LASERJET ENTERPRISE 500 COLOR

Service Manual



M551n



M551dn



M551xh

HP LaserJet Enterprise 500 color M551 Printers

Service Manual

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Conventions used in this guide

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

- Basic operation
- Engine control system
- Laser/scanner system
- Image formation system
- Pickup, feed, and delivery system
- Jam detection
- Optional paper feeder

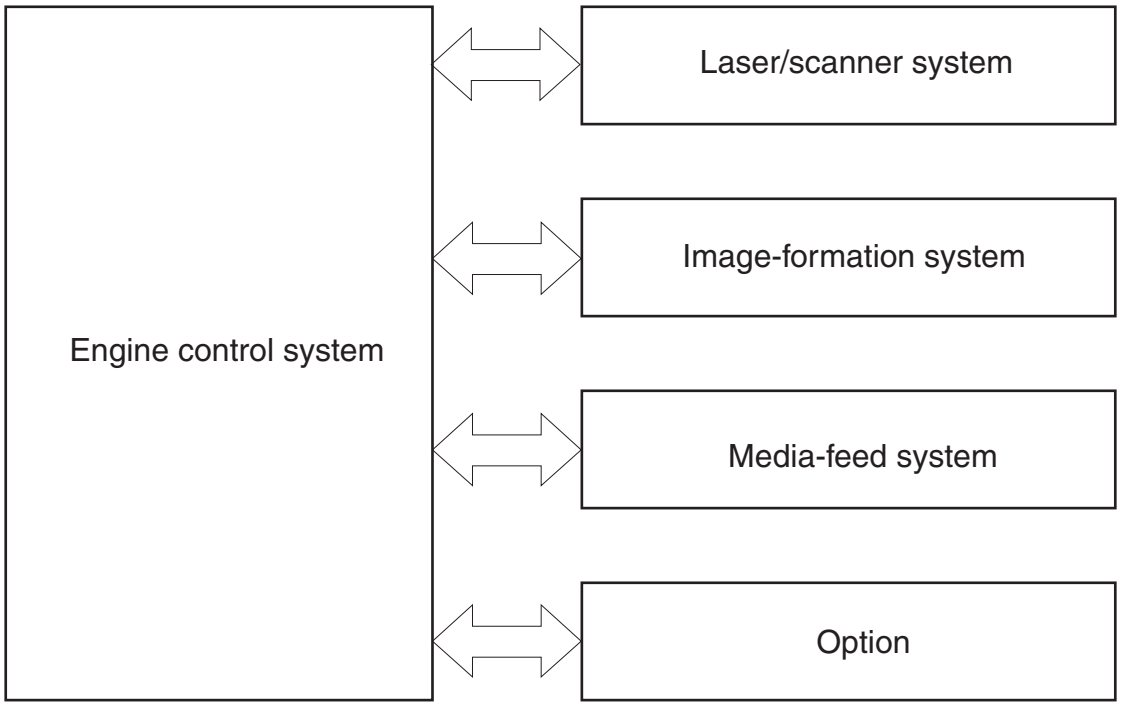
Basic operation

The product routes all high-level processes through the formatter, which stores font information, processes the print image, and communicates with the host computer.

The basic product operation comprises the following systems:

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

Figure 1-1 Relationship between the main product systems



Sequence of operation

The DC controller PCA controls the operating sequence, as described in the following table.

NOTE: The terms fusing and fixing are synonymous.

Table 1-1 Sequence of operation

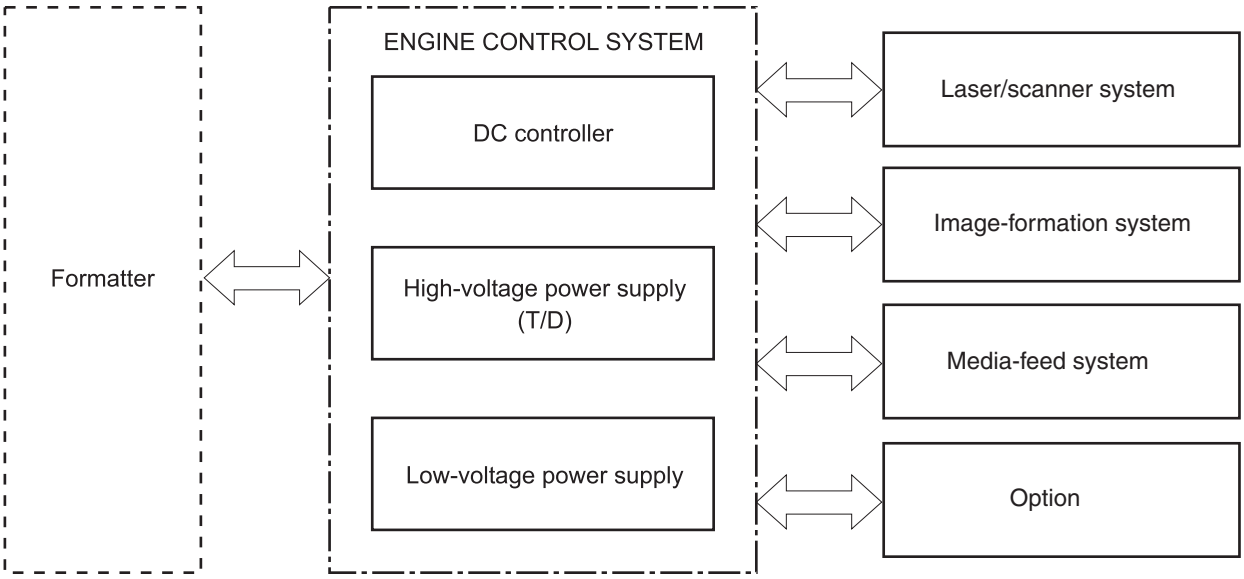
Period	Duration	Description
Waiting	From the time the power is turned on, the door is closed, or when the product exits Sleep mode until the product is ready for printing	• Heats the fuser sleeve • Pressurizes the fuser pressure roller • Detects the print cartridges • Detects the home position for the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

Engine control system

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

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

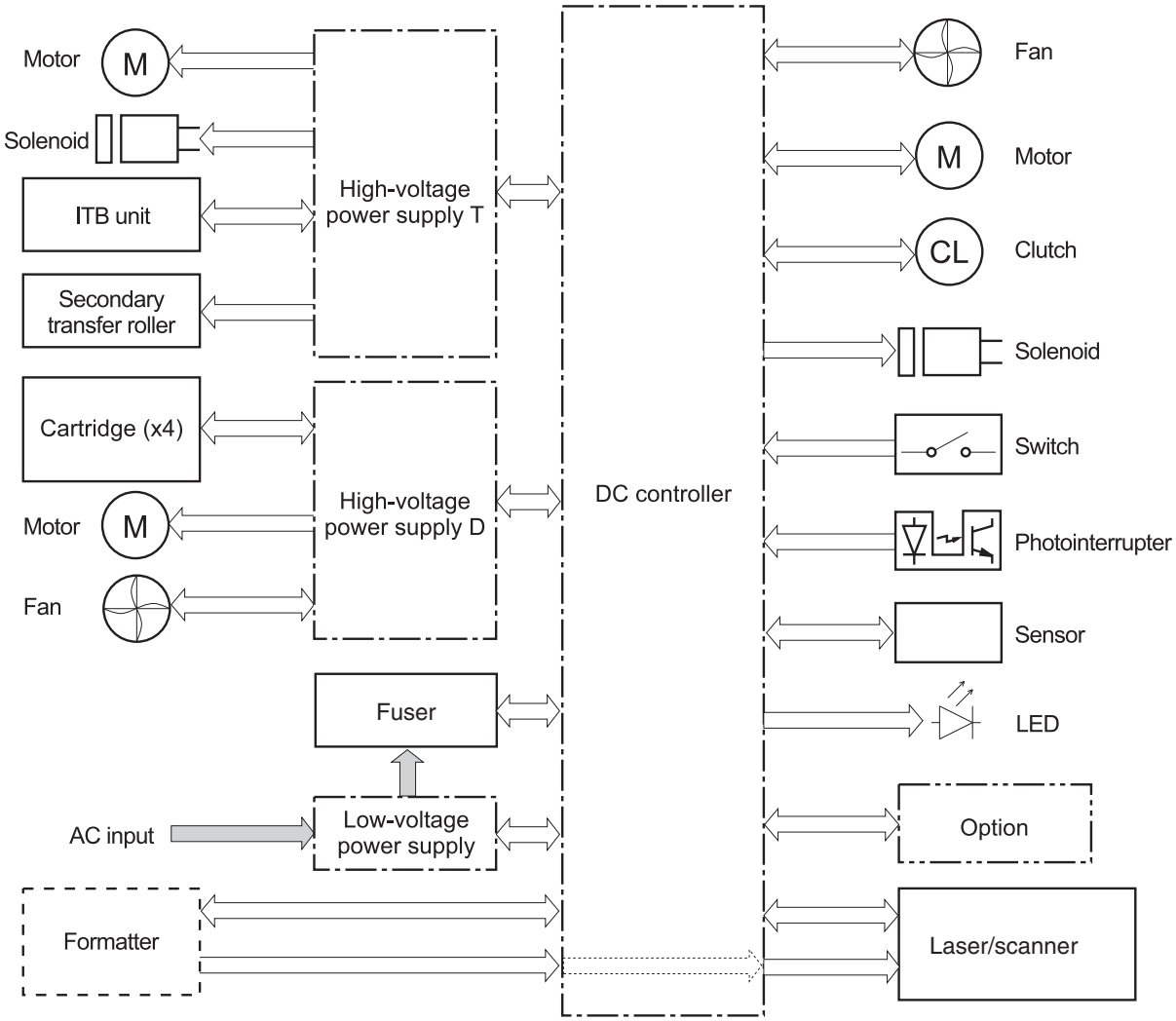
Figure 1-2 Engine control system



DC controller

The DC controller controls the operational sequence of the printer.

Figure 1-3 DC controller block diagram



Solenoids

Table 1-2 Solenoids

Component abbreviation	Component name
SL1	Primary transfer roller disengagement solenoid
SL2	Duplex reverse solenoid (HP LaserJet Enterprise 500 color M551dn and HP LaserJet Enterprise 500 color M551xh only)
SL3	Multipurpose-tray pickup solenoid
SL4	Cassette pickup solenoid

Clutches

Table 1-3 Clutches

Component abbreviation	Component name
CL1	Duplex re-pickup clutch (HP LaserJet Enterprise 500 color M551dn and HP LaserJet Enterprise 500 color M551xh only)

Switches

Table 1-4 Switches

Component abbreviation	Component name
SW1, SW2	5V interlock switch
SW3	24V interlock switch
SW4	Power switch
	Test print switch

Sensors

Table 1-5 Sensors

Component abbreviation	Component name
SR1	Drum home position sensor 1
SR2	Drum home position sensor 2
SR3	Drum home position sensor 3
SR5	Fuser output sensor
SR6	Output bin full sensor
SR7	Fuser pressure release sensor
SR8	Registration sensor
SR9	Fuser pressure release sensor
SR11	Developer alienation sensor
SR13	Tray 2 cassette sensor
SR14	Fuser loop 1 sensor
SR15	Fuser loop 2 sensor
SR17	ITB alienation sensor
SR20	Tray 2 paper sensor
SR21	Tray 1 paper sensor
SR22	Duplexer refeed sensor (HP LaserJet Enterprise 500 color M551dn and HP LaserJet Enterprise 500 color M551xh only)
	OHT sensor (in)
	OHT sensor (out)
	RD sensor (front)
	RD sensor (rear)
	Environmental sensor (temperature and humidity)
	Yellow toner-level sensor
	Magenta toner-level sensor
	Cyan toner-level sensor
	Black toner-level sensor
	Toner collection-box-full sensor

Motors and fans

The product has 11 motors and three fan motors. The motors drive the components in the paper-feed and image-formation systems. The fan motors cool the product's inside.

Table 1-6 Motors

Abbreviation	Name	Purpose	Type	Failure detection
M2	Fuser motor	Drives the Fuser roller, the delivery roller, and the Fuser pressure roller	DC motor	Yes
M3	Drum motor 1	Drives the photosensitive drum (yellow/magenta), developing unit (yellow), and primary charging roller (yellow/magenta)	DC motor	Yes
M4	Drum motor 2	Drives the photosensitive drum (cyan), developing unit (magenta/cyan), and primary charging roller (cyan)	DC motor	Yes
M5	Drum motor 3	Drives the photosensitive drum (black), developing unit (black), and ITB drive roller, and secondary transfer roller	DC motor	Yes
M7	Lifter motor	Drives the lifter for the cassette	Stepping motor	Yes
M8	Cyan/black scanner motor	Drives the scanner mirror in the cyan/ black laser scanner	DC motor	Yes
M9	Yellow/magenta scanner motor	Drives the scanner mirror in the yellow/ magenta laser scanner	DC motor	Yes
M10	Developing disengagement motor	Drives the developing unit disengagement	Stepping motor	No
M11	Duplex reverse motor (HP LaserJet Enterprise 500 color M551dn and HP LaserJet Enterprise 500 color M551xh only)	Drives the duplex reverse roller and duplex feed roller	Stepping motor	No

Table 1-6 Motors (continued)

Abbreviation	Name	Purpose	Type	Failure detection
M12	Residual toner-feed motor	Drives the residual toner feed screw	DC motor	Yes
M13	Pickup motor	Drives the cassette pickup roller, MP tray pickup roller, feed roller, registration roller, and re-pickup roller	Stepping motor	No

Table 1-7 Fans

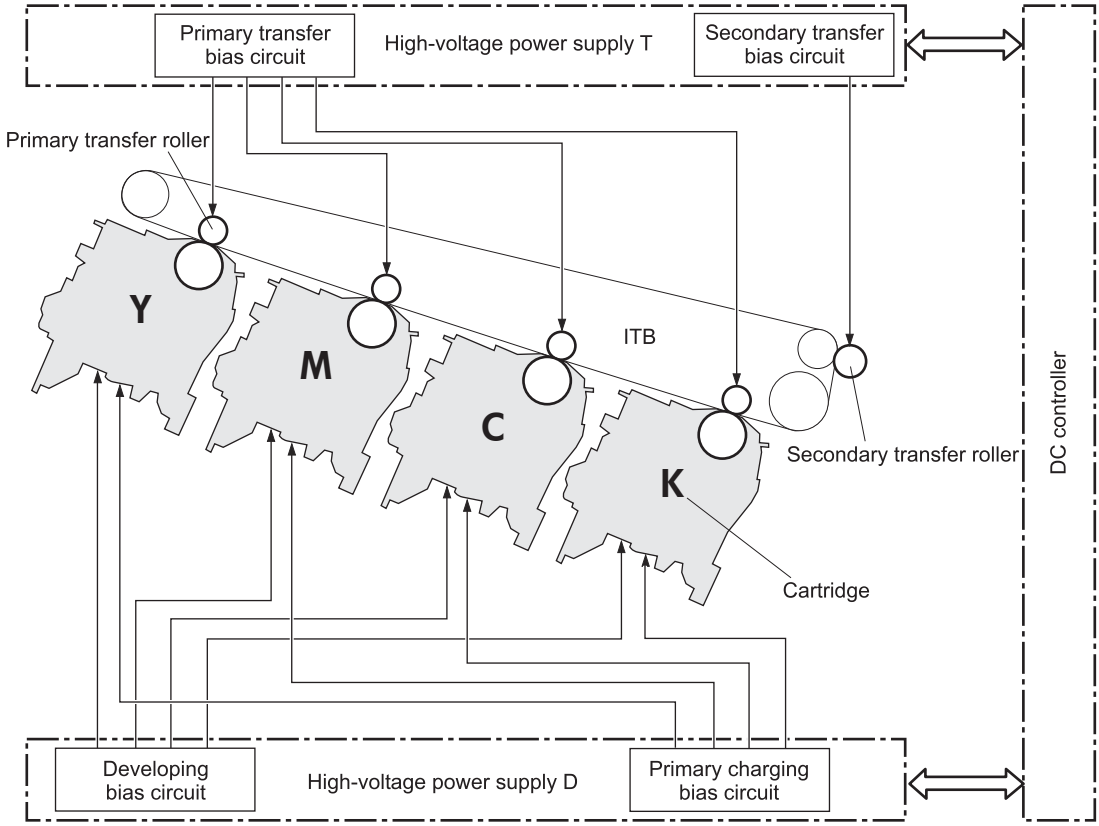
Abbreviation	Name	Cooling area	Type	Speed
FM1	Power supply fan	Around the power supply unit	Intake	Full/half
FM2	Cartridge fan	Around the cartridges	Intake	Full/half
FM3	Delivery fan	Around the delivery unit	Intake	Full/half

High voltage power supply

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

- Primary-charging roller (in the cartridge)
- Developing roller (in the cartridge)
- Primary-transfer roller
- Secondary-transfer roller

Figure 1-4 High voltage power supply circuits



The high voltage power supply contains several separate circuits.

Table 1-8 High voltage power supply circuits

Circuit	Description
Primary-charging-bias generation	DC negative bias is applied to the surface of the photosensitive drum to prepare it for image formation.
Developing-bias generation	DC negative bias adheres the toner to each photosensitive drum during the image-formation process.

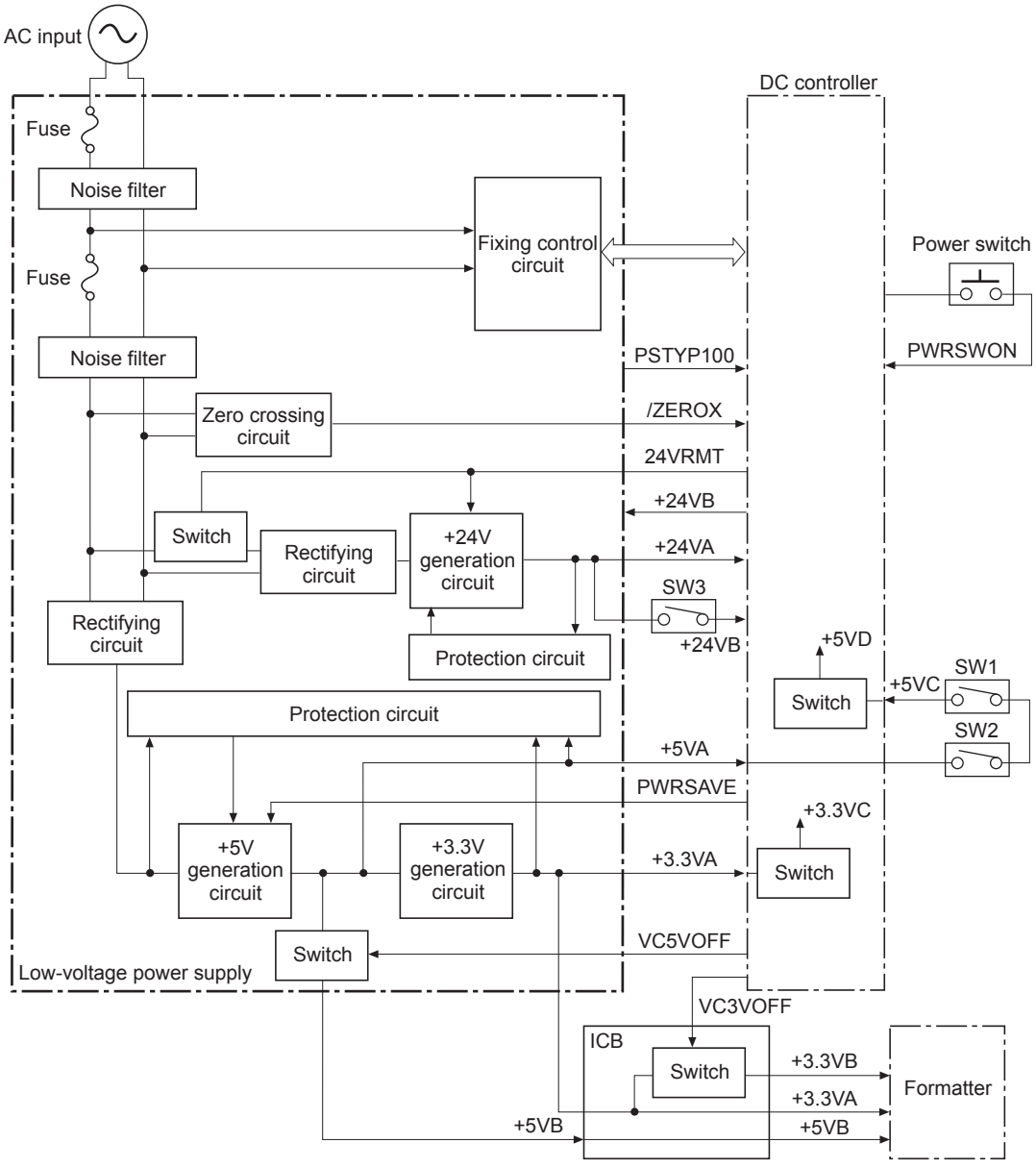
Table 1-8 High voltage power supply circuits (continued)

Circuit	Description
Primary-transfer-bias generation	DC positive bias transfers the latent toner image from each photosensitive drum onto the ITB.
Secondary-transfer-bias generation	Two DC biases, one positive and one negative, transfer the toner from the ITB onto the paper.

Low voltage power supply

The low-voltage power-supply circuit converts the AC power from the wall receptacle into the DC voltage that the product components use. The product has two low-voltage power-supplies for 110 Volt or 220 Volt input.

Figure 1-5 Low voltage power-supply circuit



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

Table 1-9 Converted DC voltages

Main DC voltage	Sub-voltage	Behavior	Notes
+24 V	+24VA	Stopped during Sleep (powersave) mode	The 24V POWER SUPPLY (24VRMT) signal controls supply or interruption of +24VA.
	+24VB	Interrupted when the front door or right door open Stopped during Sleep (powersave) mode	
+5 V	+5VA	Supplied during Sleep (powersave) mode 2 and Sleep (powersave) mode 3	The VOLTAGE CONVERSION (PWRSAVE) signal converts output voltage of +5VA into 3.2V.
	+5VB	Supplied during Sleep (powersave) mode 2 Stopped during Sleep (powersave) mode 3 Supplies power to the formatter	The 5V POWER SUPPLY (VC5VOFF) signal sontrols supply or interruption of +5VB. The VOLTAGE CONVERSION (PWRSAVE) signal converts output voltage of +5VB into 3.2V
	+5VC	Supplied during Sleep (powersave) mode 2 and Sleep (powersave) mode 3 Interrupted when the front door or right door open	the VOLTAGE CONVERSION (PWRSAVE) signal converts output voltage of +5VC into 3.2V.
	+5VD	Stopped during Sleep (powersave) mode Interrupted when the front door or right door open	
+3.3 V	3.3VA	Constantly supplied	
	3.3VB	Stopped only when the power is off Supplies power to the formatter	The 3V POWER SUPPLY (VC3VOFF) signal controls supply or interruption of +3.3VB.
	3.3VC	Stopped during Sleep (powersave) mode 2 and Sleep (powersave) mode 3	

Overcurrent/overvoltage protection

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

The low-voltage power supply has a protective circuit against overcurrent and overvoltage to prevent failures in the power supply circuit.

If the low-voltage power supply is not supplying DC voltage, the protective function might be running. In this case, turn the power off and unplug the power cord. Do not plug in and turn on the product until the cause is found and corrected.

In addition, the low-voltage power supply has two fuses (FU100/FU101) to protect against overcurrent. If overcurrent flows into the AC line, the fuse blows to stop AC power.

Safety

For safety, the product interrupts the power supply of +24VB by turning off the interlock switch (SW3) and +5VC by turning off the interlock switch (SW1/SW2).

The AC power is supplied to the product even when the power switch is turned off because the product uses the soft switch for turning on/off the product. Always unplug the power cord before disassembling the product.

Sleep (powersave) mode

Sleep mode conserves energy by stopping the power to several components when the product is idle. The product has three sleep modes depending on the power consumption. The DC controller supplies or converts each power supply according to the sleep mode.

- Sleep mode 1: Stops +24VA and +24VB
- Sleep mode 2: Stops +24VA, +24VB and +5VD. Converts +5VA, +5VB and +5VC into +3.2V.
- Sleep mode 3: Stops +24VA, +24VB, +5VB and +5VD. Converts +5VA and +5VC into +3.2V.

Power supply voltage detection

The product detects the power supply voltage that is connected to the product. The DC controller monitors the POWER SUPPLY VOLTAGE (PSTYP100) signal and detects power supply voltage, whether 100 V or 200 V, to control the fusing operation.

Low voltage power supply failure

The DC controller determines a low-voltage power supply failure and notifies the formatter when the low-voltage power supply does not supply +24 V.

Power off condition

The DC controller turns off the product with the 24V POWER SUPPLY (24VRMT) signal, 5V POWER SUPPLY (VC5VOFF) signal, 3V POWER SUPPLY (VC3VOFF) signal, and VOLTAGE CONVERSION (PWRSAVE) signal.

+5VA and +5VC, are converted into +3.2V, and +3.3VA and supplied during the power off condition.

Fuser control

The fuser-control circuit controls the fuser temperature. The product uses an on-demand fusing method.

Figure 1-6 Fuser components

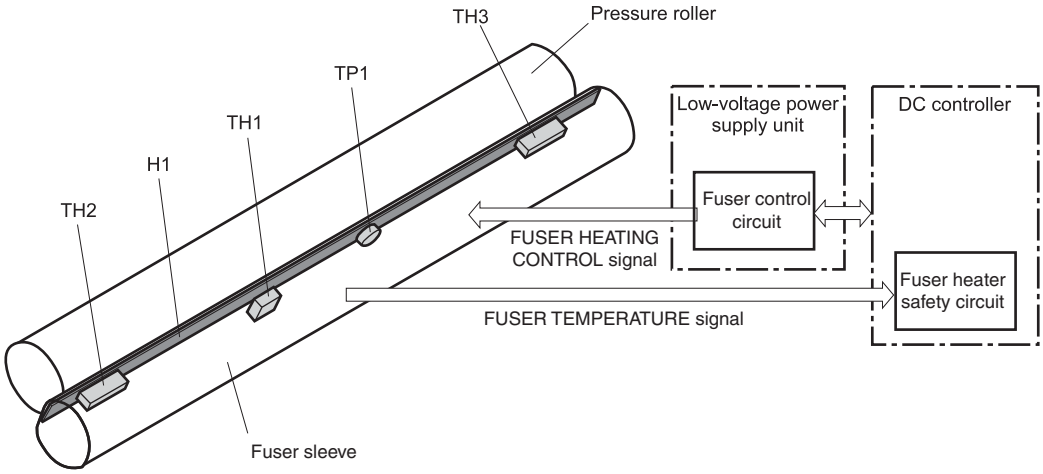


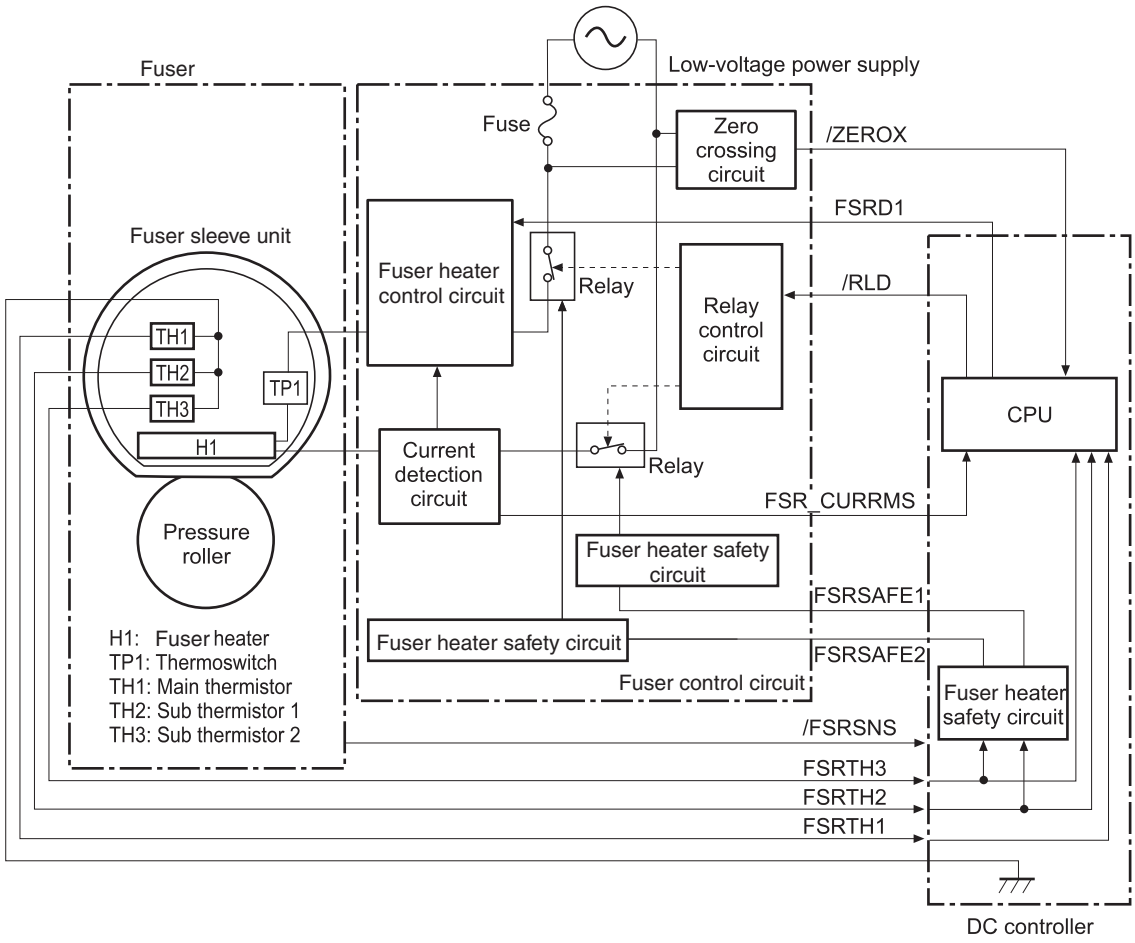
Table 1-10 Fuser components

Type of component	Abbreviation	Name	Function
Heaters	H1	Fuser heater	Heats the fuser sleeve.
Thermistors (Contact type)	TH1	Main thermistor	Each thermistor detects the center temperature of the fuser sleeve.
	TH2 TH3	Sub thermistor	Each thermistor detects the side temperature of the fuser heater.
Thermoswitches (Non-contact type)	TP1	For the fuser heater	Controls the fuser-roller main heater

Fuser temperature control circuit

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

Figure 1-7 Fuser temperature control circuit



Fuser over temperature protection

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

- **DC controller**: When a thermistor or thermopile detects a temperature above a certain threshold, the DC controller interrupts power to the specific heater. Following are the thresholds for each component:
  - TH1: 230° C (446° F) or higher
  - TH2: 285° C (545° F) or higher
  - TH3: 285° C (545° F) or higher
- **Fuser heater safety circuit**: If the DC controller fails to interrupt the power to the heaters at the prescribed temperatures, the fuser heater safety circuit deactivates the triac-drive circuit and releases the relay, which causes the heaters to stop at slightly higher temperature thresholds.
  - TH2: 290° C (554° F) or higher
  - TH3: 290° C (554° F) or higher
- **Current detection protection circuit**: If current flowing in each triac exceeds a specific value, the current detection protection circuit deactivates the triac-drive circuit and releases the relay, which interrupts the power supply to the heaters.
- **Thermoswitch**: If the temperature in the heaters is abnormally high, and the temperature in the thermoswitches exceeds a specified value, the contact to the thermoswitch breaks. Breaking this contact deactivates the triac-drive circuit and releases the relay, which interrupts the power supply to the heaters. Following are the thresholds for each thermoswitch:
  - TP1: 270° C (518° F) or higher



NOTE: When the thermoswitches reach this temperature, the temperature on the fuser rollers is about 320° C (608° F).

Fuser failure detection

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

- **Abnormally high temperatures**: Temperatures are too high for any of the following components, at any time:
  - TH1: 230° C (446° F) or higher
  - TH2: 285° C (545° F) or higher
  - TH3: 285° C (545° F) or higher
- **Abnormally low temperatures**: Temperatures are too low at any of the following components after the product has initialized.
  - TH1: 120° C (248° F) or lower
  - TP2 or TP3: 100° C (212° F) or lower

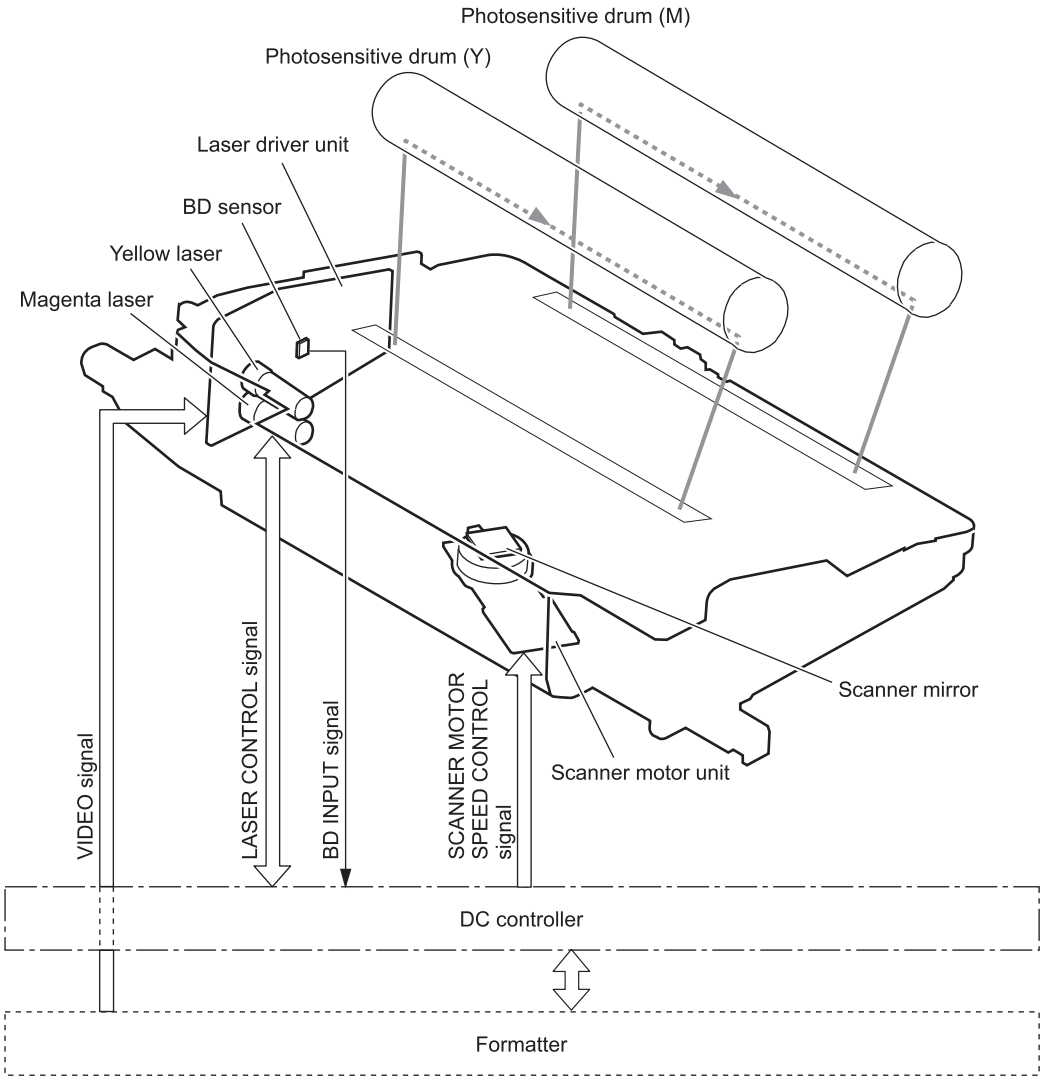
  Or, the temperature drops in either of the thermopiles (TP1 and TP2) by 30° C (86° F) or more within a specified length of time.
- **Abnormal temperature rise**: The DC controller determines an abnormal temperature rise if the detected temperature of TH1 does not rise 2° C within a specified time period after the fuser motor is turned on, or if the detected temperature of the thermistors does not rise to a specified temperature for a specified time after the fuser motor is turned on.
- **Thermistor open**: The DC controller determines a thermistor open if:
  - The detected temperature of TH1 is kept at 12° C (53° F) or lower for a specified time after the fuser motor is turned on.
  - The detected temperature of TH2 is kept at 4° C (39° F) or lower for a specified time.
  - The detected temperature of TH3 is kept at 4° C (39° F) or lower for a specified time.
- **Drive-circuit failure**: The DC controller determines a drive-circuit failure:
  - If the detected power supply frequency is out of a specified range when the printer is turned on or during the standby period
  - If the current detection circuit detects an out of specified current value
- **Fuser discrepancy**: The DC controller determines a fuser type mismatch when it detects an unexpected fuser unit presence signal. The product has two fusers for 110 V or 220 V input power.

Laser/scanner system

The laser/scanner system forms the latent electrostatic image on the photosensitive drums according to the VIDEO signals sent from the formatter. The product has two laser/scanners: one for yellow and magenta and the other for cyan and black.

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

Figure 1-8 Laser/scanner system



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

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

Image formation system

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

Figure 1-9 Image formation system

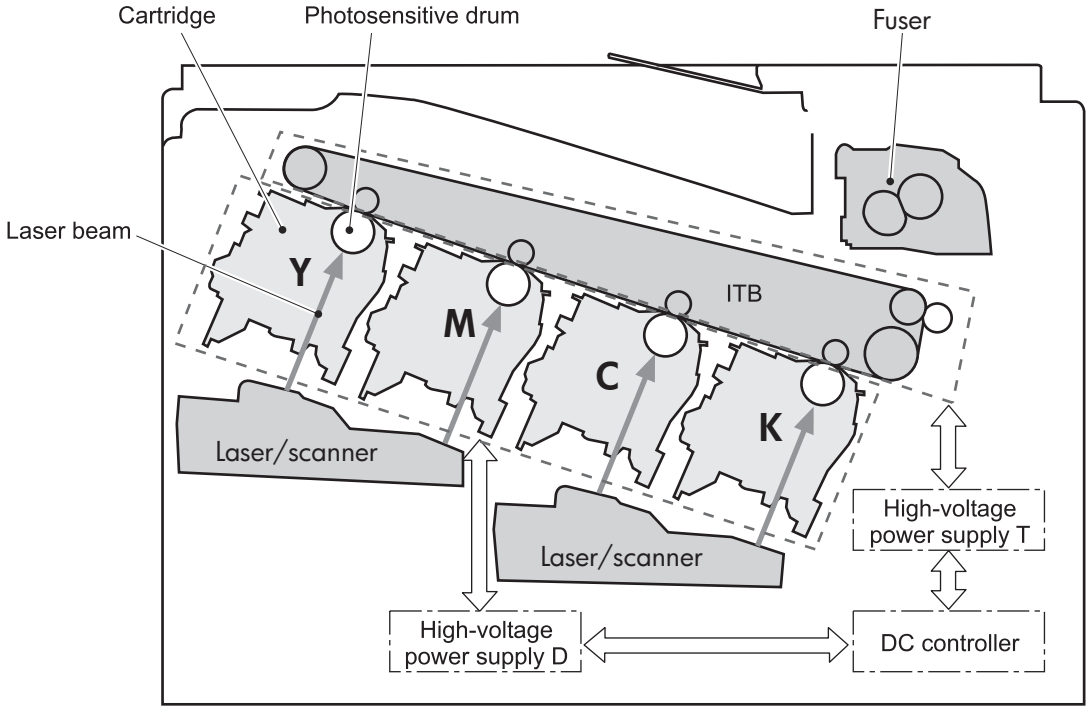


Image formation process

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

Figure 1-10 Image formation process

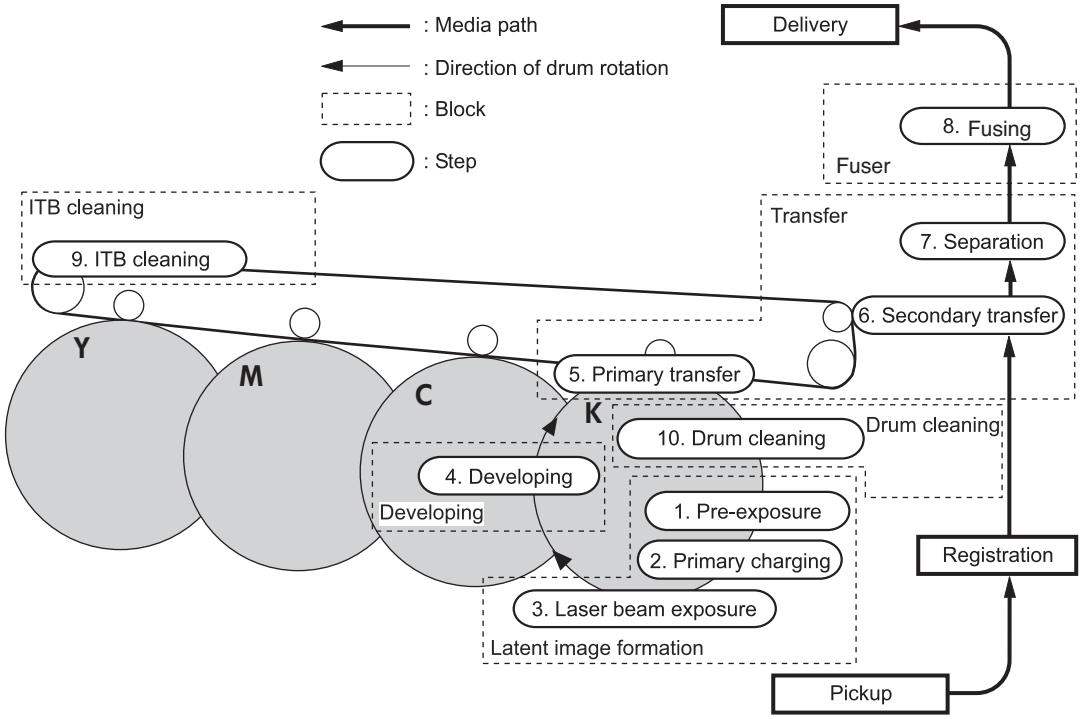


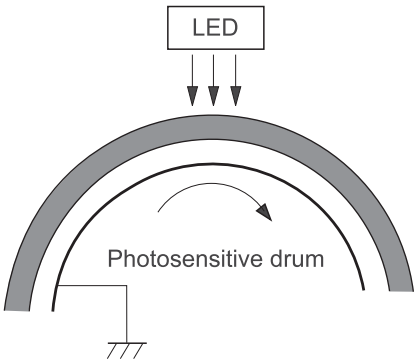
Table 1-11 Image formation process

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

Step 1: Pre-exposure

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

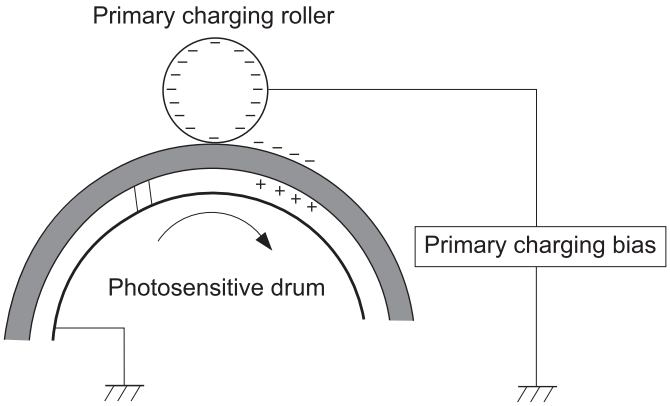
Figure 1-11 Pre-exposure



Step 2: Primary charging

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

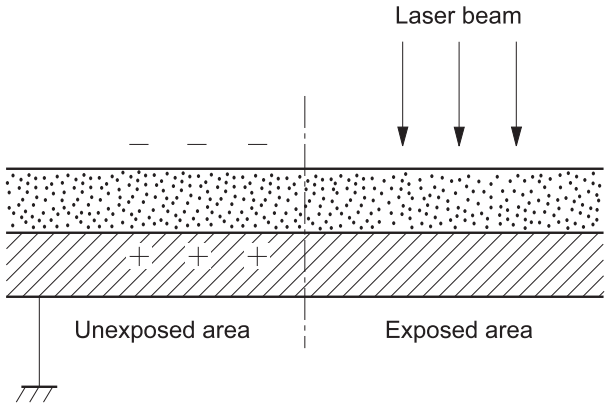
Figure 1-12 Primary charging



Step 3: Laser-beam exposure

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

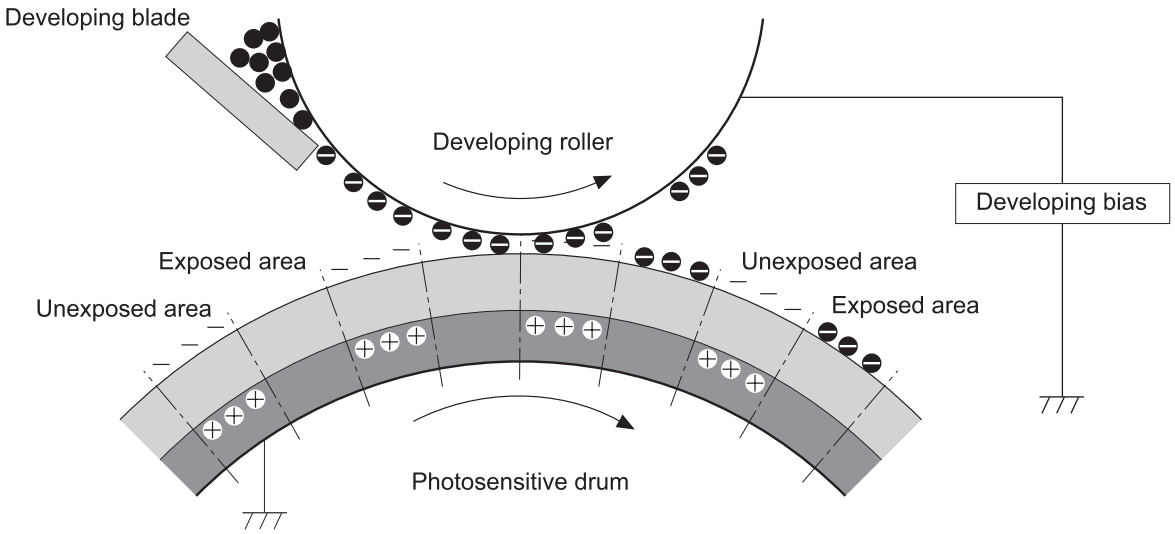
Figure 1-13 Laser-beam exposure



Step 4: Development

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

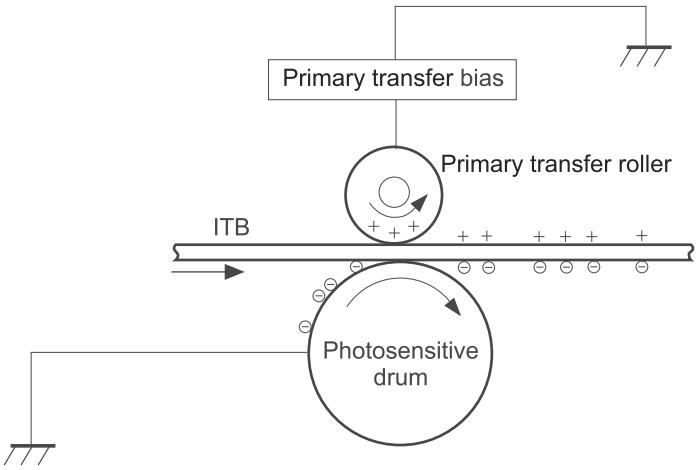
Figure 1-14 Development



Step 5: Primary transfer

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

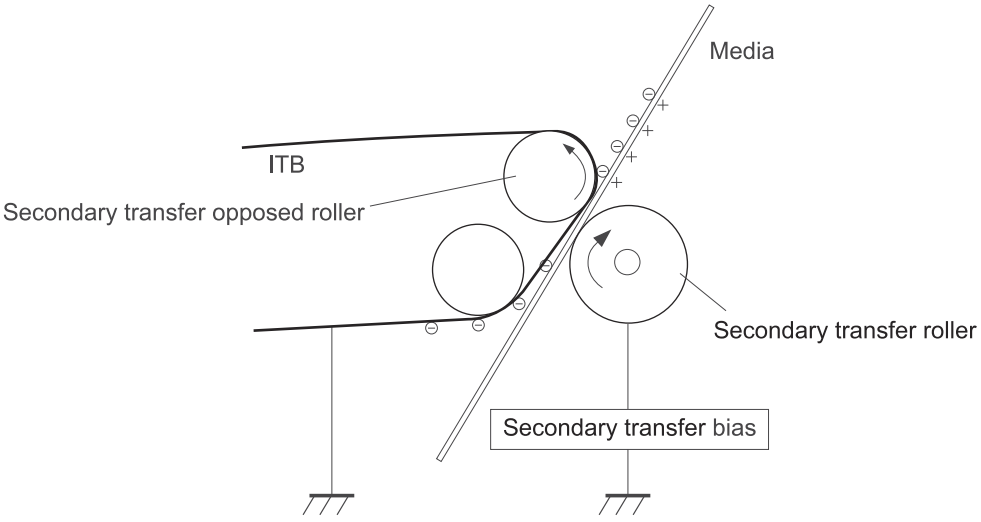
Figure 1-15 Primary transfer



Step 6: Secondary transfer

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

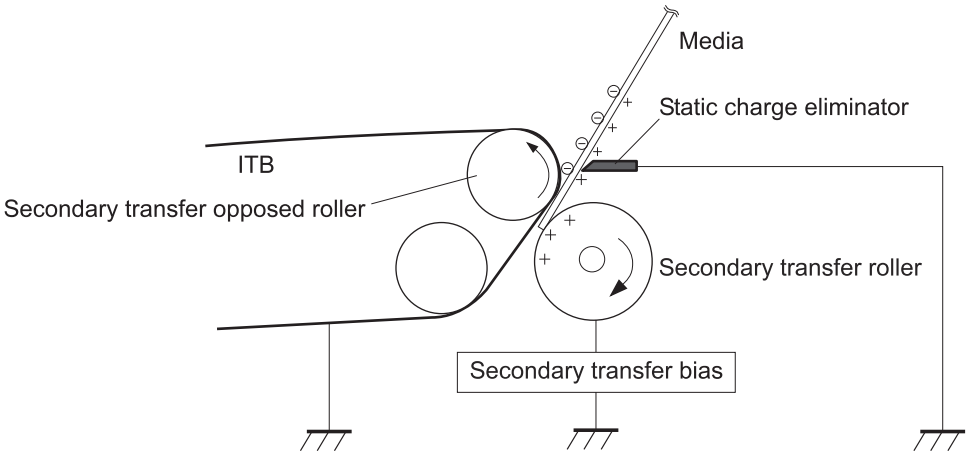
Figure 1-16 Secondary transfer



Step 7: Separation

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

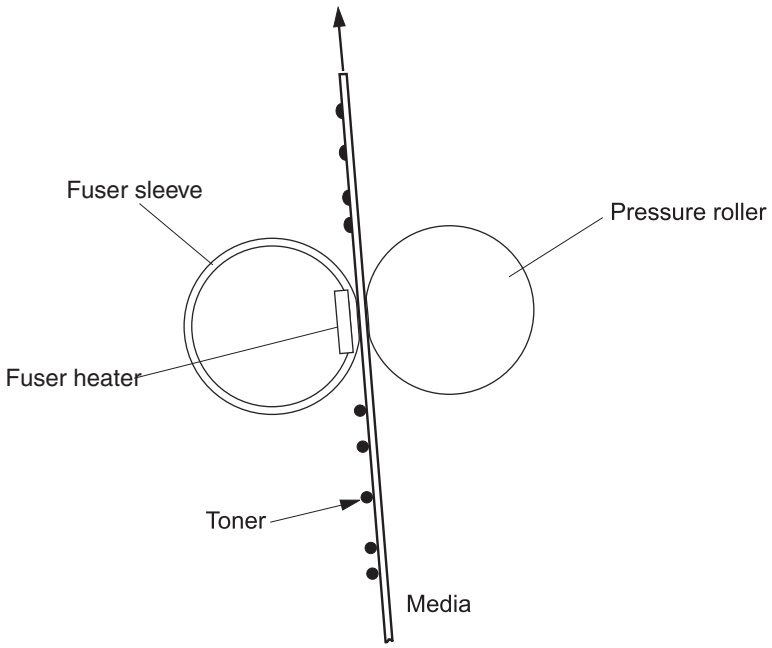
Figure 1-17 Separation



Step 8: Fusing

To create the permanent image, the paper passes through heated, pressurized rollers to melt the toner onto the page.

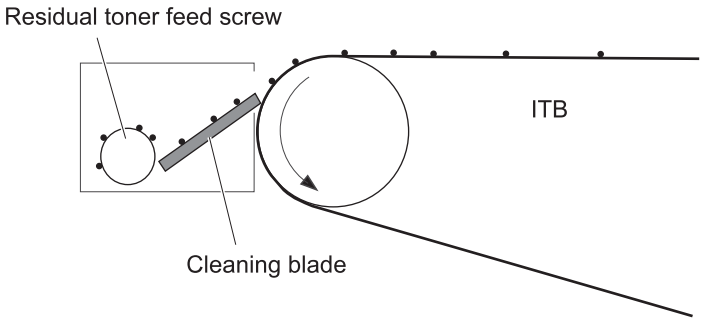
Figure 1-18 Fusing



Step 9: ITB cleaning

The cleaning blade scrapes the residual toner off the surface of the ITB. The residual toner feed screw deposits residual toner in the toner collection box.

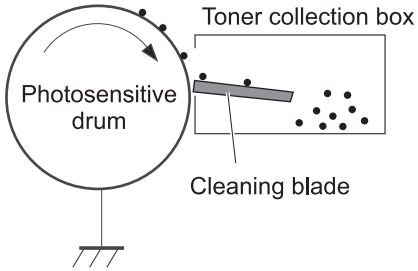
Figure 1-19 ITB cleaning



Step 10: Drum cleaning

Inside the print cartridge, the cleaning blade removes residual toner from the surface of the drum to prepare it for the next image. The waste toner falls into the hopper in the print cartridge.

Figure 1-20 Drum cleaning



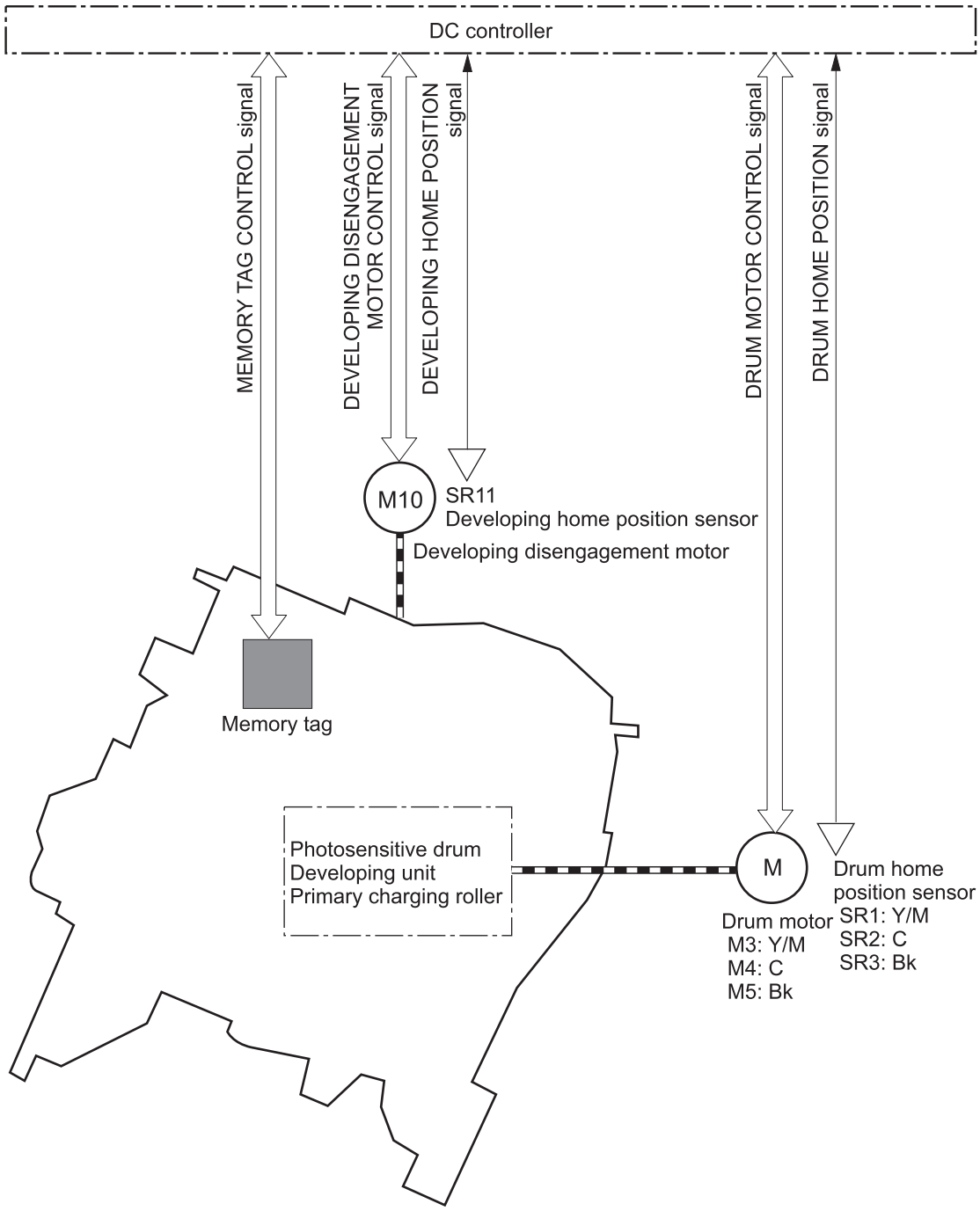
Print cartridge

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

- Photosensitive drum
- Developing roller
- Primary-charging roller

The DC controller rotates the drum motor to drive the photosensitive drum, developing roller, and the primary-charging roller.

Figure 1-21 Print-cartridge system



The DC controller rotates the drum motor to drive the photosensitive drum, developing unit, and primary charging roller.

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

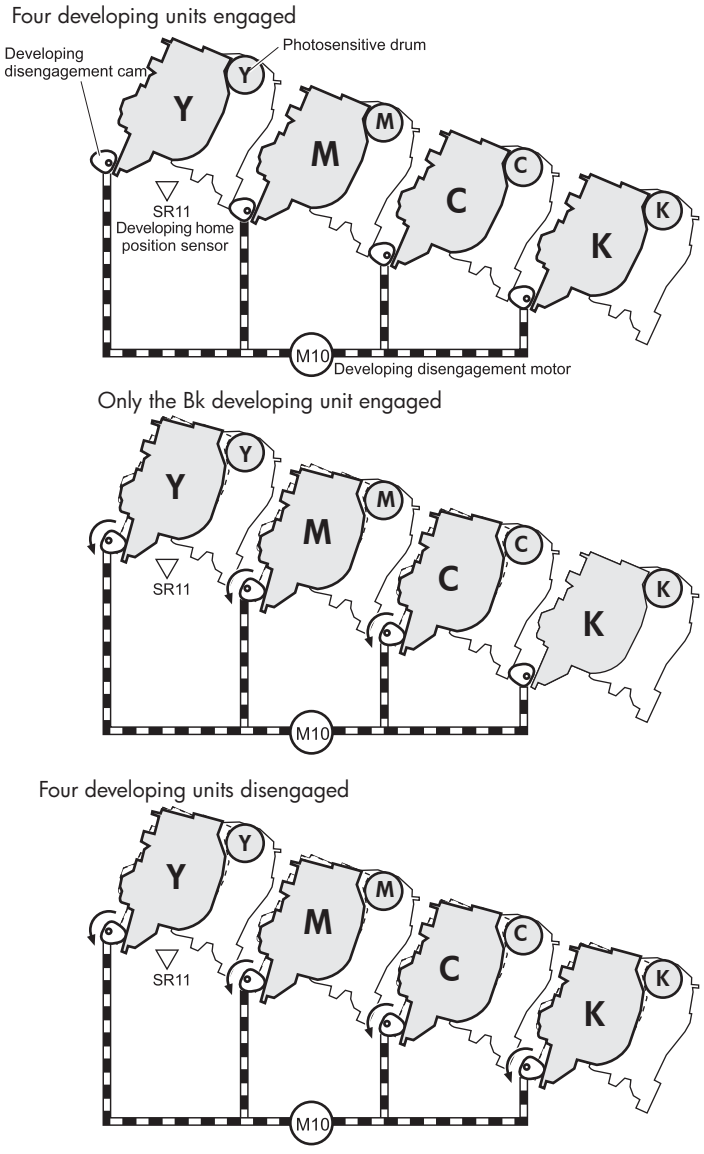
The DC controller notifies the formatter of an error if any of the following conditions exist:

- The memory tag fails to either read to or write from the DC controller
- The RD sensors detect a missing or incorrectly installed print cartridge.
- The accumulated print time reaches a specified time period or the cartridge runs out of toner.
- The toner level in any of the print cartridges drops below a certain level

Developing roller engagement and disengagement

The product can print in full-color mode or in black-only mode. To print in black-only mode, the product disengages the developing rollers in the cyan, magenta, and yellow print cartridges. This maximizes the life of the cartridges.

Figure 1-22 Developing-roller engagement and disengagement control



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

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

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

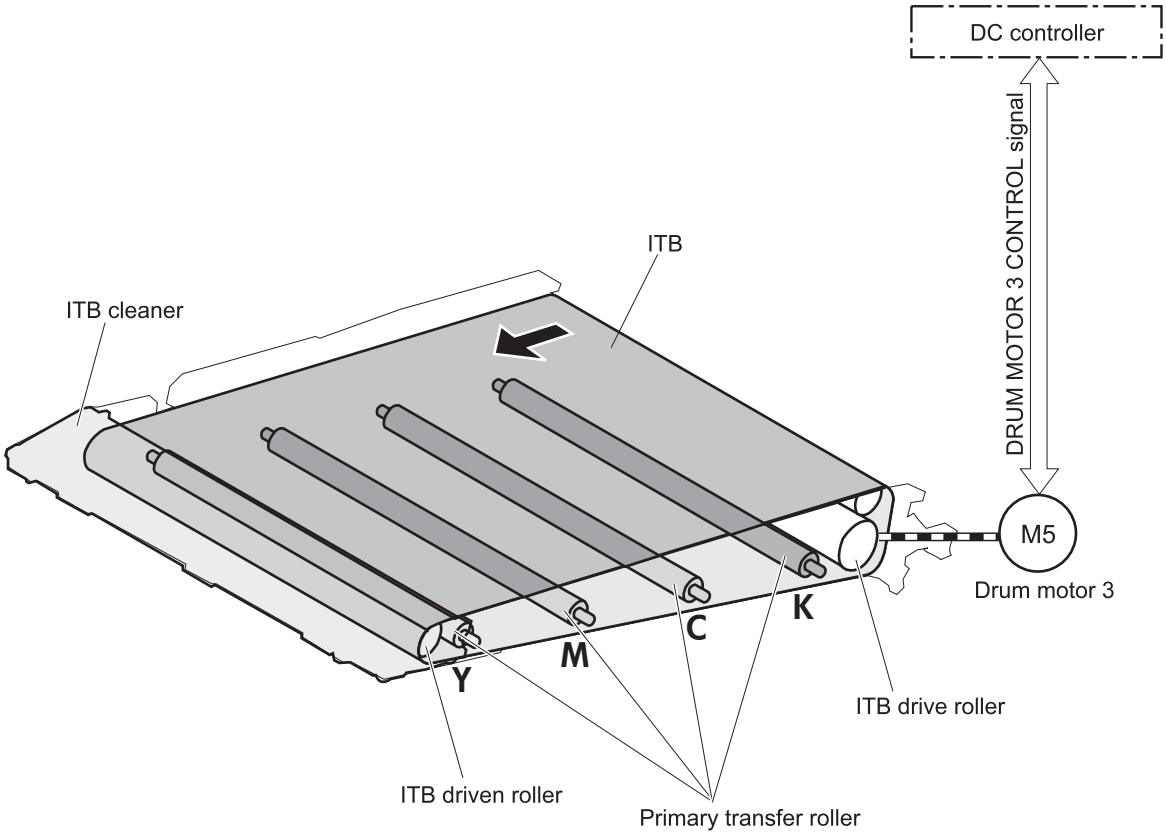
Intermediate transfer belt (ITB) unit

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

- ITB
- ITB drive roller
- ITB-driven roller
- Primary-transfer rollers
- ITB cleaner

The ITB motor drives the ITB drive roller, which rotates the ITB. The motion of the ITB causes the primary transfer rollers to rotate. The ITB cleaner cleans the ITB surface.

Figure 1-23 ITB unit



Primary-transfer-roller engagement and disengagement

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

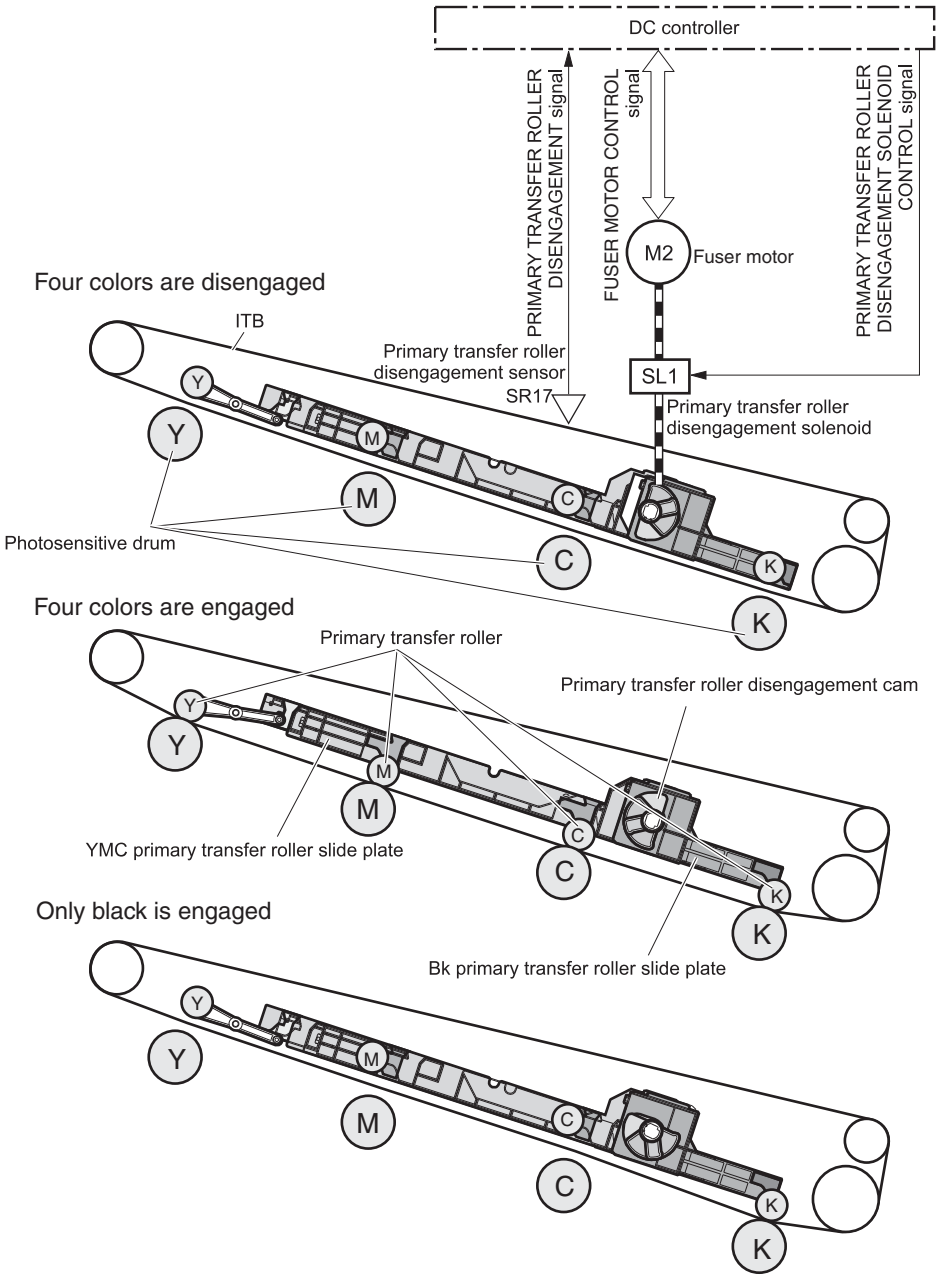
Table 1-12 Primary-transfer-roller engagement states

Roller state	Product state
All rollers disengaged	The home position for the ITB unit

Table 1-12 Primary-transfer-roller engagement states (continued)

Roller state	Product state
All rollers engaged	The state for a full-color print job
Black roller engaged	The state for a black-only print job

Figure 1-24 Three states of primary-transfer-roller engagement and disengagement



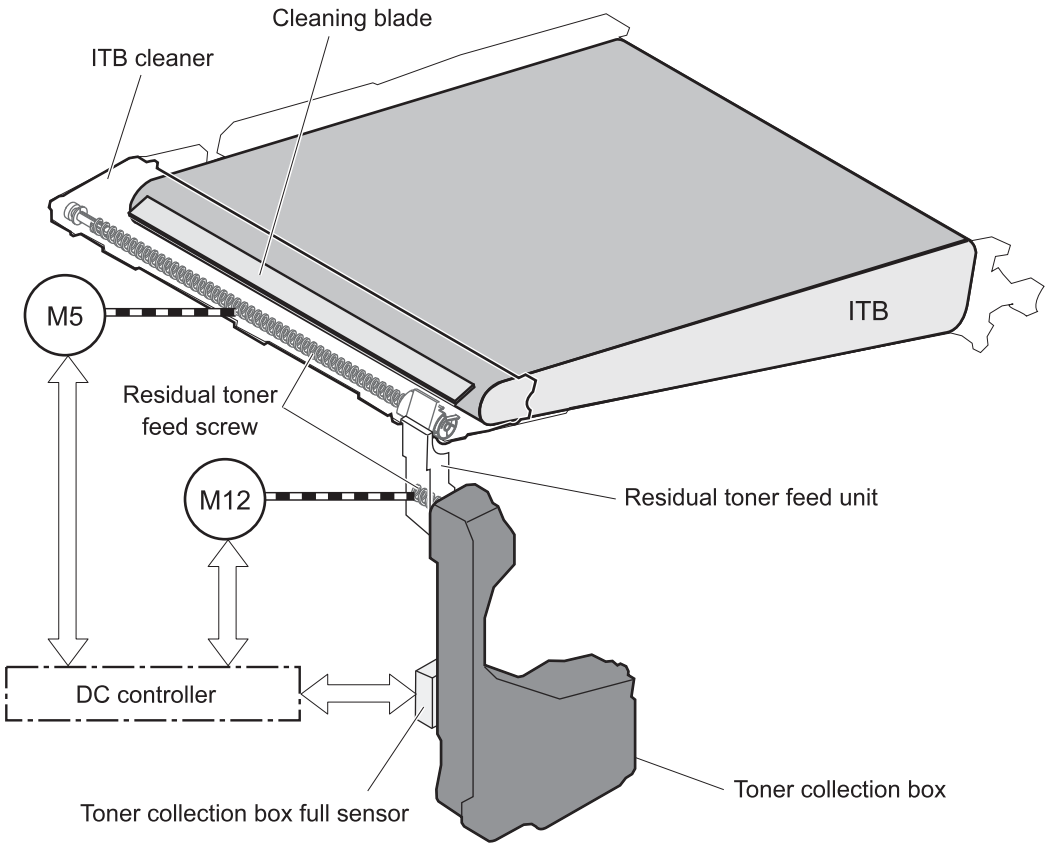
The primary-transfer-roller disengagement motor rotates or reverses to place the primary-transfer-roller disengagement cam into one of three positions. The cam causes the transfer-roller slide plate to move to the right or left. This movement causes the primary-transfer rollers to move up to engage the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

If the DC controller does not receive the expected signal from the ITB home-position sensor when the primary-transfer-roller engages or disengages, but the primary-transfer-roller disengagement motor is rotating, the DC controller determines that the primary-transfer-disengagement mechanism has failed, and notifies the formatter.

ITB cleaning

The cleaning blade in the ITB cleaner scrapes the residual toner off the ITB surface. The drum motor (M5) drives the residual toner feed screw. The screw feeds the residual toner to the residual toner feed unit. The residual toner feed motor (M12) drives the residual toner feed screw. The residual toner feed screw deposits the residual toner in the toner collection box. The DC control detects whether the toner collection box is full, using the toner collection-box-full sensor, and then notifies the formatter.

