, and then pull it straight out of the product.

**Figure 2-35** Remove the front accessory covers (1 of 2)



2. Rotate the top of the front accessory receptacle cover away from the product, and then pull it straight away from the product to remove it.

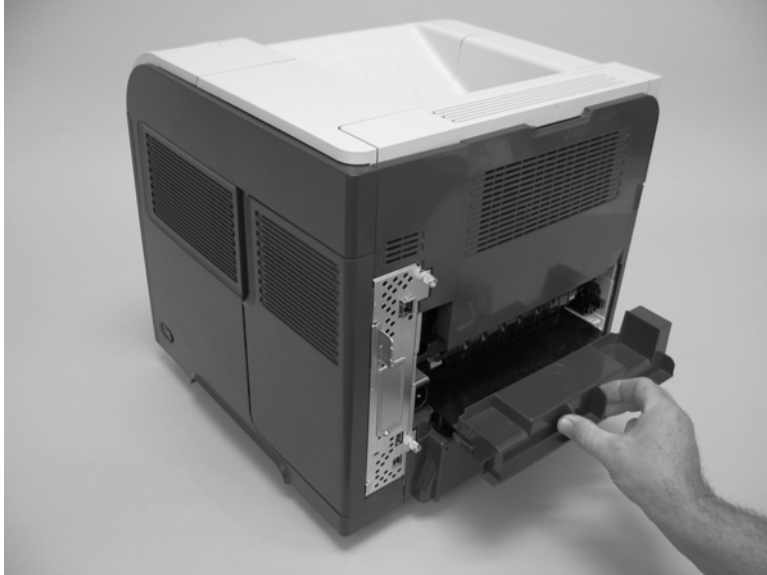
**Figure 2-36** Remove the front accessory covers (2 of 2)



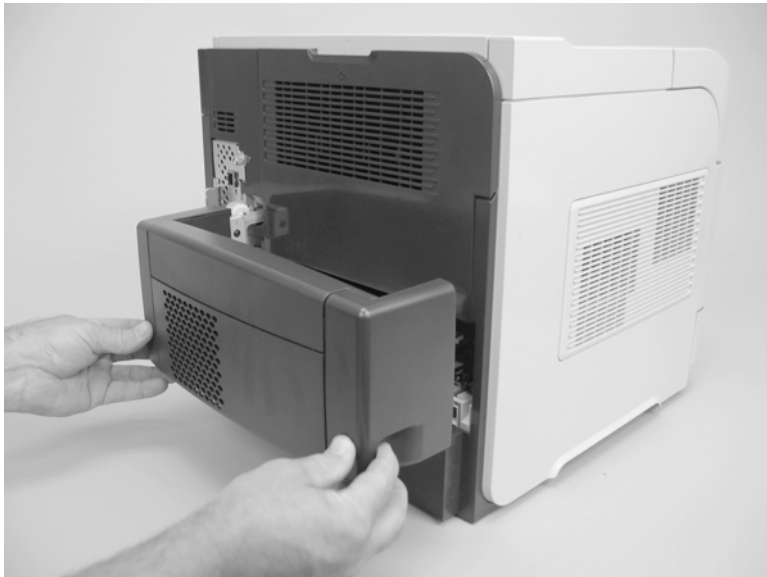
## Duplex accessory or cover

Pull the duplex accessory or cover out, slightly lift up, and then pull it completely out of the product to remove it.

**Figure 2-37** Remove the duplex accessory cover



**Figure 2-38** Remove the duplex accessory



## Tray 2 extension door

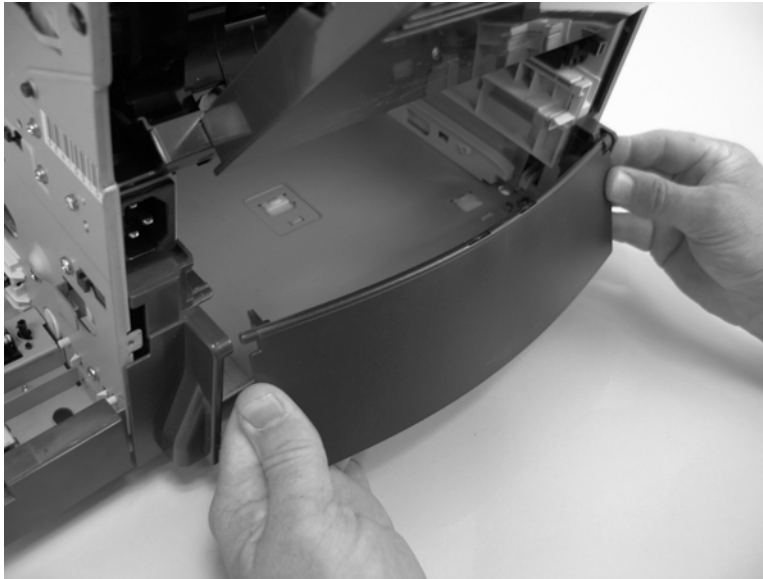
Before proceeding, remove the following components:

- Duplex accessory, or the duplex accessory cover. See [Duplex accessory or cover on page 90](#).

### Remove the Tray 2 extension door

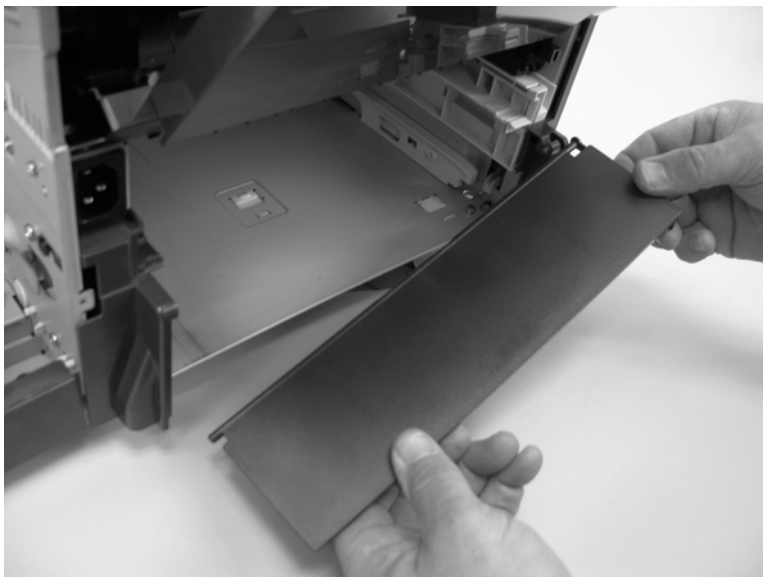
1. Carefully flex the Tray 2 extension door to release the hinge pin near the power cord side of the product.

**Figure 2-39** Remove the Tray 2 extension door (1 of 2)



2. Rotate the Tray 2 extension door to the horizontal position, and then pull up on the keyed hinge pin to release the door. Remove the Tray 2 extension door

**Figure 2-40** Remove the Tray 2 extension door (2 of 2)




## Top cover

### Before proceeding, remove the following components:


- Top accessory cover. See [Top-accessory cover on page 88](#).

### Remove the top cover

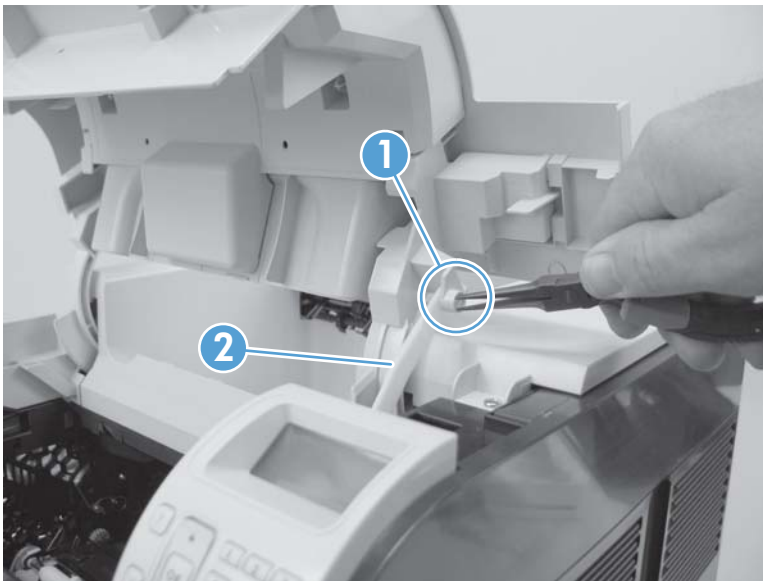
 **NOTE:** If the optional stapler/stacker or stacker accessory is installed, lift it straight up and off of the product to remove it. Then proceed to step 2.

1. Open the rear-output bin, the print-cartridge door, and the front cover.
2. Use needle-nose pliers to release the print-cartridge drive-arm tab (callout 1).

 **CAUTION:** The print-cartridge drive-arm tab is easily broken.

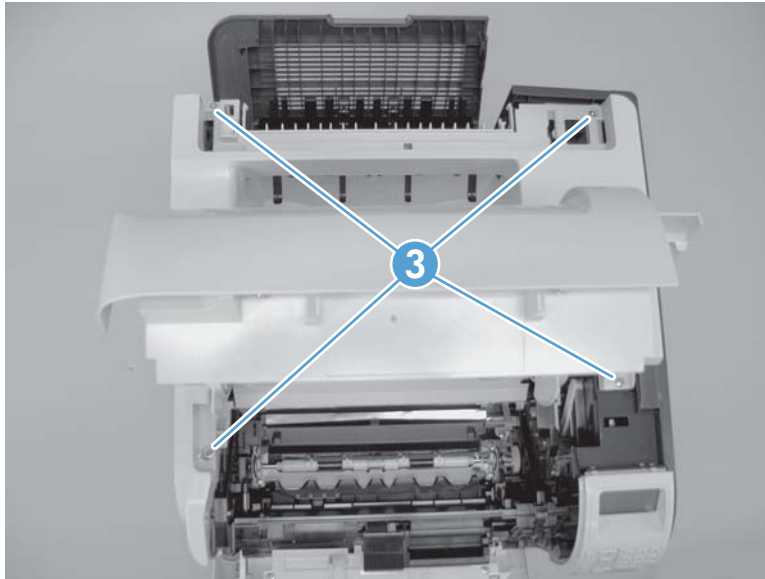
 **TIP:** Push the print-cartridge drive-arm (callout 2) back into the product to avoid damaging it when you remove the top cover.

**Figure 2-41** Remove the top cover (1 of 4)




3. Remove four screws (callout 3).

**Figure 2-42** Remove the top cover (2 of 4)



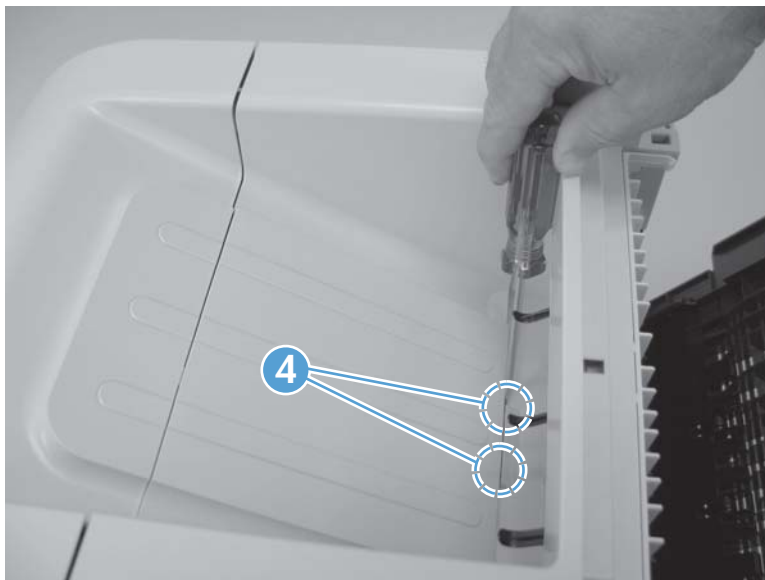
4. Partially close the print-cartridge door, and then use a small flat blade screwdriver to release two tabs (callout 4).

---

 **NOTE:** Make sure that these tabs are fully seated when the top cover is reinstalled.

---

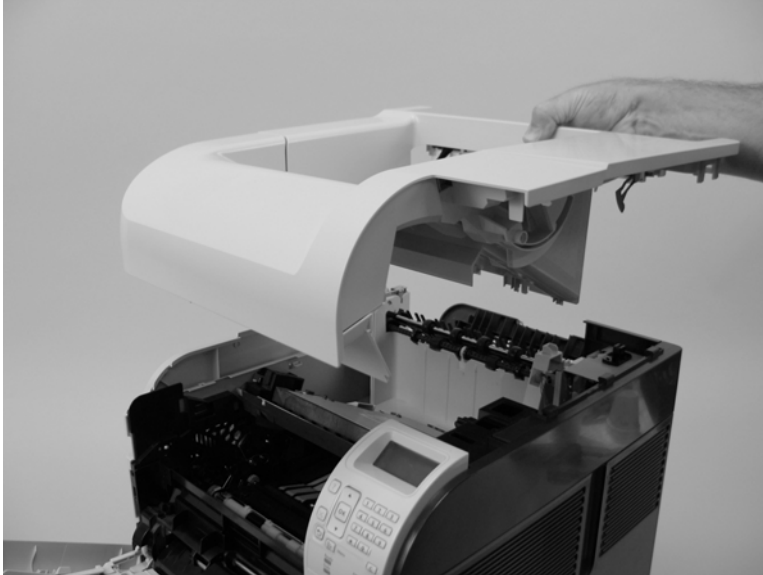
**Figure 2-43** Remove the top cover (3 of 4)



5. Lift the top cover up and off of the product to remove it.

**CAUTION:** The accessory pin (located in the left-rear corner of the cover) is not captive. Do not lose the pin.

**Figure 2-44** Remove the top cover (4 of 4)



## Right-side cover


Before proceeding, remove the following components:

- Top accessory cover. See [Top-accessory cover on page 88](#).
- Formatter cover and formatter cage. See [Formatter cover and formatter cage on page 71](#).
- Top cover. See [Top cover on page 92](#).

### Remove the right-side cover

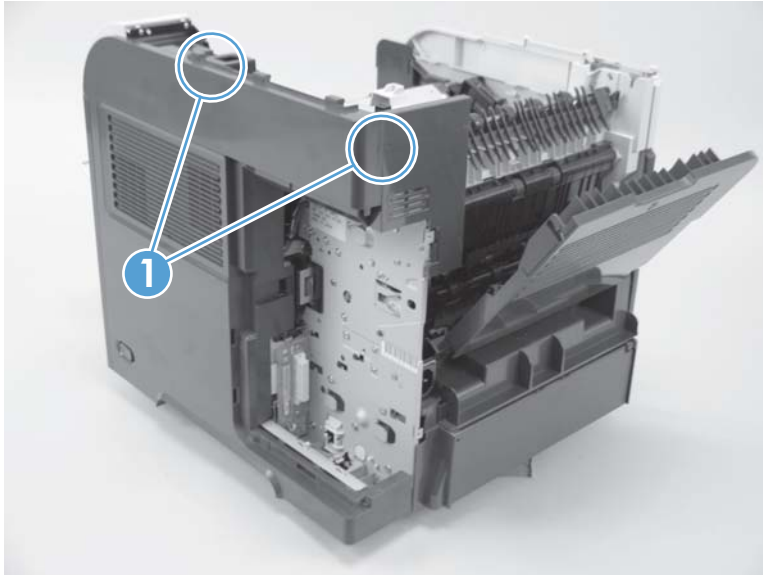
1. Release two tabs (callout 1).

---

 **TIP:** Look for the arrows embossed into the cover to locate the tab.

---

**Figure 2-45** Remove the right-side cover (1 of 3)



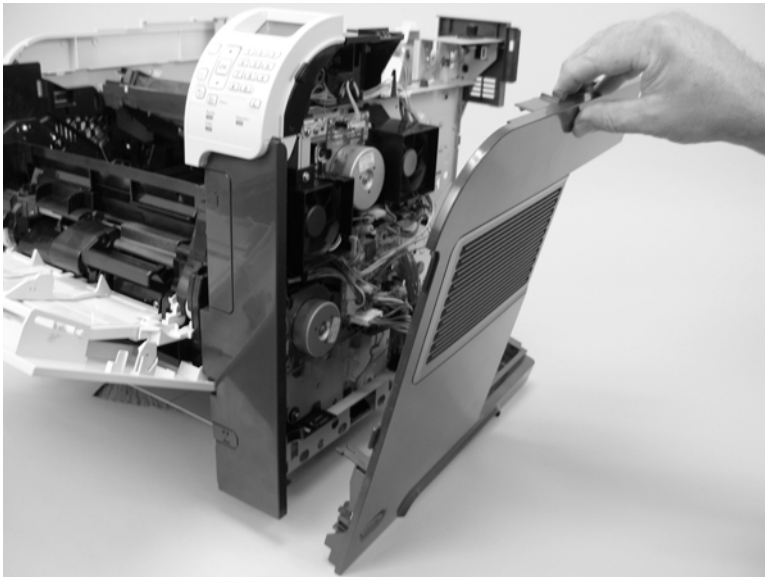
2. Carefully separate the cover from the product near the control panel.

**Figure 2-46** Remove the right-side cover (2 of 3)



3. Rotate the top of the cover away from the product, and then lift the cover up to remove it.

**Figure 2-47** Remove the right-side cover (3 of 3)

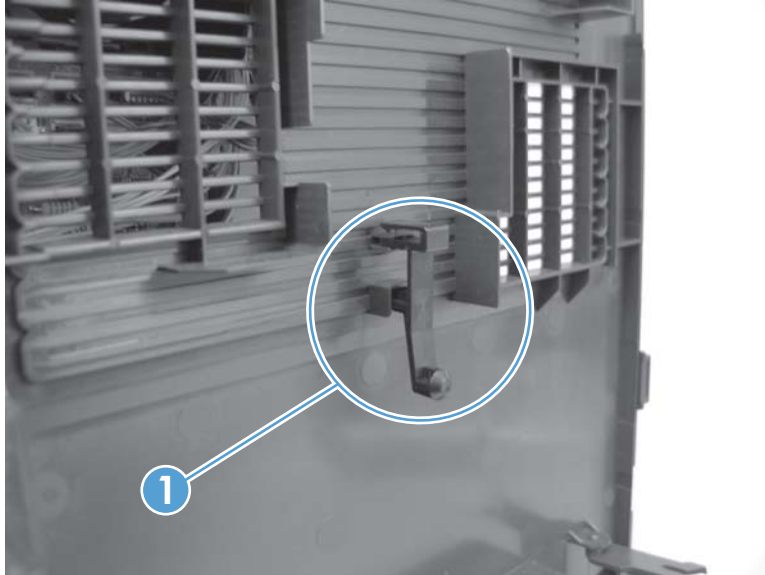




## Reinstall the right cover

- ▲ If you are installing a replacement cover, remove the engine-test button (callout 1) from the discarded cover and then install it on the replacement cover.

**Figure 2-48** Install the right cover



## Left-side cover

Before proceeding, remove the following components:

- Tray 2 extension door. See [Tray 2 extension door on page 91](#).

---

 **NOTE:** If Tray 2 was not removed prior to servicing the product, remove it now.

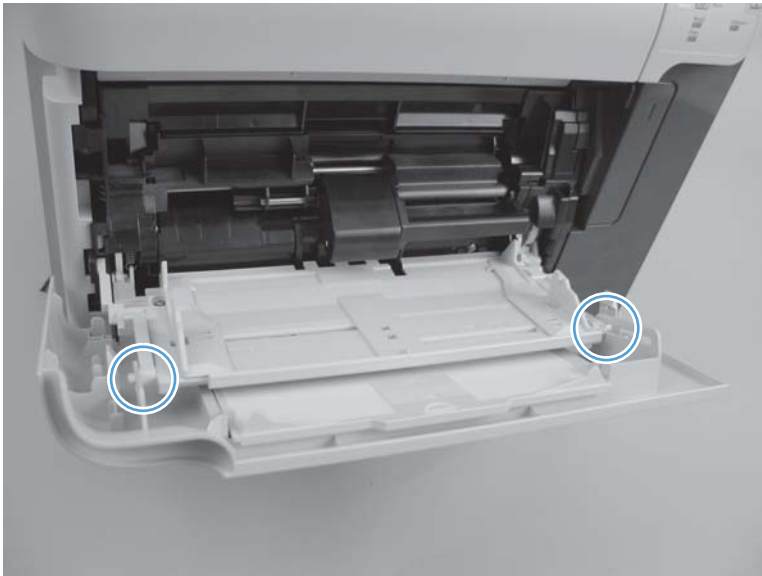
---

- Top accessory cover. See [Top-accessory cover on page 88](#).
- Duplex accessory cover. See [Duplex accessory or cover on page 90](#).
- Top cover. See [Top cover on page 92](#).

### Remove the left-side cover

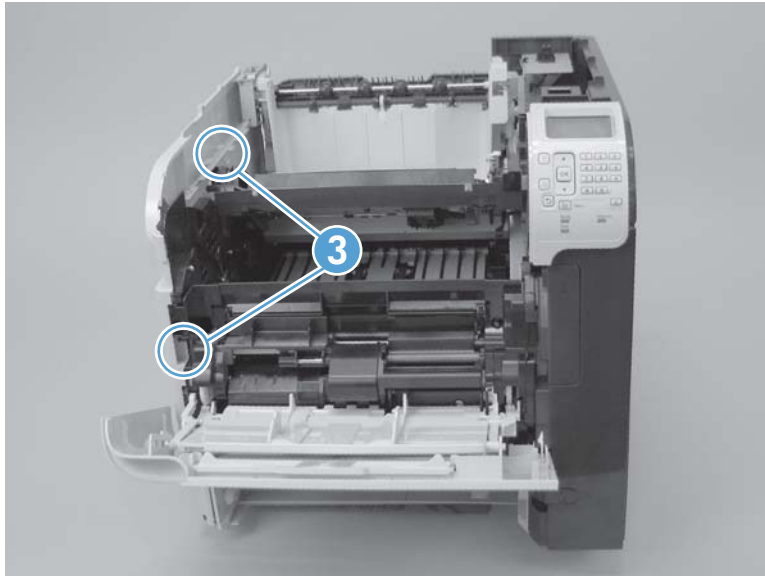
1. Gently pry the front-cover retainers off of the Tray 1 arms.

**Figure 2-49** Remove the left-side cover (1 of 3)



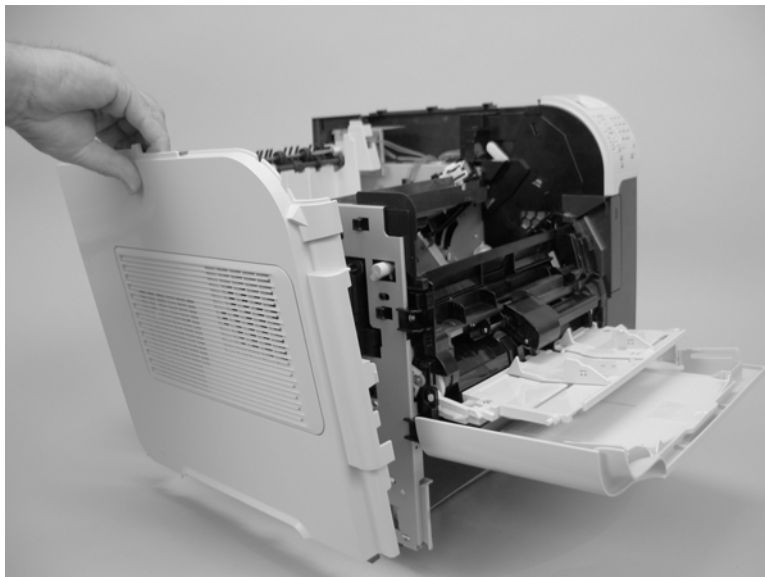
2. Release two tabs (callout 3), and then rotate the top of the cover away from the product and lift the cover up to remove it.

**Figure 2-50** Remove the left-side cover (2 of 3)



3. Rotate the top of the cover away from the product and lift the cover up to remove it.

**Figure 2-51** Remove the left-side cover (3 of 3)



## Right-front cover

Before proceeding, remove the following components:

- Walk-up USB cover, if installed.

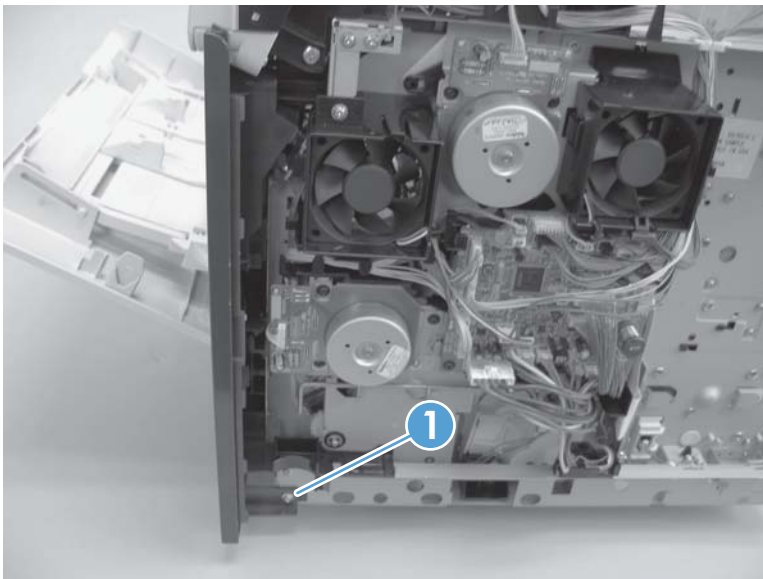
 **NOTE:** This is the small dust cover that plugs into the walk-up USB port on the front of the product.

- Top accessory cover. See [Top-accessory cover on page 88](#).
- Formatter cover and formatter cage. See [Formatter cover and formatter cage on page 71](#).
- Top cover. See [Top cover on page 92](#).
- Right-side cover. See [Right-side cover on page 95](#).

## Remove the right-front cover

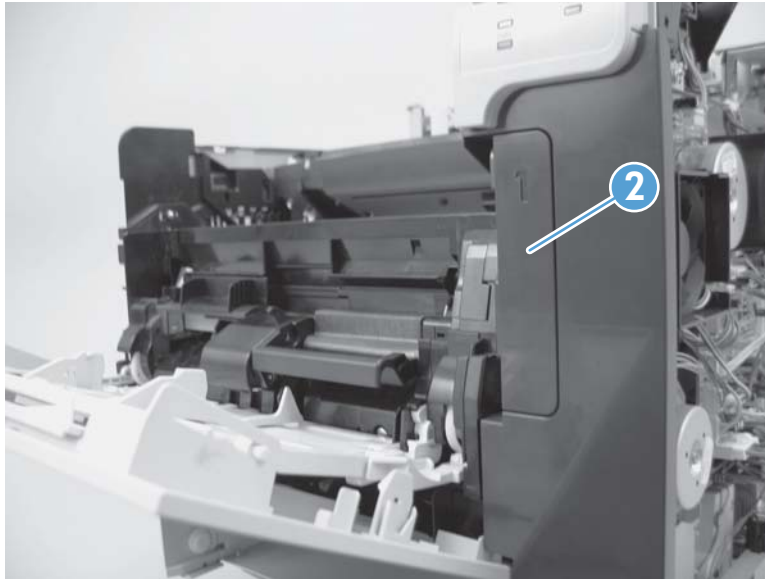
1. Open the front cover.
2. Remove one screw (callout 1).

**Figure 2-52** Remove the right-front cover (1 of 4)



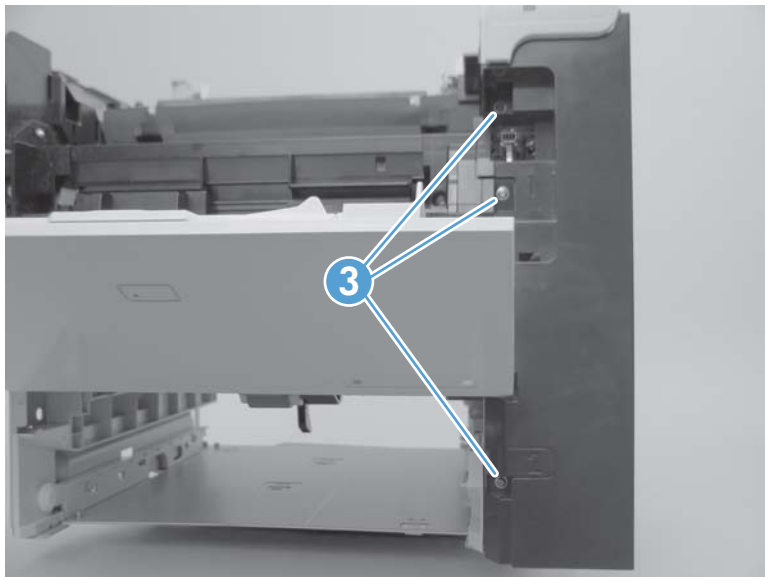
3. Gently pull the envelope-feeder connector cover (callout 2) off of the product to remove it.

**Figure 2-53** Remove the right-front cover (2 of 4)



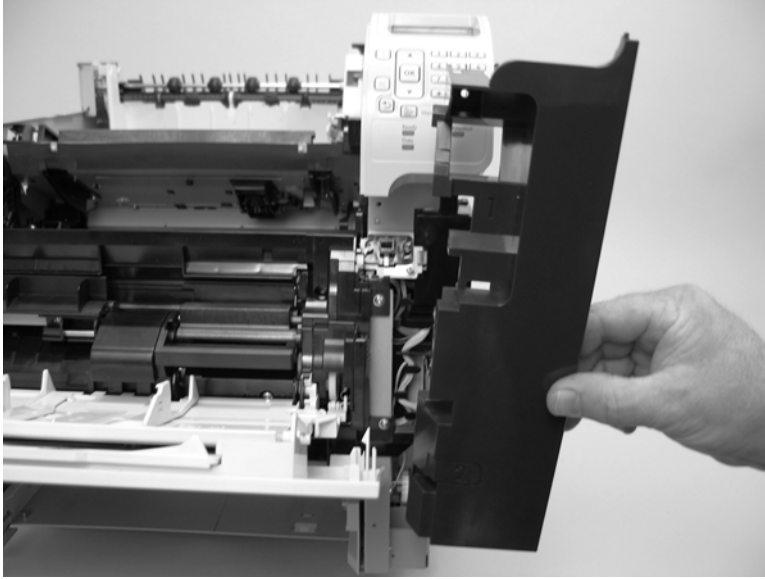
4. Remove three screws (callout 3).

**Figure 2-54** Remove the right-front cover (3 of 4)



5. Remove the right front cover.

**Figure 2-55** Remove the right-front cover (4 of 4)



## Rear-upper cover

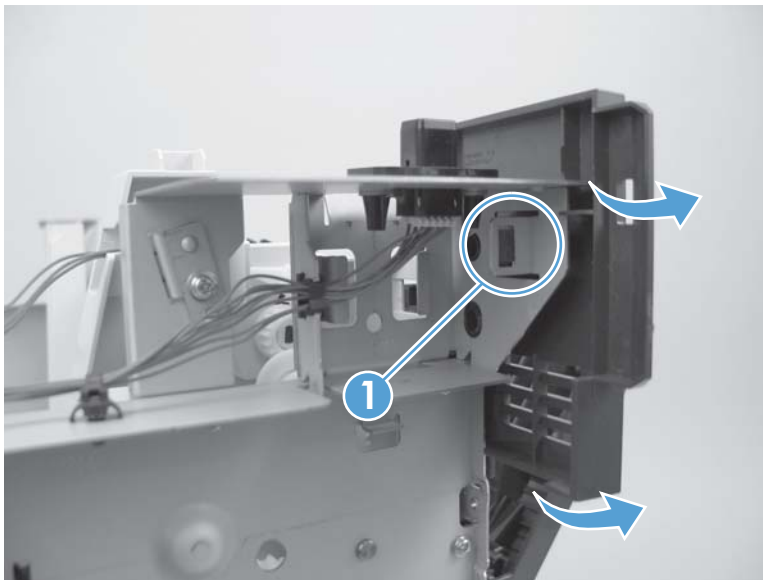
### Before proceeding, remove the following components:::

- Top accessory cover. See [Top-accessory cover on page 88](#).
- Formatter cover and formatter cage. See [Formatter cover and formatter cage on page 71](#).
- Top cover. See [Top cover on page 92](#).
- Right-side cover. See [Right-side cover on page 95](#).

### Remove the rear-upper cover

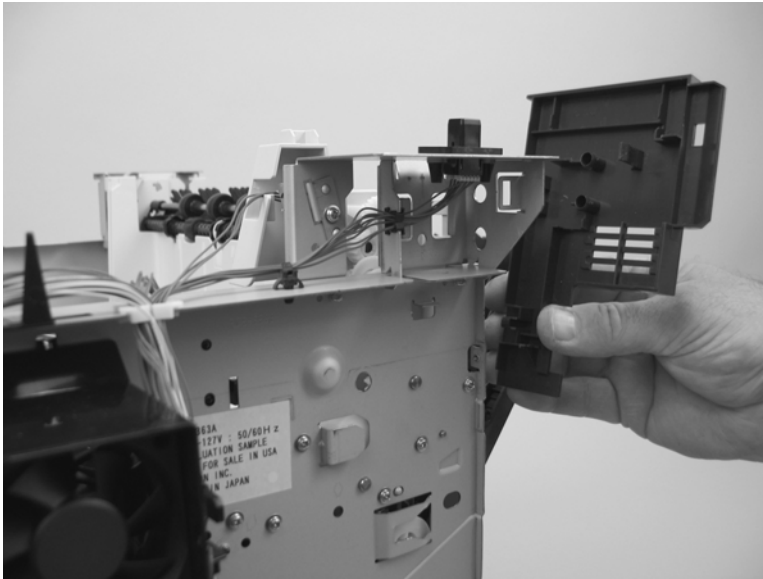
1. Release one tab (callout 1), and then rotate the cover toward the paper-delivery assembly to release it.

**Figure 2-56** Remove the rear-upper cover (1 of 2)



2. Remove the rear-upper cover

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





## Front cover

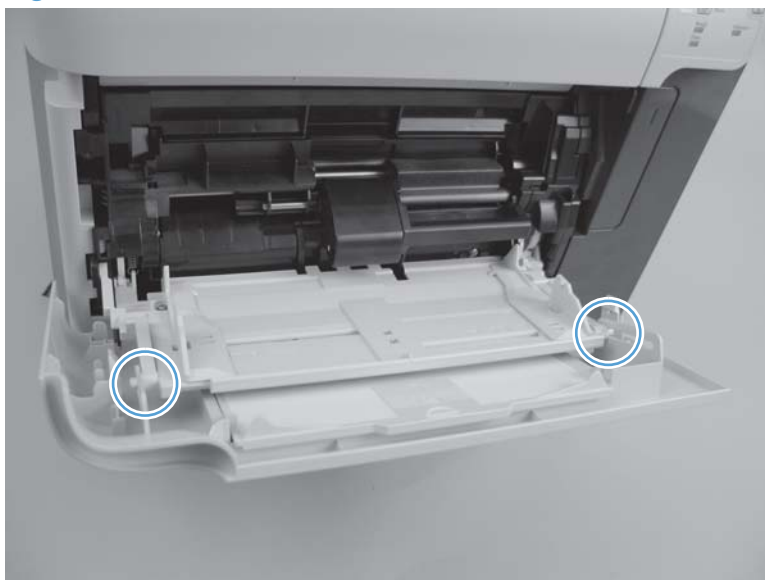
### Before proceeding, remove the following components:

- Top accessory cover. See [Top-accessory cover on page 88](#).
- Formatter cover and formatter cage. See [Formatter cover and formatter cage on page 71](#).
- Top cover. See [Top cover on page 92](#).
- Right-side cover. See [Right-side cover on page 95](#).
- Right-front cover. See [Right-front cover on page 100](#).


### Remove the front cover

1. Gently pry the front-cover retainers off of the Tray 1 arms.

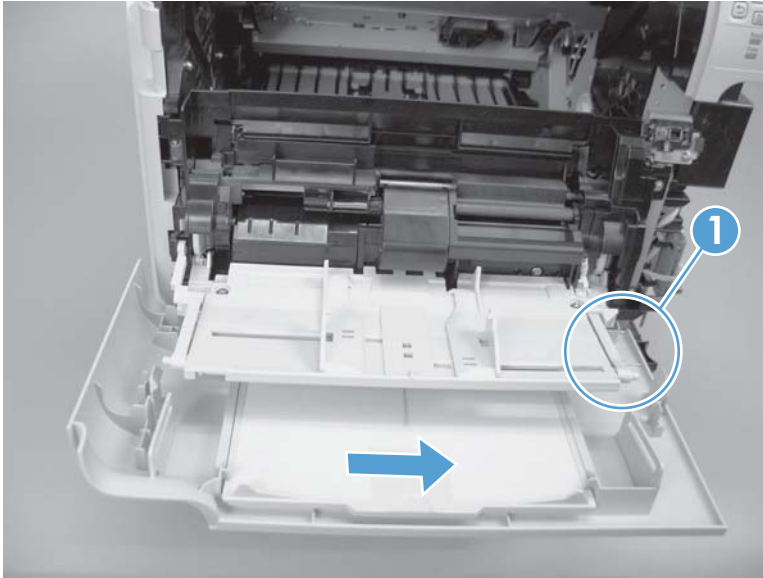
**Figure 2-58** Remove the front cover (1 of 2)



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

 **Reinstallation tip** Use a pair of needle-nose pliers to reinstall this spring.

**Figure 2-59** Remove the front cover (2 of 2)

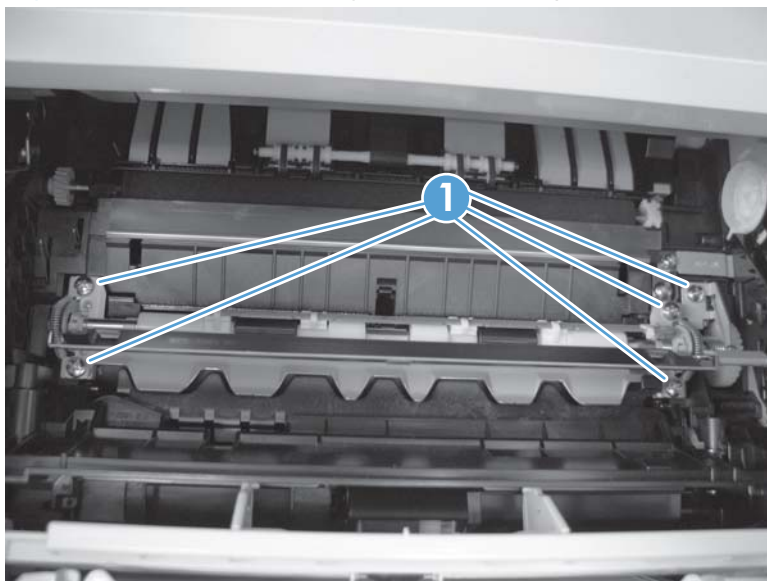


# Main assemblies

## Registration assembly

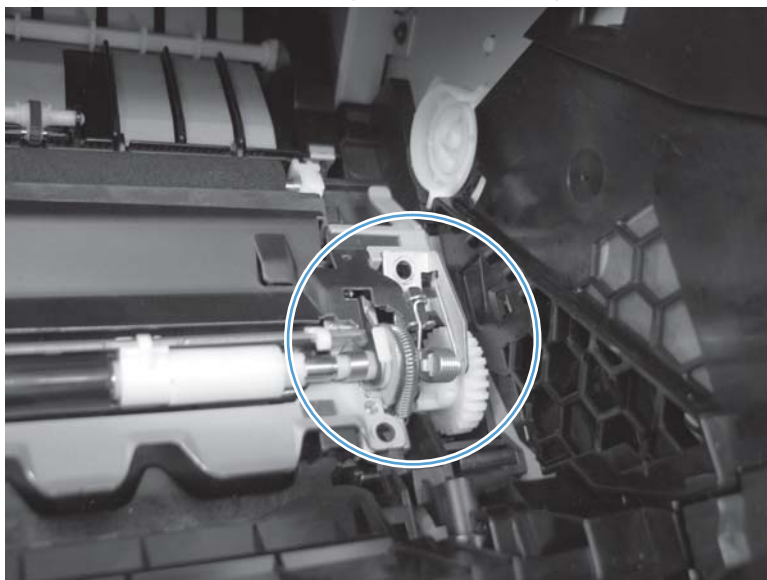
1. Open the print-cartridge door, and then remove the print cartridge.
2. Use the green handle (located at the right edge of the registration plate) to raise the registration-roller plate, and then remove five screws (callout 1).

**Figure 2-60** Remove the registration assembly (1 of 4)



3. Locate the grounding plate at the right side of the registration assembly. The plate is not captive when you remove the assembly. Do not lose the grounding plate.


**Figure 2-61** Remove the registration assembly (2 of 4)



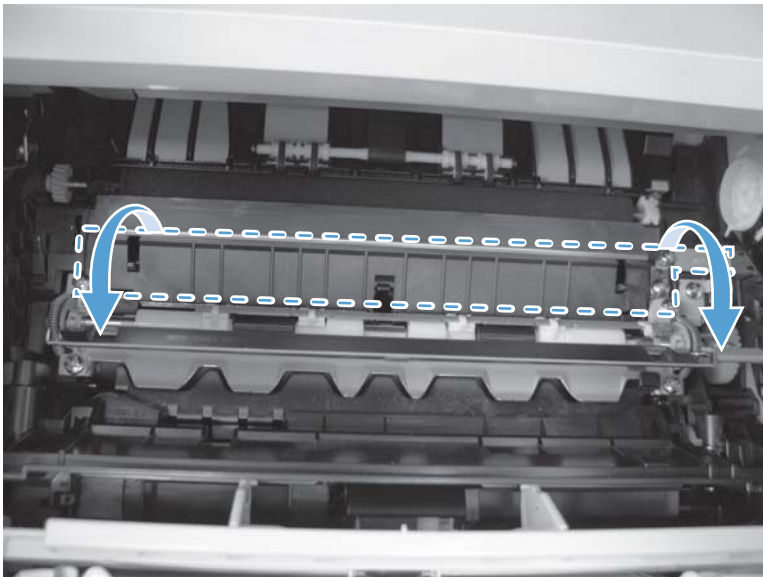
4. Lift the registration assembly out of the product.

**Figure 2-62** Remove the registration assembly (3 of 4)



 **TIP:** To reinstall the registration assembly, you must open the registration-roller plate to gain access to the mounting holes.

**Figure 2-63** Remove the registration assembly (4 of 4)



## Control-panel assembly

**CAUTION:**  ESD sensitive component.

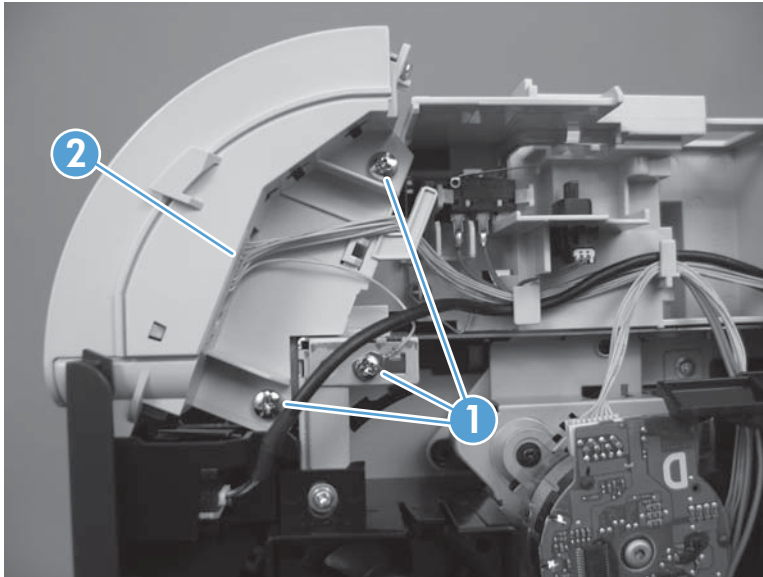
**before proceeding, remove the following components:**

- Top accessory cover. See [Top-accessory cover on page 88](#).
- Formatter cover and formatter cage. See [Formatter cover and formatter cage on page 71](#).
- Top cover. See [Top cover on page 92](#).
- Right-side cover. See [Right-side cover on page 95](#).

### Remove the control-panel assembly

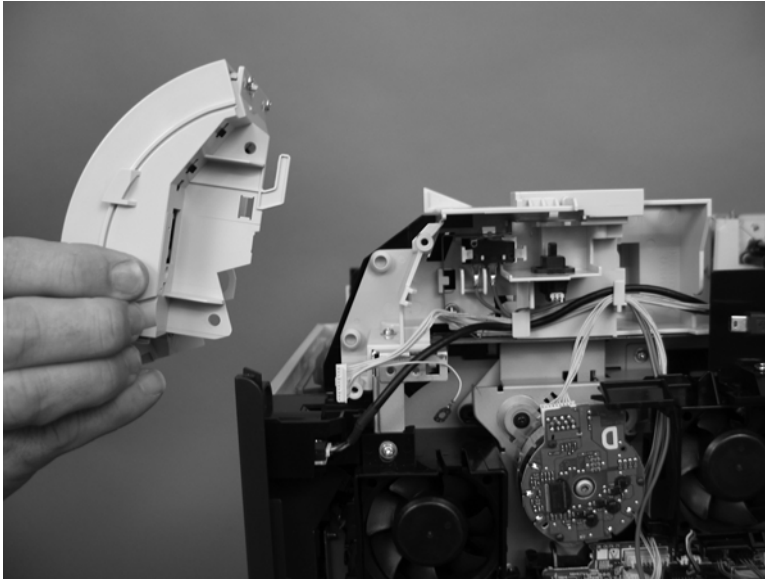
1. Remove three screws (callout 1), and then disconnect one wire-harness connector (callout 2).

**Figure 2-64** Remove the control-panel assembly (1 of 2)



2. Slightly move the control-panel assembly toward the right side of the product to release it, and then remove the assembly.

**Figure 2-65** Remove the control-panel assembly (2 of 2)



## Walk-up USB port and cable

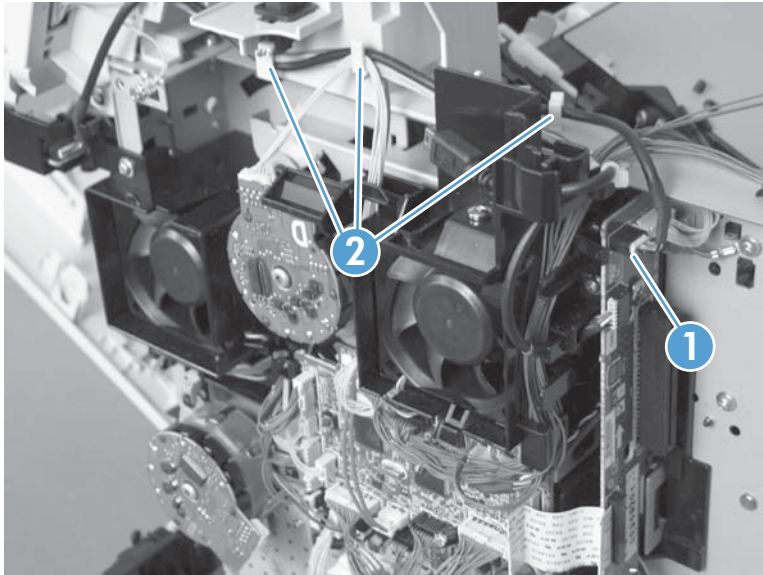
Before proceeding, remove the following components:

- Top accessory cover. See [Top-accessory cover on page 88](#).
- Formatter cover and formatter cage. See [Formatter cover and formatter cage on page 71](#).
- Top cover. See [Top cover on page 92](#).
- Right-side cover. See [Right-side cover on page 95](#).

### Remove the walk-up USB port and cable

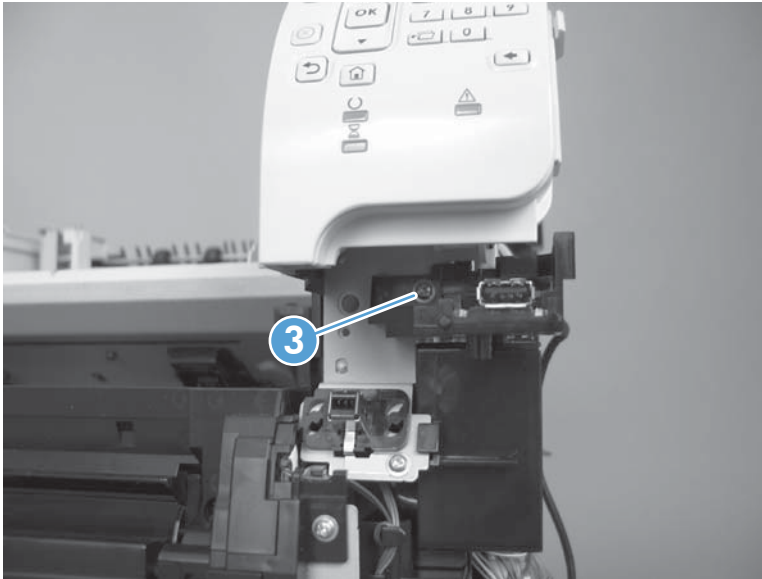
1. Disconnect one connector (callout 1), and then release the cable from the retainers (callout 2).

**Figure 2-66** Remove the walk-up USB port and cable (1 of 4)




2. Remove one screw (callout 3).

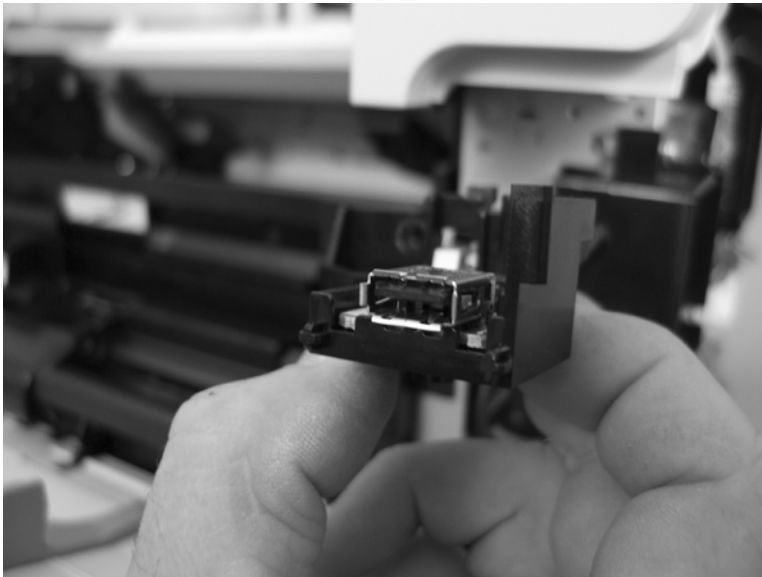
**Figure 2-67** Remove the walk-up USB port and cable (2 of 4)



3. Remove the USB port and cable assembly.

 **TIP:** You might need to push on the mounting tab that secures the USB port holder to the chassis—from the DC controller side of the product—to remove the assembly.

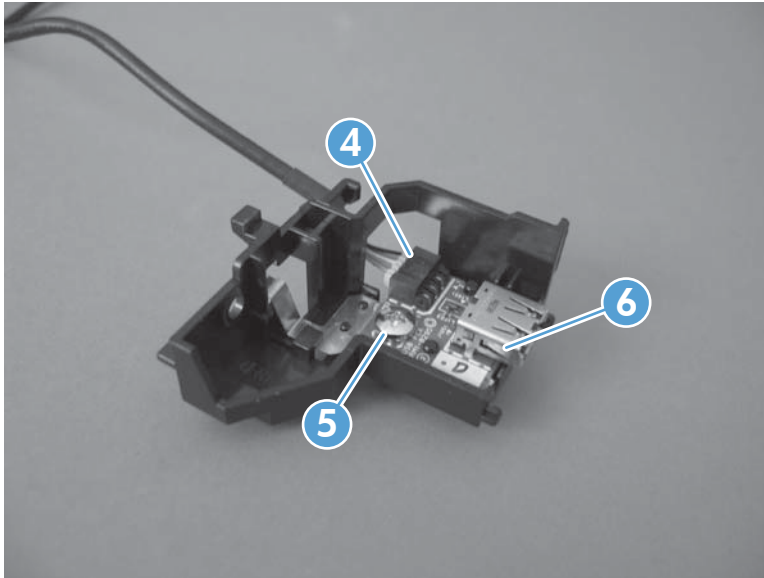
**Figure 2-68** Remove the walk-up USB port and cable (3 of 4)





4. If necessary, disconnect one connector (callout 4), remove one screw (callout 5), and then remove the walk-up port PCA (callout 6) from the mounting bracket.

**Figure 2-69** Remove the walk-up USB port and cable (4 of 4)



## Inner connecting PCA


**CAUTION:**  ESD sensitive component.

### Before proceeding, remove the following components:

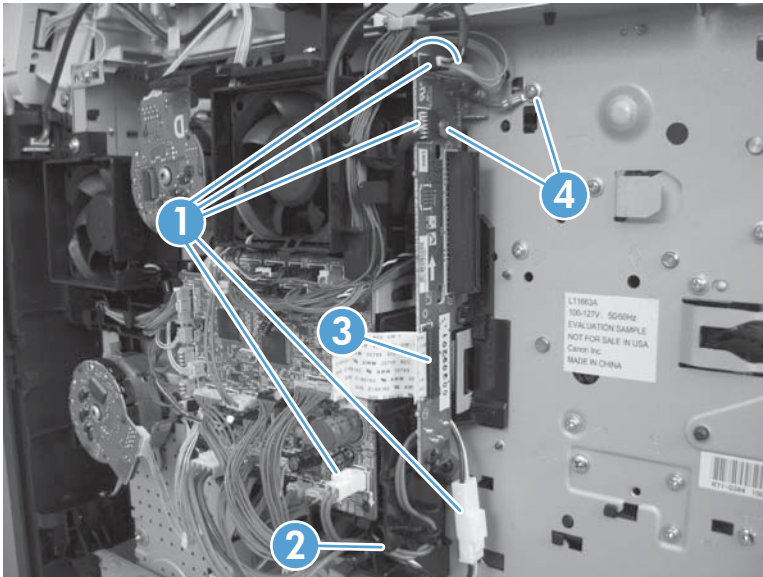
- Top accessory cover. See [Top-accessory cover on page 88](#).
- Formatter cover, formatter cage, and formatter PCA. See [Formatter cover and formatter cage on page 71](#).
- Top cover. See [Top cover on page 92](#).
- Right-side cover. See [Right-side cover on page 95](#).

### Remove the inner connecting PCA

1. Disconnect five connectors (callout 1), release the wire harness from the retainers (callout 2), disconnect one FFC (callout 3), and then remove two screws (callout 4).

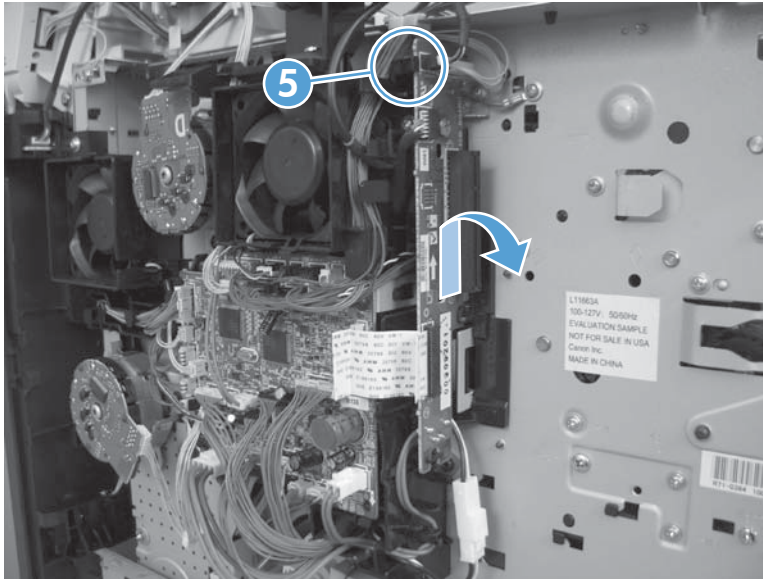
 **TIP:** The PCA mounting screw is a shoulder type fastener. When the PCA is reinstalled, make sure that you use this screw to fasten the PCA to the chassis.

**Figure 2-70** Remove the inner connecting PCA (1 of 3)



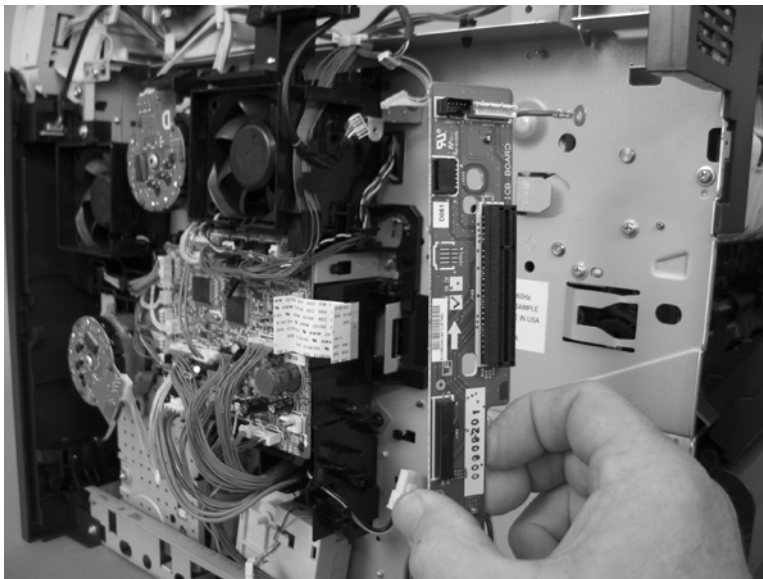
2. Release one tab (callout 5), lift up on the PCA to release it.

**Figure 2-71** Remove the inner connecting PCA (2 of 3)



3. Remove the inner connecting PCA.

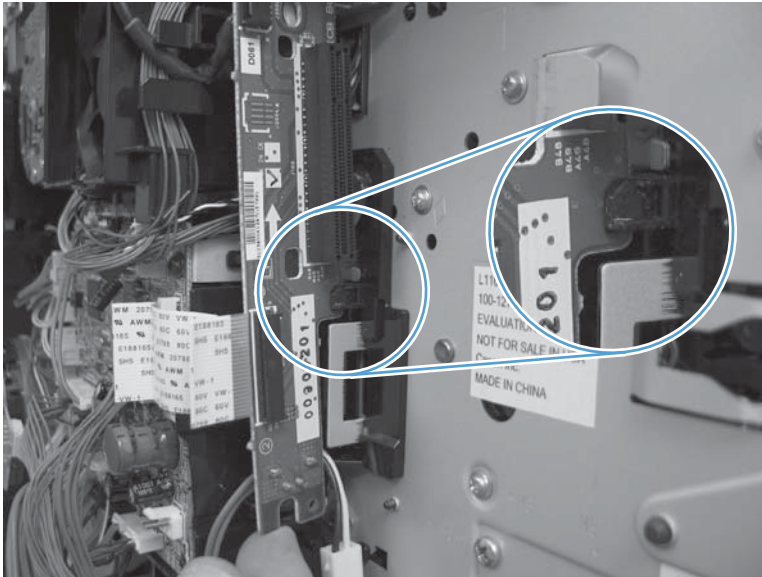
**Figure 2-72** Remove the inner connecting PCA (3 of 3)



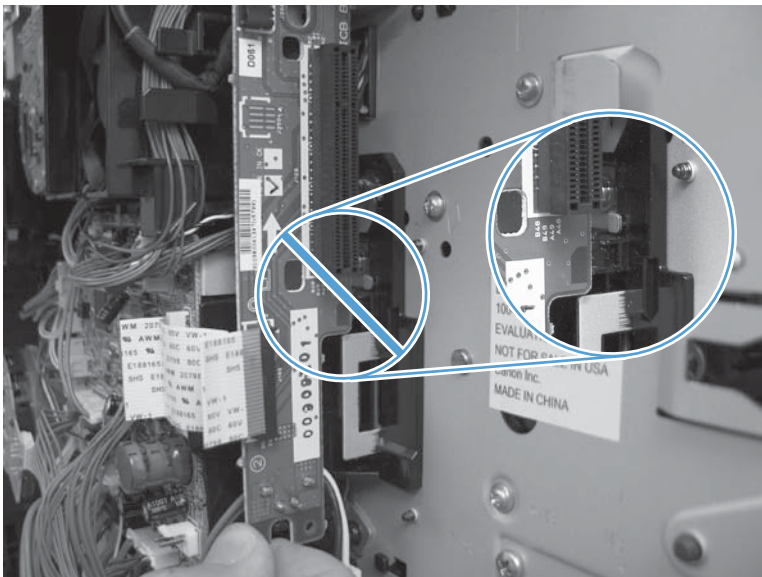
## Reinstall the inner connecting PCA

The back edge of the PCA—near the bottom of the formatter connector—must be correctly positioned in the mounting-bracket slot.

**Figure 2-73** Correctly installed inner connecting PCA



**Figure 2-74** Incorrectly installed inner connecting PCA




## Fan FN102

### Before proceeding, remove the following components:

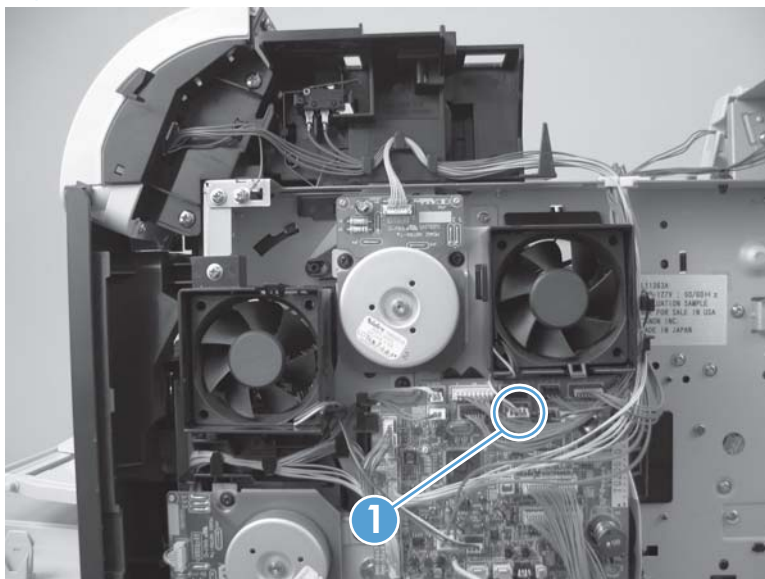
- Top accessory cover. See [Top-accessory cover on page 88](#).
- Top cover. See [Top cover on page 92](#).
- Right-side cover. See [Right-side cover on page 95](#).

### Remove fan FN102


1. Disconnect one connector (callout 1; J79), and then release the wire harness from the retainer on the fan duct.

 **TIP:** It might be easier to release this wire harness if you partially release the fan duct from the chassis (release one tab near the motor).

**Figure 2-75** Remove fan FN102 (1 of 2)

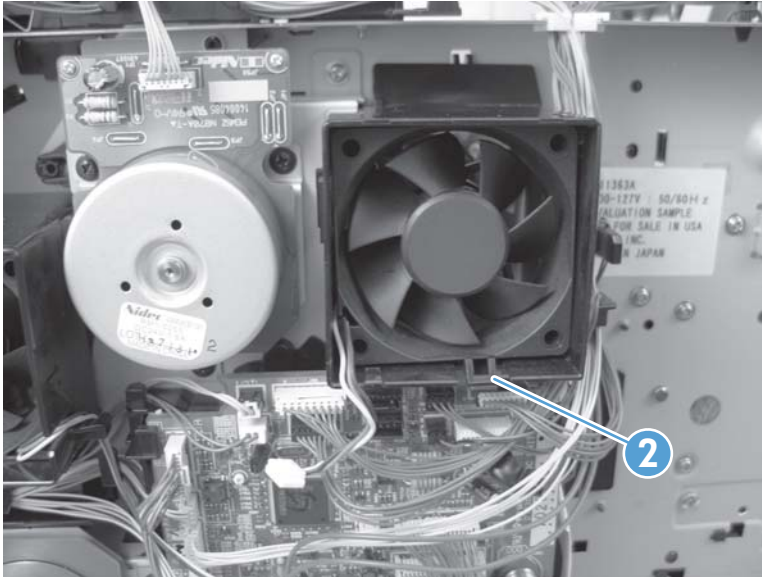


2. Release one tab (callout 2), and then remove the fan.

 **TIP:** When you reinstall the fan, the air must flow into the product. Verify that the airflow arrows that are embossed on the fan body point *into* the product.

Connect the wire-harness connector to the DC controller before reinstalling the fan into the duct.

**Figure 2-76** Remove fan FN102 (2 of 2)



## Fan FN103

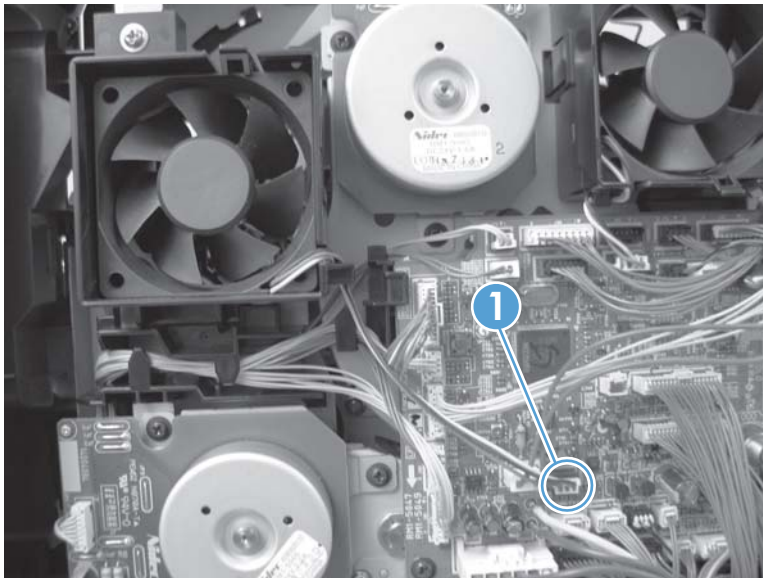
### Before proceeding, remove the following components:

- Top accessory cover. See [Top-accessory cover on page 88](#).
- Top cover. See [Top cover on page 92](#).
- Right-side cover. See [Right-side cover on page 95](#).


### Remove fan FN103

1. Disconnect one connector (callout 1; J75), and then release the wire harness from the retainer on the fan duct.

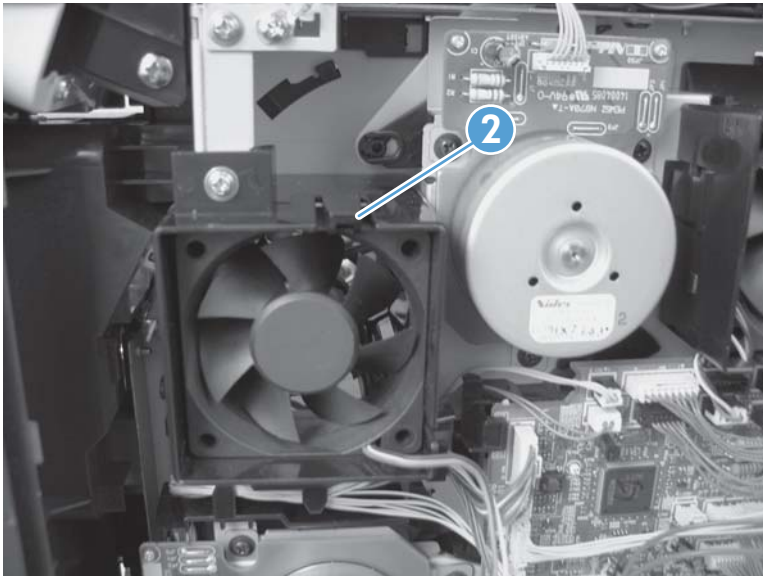
**Figure 2-77** Remove fan FN103 (1 of 2)



2. Release one tab (callout 2), and then remove the fan.

 **TIP:** When you reinstall the fan, the air must flow into the product. Verify that the airflow arrows that are embossed on the fan body point *into* the product.

**Figure 2-78** Remove fan FN103 (2 of 2)





## Pickup-motor assembly (M101)

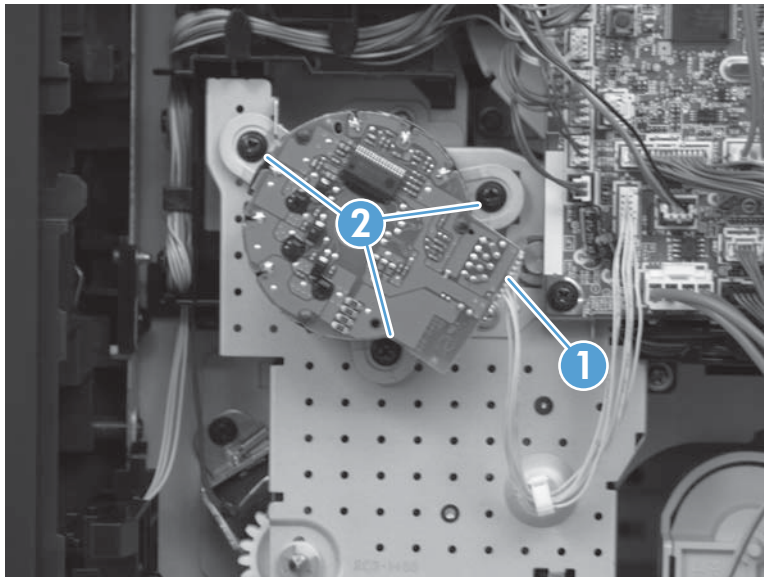
Before proceeding, remove the following components:

- Top accessory cover. See [Top-accessory cover on page 88](#).
- Formatter cover and cage. See [Formatter cover and formatter cage on page 71](#).
- Top cover. See [Top cover on page 92](#).
- Right-side cover. See [Right-side cover on page 95](#).

### Remove the pickup-motor assembly

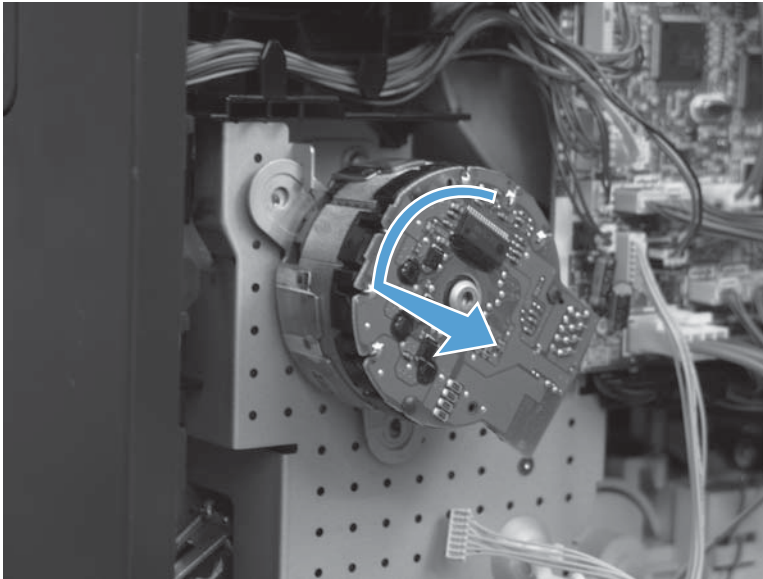
1. Disconnect one wire-harness connector (callout 1), and then remove three screws (callout 2).


**Figure 2-79** Remove the pickup motor (1 of 2)

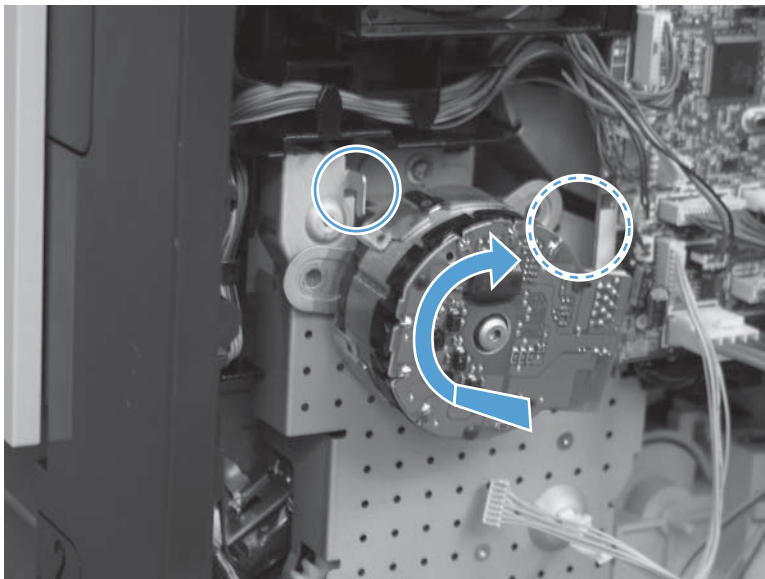


2. Rotate the motor assembly towards the front of the product to release it, and then remove it.

**Figure 2-80** Remove the pickup motor (2 of 2)



 **Reinstallation tip** Position the motor assembly on the product chassis, and then rotate it toward the back of the product to engage the tabs on the chassis with the assembly mounting bracket.



## Drum-motor assembly (M102)

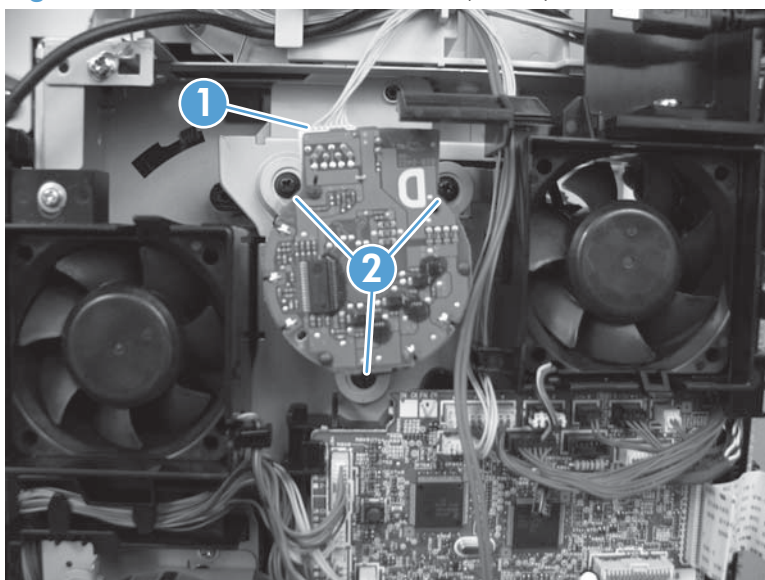
Before proceeding, remove the following components:

- Top accessory cover. See [Top-accessory cover on page 88](#).
- Formatter cover and cage. See [Formatter cover and formatter cage on page 71](#).
- Top cover. See [Top cover on page 92](#).
- Right-side cover. See [Right-side cover on page 95](#).

### Remove the drum motor

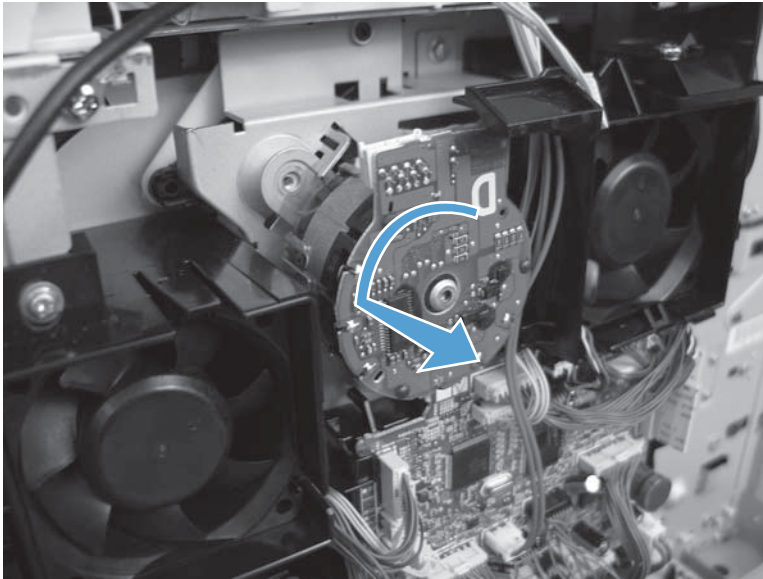
1. Disconnect one wire-harness connector (callout 1), and the remove three screws (callout 2).


**Figure 2-81** Remove the drum motor (1 of 2)

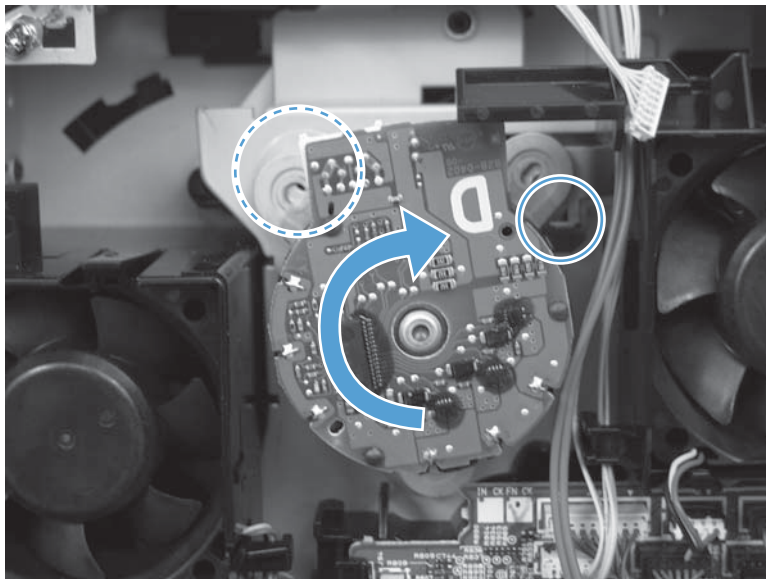


2. Rotate the motor assembly toward the front of the product to release it, and then remove it.

**Figure 2-82** Remove the drum motor (2 of 2)



 **Reinstallation tip** Position the motor assembly on the product chassis, and then rotate it toward the back of the product to engage the tabs on the chassis with the assembly mounting bracket.



## Lifter-motor assembly (M103)

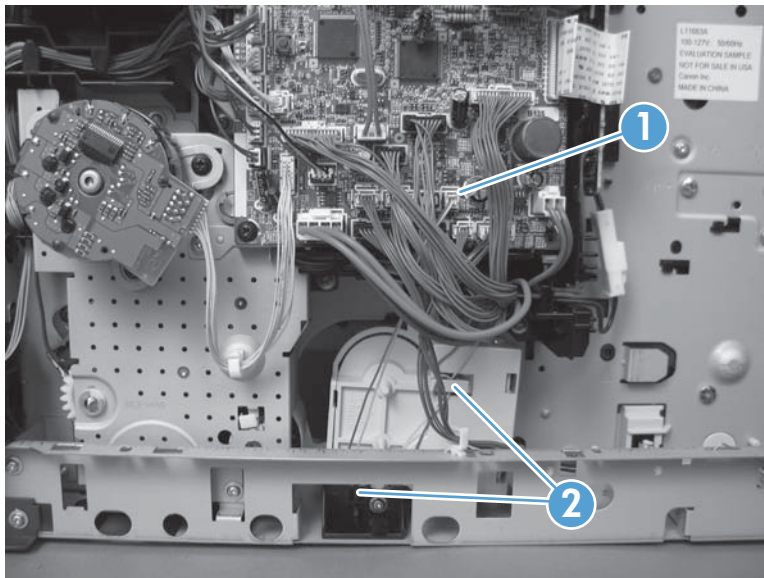
Before proceeding, remove the following components:

- Top accessory cover. See [Top-accessory cover on page 88](#).
- Formatter cover and cage. See [Formatter cover and formatter cage on page 71](#).
- Top cover. See [Top cover on page 92](#).
- Right-side cover. See [Right-side cover on page 95](#).


### Remove the lifter motor

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

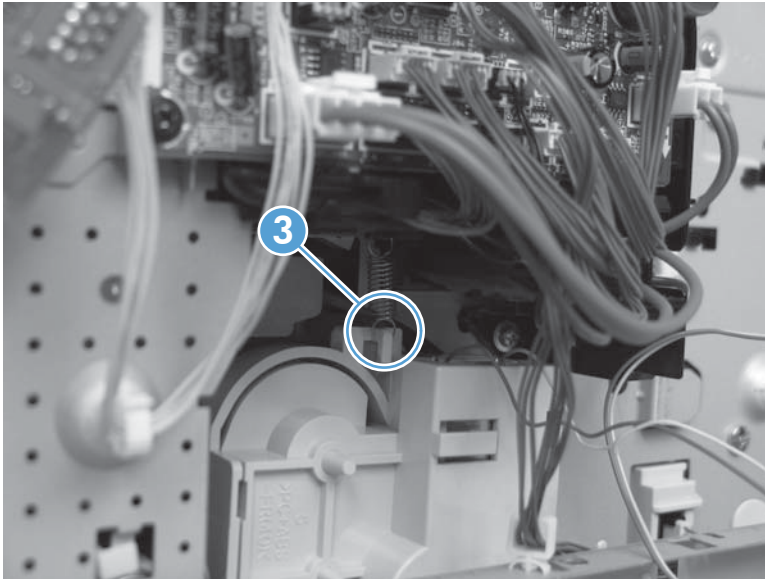
**Figure 2-83** Remove the lifter motor (1 of 4)



2. Release one spring (callout 2).

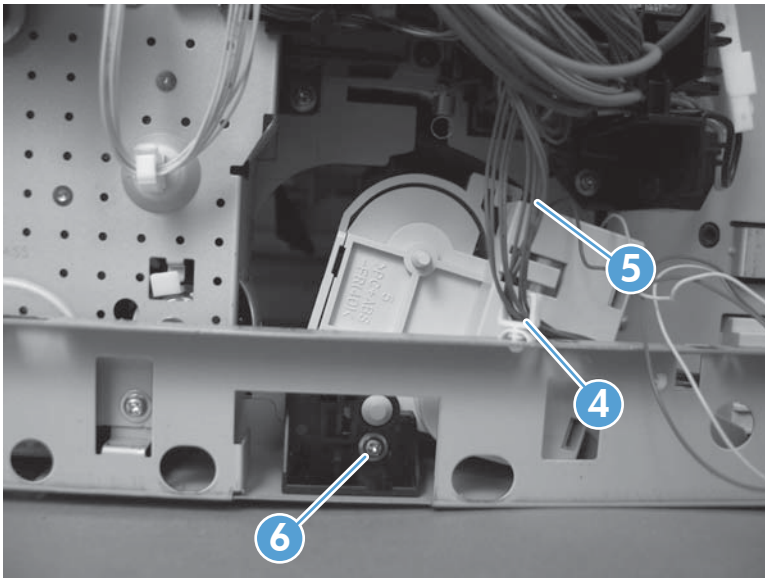
 **NOTE:** The spring is not captive. Do not lose the spring.

**Figure 2-84** Remove the lifter motor (2 of 4)



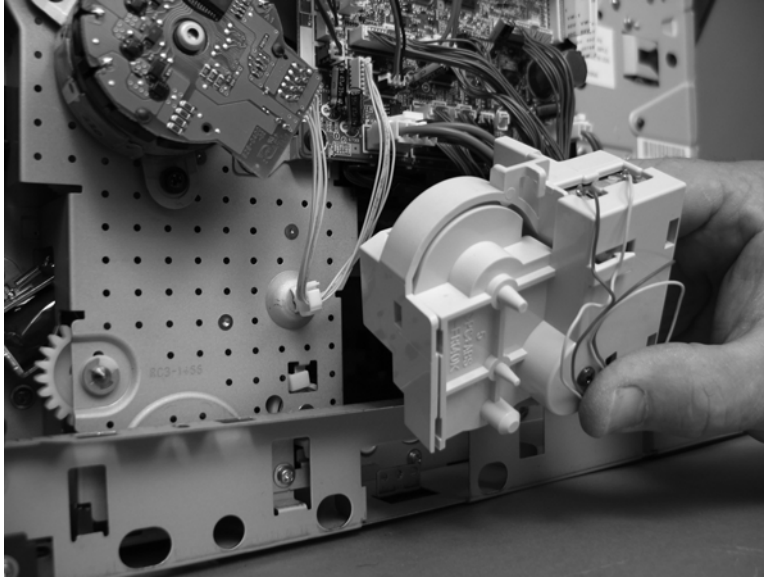
3. Release the wire-harness retainer (callout 4), move the wire harness (callout 5) out of the way, and then remove one screw (callout 6).

**Figure 2-85** Remove the lifter motor (3 of 4)



4. Remove the lifter-motor assembly.

**Figure 2-86** Remove the lifter motor (4 of 4)



## DC controller PCA


**CAUTION:**  ESD sensitive component.

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

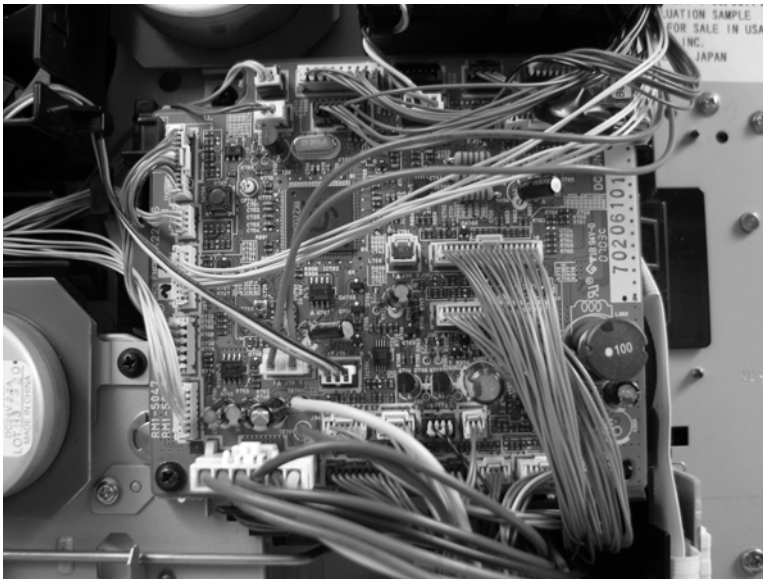
- Top accessory cover. See [Top-accessory cover on page 88](#).
- Formatter cover and cage. See [Formatter cover and formatter cage on page 71](#).
- Top cover. See [Top cover on page 92](#).
- Right-side cover. See [Right-side cover on page 95](#).

### Remove the DC controller PCA

1. Unplug all of the wire and cable connectors from the DC controller PCA.

 **TIP:** The DC controller shown below is only representational of the component found in this family of products. The component found in your specific product might look different than the one shown below.

**Figure 2-87** Remove the DC controller PCA (1 of 4)

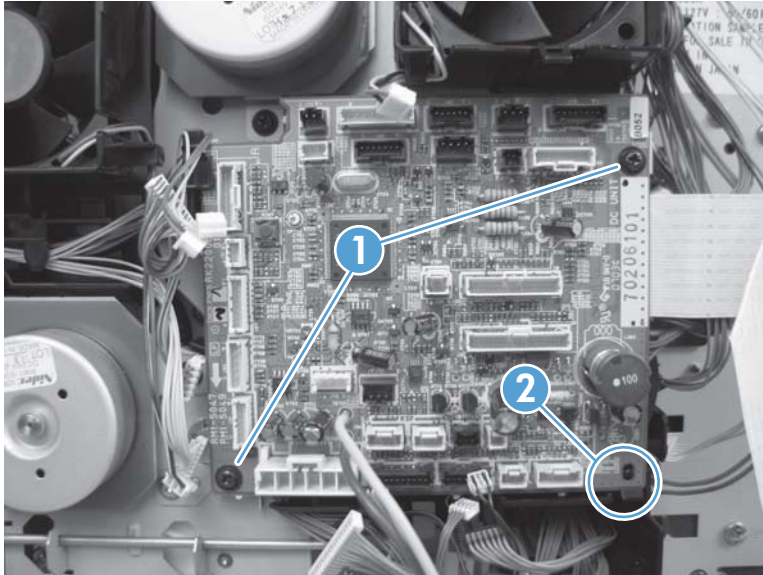




2. Remove two screws (callout 1), release one tab (callout 2), and then carefully remove the DC controller PCA.

**CAUTION:** Correct reinstallation of the DC controller is critical to correct operation of the product. If you are installing a *new* DC controller, follow the instructions in the reinstallation tips. If you are installing a *new formatter and a new DC controller*, see the special section that follows this DC controller section—[Installing a new formatter and a new DC controller on page 129](#).

**Figure 2-88** Remove the DC controller PCA (4 of 4)



## Reinstallation tip

**NOTE:** DC controller PCA connector location J80 is not used. There will not be a connector for this location when the DC controller PCA is reinstalled.

1. After installing a *new* DC controller, turn the product on and wait for five minutes after the product reaches the **Ready** state.

**NOTE:** Five minutes is required to allow for NVRAM settings to be written.

2. Turn the product off.
3. Turn the product on again, and then wait five minutes after the product reaches the Ready state.
4. Print a configuration page to verify against original settings.

## Installing a new formatter and a new DC controller

**CAUTION:** Do not replace the DC controller and the formatter at the same time.

1. Turn the product off.
2. Remove the formatter (see [Formatter cover and formatter cage on page 71](#)) and replace it with the new formatter.

3. Turn the product on and then wait for five minutes after the product reaches the **Ready** state.



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**NOTE:** Five minutes is required to allow for NVRAM settings to be written. The same five-minute wait is required several times during this procedure.


---

4. Turn the product off.
5. Turn the product on again, and then wait five minutes after the product reaches the Ready state.
6. Turn the product off.
7. Remove the DC controller (see [DC controller PCA on page 128](#)) and replace it with the new DC controller.
8. Turn the product on and wait for five minutes after the product reaches the **Ready** state.
9. Turn the product off.
10. Turn the product on again, and then wait five minutes after the product reaches the Ready state.
11. Print a configuration page to verify against original settings.

## Pickup-drive assembly

### Before proceeding, remove the following components:

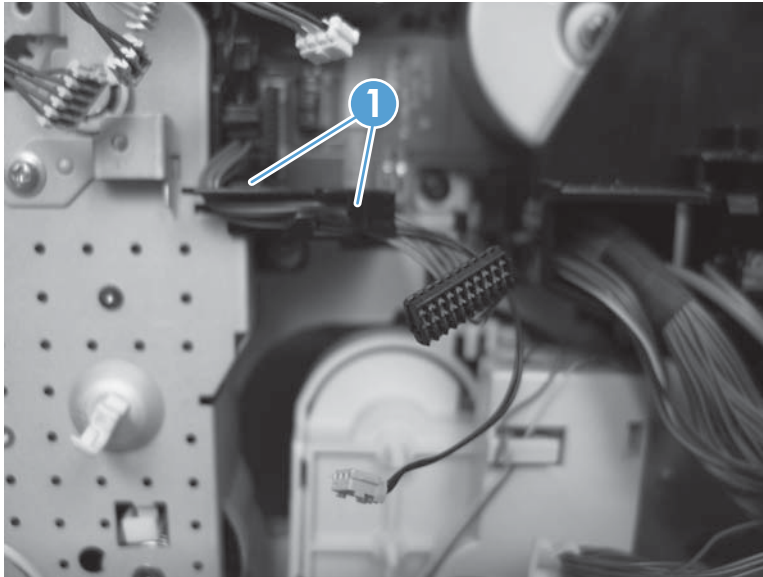
- Top accessory cover. See [Top-accessory cover on page 88](#).
- Top cover. See [Top cover on page 92](#).
- Right-side cover. See [Right-side cover on page 95](#).
- Pickup-motor assembly. See [Pickup-motor assembly \(M101\) on page 121](#).
- DC controller PCA. See [DC controller PCA on page 128](#).

 **TIP:** The pickup-motor wire harness is disconnected from the motor assembly. Leave the wire harness connected to the DC controller PCA so it is not lost when the PCA is removed.


### Remove the pickup-drive assembly

1. Release the wire harnesses from the retainer (callout 1) located on the lifter-motor side of the pickup-drive assembly.

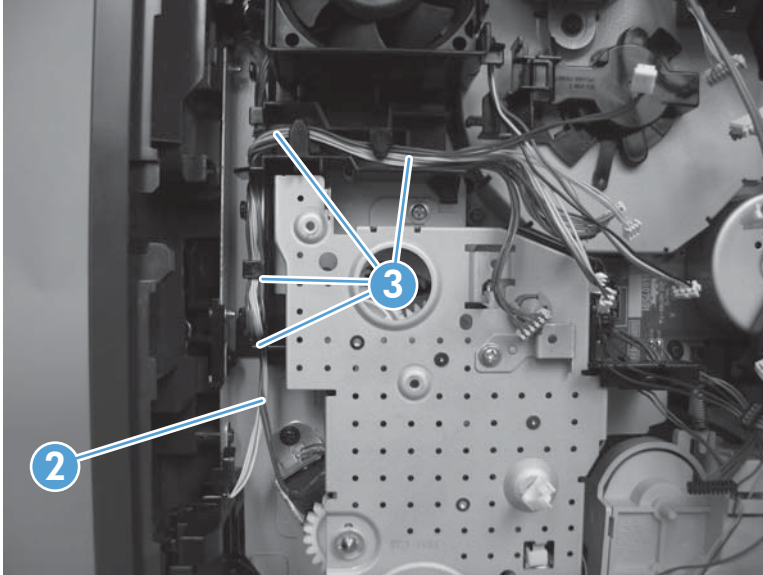
**Figure 2-89** Remove the pickup-drive assembly (1 of 8)



2. Release the solenoid wire harness (callout 2) from the retainer (callout 3).

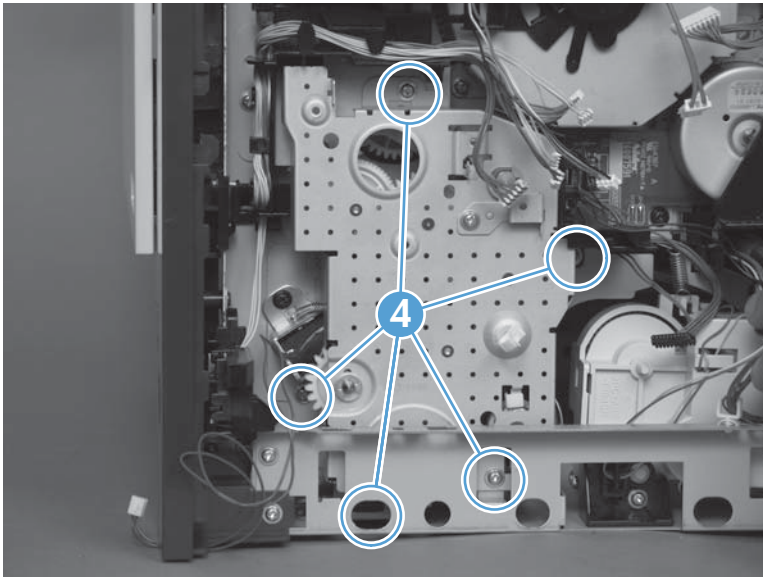
 **TIP:** Do not damage the wire harness when removing it from the retainer. It might be easier to remove all or the wire harnesses together to release the solenoid wire harness.

**Figure 2-90** Remove the pickup-drive assembly (2 of 8)



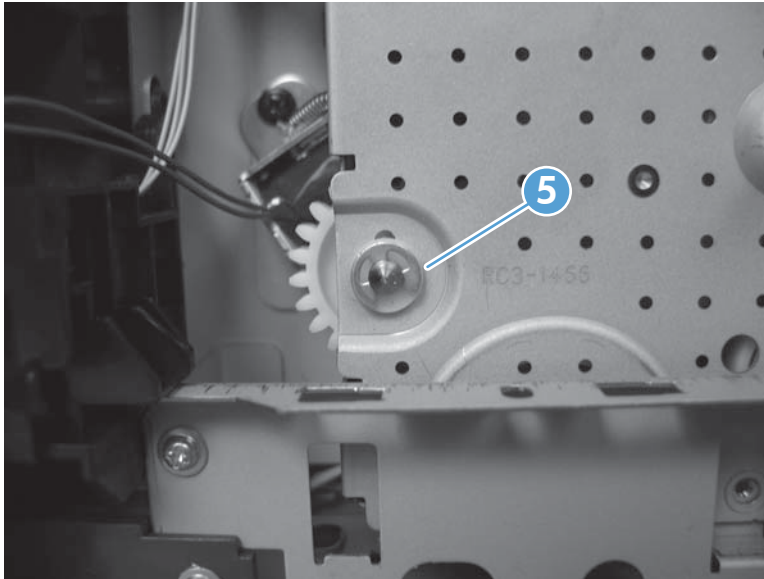
3. Remove five screws (callout 4).

**Figure 2-91** Remove the pickup-drive assembly (3 of 8)



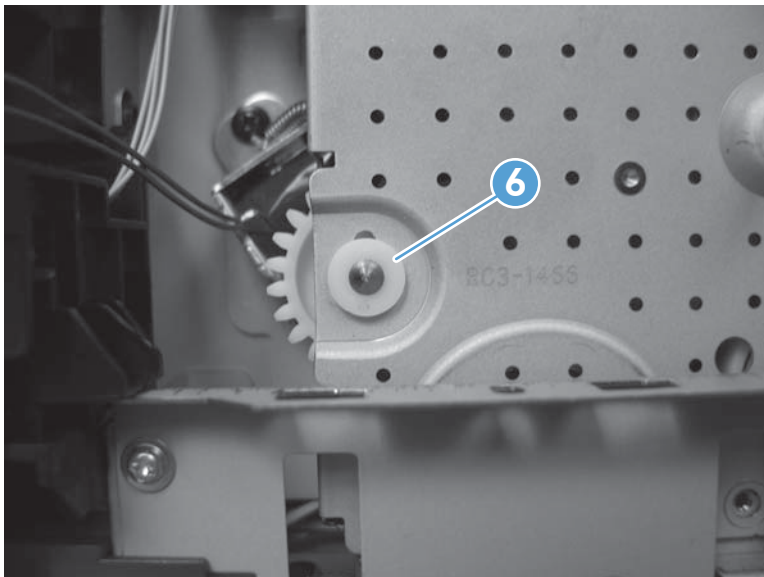
4. Remove one e-clip (callout 5).

**Figure 2-92** Remove the pickup-drive assembly (4 of 8)



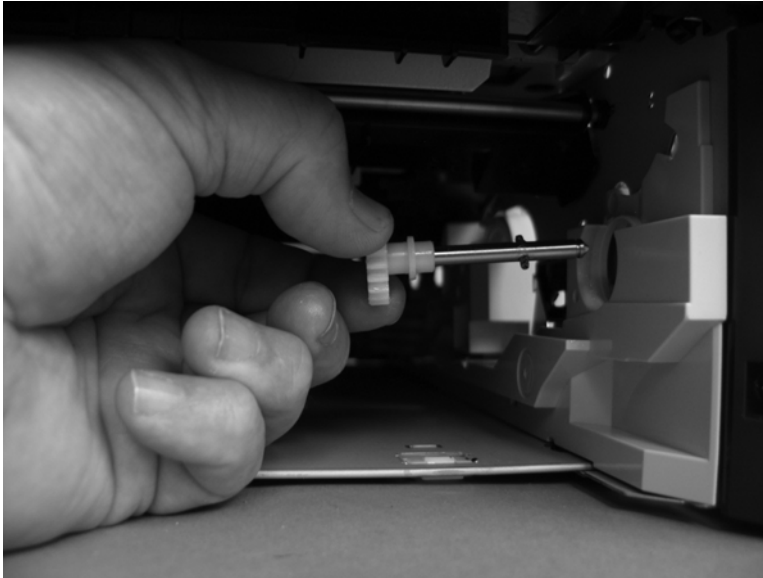
5. Remove one shaft collar (callout 6).

**Figure 2-93** Remove the pickup-drive assembly (5 of 8)




6. Push the tray drive-gear/shaft (located where the e-clip and shaft collar were removed in the previous steps) into the Tray 2 cavity.

**Figure 2-94** Remove the pickup-drive assembly (6 of 8)



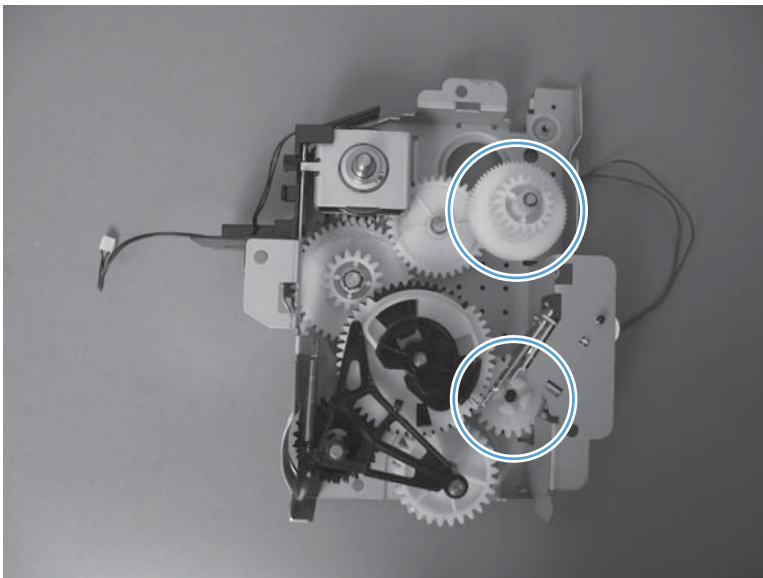
7. Two gears located inside the assembly are not captive when the assembly is removed. Do not lose these gears when handling the assembly. If the gears are dislodged during removal, use the figure below to correctly reinstall them.

---

 **TIP:** The gears in the assembly have a special grease applied to them at the factory. Try not to remove this grease when handling the assembly.

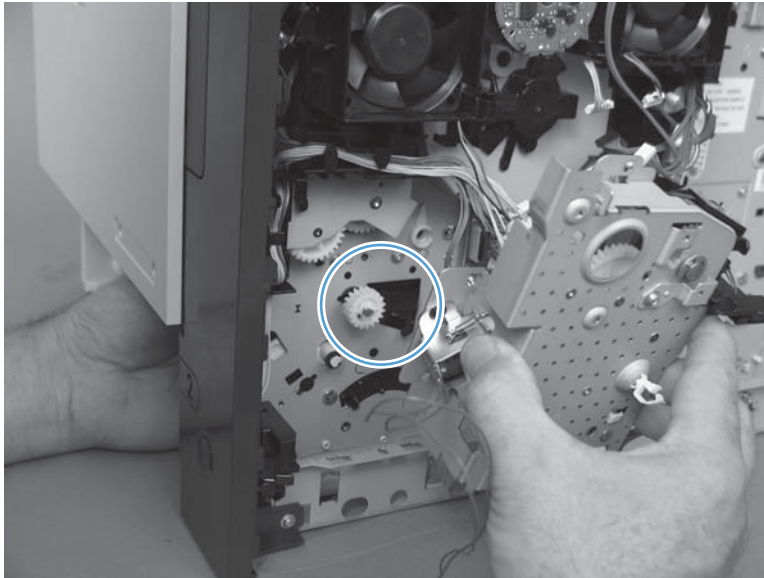
---

**Figure 2-95** Remove the pickup-drive assembly (7 of 8)



8. Reach inside the product and push the rear Tray 2 feed roller up into its raised position (this disengages the roller-lifting arm from the clutch gear), and then remove the pickup-drive assembly.

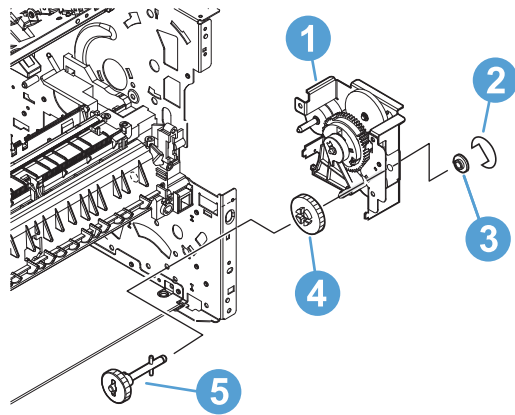
**Figure 2-96** Remove the pickup-drive assembly (8 of 8)



## Reinstall the pickup-drive assembly

When you reinstall the paper-delivery drive assembly gears and shaft, verify that the gears are seated on the shaft-locking bars and that the shaft collars are correctly positioned in the paper-pickup drive-gear assembly mounting bracket and product chassis.

**Table 2-2 Pickup-drive assembly**




1	Pickup drive unit
2	E-clip
3	Bushing
4	23T gear
5	Retard roller drive shaft



## Fuser-motor assembly (M299)

### Before proceeding, remove the following components:


- Top accessory cover. See [Top-accessory cover on page 88](#).
- Formatter cover and cage. See [Formatter cover and formatter cage on page 71](#).
- Top cover. See [Top cover on page 92](#).
- Right-side cover. See [Right-side cover on page 95](#).
- Inner connecting PCA. See [Inner connecting PCA on page 114](#).

 **NOTE:** Do not completely remove the inner connecting PCA. Remove the mounting screws, and then move the PCA out of the way.

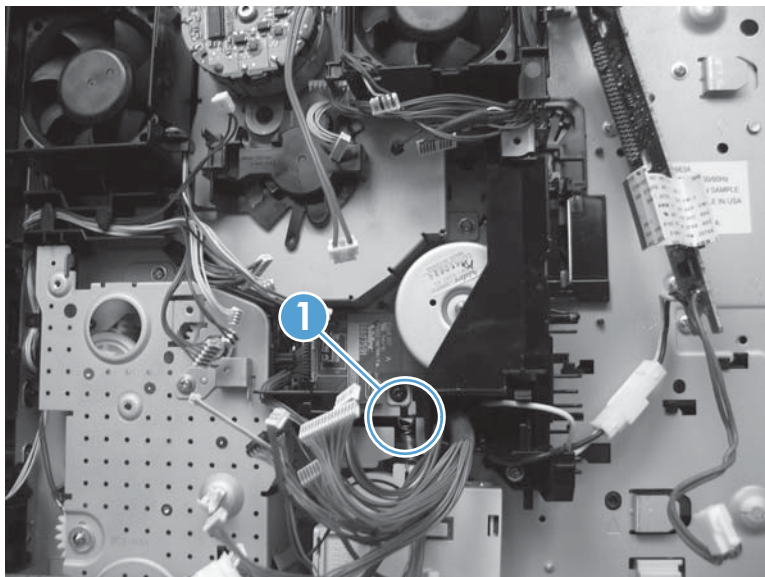
- DC controller. See [DC controller PCA on page 128](#).

### Remove the fuser-motor assembly

1. Release one spring (callout 1).

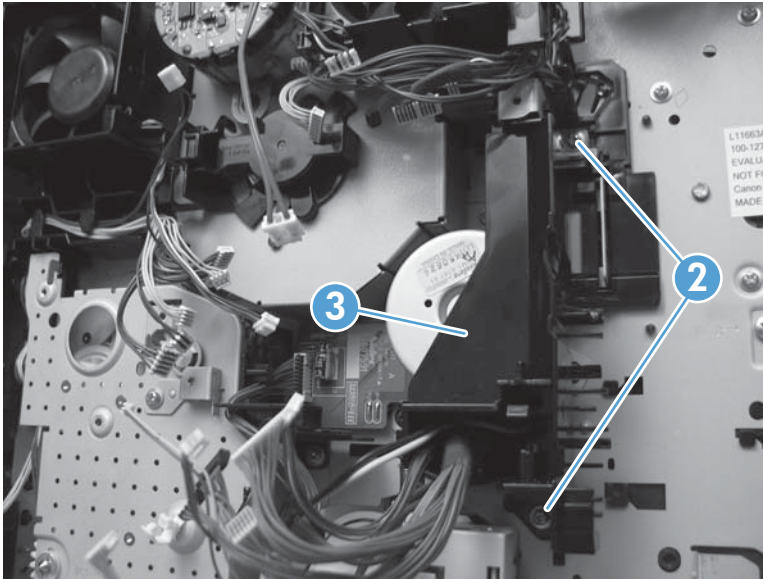
 **CAUTION:** The spring is not captive. Do not lose the spring.

**Figure 2-97** Remove the fuser-motor assembly (1 of 3)




2. Remove two screws (callout 2) and then remove the guide (callout 3).

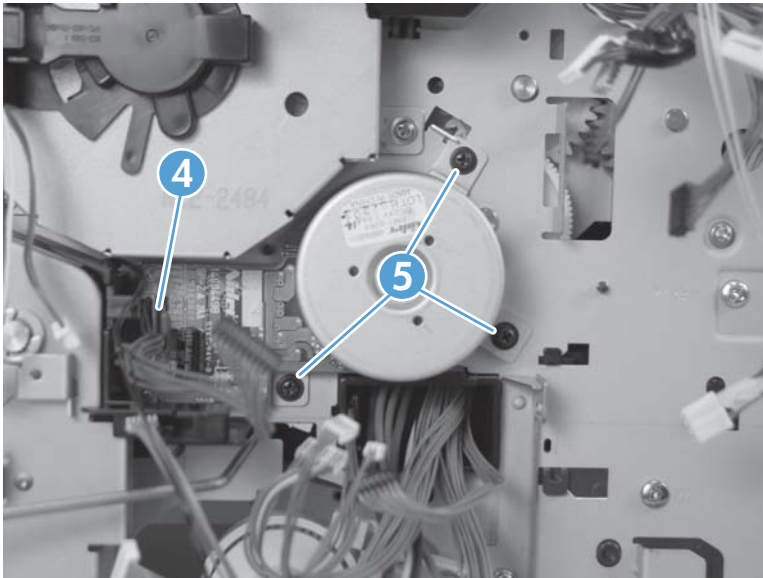
**Figure 2-98** Remove the fuser-motor assembly (2 of 3)



3. Disconnect one wire-harness connector (callout 4), and then remove three screws (callout 5). Remove the fuser-motor assembly.

 **Reinstallation tip** Install the fuser-motor wire harness on the replacement fuser-motor assembly.

**Figure 2-99** Remove the fuser-motor assembly (3 of 3)



## Drum-drive assembly

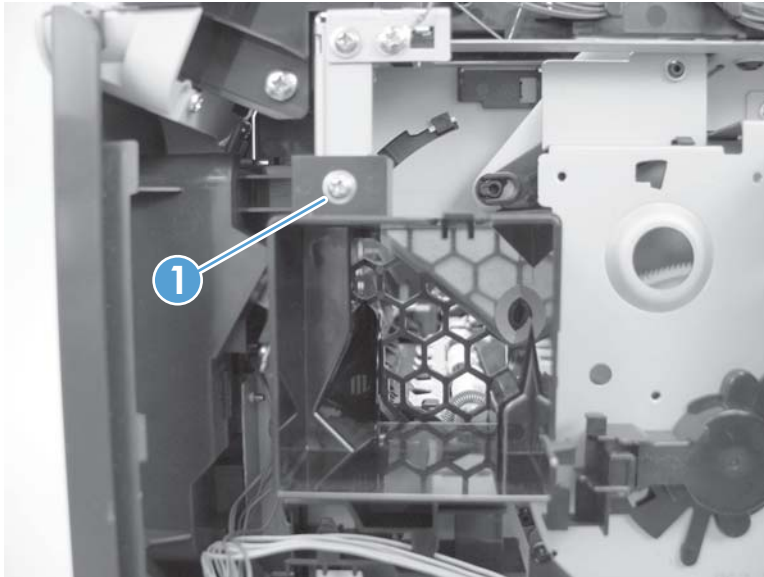
### Before proceeding, remove the following components:

- Top accessory cover. See [Top-accessory cover on page 88](#).
- Formatter cover and cage. See [Formatter cover and formatter cage on page 71](#).
- Top cover. See [Top cover on page 92](#).
- Right-side cover. See [Right-side cover on page 95](#).
- Fan FN102. See [Fan FN102 on page 117](#).
- Fan FN103. See [Fan FN103 on page 119](#).
- Drum-motor assembly. See [Drum-motor assembly \(M102\) on page 123](#).
- DC controller PCA. See [DC controller PCA on page 128](#).

### Remove the drum-drive assembly

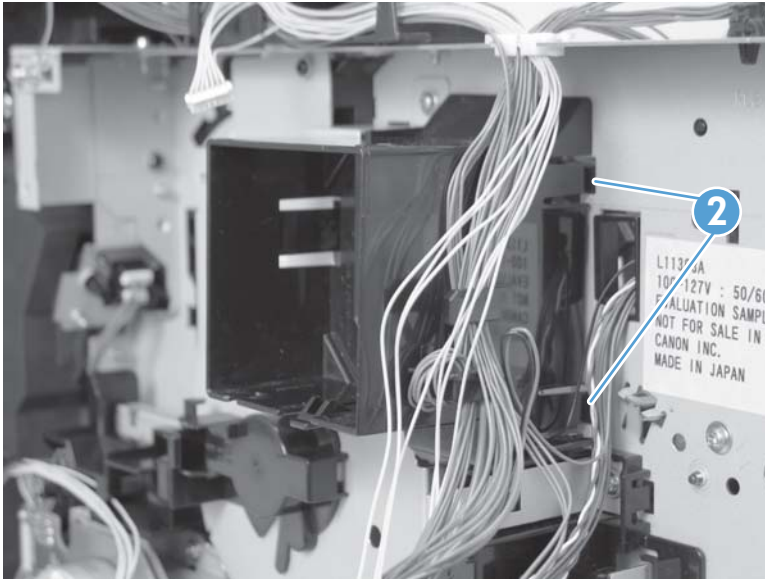
1. Remove one screw (callout 1) and the fan FN103 duct.

**Figure 2-100** Remove the drum-drive assembly (1 of 4)



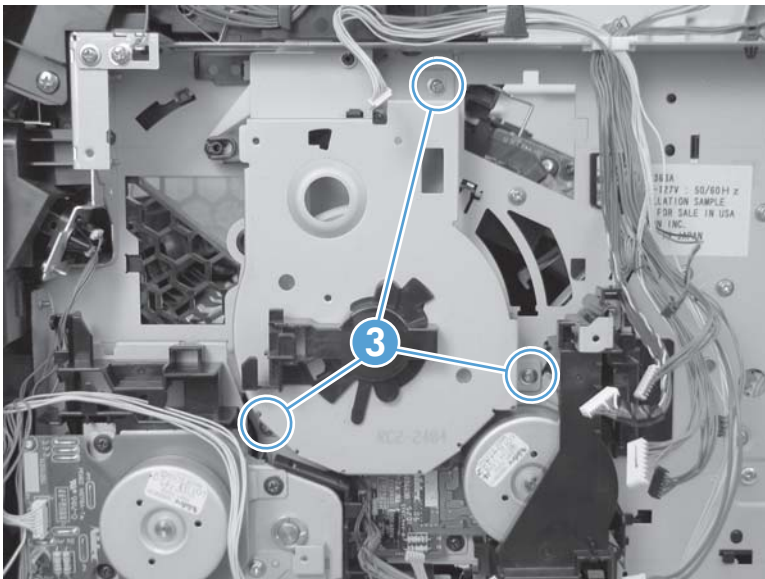
2. Release the wire-harnesses from the retainer on the fan FN102 duct (callout 2) .

**Figure 2-101** Remove the drum-drive assembly (2 of 4)



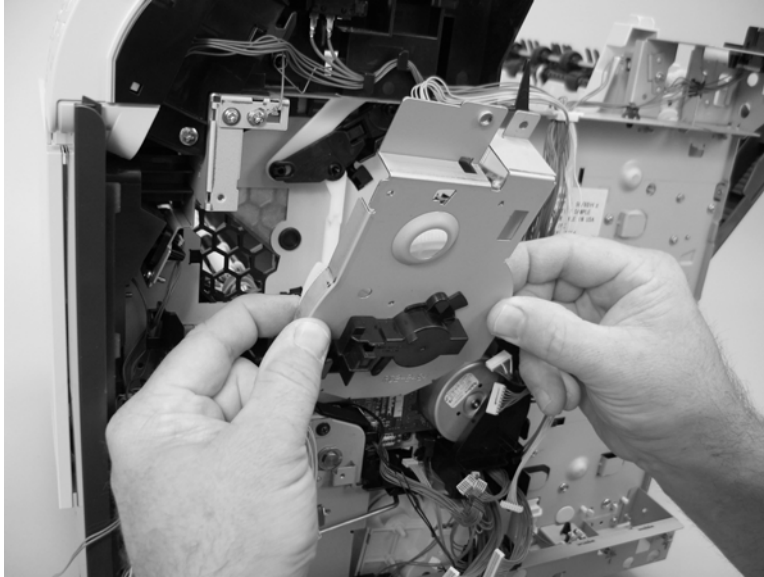
3. Remove three screws (callout 3).

**Figure 2-102** Remove the drum-drive assembly (3 of 4)



4. Carefully remove the drum-drive assembly.

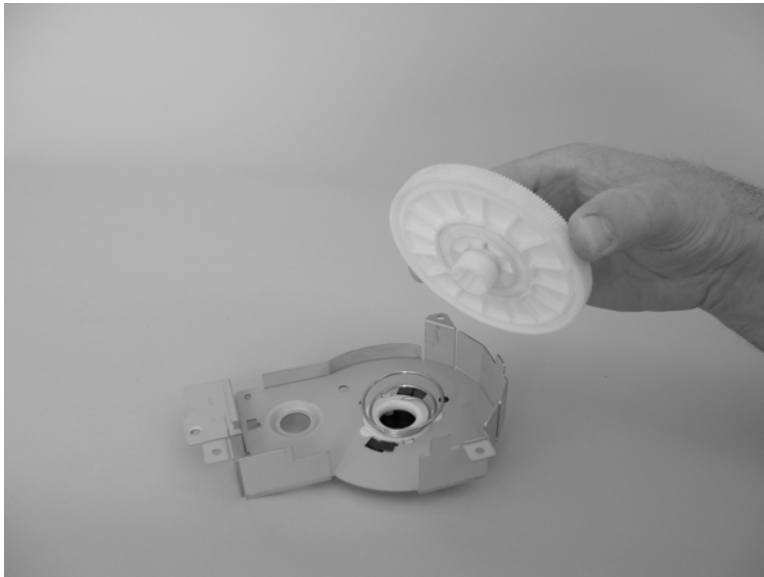
**Figure 2-103** Remove the drum-drive assembly (4 of 4)



## Reinstall the drum-drive assembly

When the drum-drive assembly is reinstalled, make sure that the spring is correctly positioned in the assembly.

**Figure 2-104** Reinstall the drum-drive assembly



## Fan FN101

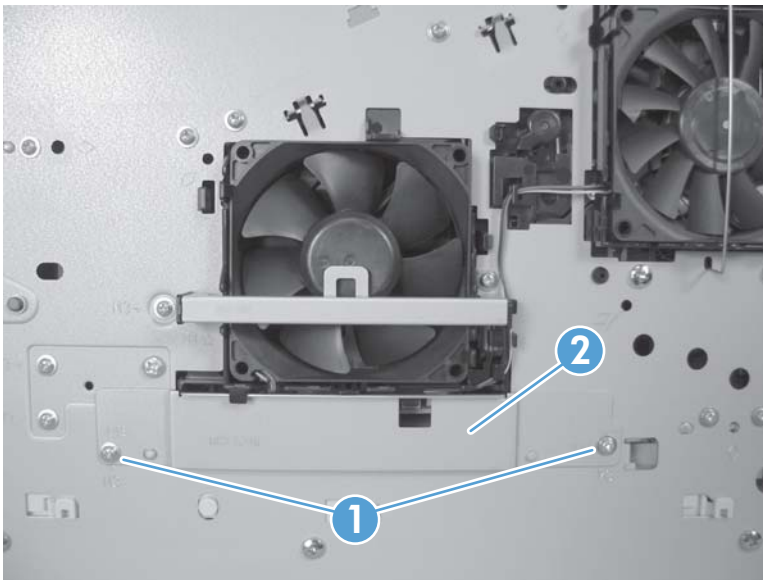
**Before proceeding, remove the following components:**

- Top accessory cover. See [Top-accessory cover on page 88](#).
- Top cover. See [Top cover on page 92](#).
- Left-side cover. See [Left-side cover on page 98](#).

### Remove fan FN101

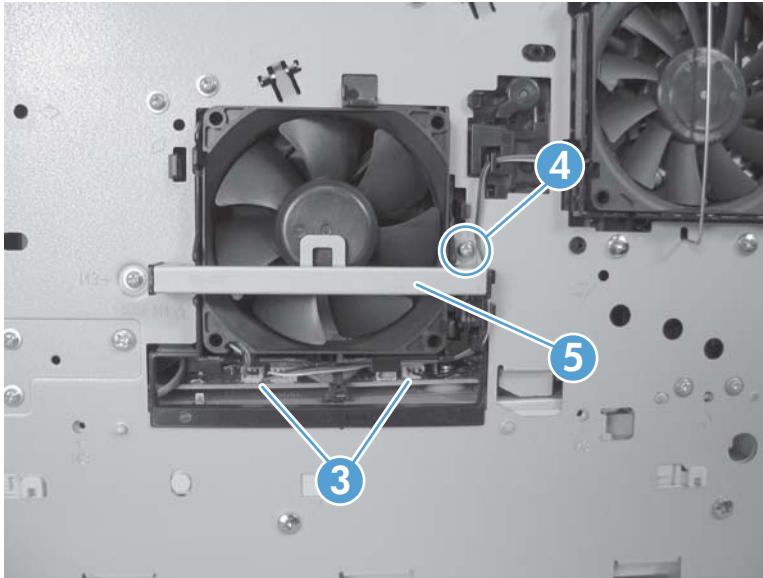
1. Remove two screws (callout 1), and then remove the sheet-metal plate (callout 2).

**Figure 2-105** Remove fan FN101 (1 of 3)



2. Disconnect two connectors (callout 3), and then remove one screw (callout 4). Slide the thermistor sensor bar (callout 5) to the right to release it, and then lift the thermistor sensor bar away from the product.

**Figure 2-106** Remove fan FN101 (2 of 3)

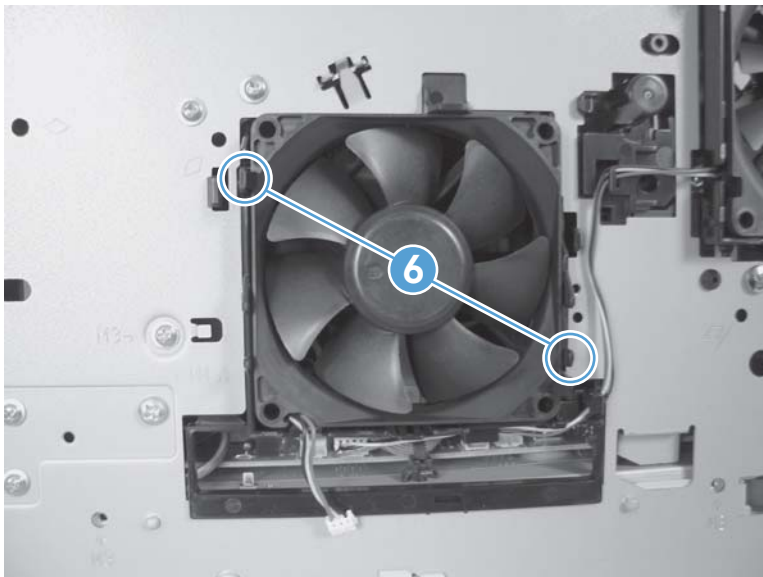


3. Release the two fan-locking tabs (callout 6), and then remove the fan.

**⚠ CAUTION:** When you reinstall the fan, do not apply too much pressure to the wire-harness connectors when they are connected to the power supply. Applying too much pressure might snap off the soldered connectors on the power supply.

**💡 Reinstallation tip** When you reinstall the fan, the air must flow into the product. Verify that the airflow arrows that are embossed on the fan body point *into* the product.

**Figure 2-107** Remove fan FN101 (3 of 3)



## Fan FN301

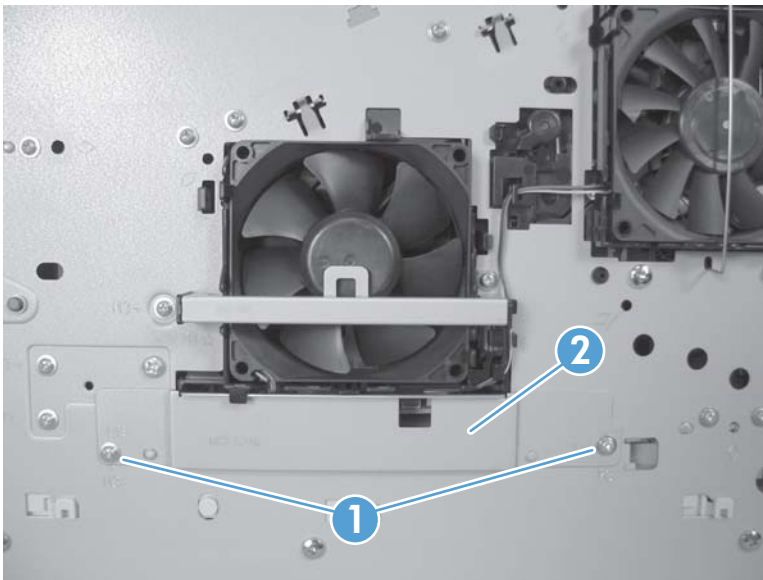
before proceeding, remove the following components:

- Top accessory cover. See [Top-accessory cover on page 88](#).
- Top cover. See [Top cover on page 92](#).
- Left-side cover. See [Left-side cover on page 98](#).

### Remove fan FN301

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

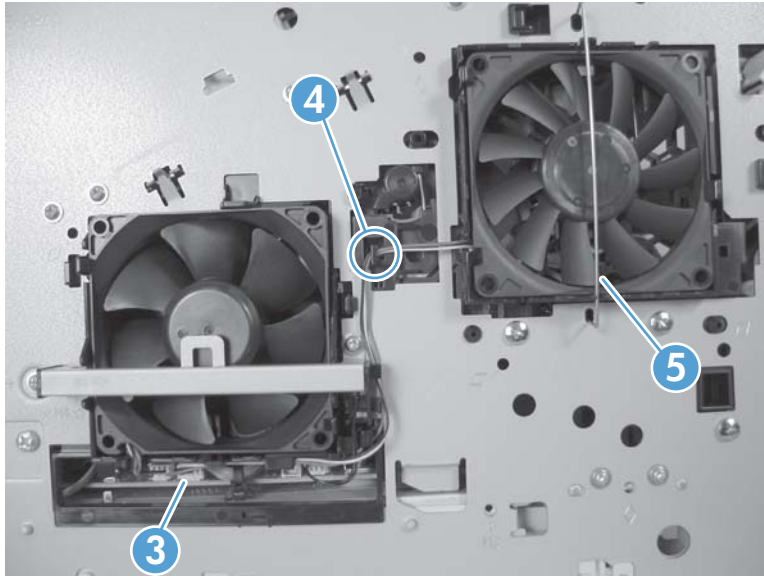
**Figure 2-108** Remove fan FN301 (1 of 3)






2. Disconnect one connector (callout 3), and then release the wire harness from the retainer (callout 4). Unhook and remove the fan clip (callout 5).

**Figure 2-109** Remove fan FN301 (2 of 3)



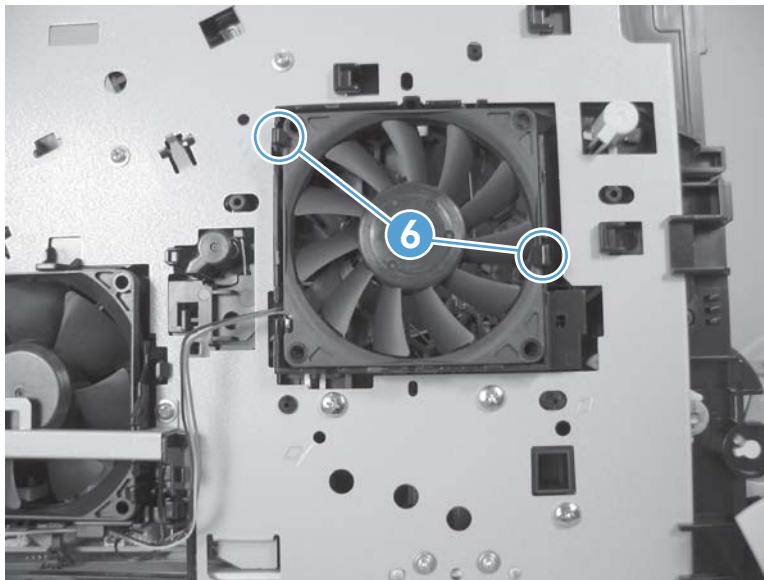
3. Release two tabs (callout 6), and then remove the fan.

---

 **TIP:** When you reinstall the fan, the air must flow into the product. Verify that the airflow arrows that are embossed on the fan body point *into* the product.

---

**Figure 2-110** Remove fan FN301 (3 of 3)



## Environmental sensor (TH3)

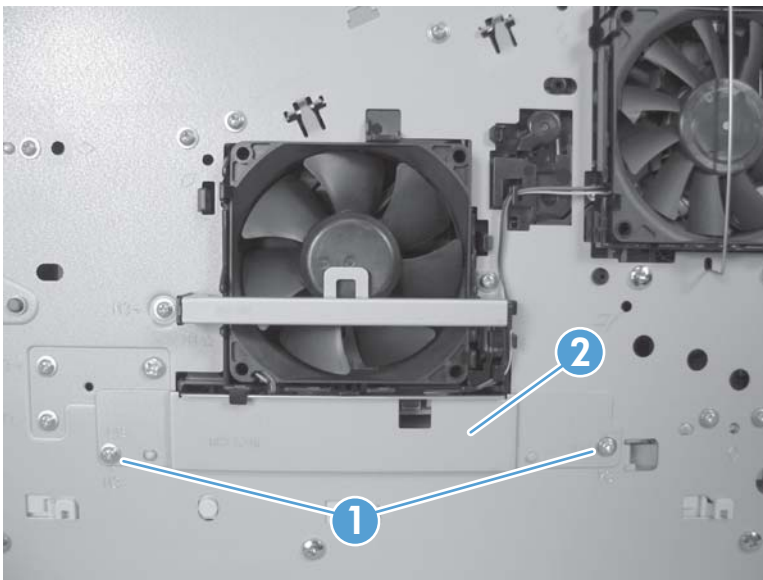
Before proceeding, remove the following components:

- Duplex accessory or cover. See [Duplex accessory or cover on page 90](#).
- Top accessory cover. See [Top-accessory cover on page 88](#).
- Tray 2 extension door. See [Tray 2 extension door on page 91](#).
- Top cover. See [Top cover on page 92](#).
- Left-side cover. See [Left-side cover on page 98](#).

### Remove the environmental sensor (TH3)

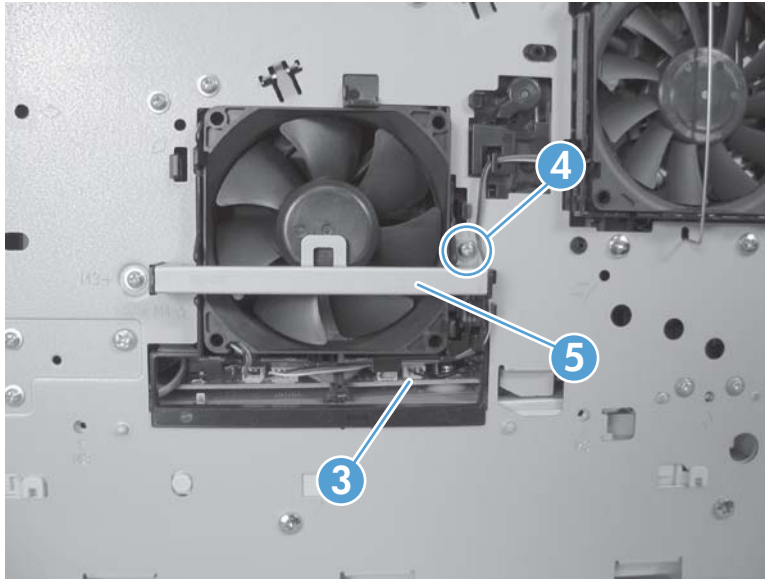
1. Remove two screws (callout 1), and then remove the fan-cover plate (callout 2).

**Figure 2-111** Remove the environmental sensor (TH3) (1 of 2)



2. Disconnect one connector (callout 3), and then remove one screw (callout 4). Slide the thermistor sensor bar (callout 5) to the right to release it, and then lift the thermistor sensor bar away from the product.

**Figure 2-112** Remove the environmental sensor (TH3) (2 of 2)



## High voltage power supply

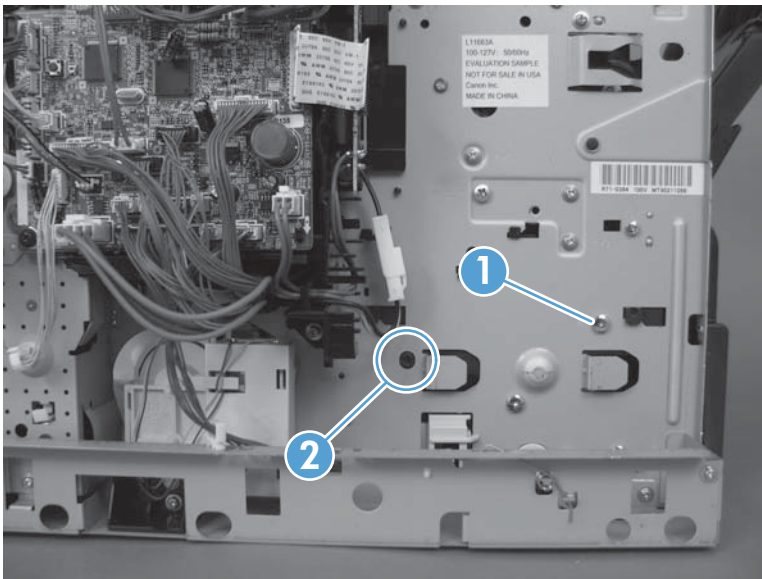
**⚠ CAUTION:**  ESD sensitive component.

- Top accessory cover. See [Top-accessory cover on page 88](#).
- Duplex accessory or cover. See [Duplex accessory or cover on page 90](#).
- Tray 2 extension door. See [Tray 2 extension door on page 91](#).
- Rear output bin. See [Rear output bin on page 87](#).
- Fuser. See [Fuser on page 70](#).
- Formatter cover and cage. See [Formatter cover and formatter cage on page 71](#).
- Top cover. See [Top cover on page 92](#).
- Right-side cover. See [Right-side cover on page 95](#).
- Left-side cover. See [Left-side cover on page 98](#).

### Remove the high-voltage power-supply assembly

1. Remove one screw (callout 1), release one tab (callout 2), and then slide the power-supply PCA guide towards the rear of the product to remove it.

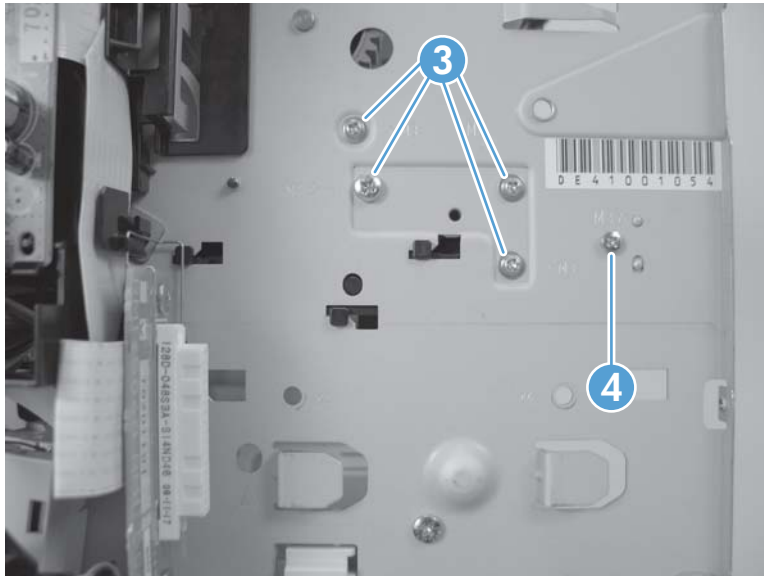
**Figure 2-113** Remove the high-voltage power-supply assembly (1 of 7)



2. Remove four screws (callout 3) and one grounding screw (callout 4).

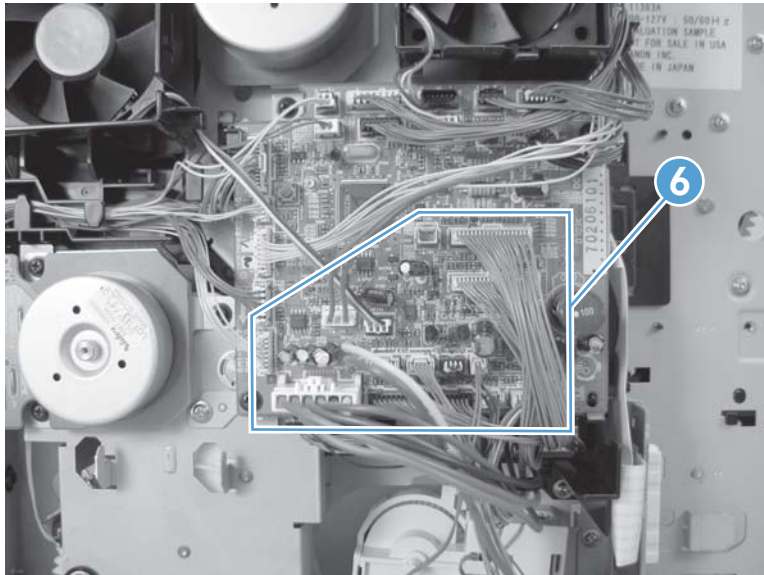
**⚠ WARNING!** When reinstalling the power supply, you must use a grounding screw to secure the AC outlet to the product chassis.

**Figure 2-114** Remove the high-voltage power-supply assembly (2 of 7)



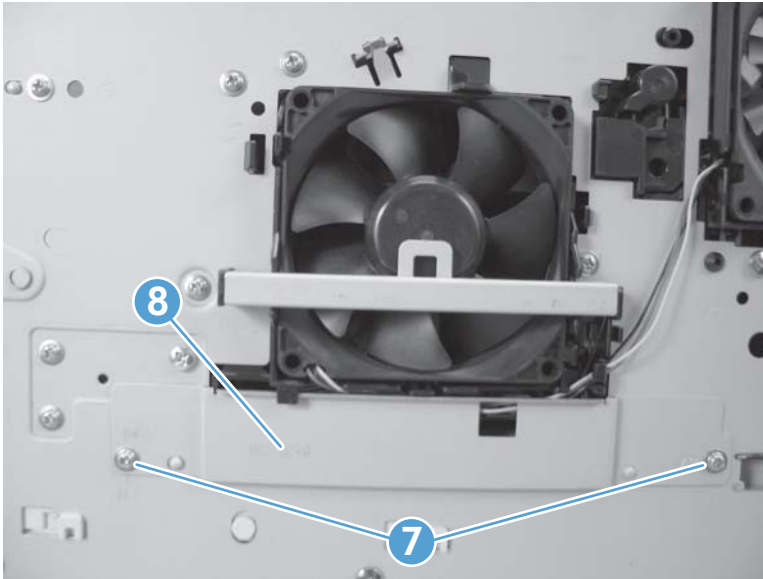
3. Disconnect five wire-harness connectors (callout 6; J82, J84, J85, J95, and J96).

**Figure 2-115** Remove the high-voltage power-supply assembly (3 of 7)



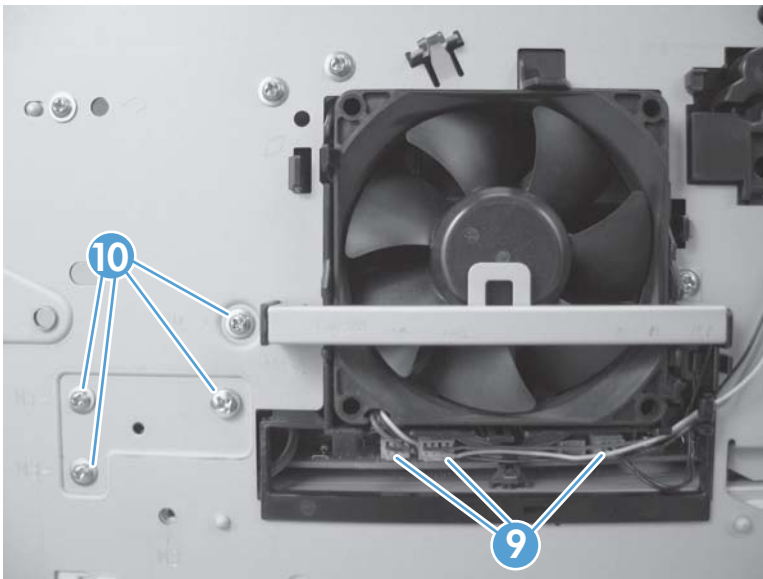
4. Remove two screws (product left side; callout 7) and then remove the fan-cover plate (callout 8).

**Figure 2-116** Remove the high-voltage power-supply assembly (4 of 7)



5. Disconnect three wire-harness connectors (product left side; callout 9) and then remove four screws (callout 10).

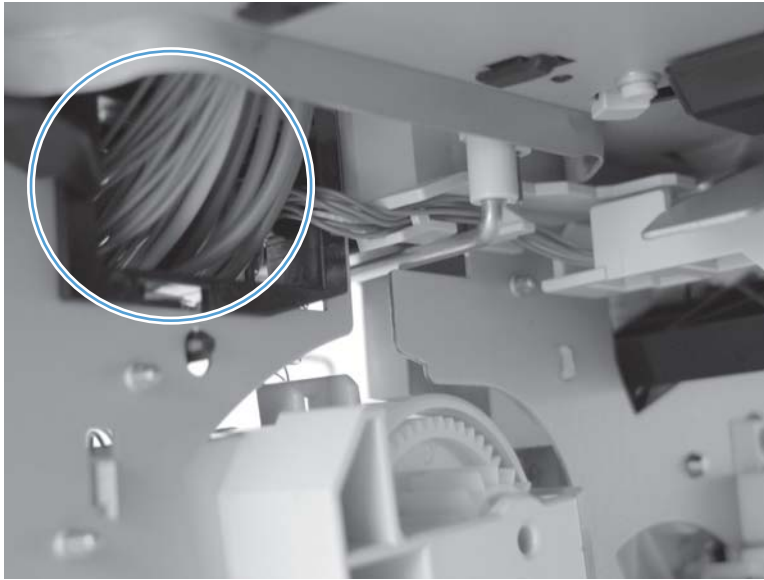
**Figure 2-117** Remove the high-voltage power-supply assembly (5 of 7)



6. Feed the cables that were disconnected earlier through the hole in the right side of the chassis under the power-supply assembly.

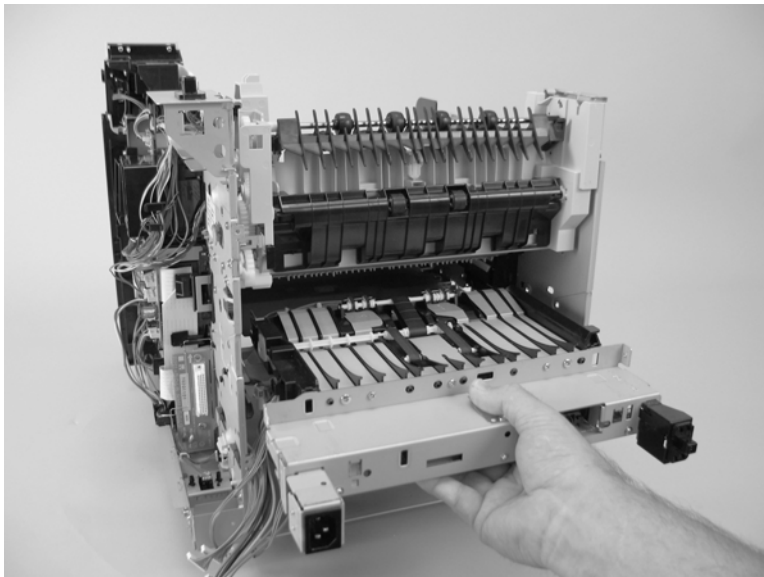
**⚠ CAUTION:** Make sure that the four rubber belts and plastic rollers on the feed-guide assembly (mounted to the top of the power supply) remain in place. These belts and rollers can easily become dislodged and you might lose them.

**Figure 2-118** Remove the high-voltage power-supply assembly (6 of 7)



7. Grasp the power-supply assembly and lift it up slightly. Pull it straight out of the chassis.

**Figure 2-119** Remove the high-voltage power-supply assembly (7 of 7)



## Feed-guide assembly

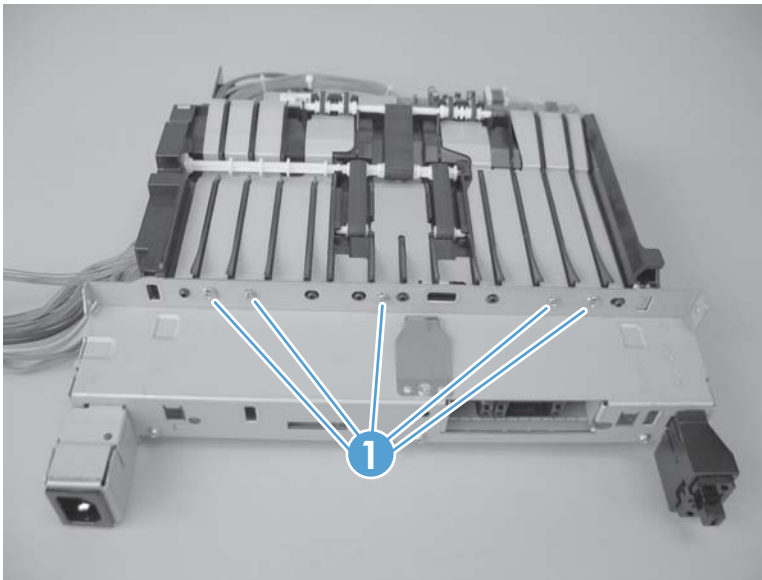
Before proceeding, remove the following components:

- Top accessory cover. See [Top-accessory cover on page 88](#).
- Duplex accessory or cover. See [Duplex accessory or cover on page 90](#).
- Tray 2 extension door. See [Tray 2 extension door on page 91](#).
- Fuser. See [Fuser on page 70](#).
- Formatter cover and cage. See [Formatter cover and formatter cage on page 71](#).
- Top cover. See [Top cover on page 92](#).
- Right-side cover. See [Right-side cover on page 95](#).
- Left-side cover. See [Left-side cover on page 98](#).
- High-voltage power supply. See [High voltage power supply on page 148](#).

### Remove the feed-guide assembly

1. Remove five screws (callout 1).

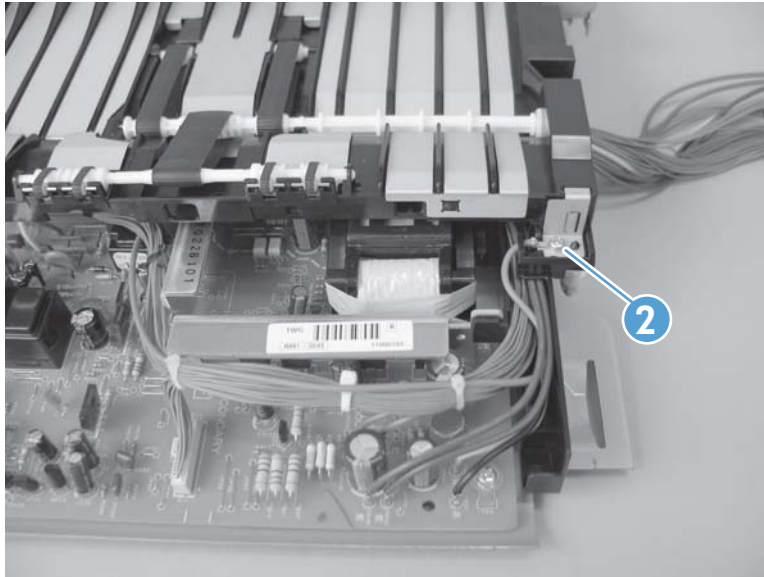
**Figure 2-120** Remove the feed-guide assembly (1 of 3)





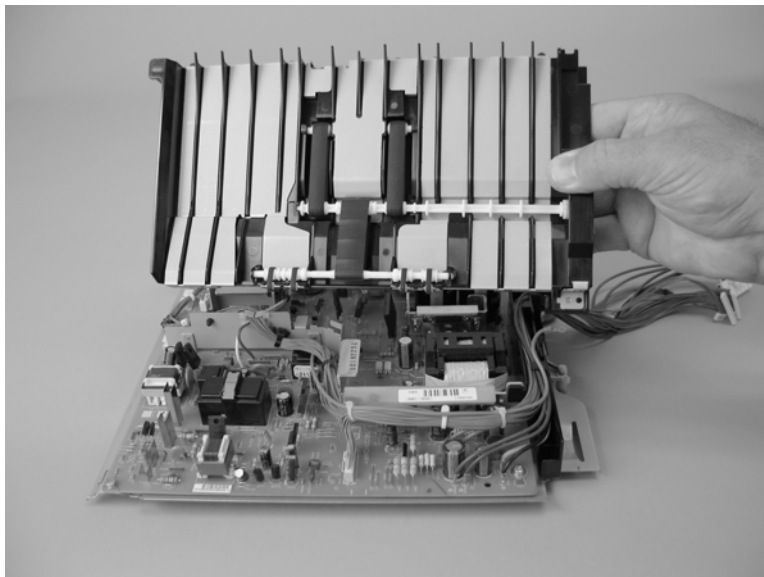
2. Remove one screw (callout 2).

**Figure 2-121** Remove the feed-guide assembly (2 of 3)



3. Remove the feed-guide assembly.

**Figure 2-122** Remove the feed-guide assembly (3 of 3)

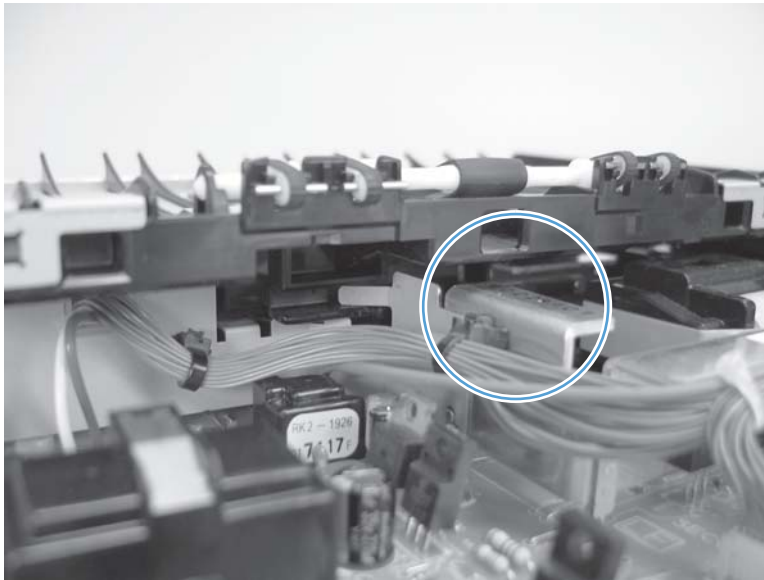


## Reinstall the feed-guide assembly

When you reinstall the feed-guide assembly, make sure that the support foot is correctly positioned on the power supply.

**⚠ CAUTION:** Make sure that the four rubber belts and plastic rollers on the feed-guide assembly (mounted to the top of the power supply) remain in place. These belts and rollers can easily become dislodged and you might lose them.

**Figure 2-123** Reinstall the feed-guide assembly



## Tray 1 paper-pickup assembly

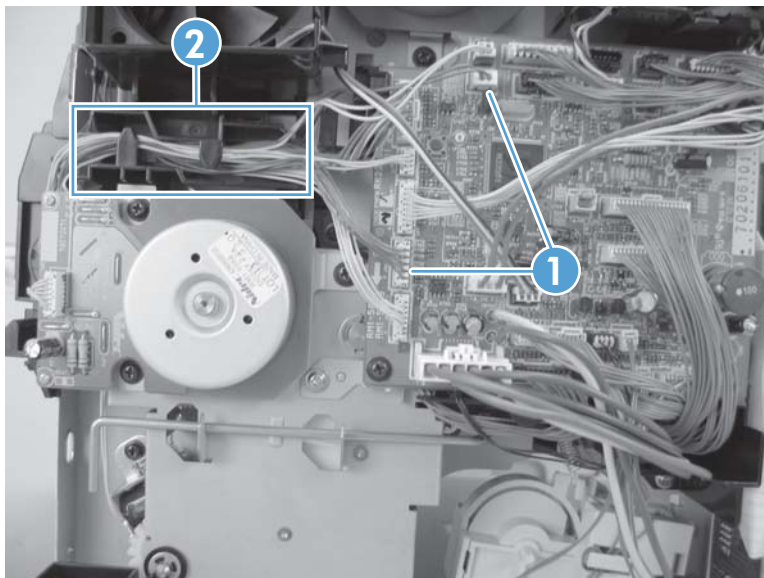
Before proceeding, remove the following components:

- Top accessory cover. See [Top-accessory cover on page 88](#).
- Duplex accessory or cover. See [Duplex accessory or cover on page 90](#).
- Tray 2 extension door. See [Tray 2 extension door on page 91](#).
- Formatter cover and cage. See [Formatter cover and formatter cage on page 71](#).
- Top cover. See [Top cover on page 92](#).
- Right-side cover. See [Right-side cover on page 95](#).
- Left-side cover. See [Left-side cover on page 98](#).
- Right front cover. See [Right-front cover on page 100](#).
- Front cover. See [Front cover on page 105](#).


### Remove the Tray 1 pickup assembly

1. Disconnect two wire-harness connectors (callout 1; J71, and J81), and then release the wire harnesses from the guide (callout 2).

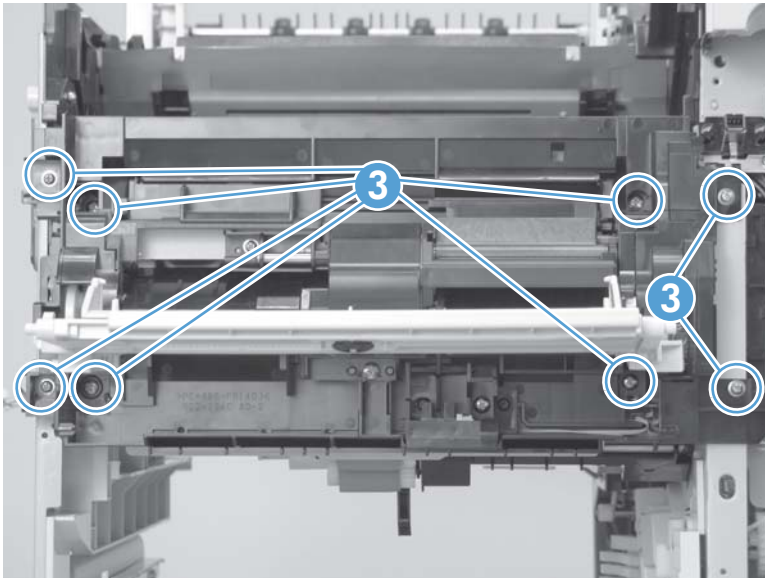
**Figure 2-124** Remove the Tray 1 paper-pickup assembly (1 of 3)



2. Remove eight screws (callout 3).

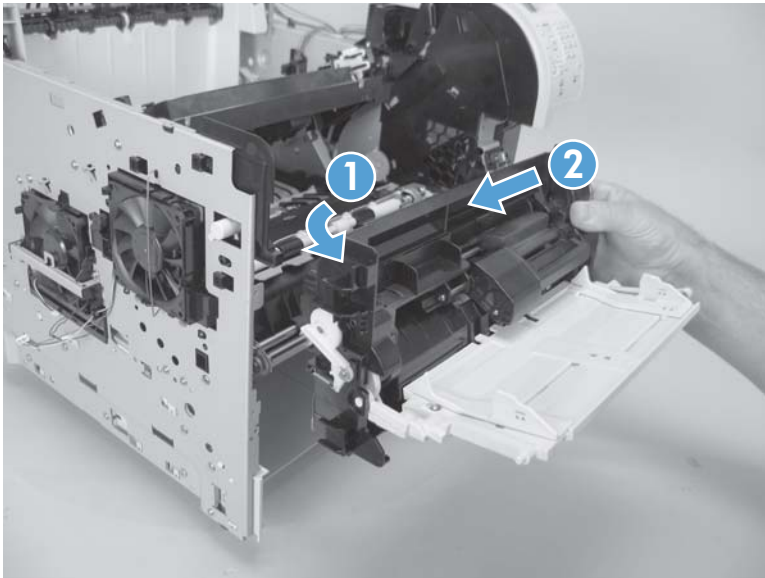
 **NOTE:** The four outside screws on the assembly are a different type than the others. Make sure that you replace the screws in the same position that they are removed from.

**Figure 2-125** Remove the Tray 1 paper-pickup assembly (2 of 3)



3. Rotate the left side of the assembly away from the chassis, and then slide the assembly to the left to remove it.

**Figure 2-126** Remove the Tray 1 pickup assembly (3 of 3)



## Feed-roller assembly

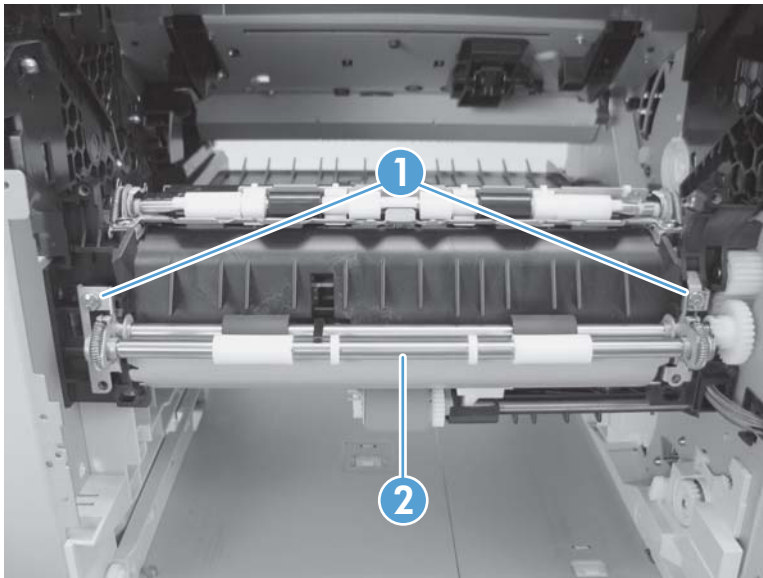
### Before proceeding, remove the following components:

- Top accessory cover. See [Top-accessory cover on page 88](#).
- Duplex accessory or cover. See [Duplex accessory or cover on page 90](#).
- Tray 2 extension door. See [Tray 2 extension door on page 91](#).
- Formatter cover and cage. See [Formatter cover and formatter cage on page 71](#).
- Top cover. See [Top cover on page 92](#).
- Right-side cover. See [Right-side cover on page 95](#).
- Left-side cover. See [Left-side cover on page 98](#).
- Right front cover. See [Right-front cover on page 100](#).
- Front cover. See [Front cover on page 105](#).
- Tray 1 paper-pickup assembly. See [Tray 1 paper-pickup assembly on page 155](#).

### Remove the feed-roller assembly

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

**Figure 2-127** Remove the feed-roller assembly



## Laser/scanner assembly

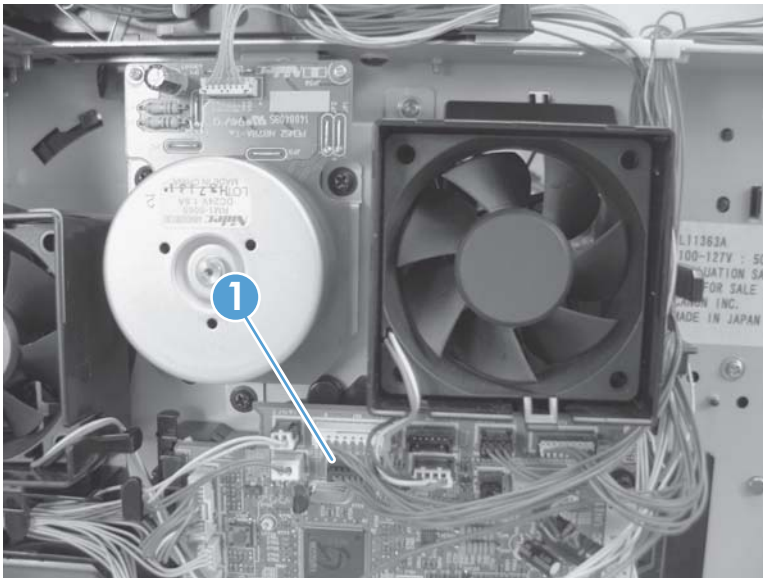
Before proceeding, remove the following components:

- Top accessory cover. See [Top-accessory cover on page 88](#).
- Duplex accessory or cover. See [Duplex accessory or cover on page 90](#).
- Formatter cover and cage. See [Formatter cover and formatter cage on page 71](#)
- Top cover. See [Top cover on page 92](#).
- Right-side cover. See [Right-side cover on page 95](#).

### Remove the laser/scanner assembly

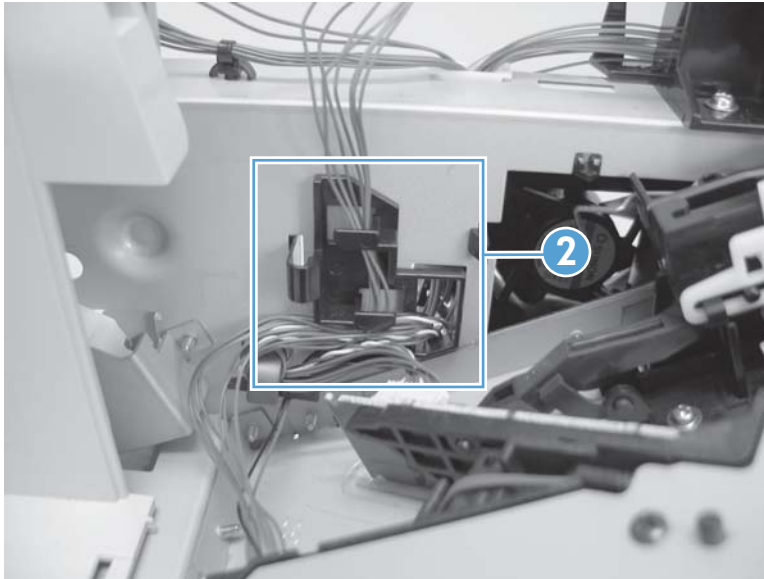
1. Unplug the laser/scanner wire-harness connector from the DC controller PCA (callout 1; J86).

**Figure 2-128** Remove the laser/scanner assembly (1 of 4)



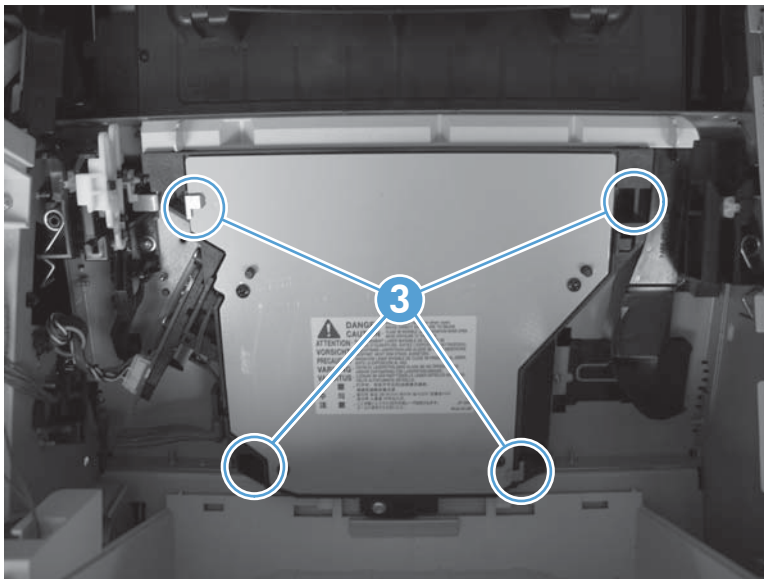
2. Remove the laser/scanner wire-harness from the wire guide (callout 2).

**Figure 2-129** Remove the laser/scanner assembly (2 of 4)



3. Remove four screws (callout 3) and the grounding clips.

**Figure 2-130** Remove the laser/scanner assembly (3 of 4)



4. Disconnect the laser/scanner wire-harness (callout 4) from the laser/scanner PCA.

**Figure 2-131** Remove the laser/scanner assembly (4 of 4)



5. Carefully lift the laser/scanner up and out of the product. Make sure that the laser/scanner assembly does not catch or snag the wires along the bottom of the assembly when you remove the assembly.

---

**CAUTION:** When you reinstall the laser/scanner assembly, make sure that the wire-harnesses are correctly routed through the cable guides. If the wire-harnesses are not correctly routed, they can be damaged when the top cover is installed.

**NOTE:** Make sure that the air duct is correctly positioned and that the laser/scanner shutter properly functions.

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## Paper-delivery assembly

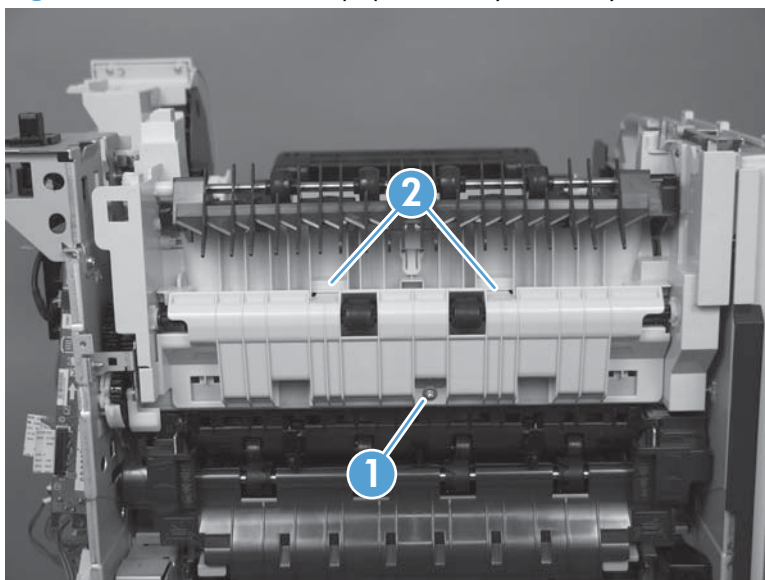
### Before proceeding, remove the following components:

- Top accessory cover. See [Top-accessory cover on page 88](#).
- Rear output bin. See [Rear output bin on page 87](#).
- Formatter cover and cage. See [Formatter cover and formatter cage on page 71](#).
- Top cover. See [Top cover on page 92](#).
- Right-side cover. See [Right-side cover on page 95](#).
- Rear upper cover. See [Rear-upper cover on page 103](#).

### Remove the paper-delivery assembly

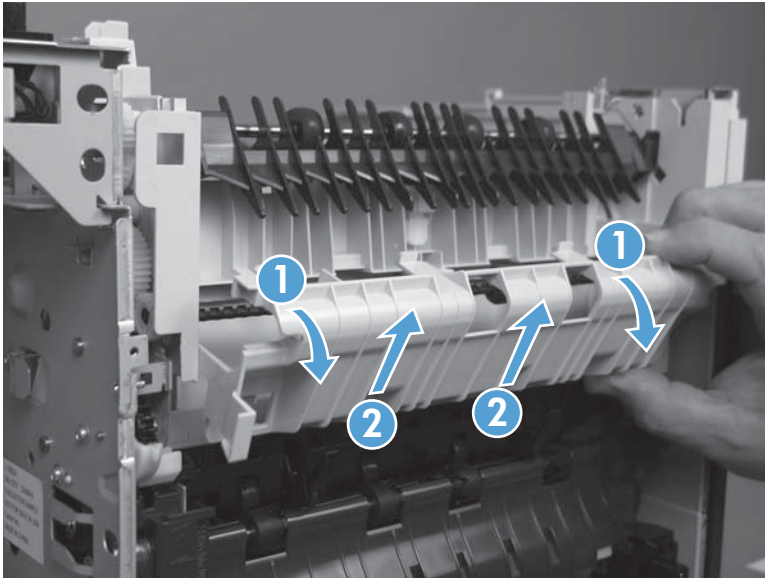
1. Remove one screw (callout 1), and then release two tabs (callout 2).

**Figure 2-132** Remove the paper-delivery assembly (1 of 4)



2. Rotate the top of the guide away from the product, push up on the guide to release it, and then remove the guide.

**Figure 2-133** Remove the paper-delivery assembly (2 of 4)



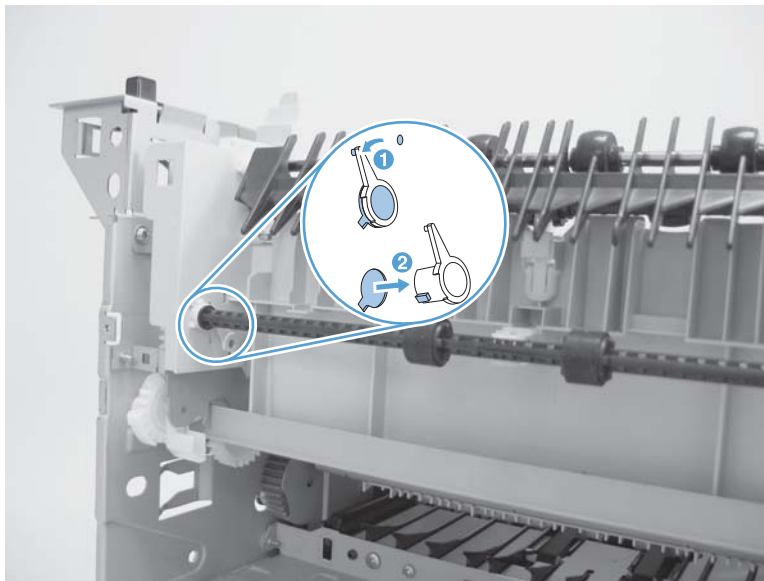
3. Use a small flatblade screwdriver to release the locking pin on the shaft lock, and then rotate the lock counter clockwise until the inner retaining tab (gear side) aligns with the hole in the paper-delivery assembly frame.

Slide the shaft lock to the right and remove it to release the gear shaft from the paper-delivery assembly.

**⚠ CAUTION:** Do not break the shaft lock. A replacement is not provided with a new paper-delivery assembly.

**💡 TIP:** Snap the shaft lock back into place on the assembly so that you will not lose it. Remove the shaft lock when you reinstall the output-delivery assembly. When the paper-delivery assembly is installed, verify that the locking pin on the shaft lock is fully seated in the hole on the paper-delivery assembly.

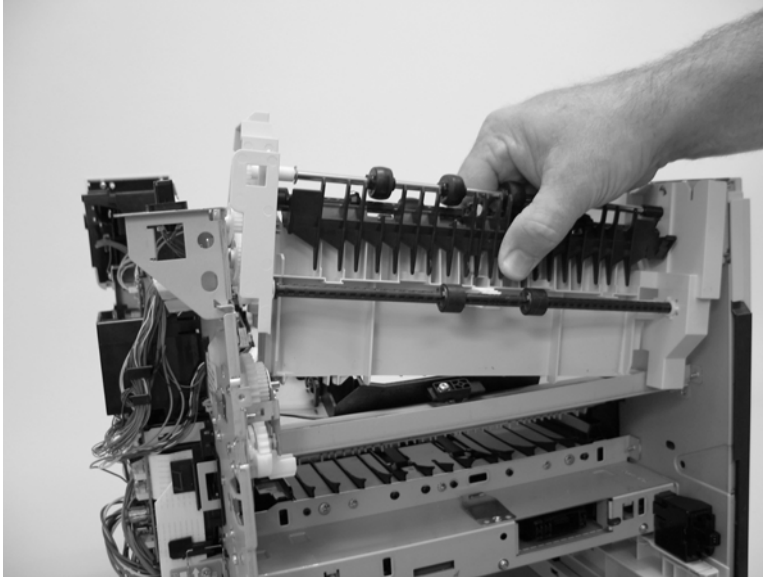
**Figure 2-134** Remove the paper-delivery assembly (3 of 4)



4. Lift up the gear end of the output-delivery assembly slightly and slide the assembly toward the formatter assembly to remove it.

**⚠ CAUTION:** The rear face-down output-bin-sensor cable is routed through a notch on the paper-delivery assembly at the gear end of the assembly. When you remove the assembly, carefully remove the cable from the notch to avoid damage to the cable. See [Figure 2-136 Reinstall the paper-delivery assembly on page 164](#).

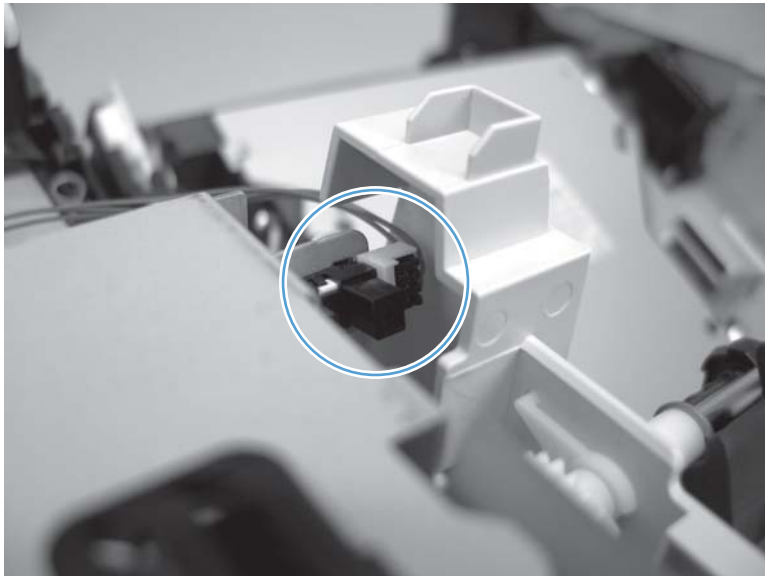
**Figure 2-135** Remove the paper-delivery assembly (4 of 4)




## Reinstall the paper-delivery assembly

Make sure that the output-bin sensor is not dislodged when the paper-deliver assembly is reinstalled.

**Figure 2-136** Reinstall the paper-delivery assembly



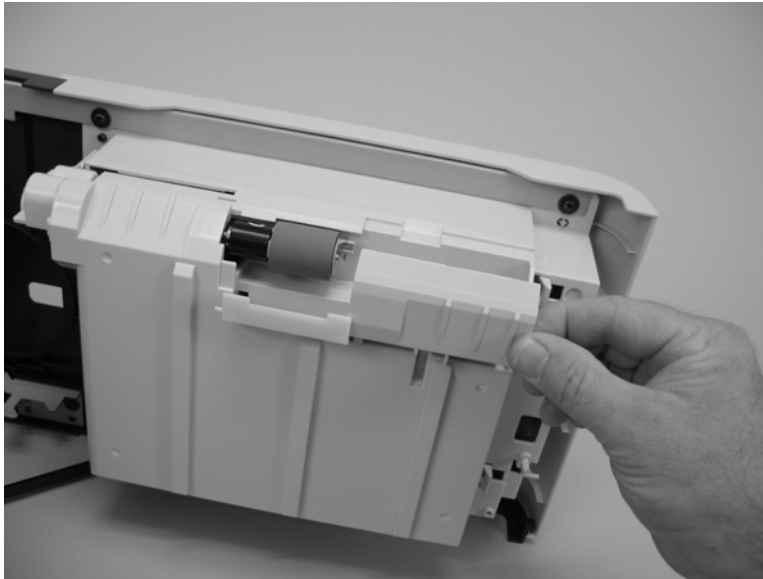
## 1,500-sheet paper deck (PD)

 **NOTE:** The removal steps for the pickup and feed rollers in the 1,500-sheet paper deck are the same as the removing the Tray 2 rollers. See [Figure 2-7 Remove the Tray 2 separation, pickup, and feed rollers \(3 of 4\) on page 67](#) and [Figure 2-8 Remove the Tray 2 separation, pickup, and feed rollers \(4 of 4\) on page 68](#) in [Tray 2 separation, pickup, and feed rollers on page 66](#).


### Separation roller (PD)

1. Open the 1,500-sheet paper deck door, and then open the separation-roller cover.

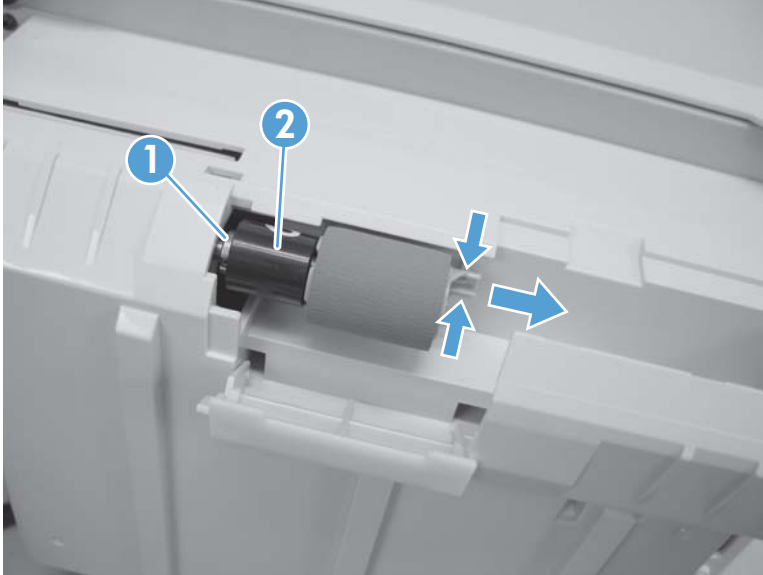
**Figure 2-137** Remove the separation roller (PD; 1 of 2)



2. Pinch the blue latch that is on the side of the feed roller and slide the roller off of the shaft.

 **Reinstallation tip** When this roller is reinstalled, it must lock into place. Verify that the roller is seated on the locking bars that are located on the round black spacer and that the spacer is seated on the shaft-locking pin (callout 1 and callout 2).

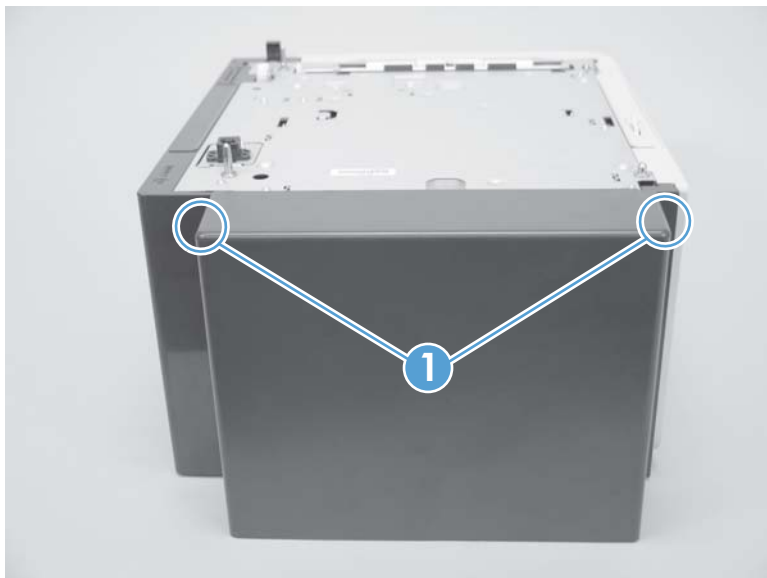
**Figure 2-138** Remove separation roller (PD; 2 of 2)



## Rear cover (PD)

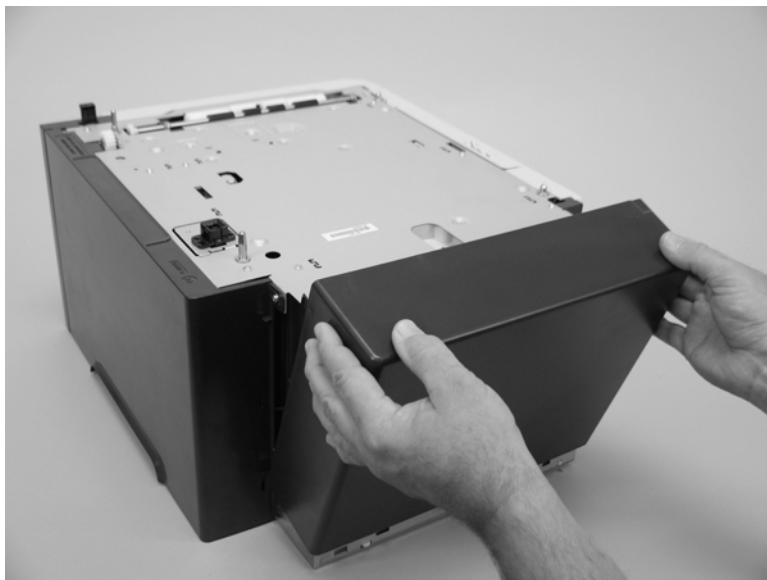
1. Release two tabs (callout 1).

**Figure 2-139** Remove the rear cover (PD; 1 of 2)



2. Rotate the top of the cover away from the feeder, and then lift up on the cover to release it. Remove the cover.

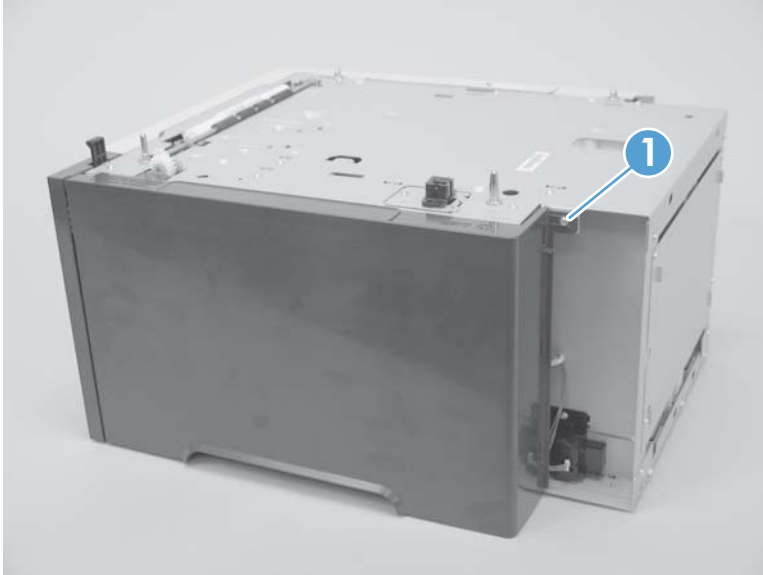
**Figure 2-140** Remove the rear cover (PD; 2 of 2)



## Right-side cover (PD)

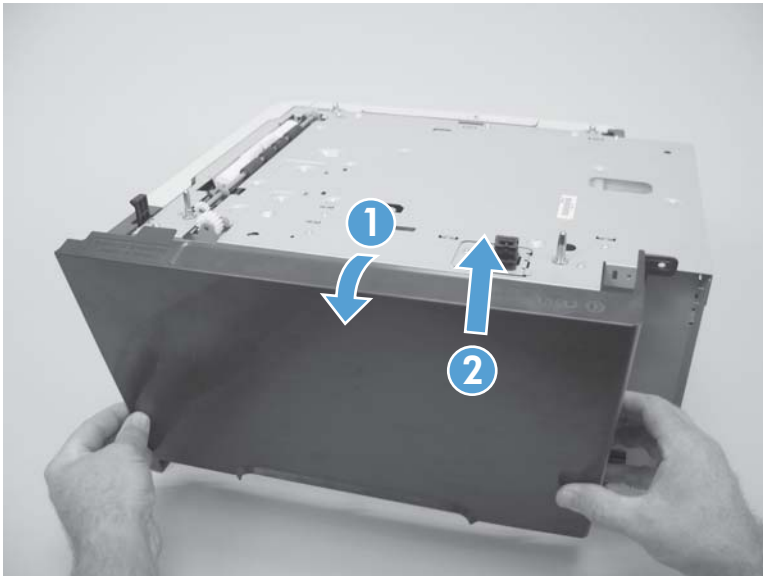
1. Remove the 1,500-sheet paper deck rear cover. See [Rear cover \(PD\) on page 167](#).
2. Remove one screw (callout 1).

**Figure 2-141** Remove the right-side cover (PD; 1 of 2)



3. Rotate the top of the cover away from the chassis and then lift it up and remove it.

**Figure 2-142** Remove the right-side cover (PD; 2 of 2)





## 1,500-sheet paper deck left-side cover

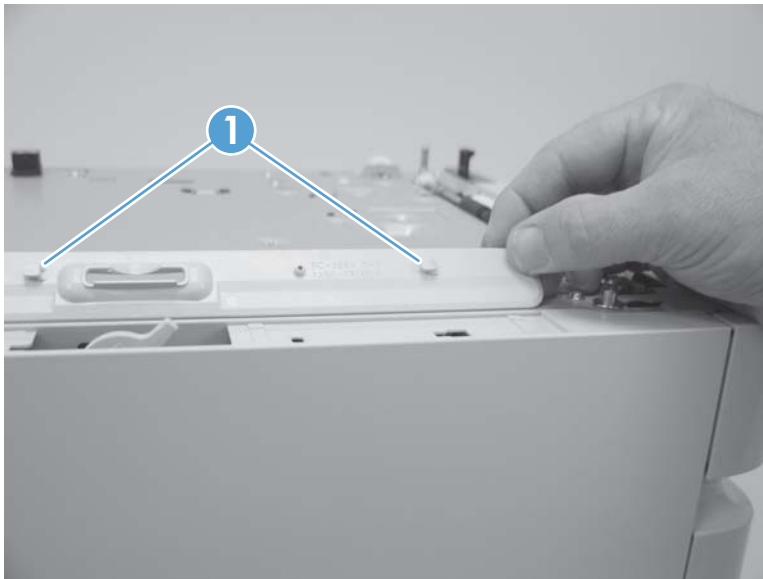
Before proceeding, remove the following components;

- 1,500-sheet paper deck rear cover. See [Rear cover \(PD\) on page 167](#).

### Remove the left-side cover

1. Before removing the lock-mechanism cover, take note of the location of the retainer tabs (callout 1). The retaining tabs on this cover can be easily broken.

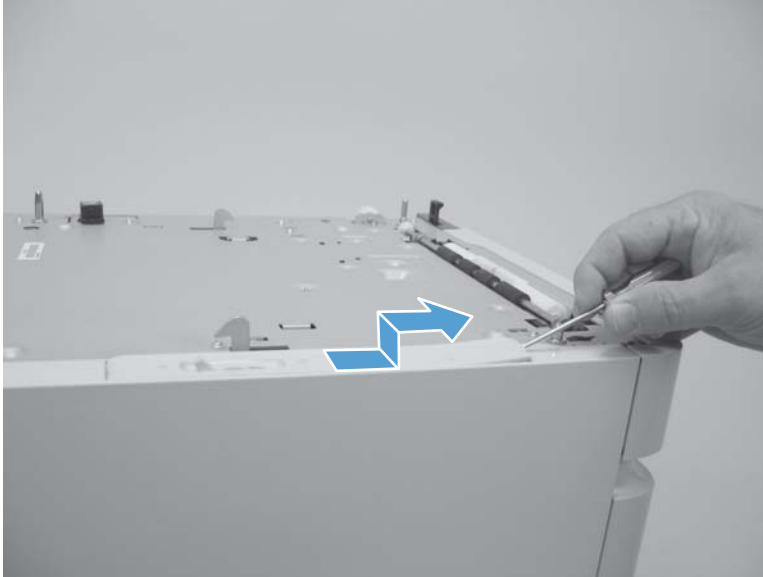
**Figure 2-143** Remove the left-side cover (PD; 1 of 5)



2. *Slightly* pry up on the lock-mechanism cover, and then slide it toward the front of the paper deck to release it. Remove the cover.