Figure 1-25 ITB cleaning process

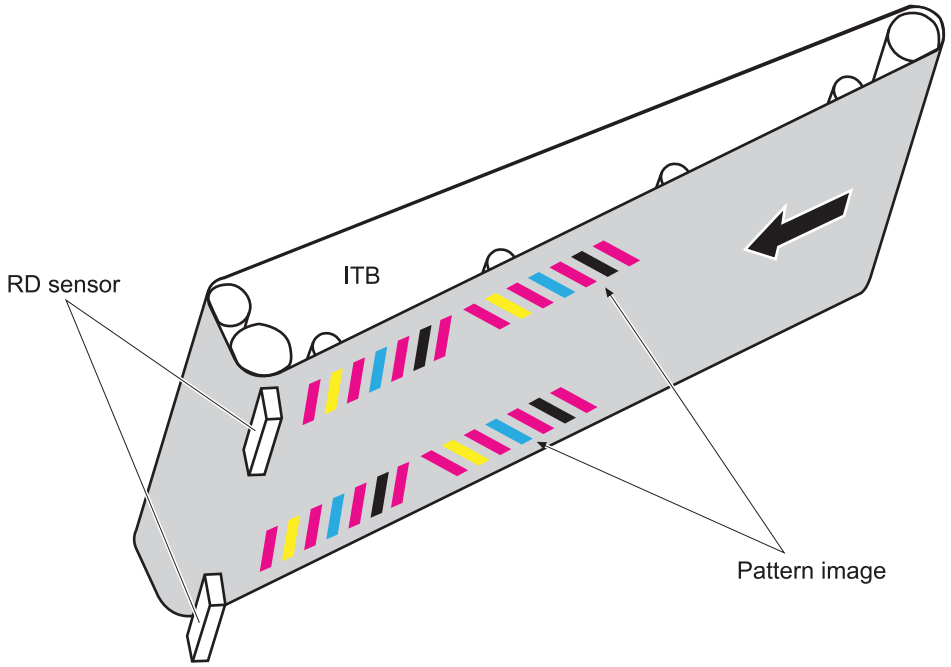


Calibration

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

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

Figure 1-26 Toner patterns for calibration



Color misregistration control

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

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

The calibration occurs when any of the following occurs:

- A cartridge is replaced
- The temperature of the sub thermistor is 50 C (122 F) or lower when the product recovers from sleep mode after a specific number of pages print.
- A specified number of pages have printed.
- The formatter sends a command.
- The user requests a calibration by using the control-panel menus.

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

Image stabilization control

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

Table 1-13 Image-stabilization controls

Image stabilization control	Description
Environment change control	The environment change control calibrates each high-voltage bias to obtain an appropriate image according to the environment changes. The DC controller determines the environment where the product is installed based on the surrounding temperature and humidity data from the environment sensor, controls, and related biases. This control occurs under the following circumstances: • The print cartridge is replaced. The DC controller notifies the formatter when it encounters a communication error with the environmental sensor.
Image density control (DMAX)	This control corrects variations in image density related to deterioration of the photosensitive drum or the toner. The DC controller adjusts the high-voltage biases to correct the problem under the following conditions: • The sub thermistor detects a temperature that is too low when the product is turned on. • After a specific period of the completion of a print operation • A print cartridge is replaced. • The ITB is replaced. • A specified number of pages have printed. • The formatter sends a command. • The environment is relatively charged.
Image halftone control (DHALF)	The DC controller measures the halftone pattern according to the command from the formatter. The formatter performs this control to calibrate the halftone, based on the halftone-density measurements, under the following conditions: • The formatter sends a command. • DMAX is completed.

The DC controller determines a RD sensor failure and notifies the formatter if it detects an out-of-specified-data value from the RD sensor when the product is turned on or when the color misregistration control starts.

Pickup, feed, and delivery system

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

Figure 1-27 Switches and sensors for the pickup, feed, and delivery system (1 of 2)

: Duplex model only

: Duplex media path

: Simplex media path

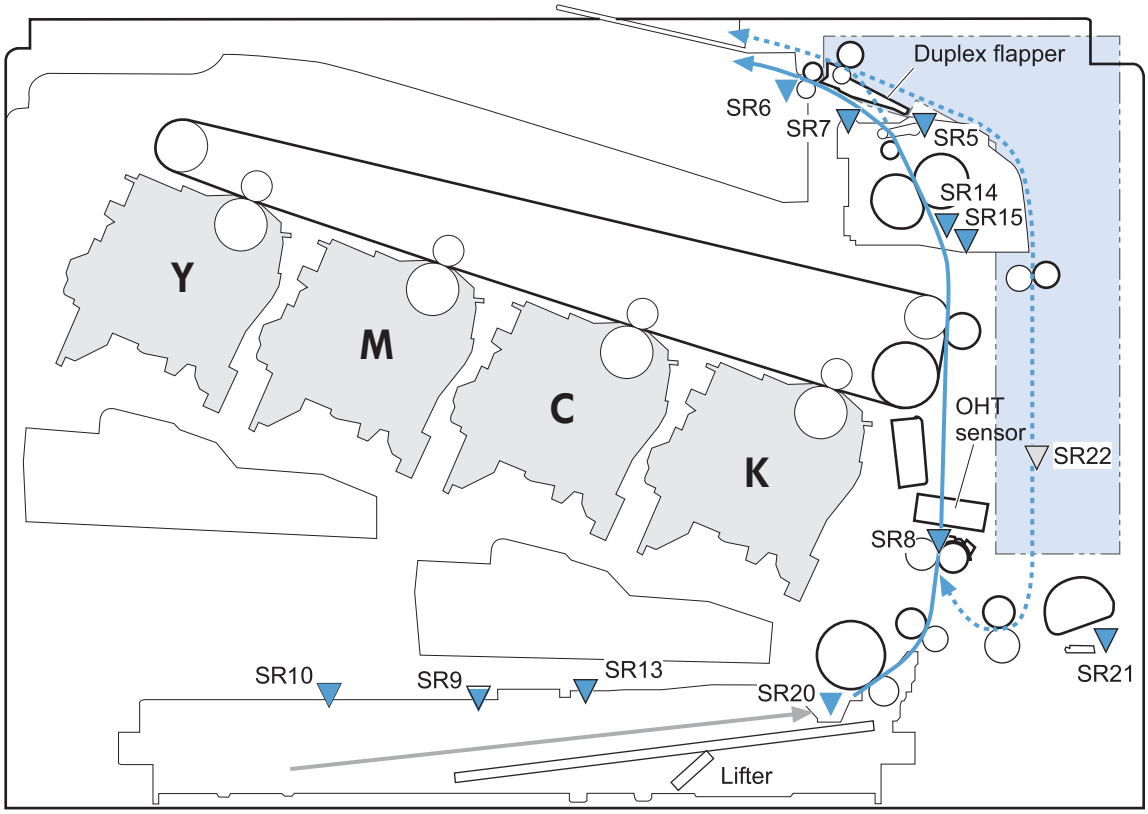


Table 1-14 Switches and sensors for the pickup, feed, and delivery system (1 of 2)

Abbreviation	Component
SR5	Fuser output
SR6	Output bin full
SR7	Fuser pressure release
SR8	Registration
SR9	Tray 2 cassette lifter
SR13	Tray 2 cassette sensor
SR14	Fuser loop 1
SR15	Fuser loop 2
SR20	Tray 2 paper

Table 1-14 Switches and sensors for the pickup, feed, and delivery system (1 of 2) (continued)

Abbreviation	Component
SR21	Tray 1 paper
SR22	Duplexer refeed (duplex models only)

Figure 1-28 Switches and sensors for the pickup, feed, and delivery system (2 of 2)

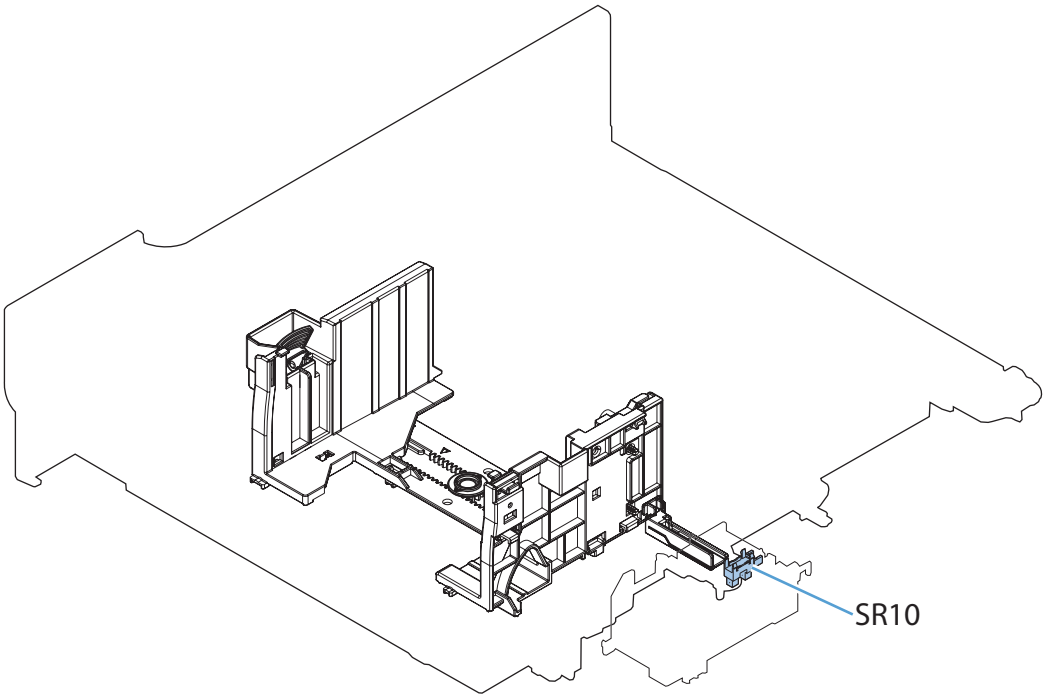


Table 1-15 Switches and sensors for the pickup, feed, and delivery system (2 of 2)

Abbreviation	Component
SR10	Paper Width (Tray 2) **NOTE:** For more information about this sensor, see Cassette media width detection on page 47.

Figure 1-29 Motors and solenoids for the pickup, feed, and delivery system

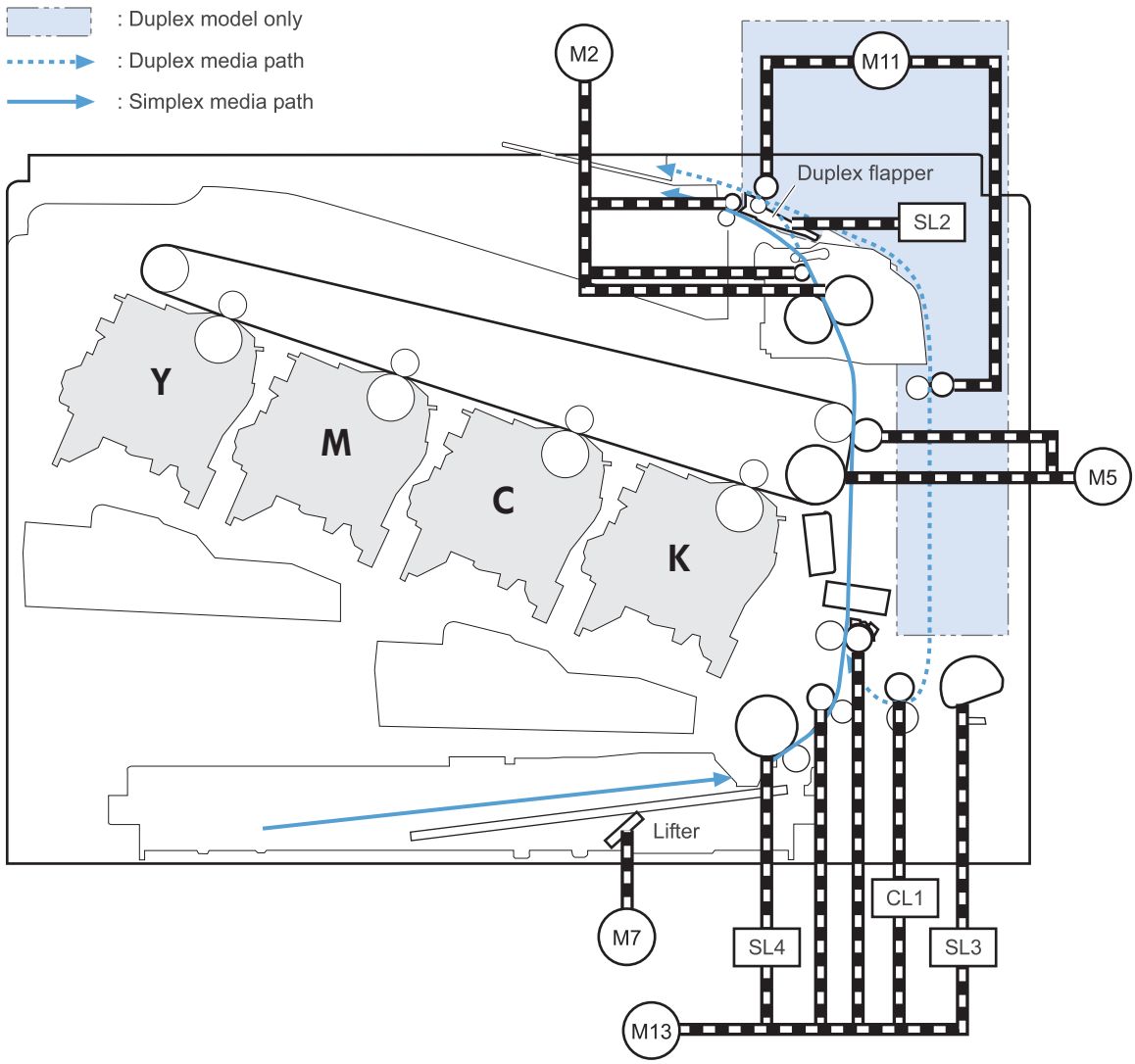
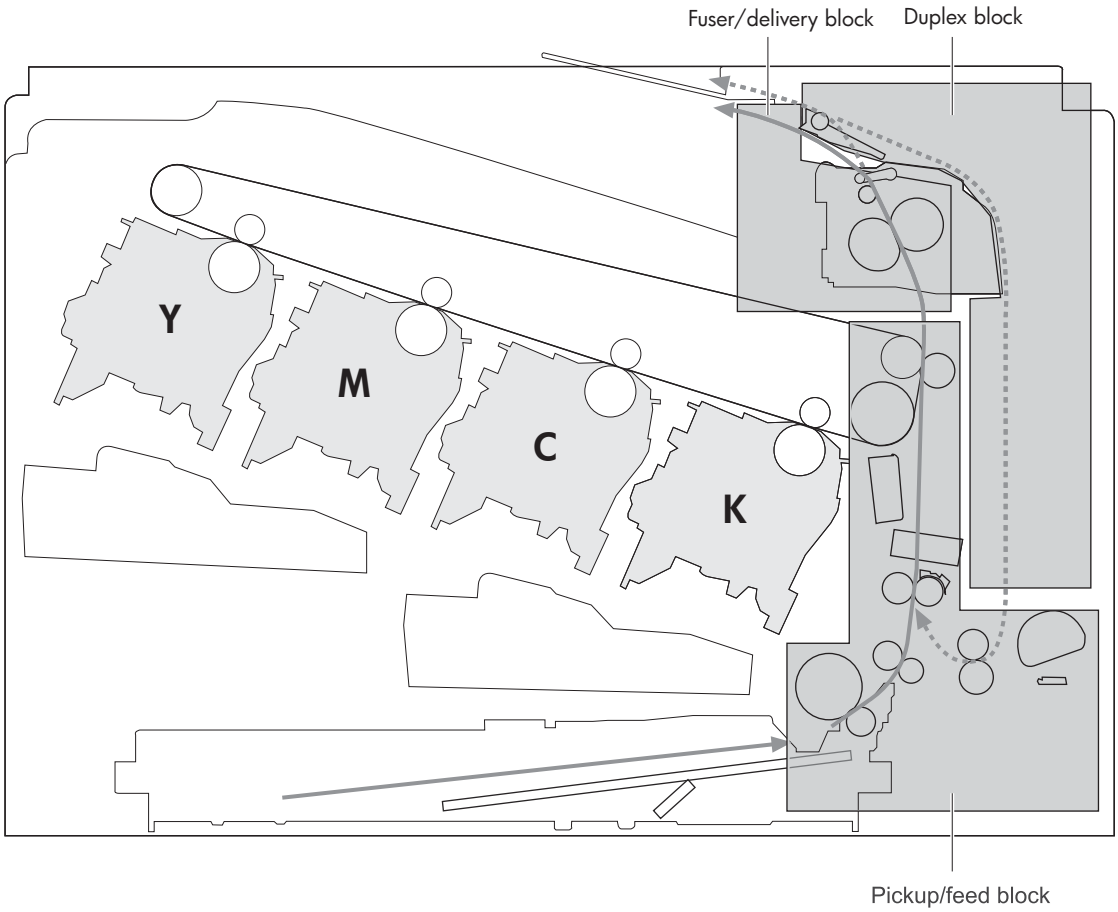


Table 1-16 Motors and solenoids for the pickup, feed, and delivery system

Abbreviation	Component
M2	Fuser motor
M5	Drum motor 3
M7	Lifter motor
M11	Duplex reverse motor (duplex models only)
M13	Pickup motor
CL1	Duplex re-pickup clutch (duplex models only)
SL2	Duplex reverse solenoid (duplex models only)
SL3	Multipurpose tray pickup solenoid
SL4	Cassette pickup solenoid

Figure 1-30 Three main units of the pickup, feed, and delivery system



Pickup-and-feed unit

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

Figure 1-31 Pick feed mechanism

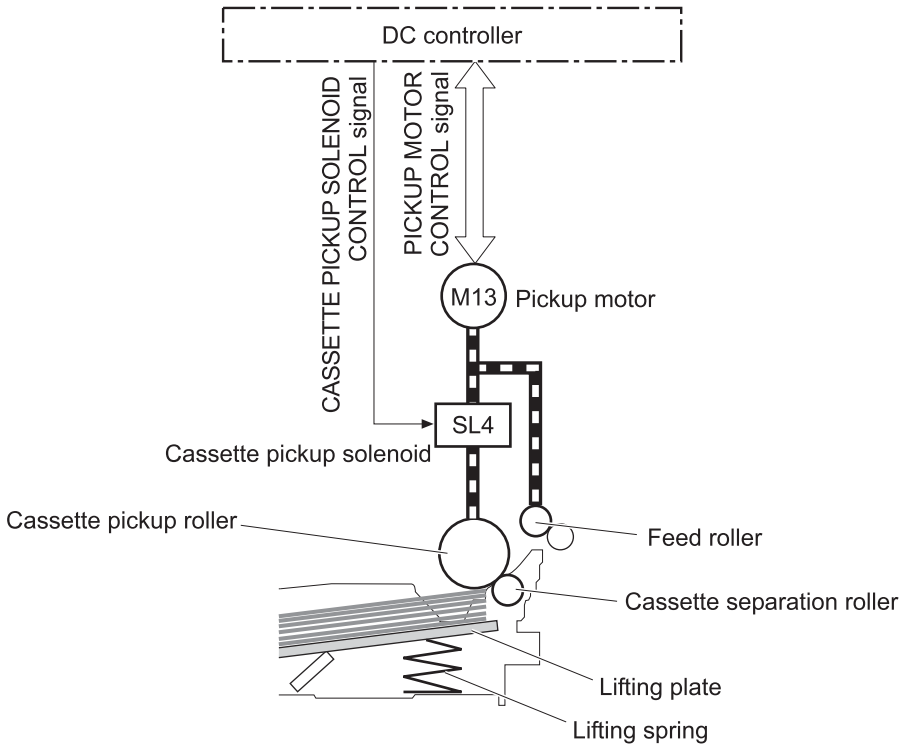


Cassette pickup

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

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

Figure 1-32 Cassette-pickup mechanism

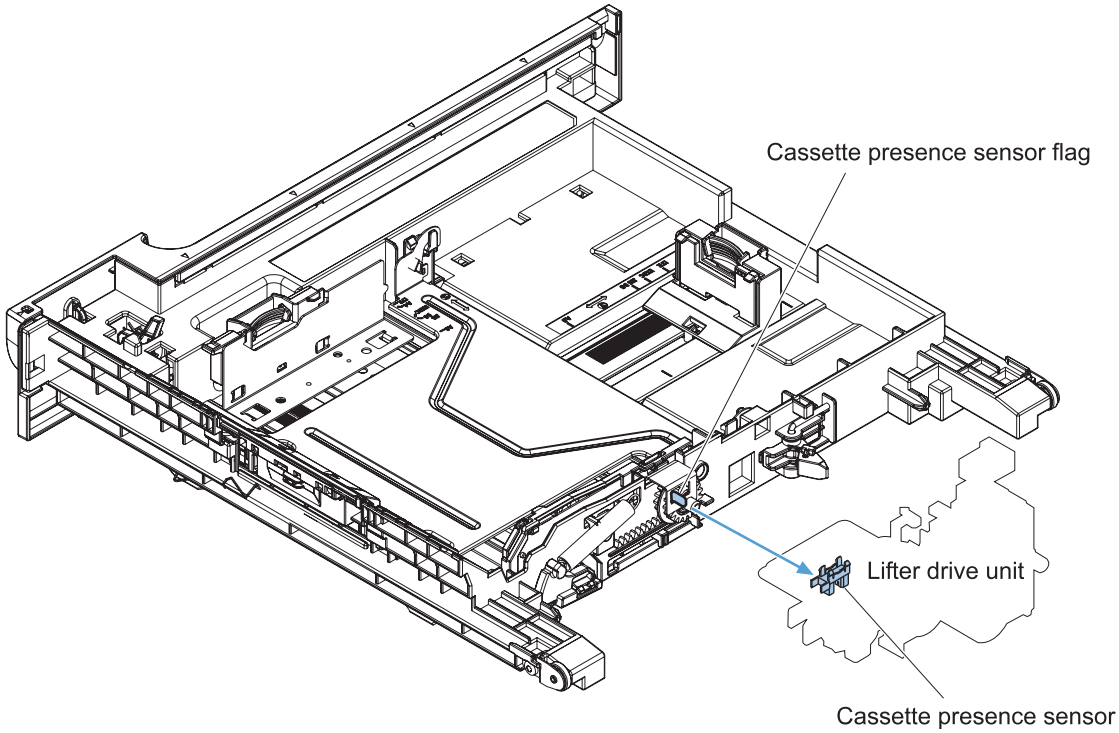


NOTE: The lift-up operation lifts the lifting plate to keep the stack surface of the media at a pickup position. The lifting spring helps support the lifting plate depending on the media size and amount.

Cassette presence detection

The cassette presence sensor is in the lifter drive unit. The sensor detects the cassette-presence sensor flag and determines whether the cassette is installed correctly.

Figure 1-33 Cassette presence sensor



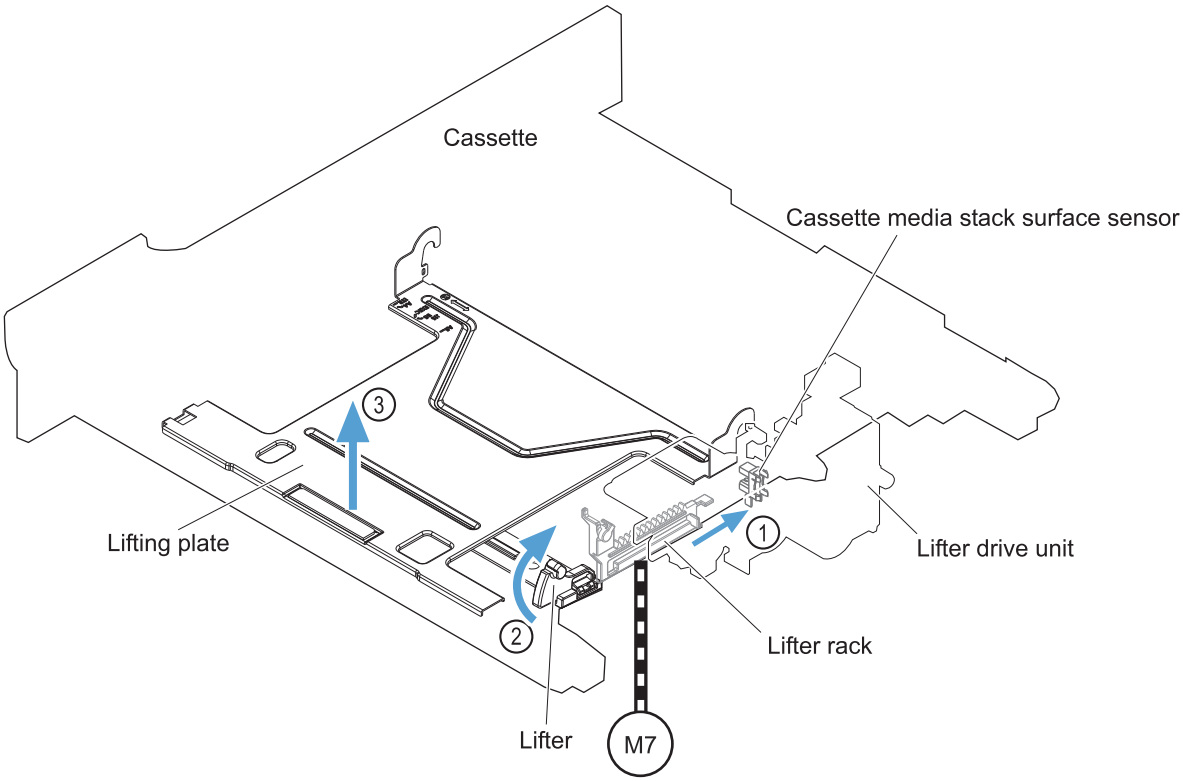
Cassette lift operation

The DC controller rotates the lifter motor (M7) and moves the lifter rack until the Tray 2 cassette lifter sensor (SR9) detects it. The lifter lifts, and the lifting plate moves up to the position where the media can be picked up. The lift operation is performed by monitoring the cassette media-stack-surface sensor when the printer is turned on, when the cassette is installed, or as needed during a print operation.

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

The DC controller lowers the lifting plate when no printing occurs to prevent media damage and pickup failure. If a print operation does not occur for a specified time, the DC controller reverses the lifter motor and moves the lifter rack until the cassette media-stack surface sensor stops detecting it.

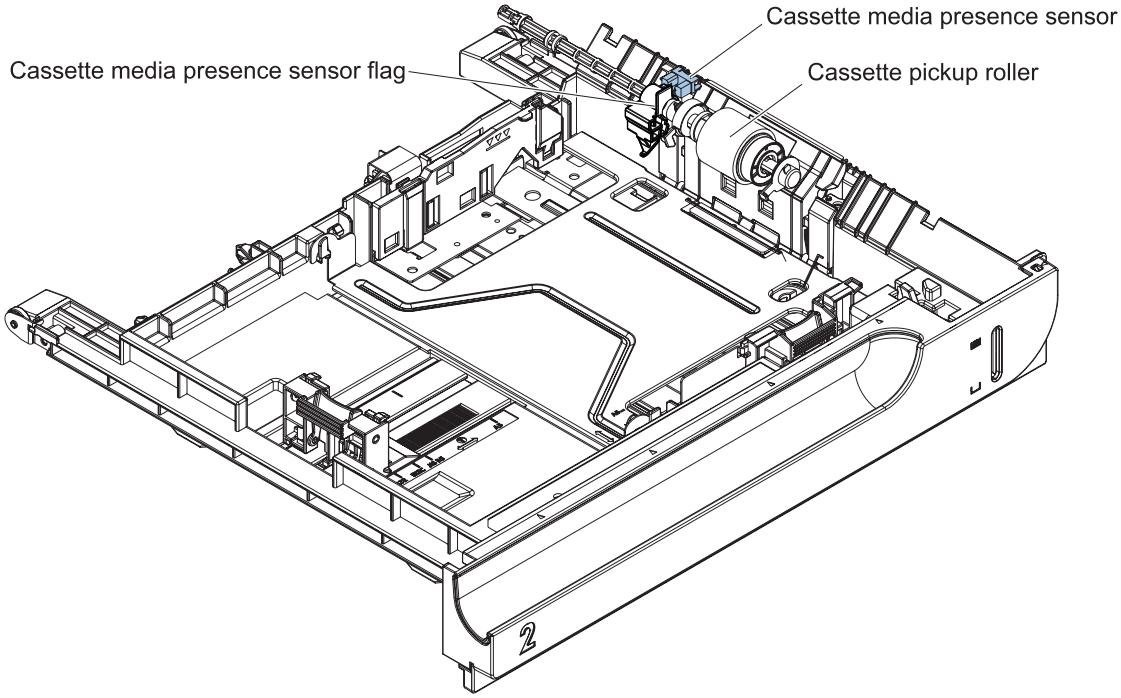
Figure 1-34 Cassette lift mechanism



Cassette paper presence detection

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

Figure 1-35 Paper level detection mechanism

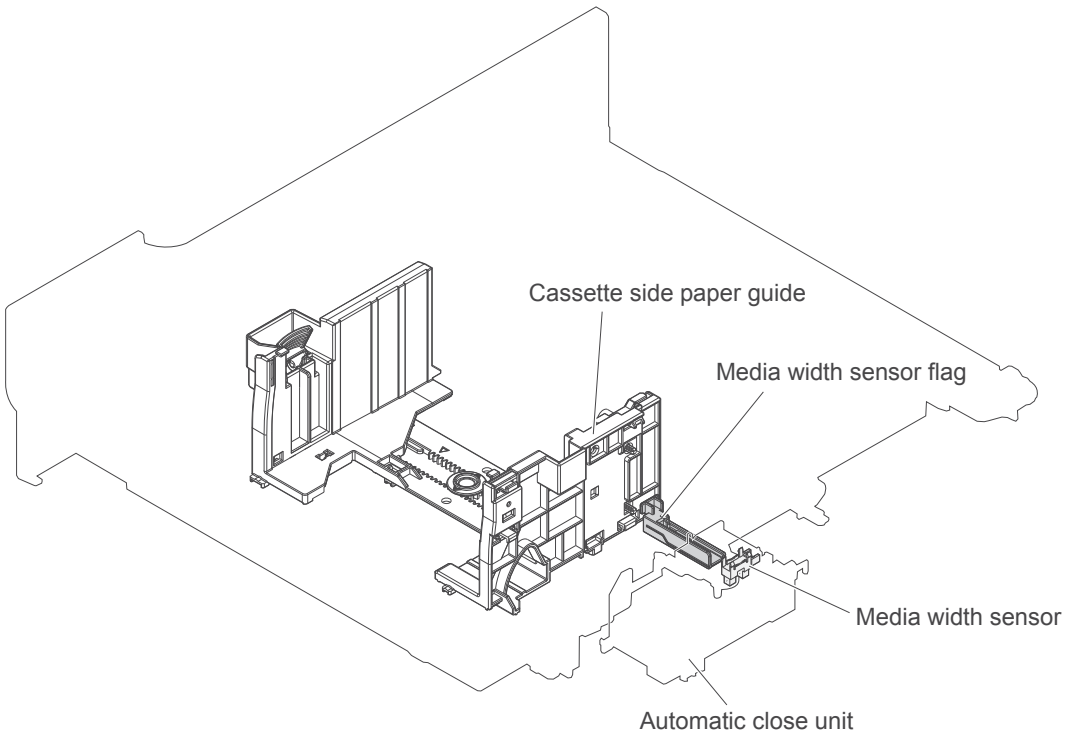


Cassette media width detection

The paper width 1 sensor (SR10) detects the size of the paper loaded in the cassette. The DC controller determines the paper size using the paper-width sensor. The paper-width sensor flag moves relative to the cassette-side paper guide.

The pickup pressure is adjusted according to the paper size to prevent a pickup failure. The pickup pressure increases when large paper sizes (Letter, A4, and A5-R) are loaded and decreases when small paper sizes (Executive, B5, A5, A6, and 4 x 6) are loaded.

Figure 1-36 Cassette media width detection

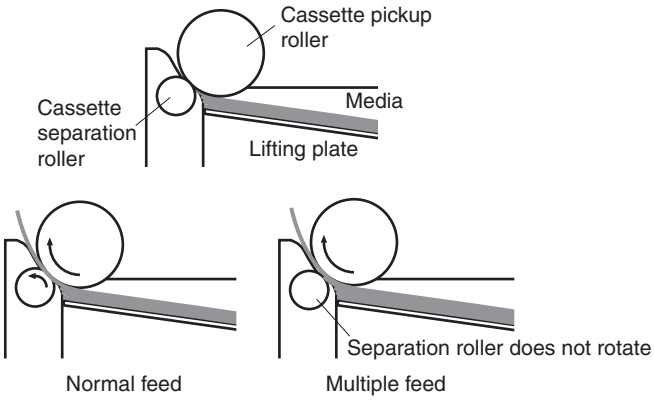


Multifeed prevention

In the cassette, a separation roller prevents multiple sheets of paper from entering the paper path. The cassette pickup roller drives the separation roller through a sheet of paper.

The low friction force between the sheets weakens the driving force from the cassette pickup roller. Because some braking force is applied to the cassette separation roller, the weak rotational force of the pickup roller is not enough to rotate the separation roller. Therefore, the separation roller holds back any multiple-fed sheets, and one sheet of media is fed into the printer.

Figure 1-37 Multifeed prevention



Multipurpose tray pickup

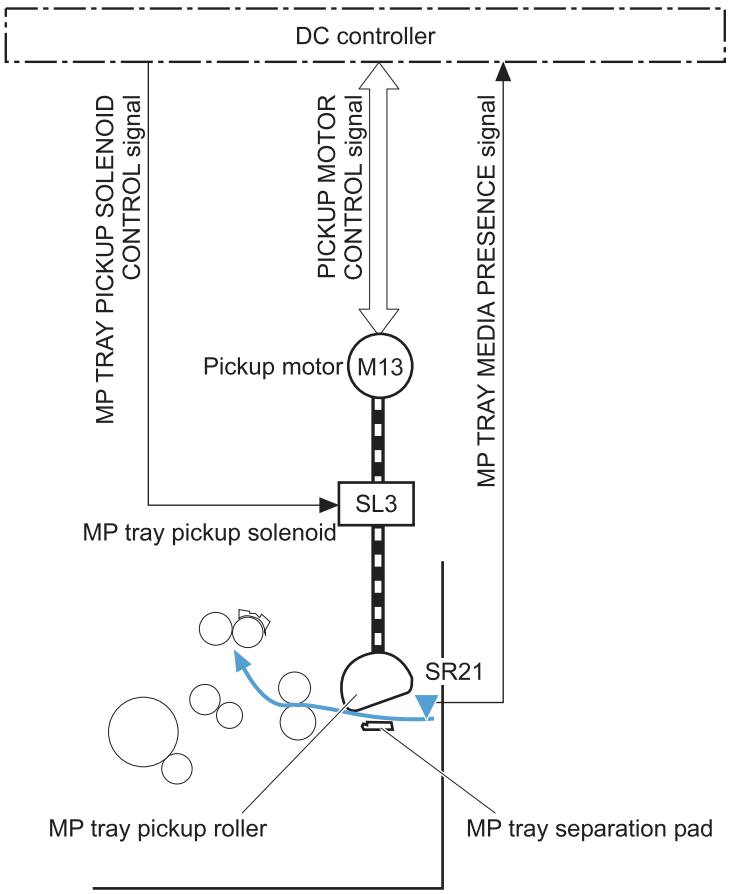
The multipurpose tray paper-presence sensor detects whether paper is in the tray. If no paper is present, the DC controller notifies the formatter. Printing does not occur until paper is in the tray.

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

1. After receiving a print command from the formatter, the DC controller reverses the pickup motor, which causes the multipurpose tray separation roller to rotate.
2. The DC controller turns on the multipurpose tray pickup solenoid (SL3), causing the multipurpose tray pickup roller to rotate.
3. The multipurpose tray separation roller isolates a single sheet of paper in case more than one sheet was picked. The single sheet of paper feeds into the product.

The Tray 1 paper sensor (SR21) detects whether the media is present in the MP tray. No printing occurs if no media is loaded.

Figure 1-38 Multipurpose tray pickup mechanism

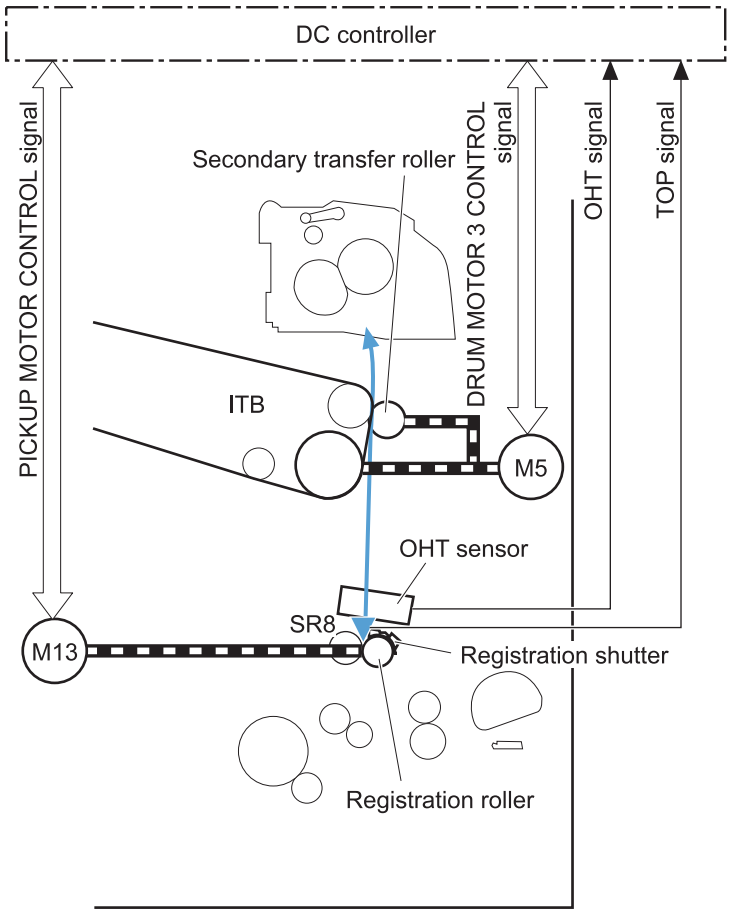


Paper feed

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

1. The paper passes through the feed rollers. The registration shutter aligns the paper correctly to prevent skewed printing.
2. The DC controller detects the leading edge of paper by the Registration sensor (SR8) and controls the rotational speed of the pickup motor to align with the leading edge of image on the ITB.
3. The DC controller detects whether or not the media is overhead transparency, using the OHT sensor.
4. The toner image on the ITB transfers onto the media, which feeds to the fuser.

Figure 1-39 Paper-feed mechanism

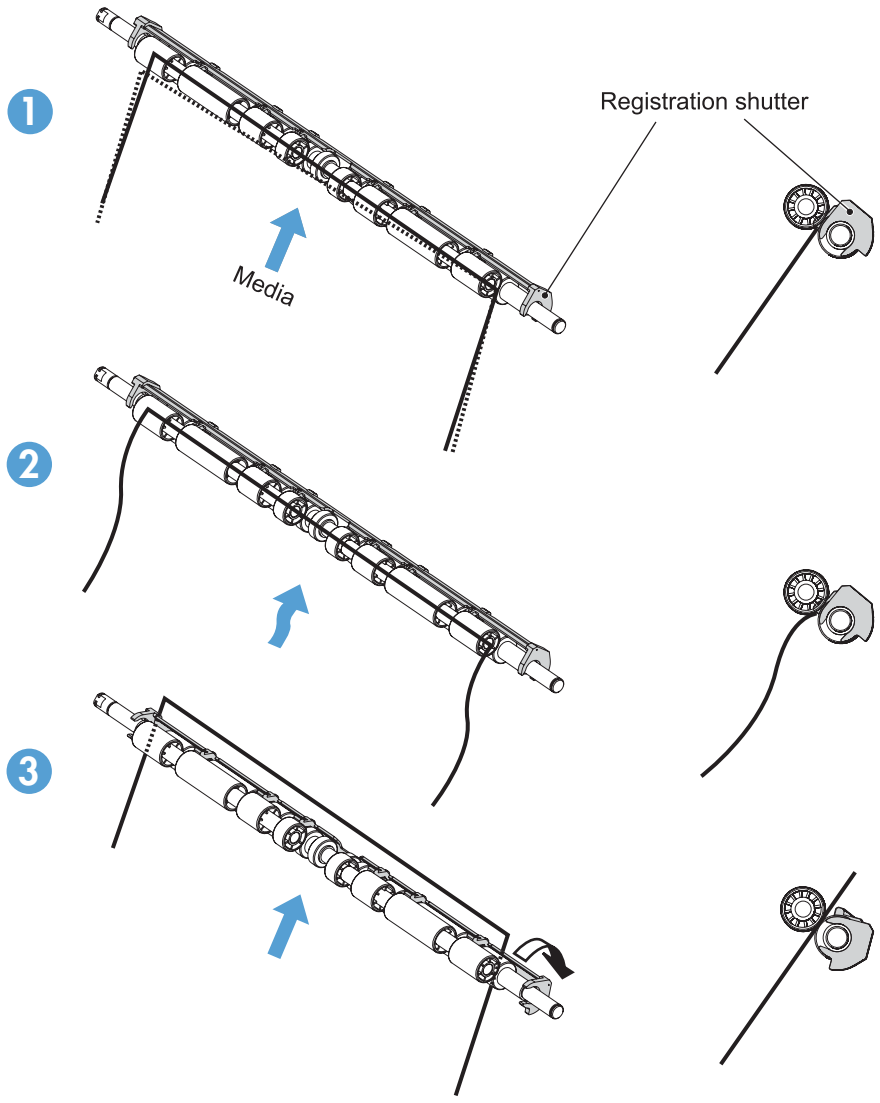


Skew-feed prevention

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

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

Figure 1-40 Skew-feed prevention



OHT detection

The OHT sensor detects overhead transparencies. The OHT sensor is a transmission sensor that uses an LED. The DC controller determines a media mismatch and notifies the formatter when the media type differs from the media type detected by the OHT sensor. The DC controller turns the LED in the OHT sensor on and off during the wait or initial rotation period. If the intensity of the light does not match the specified value, the DC controller determines that the OHT sensor has failed.

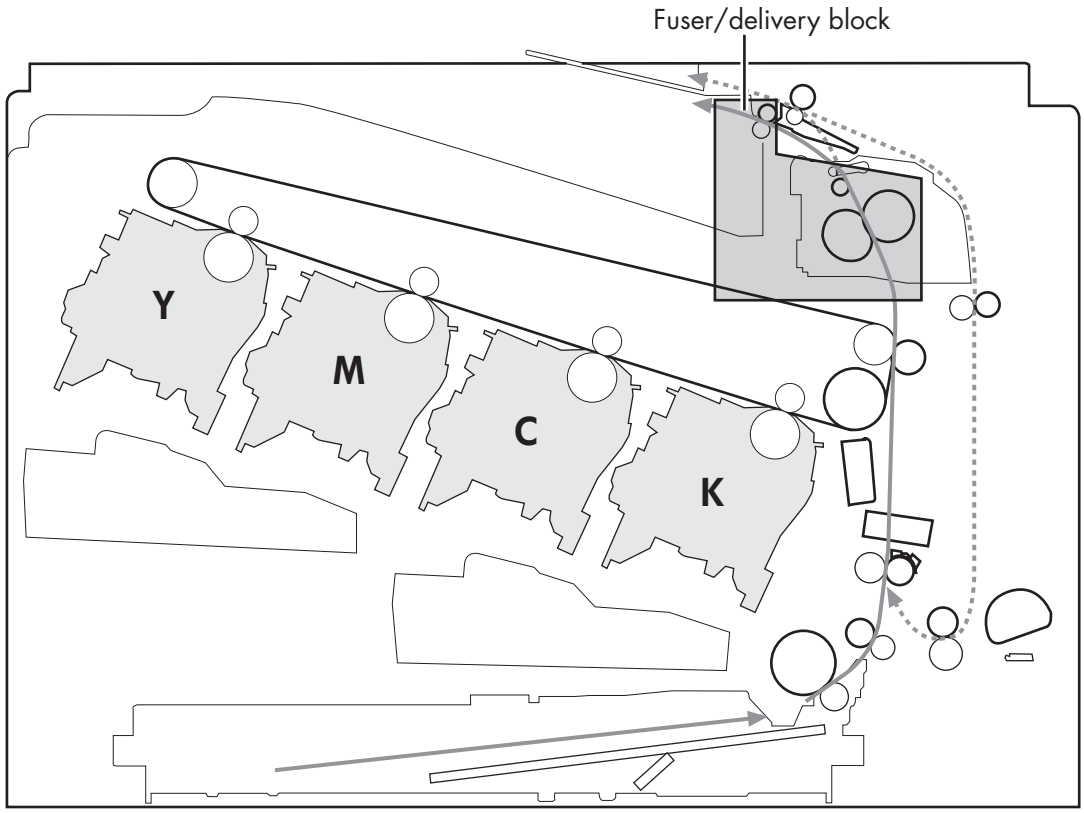
Fusing and delivery unit

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

- Loop control
- Pressure roller pressurization/depressurization control

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

Figure 1-41 Fuser and delivery unit



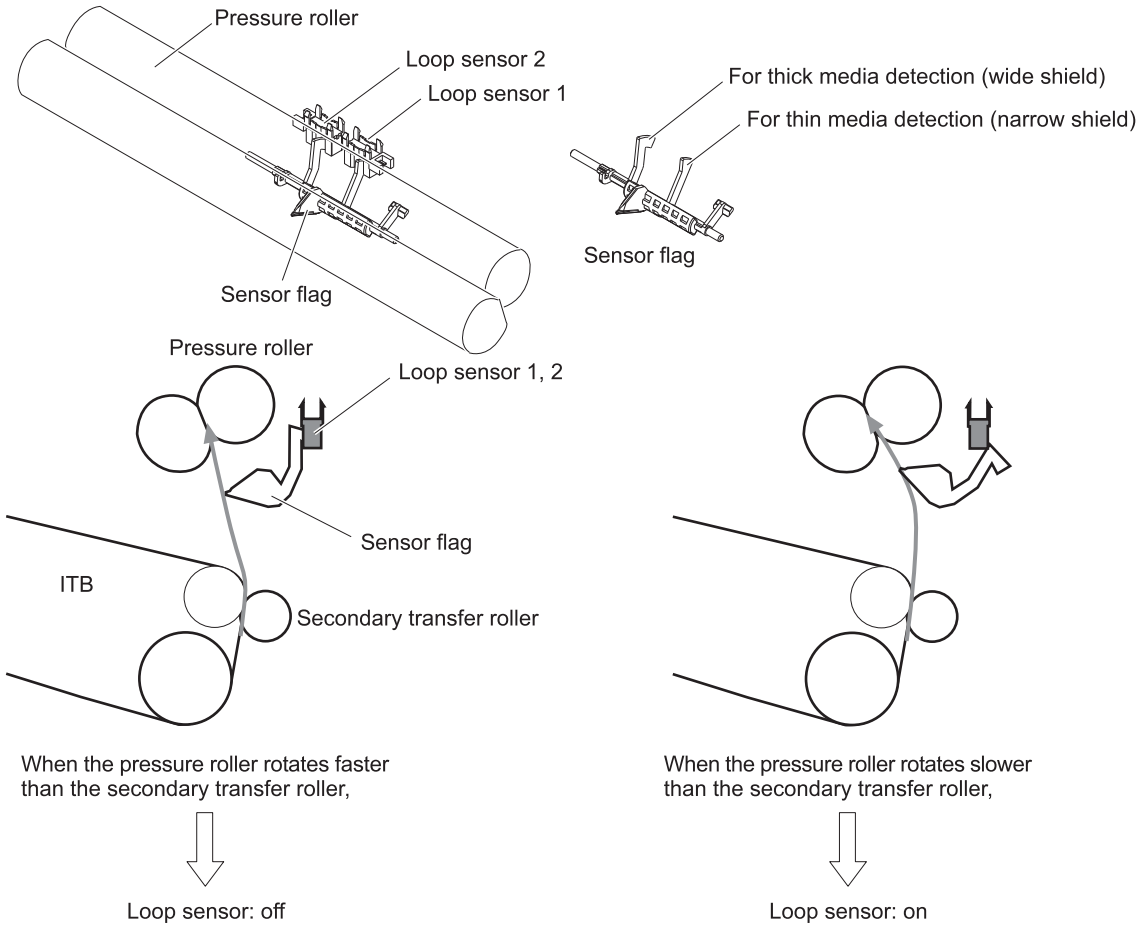
Loop control

The loop control monitors the tension of the paper between the second-transfer roller and the fuser.

- If the fuser rollers rotate more slowly than the secondary transfer rollers, the paper warp increases and an image defect or paper crease occurs.
- If the fuser rollers rotate faster than the secondary transfer rollers, the paper warp decreases and the toner image fails to transfer to the paper correctly, causing color misregistration.

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

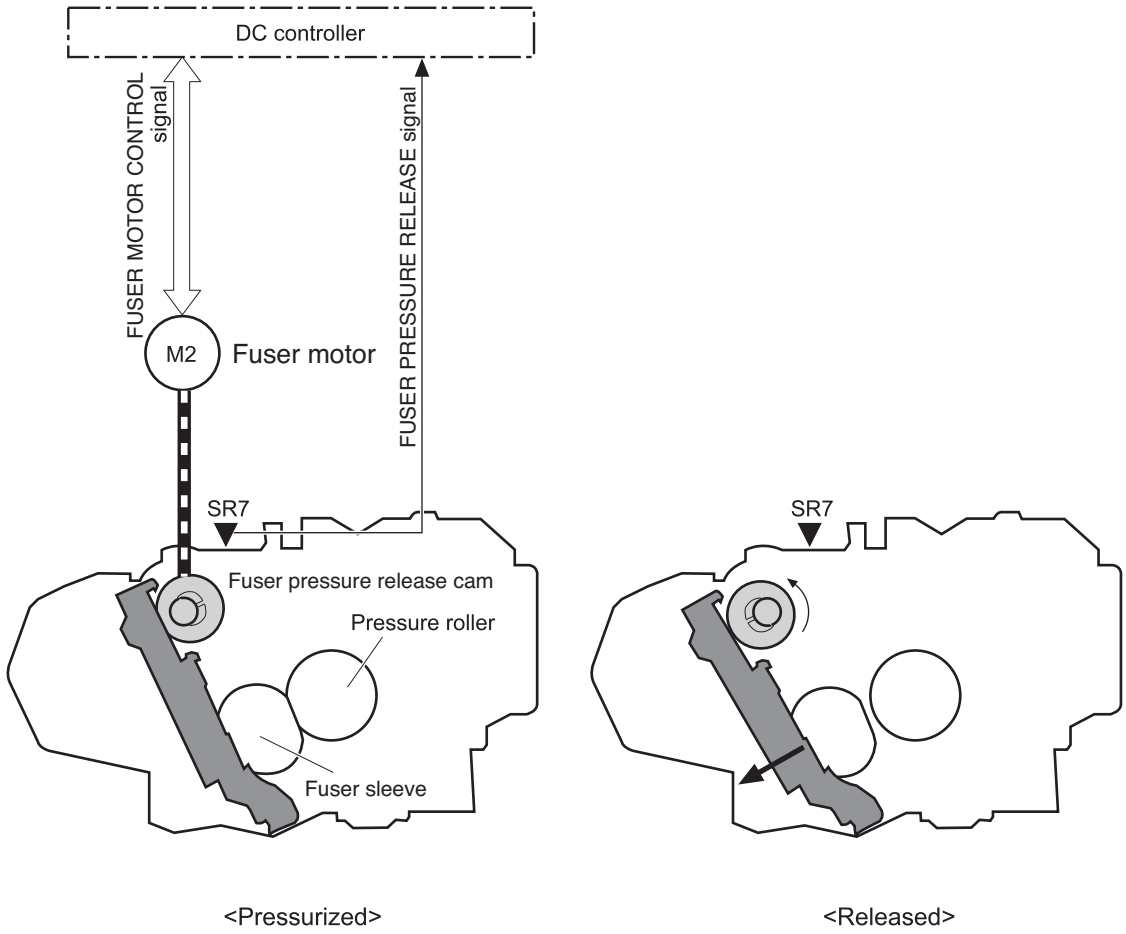
Figure 1-42 Loop-control mechanism



Pressure-roller pressurization control

To prevent excessive wear on the pressure roller and help with jam-clearing procedures, the pressure roller pressurizes only during printing and standby. The DC controller reverses the fuser motor. The fuser motor rotates the fuser pressure-release cam.

Figure 1-43 Pressure-roller pressurization control



The pressure roller depressurizes under the following conditions:

- The product is turned off with the on/off switch
- Any failure occurs other than a fuser pressure-release mechanism failure
- During powersave mode
- When a paper jam is detected

If the DC controller does not sense the fuser pressure-release sensor for a specified period after it reverses the fuser motor, it notifies the formatter that a fuser pressure-release mechanism failure has occurred.

NOTE: The fuser remains pressurized if the power is interrupted when the power cord is removed or the surge protector is turned off, or if the fuser is removed without turning off the product.

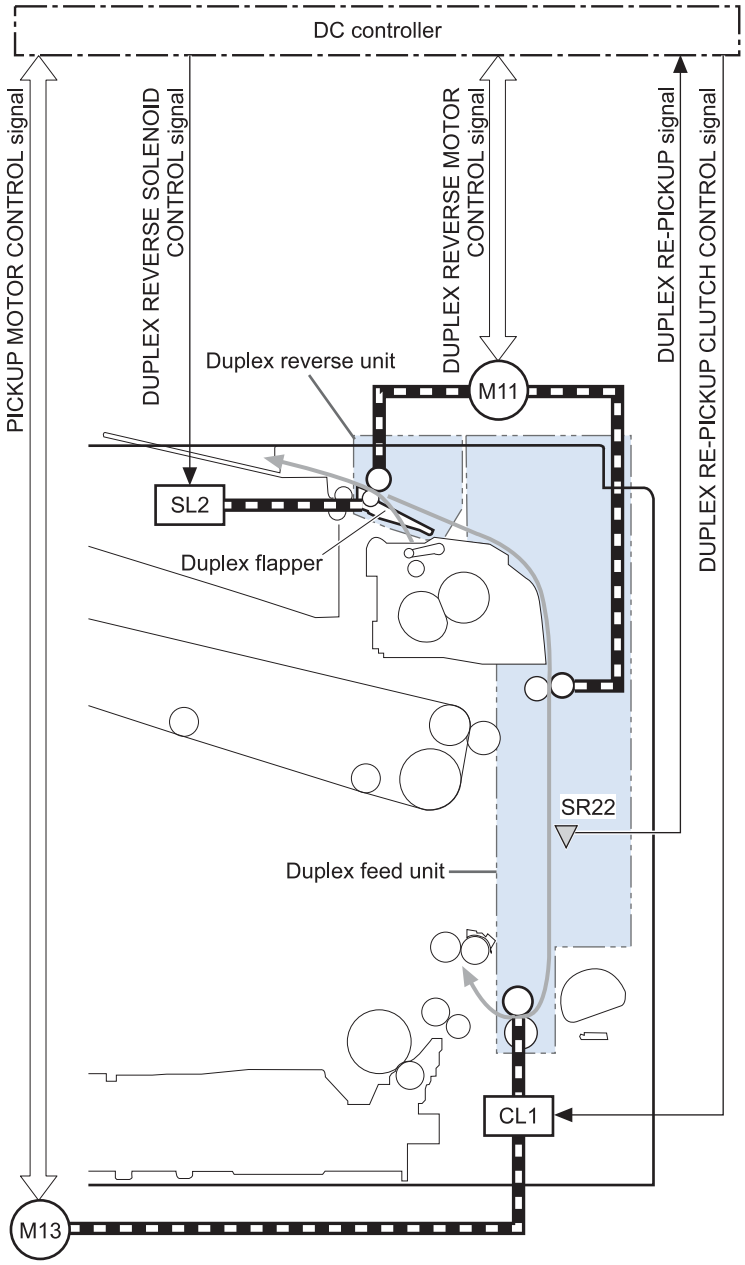
Duplexing unit (duplex models)

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

- **Duplexing-reverse unit**: Installed on top of the product
- **Duplexing-feed unit**: Along the right side

The DC controller controls the operational sequence of the duplex block. The DC controller drives each load, such as motors, solenoid, and clutch, depending on the duplex reverse unit and duplex feed unit controls.

Figure 1-44 Duplexing unit



Duplexing reverse and feed control

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

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

Duplex pickup operation

The product has the following two duplex-media-feed modes depending on the media sizes:

- One-sheet mode: Prints one sheet that is printed on two sides in one duplex print operation
- Two-sheet mode: Prints two sheets that are printed on two-sides in one duplex print operation (maximum paper size is A4)

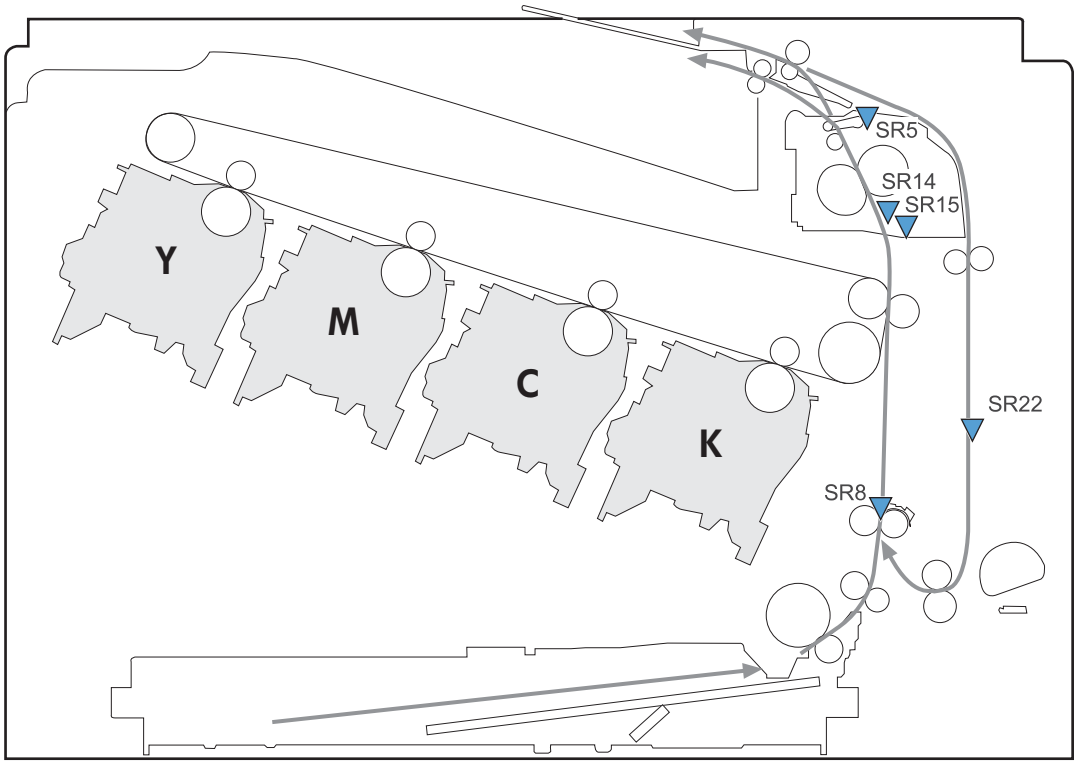
The formatter specifies the duplex-media-feed mode.

Jam detection

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

- Fuser output sensor (SR5)
- Registration sensor (SR8)
- Fuser loop 1 (SR14)
- Fuser loop 2 (SR15)
- Duplexer refeed (SR22)

Figure 1-45 Jam detection sensors



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

Table 1-17 Jams that the product detects

Jam	Description
Pickup delay jam 1	**Cassette pickup**: The TOP sensor does not detect the leading edge of the paper within a specified period after the cassette pickup solenoid has turned on.
	Multipurpose tray pickup: The TOP sensor does not detect the leading edge of the paper within a specified period after the multipurpose tray solenoid has turned on.
Pickup stationary jam	The TOP sensor does not detect the trailing edge of the paper within a specified time from when it detects the leading edge.

Table 1-17 Jams that the product detects (continued)

Jam	Description
Fuser delivery delay jam	The fuser delivery paper-feed sensor does not detect the leading edge of the paper within a specified period after the TOP sensor detects the leading edge.
Fuser delivery stationary jam	The fuser delivery paper-feed sensor does not detect the trailing edge of the paper within a specified period after it detects the leading edge.
Wrapping jam	After detecting the leading edge of the paper, the fuser delivery paper-feed sensor detects the absence of paper, and it has not yet detected the trailing edge.
Residual paper jam	One of the following sensors detects paper presence during the initialization sequence: • Fuser delivery paper-feed sensor • TOP senosor • Loop sensor 1 • Loop sensor 2
Door open jam	A door is open while paper is moving through the product.
Duplexing re-pickup jam 1	The duplex re-pickup sensor does not detect the leading edge of the paper within a specified period after the media reverse operation starts in the duplex reverse unit.
Duplexing re-pickup jam 2	The TOP sensor does not detect the leading edge of the paper within a specified period after the paper is re-picked.

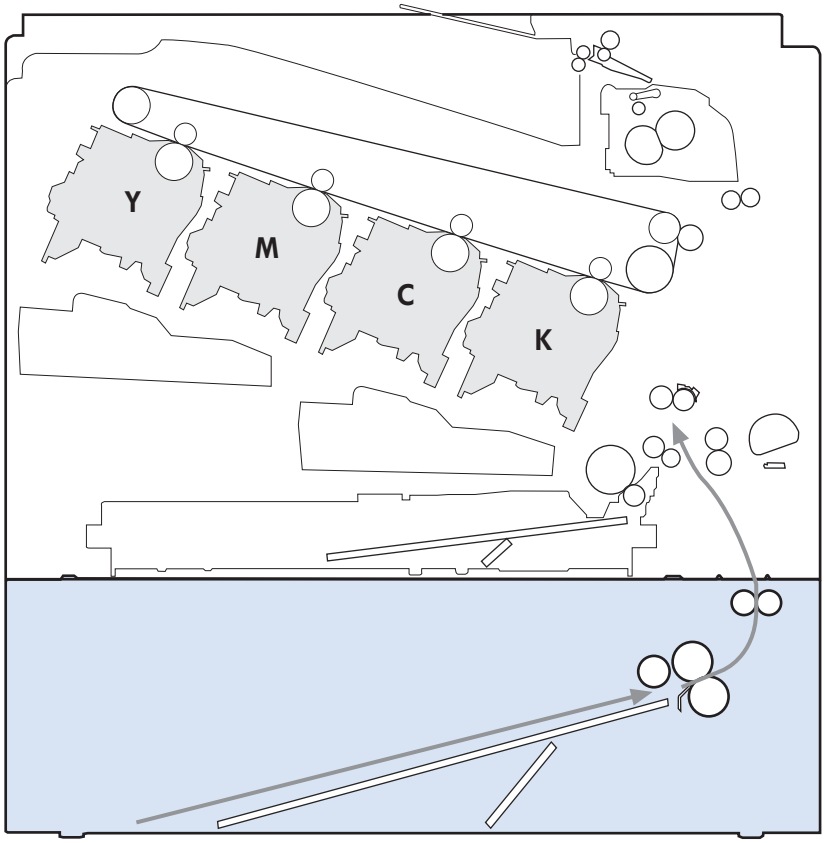
After a jam, some sheets of paper might remain inside the product. If the DC controller detects residual paper after a door closes or after the product is turned on, the product automatically clears itself of those residual sheets.

Optional paper feeder

The 1x500-sheet paper feeder is optionally installed at bottom of the printer. The paper feeder picks up the print media and feeds it to the printer.

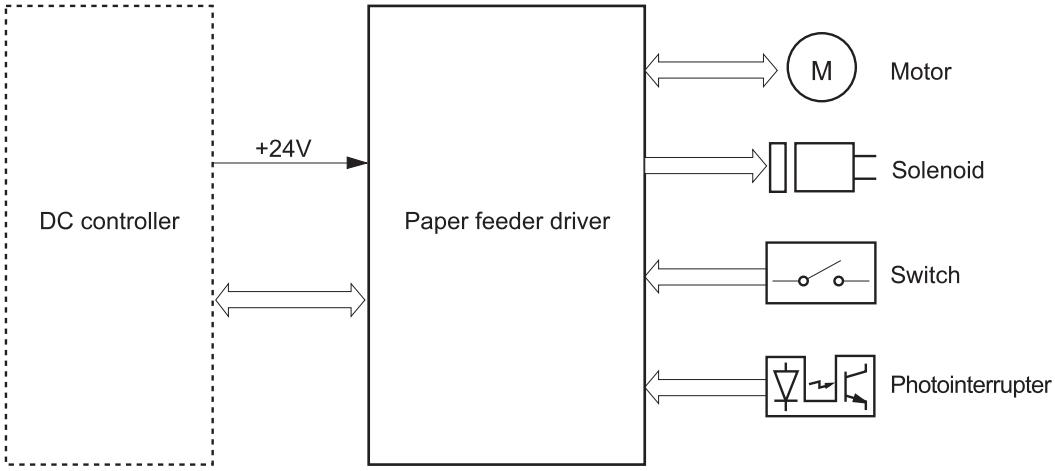
NOTE: These optional trays are *not* identical to the main cassette (Tray 2).

Figure 1-46 Optional paper feeder



The paper-deck drivers contain a microcomputer and control the paper feeder. The paper-deck drivers receive commands from the DC controller. If the DC controller is unable to communicate with a paper-deck driver, it notifies the formatter that the optional paper feeders is not connected correctly.

Figure 1-47 Signals for the paper feeder



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

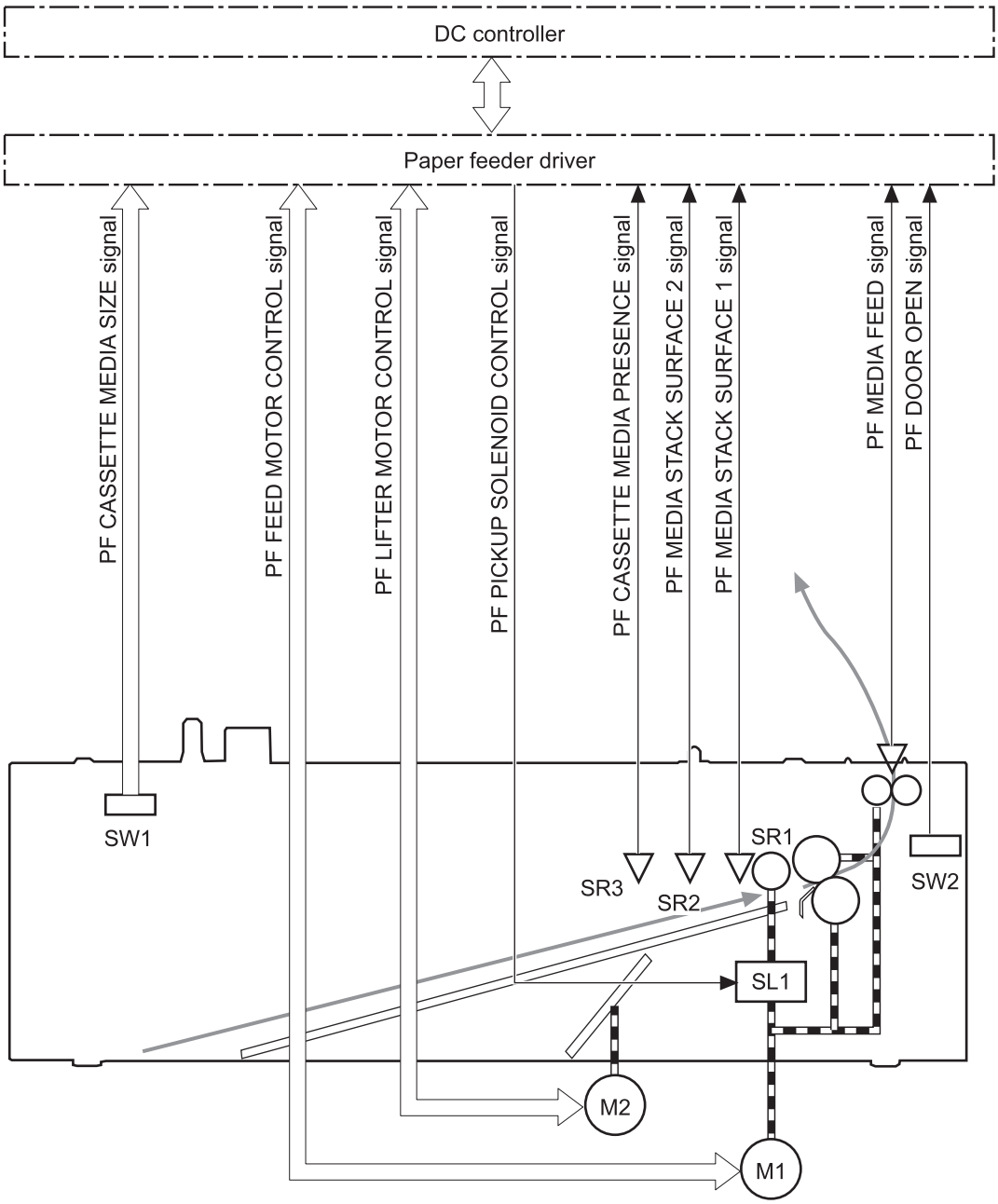
Table 1-18 Electrical components for the paper feeder

Component type	Abbreviation	Component name
Motors	M1	Paper feeder motor
	M2	Paper feeder lift motor
Solenoids	SL1	Paper feeder pickup solenoid
Sensors	SR1	Tray 3 installed sensor
	SR2	Tray 3 stack surface sensor 2
	SR3	Tray 3 paper present sensor
	SR4	Tray 3 feed sensor
Switches	SW1	Paper feeder cassette media-size switch
	SW2	Paper-feeder door switch

Paper-feeder pickup and feed operation

The paper feeder picks up one sheet from the paper-feeder cassette and feeds it to the product.

Figure 1-48 Paper-feeder pickup and feed operation



Paper size detection and cassette presence detection

The paper-feeder cassette media-size switch (SW1) detects the size of paper loaded in the paper-feeder cassette. The paper-feeder driver determines the media size by monitoring the combination of the switches.

Figure 1-49 Paper size detection

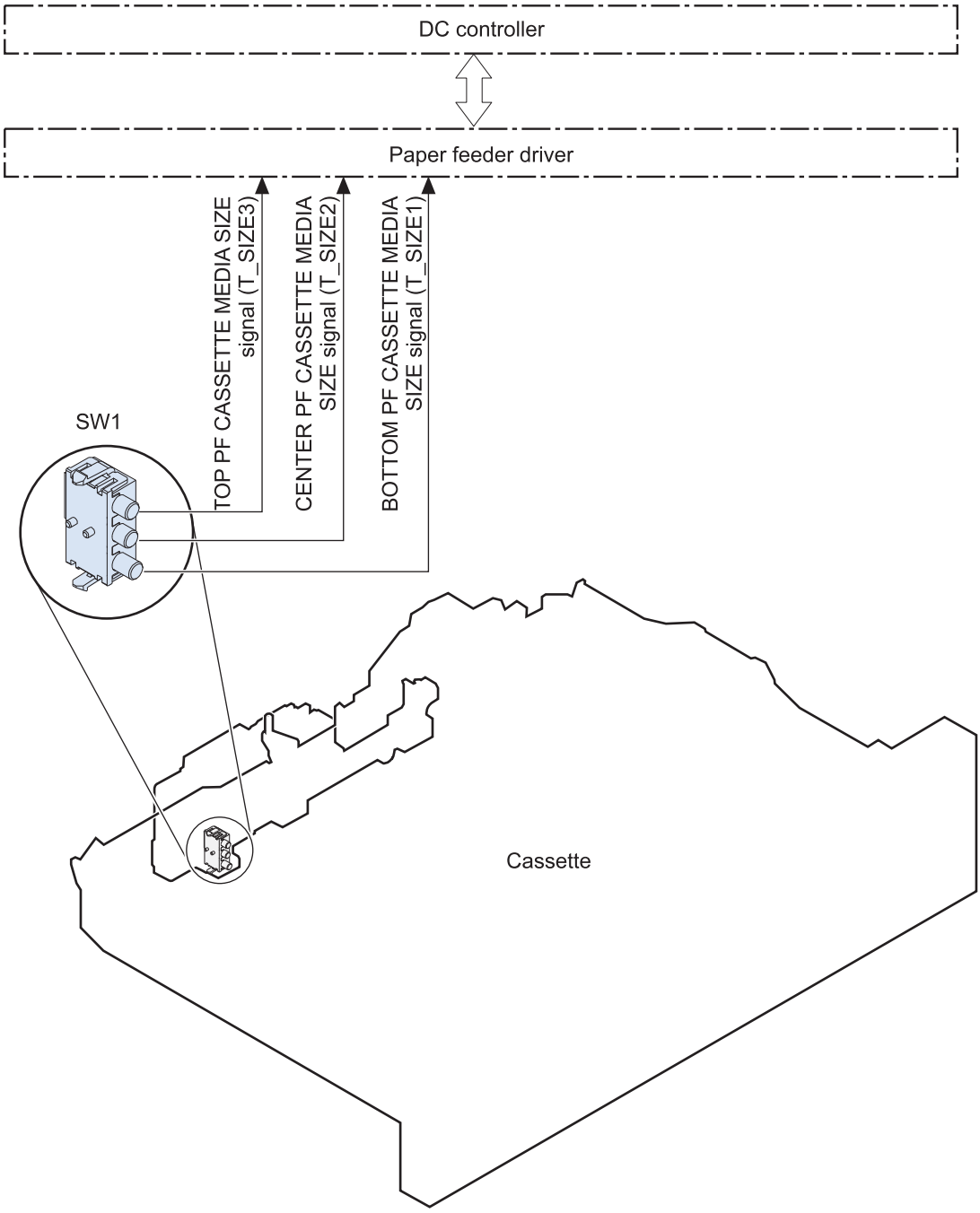


Table 1-19 **Paper size detection**

Paper size	Paper-feeder cassette media-size switch settings		
	Top switch	Center switch	Bottom switch
Universal	On	On	On

Table 1-19 Paper size detection (continued)

Paper size	Paper-feeder cassette media-size switch settings		
	Top switch	**Center switch**	**Bottom switch**
A5	**On**	**Off**	**Off**
B5	**Off**	**On**	**On**
Executive	**On**	**Off**	**On**
Letter	**Off**	**On**	**Off**
A4	**Off**	**Off**	**On**
Legal	**On**	**On**	**Off**
No cassette	**Off**	**Off**	**Off**

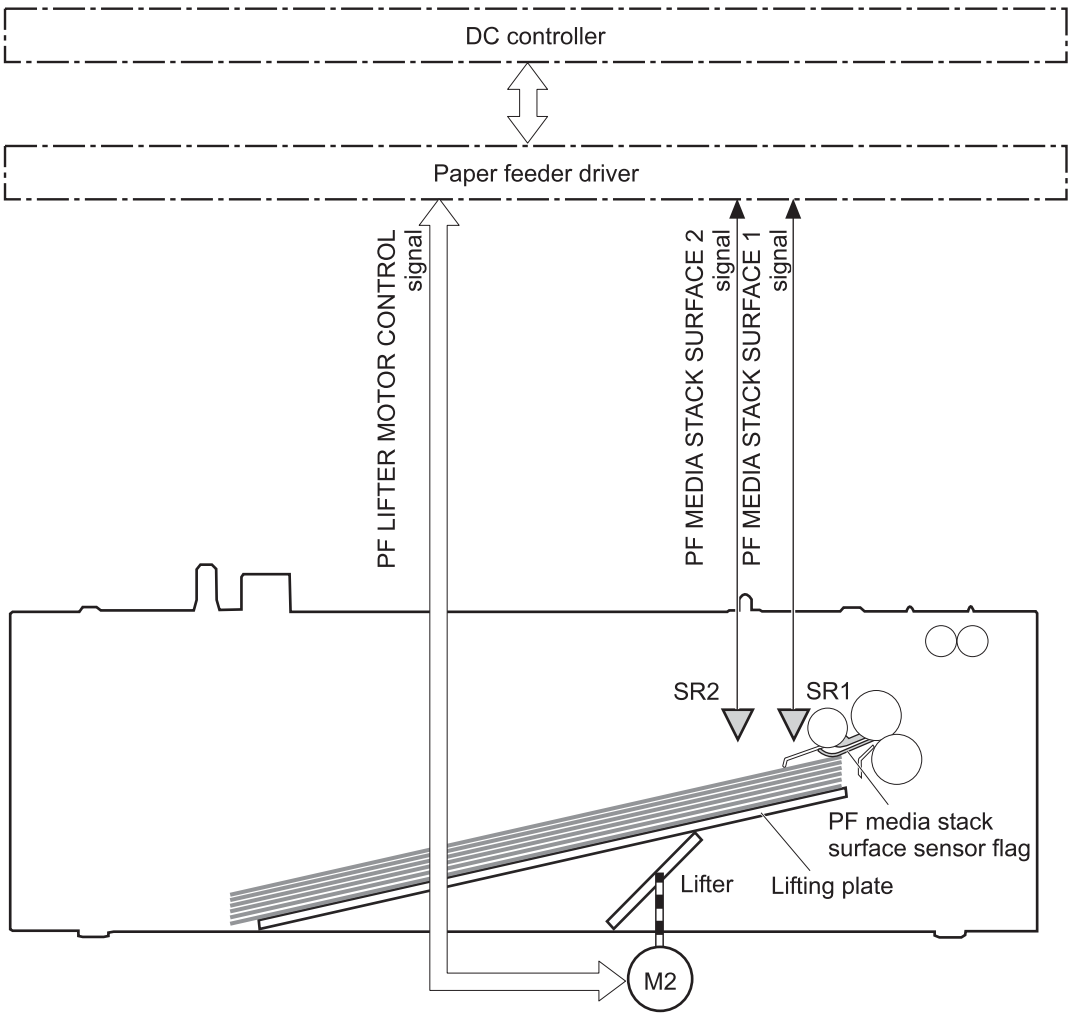
The paper-feeder cassette media size switch (SW1) detects whether the paper-feeder cassette is installed correctly. The paper-feeder driver determines if a cassette is absent when all three switches are turned off. The paper-feeder driver determines a cassette presence when one of the switches is turned on.

Paper feeder cassette lift operation

The cassette lift operation keeps the stack surface of paper at a specified height to maintain stable media feeding. The paper-feeder driver controls the paper-feeder lifter motor (M2) and monitors the paper-feeder media stack surface sensors (SR1, SR2) to adjust the stack height when the printer is turned on, when the printer recovers from sleep mode, when the paper-feeder cassette is installed or as needed during a print operation. The paper feeder has two paper-feeder media-stack surface sensors. The paper-feeder media stack surface sensor 1 detects the stack height during a print operation. The paper-feeder media-stack surface sensor 2 detects the stack height when the printer is turned on, when the printer recovers from sleep mode and when the paper-feeder cassette is installed. The operational sequence of the lift operation is as follows:

1. The paper-feeder driver rotates the paper-feeder lifter motor to lift the lifting plate.
2. The paper-feeder driver stops the paper-feeder lifter motor when the paper-feeder media-stack surface sensor 2 detects the stack surface.
3. The paper-feeder driver rotates the lifter motor again when paper-feeder media stack surface 1 detects that the media surface is lowered during a print operation.

Figure 1-50 Paper-feeder cassette lift



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

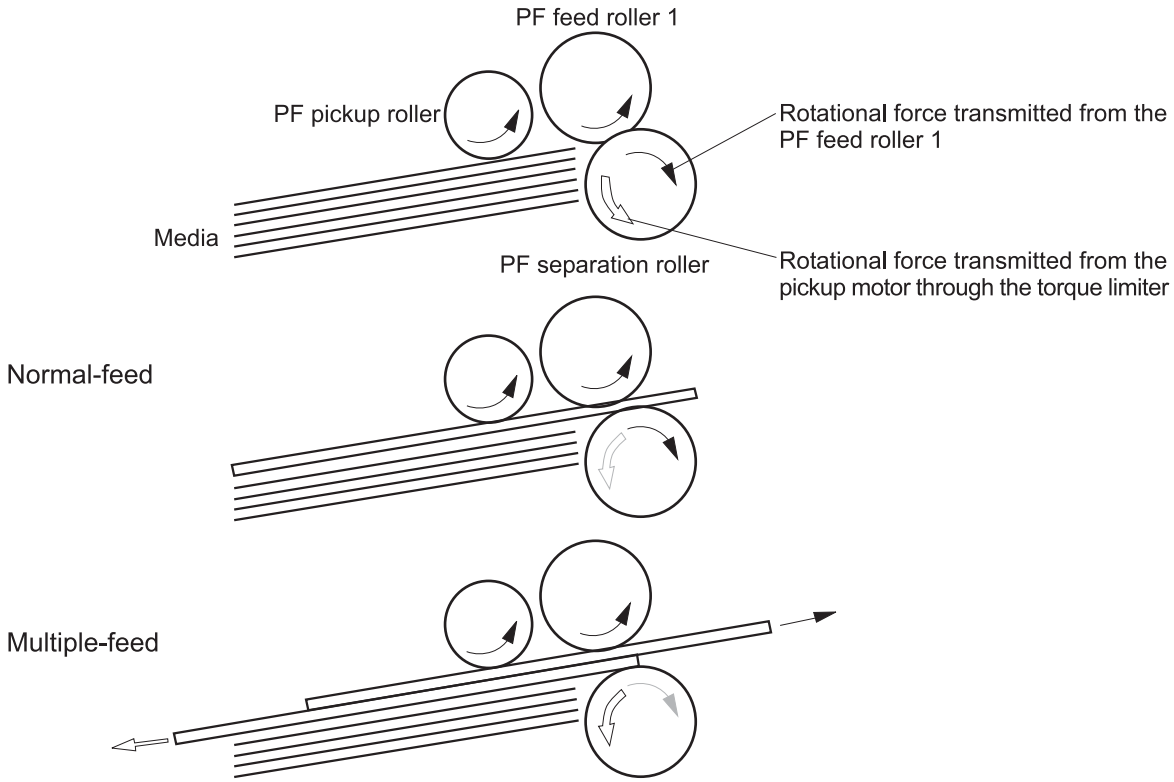
Paper feeder presence detection

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

Paper-feeder multiple feed prevention

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

Figure 1-51 Paper-feeder multiple feed prevention

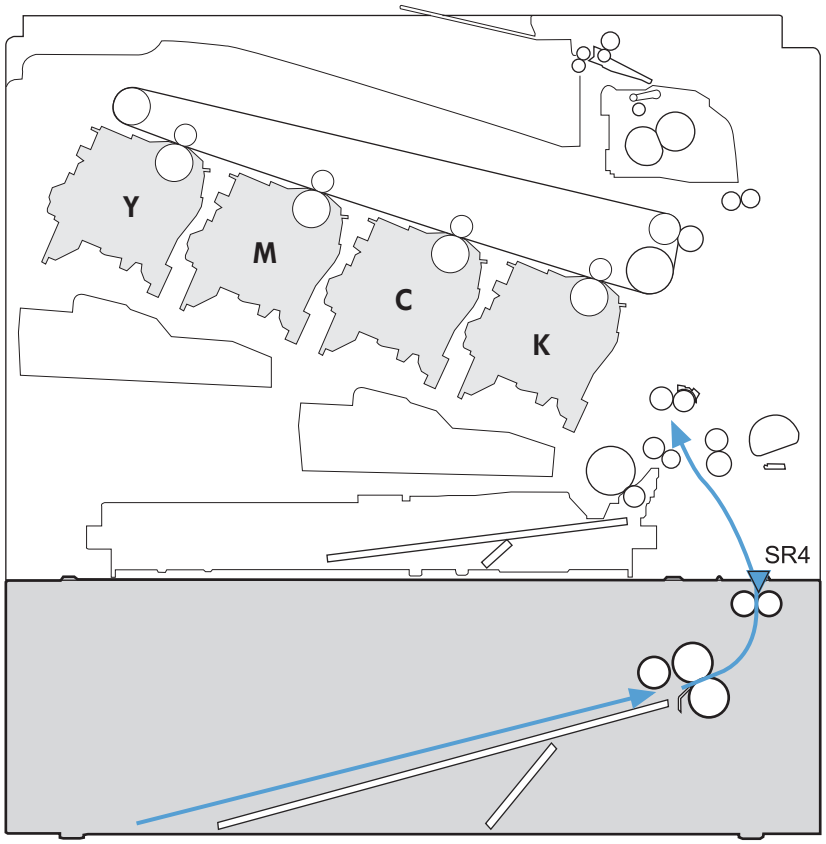


No-load	Rotational force for paper-feeder separation roller: Pushes back the media into the paper-feeder cassette Rotational force for paper-feeder feed roller 1: Feeds media into the printer
Normal feed	Rotational force for paper-feeder separation roller: Pushes back the media into the paper-feeder cassette Rotational force for paper-feeder feed roller 1: Feeds media into the printer
Multiple-feed	The low friction force between the sheets weakens the rotational force from the paper-feeder feed roller 1. The paper-feeder separation roller rotates by its own rotational force and removes the extra sheet.

Paper feeder jam detection

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

Figure 1-52 Jam detection



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

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

2 Removal and replacement

- Introduction
- Removal and replacement strategy
- Service approach
- Customer self repair (CSR) components
- Covers
- Internal assemblies
- Optional paper feeder assembly (Tray 3)

Introduction

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

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

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

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

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

Removal and replacement strategy

Cautions during removal and replacement

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.

Electrostatic discharge

⚠ **CAUTION:**  Some parts are sensitive to electrostatic discharge (ESD). Look for the ESD reminder when removing product parts. Always perform service work at an ESD protected workstation or mat, 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.

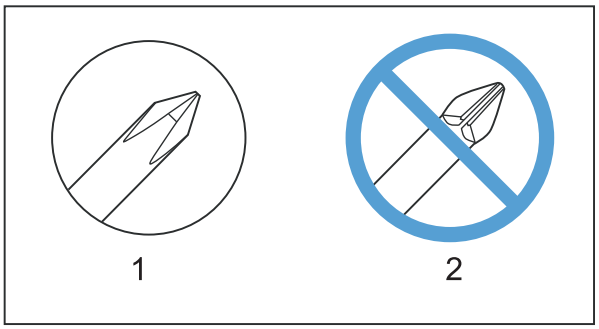
Protect the ESD sensitive parts by placing them in ESD pouches when they are out of the product.

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 pozidrive screwdriver (callout 2) or any motorized screwdriver. These can damage screws or screw threads.

Figure 2-1 Phillips and pozidrive screwdriver comparison



Service approach

Before performing service

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

After performing service

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

Post service test

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

Print-quality test

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

Parts removal order

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

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

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

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

Customer self repair (CSR) components

Print cartridges

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

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

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

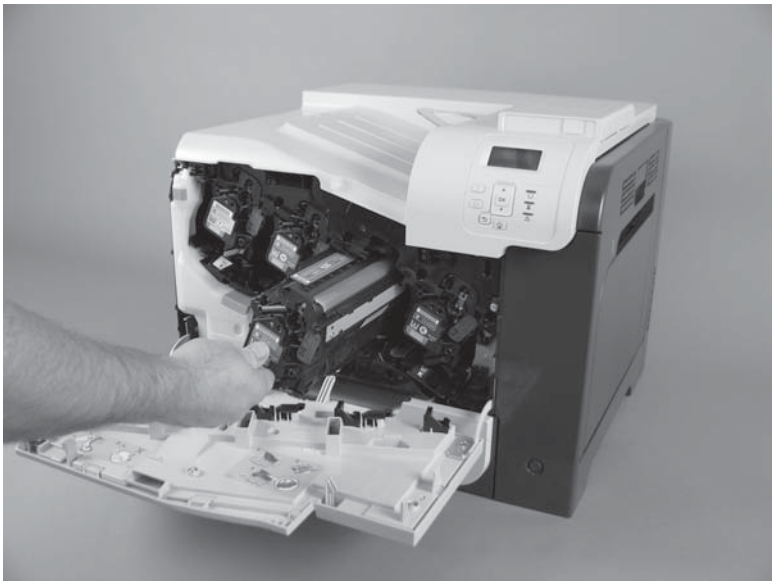


2. Grasp the print-cartridge handle and pull out to remove. Repeat this step for each print cartridge.

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

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

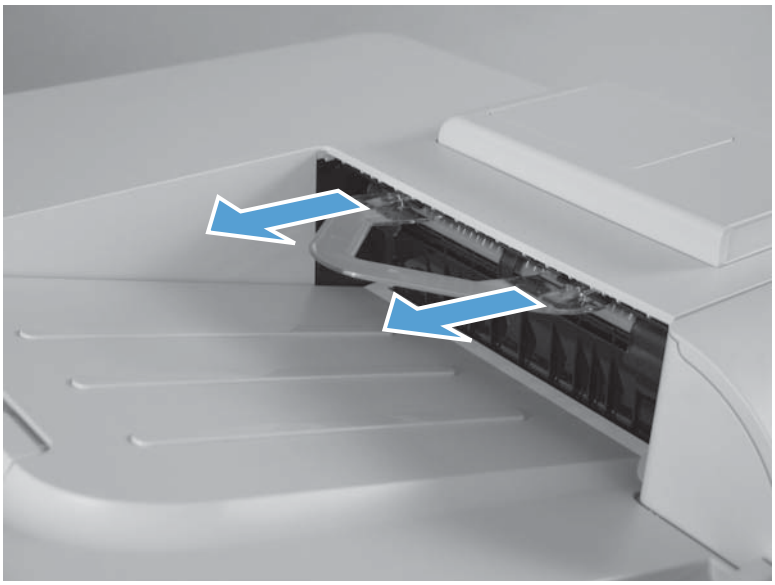
Figure 2-5 Remove the print cartridge (2 of 2)



Duplex reverse guide

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

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



2. Remove the guide.

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



Toner collection unit

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

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

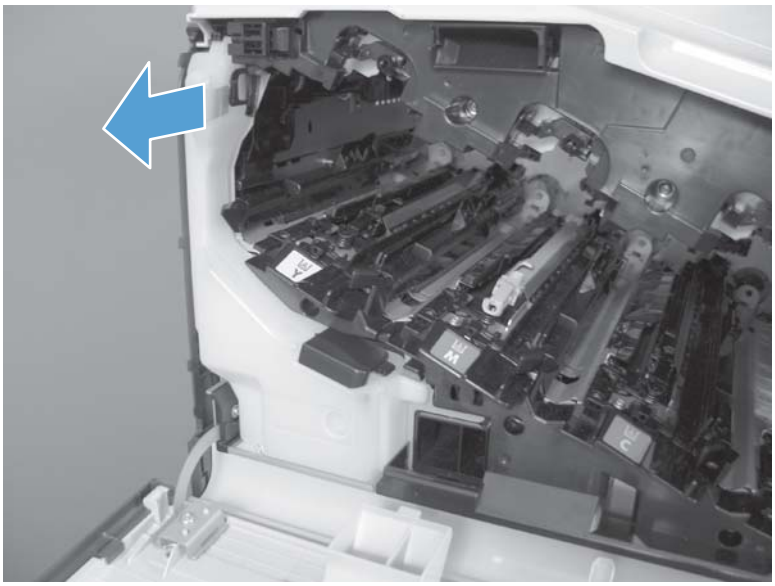
Figure 2-8 Remove the toner collection unit (1 of 4)



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

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

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



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

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



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



4. Recycle the toner collection unit.

Formatter PCA

CAUTION: ESD sensitive component.

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

Figure 2-12 Remove the formatter



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

Disk drives

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

Before proceeding, remove the following components:

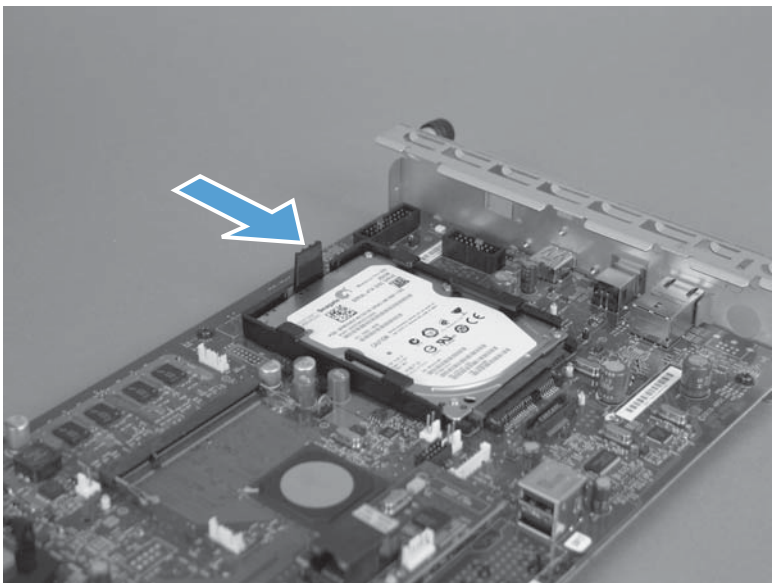
- Formatter PCA. See Formatter PCA on page 81

Remove the HDD

CAUTION: ESD sensitive component.

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

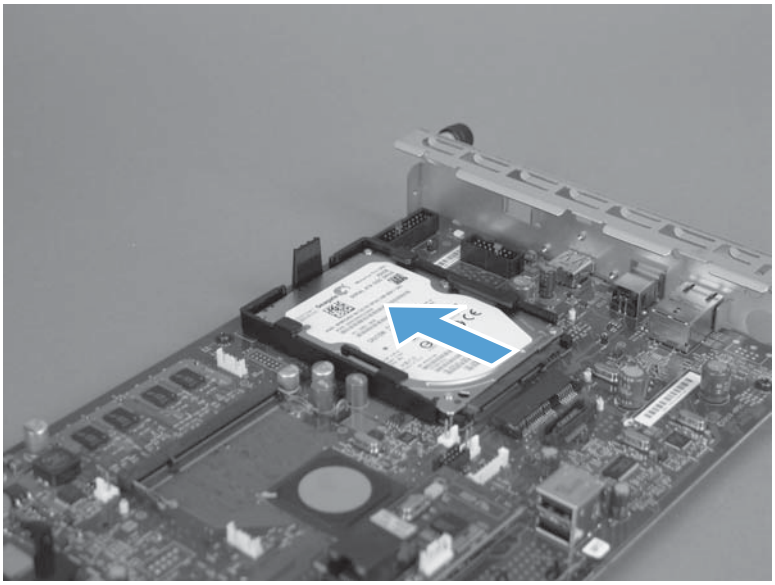
Figure 2-13 Remove the HDD (1 of 2)



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

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

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

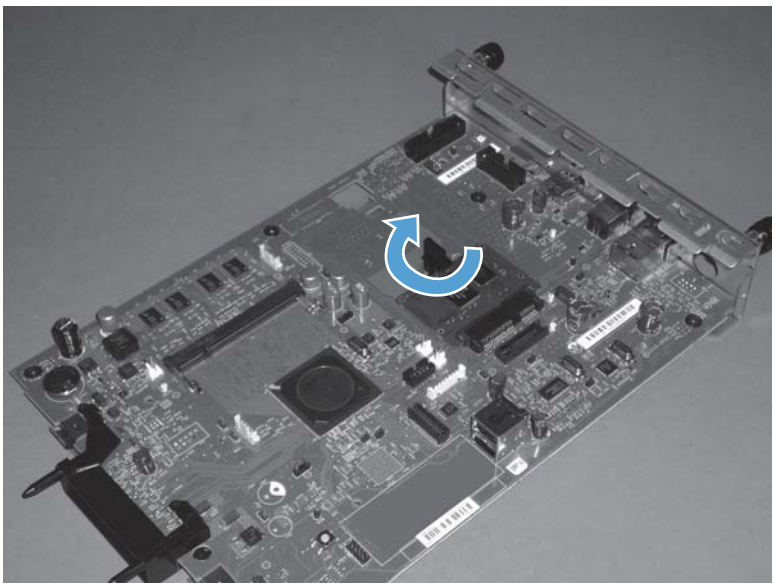


Remove the SSM

CAUTION: ESD sensitive component.

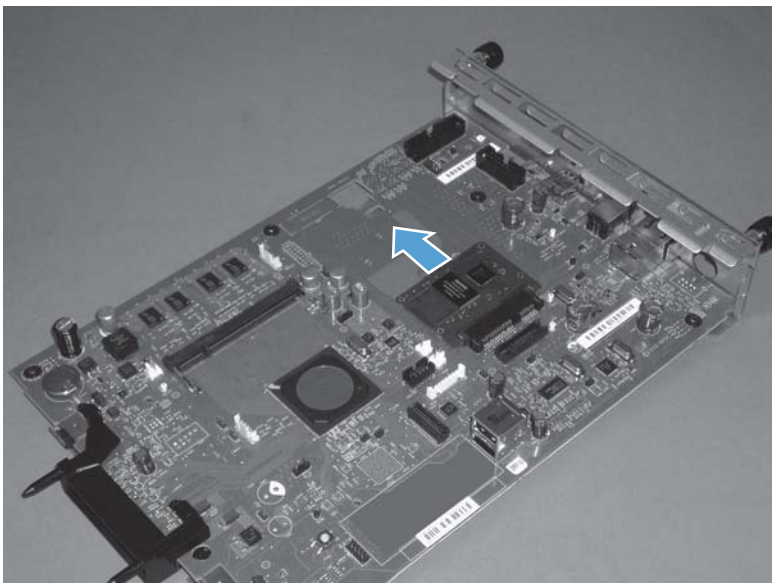
1. Place the formatter on a clean, flat, grounded surface.
2. Turn the locking tab to release it, and then remove the tab.

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



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

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



Install a replacement hard drive

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

Reload the firmware

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

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

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.

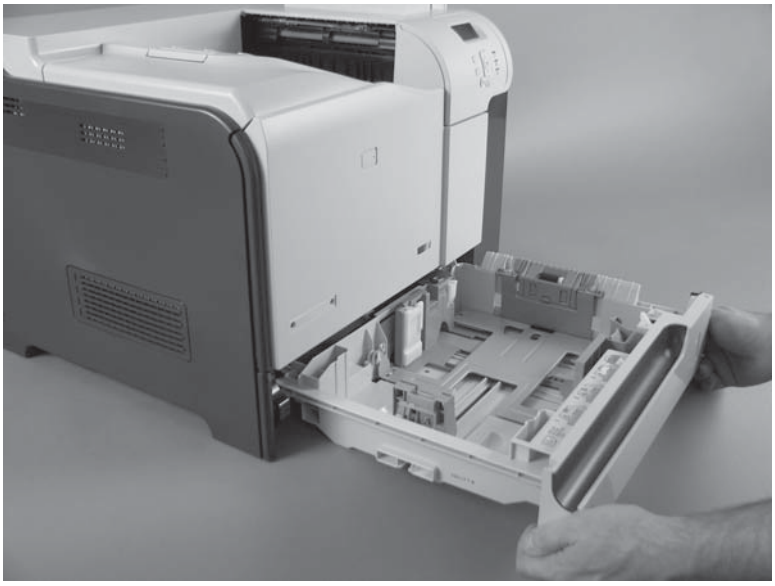
9. When the upgrade process is complete, print a configuration page and verify that the upgrade firmware version was installed.

Tray cassette

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

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

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



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

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



Fuser

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

1. Open the right door assembly.

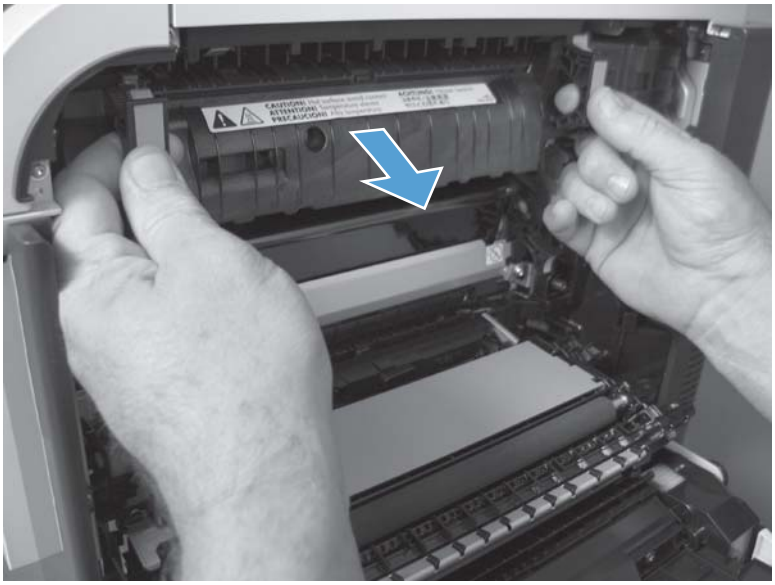
Figure 2-19 Remove the fuser (1 of 2)



2. Grasp the handles and squeeze the blue release triggers.

   Pull the fuser straight out of the product to remove it.

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



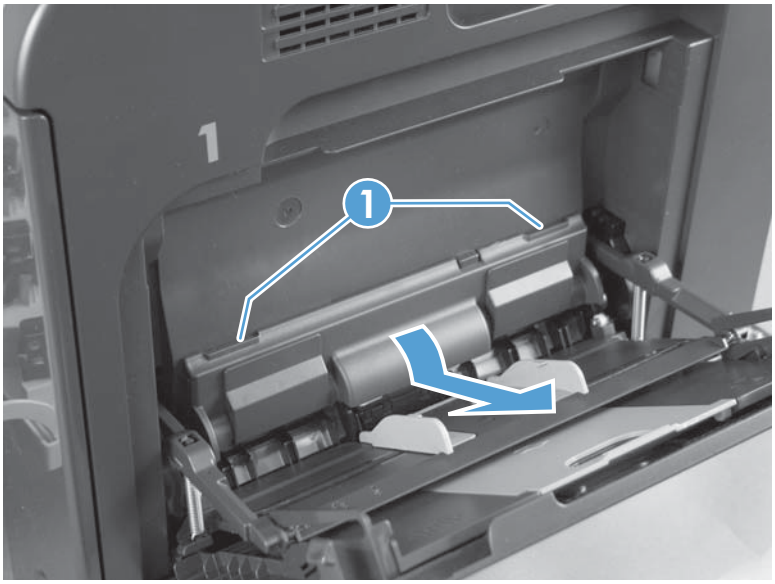
Pickup roller (Tray 1)

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

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

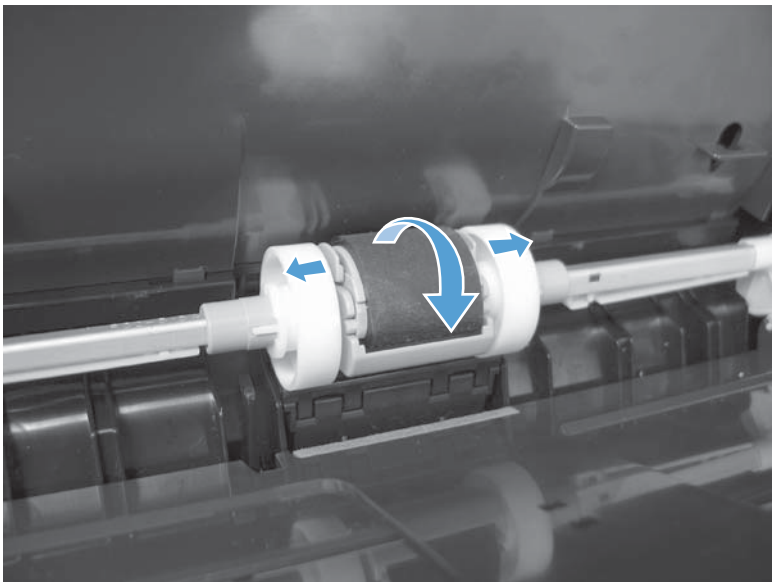
TIP: Push down along the top edge of the cover to easily release the tabs.

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



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

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



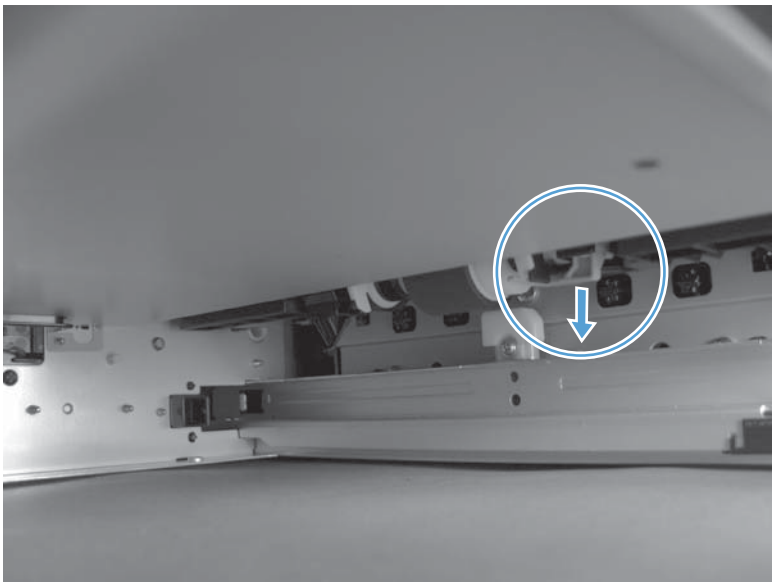
Pickup roller (Tray 2)

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

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

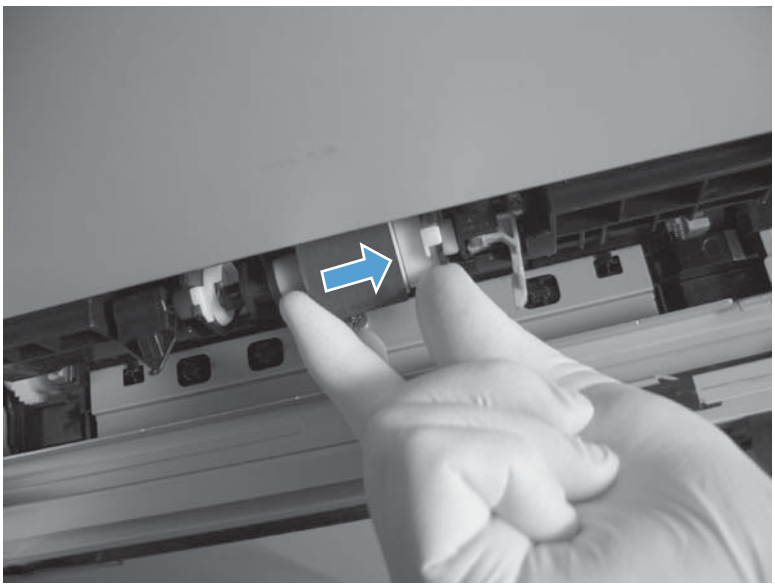
Reinstallation tip When the roller is reinstalled, rotate the roller shaft several times to make sure that the shaft correctly engages the drive mechanism. You should hear a click when the shaft engages the drive mechanism.

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



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

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



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

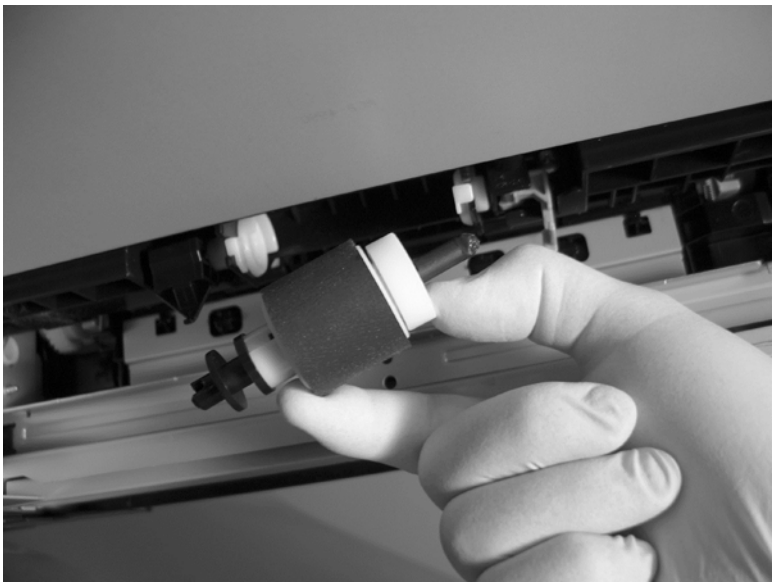
Figure 2-25 Remove the pickup roller (Tray 2; 3 of 4)



4. Remove the pickup roller.

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

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



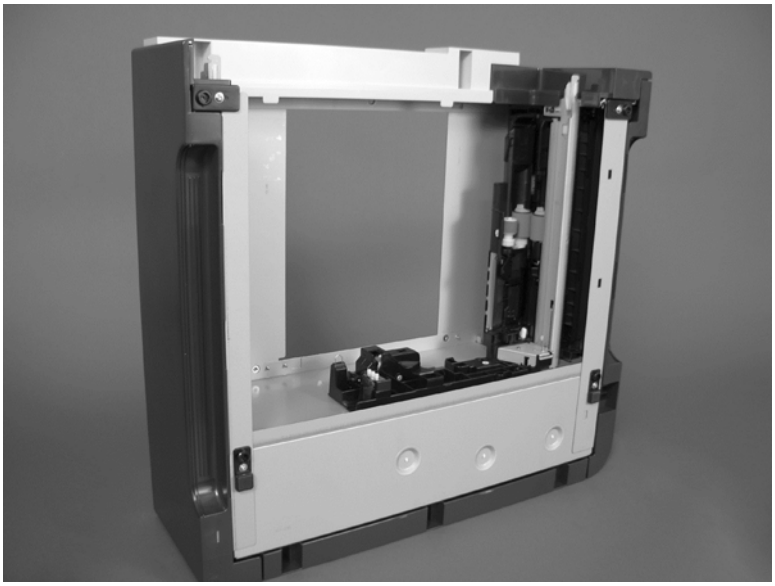
Pickup and feed rollers (Tray 3)

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

1. Locate the Tray 3 pickup and feed rollers.

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

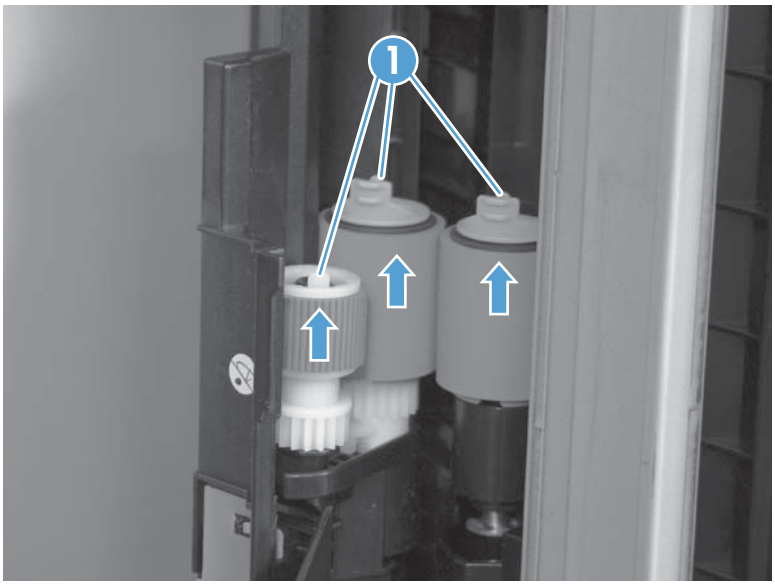
Figure 2-27 Remove the Pickup and feed rollers (Tray 3; 1 of 2)



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

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

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



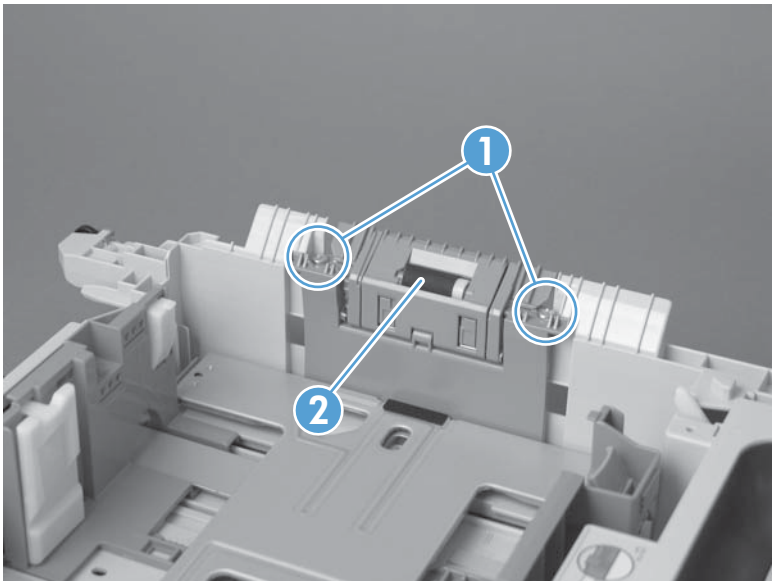
Separation roller (Tray 2)

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

NOTE: Remove the Tray 2 cassette if not already removed for service. See Tray cassette on page 86.

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

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



Secondary transfer roller

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

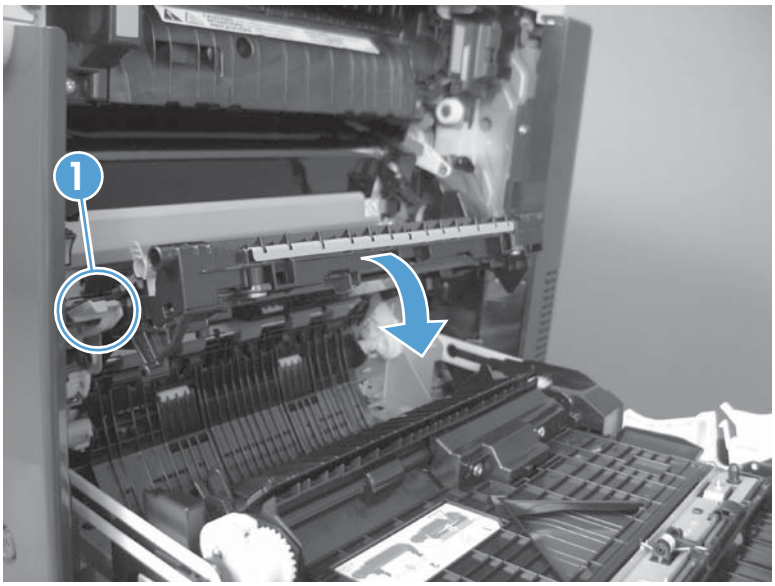
1. Open the right door assembly.

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



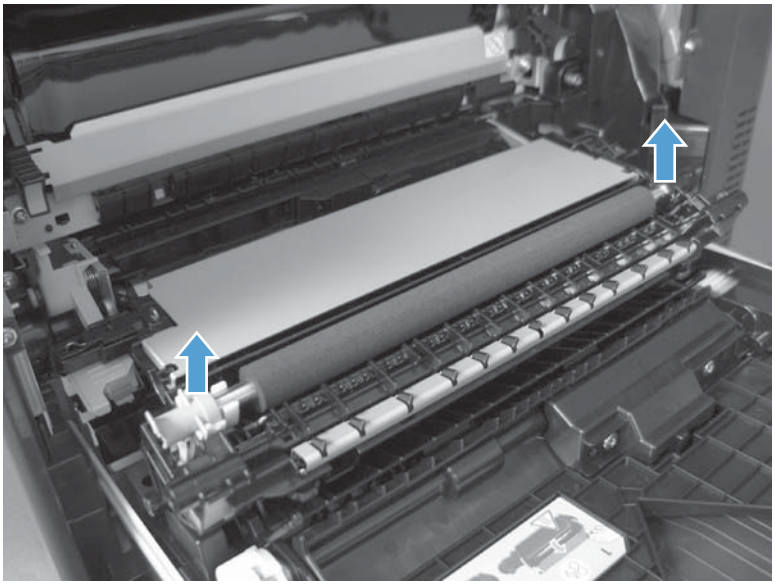
2. Use the blue lever (callout 1) to lower the secondary transfer assembly.

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



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

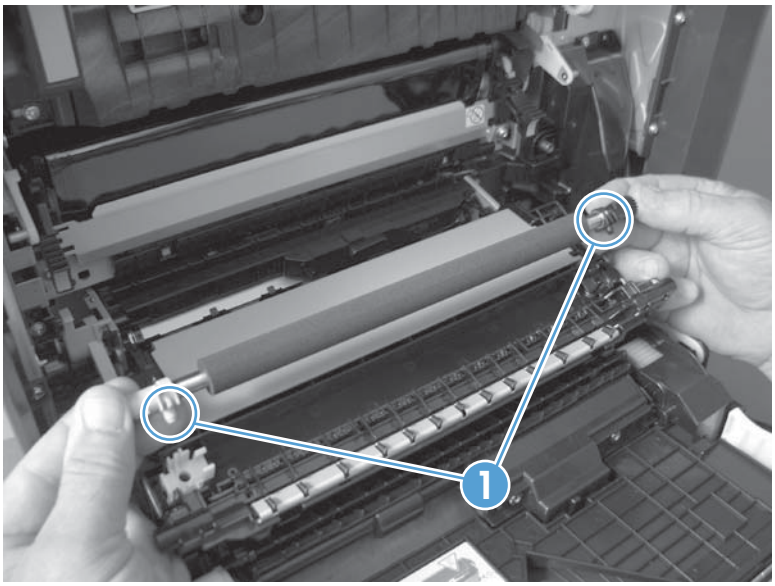
Figure 2-32 Remove the transfer roller (3 of 3)



Reinstall the transfer roller

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

Figure 2-33 Reinstall the transfer roller

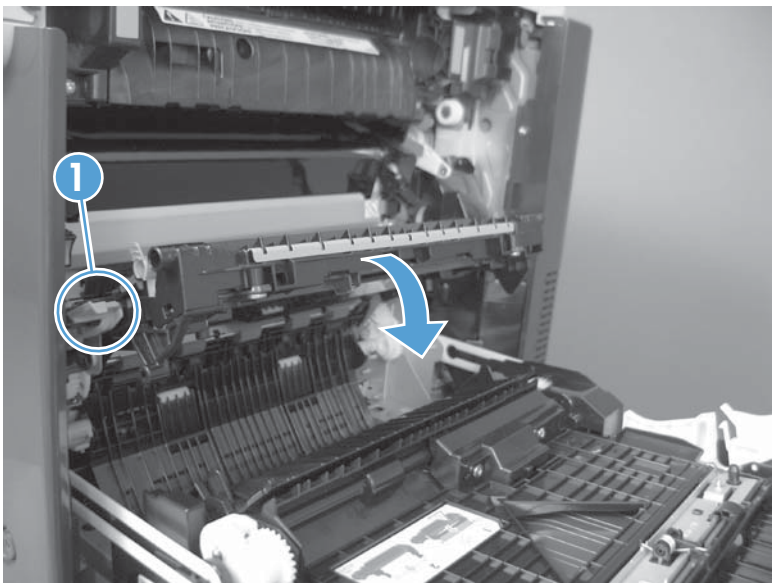


Secondary transfer assembly

The secondary transfer assembly includes the transfer roller.

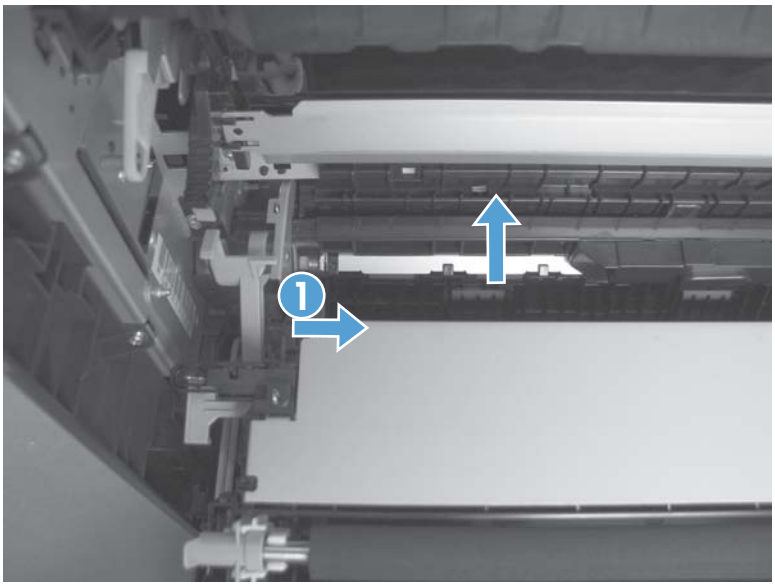
1. Open the right door assembly.
2. Use the blue lever (callout 1) to lower the secondary transfer assembly.

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



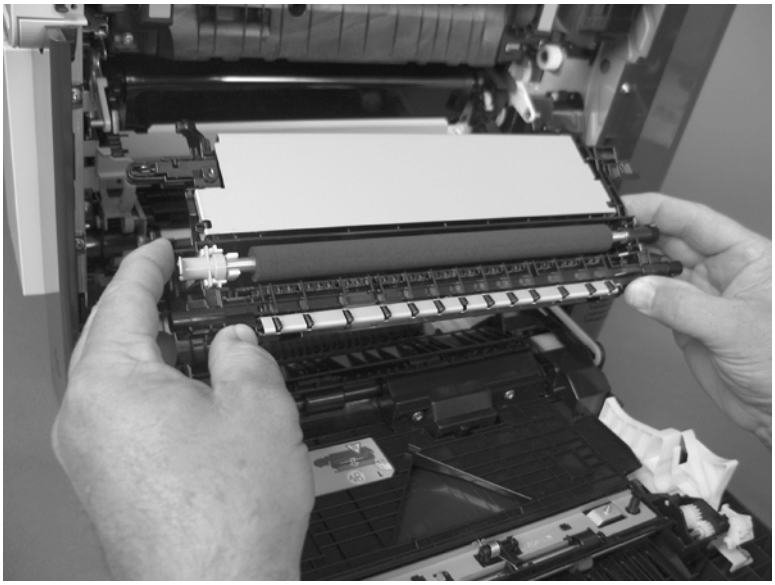
3. Push the pin on the release-lever side of the assembly toward the inside of the product to release it, and then lift the assembly up.

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



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

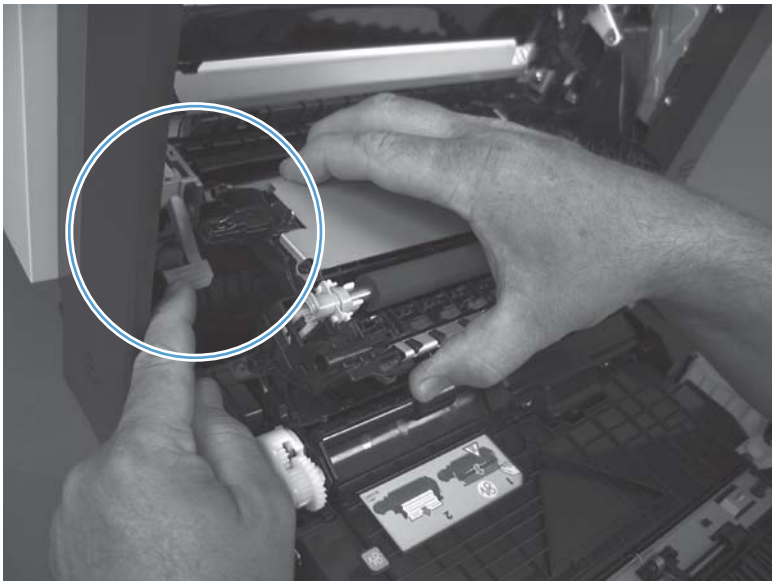
Figure 2-36 Remove the secondary transfer assembly (3 of 3)



Reinstall the secondary transfer assembly

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

Figure 2-37 Reinstall the secondary transfer assembly

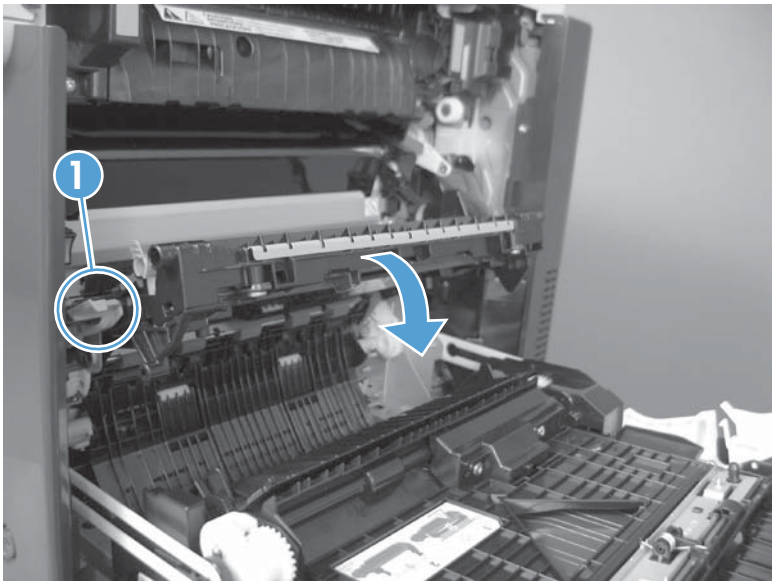


Intermediate transfer belt (ITB)

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

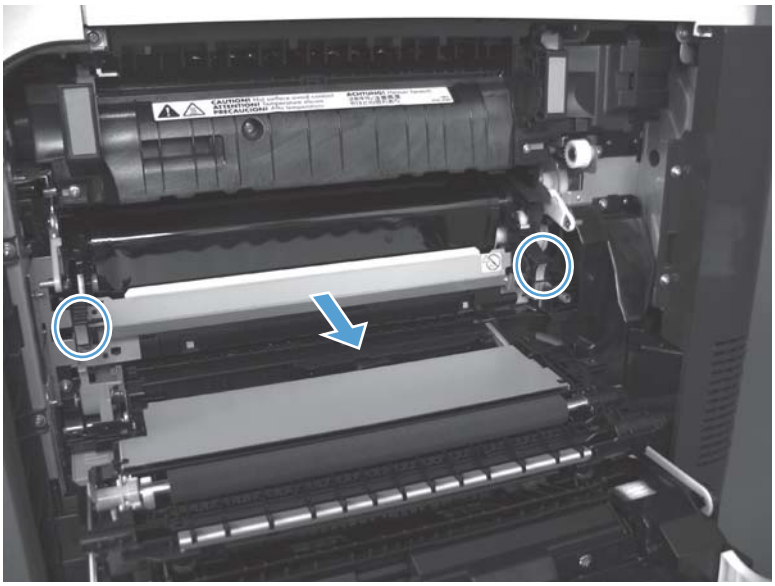
1. Open the right door assembly.
2. Use the blue lever (callout 1) to lower the secondary transfer assembly.

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



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

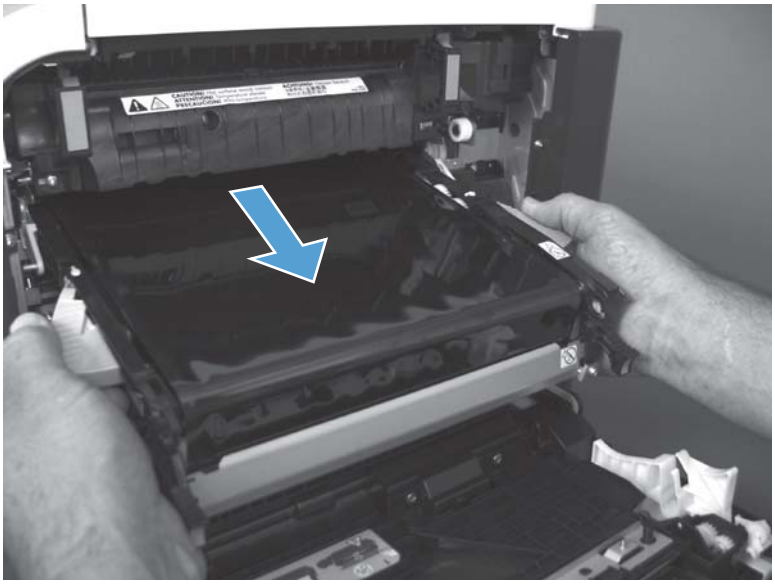
Figure 2-39 Remove the intermediate transfer belt (2 of 3)



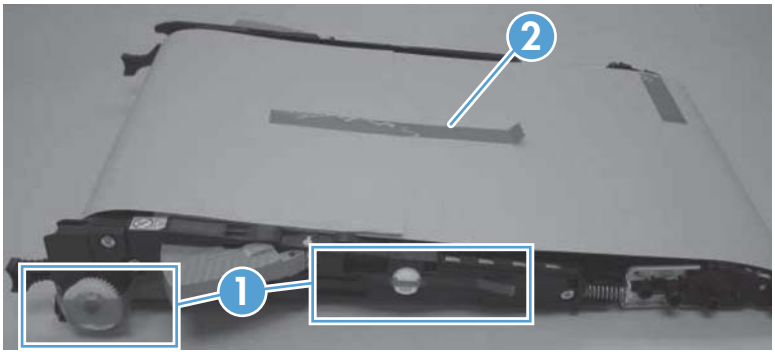
4. Grasp the large handles on the ITB and then pull the ITB straight out of the product to remove it.

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

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



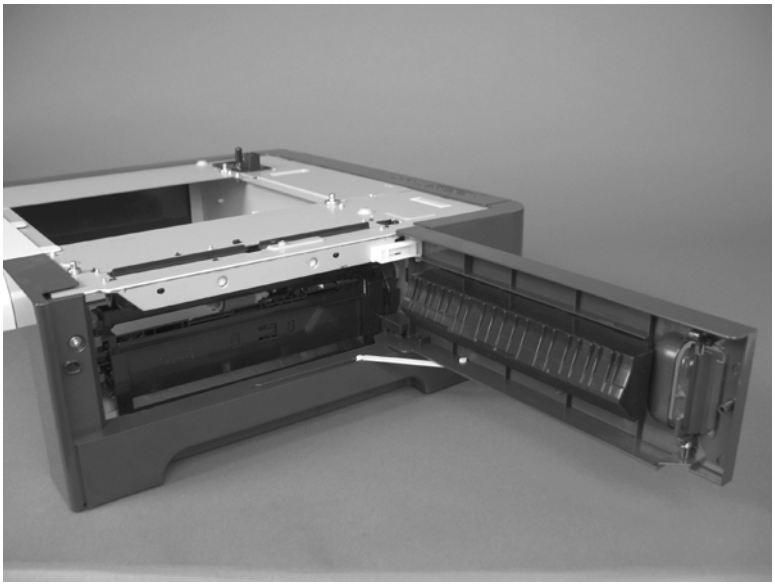
Reinstallation tip If you are installing a replacement ITB, make sure that you remove all of the packing tape (callout 1) and the protective cover sheet (callout 2).



Right door (optional paper feeder)

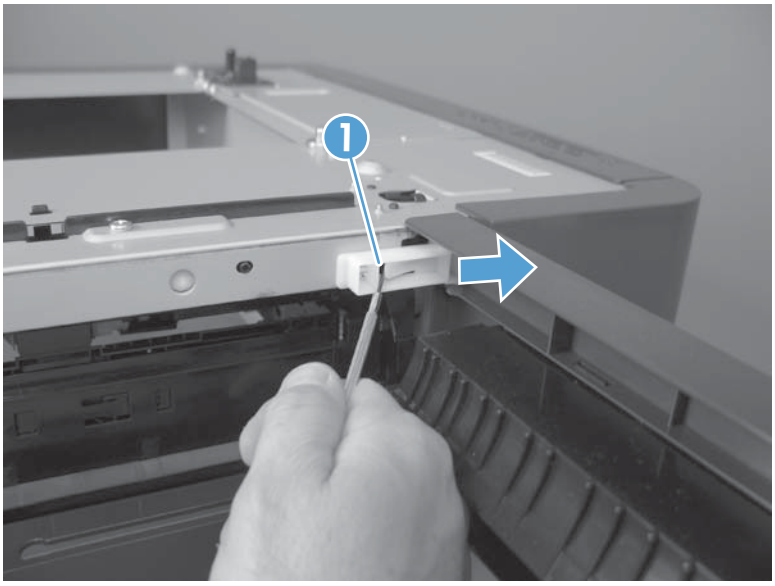
1. Open the right door.

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



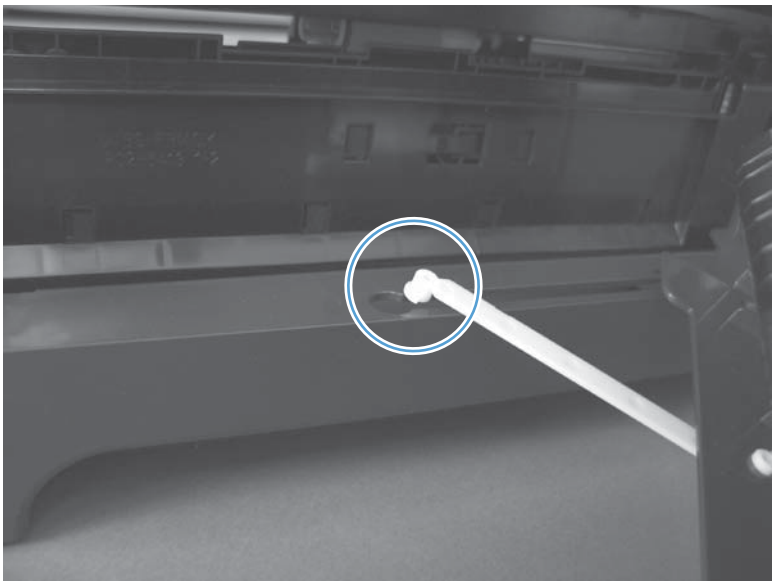
2. Release one tab (callout 1), and then slide the stopper toward the right side of the product to remove it.

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



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

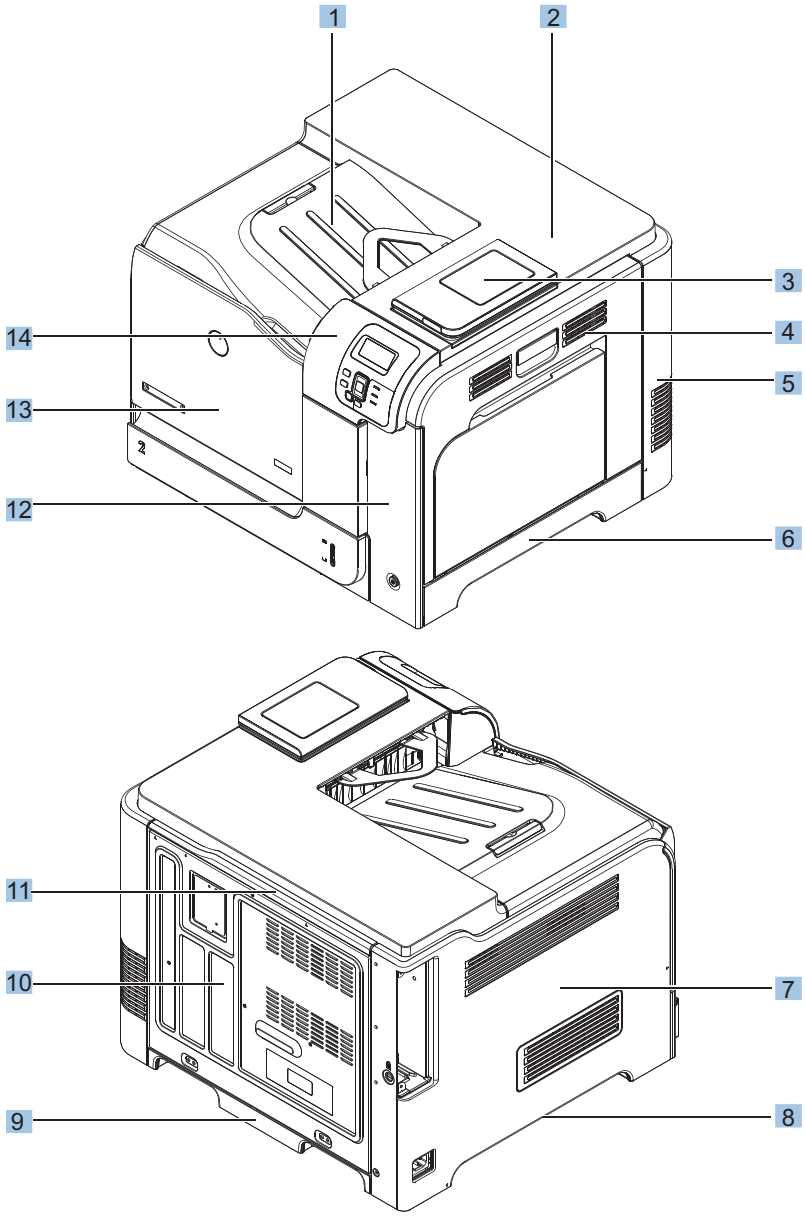
Figure 2-43 Remove the right door; optional paper feeder (3 of 3)



Covers

Identification and location

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



Item	Description	Item	Description
1	Front top cover (see Front top cover on page 122)	8	Left bottom handle (see Left bottom handle on page 114

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

Front door assembly

1. Open the front door.

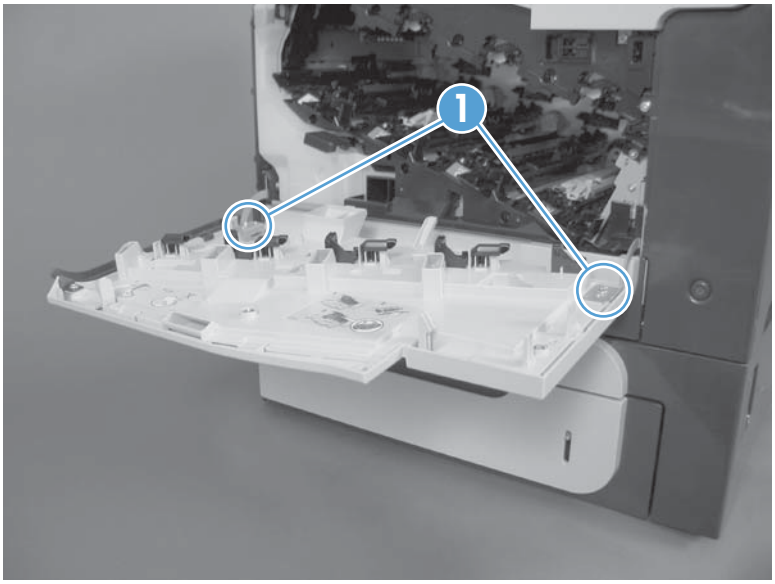
Figure 2-45 Remove the front door assembly (1 of 2)



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

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

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



Right door assembly

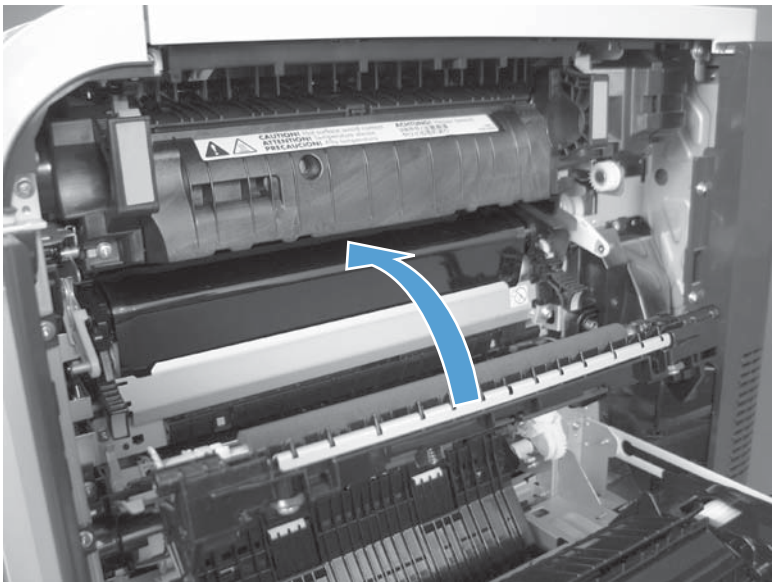
1. Open the right door assembly.

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



2. Close the secondary transfer assembly.

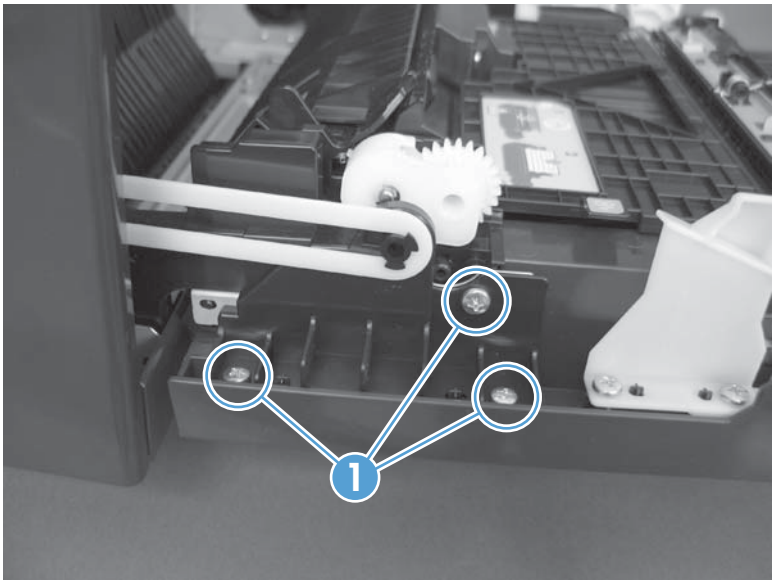
Figure 2-48 Remove the right door assembly (2 of 8)



3. Remove three screws (callout 1).

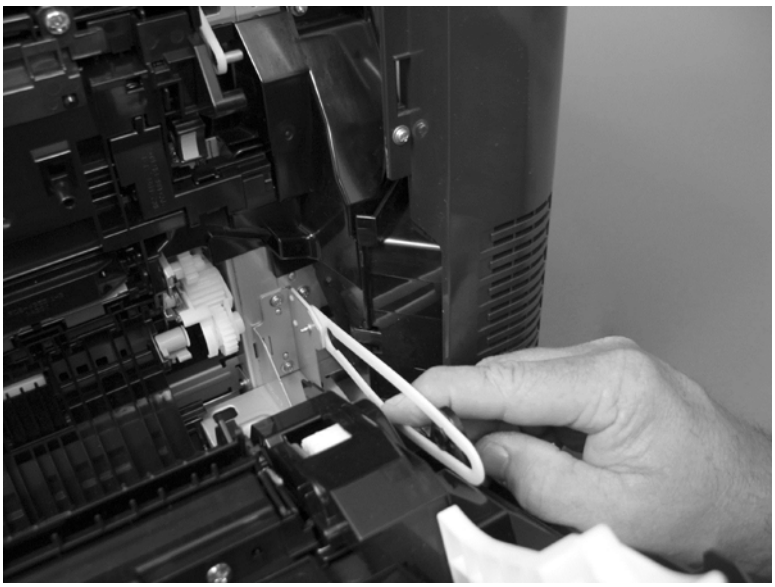
NOTE: Press down on the hinge with your hand to prevent it from springing upward when the screws are removed.

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



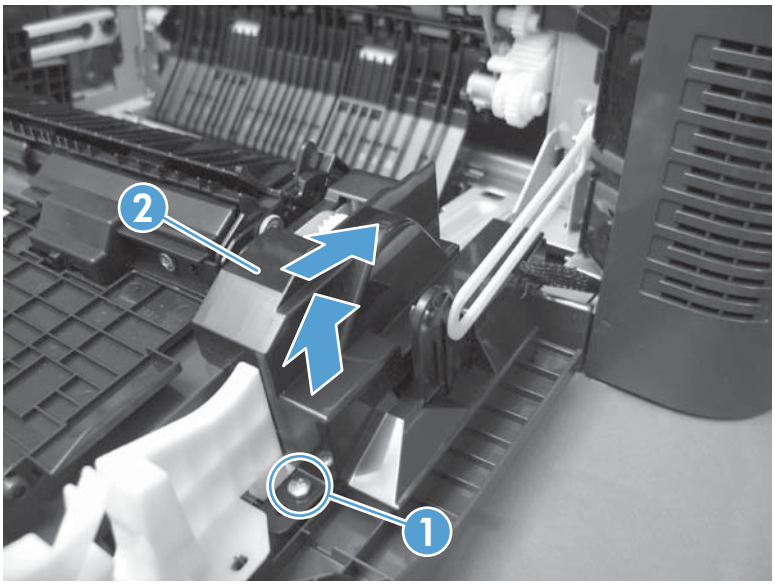
4. Carefully release one link arm.

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



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

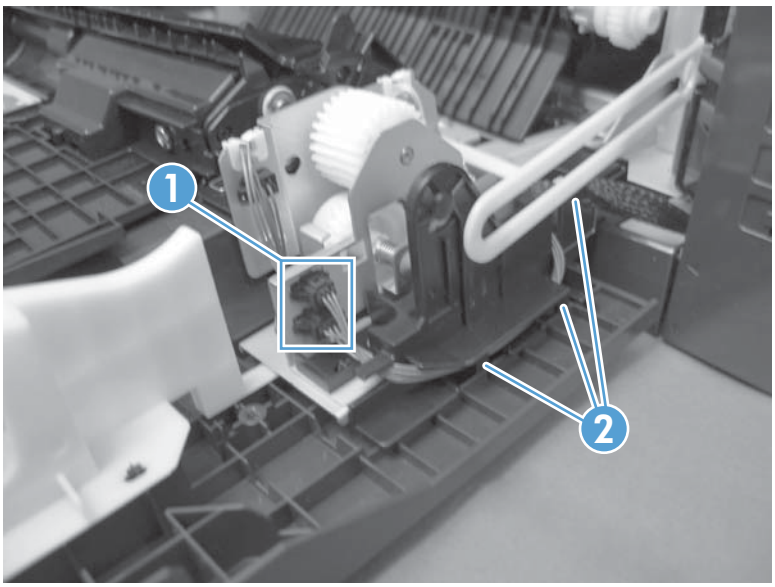
Figure 2-51 Remove the right door assembly (5 of 8)



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

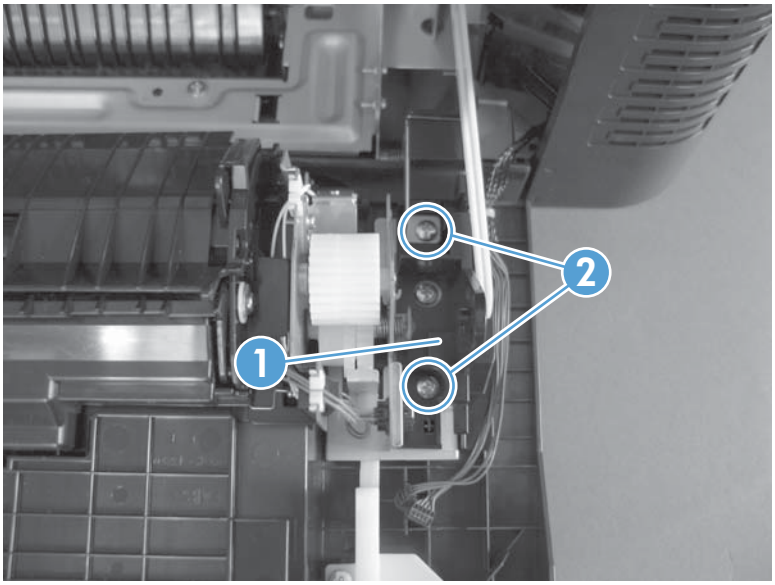
TIP: It is easier to disconnect the lower connector if you first remove the wire harnesses from the guide.