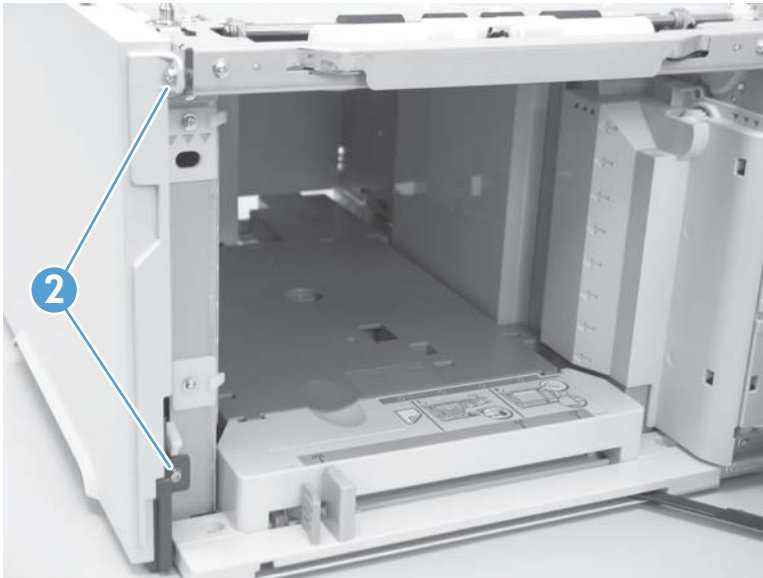
**⚠ CAUTION:** Do not pry this cover up more than is necessary for clearance when sliding it forward. The retaining tabs on this cover can be easily broken.

**Figure 2-144** Remove the left-side cover (PD; 2 of 5)



3. Open the 1,500-sheet paper deck door, and then remove two screws (callout 2).

**Figure 2-145** Remove the left-side cover (PD; 3 of 5)



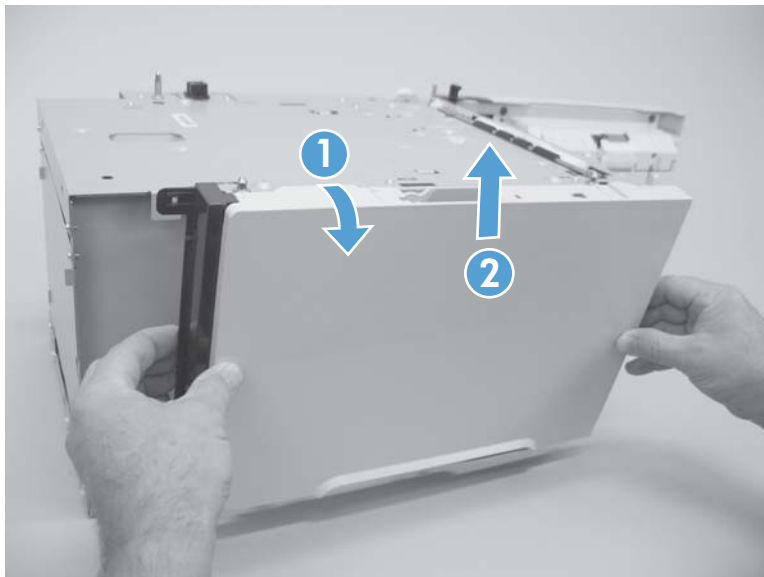
4. Remove one screw (callout 3).

**Figure 2-146** Remove the left-side cover (PD; 4 of 5)



5. Rotate the top of the cover away from the chassis and then lift it up and remove it.

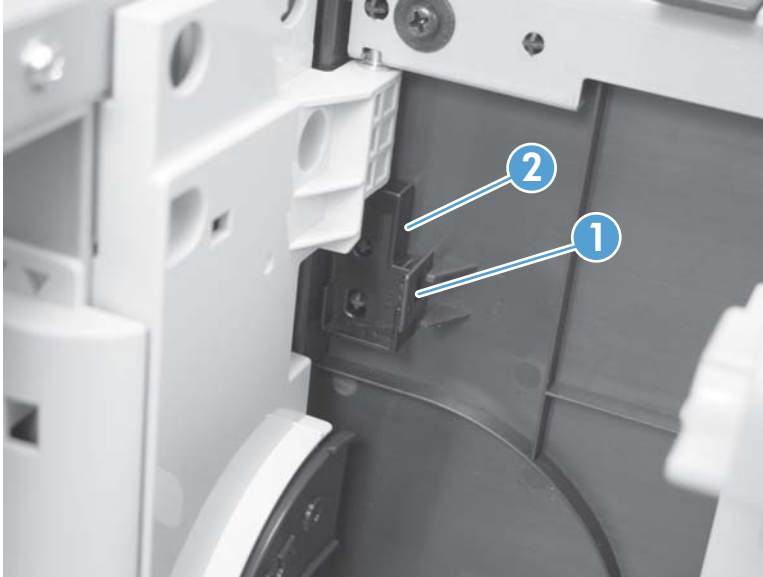
**Figure 2-147** Remove the left-side cover (PD; 5 of 5)



## Door (PD)

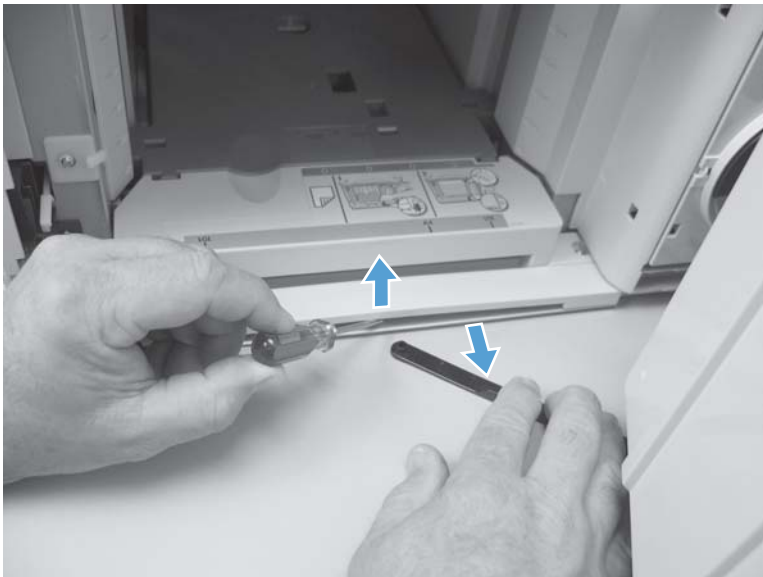
1. Open the 1,500-sheet paper deck door.
2. Release one tab (callout 1), and then remove the door-stop plate (callout 2).

**Figure 2-148** Remove the door (PD; 1 of 3)



3. With the door open about halfway, gently pry open the door slide-bar slot and disengage the door slide-bar from the feeder.

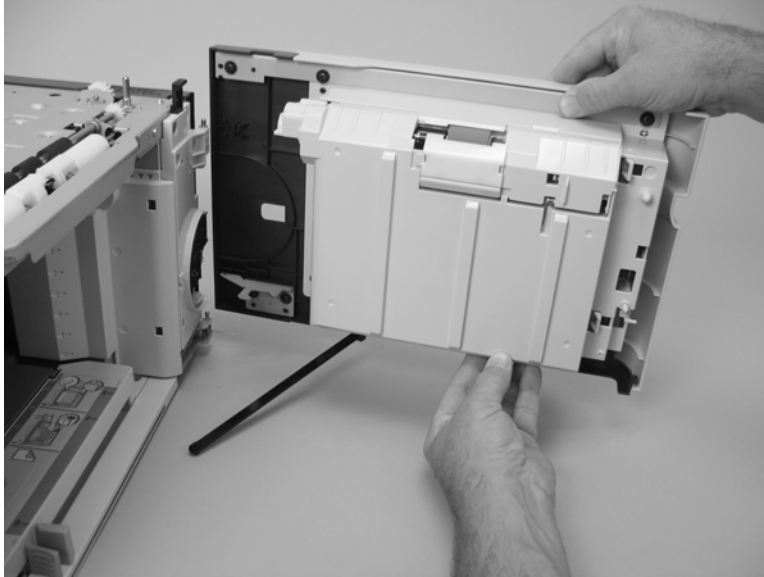
**Figure 2-149** Remove the door (PD; 2 of 3)



4. Lift the door straight up and off of the door hinge pins to remove it.

**⚠ CAUTION:** The door hinge pins are not captive. If the feeder must be turned on its side or placed upside down, remove the hinge pins and the door spring (on the lower hinge pin). Place the pins and the spring where you will not lose them.

**Figure 2-150** Remove the door (PD; 3 of 3)



## Motor (PD)

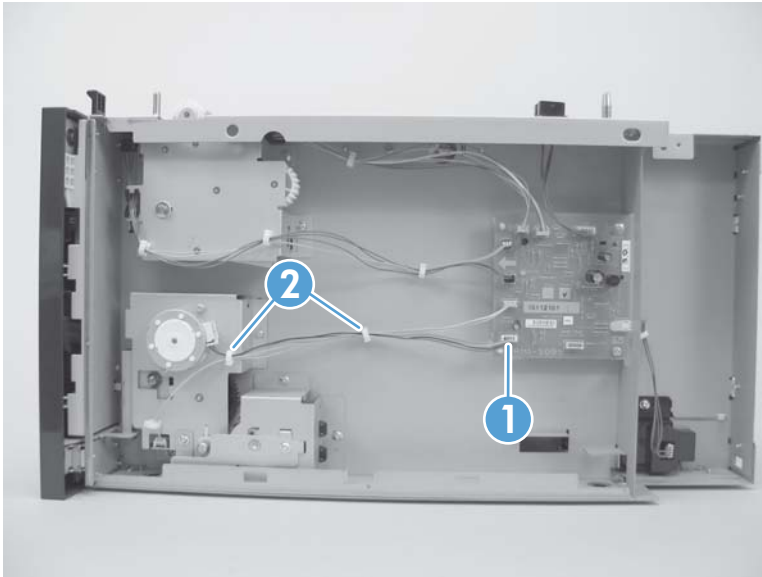
Before proceeding, remove the following components:

- 1,500-sheet feeder rear cover. See [Rear cover \(PD\) on page 167](#).
- 1,500-sheet feeder right-side cover. See [Right-side cover \(PD\) on page 168](#).

### Remove the Motor (PD)

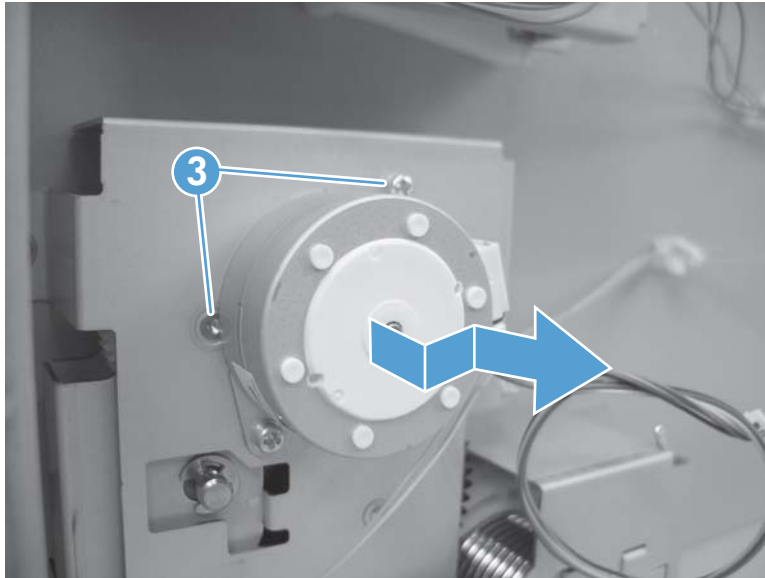
1. Disconnect one wire-harness connector (callout 1; J1703), and then release the wire harness from two retainers (callout 2).

**Figure 2-151** Remove the motor (PD; 1 of 2)



2. Remove two screws (callout 3). Slightly separate the motor from the feeder chassis, and then slide the motor toward the back of the paper deck to remove the motor.

**Figure 2-152** Remove the motor (PD; 2 of 2)



## Driver PCA (PD)

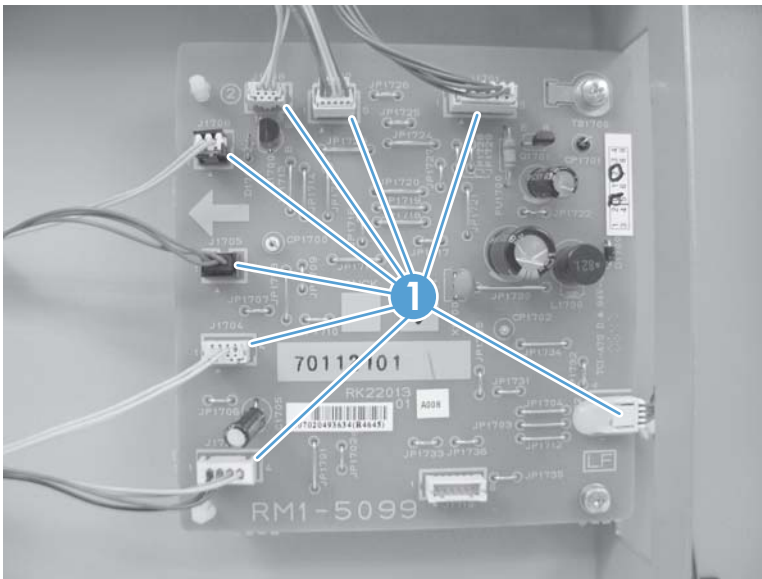
Before proceeding, remove the following components:

- 1,500-sheet feeder rear cover. See [Rear cover \(PD\) on page 167](#).
- 1,500-sheet feeder right-side cover. See [Right-side cover \(PD\) on page 168](#).

### Remove the Driver PCA (PD)

1. Disconnect eight wire-harness connectors (callout 1).

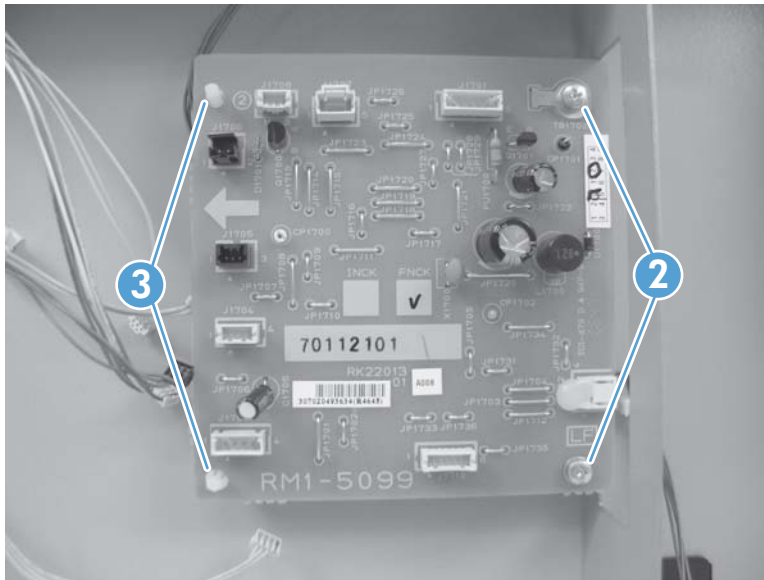
**Figure 2-153** Remove the driver PCA (PD; 1 of 2)





2. Remove two screws (callout 2). Use needle-nose pliers to squeeze the top of one of the nylon PCA standoff (callout 3). Gently pop the PCA off of the tab. Repeat the procedure on the remaining standoff. Remove the PCA.

**Figure 2-154** Remove the driver PCA (PD; 2 of 2)



## Lift-drive assembly (PD)

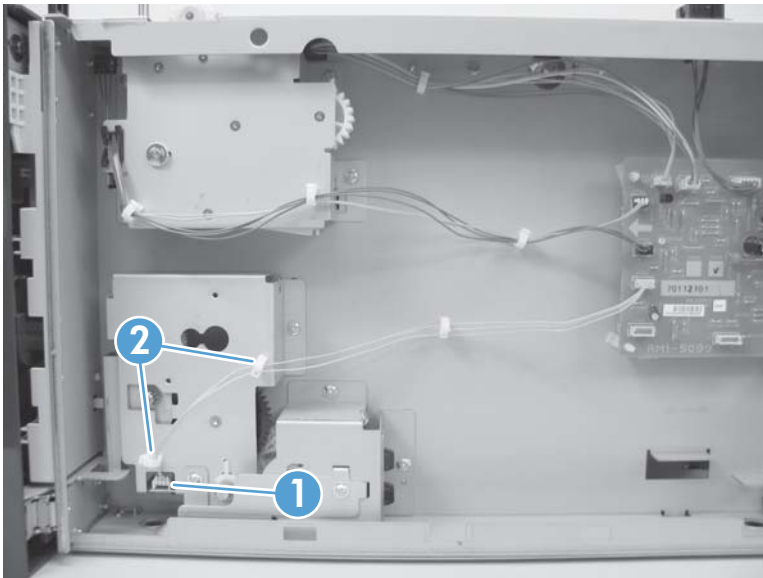
Before proceeding, remove the following components:

- 1,500-sheet feeder rear cover. See [Rear cover \(PD\) on page 167](#).
- 1,500-sheet feeder right-side cover. See [Right-side cover \(PD\) on page 168](#).
- 1,500-sheet feeder motor. See [Motor \(PD\) on page 174](#).

### Remove the Lift-drive assembly (PD)

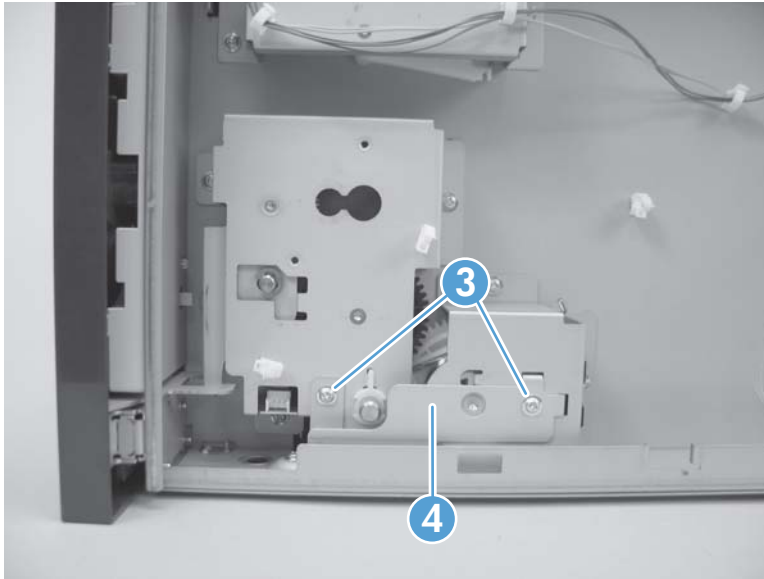
1. Disconnect one wire-harness connector (callout 1), and then release the wire harnesses from two retainers (callout 2).

**Figure 2-155** Remove the lift-drive assembly (PD; 1 of 3)



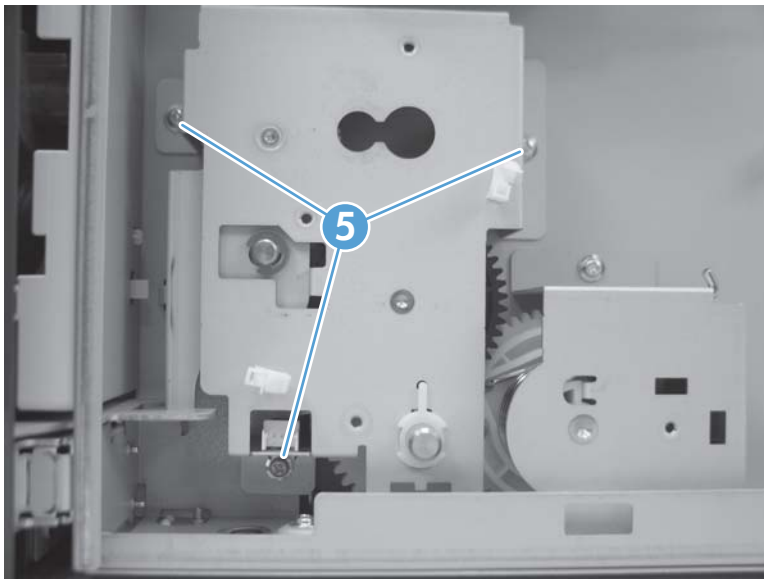
2. Remove two screws (callout 3) and then remove the sheet-metal plate (callout 4).

**Figure 2-156** Remove the lift-drive assembly (PD; 2 of 3)



3. Remove three screws (callout 5), and then carefully remove the lift-drive assembly.

**Figure 2-157** Remove the lift-drive assembly (PD; 3 of 3)





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# 3 Solve problems

To use the information in this chapter, you should have a basic understanding of the HP LaserJet printing process. Explanations of each mechanical assembly, the printer systems, and the basic theory of operation are contained in the English-language service manual. Do not perform any of these troubleshooting processes unless you understand the function of each product component.

- [Solve problems checklist](#)
- [Menu map](#)
- [Preboot menu options](#)
- [Current settings pages](#)
- [Troubleshooting process](#)
- [Tools for troubleshooting](#)
- [Clear jams](#)
- [Paper does not feed automatically](#)
- [Use manual print modes](#)
- [Solve image-quality problems](#)
- [Clean the product](#)
- [Solve performance problems](#)
- [Solve connectivity problems](#)
- [Service mode functions](#)
- [Product updates](#)

# Solve problems 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 that the control-panel display shows one of the following messages: **Ready**, **Paused...**, or **Sleep Mode**. If no lights are illuminated or the display does not say **Ready**, **Paused...**, or **Sleep Mode**, use the Power-on checks section in the product service manual to troubleshoot the problem.
2. Check the cables.
  - 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.
3. Ensure that the print media that you are using meets specifications.
4. Print a configuration page. 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 the jams section.
5. If the configuration page prints, check the following items.
  - a. If the page prints correctly, the product hardware is working. The problem is with the computer 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, see step 7. If no, check the following items:
  - Print the fuser test page.
  - Solve the print-quality problems, and then see 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 the **HP LaserJet Enterprise 600 M601**, **HP LaserJet Enterprise 600 M602**, or **HP LaserJet Enterprise 600 M603** item depending on the product model installed.


**-or-**

**Mac OS X:** Open **Printer Setup Utility**, and then double-click the line for the **HP LaserJet Enterprise 600 M601**, **HP LaserJet Enterprise 600 M602**, or **HP LaserJet Enterprise 600 M603** item depending on the product model installed.

- 8.** Verify that you have installed the HP LaserJet Enterprise 600 M601, M602, and M603 Series Printer printer driver. Check the program to make sure that you are using the HP LaserJet Enterprise 600 M601, M602, and M603 Series Printer printer driver.
- 9.** Print a short document from a different program that has worked in the past. If this solution works, 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, and select the new connection type that you are using.

# Menu map

## Print the menu maps

1. At the control panel, press the Home  button.
2. Open the following menus:
  - **Administration**
  - **Reports**
  - **Configuration/Status Pages**
3. Scroll to the **Administration Menu Map** item, and then press the **OK** button..
4. Scroll up to the **Print** option, and then press the **OK** button.



# Preboot menu options

If an error occurs while the product is booting, an error message appears on the control-panel display. The user can access the Preboot menus. The Error menu item will not be seen if an error did not occur.

## Access the Preboot menu

1. Turn the product on.
2. Press the **Stop** ⊗ button when the **Ready**, **Data**, and **Attention** LEDs are illuminated solid.
3. Use the **Down** arrow ▼ button to navigate the **Preboot** menu options.
4. Press the **OK** button to select a menu item.

## Cold reset using the Preboot menu

1. Turn the product on.
2. Press the **Stop** ⊗ button when the **Ready**, **Data**, and **Attention** LEDs are illuminated solid.
3. Use the **Down** arrow ▼ button to highlight **Administrator**, and then press the **OK** button.
4. Scroll to the **Startup Options** item, and then press the **OK** button.
5. Scroll to the **Cold Reset** item, and then press the **OK** button.
6. Press the **Back** button twice to highlight **Continue**, and then press the **OK** button.

 **NOTE:** The product will initialize.

**Table 3-1 Preboot menu options (1 of 5)**

Menu option	First level	Second level	Third level	Description
<b>Continue</b>				Selecting the <b>Continue</b> item exits the Preboot menu and continues the normal boot process.  If a selection is not made in the initial menu within 30 seconds, the product returns to a normal boot (the same as selecting <b>Continue</b> .  If the user navigates to another menu, the timeout does not apply.
<b>Sign In</b>				Enter the Administrator PIN or Service PIN if one is required to access the <b>Preboot</b> menu.

**Table 3-1 Preboot menu options (1 of 5) (continued)**

Menu option	First level	Second level	Third level	Description
<b>Administrator</b>				<p>This item navigates to the <b>Administrator</b> sub menus.</p> <p>If authentication is required (and the user is not already signed in) the <b>Sign In</b> displays. The user is required to sign in.</p>
	<b>Download</b>			<p>This item initiates a preboot firmware download process. A USB device interface or a Network connection can be used to download firmware.</p>
		<b>Network</b>		<p>See <a href="#">Product updates on page 397</a>.</p>
		<b>USB</b>		<p>See <a href="#">Product updates on page 397</a>.</p>
	<b>Clean Disk</b>			<p>This item reinitializes the disk and cleans all disk partitions.</p> <p><b>CAUTION:</b> Selecting the <b>Clean Disk</b> item removes <b>all</b> data.</p> <p>A delete confirmation prompt is <b>not</b> provided.</p> <p>The system is <b>not</b> bootable after this action—a firmware download must be performed to return the system to a bootable state.</p>
	<b>Partial Clean</b>			<p>This item reinitializes the disk (removing all data except the firmware repository where the master firmware bundle is downloaded and saved).</p> <p><b>CAUTION:</b> Selecting the <b>Partial Clean</b> item removes <b>all</b> data except the firmware repository.</p> <p>A delete confirmation prompt is <b>not</b> provided.</p> <p>This allows user to reformat the disk by removing the firmware image from the active directory without having to download new firmware code (product remains bootable).</p>
	<b>Change Password</b>			<p>Select this item to set or change the administrator password.</p>
	<b>Clear Password</b>			<p>Select the <b>Clear Password</b> item to remove a password from the Administrator menu. Before the password is actually cleared, a message will be shown asking to confirm that the password should be cleared. Press the OK button to confirm the action.</p> <p>When the confirmation prompt appears, press the <b>OK</b> button to clear the password.</p>

**Table 3-2 Preboot menu options (2 of 5)**

Menu option	First level	Second level	Third level	Description	
<b>Administrator</b>  continued	<b>Manage Disk</b>	<b>Clear Disk</b>		Select the <b>Clear Disk</b> item to enable an external device for job storage. Job storage is normally enabled only for the Boot device. This will be grayed out unless the 99.09.68 error is displayed.	
		<b>Lock Disk</b>		Select the <b>Lock Disk</b> item to lock (mate) a new secure disk to this product.  The secure disk already locked to this product will remain accessible to this product. Use this function to have more than one encrypted disk accessible by the product when using them interchangeably. The data stored on the secure disk locked to this product always remains accessible to this product.	
		<b>Leave Unlocked</b>		Select the <b>Leave Unlocked</b> item to use a new secure disk in an unlocked mode for single service event. The secure disk that is already locked to this product will remain accessible to this product and uses the old disk's encryption password with the new disk. The secure disk that is already locked to this product remains accessible to this product.	
		<b>Clear Password</b>		Select the <b>Clear Password</b> item to continue using the non-secure disk and clear the password associated with the yet to be installed secure disk.  <b>CAUTION:</b> Data on the missing secure disk will be permanently inaccessible.	
		<b>Retain Password</b>		Select the <b>Retain Password</b> item to use the non-secure disk for this session only, and then search for the missing secure disk in future sessions.	
		<b>Boot Device</b>	<b>Secure Erase</b>		Select the <b>Secure Erase</b> item to erase all of the data on the disk and unlock it if required (this might take a long time).  <b>NOTE:</b> The system will be unusable until the system files are reinstalled. ATA secure-erase command one pass over write. Erases entire disk including firmware. The disk remains an encrypted disk.
			<b>Erase and Unlock</b>		Select the <b>Erase and Unlock</b> item to cryptographically erase all data on disk and unlock the disk to allow access to it from any product.  <b>NOTE:</b> The system will be unusable until the system files are reinstalled. Erases the crypto key. The disk becomes a non-encrypted disk.
		<b>Get Status</b>		This item provides disk status information if any is available.	

**Table 3-3 Preboot menu options (3 of 5)**

Menu option	First level	Second level	Third level	Description
Administrator continued	Manage Disk continued	Internal Device		Select the <b>Internal Device</b> item to erase the internal device or get status about the internal device.
			<b>Secure Erase</b>	Select the <b>Secure Erase</b> item to erase all of the data on the disk and unlock it if required (this might take a long time).  <b>NOTE:</b> The system will be unusable until the system files are reinstalled. ATA secure-erase command one pass over write. Erases the entire disk, including firmware. The disk remains an encrypted disk.
			<b>Erase and Unlock</b>	Select the <b>Erase and Unlock</b> item to cryptographically erase all data on disk and unlock the disk to allow access to it from any product.  <b>NOTE:</b> The system will be unusable until the system files are reinstalled. Erases the crypto key. The disk becomes a non-encrypted disk.
			<b>Get Status</b>	This item provides disk status information if any is available.
		External Device		Select the <b>External Device</b> item to erase the internal device or get status about the internal device.
	<b>Secure Erase</b>		Select the <b>Secure Erase</b> item to erase all of the data on the disk and unlock it if required (this might take a long time).  <b>NOTE:</b> The system will be unusable until the system files are reinstalled. ATA secure-erase command one pass over write. Erases the entire disk, including firmware. The disk remains an encrypted disk.	
	<b>Erase and Unlock</b>		Select the <b>Erase and Unlock</b> item to cryptographically erase all data on disk and unlock the disk to allow access to it from any product.  <b>NOTE:</b> The system will be unusable until the system files are reinstalled. Erases the crypto key. The disk becomes a non-encrypted disk.	
	<b>Get Status</b>		This item provides disk status information if any is available.	

**Table 3-4 Preboot menu options (4 of 5)**

<b>Menu option</b>	<b>First level</b>	<b>Second level</b>	<b>Third level</b>	<b>Description</b>	
<b>Administrator</b> continued	<b>Configure LAN</b>			Select the <b>Configure LAN</b> item to setup the network settings for the PreBoot menu firmware upgrade.  The network can be configured obtain the network settings from a DHCP server or as static.	
			<b>DHCP</b>	Use this item for automatic IP address acquisition from the DHCP server.	
			<b>Static</b>	Use this item to manually assign the network addresses.	
				<b>IP Address</b>	Use this item to manually enter the IP addresses.
				<b>Subnet Mask</b>	Use this item to manually enter the subnet mask.
				<b>Default Gateway</b>	Use this item to manually enter the default gateway.
				<b>Save and Exit</b>	Select the <b>Save and Exit</b> item to save the manual settings.

**Table 3-5 Preboot menu options (5 of 5)**

Menu option	First level	Second level	Third level	Description
Administrator continued	Startup Options			Select the <b>Startup Options</b> item to specify options that can be set for the next time the product is turned on and initializes to the <b>Ready</b> state.
			<b>Cold Reset</b>	Check the <b>Cold Reset</b> item to clear the IP address and all customer settings (this item also returns all settings to factory defaults). Items in the <b>Service</b> menu are not reset.
			<b>First Power</b>	Not currently functional: This item allows the product initialize as if it is the first time it has been turned on.  For example, the user is prompted to configure first time settings like Select Date/Time, Select Language, and other settings).  Check this item so that it is enabled for the next time the product power is turned on.  When the product power is turned on the next time, this item is unchecked so that the pre-configured settings are used during configuration and the first time setting prompt is not used.
			<b>Skip Plug-ins</b>	This item allows the device to be started without loading the third party applications.  This means that files including Accessible Architecture on the disk will not be available at bootup. This is useful for troubleshooting problems with the hard disk without having to remove the hard disk. It also applies to flash file system disks on DIMMs.  In this case, this function will cause the printer to configure the HP firmware first, followed by the third-party applications. The files on the disk will be available after the printer enters the <b>Ready</b> state.
			<b>Skip Cal</b>	Select the <b>Skip Cal</b> item to initialize the product the next time the power is turned on without calibrating.
			<b>Show Revision</b>	Not currently functional: Check the <b>Show Revision</b> item to allow the product to initialize and show the firmware version when the device reaches the <b>Ready</b> state.  Once the product power is turned on the next time, the <b>Show Revision</b> item is unchecked so the firmware revision is not shown.
			<b>Lock Service</b>	<b>CAUTION:</b> Select the <b>Lock Service</b> item to lock the Service menu access (both PreBoot and Device Maintenance application).  Service personnel must have the Administrator remove the <b>Lock Service</b> setting before they can enter the <b>Service</b> menu.


**Table 3-6 Preboot menu options (5 of 5)**

<b>Menu option</b>	<b>First level</b>	<b>Second level</b>	<b>Third level</b>	<b>Description</b>
<b>Administrator</b> continued	<b>Startup Options</b>	<b>Skip Disk Scan</b>		<p>Check the <b>Skip Disk Scan</b> item to allow the product to initialize without scanning the disk.</p> <p>If the product is crashing on Step 4/8, checking this item may allow the problem to be isolated.</p> <p>Once the device is turned on the next time, the <b>Skip Disk Scan</b> item is unchecked and the disk scan is not skipped.</p>
		<b>Embedded Jetdirect Off</b>		<p>Check the <b>Embedded Jetdirect Off</b> item to disable the embedded Jetdirect.</p> <p>By default this item is unchecked so that Jetdirect is always enabled.</p>
<b>Service Tools</b>				<p>This item requires the Service access code.</p>
	<b>Reset Password</b>			<p>Use this item to clear the Administrator password.</p>
	<b>Subsystems</b>			<p>For manufacturing use only. Do not change these values.</p>

# Current settings pages

Printing the current settings pages provides a map of the user configurable settings that might be helpful in the troubleshooting process.

## Print the current settings pages

1. At the control panel, press the Home  button.
2. Open the following menus:
  - **Administration**
  - **Reports**
  - **Configuration/Status Pages**
3. Scroll to the **Current Settings Page** item, and then press the **OK** button.
4. Scroll up to the **Print** option, and then press the **OK** button.



# Troubleshooting process

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

- Use the pretroubleshooting checklist to evaluate the source of the problem and to reduce the number of steps that are required to fix the problem.
- Use the troubleshooting flowchart to pinpoint the root cause of hardware malfunctions. The flowchart guides you to the section of this chapter that contains steps for correcting the malfunction.

Before beginning any troubleshooting procedure, check the following issues:

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



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

## 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.

## Pre-troubleshooting checklist

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

General topic	Questions
Environment	<ul style="list-style-type: none"><li>• Is the product installed on a solid, level surface (+/- 1°)?</li><li>• Is the power-supply voltage within <math>\pm 10</math> volts of the specified power source?</li><li>• Is the power-supply plug inserted in the product and the outlet (not a power strip)?</li><li>• Is the operating environment within the specified parameters?</li><li>• Is the product exposed to ammonia gas, such as that produced by diazo copiers or office cleaning materials?  <b>NOTE:</b> Diazo copiers produce ammonia gas as part of the copying processes. Ammonia gas (from cleaning supplies or a diazo copier) can have an adverse affect on some product components (for example, the print-cartridge OPC).</li><li>• Is the product exposed to direct sunlight?</li></ul>


General topic	Questions
Media	<ul style="list-style-type: none"> <li>• Does the customer use only supported media?</li> <li>• Is the media in good condition (no curls, folds, or distortion)?</li> <li>• Is the media stored correctly and within environmental limits?</li> </ul>
Input trays	<ul style="list-style-type: none"> <li>• Is the amount of media in the tray within specifications?</li> <li>• Is the media correctly placed in the tray?</li> <li>• Are the paper guides aligned with the stack?</li> <li>• Is the cassette correctly installed in the product?</li> </ul>
Print cartridges	<ul style="list-style-type: none"> <li>• Is each print cartridge installed correctly?</li> <li>• Are original HP print cartridges installed?</li> <li>• Are the cartridges damaged?</li> </ul>
Fuser	<ul style="list-style-type: none"> <li>• Is the fuser correctly installed?</li> <li>• Is the fuser damaged?</li> </ul>
Covers and trays	<ul style="list-style-type: none"> <li>• Are the trays correctly installed?</li> <li>• Is the top cover closed?</li> </ul>
Condensation	<ul style="list-style-type: none"> <li>• Does condensation occur following a temperature change (particularly in winter following cold storage)? If so, wipe affected parts dry or leave the product on for 10 to 20 minutes.</li> <li>• Was a print cartridge opened soon after being moved from a cold to a warm room? If so, allow the print cartridge to sit at room temperature for 1 to 2 hours.</li> </ul>
Miscellaneous	<ul style="list-style-type: none"> <li>• Check for and remove any non-HP components (for example, print cartridges or memory modules) from the product.</li> <li>• Check to see whether the hardware or software configuration has changed or the problem is not associated with any specific software.</li> <li>• Remove the product from the network and ensure that the failure is associated with the product before beginning troubleshooting.</li> <li>• For any print-quality issues, clean the paper path.</li> </ul>

## 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 more testing is needed. Go to the appropriate section in this chapter, and follow the instructions there. After completing the instructions, go to the next major step in this troubleshooting flowchart.

**Table 3-7 Troubleshooting flowchart**

<b>1</b> <b>Power on</b>	Is the product on and does a readable message display?		Follow the power-on troubleshooting checks. See <a href="#">Power subsystem on page 196</a> .
	Yes ↓	No →	After the control panel display is functional, see step 2.
<b>2</b> <b>Control panel messages</b>	Does the message <b>Ready</b> display on the control panel?		If an error message displays, see <a href="#">Interpret control-panel messages, status-alert messages, and event code errors on page 266</a> .
	Yes ↓	No →	After the errors have been corrected, go to step 3.
<b>3</b> <b>Event log</b>	Open the <b>Troubleshooting</b> menu and print an event log to see the history of errors with this product.  Does the event log print?		If the event log does not print, see <a href="#">Print an event log on page 351</a> .  If paper jams inside the product, see <a href="#">Clear jams on page 353</a> .  If error messages display on the control panel when you try to print an event log, see <a href="#">Print an event log on page 351</a> .
	Yes ↓	No →	After successfully printing and evaluating the event log, see step 4.
<b>4</b> <b>Configuration/ Status Pages</b>	Open the <b>Reports</b> menu and print the configuration pages to verify that all the accessories are installed.  <b>NOTE: To display:</b> At the product control panel, press the Home  button, select the <b>Administration</b> menu, and then select the <b>Reports</b> menu.  Are all the accessories installed?		If accessories that are installed are not listed on the configuration page, remove the accessory and reinstall it.  After evaluating the configuration pages, see step 5.
	Yes ↓	No →	
<b>5</b> <b>Image quality</b>	Does the print quality meet the customer's requirements?		Compare the images with the sample defects in the image defect tables. See <a href="#">Print-quality examples on page 380</a> .
	Yes ↓	No →	After the print quality is acceptable, see step 6.
<b>6</b> <b>Interface</b>	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 →	If error messages display on the control panel, see <a href="#">Print an event log on page 351</a> .  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 receptacle and the power button is pushed to the *on* position.

### Overview

Turn on the product power. If the control-panel display remains blank, random patterns appear, or asterisks remain on the display, perform power-on checks to locate the cause of the problem.

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 **NOTE:** It might take the control panel 10 to 20 seconds to illuminate when the product power is turned on.

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During normal product operation, the left rear cooling fan begins to spin briefly after the product power is turned on. Place your hand over the holes in the left-side cover. If the fan is operating, you will feel a slight vibration and feel air passing into 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 sensor is blocked). 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 separate print engine, formatter, and control-panel problems. Perform an engine test (see [Engine test button on page 204](#)). 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 into an active electrical outlet receptacle that delivers the correct voltage.
2. Make sure that the on/off button 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 to connector J70 of the DC controller PCA.
5. Make sure that the formatter is seated and operating correctly.


---

 **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 components. See [Engine test button on page 204](#).

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If the main cooling fan is not operating, replace the power-supply assembly. See [High voltage power supply on page 148](#).

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 **NOTE:** It is important to have the control panel functional as soon as possible in the troubleshooting process so that the control-panel display can be used to help locate errors.

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If problems with the power-on check persist, refer to table [Table 3-8 Power-on defect or blank display on page 197](#).

**Table 3-8 Power-on defect or blank display**

<b>Problem</b>	<b>Action</b>
The power cord is not plugged into the wall receptacle and connected to the product.	Make sure that the power cord is firmly plugged into the wall receptacle and connected to the product.
The correct voltage (power) is not available.	Measure the voltage at the outlet. If necessary, plug the power cord into another circuit outlet.
The power button is off.	Set the button to the <i>on</i> position.  <b>NOTE:</b> The power button is illuminated when the button is in the <i>on</i> position and the product is correctly operating.
The overcurrent/overvoltage detection circuit is activated.	Wait for more than two minutes before turning the product back on.
A fuse is blown.	<ol style="list-style-type: none"><li>1. Check the fuses (FU1 and FU2) on the power supply.</li><li>2. Replace the power-supply assembly if necessary.</li></ol>

**Table 3-8 Power-on defect or blank display (continued)**

Problem	Action
The main cooling fan (located on the left side near the rear of the product) does not turn on when the product is started.	<p>An operational fan indicates the following conditions:</p> <ul style="list-style-type: none"><li>• The AC power is present in the product.</li><li>• The DC power supply is functional (24 V, 5 V, and 3.3 V are being generated).</li><li>• The DC controller microprocessor is functional.</li></ul> <p><b>If the fan is not working:</b></p> <ol style="list-style-type: none"><li>1. Turn the product off and remove the formatter. Disconnect the optional accessories.</li><li>2. Turn the product on and check the fan again.</li></ol> <p><b>If the fan is still not working:</b></p> <ol style="list-style-type: none"><li>1. Verify that the fan is connected to the power supply (connector J64).</li><li>2. Replace the fan. See <a href="#">Fan FN101 on page 142</a>.</li><li>3. If the error persists, replace the power-supply assembly. See <a href="#">High voltage power supply on page 148</a>.</li><li>4. If the error persists, replace the DC controller. See <a href="#">DC controller PCA on page 128</a>.</li></ol> <p><b>Note:</b></p> <p>The fan only operates during the initial startup and while printing, and when the temperature inside the product is too high. If the temperature is too high, the fan turns on to cool the inside of the product.</p>
The fan works, but the control-panel display is blank.	<ol style="list-style-type: none"><li>1. Print an engine test. See <a href="#">Engine test button on page 204</a>.</li><li>2. If the engine test is successful, perform the following steps, in order.<ul style="list-style-type: none"><li>◦ Reseat the control panel and formatter connector. See <a href="#">Control-panel assembly on page 109</a> and <a href="#">Formatter cover and formatter cage on page 71</a>.</li><li>◦ Replace the control-panel cable. See <a href="#">Control-panel assembly on page 109</a>.</li><li>◦ If the error persists, replace the control-panel assembly. See <a href="#">Control-panel assembly on page 109</a>.</li><li>◦ If the error persists, replace the formatter. See <a href="#">Formatter cover and formatter cage on page 71</a>.</li></ul></li><li>3. If the engine test is not successful, remove the formatter and attempt to perform the engine test again. If the engine test is successful with the formatter removed, replace the formatter. See <a href="#">Formatter cover and formatter cage on page 71</a>. If the test is not successful with the formatter removed, replace the DC controller PCA. See <a href="#">DC controller PCA on page 128</a>.</li></ol>

# Tools for troubleshooting

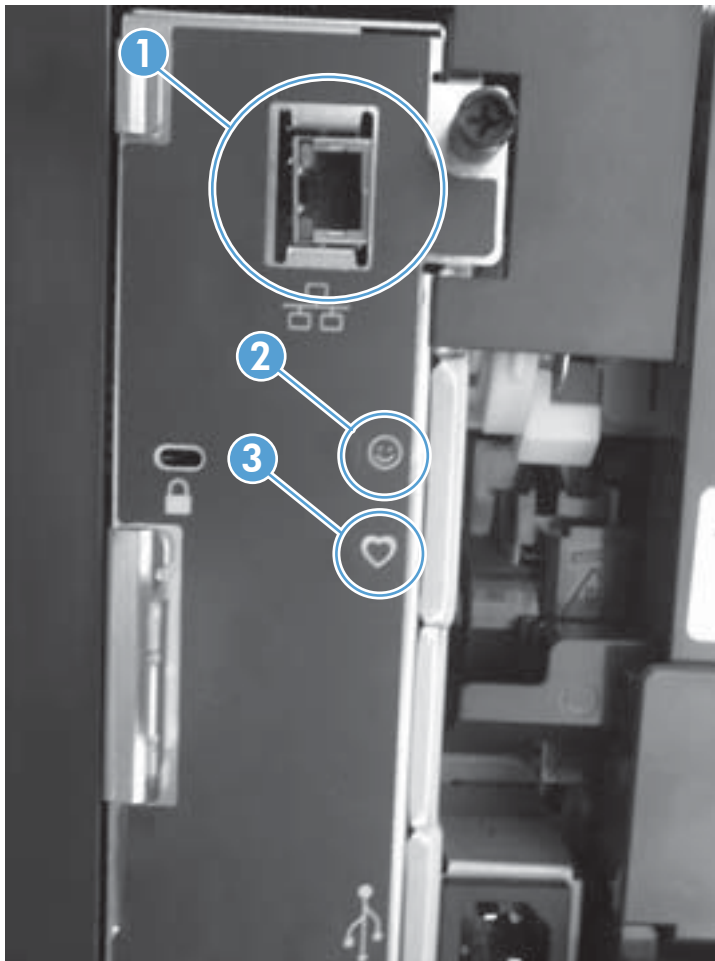
## Component diagnostics

### LED diagnostics

LED, engine, and individual diagnostics can identify and troubleshoot product problems.

#### Understand lights on the formatter

Three LEDs on the formatter indicate that the product is functioning correctly.




1	HP Jetdirect LEDs
2	Connectivity LED
3	Heartbeat LED

## HP Jetdirect LEDs

The embedded HP Jetdirect print server has two LEDs. The yellow LED indicates network activity, and the green LED indicates the link status. A blinking yellow LED indicates network traffic. If the green LED is off, a link has failed.

For link failures, check all the network cable connections. In addition, you can try to manually configure the link settings on the embedded print server by using the product control-panel menus.

1. At the control panel, press the Home  button.
2. Open the following menus:
  - **Administration**
  - **Network Settings**
  - **Jetdirect Menu**
3. Scroll to and select the **Link Speed** item, and then press the **OK** button.
4. Select the appropriate link speed, and then press the **OK** button.

## Heartbeat LED


The heartbeat LED indicates that the formatter is functioning correctly. While the product is initializing after you turn it on, the LED blinks rapidly and then turns off. When the product has finished the initialization sequence, the heartbeat LED pulses on and off.

If the heartbeat LED is off, turn the product power off, make sure that the formatter is fully seated, and then turn the product on. If the problem persists, the formatter might have a problem. Replace the formatter.

## Connectivity LED

The connectivity LED provides information about product operation. If a product error occurs, the formatter displays a message on the control-panel display. However, error situations can occur causing the formatter to control panel communication to be interrupted.

---


 **NOTE:** HP recommends fully troubleshooting the formatter and control panel before replacing either component. Use the connectivity LED to troubleshoot formatter and control panel errors to avoid unnecessarily replacing these components.

---

## Formatter to control panel communication interruptions

- The firmware does not fully initialize and configure the control panel interface.
- The control panel is not functioning (either a failed component or power problem).
- Interface cabling between the formatter and control panel is damaged or disconnected.

---

 **TIP:** If the connectivity LED is illuminated—by an error condition or normal operation—the formatter is fully seated and the power is on. The pins for the LED circuit in the formatter connector are recessed so that this LED will not illuminate unless the formatter is fully seated.

---



The connectivity LED operates according to the product state. When the product is initializing, see [Connectivity LED, product initialization on page 201](#). When the product is in **Ready** mode, see [Connectivity LED, product operating on page 203](#).

## Connectivity LED, product initialization

The following table describes the connectivity operation while the product is executing the firmware boot process.

 **NOTE:** When the initialization process completes the connectivity LED should be illuminated solid green—the LED is off if the product is in **Sleep Mode**

If after initialization the connectivity LED is not solid green, see [Connectivity LED, product operating on page 203](#).

**Table 3-9 Connectivity LED, product initialization**

Product initializing state	Connectivity LED, normal state	Connectivity LED, error state
No power (power cord unplugged or power button off)	Off	Not applicable
Power on (immediately after the power button pressed)	Red, solid <ul style="list-style-type: none"> <li>Duration should be 1 second or less</li> </ul>	Red, solid <ul style="list-style-type: none"> <li>Firmware error; problem finding hardware and booting the serial peripheral interface flash memory <ul style="list-style-type: none"> <li>Boot process halted</li> </ul> </li> </ul> <p>Replace the formatter.</p>
Serial peripheral interface (SPI) flash memory boot	Green, solid	Red, solid <ul style="list-style-type: none"> <li>Firmware error; problem corrupt or missing SPI flash memory <ul style="list-style-type: none"> <li>Boot process halted</li> </ul> </li> </ul> <p>Replace the formatter.</p>
HW checks on board DRAM	Green, solid	Red, solid <ul style="list-style-type: none"> <li>Power on self check failure <ul style="list-style-type: none"> <li>Boot process halted</li> </ul> </li> </ul> <p>Replace the formatter.</p>
Control panel connection initializes	Green, solid <p><b>NOTE:</b> Control panel communication successful. If an error occurs, a message should appear on the control-panel display.</p>	Yellow, fast flash <ul style="list-style-type: none"> <li>Formatter to control panel connection failed <ul style="list-style-type: none"> <li>Boot process continues</li> </ul> </li> </ul> <p>Check the cables between the formatter and control panel for damage. Make sure that the cables are fully seated.</p>

**Table 3-9 Connectivity LED, product initialization (continued)**

<b>Product initializing state</b>	<b>Connectivity LED, normal state</b>	<b>Connectivity LED, error state</b>
<b>Preboot</b> menu available (including diagnostics)	Green, solid	Red, solid <ul style="list-style-type: none"> <li>• Diagnostic failure               <ul style="list-style-type: none"> <li>◦ Follow diagnostic instructions</li> </ul> </li> </ul> Turn the power off, and then on again to restart the initialization process.
Accessing disk for firmware image	Green, solid <b>NOTE:</b> If applicable, disk error messages appear on the control-panel display.	Yellow, fast flash <ul style="list-style-type: none"> <li>• Control panel not connected</li> </ul>
Firmware boot	Green, solid <b>NOTE:</b> If applicable, error messages appear on the control-panel display.	Yellow, fast flash <ul style="list-style-type: none"> <li>• Control panel not connected</li> </ul>
Product operational	Green, heartbeat blink <b>NOTE:</b> If applicable, error messages appear on the control-panel display.	Yellow, fast flash <ul style="list-style-type: none"> <li>• Control panel not connected</li> </ul>
<b>49.XX.YY</b> error or initialization freezes	Not applicable	LED off  <b>NOTE:</b> An error message (for example, <b>49.XX.YY</b> ) might appear on the control-panel display.  Eventually a formatter connection missing message will appear.  Turn the power off, and then on again to restart the initialization process.  If the error persists, perform a firmware upgrade.
Control panel connection interrupted after the product is operational	Not applicable	Yellow, fast flash <ul style="list-style-type: none"> <li>• Control panel not connected</li> </ul>
<b>Sleep Mode</b>	Green, slow blink	Not applicable
Approaching <b>Sleep Mode</b>	Green, slow blink	Not applicable
Wake up from <b>Sleep Mode</b>	Follows initialization progression above.	Follows initialization progression above.
Approaching wake up from <b>Sleep Mode</b>	Follows initialization progression above.	Follows initialization progression above.

## Connectivity LED, product operating

The following table describes the connectivity operation when the product completes the firmware boot process and is in the **Ready** state.

**Table 3-10 Connectivity LED, product operational**

LED color	Description
Green	<ul style="list-style-type: none"><li>• Normal operation<ul style="list-style-type: none"><li>◦ Formatter is operating normally</li><li>◦ Firmware is operating normally</li><li>◦ Control panel is connected</li></ul></li></ul>
Yellow	<ul style="list-style-type: none"><li>• Formatter cannot connect to the control panel<ul style="list-style-type: none"><li>◦ Check control panel connections</li><li>◦ Verify control panel functionality</li></ul></li></ul>
Red	<ul style="list-style-type: none"><li>• Formatter error or failure<ul style="list-style-type: none"><li>◦ Serial peripheral interface (SPI) flash memory boot error</li><li>◦ Power on self test (formatter) failed</li><li>◦ Diagnostic (formatter) failed</li></ul></li></ul>
Off	<p><b>TIP:</b> The connectivity LED is off if the power cord is unplugged, the product power button is in the off position, or the product is in <b>Sleep Mode</b>.</p> <ul style="list-style-type: none"><li>• Firmware or system freeze<ul style="list-style-type: none"><li>◦ Check the control panel for an error message</li><li>◦ Control panel failure</li></ul></li></ul> <p><b>NOTE:</b> This condition is not usually caused by a formatter failure.</p> <p>Turn the power off, and then on again.</p> <p>If the error persists, perform a firmware upgrade.</p>

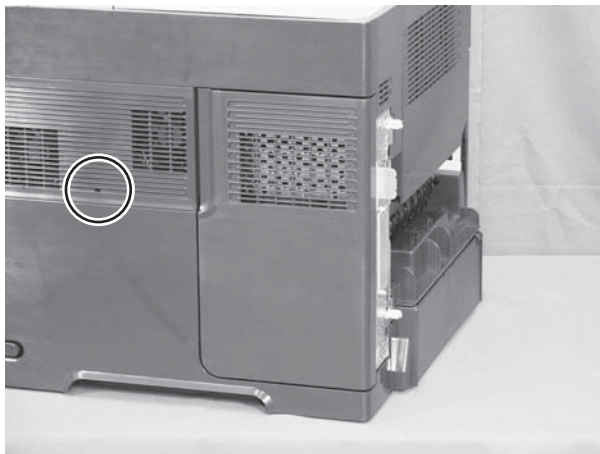
## Engine diagnostics

This section provides an overview of the engine diagnostics that are available in the HP LaserJet Enterprise 600 M601, M602, and M603 Series Printer product. The product contains extensive internal diagnostics that help in troubleshooting print quality, paper path, noise, component, and timing issues.


### Engine test button

To verify that the product engine (all product components *except* the formatter, formatter DIMM, and the stacker or stapler/stacker) is functioning, print an engine-test page. Use a small, non-metallic, pointed object to depress the test-page button, which is accessible through a slot in the right-side cover.

**Figure 3-1** Engine-test-page button




The test page should have a series of horizontal lines. The test page prints from the last tray that you printed from. However, if the product has been turned off and then on again since the most recent print job, the page will print from Tray 2.

 **NOTE:** A damaged formatter might interfere with the engine test. If the engine-test page does not print, try removing the formatter and 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.


### Formatter test

To check that the formatter is working, print a configuration page.


1. Press the Home  button.
2. Open the following menus:
  - **Administration**
  - **Reports**
  - **Configuration/Status Pages**
3. Scroll to the **Configuration Page** item, and then press the **OK** button.
4. Scroll to the **Print** item, and then press the **OK** button.

## Print/Stop test

Perform a **Print/Stop Test** to determine which image-formation component might be malfunctioning.

1. Press the Home  button.
2. Open the following menus:
  - **Administration**
  - **Troubleshooting**
  - **Diagnostic Tests**
3. Select the **Print/Stop Test** item, and then select from a range of 0 to 60,000 milli-seconds.

---

 **NOTE:** Select a range value that allows the page to progress through the paper path just past the component that you suspect is causing the print-quality problem.

---

4. Press the **OK** button to start the test.

## Drum rotation test

The photosensitive drum, which is located in the print cartridge, must rotate in order for the print process to work. The photosensitive drum receives its drive from the main gear assembly. Use this procedure to determine whether the drum is rotating.

1. Open the top cover.
2. Remove the print cartridge.
3. Mark the cartridge drive gear with a felt-tipped marker. Note the position of the mark.
4. Install the print cartridge, and then close the top cover. The start-up sequence should rotate the drum enough to move the mark on the gear.
5. Open the product and inspect the mark on the cartridge drive gear. Verify that the mark moved. If there was no movement, inspect the main gear assembly to make sure that it connects with the print-cartridge gears. If the drive gears function but the drum does not move, replace the print cartridge.

---

 **NOTE:** This test is especially important if refilled print cartridges are in use.

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If a dark and distinct toner image is present on the drum surface, assume that the cleaning, conditioning, writing, and developing functions of the electrophotographic process are functioning correctly. Troubleshoot the failure as a transfer or fusing problem. If no image is present on the drum, perform the drum-rotation test.

## Paper-path test (and automatic sensor test)

This diagnostic test generates one or more test pages that you can use to isolate the cause of jams.


To isolate a problem, specify which input tray to use, specify whether to use the duplex path, and specify the number of copies to print. Multiple copies can be printed to help isolate intermittent problems. The following options become available after you start the diagnostic feature:

- **Print Test Page.** Run the paper-path test from the default settings: Tray 2, no duplex, and one copy. To specify other settings, scroll down the menu and select the setting, and then scroll back up and select **Print Test Page** to start the test.
- **Source.** Select Tray 1, Tray 2, or the optional tray.
- **Duplex.** Enable or disable two-sided printing.

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 **NOTE:** Duplex models only.

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- **Copies.** Set the numbers of copies to be printed; the choices are 1, 10, 50, 100, or 500.
1. Press the Home  button.
  2. Open the following menus:
    - **Administration**
    - **Troubleshooting**
    - **Diagnostic Tests**
  3. Scroll to **Paper Path Test**, and then press the **OK** button.
  4. Select the paper-path test options for the test you want to run.


## Paper path sensors test (automatic)

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 **NOTE:** To view the function of each sensor and how to toggle them manually, see [Manual sensor test on page 208](#).

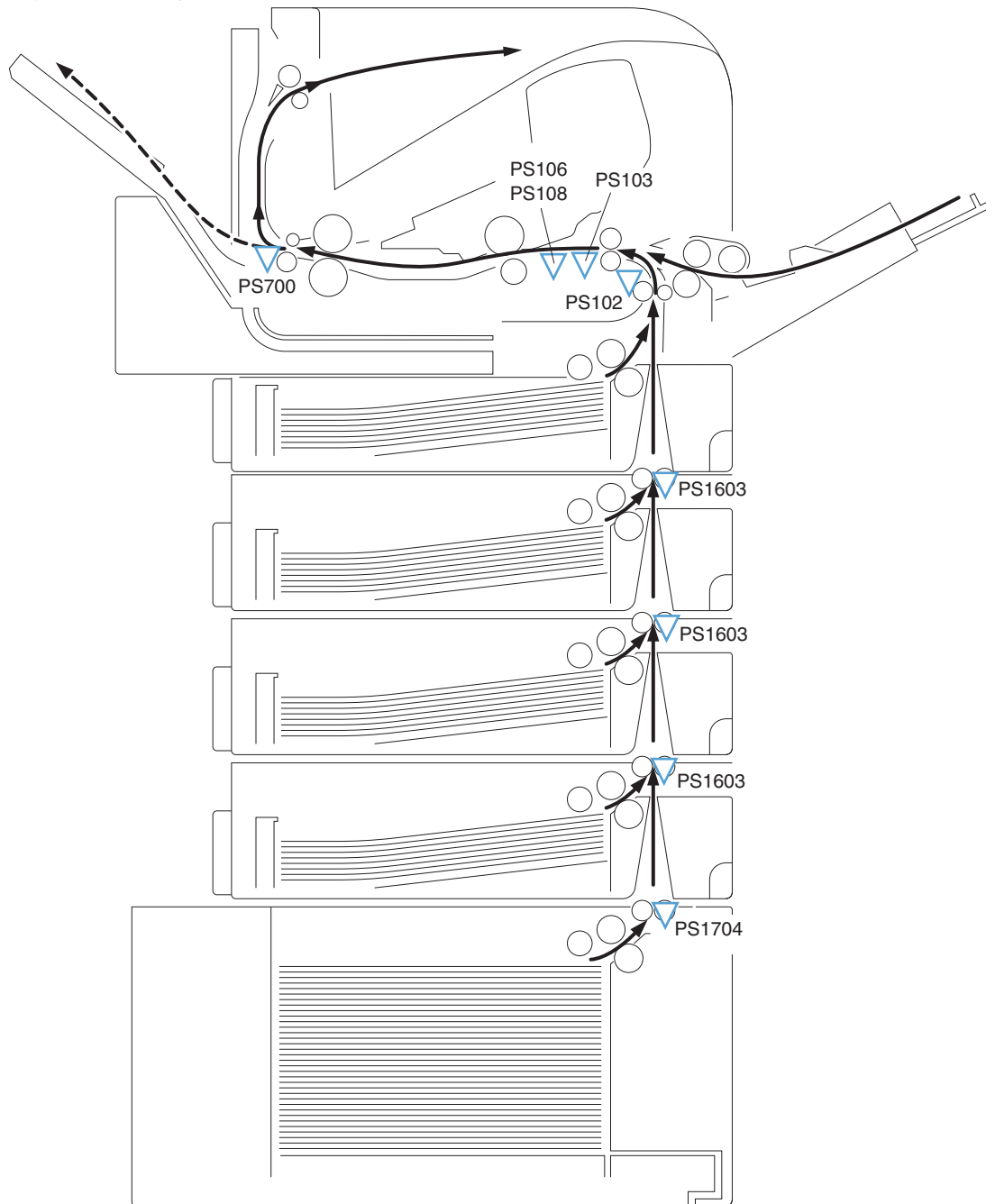
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This test displays the status of each paper path sensor and allows viewing of sensor status while printing internal pages.

1. Press the Home  button.
2. Open the following menus:
  - **Administration**
  - **Troubleshooting**
  - **Diagnostic Tests**
3. Scroll to **Paper Path Sensors**, and then press the **OK** button.

4. Select the paper path sensor to test.
5. Press **OK** to start the test, and then watch the control-panel display for the switch or sensor state to change from green to clear or clear to green. It might take a few seconds to change.

**Figure 3-2** Paper sensors



**Table 3-11** Paper sensor test designators

Designator	Sensor
PS103	Top of page sensor
PS102	Pre-feed sensor


**Table 3-11 Paper sensor test designators (continued)**


Designator	Sensor
PS700	Fuser delivery sensor
PS1502	Duplex sensor
PS106	Left-side paper width sensor
PS108	Right-side paper width sensor
PS1603	Tray 3 media path sensor <sup>1</sup>
PS1603	Tray 4 media path sensor <sup>1</sup>
PS1603	Tray 5 media path sensor <sup>1</sup>
PS1704	Tray 6 media path sensor <sup>1</sup>

<sup>1</sup> This sensor is present only if the accessory is installed.

## Manual sensor test

Use this diagnostic test to manually test the product sensors and switches. Each sensor is represented by a letter and number on the control panel display.

1. Press the Home  button.
2. Open the following menus:
  - **Administration**
  - **Troubleshooting**
  - **Diagnostic Tests**
3. Scroll to the **Manual Sensor Test** item, and then press the **OK** button.
4. Activate a switch or sensor, and then watch the control-panel display for the switch or sensor state to change from green to clear or clear to green. It might take a few seconds to change.

Menus cannot be opened during this test, so the **OK** button serves the same function as the **Stop** button .

**Table 3-12 Manual sensor diagnostic tests**

Manual sensor test designator	Sensor or switch	Replacement component
PS103	Top of page sensor, see <a href="#">Top of page sensor (PS103) on page 210</a>	Replace the product
PS102	Pre-feed sensor, see <a href="#">Pre-feed sensor (PS102) on page 211</a>	Replace the product
<b>NOTE:</b> See this procedure for the Tray 3, 4, 5, or 6 media path sensors (PS1603/1603/1603/1704).		
PS1502	Duplex sensor, see <a href="#">Duplex sensor (PS1502) on page 213</a>	Replace the duplexer
PS700	Fuser delivery sensor, see <a href="#">Fuser delivery sensor (PS700) on page 212</a>	Replace the fuser




**Table 3-12 Manual sensor diagnostic tests (continued)**

<b>Manual sensor test designator</b>	<b>Sensor or switch</b>	<b>Replacement component</b>
PS106/108	Left-side and right-side paper width sensors, see <a href="#">Media width sensors 1/2 (PS106/108) on page 214</a>	Replace the product
PS1603/1704	PF/PD media path sensors, see <a href="#">Pre-feed sensor (PS102) on page 211</a>	Replace the product
PS104	Output bin full sensor, see <a href="#">Output bin full sensor (PS104) on page 215</a>	Replace the product
PS101	Tray 2 paper present sensor, see <a href="#">Tray 2 paper present sensor (PS101) on page 217</a>	Replace the product
PS107	Tray 2 top of stack sensor, see <a href="#">Tray 2 top of stack sensor (PS107) on page 218</a>	Replace the cassette pickup assembly
SW102	Tray 2 paper size switches, see <a href="#">Tray 2 paper size switches (SW102) on page 219</a>	Replace the cassette pickup assembly

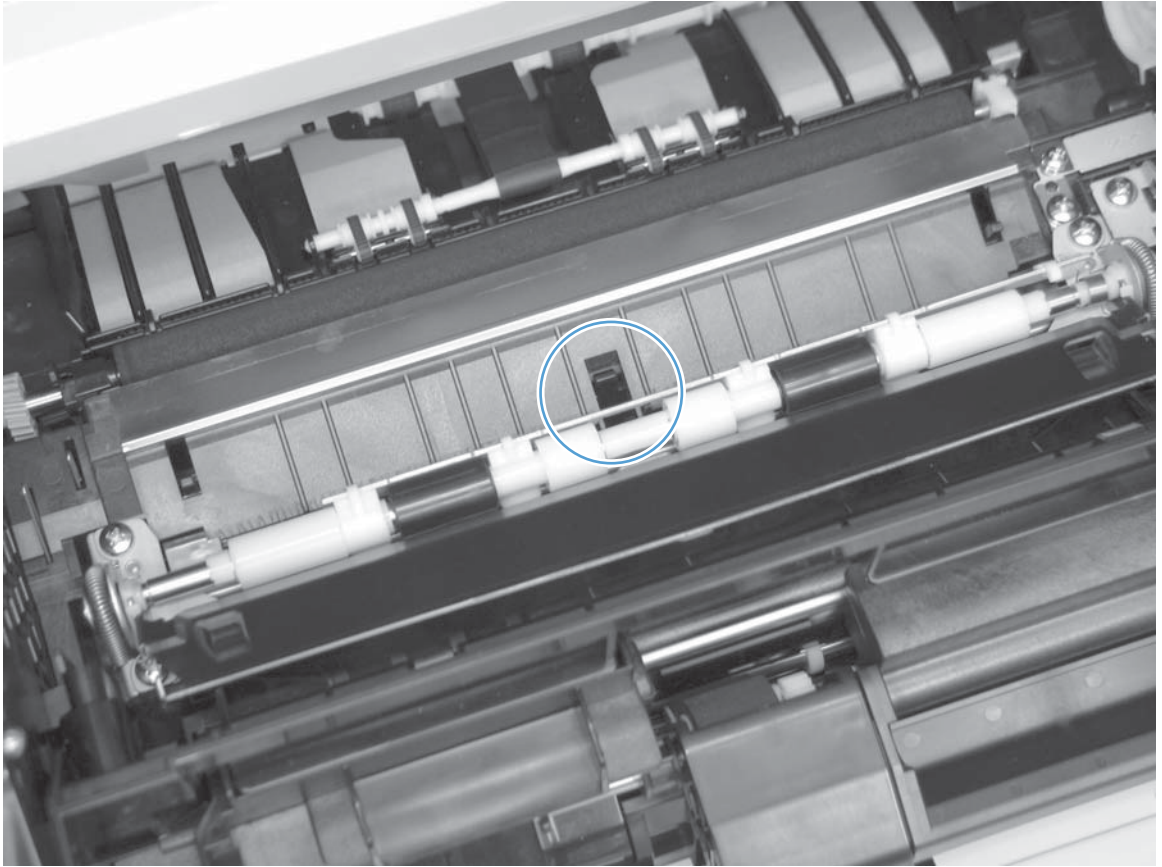
**NOTE:** See this procedure for the Tray 3, 4, 5, or 6 sensors and switches.

### Top of page sensor (PS103)

1. Open the top cover and then remove the print cartridge.
2. Activate the top of page sensor (PS103) flag.


 **NOTE:** You might need to lift the flap—use the green handles—to expose the sensor flag.

**Figure 3-3** Test the top of page sensor




3. Check the control-panel display for sensor response (the dot on the display will turn green).

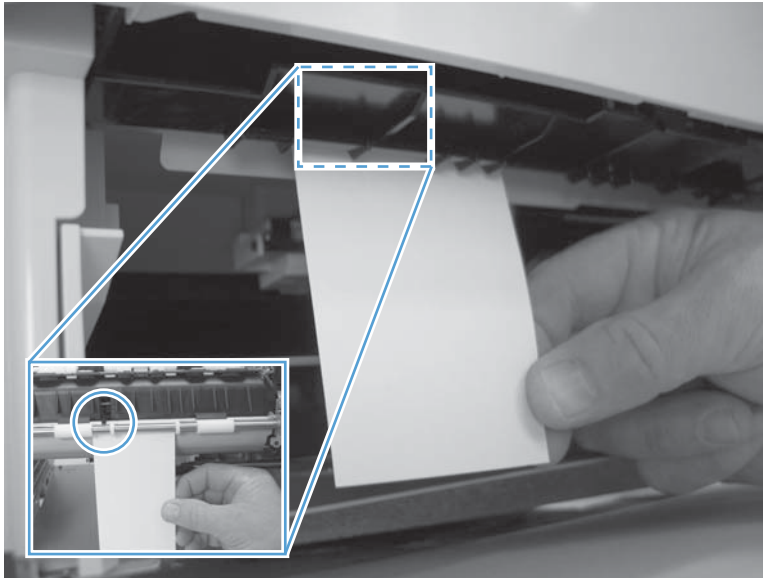
## Pre-feed sensor (PS102)

 **NOTE:** Use this procedure to test the paper feeder (PS1603) and paper deck (PS1704) media path sensors

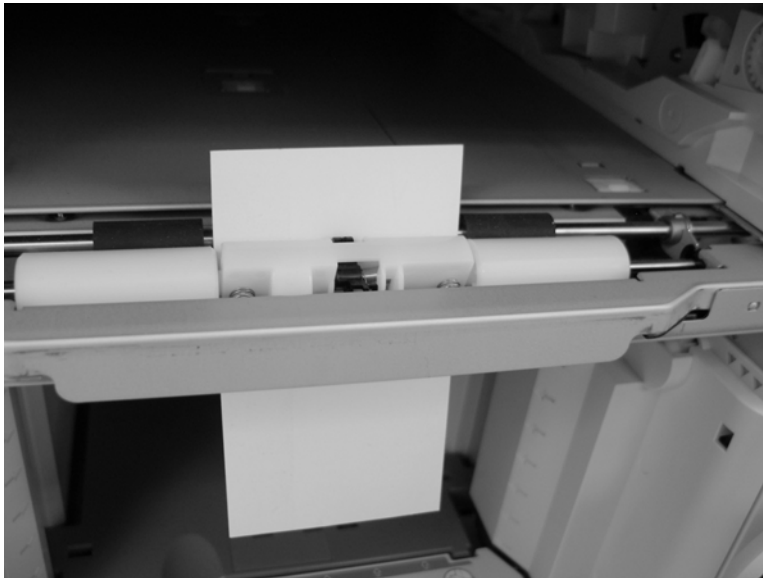
1. Remove the Tray 2 cassette.
2. Insert a piece of paper to override the Tray 2 pre-feed sensor (PS102).

 **NOTE:** The paper must be thick enough to depress and hold in place the sensor actuator arm.

**Figure 3-4** Test the Tray 2 pre-feed sensor (PS102)



**Figure 3-5** paper feeder and paper deck media path sensors



### Fuser delivery sensor (PS700)

1. Open the rear output bin.
2. Activate the fuser delivery sensor (PS700) flag.

**Figure 3-6** Test the fuser delivery sensor (PS700)

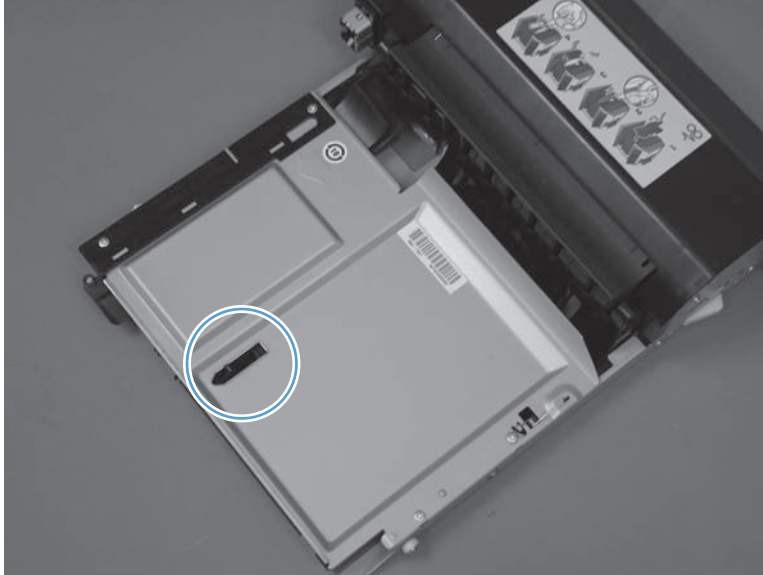


3. Check the control-panel display for sensor response (the dot on the display will turn green).

### Duplex sensor (PS1502)

1. Remove the duplexer.
2. Verify that the duplexer sensor (PS1502) flag moves freely.
3. If the flag does not move freely, replace the duplexer.

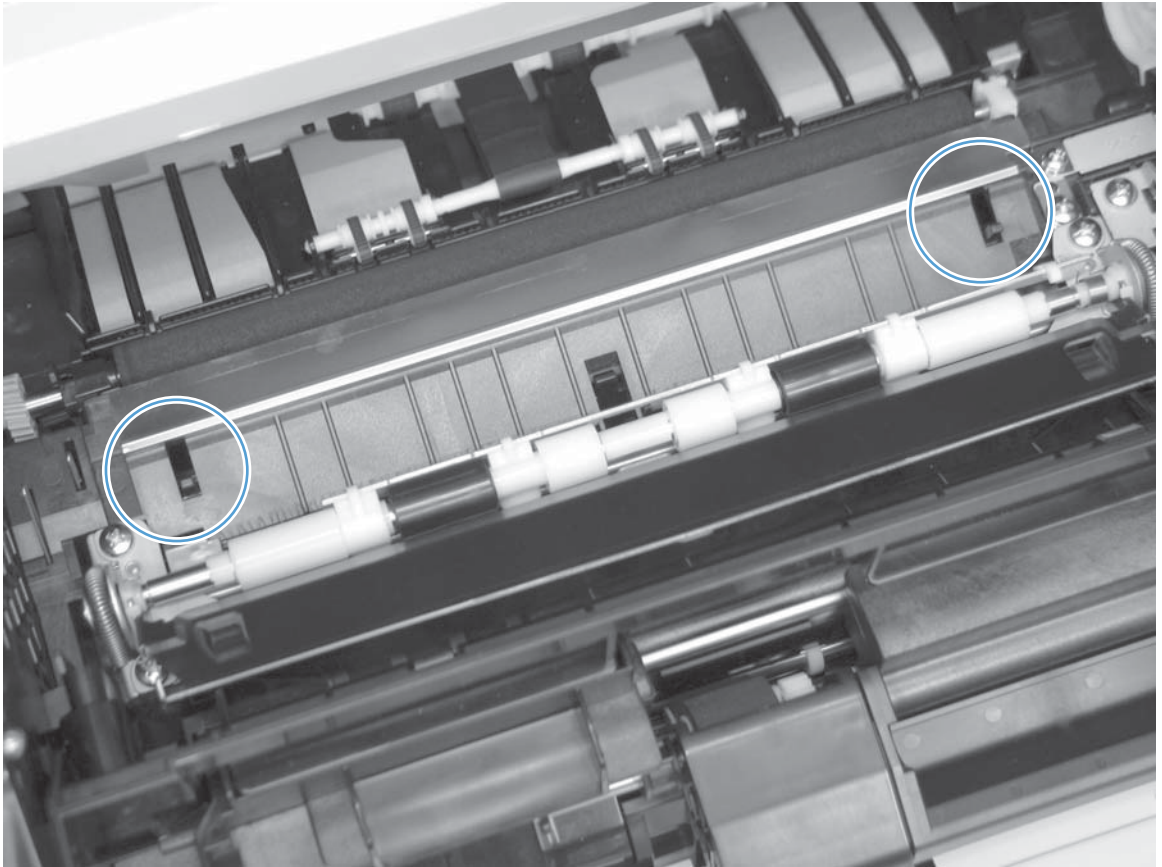
**Figure 3-7** Test the fuser duplex sensor



### Media width sensors 1/2 (PS106/108)

1. Open the top cover and then remove the print cartridge.
2. Activate the left- or right-side paper width sensors (PS106/108).

**Figure 3-8** Test the fuser pressure-release sensor



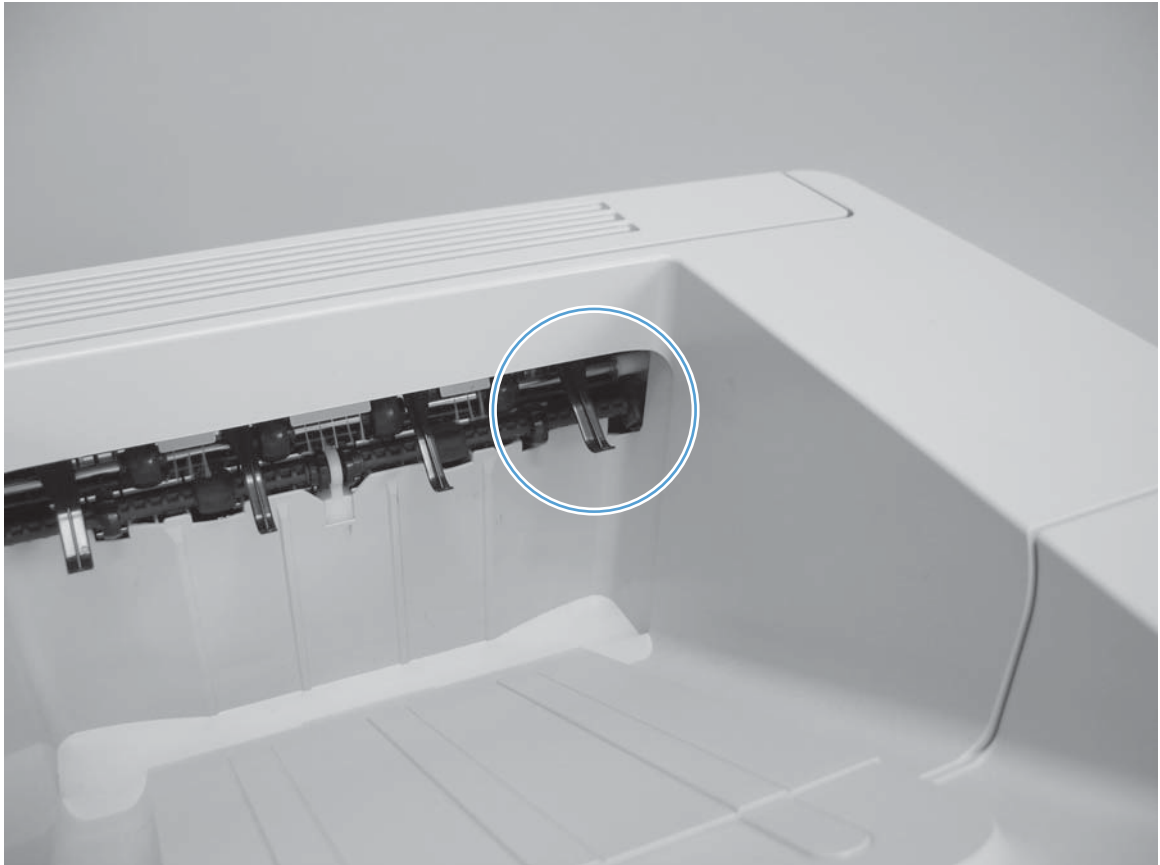
3. Check the control-panel display for sensor response (the dot on the display will turn green).
4. If the sensor does not respond, check the connectors at the DC controller.

### Output bin full sensor (PS104)

This sensor flag is located in the output bin area.

Activate the sensor flag, and then check the control-panel display for sensor response.

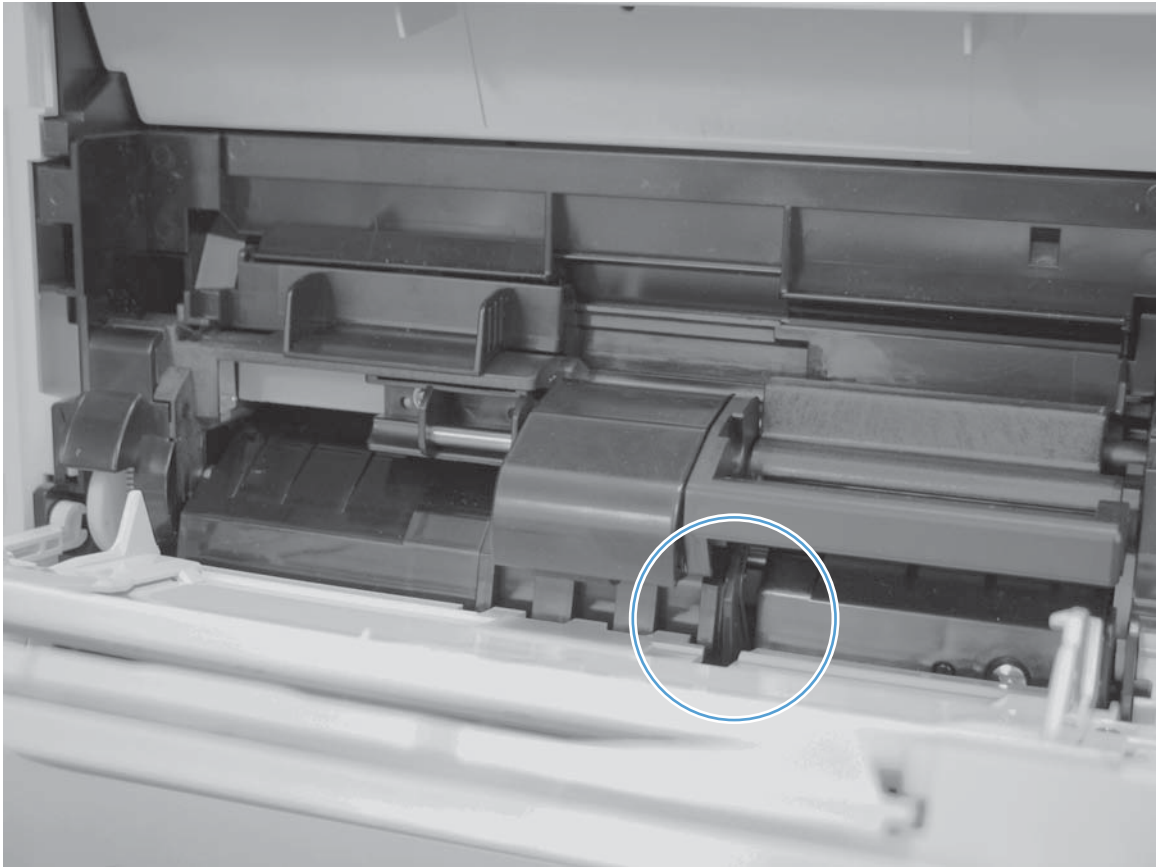
**Figure 3-9** Test the output bin full sensor (PS104)



### Tray 1 paper present sensor (PS105)

1. Open Tray 1, and then activate the Tray 1 paper present sensor (PS105) flag.

**Figure 3-10** Test the Tray 1 paper present sensor (PS105)



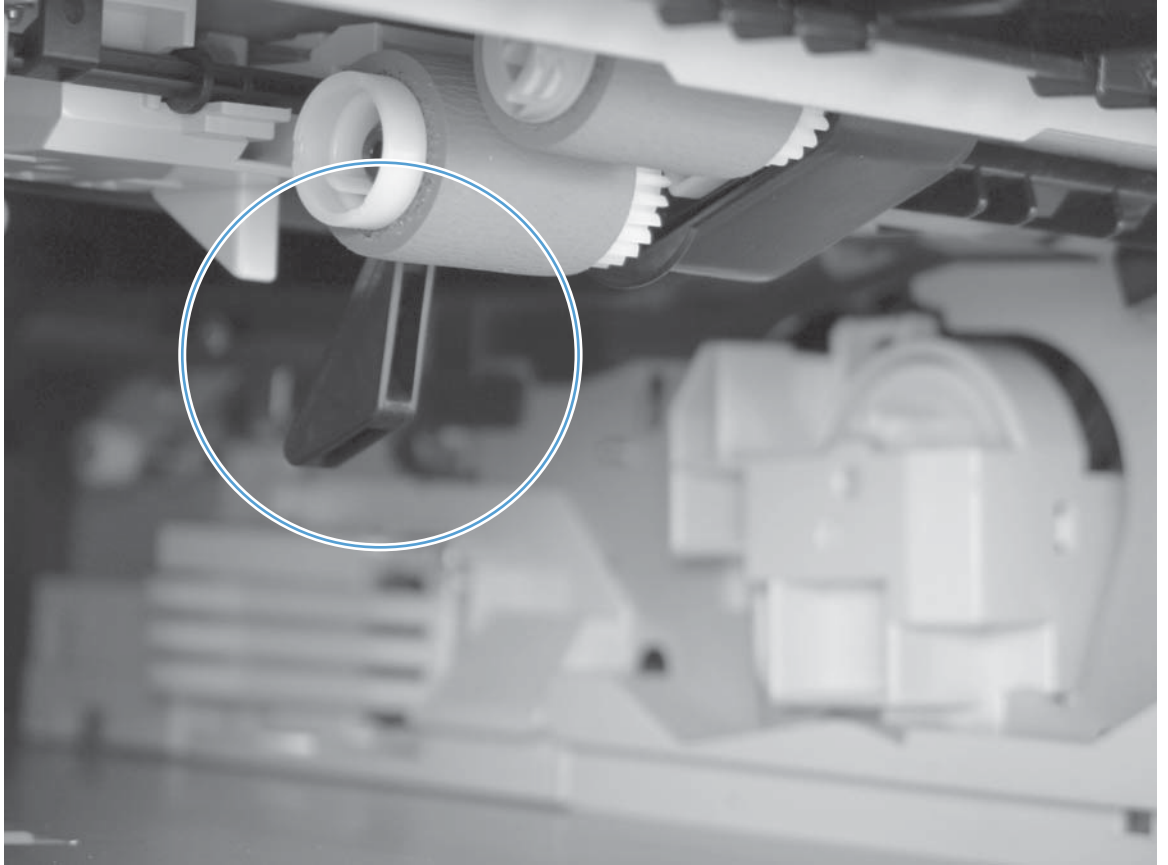
2. Check the control-panel display for sensor response (the dot on the display will turn green).



### Tray 2 paper present sensor (PS101)

1. Remove the Tray 2 cassette.
2. Activate the Tray 2 paper present sensor (PS101) sensor flag

**Figure 3-11** Test the Tray 2 paper present sensor (PS101)



3. Check the control-panel display for sensor response (the dot on the display will turn green).

### Tray 2 top of stack sensor (PS107)

1. Remove the Tray 2 cassette.
2. Activate the Tray 2 top of stack sensor (PS107) sensor flag.

**Figure 3-12** Test the Tray 2 top of stack sensor (PS107)



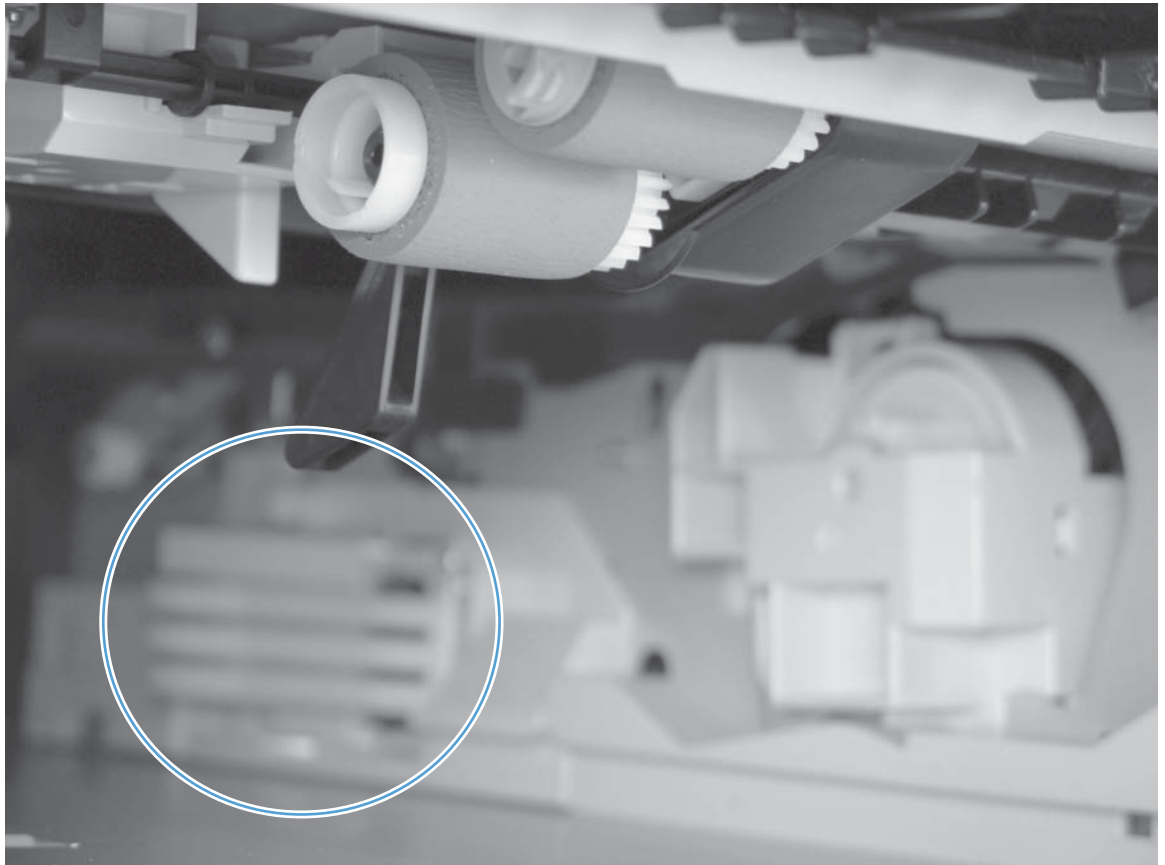
3. Check the control-panel display for sensor response (the dot on the display will turn green).

## Tray 2 paper size switches (SW102)

 **NOTE:** Use this procedure for the Tray 3, 4, 5, or 6 sensors and switches.

1. Remove the Tray 2 cassette.
2. Activate the Tray 2 paper size switches (SW102).


**Figure 3-13** Test the Tray 2 paper size switches (SW102)



3. Check the control-panel display for sensor response (the dot on the display will turn green).

## Tray/Bin manual sensor test

Use this test to test the tray and bin sensors and switches manually. The following illustrations and table show the locations of these sensors.


1. Press the Home  button.
2. Open the following menus:
  - **Administration**
  - **Troubleshooting**
  - **Diagnostic Tests**
3. Scroll to the **Manual Tray/Bin Sensor Test** item, and then press the **OK** button.
4. Activate a switch or sensor, and then watch the control-panel display for the switch or sensor state to change from green to clear or clear to green. It might take a few seconds to change.

**Table 3-13 Manual sensor test 2 diagnostic tests**

Manual sensor test 2 designator	Sensor or switch	
PS1603	Paper feeder sensor	<b>NOTE:</b> The locations of these switches and sensors are the same as those in <a href="#">Pre-feed sensor (PS102)</a> on page 211 with respect to the optional paper input accessories.
PS1704	Paper deck sensor	

## Print/stop test

Use this diagnostic test to isolate the cause of problems such as image formation defects and jams within the engine. The test can be programmed to stop from 0 to 60,000 ms.

1. Press the Home  button.
2. Open the following menus:
  - **Administration**
  - **Troubleshooting**
  - **Diagnostic Tests**
3. Scroll to the **Print/Stop Test** item, and then press the **OK** button.
4. Use the arrow buttons to set a stop time, when the print job should be interrupted, and then press the **OK** button.

**Table 3-14 Print/Stop settings**

<b>Duration</b>	<b>Description</b>
0 msec	The leading edge of the paper stops approximately 28 mm beyond the “black” paper guide of the registration assembly.
100 msec	The leading edge of the paper stops approximately 63 mm beyond the “black” paper guide of the registration assembly.
500 msec	The leading edge of the paper stops just prior to the paper entering the “nip” of the fuser assembly; the nip is the gap between the pressure roller and the hot fusing roller.
600 msec	The leading edge of the paper stops approximately 5 mm prior to the paper encountering the fuser assembly delivery photo sensor flag.
1,200 msec	(Simplex print operation) The leading edge of the paper stops 35 mm past the face-down delivery stacker rollers. The trailing edge of the paper is approximately 30 mm from the “nip” of the fusing rollers.
2,250 msec	(Duplex print operation) The leading edge of the paper has passed through the fuser assembly and into the output stacker rollers. The paper has now reversed direction and entered the duplex accessory. The leading edge of the paper stops approximately 15 mm before encountering the duplex assembly re-pick photosensor (PS1502).


If the timer is set to a value that is greater than the job-print time, you can recover the product in one of two ways.

- After the print job is completed press the **Stop** button to return to the **Diagnostics** menu before the timer times out.
- After the timer times out, press the **Stop** button. Activate the door switch to restart the engine and return it to a normal state.

When the timer trips, the control panel display shows the message **Printing stopped To continue, touch “OK”**. Pressing the **OK** button will print the previously selected job. If you do not want the previous job to print, press the **Stop** button first, and then press the **OK** button.

## Component tests

These tests activate the selected component.

1. Press the Home  button.
2. Open the following menus:
  - **Administration**
  - **Troubleshooting**
  - **Diagnostic Tests**
3. Scroll to the **Print/Stop Test** item, and then press the **OK** button.
4. Use the arrow buttons to select the particular component test that you want to perform, and then press the **OK** button.

The following table describes the component tests.

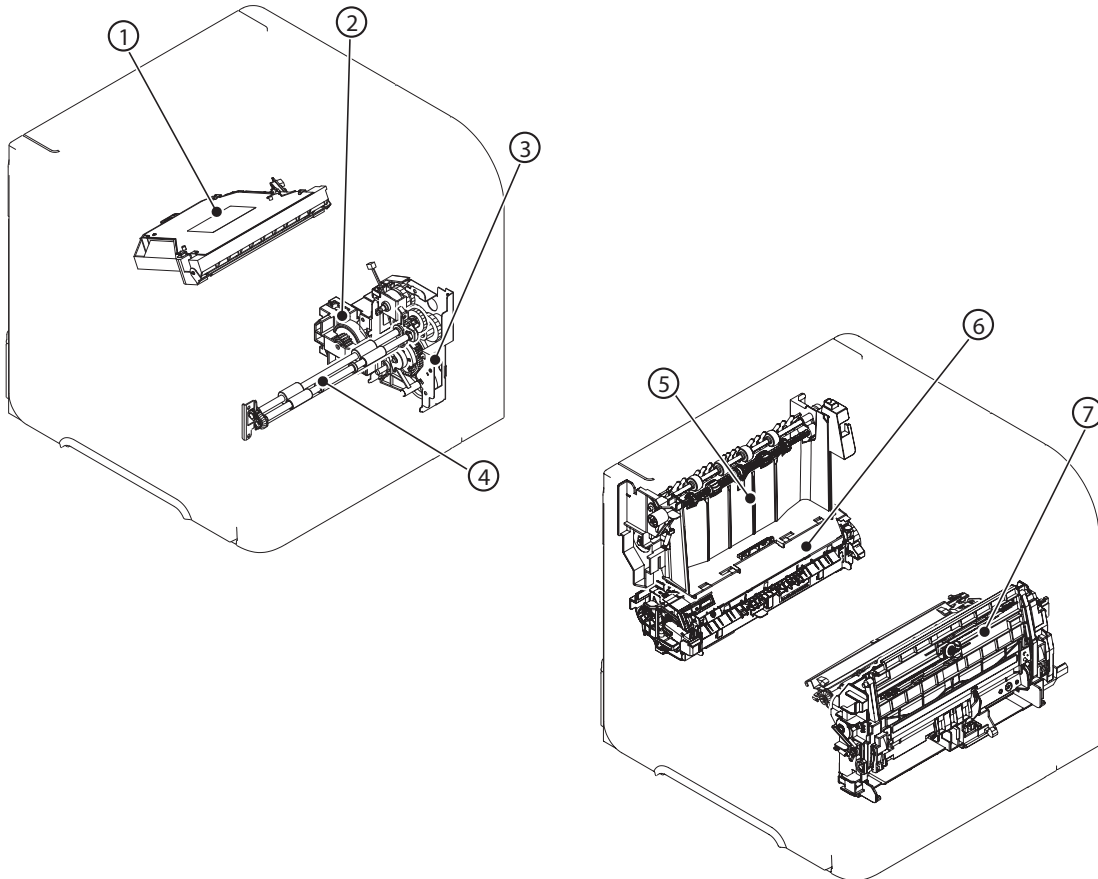
<b>Component test</b>	<b>Description</b>
<b>DRUM MOTOR</b>	This test activates the drum motor.
<b>LASER SCANNER MOTOR</b>	This test activates the laser scanner motor.
<b>FUSER MOTOR</b>	This test activates the fuser motor and drive gears.
<b>TRAY PICKUP MOTOR</b>	This test activates the tray pickup motor.
<b>FEED ROLLER CLUTCH</b>	This test activates the paper feed roller clutch.
<b>MP TRAY SOLENOID</b>	These tests activate the pickup solenoid for the selected input tray.
<b>TRAY 2 PICKUP SOLENOID</b>	
<b>TRAY 3 PICKUP SOLENOID</b>	
<b>TRAY 4 PICKUP SOLENOID</b>	
<b>TRAY 5 PICKUP SOLENOID</b>	
<b>TRAY 6 PICKUP SOLENOID</b>	
<b>DUPLEXER SWITCHBACK MOTOR</b>	This test activates the duplexing reverse motor.
<b>DUPLEX REFEED MOTOR</b>	This test activates the duplexing feed motor.

# Diagrams

## Block diagrams

### Main assemblies

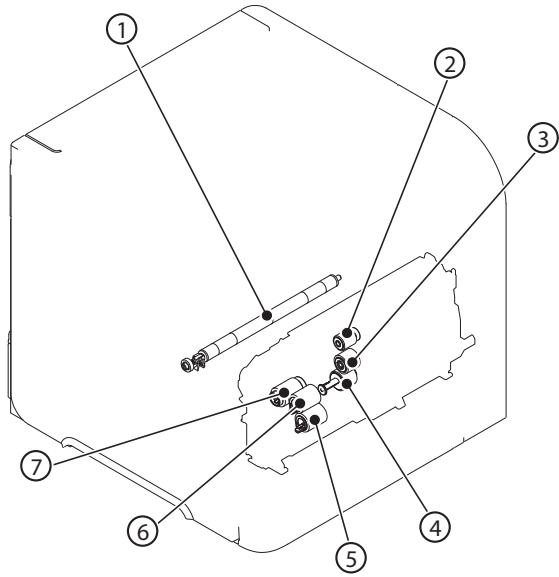
Figure 3-14 Main assemblies



1	Laser/scanner unit
2	Lifter drive unit
3	Tray 2 pickup drive unit
4	Feed roller unit
5	Delivery unit
6	Fuser
7	Multipurpose tray pickup unit

## Main parts

Figure 3-15 Main parts

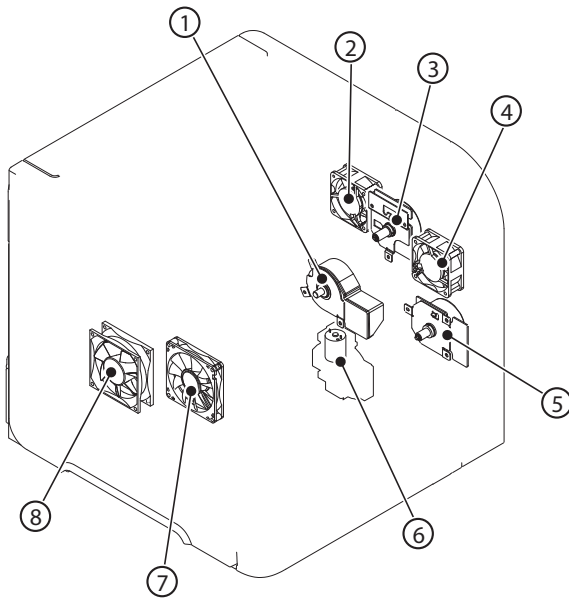


1	Transfer roller
2	Multipurpose tray pickup roller
3	Multipurpose tray feed roller
4	Multipurpose tray separation roller
5	Input tray separation roller (resides in input tray)
6	Input tray feed roller
7	Input tray pickup roller



## Motors and fans

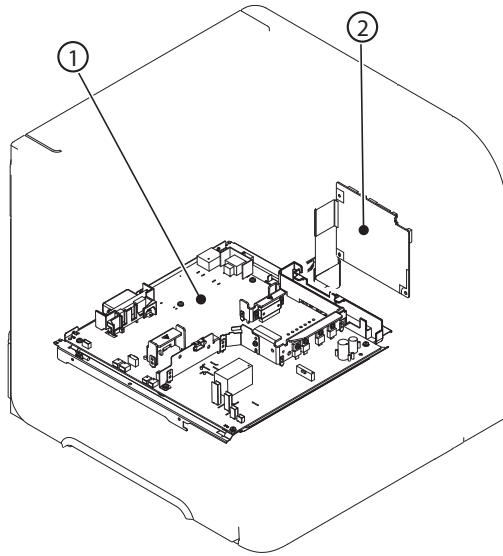
**Figure 3-16** Motors and fans



1	Fuser motor (M299)
2	Fan (FN102)
3	Drum motor (M102)
4	Fan (FN103)
5	Feed motor (M101)
6	Lifter motor (M103)
7	Fan (FN301)
8	Fan (FN101)

## PCAs

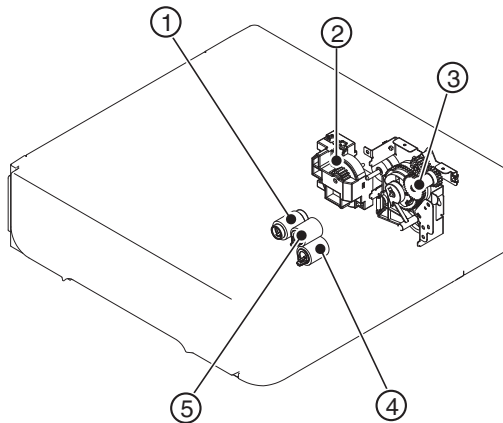
**Figure 3-17** PCAs



1	Power supply PCA
2	DC controller PCA

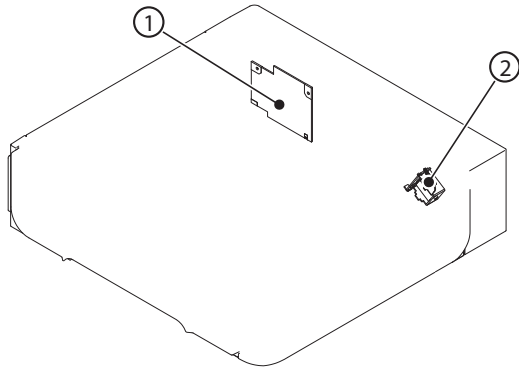
## 500-sheet feeder

**Figure 3-18** 500-sheet feeder main parts



1	Paper feeder pickup roller
2	Paper feeder lifter driver unit
3	Paper feeder pickup drive unit
4	Paper feeder separation roller
5	Paper feed roller

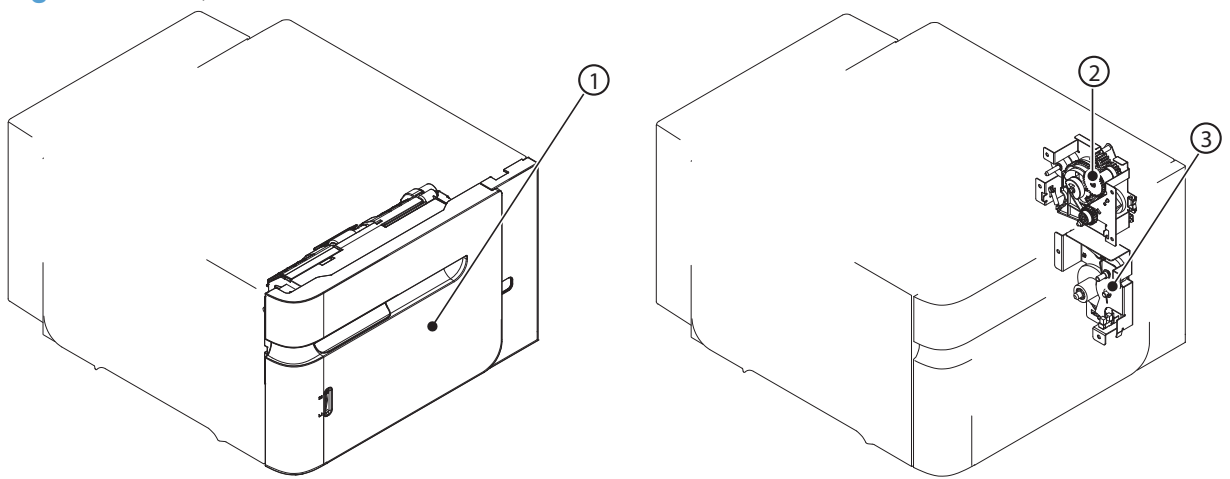
**Figure 3-19** 500-sheet feeder solenoid and PCA



1	Driver PCA
2	Pickup solenoid

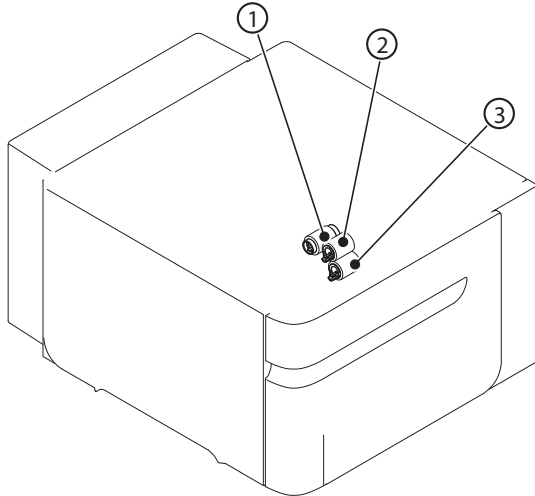
### 1,500-sheet feeder

**Figure 3-20** 1,500-sheet feeder main units



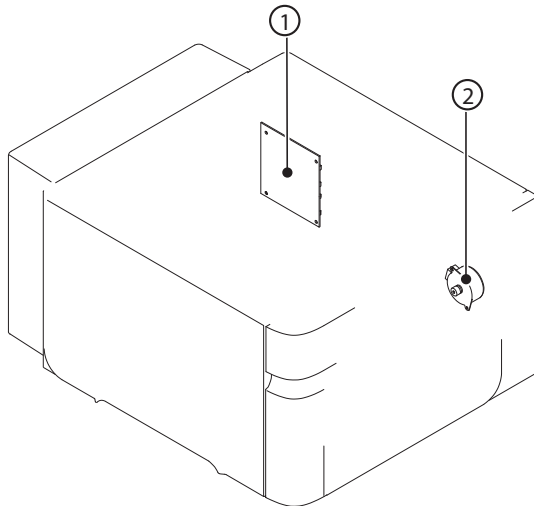
1	Front door unit
2	Pickup drive unit
3	Lifter drive unit

**Figure 3-21** 1,500-sheet feeder main parts



1	Pickup roller
2	Feed roller
3	Separation roller

**Figure 3-22** 1,500-sheet feeder motor and PCA

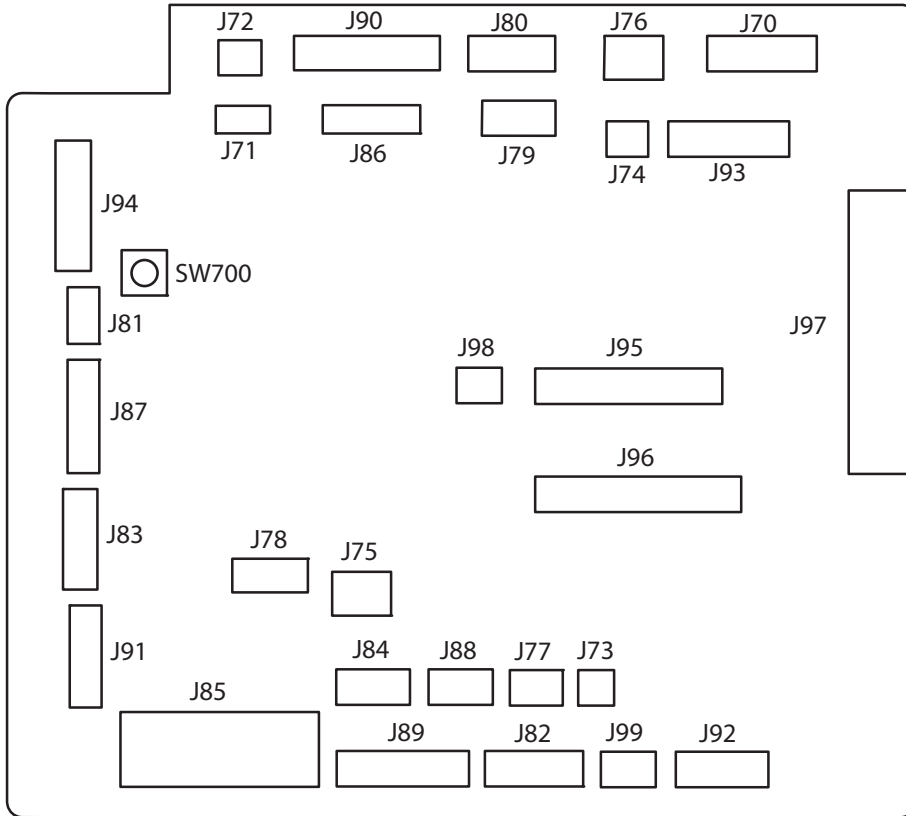


1	Driver PCA
2	Lifter motor

# Connectors

## DC controller PCA connectors

**Figure 3-23** DC controller PCA connectors



**Table 3-15** DC controller connectors

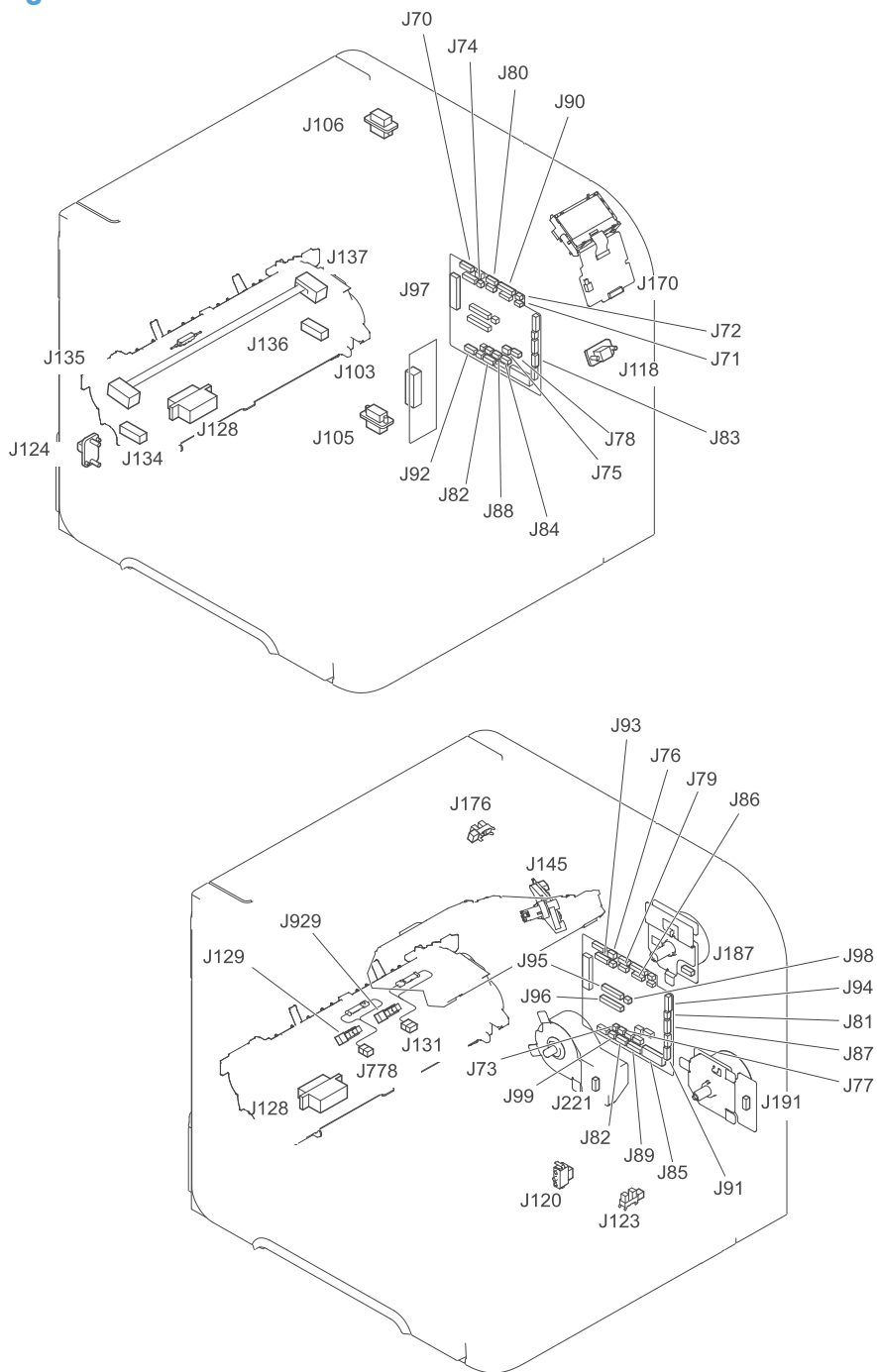
Connector	Functionality	Pin configuration
J70	Control panel connector	8-pin
J71	<b>SL102</b> Tray 1 pickup solenoid	2-pin
J72	<b>SL101</b> Tray 2 pickup solenoid	2-pin
J73	<b>M103</b> Tray 2 lift motor	2-pin
J74	<b>TG101</b> memory tag I/O	2-pin
J75	<b>FN102</b> cooling fan	3-wire
J76	<b>PS104</b> face-down output full sensor	3-pin
J77	<b>CL101</b> feed clutch	3-pin (2-wire)
J78	<b>SW101</b> door open switch	3-pin
J79	<b>FN103</b> cooling fan	4-pin (3-wire)
J80	Not used	6-pin
J81	<b>PS105</b> Tray 1 media present sensor	3-pin

**Table 3-15 DC controller connectors (continued)**

Connector	Functionality	Pin configuration
J82	Fusing assembly	7-wire
J83	Envelope feeder accessory	5-pin
J84	Duplex accessory	6-pin
J85	Power supply PCA (+24Vdc/3.3Vdc)	6-wire
J86	Scanner motor/beam detect	7-pin
J87	<b>M102</b> drum motor	8-pin (7-wire)
J88	Paper deck accessory	5-pin
J89	<b>M299</b> fusing motor	10-pin
J90	Stacker/stacker-stapler/mailbox	8-pin
J91	<b>M101</b> feed motor	7-pin
J92	<b>PS101</b> Tray 2 media present sensor <b>PS107</b> Tray 2 media stack sensor 1 <b>PS907</b> Tray 2 media stack sensor 2	8-pin
J93	Laser/driver PCA	11-pin
J94	<b>PS102</b> pre-feed sensor <b>PS108</b> media width sensor 2 <b>PS103</b> top of page sensor <b>PS106</b> media width sensor 1	12-pin
J95	Power supply PCA	18-pin
J96	Power supply PCA	20-pin
J97	Intermediate PCA to formatter PCA	32-pin ribbon
J98	Not used	
J99	<b>SW102</b> Tray 2 media size switches	4-pin
TB700	3.3 volts DC	
TB701	GRN	

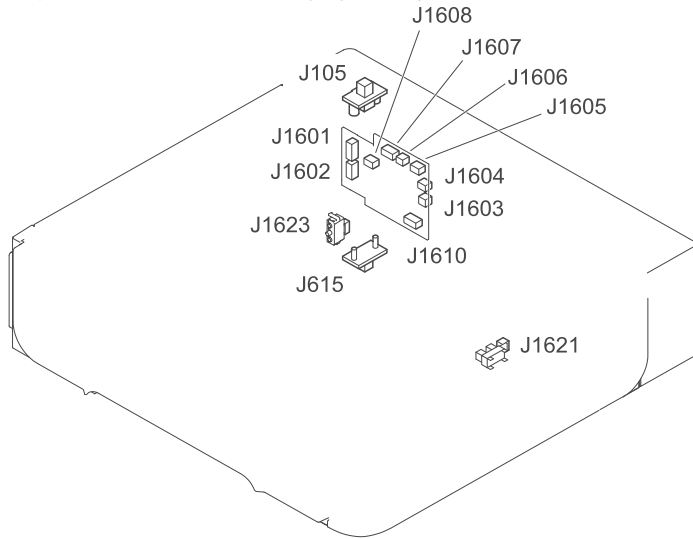
## Product base connectors

Figure 3-24 Product base connectors



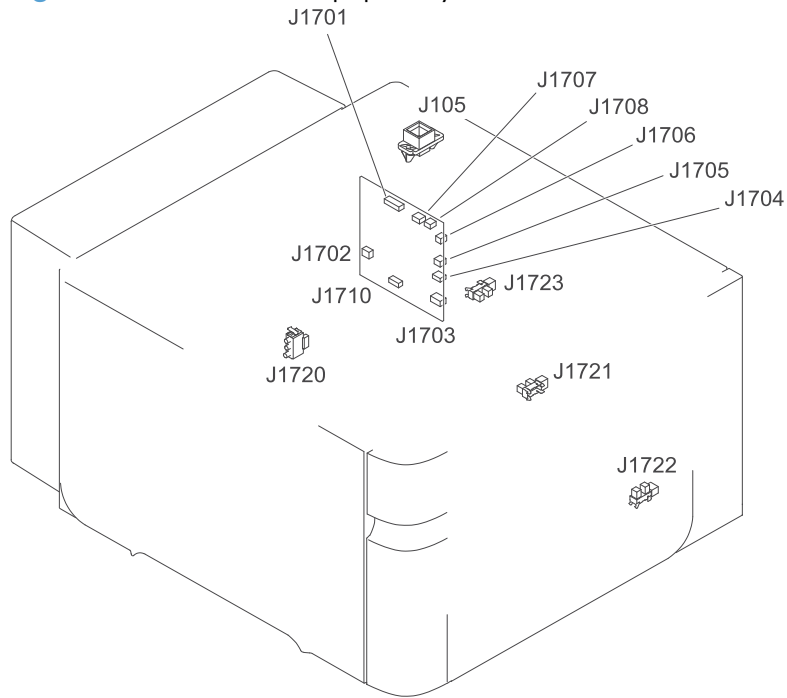
### 500-sheet paper tray connectors

**Figure 3-25** 500-sheet paper tray connectors



### 1,500-sheet paper tray connectors

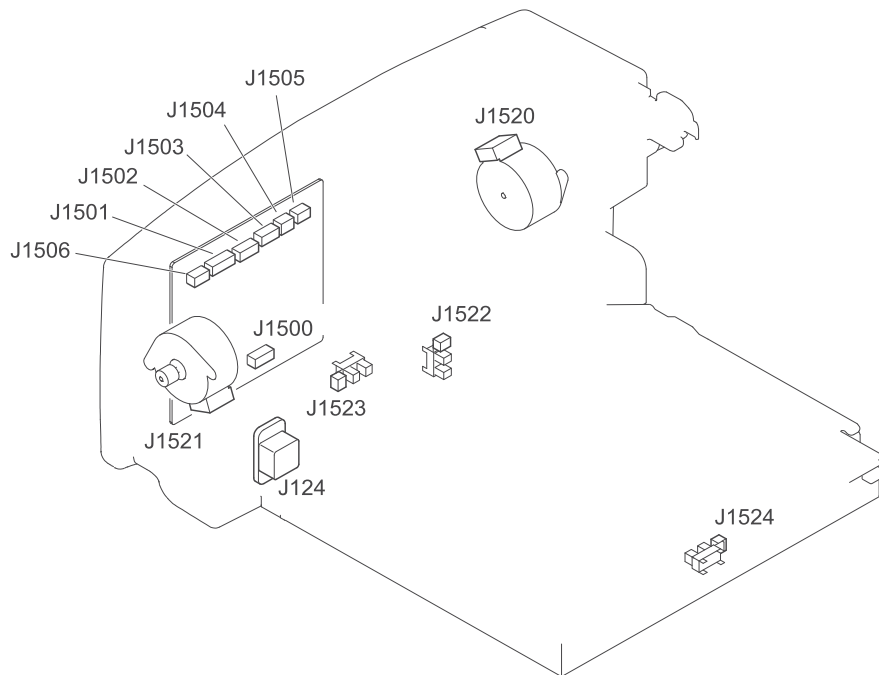
**Figure 3-26** 1,500-sheet paper tray connectors





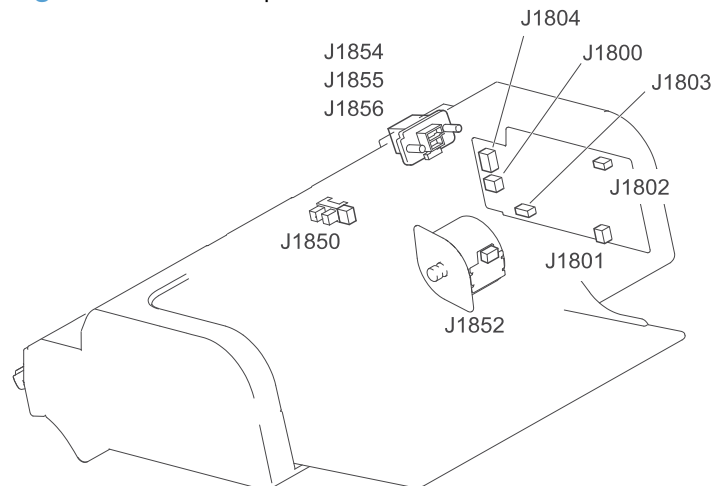
## Duplexer connectors

Figure 3-27 Duplexer connectors



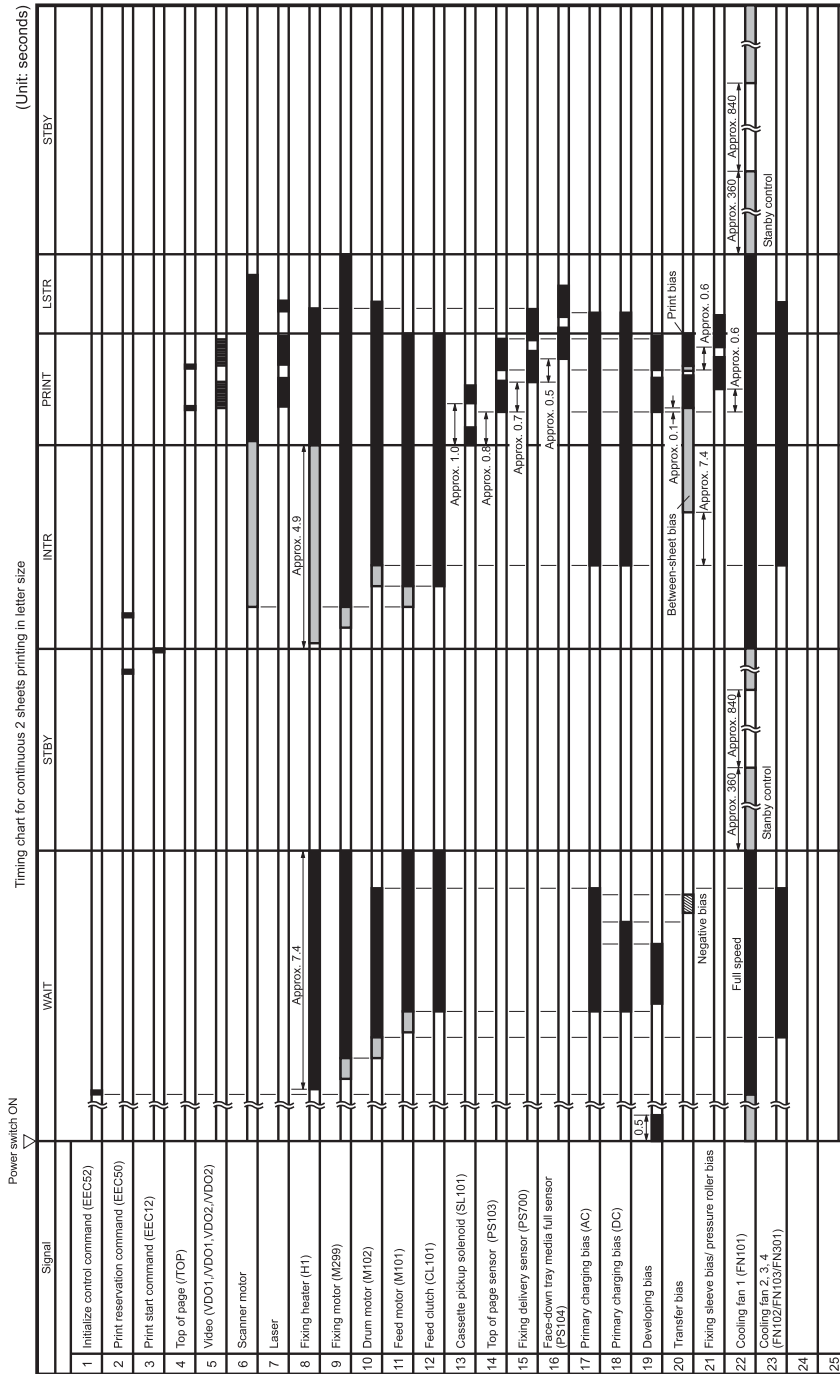
## Envelope feeder connectors

Figure 3-28 Envelope feeder connectors



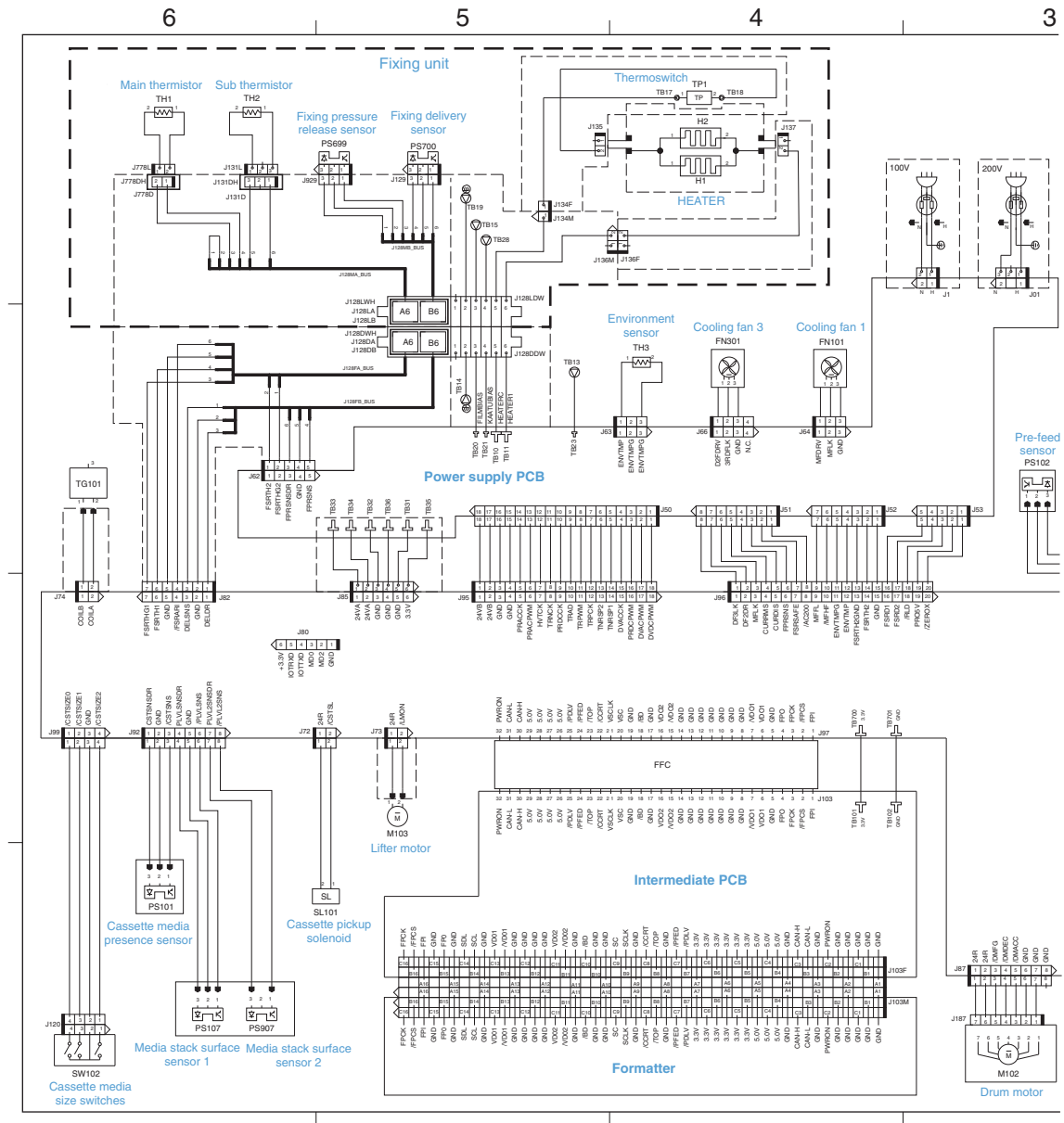
# General timing chart

Figure 3-29 General timing chart

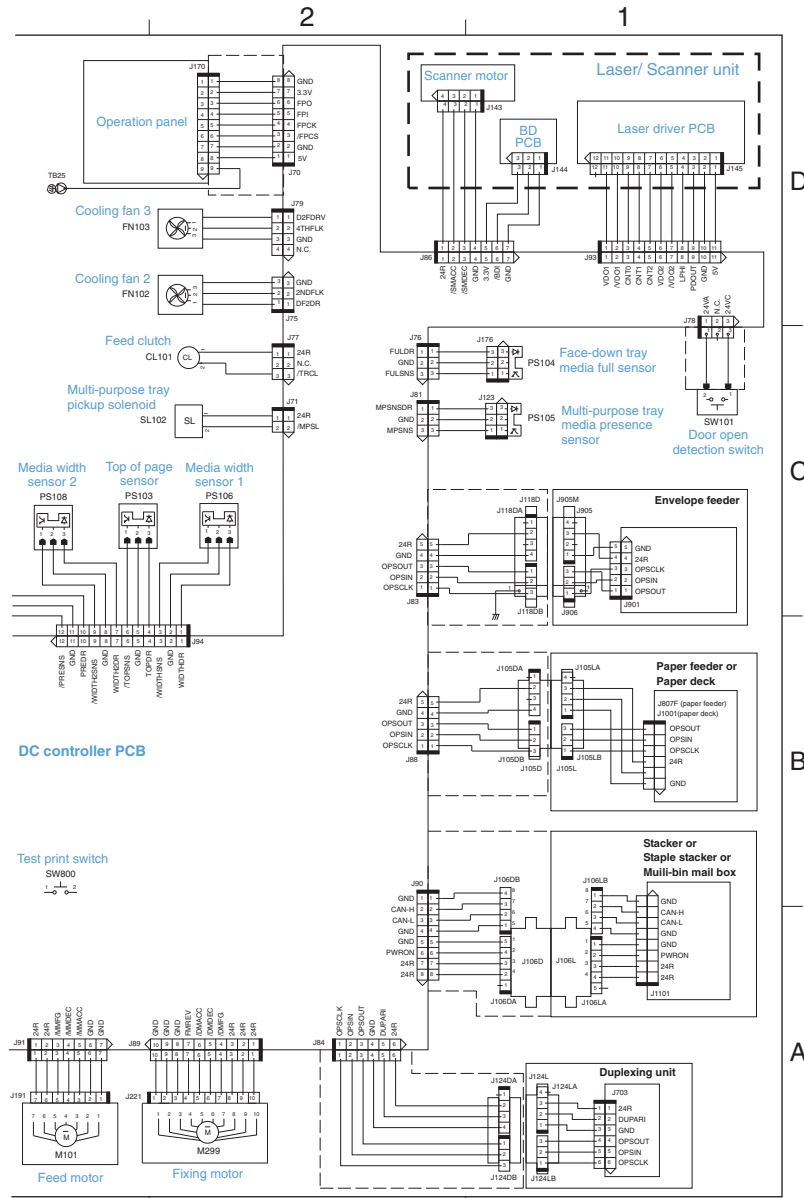


# Circuit diagrams

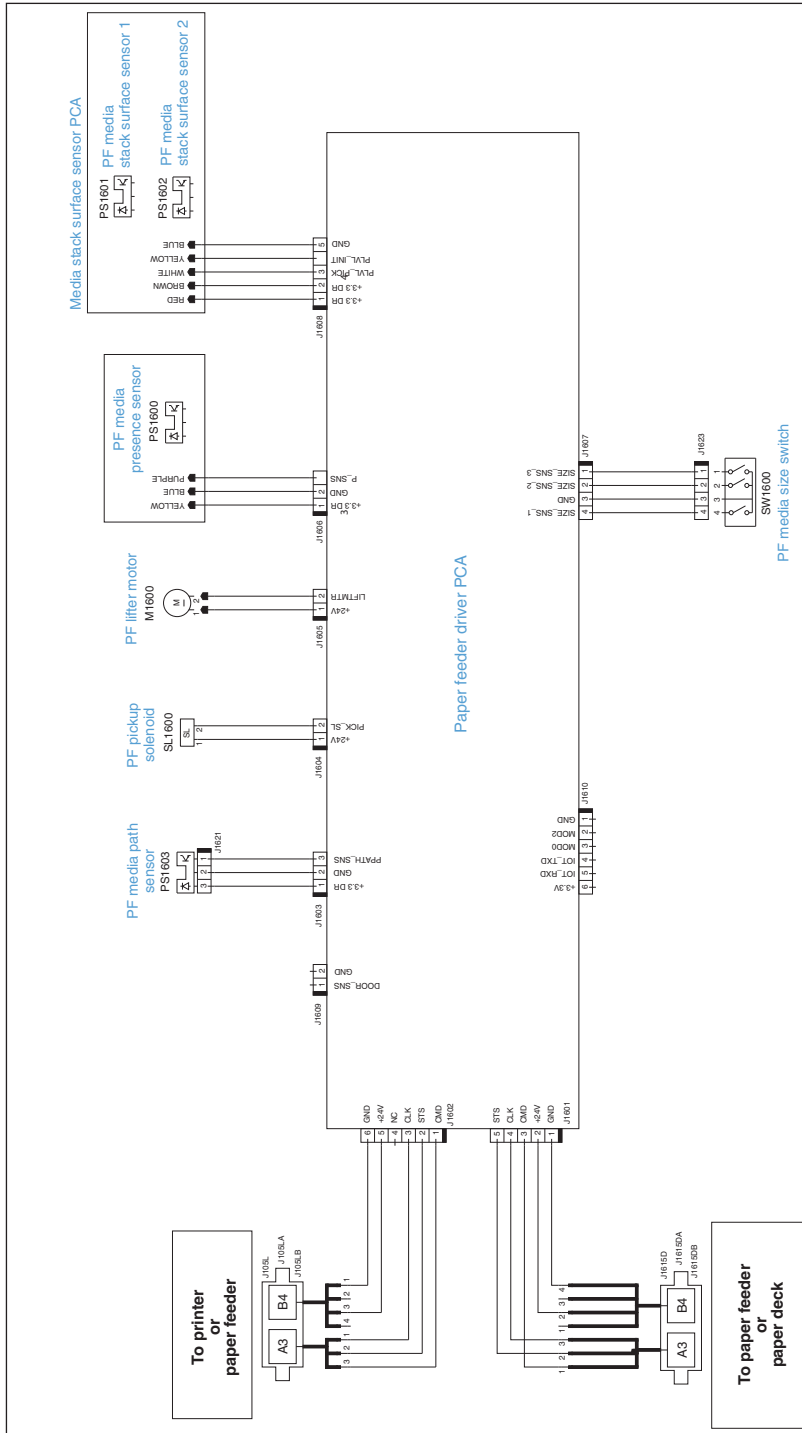
Figure 3-30 General circuit diagram (1 of 2)



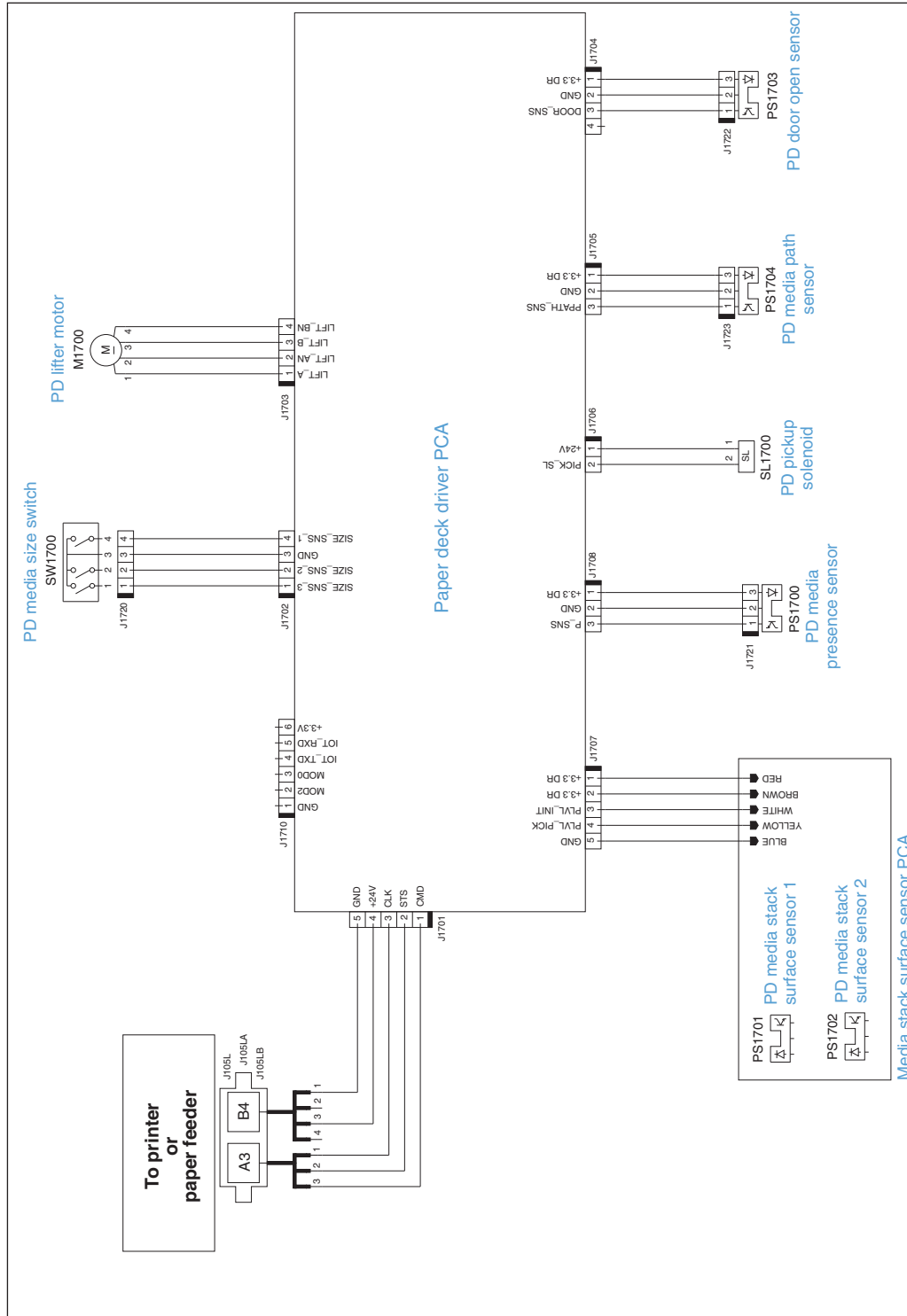
**Figure 3-31** General circuit diagram (2 of 2)



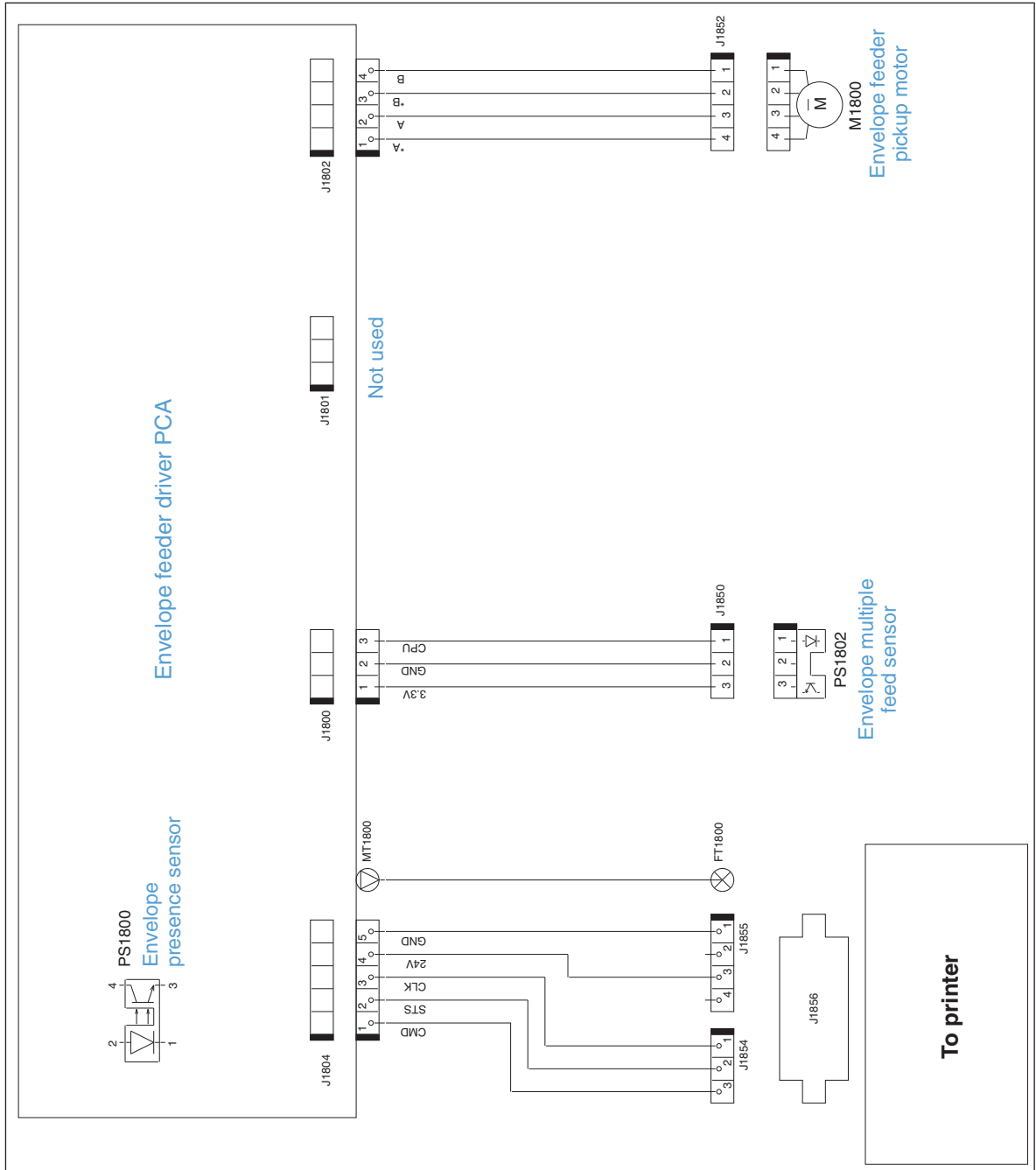
**Figure 3-32** 500-sheet paper tray circuit diagram



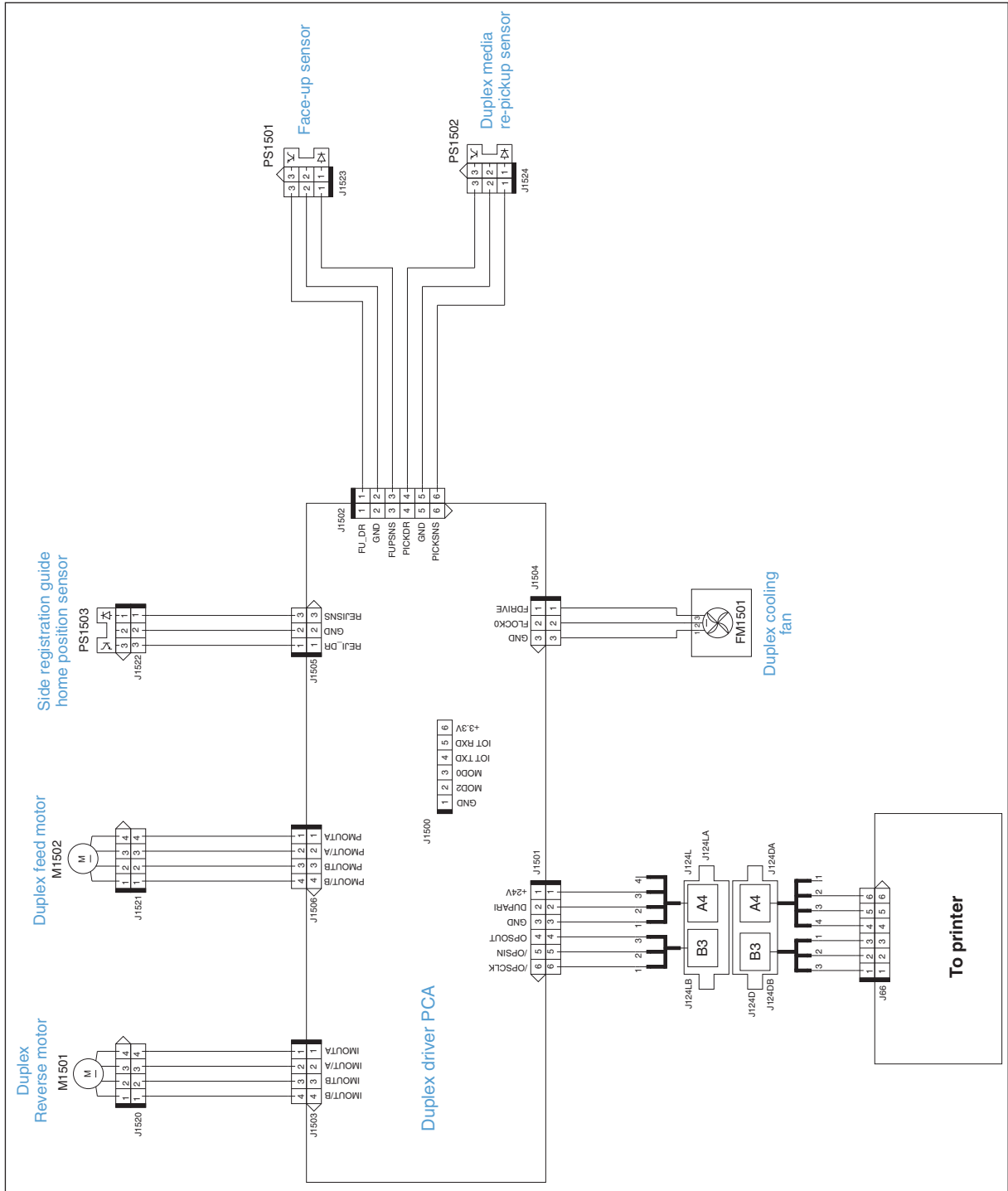
**Figure 3-33** 1,500-sheet paper tray circuit diagram



**Figure 3-34** Envelope feeder circuit diagram



**Figure 3-35** Duplexer circuit diagram






## Internal print-quality test pages


### Print-quality-troubleshooting pages

Use the built-in print-quality-troubleshooting pages to help diagnose and solve print-quality problems.

1. Press the Home  button.
2. Open the following menus:
  - **Administration**
  - **Troubleshooting**
  - **Print Quality Pages**
3. Scroll to the **Print Fuser Test Page** item, and then press the **OK** button.



## Clean the paper path

### Process a cleaning page

1. Press the Home  button.
2. Open the following menus:
  - **Device Maintenance**
  - **Calibrate/Cleaning**
3. Scroll to the **Print Cleaning Page** item, and then press the **OK** button.
4. The product prints a cleaning page, and then returns to the main menu. Discard the printed page.

### Set up an auto cleaning page

Use the procedure in this section to set up an automatic cleaning page.


1. Press the Home .
  2. Open the following menus:
    - **Device Maintenance**
    - **Calibrate/Cleaning**
    - **Cleaning Settings**
  3. Use the arrow keys and the **OK** button to select and set the following settings:
    - **Auto Cleaning**
      - Set to **On**
    - **Cleaning Interval**
      - Select the number of pages at which to automatically clean the paper path
- 
-  **TIP:** HP recommends processing a cleaning page after every 5000 printed pages.
- 
- **Cleaning Size**
    - Select **Letter** or **A4**

## Print configuration page

Depending on the model, up to three pages print when you print a configuration page. In addition to the main configuration page, the embedded Jetdirect configuration pages print.

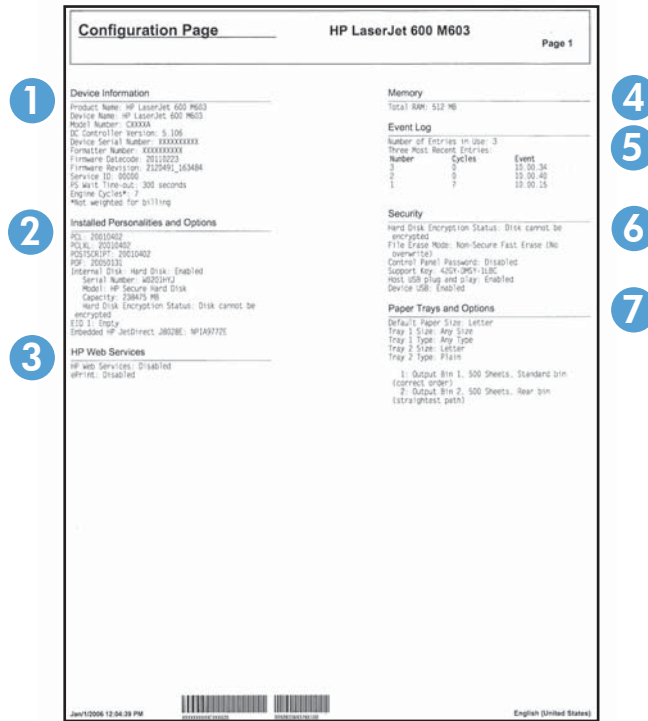
## Configuration page

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 the Home  button.
2. Open the following menus:
  - **Administration**
  - **Reports**
  - **Configuration/Status Pages**
3. Scroll to the **Configuration Page** item, and then press the **OK** button.

4. Scroll to the **Print** item, and then press the **OK** button.

**Figure 3-36** Configuration page



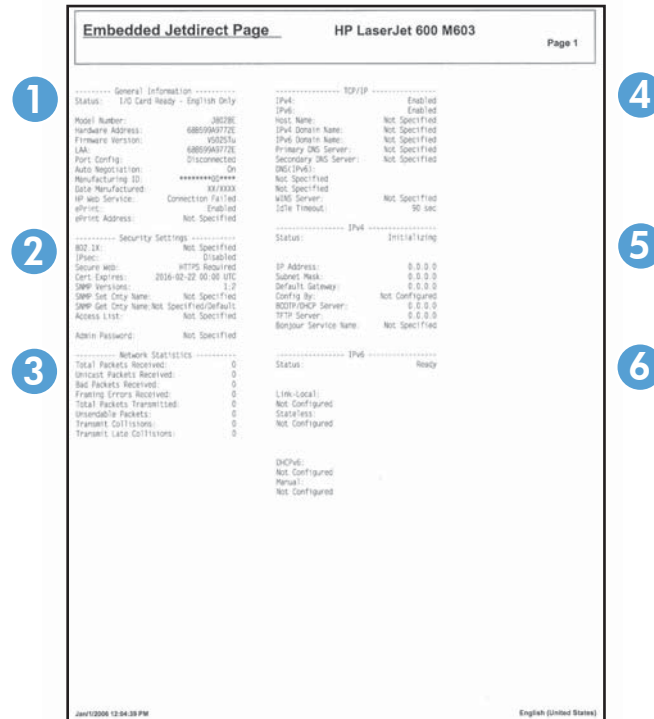
**Table 3-16** Configuration page elements

Item	Description	Item	Description
1	General Information	5	Event Log
2	Installed Personalities and Options	6	Security
3	HP Web Services	7	Paper Trays and options
4	Memory		

## HP embedded Jetdirect page

The second configuration page is the HP embedded Jetdirect page, which contains the following information:

**Figure 3-37** HP embedded Jetdirect page




1	<b>HP Jetdirect Configuration</b> indicates the product status, model number, hardware firmware version, port select, port configuration, auto negotiation, manufacturing identification, and manufactured date.
2	<b>Security Settings</b> information
3	<b>Network Statistics</b> indicates the total packets received, unicast packets received, bad packets received, framing errors received, total packets transmitted, undersize packets, transmit collisions, and transmit late collisions.
4	<b>TCP/IP</b> information, including the IP address
5	<b>IPv4</b> information
6	<b>IPv6</b> information


Always make sure the status line under the HP Jetdirect configuration lines indicates "I/O Card Ready".

## Print quality troubleshooting tools

### Repetitive image defect ruler


Defects on product rollers can cause image defects to appear at regular intervals on the page, corresponding to the circumference of the roller that is causing the defect. Measure the distance between defects that recur on a page. Use the following table or the repetitive-defect ruler to determine which roller is causing the defect. To resolve the problem, try cleaning the roller before replacing it.

 **CAUTION:** Do not use solvents or oils to clean rollers. Instead, rub the roller with lint-free paper. If dirt is difficult to remove, rub the roller with lint-free paper that has been dampened with water.

 **NOTE:** The following table replaces the graphical repetitive defect ruler. You can make your own ruler by using these measurements. For the most accurate results, use a metric ruler.

**Table 3-17 Repetitive defects**

Component	Distance between defects
Primary charging roller	37.7 mm (1.5 inches)
Transfer roller	47 mm (1.85 inches)
Developer roller	63 mm (2.5 inches)
Tray 1 pickup roller	63 mm (2.5 inches)
Tray 1 feed roller	79 mm (3.1 inches)
Tray 1 separation roller	
Tray 2 feed roller	79 mm (3.1 inches)
Tray 2 pickup roller	
Tray 2 separation roller	
Fuser sleeve unit or pressure roller	94 mm (3.75 inches)
Photosensitive drum	94 mm (3.75 inches)

 **NOTE:** Defects on the tray pickup rollers or the Tray 1 pickup roller do not cause a repetitive defect. Defects on these rollers cause a defect to appear only on the leading edge of the image.

To use all of the capabilities of this product, a firmware upgrade might be required. HP recommends that you periodically go to [www.hp.com/go/lj600Series\\_software](http://www.hp.com/go/lj600Series_software) to see if a new version of firmware is available.

# Control-panel menus

## Retrieve Job from USB menu



**NOTE:** You must enable this feature by using the control-panel menus or the HP Embedded Web Server before it can be used.

To enable this feature by using the control-panel menus, open the **Administration** menu, open the **Retrieve From USB Settings** sub menu, and then select the **Enable** option. To enable this feature by using the HP Embedded Web Server, click the **Print** tab.

**To display:** At the product control panel, press the Home button, and then select the **Retrieve Job from USB** menu.


First level	Second level	Values
Select a file or folder	<Job name>	<b>Copies</b>

## Retrieve Job from Device Memory menu

**To display:** At the product control panel, press the Home button, and then select the **Retrieve Job from Device Memory** menu.

First level	Second level	Values
<b>All Jobs (With PIN)</b>	<b>Print</b>	<b>Copies</b>
	<b>Print and Delete</b>	<b>Copies</b>
	<b>Delete</b>	
<b>All Jobs (No PIN)</b>	<b>Print</b>	<b>Copies</b>
	<b>Print and Delete</b>	<b>Copies</b>
	<b>Delete</b>	<b>Yes</b>
		<b>No</b>
<Job name with PIN>	<b>Print</b>	<b>Copies</b>
	<b>Print and Delete</b>	<b>Copies</b>
	<b>Delete</b>	
<Job name without PIN>	<b>Print</b>	<b>Copies</b>
	<b>Print and Delete</b>	<b>Copies</b>
	<b>Delete</b>	<b>Yes</b>
		<b>No</b>

## Supplies menu

**To display:** At the product control panel, press the Home  button, and then select the **Supplies** menu.


In the following table, asterisks (\*) indicate the factory default setting.

**Table 3-18 Supplies menu**

First level	Second level	Third level	Fourth level	Values
<b>Manage Supplies</b>	<b>Print Supplies Status</b>			
	<b>Supply Settings</b>	<b>Black Cartridge</b>	<b>Very Low Settings</b>	<b>Stop</b> <b>Prompt to continue</b> <b>Continue*</b>
			<b>Low Threshold Settings</b>	1-100% Default values for the CE390A cartridge: <ul style="list-style-type: none"> <li>• M601 = 8%</li> <li>• M602 = 11%</li> <li>• M603 = 20%</li> </ul> Default values for the CE390X cartridge: <ul style="list-style-type: none"> <li>• M602 = 5%</li> <li>• M603 = 9%</li> </ul>
		<b>Maintenance Kit</b>	<b>Very Low Settings</b>	<b>Stop</b> <b>Prompt to continue</b> <b>Continue*</b>
			<b>Low Threshold Settings</b>	1-100% Default = 10%
	<b>Supply Messages</b>	<b>Low Message</b>		<b>On*</b> <b>Off</b>
		<b>Level Gauge</b>		<b>On*</b> <b>Off</b>
	<b>Reset Supplies</b>	<b>New Maintenance Kit</b>		<b>No</b> <b>Yes</b>
<b>Black Cartridge</b>				The status is displayed.
<b>Maintenance Kit</b>				The status is displayed.



## Trays menu

**To display:** At the product control panel, press the Home  button, and then select the **Trays** menu.


In the following table, asterisks (\*) indicate the factory default setting.

**Table 3-19** Trays menu

First level	Second level	Values
<b>Manage Trays</b>	<b>Use Requested Tray</b>	<b>Exclusively*</b> <b>First</b>
	<b>Manually Feed Prompt</b>	<b>Always*</b> <b>Unless Loaded</b>
	<b>Size/Type Prompt</b>	<b>Display*</b> <b>Do Not Display</b>
	<b>Use Another Tray</b>	<b>Enabled*</b> <b>Disabled</b>
	<b>Alternative Letterhead Mode</b>	<b>Disabled*</b> <b>Enabled</b>
	<b>Duplex Blank Pages</b>	<b>Auto *</b> <b>Yes</b>
	<b>Tray 2 Model</b>	<b>Standard Tray*</b> <b>Custom Tray</b>
	<b>Image Rotation</b>	<b>Standard*</b> <b>Alternate</b>
	<b>Override A4/Letter</b>	<b>Yes*</b> <b>No</b>
	<b>Envelope Feeder Size</b>	Select a size from the list.
<b>Envelope Feeder Type</b>	Select a type from the list.	
<b>Tray &lt;X&gt; Size</b>	Select a size from the list.	
<b>Tray &lt;X&gt; Type</b>	Select a type from the list.	

## Administration menu


### Reports menu

**To display:** At the product control panel, press the Home  button, select the **Administration** menu, and then select the **Reports** menu.

**Table 3-20 Reports menu**

First level	Second level
<b>Configuration/Status Pages</b>	<b>Administration Menu Map</b>
	<b>Configuration Page</b>
	<b>Supplies Status Page</b>
	<b>Usage Page</b>
	<b>File Directory Page</b>
	<b>Current Settings Page</b>
<b>Other Pages</b>	<b>PCL Font List</b>
	<b>PS Font List</b>

### General Settings menu

**To display:** At the product control panel, press the Home  button, select the **Administration** menu, and then select the **General Settings** menu.

In the following table, asterisks (\*) indicate the factory default setting.

**Table 3-21 General Settings menu**

First level	Second level	Third level	Fourth level	Values
<b>Date/Time Settings</b>	<b>Date/Time Format</b>	<b>Date Format</b>		<b>DD/MMM/YYYY</b>
				<b>MMM/DD/YYYY</b>
			<b>YYYY/MMM/DD</b>	
		<b>Time Format</b>		<b>12 hour (AM/PM)</b>
			<b>24 hours</b>	
	<b>Date/Time</b>	<b>Date</b>	<b>Month</b>	Select values from the lists.
		<b>Day</b>		
		<b>Year</b>		
		<b>Time</b>	<b>Hour</b>	Select values from the lists.
			<b>Minute</b>	
			<b>AM/PM</b>	


**Table 3-21 General Settings menu (continued)**

First level	Second level	Third level	Fourth level	Values
		<b>Time Zone</b>		Select the time zone from the list.
		<b>Adjust for Daylight Savings</b>		<b>On*</b> <b>Off</b>
<b>Energy Settings</b>	<b>Sleep Timer Settings</b>	<b>Sleep/Auto Off Timer</b>		<b>Enabled*</b> <b>Disabled</b>
		<b>Sleep/Auto Off After</b>		If you enabled the sleep/ auto off timer, enter a value between 0 and 120 minutes.  Default value: 30 minutes
		<b>Wake/Auto On Events</b>		<b>All Events*</b> <b>Network port</b> <b>Power button only</b>
<b>Print Quality</b>	<b>Image Registration</b>	<b>Adjust Tray &lt;X&gt;</b>	<b>Print Test Page</b>	
			<b>X1 Shift</b> <b>Y1 Shift</b> <b>X2 Shift</b> <b>Y2 Shift</b>	-5.00 mm to 5.00 mm
	<b>Adjust Paper Types</b>	Select from a list of paper types that the product supports. The available options are the same for each paper type.	<b>Print Mode</b>	Select from a list of print modes.
			<b>Resistance Mode</b>	<b>Normal</b> <b>Up</b> <b>Down</b>
			<b>Humidity Mode</b>	<b>Normal</b> <b>High</b>
		<b>Restore Modes</b>		
	<b>Optimize</b>	<b>Line Detail</b>		<b>Normal*</b> <b>Alternate 1</b> <b>Alternate 2</b> <b>Alternate 3</b> <b>Off</b>

**Table 3-21 General Settings menu (continued)**

First level	Second level	Third level	Fourth level	Values
		<b>Restore Optimize</b>		
	<b>Resolution</b>			<b>300 x 300 dpi</b> <b>600 x 600 dpi</b> <b>FastRes 1200*</b> <b>ProRes 1200</b>
	<b>Economode</b>			<b>Off*</b> <b>On</b>
	<b>Toner Density</b>			Range: 1 - 5 Default = 3
<b>Quiet Mode</b>				<b>Off*</b> <b>On</b>
<b>Jam Recovery</b>				<b>Auto*</b> <b>Off</b> <b>On</b>
<b>Manage Stored Jobs</b>	<b>Quick Copy Job Storage Limit</b>			1-100 Default = 32
	<b>Quick Copy Job Held Timeout</b>			<b>Off*</b> <b>1 Hour</b> <b>4 Hours</b> <b>1 Day</b> <b>1 Week</b>
	<b>Default Folder Name</b>			
	<b>Sort Stored Jobs By</b>			<b>Job Name*</b> <b>Date</b>
<b>Restore Factory Settings</b>				


## Retrieve From USB Settings menu

**To display:** At the product control panel, press the Home  button, select the **Administration** menu, and then select the **Retrieve From USB Settings** menu.

**Table 3-22** Retrieve From USB Settings menu

First level	Values
Enable Retrieve from USB	Enabled
	Disabled*

## General Print Settings menu

**To display:** At the product control panel, press the Home  button, select the **Administration** menu, and then select the **General Print Settings** menu.

In the following table, asterisks (\*) indicate the factory default setting.


**Table 3-23** Print Settings menu

First level	Second level	Values
Manual Feed		Enabled
		Disabled*
Courier Font		Regular*
		Dark
Wide A4		Enabled
		Disabled*
Print PS Errors		Enabled
		Disabled*
Print PDF Errors		Enabled
		Disabled*
Personality		Auto*
		PCL
		PS
		PDF
PCL	Form Length	Range: 5 – 128 Default = 60
	Orientation	Portrait* Landscape

**Table 3-23 Print Settings menu (continued)**

<b>First level</b>	<b>Second level</b>	<b>Values</b>
	<b>Font Source</b>	<b>Internal*</b> <b>USB</b>
	<b>Font Number</b>	Range: 0 – 110 Default = 0
	<b>Font Pitch</b>	Range: 0.44 – 99.99 Default = 10.00
	<b>Font Point Size</b>	Range: 4.00 – 999.75 Default = 12.00
	<b>Symbol Set</b>	Select from a list of symbol sets.
	<b>Append CR to LF</b>	<b>No*</b> <b>Yes</b>
	<b>Suppress Blank Pages</b>	<b>No*</b> <b>Yes</b>
	<b>Media Source Mapping</b>	<b>Standard*</b> <b>Classic</b>


## Default Print Options menu

**To display:** At the product control panel, press the Home  button, select the **Administration** menu, and then select the **Default Print Options** menu.

In the following table, asterisks (\*) indicate the factory default setting.

First level	Second level	Values
<b>Number of Copies</b>		
<b>Default Paper Size</b>		Select from a list of sizes that the product supports.
<b>Default Custom Paper Size</b>	<b>Unit of Measure</b>	<b>Inches</b> <b>mm</b>
	<b>X Dimension</b>	
	<b>Y Dimension</b>	
<b>Output Bin</b>		Select from a list of available output bins.
<b>Sides</b>		<b>1-sided*</b> <b>2-sided</b>
<b>2-Sided Format</b>		<b>Book-style*</b> <b>Flip-style</b>
<b>Edge-To-Edge</b>		<b>Enabled</b> <b>Disabled*</b>

## Display Settings menu

**To display:** At the product control panel, press the Home  button, select the **Administration** menu, and then select the **Display Settings** menu.

In the following table, asterisks (\*) indicate the factory default setting.


**Table 3-24** Display Settings menu

First level	Second level	Values
<b>Display Brightness</b>		Range -10 to 10
<b>Language</b>		Select from a list of languages that the product supports.
<b>Show IP Address</b>		<b>Display</b> <b>Hide</b>
<b>Inactivity Timeout</b>		Range: 10 – 300 seconds Default = 60 seconds

**Table 3-24 Display Settings menu (continued)**

First level	Second level	Values
Clearable Warnings		On
		Job*
Continuable Events		Auto continue (10 seconds)*
		Press OK to continue

### Manage Supplies menu

**To display:** At the product control panel, press the Home  button, select the **Administration** menu, and then select the **Manage Supplies** menu.

In the following table, asterisks (\*) indicate the factory default setting.

**Table 3-25 Manage Supplies menu**


First level	Second level	Third level	Values
<b>Print Supplies Status</b>			
Supply Settings	Black Cartridge	Very Low Settings	Stop
			Prompt to continue
			Continue*
		Low Threshold Settings	1-100%
			Default values for the CE390A cartridge:
			<ul style="list-style-type: none"> <li>• M601 = 8%</li> <li>• M602 = 11%</li> <li>• M603 = 20%</li> </ul>
			Default values for the CE390X cartridge:
			<ul style="list-style-type: none"> <li>• M602 = 5%</li> <li>• M603 = 9%</li> </ul>
	Maintenance Kit	Very Low Settings	Stop
			Prompt to continue
			Continue*
		Low Threshold Settings	1-100%
			Default = 10%
Supply Messages	Low Message		On*
			Off



**Table 3-25 Manage Supplies menu (continued)**

First level	Second level	Third level	Values
	<b>Level Gauge</b>		<b>On*</b> <b>Off</b>
<b>Reset Supplies</b>	<b>New Maintenance Kit</b>		<b>No</b> <b>Yes</b>

### Manage Trays menu


**To display:** At the product control panel, press the Home  button, select the **Administration** menu, and then select the **Manage Trays** menu.

In the following table, asterisks (\*) indicate the factory default setting.

**Table 3-26 Manage Trays menu**

First level	Values
<b>Use Requested Tray</b>	<b>Exclusively*</b> <b>First</b>
<b>Manually Feed Prompt</b>	<b>Always*</b> <b>Unless Loaded</b>
<b>Size/Type Prompt</b>	<b>Display*</b> <b>Do Not Display</b>
<b>Use Another Tray</b>	<b>Enabled*</b> <b>Disabled</b>
<b>Alternative Letterhead Mode</b>	<b>Disabled*</b> <b>Enabled</b>
<b>Duplex Blank Pages</b>	<b>Auto *</b> <b>Yes</b>
<b>Tray 2 Model</b>	<b>Standard Tray</b> <b>Custom Tray</b>
<b>Image Rotation</b>	<b>Standard</b> <b>Alternate</b>
<b>Override A4/Letter</b>	<b>Yes*</b> <b>No</b>

## Stapler/Stacker Settings menu


**To display:** At the product control panel, press the Home  button, select the **Administration** menu, and then select the **Stapler/Stacker Settings** menu.

In the following table, asterisks (\*) indicate the factory default setting.

**Table 3-27 Stapler/Stacker Settings menu**

First level	Values
Stapling	None*
	Top left or right
	Top left
	Top right
Staples Very Low	Continue*
	Stop

## Multi-Bin Mailbox Settings menu


**To display:** At the product control panel, press the Home  button, select the **Administration** menu, and then select the **Multi-Bin Mailbox Settings** menu.

In the following table, asterisks (\*) indicate the factory default setting.

**Table 3-28 Multi-Bin Mailbox Settings menu**

First level	Values
Operation Mode	Mailbox*
	Stacker
	Job Separator
	Collator

## Network Settings menu

**To display:** At the product control panel, press the Home  button, select the **Administration** menu, and then select the **Network Settings** menu.

In the following table, asterisks (\*) indicate the factory default setting.

**Table 3-29 Network Settings menu**

First level	Values
I/O Timeout	Range: 5 – 300 sec Default = 15
Jetdirect Menu	See the table that follows for details.

**Table 3-30 Jetdirect Menu**

First level	Second level	Third level	Fourth level	Values
Information	Print Sec Page			Yes
				No*
TCP/IP	Enable			On*
				Off
	Host Name			
	IPV4 Settings	Config Method		Bootp
				DHCP*
				Auto IP
				Manual
		Manual Settings	IP Address	Enter the address.
			Subnet Mask	Enter the address.
			Default Gateway	Enter the address.
		Default IP		Auto IP*
				Legacy
		DHCP Release		No*
				Yes
		DHCP Renew		No*
				Yes

**Table 3-30 Jetdirect Menu (continued)**

First level	Second level	Third level	Fourth level	Values
		<b>Primary DNS</b>		
		<b>Secondary DNS</b>		
	<b>IPV6 Settings</b>	<b>Enable</b>		<b>Off</b> <b>On*</b>
		<b>Address</b>	<b>Manual Settings</b>	<b>Enable</b> <b>Address</b>
		<b>DHCPV6 Policy</b>		<b>Router Specified</b> <b>Router Unavailable*</b> <b>Always</b>
		<b>Primary DNS</b>		
		<b>Secondary DNS</b>		
	<b>Proxy Server</b>			
	<b>Proxy Port</b>			
	<b>Idle Timeout</b>			
<b>Security</b>	<b>Secure Web</b>			<b>HTTPS Required*</b> <b>HTTPS Optional</b>
	<b>IPSEC</b>			<b>Keep</b> <b>Disable*</b>
	<b>802.1X</b>			<b>Reset</b> <b>Keep*</b>
	<b>Reset Security</b>			<b>Yes</b> <b>No*</b>
<b>Diagnostics</b>	<b>Embedded Tests</b>	<b>LAN HW Test</b>		<b>Yes</b> <b>No*</b>
		<b>HTTP Test</b>		<b>Yes</b> <b>No*</b>
		<b>SNMP Test</b>		<b>Yes</b> <b>No*</b>
		<b>Data Path Test</b>		<b>Yes</b> <b>No*</b>


**Table 3-30 Jetdirect Menu (continued)**

First level	Second level	Third level	Fourth level	Values
		<b>Select All Tests</b>		<b>Yes</b> <b>No*</b>
		<b>Execution Time [H]</b>		Range: 1 – 60 hours Default = 1 hour
		<b>Execute</b>		<b>No*</b> <b>Yes</b>
	<b>Ping Test</b>	<b>Dest Type</b>		<b>IPV4</b> <b>IPV6</b>
		<b>Dest IPv4</b>		
		<b>Dest IPv6</b>		
		<b>Packet Size</b>		
		<b>Timeout</b>		
		<b>Count</b>		
		<b>Print Results</b>	<b>Yes</b> <b>No</b>	
		<b>Execute</b>	<b>Yes</b> <b>No</b>	
	<b>Ping Results</b>	<b>Packets Sent</b>		
		<b>Packets Received</b>		
		<b>Percent Lost</b>		
		<b>RTT Min</b>		
		<b>RTT Max</b>		
		<b>RTT Average</b>		
		<b>Ping in Progress</b>	<b>Yes</b> <b>No</b>	

**Table 3-30 Jetdirect Menu (continued)**

<b>First level</b>	<b>Second level</b>	<b>Third level</b>	<b>Fourth level</b>	<b>Values</b>
		<b>Refresh</b>	<b>Yes</b> <b>No</b>	
<b>Link Speed</b>				<b>Auto*</b> <b>10T Half</b> <b>10T Full</b> <b>100TX Half</b> <b>100TX Full</b> <b>1000T Full</b>

## Troubleshooting menu

**To display:** At the product control panel, press the Home  button, select the **Administration** menu, and then select the **Troubleshooting** menu.

In the following table, asterisks (\*) indicate the factory default setting.


**Table 3-31 Troubleshooting menu**

First level	Second level	Third level	Values
<b>Print Event Log</b>			
<b>View Event Log</b>			
<b>Print Paper Path Page</b>			
<b>Print Quality Pages</b>	<b>Print Fuser Test Page</b>		
<b>Diagnostic Tests</b>	<b>Paper Path Sensors</b>	Select from a list of the product sensors.	
	<b>Paper Path Test</b>	<b>Print Test Page</b>	
		<b>Source</b>	Select from a list of the available trays.
		<b>Destination</b>	Select from a list of the available bins.
		<b>Duplex</b>	<b>Off*</b> <b>On</b>
		<b>Copies</b>	<b>1 *</b>
			<b>10</b>
			<b>50</b>
			<b>100</b>
			<b>500</b>
		<b>Stacking</b>	<b>Off</b> <b>On</b>
	<b>Manual Sensor Test</b>		
	<b>Manual Tray/Bin Sensor Test</b>		
	<b>Component Test</b>		
	<b>Print/Stop Test</b>	Range: 0 – 60,000	

## Device Maintenance menu

### Backup/Restore menu

**CAUTION:** Data backup and restoration is the responsibility of the customer/administrator of the product. Service personnel should not back up or restore customer data under any circumstances.


**To display:** At the product control panel, press the Home  button, select the **Device Maintenance** menu, and then select the **Backup/Restore** menu.

In the following table, asterisks (\*) indicate the factory default setting.

**Table 3-32 Backup/Restore menu**

First level	Second level	Third level	Values
<b>Backup Data</b>	<b>Scheduled Backups</b>	<b>Enable Scheduling</b>	Enter a time
		<b>Days Between</b>	Enter the number of days
	<b>Backup Now</b>		
	<b>Export Last Backup</b>		
<b>Restore Data</b>			Insert a USB drive that contains the backup file.

### Calibrate/Cleaning menu

**To display:** At the product control panel, press the Home  button, select the **Device Maintenance** menu, and then select the **Calibrate/Cleaning** menu.


In the following table, asterisks (\*) indicate the factory default setting.

**Table 3-33 Calibrate/Cleaning menu**

First level	Second level	Values
<b>Cleaning Settings</b>	<b>Auto Cleaning</b>	<b>Off*</b>
		<b>On</b>
	<b>Cleaning Interval</b>	From the list, select the number of pages at which to automatically clean the product.
	<b>Cleaning Size</b>	<b>Letter</b>
		<b>A4</b>
<b>Print Cleaning Page</b>		



## USB Firmware Upgrade menu

**To display:** At the product control panel, press the Home  button, select the **Device Maintenance** menu, and then select the **USB Firmware Upgrade** menu.

Insert a USB storage device with a firmware upgrade bundle into the USB port, and follow the on-screen instructions.

## Service menu


**To display:** At the product control panel, press the Home  button, select the **Device Maintenance** menu, and then select the **Service** menu.

The **Service** menu is locked and requires a PIN for access. This menu is intended for use by authorized service personnel.

## Interpret control-panel messages, status-alert messages, and event code errors

The control-panel messages and event code errors indicate the current product status or situations that might require action.

---

 **NOTE:** Event log errors do not appear on the control-panel display. Access the event log to view or print the event log errors.

---

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

For some messages, restarting the product might fix the problem. If a critical error persists, the product might require service.

### 10.00.33

#### Description

A used supply is in use (end of life).

#### Recommended action

No action necessary.

### 10.00.35

#### Description

An incompatible supply is in use.

#### Recommended action

Install the correct HP print cartridge for this product (CE390A or CE390X).

---

 **NOTE:** The CE390X cartridge is not compatible with the HP LaserJet Enterprise 600 M601.

---

### 10.00.60


#### Description

The black cartridge is low.

#### Recommended action

If print quality is no longer acceptable, replace the print cartridge.

---

 **TIP:** Advise the customer that HP recommends that they have replacement supplies available to install when the print quality is no longer acceptable.

---

## 10.00.69

### Description

The black cartridge is very low.

### Recommended action

If print quality is no longer acceptable, replace the print cartridge.



**TIP:** Advise the customer that HP recommends that they have replacement supplies available to install when the print quality is no longer acceptable.

---

## 10.00.91

### Description

Cartridge motor stall.

### Recommended action

Replace the print cartridge.

## 10.0X.Y0 Supply memory error

### Description

The product cannot read or write to at least one print cartridge memory tag or a memory tag is missing from the print cartridge.

### Memory error (Y = 0)

- **10.00.00** (event code)  
Black print cartridge

### Memory tag missing (Y = 1)

- **10.00.10** (event code)  
Black print cartridge

### Recommended action

1. Remove, and then reinstall the indicated print cartridge.
2. If the error reappears, turn the power off, and then on.
3. Check the cartridge memory tag. If it is damaged, replace the cartridge.
4. If the error persists, replace the indicated print cartridge.


### 10.23.35

#### **Description**

An incompatible fuser is in use.

#### **Recommended action**

Replace the fuser.

 **TIP:** Advise the customer that HP recommends that they have replacement supplies available to install when the print quality is no longer acceptable.

---

### 10.23.50

#### **Description**

The fuser kit life was reset above the order threshold.

#### **Recommended action**

No action necessary.

### 10.23.51

#### **Description**

The fuser kit life was reset above the replace threshold.

#### **Recommended action**

No action necessary.

### 10.23.52

#### **Description**

The fuser kit life was reset above the reset threshold.

#### **Recommended action**


No action necessary.

### 10.23.60

#### **Description**

The product indicates when fuser kit is very low. The actual remaining fuse kit life might vary.

You do not need to replace the fuser kit at this time unless print quality is no longer acceptable.

 **NOTE:** After an HP supply has reached the very low threshold, the HP premium protection warranty ends.

---

### **Recommended action**

If print quality is no longer acceptable, replace the fuser kit. See the parts chapter in the service manual for the fuser kit part number.



**TIP:** Advise the customer that HP recommends that they have replacement supplies available to install when the print quality is no longer acceptable.

---

## **10.23.70 Printing Past Very Low**

### **Description**

The product indicates when the fuser kit is very low. The actual remaining fuse kit life might vary.

You do not need to replace the fuser kit at this time unless print quality is no longer acceptable.



**NOTE:** After an HP supply has reached the very low threshold, the HP premium protection warranty ends.

---

### **Recommended action**

If print quality is no longer acceptable, replace the fuser kit. See the parts chapter in the service manual for the fuser kit part number.



**TIP:** Advise the customer that HP recommends that they have replacement supplies available to install when the print quality is no longer acceptable.

---

## **10.26.15**

### **Description**

The product indicates when the maintenance might need to be replaced.

### **Recommended action**

If print quality is no longer acceptable, replace the maintenance kit. See the parts chapter in the service manual for the maintenance kit part number.



**TIP:** Advise the customer that HP recommends that they have replacement supplies available to install when the print quality is no longer acceptable.

---

## **10.26.50**

### **Description**

The maintenance kit was reset.

### **Recommended action**


No action required.

## 10.26.60

### Description

The product indicates when the maintenance kit is very low. The actual remaining maintenance kit life might vary.


You do not need to replace the maintenance kit at this time unless print quality is no longer acceptable.

 **NOTE:** After an HP supply has reached the very low threshold, the HP premium protection warranty ends.

---

### Recommended action

If print quality is no longer acceptable, replace the maintenance kit. See the parts chapter in the service manual for the maintenance kit part number.

 **TIP:** Advise the customer that HP recommends that they have replacement supplies available to install when the print quality is no longer acceptable.

---

## 10.XX.34 Used Supply In Use

### Description


The print cartridge is used.

- **10.00.34** (event code)

Black print cartridge

### Recommended action

If you believe this is a genuine HP supply, go to [www.hp.com/go/anticounterfeit](http://www.hp.com/go/anticounterfeit).

 **NOTE:** Removing a cartridge from one product and then installing it in a different product (for testing functionality) will cause this event code.

---

## 10.XX.40 Genuine HP Supplies Installed

### Description

A genuine HP print cartridge has been installed.

- **10.00.40** (event code)

Black print cartridge

### Recommended action

No action necessary.

## 10.XX.41 Unsupported Supply In Use

### Description

The installed print cartridge is for a different product.


- **10.00.41** (event code)

Black print cartridge

### Recommended action

Remove the print cartridge, and then install the correct cartridge for this product.

---

 **TIP:** See the parts chapter in the service manual for the correct cartridge part number.

---


## 10.XX.70 Printing past very low

### Description

The product indicates when a supply level is very low. The actual remaining print cartridge life might vary.

You do not need to replace the print cartridge at this time unless print quality is no longer acceptable.

---

 **NOTE:** After an HP supply has reached the very low threshold, the HP premium protection warranty ends.

---


- **10.00.70** (event code)

Black print cartridge

### Recommended action

If print quality is no longer acceptable, replace the print cartridge. See the parts chapter in the service manual for the correct cartridge part number.

---

 **TIP:** Advise the customer that HP recommends that they have replacement supplies available to install when the print quality is no longer acceptable.

---

## 10.YY.15 Install <supply>

### Description

The indicated supply has been removed or installed incorrectly.

- **10.00.15** (event code)

Black print cartridge

- **10.23.15**

Fuser kit

### **Recommended action**

Replace or install the indicated supply.

See the parts chapter in the service manual for the correct supply or kit part number.

## **10.YY.35 Incompatible <supply>**


### **Description**

The indicated supply is not compatible with this product.

- **10.00.35** (event code)  
Black print cartridge
- **10.23.35** (event code)  
Fuser

### **Recommended action**

---

 **CAUTION:** The fuser might be hot. Be careful when removing the fuser.

---

Install a supply that is designed for this product.

See the parts chapter in the service manual for the correct supply part number.

## **11.00.YY Internal clock error**

### **Description**

The product real time clock has experienced an error.

- 01=dead clock
- 02=dead real time clock

### **Recommended action**

Whenever the product is turned off and then turned on again, set the time and date at the control panel.

If the error persists, you might need to replace the formatter.

## **13.00.00**

### **Description**

Generic jam event code.

### **Recommended action**

Check the product for a jam. See the clear jams section in the service manual.



## 13.00.EE

### Description

Unknown door open

### Recommended action

make sure that all of the doors and covers are closed.

## 13.A3.FF

### Description

Power on jam at the Tray 3 feed sensor.

### Recommended action

Check the product for a jam. See the clear jams section in the service manual.

## 13.D3.DZ

### Description

Late to duplex re-feed jam

- **13.D3.D1** (event code)
- **13.D3.D2** (event code)
- **13.D3.D3** (event code)
- **13.D3.D4** (event code)
- **13.D3.D5** (event code)
- **13.D3.D6** (event code)
- **13.D3.DD** (event code)
- **13.D3.DE** (event code)

### Recommended action

Check the product for a jam. See the clear jams section in the service manual.

## 13.E5.FF

### Description

A power on jam has occurred.

### Recommended action

Check the product for a jam. See the clear jams section in the service manual.

### 13.EA.EE

**Description**

A door jam has occurred.

**Recommended action**

Check the product for a jam. See the clear jams section in the service manual.

Use the component test to isolate a faulty door switch or sensor.

### 13.EE.FF

**Description**

A power on jam has occurred.

**Recommended action**

Check the product for a jam. See the clear jams section in the service manual.

### 13.FF.EE

**Description**

A door jam has occurred.

**Recommended action**

Check the product for a jam. See the clear jams section in the service manual.

Use the Manual sensors test or Tray/Bin manual sensors test to isolate a faulty door switch or sensor.

### 13.FF.FF

**Description**

A power on residual paper jam has occurred (sensor).

**Recommended action**

Check the product for a jam. See the clear jams section in the service manual.

Use the Manual sensors test or Tray/Bin manual sensors test to isolate a faulty door switch or sensor.

### 13.WX.EE

**Description**

This jam occurs when a door is opened during printing.

**Recommended action**

Make sure that the doors are fully closed.

## 13.WX.FF

### Description

Power on residual paper jam

This jam occurs when the paper exists at any of the paper path jam sensors at power on or door close. Due to the current FW timing requirements, the displayed jam code is always 13.FF.FF, only the event log will have 13.WX.FF

### Recommended action

Clear the jam. See the clear jams section in the service manual.

## 13.WX.YZ Fuser Area Jam

### Description

A jam in the fuser area has occurred.

### Recommended action

Clear the jam. See the clear jams section in the service manual.

Make sure media is within specifications, check for obstructions in the fuser, check that the T2 roller is installed properly.

## 13.WX.YZ Fuser wrap jam

### Description

### Recommended action

Clear the jam. See the clear jams section in the service manual.

## 13.WX.YZ Jam below control panel

### Description

- **13.B2.9Z** (event code)  
Page at duplex switchback jam.  
Z = the source tray number

### Recommended action

Check the product for a jam. See the clear jams section in the service manual.

## 13.WX.YZ Jam in Tray 1

### Description

- **13.B2.D1** (event code)

Late to registration jam, from Tray 1

This jam occurs when the paper does not reach the TOP sensor in designated amount of time from the start of paper pickup at printing from Tray 1 and duplex printing.

**Recommended action**

Clear the jam. See the clear jams section in the service manual.

### 13.WX.YZ Jam in Tray <X>

**Description**

A misfeed jam has occurred.

**Recommended action**

Clear the jam. See the clear jams section in the service manual.

### 13.WX.YZ Jam inside envelope feeder

**Description**

A jam exists inside the envelope feeder.

**Recommended action**

Clear the jam. See the clear jams section in the service manual.

### 13.WX.YZ Jam inside top cover

**Description**

A jam exists inside the top cover.

**Recommended action**

Clear the jam. See the clear jams section in the service manual.

### 14.00.XX

**Description**

A feed roller error has occurred.

- **14.00.01** (event code)
- **14.00.02** (event code)
- **14.00.03** (event code)
- **14.00.04** (event code)
- **14.00.05** (event code)
- **14.00.06** (event code)

### **Recommended action**

Check the product and accessories feed rollers for dirt or damage. Clean or replace the rollers as necessary.