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



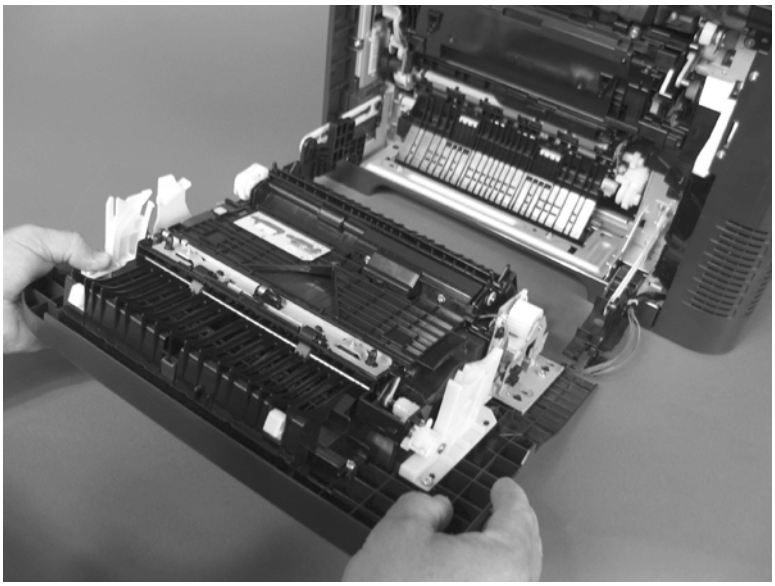
7. While pressing down on the small hinge (callout 1), remove two screws (callout 2).

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



8. Remove the right door assembly.

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



Right rear cover

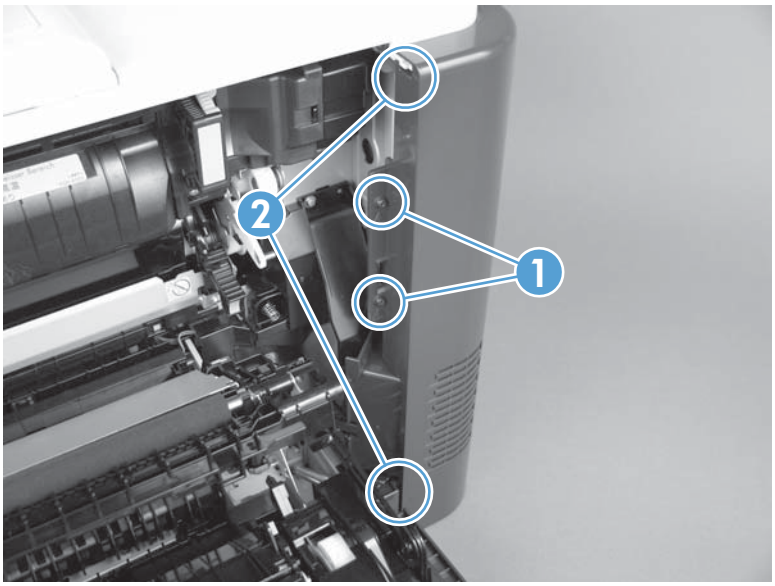
1. Open the right door assembly.

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



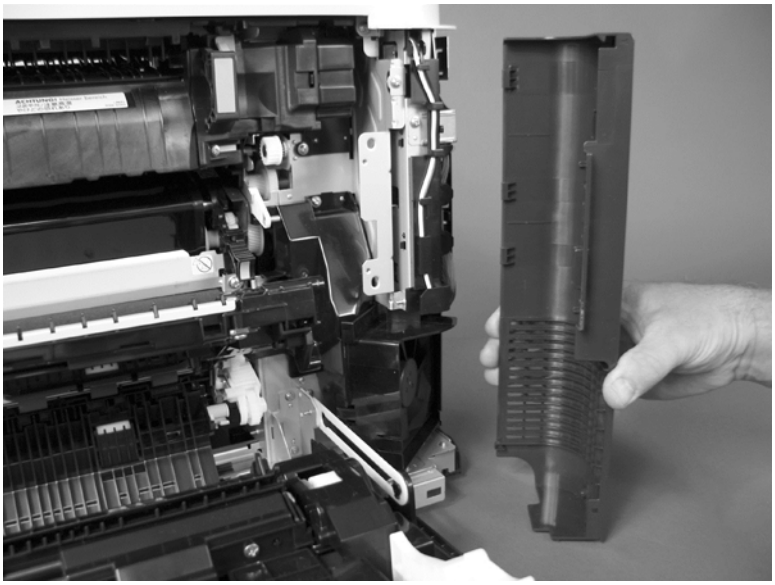
2. Remove two screws (callout 1) and release two tabs (callout 2).

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



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

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



Left cover

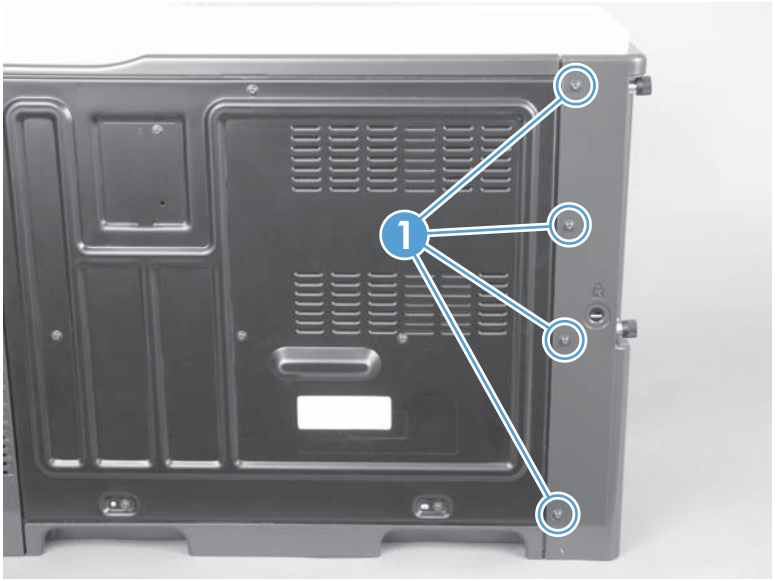
Before proceeding, remove the following components:

- Formatter PCA. See Formatter PCA on page 81.
- Toner collection unit. See Toner collection unit on page 79.

Remove the left cover

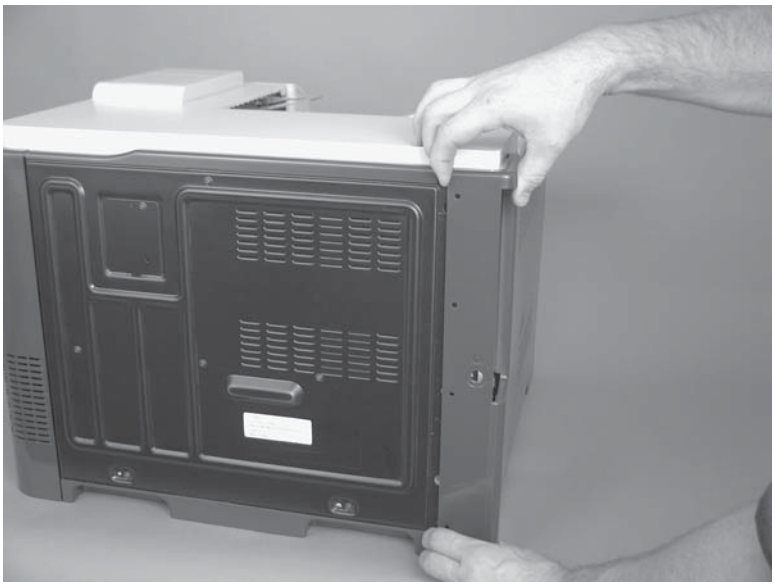
1. Remove four screws (callout 1).

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



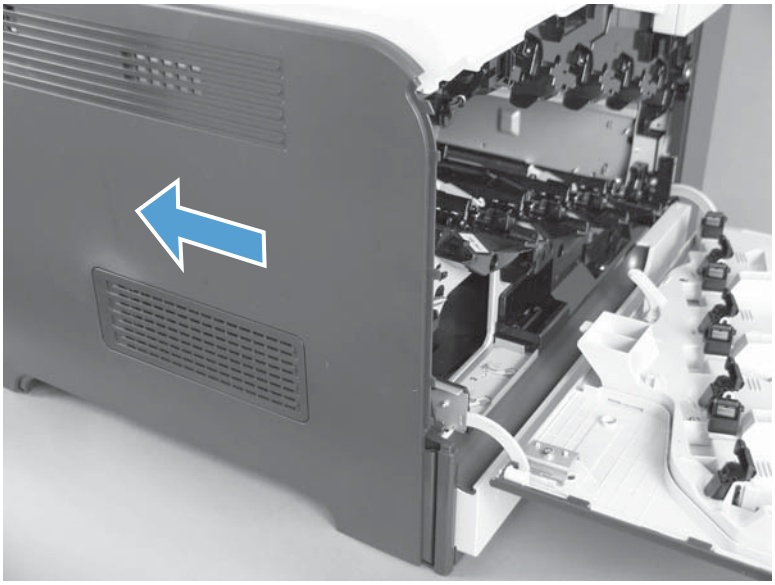
2. Release the rear edge of the cover, and slightly separate the cover from the product.

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



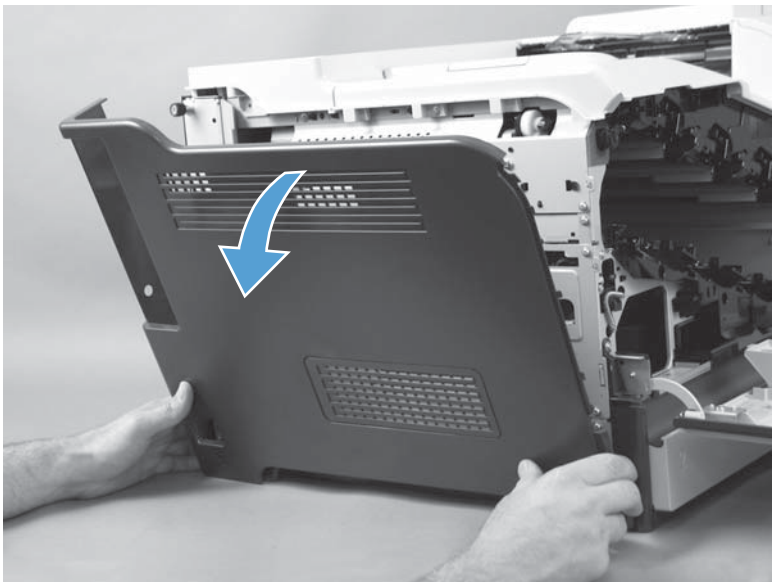
3. Slide the cover toward the back of the product.

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



4. Remove the cover.

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



Left bottom cover

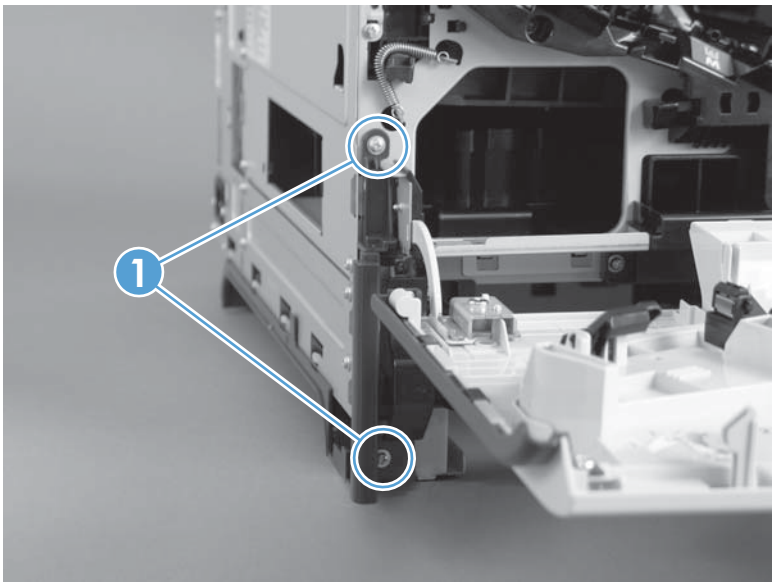
Before proceeding, remove the following components:

- Toner collection unit. See Toner collection unit on page 79.
- Left cover. See Left cover on page 111.

Remove the left bottom cover

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

Figure 2-62 Remove the left bottom cover



Left bottom handle

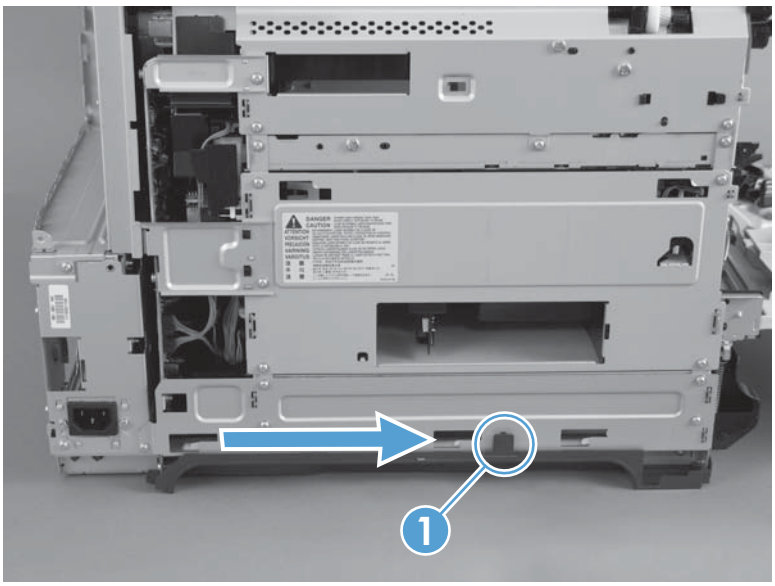
Before proceeding, remove the following components:

- Toner collection unit. See Toner collection unit on page 79.
- Left cover. See Left cover on page 111.
- Left bottom cover. See Left bottom cover on page 113.

Remove the left bottom handle

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

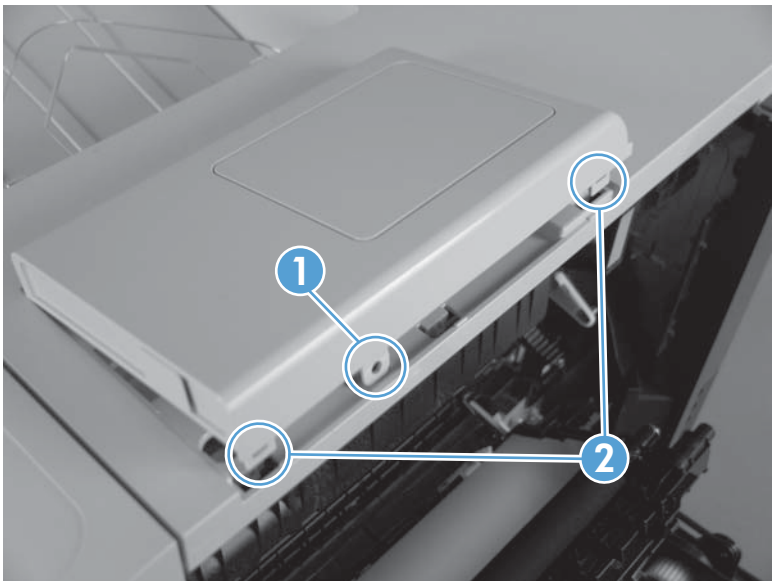
Figure 2-63 Remove the left bottom handle



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

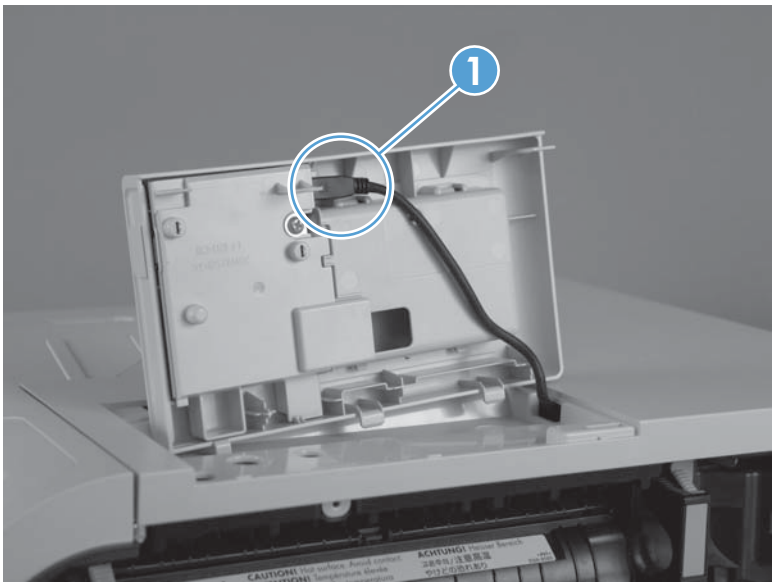
1. Remove one screw (callout 1), and then release two tabs (callout 2).

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



2. Release one connector (callout 1).

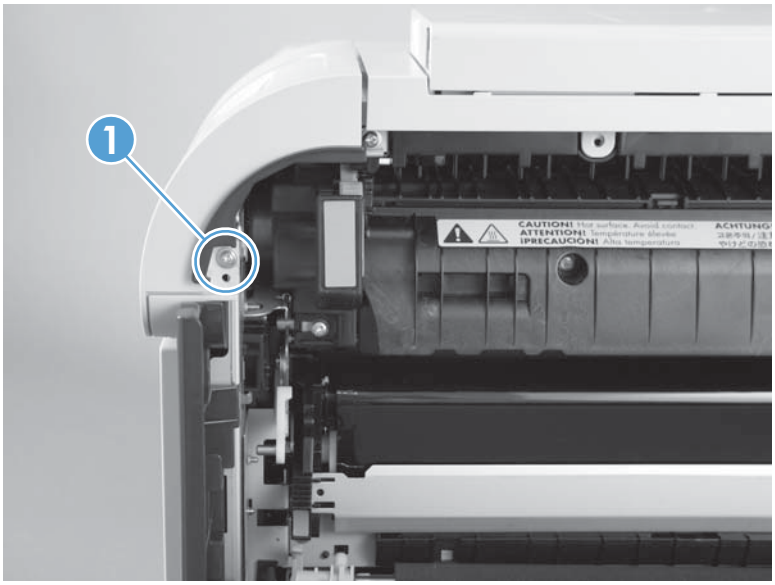
Figure 2-65 Remove the HIP (2 of 2)



Control panel assembly

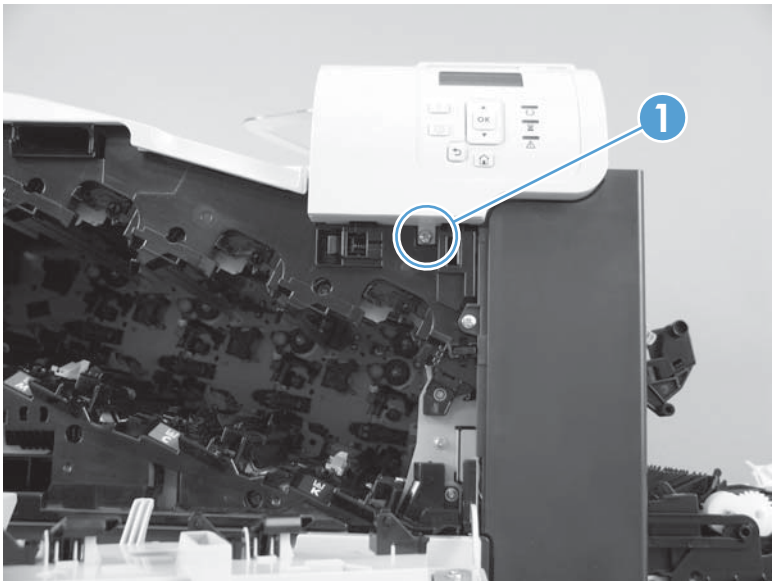
1. Open the front door and the right door.
2. Remove one screw (callout 1).

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



3. Remove one screw (callout 1).

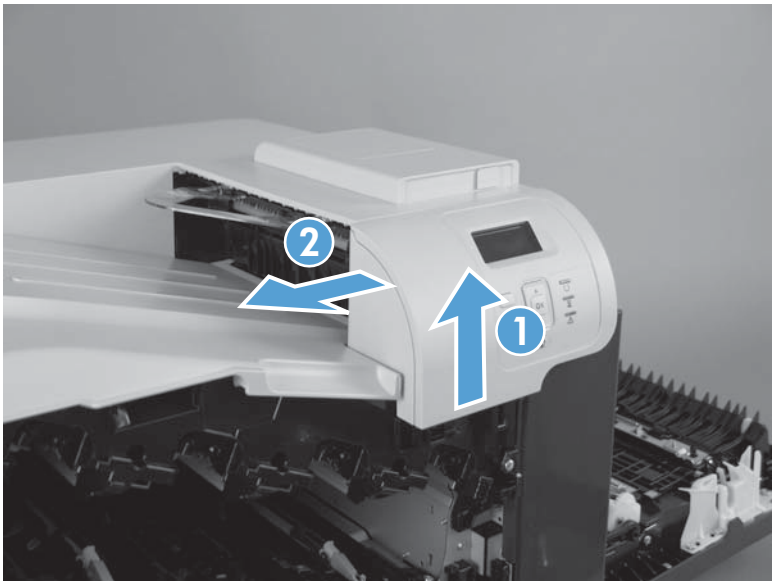
Figure 2-67 Remove the control panel assembly (2 of 4)



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

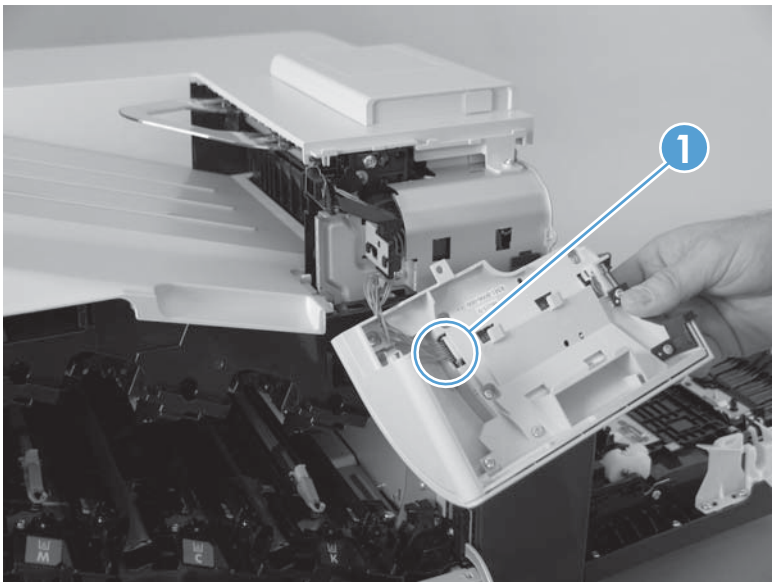
CAUTION: The control panel assembly is attached to the product by the wire harness connector.

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



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

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



Right front cover

Before proceeding, remove the following components:

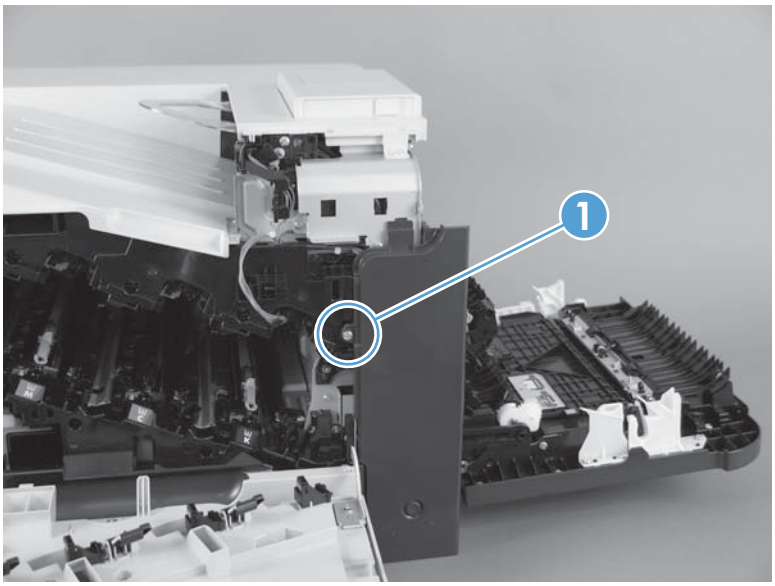
- Control panel assembly. See Control panel assembly on page 116.

Remove the right front cover

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

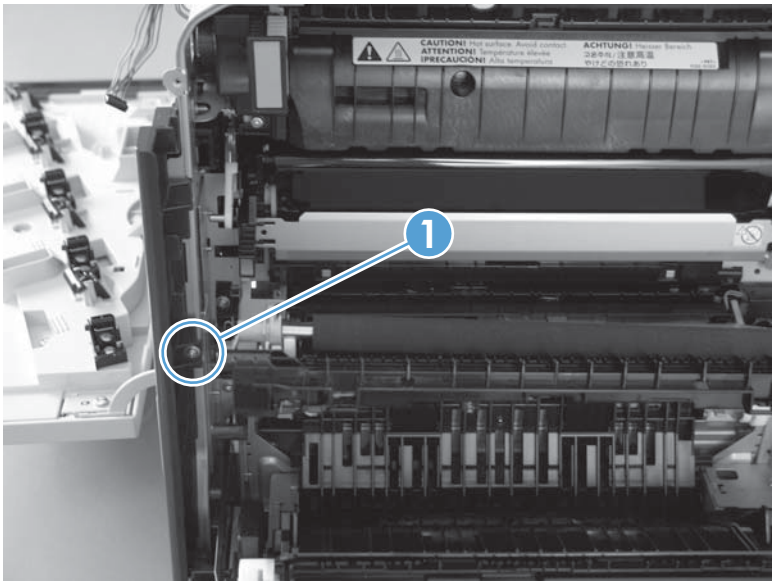
1. Remove one screw (callout 1).

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



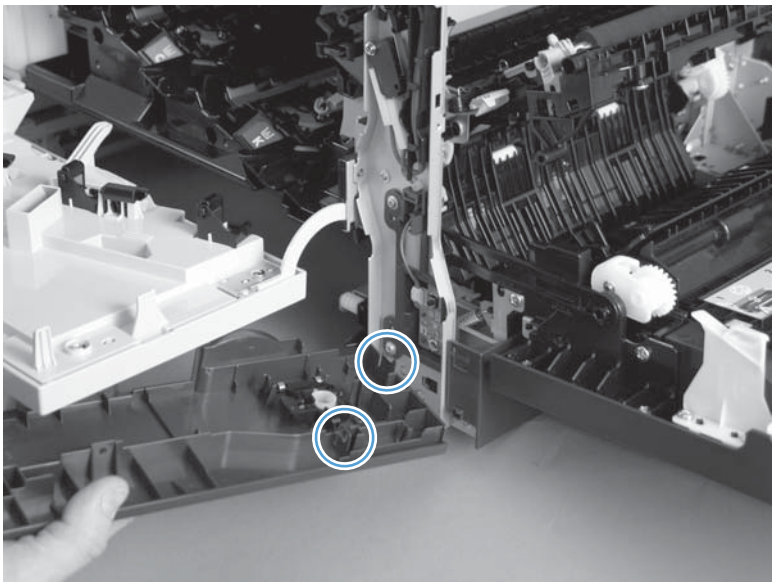
2. Remove one screw (callout 1).

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



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

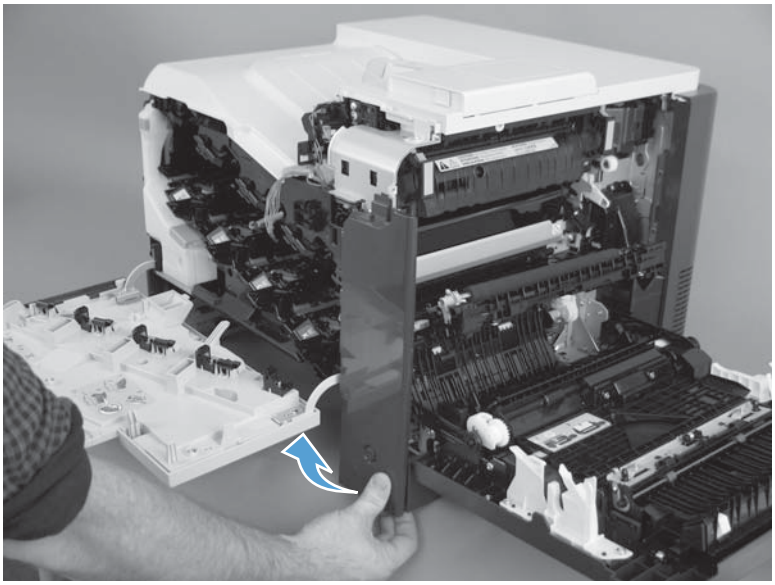
Figure 2-72 Remove the right front cover (3 of 5)



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

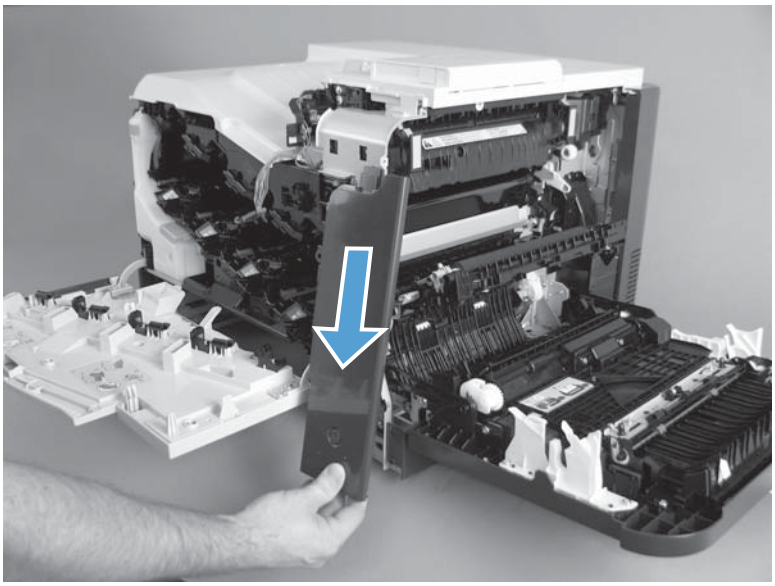
TIP: It might be easier if you position the product at the edge of the work surface so that there is space to access the tab. You might try pushing the tab down by carefully inserting a small flat blade screwdriver.

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



5. Pull down on the cover to remove it.

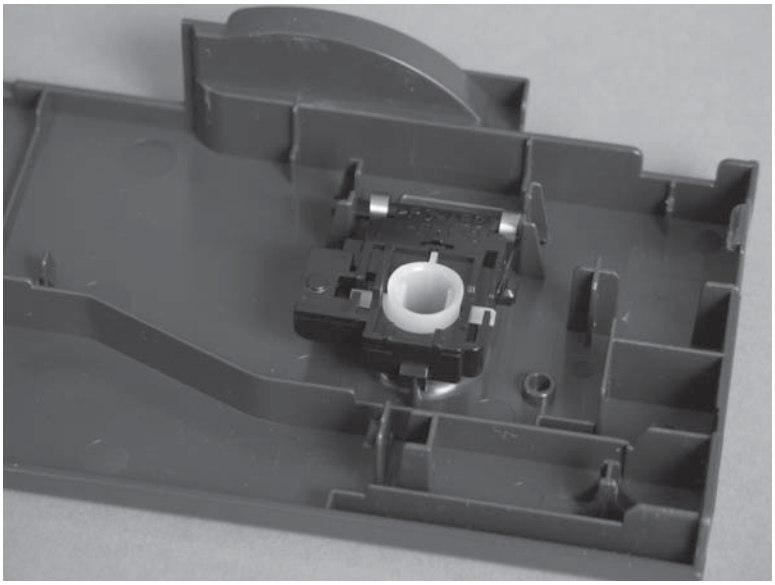
Figure 2-74 Remove the right front cover (5 of 5)



Reinstall the power button

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

Figure 2-75 Reinstall the power button



Front top cover

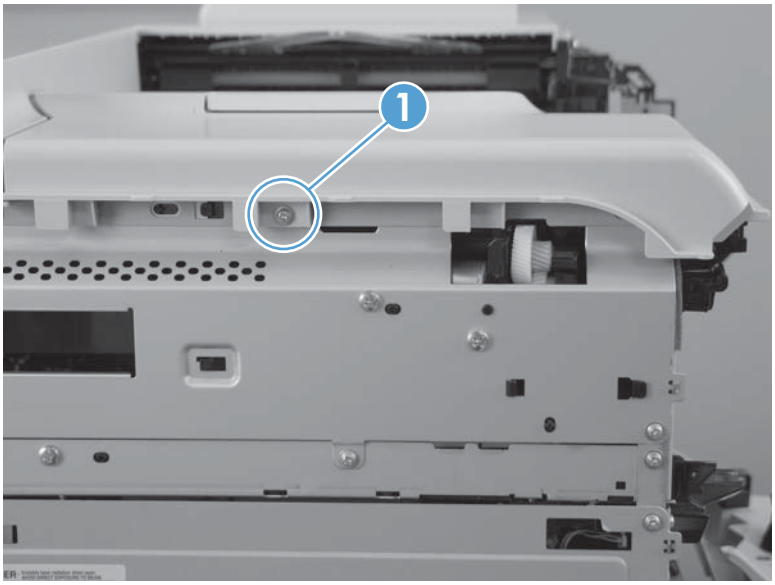
Before proceeding, remove the following components:

- Toner collection unit. See Toner collection unit on page 79.
- Left cover. See Left cover on page 111.
- Control panel assembly. See Control panel assembly on page 116.

Remove the front top cover

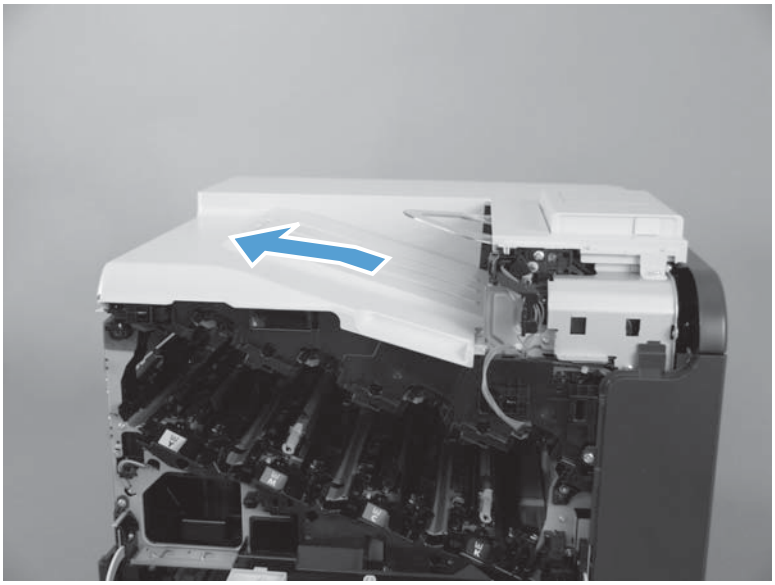
1. Remove one screw (callout 1).

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



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

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



Rear cover and upper rear cover

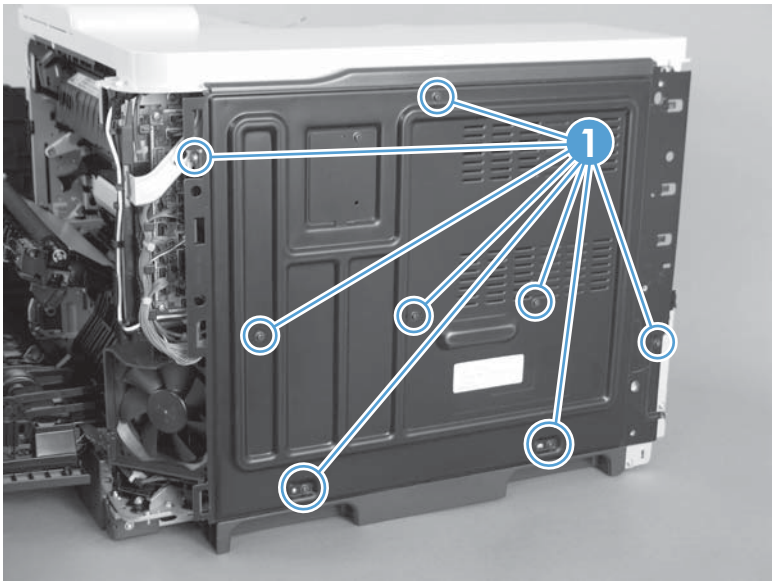
Before proceeding, remove the following components:

- Toner collection unit. See Toner collection unit on page 79.
- Right rear cover. See Right rear cover on page 109.
- Left cover. See Left cover on page 111.

Remove the rear cover and upper rear cover

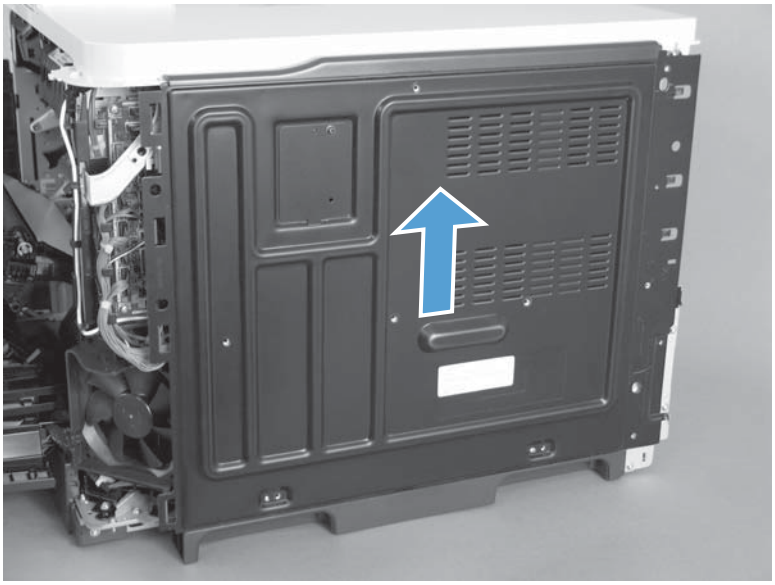
1. Remove eight screws (callout 1).

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



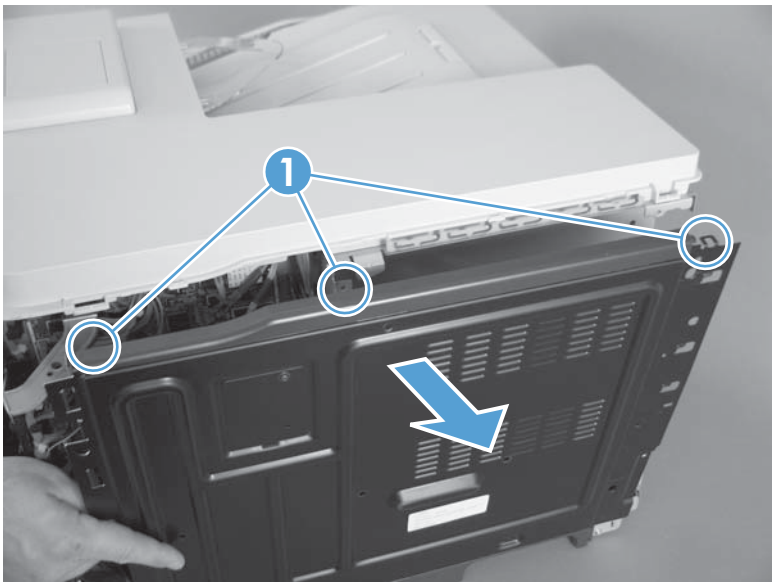
2. Slide the cover up.

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



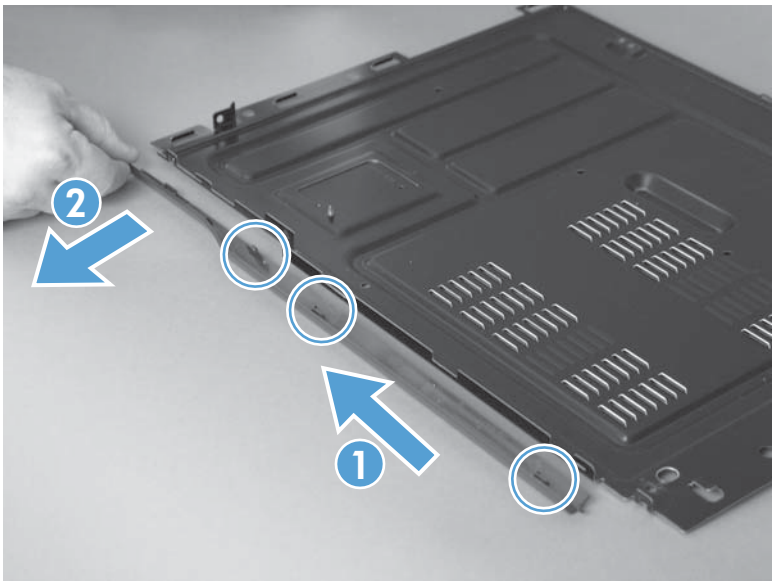
3. Release three tabs (callout 1) and then remove the cover.

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



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

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



Rear top cover

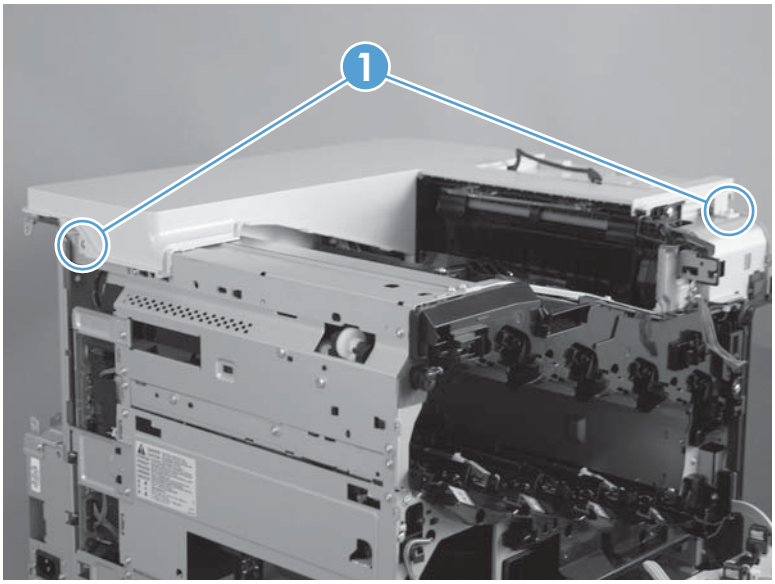
Before proceeding, remove the following components:

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

Remove the rear top cover

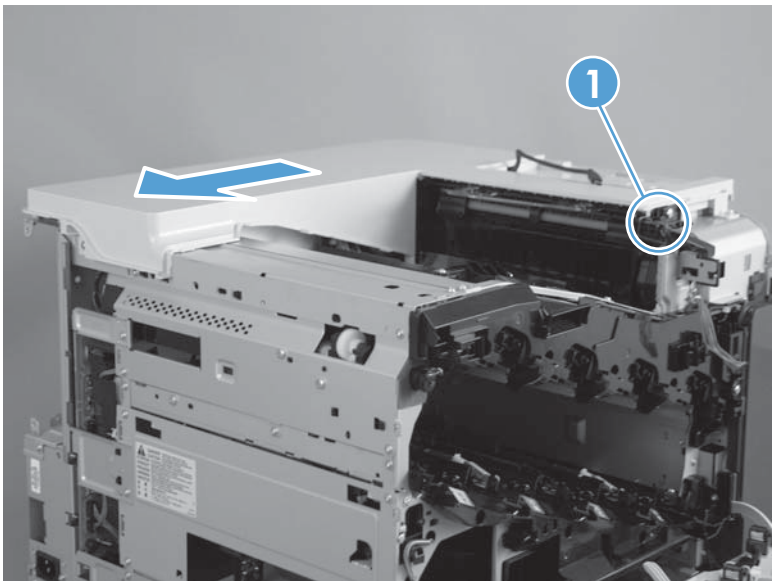
1. Remove two screws (callout 1).

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



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

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



Right bottom handle

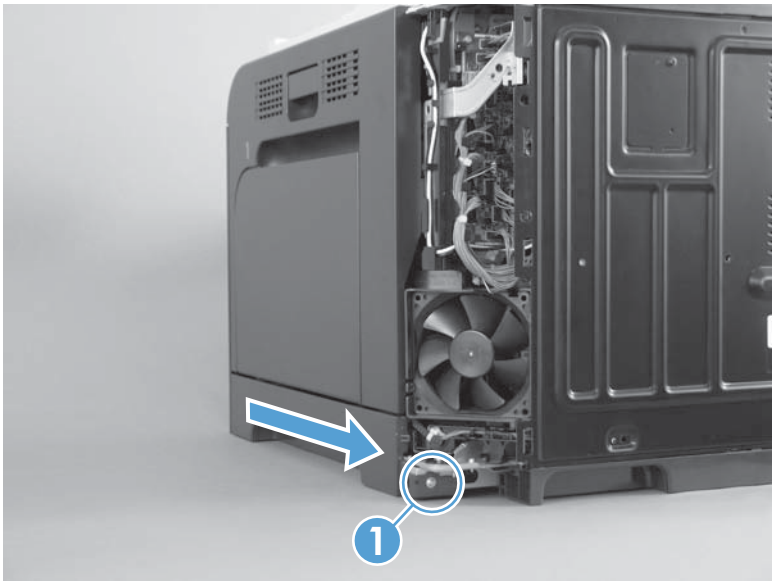
Before proceeding, remove the following components:

- Right rear cover. See Right rear cover on page 109.
- Control panel assembly. See Control panel assembly on page 116.
- Right front cover. See Right front cover on page 118.

Remove the right bottom handle

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

Figure 2-84 Remove the right bottom handle



Rear bottom handle

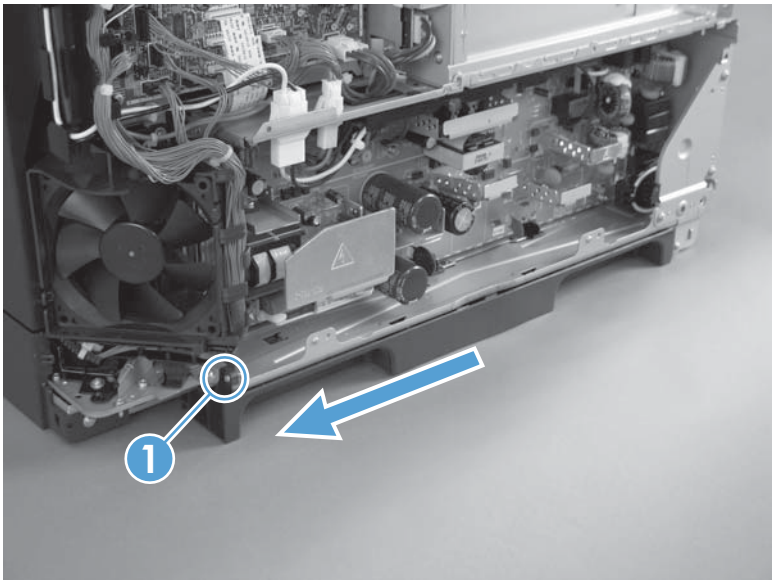
Before proceeding, remove the following components:

- Toner collection unit. See Toner collection unit on page 79.
- Right rear cover. See Right rear cover on page 109.
- Left cover. See Left cover on page 111.
- Rear cover and rear upper cover. See Rear cover and upper rear cover on page 124.

Remove the rear bottom handle

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

Figure 2-85 Remove the rear bottom handle



Internal assemblies

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

Delivery fan, cartridge fan, and environmental sensor

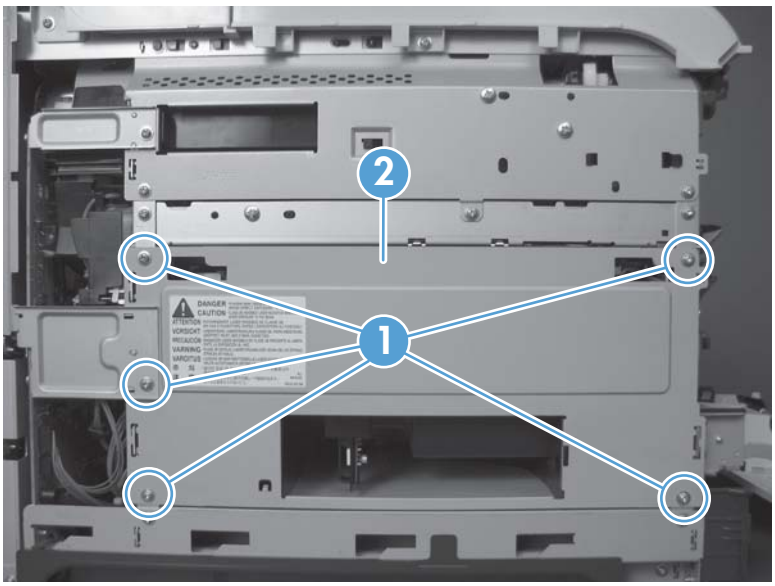
Before proceeding, remove the following components:

- Toner collection unit. See Toner collection unit on page 79.
- Left cover. See Left cover on page 111.

Remove the delivery fan, cartridge fan, and environmental sensor

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

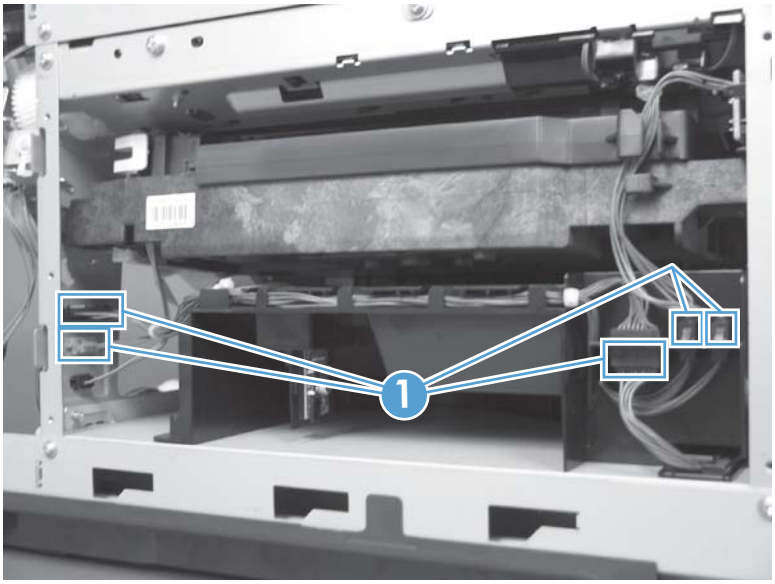
Figure 2-86 Remove the delivery fan, cartridge fan, and environmental sensor (1 of 9)



2. Disconnect five connectors (callout 1).

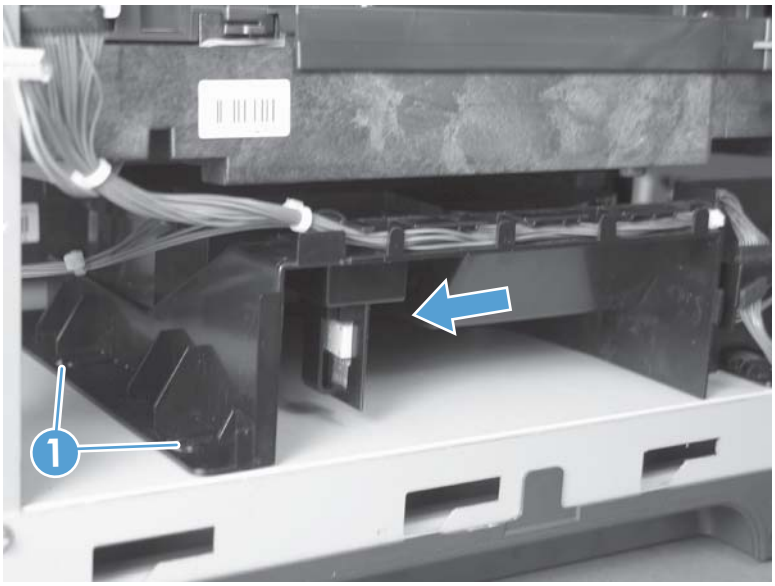
NOTE: Disconnect the larger connector on the right side from the bottom. Disconnect the two smaller connectors on the right side from the top.

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



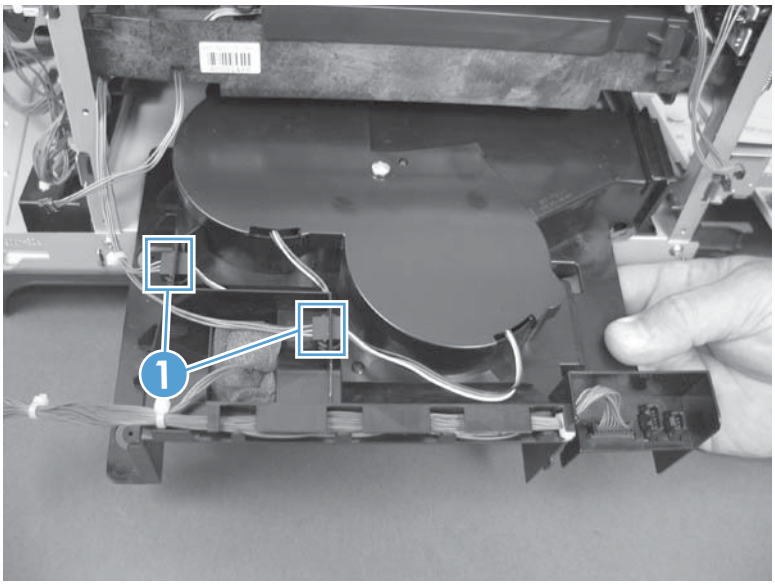
3. Release two tabs (callout 1), and then slide the delivery fan and cartridge fan assembly toward the power-supply side of the product to release it.

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



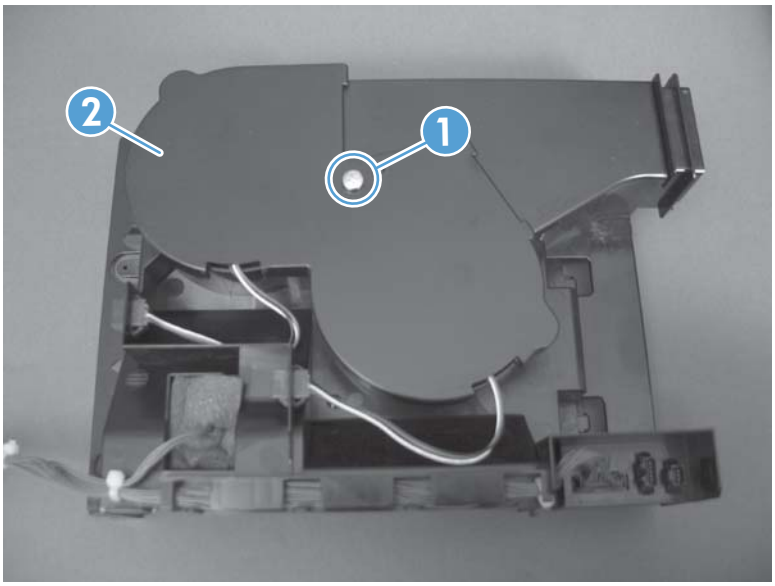
4. Pull the assembly slightly out of the product, disconnect two connectors (callout 1), and then remove the assembly.

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



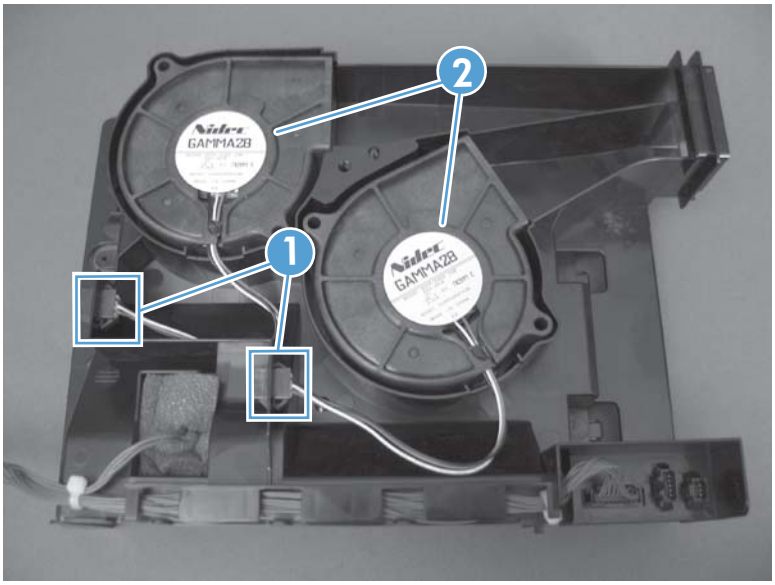
5. Remove one screw (callout 1), and then remove the cover (callout 2).

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



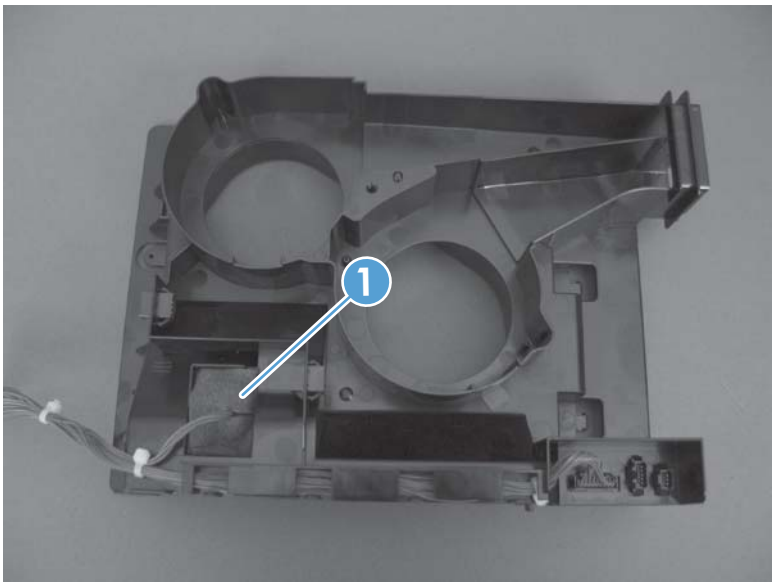
6. Disconnect two connectors (callout 1), and then remove the fans (callout 2).

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



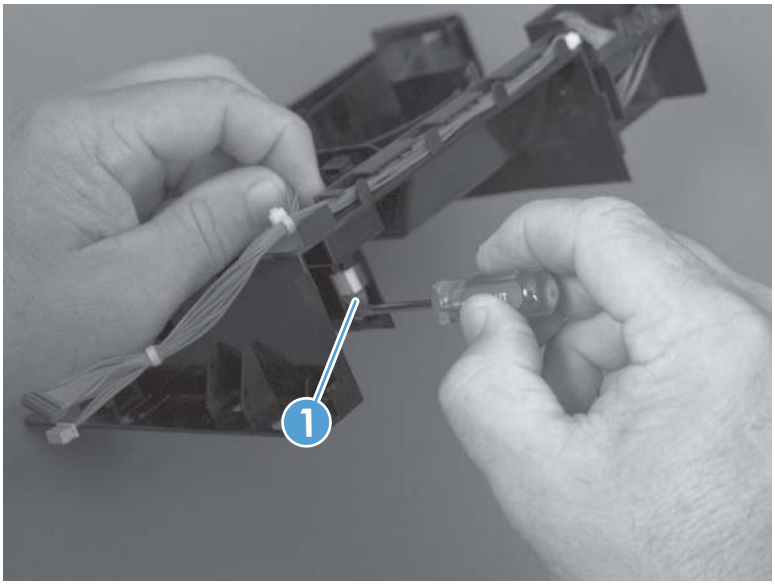
7. Remove the antistatic foam (callout 1).

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



8. Release one tab (callout 1).

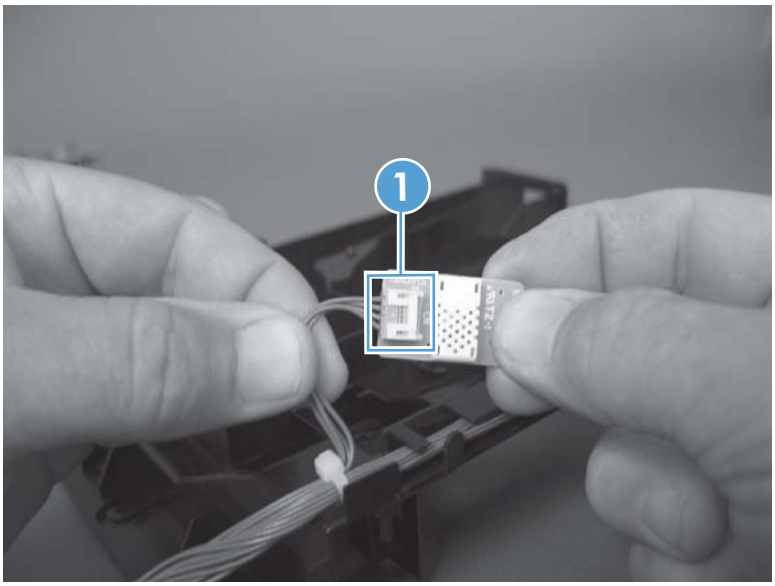
Figure 2-93 Remove the delivery fan, cartridge fan, and environmental sensor (8 of 9)



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

CAUTION: ESD sensitive part.

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



Toner collection sensor

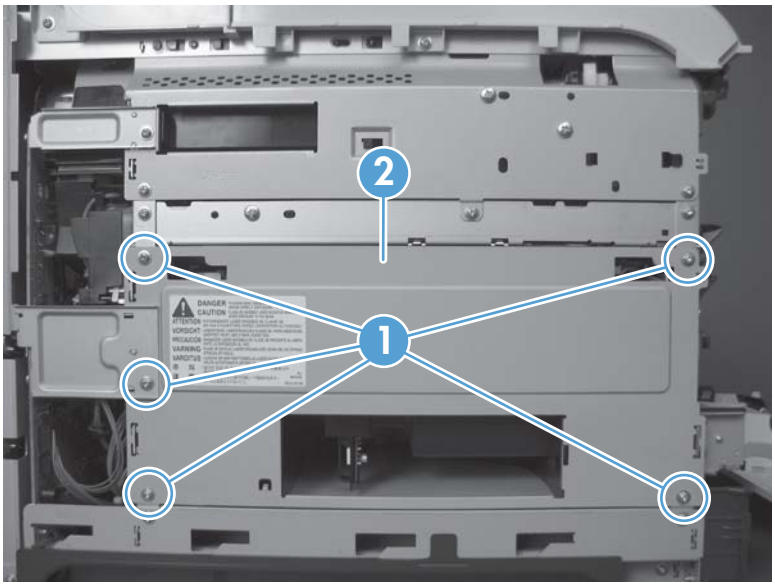
Before proceeding, remove the following components:

- Toner collection unit. See Toner collection unit on page 79.
- Left cover. See Left cover on page 111.

Remove the toner collection sensor

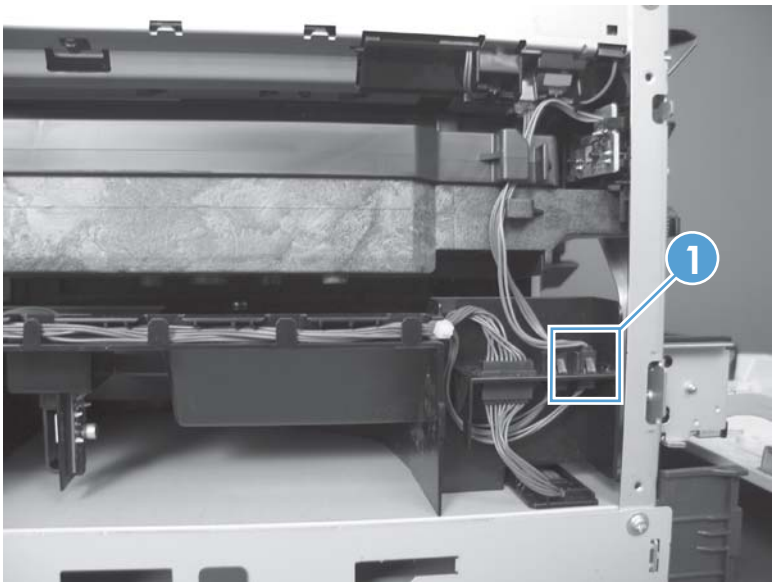
1. Remove five screws (callout 1), and then remove the sheet-metal plate (callout 2).

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



2. Disconnect one connector (callout 1).

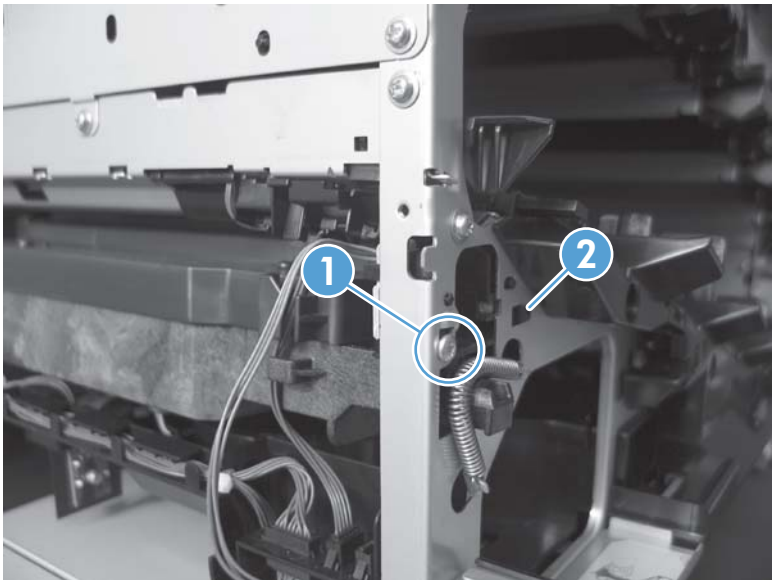
Figure 2-96 Remove the toner collection sensor (2 of 4)



3. Remove one screw (callout 1).

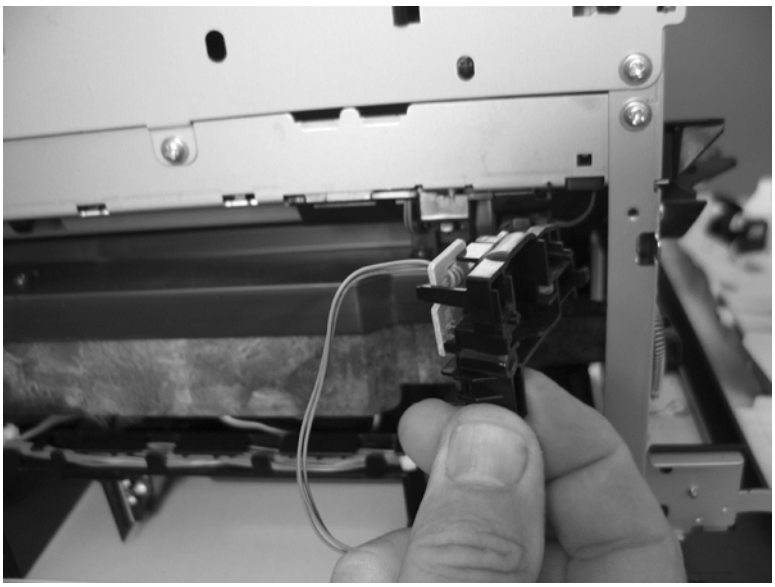
Reinstallation tip When you reinstall the sensor, make sure that the tab (callout 2) on the sensor body completely engages the slot in the product chassis.

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



4. Remove the toner collection sensor.

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



Residual toner feed motor

Before proceeding, remove the following components:

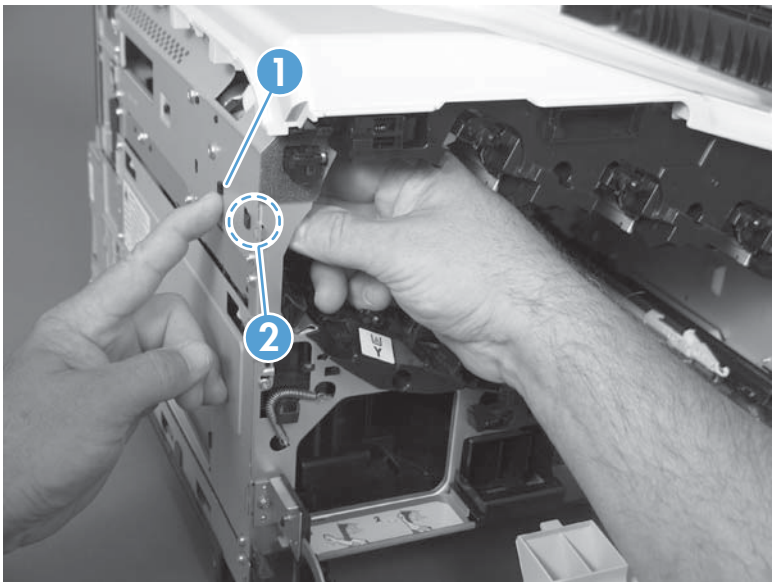
- Toner collection unit. See Toner collection unit on page 79.
- Intermediate transfer belt (ITB). See Intermediate transfer belt (ITB) on page 98.
- Left cover. See Left cover on page 111.

Remove the residual toner feed motor

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

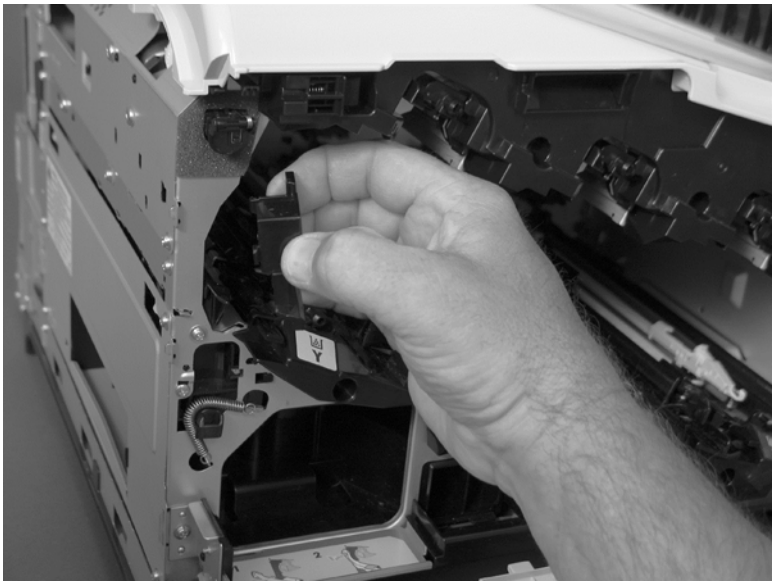
1. Release one tab (callout 1) while you support the cover (callout 2).

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



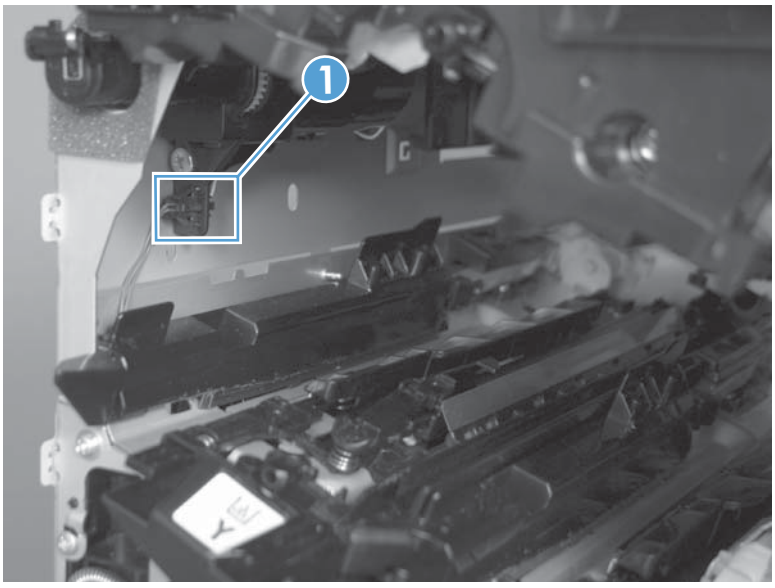
2. Remove the cover.