## **20.00.00 Insufficient memory: <Device> To continue, touch "OK"**

### **Description**

The product has experienced a memory error. You might have tried to transfer too many fonts or macros.

### **Recommended action**

Touch the **OK** button to print the transferred data (some data might be lost), and then simplify the print job or install additional memory.

## **21.00.00 Page Too Complex**

### **Description**

The page decompression process was too slow for the printer.

### **Recommended action**

Touch the **OK** button to continue printing (some data might be lost).

## **32.08.AX**

### **Description**

- **32.08.A1** (event code)  
Shutdown event
- **32.08.A2** (event code)  
Boot from normal shutdown event
- **32.08.A3** (event code)  
Boot from abnormal shutdown event

### **Recommended action**

No action necessary.

## 32.1C.XX

### Description

- **32.1C.01** (event code)  
NVRAM backup/restore service backup started
- **32.1C.02** (event code)  
NVRAM backup/restore service restore started
- **32.1C.03** (event code)  
NVRAM backup/restore administrator backup started
- **32.1C.04** (event code)  
NVRAM backup/restore administrator restore started
- **32.1C.05** (event code)  
Backup/restore complete
- **32.1C.06** (event code)  
Data model failed to clone job ticket
- **32.1C.07** (event code)  
Backup restore permissions error
- **32.1C.08** (event code)  
Not enough disk space to perform backup/restore or network share issue
- **32.1C.09** (event code)  
Tried to restore a backup file that was not valid for this product
- **32.1C.0A** (event code)  
Backup file is invalid
- **32.1C.0B** (event code)  
Backup is from newer version of FW than what is currently on the product
- **32.1C.0C** (event code)  
Backup cancelled from the HP Embedded Web Server
- **32.1C.0D** (event code)  
Backup/restore failed, auto-reboot failed, or the product might be busy
- **32.1C.0E** (event code)  
Backup/restore timeout while communicating with the formatter

- **32.1C.0F** (event code)  
Backup/restore timeout while communicating with the finisher firmware
- **32.1C.10** (event code)  
Backup/restore timeout while communicating with the scanner firmware
- **32.1C.11** (event code)  
Backup/restore timeout while communicating with the engine
- **32.1C.12** (event code)  
Backup/restore timeout while communicating with the disk
- **32.1C.13** (event code)  
Scheduled backup failure
- **32.1C.14** (event code)  
NVRAM restore timeout while communicating with the formatter
- **32.1C.15** (event code)  
NVRAM restore timeout while communicating with the finisher firmware
- **32.1C.16** (event code)  
NVRAM restore timeout while communicating with the scanner firmware
- **32.1C.17** (event code)  
NVRAM restore timeout while communicating with the engine
- **32.1C.18** (event code)  
Backup of copy subsystem failed
- **32.1C.19** (event code)  
Backup of fax subsystem failed
- **32.1C.1A** (event code)  
Backup of digital send subsystem failed
- **32.1C.1B** (event code)  
Backup of print subsystem failed
- **32.1C.1C** (event code)  
Backup of networking subsystem failed
- **32.1C.1D** (event code)  
Backup of finishing subsystem failed

- **32.1C.1E** (event code)  
Restore of copy subsystem failed
- **32.1C.1F** (event code)  
Restore of fax subsystem failed
- **32.1C.20** (event code)  
Restore of digital send subsystem failed
- **32.1C.21** (event code)  
Restore of print subsystem failed
- **32.1C.22** (event code)  
Restore of networking subsystem failed
- **32.1C.24** (event code)  
NVRAM backup/restore successful
- **32.1C.25** (event code)  
Reset of copy subsystem failed
- **32.1C.26** (event code)  
Reset of fax subsystem failed
- **32.1C.27** (event code)  
Reset of digital send subsystem failed
- **32.1C.28** (event code)  
Reset of print subsystem failed
- **32.1C.29** (event code)  
Reset of networking subsystem failed
- **32.1C.2A** (event code)  
Reset of finishing subsystem failed
- **32.1C.2B** (event code)  
Reset formatter timeout
- **32.1C.2C** (event code)  
Reset finisher timeout
- **32.1C.2D** (event code)  
Reset scanner timeout



- **32.1C.2E** (event code)  
Reset engine timeout
- **32.1C.2F** (event code)  
Reset failure

**Recommended action**

- **32.1C.01** (event code)  
No action necessary
- **32.1C.02** (event code)  
No action necessary
- **32.1C.03** (event code)  
No action necessary
- **32.1C.04** (event code)  
No action necessary
- **32.1C.05** (event code)  
No action necessary
- **32.1C.06** (event code)  
Retry
- **32.1C.07** (event code)  
Retry
- **32.1C.08** (event code)  
Remove stored jobs and retry  
Use larger capacity storage device  
Check network share
- **32.1C.09** (event code)  
Use a valid backup file
- **32.1C.0A** (event code)  
Use a valid backup file  
Reboot and observe state of product  
Do a partition clean using the **Preboot** menu.
- **32.1C.0B** (event code)

Use a valid backup file or put correct firmware version on the product.

- **32.1C.0C** (event code)  
No action necessary
- **32.1C.0D** (event code)  
Reboot and then retry the backup/restore
- **32.1C.0E** (event code)  
Turn the product off then on and retry
- **32.1C.0F** (event code)  
Turn the product off then on and retry
- **32.1C.10** (event code)  
Turn the product off then on and retry
- **32.1C.11** (event code)  
Turn the product off then on and retry
- **32.1C.12** (event code)  
Turn the product off then on and retry
- **32.1C.13** (event code)  
Turn the product off then on and retry
- **32.1C.14** (event code)  
Turn the product off then on and retry
- **32.1C.15** (event code)  
Turn the product off then on and retry
- **32.1C.16** (event code)  
Turn the product off then on and retry
- **32.1C.17** (event code)  
Turn the product off then on and retry
- **32.1C.18** (event code)  
Turn the product off then on and retry
- **32.1C.19** (event code)  
Turn the product off then on and retry
- **32.1C.1A** (event code)

- Turn the product off then on and retry

  - **32.1C.1B** (event code)

Turn the product off then on and retry

  - **32.1C.1C** (event code)

Turn the product off then on and retry

  - **32.1C.1D** (event code)

Turn the product off then on and retry

  - **32.1C.1E** (event code)

Turn the product off then on and retry

If the error persists, clear the firmware image from the active partition by using the **Partial Clean** item in the **Preboot** menu.

  - **32.1C.1F** (event code)

Turn the product off then on and retry

If the error persists, clear the firmware image from the active partition by using the **Partial Clean** item in the **Preboot** menu.

  - **32.1C.20** (event code)

Turn the product off then on and retry

If the error persists, clear the firmware image from the active partition by using the **Partial Clean** item in the **Preboot** menu.

  - **32.1C.21** (event code)

Turn the product off then on and retry

If the error persists, clear the firmware image from the active partition by using the **Partial Clean** item in the **Preboot** menu.

  - **32.1C.22** (event code)

Turn the product off then on and retry

If the error persists, clear the firmware image from the active partition by using the **Partial Clean** item in the **Preboot** menu.

  - **32.1C.24** (event code)

Turn the product off then on and retry.

  - **32.1C.25** (event code)

Turn the product off then on and retry.

  - **32.1C.26** (event code)

- Turn the product off then on and retry.
- **32.1C.27** (event code)
- Turn the product off then on and retry.
- **32.1C.28** (event code)
- Turn the product off then on and retry.
- **32.1C.29** (event code)
- Turn the product off then on and retry.
- **32.1C.2A** (event code)
- Turn the product off then on and retry.
- **32.1C.2B** (event code)
- Turn the product off then on and retry.
- **32.1C.2C** (event code)
- Turn the product off then on and retry.
- **32.1C.2D** (event code)
- Turn the product off then on and retry.
- **32.1C.2E** (event code)
- Turn the product off then on and retry.
- **32.1C.2f** (event code)
- Turn the product off then on and retry.

## 32.21.00

### Description

Corrupt firmware in external accessory

### Recommended action

Turn the product off, then on, and retry.

If the error persists, clear the firmware image from the active partition by using the **Partial Clean** item in the **Preboot** menu

## 33.01.XX

### Description

- **33.01.01** (event code)  
A restore process has occurred.
- **33.01.02** (event code)  
A save process has occurred.

### Recommended action

No action necessary.

## 33.XX.YY Used board/disk

### Description

An encrypted board or disk with existing data previously locked to a different product has replaced the original. If you continue, data is permanently lost.

### Recommended action

To save the data on the board or disk, turn the product off. Replace the board or disk with another board or disk.

To delete the data on the board or disk and continue, touch the **OK** button.

## 40.00.01 USB I/O buffer overflow To continue, touch “OK”

### Description

The USB buffer has overflowed.

### Recommended action

Touch the **OK** button to print the transferred data (some data might be lost).

Check the host configuration.

## 40.00.02 Embedded I/O buffer overflow To continue, touch “OK”

### Description

The product has experienced a JetDirect buffer overflow.

### Recommended action

Touch the **OK** button to print the transferred data (some data might be lost).

Check the host configuration.

## 40.00.05 Embedded I/O bad transmission To continue, touch "OK"

### Description

The USB device has been removed.

### Recommended action

Touch the OK button to clear the error message. (Data will be lost.)

Install the USB device.

## 41.02.00 Error

### Description

A beam detected misprint error.

### Recommended action

Turn the product off, and then on.

If the error persists, replace the laser/scanner assembly.

## 41.03.YZ Unexpected size in envelope feeder To use another tray, touch "Options"

### Description

The product detected a different paper size than expected.

- Y = 0  
Size mismatch. Detected media is longer or shorter than expected.
- Y = A  
Size mismatch. Detected media too long.
- Y = B  
Size mismatch. Detected media too short.
- Y = C  
Size mismatch. Inter-page gap error.
- Z = D  
Source is duplexer
- Z = E  
Source is envelope feeder
- Z = 2

- Source is Tray 2
- Z = 3
  - Source is Tray 3
- Z = 4
  - Source is Tray 4
- Z = 5
  - Source is Tray 5

**Recommended action**

Make sure that the feeder is loaded with the correct paper size and that the sliding paper guides are correctly adjusted.

Use the Tray/Bin manual sensor test to verify that the envelope feeder paper sensor (PS1802) is correctly functioning.

If the error persists, replace the envelope feeder.

### 41.03.YZ Unexpected size in tray <X>

**Description**

The product detected a different paper size than expected.

- Y = 0
  - Size mismatch. Detected media is longer or shorter than expected.
- Y = A
  - Size mismatch. Detected media too long.
- Y = B
  - Size mismatch. Detected media too short.
- Y = C
  - Size mismatch. Inter-page gap error.
- Z = D
  - Source is duplexer
- Z = E
  - Source is envelope feeder
- Z = 1
  - Source is Tray 1

- Z = 2  
Source is Tray 2
- Z = 3  
Source is Tray 3
- Z = 4  
Source is Tray 4
- Z = 5  
Source is Tray 5

**Recommended action**

Make sure that the tray is loaded with the correct paper size and that the sliding paper guides are correctly adjusted.

Use the Tray/Bin manual sensor test to verify that the cassette media switch is correctly functioning.

If the error persists, replace the lifter assembly.

### 41.05.YZ Unexpected type in tray <X>

**Description**

The product detected a different paper type than expected.

- Y = 0 (expected type)  
Unknown
- Y = 1 (expected type)  
Normal media
- Y = 3 (expected type)  
LBP OHT
- Y = 6 (expected type)  
Non-assured OHT
- Y = 7 (expected type)  
Heavy media
- Y = 8 (expected type)  
Light media
- Y = 9 (expected type)  
Rough media



- Y = C (expected type)  
Heavy media 3
- Y = D (expected type)  
Heavy media 2
- Z = 1 (detected type)  
Normal media
- Z = 3 (detected type)  
LBP OHT
- Z = 6 (detected type)  
Non-assured OHT
- Z = 7 (detected type)  
Heavy media
- Z = 8 (detected type)  
Light media
- Z = 9 (detected type)  
Rough media
- Z = B (detected type)  
Heavy glossy media (glossy media 2)
- Z = C (detected type)  
Heavy media 3
- Z = D (detected type)  
Heavy media 2

**Recommended action**

Load the tray with the size and type of paper indicated, or use another tray if available.

If this message appears and the tray is loaded with the correct paper type, check the print driver settings to make sure they match the tray type settings.

Clean the Media Sensor.

If the error persists, replace the paper pickup assembly.

## 41.XX.YZ Error To continue, touch "OK"

### Description

A product error has occurred.

- XX = error type
- Y = fuser mode
- Z = input tray
- XX = 02  
Beam detect misprint
- XX = 09  
Sub thermistor abnormally high
- XX = 18  
Scan line inclination adjustment
- XX = 20  
Image drum HV
- Y = 2  
Normal typed (not AutoSense)
- Y = 3)  
Light media 1, 2, 3: typed or AutoSense
- Y = 4  
Heavy media 1: typed or AutoSense
- Z = 0  
Envelope feeder
- Z = 1  
Tray 1
- Z = 2  
Tray 2
- Z = 3  
Tray 3
- Z = 4  
Tray 4

- Z = 5  
Tray 5
- Z = 6  
Tray 6
- Z = D  
Duplexer

**Recommended action**

Turn the product off, and then on.

If the error persists, replace the DC controller PCA.

## 42.XX.YY

**Description**

Internal system failure

**Recommended action**

Turn the product off, then on, and retry.

If the error persists, clear the firmware image from the active partition by using the **Partial Clean** item in the **Preboot** menu.

## 47.00.XX

**Description**

Back channel internal error

**Recommended action**

Turn the product off, and then on again. Resend the print job.

If the error persists, execute the **Partial Clean** item in the **Preboot** menu.

## 47.01.XX

**Description**

Image transformer internal error

**Recommended action**

Turn the product off, and then on again. Resend the print job.

If the error persists, execute the **Partial Clean** item in the **Preboot** menu.

## 47.02.XX

### **Description**

Job parser internal error

### **Recommended action**

Turn the product off, and then on again. Resend the print job.

If the error persists, execute the **Partial Clean** item in the **Preboot** menu.

## 47.03.XX

### **Description**

Print job internal error

### **Recommended action**

Turn the product off, and then on again. Resend the print job.

If the error persists, execute the **Partial Clean** item in the **Preboot** menu.

## 47.04.XX

### **Description**

Print spooler 9100 internal error

### **Recommended action**

Turn the product off, and then on again. Resend the print job.

If the error persists, execute the **Partial Clean** item in the **Preboot** menu.

## 47.05.00

### **Description**

Print spooler framework internal error

### **Recommended action**

Turn the product off, and then on again. Resend the print job.

If the error persists, execute the **Partial Clean** item in the **Preboot** menu.

## 47.06.XX

### **Description**

Print App internal error

## Recommended action

Turn the product off, and then on again. Resend the print job.

If the error persists, execute the **Partial Clean** item in the **Preboot** menu.

## 47.WX.YZ Printer Calibration Failed To continue, touch "OK"

### Description

The device is unable to access or implement one of the image patterns files.

Y = calibration type, Z = event

- **47.FC.20** (event code)  
Error Diffusion Image not found at system initialization
- **47.FC.21** (event code)  
Error Diffusion Store image failure
- **47.FC.22** (event code)  
Error Diffusion Image not found
- **47.FC.23**  
Error Diffusion Print engine execution failure
- **47.FC.300** (event code)  
Drum Speed Adjustment Image not found at system initialization
- **47.FC.31** (event code)  
Drum Speed Adjustment Store image failure
- **47.FC.32** (event code)  
Drum Speed Adjustment Image not found
- **47.FC.33** (event code)  
Drum Speed Adjustment Print engine execution failure
- **47.FC.40** (event code)  
Pulse Width Modulation Image not found at system initialization
- **47.FC.41** (event code)  
Pulse Width Modulation Store image failure
- **47.FC.42** (event code)  
Pulse Width Modulation Image not found
- **47.FC.43** (event code)

Pulse Width Modulation Print engine execution failure

**Recommended action**

Turn the product off, and then on.

If the error persists, reload the firmware.

**49.XX.YY To continue turn off then on**

**Description**

A firmware error has occurred.

**Recommended action**

1. Turn the product off, and then on.
2. If the error returns, check the following:
  - The error might be caused by a network connectivity problem.
    - Damaged interface cable
    - Damaged USB port
    - Invalid network configuration setting
  - The error might be caused by the print job.
    - Invalid printer driver
    - Problem with the software application
    - Problem with the file
3. If the error persists, perform a firmware upgrade.

**50.WX.YZ Fuser error To continue turn off then on**

**Description**

The fuser has experienced an error.

W = fuser error code, X = fuser mode, Y = previous printer sleep state, Z = next printer sleep state

**Recommended action**

**W = 2**

Fuser warm up failure

1. Reconnect the connector (J128) between the fuser and the DC controller PCA.
2. Turn the product off. Remove the fuser and then reinstall it. If the error persist, replace the fuser.
3. If the error persists, replace the low-voltage power supply.

### **W = 3**

Low temperature thermistor 1

1. Reinstall the fuser. Check the connector (J128) between the fuser and the product. If it is damaged, replace the fuser.
2. Reconnect the connector (J82) on the DC controller PCA.
3. Replace the fuser.
4. W = 2: Reconnect the connector (J62) on the low-voltage power supply PCA.
5. If the error persists, replace the low-voltage power supply.

### **W = 4**

High temperature thermistor 1

1. Reinstall the fuser. Check the connector (J128) between the fuser and the product. If it is damaged, replace the fuser.
2. Reconnect the connector (J82) on the DC controller PCA.
3. Replace the fuser.
4. If the error persists, replace the low-voltage power supply.

### **W = 6**

Drive circuit fault

1. Check the power source. Make sure the power source meets product requirements.



**NOTE:** If the power source does not meet the power frequency requirement of 40 to 70Hz, the fuser temperature control does not work properly and causes this error.

2. Reconnect connectors J51, J52, J53, and J162 and DC controller PCA connectors J85, J95, and J96.
3. If the error persists, replace the low-voltage power supply.

### **W = 10**

Low temperature thermistor 2

1. Reinstall the fuser. Check the connector (J128) between the fuser and the product. If it is damaged, replace the fuser.
2. Reconnect the connector (J62) on the low-voltage power supply PCA.
3. If the error persists, replace the low-voltage power supply.

### **W = 11**

High temperature thermistor 2

1. Reinstall the fuser. Check the connector (J128) between the fuser and the product. If it is damaged, replace the fuser.
2. Reconnect the connector (J62) on the low-voltage power supply PCA.
3. If the error persists, replace the low-voltage power supply.

#### **W = 12**

Fuser pressure release mechanism failure

1. Reconnect the fuser connector (J128) and the DC controller PCA connector (J62).
2. Check the fuser pressure release sensor flag. If the flag is damaged or not properly working, replace the fuser.
3. Reconnect the fuser motor connector (J221) and the DC controller PCA connector (J89).
4. Use the **Component Test** item in the **Troubleshooting** menu to test the fuser motor. If the motor fails the test, replace the fuser motor.
5. If the error persists replace the fuser.

## **51.00.YY Error**

### **Description**

Laser/scanner error

- YY = 20

Black laser/scanner error

### **Recommended action**

1. Reconnect connector (J145) on the laser/scanner.
2. Reconnect connectors (J86 and J93) on the DC controller.
3. If the error persists, replace the laser/scanner.

## **52.XX.00 Error To continue turn off then on**

### **Description**

Laser/scanner error

- XX = 00

laser/scanner motor startup error

- XX = 20

Laser/scanner rotation error



### Recommended action

1. Reconnect connector (J145) on the laser/scanner.
2. Reconnect connectors (J86 and J93) on the DC controller.
3. Use the scanner motor (M108) drive test in the component test to verify that the scanner motor is properly functioning. If it is not, replace the laser/scanner.



**NOTE:** Listen for a high pitched whine from the motor.

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4. If the error persists, replace the laser/scanner.

## 54.XX.YY Error

### Description

A sensor error has occurred.

### Recommended action

#### 54.00.03

Environmental sensor (TH3) failure

1. Turn the product off, and then reconnect the connector (J63) on the DC controller PCA. Turn the product on.
2. If the environment sensor has been removed or replaced, check the connector (J199) on the environment sensor and the connector (J63) on the DC controller PCA.
3. If the error persists, replace the environment sensor assembly.

#### 54.06.21

Primary laser/scanner beam detect abnormality

1. Turn the product off, and then on.
2. If the product has had parts removed or replace, check the connector (J93) on the DC controller PCA.
3. If the error persists, replace the laser/scanner assembly.

## 55.00.YY DC controller error To continue turn off then on

### Description

DC controller PCA error

- **55.00.01** (event code)  
DC controller memory error
- **55.00.03** (event code)  
DC controller no engine response
- **55.00.04** (event code)  
DC controller communications timeout

### Recommended action

Turn the product off, and then on.

If the error persists, replace the DC controller PCA.

## 55.0X.YY DC controller error To continue turn off then on

### Description

DC controller PCA error

- **55.01.06** (event code)  
NVRAM memory data error warning
- **55.02.06** (event code)  
NVRAM memory access error warning

### Recommended action

Turn the product off, and then on.

If the error persists, replace the DC controller PCA.

## 56.00.YY Error To continue turn off then on

### Description

Optional paper trays communication error

### Recommended action

Turn the product off, and then on.

If the error persists, reseal the optional paper trays (1 x 500-sheet feeder and/or 3 x 500-sheet feeder).

Check the input connectors for damage. If a connector is damaged, replace the connector.

## 57.00.0Y Error To continue turn off then on

### Description

Fan error

### Recommended action

#### 57.00.03

Main fan (FN101) failure

1. Turn the product off, and then on. Listen for fan noise at the back corner of the product. If no noise is heard, replace the power supply fan (FN101).
2. If the fan has been removed or replaced, check the connector (J64) on the DC controller PCA.
3. If the error persists, replace the main fan (FN101).

#### 57.00.04

Laser/scanner fan (FN102) failure

1. If this part has been removed or replace, check the connector (J75) on the DC controller PCA.
2. If the error persists, replace the laser/scanner fan (FN102).

#### 57.00.06

Cartridge fan (FN301) failure

1. If this part has been removed or replace, check the connector (J95) on the DC controller PCA.
2. If the fan has been removed or replaced, check the connector (J66) on the DC controller PCA.
3. If the error persists, replace the cartridge fan (FN301).

#### 57.00.05

Cartridge front-side fan (FN103) failure

1. Turn the product off, and then on. Listen for fan noise at the middle back of the product. If no noise is heard, replace the cartridge front-side fan (FN103).
2. If the fan has been removed or replaced, check the connector (J79) on the DC controller PCA.
3. If the error persists, replace the cartridge front-side fan (FN103).

#### 57.00.07

Duplex fan (FN107) failure

1. Turn the product off, and then on. Listen for fan noise at the left side of the product. If no noise is heard, replace the duplex fan (FN107).
2. If the fan has been removed or replaced, check the connector (J64) on the DC controller PCA.
3. If the error persists, replace the duplexer.

## 58.00.OY Error To continue turn off then on

### Description

A sensor error has occurred.

### Recommended action

#### 58.00.05

Environmental sensor (TH3) failure

1. Turn the product off.
2. If this part has been removed or replaced, check the connector (J63) on the DC controller PCA.
3. If the error persists, replace the environmental sensor (TH3).

#### 58.00.03

DC controller CPU failure

1. Turn the product off.
2. Check all of the connectors on the DC controller PCA.
3. If the error persists, replace the DC controller PCA.

#### 58.00.04

LVPS failure

1. Turn the product off.
2. If this part has been removed or replaced, check the connector (J50) on the LVPS, and then check the connector (J85 and J95) on the DC controller PCA.
3. If the error persists, replace the LVPS.

## 59.00.YY error To continue turn off then on

### Description

A motor error has occurred.

- YY = 00

Paper path malfunction

### Recommended action

#### 59.00.20 or 59.00.30

Feed motor (M101) failure (start-up or rotational)

1. Reconnect the connector (J191) on the feed motor and the connector (J91) on the DC controller PCA.
2. Use the feed motor (M101) drive test in the Component test to verify that the motor is properly functioning. If it is not, replace the feed motor (M101).

#### **59.00.40 or 59.00.50**

Fuser motor (M299) failure (start-up or rotational)

1. Reconnect the connector (J221) on the feed motor and the connector (J89) on the DC controller PCA.
2. Use the fuser motor (M299) drive test in the Component test to verify that the motor is properly functioning. If it is not, replace the fuser motor (M299).

#### **59.00.60 or 59.00.70**

Drum motor (M102) failure (start-up or rotational)

1. Reconnect the connector (J187) on the drum motor and the connector (J87) on the DC controller PCA.
2. Use the drum motor (M102) drive test in the Component test to verify that the motor is properly functioning. If it is not, replace the drum motor (M102).

## **59.A2.0x Error**

### **Description**

A product error has occurred.

### **Recommended action**

#### **59.A2.02 or 59.A2.11**

Lifter driver assembly Tray 2 failure

1. Use the Tray/Bin manual sensor test to verify that the Tray 2 paper (PS107 and PS907) surface sensors are properly functioning.
2. If this part has been removed or replace, check the connector (J73 and J94) on the on the DC controller PCA.
3. Check the media stack surface sensor lever and place it in the correct position to move smoothly. Replace the media stack surface sensor lever if it is damaged.
4. If the error persists, replace the lifter drive assembly (Tray 2).

#### **59.A2.12 to 59.A2.15**

Lifter driver assembly Tray 3 to 6 motor failure

1. Reconnect the connectors (J1605 and J1608) on the paper feeder drive PCA.
2. Reconnect the connectors (J1703 and J1707) on the paper cassette drive PCA.
3. Replace the sheet feeder media stack surface sensor.
4. If the error persists, replace the lifter motor for the specific sheet feeder.

## 60.00.0Y Tray <Y> lifting error

### Description

A tray lift motor error has occurred.

### Recommended action

#### 60.00.02

Lifter driver assembly Tray 2 failure

1. Use the Tray/Bin manual sensor test to verify that the Tray 2 paper (PS107 and PS907) surface sensors are properly functioning.
2. If this part has been removed or replace, check the connector (J73 and J94) on the on the DC controller PCA.
3. Check the media stack surface sensor level and place it in the correct position to move smoothly. Replace the sensor lever if it is damaged.
4. Replace the media stack surface sensor.
5. If the error persists, replace the lifter drive assembly (Tray 2).

#### 60.00.12 to 60.00.15

Lifter driver assembly Tray 3 failure

1. Use the Tray/Bin manual sensor test to verify that the Tray 3 paper (SR1 and SR2) surface sensors are properly functioning.
2. If this part has been removed or replace, check the connector (1605 and 1608) on the on the paper feeder controller PCA.
3. Reconnect the connectors (J1703 and J1707) on the sheet feeder PCA.
4. Replace the sheet feeder media stack surface sensor.
5. If the error persists, replace the lifter drive assembly (Tray 3-6).

## 62.00.00 No system To continue turn off then on

### Description

Internal system failure

### **Recommended action**

Turn the product off, and then on.

If the error persists, reload the firmware. If the error still persists, perform a firmware upgrade.

If the firmware upgrade does not resolve the problem, replace the hard disk.

## **65.X0.A1 Output accessory disconnected**

### **Description**

An external paper handling accessory connection has been interrupted.

### **Recommended action**

1. Turn the product off.
2. Make sure that all packing materials have been removed from the paper handling accessory.
3. Check the paper path for obstructions, or jammed paper.
4. Check the accessory cable connection.
5. Turn the product on. If the error persists, replace the accessory.

## **66.80.YY Stapler/Stacker failure**

### **Description**

An external paper handling accessory error has occurred.

- **66.80.01** (event code)  
Y-align malfunction
- **66.80.02** (event code)  
Jogger malfunction
- **66.80.03** (event code)  
Stapler malfunction
- **66.80.21** (event code)  
Lift up malfunction
- **66.80.22** (event code)  
Lift down malfunction
- **66.80.23** (event code)  
Lift sensor malfunction
- **66.80.33** (event code)

- Output roller malfunction
- **66.80.35** (event code)
- Self priming malfunction
- **66.80.51** (event code)
- System error (FW error)
- **66.80.55** (event code)
- System error 5 (FW error)
- **66.80.56** (event code)
- System error 6 (FW error)
- **66.80.57** (event code)
- System error 7 (FW error)
- **66.80.58** (event code)
- System error 8 (FW error)
- **66.80.59** (event code)
- System error 9 (FW error)
- **66.80.60** (event code)
- System error 10 (inter-page delay mismatch)
- **66.80.61** (event code)
- System error 11 (lifter task trouble)
- **66.80.62** (event code)
- System error 12 (inter-page delay mismatch)
- **66.80.63** (event code)
- System error 13 (FW error)
- **66.80.64** (event code)
- System error 14 (FW error)
- **66.80.65** (event code)
- System error 15 (FW error)
- **66.80.70** (event code)
- Page-info in flush
- **66.80.71** (event code)



- Flush request in PDLV
- **66.80.72** (event code)
- Delivery notice error
- **66.80.73** (event code)
- Flush request in checking paper path
- **66.80.74** (event code)
- Checking paper path start in PDLV
- **66.80.75** (event code)
- Flush request in flush
- **66.80.76** (event code)
- Non-flush complete

**Recommended action**

Turn the product off, and then on.

If the error persists, replace the paper handling device.

### 69.11.YY Error To continue turn off then on

**Description**

Duplexer error

**Recommended action**

Turn the product off, and then on.

If the error persists, replace the duplexer.

### 70.00.00 Error To continue turn off then on

**Description**

DC controller failure

**Recommended action**

Turn the product off, and then on.

If the error persists, replace the DC controller.

## 79.XX.YY Error To continue turn off then on

### Description

This error can be caused by corrupted print jobs, software application issues, non-product specific printer drivers, poor-quality USB or network cables, bad network connections or incorrect network configurations, invalid firmware operations, or unsupported accessories.

### Recommended action

1. Turn the product off, and then on.
  2. If the error persists, check the following:
    - The error might be caused by a network connectivity problem, such as a bad interface cable, a bad USB port, or an invalid network configuration setting.
    - The error might be caused by the print job, an invalid print driver, a problem with the software application, or a problem with the file you are printing.  
  
Make sure you are using the correct printer driver. Try printing using a different software application. Try printing a different file or print job.
- Upgrading the product firmware might resolve the problem.

## 80.0X.YY Embedded JetDirect error

### Description

Embedded HP JetDirect print server critical error

- **80.01.80** (event code)  
No heartbeat
- **80.01.81** (event code)  
Reclaim timeout
- **80.01.82** (event code)  
Invalid data length
- **80.01.8B** (event code)  
Invalid max outstanding packet header field
- **80.01.8C** (event code)  
Invalid channel mapping response
- **80.03.01** (event code)  
No PGP buffers
- **80.03.02** (event code)

- Channel table full
- **80.03.03** (event code)  
Producer index not reset
- **80.03.04** (event code)  
Consumer index not reset
- **80.03.05** (event code)  
Queue position size too small
- **80.03.06** (event code)  
Transport overflow
- **80.03.07** (event code)  
No overflow packets
- **80.03.08** (event code)  
Invalid identify response
- **80.03.09** (event code)  
Invalid channel map return status
- **80.03.10** (event code)  
Invalid reclaim return status
- **80.03.11** (event code)  
Datagram invalid buffer
- **80.03.12** (event code)  
Max stream channels
- **80.03.13** (event code)  
Max datagram channels
- **80.03.14** (event code)  
Card reset failed
- **80.03.15** (event code)  
Self test failure
- **80.03.16** (event code)  
Unknown PGP packet
- **80.03.17** (event code)
- **80.03.18** (event code)

Duplicate I/O channel.

**Recommended action**

Turn the product off, and then on.

If the error persists, replace the formatter.

## 81.YY.ZZ EIO-1 Card Failure

**Description**

An EIO error has occurred.

- **81.01.80** (event code)  
No heartbeat
- **81.01.81** (event code)  
Reclaim timeout
- **81.01.82** (event code)  
Invalid data length
- **81.01.8B** (event code)  
Invalid max outstanding
- **81.01.8C** (event code)  
Invalid channel mapping
- **81.03.01** (event code)  
No PGP buffers
- **81.03.02** (event code)  
Channel table full
- **81.03.03** (event code)  
Producer index not reset
- **81.03.04** (event code)  
Consumer index not reset
- **81.03.05** (event code)  
Queue position size
- **81.03.06** (event code)  
Transport overflow
- **81.03.07** (event code)

- No overflow packets
- **81.03.08** (event code)  
Invalid identify response
- **81.03.09** (event code)  
Invalid channel map return
- **81.03.10** (event code)  
Invalid reclaim return status
- **81.03.12** (event code)  
Datagram invalid buffer
- **81.03.13** (event code)  
Max stream channels
- **81.03.14** (event code)  
Max datagram channels
- **81.03.15** (event code)  
Card reset failed
- **81.03.16** (event code)  
Self test failure
- **81.03.17** (event code)  
Unknown PGP packet
- **81.03.18** (event code)  
Duplicate I/O channel

**Recommended action**

Turn the product off, and then on.

If the error persists, replace the EIO device..

**82.73.46 OR 82.73.47**

**Description**

A hard disk or compact flash disk cleaning failed. Usually caused by a failure of the disk hardware.

### **Recommended action**

1. Turn the product off, and then on.
2. Use the **Clean Disk** item in the **Preboot** menu.
3. Reload the firmware.

## **98.00.01 Corrupt data in firmware volume**

### **Description**

Data corruption has occurred in the firmware volume

### **Recommended action**

Turn the product off, and then on.

Use the **Clean Disk** item in the **Preboot** menu.

Reload the firmware.

## **98.00.02 Corrupt data in solutions volume**

### **Description**

Data corruption has occurred in the solutions volume

### **Recommended action**

Turn the product off, and then on.

Use the **Clean Disk** item in the **Preboot** menu.

Reload the firmware.

## **98.00.03 Corrupt data in configuration volume**

### **Description**

Data corruption has occurred in the configuration volume

### **Recommended action**

Turn the product off, and then on.

Use the **Clean Disk** item in the **Preboot** menu.

Reload the firmware.

## **98.00.04 Corrupt data in job data volume**

### **Description**

Data corruption has occurred in the job data volume

### **Recommended action**

Turn the product off, and then on.

Rerun the file erase function.

## **99.00.01 Upgrade not performed file is corrupt**

### **Description**

A remote firmware upgrade (RFU) was not performed.

CRC error in the firmware image (bad image).

### **Recommended action**

Download the RFU file and attempt the upgrade again.

## **99.00.02 Upgrade not performed timeout during receive**

### **Description**

A remote firmware upgrade (RFU) was not performed.

I/O timeout when reading header number and size. Indicates a problem with the network environment, not the device.

### **Recommended action**

The most common cause is an issue with the network environment. Make sure that there is a good connection to the device and attempt the upgrade again, or upgrade using the USB walk-up port.

## **99.00.03 Upgrade not performed error writing to disk**

### **Description**

A remote firmware upgrade (RFU) was not performed.

Disk error. May indicate a problem or a hard disk failure. It might be necessary to check the connection to the hard disk or replace the hard disk.

### **Recommended action**

1. Download the RFU file and attempt the upgrade again.
2. If the error persists, perform the **Clean Disk** process. You will then need to download firmware from the **Preboot** menu.
3. If the error persists, replace the hard disk.

## **99.00.04 Upgrade not performed timeout during receive**

### **Description**

A remote firmware upgrade (RFU) was not performed.

I/O timeout when reading rest of header.

**Recommended action**

The most common cause is an issue with the network environment. Make sure that there is a good connection to the device and attempt the upgrade again, or upgrade using the USB walk-up port.

### 99.00.05 Upgrade not performed timeout during receive

**Description**

A remote firmware upgrade (RFU) was not performed.

I/O timeout when reading image data.

**Recommended action**

The most common cause is an issue with the network environment. Make sure that there is a good connection to the device and attempt the upgrade again, or upgrade using the USB walk-up port.

### 99.00.06 Upgrade not performed error reading upgrade

**Description**

A remote firmware upgrade (RFU) was not performed.

Unexpected read error when reading header number and size.

**Recommended action**

1. Download the RFU file and attempt the upgrade again.
2. If the error persists, replace the hard disk.

### 99.00.07 Upgrade not performed error reading upgrade

**Description**

A remote firmware upgrade (RFU) was not performed.

Unexpected read error when reading rest of header.

**Recommended action**

1. Download the RFU file and attempt the upgrade again.
2. If the error persists, replace the hard disk.

### 99.00.08 Upgrade not performed error reading upgrade

**Description**

A remote firmware upgrade (RFU) was not performed.

Unexpected read error when reading image data.



**Recommended action**

1. Download the RFU file and attempt the upgrade again.
2. If the error persists, replace the hard disk.

**99.00.09 Upgrade canceled by user****Description**

A remote firmware upgrade (RFU) was not performed.

The RFU was canceled by the user.

**Recommended action**

Resend the RFU.

**99.00.10 Upgrade canceled by user****Description**

A remote firmware upgrade (RFU) was not performed.

Job canceled when reading header number and size.

**Recommended action**

Resend the RFU.

**99.00.11 Upgrade canceled by user****Description**

A remote firmware upgrade (RFU) was not performed.

Job canceled when reading rest of header.

**Recommended action**

Resend the RFU.

**99.00.12 Upgrade not performed the file is invalid****Description**

A remote firmware upgrade (RFU) was not performed.

Header number is 1 but header size doesn't match version 1 size.

**Recommended action**

Download the RFU file again. Make sure that you download the file for the correct product model.  
Resend the RFU.

## 99.00.13 Upgrade not performed the file is invalid

### Description

A remote firmware upgrade (RFU) was not performed.

Header number is 2 but header size doesn't match version 2 size.

### Recommended action

Download the RFU file again. Make sure that you download the file for the correct product model.  
Resend the RFU.

## 99.00.14 Upgrade not performed the file is invalid

### Description

A remote firmware upgrade (RFU) was not performed.

The file is invalid.

### Recommended action

Download the RFU file again. Make sure that you download the file for the correct product model.  
Resend the RFU.

## 99.00.2X

### Description

- **99.00.20** (event log)  
The bundle is not for this product
- **99.00.21** (event log)  
The bundle is not signed with the correct signature, or the signature is invalid
- **99.00.22** (event log)  
The bundle header version is not supported by this firmware
- **99.00.23** (event log)  
The package header version is not supported by this firmware
- **99.00.24** (event log)
- The format of the bundle is invalid
- **99.00.25** (event log)  
The format of the package is invalid
- **99.00.26** (event log)

A CRC32 check did not pass

- **99.00.27** (event log)

An I/O error occurred while downloading the bundle

#### **Recommended action**

Download the correct firmware file from [www.hp.com/go/lj600Series\\_firmware](http://www.hp.com/go/lj600Series_firmware), and then resend the firmware upgrade.

**99.00.27 only:** Turn the product off, and then on again. Resend the firmware upgrade. If the error persists, try the sending the upgrade by another method (USB or Embedded Web Server).

### **99.09.60 Unsupported disk**

#### **Description**

**Preboot** menu error.

The hard disk currently installed is not recognized or supported by the product.

#### **Recommended action**

Install the correct hard disk for this product.

### **99.09.61 Unsupported disk**

#### **Description**

**Preboot** menu error.

The installed disk is installed in a product configured for a encrypted hard disk.

#### **Recommended action**

Access the **Preboot** menu and then select **Lock Disk** to lock the disk.

### **99.09.62 Unknown disk**

#### **Description**

**Preboot** menu error.

The installed disk was previously locked in another product.

#### **Recommended action**

Install a new disk or use the **Preboot** menu to unlock this disk. If the disk is to be reused in a different product, execute the **Clean Disk** procedure from the **Preboot** menu, then reload firmware and lock the disk.

### 99.09.63 Incorrect disk

#### Description

A new or blank disk has been installed in a device which previously had an encrypted disk.

#### Recommended action

Follow the procedure to load firmware on a new hard disk and then lock it to this product.

### 99.09.64 Disk malfunction

#### Description

A fatal hard disk failure has occurred.

#### Recommended action

Replace the hard disk drive.

### 99.09.65 Disk data error

#### Description

Disk data corruption has occurred.

#### Recommended action

Execute the **Clean Disk** procedure from the **Preboot** menu, and then resend the RFU.

### 99.09.66 No disk installed

#### Description

A disk drive is not installed in the product.

#### Recommended action

Install a compatible hard disk drive.

### 99.09.67 Disk is not bootable please download firmware


#### Description

The product has a non-secure disk (solid state disk) installed as the boot disk, and it has been replaced with a new service part. A new firmware image needs to be downloaded to the device.

#### Recommended action

1. Press any key to continue to the main **Preboot** menu.
2. Press the **Help** button to see the help text for the error.
3. Select the Administrator menu.

---

 **NOTE:** If there is a password assigned to the Administrator, a prompt to enter the password displays.

---

4. Select the Download item.
5. The user can now download a new firmware bundle to the product.

## 99.XX.YY

### Description

Firmware installation error

### Recommended action

Reload the firmware.

## <binname> full Remove all paper from bin

### Description

The specified output bin is full.

### Recommended action

Empty the bin to continue printing.

## <Supply> low OR Supplies low

### Description

The product indicates when a supply level, or more than one supply, is low. Actual print cartridge life might vary. You do not need to replace the print cartridge at this time unless print quality is no longer acceptable.

When multiple supplies are low, more than one event code is recorded.


- **10.00.60** (event code)  
Black print cartridge
- **10.23.60** (event code)  
Fuser Kit

### Recommended action

If print quality is no longer acceptable, replace the supply.

HP recommends that the customer have a replacement supply available to install when print quality is no longer acceptable.

---

 **NOTE:** When an HP supply has reached its approximated end of life, the HP Premium Protection Warranty ends.

---

## <Supply> very low OR Supplies very low

### Description

The product indicates when a supply level, or more than one supply, is very low. Actual print cartridge life might vary. You do not need to replace the print cartridge at this time unless print quality is no longer acceptable.

When multiple supplies are low, more than one event code is recorded.

- **10.00.70** (event code)  
Black print cartridge
- **10.23.70** (event code)  
Fuser Kit

### Recommended action

If print quality is no longer acceptable, replace the supply.

HP recommends that the customer have a replacement supply available to install when print quality is no longer acceptable.



---

**NOTE:** When an HP supply has reached its approximated end of life, the HP Premium Protection Warranty ends.

---

## [File System] device failure To clear press "OK"

### Description

The specified device has failed.

### Recommended action

Touch the **OK** button to clear the error.

## [File System] file operation failure To clear press "OK"

### Description

A PJL file system command attempted to perform an illogical operation.

### Recommended action

Touch the **OK** button to clear the error.

## [File System] file system is full To clear press "OK"

### Description

A PJL file system command could not store something on the file system because the file system was full.

**Recommended action**

Touch the **OK** button to clear the error.

**[File System] is not initialized****Description**

This file-storage component must be initialized before use.

**Recommended action**

Use the HP Embedded Web Server or HP Web Jetadmin to initialize the file system.

**[File System] is write protected****Description**

The file system device is protected and no new files can be written to it.

**Recommended action**

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

**Accept bad signature****Description**

The product is performing a remote firmware upgrade, and the code signature is invalid.

**Recommended action**

Download the correct firmware upgrade file for this product, and then reinstall the upgrade. See the product user guide for more information.

**Bad optional tray connection****Description**

The optional tray is not connected, not connected correctly, or a connection is not working correctly.

**Recommended action**

1. Turn the product off.
2. Remove and then reinstall the optional tray.
3. Reconnect connectors for the tray.
4. If the problem continues, replace the connector for the tray.

## Canceling

### Description

The product is canceling the current job.

### Recommended action

No action is necessary.

## Canceling... <jobname>

### Description

The product is canceling the current job <jobname>.

### Recommended action

No action is necessary.

## Cartridge Low

### Description

This message appears even though the print cartridge is new.

### Recommended action

1. Remove, and then reinstall the print cartridge.
2. Make sure a genuine HP supply is used.
3. If the error persists, replace the print cartridge.

## Cartridge Memory Abnormal

### Description

This message appears even though the print cartridge is new.

### Recommended action

1. Remove, and then reinstall the print cartridge.
2. Reconnect connector (J74) on the DC controller PCA.
3. If the error persists, replace the print cartridge.

## Cartridge Out

### Description

This message appears even though the print cartridge is new.



**Recommended action**

1. Remove, and then reinstall the print cartridge.
2. Make sure a genuine HP supply is used.
3. If the error persists, replace the print cartridge.

## Checking engine

**Description**

The product is conducting an internal test.

**Recommended action**

No action is necessary.

## Checking paper path

**Description**

The product is checking for possible paper jams.

**Recommended action**

No action is necessary.

## Chosen personality not available To continue, touch "OK"

**Description**

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.

**Recommended action**

Print the job by using a print driver for a different language, or add the requested language to the product (if possible). To see a list of available personalities, print a configuration page.

## Cleaning do not grab paper

**Description**

The product is performing an automatic cleaning cycle. Printing will continue after the cleaning is complete.

**Recommended action**

No action is necessary.

## Cleaning...

### Description

The product is performing an automatic cleaning cycle. Printing will continue after the cleaning is complete.

### Recommended action

No action is necessary.

## Clearing event log

### Description

This message is displayed while the event log is cleared. The product exits the menus when the event log has been cleared.

### Recommended action

No action is necessary.

## Clearing paper path

### Description

The product is attempting to eject jammed paper.

### Recommended action

Check progress at the bottom of the display.

## Close stapler/stacker multi bin mailbox door

### Description

This message appears even though the stapler/stacker multi bin mailbox door is closed.

### Recommended action

1. Reconnect the connector (J465) on the stapler/stacker controller PCA.
2. Check the stapler/stacker door sensor flag. If the flag is damaged, replace the sensor flag.

## Close top cover

### Description

This message appears even though the top cover is closed.

### **Recommended action**

1. Verify that the switch (SW101) is properly functioning (open and close the top cover). If the switch fails the test, replace the switch.
2. Make sure that the switch flag—at the right-side of the top cover assembly, behind the control-panel display— is not damaged or missing. If the flag is damaged or missing, replace the top cover assembly.
3. Reconnect the connector (J78) on the DC controller PCA.
4. If the problem persists, replace the top cover switch (SW101).

## **Cooling device**

### **Description**

The product is cooling.

### **Recommended action**

No action is necessary.

## **Creating cleaning page...**

### **Description**

A cleaning page is being generated.

### **Recommended action**

No action is necessary.

## **Data received To print last page press "OK"**

### **Description**

The product is waiting for the command to print the last page.

### **Recommended action**

Touch the **OK** button to print the last page of the job.

## **Event log is empty**

### **Description**

No product events are in the log.

### **Recommended action**

No action is necessary.

## Expected drive missing

### Description

The product cannot find the encrypted hard drive.

### Recommended action

Install the encrypted hard drive.

## External device initializing

### Description

An external device is initializing.

### Recommended action

No action necessary.

## Face Down Tray Full

### Description

This message is displaying even though the tray is not full.

### Recommended action

1. Check the face down tray media full sensor flag and place it in the correct position to move smoothly. Replace sensor flag if damaged.
2. Use the Output bin full sensor (PS104) test in the Manual sensor test to verify that the sensor is properly functioning. If it is not, replace the sensor (PS104).
3. Reconnect the connector (J176) at face down tray media full sensor and DC controller PCA (J76).
4. Reconnect the connector (J176) at face down tray media full sensor and DC controller PCA (J76).

## FIM Load Error Send full FIM on <X> port

### Description

The product displays this message before the firmware is loaded at startup if an error has occurred during a firmware upgrade.

### Recommended action

Resend the firmware upgrade.

## Fuser Kit low

### Description


**10.23.60** (event code)

The product indicates when a supply is low.

### Recommended action

Replace the fuser.

---

 **NOTE:** After replacing the fuser, reset the fuser page counter by selecting **New Fuser Kit** in the **Reset Supplies** sub-menu.

---


## Fuser Kit very low To continue, touch "OK"

### Description

**10.23.70** (event code)

The product indicates when a supply is very low.

---


 **NOTE:** After an HP supply has reached the very low threshold, the HP premium protection warranty for that supply has ended.

---

### Recommended action

Replace the fuser.

---

 **NOTE:** After replacing the fuser, reset the fuser page counter by selecting **New Fuser Kit** in the **Reset Supplies** sub-menu.

---

## Genuine HP cartridge installed

### Description

A new HP print cartridge has been installed. The message appears for about 6 seconds before the product returns to the **Ready** state.

### Recommended action

No action necessary.

## Genuine HP supply installed

### Description

**10.XX.40** (event code)

A new genuine HP print cartridge has been installed.

### Recommended action

Touch the **Hide** button to remove this message.

## HP Secure hard drive disabled

### Description

The drive has been encrypted for another product.

**Recommended action**

Remove the drive or use the Embedded Web Server for more information.

**Incompatible <supply>****Description**

The indicated supply <supply>is not compatible with this product.

- **10.00.35** (event code)

Black print cartridge

- Fuser kit

**10.23.35** (event code)

**Recommended action**

Replace the supply with one that is designed for this product.

**Incompatible supplies****Description**

Print cartridges or other supply items are installed that were not designed for this product. The product cannot print with these supplies installed.

Event codes are supply specific.

**Recommended action**

Touch the **OK** button to identify the incompatible supplies.

Replace the supplies with those that are designed for this product.

**Initializing...****Description**

The product is starting.


**Recommended action**

No action necessary.

**Install fuser unit****Description**

The fuser has been removed or installed incorrectly.

### Recommended action

 **CAUTION:** The fuser can be hot while the product is in use. Turn the product off, and then wait for the fuser to cool before handling it.

---

1. Remove the output bin or stapler/stacker.
2. Remove the fuser entrance guide.
3. Remove the fuser.

## Install supplies

### Description

More than one supply is missing or is installed incorrectly.

### Recommended action

Touch the **OK** button to identify the supplies that need to be replaced.

Touch the **OK** button a second time for more information about the specific supply.

Insert the supply or make sure it is correctly installed and fully seated.

## Install supply

### Description

A supply item is either not installed or installed incorrectly.

- Black cartridge

**10.00.15** (event code)

### Recommended action

Install the supply item or make sure that the installed supply item is fully seated.

## Internal disk device failure To clear press "OK"

### Description

The internal disk failed.

### Recommended action

Touch the **OK** button to clear the error.

## Internal disk file operation failed

### Description

A PJI system command attempted to perform an illogical operation, such as downloading a file to a non-existent directory.

**Recommended action**

Touch the **OK** button to clear the error.

**Internal disk file system is full****Description**

A PJJ system command attempted to write data to the internal disk but was unsuccessful because the disk is full.

**Recommended action**

Touch the **OK** button to clear the error.

**Internal disk is write protected****Description**

The internal disk is write protected and no new files can be written to it.

**Recommended action**

Touch the **OK** button to clear the error.

**Internal disk not found****Description**

The internal disk was not found at start up.

**Recommended action**

Turn the product off, and then on again.

**Internal disk not functional****Description**

**82.OX.YY** (event code)

The internal hard drive is not correctly functioning.

**Recommended action**

Turn the product off, remove and then reinstall the hard drive.

If the error persists, replace the internal hard drive.

**Internal disk not initialized****Description**

The internal disk file system must be initialized before it can be used.



**Recommended action**

Initialize the internal disk file system.

**Internal disk spinning up****Description**

Internal disk device is spinning up its platter. Jobs that require disk access must wait.

**Recommended action**

No action is necessary.

**Job not stapled due to mixed sizes****Description**

This message is displayed when the job to staple has more than one paper size (paper width).

**Recommended action**

Paper with different widths cannot be stapled. Use the same width paper for the entire print job.

**Load Tray <X>: [Type], [Size]****Description**

This message appears even though there is media loaded in the tray.

**Recommended action**

Use the sensor tests to verify that the sensor is correctly functioning.

Make sure that the sensor flag on the media presence sensor is not damaged and moves freely.

Reconnect the corresponding connector:

- MP tray: connector (J191) on the MP tray media feed sensor and the connector (J91) on the DC controller PCA.
- Printer cassette: connectors (J22) on the cassette media feed sensor and the connector (J1605) on the DC controller PCA.
- 1 X 500-sheet paper feeder cassette: connector (J32) on the paper feeder cassette media feed sensor and the connector (J1602) on the paper feeder controller PCA.
- Paper deck cassette 1: connector (J32) on the paper deck cassette 1 media feed sensor and connector (J1602) on the paper deck controller PCA 1
- Paper deck cassette 2: connector (J13) on the paper deck cassette 2 media feed sensor and connector (J1607) on the paper deck controller PCA 2.
- Paper deck cassette 3: connector (J13) on the paper deck cassette 3 media feed sensor and connector (J607) on the paper deck controller PCA 3.

## Load Tray <X>: [Type], [Size] To use another tray, press "OK"

### Description

This message appears when the indicated tray is selected but is not loaded, and other paper trays are available for use. It also appears when the tray is configured for a different paper type or size than the print job requires.

### Recommended action

Load the correct paper in the tray.

If prompted, confirm the size and type of paper loaded.

Otherwise, press the **OK** button to select another tray.

## Loading program <XX>

### Description

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.

### Recommended action

No action necessary.



---

**NOTE:** Do not turn the product off.

---

## Manually feed output stack Then touch "OK" to print second side

### Description

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.

### Recommended action

1. Maintaining the same orientation, remove pages from the output bin.
2. Flip document printed side up.
3. Load document in Tray 1.
4. Touch the **OK** button to print the second side of the job.

## Manually feed: <Type><Size>

### Description

This message appears when manual feed is selected, Tray 1 is not loaded, and other trays are empty.

### **Recommended action**

Load tray with requested paper.

If paper is already in tray, press the **Help** button to exit the message and then press the **OK** button to print.

To use another tray, clear paper from Tray 1, press the **Help** button to exit the message and then press the **OK** button.

## **Manually feed: <Type><Size> To use another tray, press “OK”**

### **Description**

This message appears when manual feed is selected, Tray 1 is loaded, and other trays are available.

### **Recommended action**

Load tray with requested paper.

If paper is already in tray, press the **Help** button to exit the message and then press the **OK** button to print.

To use another tray, clear paper from Tray 1, press the **Help** button to exit the message and then press the **OK** button.

## **Moving solenoid**

### **Description**

The solenoid is moving as part of a component test.

### **Recommended action**

**To exit press** ⊗

## **Moving solenoid and motor**

### **Description**

The solenoid and a motor are moving as part of a component test.

### **Recommended action**

**To exit press** ⊗

## **No job to cancel**

### **Description**

You have pressed the stop button but the product is not actively processing any jobs.

### **Recommended action**

No action necessary.

## NON HP SUPPLY INSTALLED

### Description

**10.99.31** (event code)

This message is displayed for about 6 seconds when a new non HP supply is installed.

### Recommended action

If you believe you purchased a genuine HP supply, go to [www.hp.com/go/anticounterfeit](http://www.hp.com/go/anticounterfeit).

## Output Bin Full

### Description

This message appears even though the output bin is not full.

### Recommended action

1. Make sure that the output bin sensor flag is not damaged and can move freely. If the flag is damaged, replace the flag.
2. Use the output bin full sensor (PS104) test in the Manual sensor test to test the sensor. If it does not respond, replace the output bin full sensor (PS104).
3. Reconnect connector (J76) on the DC controller PCA.

## Paused...

### Description

The product is paused, and there are no error messages pending at the display. The I/O continues receiving data until memory is full.

### Recommended action

Press the **Stop** button (⊗).

## Performing Paper Path Test...

### Description

A paper-path test is being performed.

### Recommended action

No action necessary.

## Please Wait...

### Description

The product is in the process of clearing data.

**Recommended action**

No action necessary.

**Printing Configuration...****Description**

The product is printing the Configuration page.

**Recommended action**

No action necessary.

**Printing Event Log...****Description**

The product is printing the Event Log page.

**Recommended action**

No action necessary.

**Printing File Directory...****Description**

The product is printing the File Directory pages.

**Recommended action**

No action necessary.

**Printing Font List...****Description**

The product is printing the Font List pages.

**Recommended action**

No action necessary.

**Printing Fuser Test Page...****Description**

The product is printing the Fuser Test page.

**Recommended action**

No action necessary.

## Printing Help Page...

### **Description**

The product is printing the Help page.

### **Recommended action**

No action necessary.

## Printing Menu Map...

### **Description**

The product is printing the Menu Map pages.

### **Recommended action**

No action necessary.

## Printing Registration Page...

### **Description**

The product is printing the Registration pages.

### **Recommended action**

No action necessary.

## Printing stopped

### **Description**

Time has expired on the Print/Stop test.

### **Recommended action**

Touch the **OK** button to continue.

## Printing Supplies Status Page...

### **Description**

The product is printing the Supplies Status page.

### **Recommended action**

No action necessary.

## Printing Usage Page...

### **Description**

The product is printing the Usage page.

**Recommended action**

No action necessary.

**Printing...engine test****Description**

The product is printing an engine test page.


**Recommended action**

No action necessary.

**Processing duplex job Do not grab paper until job completes****Description**

Paper temporarily comes into the output bin while printing a duplex job.

---

 **CAUTION:** Do not grab paper as it temporarily comes into the output bin. The message disappears when the job is finished.

---

**Recommended action**

No action necessary.

**Processing job from tray <X>... Do not grab paper until job completes****Description**

The product is actively processing a job from the designated tray.

**Recommended action**

No action necessary.

**Processing...****Description**

The product is currently processing a job but is not yet picking pages. When paper motion begins, this message is replaced by a message that indicates the tray the job is using.

**Recommended action**

No action necessary.

**Processing... copy <X> of <Y>****Description**

The product is currently processing or printing collated copies. The message indicates that copy number <X> of total copies <Y> is currently being processed.

**Recommended action**

No action necessary.

**RAM disk device failure To clear press “OK”****Description**

The specified device failed.

**Recommended action**

Touch the **OK** button to remove the message.

**RAM disk file operation failed To clear press “OK”****Description**

A PJI command was received that attempted to perform an illegal operation, such as downloading a file to a non-existent directory.

**Recommended action**

Touch the **OK** button to clear the error.

**RAM disk file system is full To clear press “OK”****Description**

The hard disk is full.

**Recommended action**

Touch the **OK** button to clear the error.

**RAM disk is write protected To clear press “OK”****Description**

The device is protected and no new files can be written to it.

**Recommended action**

Touch the **OK** button to clear the error.

**RAM disk not initialized****Description**

The RAM disk file system must be initialized before it can be used.

**Recommended action**

Initialize the RAM disk file system.



## Ready

### Description

The product is online and ready for data. No status or product attendance messages are pending at the display.

### Recommended action

No action necessary.

## Ready <IP Address>

### Description

The product is online and ready for data. No status or product attendance messages are pending at the display. The product IP address displays.

### Recommended action

No action necessary.

## Receiving Upgrade

### Description

The product is receiving a firmware upgrade.

### Recommended action

Do not turn the product off until it reaches the **Ready** state.

## Remove one print cartridge

### Description

The product is testing the print-cartridge motor.

### Recommended action

To perform the test, remove the print cartridge. To cancel the test, press the **Stop** button ⊗.

**To exit press** ⊗

## Remove USB accessory

### Description

This message displays when an unsupported USB device is inserted into a host USB port on the product.

### Recommended action

Remove the unsupported USB device.

## Replace <supply>

### Description


This alert appears only if the product is configured to stop when a supply reaches the very low threshold. The product indicates when a supply level is at its estimated end of life. The actual life remaining might be different than estimated.

The supply does not need to be replaced now unless the print quality is no longer acceptable.

HP recommends that the customer have a replacement supply available to install when print quality is no longer acceptable.

The product can be configured to stop when the supply level is very low. The supply might still be able to produce acceptable print quality.

---

 **NOTE:** When an HP supply has reached its approximated end of life, the HP Premium Protection Warranty on that supply ends.

---

- **10.00.70** (event code)  
Black print cartridge
- **10.23.70** (event code)  
Fuser Kit

### Recommended action

Replace the specified supply.

Or, configure the product to continue printing by using the **Manage Supplies** menu.

## Replace supplies


### Description

This alert appears only if the product is configured to stop when a supply reaches the very low threshold. The product indicates when a supply level is at its estimated end of life. The actual life remaining might be different than estimated.

The supply does not need to be replaced now unless the print quality is no longer acceptable.

HP recommends that the customer have a replacement supply available to install when print quality is no longer acceptable.

---

 **NOTE:** When an HP supply has reached its approximated end of life, the HP Premium Protection Warranty on that supply ends.

---

Recorded event codes depend on which supplies are at the end of life.

- **10.00.70** (event code)  
Black print cartridge
- **10.23.70** (event code)

Fuser Kit

**Recommended action**

Touch the **OK** button to find out which supplies need to be replaced.

Or, configure the product to continue printing by using the **Manage Supplies** menu.

## Resend external accessory firmware

**Description**

An external accessory requires a firmware upgrade. Printing can continue, but jams might occur if the job uses the external accessory.

**Recommended action**

Perform a firmware upgrade.

## Resend Upgrade

**Description**

A firmware upgrade did not complete successfully.

**Recommended action**

Upgrade the firmware again.

## Restore Factory Settings

**Description**

The product is restoring factory settings.

**Recommended action**

No action necessary.

## ROM disk device failed To clear press "OK"

**Description**

The specified device failed.

**Recommended action**

Touch the **OK** button to clear the error.

## ROM disk file operation failed To clear press "OK"

**Description**

A PJI command was received that attempted to perform an illegal operation, such as downloading a file to a non-existent directory.

**Recommended action**

Touch the **OK** button to clear the error.

**ROM disk file system is full To clear press “OK”****Description**

The hard disk is full.

**Recommended action**

Touch the **OK** button to clear the error.

**ROM disk is write protected To clear press “OK”****Description**

The device is protected and no new files can be written to it.

**Recommended action**

Touch the **OK** button to clear the error.

**ROM disk not initialized To clear press “OK”****Description**

The ROM disk file system must be initialized before it can be used.


**Recommended action**

Initialize the ROM disk file system.

**Rotating Motor****Description**

The product is executing a component test and the component selected is a motor.

**Recommended action**

Press the **Stop** button  when ready to stop this test.

**To exit press** 

**Size Mis-Match****Description**

This message appears even though the correct size paper is loaded in the correct paper tray.

### **Recommended action**

1. Use the Tray 2 size switch (SW102) test in the Tray/Bin manual sensor test to test the switch. If it does not respond, replace the lifter drive assembly.
2. Reconnect connector (J122) on the Tray 2 media size switch, and then reconnect connector (J72) on the DC controller.
3. If the error persists, replace the lifter drive assembly.

## **Size mismatch in Tray <X>**

### **Description**

The paper in the listed tray does not match the size specified for that tray.

### **Recommended action**

1. Load the correct paper.
2. Verify the paper is positioned correctly.
3. Close the tray, and then verify that the control panel lists the correct size and type for the specified tray.
4. If necessary, use the control-panel menus to reconfigure the size and type settings for the specified tray.

## **Sleep mode on**

### **Description**

The product is in sleep mode. Pressing a control-panel button, receiving of a print job, or an error condition clears this message.

### **Recommended action**

No action necessary.

## **Staple Cartridge low**

### **Description**

The product indicates when a supply level is low. 20 to 50 staples remain in the cartridge.

### **Recommended action**

Replace the staple cartridge.

## **Staple Cartridge very low**

### **Description**

The product staple cartridge is at end of life.



**NOTE:** After an HP supply has reached the very low threshold, the HP premium protection warranty ends.

---

### **Recommended action**

Replace the staple cartridge.

## **Stapler/Stacker staple jam**

### **Description**

A stapler/stacker jam exists.

### **Recommended action**

#### **13.89.33**

Clear the jam. See the clear jams section in the service manual.

## **Supplies low**

### **Description**

Multiple supplies on the product have reached the **User defined low** threshold.

### **Recommended action**

Replace the supply when print quality is no longer acceptable.

## **SUPPLY MEMORY WARNING**

### **Description**

The product cannot read or write to the e-label or the e-label is missing.

### **Recommended action**

No action necessary.

## **The unit has corrupt data**

### **Description**

#### **98.00.0X** (event code)

Data corruption has occurred in the firmware volume

- **98.00.01**  
Corrupt data in the firmware volume
- **98.00.02**  
Corrupt data in the solutions volume
- **98.00.03**

- Corrupt data in the configuration volume
- **98.00.04**  
Corrupt data in the job data volume

**Recommended action**

- **98.00.01** or **98.00.02** or **98.00.03**
  1. Turn the product off, and then on again.
  2. Use the **Clean Disk** item in the **Preboot** menu.
  3. Reload the firmware.
- **98.00.04**
  1. Turn the product off, and then on again.
  2. Run the file erase function.

**Tray <X> empty: [Type], [Size]**

**Description**

The specified tray is empty and the current job does not need this tray to print.

- X = 1  
Tray 1
- X = 2  
Tray 2
- X = 3  
Tray 3
- X = 4  
Tray 4
- X = 5  
Tray 5

**Recommended action**

Refill the tray at a convenient time.



**NOTE:** This could be a false message. If the tray is loaded without removing the shipping lock, the product does not sense that the paper is loaded. Remove the shipping lock and then load the tray.

## Tray <X> lifting

### Description

The product is in the process of lifting paper in the indicated tray.

- X = 2  
Tray 2
- X = 3  
Tray 3
- X = 4  
Tray 4
- X = 5  
Tray 5

### Recommended action

No action necessary.

## Tray <X> open

### Description

The specified tray is open or not closed completely.

- X = 2  
Tray 2
- X = 3  
Tray 3
- X = 4  
Tray 4
- X = 5  
Tray 5

### Recommended action

Close the tray.



**NOTE:** If this message appears after lifter drive assembly was removed or replaced, make sure that the connector on the assembly is correctly connected and fully seated.

If the error persists, use the Media size switches (SW102, SW2, SW3, ) test in the Tray/Bin manual sensor test to test the switches. If they do not respond, replace associated the lifter drive assembly.



## Tray <X> overfilled

### Description


The tray is filled above the stack-height mark.

- X = 2  
Tray 2
- X = 3  
Tray 3
- X = 4  
Tray 4
- X = 5  
Tray 5

### Recommended action

Remove enough paper so that the paper stack does not exceed the limit for the tray.

---

 **NOTE:** If this message appears after lifter drive assembly was removed or replaced, make sure that the connector on the assembly is correctly connected and fully seated.

---

## Type mismatch Tray

### Description

The specified tray contains a paper type that does not match the configured type.

### Recommended action

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. At the control panel, verify the type configuration.

## Unsupported drive installed To continue, touch "OK"

### Description

A non-supported hard drive has been installed. The drive is unusable by this product.

### Recommended action

1. Turn the product off.
2. Remove the hard drive.
3. Turn the product on.

## Unsupported supply in use OR Unsupported supply installed To continue, touch "OK"

### Description

A non-supported supply has been installed.

OR

The print cartridge is for a different HP product.

- XX = 00

Black print cartridge

### Recommended action

Install the correct supplies for this product. See the parts chapter in the service manual for supply part numbers.

## Unsupported tray configuration

### Description

The product has too many optional trays installed.

### Recommended action

Turn the product off, remove the unsupported trays, and then turn the product on.

## Unsupported USB accessory detected Remove USB accessory

### Description

A non-supported USB accessory has been installed.

### Recommended action

Turn the product off, remove the USB accessory, and then turn the product on.

## Upgrade Error

### Description

**30.01.36** (event code)

SCB upgrade error

### Recommended action

1. Turn the product off, and then on.
2. Resend the upgrade.
3. If the error persists, replace the SCB.

## USB accessory not functional

### Description

A parameter in the USB accessory is not correctly functioning.

### Recommended action

1. Turn the product off.
2. Remove the USB accessory.
3. Insert a replacement USB accessory.

## USB hubs are not fully supported Some operations may not work properly

### Description

Some USB hubs require more power than the product has available.

### Recommended action

Remove the USB hub.

## USB is write protected To clear press "OK"

### Description

The device is protected and no new files can be written to it.

### Recommended action

Touch the **OK** button to clear the error.

## USB needs too much power

### Description

Power requirements for the USB device attached to the product are beyond supported limits.

### Recommended action

Remove the USB device and then turn the product off and then on again. Try a similar accessory that has its own power supply or requires less power.

## USB needs too much power Remove USB and Then Turn Off then On

### Description

A USB accessory is drawing too much electrical current. Printing cannot continue.

### Recommended action

Turn the product off, remove the USB accessory, and then turn the product on.

Use a USB accessory that uses less power or that contains its own power supply.

## USB not initialized

### Description

The USB device file system must be initialized before it can be used.

### Recommended action

Use the EWS or HP Web Jetadmin to initialize the component.

## USB storage accessory removed Clearing any associated data

### Description

This message displays for about 6 seconds after a USB device is removed.

### Recommended action

Touch the **Hide** button to remove this message.

## USB storage device failure To clear press "OK"

### Description

The specified device failed.

### Recommended action

Touch the **OK** button to clear this error.

## USB storage file operation failed To clear press "OK"

### Description

A PJI file system command was received that attempted to perform an illegal operation, such as downloading a file to a non-existent directory.

### Recommended action

Touch the **OK** button to clear this error.

## USB storage file system is full To clear press "OK"

### Description

The file system on the installed USB device is full.

### Recommended action

Touch the **OK** button to clear this error.

## Used supply installed To continue, touch “OK” OR Used supply in use

### Description

One of the print cartridges has been previously used.

- XX = 00

Black print cartridge

### Recommended action

If you believe you purchased a genuine HP supply, go to [www.hp.com/go/anticounterfeit](http://www.hp.com/go/anticounterfeit).

## Waiting for tray <X> to lift

### Description

The specified tray is in the process of lifting paper to the top of the tray (so it can properly feed).

### Recommended action

No action necessary

## Windows Login Required to Use this Feature

### Description

Windows login required.

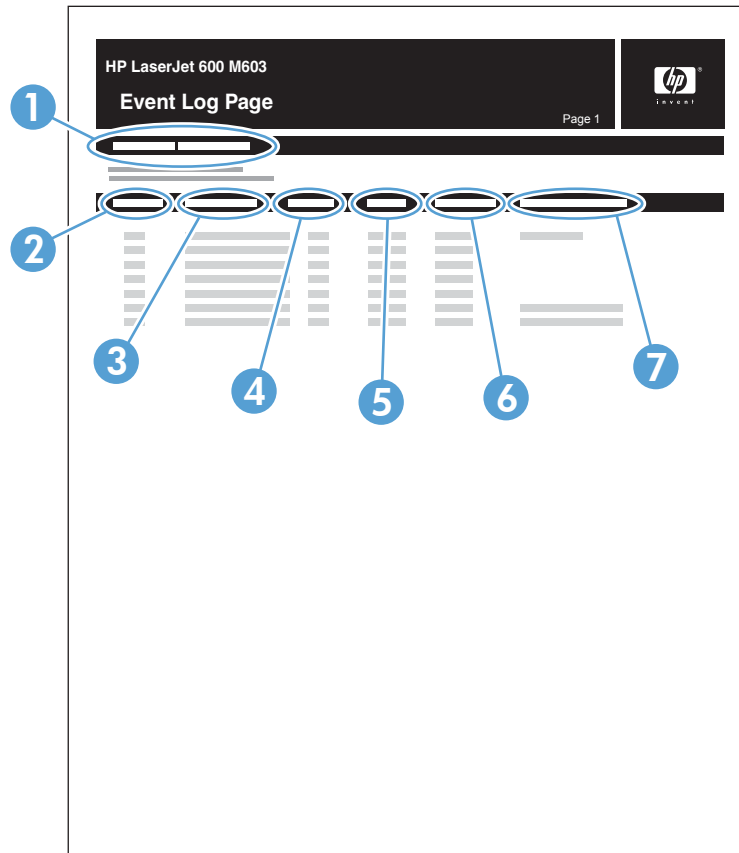
### Recommended action

Enter your windows login.

## Event-log messages


This section describes messages that only appear in the event log. For additional numeric messages, see the control-panel message section of this manual

**Figure 3-38** Sample event log




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
8	Consecutive Repeats

## Print an event log


 **NOTE:** Printing an event log by using the **Administration** menu shows only a subset of events. To print a complete event log, use the **Service** menu.

---

### Print the event log from the Administration menu

1. Press the Home  button.
2. Open the following menus:
  - **Administration**
  - **Troubleshooting**
3. Scroll to the **Print Event Log** item, and then press the **OK** button.

### Print the event log from the Service menu

1. Press the Home  button.
2. Open the following menus:
  - **Device Maintenance**
  - **Service**

The PIN for the HP LaserJet Enterprise 600 M601, M602, and M603 Series Printer is 10060111, 10060211, or 10060311 depending on your model.
3. Scroll to the **Print Event Log** item, and then press the **OK** button.

## View an event log



**NOTE:** Viewing an event log by using the **Administration** menu shows only a subset of events. To print a complete event log, use the **Service** menu.

---

### View an event log from the Administration menu

1. Press the Home button.
2. Open the following menus:
  - **Administration**
  - **Troubleshooting**
3. Scroll to the **View Event Log** item, and then press the **OK** button.

### Viewing the event log from the Service menu

1. Press the Home button.
2. Open the following menus:
  - **Device Maintenance**
  - **Service**

The PIN for the HP LaserJet Enterprise 600 M601, M602, and M603 Series Printer is 10060111, 10060211, or 10060311 depending on your model.
3. Scroll to the **View Event Log** item, and then press the **OK** button.

## Clear an event log

### Clearing the event log from the Service menu

1. Press the Home button.
2. Open the following menus:
  - **Device Maintenance**
  - **Service**

The PIN for the HP LaserJet Enterprise 600 M601, M602, and M603 Series Printer is 10060111, 10060211, or 10060311 depending on your model.
3. Scroll to the **Clear Event Log** item, and then press the **OK** button.



# Clear jams

The product closely monitors the paper path for jams. The product displays a jam error message when one of the following conditions occurs.

- Paper is detected at a paper path sensor when paper is not expected.
- Paper fails to clear a sensor within a specified time period.
- Paper fails to arrive at a sensor within a specified time period.

If the product is experiencing frequent jams, use the following steps to assist you in resolving the causes of the jam.

- Review the event log to determine a cause for the jams.
- Inspect each of the paper path sensors to determine if the sensor flags are free from obstructions and functioning correctly. See [Component diagnostics on page 199](#).
- Use the manual sensor diagnostic test to determine if all paper path motors and solenoids are functioning correctly.
- 

The sensors below monitor the product paper path.

- PS102, pre-feed sensor
- PS103, top-of-page sensor
- PS106, media-width sensor
- PS108, media-width sensor
- PS700, fusing delivery sensor
- PS1603, optional 500-sheet feeder media path sensors
- PS1502, duplex sensor
- PS1704, optional 1,500-sheet feeder media path sensors

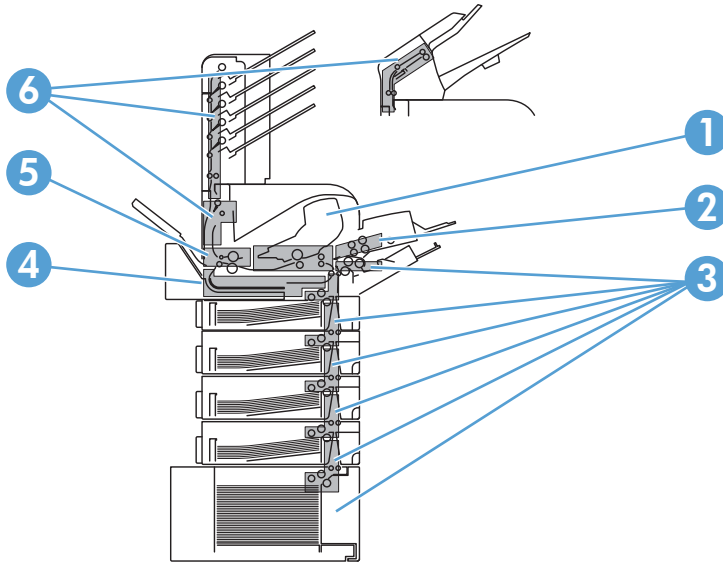


**NOTE:** To locate the sensors listed above, see [Paper path sensors test \(automatic\) on page 206](#).


## Jam locations

If a jam message appears on the control-panel display, look for jammed paper or other print media in the locations that are indicated in the following illustration. Then follow the procedure for clearing the jam. You might need to look for paper in other locations than those that are indicated in the jam message. If the location of the jam is not obvious, look first in the top-cover area underneath the print cartridge.

When clearing jams, be very careful not to tear jammed paper. If a small piece of paper is left in the product, it could cause additional jams.



1	Top-cover and print-cartridge areas
2	Optional envelope feeder
3	Tray areas (Tray 1, Tray 2, and optional trays)
4	Optional duplexer
5	Fuser area
6	Output areas (top bin; rear bin; and optional stacker, stapler/stacker, or 5-bin mailbox)

 **NOTE:** Loose toner might remain in the product after a jam and cause temporary print-quality problems. These problems should clear up within a few pages.

## Common causes of jams

Many jams are caused by using paper that does not meet HP specifications. For complete paper specifications for all HP LaserJet products, see the *HP LaserJet Printer Family Print Media Guide*. This guide is available at [www.hp.com/support/ljpaperguide](http://www.hp.com/support/ljpaperguide).

### The product is jammed.<sup>1</sup>

Cause	Solution
The paper does not meet specifications.	Use only paper that meets HP specifications.
A component is installed incorrectly.	Verify that all print cartridges, the transfer unit, and the fuser 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.
A tray is loaded incorrectly.	Remove any excess paper from the tray. Make sure that the stack is below the maximum stack height mark in the tray.
The paper is skewed.	The 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 tray.  <b>NOTE:</b> Do not fan paper. Fanning can create static electricity, which can cause paper to stick together.
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 rollers from the tray are not picking up the paper.	Remove the top sheet of paper. If the paper is too heavy, it might not be picked from the tray.
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.
Product 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.
Paper was not stored correctly.	Replace the paper in the trays. Paper should be stored in the original packaging in a controlled environment.

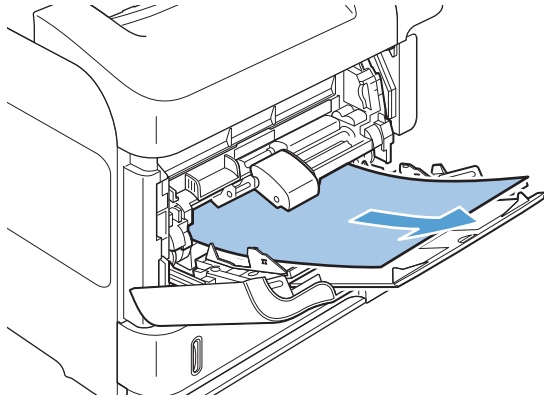
<sup>1</sup> If the product continues to jam, contact HP Customer Support or your authorized HP service provider.

## Clear jams from the input trays

Use these procedures to clear jams from the trays.

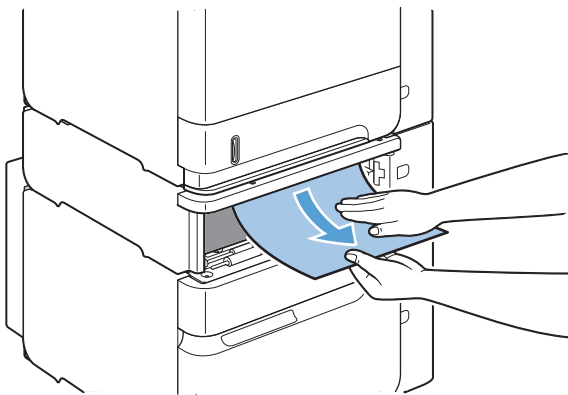
### Clear jams from Tray 1

Slowly pull the jammed paper or other print media out of the product. If part of the paper has already been pulled into the product, see [Clear jams from the print-cartridge \(top cover\) on page 373](#).

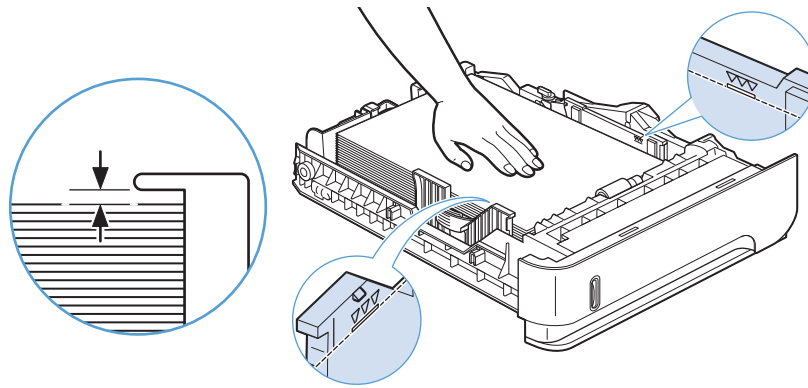


### Clear jams from Tray 2 or an optional 500-sheet tray

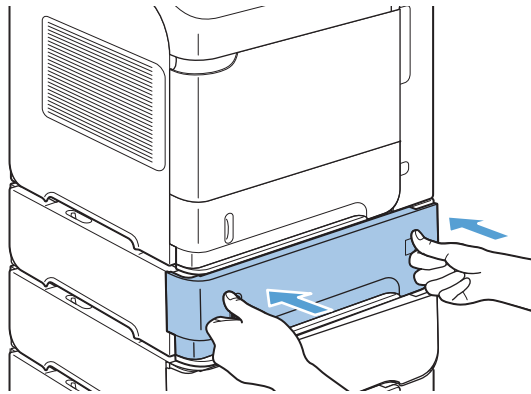
1. Slide the tray out of the product, lift it slightly, and remove any damaged paper from the tray.
2. If the edge of the jammed paper is visible in the feed area, slowly pull the paper down and out of the product. (Do not pull the paper straight out, or it will tear.) If the paper is not visible, look in the next tray or in the top-cover area. See [Clear jams from the print-cartridge \(top cover\) on page 373](#).



3. Make sure that the paper is flat in the tray at all four corners and below the maximum-height indicators.



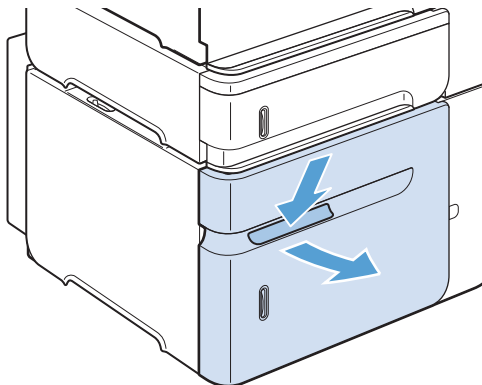
4. Slide the tray into the product.



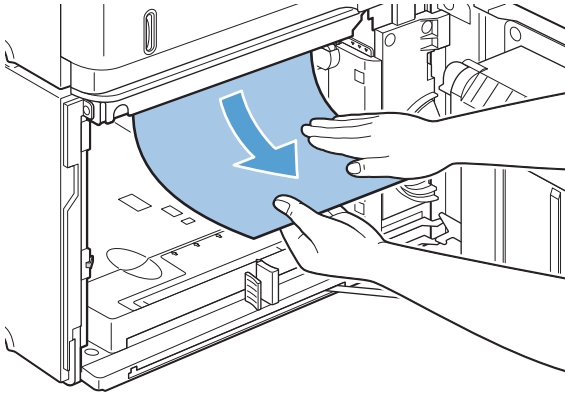
5. Press **OK** to clear the jam message.
6. If a jam message persists, a sheet is still jammed in the product. Look for the jam in another location.

### Clear jams from the optional 1,500-sheet tray

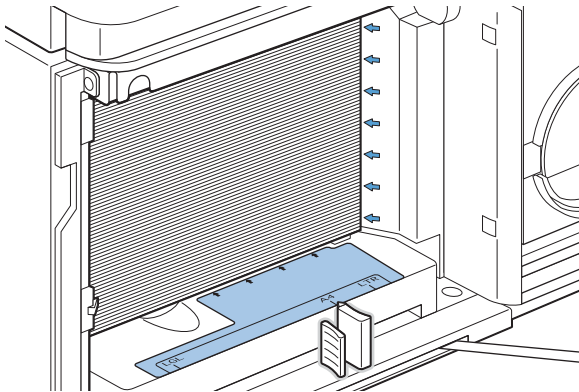
1. Open the front door of the tray.



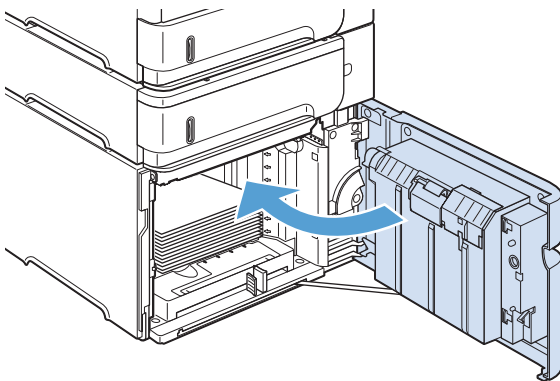
2. If the edge of the jammed paper is visible in the feed area, slowly pull the paper down and out of the product. (Do not pull the paper straight out, or it will tear.) If the paper is not visible, look in the top-cover area.



3. Make sure that the paper does not exceed the fill marks on the paper guides, and that the front edge of the stack is aligned with the arrows.



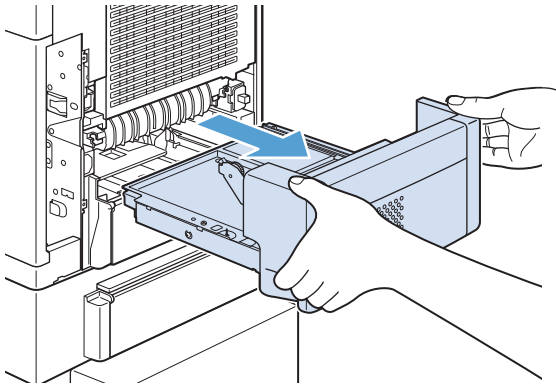
4. Close the front door of the tray.



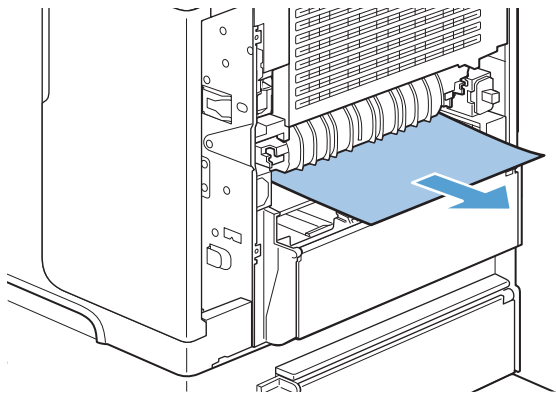
5. Press **OK** to clear the jam message.
6. If a jam message persists, a sheet is still jammed in the product. Look for the jam in another location.

## Clear jams from the optional duplexer

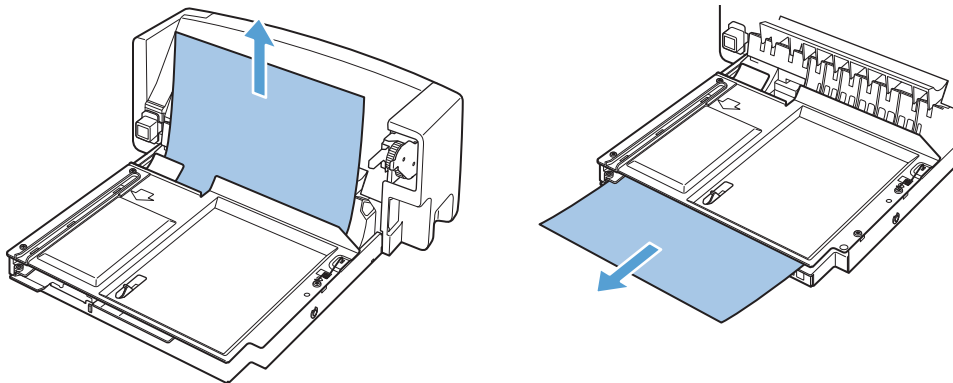
1. Lift the optional duplexer up and then pull it out to remove it.



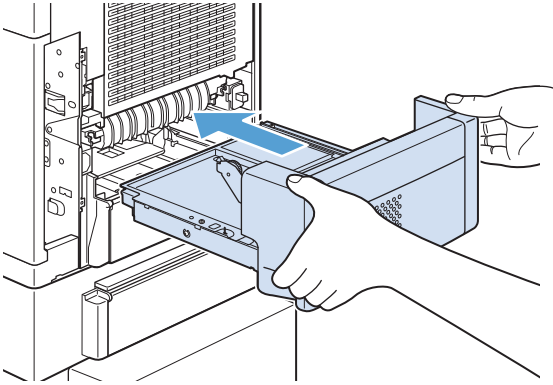
2. Remove any paper that is on top of Tray 2. (You might need to reach inside the product.)



3. Slowly pull any paper out of the optional duplexer.



4. Insert the optional duplexer into the product.



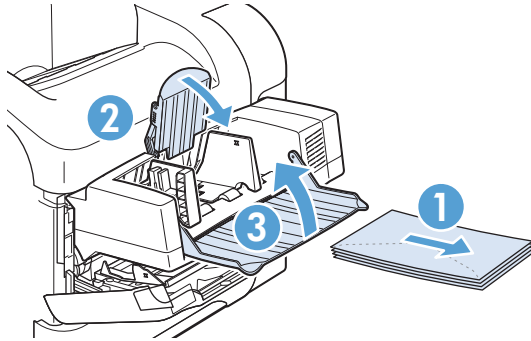
5. If a jam message persists, a sheet is still jammed in the product. Look for jam in another location.



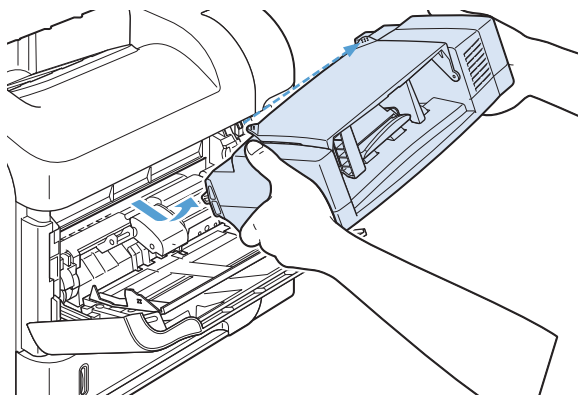
## Clear jams from the optional envelope feeder

This procedure applies only to jams that occur when you are using an optional envelope feeder.

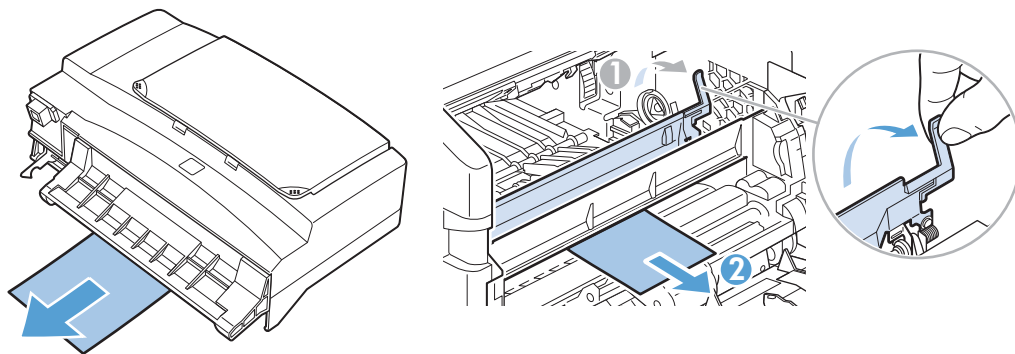
1. Remove any envelopes that are loaded in the optional envelope feeder. Lower the envelope weight and lift the tray extension up, to the closed position.



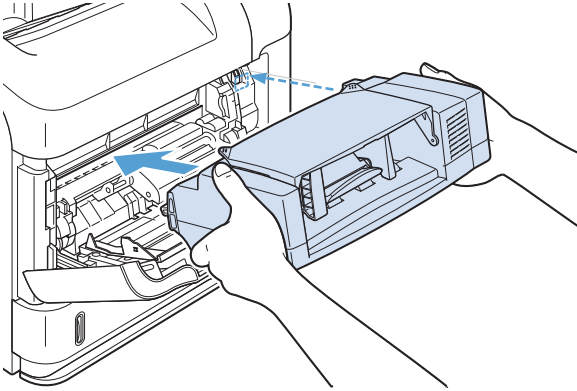
2. Grasp both sides of the optional envelope feeder and carefully lift it up, and then pull it out of the product.



3. Slowly remove any jammed envelopes from the optional envelope feeder and the product.



4. Reinstall the envelope feeder.



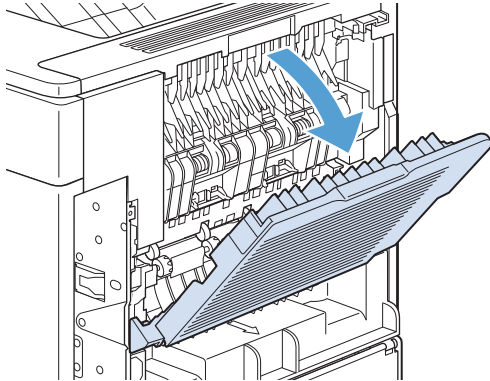
5. Press **OK** to clear the jam message.
6. If a jam message persists, an envelope is still jammed in the product. Look for the jam in another location.
7. Replace the envelopes, making sure that you push the bottom envelopes in slightly further than the top envelopes.


## Clear jams from the output areas

Use these procedures to clear jams that occur in the rear output bin or in the optional stacker, stapler/stacker, or 5-bin mailbox.