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



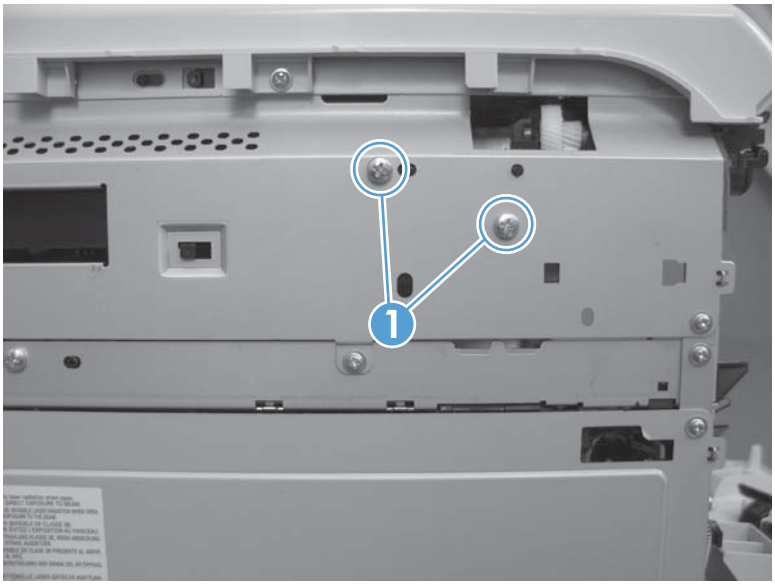
3. Disconnect one connector (callout 1).

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



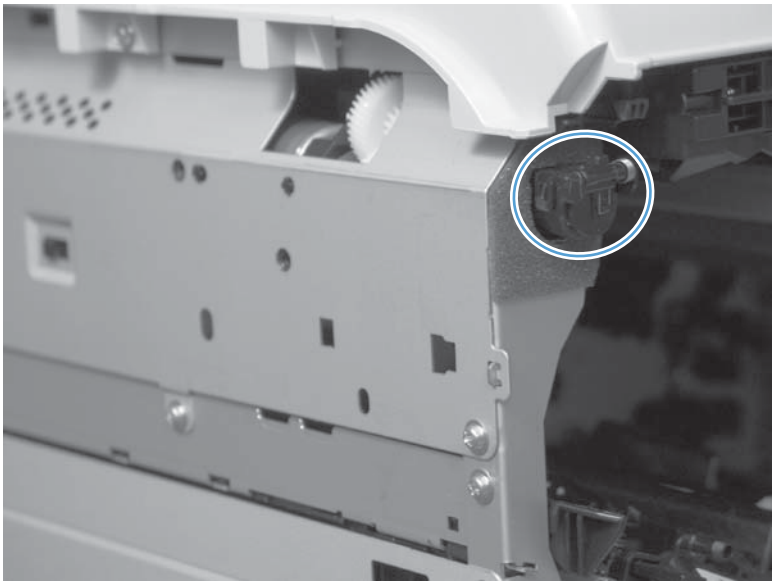
4. Support the assembly, and then remove two screws (callout 1).

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



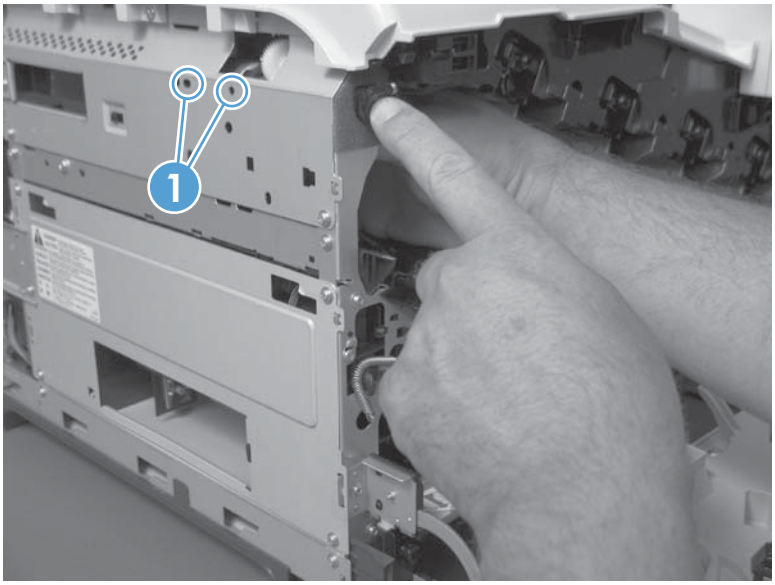
5. Be careful. Do not dislodge the residual toner collection door when you remove the assembly. If the door becomes dislodged, see Reinstall the residual toner collection door on page 142 to reinstall it.

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



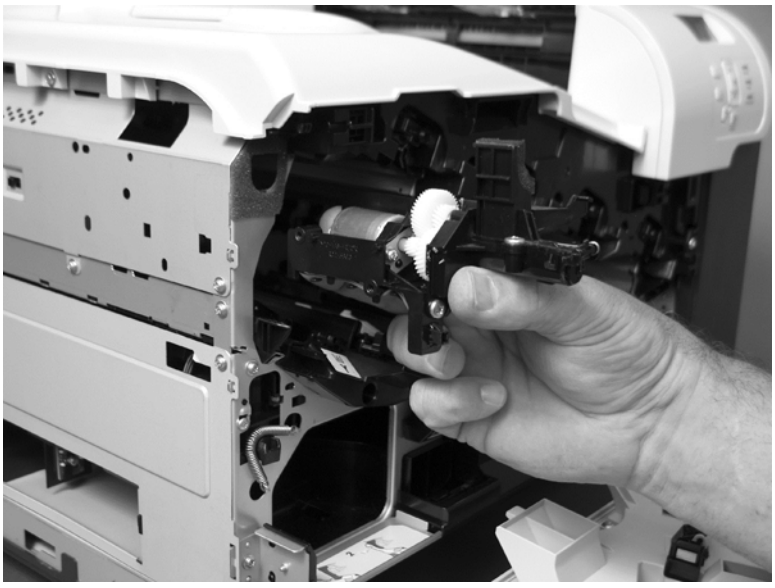
6. Release two tabs (callout 1), and then push the assembly into the product to release it.

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



7. Remove the motor.

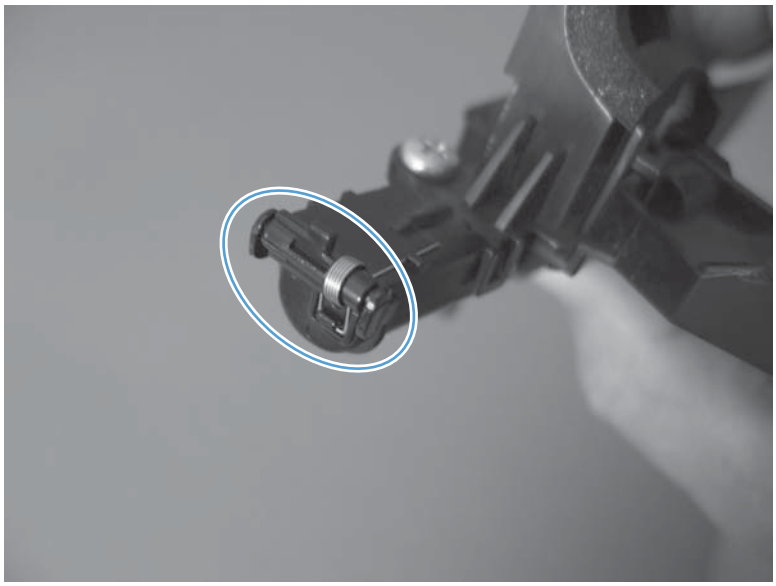
Figure 2-105 Remove the residual toner feed motor (7 of 7)



Reinstall the residual toner collection door

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

Figure 2-106 Reinstall the residual toner collection door



Registration density (RD) sensor assembly

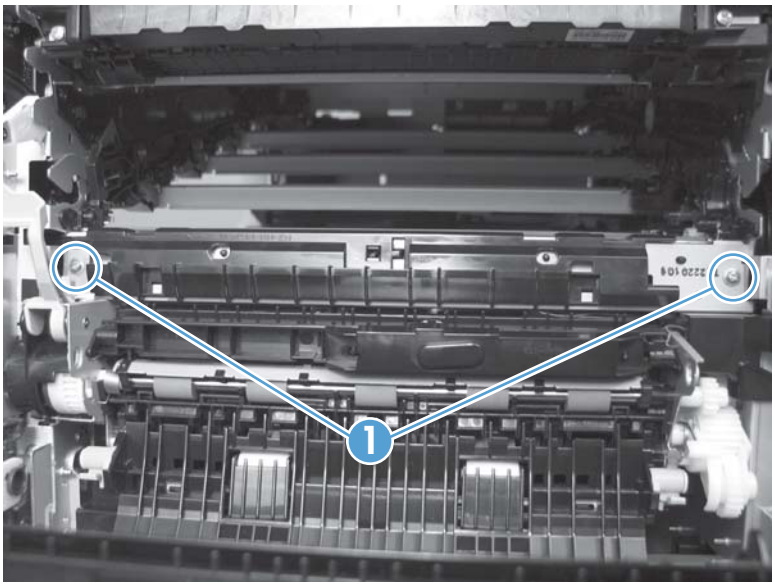
Before proceeding, remove the following components:

- Secondary transfer assembly. See Secondary transfer assembly on page 96.
- Intermediate transfer belt (ITB). See Intermediate transfer belt (ITB) on page 98.

Remove the RD sensor assembly

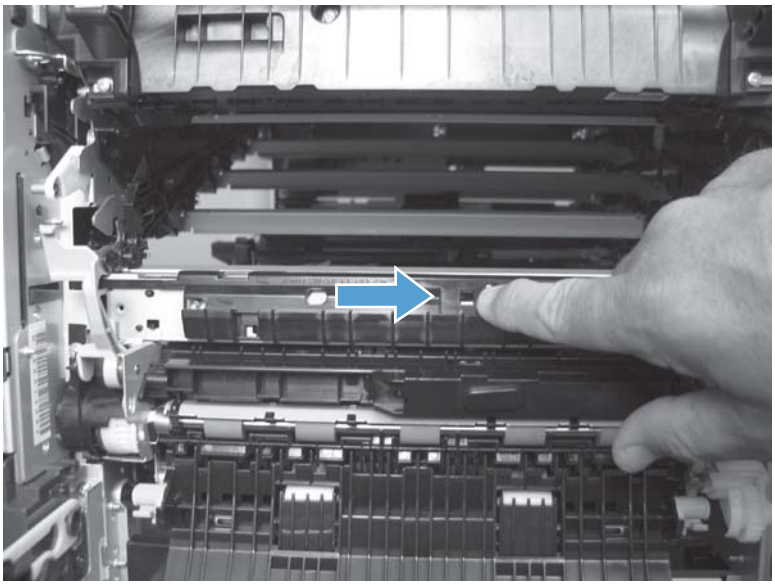
1. Remove two screws (callout 1).

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



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

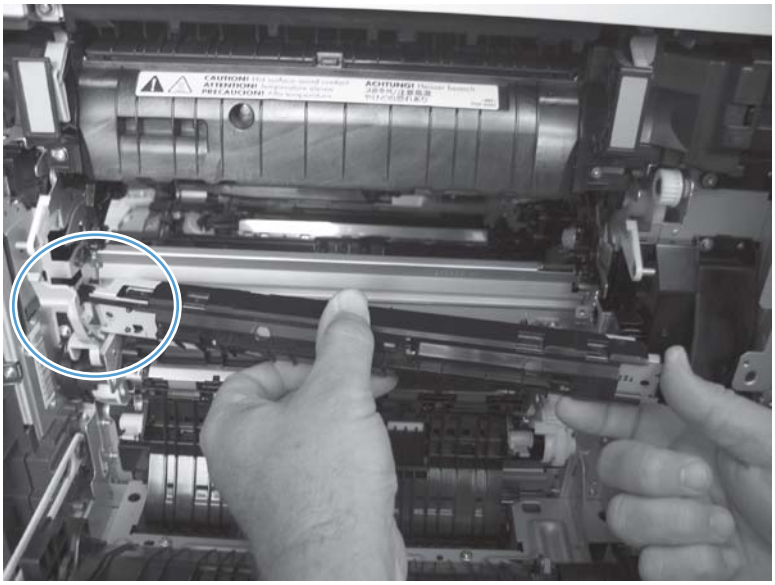
Figure 2-108 Remove the RD sensor assembly (2 of 6)



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

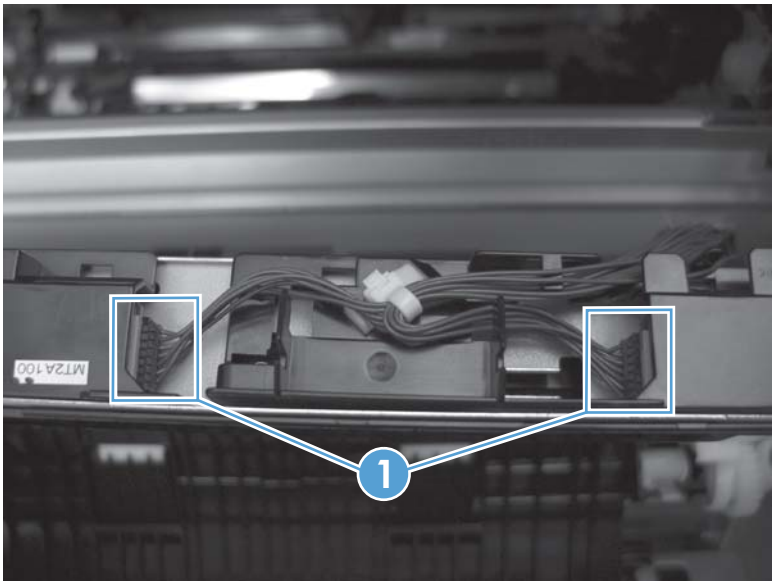
CAUTION: Do not damage the shutter as it passes through the chassis.

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



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

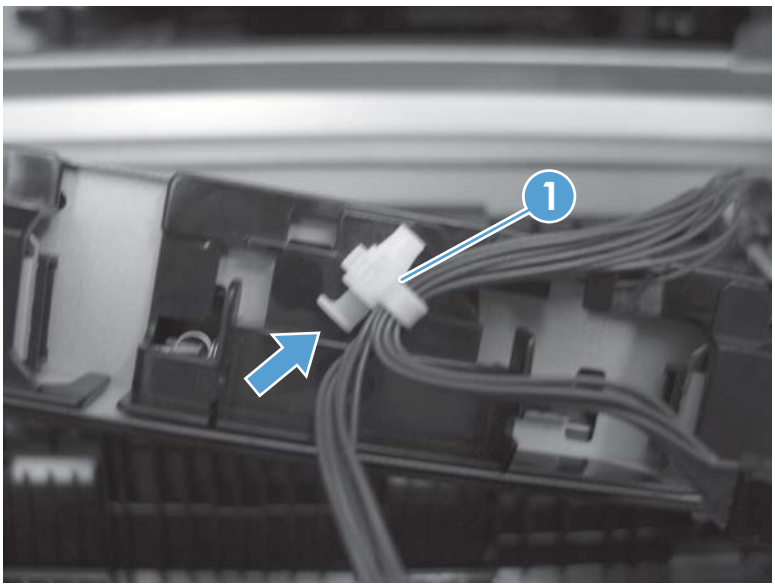
Figure 2-110 Remove the RD sensor assembly (4 of 6)



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

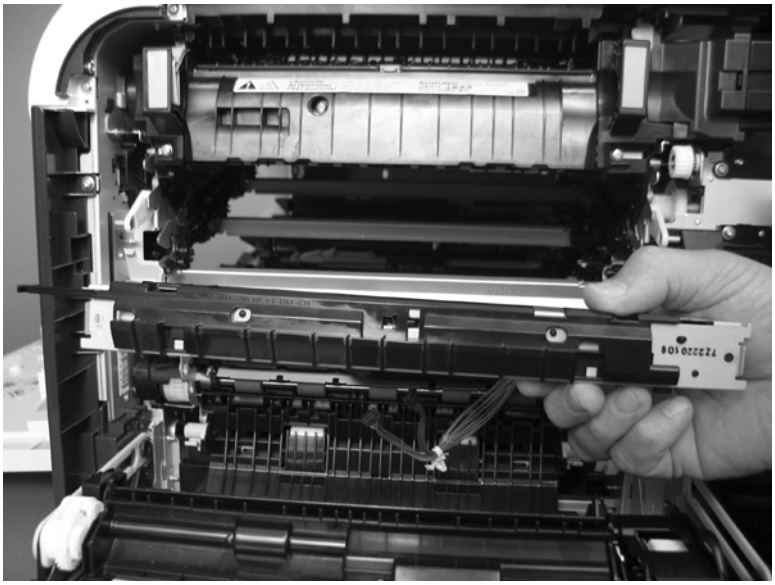
NOTE: The retainer remains attached to the wire harness, and disengages from the assembly.

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



6. Remove the assembly.

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



Power supply fan and fan duct

Before proceeding, remove the following components:

- Toner collection unit. See Toner collection unit on page 79.
- Right rear cover. See Right rear cover on page 109.
- Left cover. See Left cover on page 111.
- Rear cover and upper rear cover. See Rear cover and upper rear cover on page 124.

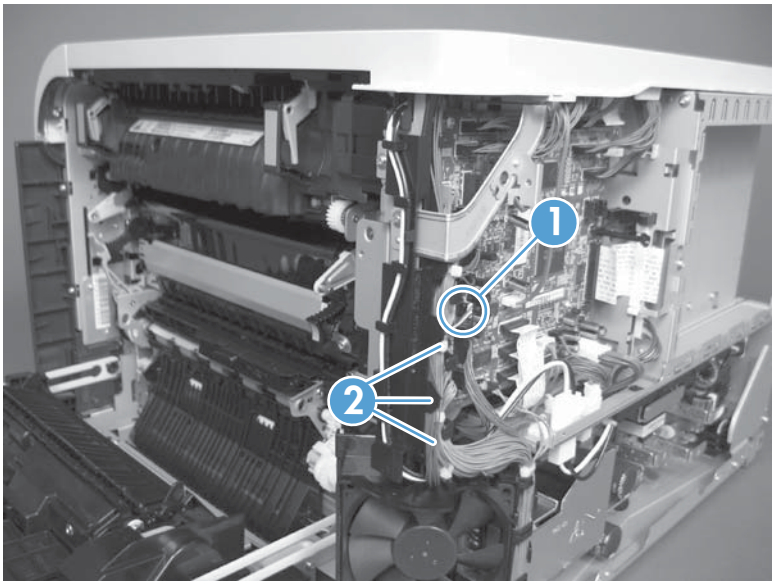
NOTE: It is not necessary to separate the upper rear cover from the rear cover to remove the power supply fan.

Remove the power supply fan and fan duct

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

NOTE: To locate DC controller connector locations, see DC controller PCA on page 284.

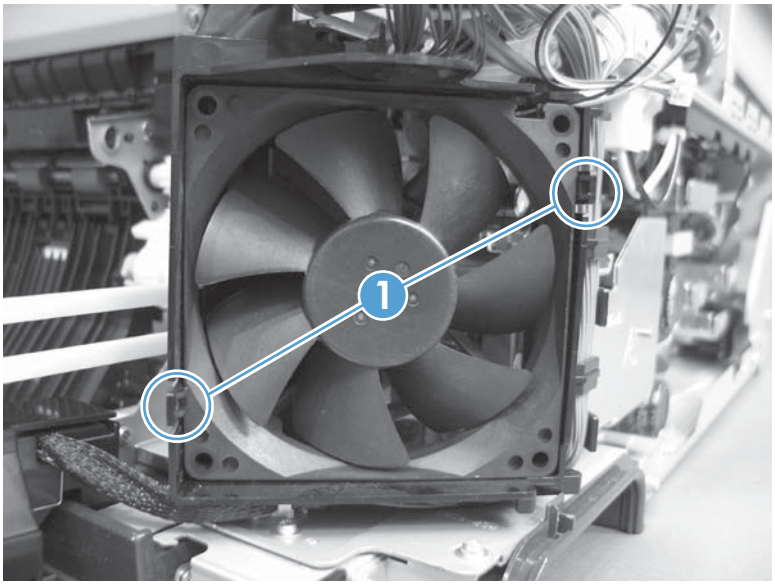
Figure 2-113 Remove the power supply fan (1 of 4)



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

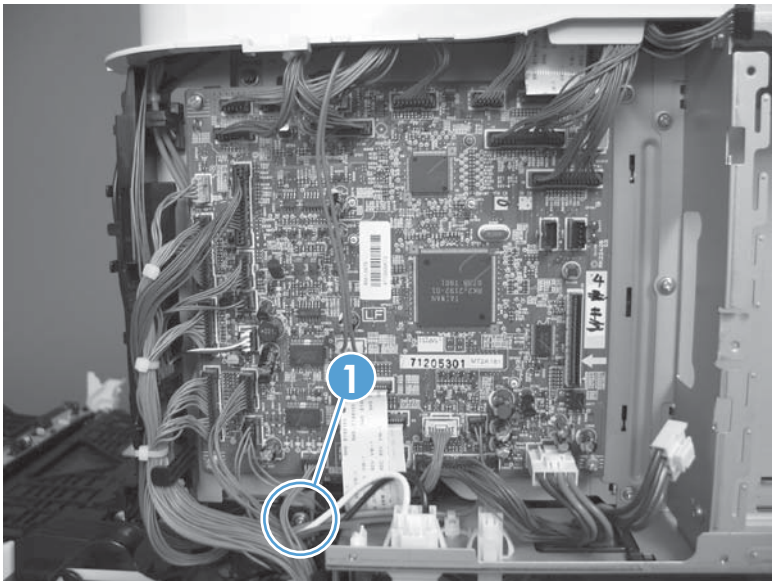
Reinstallation tip When the fan is reinstalled, the air must flow into the product. Look at the arrows embossed on the fan frame that indicate air flow direction.

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



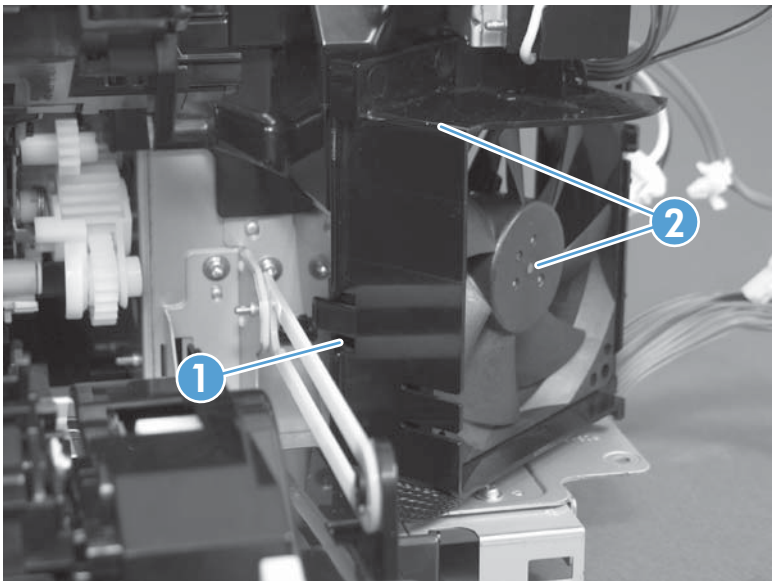
3. **To remove the fan and fan duct**: Remove one screw (callout 1), and then release the wire harnesses from the guides on the fan duct.

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



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

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



Registration assembly

Before proceeding, remove the following components:

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

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

- RD sensor assembly. See Registration density (RD) sensor assembly on page 143.

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

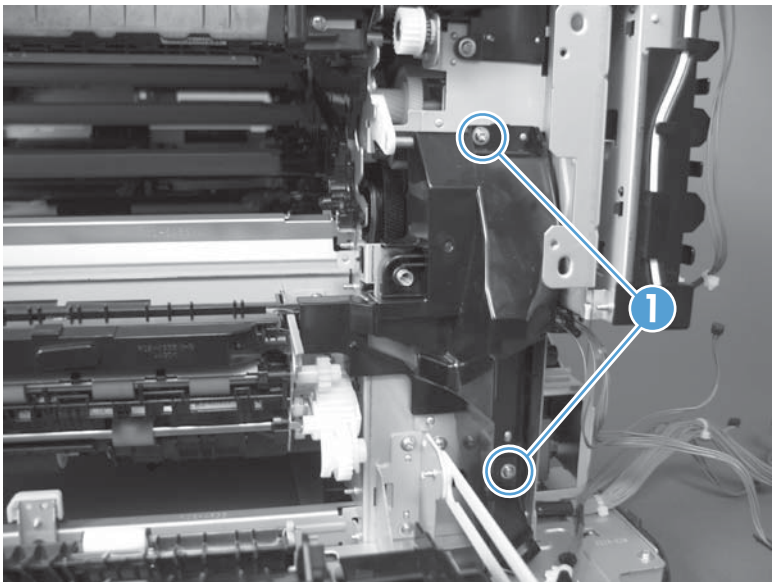
- Power supply fan and fan duct. See Power supply fan and fan duct on page 147.

Remove the registration assembly

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

1. Remove two screws (callout 1).

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



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

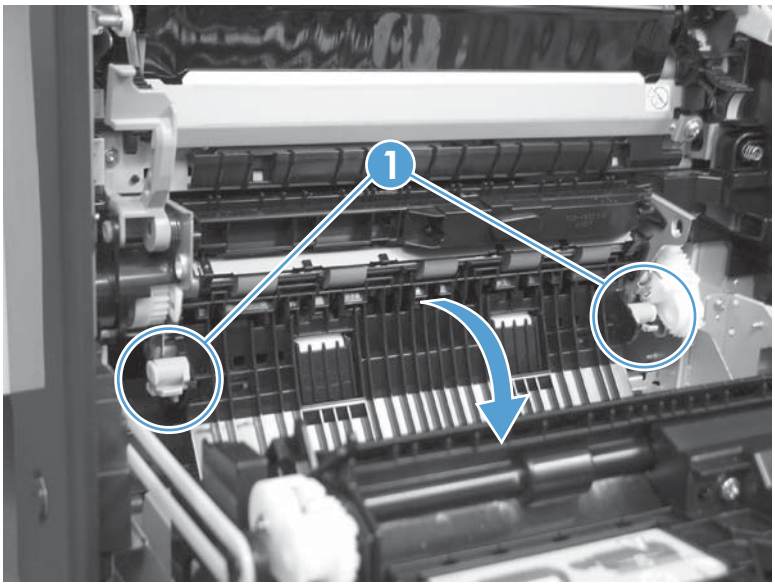
Figure 2-118 Remove the registration assembly (2 of 8)



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

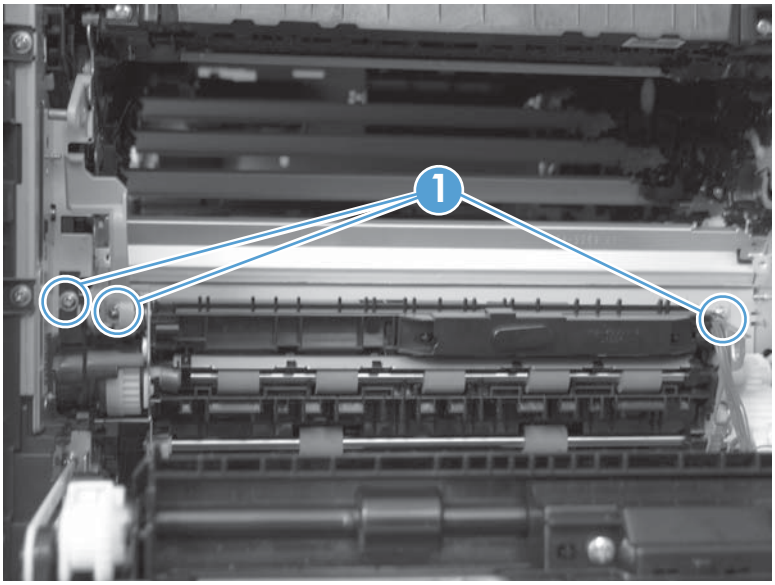
Reinstallation tip Make sure that the feed guide snaps into the closed position when you reinstall the registration assembly.

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



4. Remove three screws (callout 1).

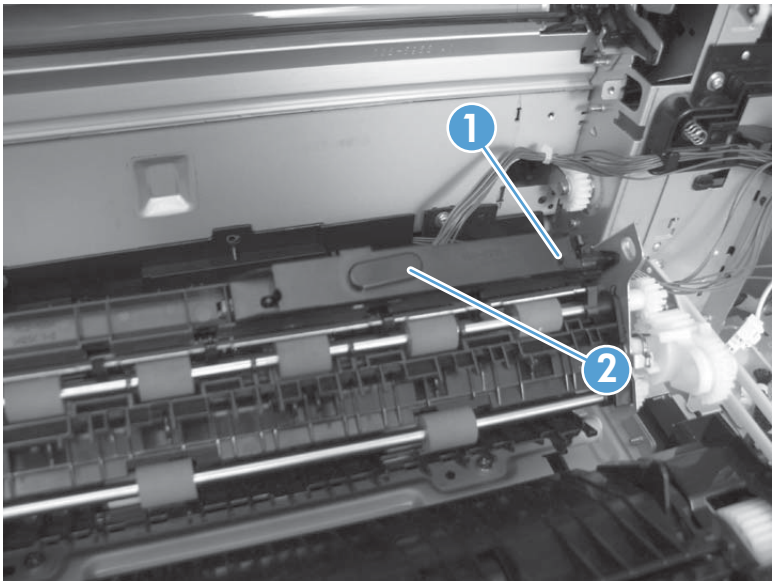
Figure 2-120 Remove the registration assembly (4 of 8)



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

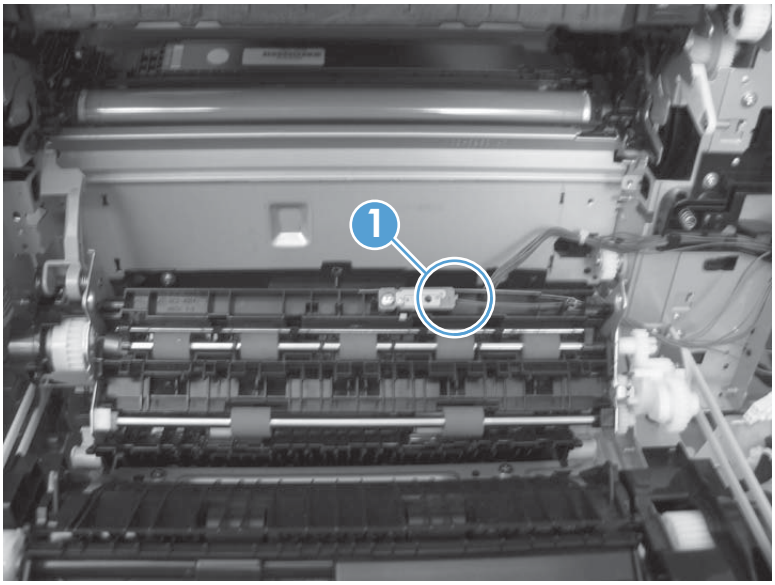
CAUTION: The assembly is still attached to the product by the wire harnesses.

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



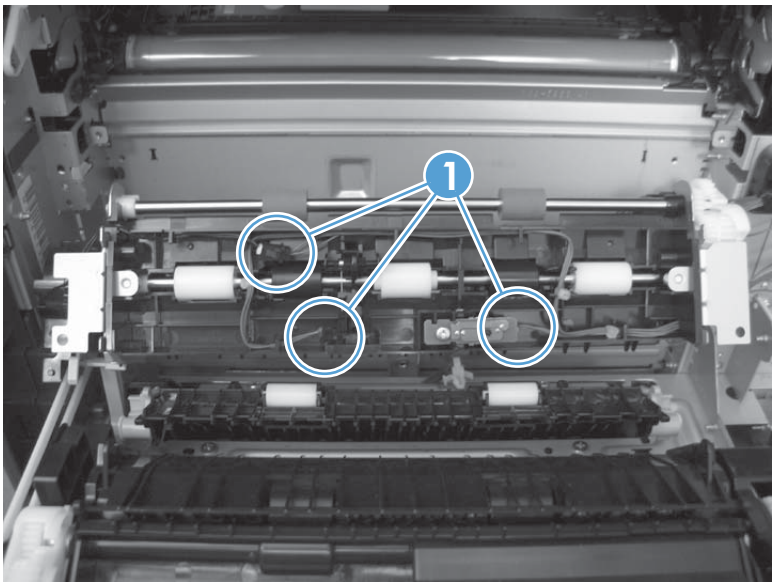
6. Disconnect one connector (callout 1), and then release the wire harness from the retainer.

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



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

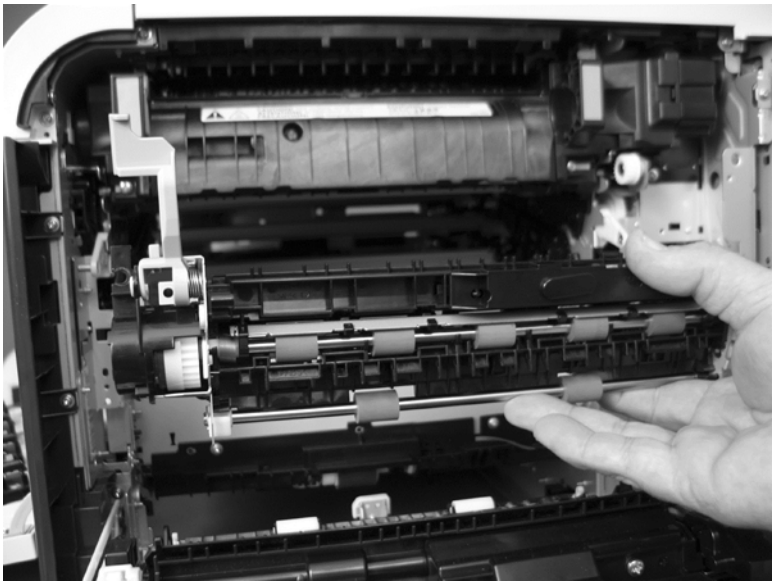
Figure 2-123 Remove the registration assembly (7 of 8)



8. Remove the assembly.

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

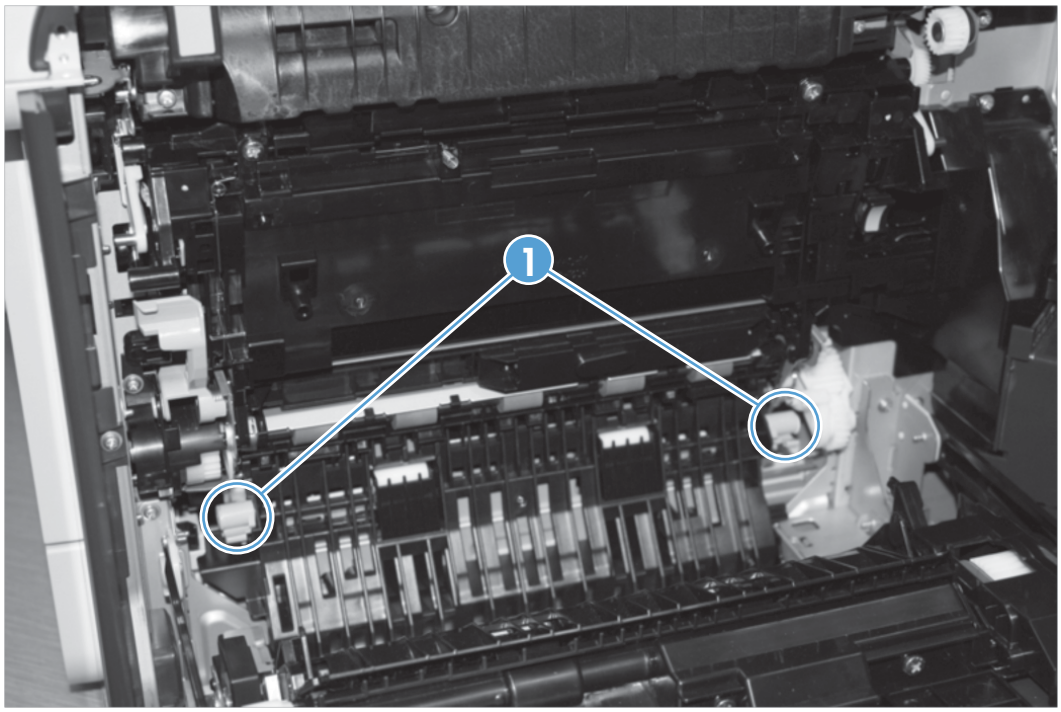
Figure 2-124 Remove the registration assembly (8 of 8)



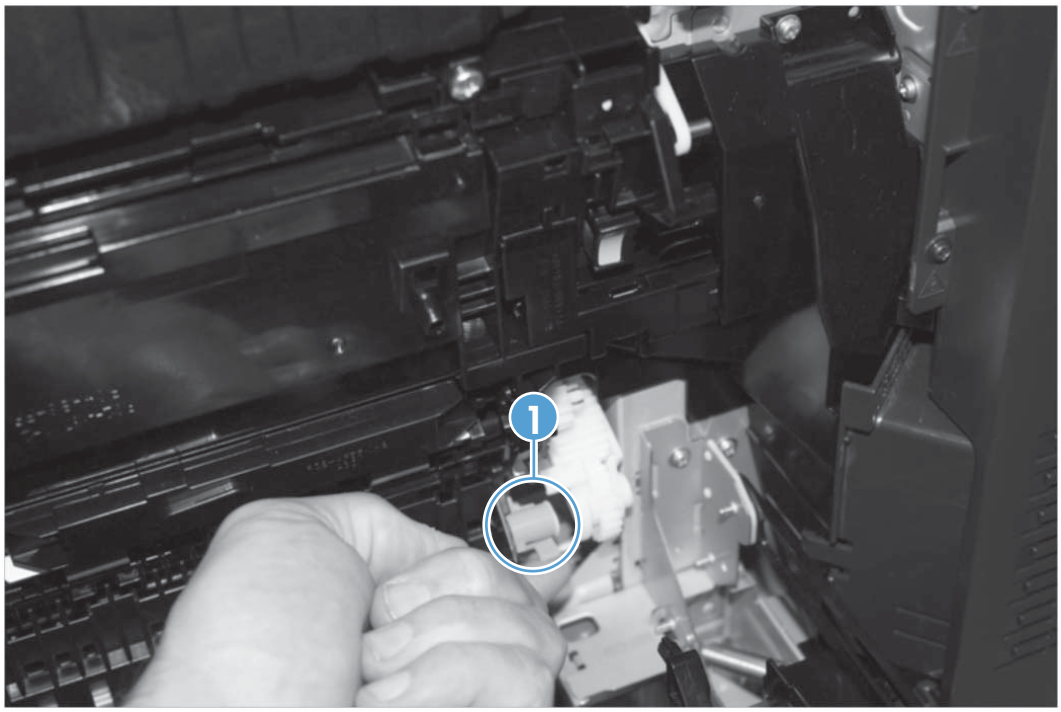
Lower pickup guide

Remove the lower pickup guide

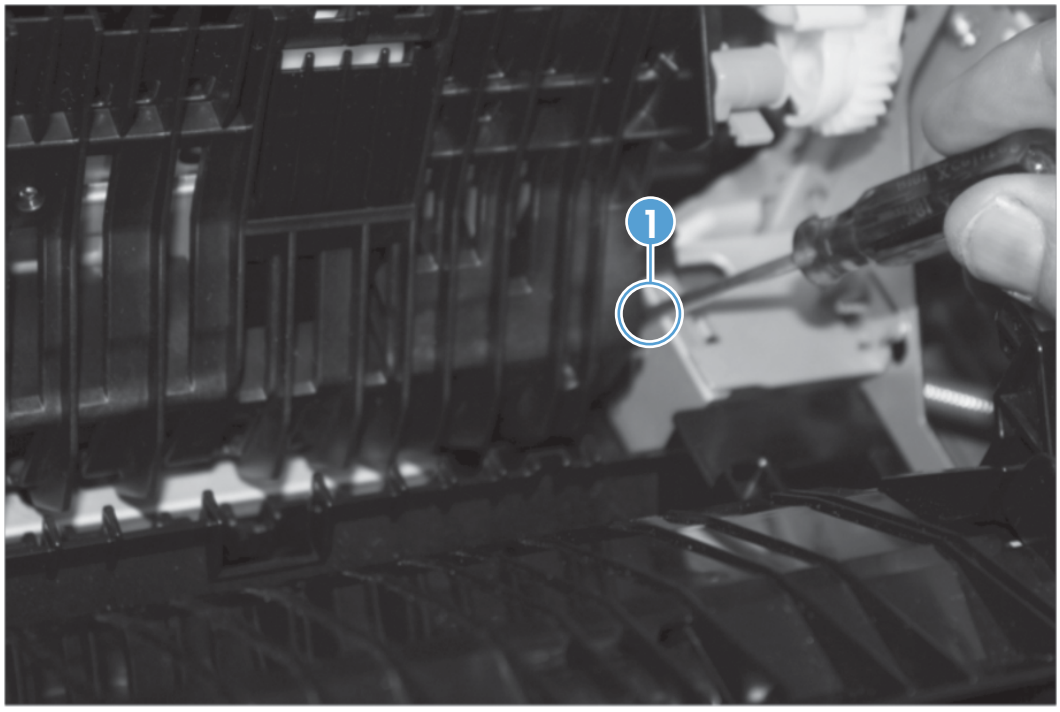
1. Open the right Door. The lower pickup guide is directly below the registration assembly and is locked into place by 2 green circular knobs, one on each side of the upper portion of the guide.



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



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



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

Reinstall the lower pickup guide

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

Interconnect board (ICB)

Before proceeding, remove the following components:

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

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

Remove the ICB

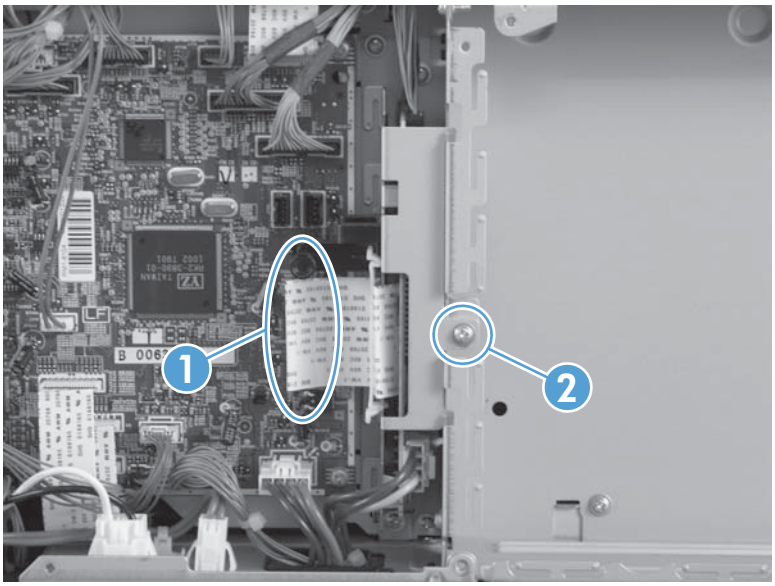
WARNING! **Do not** remove the ICB from a product and then install it into a **different** product. Failure to follow this warning will result in severe damage to that product and cause it to be unusable. HP recommends that if you remove and replace the ICB, you should destroy the discarded ICB so that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

CAUTION: ESD sensitive part.

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

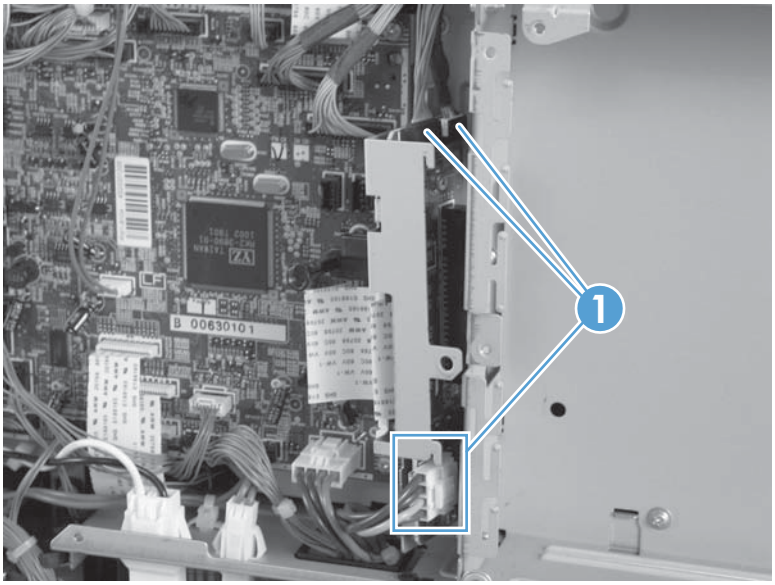
NOTE: To locate DC controller connector locations, see DC controller PCA on page 284.

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



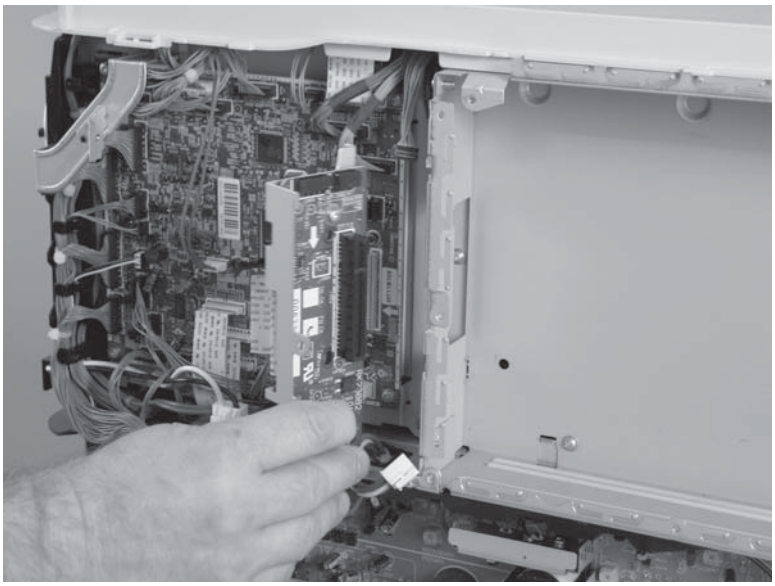
2. Disconnect three connectors (callout 1).

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



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

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



DC controller PCA and tray

Before proceeding, remove the following components:

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

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

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

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

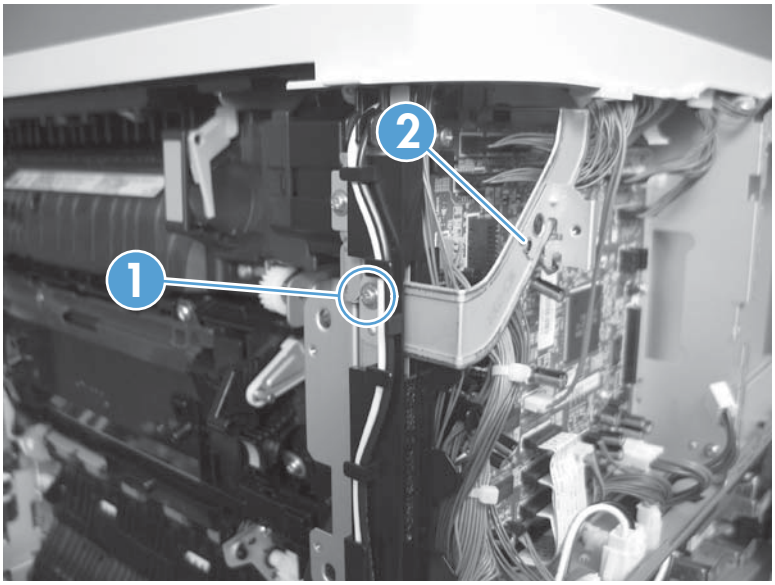
NOTE: If removing the DC controller to access another component, skip the third step and leave the DC controller attached to the sheet-metal tray.

Remove the DC controller PCA

CAUTION: ESD sensitive part.

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

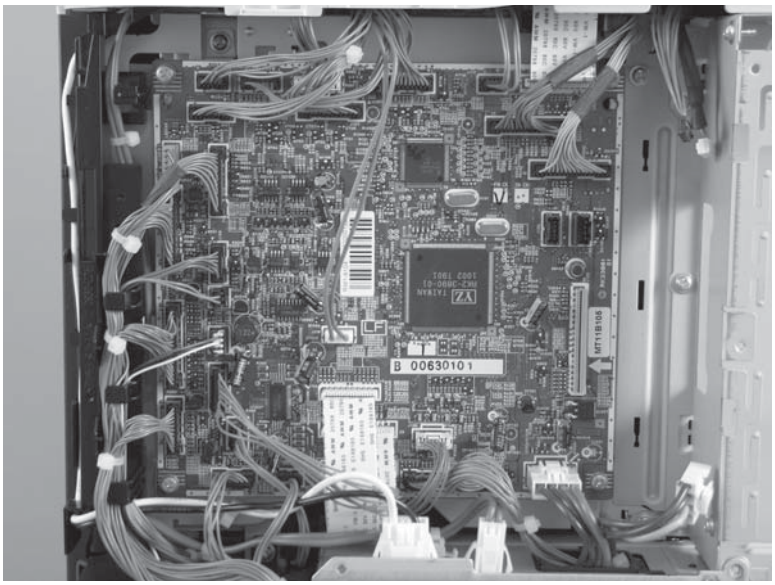
Figure 2-128 Remove the DC controller PCA and tray (1 of 4)



2. Disconnect all the connectors.

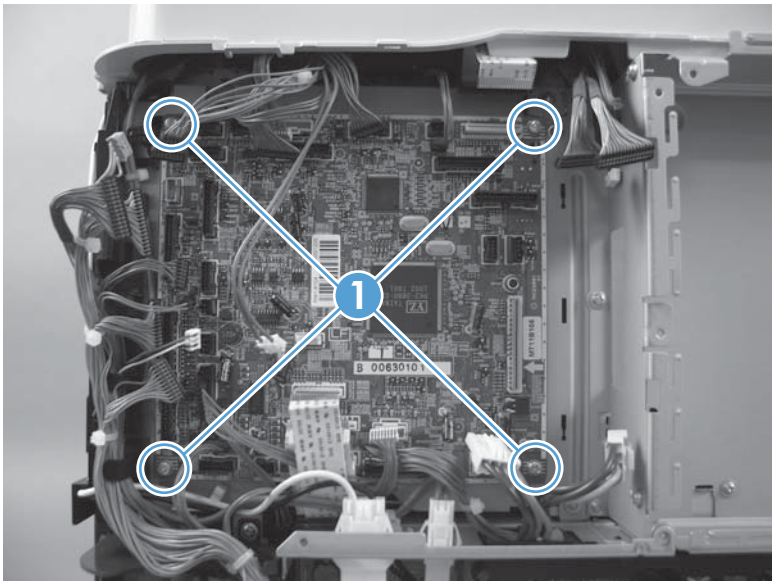
Reinstallation tip The connector locations J133 and J134 are not used.

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



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

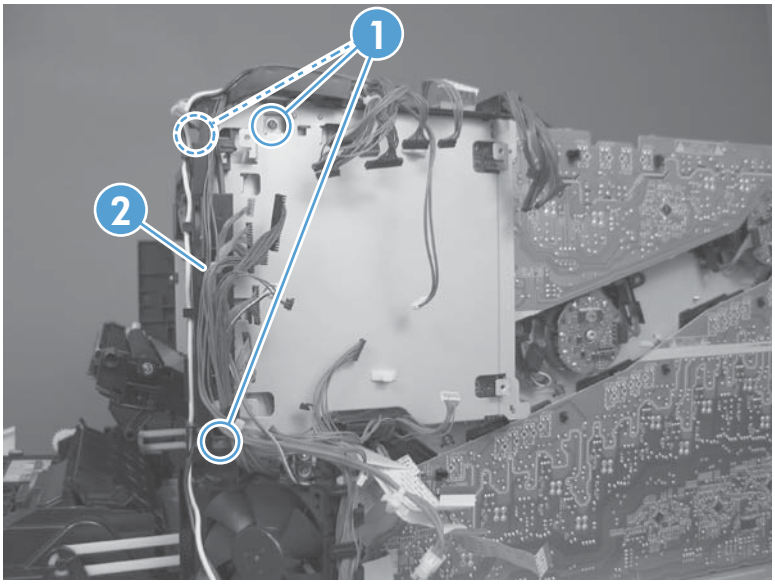
Figure 2-130 Remove the DC controller PCA and tray (3 of 4)



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

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

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



Low voltage power supply

Before proceeding, remove the following components:

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

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

- Interconnect board (ICB). See Interconnect board (ICB) on page 158.

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

Remove the low voltage power supply

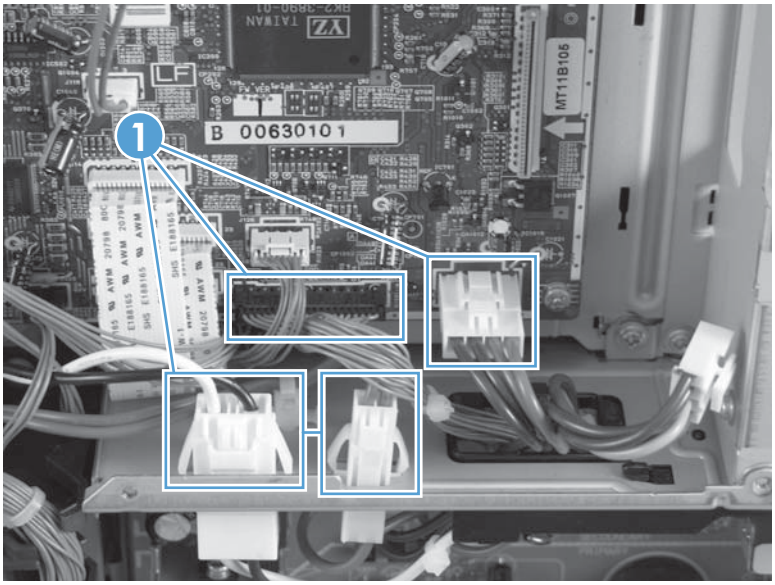
CAUTION: ESD sensitive part.

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

NOTE: To locate DC controller connector locations, see DC controller PCA on page 284.

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

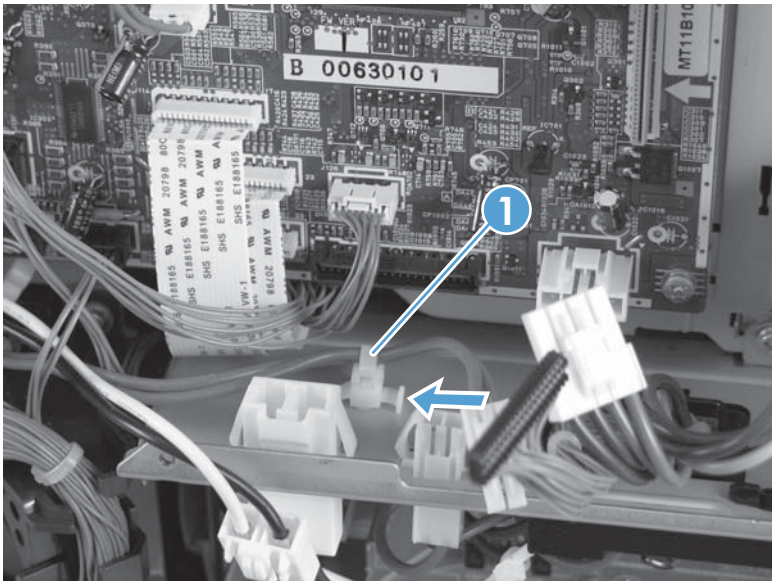
Figure 2-132 Remove the low voltage power supply (1 of 7)



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

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

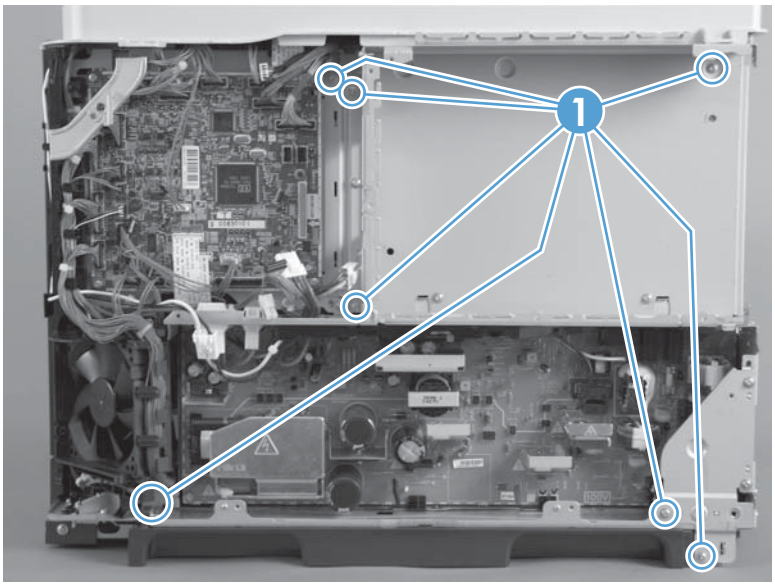
Figure 2-133 Remove the low voltage power supply (2 of 7)



3. Remove seven screws (callout 1).

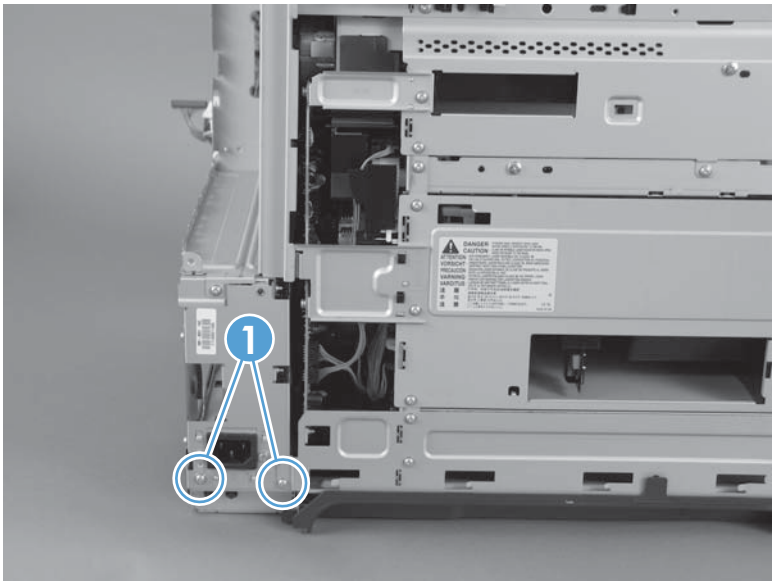
NOTE: The illustration below shows the ICB removed.

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



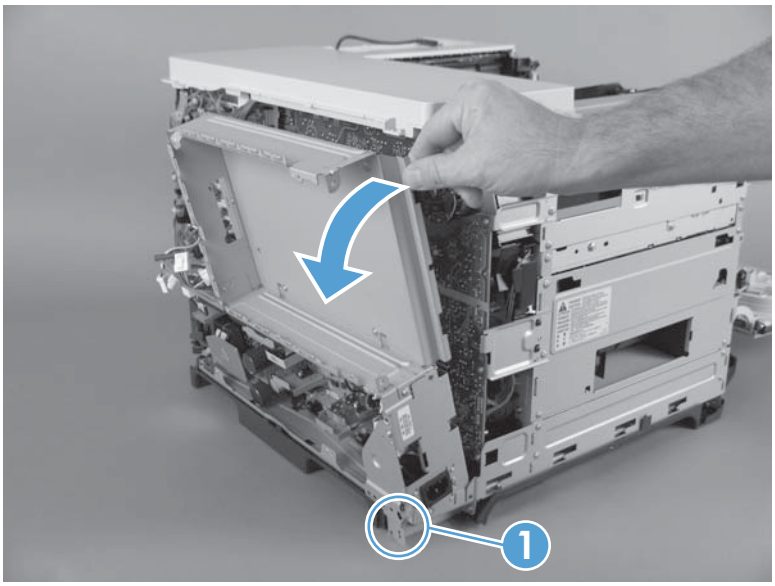
4. Remove two screws (callout 1).

Figure 2-135 Remove the low voltage power supply (4 of 7)



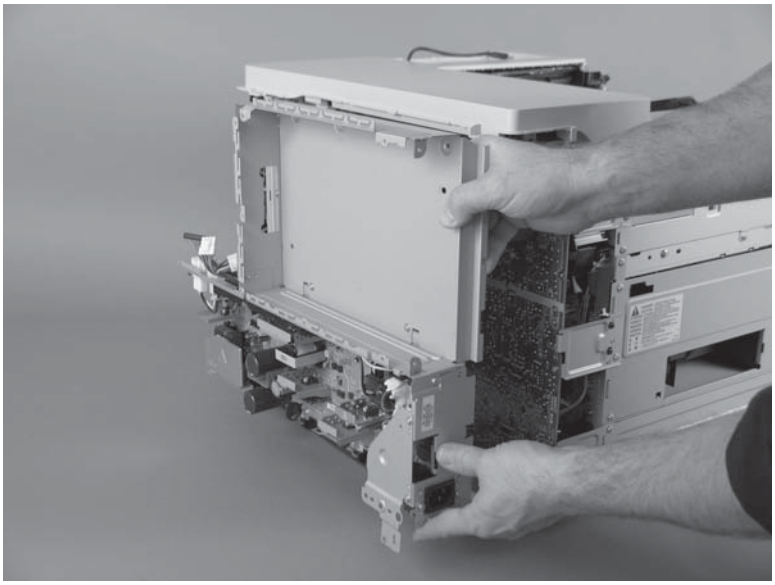
5. Release one tab (callout 1), and then rotate the formatter cage away from the top of the product.

Figure 2-136 Remove the low voltage power supply (5 of 7)



6. Remove the assembly.

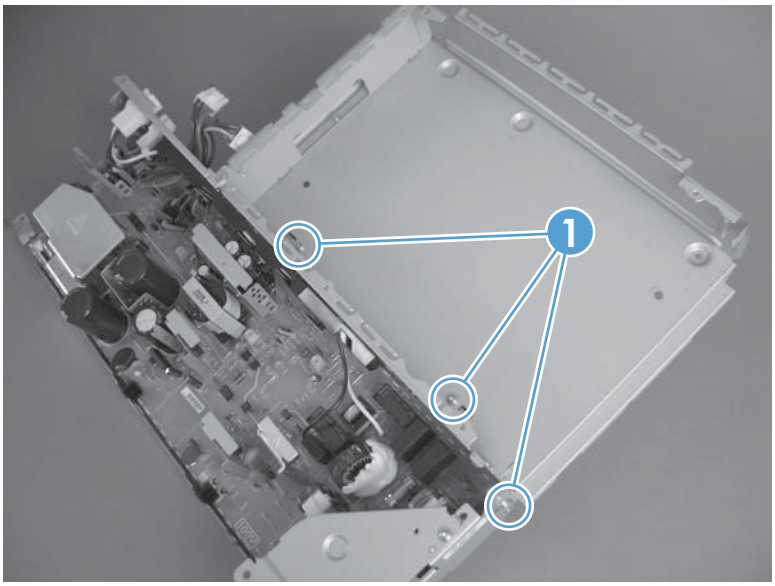
Figure 2-137 Remove the low voltage power supply (6 of 7)



7. Remove three screws (callout 1), and then separate the formatter cage from the low voltage power supply.

NOTE: If you are removing the power supply for internal product access, you can leave the formatter cage installed on the power supply chassis.

Figure 2-138 Remove the low voltage power supply (7 of 7)



High voltage power supply lower (HVPS-D)

Before proceeding, remove the following components:

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

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

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

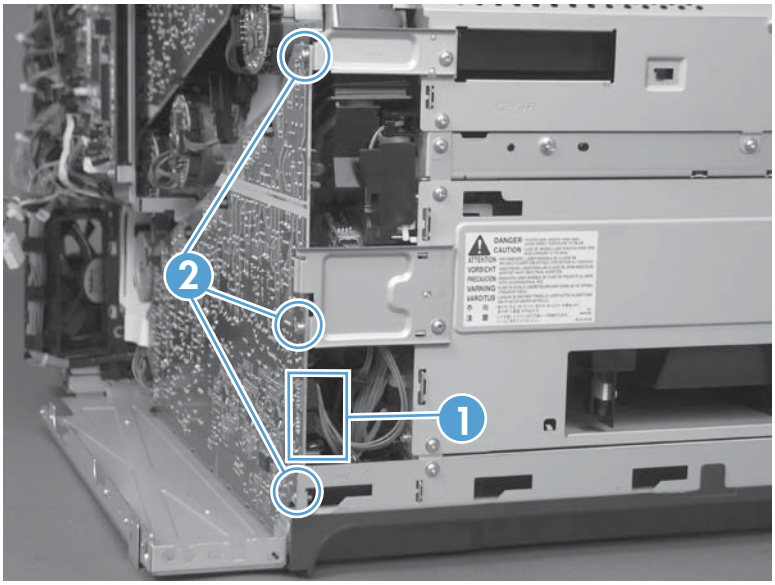
Remove the high voltage power supply lower

CAUTION: ESD sensitive part.

1. Disconnect two connectors (callout 1), and then remove three screws (callout 2).

NOTE: The screws include lock washers and are unique to this assembly. Make sure to reinstall with this assembly.

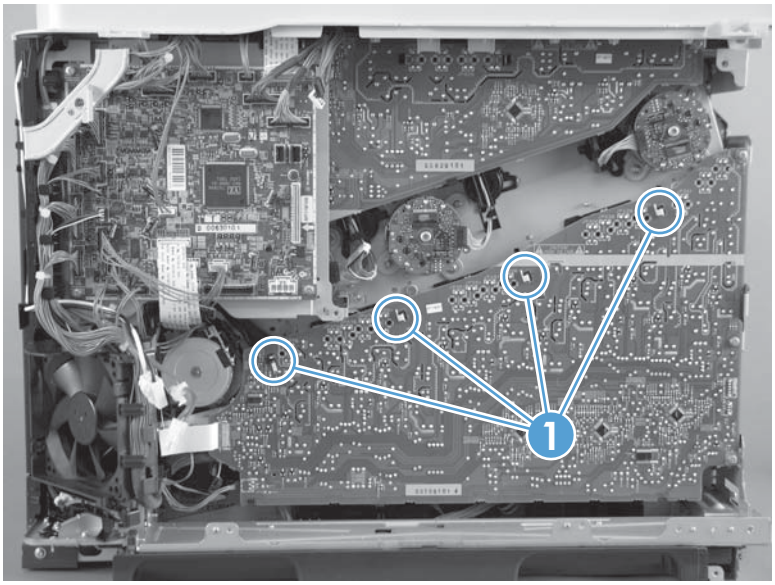
Figure 2-139 Remove the high voltage power supply lower (1 of 4)



2. Use a small flat blade screwdriver to carefully remove four locking clips (callout 1).

CAUTION: Do not damage the PCA with the screwdriver.

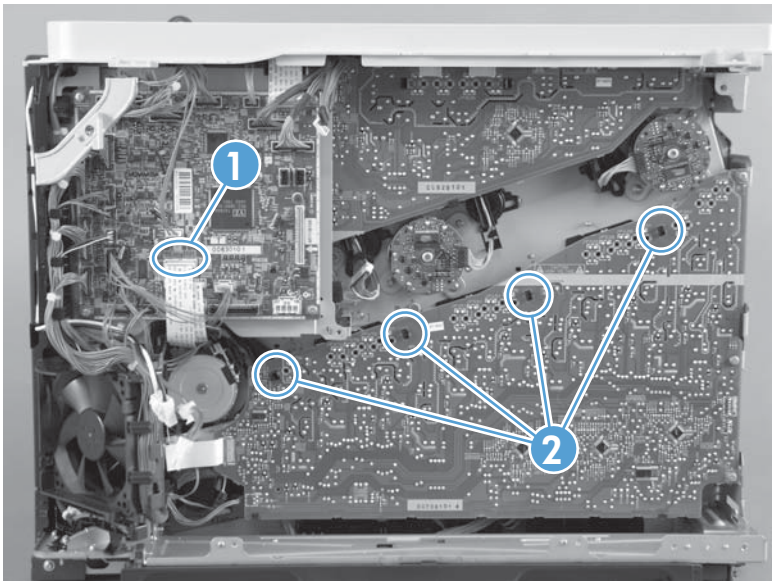
Figure 2-140 Remove the high voltage power supply lower (2 of 4)



3. Disconnect one connector (callout 1; J114), and then release four clips (callout 2).

NOTE: To locate DC controller connector locations, see DC controller PCA on page 284.

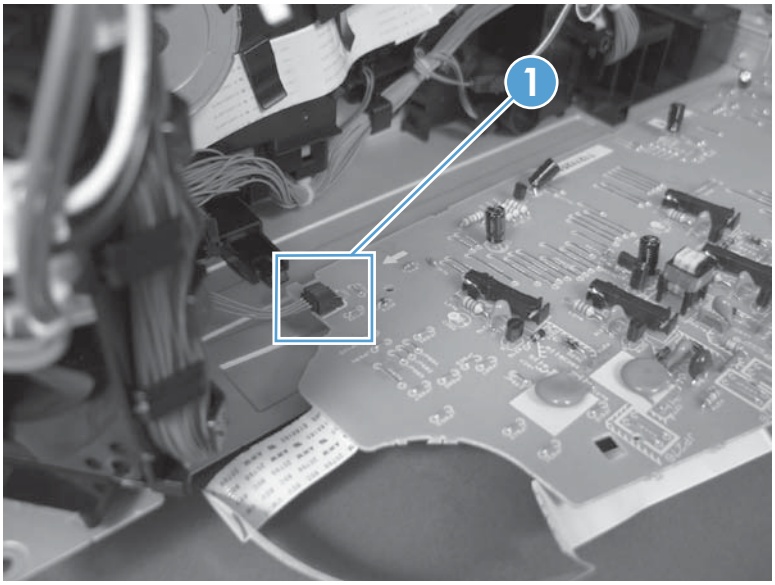
Figure 2-141 Remove the high voltage power supply lower (3 of 4)



4. Rotate the top of the power supply away from the chassis, and then disconnect one connector (callout 1). Remove the power supply.

Reinstallation tip Make sure the cables do not get stuck behind or damaged by the sheet metal.

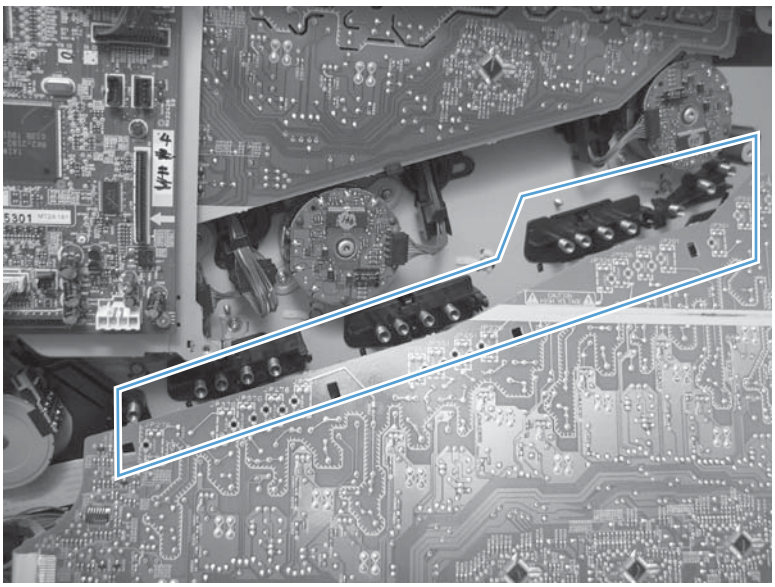
Figure 2-142 Remove the high voltage power supply lower (4 of 4)



Reinstall the high voltage power supply lower

When you reinstall the power supply, look through the holes in the PCA and make sure that the high voltage contact springs are correctly seated against the PCA.

Figure 2-143 Reinstall the high voltage power supply lower



Developing disengagement motor

Before proceeding, remove the following components:

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

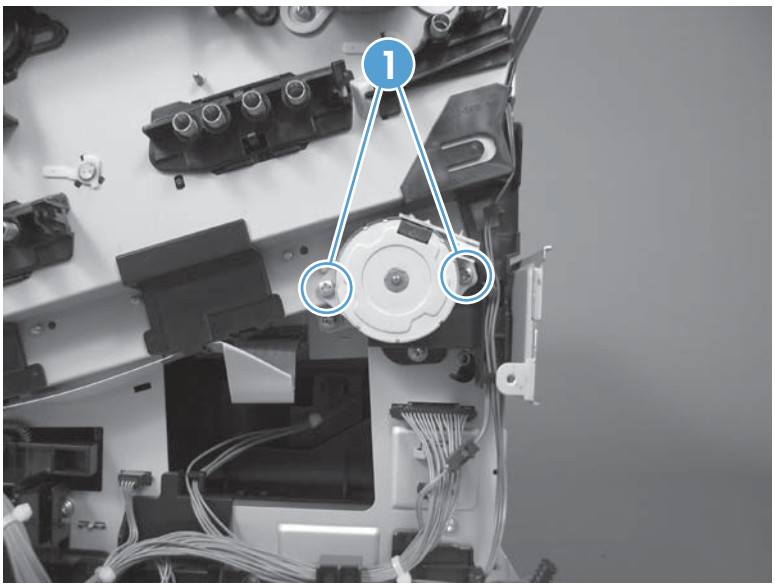
NOTE: It is not necessary to separate the upper rear cover from the rear cover to remove the developing disengagement motor.

- Interconnect board (ICB). See Interconnect board (ICB) on page 158.
- Low voltage power supply. See Low voltage power supply on page 163.
- High voltage power supply lower. See High voltage power supply lower (HVPS-D) on page 167.

Remove the developing disengagement motor

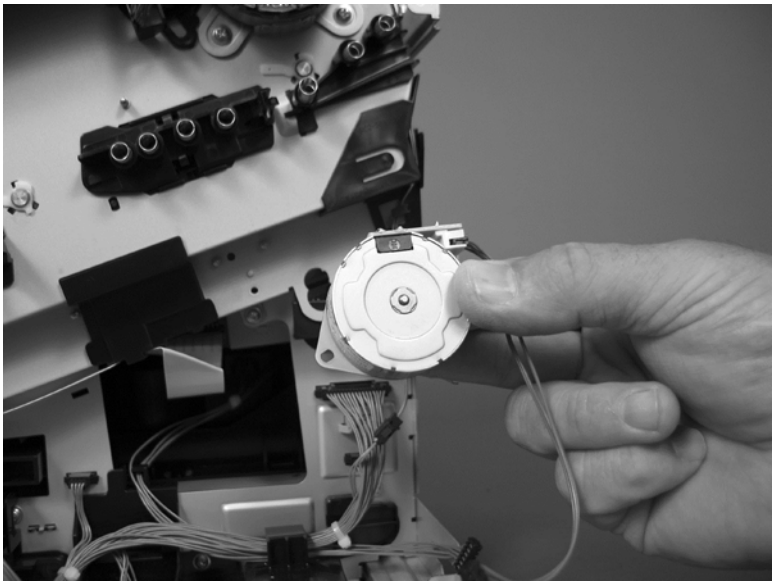
1. Remove two screws (callout 1).

Figure 2-144 Remove the developing disengagement motor (1 of 2)



2. Remove the motor.

Figure 2-145 Remove the developing disengagement motor (2 of 2)



Pickup motor

Before proceeding, remove the following components:

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

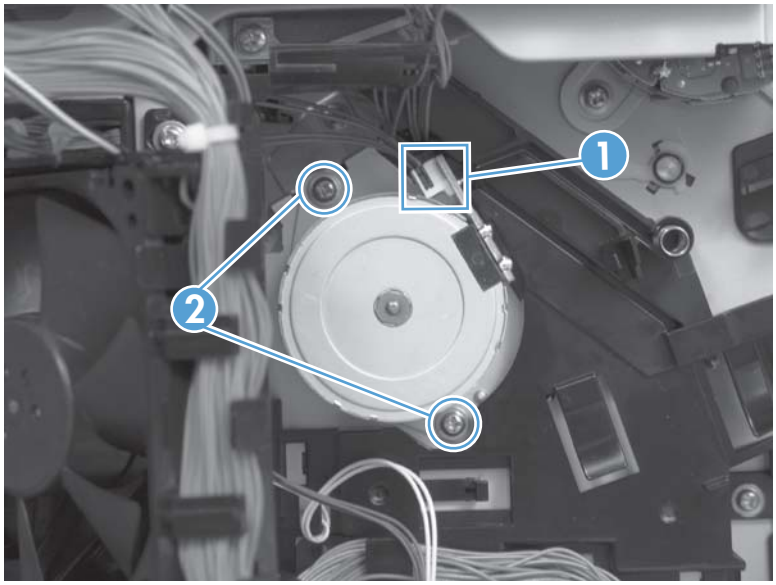
NOTE: It is not necessary to separate the upper rear cover from the rear cover to remove the pickup motor.

- Interconnect board (ICB). See Interconnect board (ICB) on page 158.
- Low voltage power supply. See Low voltage power supply on page 163.
- High voltage power supply lower. See High voltage power supply lower (HVPS-D) on page 167.

Remove the pickup motor

Disconnect one connector (callout 1), remove two screws (callout 2), and then remove the motor.

Figure 2-146 Remove the pickup motor



Lifter drive assembly

Before proceeding, remove the following components:

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

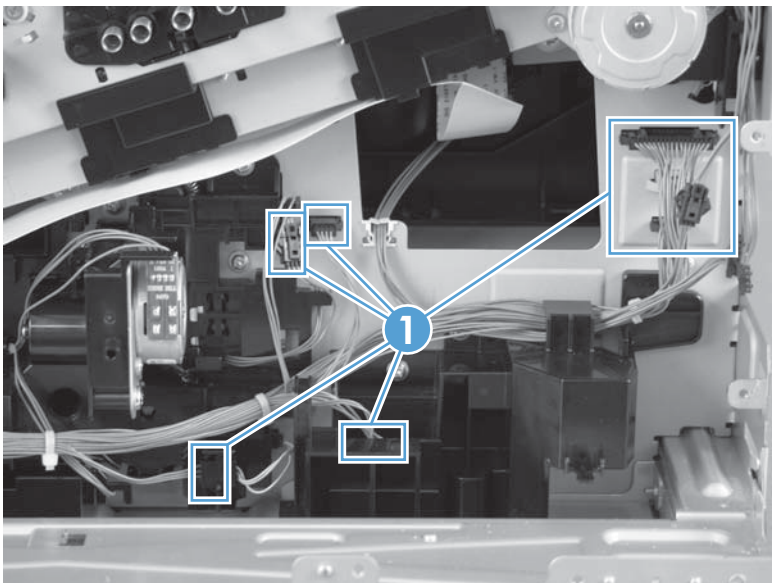
NOTE: It is not necessary to separate the upper rear cover from the rear cover to remove the lifter drive assembly.

- Interconnect board (ICB). See Interconnect board (ICB) on page 158.
- Low voltage power supply. See Low voltage power supply on page 163.
- High voltage power supply lower. See High voltage power supply lower (HVPS-D) on page 167.

Remove the lifter drive assembly

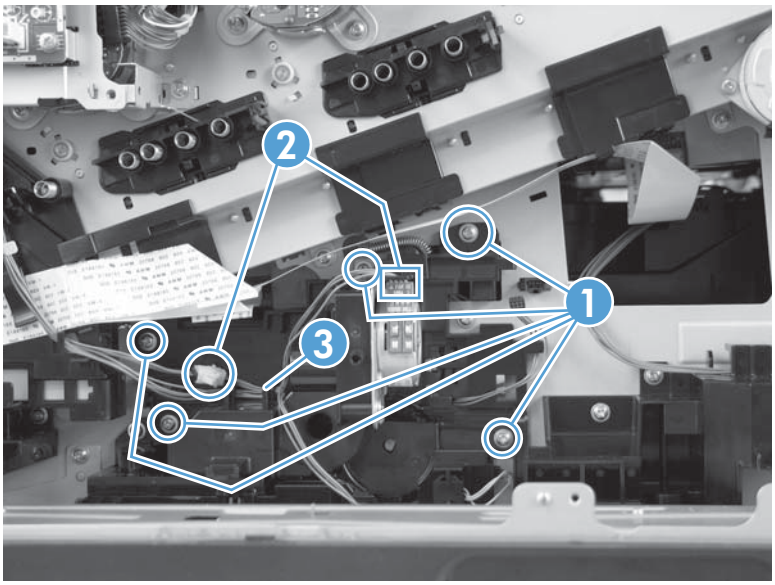
1. Disconnect eight connectors (callout 1), and then release the wire harness from the retainers.

Figure 2-147 Remove the lifter drive assembly (1 of 2)



2. Remove five screws (callout 1), disconnect two connectors (callout 2), release the wire harness from the retainers (callout 3), and then remove the assembly.

Figure 2-148 Remove the lifter drive assembly (2 of 2)



Automatic close assembly

Before proceeding, remove the following components:

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

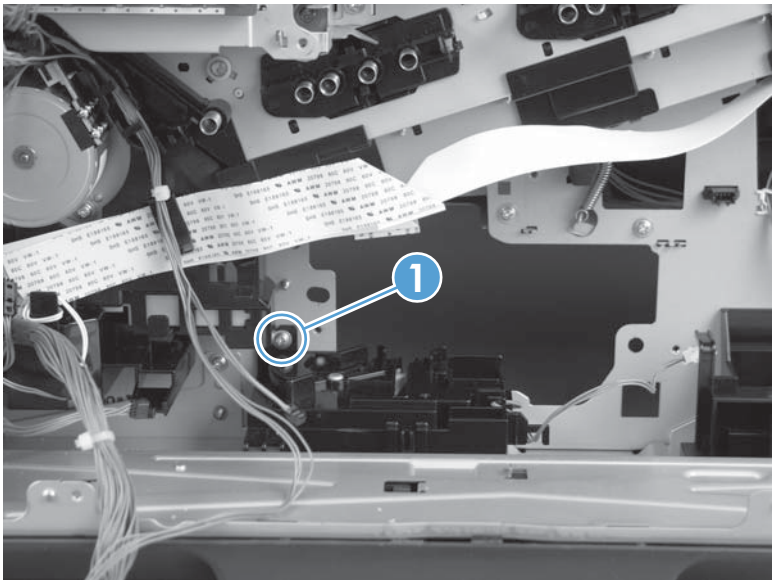
NOTE: It is not necessary to separate the upper rear cover from the rear cover to remove the lifter drive assembly.

- Interconnect board (ICB). See Interconnect board (ICB) on page 158.
- Low voltage power supply. See Low voltage power supply on page 163.
- High voltage power supply lower. See High voltage power supply lower (HVPS-D) on page 167.
- Lifter drive assembly. See Lifter drive assembly on page 173.

Remove the automatic close assembly

▲ Remove one screw (callout 1), and then remove the assembly.

Figure 2-149 Remove the automatic close assembly



Cassette pickup drive assembly

Before proceeding, remove the following components:

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

NOTE: It is not necessary to separate the upper rear cover from the rear cover to remove the cassette-pickup drive assembly.

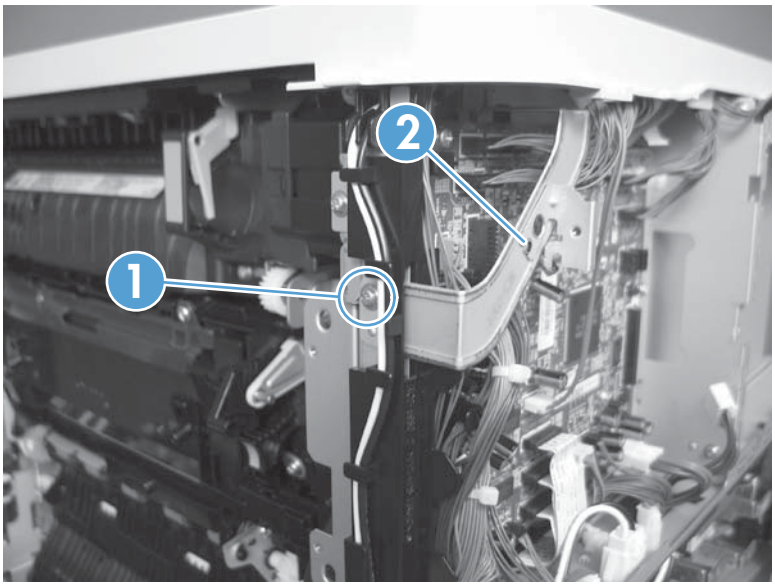
- Interconnect board (ICB). See Interconnect board (ICB) on page 158.
- Low voltage power supply. See Low voltage power supply on page 163.
- High voltage power supply lower. See High voltage power supply lower (HVPS-D) on page 167.

Remove the cassette pickup drive assembly

NOTE: To remove the pickup motor only, see Pickup motor on page 172.

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

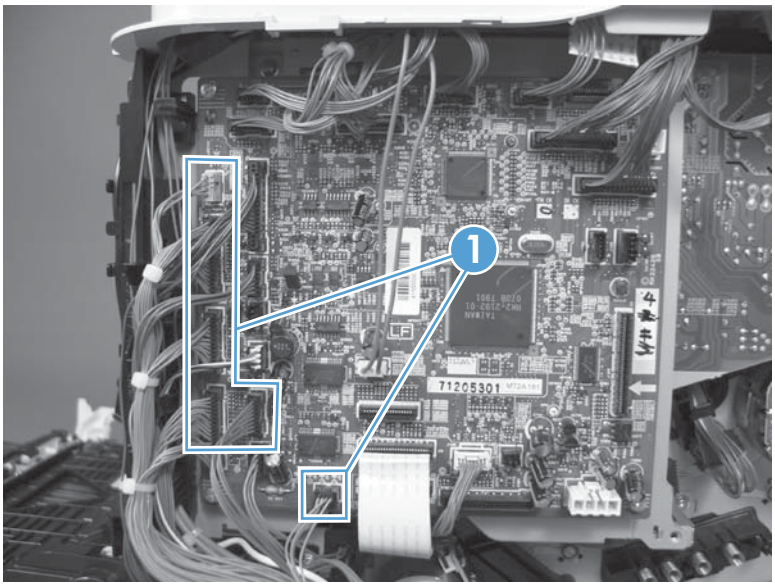
Figure 2-150 Remove the cassette pickup drive assembly (1 of 10)



2. Disconnect six connectors (callout 1; J106, J107, J108, J137, J138, J140).

NOTE: To locate DC controller connector locations, see DC controller PCA on page 284.

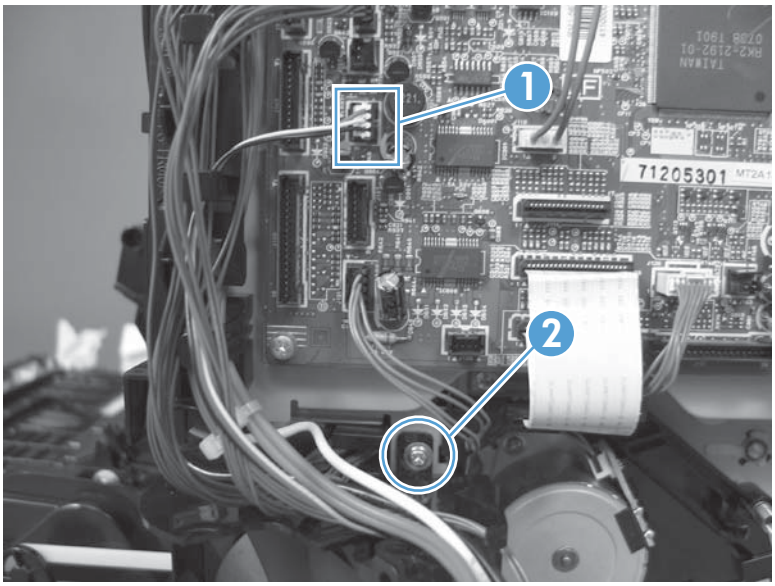
Figure 2-151 Remove the cassette pickup drive assembly (2 of 10)



3. Disconnect one connector (callout 1; J119), remove one screw (callout 2), and then release the wire harness from the guides.

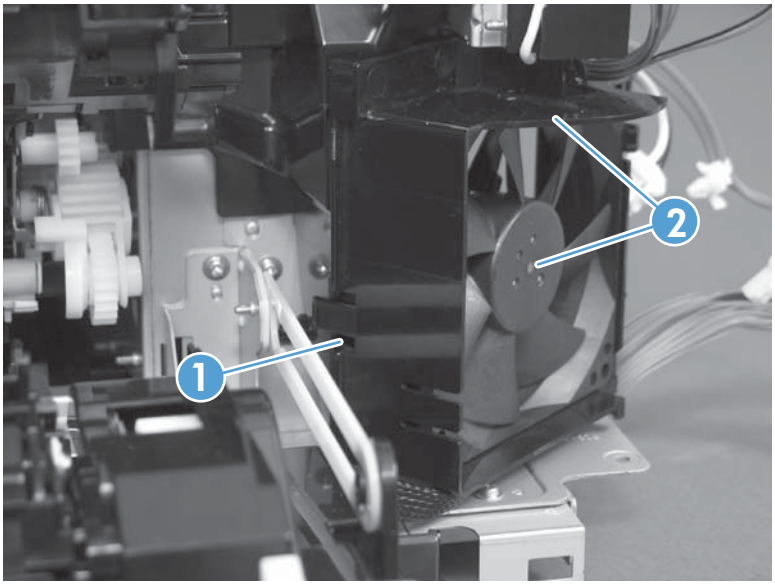
NOTE: To locate DC controller connector locations, see DC controller PCA on page 284.

Figure 2-152 Remove the cassette pickup drive assembly (3 of 10)



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

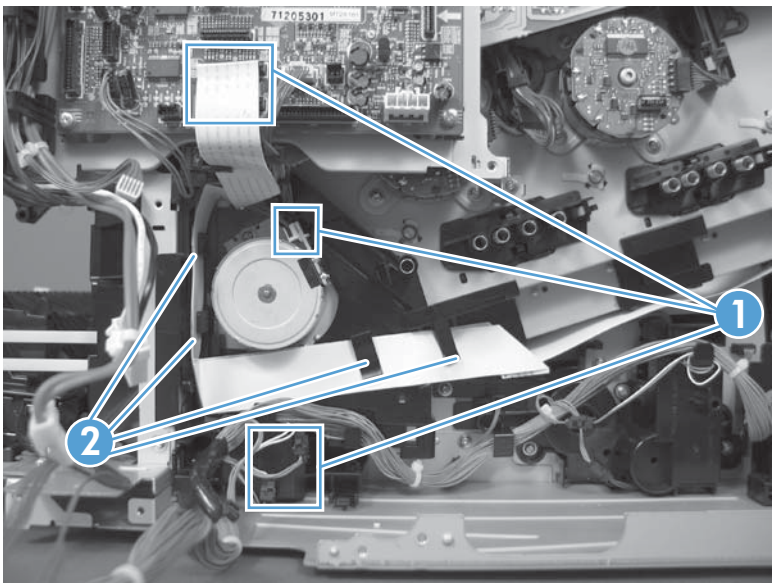
Figure 2-153 Remove the cassette pickup drive assembly (4 of 10)



5. Disconnect five connectors (callout 1; J110, J111 on the DC controller PCA), release the FFCs from the guide (callout 2), and then release the wire harnesses from the guides.

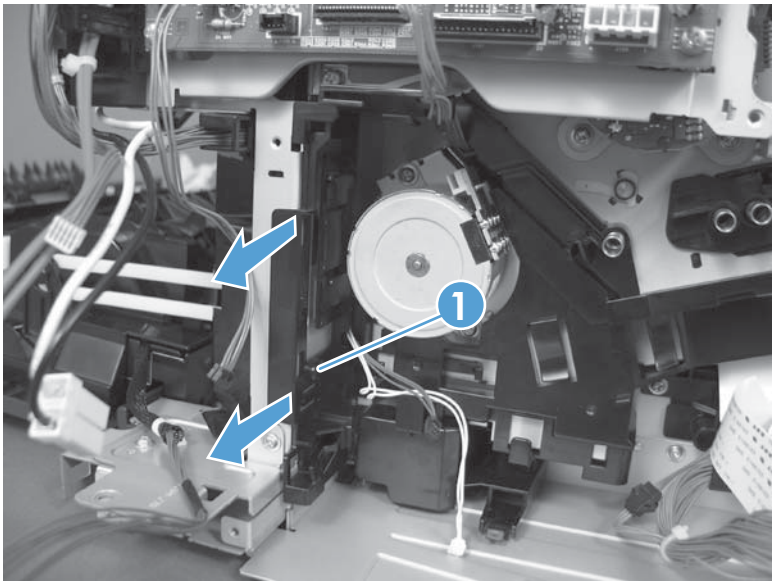
NOTE: To locate DC controller connector locations, see DC controller PCA on page 284.

Figure 2-154 Remove the cassette pickup drive assembly (5 of 10)



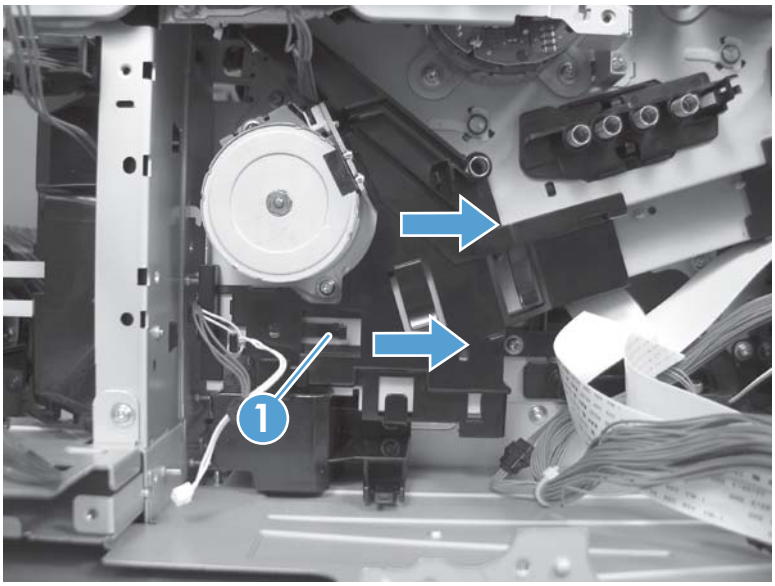
6. Release one tab (callout 1), and then remove the guide.

Figure 2-155 Remove the cassette pickup drive assembly (6 of 10)



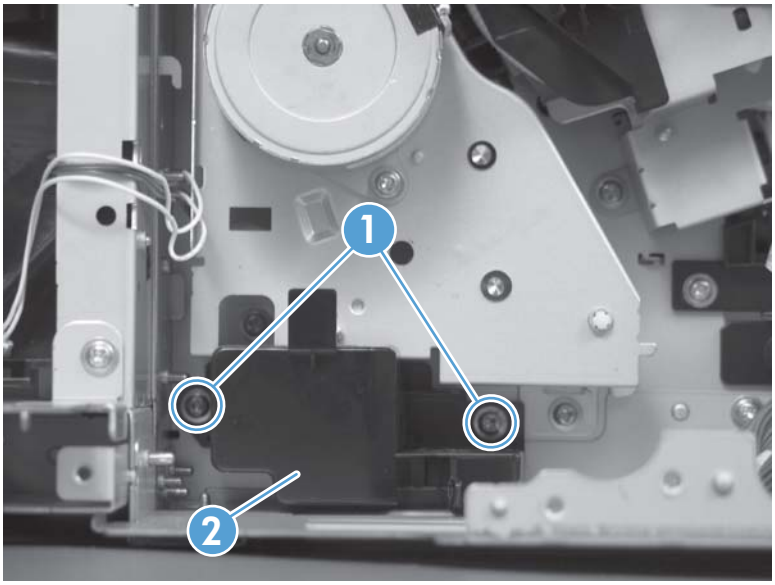
7. Release one tab (callout 1), and then remove the guide.

Figure 2-156 Remove the cassette pickup drive assembly (7 of 10)



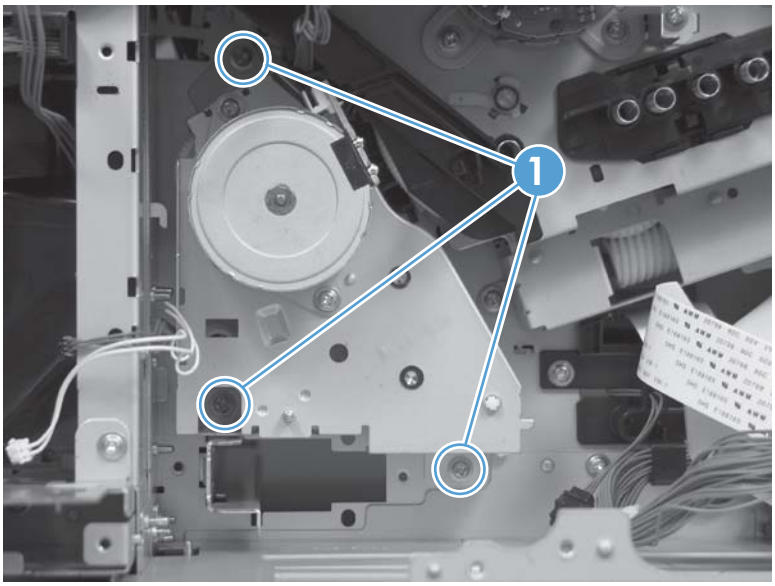
8. Remove two screws (callout 1), and then remove the high voltage bracket (callout 2).

Figure 2-157 Remove the cassette pickup drive assembly (8 of 10)



9. Remove three screws (callout 1).

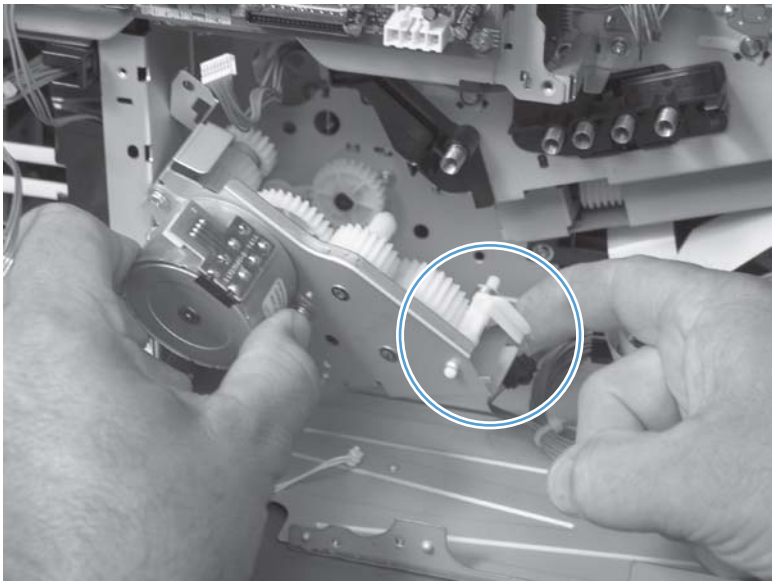
Figure 2-158 Remove the cassette pickup drive assembly (9 of 10)



10. Carefully remove the assembly.

CAUTION: The gears, arm, and spring on the assembly are not captive. Use your finger to secure the arm and spring as you remove the assembly. If the gears, arm, or spring become dislodged, see Reinstall the cassette pickup drive assembly on page 181.

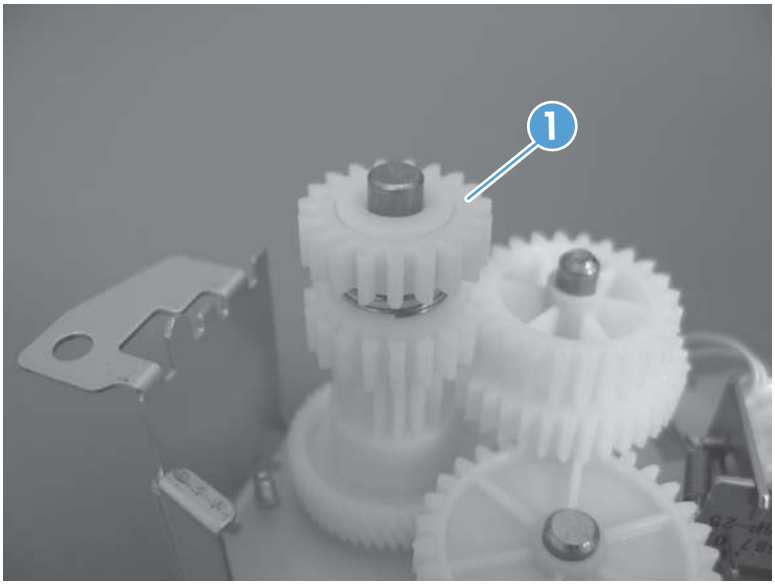
Figure 2-159 Remove the cassette pickup drive assembly (10 of 10)



Reinstall the cassette pickup drive assembly

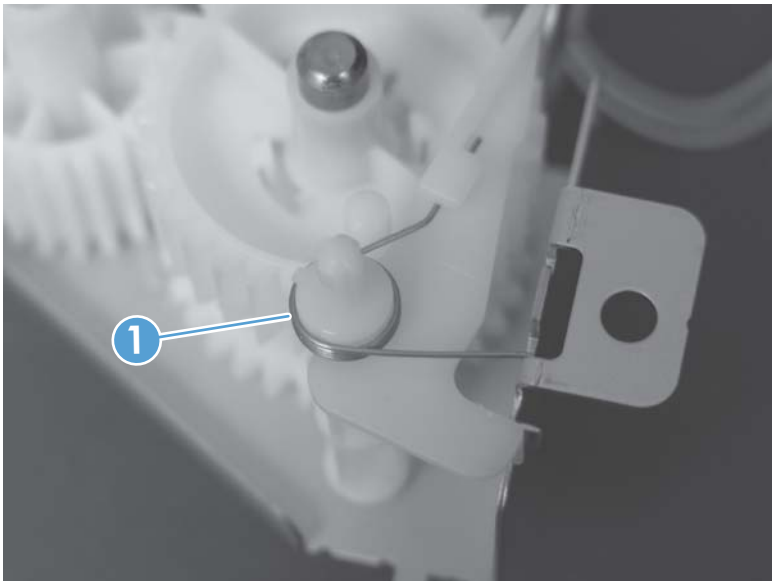
1. Make sure that the spring-loaded gear (callout 1) is correctly installed.

Figure 2-160 Reinstall the cassette pickup drive assembly (1 of 3)



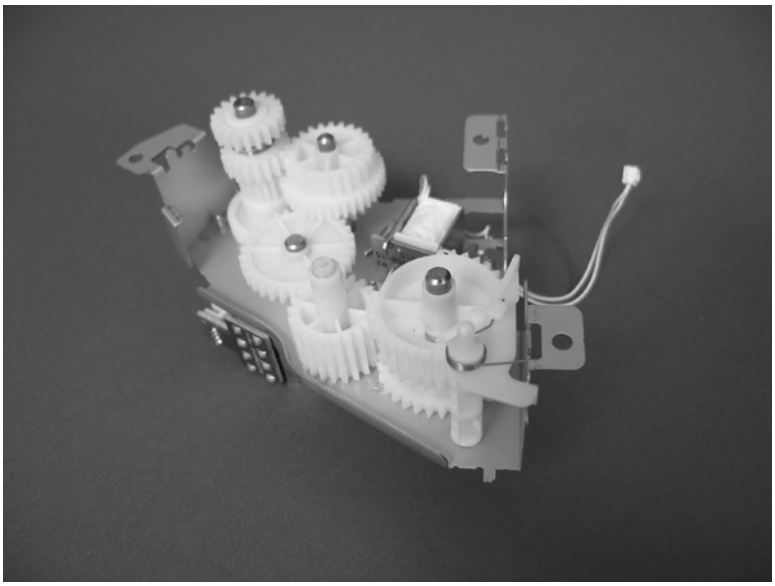
2. Make sure that the spring (callout 1) is correctly installed.

Figure 2-161 Reinstall the cassette pickup drive assembly (2 of 3)



3. Make sure that the gears, arm, and spring are correctly installed.

Figure 2-162 Reinstall the cassette pickup drive assembly (3 of 3)



Cassette pickup assembly

Before proceeding, remove the following components:

- Toner collection unit. See Toner collection unit on page 79.
- Formatter. See Formatter PCA on page 81.
- Secondary transfer unit. See Secondary transfer assembly on page 96.
- Intermediate transfer belt. See Intermediate transfer belt (ITB) on page 98.
- Right rear cover. See Right rear cover on page 109.
- Left cover. See Left cover on page 111.
- Rear cover and upper rear cover. See Rear cover and upper rear cover on page 124.

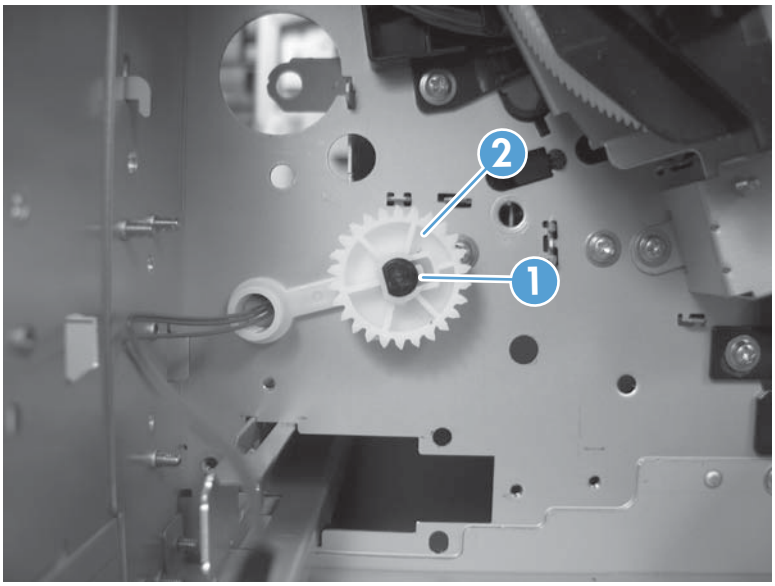
NOTE: It is not necessary to separate the upper rear cover from the rear cover to remove the cassette pickup assembly.

- Registration density (RD) sensor assembly. See Registration density (RD) sensor assembly on page 143.
- Power supply fan and fan duct. See Power supply fan and fan duct on page 147.
- Registration assembly. See Registration assembly on page 150.
- Interconnect board (ICB). See Interconnect board (ICB) on page 158.
- Low voltage power supply. See Low voltage power supply on page 163.
- High voltage power supply lower. See High voltage power supply lower (HVPS-D) on page 167.
- Cassette pickup drive assembly. See Cassette pickup drive assembly on page 176.

Remove the cassette pickup assembly

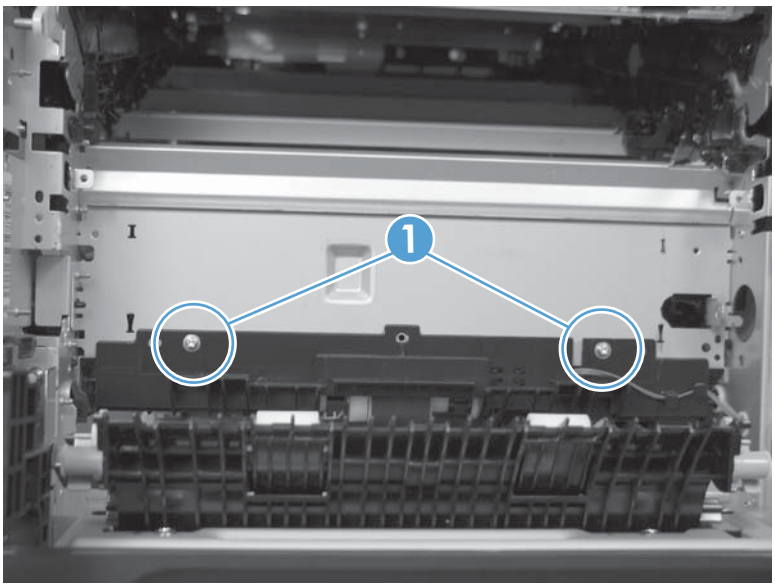
1. Release one tab (callout 1), and then remove the gear (callout 2).

Figure 2-163 Remove the cassette pickup assembly (1 of 3)



2. Remove two screws (callout 1).

Figure 2-164 Remove the cassette pickup assembly (2 of 3)



3. Remove the assembly.

Figure 2-165 Remove the cassette pickup assembly (3 of 3)



Laser/scanner assembly (Y/M)

Before proceeding, remove the following components:

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

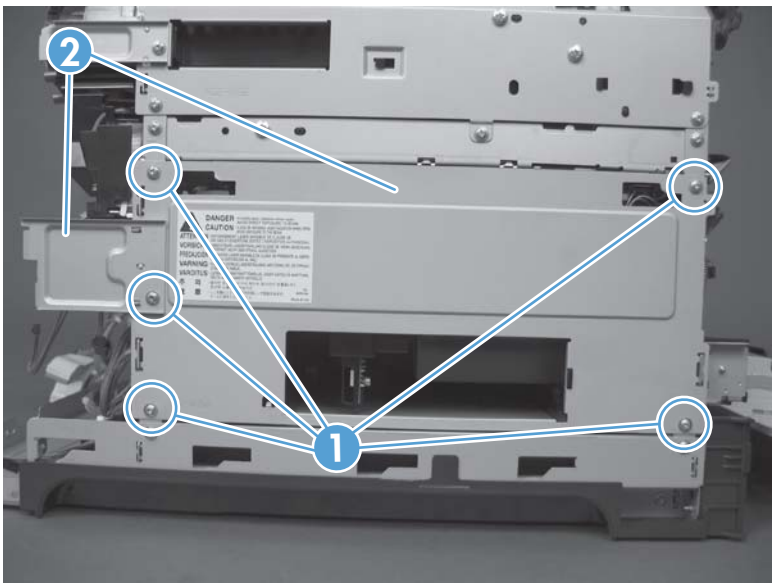
NOTE: It is not necessary to separate the upper rear cover from the rear cover to remove the laser/scanner assembly (Y/M).

- Interconnect board (ICB). See Interconnect board (ICB) on page 158.
- Low voltage power supply. See Low voltage power supply on page 163.
- High voltage power supply lower. See High voltage power supply lower (HVPS-D) on page 167.

Remove the laser/scanner assembly (Y/M)

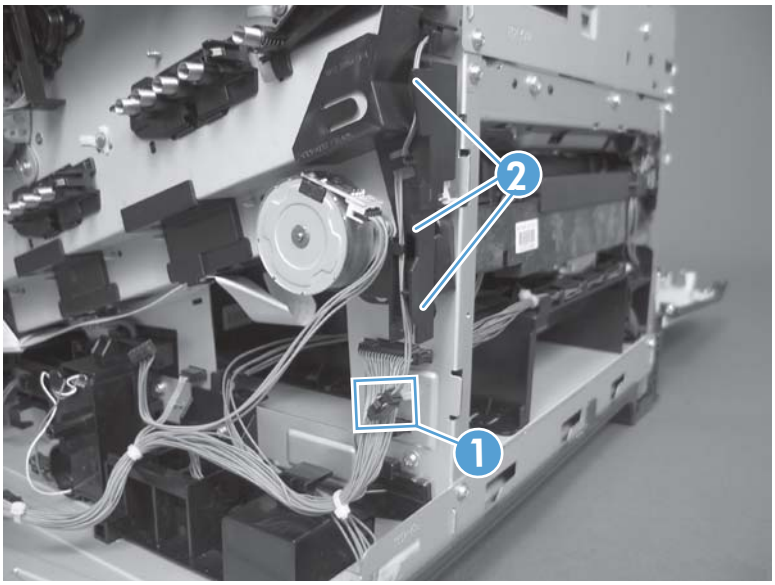
1. Remove five screws (callout 1), and then remove the sheet-metal plate (callout 2).

Figure 2-166 Remove the laser/scanner assembly (Y/M) (1 of 12)



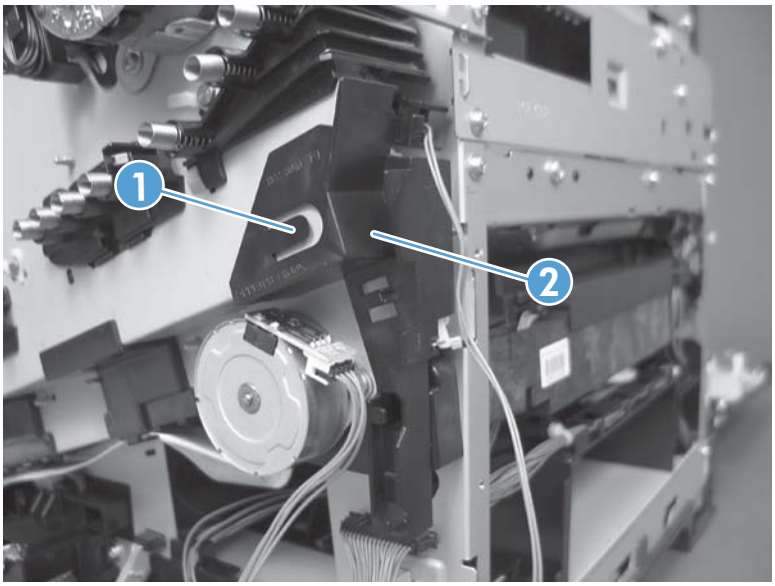
2. Disconnect the in-line one connector (callout 1), and then release the wire harnesses from the guide (callout 2).

Figure 2-167 Remove the laser/scanner assembly (Y/M) (2 of 12)



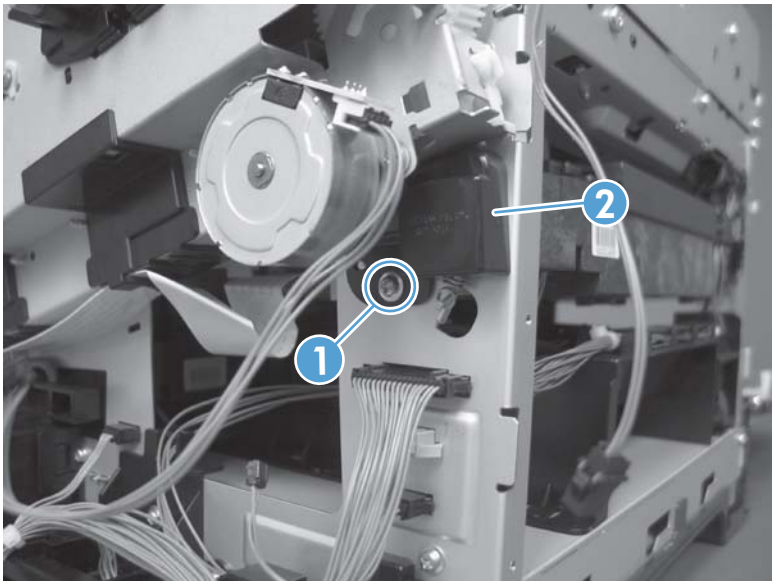
3. Release one tab (callout 1), and then remove the guide (callout 2).

Figure 2-168 Remove the laser/scanner assembly (Y/M) (3 of 12)



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

Figure 2-169 Remove the laser/scanner assembly (Y/M) (4 of 12)

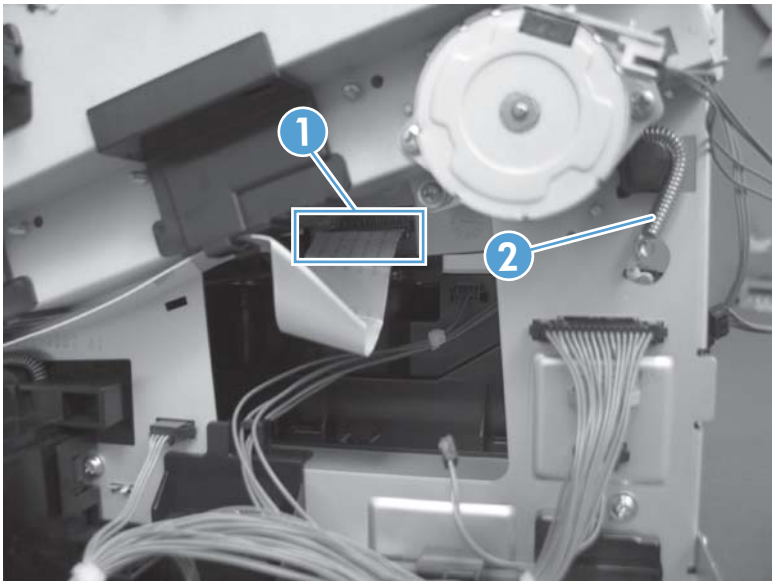


5. Disconnect one FFC (callout 1), and then release one spring (callout 2).

CAUTION: The spring is not captive. Do not lose the spring when it is removed. Use a pair of needle-nose pliers to safely retain the spring when it is removed. Do not use a flat blade screwdriver to remove the spring; the spring could forcibly leave the product and strike you.

Reinstallation tip When you reinstall the spring, make sure that the laser/scanner fits tightly up against the product chassis, and make sure that the FFC is fully seated in the connector. The locator tabs on the front and rear of the scanner must be firmly seated in the slots in the chassis.

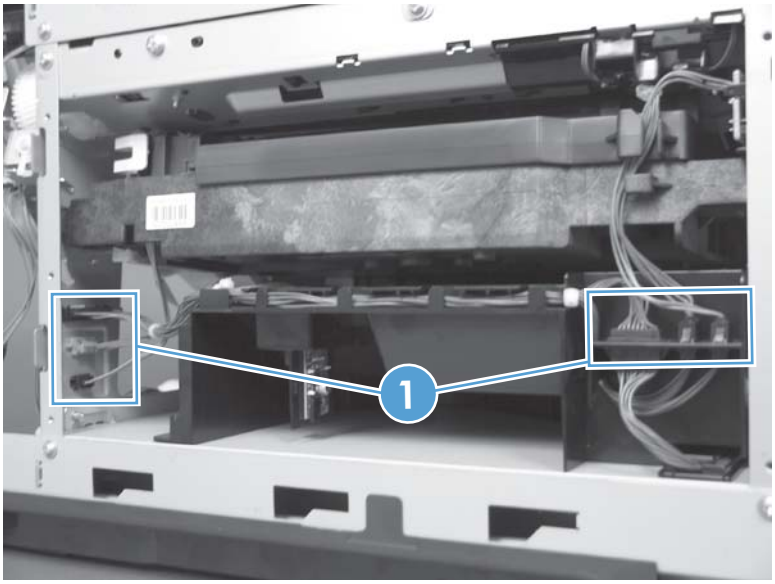
Figure 2-170 Remove the laser/scanner assembly (Y/M) (5 of 12)



6. Disconnect six connectors (callout 1).

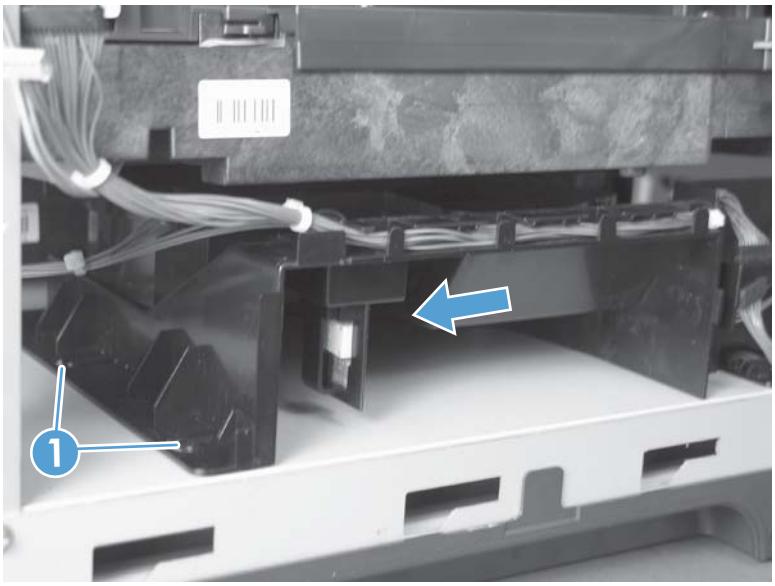
NOTE: Disconnect the larger connector on the right side from the bottom. Disconnect the two smaller connectors on the right side from the top.

Figure 2-171 Remove the laser/scanner assembly (Y/M) (6 of 12)



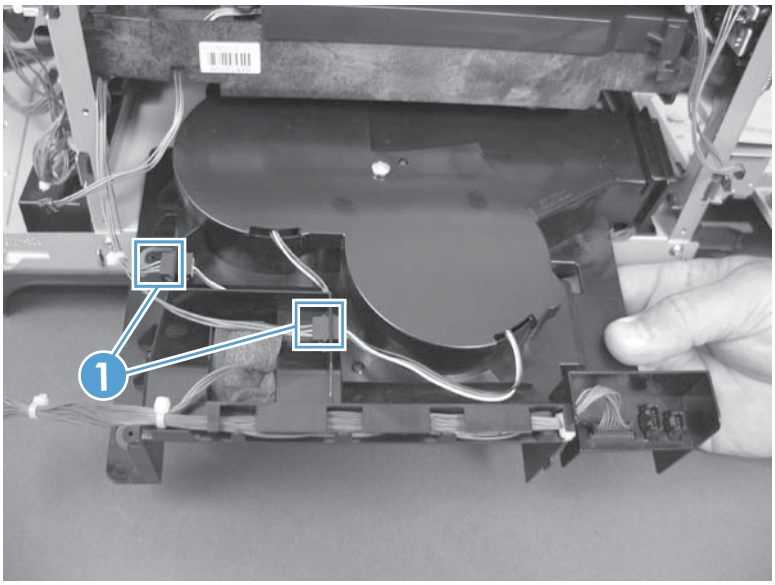
7. Release two tabs (callout 1), and then slide the fan assembly toward the power-supply side of the product to release it.

Figure 2-172 Remove the laser/scanner assembly (Y/M) (7 of 12)



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

Figure 2-173 Remove the laser/scanner assembly (Y/M) (8 of 12)

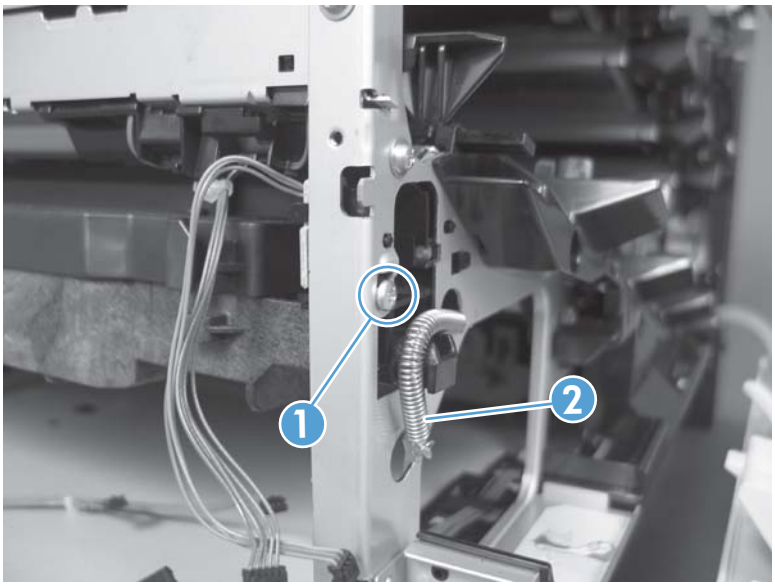


9. Remove one screw (callout 1), and then release one spring (callout 2).

CAUTION: The spring is not captive. Do not lose the spring when it is removed. Use a pair of needle-nose pliers to safely retain the spring when it is removed. Do not use a flat blade screwdriver to remove the spring; the spring could forcibly leave the product and strike you.

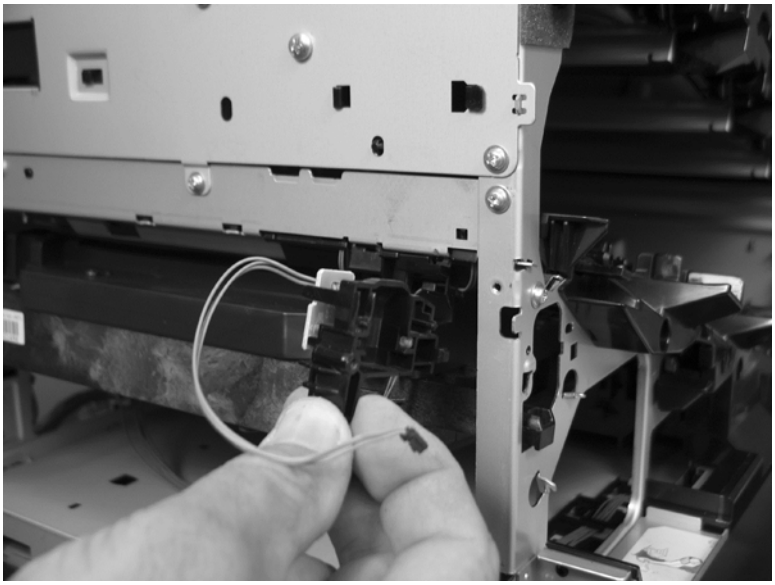
Reinstallation tip When the laser/scanner is properly positioned in the chassis, the plastic parts which protrude at the front and rear of the product will be firmly seated against the locator tabs on the chassis. Verify that the assembly is correctly seated, and then install the spring.

Figure 2-174 Remove the laser/scanner assembly (Y/M) (9 of 12)



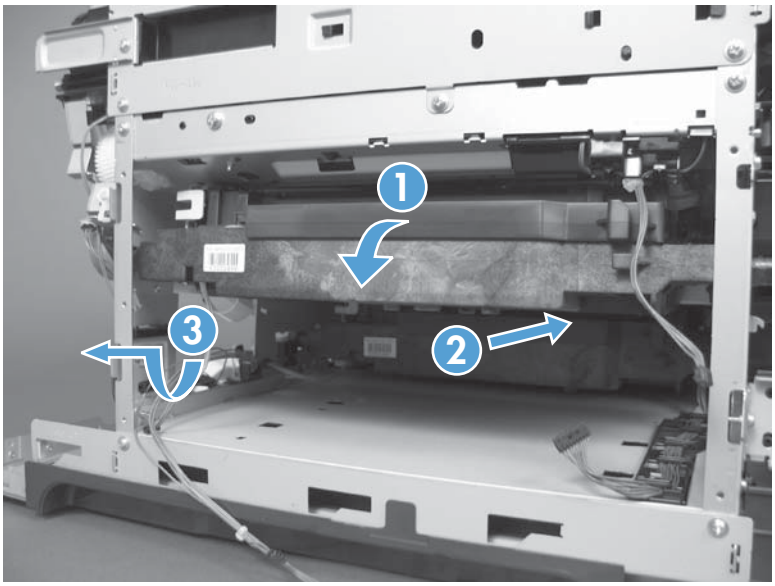
10. Remove the toner collection sensor.

Figure 2-175 Remove the laser/scanner assembly (Y/M) (10 of 12)



11. Rotate the front of the laser/scanner assembly down (callout 1), and then slide it toward the right (callout 2). Lower the left corner, and then rotate the left corner out of the product (callout 3).

Figure 2-176 Remove the laser/scanner assembly (Y/M) (11 of 12)



12. Pull the laser/scanner assembly straight out of the product to remove it.

Figure 2-177 Remove the laser/scanner assembly (Y/M) (12 of 12)



Laser/scanner assembly (C/Bk)

Before proceeding, remove the following components:

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

  NOTE: It is not necessary to separate the upper rear cover from the rear cover to remove the laser/scanner assembly (C/Bk).

- Interconnect board (ICB). See Interconnect board (ICB) on page 158.
- Low voltage power supply. See Low voltage power supply on page 163.
- High voltage power supply lower. See High voltage power supply lower (HVPS-D) on page 167.
- Lifter drive assembly. See Lifter drive assembly on page 173.
- Laser/scanner assembly (Y/M). See Laser/scanner assembly (Y/M) on page 186.

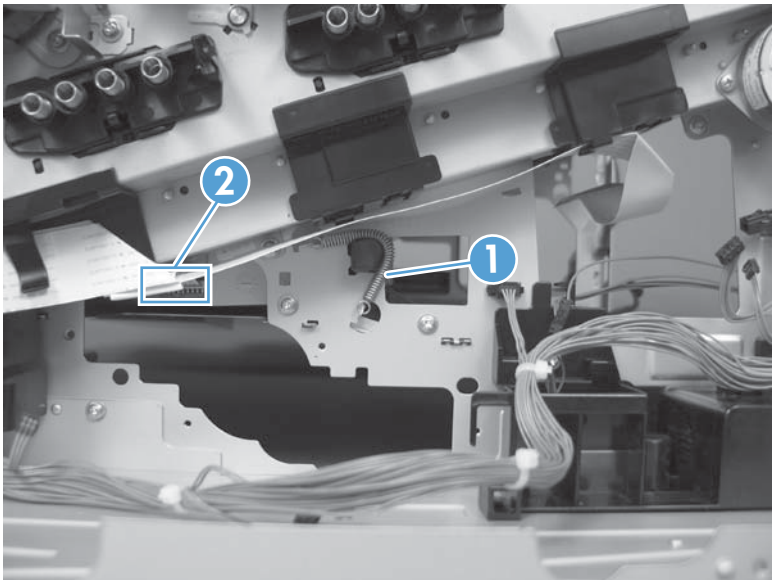
Remove the laser/scanner assembly (C/Bk)

1. Release one spring (callout 1), and then disconnect one connector (callout 2).

CAUTION: The spring is not captive. Do not lose the spring when it is removed. Use a pair of needle-nose pliers to safely retain the spring when it is removed. Do not use a flat blade screwdriver to remove the spring; the spring could forcibly leave the product and strike you.

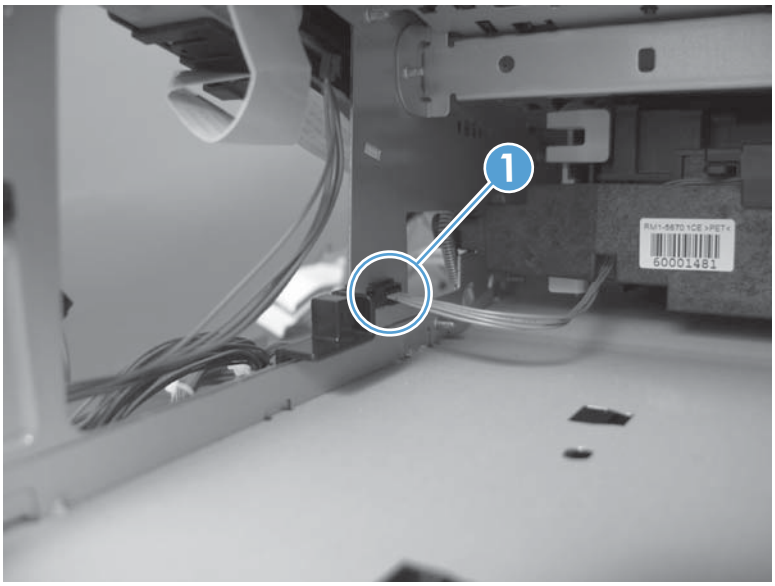
Reinstallation tip When you reinstall the spring, make sure that the laser/scanner fits tightly up against the product chassis, and make sure that the FFC is fully seated in the connector. The locator tabs on the front of the scanner must be firmly seated in the slots in the chassis.

Figure 2-178 Remove the laser/scanner assembly (C/Bk) (1 of 7)



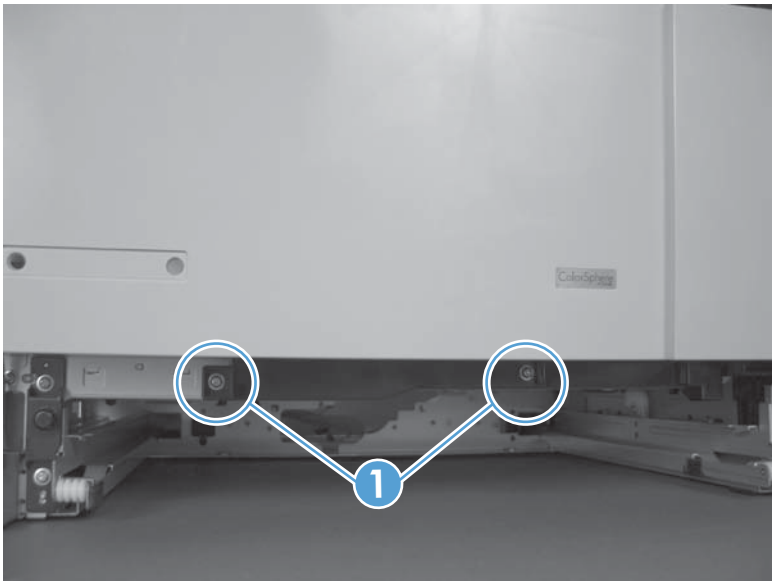
2. Disconnect one connector (callout 1).

Figure 2-179 Remove the laser/scanner assembly (C/Bk) (2 of 7)



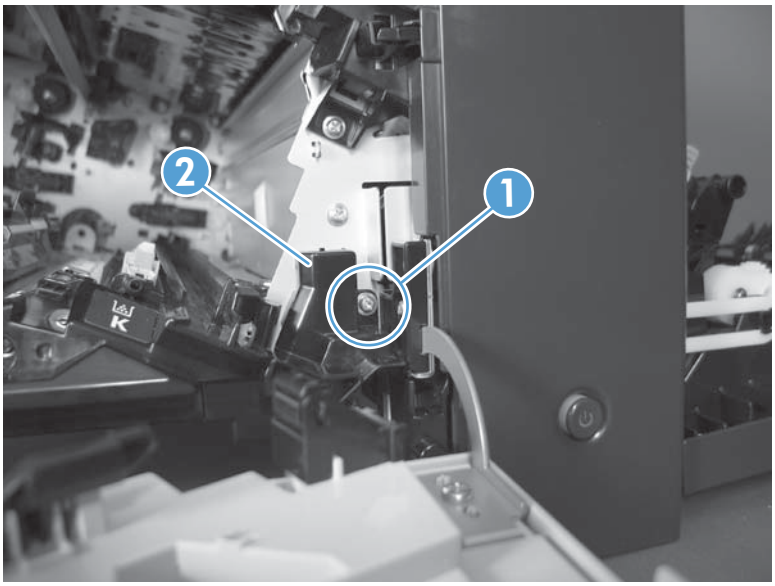
3. Remove two screws (callout 1) located below the front door.

Figure 2-180 Remove the laser/scanner assembly (C/Bk) (3 of 7)



4. Open the front door, and then remove one screw (callout 1) and the cover (callout 2).

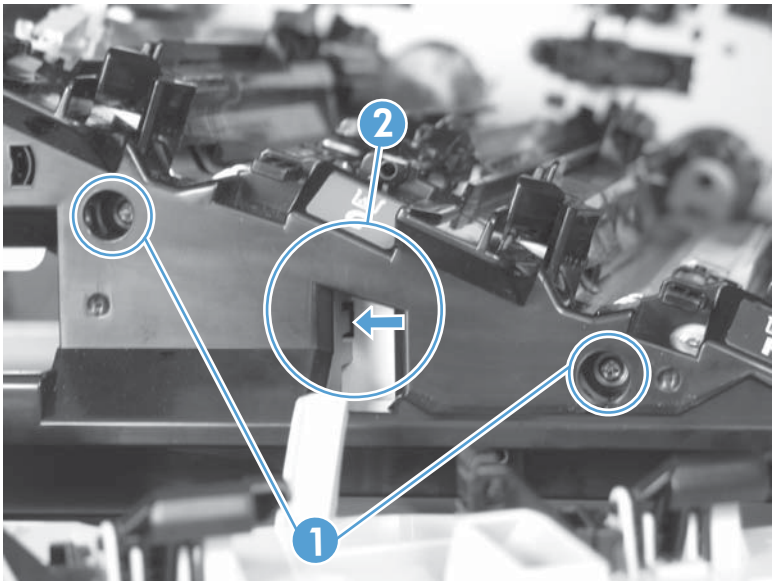
Figure 2-181 Remove the laser/scanner assembly (C/Bk) (4 of 7)



5. Remove two screws (callout 1). Use your finger to release the locking tab (callout 2), and then remove the cover.

CAUTION: Be careful. The PGC actuators are easily dislodged when the cover is removed. See Figure 2-185 Reinstall the PGC actuators (1 of 5) on page 198. To reinstall the actuators, see Reinstall the protective glass cleaner (PGC) actuators on page 198.

Figure 2-182 Remove the laser/scanner assembly (C/Bk) (5 of 7)

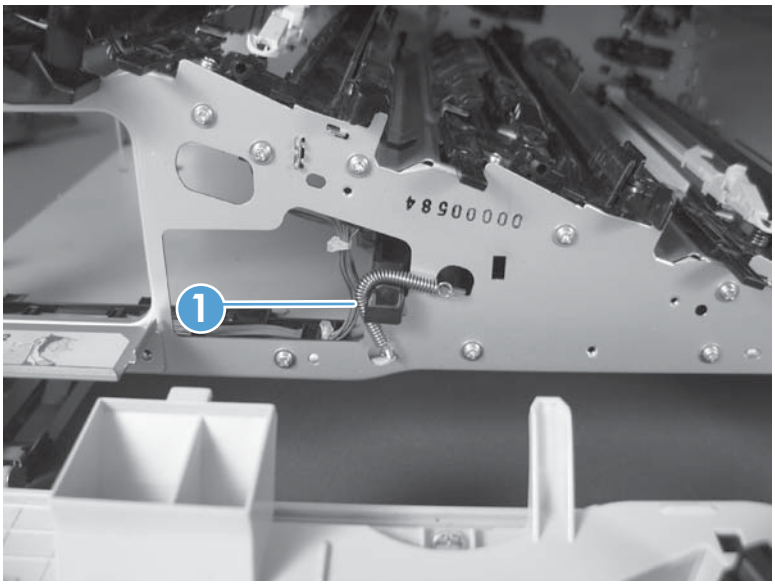


6. Release one spring (callout 1).

CAUTION: The spring is not captive. Do not lose the spring when it is removed. Use a pair of needle-nose pliers to safely retain the spring when it is removed. Do not use a flat blade screwdriver to remove the spring; the spring could forcibly leave the product and strike you.

Reinstallation tip When you reinstall the spring, make sure that the laser/scanner fits tightly up against the product chassis.

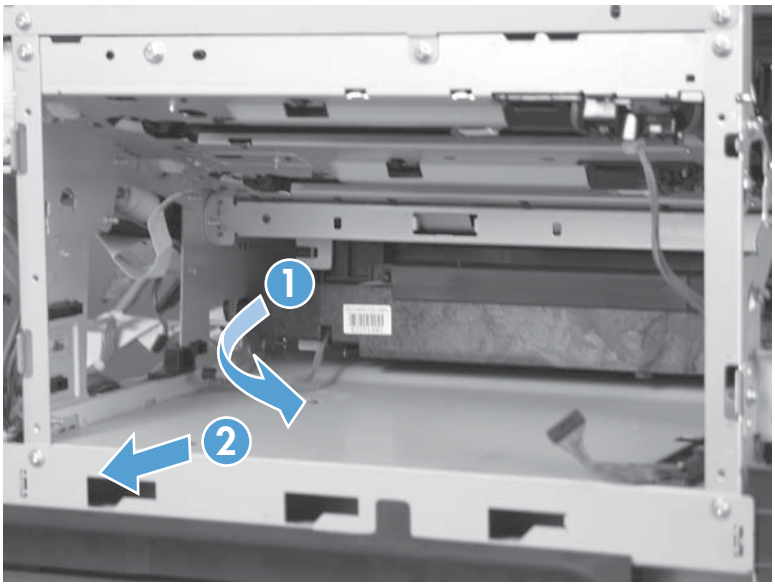
Figure 2-183 Remove the laser/scanner assembly (C/Bk) (6 of 7)



7. Rotate the corner of the assembly away from the product until you can see the PCA, and then remove the assembly from the product.

Reinstallation tip When the laser/scanner is properly positioned in the chassis, the plastic parts which protrude at the front and rear of the product will be firmly seated against the locator tabs on the chassis. Verify that the assembly is correctly seated, and then install the spring.

Figure 2-184 Remove the laser/scanner assembly (C/Bk) (7 of 7)

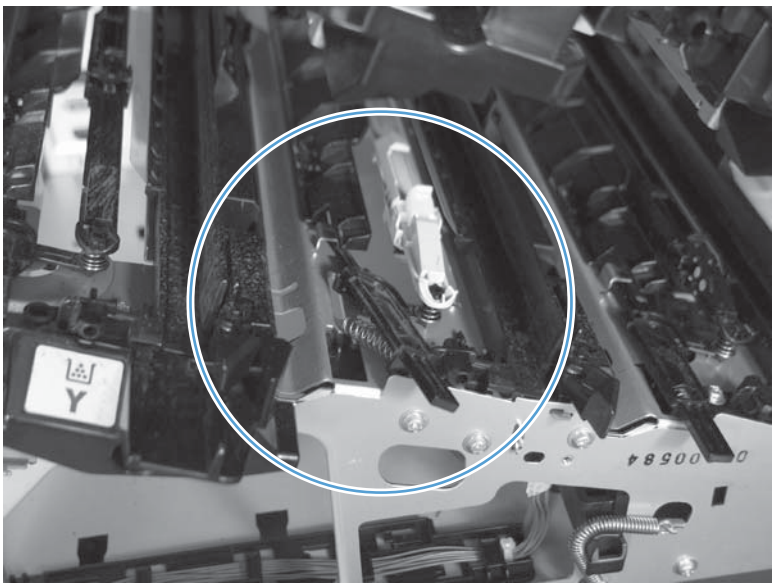


Reinstall the protective glass cleaner (PGC) actuators

1. The following figure shows a dislodged PGC actuator.

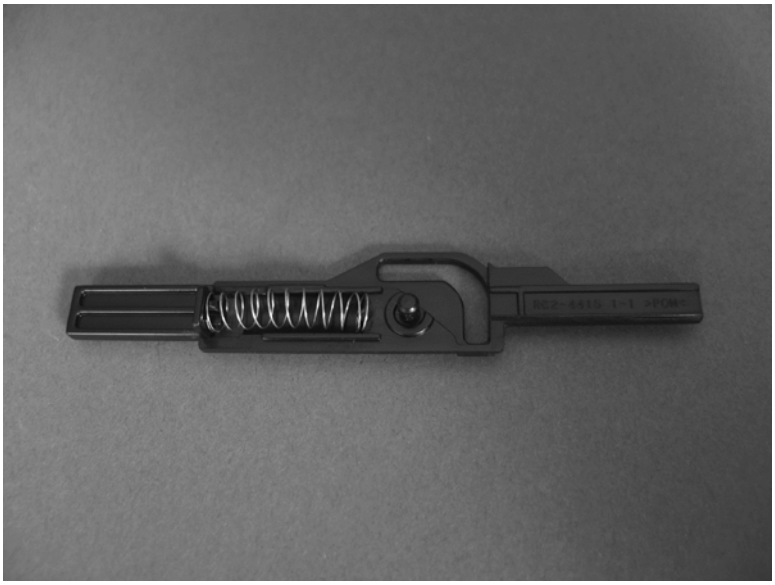
TIP: If the actuator and spring are only slightly dislodged, you might be able to easily push them back into place.

Figure 2-185 Reinstall the PGC actuators (1 of 5)



2. Remove the actuator and spring from the product. Install the spring on the actuator.

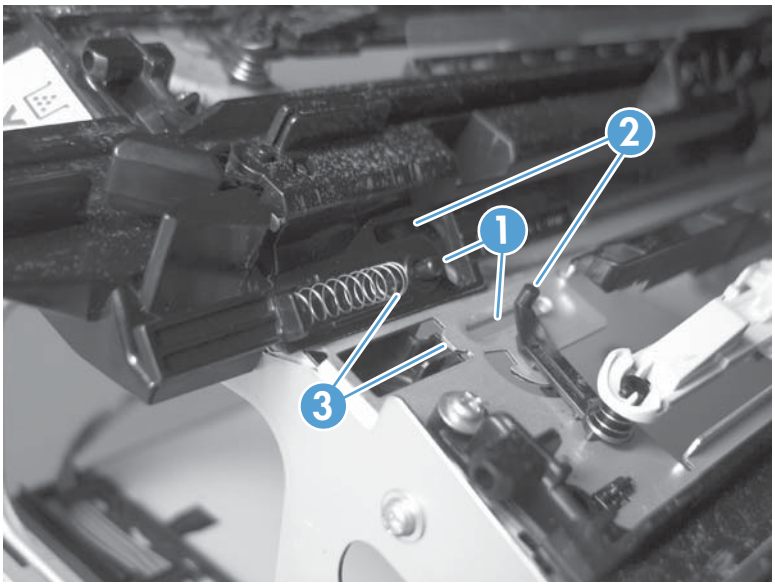
Figure 2-186 Reinstall the PGC actuators (2 of 5)



3. Before proceeding, take note of the following:

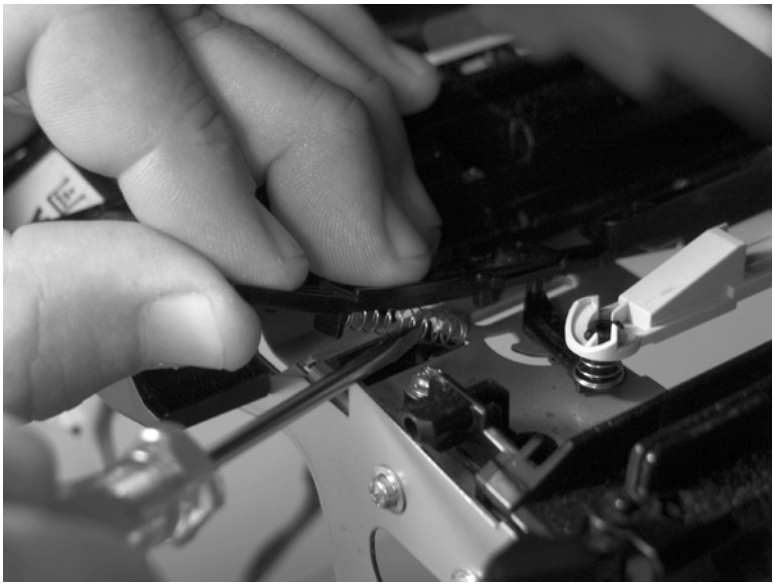
- **Callout 1**: The pin on the actuator will be installed into the slot in the chassis.
- **Callout 2**: The pin on the pivot arm will be installed into the slot on the actuator.
- **Callout 3**: The end of the spring will be installed onto the tab on the chassis.