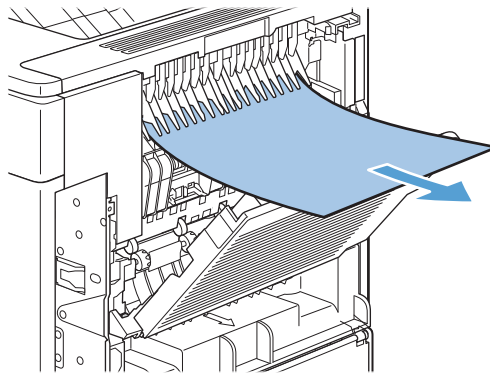
### Clear jams from the rear output bin


1. Open the rear output bin.



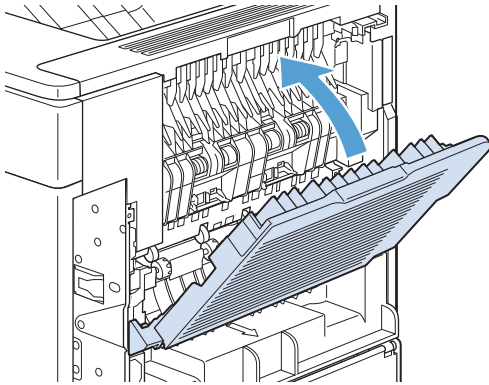
 **NOTE:** If most of the paper is still inside the product, it might be easier to remove it through the top-cover area.

2. Grasp both sides of the paper, and slowly pull the paper out of the product. Loose toner might be on the sheet. Be careful not to spill it on yourself or into the product.



 **NOTE:** If the jammed paper is difficult to remove, try opening the top cover all the way to release pressure on the paper. If the sheet has torn, or if you still cannot remove it, see [Clear jams from the fuser on page 369](#).

3. Close the rear output bin.



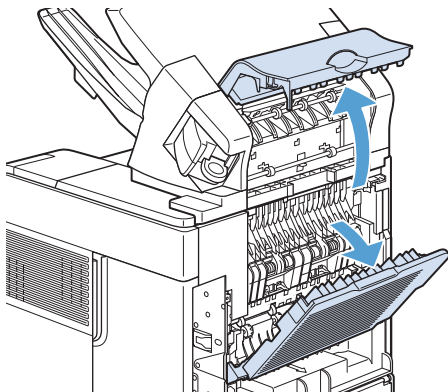
4. If a jam message persists, a sheet is still jammed in the product. Look for the jam in another location.

### Clear jams from the optional stacker or stapler/stacker

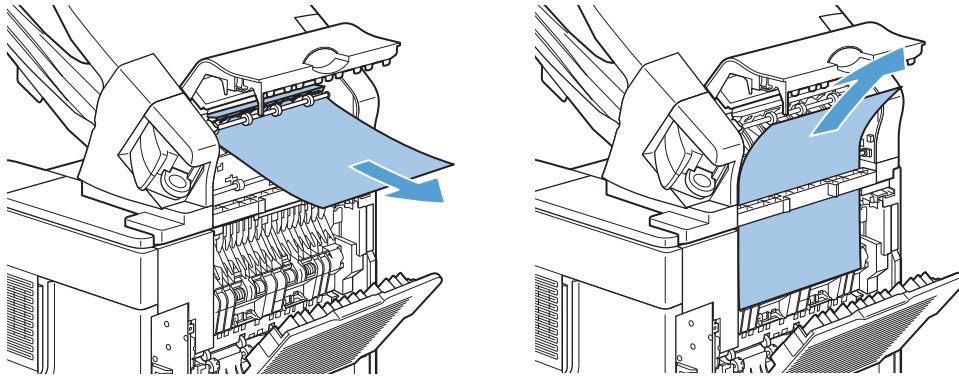
Paper jams can occur in the optional stacker or the optional stapler/stacker. Staple jams can occur only in the optional stapler/stacker.

### Clear paper jams from the optional stacker or stapler/stacker

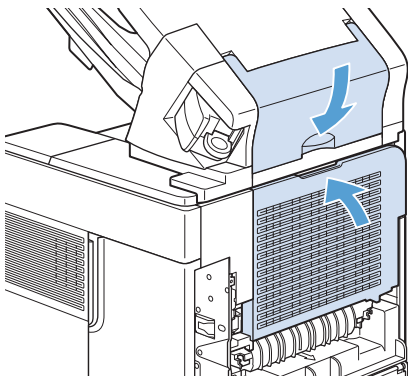
1. At the back of the product, open the door on the stacker or stapler/stacker, and open the rear output bin.




2. Carefully remove any jammed paper.



3. Close the door on the stacker or stapler/stacker, and close the rear output bin.

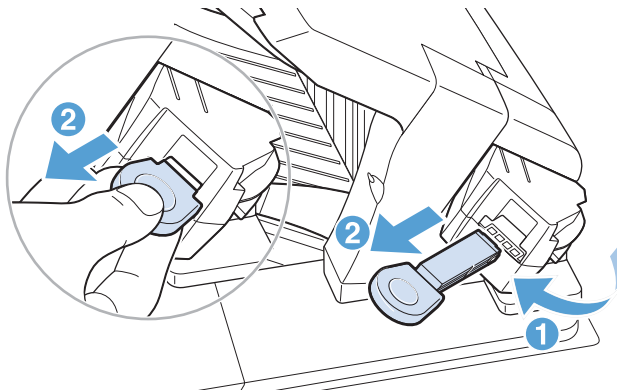


4. If a jam message persists, a sheet is still jammed. Look for it in another location. Check the front of the accessory and carefully remove any jammed paper.

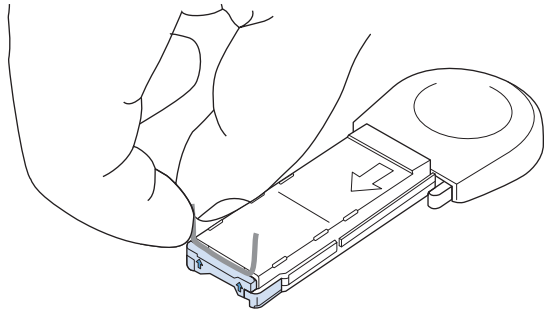
 **NOTE:** The output bin must be pushed down into the lowest position for printing to continue.

### Clear staple jams from the optional stapler/stacker

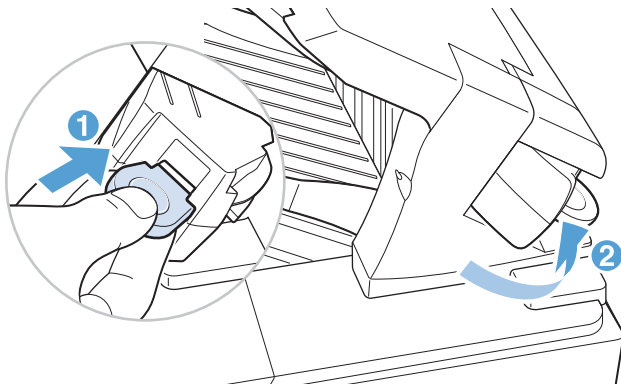
1. On the right side of the stapler/stacker, turn the stapler unit toward the front of the product until the unit clicks into the open position. Pull outward on the blue staple cartridge to remove it.



2. Rotate the green cover on the end of the staple cartridge upward, and remove the jammed staple.



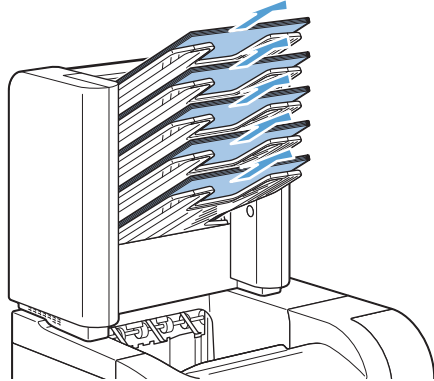
3. Insert the staple cartridge into the stapler unit, and rotate the stapler unit toward the rear of the product until the unit snaps into place.



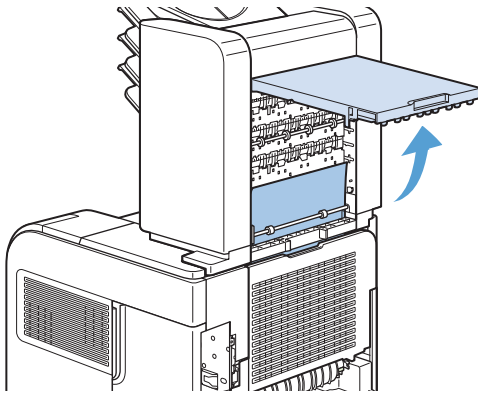
The stapler needs to reload after clearing a staple jam, so the first few documents might not be stapled. If a print job is sent and the stapler is jammed or is out of staples, the job will still print as long as the path to the stacker bin is not blocked.

## Clear jams from the optional 5-bin mailbox

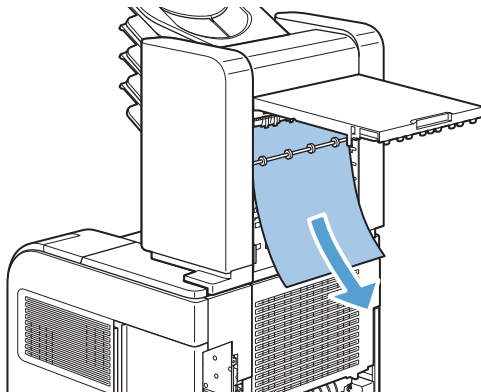
1. Remove any paper that is in the output bins.



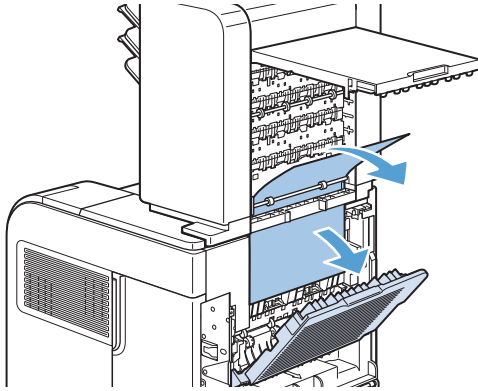
2. On the back of the 5-bin mailbox, open the jam-access door.



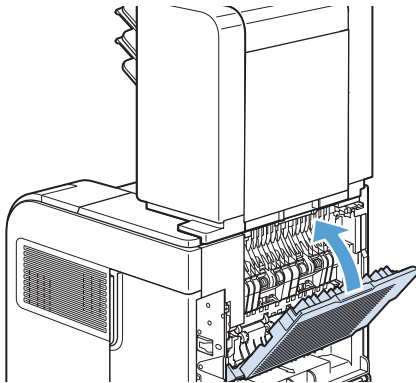
3. If the paper is jammed at the top of the 5-bin mailbox, pull it straight down to remove it.



4. If the paper is jammed at the bottom of the 5-bin mailbox, open the rear output bin, and then pull straight up on the paper to remove it.



5. Close the jam-access door and the rear output bin.

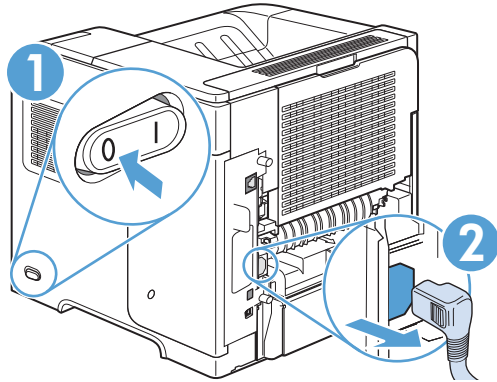




## Clear jams from the fuser

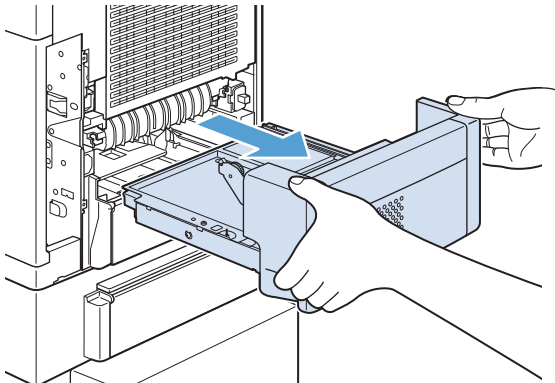
Use this procedure only in these situations:

- Paper has jammed inside the fuser and cannot be removed from the top-cover area or the rear-output area.
  - A sheet of paper has torn while you were trying to clear a jam from the fuser.
1. Turn the product off and unplug the power cord from the product.

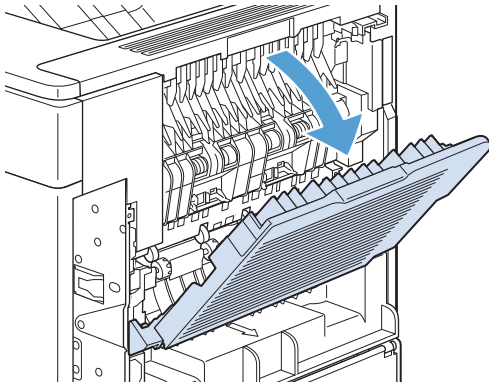


**⚠ WARNING!** The fuser is very hot. To avoid minor burns, wait 30 minutes for the fuser to cool before removing it from the product.

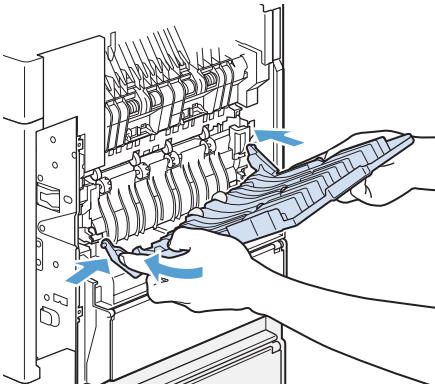
2. Rotate the product so the rear is facing you. If an optional duplexer is installed, lift it and pull it straight out. Set it aside.



3. Open the rear output bin.

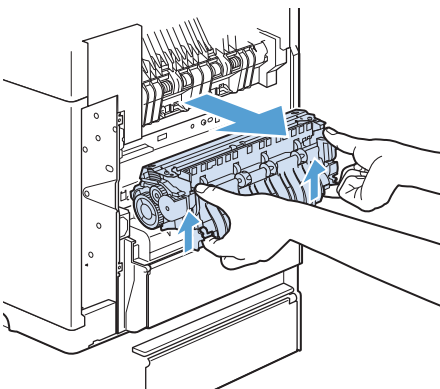


4. Remove the rear output bin. Place your finger near the left-side hinge, and push firmly to the right until the hinge-pin clears the hole inside the product. Rotate the output bin outward to remove it.

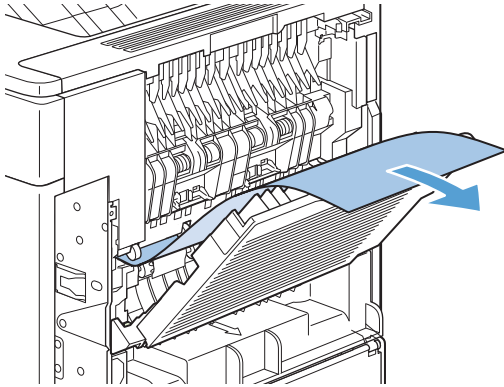


5. If paper is visible, remove it.

If paper is not visible, push up on the two blue levers on the sides of the fuser, and pull the fuser straight out.

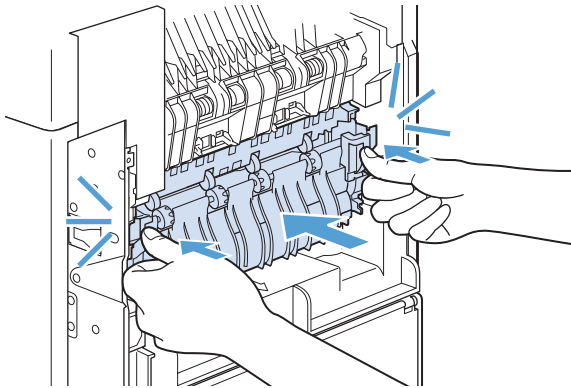


6. Remove the jammed paper. If necessary, lift the black plastic guide that is located on the top of the fuser to gain access to the jammed sheet.

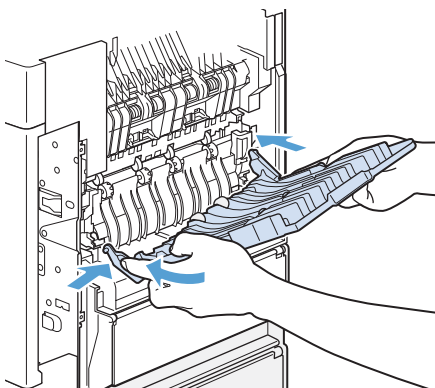


**⚠ CAUTION:** Do not use a sharp or metal object to clear paper from the fuser area. You might damage the fuser.

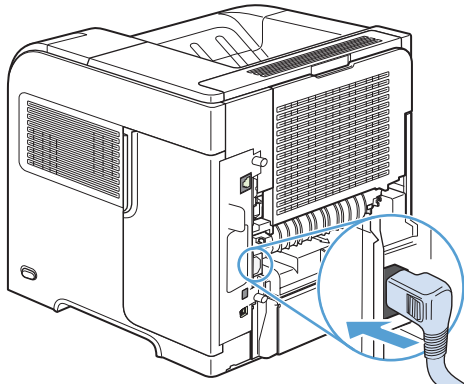
7. Push the fuser firmly into the product until the blue levers on both sides click into place.



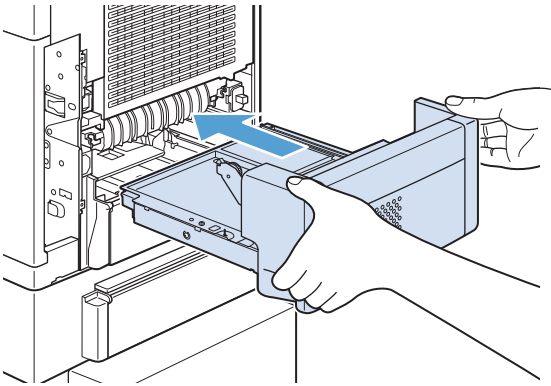
8. Reinstall the rear output bin. Insert the right hinge-pin into the hole inside the product. Push inward on the left hinge, and slide it into the hole inside the product. Close the rear output bin.



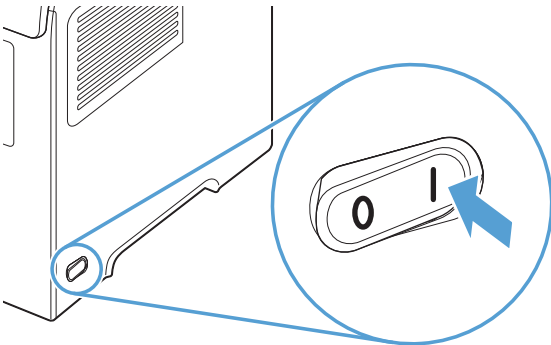
9. Plug the power cord into the product.



10. Replace the optional duplexer, if it was removed.



11. Turn the product on.

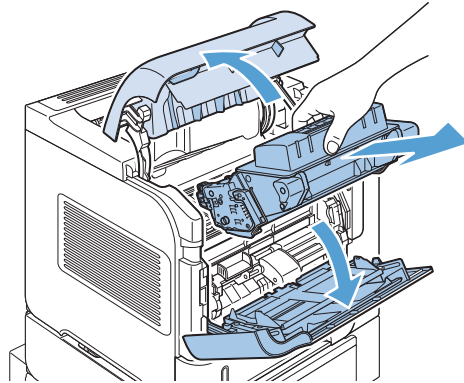


12. If a jam message persists, a sheet is still jammed in the product. Look for the jam in another location.

After clearing all jams, you need to send the print job again because the product power has been turned off.

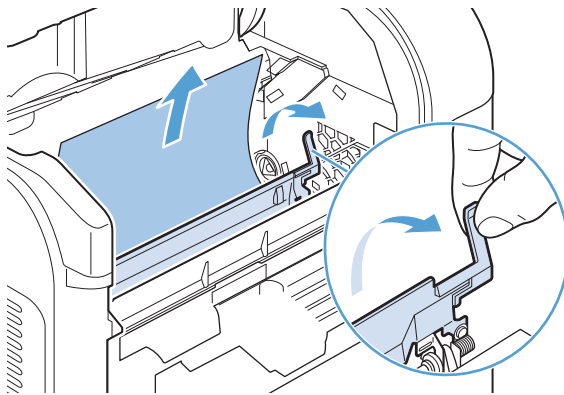
## Clear jams from the print-cartridge (top cover)

1. Open the top cover and remove the print cartridge.

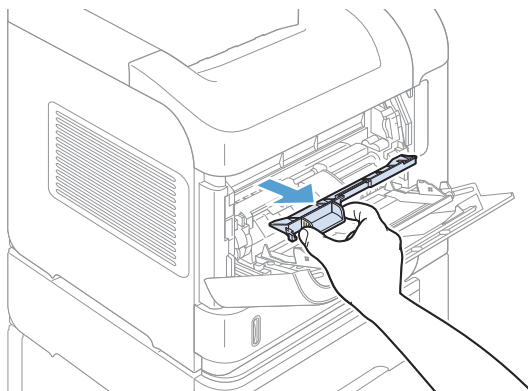


**⚠ CAUTION:** To prevent damage to the print cartridge, do not expose it to light for more than a few minutes. Cover the print cartridge with a sheet of paper while it is outside of the product.

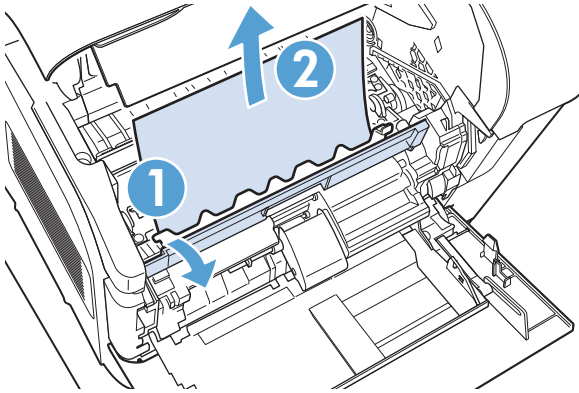
2. Use the green handle to lift the paper-access plate. Slowly pull the jammed paper out of the product. Do not tear the paper. If paper is difficult to remove, try clearing it from the tray area.



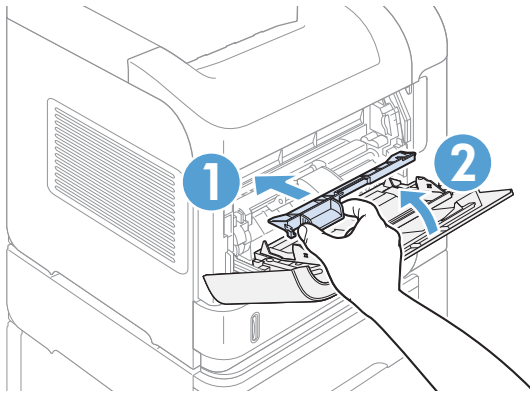
3. Open Tray 1 and remove the envelope accessory cover. If paper is present, remove it.



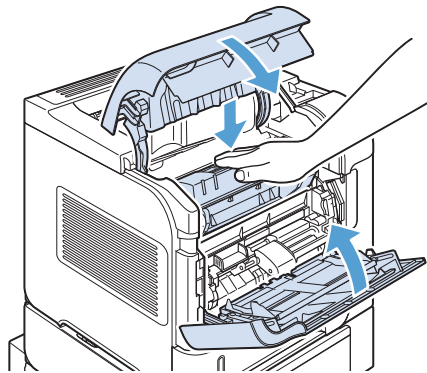
4. Rotate the paper guide to check for additional jammed paper underneath. If jammed paper is present, remove it.



5. Replace the envelope accessory cover and close Tray 1.



6. Reinstall the print cartridge and close the top cover.



7. If a jam message persists, jammed paper is still in the product. Look for the jam in another location.

## Change 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 enough memory is available. This is the default setting.
- **Off** — The product does not try to reprint jammed pages. Because no memory is used to store the most recent pages, performance is optimal.



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**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.

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- **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 the Home button.
2. Open the following menus:
  - **Administration**
  - **General Settings**
  - **Jam Recovery**
3. Scroll to the appropriate setting, and then press the **OK** button.
4. Press the Home button to return to the **Ready** state.

# Paper does not feed automatically

- [The product does not pick up paper](#)
- [The product picks up multiple sheets of paper](#)
- [Prevent paper jams](#)

## The product does not pick up paper

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

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

## The product picks up multiple sheets of paper

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

1. Remove the stack of paper from the tray and flex it, rotate it 180 degrees, and flip it over. *Do not fan the paper.* Return the stack of paper to the tray.
2. Use only paper that meets HP specifications for this product.
3. Use paper that is not wrinkled, folded, or damaged. If necessary, use paper from a different package.
4. Make sure the tray is not overfilled. If it is, remove the entire stack of paper from the tray, straighten the stack, and then return some of the paper to the tray.
5. Make sure the paper guides in the tray are adjusted correctly for the size of paper. Adjust the guides so they are touching the paper stack without bending it.

## Prevent paper jams

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

1. Use only paper that meets HP specifications for this product.
2. Use paper that is not wrinkled, folded, or damaged. If necessary, use paper from a different package.
3. Use paper that has not previously been printed or copied on.
4. Make sure the tray is not overfilled. If it is, remove the entire stack of paper from the tray, straighten the stack, and then return some of the paper to the tray.



5. Make sure the paper guides in the tray are adjusted correctly for the size of paper. Adjust the guides so they are touching the paper stack without bending it.
6. Make sure that the tray is fully inserted in the product.
7. If you are printing on heavy, embossed, or perforated paper, use the manual feed feature and feed sheets one at a time.

# Use manual print modes

Try the following multi-purpose (MP) modes to see if they solve the image-quality problems. To access the manual print modes, open the following menus:

- **Administration**
- **General Settings**
- **Print Quality**
- **Adjust Paper Types**

**Table 3-34** MP modes under the Adjust Paper Types sub menu

<b>Print Mode</b>	<ul style="list-style-type: none"><li>• <b>NORMAL MODE</b></li><li>• <b>HEAVY MODE</b></li><li>• <b>SHELF EDGE MODE 2</b></li><li>• <b>CARDSTOCK MODE</b></li><li>• <b>TRANSPARENCY MODE</b></li><li>• <b>ENVELOPE MODE</b></li><li>• <b>LABEL MODE</b></li><li>• <b>LIGHT MODE</b></li><li>• <b>EXTRA LIGHT MODE</b></li><li>• <b>ROUGH MODE</b></li><li>• <b>HEAVY GLOSSY MODE</b></li><li>• <b>HEAVY ROUGH MODE</b></li><li>• <b>BOND MODE</b></li></ul>
<b>RESISTANCE MODE</b>	<p><b>NOTE:</b> Not all print modes are available for all paper types.</p> <p>Set to <b>Up</b> to resolve print-quality issues caused by poor secondary transfer in low-humidity environments with resistive or rough surface media.</p>

**Table 3-34 MP modes under the Adjust Paper Types sub menu (continued)**

<b>HUMIDITY MODE</b>	<p>With glossy film, set to <b>High</b> when the product is in a high-humidity environment and print-quality defects occur on HP Tough Paper or Opaque film.</p> <p>With transparencies, set to <b>High</b> when the product is in a high-humidity environment and print-quality defects occur on color transparencies on the first page of a print job.</p> <p>With all other paper types, set to <b>High</b> when the product is in a high-humidity environment and light density occurs on the first page of a print job.</p>
<b>FUSER TEMP MODE</b>	<p>If you are seeing a faint image of the page repeated at the bottom of the page or on the following page, 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 <b>ALTERNATE 1</b> setting first and see if it solves the problem. If you continue to see the problem, try <b>ALTERNATE 2</b> and then <b>ALTERNATE 3</b>. Using the <b>ALTERNATE 2</b> and <b>ALTERNATE 3</b> settings might cause an extra delay between jobs.</p>

**Table 3-35 MP modes under the Optimize submenu**

<b>LINE DETAIL</b>	Use this setting to improve line detail.
<b>RESTORE OPTIMIZE</b>	Use this setting to restore default settings.

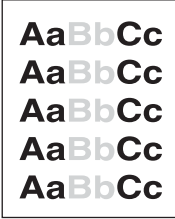

# Solve image-quality problems

Occasionally, you might encounter problems with print quality. The information in the following sections helps you identify and resolve these issues.

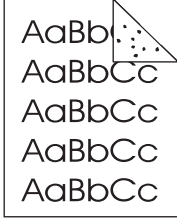

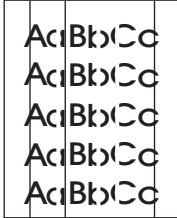
## Print-quality examples

These examples identify the most common print-quality problems. If you still have problems after trying the suggested solutions, contact HP Customer Support.



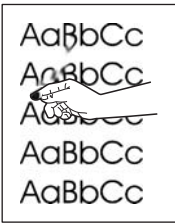
**Table 3-36** Image defect examples

Problem	Image example	Solution
Light print (partial page)		<ol style="list-style-type: none"><li>1. Make sure that the print cartridge is fully installed.</li><li>2. The toner level in the print cartridge might be low. Replace the print cartridge.</li><li>3. The paper might not meet HP specifications (for example, the paper is too moist or too rough).</li></ol>
Light print (entire page)		<ol style="list-style-type: none"><li>1. Make sure that the print cartridge is fully installed.</li><li>2. Make sure that the <b>Economode</b> setting is turned off at the control panel and in the printer driver.</li><li>3. Open the following menus:<ul style="list-style-type: none"><li>◦ <b>Administration</b></li><li>◦ <b>General Settings</b></li><li>◦ <b>Print Quality</b></li><li>◦ <b>Toner Density</b><ul style="list-style-type: none"><li>• Select form a range of density settings.</li></ul></li></ul></li><li>4. Try using a different type of paper.</li><li>5. The print cartridge might be almost empty. Replace the print cartridge.</li><li>6. Clean the product paper path.</li><li>7. If the error persists, replace the transfer roller and clean the contacts.</li><li>8. If the error persists, replace the high-voltage power supply.</li><li>9. If the error persists, replace the DC controller.</li><li>10. If the error persists, replace the laser/scanner.</li></ol>

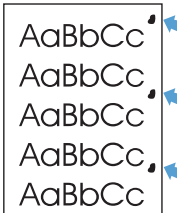
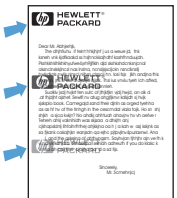
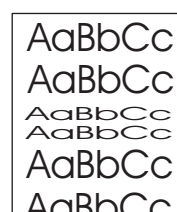
**Table 3-36 Image defect examples (continued)**

Problem	Image example	Solution
Specks		<p>Specks might appear on a page after a jam has been cleared.</p> <ol style="list-style-type: none"> <li>1. Print a few more pages to see if the problem corrects itself.</li> <li>2. Clean the inside of the product and run a cleaning page to clean the fuser.</li> <li>3. Try using a different type of paper.</li> <li>4. Clean the cassette pickup roller. If the roller is dirty and can not be cleaned, replace the roller.</li> <li>5. Check the print cartridge for leaks. If the print cartridge is leaking, replace it.</li> <li>6. Clean the product paper path several times.</li> </ol>
Dropouts		<ol style="list-style-type: none"> <li>1. Make sure that the environmental specifications for the product are being met.</li> <li>2. Open the following menus: <ul style="list-style-type: none"> <li>◦ <b>Administration</b></li> <li>◦ <b>General Settings</b></li> <li>◦ <b>Print Quality</b></li> <li>◦ <b>Adjust Paper Types</b> <ul style="list-style-type: none"> <li>• Scroll to the desired paper type, and then press the <b>OK</b> button.</li> </ul> </li> <li>◦ <b>Print Mode</b> <ul style="list-style-type: none"> <li>• Scroll to the print mode, and then press the <b>OK</b> button.</li> </ul> </li> </ul> </li> <li>3. Try using a smoother paper that you know will work in the product.</li> <li>4. Try using the <b>Print/Stop Test</b> in the <b>Troubleshooting</b> menu to determine if a image-formation component is malfunctioning. Replace the failed component.</li> <li>5. If the error persists, replace the transfer roller.</li> <li>6. The fuser pressure roller might not be within nip width specifications. If the error persists, replace fuser.</li> </ol>
Lines		<ol style="list-style-type: none"> <li>1. Print a few more pages to see if the problem corrects itself.</li> <li>2. Clean the inside of the product and run a cleaning page to clean the fuser.</li> <li>3. Replace the print cartridge.</li> <li>4. Replace the print cartridge.</li> </ol>

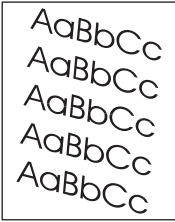
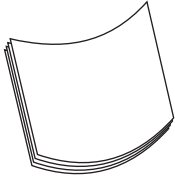
**Table 3-36 Image defect examples (continued)**

Problem	Image example	Solution
Gray background		<ol style="list-style-type: none"> <li>1. Do not use paper that has already been run through the product.</li> <li>2. Try using a different type of paper.</li> <li>3. Print a few more pages to see if the problem corrects itself.</li> <li>4. Turn over the paper in the tray. Also, try rotating the paper 180°.</li> <li>5. Open the following menus: <ul style="list-style-type: none"> <li>◦ <b>Administration</b></li> <li>◦ <b>General Settings</b></li> <li>◦ <b>Print Quality</b></li> <li>◦ <b>Toner Density</b> <ul style="list-style-type: none"> <li>• Select form a range of density settings.</li> </ul> </li> </ul> </li> <li>6. Make sure that the environmental specifications for the product are being met.</li> <li>7. Clean the product paper path.</li> <li>8. If the error persists, replace the laser/scanner.</li> <li>9. If the error persists, replace the DC controller PCA.</li> <li>10. If the error persists, replace the high-voltage power supply.</li> </ol>
Toner smear		<ol style="list-style-type: none"> <li>1. Print a few more pages to see if the problem corrects itself.</li> <li>2. Try using a different type of paper.</li> <li>3. Make sure that the environmental specifications for the product are being met.</li> <li>4. Clean the inside of the product and run a cleaning page to clean the fuser.</li> <li>5. Replace the print cartridge.</li> </ol>
Loose toner		<p>Loose toner, in this context, is defined as toner that can be rubbed off the page.</p> <ol style="list-style-type: none"> <li>1. Open the following menus: <ul style="list-style-type: none"> <li>◦ <b>Administration</b></li> <li>◦ <b>General Settings</b></li> <li>◦ <b>Print Quality</b></li> </ul> </li> </ol>

**Table 3-36 Image defect examples (continued)**

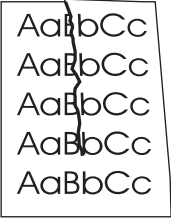
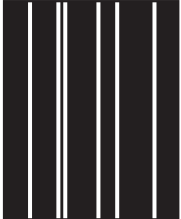
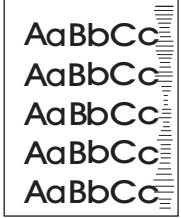
Problem	Image example	Solution
		<ul style="list-style-type: none"> <li>◦ <b>Adjust Paper Types</b> <ul style="list-style-type: none"> <li>• Scroll to the desired paper type, and then press the <b>OK</b> button.</li> </ul> </li> <li>◦ <b>Print Mode</b> <ul style="list-style-type: none"> <li>• Scroll to the print mode, and then press the <b>OK</b> button.</li> </ul> </li> </ul> <ol style="list-style-type: none"> <li>2. If you have observed a rougher texture on one side of your paper, try printing on the smoother side.</li> <li>3. Make sure that the environmental specifications for the product are being met.</li> <li>4. Make sure that the type and quality of the paper you are using meet HP specifications.</li> </ol>
Repeat defects		<ol style="list-style-type: none"> <li>1. Print a few more pages to see if the problem corrects itself.</li> <li>2. Clean the inside of the product and run a cleaning page to clean the fuser.</li> <li>3. The print cartridge might need to be replaced.</li> </ol>
Repeat image		<p>This type of defect might occur when using preprinted forms or a large quantity of narrow paper.</p> <ol style="list-style-type: none"> <li>1. Print a few more pages to see if the problem corrects itself.</li> <li>2. Make sure that the type and quality of the paper you are using meet HP specifications.</li> <li>3. The print cartridge might need to be replaced.</li> <li>4. Clean the delivery roller.</li> </ol>
Misformed characters		<ol style="list-style-type: none"> <li>1. Print a few more pages to see if the problem corrects itself.</li> <li>2. Make sure that the environmental specifications for the product are being met.</li> <li>3. Make sure that the type and quality of the paper you are using meet HP specifications.</li> <li>4. Try using another input tray.</li> <li>5. If the error persists, reconnect the connectors (J143, J144, and J145) on the laser/scanner.</li> <li>6. If the error persists, reconnect the connectors (J83 and J84) on the DC controller PCA.</li> <li>7. If the error persists, replace the laser/scanner.</li> <li>8. If the error persists, replace the DC controller PCA.</li> </ol>

**Table 3-36 Image defect examples (continued)**

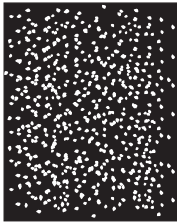
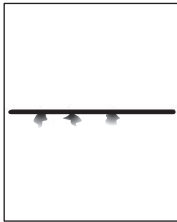
Problem	Image example	Solution
Page skew		<ol style="list-style-type: none"><li>1. Print a few more pages to see if the problem corrects itself.</li><li>2. Verify that no torn pieces of paper are inside the product.</li><li>3. Make sure that paper is loaded correctly and that all adjustments have been made. Make sure that the guides in the tray are not too tight or too loose against the paper.</li><li>4. Turn over the paper in the tray. Also, try rotating the paper 180°.</li><li>5. Make sure that the type and quality of the paper you are using meet HP specifications.</li><li>6. Make sure that the environmental specifications for the product are being met.</li><li>7. If the error persists, replace the registration assembly.</li></ol>
Curl or wave		<ol style="list-style-type: none"><li>1. Turn over the paper in the tray. Also, try rotating the paper 180°.</li><li>2. Make sure that the type and quality of the paper you are using meet HP specifications.</li><li>3. Make sure that the environmental specifications for the product are being met.</li><li>4. Try printing to a different output bin.</li><li>5. Open the following menus:<ul style="list-style-type: none"><li>◦ <b>Administration</b></li><li>◦ <b>General Settings</b></li><li>◦ <b>Print Quality</b></li><li>◦ <b>Adjust Paper Types</b><ul style="list-style-type: none"><li>• Scroll to the desired paper type, and then press the <b>OK</b> button.</li></ul></li><li>◦ <b>Print Mode</b><ul style="list-style-type: none"><li>• Scroll to the print mode, and then press the <b>OK</b> button.</li></ul></li></ul></li></ol>



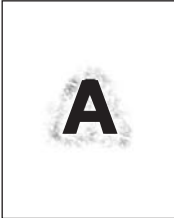

**Table 3-36 Image defect examples (continued)**

Problem	Image example	Solution
Wrinkles or creases		<ol style="list-style-type: none"> <li>1. Print a few more pages to see if the problem corrects itself.</li> <li>2. Make sure that the environmental specifications for the product are being met.</li> <li>3. Turn over the paper in the tray. Also, try rotating the paper 180°.</li> <li>4. Make sure that paper is loaded correctly and all adjustments have been made.</li> <li>5. Make sure that the type and quality of the paper you are using meet HP specifications.</li> <li>6. Try using another input tray.</li> <li>7. If envelopes are creasing, try storing envelopes so that they lie flat.</li> <li>8. Open the following menus: <ul style="list-style-type: none"> <li>◦ <b>Administration</b></li> <li>◦ <b>General Settings</b></li> <li>◦ <b>Print Quality</b></li> <li>◦ <b>Adjust Paper Types</b> <ul style="list-style-type: none"> <li>• Scroll to the desired paper type, and then press the <b>OK</b> button.</li> </ul> </li> <li>◦ <b>Print Mode</b> <ul style="list-style-type: none"> <li>• Scroll to the print mode, and then press the <b>OK</b> button.</li> </ul> </li> </ul> </li> </ol>
Vertical white lines		<ol style="list-style-type: none"> <li>1. Print a few more pages to see if the problem corrects itself.</li> <li>2. Make sure that the type and quality of the paper you are using meet HP specifications.</li> <li>3. Replace the print cartridge.</li> <li>4. If the error persists, the fuser sleeve might be scratched. Replace the fuser.</li> <li>5. If the error persists, the mirror in the laser scanner might be contaminated. Replace the laser/scanner.</li> </ol>
Tire tracks		<p>This defect typically occurs when the print cartridge has far exceeded its rated life. For example, if you are printing a very large quantity of pages with very little toner coverage.</p> <ol style="list-style-type: none"> <li>1. Replace the print cartridge.</li> <li>2. Reduce the number of pages that you print with very low toner coverage.</li> </ol>

**Table 3-36 Image defect examples (continued)**

Problem	Image example	Solution
White spots on black		<ol style="list-style-type: none"><li>1. Print a few more pages to see if the problem corrects itself.</li><li>2. Make sure that the type and quality of the paper you are using meet HP specifications.</li><li>3. Make sure that the environmental specifications for the product are being met.</li><li>4. Clean the product paper path.</li><li>5. Replace the print cartridge.</li></ol>
Scattered lines		<ol style="list-style-type: none"><li>1. Make sure that the type and quality of the paper you are using meet HP specifications.</li><li>2. Make sure that the environmental specifications for the product are being met.</li><li>3. Turn over the paper in the tray. Also, try rotating the paper 180°.</li><li>4. Open the following menus:<ul style="list-style-type: none"><li>◦ <b>Administration</b></li><li>◦ <b>General Settings</b></li><li>◦ <b>Print Quality</b></li><li>◦ <b>Toner Density</b><ul style="list-style-type: none"><li>• Select form a range of density settings.</li></ul></li></ul></li><li>5. Open the <b>CONFIGURE DEVICE</b> menu at the product control panel. On the <b>PRINT QUALITY</b> submenu, open <b>OPTIMIZE</b> and set <b>LINE DETAIL=ON</b>.<ul style="list-style-type: none"><li>◦ <b>Administration</b></li><li>◦ <b>General Settings</b></li><li>◦ <b>Print Quality</b></li><li>◦ <b>Optimize</b><ul style="list-style-type: none"><li>• Select form a list of settings.</li></ul></li></ul></li><li>6. If the error persists, the transfer roller might be deformed or deteriorated. Replace the transfer roller.</li><li>7. If the error persists, replace the DC controller PCA.</li><li>8. If the error persists, replace the high-voltage power supply.</li></ol>

**Table 3-36 Image defect examples (continued)**

Problem	Image example	Solution
Blurred print		<ol style="list-style-type: none"><li>1. Make sure that the type and quality of the paper you are using meet HP specifications.</li><li>2. Make sure that the environmental specifications for the product are being met.</li><li>3. Turn over the paper in the tray. Also, try rotating the paper 180°.</li><li>4. Do not use paper that already has been run through the product.</li><li>5. Open the following menus:<ul style="list-style-type: none"><li>◦ <b>Administration</b></li><li>◦ <b>General Settings</b></li><li>◦ <b>Print Quality</b></li><li>◦ <b>Toner Density</b><ul style="list-style-type: none"><li>• Select form a range of density settings.</li></ul></li></ul></li></ol>
Random image repetition		<p>If an image that appears at the top of the page (in solid black) repeats further down the page (in a gray field), the toner might not have been completely erased from the last job. (The repeated image might be lighter or darker than the field it appears in.)</p> <ul style="list-style-type: none"><li>• Print the job several times to determine if the problem persists.</li><li>• Change the tone (darkness) of the field that the repeated image appears in.</li><li>• Change the order in which the images are printed. For example, have the lighter image at the top of the page, and the darker image farther down the page.</li><li>• From your software program, rotate the whole page 180° to print the lighter image first.</li><li>• If the defect occurs later in a print job, turn the product off for 10 minutes, and then turn it on to restart the print job.</li></ul>


## 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 product free from dust and debris.


To clean the product exterior, use a soft, water-moistened cloth.

## Clean the paper path

 **NOTE:** If you are processing a cleaning page to clean the fuser, repeat the process 1 to 6 times until the paper comes out clean.



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### Process a cleaning page

1. Press the Home  button.
2. Open the following menus:
  - **Device Maintenance**
  - **Calibrate/Cleaning**
3. Scroll to the **Print Cleaning Page** item, and then press the **OK** button.
4. The product prints a cleaning page, and then returns to the main menu. Discard the printed page.

### Set up an auto cleaning page

Use the procedure in this section to set up an automatic cleaning page.

1. Press the Home  button.
2. Open the following menus:
  - **Device Maintenance**
  - **Calibrate/Cleaning**
3. Press the **Down** arrow  to highlight the **Auto Cleaning** item, and then select the **Enabled** item. Press the **OK** button.
4. Scroll to the **Cleaning Interval** item, and then use the arrow buttons to select an interval. Press the **OK** button.

 **TIP:** HP recommends processing a cleaning page after every 5000 printed pages.

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5. Scroll to the **Auto Cleaning Size** item, and then use the arrow buttons to select the cleaning page size. Press the **OK** button.

## Solve performance problems

Problem	Cause	Solution
Pages print but are totally blank.	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.
	All of the print cartridges might be very low on toner.	Replace the toner cartridges if a <b>Supplies very low</b> message is displayed.
Pages print very slowly.	Heavier paper types can slow the print job.	Print on a different type of paper. Proper fusing may require a slower print speed to ensure the best print quality.
	Complex pages can print slowly.	Simplify the page.
Pages did not print.	The product might not be pulling paper correctly.	Make sure paper is loaded in the tray correctly.
	The paper is jamming in the product.	Clear the jam.
	The USB cable might be defective or incorrectly connected.	<ul style="list-style-type: none"><li>• Disconnect the USB cable at both ends and reconnect it.</li><li>• Try printing a job that has printed in the past.</li><li>• Try using a different USB cable.</li></ul>
	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 cable.

- Verify that the cable is connected to the computer and to the product.
- Verify that the cable is not longer than 2 m (6.5 ft). 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 problems


Check the following items to verify that the product is communicating with the network. Before beginning, print a configuration page. See [Internal print-quality test pages on page 241](#).

Problem	Solution
Poor physical connection	<p>Verify that the product is attached to the correct network port using a cable of the correct length.</p> <p>Verify that cable connections are secure.</p> <p>Look at the network port connection on the back of the product, and verify that the amber activity light and the green link-status light are lit.</p> <p>If the problem continues, try a different cable or port on the hub.</p>
The computer is unable to communicate with the product.	<p>Use the command prompt to ping the product from your computer. For example:</p> <pre>ping 192.168.45.39</pre> <p>Verify that the ping displays round-trip times, which indicates that it is working.</p> <p>If the ping command failed, verify that the network hubs are on, and then verify that the network settings, the product, and the computer are all configured for the same network.</p>
Incorrect link and duplex settings	<p>Hewlett-Packard recommends leaving this setting in automatic mode (the default setting). See the user guide.</p>
Incorrect IP address for the product on the computer	<p>Use the correct IP address. The IP address is listed on the configuration page.</p> <p>If the IP address is correct, delete the product and then add it again.</p>
New software programs have caused compatibility problems.	<p>Verify that any new software programs are correctly installed and that they use the correct printer driver.</p>
Your computer or workstation is set up incorrectly.	<p>Check the network drivers, printer drivers, and the network redirection.</p> <p>Verify that the operating system is configured correctly.</p>
The protocol is disabled, or other network settings are incorrect.	<p>Review the configuration page to check the status of the protocol. Enable it if necessary.</p> <p>Reconfigure the network settings if necessary. See the user guide.</p>


# Service mode functions

## Service menu

The **Service** menu is PIN-protected for added security. Only authorized service people have access to the **Service** menu. When you select **Service** from the list of menus, the product prompts you to enter an eight-digit PIN number (**Service Access Code**). The PIN for the HP LaserJet Enterprise 600 M601, M602, and M603 Series Printer is 10060111, 10060211, or 10060311 depending on your model.

1. Press the Home  button.
2. Open the following menus:
  - **Device Maintenance**
  - **Service**
  - **Service Access Code**
3. Enter the eight-digit PIN using the arrow buttons or numeric keypad.

After entering a digit, press the **OK** button. Repeat for each digit in the PIN.

 **NOTE:** Only the **Service Access Code** can be used to access the **Service** menu. The message **Your user account does not have permission to access the selected item** displays if the correct **Service Access Code** is not used.

4. Press the **OK** button to enter the PIN and open the **Service** menu.


The following menu items appear in the **Service** menu:

First level	Second level	Third level	Description
	<b>User Access Code</b>		Only the <b>Service Access Code</b> can be used to access the <b>Service</b> menu. The message <b>Your user account does not have permission to access the selected item</b> displays if the correct <b>Service Access Code</b> is not used.
	<b>Administrator Access Code</b>		Only the <b>Service Access Code</b> can be used to access the <b>Service</b> menu. The message <b>Your user account does not have permission to access the selected item</b> displays if the correct <b>Service Access Code</b> is not used.
	<b>Service Access Code</b>		This item allows access to the <b>Service</b> sub menus.

First level	Second level	Third level	Description
	<b>Print Event Log</b>		Use this item to print the service event log.
	<b>View Event Log</b>		Use this item to view the service event log.
	<b>Clear Event Log</b>		Use this item to clear (erase) the service event log.
	<b>Cycle Counts</b>	<b>Mono Cycle Counts</b>	Use this item to reset the mono print job page count.
		<b>Refurbish Cycle Count</b>	Use this item to reset the refurbish print job page count.
	<b>Serial Number</b>		Use this item to reset the product serial number.
	<b>Service ID</b>		Use this item to reset the product service identification number.
	<b>Cold Reset Paper</b>		Use this item to set the cold reset paper size.
<b>Test Support</b>	<b>Continuous Print from USB</b>		Use this item to test print from an external USB.

## Product resets

### Restore factory-set defaults

1. Press the Home  button.
2. Open the following menus:
  - **Administration**
  - **General Settings**
  - **Restore Factory Settings**
3. Scroll to type of reset from a list, and then press the **OK** button.
4. Scroll to the **Reset** item, and then press the **OK** button.

### Restore factory-set defaults values

- **General**
  - Display and sound settings for the control panel
  - Localization settings (for example, clock format and date format)



- Error and warning log behavior
- Default media settings
- Sleep mode and delay setting
- Internal backup file maximum size
- Oxp installer solutions, tasks and pending tasks
- Http job defaults
- Clears the error, warning and info logs
- Supported media types
- Resets JetLink connected external devices
- **Print**
  - Print default job, stored job and quick set settings
  - Some print job usage data
  - Print system configuration settings
- **Security**
  - Default Authentication agent
  - Authentication agents
  - Policy agents

## Clean Disk and Partial Clean functions

### Active and repository firmware locations

The firmware bundle now consists of multiple parts. The main components are the Windows CE Operating System and the printer/peripheral firmware files.


There are two locations/partitions on the hard drive where the firmware components are stored:

- The Active – where the Operating System and firmware currently are executing
- The Repository – the recovery location

If the Active location is damaged, or a **Partial Clean** was performed, the printer automatically copies over the OS and firmware files from the Repository location and the printer recovers.

If both the Active and Repository locations are damaged, or a **Clean Disk** was performed, then both locations are gone and the error message **99.09.67** appears on the control-panel display. The user must upload the firmware to the printer in order for it to function again

---

 **CAUTION:** The **Clean Disk** option performs a disk initialization for the entire disk. The operating system, firmware files, and third party files (among other files) will be completely lost. HP does not recommend this action.

---


## Partial Clean

The **Partial Clean** option erases all partitions and data on the disk drive, except for the firmware repository where a backup copy of the firmware file is stored. This allows the disk drive to be reformatted without having to download a firmware upgrade file to return the product to a bootable state.

### Characteristics of a Partial Clean

- Customer-defined settings, third-party solutions, firmware files, and the operating system are deleted.
- Rebooting the product restores the firmware files from the Repository location, but does not restore any customer-defined settings.
- For previous HP products, a Hard Disk Initialization is similar to executing the **Partial Clean** function for this product.

---

 **CAUTION:** HP recommends backing-up product configuration data before executing a **Partial Clean** if you need to retain customer-defined settings. See the **Backup/Restore** item in the **Device Maintenance** menu.

---

### Reasons for performing Partial Clean

- The product continually boots up in an error state.



**NOTE:** Try clearing the error prior to executing a **Partial Clean**.

---


- The product will not respond to commands from the control panel.
- Executing the **Partial Clean** function is helpful for troubleshooting hard disk problems.
- To reset the product by deleting all solutions and customer-defined settings.
- The product default settings are not properly working.

### Execute a Partial Clean

1. Turn the product on.
2. When the Ready, Data, and Attention LEDs are illuminated solid, press the **Stop** button.
3. Scroll to **Administration**, and then press the **OK** button.
4. Scroll to **Partial Clean**, and then press the **OK** button.

5. Press the **OK** button again.
6. Press the **Back** button to highlight **Continue**, and then press the **OK** button.

---

 **NOTE:** The product initializes.

---

## Clean Disk

The **Clean Disk** option erases the entire disk drive.


 **CAUTION:** After executing a **Clean Disk** option, the product is *not* bootable.

---

### Characteristics of a Partial Clean


- Customer-defined settings, third-party solutions, firmware files, and the operating system are deleted.

---

 **NOTE:** Rebooting the product *does not* restore the firmware files.

---

- Rebooting the product restores the firmware files from the Repository location, but does not restore any customer-defined settings.
- After executing the **Clean Disk** function, the message **99.09.67** displays on the control panel.
- After executing the **Clean Disk** function, the product firmware must be reloaded.

 **CAUTION:** HP recommends that you do not use the **Clean Disk** option unless an error occurs and the solution in the product service manual recommends this solution. After executing the **Clean Disk** function, the product is unusable.


HP recommends backing-up product configuration data before executing a **Clean Disk** if you need to retain customer-defined settings. See the **Backup/Restore** item in the **Device Maintenance** menu.

---

### Reasons for performing Clean Disk

- The product continually boots up in an error state.

---

 **NOTE:** Try clearing the error prior to executing a **Clean Disk**.

---

- The product will not respond to commands from the control panel.
- Executing the **Clean Disk** function is helpful for troubleshooting hard disk problems.
- To reset the product by deleting all solutions and customer-defined settings.

### Execute a Clean Disk

1. Turn the product on.
2. When the Ready, Data, and Attention LEDs are illuminated solid, press the **Stop** button.
3. Scroll to **Administration**, and then press the **OK** button.

4. Scroll to **Clean Disk**, and then press the **OK** button.
5. Press the **OK** button again.



---

**NOTE:** When the **Clean Disk** operation is complete, you will need to reload the product firmware.

---

# Product updates

To download the most recent firmware upgrade for the product, go to [www.hp.com/go/lj600Series\\_firmware](http://www.hp.com/go/lj600Series_firmware).

## Determine the installed revision of firmware

Print a configuration page to determine the installed revision of firmware. See [Internal print-quality test pages on page 241](#).

On the configuration page, look in the section marked Device Information for the firmware datecode and firmware revision.

### Firmware datecode and firmware revision examples

- 20100831 (firmware datecode)
- 103067\_104746 (firmware revision)


## Perform a firmware upgrade

The firmware bundle is a `xxxxxxxx.bdl` file. This file requires an interactive upgrade method. You cannot upgrade the printer using the traditional FTP, LPR or Port 9100 methods of upgrading. Use one of the following methods to upgrade the firmware for this product.

### Embedded Web Server

1. Open an browser window.
2. Enter the product IP address in the URL line.
3. Select the **Firmware upgrade** link from within the **Troubleshooting** tab.


---

 **NOTE:** If you get a warning screen, follow the instructions for setting an administrator password from the **Security** tab.

---

4. Browse to the location that the firmware upgrade file was downloaded to, and then select the firmware file. Select the Install button to perform the upgrade.

---

 **NOTE:** Do not close the browser window until the Embedded Web Server (EWS) displays the confirmation page.


---

5. Select **Restart Now** from the EWS confirmation page, or turn the product off, and then on again using the power button.

## USB storage device (Preboot menu)

1. Copy the `xxxxxxxx.bdl` file to a portable USB flash memory storage device (thumb drive).
2. Turn the product on.
3. Press the **Stop** button when the **Ready**, **Data** and **Attention** LEDs illuminate solid.
4. Scroll to the **Administrator** menu, and then press the **OK** button.
5. Scroll to the **Download** item, and then press the **OK** button.
6. Insert the portable USB storage device with the `xxxxxxxx.bdl` file on it.


---

 **NOTE:** If the error message **No USB Thumbdrive Files Found** appears on the control-panel display, you might need to connect the storage device to the external USB connection on the formatter or try using a different portable storage device.


---

7. Scroll to the **USB Thumbdrive** item, and then press the **OK** button.
8. Scroll to the `xxxxxxxx.bdl` file, and then press the **OK** button.

---

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


---

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


---

9. When the message **Complete** appears on the control-panel display, press the **Back** button 3 times.
10. When the message **Continue** appears on the control-panel display, press the **OK** button. The product will initialize.
11. When the upgrade process is complete, print a configuration page and verify that the upgrade firmware version was installed. See [Print configuration page on page 243](#) and [Determine the installed revision of firmware on page 397](#).

## USB storage device (control-panel menu)

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

---


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

---

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

When the upgrade is complete, the product will initialize.

---

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

---

9. When the upgrade process is complete, print a configuration page and verify that the upgrade firmware version was installed. See [Internal print-quality test pages on page 241](#) and [Determine the installed revision of firmware on page 397](#).





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# 4 Parts and diagrams

- [Order parts by authorized service providers](#)
- [How to use the parts lists and diagrams](#)
- [Assembly locations](#)
- [Covers](#)
- [Internal components](#)
- [Input devices](#)
- [Duplexer](#)
- [Envelope feeder](#)
- [Output devices](#)
- [Alphabetical parts list](#)
- [Numerical parts list](#)

# Order parts by authorized service providers

## Order parts, accessories, and supplies

**Table 4-1 Order parts, accessories, and supplies**

Order supplies and paper	<a href="http://www.hp.com/go/suresupply">www.hp.com/go/suresupply</a>
Order genuine HP parts or accessories	<a href="http://www.hp.com/buy/parts">www.hp.com/buy/parts</a>
Order through service or support providers	Contact an HP-authorized service or support provider.
Order using HP software	For information about using the HP software to order parts, accessories, and supplies, see the product user guide.

## Supplies part numbers

**Table 4-2 Supplies part numbers**

Item	Description	Part number
HP LaserJet print cartridge with HP ColorSphere toner	Black print cartridge (standard)	CE390A (new)
		CE390-67901 (service)
	Black print cartridge (high capacity)	CE390X (new)
		CE390-67902 (service)

## Customer-self repair parts

Each kit includes parts and installation instructions. The customer-self repair (CSR) level indicates the expected difficulty the customer will experience when replacing this part:

- A = Mandatory
- B = Optional
- C = Very difficult

Item	Part number	CSR level
Transfer roller kit	CE988-60793	A
<ul style="list-style-type: none"><li>• Transfer roller assembly (with removal tool)</li><li>• Installation instructions</li></ul>		
Output bin assembly kit	CE988-67918	A
<ul style="list-style-type: none"><li>• Output bin</li><li>• Installation instructions</li></ul>		

Item	Part number	CSR level
Formatter kit	CE988-67906	A
<ul style="list-style-type: none"> <li>• Formatter assembly</li> <li>• Installation instructions</li> </ul>	CE988-67908 (China)	
Fuser kit	CE988-67901 (110 V)	A
<ul style="list-style-type: none"> <li>• Fuser assembly</li> <li>• Installation instructions</li> </ul>	CE988-67902 (220 V)	
Tray 2-X pickup and feed rollers kit	CE988-67904	A
<ul style="list-style-type: none"> <li>• Paper pickup rollers</li> <li>• Paper feed rollers</li> <li>• Installation instructions</li> </ul>		
Tray 1 rollers kit	CE988-67905	B
<ul style="list-style-type: none"> <li>• Tray 1 pickup roller</li> <li>• Tray 1 feed roller</li> <li>• Tray 1 separation roller</li> <li>• Installation instructions</li> </ul>		
Solid state memory kit	CE988-67907	B
<ul style="list-style-type: none"> <li>• Solid state memory, 8 GB</li> <li>• Installation instructions</li> </ul>		
Hard disk drive encrypted kit	CE502-67915	B
<ul style="list-style-type: none"> <li>• Hard disk drive encrypted, 250 GB</li> <li>• Installation instructions</li> </ul>		
Preventative maintenance service kits	110 volt: CF064-67901	A
<ul style="list-style-type: none"> <li>• Fuser</li> <li>• Transfer roller (and tool)</li> <li>• Tray 2-X pickup and feed rollers kit</li> <li>• Disposable gloves</li> <li>• Installation instructions</li> </ul>	220 volt: CF065-67901	
1x500-sheet feeder kit	CE998-67901	A
Custom media cassette kit	CB527-67901	A
Staple cartridge kit	Q3216-67901	A
512 MB memory kit	CE483-67901	A
Envelope feeder kit	CE399-67901	A

Item	Part number	CSR level
Duplex kit	CF062-67901	A
500-sheet stacker kit	CE404-67901	A
500-sheet stapler/stacker kit	CE405-67901	A
5-bin mailbox kit	CE997-67901	A
Product stand kit	CF063-67901	A

## Accessories part numbers

**Table 4-3 Accessories part numbers**

Item	Description	Part number
1x500-sheet feeder	Optional feeder to increase paper capacity.  The product can accommodate up to four optional 500-sheet feeders	CE998A
1x1500-sheet feeder	Optional feeder to increase paper capacity.	CE398A
Custom media cassette	Enables the product to print A6-size paper from Tray 2.	CE527A
1,000-staple cartridge	Staple cartridge refill	Q3216A
44 X 32-PIN DDR2 memory DIMM, 512 mb	Memory DIMM	CE483A
Envelope feeder	Optional input accessory to increase paper handling.	CE399A
Duplexer (duplex printing accessory)	Allows automatic printing on both sides of the paper.	CF062A
500-sheet stacker	Provides an additional output bin that holds 500 sheets.	CE404A
500-sheet stapler/stacker	Allows for high-volume output with automatic job finishing. Staples up to 15 sheets of paper.	CE405A
HP 5-bin mailbox	Provides five output bins that you can use to sort jobs.	CE997A

**Table 4-3 Accessories part numbers (continued)**

<b>Item</b>	<b>Description</b>	<b>Part number</b>
Printer stand	Provides stability when multiple optional trays are installed. The stand has casters so you can easily move the product.	CF063A
Power cords	China 220V - 10A	8121-0951
	Thailand 122V - 10A	8121-0952
	Argentina 220V - 10A	8121-0953
	Switzerland 220V - 10A	8121-0947
	Denmark 220V - 10A	8121-0949
	South Africa 220V - 10A	8121-0954
	Malaysia, Hong Kong, Singapore 220V - 10A	8121-0946
	Korea, Vietnam, Indonesia, Europe 220V - 10A	8121-0950
	Peru, Chile 220V - 10A	8120-5301
	Israel 220V - 10A	8121-1005
	Australia 220V - 10A	8121-0872
	China 220V - 10A	8121-0945
	Taiwan 110V - 13A	8121-0971
	Brazil 110V - 10A	8121-1070
	India 220V - 6A	8121-1083
US, Saudia Arabia, Canada, Mexico 110V - 13A	8121-1142	
Japan 110V - 12A	8121-1144	

## Related documentation and software


**Table 4-4 Related documentation and software**


<b>Item</b>	<b>Description</b>	<b>Part number</b>
<i>HP LaserJet Enterprise 600 M601, M602, and M603 Series Printer User Guide</i>	Product user guide	CE988-90901
<i>HP LaserJet Enterprise M600 M601, M602, and M603 Series Printer Service Manual</i>	English service manual (this manual)	CE988-90945

## How to use the parts lists and diagrams

The figures in this chapter show the major subassemblies in the product and their component parts. A parts list table follows each exploded view assembly diagram. Each table lists the item number, the associated part number, and the description of each part. If a part is not listed in the table, then it is not a field replacement unit (FRU).

---

 **CAUTION:** Be sure to order the correct part. When looking for part numbers for electrical components, pay careful attention to the voltage that is listed in the description column. Doing so will ensure that the part number selected is for the correct model.

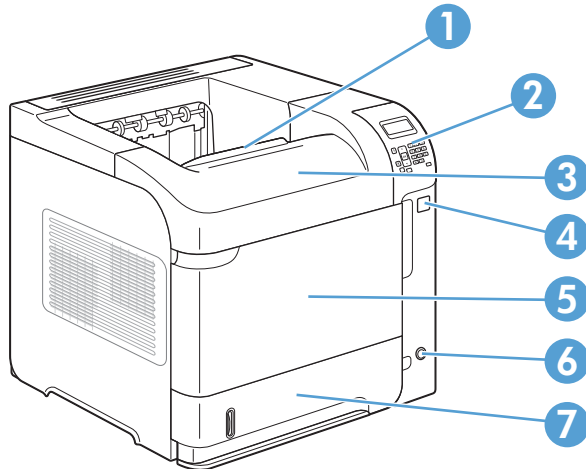
 **NOTE:** In this manual, the abbreviation “PCA” stands for “printed circuit-board assembly.” Components described as a PCA might consist of a single circuit board or a circuit board plus other parts, such as cables and sensors.

---

# Assembly locations

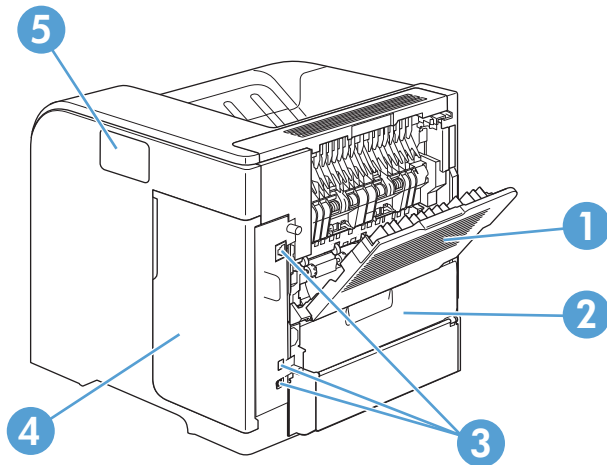
## Base product (no optional trays or accessories)

Figure 4-1 Base product (no optional trays or accessories; 1 of 3)



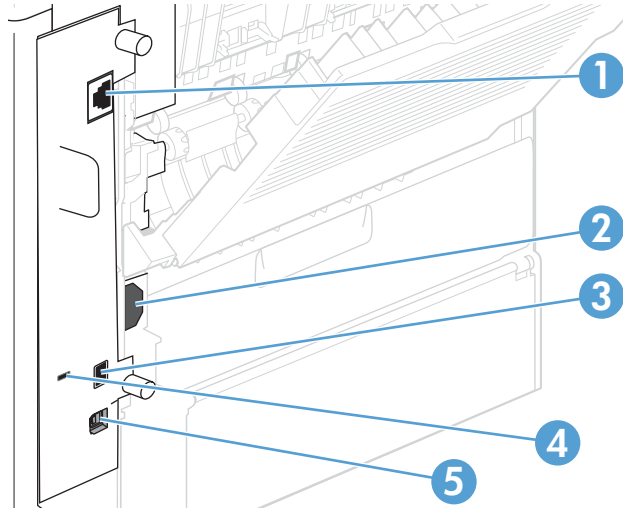
Item	Description
1	Top output bin
2	Control panel (the M602 and M603 models include a numeric keypad)
3	Top cover (provides access to the print cartridge)
4	Walkup USB printing
5	Tray 1 (pull to open)
6	On/off button
7	Tray 2

**Figure 4-2** Base product (no optional trays or accessories; 2 of 3)



Item	Description
1	Rear output bin
2	Duplex accessory cover (remove to install the duplex accessory)
3	Interface ports(formatter)
4	Right cover (provides access to the DIMM slot)
5	Hardware integration pocket (M602 and M603 models only)

**Figure 4-3** Base product (no optional trays or accessories; 3 of 3)



Item	Description
1	RJ-45 Network connection
2	Power connection
3	Host USB connection

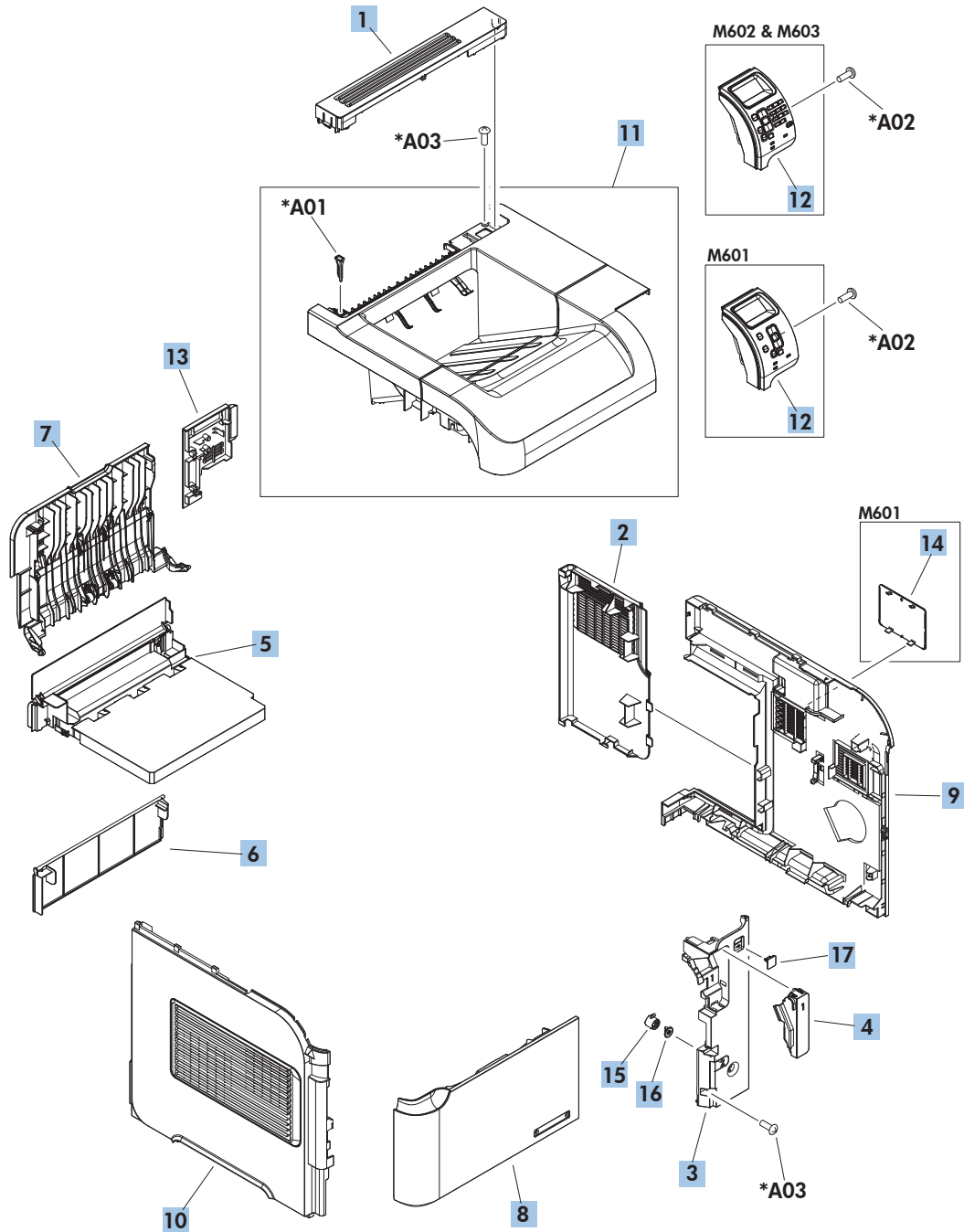


<b>Item</b>	<b>Description</b>
4	Slot for a cable-type security lock
5	High-speed USB 2.0 connection

# Covers

## Product base

Figure 4-4 Covers



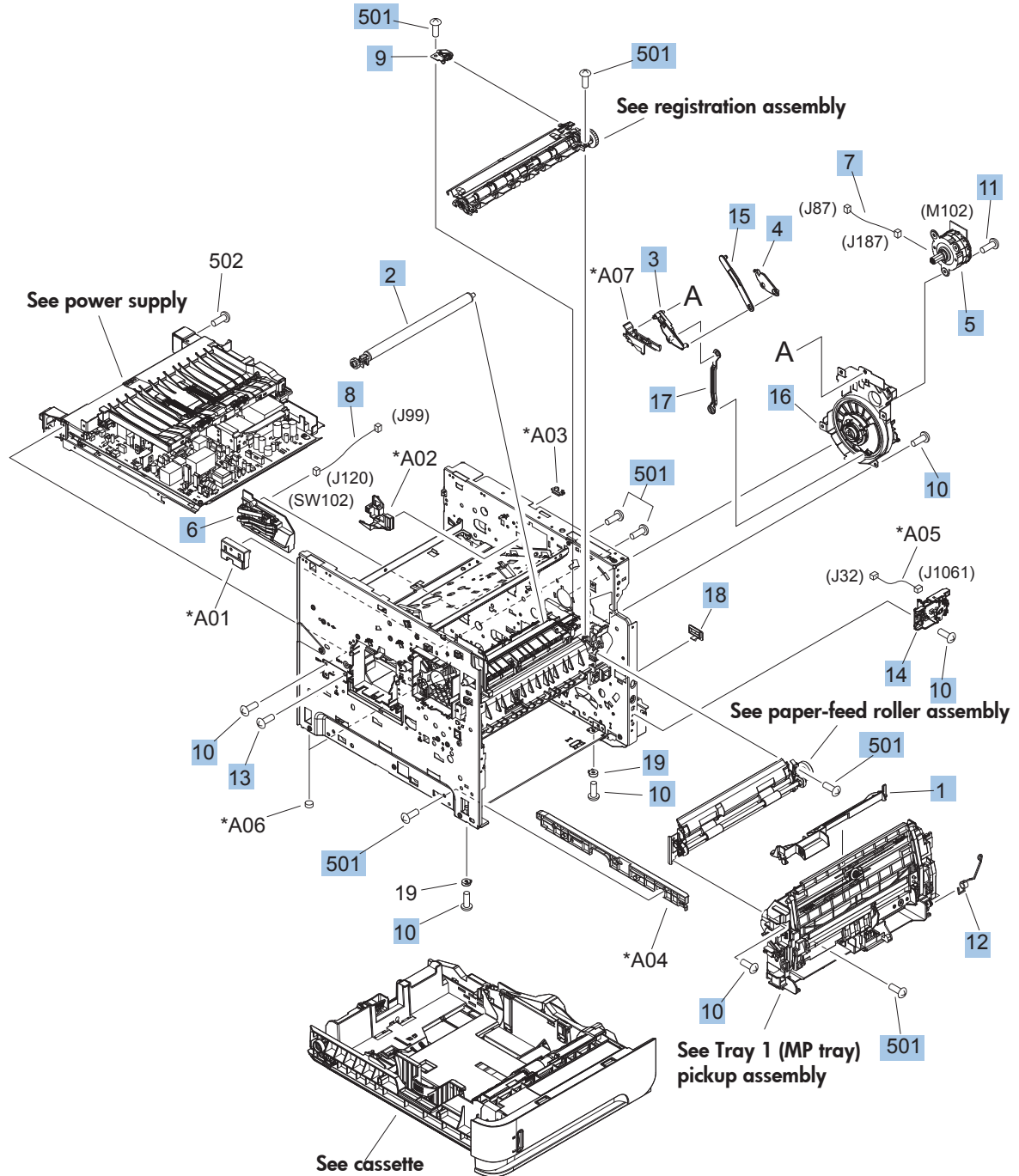
**Table 4-5 Covers**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Cover, option	RC2-2459-000CN	1
2	Cover, formatter	RC2-2468-000CN	1
3	Cover, right front	RC3-1426-000CN	1
4	Cover, envelope connector	RC2-2476-000CN	1
5	Cover, duplexing assembly	RM1-8399-000CN	1
6	Cover, legal	RC2-5239-000CN	1
7	Face-up tray assembly	RM1-8388-060CN	1
8	Cover, front assembly	RM1-8408-000CN	1
9	Cover, right (M602 and M603)	RM1-8400-000CN	1
9	Cover, right (M601)	RM1-8445-000CN	1
10	Cover, left assembly	RM1-8401-000CN	1
11	Cover, top assembly (M602 and M603)	RM1-8394-000CN	1
11	Cover, top assembly (M601)	RM1-8434-000CN	1
12	Control-panel assembly (M602 and M603)	RM1-8289-000CN	1
12	Control-panel assembly (M601)	RM1-8290-000CN	1
13	Cover, right rear	RC2-2478-000CN	1
14	Cover, HIP (M602 and M603)	RC3-1424-000CN	1
15	Button, power	RC3-1430-000CN	1
16	Cap, power button	RC3-1431-000CN	1
17	Cover, USB	RC3-1434-000CN	1

# Internal components

## Internal components (1 of 3)

Figure 4-5 Internal components (1 of 3)

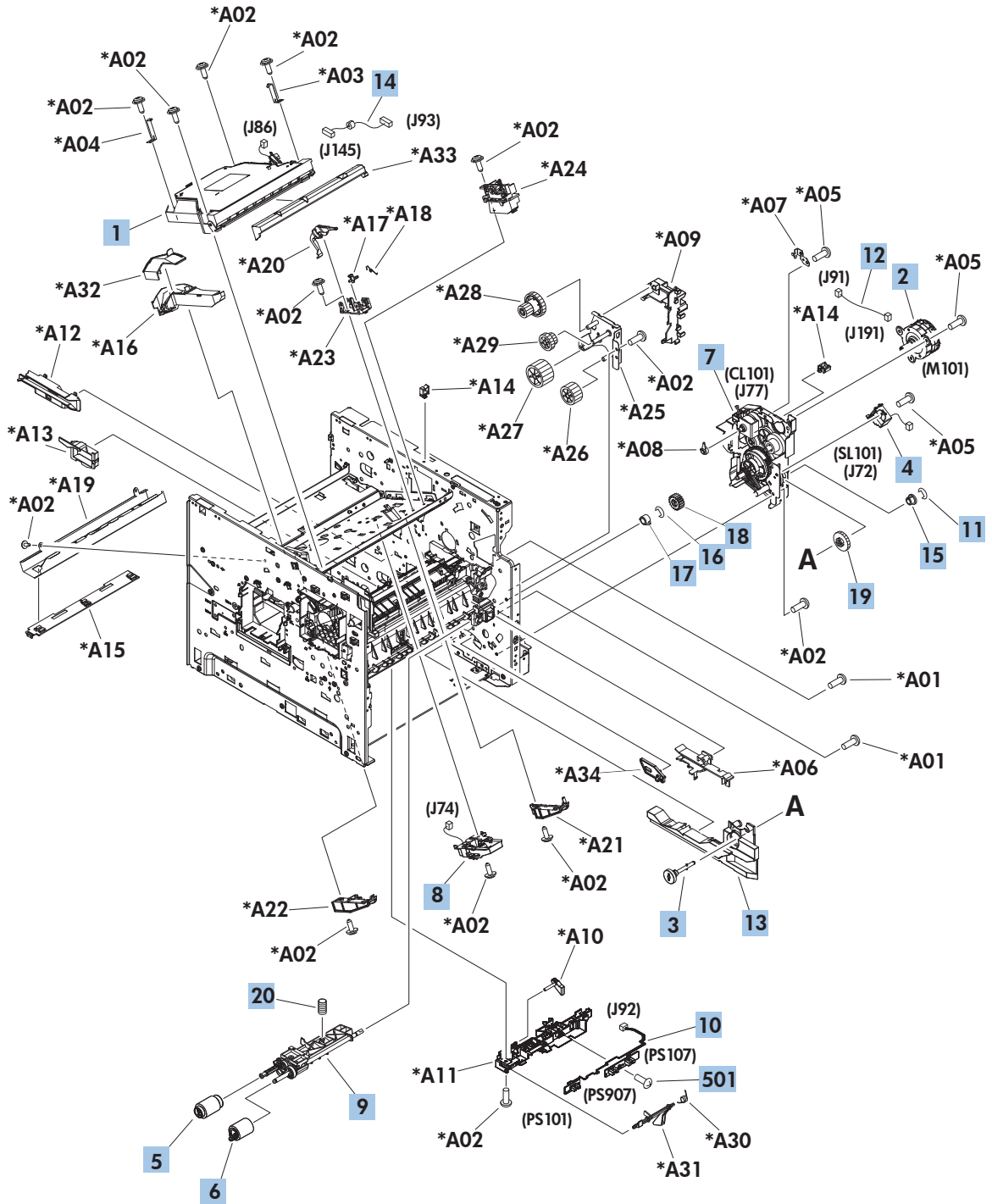


**Table 4-6 Internal components (1 of 3)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Cover, envelope feeder	RL1-1667-000CN	1
2	Transfer roller	RM1-8491-000CN	1
3	Arm, release A	RC2-2480-000CN	1
4	Arm, release B	RC2-2481-000CN	1
5	Motor, drum assembly (M102)	RM1-8358-000CN	1
6	Size detect assembly	RM1-4525-000CN	1
7	Cable, drum motor	RM1-8308-000CN	1
8	Cable, size sensor	RM1-5091-000CN	1
9	Plate, ground assembly	RM1-5461-000CN	1
10	Screw, D, M3x8	XA9-1671-000CN	21
11	Screw, tap, M3x6	XA9-1503-000CN	3
12	Spring, torsion	RC3-1470-000CN	1
13	Screw, M4x5	RC2-2633-000CN	2
14	PCA, switch assembly	RM1-8428-000CN	1
15	Rod, release, upper	RC2-2482-000CN	1
16	Drum drive assembly	RM1-8489-000CN	1
17	Rod, release lower	RC2-2483-000CN	1
18	Guard, edge	RC1-0247-000CN	1
19	Spacer, frame	RC2-2725-000CN	2
501	Screw, tapping pan head M4X10	XB4-7401-607CN	16

# Internal components (2 of 3)

Figure 4-6 Internal components (2 of 3)



**Table 4-7 Internal components (2 of 3)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Laser/scanner assembly	RM1-8406-000CN	1
2	Motor, paper feed assembly (M101)	RM1-8285-000CN	1
3	Shaft retard drive	RL1-3020-000CN	1
4	Solenoid	RK2-4078-000CN	1
5	Paper pickup roller assembly	RM1-0036-020CN	1
6	Paper feed roller assembly	RM1-0037-020CN	1
7	Paper pickup drive assembly	RM1-8415-000CN	1
8	Tag holder assembly	RM1-4539-000CN	1
9	Paper feed shaft assembly	RM1-8424-000CN	1
10	Cable, feed sensor	RM1-8298-000CN	1
11	Ring, E	XD9-0232-000CN	1
12	Cable, feed motor	RM1-8311-000CN	1
13	Guide, front right assembly	RM1-8427-000CN	1
14	Cable, laser	RM1-8340-000CN	1
15	Bushing	RC1-0214-000CN	1
16	Ring, E	XD9-0233-010CN	1
17	Bushing	RC3-1403-000CN	1
18	Gear, 18T	RU5-0088-000CN	1
19	Gear, 23T	RU5-0040-000CN	1
20	Spring, compression	RC1-0213-000CN	1
501	Screw, tap, binding head, M3x8	XB4-7300-809CN	2



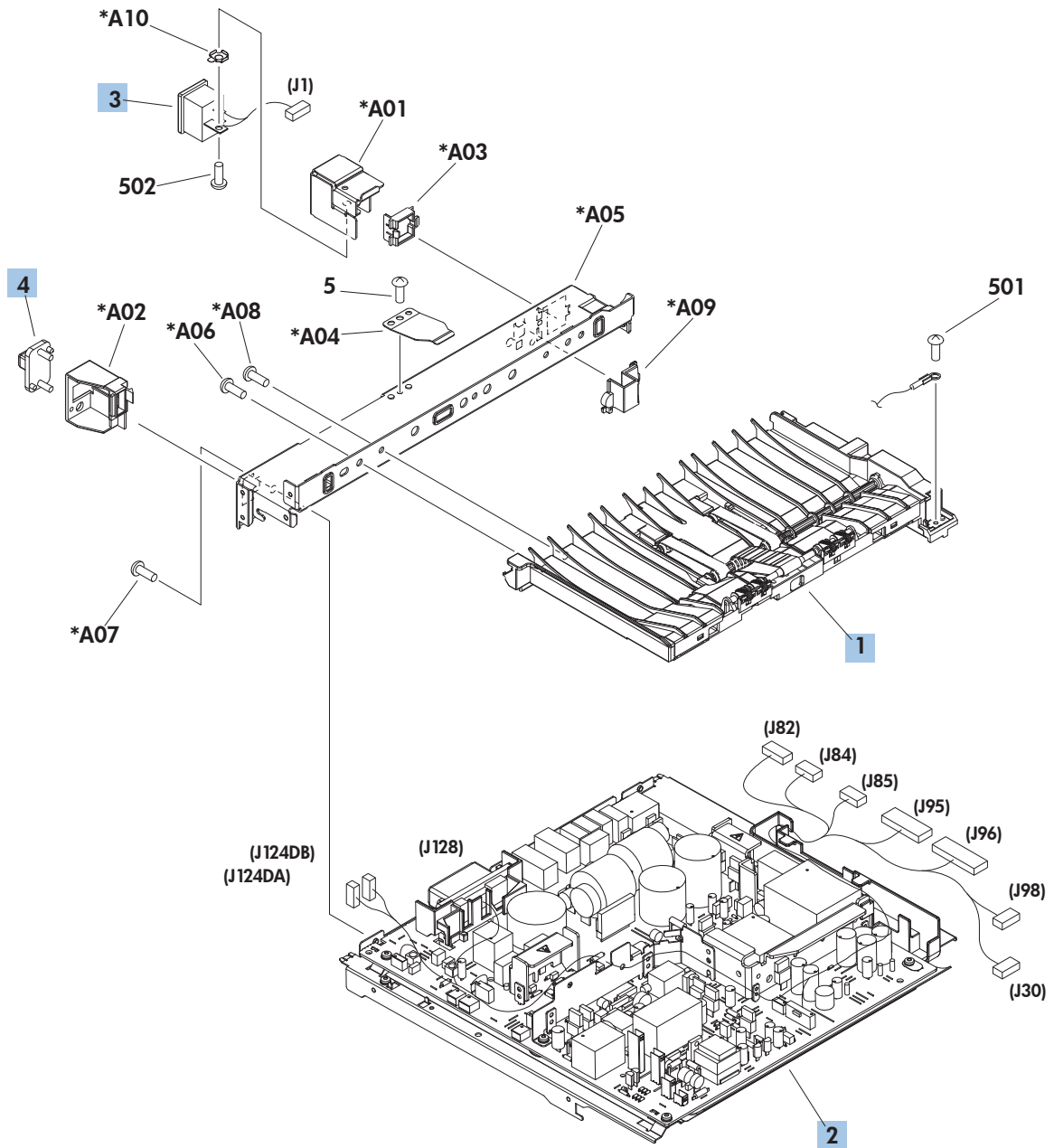


**Table 4-8 Internal components (3 of 3)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Guide, right assembly	RM1-4558-000CN	1
2	Cable, panel	RM1-8341-000CN	1
3	Sensor, temperature assembly	RM1-8438-000CN	1
4	Fan (FN101)	RK2-1988-000CN	1
5	Fan (FN102)	RK2-1989-000CN	1
6	Fan (FN103)	RK2-3244-000CN	1
7	Fan (FN104)	RK2-1992-000CN	1
8	Bushing, paper delivery	RC1-0136-000CN	1
9	Paper delivery drive assembly	RM1-8410-000CN	1
10	PCA, DC controller	RM1-8293-000CN	1
11	Motor, fuser (M299)	RM1-5051-020CN	1
12	Switch, interlock assembly	RM1-8307-000CN	1
13	Cable, fuser motor	RM1-5088-000CN	1
14	Lifter drive assembly	RM1-4585-000CN	1
15	Cable, full sensor	RM1-8927-000CN	1
16	Cable, envelope feeder	RM1-5085-000CN	1
17	Photo interrupter, IC	WG8-5849-000CN	1
20	PCA, inner connecting	RM1-8294-000CN	1
21	Cable, flat flexible (FFC)	RK2-4077-000CN	1
22	Switch, push	WC2-5637-000CN	1
24	Cable, HIP (M602 and M603)	RK2-4152-000CN	1
25	Cable, door switch	RM1-8344-000CN	1
26	USB PCA	RM1-8429-000CN	1
27	Cable, USB	RK2-4149-000CN	1
28	Guide assembly, left	RM1-8439-000CN	1

# High-voltage power supply

Figure 4-8 High-voltage power supply

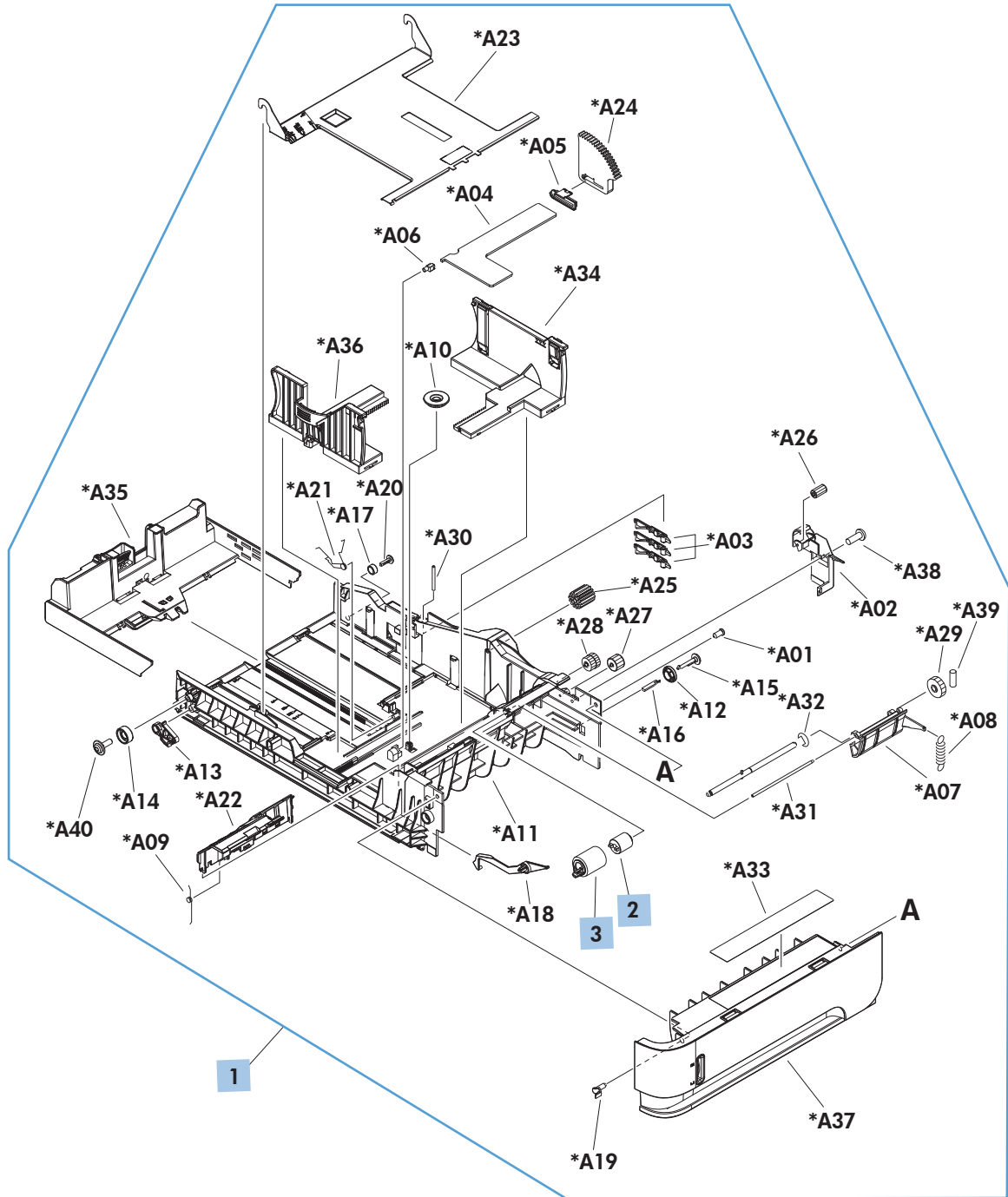


**Table 4-9 High-voltage power supply**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Paper feed assembly	RM1-4548-000CN	1
2	High-voltage power supply 110V	RM1-8392-000CN	1
2	High-voltage power supply 220V	RM1-8393-000CN	1
3	Connector, inlet	RM1-8348-000CN	1
4	Connector, drawer 6P	VS1-7514-006CN	1

# Cassette (Tray 2)

Figure 4-9 Cassette (Tray 2)