Figure 2-187 Reinstall the PGC actuators (3 of 5)



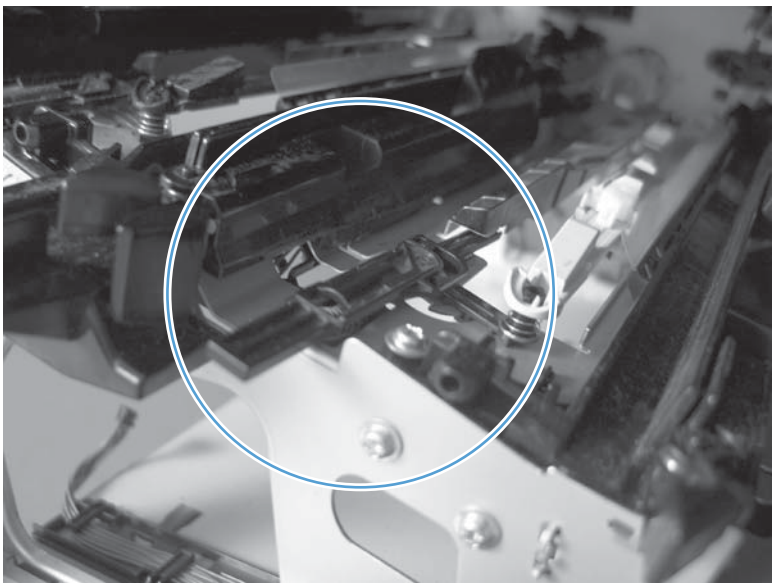
4. Place the end of the actuator into the PGC rod, and then use a small flat blade screw driver to fasten the end of the spring on the tab on the chassis.

Figure 2-188 Reinstall the PGC actuators (4 of 5)



5. Push down on the actuator to seat it into place. Verify that the actuators is correctly installed. The PGC actuator should freely move when you push in on the actuator.

Figure 2-189 Reinstall the PGC actuators (5 of 5)



High voltage power supply upper (HVPS-T)

Before proceeding, remove the following components:

- Toner collection unit. See Toner collection unit on page 79.
- Formatter. See Formatter PCA on page 81.
- Right rear cover. See Right rear cover on page 109.
- Left cover. See Left cover on page 111.
- Hardware integration pocket (HIP). See Hardware integration pocket (HIP) (dn and xh models only) on page 115.
- Control panel assembly. See Control panel assembly on page 116
- Front top cover. See Front top cover on page 122.
- Rear top cover. See Rear top cover on page 127.
- Rear cover and upper rear cover. See Rear cover and upper rear cover on page 124.

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

- Interconnect board (ICB). See Interconnect board (ICB) on page 158.
- DC controller. See DC controller PCA and tray on page 160.
- Low voltage power supply. See Low voltage power supply on page 163.

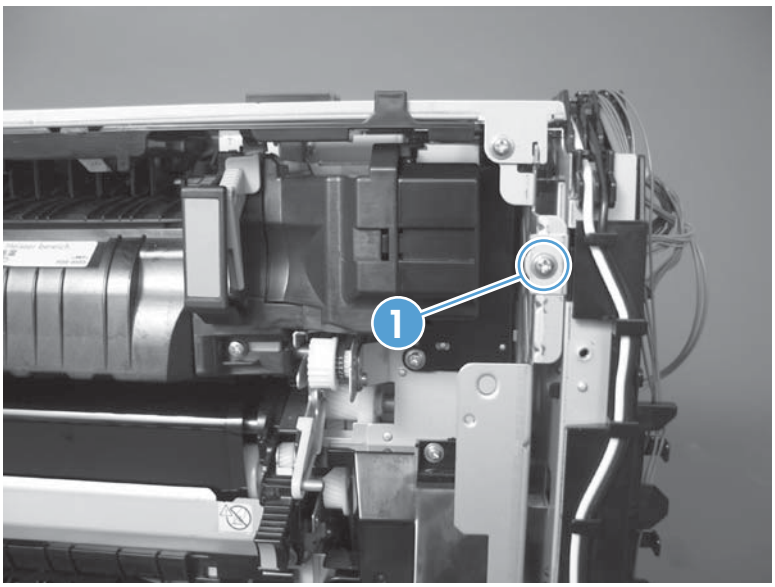
Remove the high voltage power supply upper

CAUTION: ESD sensitive part.

NOTE: If the sheet-metal tray was removed with the DC controller, begin at step 3.

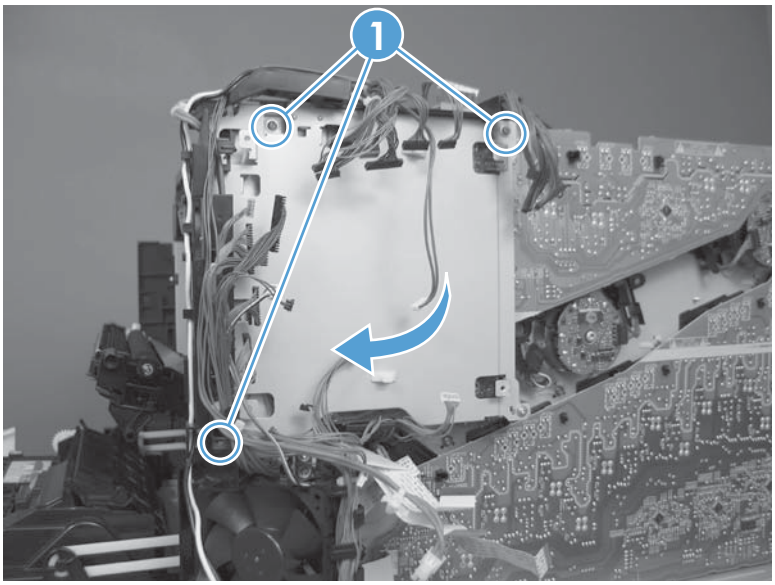
1. Remove one screw (callout 1).

Figure 2-190 Remove the high voltage power supply upper (1 of 5)



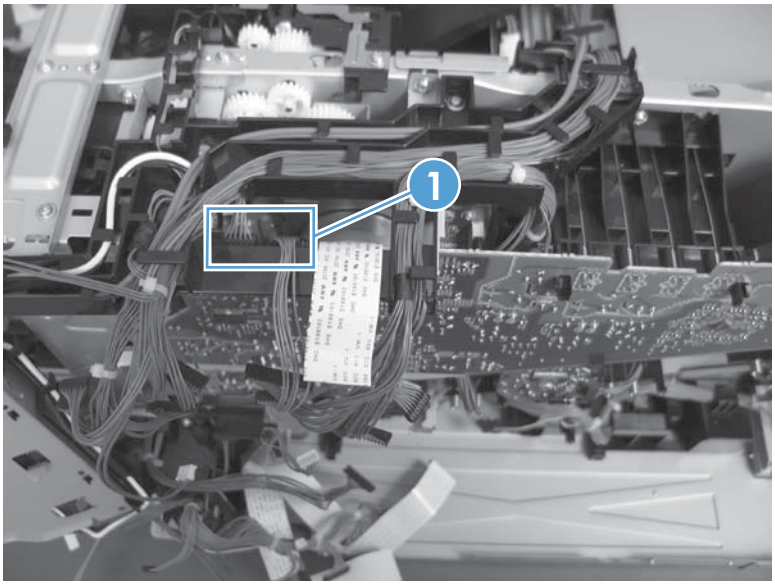
2. Remove three screws (callout 1), and then rotate the sheet-metal plate away from the power supply.

Figure 2-191 Remove the high voltage power supply upper (2 of 5)



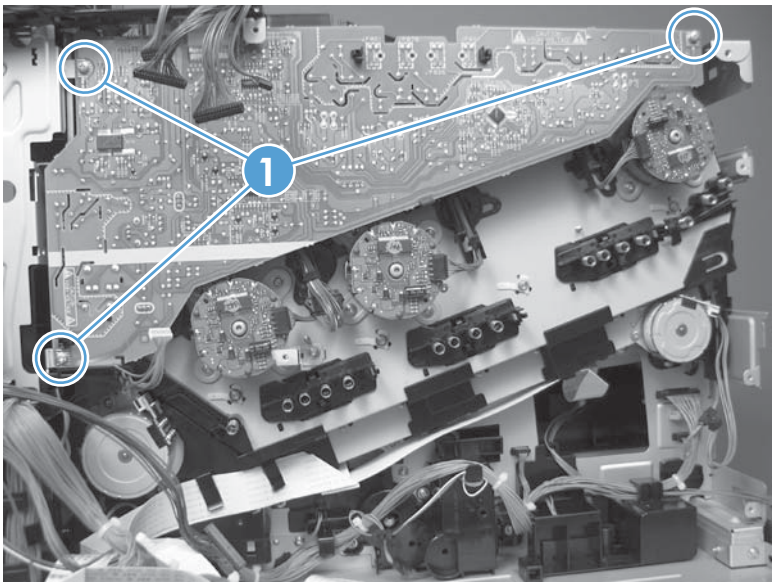
3. **Duplex models only**: Disconnect one connector (callout 1).

Figure 2-192 Remove the high voltage power supply upper (3 of 5)



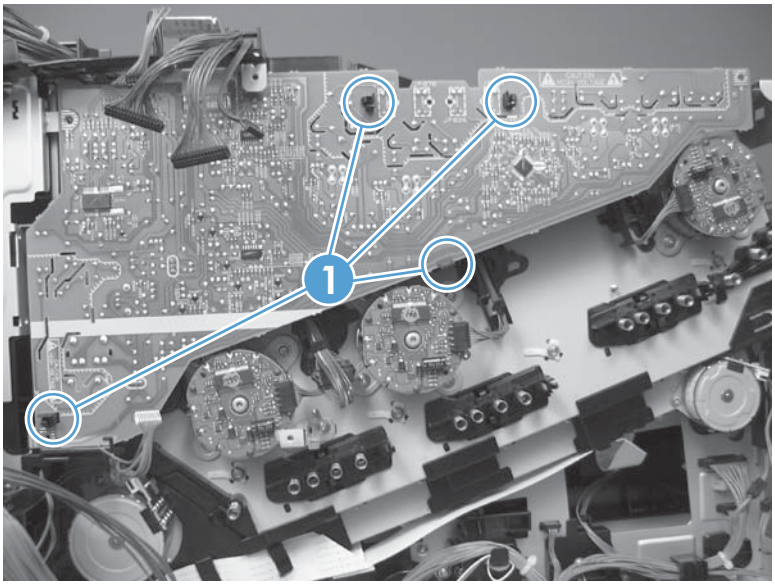
4. Remove three screws (callout 1).

Figure 2-193 Remove the high voltage power supply upper (4 of 5)



5. Release four tabs (callout 1), and then remove the power supply.

Figure 2-194 Remove the high voltage power supply upper (5 of 5)

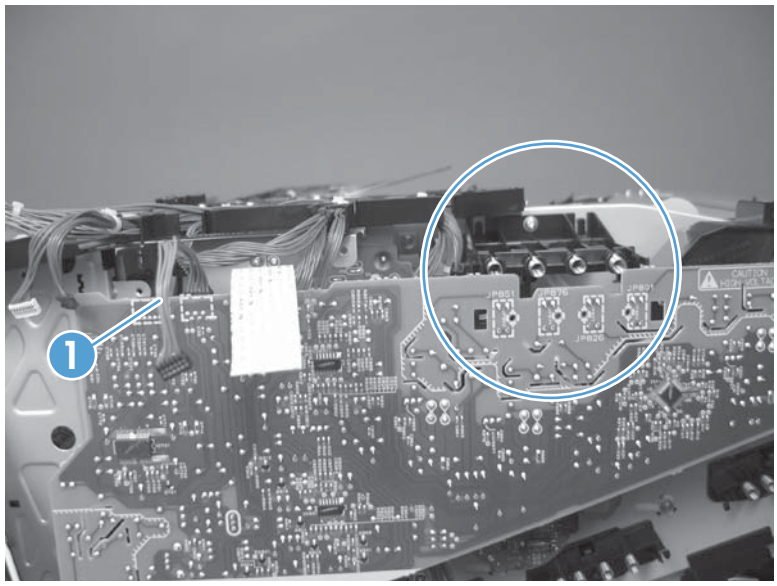


Reinstall the high voltage power supply upper

When you reinstall the power supply, look through the holes in the PCA and make sure that the high voltage contact springs are correctly seated against the PCA.

NOTE: For a replacement power supply, remove one wire harness (callout 1) and then install it on the replacement power supply.

Figure 2-195 Reinstall the high voltage power supply upper



Drum motor 1

Before proceeding, remove the following components:

- Toner collection unit. See Toner collection unit on page 79.
- Formatter PCA. See Formatter PCA on page 81.
- Right rear cover. See Right rear cover on page 109.
- Left cover. See Left cover on page 111.
- Hardware integration pocket (HIP). See Hardware integration pocket (HIP) (dn and xh models only) on page 115.
- Control panel assembly. See Control panel assembly on page 116
- Front top cover. See Front top cover on page 122.
- Rear cover and upper rear cover. See Rear cover and upper rear cover on page 124.

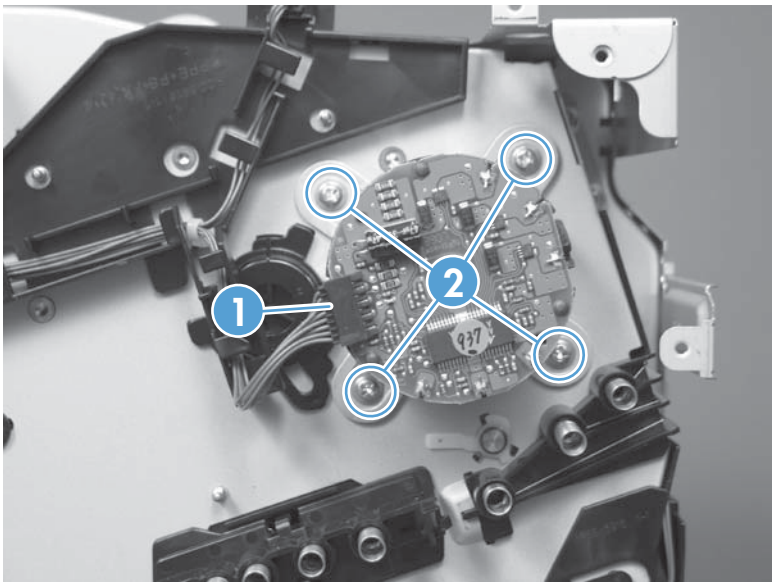
NOTE: It is not necessary to separate the upper rear cover from the rear cover to remove drum motor 1.

- Rear top cover. See Rear top cover on page 127.
- Interconnect board (ICB). See Interconnect board (ICB) on page 158.
- DC controller. See DC controller PCA and tray on page 160.
- Low voltage power supply. See Low voltage power supply on page 163.
- High voltage power supply upper. See High voltage power supply upper (HVPS-T) on page 201.

Remove the drum motor 1

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

Figure 2-196 Remove the drum motor 1



Drum motor 2 or drum motor 3

Before proceeding, remove the following components:

- Toner collection unit. See Toner collection unit on page 79.
- Formatter PCA. See Formatter PCA on page 81.
- Right rear cover. See Right rear cover on page 109.
- Left cover. See Left cover on page 111.
- Hardware integration pocket (HIP). See Hardware integration pocket (HIP) (dn and xh models only) on page 115.
- Control panel assembly. See Control panel assembly on page 116.
- Front top cover. See Front top cover on page 122.
- Rear cover and upper rear cover. See Rear cover and upper rear cover on page 124.

NOTE: It is not necessary to separate the upper rear cover from the rear cover to remove drum motor 2 or drum motor 3.

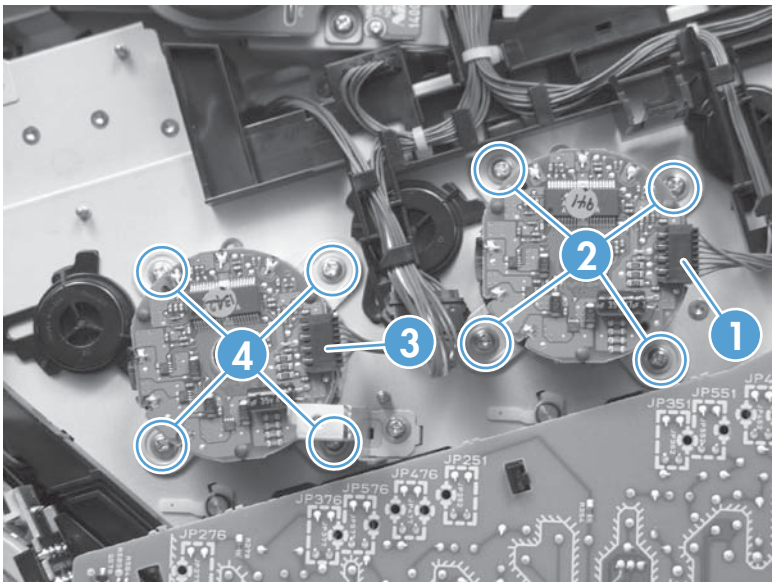
- Rear top cover. See Rear top cover on page 127.
- Interconnect board (ICB). See Interconnect board (ICB) on page 158.
- DC controller. See DC controller PCA and tray on page 160.
- Low voltage power supply. See Low voltage power supply on page 163.
- High voltage power supply upper. See High voltage power supply upper (HVPS-T) on page 201.

Remove the drum motor 2 or drum motor 3

▲ Do one of the following:

- Remove drum motor 2: Disconnect one connector (callout 1), remove four screws (callout 2), and then remove the motor.
- Remove drum motor 3: Disconnect one connector (callout 3), remove four screws (callout 4), and then remove the motor.

Figure 2-197 Remove the drum motor 2 or drum motor 3



Fuser motor

Before proceeding, remove the following components:

- Toner collection unit. See Toner collection unit on page 79.
- Formatter. See Formatter PCA on page 81.
- Right rear cover. See Right rear cover on page 109.
- Left cover. See Left cover on page 111.
- Hardware integration pocket (HIP). See Hardware integration pocket (HIP) (dn and xh models only) on page 115.
- Control panel assembly. See Control panel assembly on page 116.
- Front top cover. See Front top cover on page 122.
- Rear cover and upper rear cover. See Rear cover and upper rear cover on page 124.

NOTE: It is not necessary to separate the upper rear cover from the rear cover to remove the fuser motor.

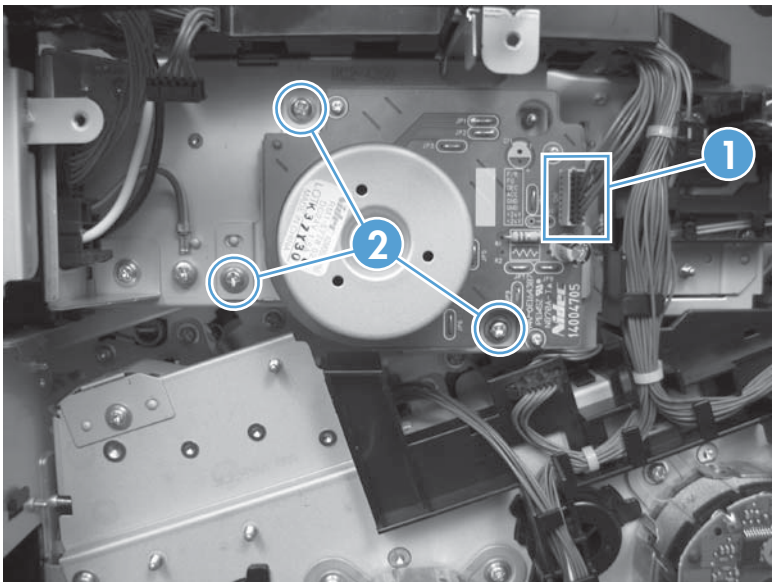
- Rear top cover. See Rear top cover on page 127.
- Interconnect board (ICB). See Interconnect board (ICB) on page 158.
- DC controller PCA. See DC controller PCA and tray on page 160.
- Low voltage power supply. See Low voltage power supply on page 163.
- High voltage power supply upper. See High voltage power supply upper (HVPS-T) on page 201.

NOTE: The terms fusing and fixing are synonymous.

Remove the fuser motor

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

Figure 2-198 Remove the fuser motor



Main drive assembly

Before proceeding, remove the following components:

- Toner collection unit. See Toner collection unit on page 79.
- Formatter. See Formatter PCA on page 81.
- Fuser. See Fuser on page 87.
- Secondary transfer assembly. See Secondary transfer assembly on page 96.
- Intermediate transfer belt (ITB). See Intermediate transfer belt (ITB) on page 98.
- Right rear cover. See Right rear cover on page 109.
- Left cover. See Left cover on page 111.
- Hardware integration pocket (HIP). See Hardware integration pocket (HIP) (dn and xh models only) on page 115.
- Control panel assembly. See Control panel assembly on page 116.
- Front top cover. See Front top cover on page 122.
- Rear cover and upper rear cover. See Rear cover and upper rear cover on page 124.

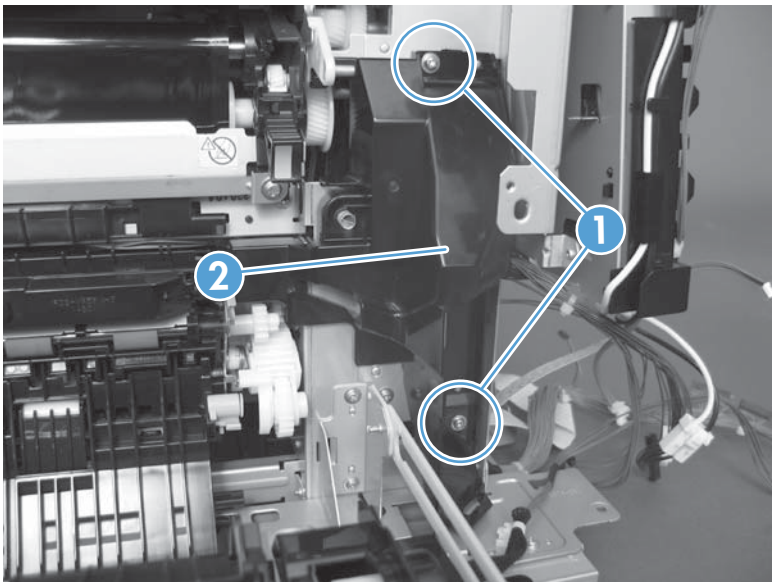
NOTE: It is not necessary to separate the upper rear cover from the rear cover to remove the main drive assembly.

- Rear top cover. See Rear top cover on page 127.
- Power supply fan and fan duct. See Power supply fan and fan duct on page 147.
- Interconnect board (ICB). See Interconnect board (ICB) on page 158.
- DC controller PCA. See DC controller PCA and tray on page 160.
- Low voltage power supply. See Low voltage power supply on page 163.
- High voltage power supply lower. See High voltage power supply lower (HVPS-D) on page 167.
- High voltage power supply upper. See High voltage power supply upper (HVPS-T) on page 201.

Remove the main drive assembly

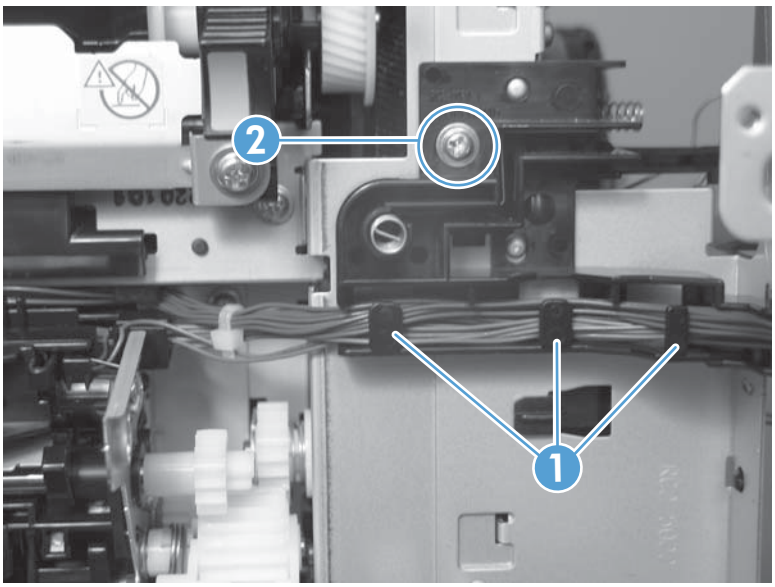
1. Remove two screws (callout 1), and then remove the cover (callout 2).

Figure 2-199 Remove the main drive assembly (1 of 7)



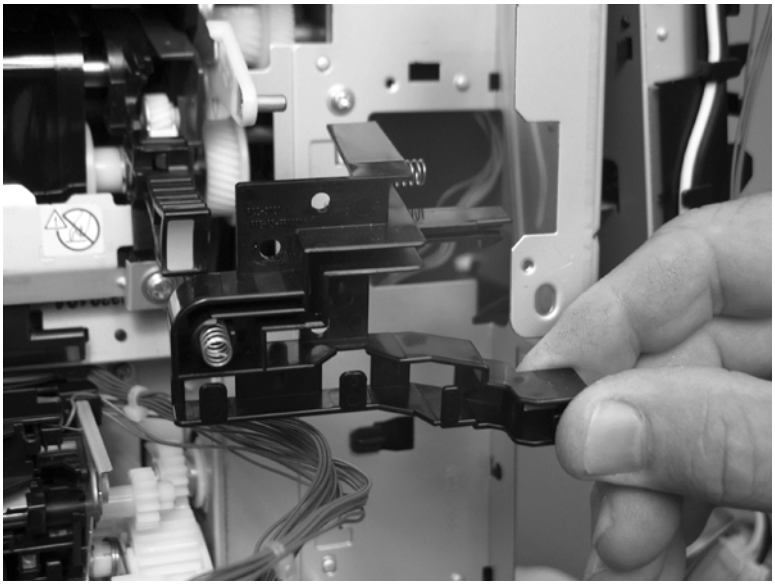
2. Release the wire harnesses from the guide (callout 1), and then remove one screw (callout 2).

Figure 2-200 Remove the main drive assembly (2 of 7)



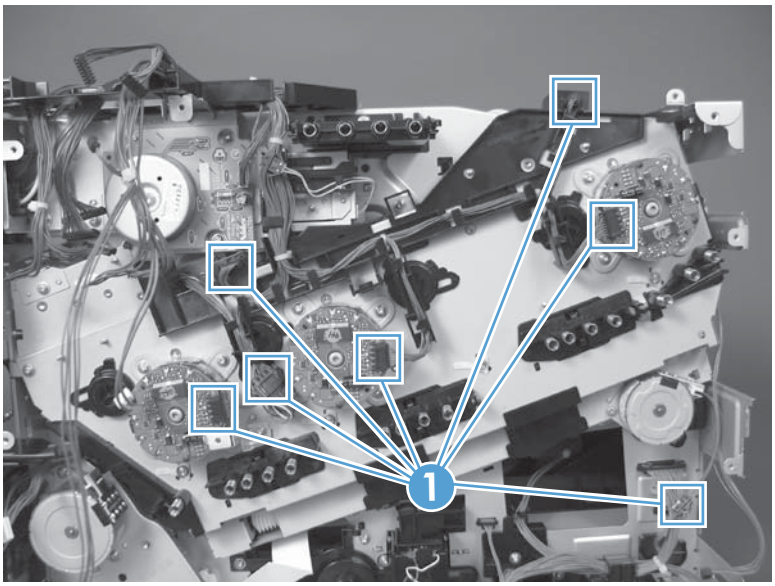
3. Lift the high voltage bracket up to release it, and then remove the bracket.

Figure 2-201 Remove the main drive assembly (3 of 7)



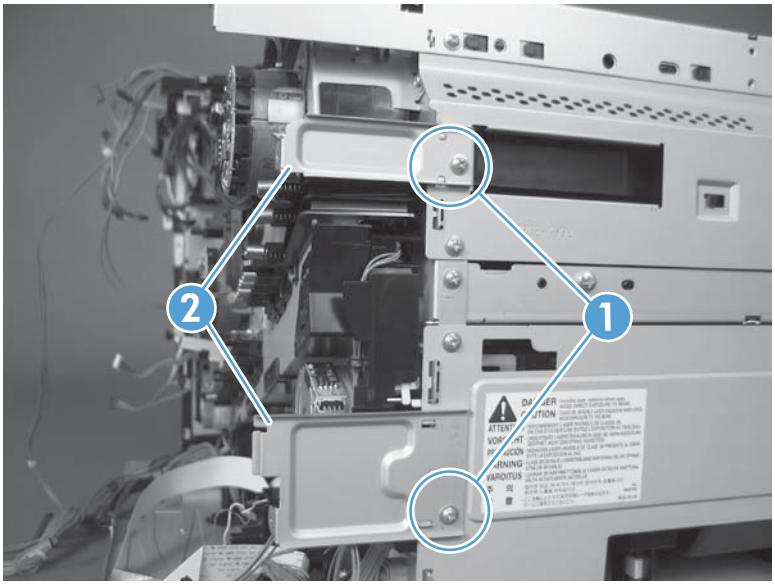
4. Disconnect seven connectors (callout 1), and then release the wire harnesses from the guides.

Figure 2-202 Remove the main drive assembly (4 of 7)



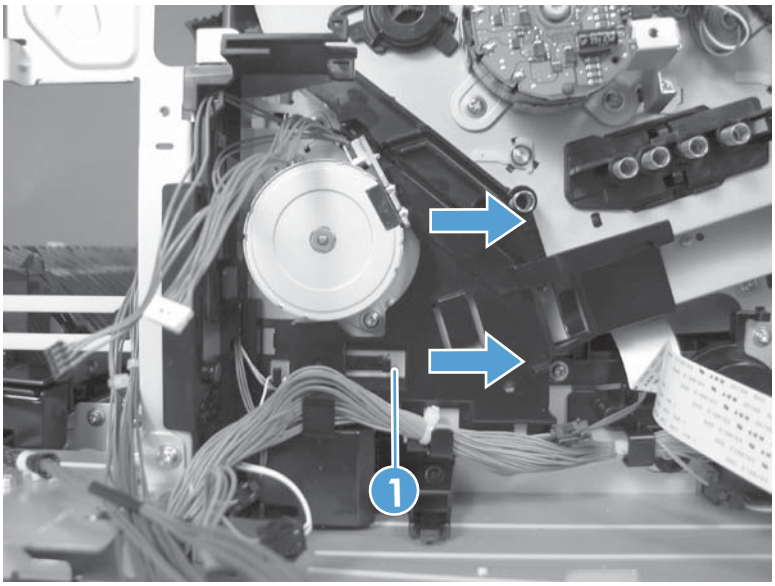
5. Remove two screws (callout 1), and then remove the sheet-metal plates (callout 2).

Figure 2-203 Remove the main drive assembly (5 of 7)



6. Release the FFCs and lower wiring harness from the guide, and then release one tab (callout 1) and remove the guide.

Figure 2-204 Remove the main drive assembly (6 of 7)

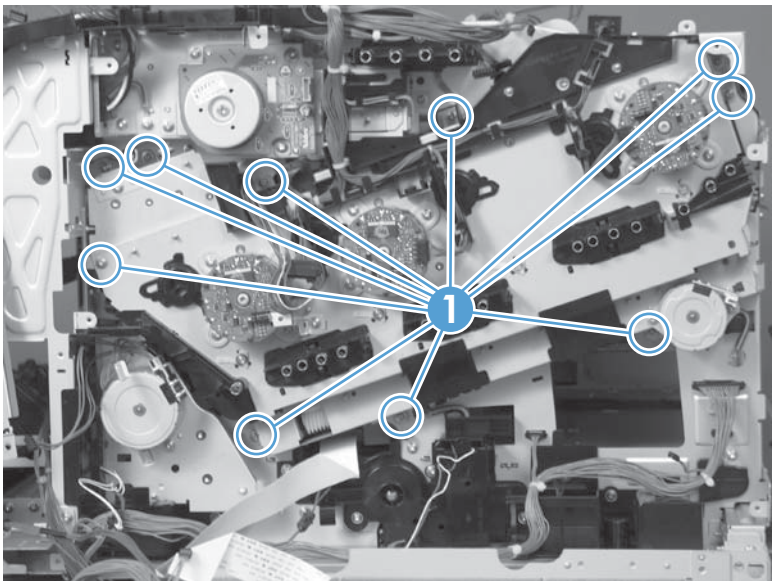


7. Remove ten screws (callout 1), and then carefully remove the assembly.

CAUTION: Be careful when you remove the assembly. The cams on the backside of the assembly can be dislodged. If the cams become dislodged, install them on the shafts as shown in Figure 2-207 Reinstall the main drive assembly (2 of 11) on page 217.

The black cam must be installed on the shaft furthest away from the developing disengagement motor. The white cams are interchangeable.

Figure 2-205 Remove the main drive assembly (7 of 7)



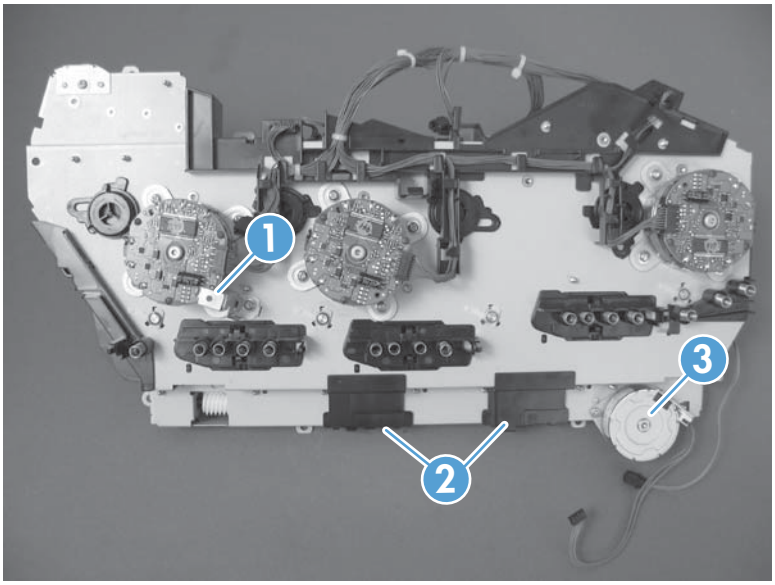
Reinstall the main drive assembly

1. Remove the bracket (callout 1), two guides (callout 2), and the developing disengagement motor (callout 3).

   Install the bracket and guides on the replacement main drive assembly.

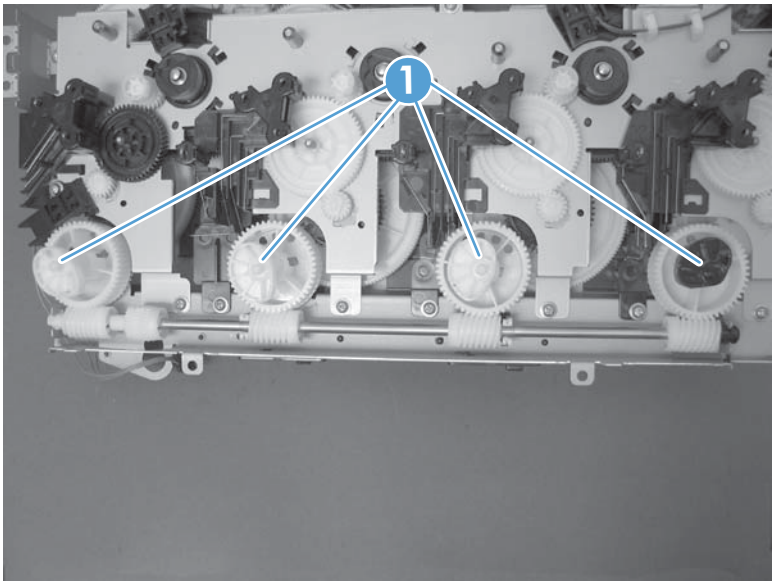
NOTE: Do not install the developing disengagement motor on the assembly (this motor must be removed from the assembly to align the main drive cams).

Figure 2-206 Reinstall the main drive assembly (1 of 11)



2. Locate the cams (callout 1) on the back side of the assembly.

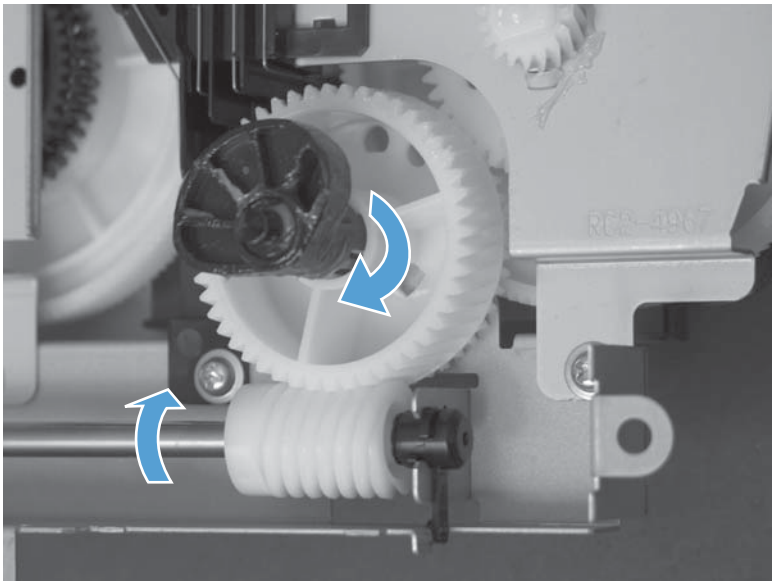
Figure 2-207 Reinstall the main drive assembly (2 of 11)



3. Slowly rotate the shaft near the black cam.

WARNING! Do not touch the plastic gears or cams. You must not wipe away any of the grease that is applied to these components. Always rotate the gears and cams by rotating the metal drive shaft.

Figure 2-208 Reinstall the main drive assembly (3 of 11)

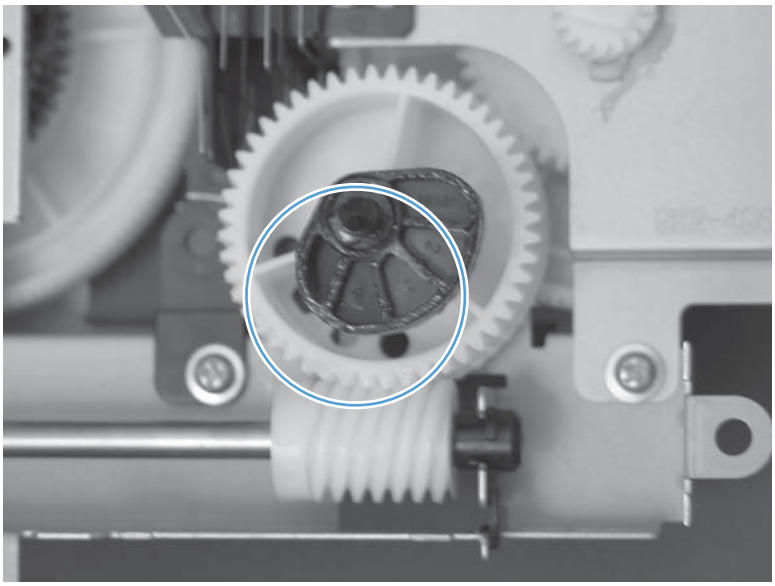


4. Continue to rotate the shaft until the holes in the black-cam gear align as shown below.

   When correctly aligned, the *bottom-most* hole in the gear is aligned with a hole in the sheet-metal chassis.

NOTE: The holes in the other cam gears have a different alignment. You must make sure that the holes in the black-cam gear are correctly aligned.

Figure 2-209 Reinstall the main drive assembly (4 of 11)



5. Verify that the cams (callout 1) align correctly.

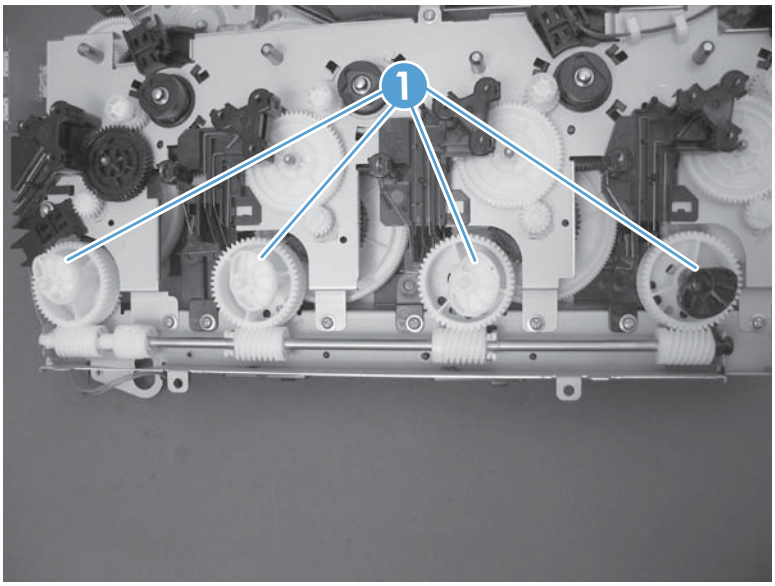
TIP: The second cam in from the right (the white cam to the left of the black cam), should have the *second* hole aligned with the hole in the sheet-metal chassis.

The third cam in from the right, should have the *third* hole aligned with the hole in the sheet-metal chassis.

The fourth cam in from the right (the cam nearest the developing disengagement motor), should have the *fourth* hole aligned with the hole in the sheet-metal chassis.

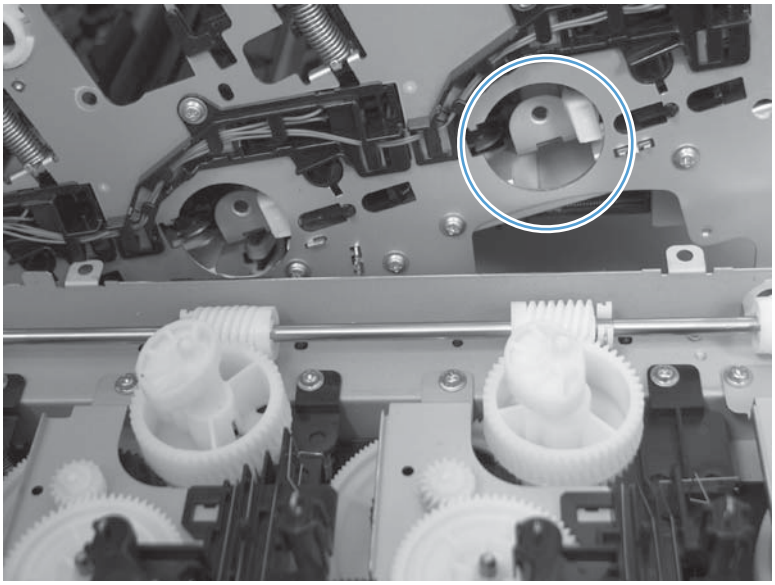
If the second, third, or fourth cams do not correctly align, do the following. Hold the long drive shaft, gently tilt the cam and gear away from the shaft to allow clearance to rotate the gear until the correct hole in the gear aligns with the hole in the chassis.

Figure 2-210 Reinstall the main drive assembly (5 of 11)



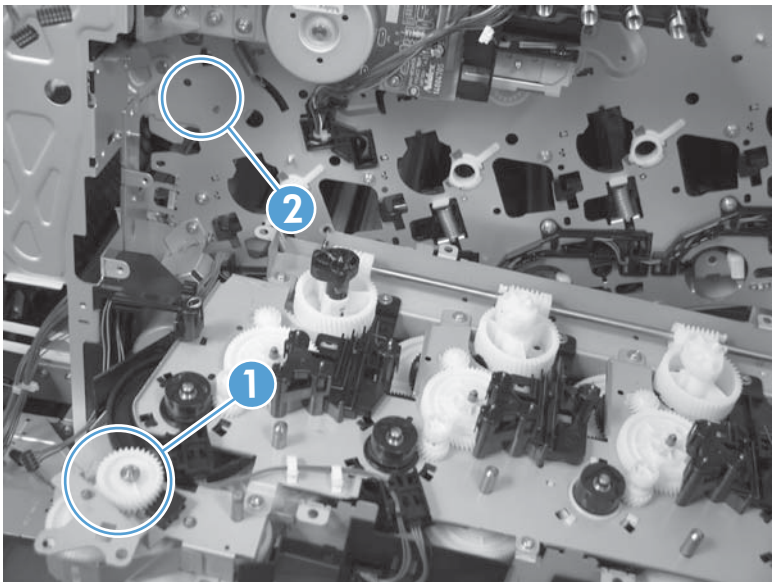
6. When the cams align correctly, they easily fit into the holes in the chassis.

Figure 2-211 Reinstall the main drive assembly (6 of 11)



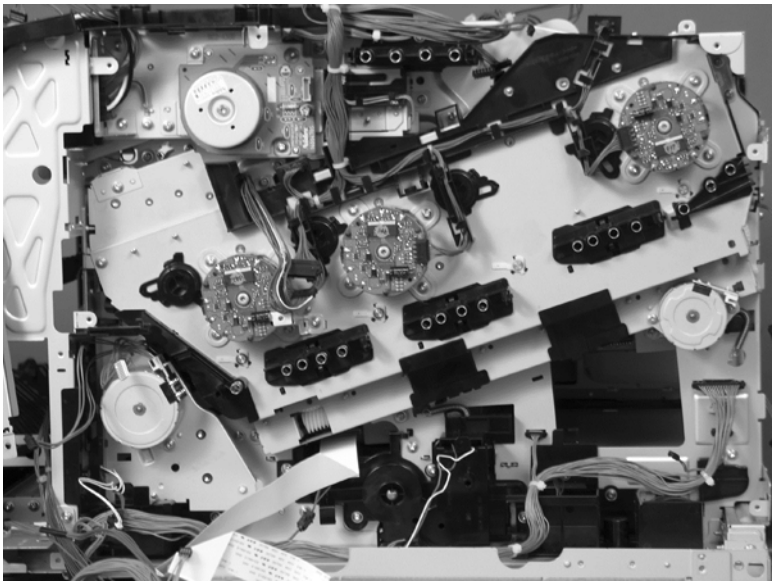
7. When the assembly is placed on the chassis, the pin on the swing gear and on the bracket (callout 1), must align with the holes in the chassis (callout 2).

Figure 2-212 Reinstall the main drive assembly (7 of 11)



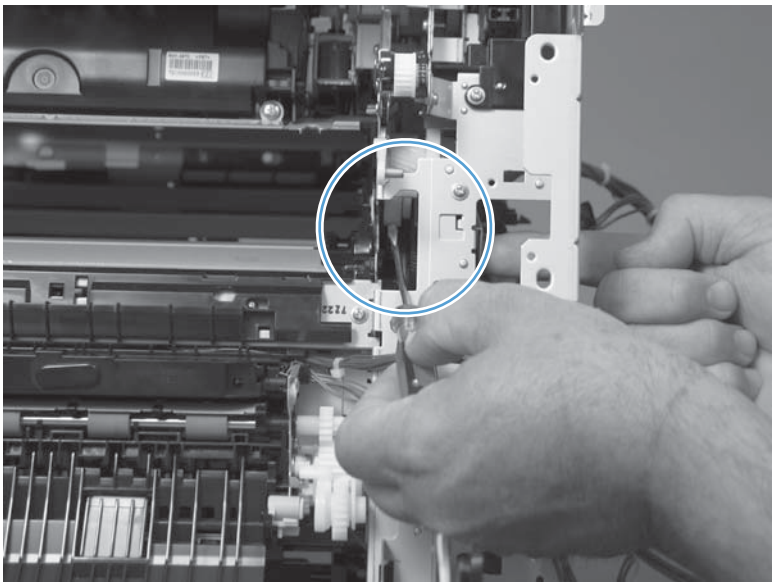
8. Position the assembly on the chassis.

Figure 2-213 Reinstall the main drive assembly (8 of 11)



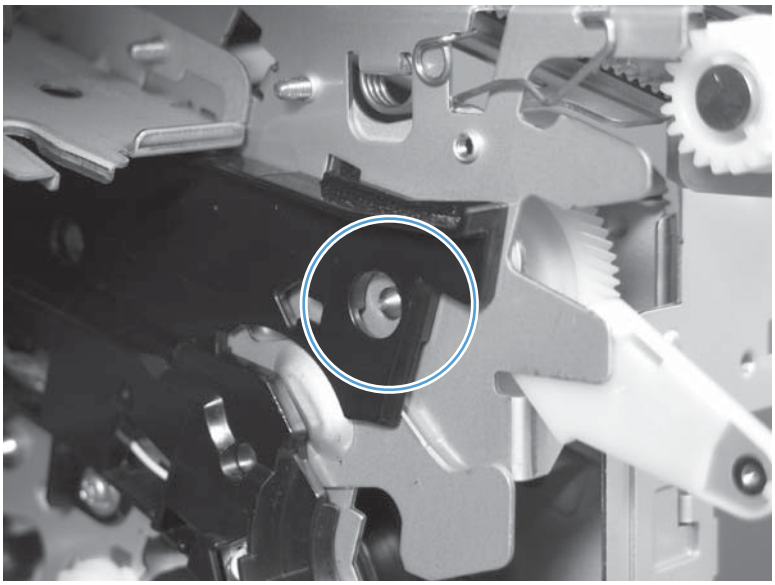
9. Use your finger to push in on the assembly, and use a small flat blade screwdriver to align the pin on the swing gear with the hole in the chassis.

Figure 2-214 Reinstall the main drive assembly (9 of 11)



10. When the assembly is correctly installed against the chassis, the pin above the swing gear protrudes through the hole in the chassis.

Figure 2-215 Reinstall the main drive assembly (10 of 11)

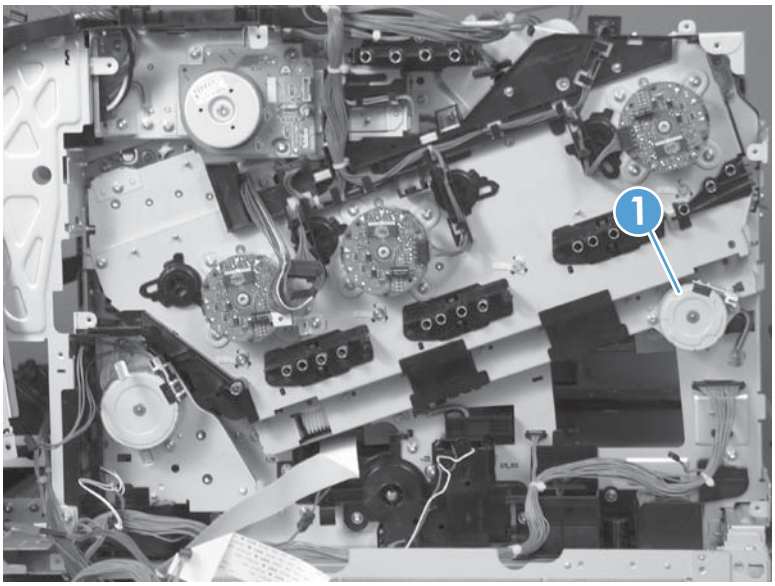


11. Install the main drive assembly mounting screws, and then reinstall the developing disengagement motor (callout 1).

TIP: After reassembling the product, use the **Diagnostics** menu to print a **Color Band Test** page.

If the test page shows one or more color planes are not printing (usually in the upper left corner of the page), the cam or cams for the missing color plane are not correctly aligned. Repeat the reinstall the main drive assembly procedure.

Figure 2-216 Reinstall the main drive assembly (11 of 11)



Fuser drive assembly

Before proceeding, remove the following components:

- Toner collection unit. See Toner collection unit on page 79.
- Formatter. See Formatter PCA on page 81.
- Fuser. See Fuser on page 87.
- Secondary transfer assembly. See Secondary transfer assembly on page 96.
- Right rear cover. See Right rear cover on page 109.
- Left cover. See Left cover on page 111.
- Hardware integration pocket (HIP). See Hardware integration pocket (HIP) (dn and xh models only) on page 115.
- Control panel assembly. See Control panel assembly on page 116.
- Front top cover. See Front top cover on page 122.
- Rear cover and upper rear cover. See Rear cover and upper rear cover on page 124.

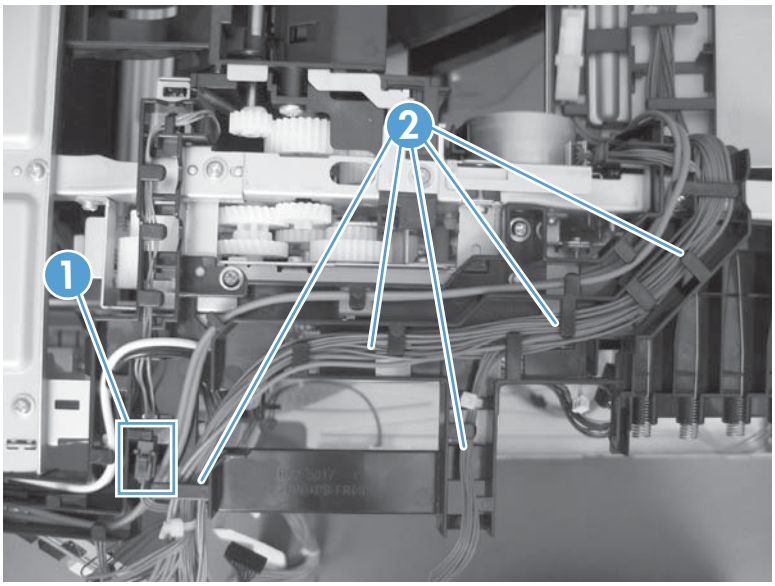
NOTE: It is not necessary to separate the upper rear cover from the rear cover to remove the fuser drive assembly.

- Rear top cover. See Rear top cover on page 127.
- Power supply fan and fan duct. See Power supply fan and fan duct on page 147.
- Interconnect board (ICB). See Interconnect board (ICB) on page 158.
- DC controller PCA. See DC controller PCA and tray on page 160.
- Low voltage power supply. See Low voltage power supply on page 163.
- High voltage power supply lower. See High voltage power supply lower (HVPS-D) on page 167.
- High voltage power supply upper. See High voltage power supply upper (HVPS-T) on page 201.
- Main drive assembly. See Main drive assembly on page 212.

Remove the fuser drive assembly

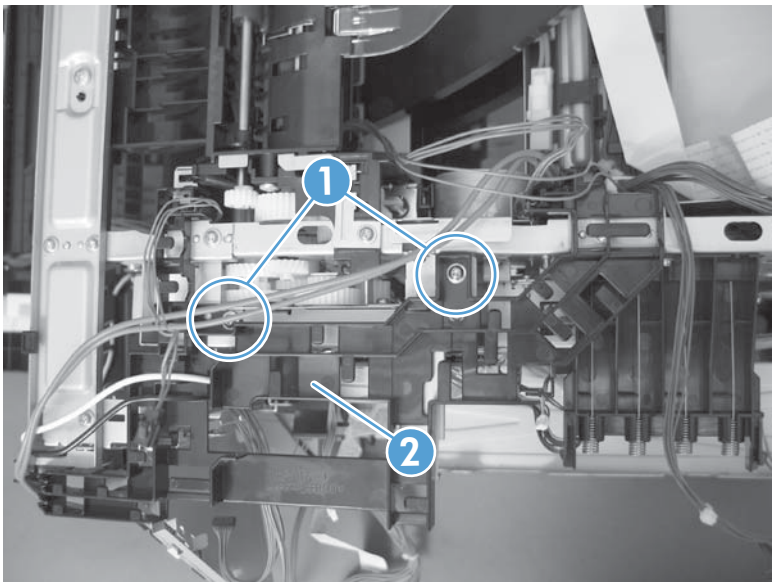
1. Disconnect one connector (callout 1), and then release the wire harnesses from the guide (callout 2).

Figure 2-217 Remove the fuser drive assembly (1 of 6)



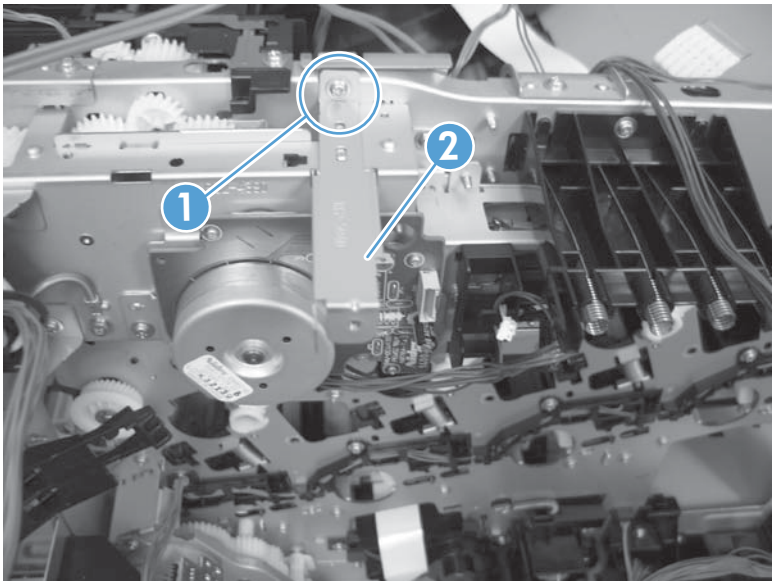
2. Remove two screws (callout 1), and then remove the guide (callout 2).

Figure 2-218 Remove the fuser drive assembly (2 of 6)



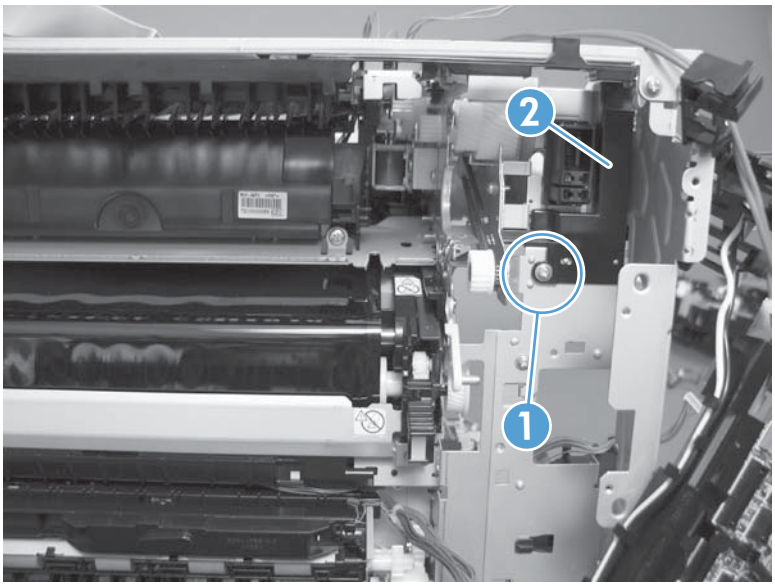
3. Remove one screw (callout 1), and then remove the sheet-metal plate (callout 2).

Figure 2-219 Remove the fuser drive assembly (3 of 6)



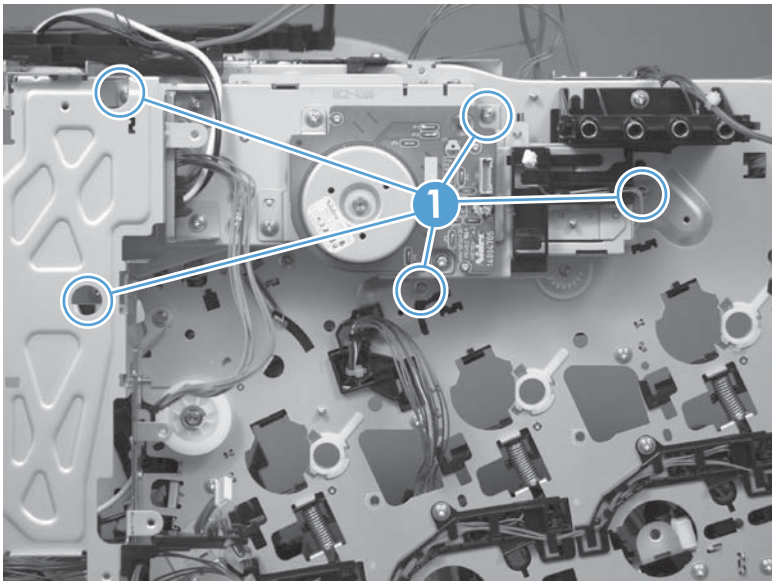
4. Remove one screw (callout 1), and then remove the cover (callout 2).

Figure 2-220 Remove the fuser drive assembly (4 of 6)



5. Remove five screws (callout 1).

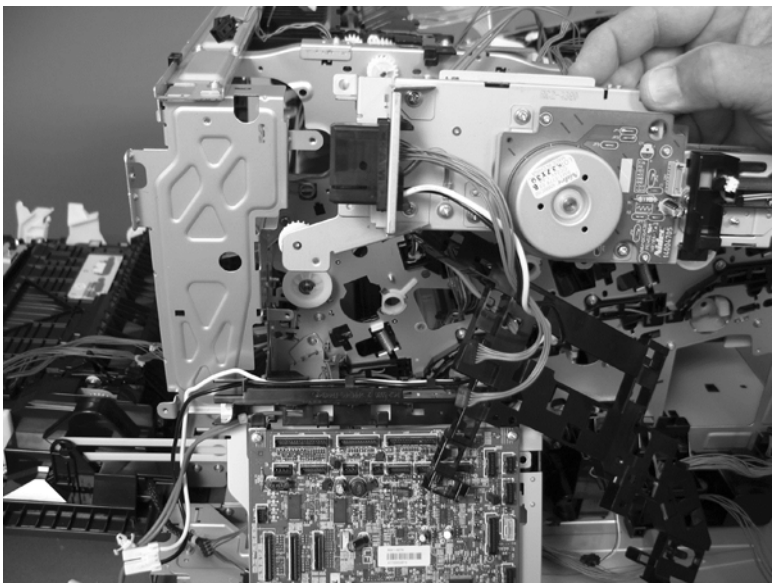
Figure 2-221 Remove the fuser drive assembly (5 of 6)



6. Carefully remove the assembly.

CAUTION: A gear on the assembly is not captive. Do not lose the gear when you remove the assembly. If the gear becomes dislodged, see Reinstall the fuser drive assembly on page 227.

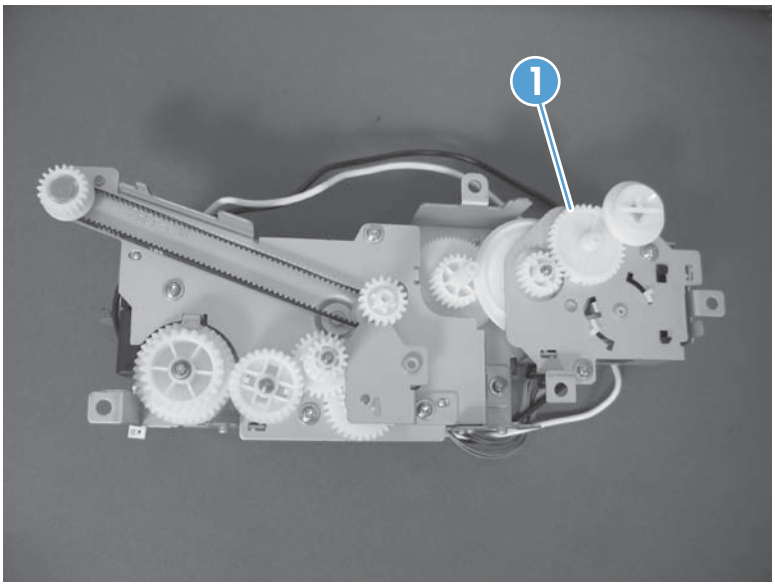
Figure 2-222 Remove the fuser drive assembly (6 of 6)



Reinstall the fuser drive assembly

If the gear (callout 1) is dislodged when the assembly is removed, use the figure below to correctly install it on the assembly.

Figure 2-223 Reinstall the fuser drive assembly



Delivery assembly

Before proceeding, remove the following components:

- Toner collection unit. See Toner collection unit on page 79.
- Formatter PCA. See Formatter PCA on page 81.
- Fuser. See Fuser on page 87.
- Secondary transfer assembly. See Secondary transfer assembly on page 96.
- Intermediate transfer belt (ITB). See Intermediate transfer belt (ITB) on page 98.
- Right rear cover. See Right rear cover on page 109.
- Left cover. See Left cover on page 111.
- Hardware integration pocket (HIP). See Hardware integration pocket (HIP) (dn and xh models only) on page 115.
- Control panel assembly. See Control panel assembly on page 116.
- Front top cover. See Front top cover on page 122.
- Rear cover and upper rear cover. See Rear cover and upper rear cover on page 124.

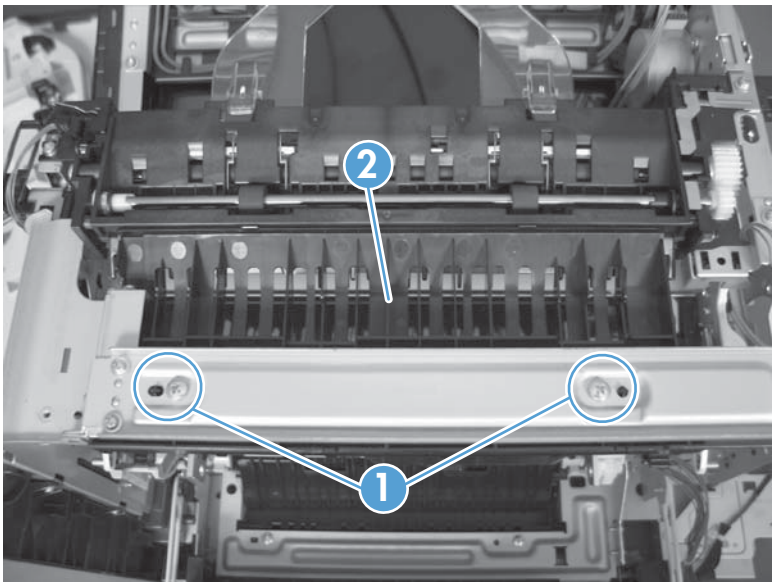
NOTE: It is not necessary to separate the upper rear cover from the rear cover to remove the delivery assembly.

- Rear top cover. See Rear top cover on page 127.
- Power supply fan and fan duct. See Power supply fan and fan duct on page 147.
- Interconnect board (ICB). See Interconnect board (ICB) on page 158.
- Low voltage power supply. See Low voltage power supply on page 163.
- High voltage power supply lower. See High voltage power supply lower (HVPS-D) on page 167.
- High voltage power supply upper. See High voltage power supply upper (HVPS-T) on page 201.
- Main drive assembly. See Main drive assembly on page 212.
- Fuser drive assembly. See Fuser drive assembly on page 223.

Remove the delivery assembly

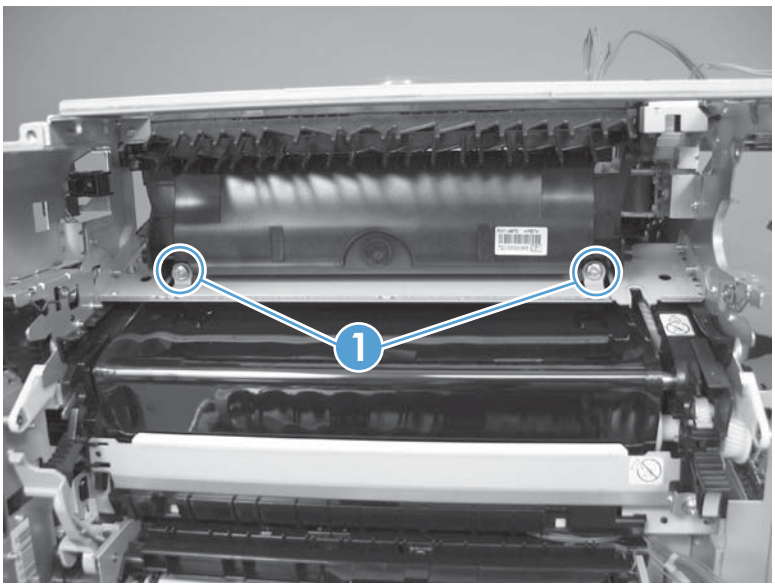
1. Remove two screws (callout 1), and then remove the guide (callout 2).

Figure 2-224 Remove the delivery assembly (1 of 5)



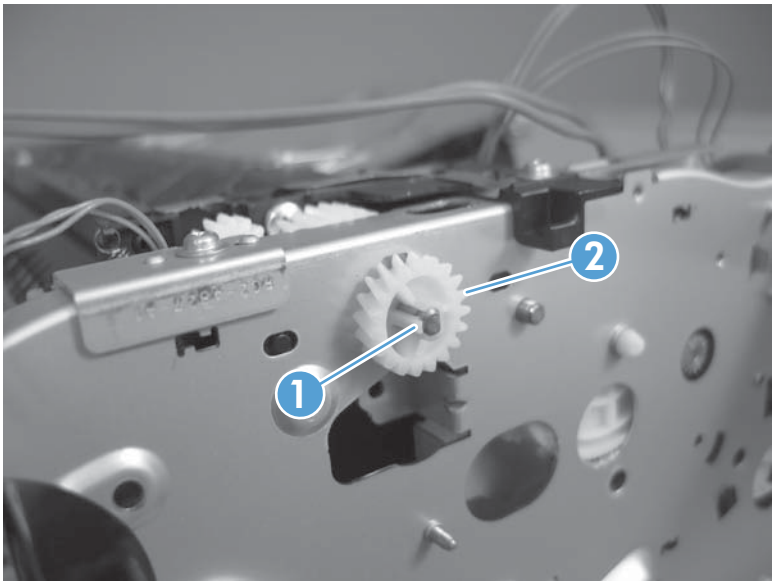
2. Remove two screws (callout 1).

Figure 2-225 Remove the delivery assembly (2 of 5)



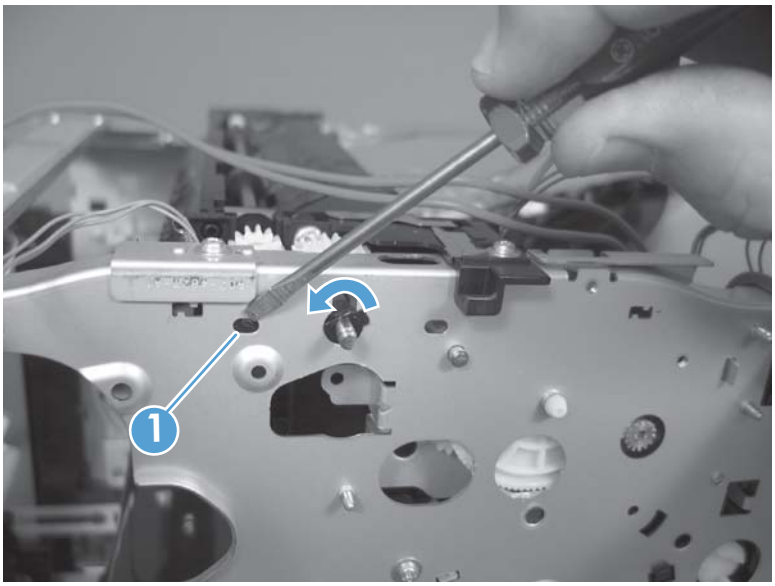
3. Release one tab (callout 1), and then remove the gear (callout 2).

Figure 2-226 Remove the delivery assembly (3 of 5)



4. Release one tab (callout 1), and then rotate the locking clip until the tab on the clip aligns with the slot in the chassis.

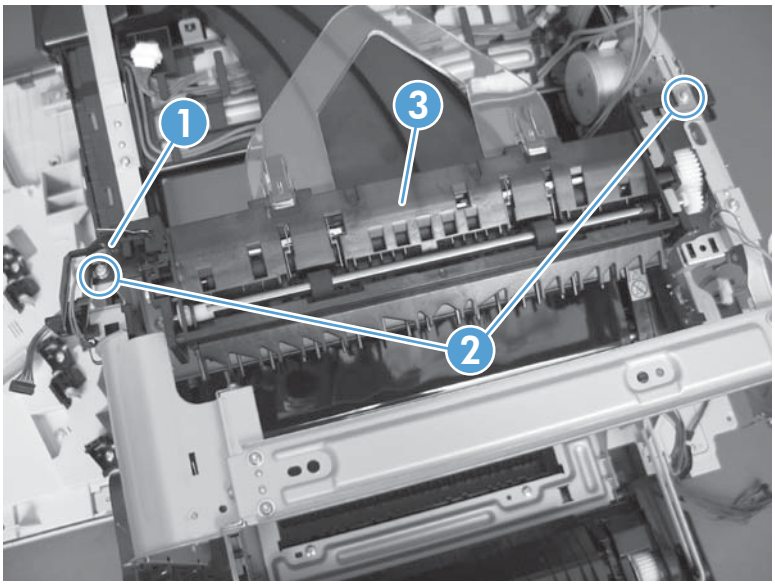
Figure 2-227 Remove the delivery assembly (4 of 5)



5. Disconnect one connector (callout 1), remove two screws (callout 2), and then carefully lift the assembly (callout 3) off of the product to remove it.

CAUTION: A solenoid arm (duplex models only; on the right side) and a spring (on the left side) on the assembly are not captive. Do not lose the solenoid arm or spring when you remove the assembly. If the solenoid arm or spring become dislodged, see Reinstall the delivery assembly on page 232.