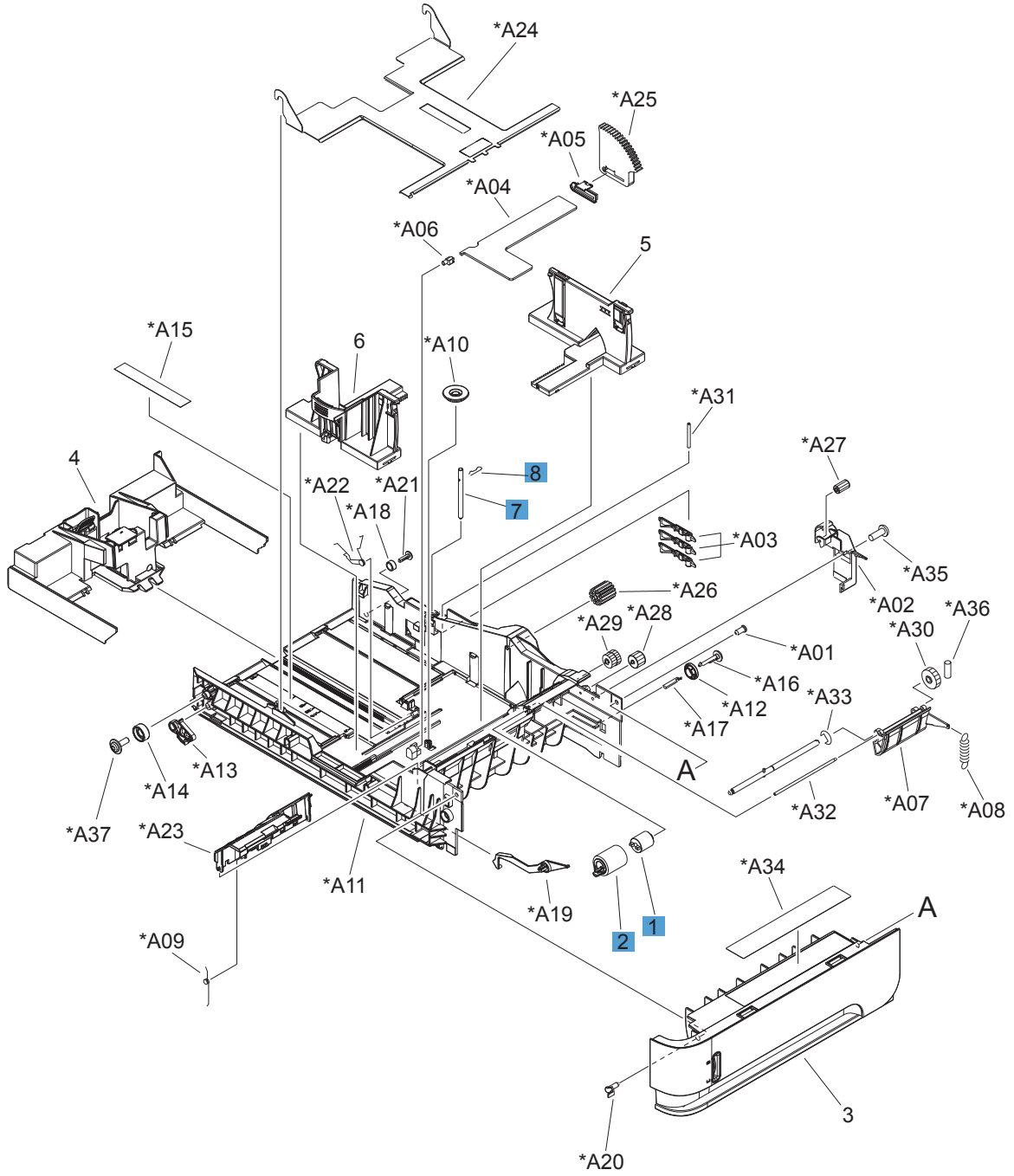


**Table 4-10 Cassette (Tray 2)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Cassette (Tray 2)	RM1-4559-020CN	1
2	Torque limiter (Tray 2)	RC2-5771-000CN	1
3	Roller, paper feed assembly (Tray 2)	RM1-0037-020CN	1

# Cassette (custom media)

Figure 4-10 Cassette (custom media)

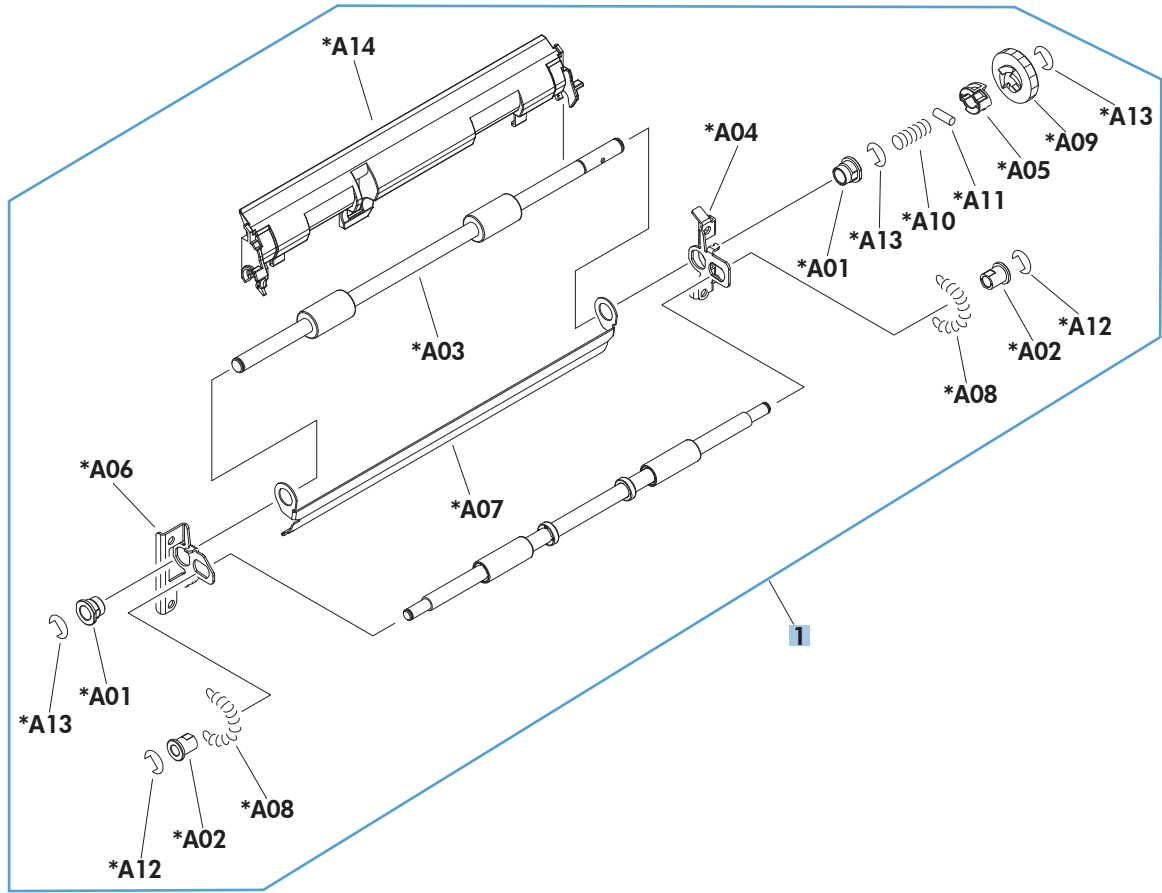


**Table 4-11** Cassette (custom media)

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Torque limiter (custom media)	RM1-0037-000CN	1
2	Roller, paper feed assembly (custom media)	RM1-4560-000CN	1
7	Pin, cassette (custom media)	RC2-6486-000CN	1
8	Pin, stopper (custom media)	RC2-6487-000CN	1

# Paper feed roller assembly

Figure 4-11 Paper feed roller assembly



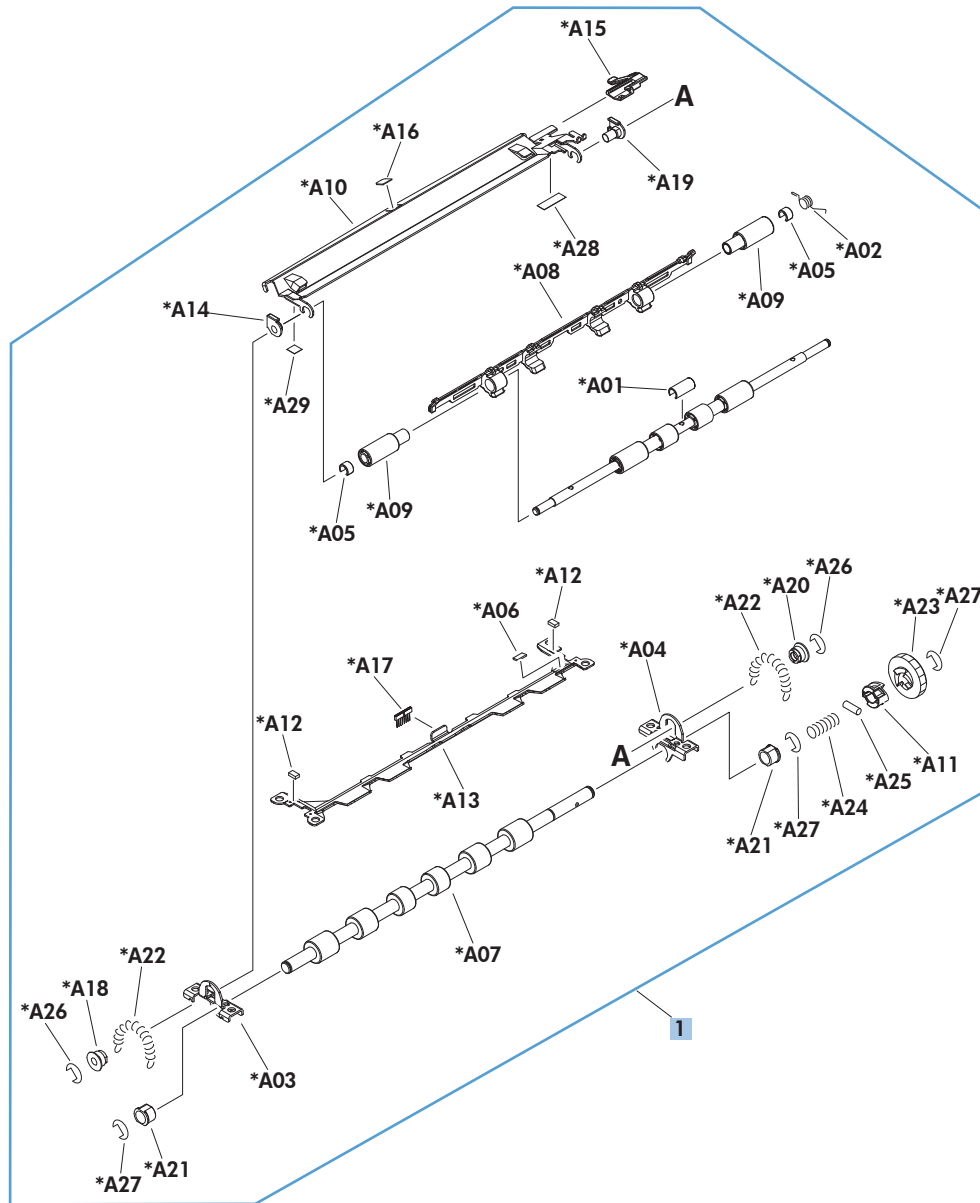


**Table 4-12 Paper feed roller assembly**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Paper feed roller assembly	RM1-8411-000CN	1

# Registration assembly

Figure 4-12 Registration assembly



**Table 4-13 Registration assembly**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Registration assembly	RM1-8413-0000CN	1

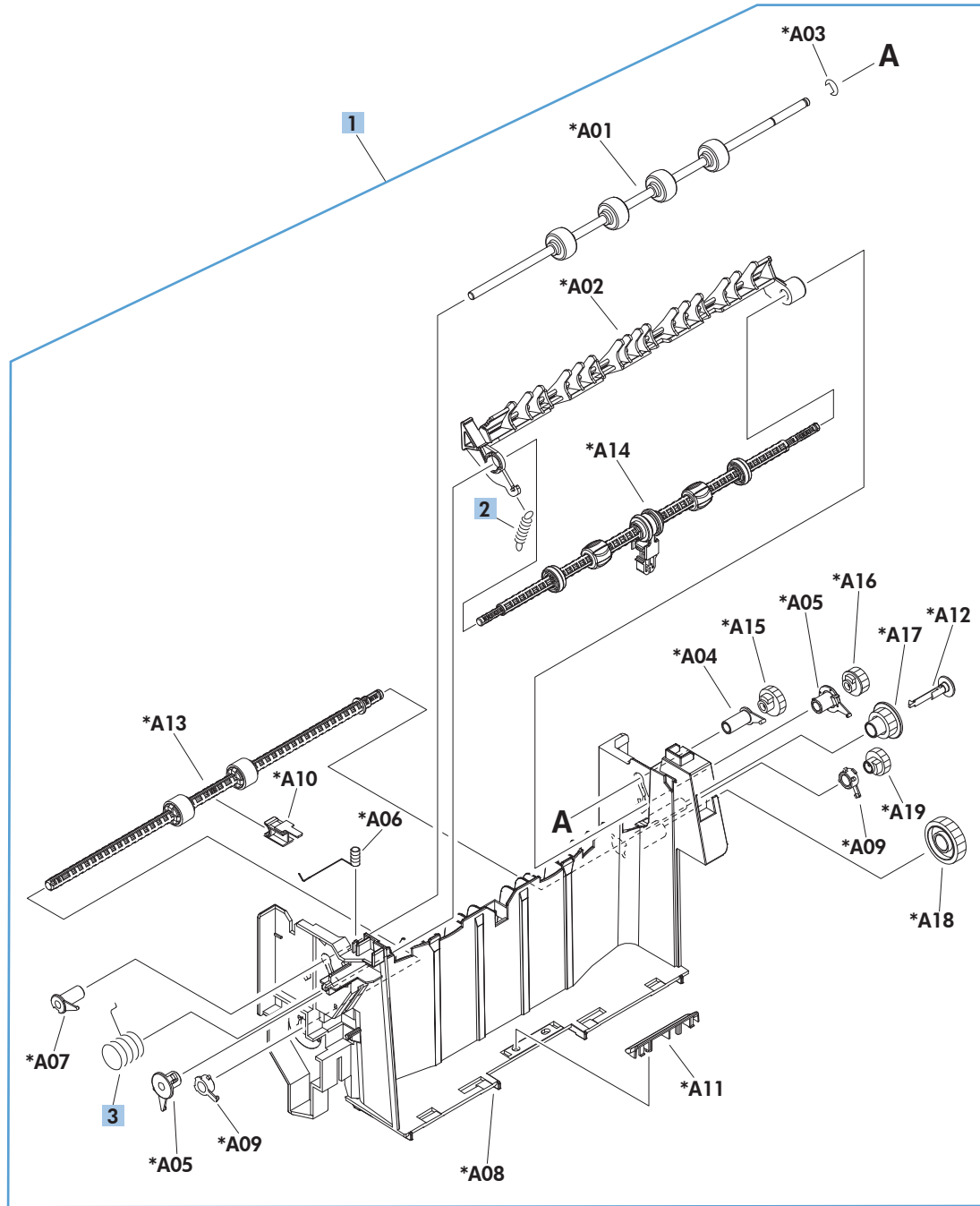


**Table 4-14 Tray 1 (MP) pickup assembly**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Tray 1 (MP) pickup assembly	RM1-8425-000CN	1
2	Roller pickup, Tray 1 (MP)	RL1-1641-000CN	1
3	Roller feed, Tray 1 (MP)	RL1-1663-000CN	1
4	Roller separation, Tray 1 (MP)	RL1-1654-020CN	1

# Paper delivery assembly

Figure 4-14 Paper delivery assembly

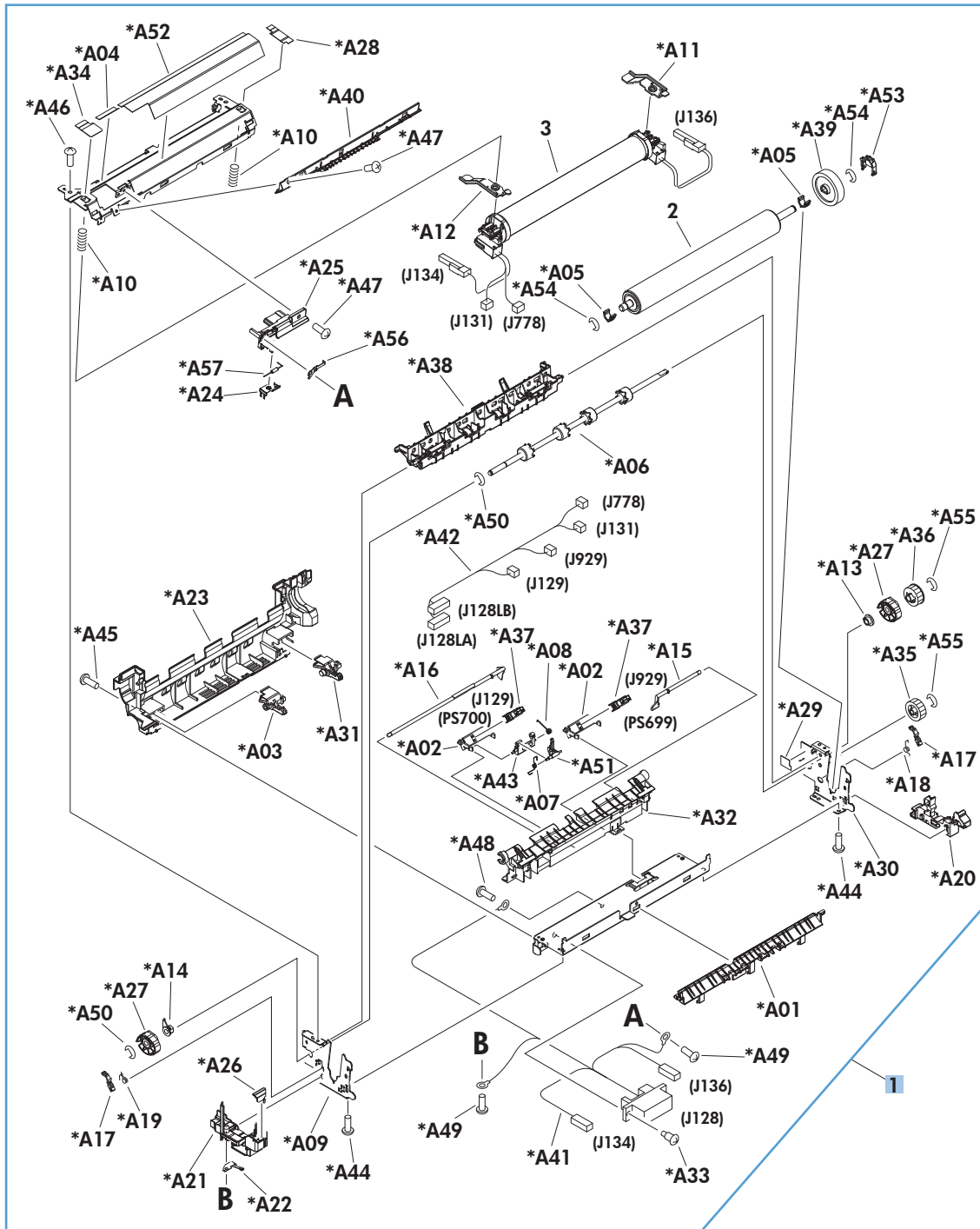


**Table 4-15 Paper delivery assembly**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Paper delivery assembly	RM1-8414-000CN	1
2	Spring, tension	RC1-0133-000CN	1
3	Spring, grounding	RU6-2105-000CN	1

# Fuser assembly

Figure 4-15 Fuser assembly



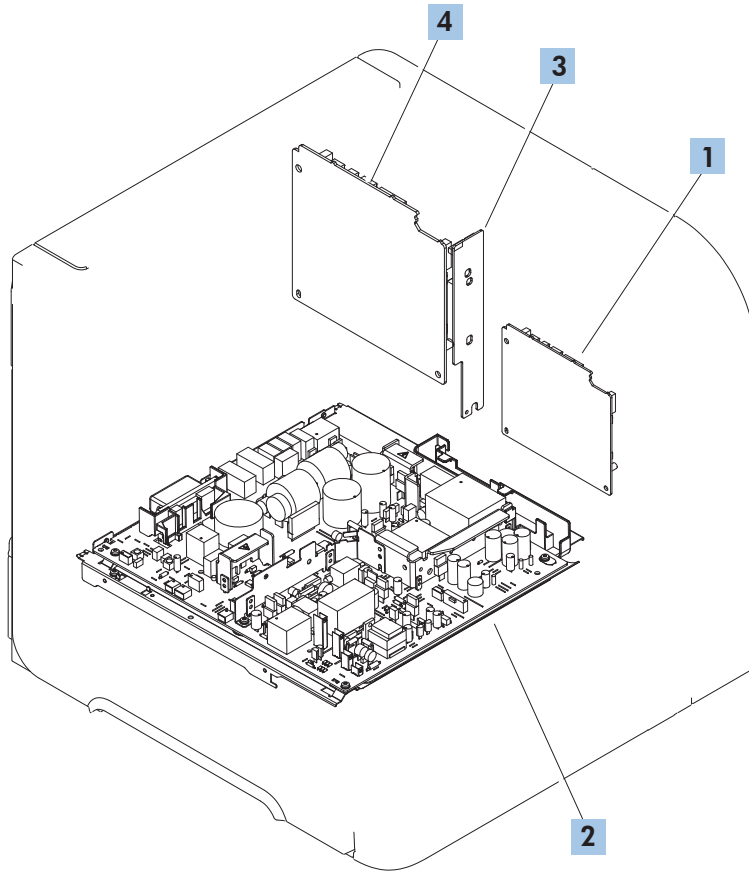


**Table 4-16 Fuser assembly**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Fuser assembly 110V	RM1-8395-000CN	1
1	Fuser assembly 220V	RM1-8396-000CN	1

## PCAs (product base)

Figure 4-16 PCAs (product base)



**Table 4-17 PCAs (product base)**

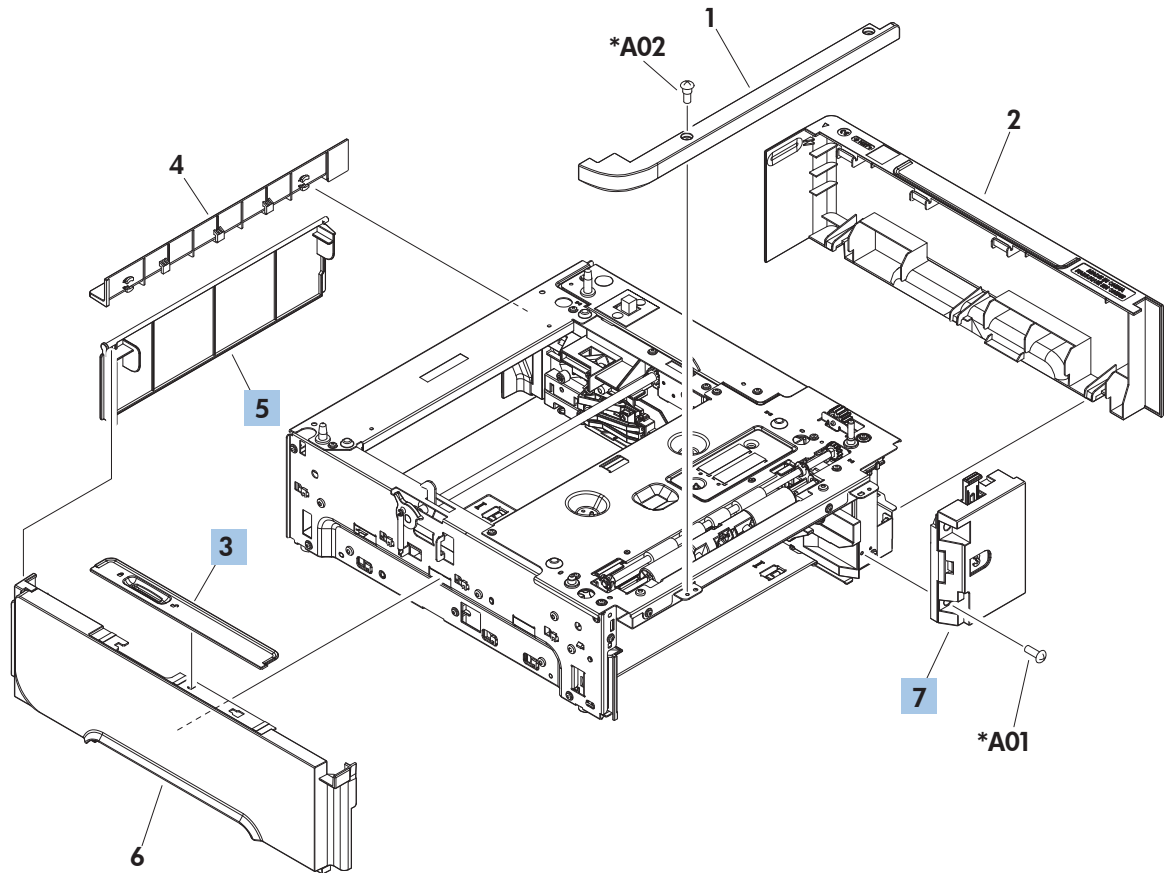
<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	PCA, DC controller	RM1-8293-000CN	1
2	Power supply, high-voltage 110V	RM1-8392-000CN	1
2	Power supply, low-voltage 220V	RM1-8393-000CN	1
3	PCA, inner connecting	RM1-8294-000CN	1
4	Formatter	CE988-67906	1

# Input devices

## 1x500-sheet feeder

### Covers (1x500)

Figure 4-17 Covers (1x500)



**Table 4-18 Covers (1x500)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
3	Cover, lock (1x500)	RC2-2584-000CN	1
5	Cover, legal (1x500)	RC2-5239-000CN	1
7	Number dial assembly (1x500)	RM1-4591-000CN	1

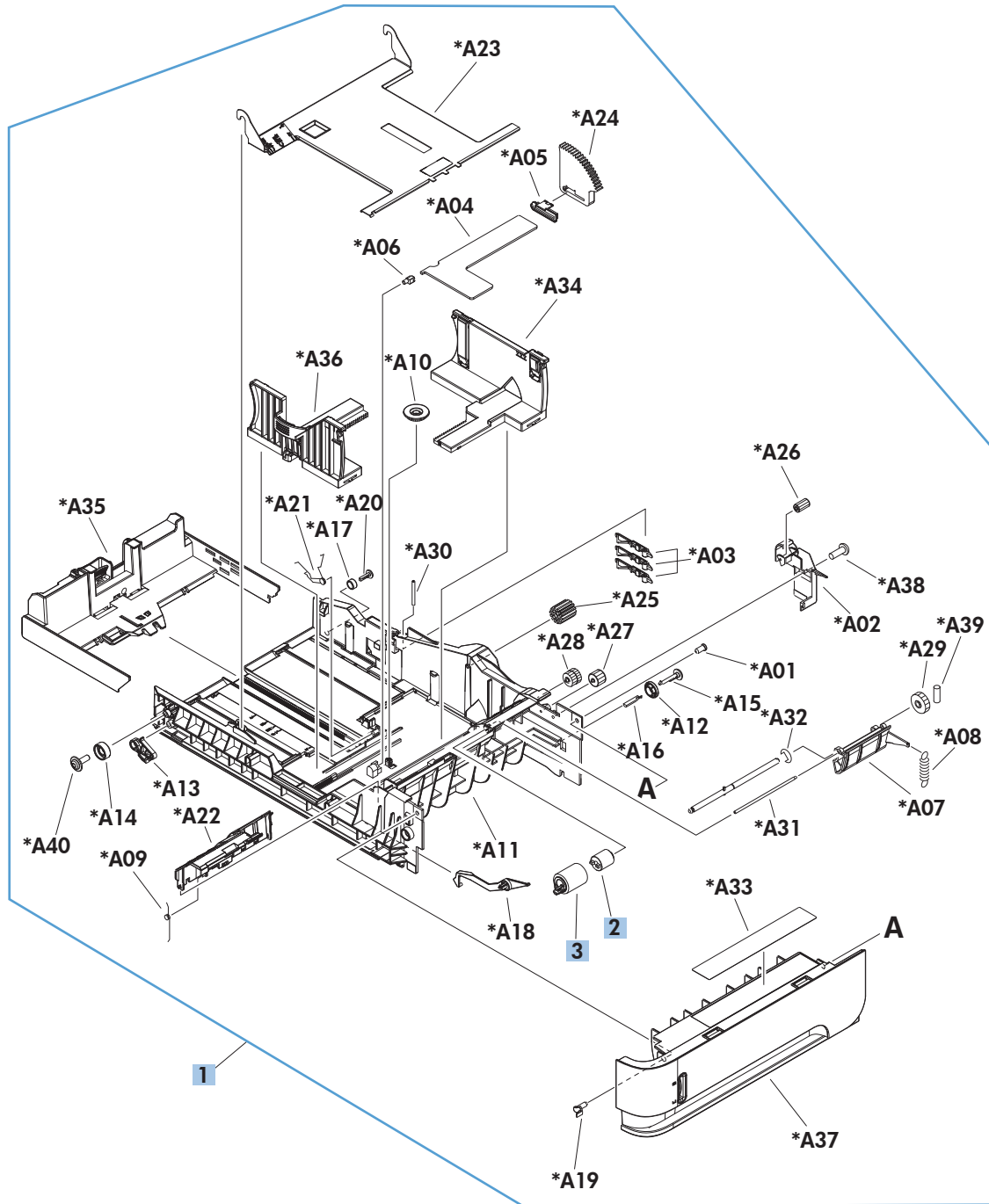


**Table 4-19 Main body (1x500)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Solenoid (1x500)	RK2-0270-000CN	1
2	Size detect assembly (1x500)	RM1-4525-000CN	1
3	Roller, paper feed assembly (1x500)	RM1-0037-020CN	1
6	Plate, pickup drive side assembly (1x500)	RM1-8441-000CN	1
8	PCA, Feeder (1x500)	RM1-8302-000CN	1
9	Connector, drawer 6P (1x500)	VS1-7500-006CN	1
10	Lifter drive assembly (1x500)	RM1-1094-050CN	1
11	Roller, paper pickup assembly (1x500)	RM1-0036-020CN	1

# Cassette (1x500)

Figure 4-19 Cassette (1x500)



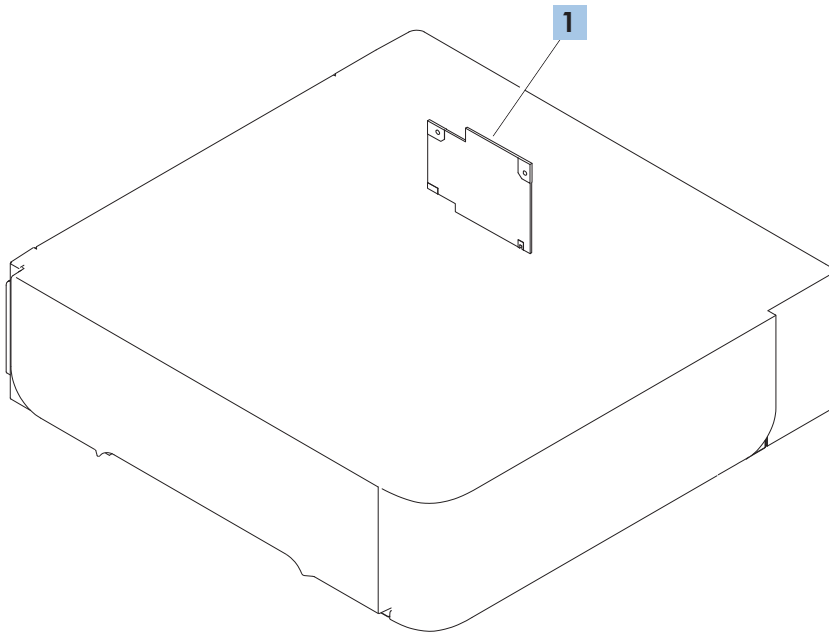


**Table 4-20 Cassette (1x500)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Cassette (1x500)	RM1-4559-020CN	1
2	Torque limiter (1x500)	RC2-5771-000CN	1
3	Roller, paper feed assembly (1x500)	RM1-0037-020CN	1

## PCA (1x500)

Figure 4-20 PCA (1x500)



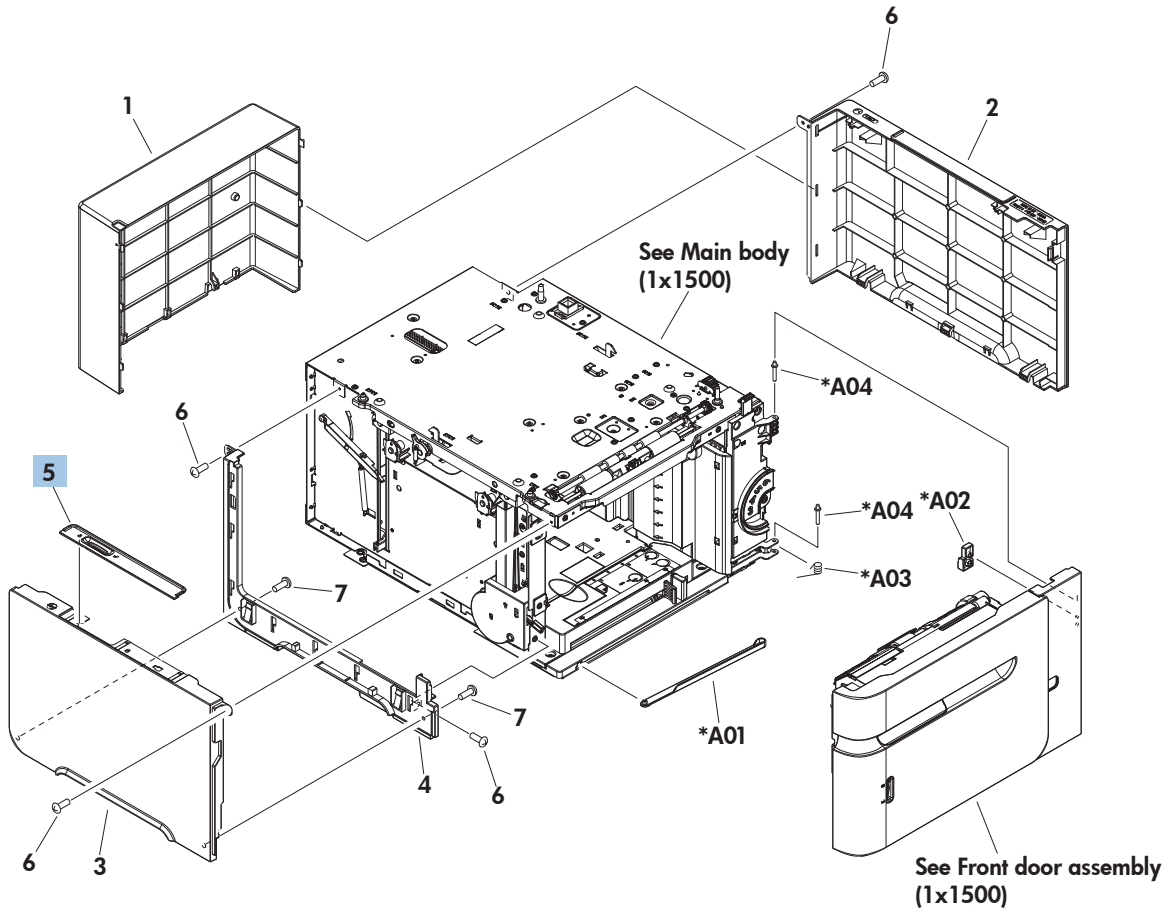
**Table 4-21 PCA (1x500)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	PCA, feeder (1x500)	RM1-8302-000CN	1

# 1x1500-sheet paper deck

## Covers (1x1500)

Figure 4-21 Covers (1x1500)

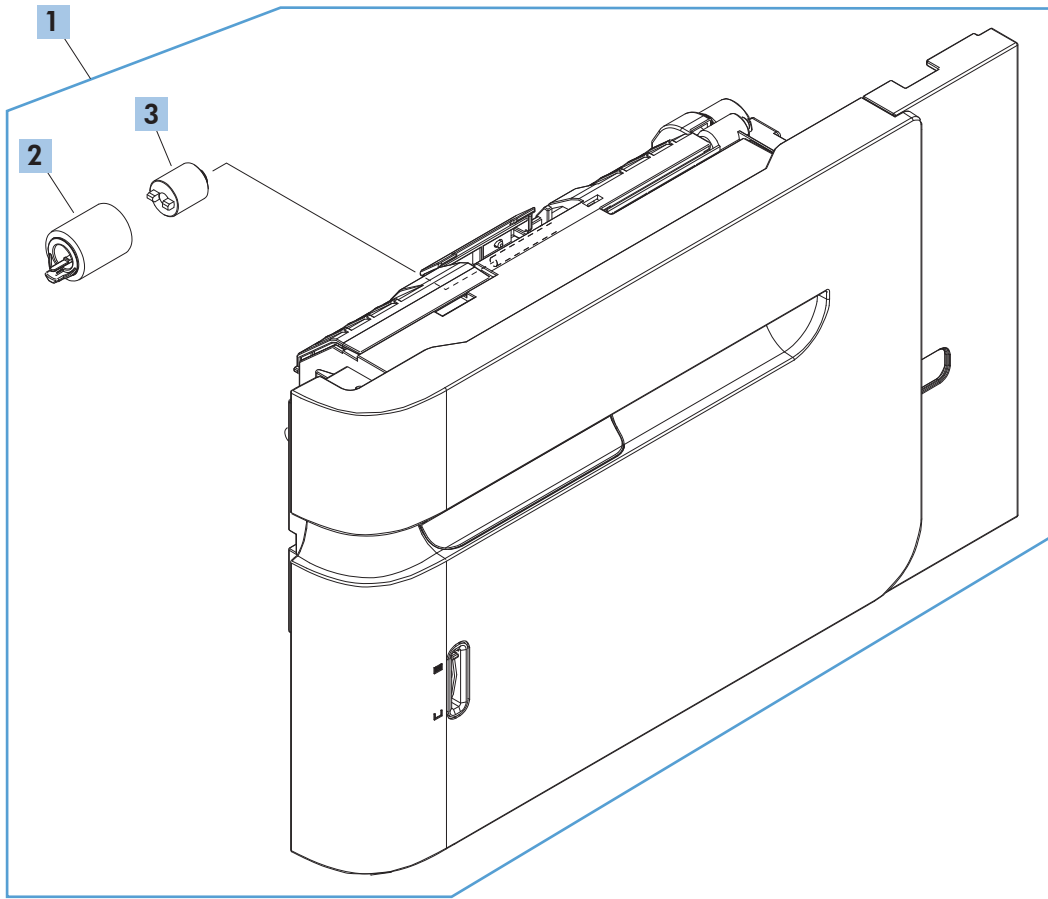


**Table 4-22 Covers (1x1500)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
5	Cover, lock (1x1500)	RC2-2584-000CN	1

## Front door assembly (1x1500)

Figure 4-22 Front door assembly (1x1500)

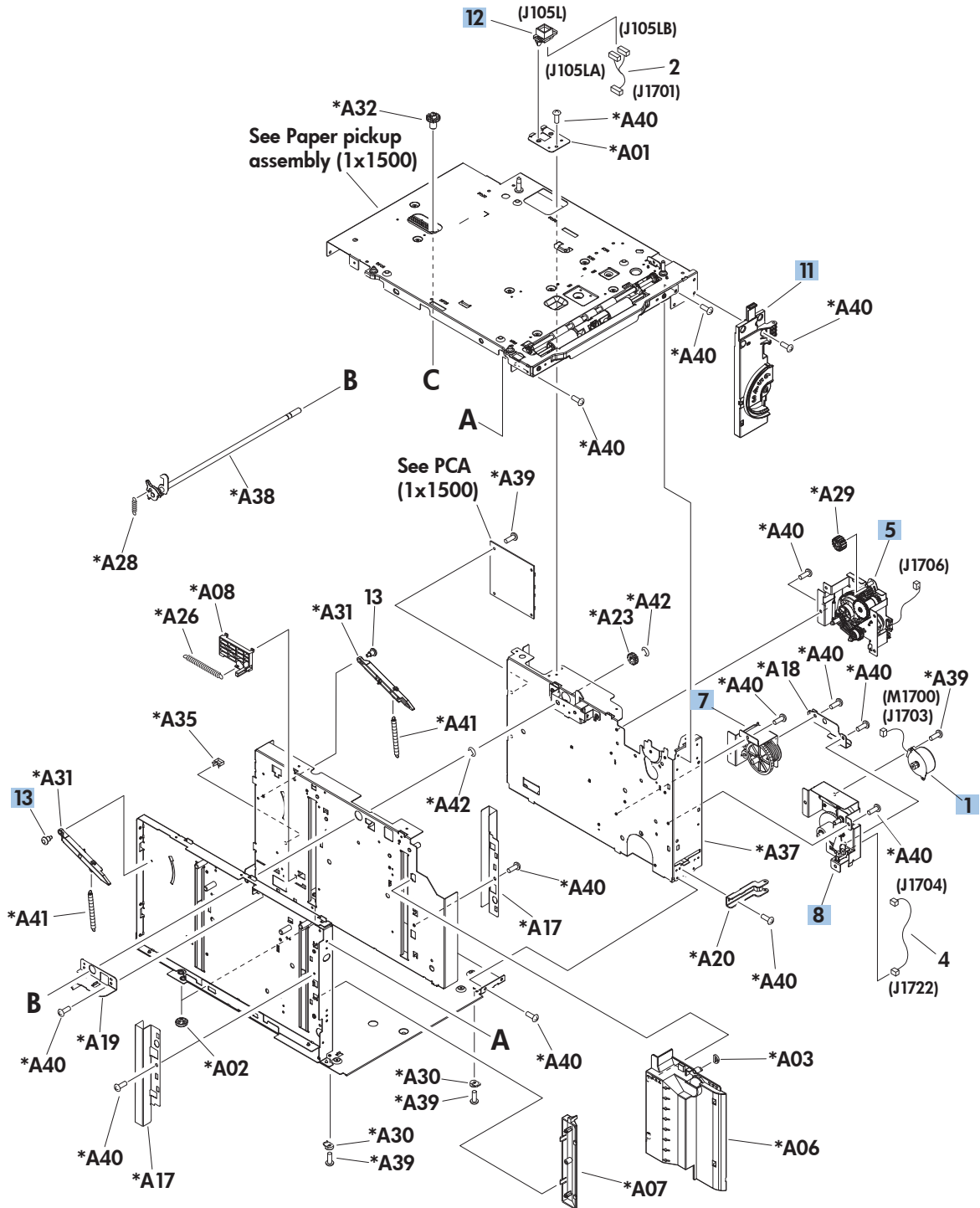


**Table 4-23 Front door assembly (1x1500)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Front door assembly (1x1500)	RM1-5255-020CN	1
2	Roller, paper feed assembly (1x1500)	RM1-0037-020CN	1
3	Torque limiter (1x1500)	RC2-5771-000CN	1

# Main body (1x500; 1 of 2)

Figure 4-23 Main body (1x500; 1 of 2)



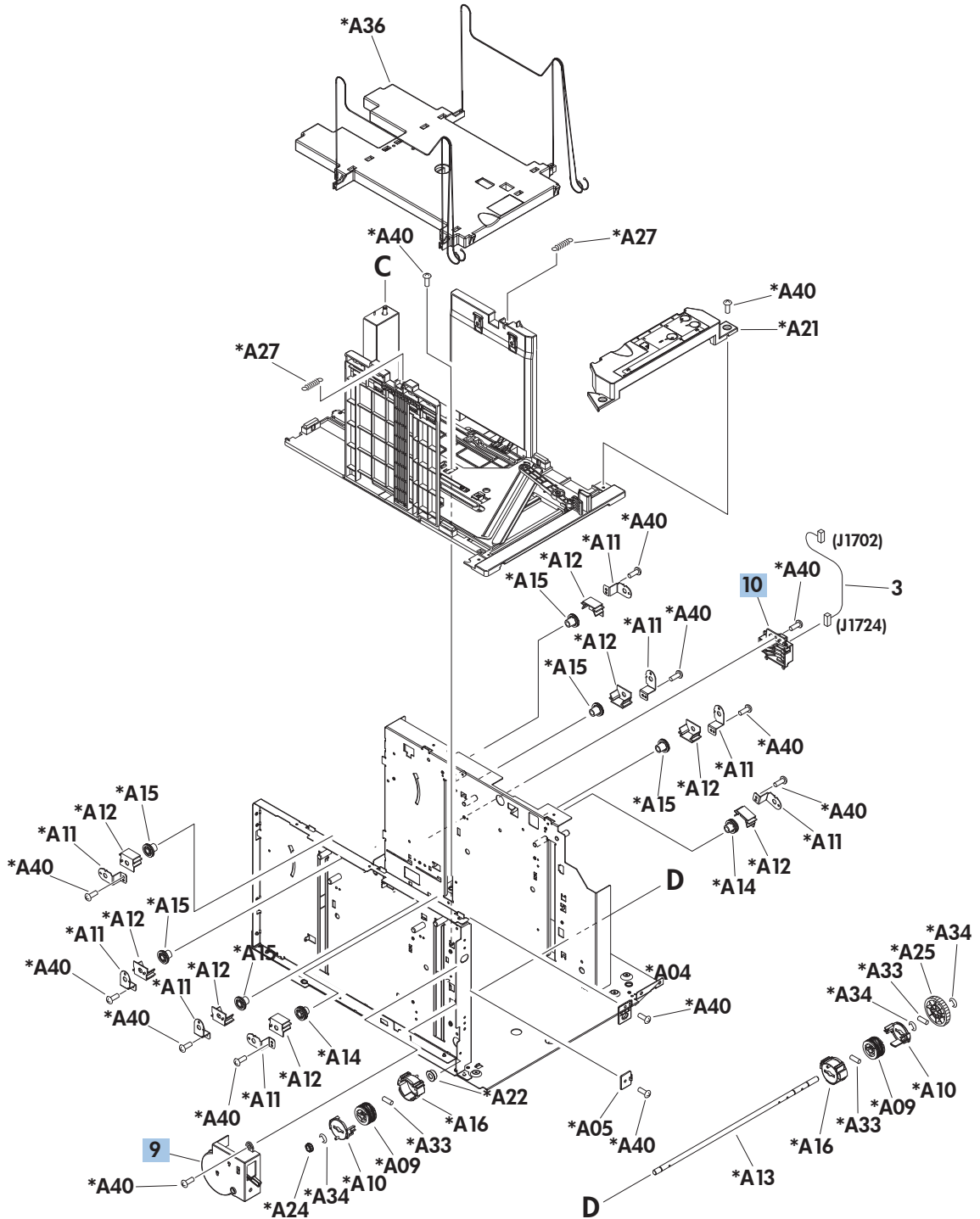


**Table 4-24 Main body (1x500; 1 of 2)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Motor, stepping (M1700) (1x1500)	RH7-1603-020CN	1
5	Paper pickup drive assembly (1x1500)	RM1-8457-000CN	1
7	Oil damper assembly (1x1500)	RM1-0289-030CN	1
8	Lifter drive assembly (1x1500)	RM1-8453-000CN	1
11	Numbering assembly (1x1500)	RM1-5265-000CN	1
12	Connector, drawer 6 pin(1x1500)	VS1-7500-006CN	1

# Main body (1x500; 2 of 2)

Figure 4-24 Main body (1x500; 2 of 2)

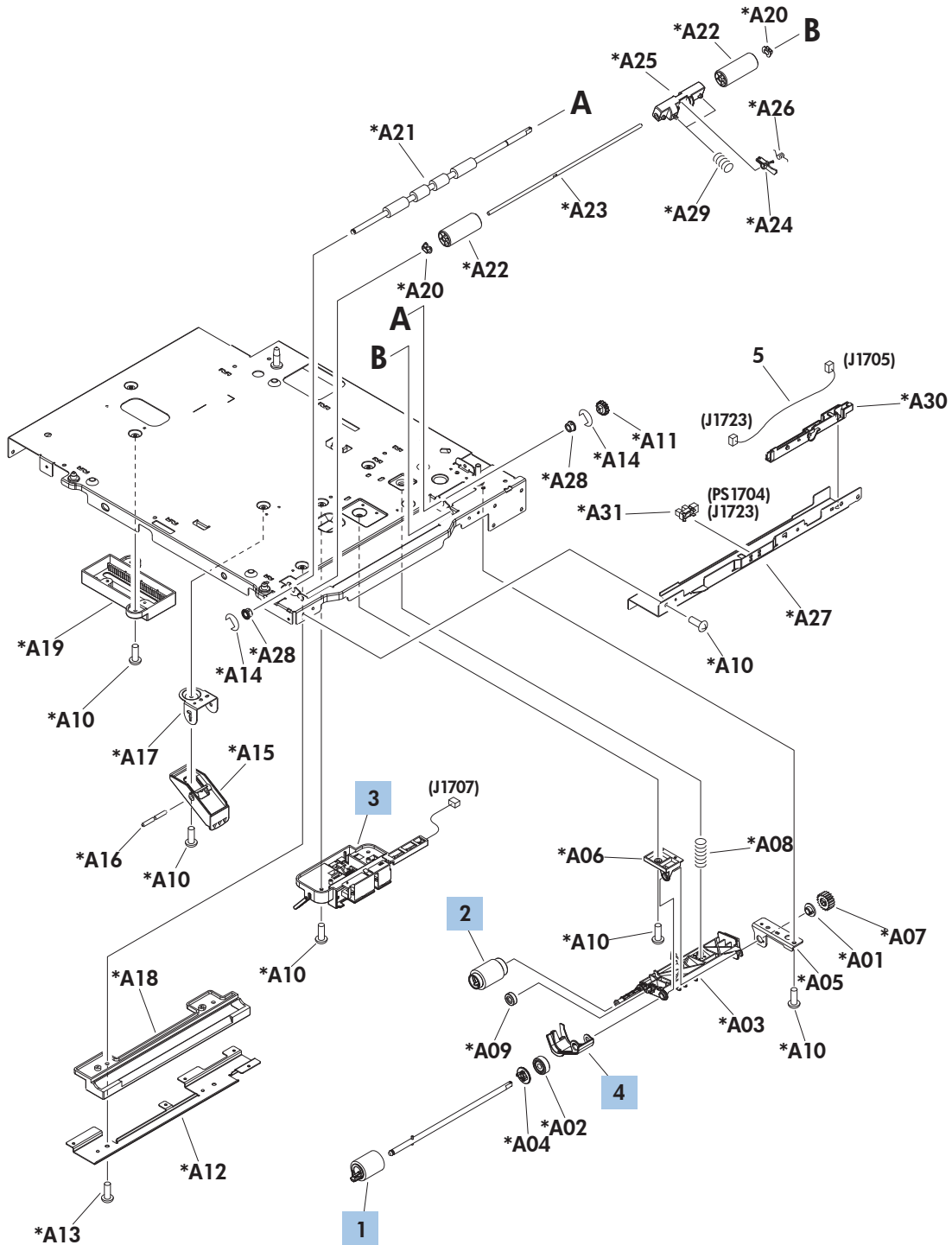


**Table 4-25 Main body (1x500; 2 of 2)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
9	Remnant indication assembly (1x1500)	RM1-5259-000CN	1
10	Paper size detect assembly (1x1500)	RM1-5261-000CN	1

## Paper pickup assembly (1x500)

Figure 4-25 Paper pickup assembly (1x500)

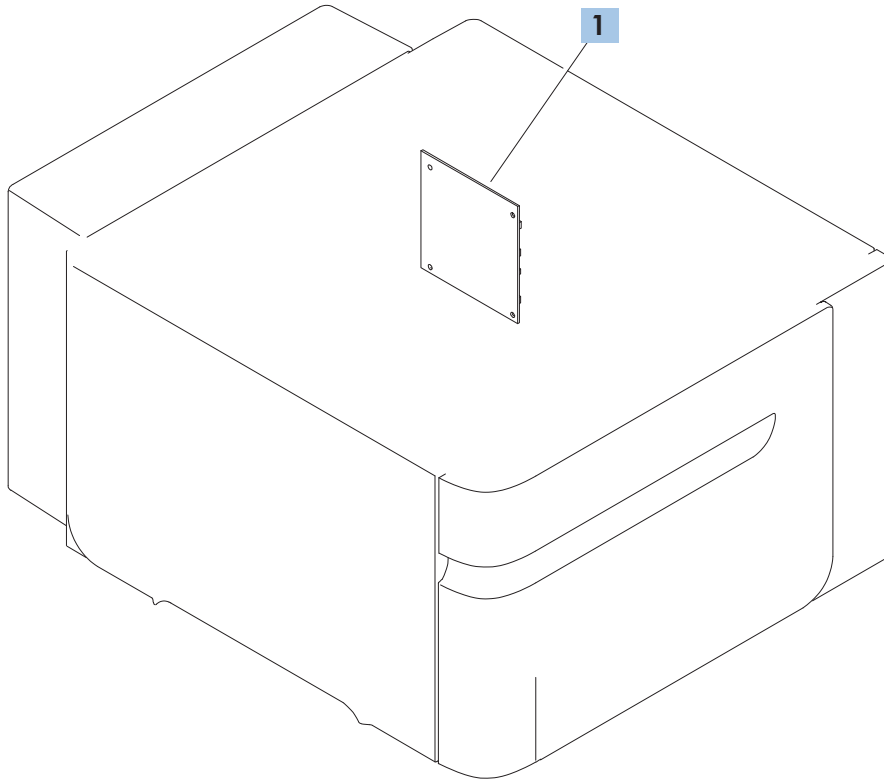


**Table 4-26 Paper pickup assembly (1x500)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Roller, paper feed assembly (1x1500)	RM1-0037-020CN	1
2	Roller, paper pickup assembly (1x1500)	RM1-0036-020CN	1
3	Paper detect sensor assembly (1x1500)	RM1-8456-000CN	1
4	Flag, paper detect (1x1500)	RC2-2524-000CN	1

## PCA (1x1500)

Figure 4-26 PCA (1x1500)



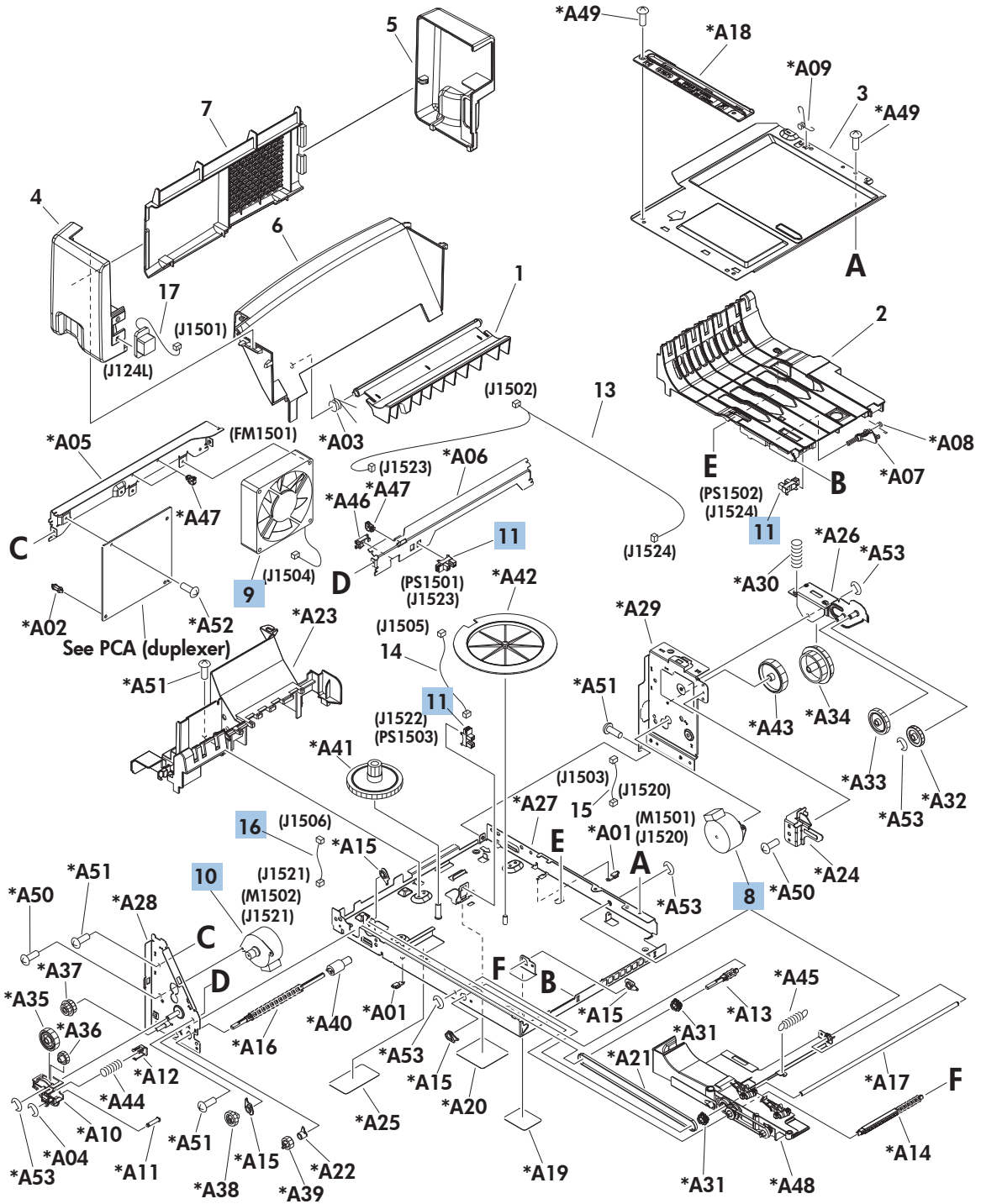
**Table 4-27 PCA (1x1500)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	PCA, feeder (1x1500)	RM1-8303-000CN	1

# Duplexer

## Main body (duplexer)

Figure 4-27 Main body (duplexer)



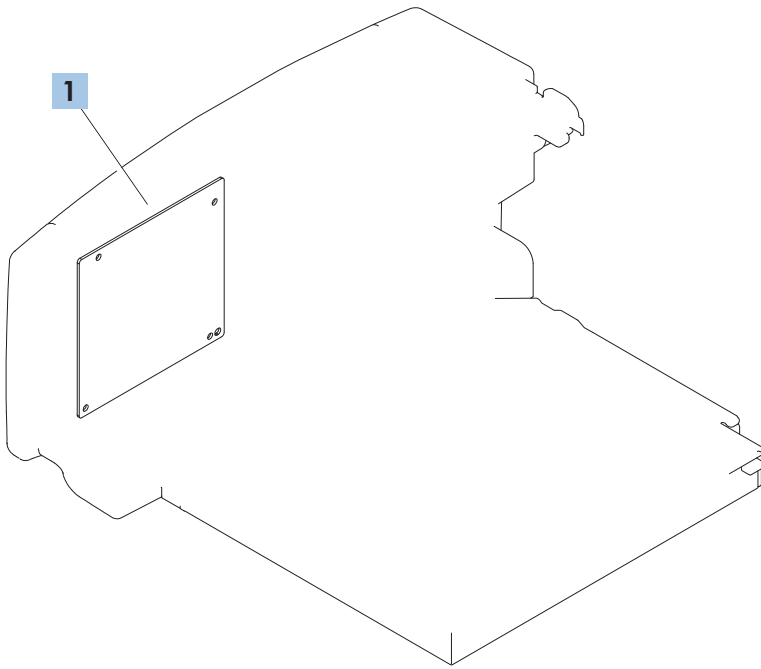


**Table 4-28 Main body (duplexer)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
8	Motor, stepping, DC 24V (M1501) (duplexer)	RK2-2015-000CN	1
9	Fan (FN1501) (duplexer)	RK2-2016-000CN	1
10	Motor, stepping, DC 24V (M1502) (duplexer)	RK2-2139-000CN	1
11	Photo interrupter (duplexer)	WG8-5849-000CN	3
16	Cable, paper re-pickup motor (duplexer)	RM1-5141-000CN	1

## PCA (duplexer)

Figure 4-28 PCA (duplexer)



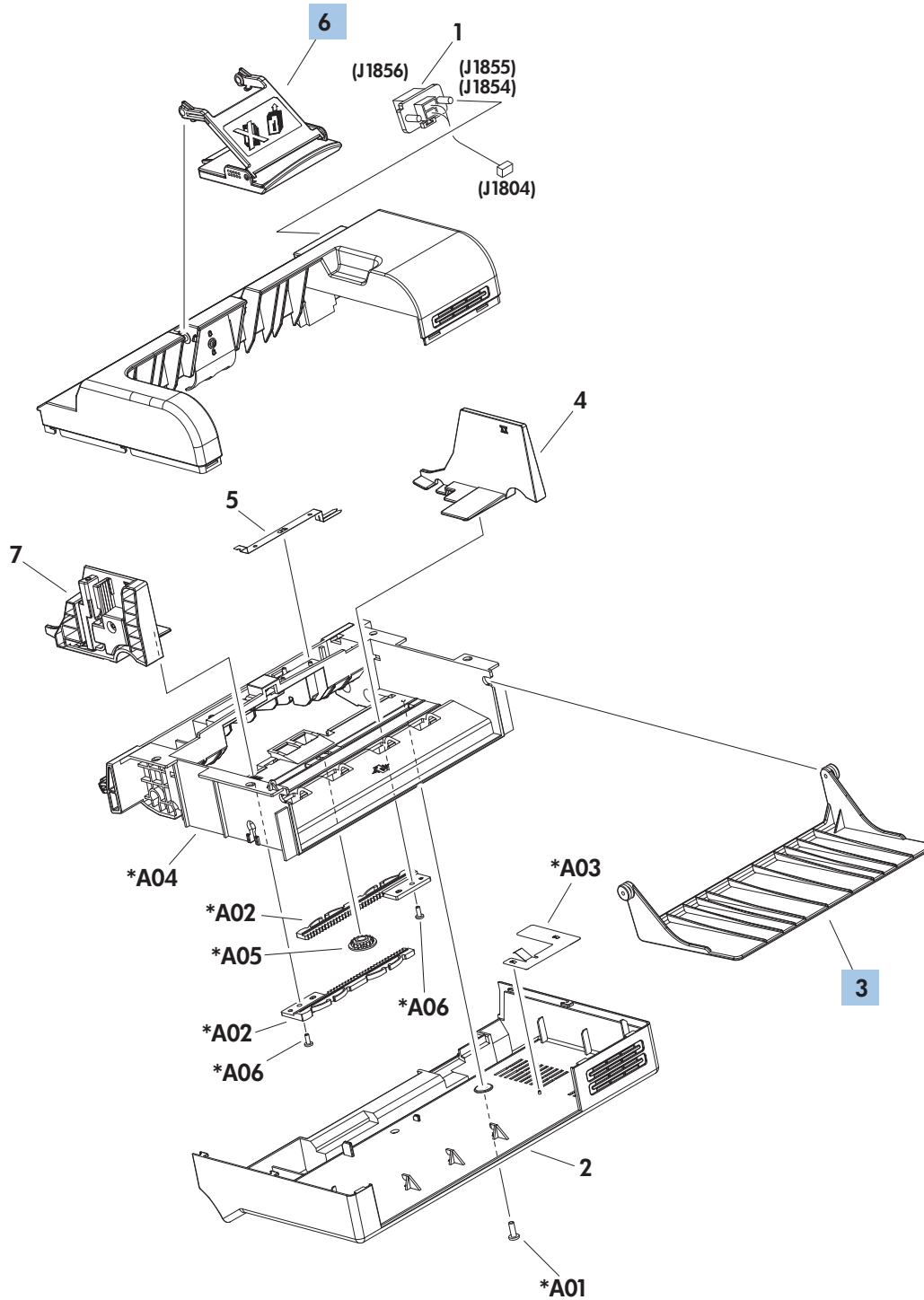
**Table 4-29 PCA (duplexer)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	PCA (duplexer)	RM1-8305-000CN	1

# Envelope feeder

## Covers (envelope feeder)

Figure 4-29 Covers (envelope feeder)

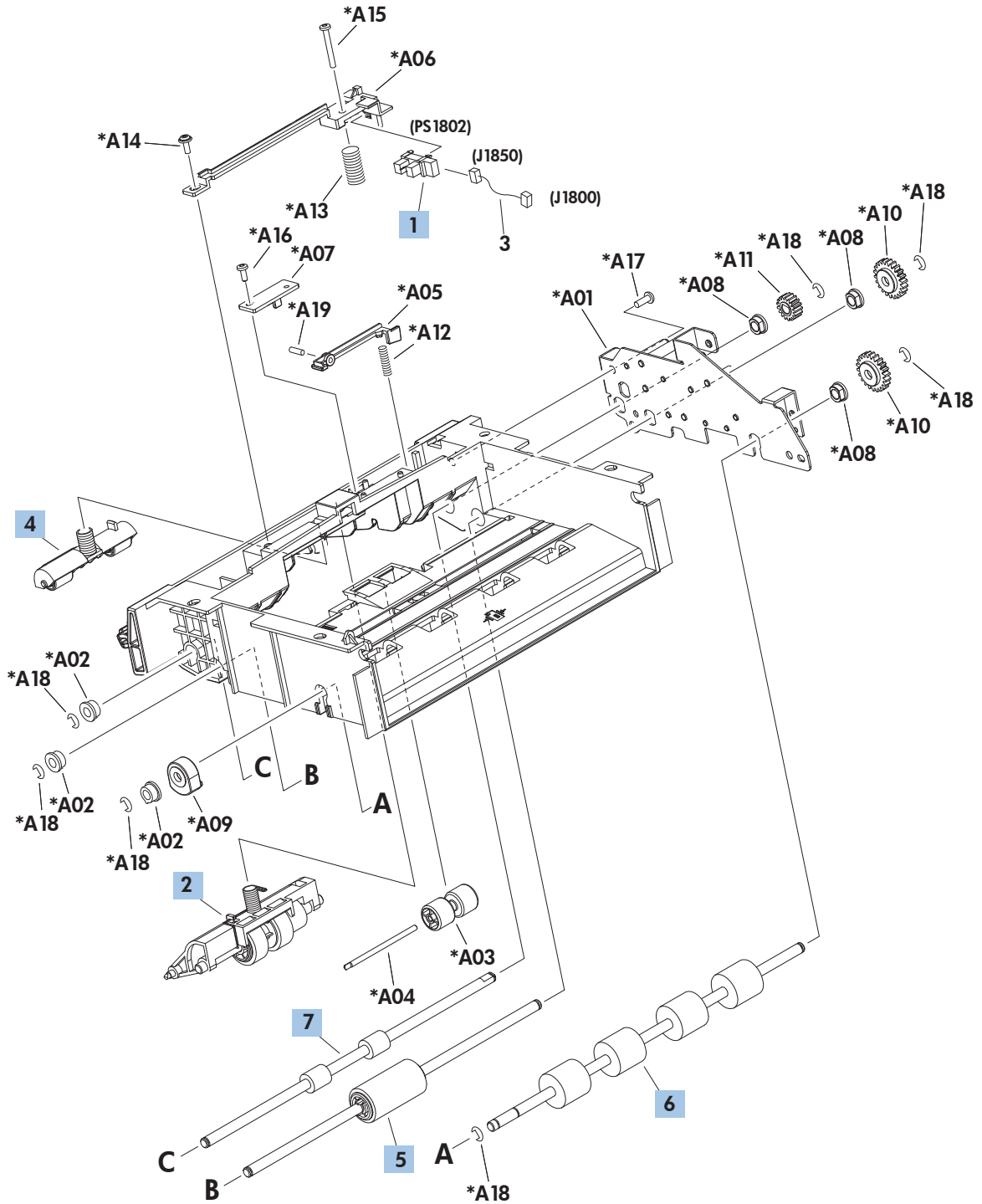


**Table 4-30 Covers (envelope feeder)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
3	Tray, extension (envelope feeder)	RC2-5705-000CN	1
6	Weight assembly (envelope feeder)	RM1-5226-000CN	1

# Main body (1 of 2; envelope feeder)

Figure 4-30 Main body (1 of 2; envelope feeder)

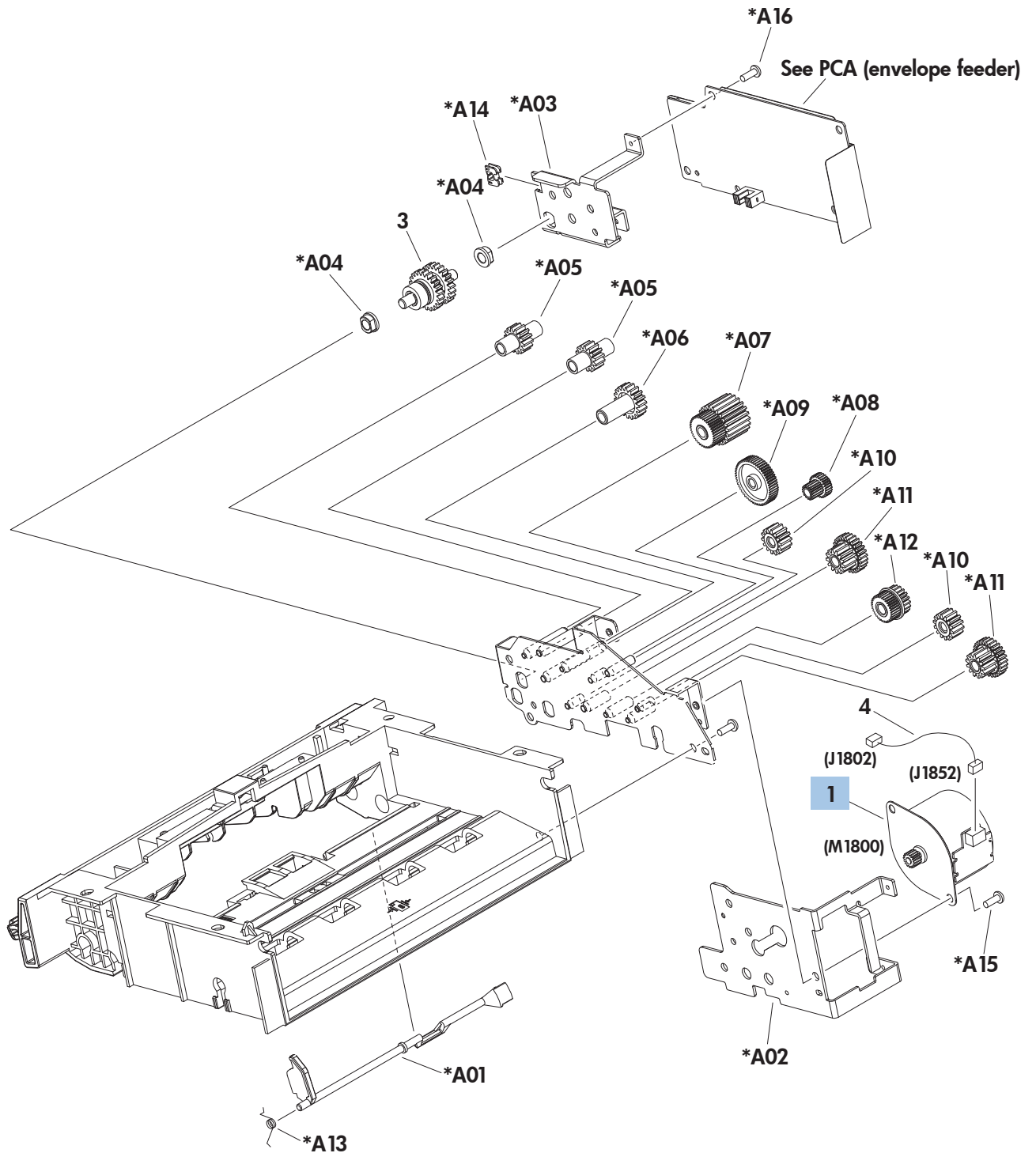


**Table 4-31 Main body (1 of 2; envelope feeder)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Photo interrupter (envelope feeder)	WG8-5624-000CN	1
2	Roller, separation assembly (envelope feeder)	RM1-5224-000CN	1
4	Roller, paper feed assembly (envelope feeder)	RM1-5223-000CN	1
5	Roller, paper pickup assembly (envelope feeder)	RM1-5221-000CN	1
6	Roller, paper pickup (envelope feeder)	RC2-5700-000CN	1
7	Roller, paper feed (envelope feeder)	RC2-5701-000CN	1

## Main body (2 of 2; envelope feeder)

Figure 4-31 Main body (2 of 2; envelope feeder)



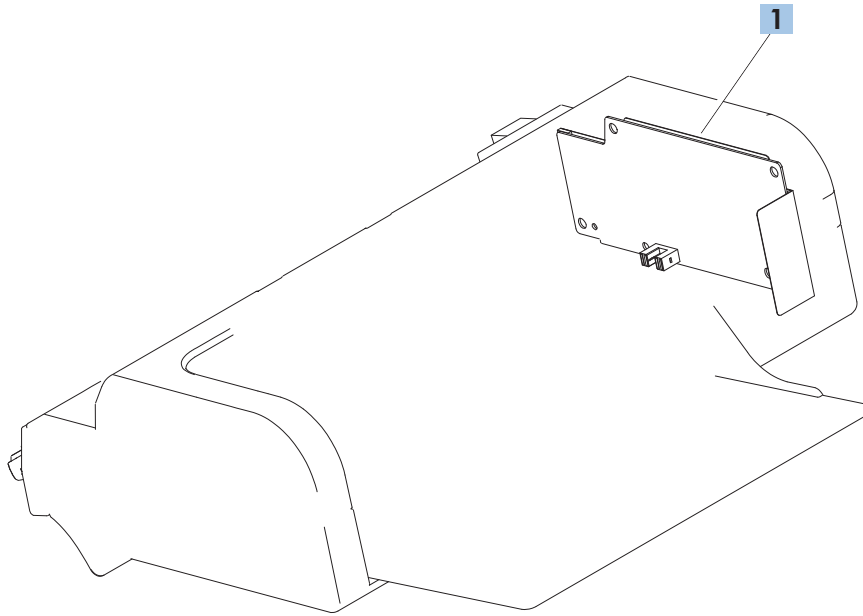


**Table 4-32 Main body (2 of 2; envelope feeder)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Motor, stepping, DC 24V (M1800) (envelope feeder)	RK2-2162-000CN	1

## PCA (envelope feeder)

Figure 4-32 PCA (envelope feeder)



**Table 4-33 PCA (envelope feeder)**

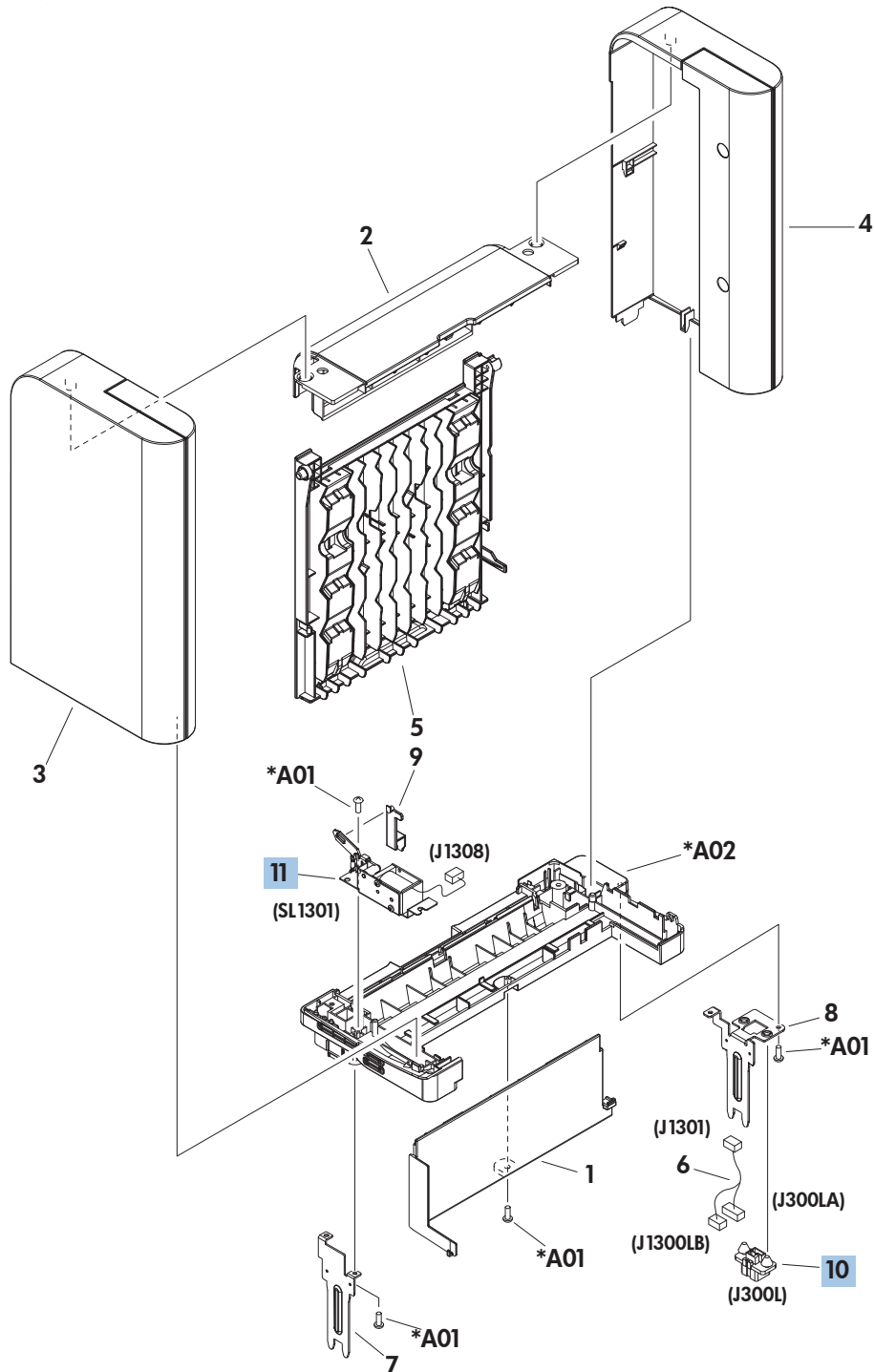
<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	PCA (envelope feeder)	RM1-9030-000CN	1

# Output devices

## Stapler/stacker multi-bin mailbox (MBM)

### Covers (MBM)

Figure 4-33 Covers (MBM)



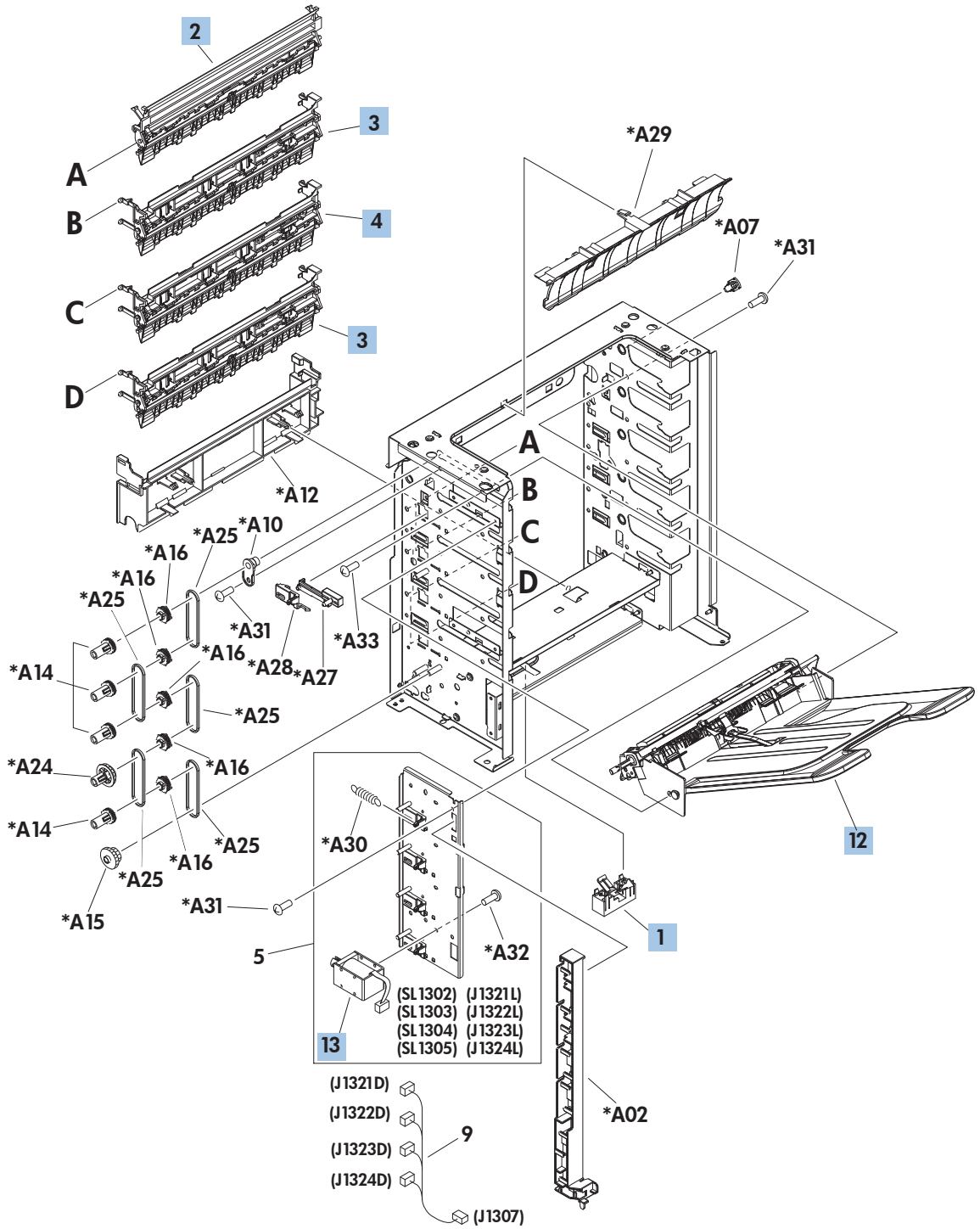
**Table 4-34 Covers (MBM)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
10	Connector 8P (MBM)	VS1-7500-008CN	1
11	Solenoid assembly, IN (MBM)	RM1-5270-000CN	1

# Main body (MBM)

## Main body (MBM; 1 of 2)

Figure 4-34 Main body (MBM; 1 of 2)

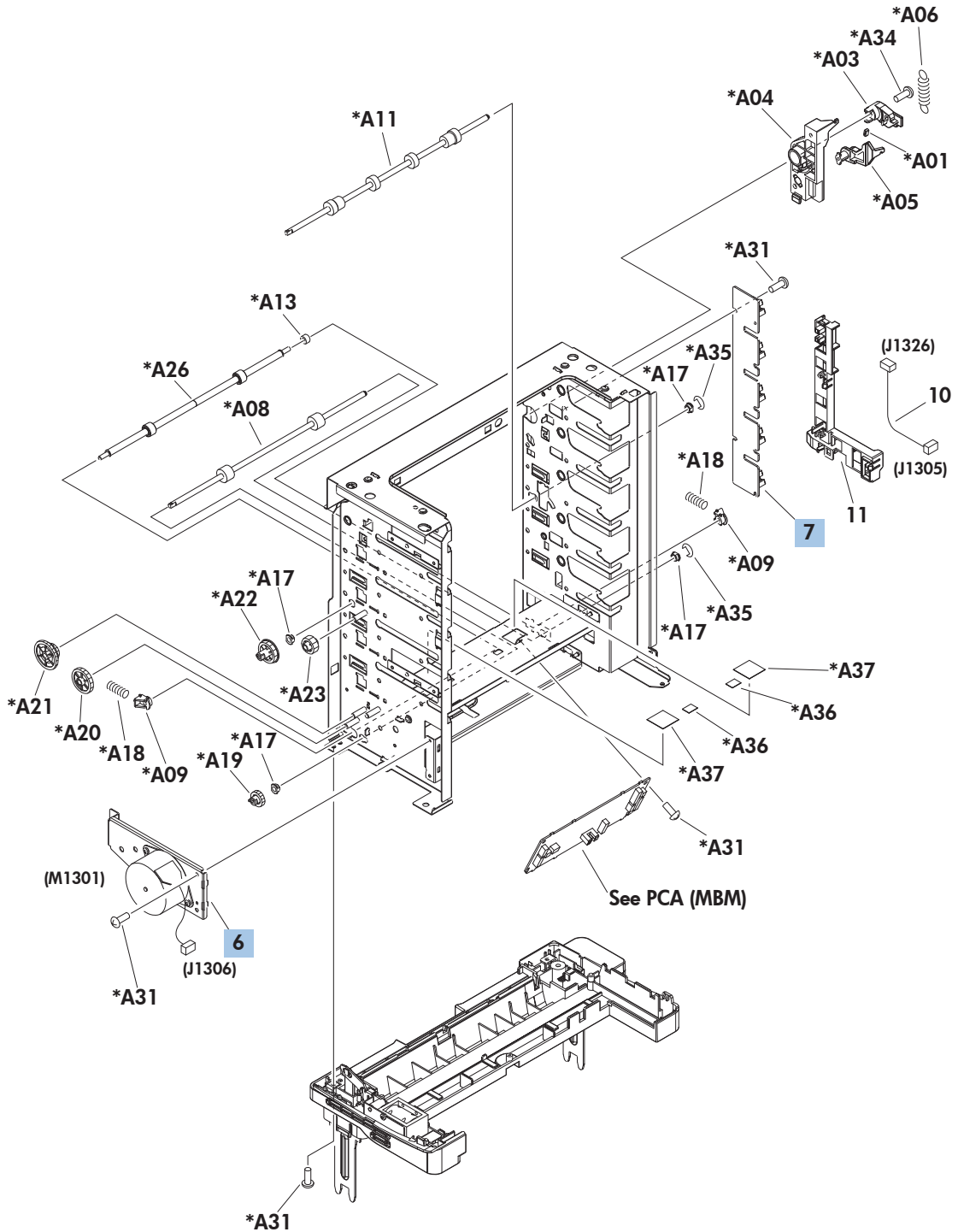


**Table 4-35 Main body (MBM; 1 of 2)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Flag, paper sensing (MBM)	RM1-5269-000CN	1
2	Top bin flapper assembly (MBM)	RM1-4665-000CN	1
3	Bin flapper assembly (MBM)	RM1-4666-000CN	2
4	Center bin flapper assembly (MBM)	RM1-4667-000CN	1
12	Bin assembly (MBM)	RM1-6672-000CN	1
13	Solenoid (MBM)	RL1-1709-000CN	1

## Main body (MBM; 2 of 2)

Figure 4-35 Main body (MBM; 2 of 2)



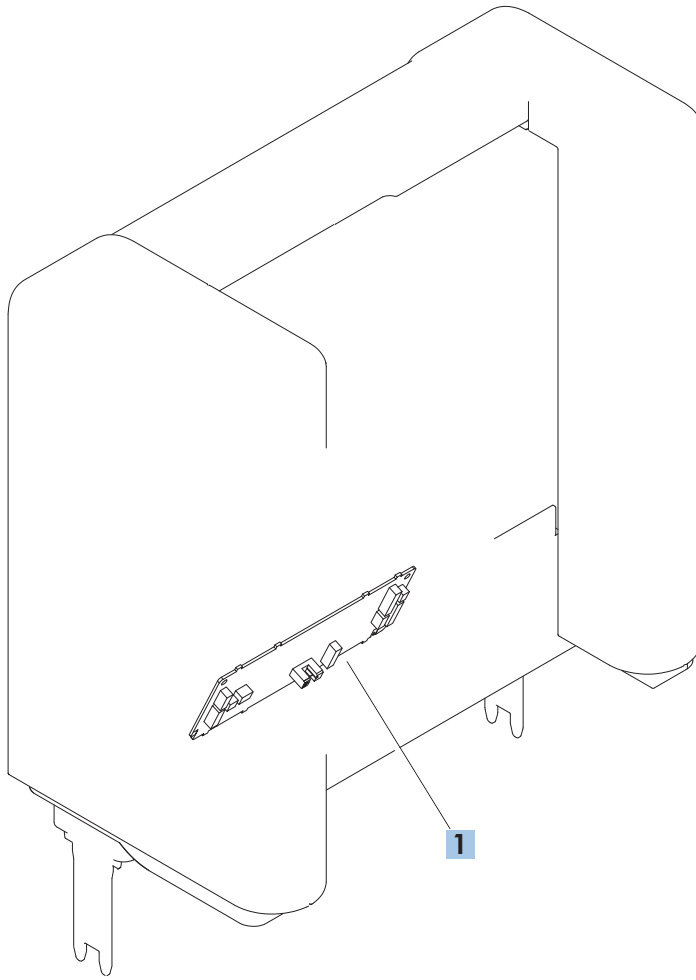


**Table 4-36 Main body (MBM; 2 of 2)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
6	Drive assembly (MBM)	RM1-5267-000CN	1
7	Sensor assembly (MBM)	RM1-5096-000CN	1

## PCA (MBM)

Figure 4-36 PCA (MBM)



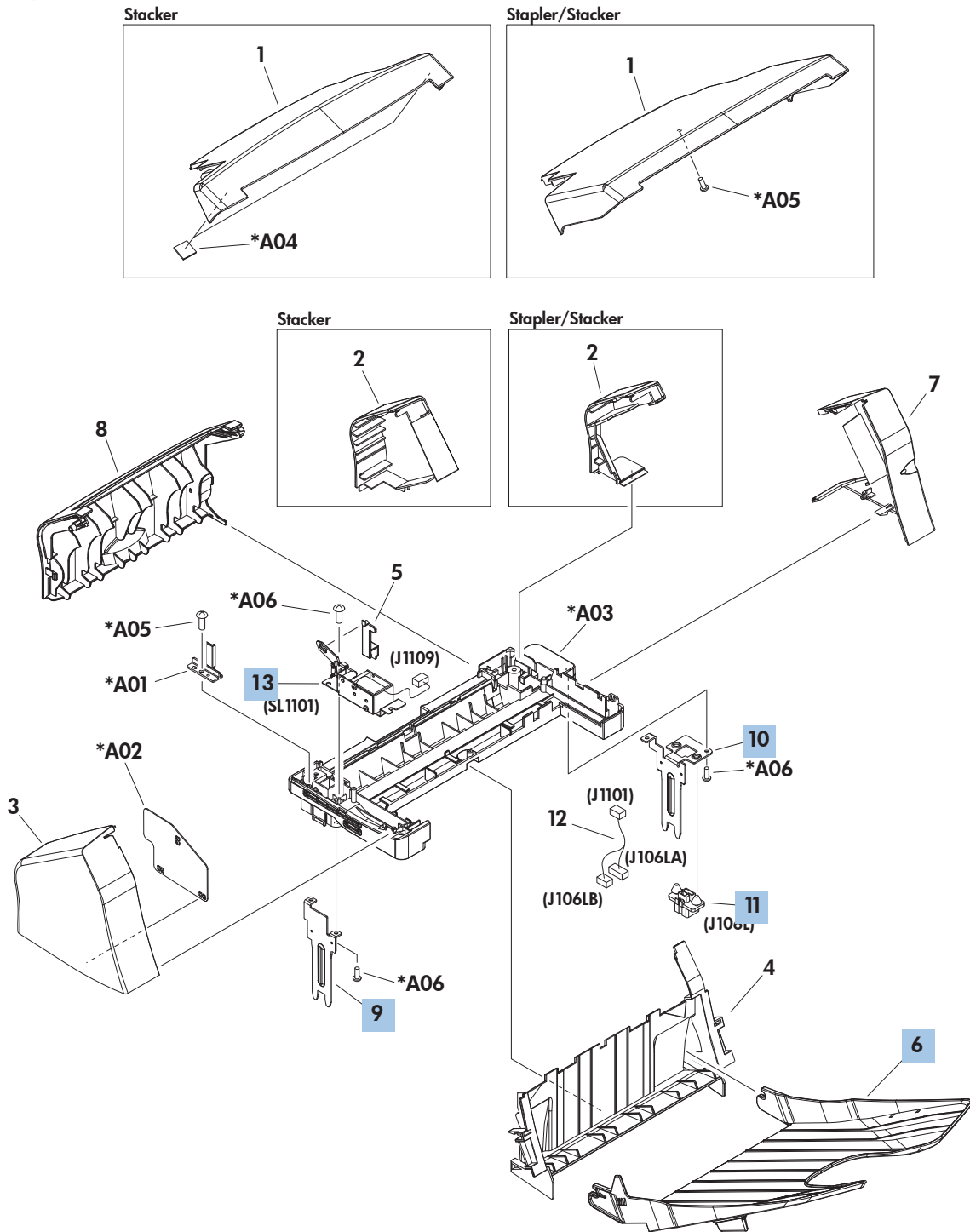
**Table 4-37 PCA (MBM)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	PCA (MBM)	RM1-8350-000CN	1

# Stacker and Stapler/Stacker (S and S/S)

## Covers (S and S/S)

Figure 4-37 Covers (S and S/S)

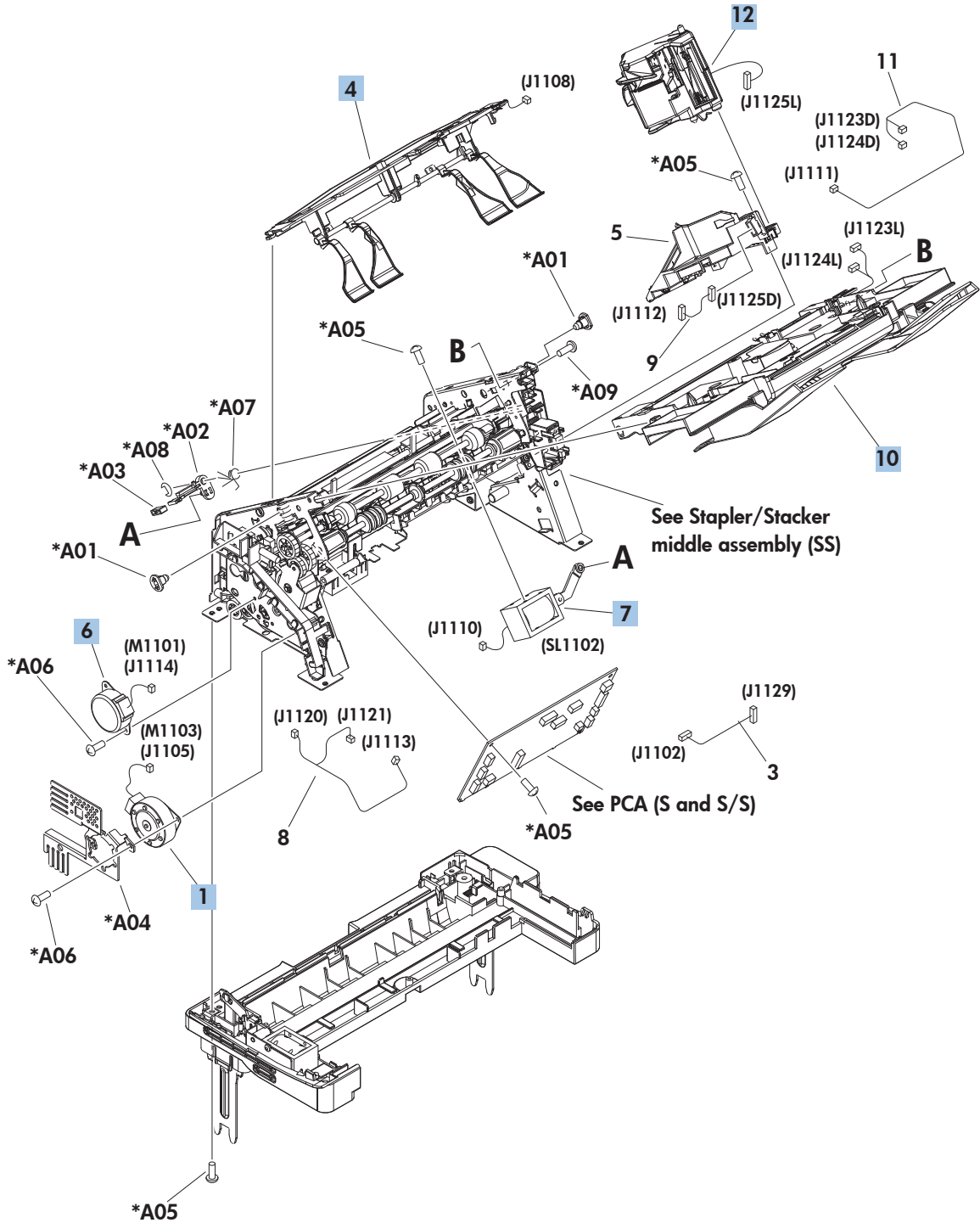


**Table 4-38 Covers (S and S/S)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
6	Tray assembly (S and S/S)	RM1-4671-000CN	1
9	Joint, left (S and S/S)	RL1-1703-000CN	1
10	Joint, right (S and S/S)	RL1-1704-000CN	1
11	Connector 8P (S and S/S)	VS1-7500-008CN	1
13	Solenoid assembly, IN (S and S/S)	RM1-5270-000CN	1

# Main body (SS)

Figure 4-38 Main body (SS)

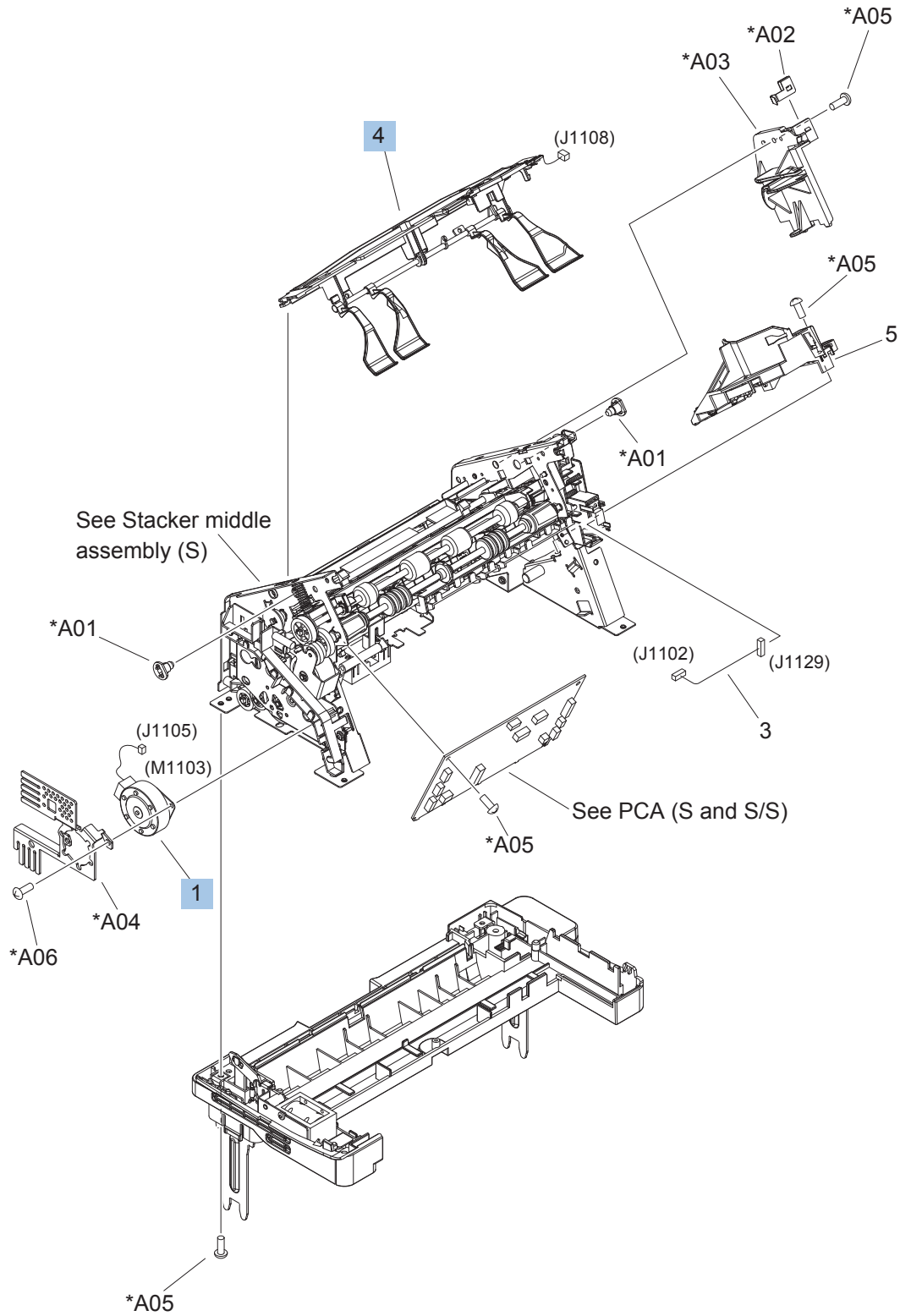


**Table 4-39 Main body (SS)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Motor, stepping, DC 24V (M1103) (S/S)	RK2-2025-000CN	1
4	Sensor, paper full assembly (S/S)	RM1-1166-000CN	1
6	Motor, stepping, DC 24V (M1101) (S/S)	RK2-2027-000CN	1
7	Solenoid (S/S)	RL1-0506-000CN	1
10	Jog assembly (S/S)	RM1-4670-000CN	1
12	Stapler assembly (S/S)	RM1-4826-000CN	1

## Main body (S)

Figure 4-39 Main body (S)





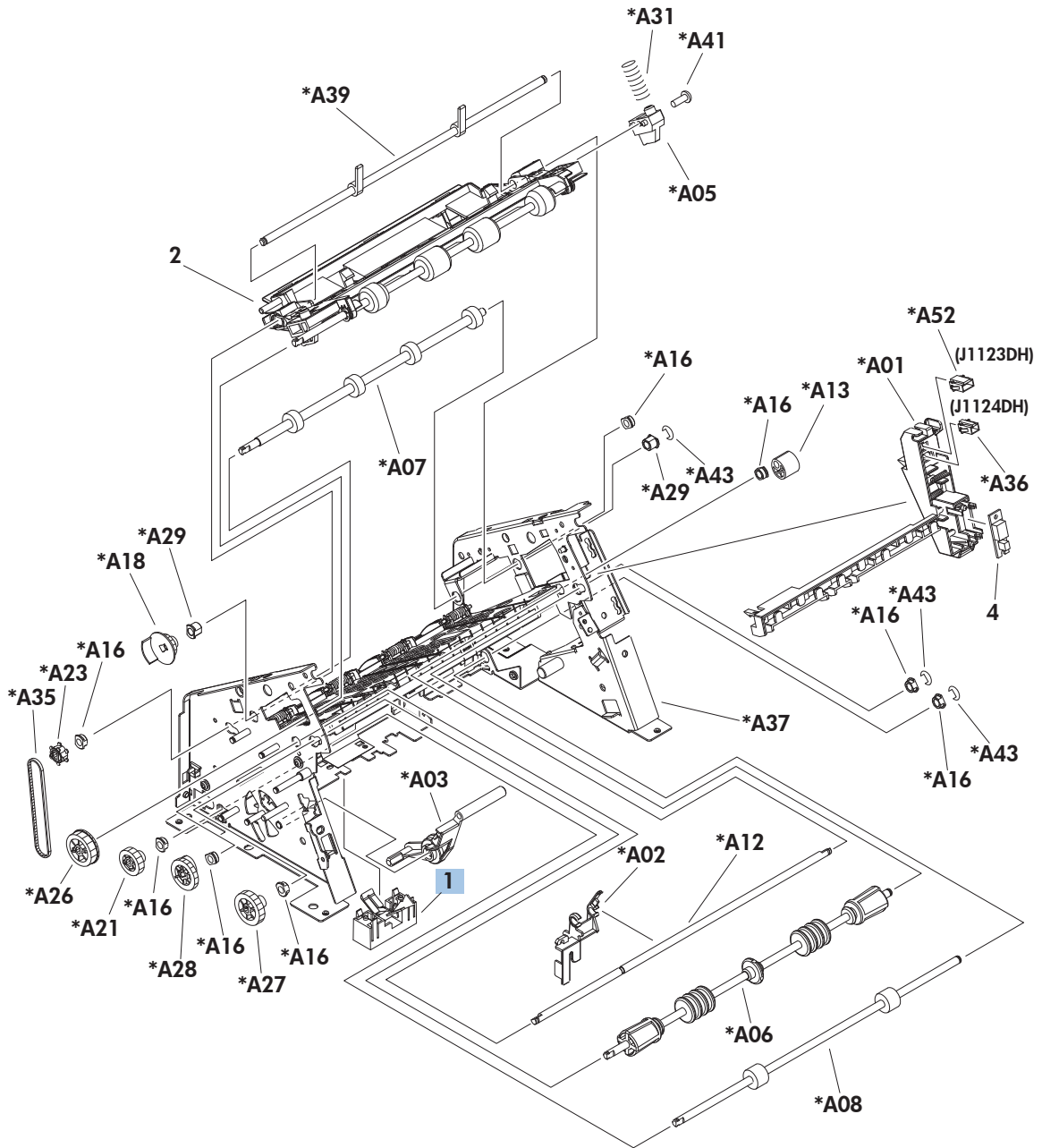
**Table 4-40 Main body (S)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Motor, stepping, DC 24V (M1103) (S)	RK2-2025-000CN	1
5	Stapler mount assembly (S)	RM1-4676-000CN	1

## Middle assemblies (S and S/S)

### Stapler/Stacker middle assembly (1 of 2; S/S)

Figure 4-40 Stapler/Stacker middle assembly (1 of 2; S/S)

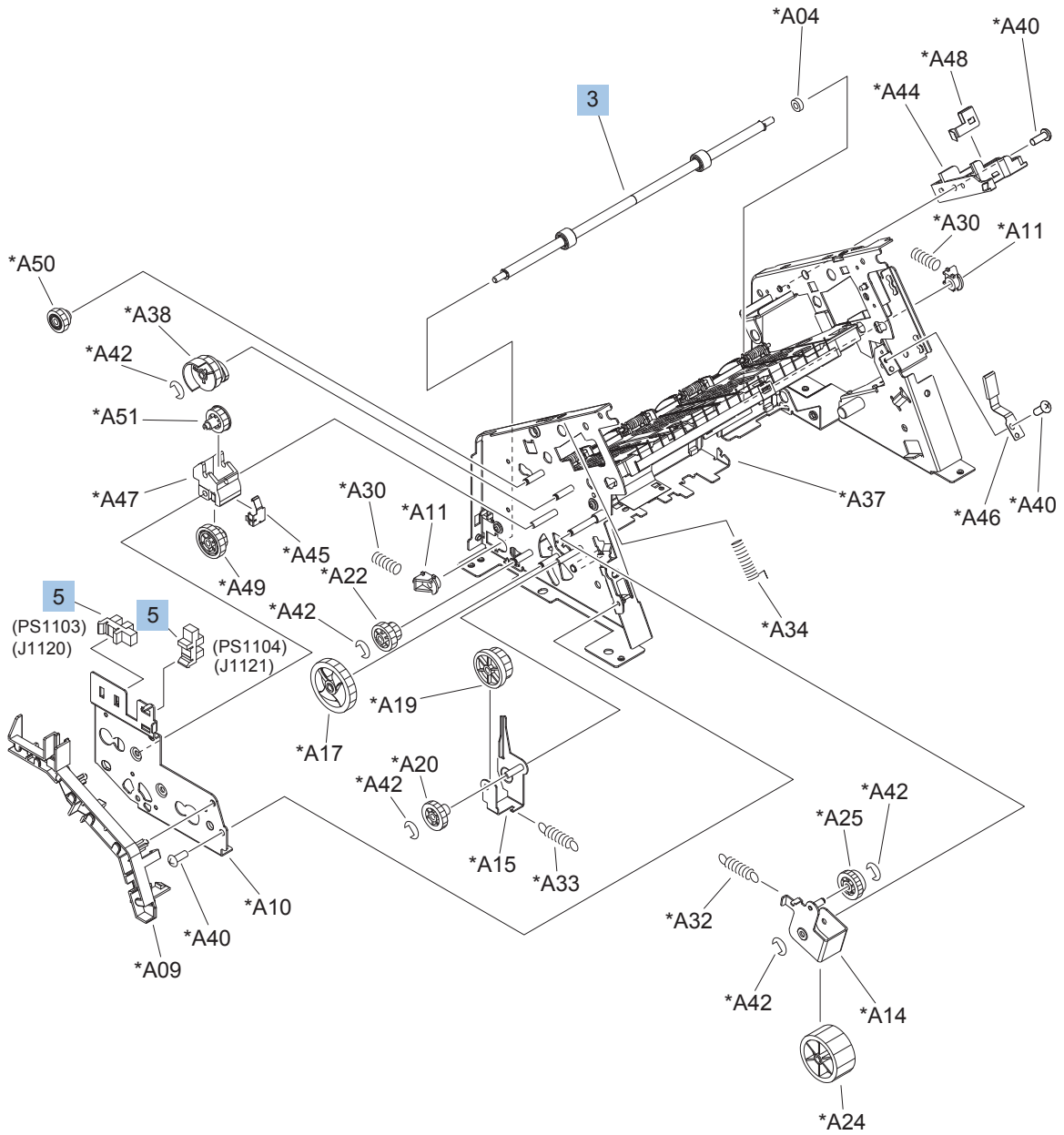


**Table 4-41 Stapler/Stacker middle assembly (1 of 2; S/S)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Flag, paper sensing (S/S)	RM1-0239-000CN	1

## Stapler/Stacker middle assembly (2 of 2; S/S)

Figure 4-41 Stapler/Stacker middle assembly (2 of 2; S/S)

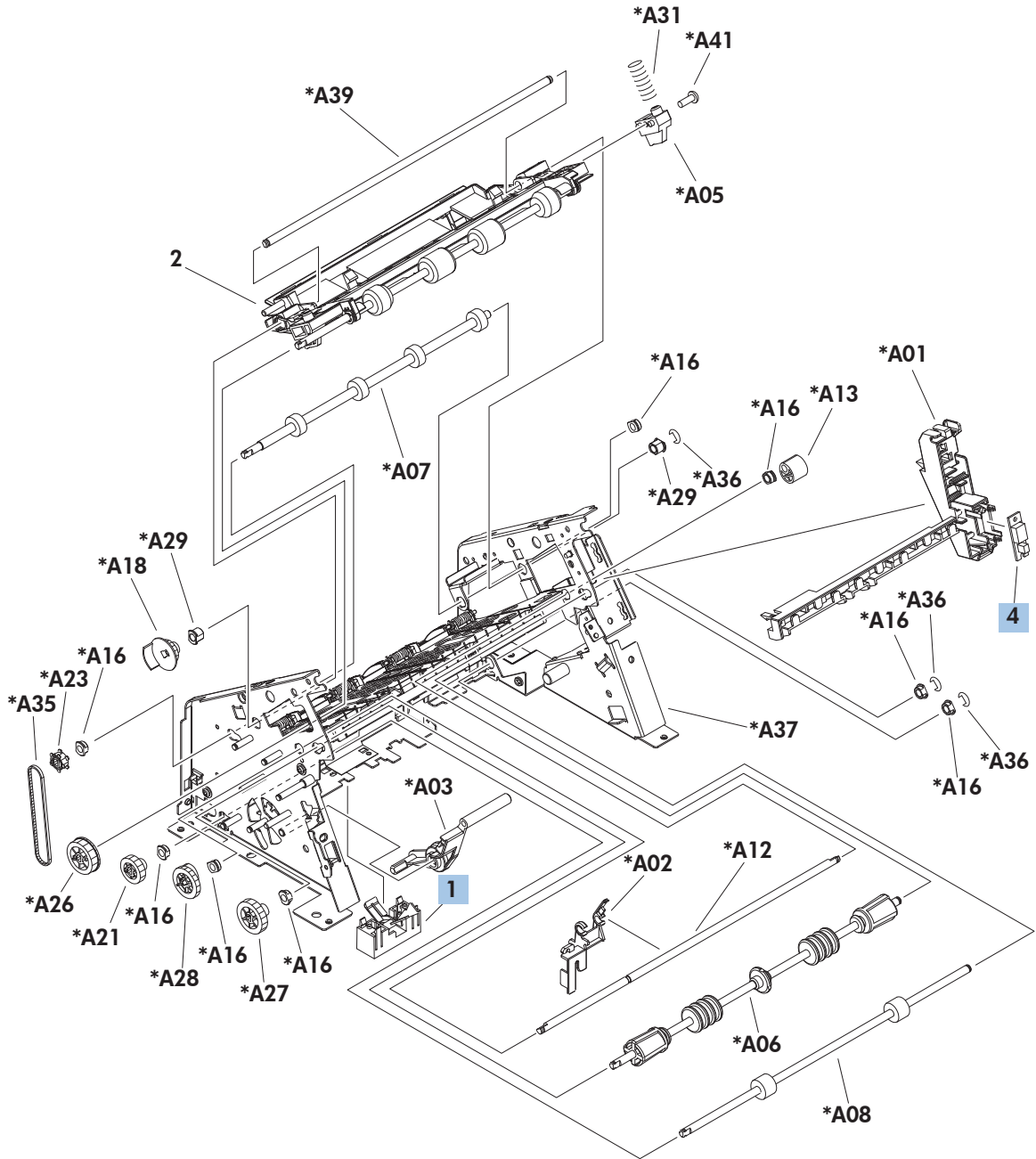


**Table 4-42 Stapler/Stacker middle assembly (2 of 2; S/S)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
3	Roller, paper feed assembly (S/S)	RM1-0253-020CN	1
5	Photo interrupter (S/S)	WG8-5645-000CN	2

## Stacker middle assembly (1 of 2; S)

Figure 4-42 Stacker middle assembly (1 of 2; S)

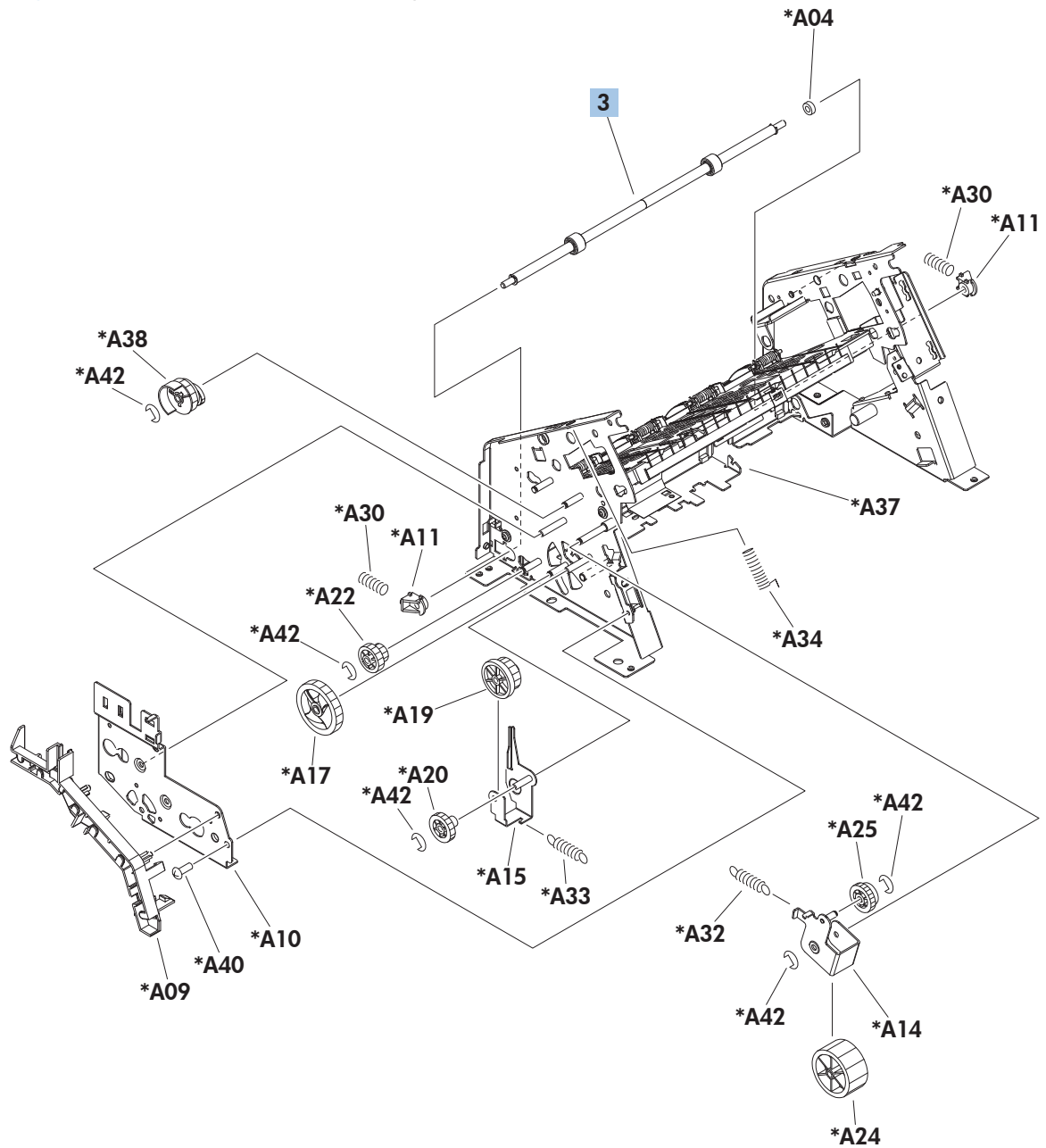


**Table 4-43 Stacker middle assembly (1 of 2; S)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	Flag, paper sensing assembly (S)	RM1-0239-000CN	1
4	LED PCA (S)	RG1-4266-030CN	1

## Stacker middle assembly (2 of 2; S)

Figure 4-43 Stacker middle assembly (2 of 2; S)



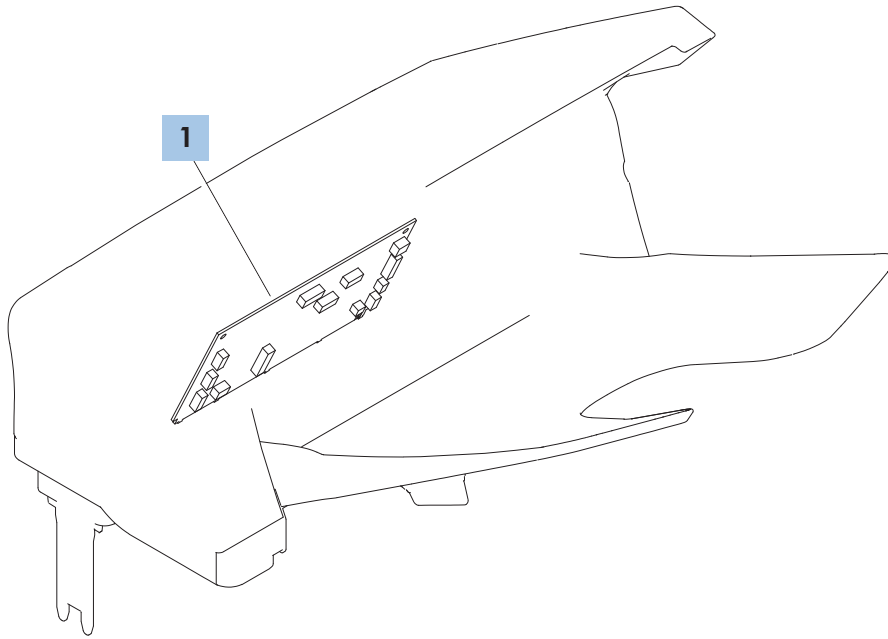


**Table 4-44 Stacker middle assembly (2 of 2; S)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
3	Roller, paper feed assembly (S)	RM1-0253-020CN	1

## PCA (S and S/S)

Figure 4-44 PCA (S and S/S)



**Table 4-45 PCA (S and S/S)**

<b>Ref</b>	<b>Description</b>	<b>Part number</b>	<b>Qty</b>
1	PCA (S/S)	RM1-8351-000CN	1
1	PCA (S)	RM1-8352-000CN	1

# Alphabetical parts list

**Table 4-46 Alphabetical parts list**

<b>Description</b>	<b>Part number</b>	<b>Table and page</b>
Arm, release A	RC2-2480-000CN	<a href="#">Internal components (1 of 3) on page 413</a>
Arm, release B	RC2-2481-000CN	<a href="#">Internal components (1 of 3) on page 413</a>
Bin assembly (MBM)	RM1-6672-000CN	<a href="#">Main body (MBM; 1 of 2) on page 471</a>
Bin flapper assembly (MBM)	RM1-4666-000CN	<a href="#">Main body (MBM; 1 of 2) on page 471</a>
Bushing	RC1-0214-000CN	<a href="#">Internal components (2 of 3) on page 415</a>
Bushing	RC3-1403-000CN	<a href="#">Internal components (2 of 3) on page 415</a>
Bushing, paper delivery	RC1-0136-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
Button, power	RC3-1430-000CN	<a href="#">Covers on page 411</a>
Cable, door switch	RM1-8344-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
Cable, drum motor	RM1-8308-000CN	<a href="#">Internal components (1 of 3) on page 413</a>
Cable, envelope feeder	RM1-5085-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
Cable, feed motor	RM1-8311-000CN	<a href="#">Internal components (2 of 3) on page 415</a>
Cable, feed sensor	RM1-8298-000CN	<a href="#">Internal components (2 of 3) on page 415</a>
Cable, flat flexible (FFC)	RK2-4077-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
Cable, full sensor	RM1-8927-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
Cable, fuser motor	RM1-5088-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
Cable, HIP (M602 and M603)	RK2-4152-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
Cable, laser	RM1-8340-000CN	<a href="#">Internal components (2 of 3) on page 415</a>
Cable, panel	RM1-8341-000CN	<a href="#">Internal components (3 of 3) on page 417</a>

**Table 4-46 Alphabetical parts list (continued)**

<b>Description</b>	<b>Part number</b>	<b>Table and page</b>
Cable, paper re-pickup motor (duplexer)	RM1-5141-000CN	<a href="#">Main body (duplexer) on page 457</a>
Cable, size sensor	RM1-5091-000CN	<a href="#">Internal components (1 of 3) on page 413</a>
Cable, USB	RK2-4149-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
Cap, power button	RC3-1431-000CN	<a href="#">Covers on page 411</a>
Cassette (1x500)	RM1-4559-020CN	<a href="#">Cassette (1x500) on page 441</a>
Cassette (Tray 2)	RM1-4559-020CN	<a href="#">Cassette (Tray 2) on page 421</a>
Center bin flapper assembly (MBM)	RM1-4667-000CN	<a href="#">Main body (MBM; 1 of 2) on page 471</a>
Connector 8P (MBM)	VS1-7500-008CN	<a href="#">Covers (MBM) on page 469</a>
Connector 8P (S and S/S)	VS1-7500-008CN	<a href="#">Covers (S and S/S) on page 477</a>
Connector, drawer 6 pin(1x1500)	VS1-7500-006CN	<a href="#">Main body (1x500; 1 of 2) on page 449</a>
Connector, drawer 6P	VS1-7514-006CN	<a href="#">High-voltage power supply on page 419</a>
Connector, drawer 6P (1x500)	VS1-7500-006CN	<a href="#">Main body (1x500) on page 439</a>
Connector, inlet	RM1-8348-000CN	<a href="#">High-voltage power supply on page 419</a>
Control-panel assembly (M601)	RM1-8290-000CN	<a href="#">Covers on page 411</a>
Control-panel assembly (M602 and M603)	RM1-8289-000CN	<a href="#">Covers on page 411</a>
Cover, duplexing assembly	RM1-8399-000CN	<a href="#">Covers on page 411</a>
Cover, envelope connector	RC2-2476-000CN	<a href="#">Covers on page 411</a>
Cover, envelope feeder	RL1-1667-000CN	<a href="#">Internal components (1 of 3) on page 413</a>
Cover, formatter	RC2-2468-000CN	<a href="#">Covers on page 411</a>
Cover, front assembly	RM1-8408-000CN	<a href="#">Covers on page 411</a>
Cover, HIP (M602 and M603)	RC3-1424-000CN	<a href="#">Covers on page 411</a>
Cover, left assembly	RM1-8401-000CN	<a href="#">Covers on page 411</a>
Cover, legal	RC2-5239-000CN	<a href="#">Covers on page 411</a>
Cover, legal (1x500)	RC2-5239-000CN	<a href="#">Covers (1x500) on page 437</a>
Cover, lock (1x1500)	RC2-2584-000CN	<a href="#">Covers (1x1500) on page 445</a>
Cover, lock (1x500)	RC2-2584-000CN	<a href="#">Covers (1x500) on page 437</a>

**Table 4-46 Alphabetical parts list (continued)**

<b>Description</b>	<b>Part number</b>	<b>Table and page</b>
Cover, option	RC2-2459-000CN	<a href="#">Covers on page 411</a>
Cover, right (M601)	RM1-8445-000CN	<a href="#">Covers on page 411</a>
Cover, right (M602 and M603)	RM1-8400-000CN	<a href="#">Covers on page 411</a>
Cover, right front	RC3-1426-000CN	<a href="#">Covers on page 411</a>
Cover, right rear	RC2-2478-000CN	<a href="#">Covers on page 411</a>
Cover, top assembly (M601)	RM1-8434-000CN	<a href="#">Covers on page 411</a>
Cover, top assembly (M602 and M603)	RM1-8394-000CN	<a href="#">Covers on page 411</a>
Cover, USB	RC3-1434-000CN	<a href="#">Covers on page 411</a>
Drive assembly (MBM)	RM1-5267-000CN	<a href="#">Main body (MBM; 2 of 2) on page 473</a>
Drum drive assembly	RM1-8489-000CN	<a href="#">Internal components (1 of 3) on page 413</a>
Face-up tray assembly	RM1-8388-060CN	<a href="#">Covers on page 411</a>
Fan (FN101)	RK2-1988-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
Fan (FN102)	RK2-1989-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
Fan (FN103)	RK2-3244-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
Fan (FN104)	RK2-1992-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
Fan (FN1501) (duplexer)	RK2-2016-000CN	<a href="#">Main body (duplexer) on page 457</a>
Flag, paper detect (1x1500)	RC2-2524-000CN	<a href="#">Paper pickup assembly (1x500) on page 453</a>
Flag, paper sensing (MBM)	RM1-5269-000CN	<a href="#">Main body (MBM; 1 of 2) on page 471</a>
Flag, paper sensing (S/S)	RM1-0239-000CN	<a href="#">Stapler/Stacker middle assembly (1 of 2; S/S) on page 483</a>
Flag, paper sensing assembly (S)	RM1-0239-000CN	<a href="#">Stacker middle assembly (1 of 2; S) on page 487</a>
Formatter	CE988-67906	<a href="#">PCAs (product base) on page 435</a>
Front door assembly (1x1500)	RM1-5255-020CN	<a href="#">Front door assembly (1x1500) on page 447</a>
Fuser assembly 110V	RM1-8395-000CN	<a href="#">Fuser assembly on page 433</a>
Fuser assembly 220V	RM1-8396-000CN	<a href="#">Fuser assembly on page 433</a>

**Table 4-46 Alphabetical parts list (continued)**

<b>Description</b>	<b>Part number</b>	<b>Table and page</b>
Gear, 18T	RU5-0088-000CN	<a href="#">Internal components (2 of 3) on page 415</a>
Gear, 23T	RU5-0040-000CN	<a href="#">Internal components (2 of 3) on page 415</a>
Guard, edge	RC1-0247-000CN	<a href="#">Internal components (1 of 3) on page 413</a>
Guide assembly, left	RM1-8439-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
Guide, front right assembly	RM1-8427-000CN	<a href="#">Internal components (2 of 3) on page 415</a>
Guide, right assembly	RM1-4558-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
High-voltage power supply 110V	RM1-8392-000CN	<a href="#">High-voltage power supply on page 419</a>
High-voltage power supply 220V	RM1-8393-000CN	<a href="#">High-voltage power supply on page 419</a>
Jog assembly (S/S)	RM1-4670-000CN	<a href="#">Main body (SS) on page 479</a>
Joint, left (S and S/S)	RL1-1703-000CN	<a href="#">Covers (S and S/S) on page 477</a>
Joint, right (S and S/S)	RL1-1704-000CN	<a href="#">Covers (S and S/S) on page 477</a>
Laser/scanner assembly	RM1-8406-000CN	<a href="#">Internal components (2 of 3) on page 415</a>
LED PCA (S)	RG1-4266-030CN	<a href="#">Stacker middle assembly (1 of 2; S) on page 487</a>
Lifter drive assembly	RM1-4585-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
Lifter drive assembly (1x1500)	RM1-8453-000CN	<a href="#">Main body (1x500; 1 of 2) on page 449</a>
Lifter drive assembly (1x500)	RM1-1094-050CN	<a href="#">Main body (1x500) on page 439</a>
Motor, drum assembly (M102)	RM1-8358-000CN	<a href="#">Internal components (1 of 3) on page 413</a>
Motor, fuser (M299)	RM1-5051-020CN	<a href="#">Internal components (3 of 3) on page 417</a>
Motor, paper feed assembly (M101)	RM1-8285-000CN	<a href="#">Internal components (2 of 3) on page 415</a>
Motor, stepping (M1700) (1x1500)	RH7-1603-020CN	<a href="#">Main body (1x500; 1 of 2) on page 449</a>
Motor, stepping, DC 24V (M1101) (S/S)	RK2-2027-000CN	<a href="#">Main body (SS) on page 479</a>

**Table 4-46 Alphabetical parts list (continued)**

<b>Description</b>	<b>Part number</b>	<b>Table and page</b>
Motor, stepping, DC 24V (M1103) (S)	RK2-2025-000CN	<a href="#">Main body (S) on page 481</a>
Motor, stepping, DC 24V (M1103) (S/S)	RK2-2025-000CN	<a href="#">Main body (SS) on page 479</a>
Motor, stepping, DC 24V (M1501) (duplexer)	RK2-2015-000CN	<a href="#">Main body (duplexer) on page 457</a>
Motor, stepping, DC 24V (M1502) (duplexer)	RK2-2139-000CN	<a href="#">Main body (duplexer) on page 457</a>
Motor, stepping, DC 24V (M1800) (envelope feeder)	RK2-2162-000CN	<a href="#">Main body (2 of 2; envelope feeder) on page 465</a>
Number dial assembly (1x500)	RM1-4591-000CN	<a href="#">Covers (1x500) on page 437</a>
Numbering assembly (1x1500)	RM1-5265-000CN	<a href="#">Main body (1x500; 1 of 2) on page 449</a>
Oil damper assembly (1x1500)	RM1-0289-030CN	<a href="#">Main body (1x500; 1 of 2) on page 449</a>
Paper delivery assembly	RM1-8414-000CN	<a href="#">Paper delivery assembly on page 431</a>
Paper delivery drive assembly	RM1-8410-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
Paper detect sensor assembly (1x1500)	RM1-8456-000CN	<a href="#">Paper pickup assembly (1x500) on page 453</a>
Paper feed assembly	RM1-4548-000CN	<a href="#">High-voltage power supply on page 419</a>
Paper feed roller assembly	RM1-0037-020CN	<a href="#">Internal components (2 of 3) on page 415</a>
Paper feed roller assembly	RM1-8411-000CN	<a href="#">Paper feed roller assembly on page 425</a>
Paper feed shaft assembly	RM1-8424-000CN	<a href="#">Internal components (2 of 3) on page 415</a>
Paper pickup drive assembly	RM1-8415-000CN	<a href="#">Internal components (2 of 3) on page 415</a>
Paper pickup drive assembly (1x1500)	RM1-8457-000CN	<a href="#">Main body (1x500; 1 of 2) on page 449</a>
Paper pickup roller assembly	RM1-0036-020CN	<a href="#">Internal components (2 of 3) on page 415</a>
Paper size detect assembly (1x1500)	RM1-5261-000CN	<a href="#">Main body (1x500; 2 of 2) on page 451</a>
PCA (duplexer)	RM1-8305-000CN	<a href="#">PCA (duplexer) on page 459</a>
PCA (envelope feeder)	RM1-9030-000CN	<a href="#">PCA (envelope feeder) on page 467</a>
PCA (MBM)	RM1-8350-000CN	<a href="#">PCA (MBM) on page 475</a>



**Table 4-46 Alphabetical parts list (continued)**

<b>Description</b>	<b>Part number</b>	<b>Table and page</b>
PCA (S)	RM1-8352-000CN	<a href="#">PCA (S and S/S) on page 491</a>
PCA (S/S)	RM1-8351-000CN	<a href="#">PCA (S and S/S) on page 491</a>
PCA, DC controller	RM1-8293-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
PCA, DC controller	RM1-8293-000CN	<a href="#">PCAs (product base) on page 435</a>
PCA, feeder (1x1500)	RM1-8303-000CN	<a href="#">PCA (1x1500) on page 455</a>
PCA, Feeder (1x500)	RM1-8302-000CN	<a href="#">Main body (1x500) on page 439</a>
PCA, feeder (1x500)	RM1-8302-000CN	<a href="#">PCA (1x500) on page 443</a>
PCA, inner connecting	RM1-8294-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
PCA, inner connecting	RM1-8294-000CN	<a href="#">PCAs (product base) on page 435</a>
PCA, switch assembly	RM1-8428-000CN	<a href="#">Internal components (1 of 3) on page 413</a>
Photo interrupter (duplexer)	WG8-5849-000CN	<a href="#">Main body (duplexer) on page 457</a>
Photo interrupter (envelope feeder)	WG8-5624-000CN	<a href="#">Main body (1 of 2; envelope feeder) on page 463</a>
Photo interrupter (S/S)	WG8-5645-000CN	<a href="#">Stapler/Stacker middle assembly (2 of 2; S/S) on page 485</a>
Photo interrupter, IC	WG8-5849-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
Pin, cassette (custom media)	RC2-6486-000CN	<a href="#">Cassette (custom media) on page 423</a>
Pin, stopper (custom media)	RC2-6487-000CN	<a href="#">Cassette (custom media) on page 423</a>
Plate, ground assembly	RM1-5461-000CN	<a href="#">Internal components (1 of 3) on page 413</a>
Plate, pickup drive side assembly (1x500)	RM1-8441-000CN	<a href="#">Main body (1x500) on page 439</a>
Power supply, high-voltage 110V	RM1-8392-000CN	<a href="#">PCAs (product base) on page 435</a>
Power supply, low-voltage 220V	RM1-8393-000CN	<a href="#">PCAs (product base) on page 435</a>
Registration assembly	RM1-8413-0000CN	<a href="#">Registration assembly on page 427</a>

**Table 4-46 Alphabetical parts list (continued)**

<b>Description</b>	<b>Part number</b>	<b>Table and page</b>
Remnant indication assembly (1x1500)	RM1-5259-000CN	<a href="#">Main body (1x500; 2 of 2) on page 451</a>
Ring, E	XD9-0232-000CN	<a href="#">Internal components (2 of 3) on page 415</a>
Ring, E	XD9-0233-010CN	<a href="#">Internal components (2 of 3) on page 415</a>
Rod, release lower	RC2-2483-000CN	<a href="#">Internal components (1 of 3) on page 413</a>
Rod, release, upper	RC2-2482-000CN	<a href="#">Internal components (1 of 3) on page 413</a>
Roller feed, Tray 1 (MP)	RL1-1663-000CN	<a href="#">Tray 1 (MP) pickup assembly on page 429</a>
Roller pickup, Tray 1 (MP)	RL1-1641-000CN	<a href="#">Tray 1 (MP) pickup assembly on page 429</a>
Roller separation, Tray 1 (MP)	RL1-1654-020CN	<a href="#">Tray 1 (MP) pickup assembly on page 429</a>
Roller, paper feed (envelope feeder)	RC2-5701-000CN	<a href="#">Main body (1 of 2; envelope feeder) on page 463</a>
Roller, paper feed assembly (1x1500)	RM1-0037-020CN	<a href="#">Front door assembly (1x1500) on page 447</a>
Roller, paper feed assembly (1x1500)	RM1-0037-020CN	<a href="#">Paper pickup assembly (1x500) on page 453</a>
Roller, paper feed assembly (1x500)	RM1-0037-020CN	<a href="#">Main body (1x500) on page 439</a>
Roller, paper feed assembly (1x500)	RM1-0037-020CN	<a href="#">Cassette (1x500) on page 441</a>
Roller, paper feed assembly (custom media)	RM1-4560-000CN	<a href="#">Cassette (custom media) on page 423</a>
Roller, paper feed assembly (envelope feeder)	RM1-5223-000CN	<a href="#">Main body (1 of 2; envelope feeder) on page 463</a>
Roller, paper feed assembly (S)	RM1-0253-020CN	<a href="#">Stacker middle assembly (2 of 2; S) on page 489</a>
Roller, paper feed assembly (S/S)	RM1-0253-020CN	<a href="#">Stapler/Stacker middle assembly (2 of 2; S/S) on page 485</a>
Roller, paper feed assembly (Tray 2)	RM1-0037-020CN	<a href="#">Cassette (Tray 2) on page 421</a>
Roller, paper pickup (envelope feeder)	RC2-5700-000CN	<a href="#">Main body (1 of 2; envelope feeder) on page 463</a>
Roller, paper pickup assembly (1x1500)	RM1-0036-020CN	<a href="#">Paper pickup assembly (1x500) on page 453</a>

**Table 4-46 Alphabetical parts list (continued)**

<b>Description</b>	<b>Part number</b>	<b>Table and page</b>
Roller, paper pickup assembly (1x500)	RM1-0036-020CN	<a href="#">Main body (1x500) on page 439</a>
Roller, paper pickup assembly (envelope feeder)	RM1-5221-000CN	<a href="#">Main body (1 of 2; envelope feeder) on page 463</a>
Roller, separation assembly (envelope feeder)	RM1-5224-000CN	<a href="#">Main body (1 of 2; envelope feeder) on page 463</a>
Screw, D, M3x8	XA9-1671-000CN	<a href="#">Internal components (1 of 3) on page 413</a>
Screw, M4x5	RC2-2633-000CN	<a href="#">Internal components (1 of 3) on page 413</a>
Screw, tap, binding head, M3x8	XB4-7300-809CN	<a href="#">Internal components (2 of 3) on page 415</a>
Screw, tap, M3x6	XA9-1503-000CN	<a href="#">Internal components (1 of 3) on page 413</a>
Screw, tapping pan head M4X10	XB4-7401-607CN	<a href="#">Internal components (1 of 3) on page 413</a>
Sensor assembly (MBM)	RM1-5096-000CN	<a href="#">Main body (MBM; 2 of 2) on page 473</a>
Sensor, paper full assembly (S/S)	RM1-1166-000CN	<a href="#">Main body (SS) on page 479</a>
Sensor, temperature assembly	RM1-8438-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
Shaft retard drive	RL1-3020-000CN	<a href="#">Internal components (2 of 3) on page 415</a>
Size detect assembly	RM1-4525-000CN	<a href="#">Internal components (1 of 3) on page 413</a>
Size detect assembly (1x500)	RM1-4525-000CN	<a href="#">Main body (1x500) on page 439</a>
Solenoid	RK2-4078-000CN	<a href="#">Internal components (2 of 3) on page 415</a>
Solenoid (1x500)	RK2-0270-000CN	<a href="#">Main body (1x500) on page 439</a>
Solenoid (MBM)	RL1-1709-000CN	<a href="#">Main body (MBM; 1 of 2) on page 471</a>
Solenoid (S/S)	RL1-0506-000CN	<a href="#">Main body (SS) on page 479</a>
Solenoid assembly, IN (MBM)	RM1-5270-000CN	<a href="#">Covers (MBM) on page 469</a>
Solenoid assembly, IN (S and S/S)	RM1-5270-000CN	<a href="#">Covers (S and S/S) on page 477</a>
Spacer, frame	RC2-2725-000CN	<a href="#">Internal components (1 of 3) on page 413</a>

**Table 4-46 Alphabetical parts list (continued)**

<b>Description</b>	<b>Part number</b>	<b>Table and page</b>
Spring, compression	RC1-0213-000CN	<a href="#">Internal components (2 of 3) on page 415</a>
Spring, grounding	RU6-2105-000CN	<a href="#">Paper delivery assembly on page 431</a>
Spring, tension	RC1-0133-000CN	<a href="#">Paper delivery assembly on page 431</a>
Spring, torsion	RC3-1470-000CN	<a href="#">Internal components (1 of 3) on page 413</a>
Stapler assembly (S/S)	RM1-4826-000CN	<a href="#">Main body (SS) on page 479</a>
Stapler mount assembly (S)	RM1-4676-000CN	<a href="#">Main body (S) on page 481</a>
Switch, interlock assembly	RM1-8307-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
Switch, push	WC2-5637-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
Tag holder assembly	RM1-4539-000CN	<a href="#">Internal components (2 of 3) on page 415</a>
Top bin flapper assembly (MBM)	RM1-4665-000CN	<a href="#">Main body (MBM; 1 of 2) on page 471</a>
Torque limiter (1x1500)	RC2-5771-000CN	<a href="#">Front door assembly (1x1500) on page 447</a>
Torque limiter (1x500)	RC2-5771-000CN	<a href="#">Cassette (1x500) on page 441</a>
Torque limiter (custom media)	RM1-0037-000CN	<a href="#">Cassette (custom media) on page 423</a>
Torque limiter (Tray 2)	RC2-5771-000CN	<a href="#">Cassette (Tray 2) on page 421</a>
Transfer roller	RM1-8491-000CN	<a href="#">Internal components (1 of 3) on page 413</a>
Tray 1 (MP) pickup assembly	RM1-8425-000CN	<a href="#">Tray 1 (MP) pickup assembly on page 429</a>
Tray assembly (S and S/S)	RM1-4671-000CN	<a href="#">Covers (S and S/S) on page 477</a>
Tray, extension (envelope feeder)	RC2-5705-000CN	<a href="#">Covers (envelope feeder) on page 461</a>
USB PCA	RM1-8429-000CN	<a href="#">Internal components (3 of 3) on page 417</a>
Weight assembly (envelope feeder)	RM1-5226-000CN	<a href="#">Covers (envelope feeder) on page 461</a>

# Numerical parts list

**Table 4-47 Numerical parts list**

<b>Part number</b>	<b>Description</b>	<b>Table and page</b>
CE988-67906	Formatter	<a href="#">PCAs (product base) on page 435</a>
RC1-0133-000CN	Spring, tension	<a href="#">Paper delivery assembly on page 431</a>
RC1-0136-000CN	Bushing, paper delivery	<a href="#">Internal components (3 of 3) on page 417</a>
RC1-0213-000CN	Spring, compression	<a href="#">Internal components (2 of 3) on page 415</a>
RC1-0214-000CN	Bushing	<a href="#">Internal components (2 of 3) on page 415</a>
RC1-0247-000CN	Guard, edge	<a href="#">Internal components (1 of 3) on page 413</a>
RC2-2459-000CN	Cover, option	<a href="#">Covers on page 411</a>
RC2-2468-000CN	Cover, formatter	<a href="#">Covers on page 411</a>
RC2-2476-000CN	Cover, envelope connector	<a href="#">Covers on page 411</a>
RC2-2478-000CN	Cover, right rear	<a href="#">Covers on page 411</a>
RC2-2480-000CN	Arm, release A	<a href="#">Internal components (1 of 3) on page 413</a>
RC2-2481-000CN	Arm, release B	<a href="#">Internal components (1 of 3) on page 413</a>
RC2-2482-000CN	Rod, release, upper	<a href="#">Internal components (1 of 3) on page 413</a>
RC2-2483-000CN	Rod, release lower	<a href="#">Internal components (1 of 3) on page 413</a>
RC2-2524-000CN	Flag, paper detect (1x1500)	<a href="#">Paper pickup assembly (1x500) on page 453</a>
RC2-2584-000CN	Cover, lock (1x500)	<a href="#">Covers (1x500) on page 437</a>
RC2-2584-000CN	Cover, lock (1x1500)	<a href="#">Covers (1x1500) on page 445</a>
RC2-2633-000CN	Screw, M4x5	<a href="#">Internal components (1 of 3) on page 413</a>
RC2-2725-000CN	Spacer, frame	<a href="#">Internal components (1 of 3) on page 413</a>
RC2-5239-000CN	Cover, legal	<a href="#">Covers on page 411</a>
RC2-5239-000CN	Cover, legal (1x500)	<a href="#">Covers (1x500) on page 437</a>
RC2-5700-000CN	Roller, paper pickup (envelope feeder)	<a href="#">Main body (1 of 2; envelope feeder) on page 463</a>

**Table 4-47 Numerical parts list (continued)**

<b>Part number</b>	<b>Description</b>	<b>Table and page</b>
RC2-5701-000CN	Roller, paper feed (envelope feeder)	<a href="#">Main body (1 of 2; envelope feeder) on page 463</a>
RC2-5705-000CN	Tray, extension (envelope feeder)	<a href="#">Covers (envelope feeder) on page 461</a>
RC2-5771-000CN	Torque limiter (Tray 2)	<a href="#">Cassette (Tray 2) on page 421</a>
RC2-5771-000CN	Torque limiter (1x500)	<a href="#">Cassette (1x500) on page 441</a>
RC2-5771-000CN	Torque limiter (1x1500)	<a href="#">Front door assembly (1x1500) on page 447</a>
RC2-6486-000CN	Pin, cassette (custom media)	<a href="#">Cassette (custom media) on page 423</a>
RC2-6487-000CN	Pin, stopper (custom media)	<a href="#">Cassette (custom media) on page 423</a>
RC3-1403-000CN	Bushing	<a href="#">Internal components (2 of 3) on page 415</a>
RC3-1424-000CN	Cover, HIP (M602 and M603)	<a href="#">Covers on page 411</a>
RC3-1426-000CN	Cover, right front	<a href="#">Covers on page 411</a>
RC3-1430-000CN	Button, power	<a href="#">Covers on page 411</a>
RC3-1431-000CN	Cap, power button	<a href="#">Covers on page 411</a>
RC3-1434-000CN	Cover, USB	<a href="#">Covers on page 411</a>
RC3-1470-000CN	Spring, torsion	<a href="#">Internal components (1 of 3) on page 413</a>
RG1-4266-030CN	LED PCA (S)	<a href="#">Stacker middle assembly (1 of 2; S) on page 487</a>
RH7-1603-020CN	Motor, stepping (M1700) (1x1500)	<a href="#">Main body (1x500; 1 of 2) on page 449</a>
RK2-0270-000CN	Solenoid (1x500)	<a href="#">Main body (1x500) on page 439</a>
RK2-1988-000CN	Fan (FN101)	<a href="#">Internal components (3 of 3) on page 417</a>
RK2-1989-000CN	Fan (FN102)	<a href="#">Internal components (3 of 3) on page 417</a>
RK2-1992-000CN	Fan (FN104)	<a href="#">Internal components (3 of 3) on page 417</a>
RK2-2015-000CN	Motor, stepping, DC 24V (M1501) (duplexer)	<a href="#">Main body (duplexer) on page 457</a>
RK2-2016-000CN	Fan (FN1501) (duplexer)	<a href="#">Main body (duplexer) on page 457</a>
RK2-2025-000CN	Motor, stepping, DC 24V (M1103) (S/S)	<a href="#">Main body (SS) on page 479</a>

**Table 4-47 Numerical parts list (continued)**

<b>Part number</b>	<b>Description</b>	<b>Table and page</b>
RK2-2025-000CN	Motor, stepping, DC 24V (M1103) (S)	<a href="#">Main body (S) on page 481</a>
RK2-2027-000CN	Motor, stepping, DC 24V (M1101) (S/S)	<a href="#">Main body (SS) on page 479</a>
RK2-2139-000CN	Motor, stepping, DC 24V (M1502) (duplexer)	<a href="#">Main body (duplexer) on page 457</a>
RK2-2162-000CN	Motor, stepping, DC 24V (M1800) (envelope feeder)	<a href="#">Main body (2 of 2; envelope feeder) on page 465</a>
RK2-3244-000CN	Fan (FN103)	<a href="#">Internal components (3 of 3) on page 417</a>
RK2-4077-000CN	Cable, flat flexible (FFC)	<a href="#">Internal components (3 of 3) on page 417</a>
RK2-4078-000CN	Solenoid	<a href="#">Internal components (2 of 3) on page 415</a>
RK2-4149-000CN	Cable, USB	<a href="#">Internal components (3 of 3) on page 417</a>
RK2-4152-000CN	Cable, HIP (M602 and M603)	<a href="#">Internal components (3 of 3) on page 417</a>
RL1-0506-000CN	Solenoid (S/S)	<a href="#">Main body (SS) on page 479</a>
RL1-1641-000CN	Roller pickup, Tray 1 (MP)	<a href="#">Tray 1 (MP) pickup assembly on page 429</a>
RL1-1654-020CN	Roller separation, Tray 1 (MP)	<a href="#">Tray 1 (MP) pickup assembly on page 429</a>
RL1-1663-000CN	Roller feed, Tray 1 (MP)	<a href="#">Tray 1 (MP) pickup assembly on page 429</a>
RL1-1667-000CN	Cover, envelope feeder	<a href="#">Internal components (1 of 3) on page 413</a>
RL1-1703-000CN	Joint, left (S and S/S)	<a href="#">Covers (S and S/S) on page 477</a>
RL1-1704-000CN	Joint, right (S and S/S)	<a href="#">Covers (S and S/S) on page 477</a>
RL1-1709-000CN	Solenoid (MBM)	<a href="#">Main body (MBM; 1 of 2) on page 471</a>
RL1-3020-000CN	Shaft retard drive	<a href="#">Internal components (2 of 3) on page 415</a>
RM1-0036-020CN	Paper pickup roller assembly	<a href="#">Internal components (2 of 3) on page 415</a>
RM1-0036-020CN	Roller, paper pickup assembly (1x500)	<a href="#">Main body (1x500) on page 439</a>
RM1-0036-020CN	Roller, paper pickup assembly (1x1500)	<a href="#">Paper pickup assembly (1x500) on page 453</a>

**Table 4-47 Numerical parts list (continued)**

<b>Part number</b>	<b>Description</b>	<b>Table and page</b>
RM1-0037-000CN	Torque limiter (custom media)	<a href="#">Cassette (custom media) on page 423</a>
RM1-0037-020CN	Paper feed roller assembly	<a href="#">Internal components (2 of 3) on page 415</a>
RM1-0037-020CN	Roller, paper feed assembly (Tray 2)	<a href="#">Cassette (Tray 2) on page 421</a>
RM1-0037-020CN	Roller, paper feed assembly (1x500)	<a href="#">Main body (1x500) on page 439</a>
RM1-0037-020CN	Roller, paper feed assembly (1x500)	<a href="#">Cassette (1x500) on page 441</a>
RM1-0037-020CN	Roller, paper feed assembly (1x1500)	<a href="#">Front door assembly (1x1500) on page 447</a>
RM1-0037-020CN	Roller, paper feed assembly (1x1500)	<a href="#">Paper pickup assembly (1x500) on page 453</a>
RM1-0239-000CN	Flag, paper sensing (S/S)	<a href="#">Stapler/Stacker middle assembly (1 of 2; S/S) on page 483</a>
RM1-0239-000CN	Flag, paper sensing assembly (S)	<a href="#">Stacker middle assembly (1 of 2; S) on page 487</a>
RM1-0253-020CN	Roller, paper feed assembly (S/S)	<a href="#">Stapler/Stacker middle assembly (2 of 2; S/S) on page 485</a>
RM1-0253-020CN	Roller, paper feed assembly (S)	<a href="#">Stacker middle assembly (2 of 2; S) on page 489</a>
RM1-0289-030CN	Oil damper assembly (1x1500)	<a href="#">Main body (1x500; 1 of 2) on page 449</a>
RM1-1094-050CN	Lifter drive assembly (1x500)	<a href="#">Main body (1x500) on page 439</a>
RM1-1166-000CN	Sensor, paper full assembly (S/S)	<a href="#">Main body (SS) on page 479</a>
RM1-4525-000CN	Size detect assembly	<a href="#">Internal components (1 of 3) on page 413</a>
RM1-4525-000CN	Size detect assembly (1x500)	<a href="#">Main body (1x500) on page 439</a>
RM1-4539-000CN	Tag holder assembly	<a href="#">Internal components (2 of 3) on page 415</a>
RM1-4548-000CN	Paper feed assembly	<a href="#">High-voltage power supply on page 419</a>
RM1-4558-000CN	Guide, right assembly	<a href="#">Internal components (3 of 3) on page 417</a>
RM1-4559-020CN	Cassette (Tray 2)	<a href="#">Cassette (Tray 2) on page 421</a>
RM1-4559-020CN	Cassette (1x500)	<a href="#">Cassette (1x500) on page 441</a>



**Table 4-47 Numerical parts list (continued)**

<b>Part number</b>	<b>Description</b>	<b>Table and page</b>
RM1-4560-000CN	Roller, paper feed assembly (custom media)	<a href="#">Cassette (custom media) on page 423</a>
RM1-4585-000CN	Lifter drive assembly	<a href="#">Internal components (3 of 3) on page 417</a>
RM1-4591-000CN	Number dial assembly (1x500)	<a href="#">Covers (1x500) on page 437</a>
RM1-4665-000CN	Top bin flapper assembly (MBM)	<a href="#">Main body (MBM; 1 of 2) on page 471</a>
RM1-4666-000CN	Bin flapper assembly (MBM)	<a href="#">Main body (MBM; 1 of 2) on page 471</a>
RM1-4667-000CN	Center bin flapper assembly (MBM)	<a href="#">Main body (MBM; 1 of 2) on page 471</a>
RM1-4670-000CN	Jog assembly (S/S)	<a href="#">Main body (SS) on page 479</a>
RM1-4671-000CN	Tray assembly (S and S/S)	<a href="#">Covers (S and S/S) on page 477</a>
RM1-4676-000CN	Stapler mount assembly (S)	<a href="#">Main body (S) on page 481</a>
RM1-4826-000CN	Stapler assembly (S/S)	<a href="#">Main body (SS) on page 479</a>
RM1-5051-020CN	Motor, fuser (M299)	<a href="#">Internal components (3 of 3) on page 417</a>
RM1-5085-000CN	Cable, envelope feeder	<a href="#">Internal components (3 of 3) on page 417</a>
RM1-5088-000CN	Cable, fuser motor	<a href="#">Internal components (3 of 3) on page 417</a>
RM1-5091-000CN	Cable, size sensor	<a href="#">Internal components (1 of 3) on page 413</a>
RM1-5096-000CN	Sensor assembly (MBM)	<a href="#">Main body (MBM; 2 of 2) on page 473</a>
RM1-5141-000CN	Cable, paper re-pickup motor (duplexer)	<a href="#">Main body (duplexer) on page 457</a>
RM1-5221-000CN	Roller, paper pickup assembly (envelope feeder)	<a href="#">Main body (1 of 2; envelope feeder) on page 463</a>
RM1-5223-000CN	Roller, paper feed assembly (envelope feeder)	<a href="#">Main body (1 of 2; envelope feeder) on page 463</a>
RM1-5224-000CN	Roller, separation assembly (envelope feeder)	<a href="#">Main body (1 of 2; envelope feeder) on page 463</a>
RM1-5226-000CN	Weight assembly (envelope feeder)	<a href="#">Covers (envelope feeder) on page 461</a>
RM1-5255-020CN	Front door assembly (1x1500)	<a href="#">Front door assembly (1x1500) on page 447</a>

**Table 4-47 Numerical parts list (continued)**

<b>Part number</b>	<b>Description</b>	<b>Table and page</b>
RM1-5259-000CN	Remnant indication assembly (1x1500)	<a href="#">Main body (1x500; 2 of 2) on page 451</a>
RM1-5261-000CN	Paper size detect assembly (1x1500)	<a href="#">Main body (1x500; 2 of 2) on page 451</a>
RM1-5265-000CN	Numbering assembly (1x1500)	<a href="#">Main body (1x500; 1 of 2) on page 449</a>
RM1-5267-000CN	Drive assembly (MBM)	<a href="#">Main body (MBM; 2 of 2) on page 473</a>
RM1-5269-000CN	Flag, paper sensing (MBM)	<a href="#">Main body (MBM; 1 of 2) on page 471</a>
RM1-5270-000CN	Solenoid assembly, IN (MBM)	<a href="#">Covers (MBM) on page 469</a>
RM1-5270-000CN	Solenoid assembly, IN (S and S/S)	<a href="#">Covers (S and S/S) on page 477</a>
RM1-5461-000CN	Plate, ground assembly	<a href="#">Internal components (1 of 3) on page 413</a>
RM1-6672-000CN	Bin assembly (MBM)	<a href="#">Main body (MBM; 1 of 2) on page 471</a>
RM1-8285-000CN	Motor, paper feed assembly (M101)	<a href="#">Internal components (2 of 3) on page 415</a>
RM1-8289-000CN	Control-panel assembly (M602 and M603)	<a href="#">Covers on page 411</a>
RM1-8290-000CN	Control-panel assembly (M601)	<a href="#">Covers on page 411</a>
RM1-8293-000CN	PCA, DC controller	<a href="#">Internal components (3 of 3) on page 417</a>
RM1-8293-000CN	PCA, DC controller	<a href="#">PCAs (product base) on page 435</a>
RM1-8294-000CN	PCA, inner connecting	<a href="#">Internal components (3 of 3) on page 417</a>
RM1-8294-000CN	PCA, inner connecting	<a href="#">PCAs (product base) on page 435</a>
RM1-8298-000CN	Cable, feed sensor	<a href="#">Internal components (2 of 3) on page 415</a>
RM1-8302-000CN	PCA, Feeder (1x500)	<a href="#">Main body (1x500) on page 439</a>
RM1-8302-000CN	PCA, feeder (1x500)	<a href="#">PCA (1x500) on page 443</a>
RM1-8303-000CN	PCA, feeder (1x1500)	<a href="#">PCA (1x1500) on page 455</a>
RM1-8305-000CN	PCA (duplexer)	<a href="#">PCA (duplexer) on page 459</a>
RM1-8307-000CN	Switch, interlock assembly	<a href="#">Internal components (3 of 3) on page 417</a>

**Table 4-47 Numerical parts list (continued)**

<b>Part number</b>	<b>Description</b>	<b>Table and page</b>
RM1-8308-000CN	Cable, drum motor	<a href="#">Internal components (1 of 3) on page 413</a>
RM1-8311-000CN	Cable, feed motor	<a href="#">Internal components (2 of 3) on page 415</a>
RM1-8340-000CN	Cable, laser	<a href="#">Internal components (2 of 3) on page 415</a>
RM1-8341-000CN	Cable, panel	<a href="#">Internal components (3 of 3) on page 417</a>
RM1-8344-000CN	Cable, door switch	<a href="#">Internal components (3 of 3) on page 417</a>
RM1-8348-000CN	Connector, inlet	<a href="#">High-voltage power supply on page 419</a>
RM1-8350-000CN	PCA (MBM)	<a href="#">PCA (MBM) on page 475</a>
RM1-8351-000CN	PCA (S/S)	<a href="#">PCA (S and S/S) on page 491</a>
RM1-8352-000CN	PCA (S)	<a href="#">PCA (S and S/S) on page 491</a>
RM1-8358-000CN	Motor, drum assembly (M102)	<a href="#">Internal components (1 of 3) on page 413</a>
RM1-8388-060CN	Face-up tray assembly	<a href="#">Covers on page 411</a>
RM1-8392-000CN	High-voltage power supply 110V	<a href="#">High-voltage power supply on page 419</a>
RM1-8392-000CN	Power supply, high-voltage 110V	<a href="#">PCAs (product base) on page 435</a>
RM1-8393-000CN	High-voltage power supply 220V	<a href="#">High-voltage power supply on page 419</a>
RM1-8393-000CN	Power supply, low-voltage 220V	<a href="#">PCAs (product base) on page 435</a>
RM1-8394-000CN	Cover, top assembly (M602 and M603)	<a href="#">Covers on page 411</a>
RM1-8395-000CN	Fuser assembly 110V	<a href="#">Fuser assembly on page 433</a>
RM1-8396-000CN	Fuser assembly 220V	<a href="#">Fuser assembly on page 433</a>
RM1-8399-000CN	Cover, duplexing assembly	<a href="#">Covers on page 411</a>
RM1-8400-000CN	Cover, right (M602 and M603)	<a href="#">Covers on page 411</a>
RM1-8401-000CN	Cover, left assembly	<a href="#">Covers on page 411</a>
RM1-8406-000CN	Laser/scanner assembly	<a href="#">Internal components (2 of 3) on page 415</a>
RM1-8408-000CN	Cover, front assembly	<a href="#">Covers on page 411</a>
RM1-8410-000CN	Paper delivery drive assembly	<a href="#">Internal components (3 of 3) on page 417</a>

**Table 4-47 Numerical parts list (continued)**

<b>Part number</b>	<b>Description</b>	<b>Table and page</b>
RM1-8411-000CN	Paper feed roller assembly	<a href="#">Paper feed roller assembly on page 425</a>
RM1-8413-0000CN	Registration assembly	<a href="#">Registration assembly on page 427</a>
RM1-8414-000CN	Paper delivery assembly	<a href="#">Paper delivery assembly on page 431</a>
RM1-8415-000CN	Paper pickup drive assembly	<a href="#">Internal components (2 of 3) on page 415</a>
RM1-8424-000CN	Paper feed shaft assembly	<a href="#">Internal components (2 of 3) on page 415</a>
RM1-8425-000CN	Tray 1 (MP) pickup assembly	<a href="#">Tray 1 (MP) pickup assembly on page 429</a>
RM1-8427-000CN	Guide, front right assembly	<a href="#">Internal components (2 of 3) on page 415</a>
RM1-8428-000CN	PCA, switch assembly	<a href="#">Internal components (1 of 3) on page 413</a>
RM1-8429-000CN	USB PCA	<a href="#">Internal components (3 of 3) on page 417</a>
RM1-8434-000CN	Cover, top assembly (M601)	<a href="#">Covers on page 411</a>
RM1-8438-000CN	Sensor, temperature assembly	<a href="#">Internal components (3 of 3) on page 417</a>
RM1-8439-000CN	Guide assembly, left	<a href="#">Internal components (3 of 3) on page 417</a>
RM1-8441-000CN	Plate, pickup drive side assembly (1x500)	<a href="#">Main body (1x500) on page 439</a>
RM1-8445-000CN	Cover, right (M601)	<a href="#">Covers on page 411</a>
RM1-8453-000CN	Lifter drive assembly (1x1500)	<a href="#">Main body (1x500; 1 of 2) on page 449</a>
RM1-8456-000CN	Paper detect sensor assembly (1x1500)	<a href="#">Paper pickup assembly (1x500) on page 453</a>
RM1-8457-000CN	Paper pickup drive assembly (1x1500)	<a href="#">Main body (1x500; 1 of 2) on page 449</a>
RM1-8489-000CN	Drum drive assembly	<a href="#">Internal components (1 of 3) on page 413</a>
RM1-8491-000CN	Transfer roller	<a href="#">Internal components (1 of 3) on page 413</a>
RM1-8927-000CN	Cable, full sensor	<a href="#">Internal components (3 of 3) on page 417</a>
RM1-9030-000CN	PCA (envelope feeder)	<a href="#">PCA (envelope feeder) on page 467</a>

**Table 4-47 Numerical parts list (continued)**

<b>Part number</b>	<b>Description</b>	<b>Table and page</b>
RU5-0040-000CN	Gear, 23T	<a href="#">Internal components (2 of 3) on page 415</a>
RU5-0088-000CN	Gear, 18T	<a href="#">Internal components (2 of 3) on page 415</a>
RU6-2105-000CN	Spring, grounding	<a href="#">Paper delivery assembly on page 431</a>
VS1-7500-006CN	Connector, drawer 6P (1x500)	<a href="#">Main body (1x500) on page 439</a>
VS1-7500-006CN	Connector, drawer 6 pin(1x1500)	<a href="#">Main body (1x500; 1 of 2) on page 449</a>
VS1-7500-008CN	Connector 8P (MBM)	<a href="#">Covers (MBM) on page 469</a>
VS1-7500-008CN	Connector 8P (S and S/S)	<a href="#">Covers (S and S/S) on page 477</a>
VS1-7514-006CN	Connector, drawer 6P	<a href="#">High-voltage power supply on page 419</a>
WC2-5637-000CN	Switch, push	<a href="#">Internal components (3 of 3) on page 417</a>
WG8-5624-000CN	Photo interrupter (envelope feeder)	<a href="#">Main body (1 of 2; envelope feeder) on page 463</a>
WG8-5645-000CN	Photo interrupter (S/S)	<a href="#">Stapler/Stacker middle assembly (2 of 2; S/S) on page 485</a>
WG8-5849-000CN	Photo interrupter, IC	<a href="#">Internal components (3 of 3) on page 417</a>
WG8-5849-000CN	Photo interrupter (duplexer)	<a href="#">Main body (duplexer) on page 457</a>
XA9-1503-000CN	Screw, tap, M3x6	<a href="#">Internal components (1 of 3) on page 413</a>
XA9-1671-000CN	Screw, D, M3x8	<a href="#">Internal components (1 of 3) on page 413</a>
XB4-7300-809CN	Screw, tap, binding head, M3x8	<a href="#">Internal components (2 of 3) on page 415</a>
XB4-7401-607CN	Screw, tapping pan head M4X10	<a href="#">Internal components (1 of 3) on page 413</a>
XD9-0232-000CN	Ring, E	<a href="#">Internal components (2 of 3) on page 415</a>
XD9-0233-010CN	Ring, E	<a href="#">Internal components (2 of 3) on page 415</a>



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# A Service and support

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- [End User License Agreement](#)
- [Customer self-repair warranty service](#)
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# Hewlett-Packard limited warranty statement

HP PRODUCT	DURATION OF LIMITED WARRANTY
HP LaserJet 600 M601n, M601dn, M602n, M602dn, M602x, M603n, M603dn, M603xh	One-year return-to-bench repair warranty

HP warrants to you, the end-user customer, that HP hardware and accessories will be free from defects in materials and workmanship after the date of purchase, for the period specified above. If HP receives notice of such defects during the warranty period, HP will, at its option, either repair or replace products which prove to be defective. Replacement products may be either new or equivalent in performance to new.

HP warrants to you that HP software will not fail to execute its programming instructions after the date of purchase, for the period specified above, due to defects in material and workmanship when properly installed and used. If HP receives notice of such defects during the warranty period, HP will replace software which does not execute its programming instructions due to such defects.

HP does not warrant that the operation of HP products will be uninterrupted or error free. If HP is unable, within a reasonable time, to repair or replace any product to a condition as warranted, you will be entitled to a refund of the purchase price upon prompt return of the product.

HP products may contain remanufactured parts equivalent to new in performance or may have been subject to incidental use.

Warranty does not apply to defects resulting from (a) improper or inadequate maintenance or calibration, (b) software, interfacing, parts or supplies not supplied by HP, (c) unauthorized modification or misuse, (d) operation outside of the published environmental specifications for the product, or (e) improper site preparation or maintenance.

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THE WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT OR MODIFY AND ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.

# HP's Premium Protection Warranty: LaserJet print cartridge limited warranty statement

This HP product is warranted to be free from defects in materials and workmanship.

This warranty does not apply to products that (a) have been refilled, refurbished, remanufactured or tampered with in any way, (b) experience problems resulting from misuse, improper storage, or operation outside of the published environmental specifications for the printer product or (c) exhibit wear from ordinary use.

To obtain warranty service, please return the product to place of purchase (with a written description of the problem and print samples) or contact HP customer support. At HP's option, HP will either replace products that prove to be defective or refund your purchase price.

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## Data stored on the print cartridge

The HP print cartridges used with this product contain a memory chip that assists in the operation of the product.

In addition, this memory chip collects a limited set of information about the usage of the product, which might include the following: the date when the print cartridge was first installed, the date when the print cartridge was last used, the number of pages printed using the print cartridge, the page coverage, the printing modes used, any printing errors that might have occurred, and the product model. This information helps HP design future products to meet our customers' printing needs.

The data collected from the print cartridge memory chip does not contain information that can be used to identify a customer or user of the print cartridge or their product.

HP collects a sampling of the memory chips from print cartridges returned to HP's free return and recycling program (HP Planet Partners: [www.hp.com/recycle](http://www.hp.com/recycle)). The memory chips from this sampling are read and studied in order to improve future HP products. HP partners who assist in recycling this print cartridge might have access to this data, as well.

Any third party possessing the print cartridge might have access to the anonymous information on the memory chip. If you prefer to not allow access to this information, you can render the chip inoperable. However, after you render the memory chip inoperable, the memory chip cannot be used in an HP product.

# End User License Agreement

PLEASE READ CAREFULLY BEFORE USING THIS SOFTWARE PRODUCT: This End-User License Agreement (“EULA”) is a contract between (a) you (either an individual or the entity you represent) and (b) Hewlett-Packard Company (“HP”) that governs your use of the software product (“Software”). This EULA does not apply if there is a separate license agreement between you and HP or its suppliers for the Software, including a license agreement in online documentation. The term “Software” may include (i) associated media, (ii) a user guide and other printed materials, and (iii) “online” or electronic documentation (collectively “User Documentation”).

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  - a.** Third Party Transfer. The initial end user of the HP Software may make a one-time transfer of the HP Software to another end user. Any transfer will include all component parts, media, User Documentation, this EULA, and if applicable, the Certificate of Authenticity. The transfer may not be an indirect transfer, such as a consignment. Prior to the transfer, the end user receiving the transferred Software will agree to this EULA. Upon transfer of the HP Software, your license is automatically terminated.
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- 11. RESERVATION OF RIGHTS.** HP and its suppliers reserve all rights not expressly granted to you in this EULA.

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Rev. 04/09

## Customer self-repair warranty service

HP products are designed with many Customer Self Repair (CSR) parts to minimize repair time and allow for greater flexibility in performing defective parts replacement. If during the diagnosis period, HP identifies that the repair can be accomplished by the use of a CSR part, HP will ship that part directly to you for replacement. There are two categories of CSR parts: 1) Parts for which customer self repair is mandatory. If you request HP to replace these parts, you will be charged for the travel and labor costs of this service. 2) Parts for which customer self repair is optional. These parts are also designed for Customer Self Repair. If, however, you require that HP replace them for you, this may be done at no additional charge under the type of warranty service designated for your product.

Based on availability and where geography permits, CSR parts will be shipped for next business day delivery. Same-day or four-hour delivery may be offered at an additional charge where geography permits. If assistance is required, you can call the HP Technical Support Center and a technician will help you over the phone. HP specifies in the materials shipped with a replacement CSR part whether a defective part must be returned to HP. In cases where it is required to return the defective part to HP, you must ship the defective part back to HP within a defined period of time, normally five (5) business days. The defective part must be returned with the associated documentation in the provided shipping material. Failure to return the defective part may result in HP billing you for the replacement. With a customer self repair, HP will pay all shipping and part return costs and determine the courier/carrier to be used.

# Customer support

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Get telephone support for your country/region	Country/region phone numbers are on the flyer that was in the box with your product or at <a href="http://www.hp.com/support/">www.hp.com/support/</a> .
Have the product name, serial number, date of purchase, and problem description ready.	
Get 24-hour Internet support	<a href="http://www.hp.com/support/lj600Series">www.hp.com/support/lj600Series</a>
Get support for products used with a Macintosh computer	<a href="http://www.hp.com/go/macosex">www.hp.com/go/macosex</a>
Download software utilities, drivers, and electronic information	<a href="http://www.hp.com/go/lj600Series_software">www.hp.com/go/lj600Series_software</a>
Order additional HP service or maintenance agreements	<a href="http://www.hp.com/go/carepack">www.hp.com/go/carepack</a>
Register your product	<a href="http://www.register.hp.com">www.register.hp.com</a>

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# Repack the product

If HP Customer Care determines that your product needs to be returned to HP for repair, follow these steps to repack the product before shipping it.

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**⚠ CAUTION:** Shipping damage as a result of inadequate packing is the customer's responsibility.

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1. Remove and retain any DIMM cards that you have purchased and installed in the product.

**⚠ CAUTION:** Static electricity can damage electronic parts. 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.

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2. Remove and retain the print cartridge.

**⚠ CAUTION:** It is *extremely important* to remove the print cartridge before shipping the product. A print cartridge that remains in the product during shipping can leak and cover the product engine and other parts with toner.

To prevent damage to the print cartridge, avoid touching the roller on it, and store the print cartridge in its original packing material or so that it is not exposed to light.

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3. Remove and retain the power cable, interface cable, and optional accessories.
4. If possible, include print samples and 50 to 100 sheets of paper or other print media that did not print correctly.
5. In the U.S., call HP Customer Care to request new packing material. In other areas, use the original packing material, if possible. Hewlett-Packard recommends insuring the equipment for shipment.



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## B Product specifications

- [Physical specifications](#)
- [Power consumption, electrical specifications, and acoustic emissions](#)
- [Operating environment](#)

# Physical specifications

**Table B-1 Product dimensions and weights**

Product model	Height	Depth	Width	Weight
n and dn models	394 mm (15.5 in)	4515 mm (17.8 in)	425 mm (16.75 in)	23.6 kg (51.9 lb)
x and xh models	514 mm (20.25 in)	451 mm (17.8 in)	425 mm (16.75 in)	30.4 kg (66.8 lb)
Optional 500-sheet feeder	121 mm (4.8 in)	448.4 mm (17.7 in)	415 mm (16.3 in)	6.7 kg (14.7 lb)
Optional 1500-sheet tray	263.5 mm (10.4 in)	511.5 mm (20.1 in)	421 mm (16.6 in)	13 kg (28.7 lb)
Optional duplexing unit	154 mm (6.1 in)	348 mm (13.7 in)	332 mm (13.1 in)	2.5 kg (5.5 lb)
Optional envelope feeder	113 mm (4.4 in)	354 mm (13.9 in)	328 mm (12.9 in)	2.5 kg (5.5 lb)
Optional stapler/stacker	371 mm (14.6 in)	430 mm (16.9 in)	387 mm (15.2 in)	4.2 kg (9.3 lb)
Optional stacker	304 mm (12 in)	430 mm (16.9 in)	378 mm (14.9 in)	3.2 kg (7.1 lb)
Optional multi-bin mailbox	522 mm (20.6 in)	306 mm (12 in)	353 mm (13.9 in)	7.0 kg (15.4 lb)
Optional printer stand	114 mm (4.5 in)	653 mm (25.7 in)	663 mm (26.17 in)	13.6 kg (30 lb)

**Table B-2 Product dimensions with all doors and trays fully opened**

Product model	Height	Depth	Width
n and dn models	394 mm (15.5 in)	864 mm (34.0 in)	425 mm (16.75 in)
x and xh models	514 mm (20.25 in)	864 mm (34.0 in)	425 mm (16.75 in)

## Power consumption, electrical specifications, and acoustic emissions

See [www.hp.com/go/lj600Series\\_regulatory](http://www.hp.com/go/lj600Series_regulatory) for current information.

**⚠ CAUTION:** Power requirements are based on the country/region where the product is sold. Do not convert operating voltages. This will damage the product and void the product warranty.

# Operating environment

**Table B-3 Necessary conditions**

<b>Environmental condition</b>	<b>Printing</b>	<b>Storage/standby</b>
Temperature (product and print cartridge)	7.5°C (45.5°F)	0°C (32°F)
	to 32.5°C (90.5°F)	to 35°C (95°F)
Relative humidity	5% to 90%	35% to 85%



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# C Regulatory information

- [FCC regulations](#)
- [Environmental product stewardship program](#)
- [Declaration of Conformity](#)
- [Certificate of Volatility](#)
- [Safety statements](#)

## FCC regulations

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



**NOTE:** Any changes or modifications to the printer that are not expressly approved by HP could void the user's authority to operate this equipment.

Use of a shielded interface cable is required to comply with the Class A limits of Part 15 of FCC rules.



# Environmental product stewardship program

## Protecting the environment

Hewlett-Packard Company is committed to providing quality products in an environmentally sound manner. This product has been designed with several attributes to minimize impacts on our environment.

## Ozone production

This product generates no appreciable ozone gas (O<sub>3</sub>).

## Power consumption

Power usage drops significantly while in Sleep mode, which saves natural resources and saves money without affecting the high performance of this product. Hewlett-Packard printing and imaging equipment marked with the ENERGY STAR® logo is qualified to the U.S. Environmental Protection Agency's ENERGY STAR specifications for imaging equipment. The following mark will appear on ENERGY STAR qualified imaging products:



Additional ENERGY STAR qualified imaging product model information is listed at:

[www.hp.com/go/energystar](http://www.hp.com/go/energystar)

## Toner consumption

EconoMode uses less toner, which might extend the life of the print cartridge. HP does not recommend the full-time use of EconoMode. If EconoMode is used full-time, the toner supply might outlast the mechanical parts in the print cartridge. If print quality begins to degrade and is no longer acceptable, consider replacing the print cartridge.

## Paper use

This product's optional automatic duplex feature (two-sided printing) and N-up printing (multiple pages printed on one page) capability can reduce paper usage and the resulting demands on natural resources.


## Plastics

Plastic parts over 25 grams are marked according to international standards that enhance the ability to identify plastics for recycling purposes at the end of the product's life.

## HP LaserJet print supplies

It's easy to return and recycle your HP LaserJet print cartridges after use—free of charge—with HP Planet Partners. Multilingual program information and instructions are included in every new HP LaserJet print cartridge and supplies package. You help reduce the toll on the environment further when you return multiple cartridges together rather than separately.

HP is committed to providing inventive, high-quality products and services that are environmentally sound, from product design and manufacturing to distribution, customer use and recycling. When you participate in the HP Planet Partners program, we ensure your HP LaserJet print cartridges are recycled properly, processing them to recover plastics and metals for new products and diverting millions of tons of waste from landfills. Since this cartridge is being recycled and used in new materials, it will not be returned to you. Thank you for being environmentally responsible!

 **NOTE:** Use the return label to return original HP LaserJet print cartridges only. Please do not use this label for HP inkjet cartridges, non-HP cartridges, refilled or remanufactured cartridges or warranty returns. For information about recycling your HP inkjet cartridges please go to <http://www.hp.com/recycle>.

## Return and recycling instructions

### United States and Puerto Rico

The enclosed label in the HP LaserJet toner cartridge box is for the return and recycling of one or more HP LaserJet print cartridges after use. Please follow the applicable instructions below.

#### Multiple returns (more than one cartridge)

1. Package each HP LaserJet print cartridge in its original box and bag.
2. Tape the boxes together using strapping or packaging tape. The package can weigh up to 31 kg (70 lb).
3. Use a single pre-paid shipping label.

#### **OR**

1. Use your own suitable box, or request a free bulk collection box from [www.hp.com/recycle](http://www.hp.com/recycle) or 1-800-340-2445 (holds up to 31 kg (70 lb) of HP LaserJet print cartridges).
2. Use a single pre-paid shipping label.

#### Single returns

1. Package the HP LaserJet print cartridge in its original bag and box.
2. Place the shipping label on the front of the box.

#### Shipping

For US and Puerto Rico HP LaserJet print cartridge recycling returns, use the pre-paid, pre-addressed shipping label contained in the box. To use the UPS label, give the package to the UPS driver during

your next delivery or pick-up, or take it to an authorized UPS drop-off center. (Requested UPS Ground pickup will be charged normal pick-up rates) For the location of your local UPS drop-off center, call 1-800-PICKUPS or visit [www.ups.com](http://www.ups.com).

If you are returning the package with the FedEx label, give the package to either the U.S. Postal Service carrier or FedEx driver during your next pick-up or delivery. (Requested FedEx Ground pickup will be charged normal pick-up rates). Or, you can drop off your packaged print cartridge(s) at any U.S. Post Office or any FedEx shipping center or store. For the location of your nearest U.S. Post Office, please call 1-800-ASK-USPS or visit [www.usps.com](http://www.usps.com). For the location of your nearest FedEx shipping center/store, please call 1-800-GOFEDEX or visit [www.fedex.com](http://www.fedex.com).

For more information, or to order additional labels or boxes for bulk returns, visit [www.hp.com/recycle](http://www.hp.com/recycle) or call 1-800-340-2445. Information subject to change without notice.

## Residents of Alaska and Hawaii

Do not use the UPS label. Call 1-800-340-2445 for information and instructions. The U.S. Postal Service provides no-cost cartridge return transportation services under an arrangement with HP for Alaska and Hawaii.

## Non-U.S. returns

To participate in HP Planet Partners return and recycling program, just follow the simple directions in the recycling guide (found inside the packaging of your new product supply item) or visit [www.hp.com/recycle](http://www.hp.com/recycle). Select your country/region for information on how to return your HP LaserJet printing supplies.

## Paper

This product is capable of using recycled papers when the paper meets the guidelines outlined in the *HP LaserJet Printer Family Print Media Guide*. This product is suitable for the use of recycled paper according to EN12281:2002.

## Material restrictions

This HP product does not contain added mercury.

This HP product contains a battery that might require special handling at end-of-life. The batteries contained in or supplied by Hewlett-Packard for this product include the following:

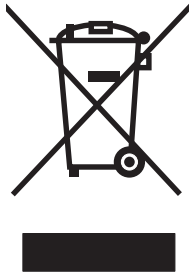
<b>HP LaserJet Enterprise 600 M601, M602, and M603 Series Printer</b>	
Type	Carbon monofluoride lithium
Weight	1.5 g
Location	On formatter board
User-removable	No



## 廢電池請回收

For recycling information, you can go to [www.hp.com/recycle](http://www.hp.com/recycle), or contact your local authorities or the Electronics Industries Alliance: [www.eiae.org](http://www.eiae.org).

## Disposal of waste equipment by users in private households in the European Union



This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

## Chemical substances

HP is committed to providing our customers with information about the chemical substances in our products as needed to comply with legal requirements such as REACH (Regulation EC No 1907/2006 of the European Parliament and the Council). A chemical information report for this product can be found at: [www.hp.com/go/reach](http://www.hp.com/go/reach).

## Material Safety Data Sheet (MSDS)

Material Safety Data Sheets (MSDS) for supplies containing chemical substances (for example, toner) can be obtained by accessing the HP Web site at [www.hp.com/go/msds](http://www.hp.com/go/msds) or [www.hp.com/hpinfo/community/environment/productinfo/safety](http://www.hp.com/hpinfo/community/environment/productinfo/safety).

## For more information

To obtain information about these environmental topics:

- Product environmental profile sheet for this and many related HP products
- HP's commitment to the environment
- HP's environmental management system

- HP's end-of-life product return and recycling program
- Material Safety Data Sheets

Visit [www.hp.com/go/environment](http://www.hp.com/go/environment) or [www.hp.com/hpinfo/globalcitizenship/environment](http://www.hp.com/hpinfo/globalcitizenship/environment).

# Declaration of Conformity

## Declaration of Conformity

according to ISO/IEC 17050-1 and EN 17050-1

**Manufacturer's Name:** Hewlett-Packard Company DoC#: BOISB-1101-00-rel.1.0

**Manufacturer's Address:** 11311 Chinden Boulevard  
Boise, Idaho 83714-1021, USA

### declares, that the product

**Product Name:** HP LaserJet Enterprise 600 M601, M602, and M603

Including:

CE998A – 500-sheet paper tray

CF062A – Duplexer

**Regulatory Model Number<sup>2)</sup>** BOISB-1101-00

**Product Options:** ALL

**Print Cartridges:** CE390A, CE390X

### conforms to the following Product Specifications:

**SAFETY:** IEC 60950-1:2005 / EN60950-1: 2006 +A11  
IEC 60825-1:2007 / EN 60825-1:2007 (Class 1 Laser/LED Product)  
IEC 62311:2007 / EN62311:2008

GB4943-2001

**EMC:** CISPR22:2005 +A1/ EN55022:2006 +A1 - Class A<sup>1), 3)</sup>

EN 61000-3-2:2006


EN 61000-3-3:2008

EN 55024:1998 +A1 +A2

FCC Title 47 CFR, Part 15 Class A<sup>1)</sup>/ ICES-003, Issue 4

GB9254-2008, GB17625.1-2003

### Supplementary Information:

The product herewith complies with the requirements of the EMC Directive 2004/108/EC and the Low Voltage Directive 2006/95/EC and carries the CE-Marking  accordingly.

This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two Conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

1. The product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems.
2. For regulatory purposes, this product is assigned a Regulatory model number. This number should not be confused with the product name or the product number(s).
3. The product meets the requirements of EN55022 & CNS13438 Class A in which case the following applies: "Warning – This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures".

**Boise, Idaho USA**

**September 2011**

**For regulatory topics only:**

European Contact: Your Local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department HQ-TRE / Standards Europe, Herrenberger Straße 140, D-71034, Böblingen (FAX: +49-7031-14-3143)  
[www.hp.eu/certificates](http://www.hp.eu/certificates)

USA Contact: Product Regulations Manager, Hewlett-Packard Company, PO Box 15, Mail Stop 160, Boise, Idaho 83707-0015 (Phone: 208-396-6000)

# Certificate of Volatility

This is a statement regarding the volatility of customer data stored in memory. This statement describes how to securely erase data from the product.

## Types of memory

### Volatile memory

The product utilizes volatile memory (a total of 512 MB; expandable to 1024 MB) to support the embedded OS and to store customer data during the printing process. When the product is powered off, this volatile memory is erased.

### Non-volatile memory

The product utilizes non-volatile memory (EEPROM) to store system control data and user preference settings. No customer print data is stored in non-volatile memory. This non-volatile memory can be cleared and restored to factory defaults by performing a Cold Reset or Restore Factory Settings at the control panel.

### Hard-disk-drive memory

The product contains an internal hard disk drive that may retain data after the product is powered off. The product also may contain additional optional compact flash storage. Data stored in these devices may be from stored copy or print jobs, or third-party solutions. Some of this data can be erased from the product control panel, but most must be erased using the Secure Disk Erase feature available from the product BIOS Menu, the Embedded Web Server (EWS) for the product, and from HP Web Jetadmin. Secure Storage Erase features comply with U.S. NIST Special Publication 800-88 "Guidelines for Media Sanitization".



# Safety statements

## Laser safety

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration has implemented regulations for laser products manufactured since August 1, 1976. Compliance is mandatory for products marketed in the United States. The device is certified as a “Class 1” laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. Since radiation emitted inside the device is completely confined within protective housings and external covers, the laser beam cannot escape during any phase of normal user operation.

**⚠ WARNING!** Using controls, making adjustments, or performing procedures other than those specified in this user guide may result in exposure to hazardous radiation.

## Canadian DOC regulations

Complies with Canadian EMC Class A requirements.

« Conforme à la classe A des normes canadiennes de compatibilité électromagnétiques. « CEM ». »

## VCCI statement (Japan)

この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者は適切な対策を講ずるよう要求されることがあります。

VCCI-A

## Power cord instructions

Make sure your power source is adequate for the product voltage rating. The voltage rating is on the product label. The product uses either 100-127 Vac or 220-240 Vac and 50/60 Hz.

Connect the power cord between the product and a grounded AC outlet.

**⚠ CAUTION:** To prevent damage to the product, use only the power cord that is provided with the product.

## Power cord statement (Japan)

製品には、同梱された電源コードをお使い下さい。  
同梱された電源コードは、他の製品では使用出来ません。

## EMC statement (China)

此为 A 级产品，在生活环境中，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对其干扰采取切实可行的措施。

## EMC statement (Korea)

A급 기기 (업무용 방송통신기기)	이 기기는 업무용(A급)으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이점을 주의하시기 바라며, 가정 외의 지역에서 사용하는 것을 목적으로 합니다.
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## EMI statement (Taiwan)

### 警告使用者：

這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

## Product Stability

Do not extend more than one paper tray at a time.

## Laser statement for Finland

### Luokan 1 laserlaite

Klass 1 Laser Apparat

HP LaserJet 600 M601n, M601dn, M602n, M602dn, M602x, M603n, M603dn, M603xh, laserkirjoitin on käyttäjän kannalta turvallinen luokan 1 laserlaite. Normaalisissa käytössä kirjoittimen suojakotelointi estää lasersäteen pääsyn laitteen ulkopuolelle. Laitteen turvallisuusluokka on määritetty standardin EN 60825-1 (2007) mukaisesti.

### VAROITUS !

Laitteen käyttäminen muulla kuin käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

### VARNING !

Om apparaten används på annat sätt än i bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

## **HUOLTO**

HP LaserJet 600 M601n, M601dn, M602n, M602dn, M602x, M603n, M603dn, M603xh - kirjoittimen sisällä ei ole käyttäjän huollettavissa olevia kohteita. Laitteen saa avata ja huoltaa ainoastaan sen huoltamiseen koulutettu henkilö. Tällaiseksi huoltotoimenpiteeksi ei katsota väriainekasetin vaihtamista, paperiradan puhdistusta tai muita käyttäjän käsikirjassa lueteltuja, käyttäjän tehtäväksi tarkoitettuja ylläpitotoimia, jotka voidaan suorittaa ilman erikoistyökaluja.

## **VARO !**

Mikäli kirjoittimen suojakotelo avataan, olet alttiina näkymättömälle lasersäteilylle laitteen ollessa toiminnassa. Älä katso säteeseen.

## **VARNING !**

Om laserprinterns skyddshölje öppnas då apparaten är i funktion, utsätts användaren för osynlig laserstrålning. Betrakta ej strålen.

Tiedot laitteessa käytettävän laserdiodin säteilyominaisuuksista: Aallonpituus 775-795 nm Teho 5 m W Luokan 3B laser.

## **GS statement (Germany)**

Das Gerät ist nicht für die Benutzung im unmittelbaren Gesichtsfeld am Bildschirmarbeitsplatz vorgesehen. Um störende Reflexionen am Bildschirmarbeitsplatz zu vermeiden, darf dieses Produkt nicht im unmittelbaren Gesichtsfeld platziert werden.

## Substances Table (China)

### 有毒有害物质表

根据中国电子信息产品污染控制管理办法的要求而出台

部件名称	有毒有害物质和元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
打印引擎	X	0	0	0	0	0
控制面板	0	0	0	0	0	0
塑料外壳	0	0	0	0	0	0
格式化板组件	X	0	0	0	0	0
碳粉盒	X	0	0	0	0	0

0609

0：表示在此部件所用的所有同类材料中，所含的此有毒或有害物质均低于 SJ/T11363-2006 的限制要求。

X：表示在此部件所用的所有同类材料中，至少一种所含的此有毒或有害物质高于 SJ/T11363-2006 的限制要求。

注：引用的“环保使用期限”是根据在正常温度和湿度条件下操作使用产品而确定的。

## Restriction on Hazardous Substances statement (Turkey)

Türkiye Cumhuriyeti: EEE Yönetmeliğine Uygundur

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