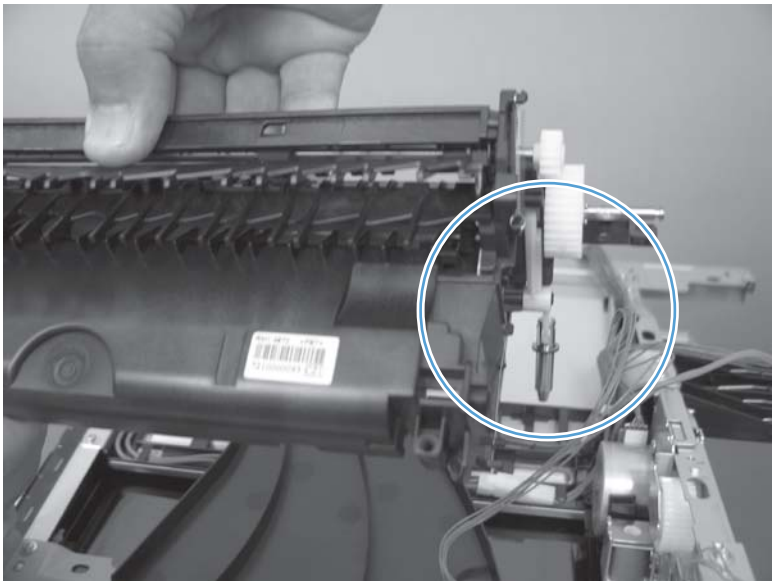
Figure 2-228 Remove the delivery assembly (5 of 5)



Reinstall the delivery assembly

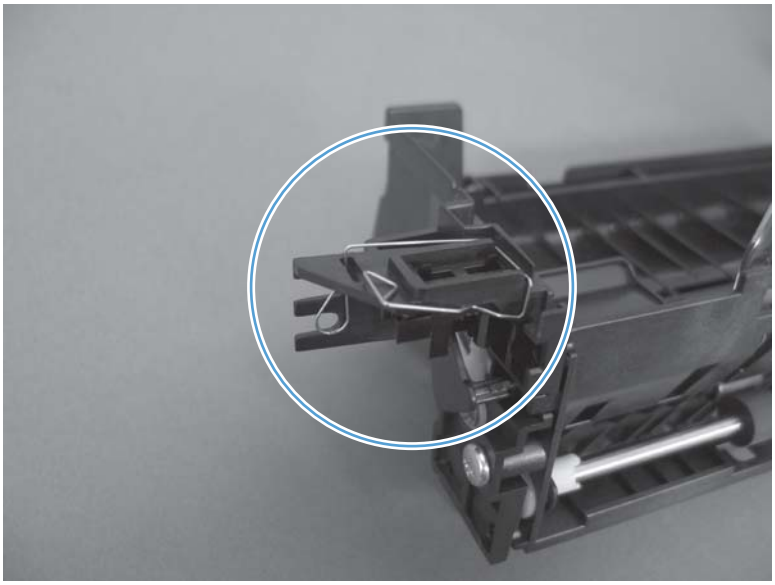
1. **Duplex models only**: Make sure that the solenoid arm is correctly installed on the assembly.

Figure 2-229 Reinstall the delivery assembly (1 of 2)



2. Make sure that the spring is correctly installed on the assembly.

Figure 2-230 Reinstall the delivery assembly (2 of 2)



Duplex drive assembly

Before proceeding, remove the following components:

- Toner collection unit. See Toner collection unit on page 79.
- Formatter PCA. See Formatter PCA on page 81.
- Fuser. See Fuser on page 87.
- Secondary transfer assembly. See Secondary transfer assembly on page 96.
- Intermediate transfer belt (ITB). See Intermediate transfer belt (ITB) on page 98.
- Right rear cover. See Right rear cover on page 109.
- Left cover. See Left cover on page 111.
- Hardware integration pocket (HIP). See Hardware integration pocket (HIP) (dn and xh models only) on page 115.
- Control panel assembly. See Control panel assembly on page 116.
- Front top cover. See Front top cover on page 122.
- Rear cover and upper rear cover. See Rear cover and upper rear cover on page 124.

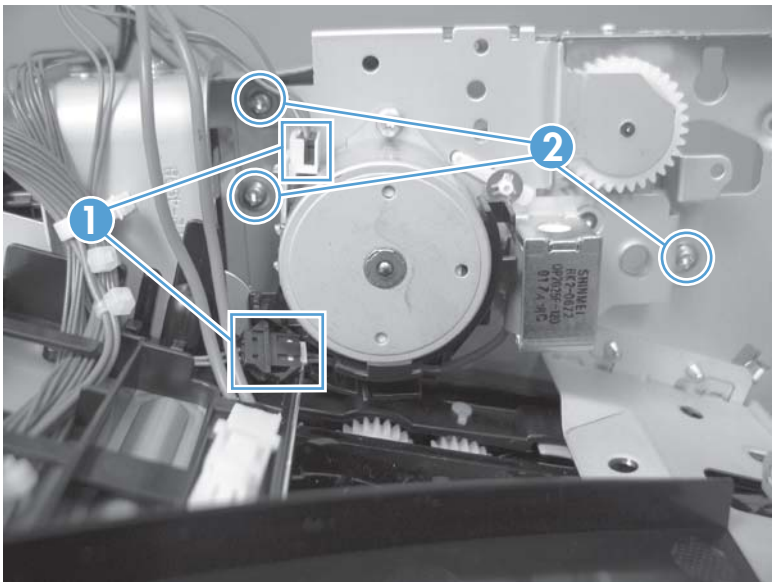
NOTE: It is not necessary to separate the upper rear cover from the rear cover to remove the duplex drive assembly.

- Rear top cover. See Rear top cover on page 127.
- Power supply fan and fan duct. See Power supply fan and fan duct on page 147.
- Interconnect board (ICB). See Interconnect board (ICB) on page 158.
- Low voltage power supply. See Low voltage power supply on page 163.
- High voltage power supply lower. See High voltage power supply lower (HVPS-D) on page 167.
- High voltage power supply upper. See High voltage power supply upper (HVPS-T) on page 201.
- Main drive assembly. See Main drive assembly on page 212.
- Fuser drive assembly. See Fuser drive assembly on page 223.
- Delivery assembly. See Delivery assembly on page 228.

Remove the duplex drive assembly

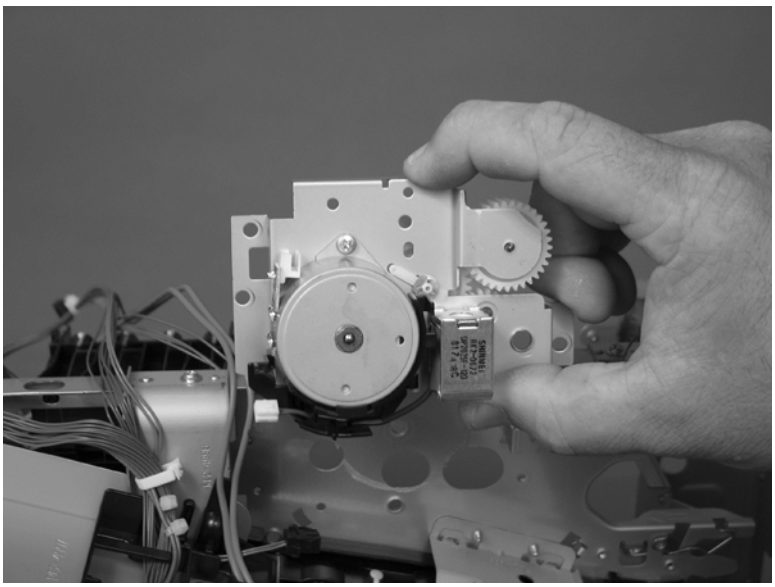
1. Disconnect two connectors (callout 1), and then remove three screws (callout 2).

Figure 2-231 Remove the duplex drive assembly (1 of 2)



2. Remove the assembly.

Figure 2-232 Remove the duplex drive assembly (2 of 2)



Optional paper feeder assembly (Tray 3)

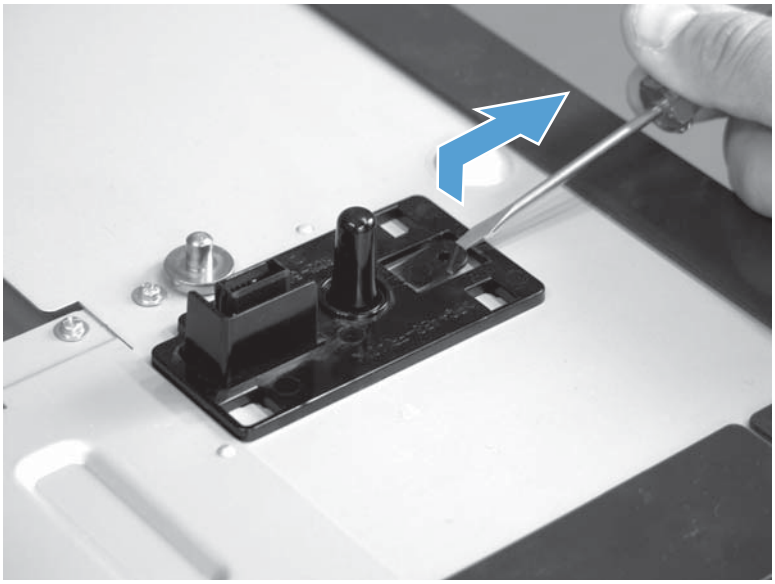
NOTE: For information about removing the Tray 3 pickup roller, see Pickup and feed rollers (Tray 3) on page 91.

For information about removing the Tray 3 cassette, see Tray cassette on page 86.

For information about removing the right door (optional paper feeder), see Right door (optional paper feeder) on page 100.

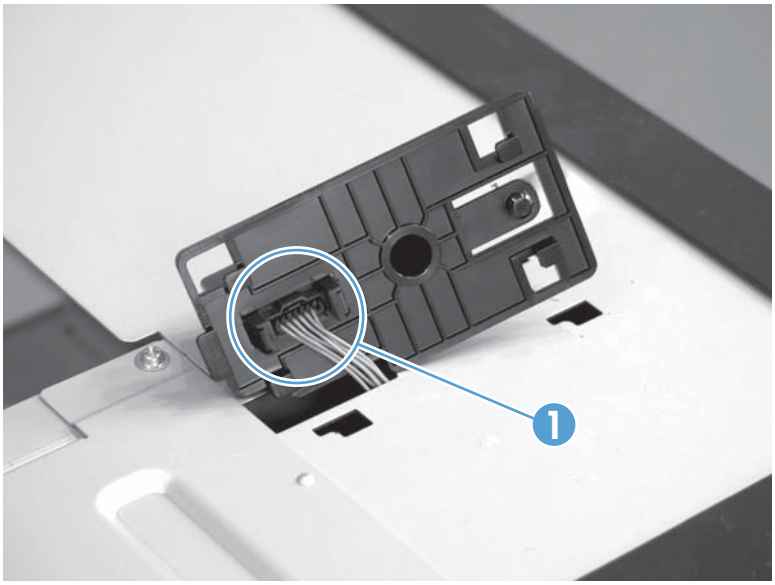
Drawer connector

1. With a small screwdriver, lift one tab and then slide the drawer connector to release.



2. Remove one connector (callout 1).

Figure 2-233 Remove the drawer connector; optional paper feeder



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.

NOTE: To perform diagnostic and configuration procedures (for example, resetting page counts) for the HP LaserJet Enterprise 500 color M551, you must install the CP1210 Service Config Tool (available at your HP authorized repair center).

- Solve problems checklist
- Menu map
- Current settings pages
- Preboot menu options
- Troubleshooting process
- Tools for troubleshooting
- Clear jams
- Solve paper handling problems
- Use manual print modes
- Solve image quality problems
- Clean the product
- Solve performance problems
- Solve connectivity problems
- Service mode functions
- Preboot menu options
- 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 one of the following messages display on the control panel: **Ready**, **Paused**, or **Sleep mode on**. If no lights are on or the display does not say **Ready**, **Paused**, or **Sleep mode on**, 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 print-quality (PQ) troubleshooting pages.
   - 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 **HP LaserJet Enterprise 500 color M551**.

   -or-

   Mac OS X: Open **Printer Setup Utility**, and then double-click the line for the **HP LaserJet Enterprise 500 color M551**.

8. Verify that you have installed the HP LaserJet Enterprise 500 color M551 printer driver. Check the program to make sure that you are using the HP LaserJet Enterprise 500 color M551 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, selecting 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. Use the Down arrow ▼ to highlight the **Administration Menu Map** item, and then press the OK button to select it.
4. Use the Up arrow ▲ button to highlight the **Print** item, and then press the OK button.
5. Press the Home button or back arrow button to exit the menus.

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. Use the Down arrow ▼ button to highlight the **Current Settings Page** item, and then press the OK button to select it.
4. Use the Up arrow ▲ button to highlight the **Print** item, and then press the OK button.
5. Press the Home button or back arrow button to exit the menus.

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.

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.

Access the Preboot menu

1. Turn the product on.
2. Press the **Stop** ⊗ button when the **Ready**, **Data**, and **Attention** LEDs are illuminated solid.

   NOTE: The window for accessing the Preboot menu, while the **Ready**, **Data**, and **Attention** LEDs are illuminated solid, is around one second. You can press the ⊗ button repeatedly while the product is starting up to make you sure you gain access to the Preboot menu.
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 arrow ⮌ button twice to highlight **Continue**, and then press the OK button.

   NOTE: The product will initialize.

Troubleshooting process

Determine the problem source

When the product malfunctions or encounters an unexpected situation, the product control panel alerts you to the situation. This section contains a pre-troubleshooting checklist to filter out many possible causes of the problem. A troubleshooting flowchart helps you diagnose the root cause of the problem. The remainder of this chapter provides steps for correcting problems.

- Use the 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.

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 3-1 Troubleshooting flowchart

1 **Power on**	Is the product on and does a readable message display?		Follow the power-on troubleshooting checks. See Power subsystem on page 244. After the control panel display is functional, see step 2.
	Yes ↓	No →	
2 **Control panel messages**	Does the message **Ready** display on the control panel?		After the errors have been corrected, go to step 3.
	Yes ↓	No →	
3 **Event log**	Open the **Troubleshooting** 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, check for error messages. If paper jams inside the product, see the jams section of the product service manual. If error messages display on the control panel when you try to print an event log, see the control panel message section of the service manual. After successfully printing and evaluating the event log, see step 4.
	Yes ↓	No →	

Table 3-1 Troubleshooting flowchart (continued)

4 **Information pages**	Open the **Reports** menu and print the configuration pages to verify that all the accessories are installed. 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 →	
5 **Image quality**	Does the print quality meet the customer's requirements?		Compare the images with the sample defects in the image defect tables. See the images defects table in the product service manual. After the print quality is acceptable, see step 6.
	Yes ↓	No →	
6 **Interface**	Can the customer print successfully from the host computer?		Verify that all I/O cables are connected correctly and that a valid IP address is listed on the Jetdirect configuration page. If error messages display on the control panel when you try to print an event log, see the control panel message section of the service manual. When the customer can print from the host computer, this is the end of the troubleshooting process.
	Yes. This is the end of the troubleshooting process.	No →	

Power subsystem

Power-on checks

The basic product functions should start up when the product is plugged into an electrical outlet and the power switch is pushed to the *on* position. If the product does not start, use the information in this section to isolate and solve the problem.

Power-on troubleshooting overview

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

During normal operation, the main cooling fan begins to spin briefly after the product power is turned on. Place your hand over the holes in the left-side cover, near the formatter. If the fan is operating, you will feel air passing out of the product. You can also lean close to the product and hear the fan operating. You can also place your hand over the hole in the right-rear lower corner. If the fan is operating, you should feel air being drawn into the product. 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 right or front cover is open, a jam condition is sensed, or the paper-path sensors are damaged). You might be able to visually and audibly determine if the main motor is turned on.

If the fan and main motor are operating correctly, the next troubleshooting step is to isolate print engine, formatter, and control panel problems. Perform an engine test. If the formatter is damaged, it might interfere with the engine test. If the engine-test page does not print, try removing the formatter

and then performing the engine test again. If the engine test is then successful, the problem is almost certainly with the formatter, the control panel, or the cable that connects them.

If the control panel is blank when you turn on the product, check the following items.

1. Make sure that the product is plugged directly into an active electrical outlet (not a power strip) that delivers the correct voltage.
2. Make sure that the power switch is in the *on* position.
3. Make sure that the fan runs briefly, which indicates that the power supply is operational.
4. Make sure that the control panel display wire harness is connected.
5. Make sure that the formatter is seated and operating correctly. Turn off the product and remove the formatter. Reinstall the formatter, and then verify that the heartbeat LED is flashing.
6. Remove any external solutions, and then try to turn the product on again.



NOTE: If the control panel display is blank, but the main cooling fan runs briefly after the product power is turned on, try printing an engine-test page to determine whether the problem is with the control-panel display, formatter, or other product components.

Tools for troubleshooting

The section describes the tools that can help you solve problems with your device.

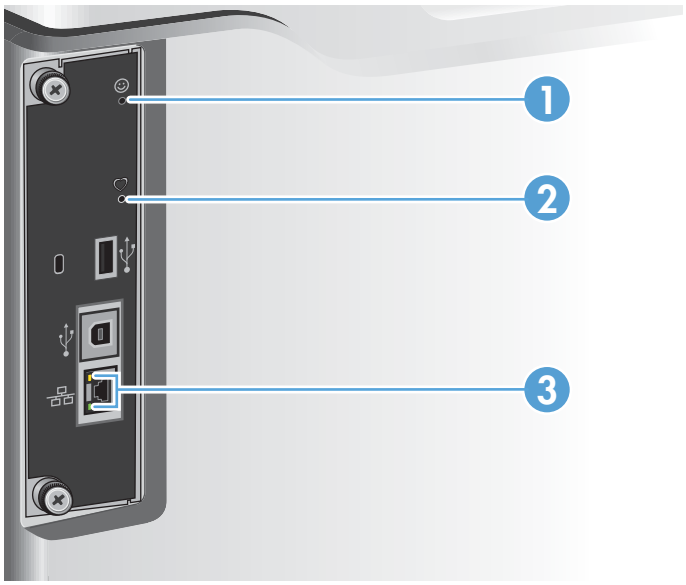
Individual component diagnostics

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	Connectivity LED
2	Heartbeat LED
3	HP Jetdirect LEDs

Heartbeat LED

The heartbeat 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 hjeartbeat 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 heartbeat 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 heartbeat LED operates according to the product state. When the product is initializing, see Heartbeat LED, product initialization on page 247. When the product is in **Ready** mode, see Connectivity LED, product operating on page 249.

Heartbeat LED, product initialization

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

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

If after initialization the heartbeat LED is not solid green, see Connectivity LED, product operating on page 249.

Table 3-2 Heartbeat LED, product initialization

Product initializing state	Heartbeat LED, normal state	Heartbeat LED, error state
No power (power cord unplugged or power switch off)	Off	Not applicable
Power on (immediately after the power switch pressed)	Red, solid • Duration should be 1 second or less	Red, solid • Firmware error; problem finding hardware and booting the serial peripheral interface flash memory ◦ Boot process halted Replace the formatter.
Serial peripheral interface (SPI) flash memory boot	Green, solid	Red, solid • Firmware error; problem corrupt or missing SPI flash memory ◦ Boot process halted Replace the formatter.

Table 3-2 Heartbeat LED, product initialization (continued)

Product initializing state	Heartbeat LED, normal state	Heartbeat LED, error state
HW checks on board DRAM	Green, solid	Red, solid • Power on self check failure ◦ Boot process halted Replace the formatter.
Control panel connection initializes	Green, solid **NOTE:** Control panel communication successful. If an error occurs, a message should appear on the control-panel display.	Yellow, fast flash • Formatter to control panel connection failed ◦ Boot process continues Check the cables between the formatter and control panel for damage. Make sure that the cables are fully seated.
Preboot menu available (including diagnostics)	Green, solid	Red, solid • Diagnostic failure ◦ Follow diagnostic instructions Turn the power off, and then on again to restart the initialization process.
Accessing disk for firmware image	Green, solid **NOTE:** If applicable, disk error messages appear on the control-panel display.	Yellow, fast flash • Control panel not connected
Firmware boot	Green, solid **NOTE:** If applicable, error messages appear on the control-panel display.	Yellow, fast flash • Control panel not connected
Product operational	Green, heartbeat blink **NOTE:** If applicable, error messages appear on the control-panel display.	Yellow, fast flash • Control panel not connected
49.XX.YY error or initialization freezes	Not applicable	LED off **NOTE:** An error message (for example, **49.XX.YY**) 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.

Table 3-2 Heartbeat LED, product initialization (continued)

Product initializing state	Heartbeat LED, normal state	Heartbeat LED, error state
Control panel connection interrupted after the product is operational	Not applicable	Yellow, fast flash • Control panel not connected
Sleep mode	Green, slow blink	Not applicable
Approaching **Sleep mode**	Green, slow blink	Not applicable
Wake up from **Sleep mode**	Follows initialization progression above.	Follows initialization progression above.
Approaching wake up from **Sleep mode**	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 3-3 Heartbeat LED, product operational

LED color	Description
Green	• Normal operation ◦ Formatter is operating normally ◦ Firmware is operating normally ◦ Control panel is connected
Yellow	• Formatter cannot connect to the control panel ◦ Check control panel connections ◦ Verify control panel functionality

Table 3-3 Heartbeat LED, product operational (continued)

LED color	Description
Red	• Formatter error or failure ◦ Serial peripheral interface (SPI) flash memory boot error ◦ Power on self test (formatter) failed ◦ Diagnostic (formatter) failed
Off	**TIP:** The connectivity LED is off if the power cord is unplugged, the product power switch is in the off position, or the product is in **Sleep mode**. • Firmware or system freeze ◦ Check the control panel for an error message ◦ Control panel failure **NOTE:** This condition is not usually caused by a formatter failure. Turn the power off, and then on again. If the error persists, perform a firmware upgrade.

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 250. When the product is in **Ready** mode, see Connectivity LED, product operating on page 252.

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 252.

Table 3-4 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 • Duration should be 1 second or less	Red, solid • Firmware error; problem finding hardware and booting the serial peripheral interface flash memory ◦ Boot process halted Replace the formatter.
Serial peripheral interface (SPI) flash memory boot	Green, solid	Red, solid • Firmware error; problem corrupt or missing SPI flash memory ◦ Boot process halted Replace the formatter.
HW checks on board DRAM	Green, solid	Red, solid • Power on self check failure ◦ Boot process halted Replace the formatter.
Control panel connection initializes	Green, solid **NOTE:** Control panel communication successful. If an error occurs, a message should appear on the control-panel display.	Yellow, fast flash • Formatter to control panel connection failed ◦ Boot process continues Check the cables between the formatter and control panel for damage. Make sure that the cables are fully seated.
Preboot menu available (including diagnostics)	Green, solid	Red, solid • Diagnostic failure ◦ Follow diagnostic instructions Turn the power off, and then on again to restart the initialization process.

Table 3-4 Connectivity LED, product initialization (continued)

Product initializing state	Connectivity LED, normal state	Connectivity LED, error state
Accessing disk for firmware image	Green, solid **NOTE:** If applicable, disk error messages appear on the control-panel display.	Yellow, fast flash • Control panel not connected
Firmware boot	Green, solid **NOTE:** If applicable, error messages appear on the control-panel display.	Yellow, fast flash • Control panel not connected
Product operational	Green, heartbeat blink **NOTE:** If applicable, error messages appear on the control-panel display.	Yellow, fast flash • Control panel not connected
49.XX.YY error or initialization freezes	Not applicable	LED off **NOTE:** An error message (for example, **49.XX.YY**) 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 • Control panel not connected
Sleep mode	Green, slow blink	Not applicable
Approaching **Sleep mode**	Green, slow blink	Not applicable
Wake up from **Sleep mode**	Follows initialization progression above.	Follows initialization progression above.
Approaching wake up from **Sleep mode**	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 3-5 Connectivity LED, product operational

LED color	Description
Green	• Normal operation ◦ Formatter is operating normally ◦ Firmware is operating normally ◦ Control panel is connected
Yellow	• Formatter cannot connect to the control panel ◦ Check control panel connections ◦ Verify control panel functionality
Red	• Formatter error or failure ◦ Serial peripheral interface (SPI) flash memory boot error ◦ Power on self test (formatter) failed ◦ Diagnostic (formatter) failed
Off	**TIP:** 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 **Sleep mode**. • Firmware or system freeze ◦ Check the control panel for an error message ◦ Control panel failure **NOTE:** This condition is not usually caused by a formatter failure. Turn the power off, and then on again. If the error persists, perform a firmware upgrade.

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. Press the Home button.
2. Press the Down arrow ▼ button to highlight the **Administration** menu, and then press the OK button.
3. Press the Down arrow ▼ button to highlight the **Network Settings** menu, and then press the OK button.
4. Press the Down arrow ▼ button to highlight the **Jetdirect Menu** option, and then press the OK button.

5. Press the Down arrow ▼ button to highlight the **Link Speed** menu, and then press the OK button.
6. Select the appropriate link speed, and then press the OK button.

Engine diagnostics

This section provides an overview of the engine diagnostics that are available in the HP LaserJet Enterprise 500 color M551 product. The product contains extensive internal diagnostics that help in troubleshooting print quality, paper path, noise, component, and timing issues.

Defeating interlocks

Different tests can be used to isolate different types of issues. For component or noise isolation, you can run the diagnostic test when the front and right doors are open. To operate the product with the doors open, the door switch levers must be depressed to simulate a closed-door position.

⚠ **WARNING!** Be careful when performing printer diagnostics to avoid risk of injury. Only trained service personnel should open and run the diagnostics with the covers removed. Never touch any of the power supplies when the printer is turned on.

1. Open the right and front doors.

2. Locate the slots on the right and front of the product.

Figure 3-1 Diagnostic test (1 of 3)

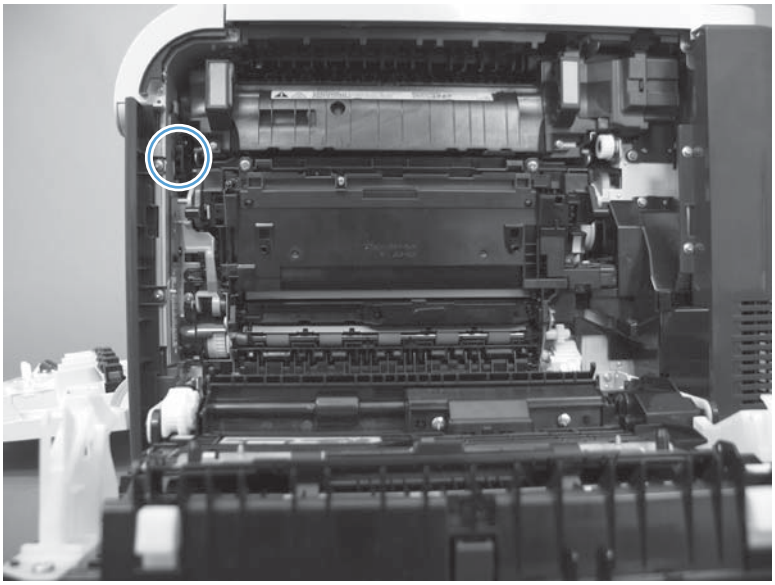


Figure 3-2 Diagnostic test (2 of 3)



3. Insert a folded piece of paper into each slot at the same time until the product is in a **Ready** state.

Figure 3-3 Diagnostic test (3 of 3)



Disable cartridge check

Use this diagnostic test to print internal pages or send an external job to the product when one or more print cartridges are removed or exchanged. Consumable supply errors are ignored while the product is in this mode. When the product is in this mode, you can navigate the troubleshooting menus and print internal pages (the print quality pages will be the most useful). This test can be used isolate problems, such as noise, and to isolate print-quality problems that are related to individual print cartridges.

NOTE: Cartridges are not keyed and can be interchanged. An error will display on the control panel if a print cartridge is installed in the wrong position. The **Supplies** menu will explain which print cartridge is misplaced.

NOTE: Do not remove or exchange print cartridges until after you start the disable cartridge check diagnostic.

1. Press the Home button.
2. Open the following menus:
   - **Administration**
   - **Troubleshooting**
   - **Diagnostic Tests**
3. Press the Down arrow ▼ button to highlight **Disable Cartridge Check**, and then press the OK button.

To exit this diagnostic test, press the Stop ⊗ button and then select **Exit Troubleshooting**.

Engine test button

To verify that the product engine is functioning, print an engine test page. Use a small pointed object to depress the test-page switch located on the rear of the product. The test page should have a series of horizontal lines. The test page can use only Tray 2 as the paper source, so make sure that paper is loaded in Tray 2.

Figure 3-4 Engine-test button



Paper path 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 Tray**. Select Tray 1, Tray 2, or the optional tray.
- **Test Duplex Path**. Enable or disable two-sided printing.

NOTE: Duplex models only.

- **Number of 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. Press the Down arrow ▼ button to highlight **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

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. Press the Down arrow ▼ button to highlight the **Paper Path Sensors** option, and then press the OK button.

4. Select **Start Test**. Press the Down arrow ▼ button to see the test results.

NOTE: Exiting the Paper-path sensor test menu and then reentering it will clear the test values from the previous test.

Viewing the sensor status before you activate the test should show that the sensors PS9, PS11 and SW5 have already been activated. After running the Paper-path sensor test, sensor PS9 does not show any activation status.

Table 3-6 Paper-path sensors diagnostic tests

Sensor name	Sensor number
Registration	SR8
Fuser loop 1	SR14
Fuser loop 2	SR15
Fuser pressure release	SR7
Fuser output	SR5
Duplexer refeed	SR22
Developer alienation	SR11
ITB alienation	SR17
Output bin full	SR6
Tray 1 paper	SR21
Tray 2 paper	SR20
Tray 2 Cassette Sensor	SR13
Tray 2 Cassette Lifter	SR9
Tray 3 paper	SR3
Tray 3 feed	SR4
Tray 3 installed	SR1
Tray 3 size (top) button	SW1
Tray 3 (middle) button	
Tray 3 (bottom) button	

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. Press the Down arrow ▼ button to highlight the **Manual Sensor Test** item, and then press the OK button.

To exit this diagnostic, press the Stop key, and then select **Exit Troubleshooting**.

Menus cannot be opened during this test, so the OK button serves the same function as the Stop ⊗ button.

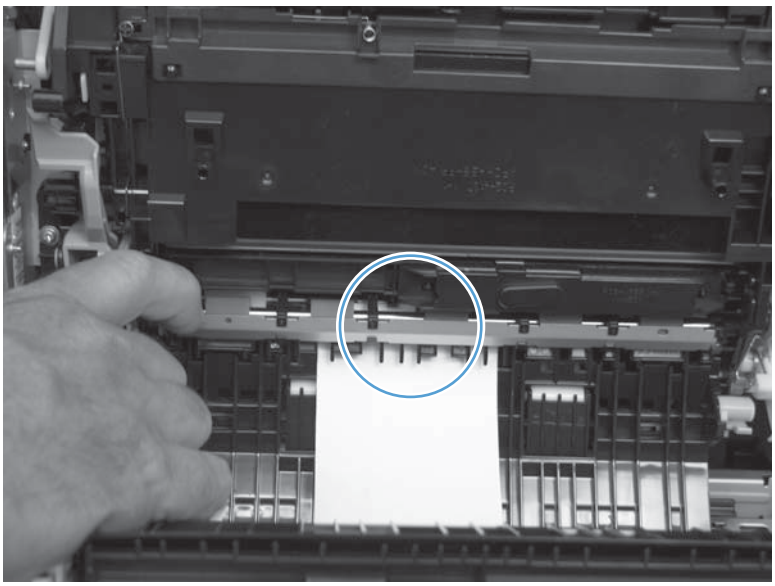
Table 3-7 Manual sensor diagnostic tests

Sensor or switch name	Sensor or switch number
Front door switch	SW1
Registration	SR8
Fuser loop 1	SR14
Fuser loop 2	SR15
Fuser pressure release	SR7
Fuser output	SR5
Duplexer refeed	SR22
Developer alienation	SR11
ITB alienation	SR17
Output bin full	SR6

Registration sensor

1. Open the right door.
2. Open the registration shutter.
3. Insert a piece of paper to activate the TOP sensor.

Figure 3-5 Test the registration sensor

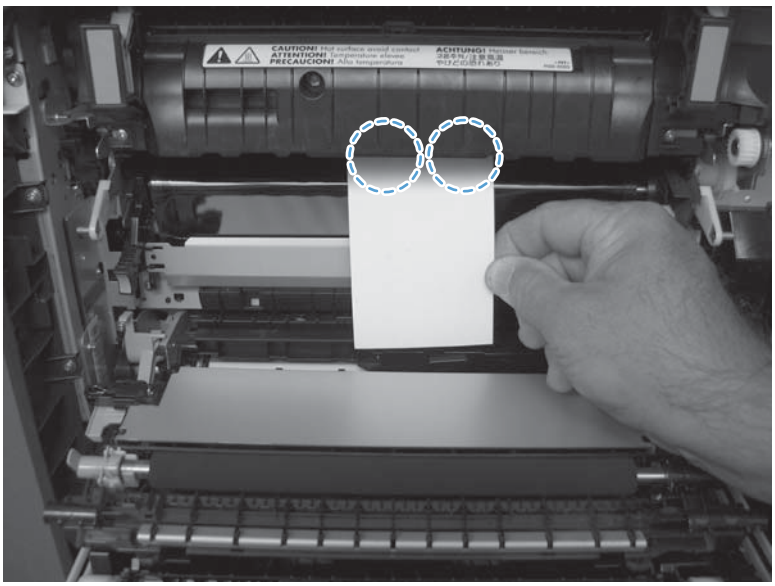


4. Check the control-panel display for sensor response.
5. If no response, replace the registration assembly.

Fuser loop sensors

1. Open the right door.
2. Lower the secondary transfer assembly.
3. Slowly insert a piece of paper to activate the fuser loop sensors underneath the fuser.

Figure 3-6 Test the fuser loop sensors

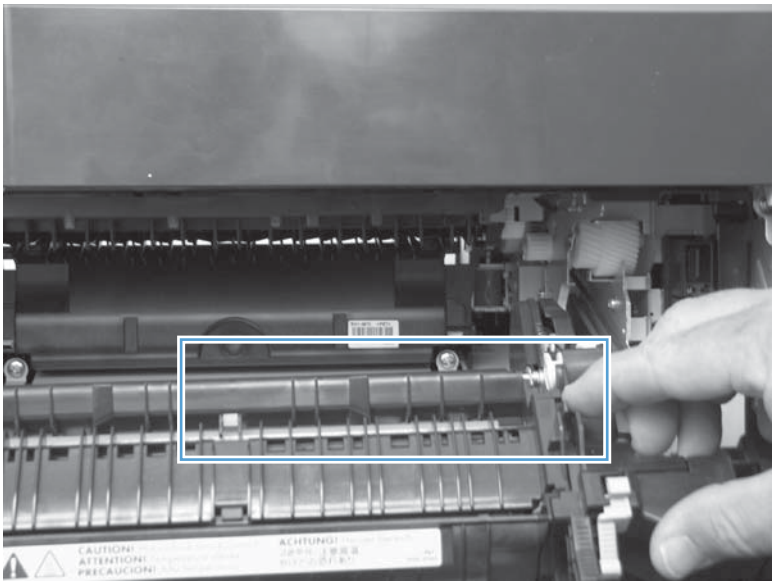


4. Check the control-panel display for a sensor response.
5. If there is no response, replace fuser. See Fuser on page 87.

Fuser output sensor

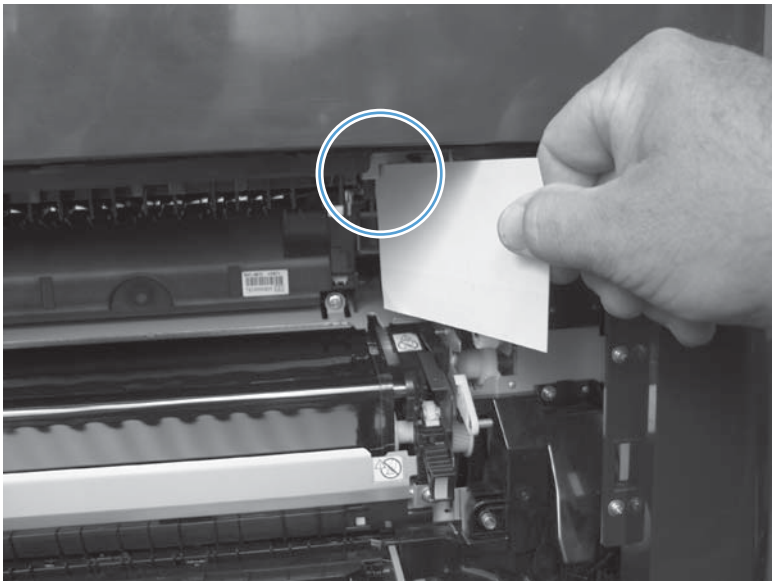
1. Open the right door.
2. Lower the secondary transfer assembly.
3. Remove the fuser assembly, and then verify that the sensor flag on the fuser assembly moves freely. If the sensor flag does not move freely, replace the fuser. See Fuser on page 87.

Figure 3-7 Test the fuser output sensor (1 of 2)



4. Insert a piece of paper to activate the sensor.

Figure 3-8 Test the fuser output sensor (2 of 2)

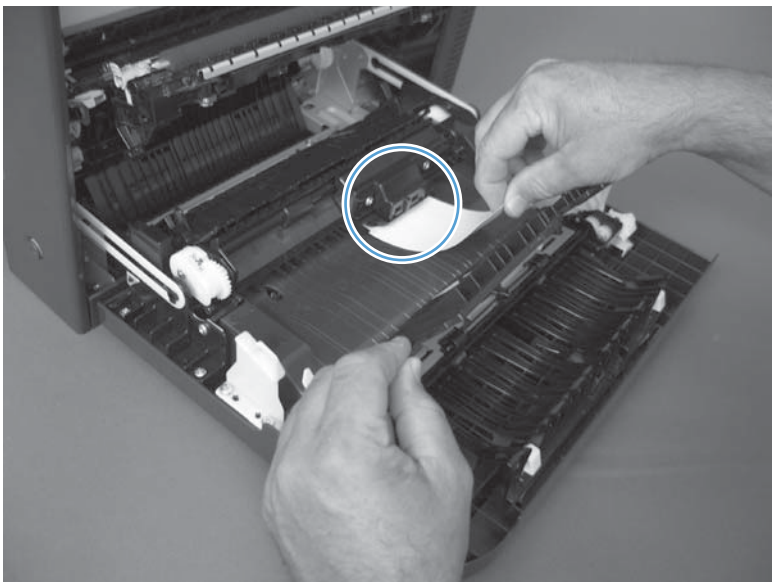


5. Check the control-panel display for a sensor response.
6. If there is no response, replace the fuser output sensor.

Duplexer refeed sensor

1. Open the right door.
2. Use the green handle to lift the duplex jam cover.
3. Insert a piece of paper to activate the sensor (8492).

Figure 3-9 Test the duplexer refeed sensor



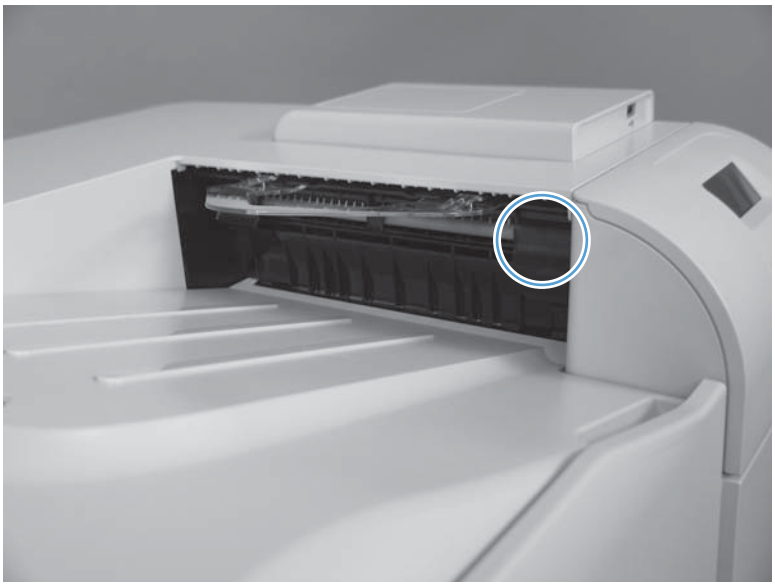
4. Check the control-panel display for sensor response.
5. If no response, replace the right door assembly.

Output-bin full sensor

NOTE: Upper-front cover has been removed for clarity.

1. Open the right door.
2. Lower the secondary transfer assembly.
3. Remove the fuser.
4. Move the output-bin full sensor flag.

Figure 3-10 Test the output-bin-full sensor

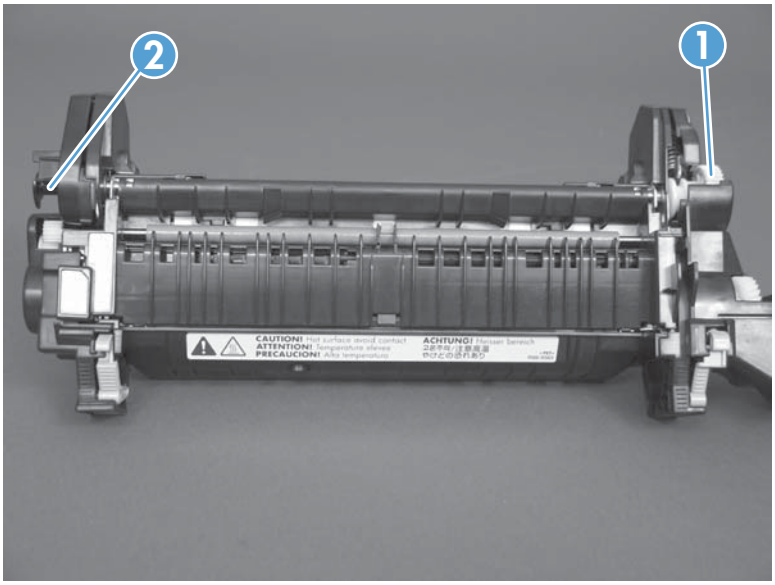


5. Check the control-panel display for sensor response.
6. If no response, remove the control panel and verify that the flag is moving. If not, replace the delivery assembly. If the sensor is malfunctioning, replace the delivery assembly.

Fuser pressure-release sensor

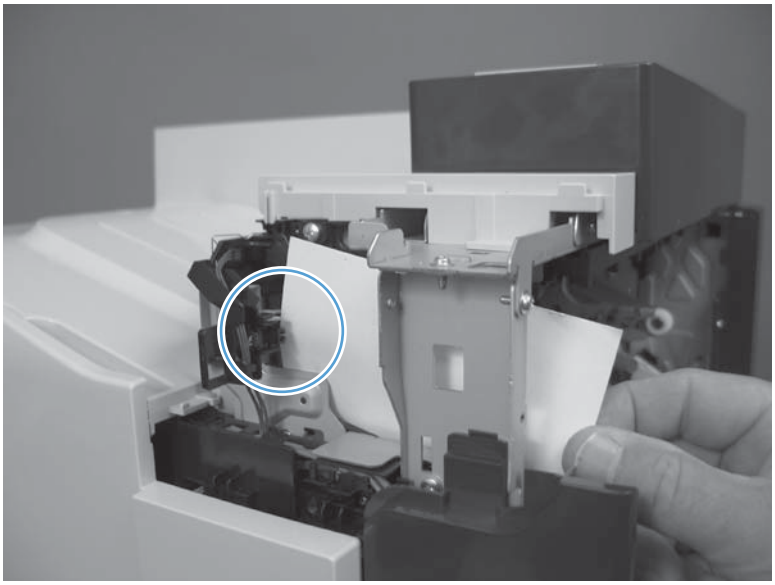
1. Open the right door.
2. Lower the secondary transfer assembly.
3. Remove the fuser, and then rotate the gear (callout 1) to move the flag (callout 2). If the flag does not actuate, replace the fuser.

Figure 3-11 Test the fuser pressure-release sensor (1 of 2)



4. Insert a piece of paper to activate the fuser pressure-release sensor.

Figure 3-12 Test the fuser pressure-release sensor (2 of 2)

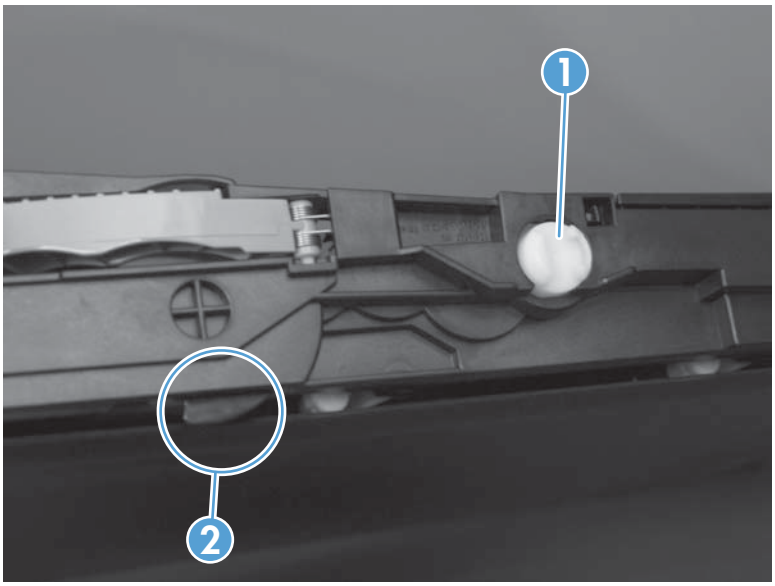


5. Check the control-panel display for sensor response.
6. If there is no response, replace fuser pressure-release sensor.

ITB alienation sensor

1. Open the right door.
2. Lower the secondary transfer assembly.
3. Remove the ITB.
4. Rotate the gear (callout 1) to move the flag (callout 2). If the flag does not actuate, replace the ITB.

Figure 3-13 Test the ITB alienation sensor (1 of 2)



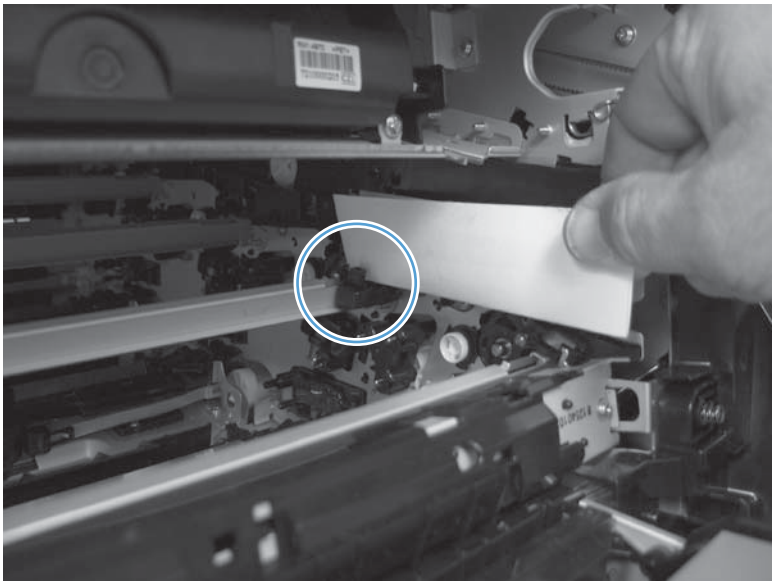
5. Remove all print cartridges.

NOTE: Cover all removed print cartridges with paper.

6. Locate the sensor behind the cyan OPC drum position.

7. Insert a piece of paper to activate the ITB alienation sensor.

Figure 3-14 Test the ITB alienation sensor (2 of 2)

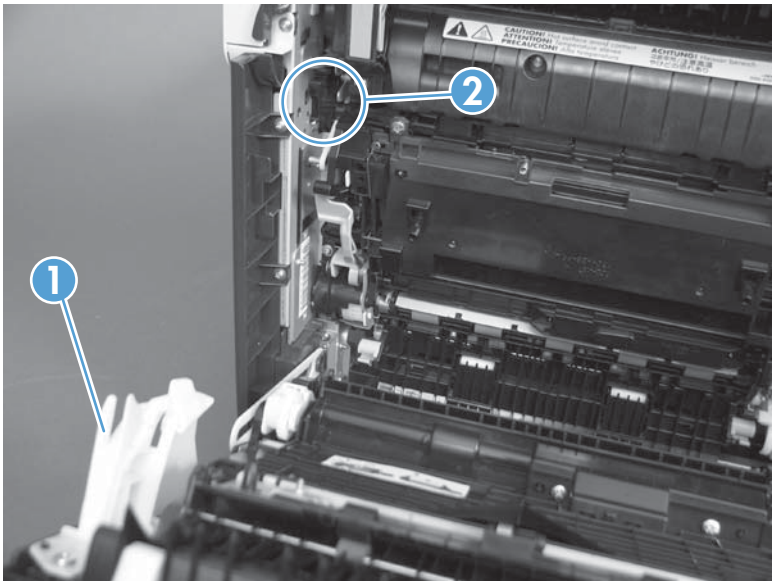


8. Check the control-panel display for sensor response.
9. If no response, replace the sensor.

Right- and front-door interlock switches

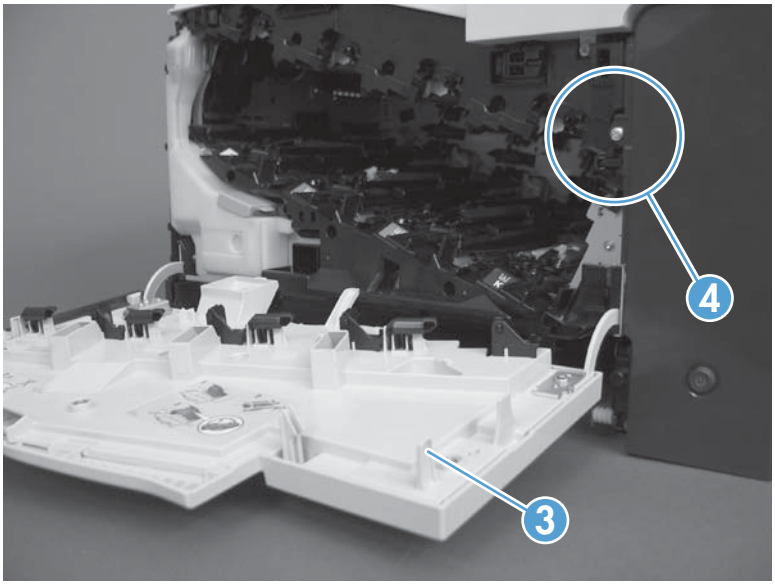
1. Open the right door (callout 1) to disengage the right-door switch (callout 2).

Figure 3-15 Test the right- and front-door interlock switches (1 of 4)



2. Close the right door and check the control panel on the product for sensor response.
3. Open the front door (callout 3) to disengage the front-door switch (callout 4).

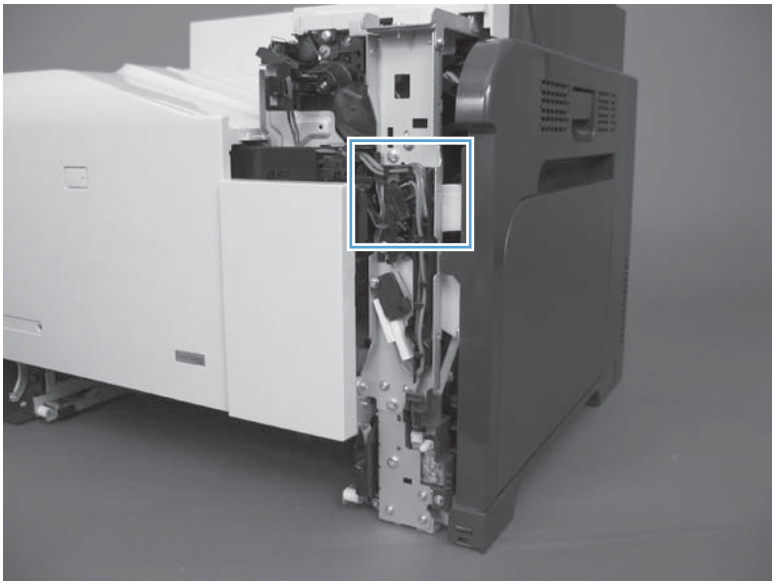
Figure 3-16 Test the right- and front-door interlock switches (2 of 4)



4. Close the front door and check the control panel on the product for sensor response.
5. If either interlock switch failed to respond, remove the upper-front cover and right-front cover. By removing the right-front cover, you can tell if the linkages are properly closing the switches.

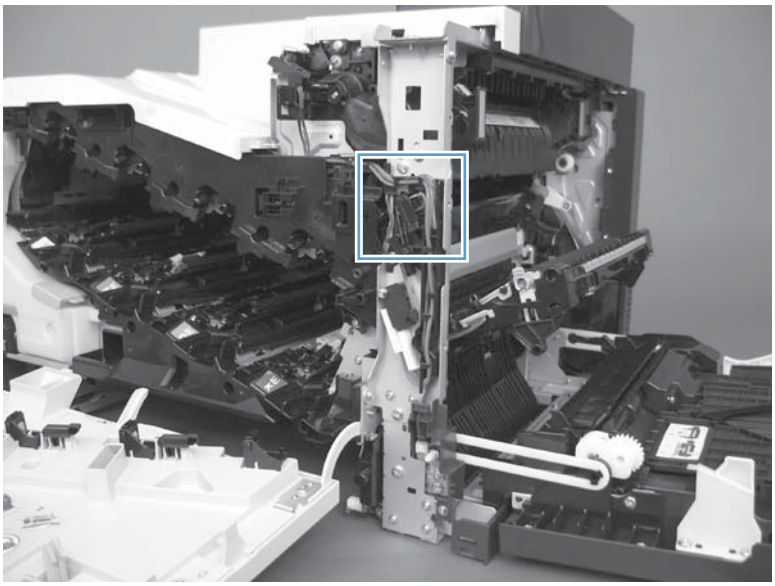
6. Close the right door and front door to verify that the switches close.

Figure 3-17 Test the right- and front-door interlock switches (3 of 4)



7. Open the right door and front door to verify that the switches open.

Figure 3-18 Test the right- and front-door interlock switches (4 of 4)



8. If the switches do not close, check the connectors on the DC controller PCA.
9. If the switches are opening/closing correctly when either door is open or closed, then check J118 on the DC controller.
10. If the connectors are securely connected to the DC controller PCA and the switches still do not close, replace the DC controller PCA.

Tray/bin manual sensor test

Use this test to test paper-path sensors and the paper-size 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. Press the Down arrow ▼ button to highlight the **Manual Tray/Bin Sensor Test** item, and then press the OK button.

Table 3-8 Manual sensor test 2 diagnostic tests

Sensor or switch name	Sensor or switch number
Tray 1 paper	SR21
Tray 2 paper	SR20
Tray 2 cassette sensor	SR13
Tray 2 cassette lifter	SR9
Paper Width 1	SR10
Output-bin full	SR6
Tray 3 paper present	SR3
Tray 3 feed	SR4
Tray 3 installed	SR1
Tray 3 size switch (top) button	SW1
Tray 3 size switch (middle) button	
Tray 3 size switch (bottom) button	

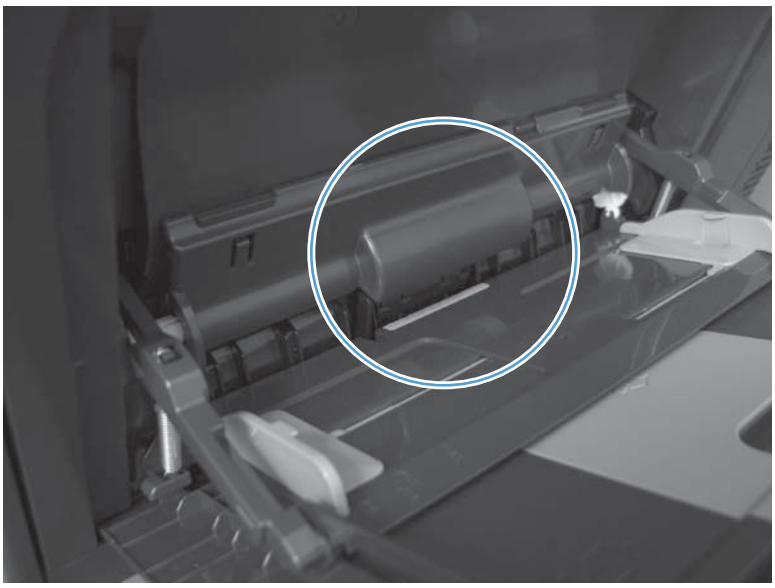
To perform an end-plate (left-side set of switches) or side-plate (right-side set of switches) switch test, do the following:

- Remove the appropriate tray (for example, if you want to test SR20 or SR9, remove Tray 2).
- Watch for the corresponding bit to toggle from 1 to 0. It can take a few seconds for bits to toggle.
- Test each switch individually to see if the corresponding bit toggles from 0 to 1.

Tray 1 paper sensor

1. Open Tray 1.
2. Move the Tray 1 paper sensor flag.

Figure 3-19 Test the Tray 1 paper sensor

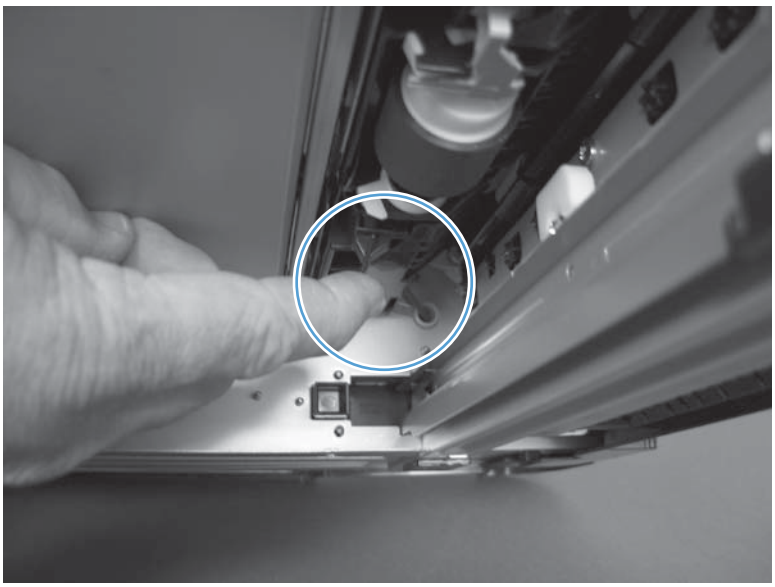


3. Check the control-panel display for sensor response.
4. If no response, replace Tray 1.

Tray 2 paper sensor

1. Remove Tray 2.
2. Move the Tray 2 paper sensor flag.

Figure 3-20 Test the Tray 2 paper sensor



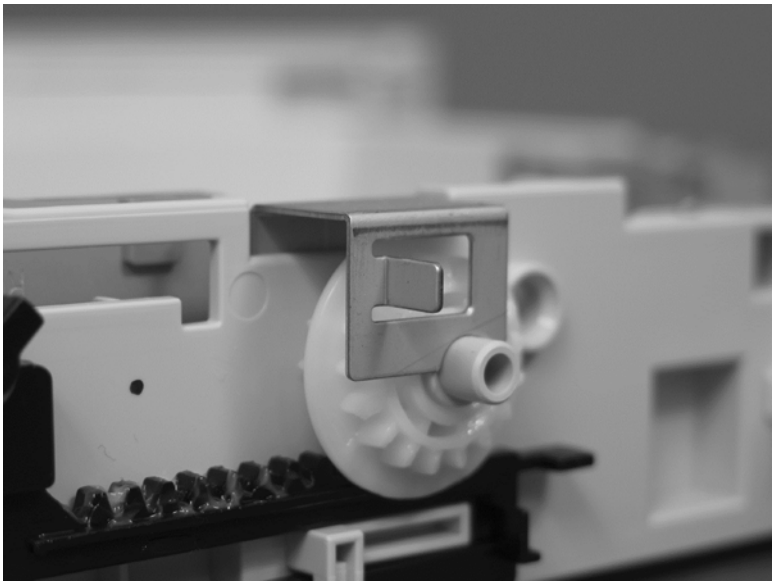
3. Check the control-panel display for sensor response.
4. If there is no response, replace the Tray 2 paper-out sensor.

Tray 2 cassette sensor

1. Remove Tray 2.

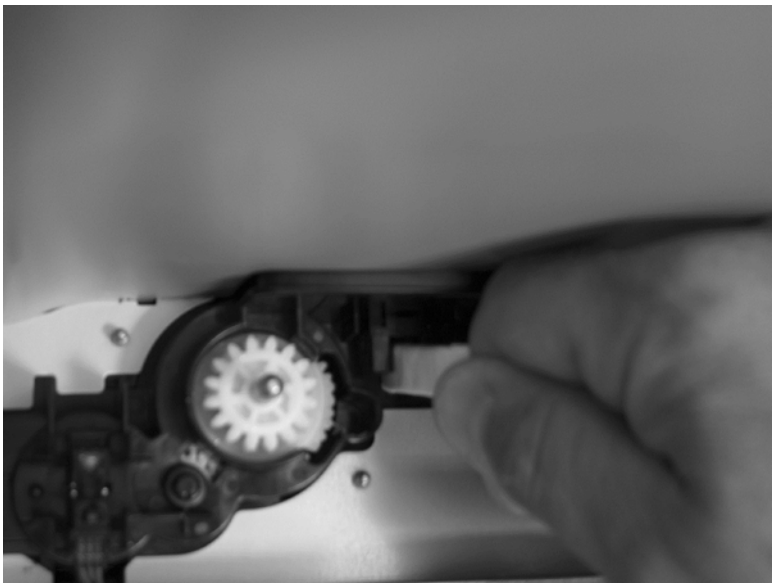
NOTE: The Tray 2 Cassette sensor flag is on the back of Tray 2. Inspect the flag to verify that it is aligned correctly. If it is bent upward, it might miss the sensor when installed.

Figure 3-21 Test the Tray 2 cassette sensor (1 of 2)



2. Insert a piece of paper in the Tray 2 cassette sensor.

Figure 3-22 Test the Tray 2 cassette sensor (2 of 2)

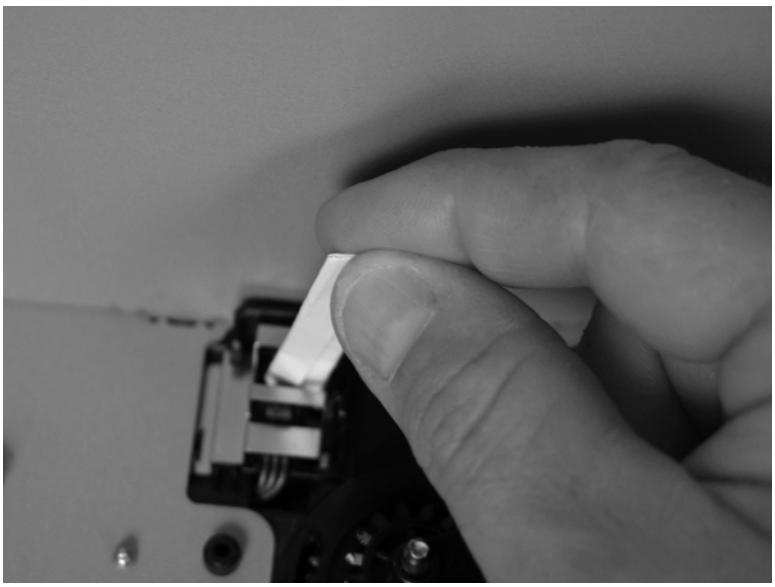


3. Check the control-panel display for sensor response.
4. If there is no response, replace the lifter-drive assembly.

Tray 2 cassette lifter sensor

1. Remove Tray 2.
2. In the Tray 2 cavity, insert a piece of paper in the Tray 2 cassette lifter sensor.

Figure 3-23 Test the Tray 2 cassette lifter sensor

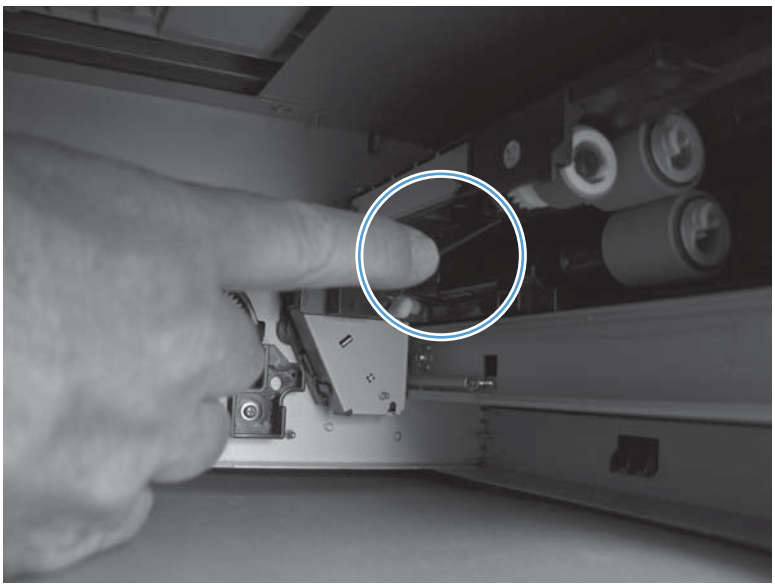


3. Check the control-panel display for sensor response.
4. If no response, replace the lifter-drive assembly.

Tray 3 empty sensor

1. Remove the optional Tray 3 cassette.
2. Move the optional Tray 3 empty sensor flag.

Figure 3-24 Test the optional Tray 3 empty sensor

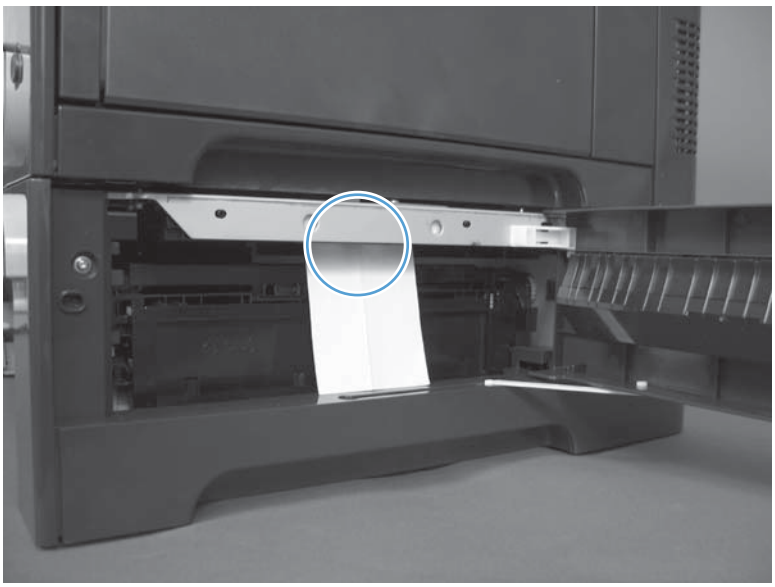


3. Check the control-panel display for sensor response.
4. If no response, replace the optional Tray 3.

Tray 3 media feed sensor

1. Open the right door on optional Tray 3.
2. Insert a piece of paper to activate the optional Tray 3 media feed sensor

Figure 3-25 Test the optional Tray 3 media feed sensor

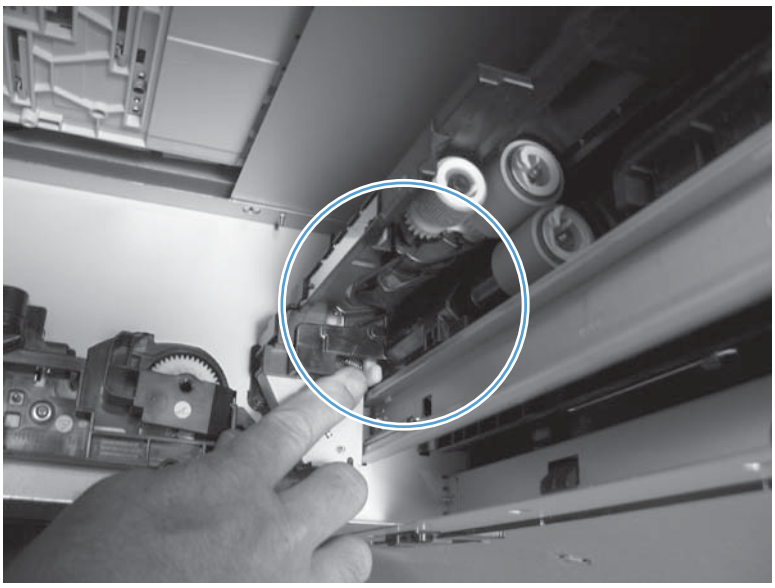


3. Check the control-panel display for sensor response.
4. If there is no response, replace the optional Tray 3.

Tray 3 stack surface sensor

1. Remove the optional Tray 3 cassette.
2. Push the lever to activate the sensor arms.

Figure 3-26 Test the optional Tray 3 stack surface sensor

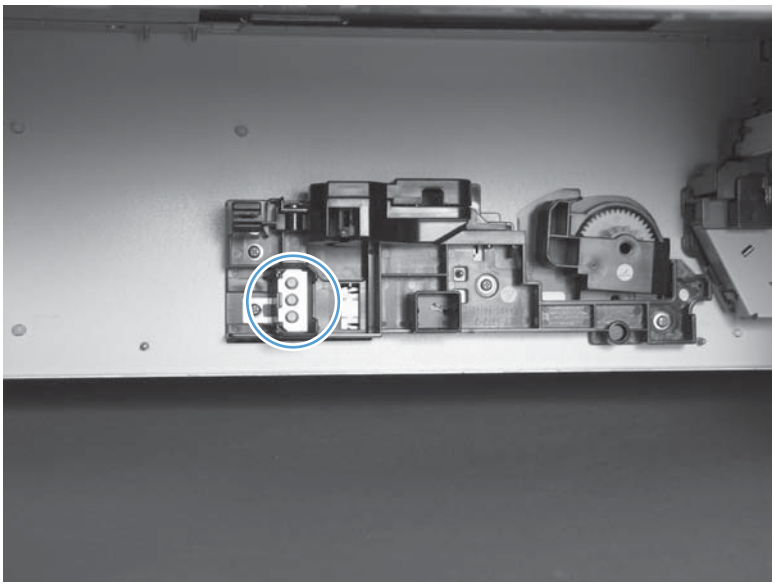


3. If there is no response, replace the optional Tray 3.

Tray 3 media size sensors

1. Push any of the three buttons to see if the control panel changes for sensors S, T or U.
   - S: top button on size switch
   - T: middle button on size switch
   - U: bottom button on size switch

   Figure 3-27 Test the optional Tray 3 media size sensors



2. If any of the tests fail, replace the 500-sheet feeder.

Print/stop test

Use this diagnostic test to isolate the cause of problems such as image-formation defects and jams within the engine. During this test you can stop the paper anywhere along the product paper path. The test can be programmed to stop printing internal pages or an external print job when the paper reaches a certain position. The test can also be programmed to stop from 0 to 60,000 ms. 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 **Diagnostic Tests** 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**. Select **OK** to print the previously selected job. If you do not want the previous job to print, select **Stop**.

NOTE: Do not try to perform a print/stop test while the product is calibrating, because you will be required to power-cycle the product. If a jam message displays on the control panel during testing, activate the door switch.

Component tests

Component test (special-mode test)

This test activates individual parts independently to isolate problems.

Each component test can be performed once or repeatedly. If you turn on the **Repeat** option from the drop-down menu, the test cycles the component on and off. This process continues for two minutes, and then the test terminates.

NOTE: The front or side door interlocks must be defeated to run the component tests. Some tests may require that the ITB and print cartridges be removed. The control panel display prompts you to remove some or all cartridges during certain tests.

1. Press the Home button.
2. Open the following menus:
   - **Administration**
   - **Troubleshooting**
   - **Diagnostic Tests**
3. Press the Down arrow ▼ button to highlight the **Component Test** item, and then press the OK button.
4. Select the component test options for the test you want to run.

Table 3-9 Component test details

Component test	Motor or solenoid number	Comments
Transfer Motors	M5	All motors related to cartridges and belts
Belt Only	M10	Remove all print cartridges to perform this test. Rotates the ITB belt. You can hear the auger motor running.
Cartridge Motors	• M3: yellow • M4: magenta and cyan • M5: black	Activates three drum motors at a specified speed for 10 seconds.
Black Laser Scanner	M8	Activates the black/cyan scanner motor for 10 seconds.
Cyan Laser Scanner	M8	Activates the black/cyan scanner motor for 10 seconds.
Magenta Laser Scanner	M9	Activates the yellow/magenta scanner motor for 10 seconds.
Yellow Laser Scanner	M9	Activates the yellow/magenta scanner motor for 10 seconds.

Table 3-9 Component test details (continued)

Component test	Motor or solenoid number	Comments
Fuser Motor	M2	Activate the fuser motor at a specified speed for 10 seconds.
Fuser Pressure Release Motor	M2 reverse	Reverses the fuser motor and pressurizes or depressurizes the pressure release motor.
Alienation Motor	M10	Activates CMYK developer alienation in the following sequence: All colors engaged, all colors alienated, K-only engaged, and K alienated.
ITB Contact/Alienation	M2	Activates the ITB drive motor at a specified speed for 10 seconds.
TCU Motor	M12	Activates the motor at a specified speed for 10 seconds.
Tray <X> Pickup Solenoid	Tray 1: SL3 Tray 2: SL4 Tray 3: SL1	Activates the solenoid for 10 seconds.
Tray <X> Pickup Motor	Tray 2: SL4 Tray 3: M1 (paper feeder motor) and M2 (paper feeder lift motor)	Activates the pickup motor, pickup roller, separation roller, and registration roller at a specified speed for 10 seconds.
Duplexer Pickup Motor	M11: Duplex reverse motor	Activates the motor at a specified speed for 10 seconds.
Duplex Refeed Clutch Solenoid	• CL1: duplex re-pickup clutch • SL2: duplex reverse solenoid	Activates the clutch and solenoid for 10 seconds.

Diagrams

Block diagrams

Figure 3-28 Sensors

: Duplex model only

: Duplex media path

: Simplex media path

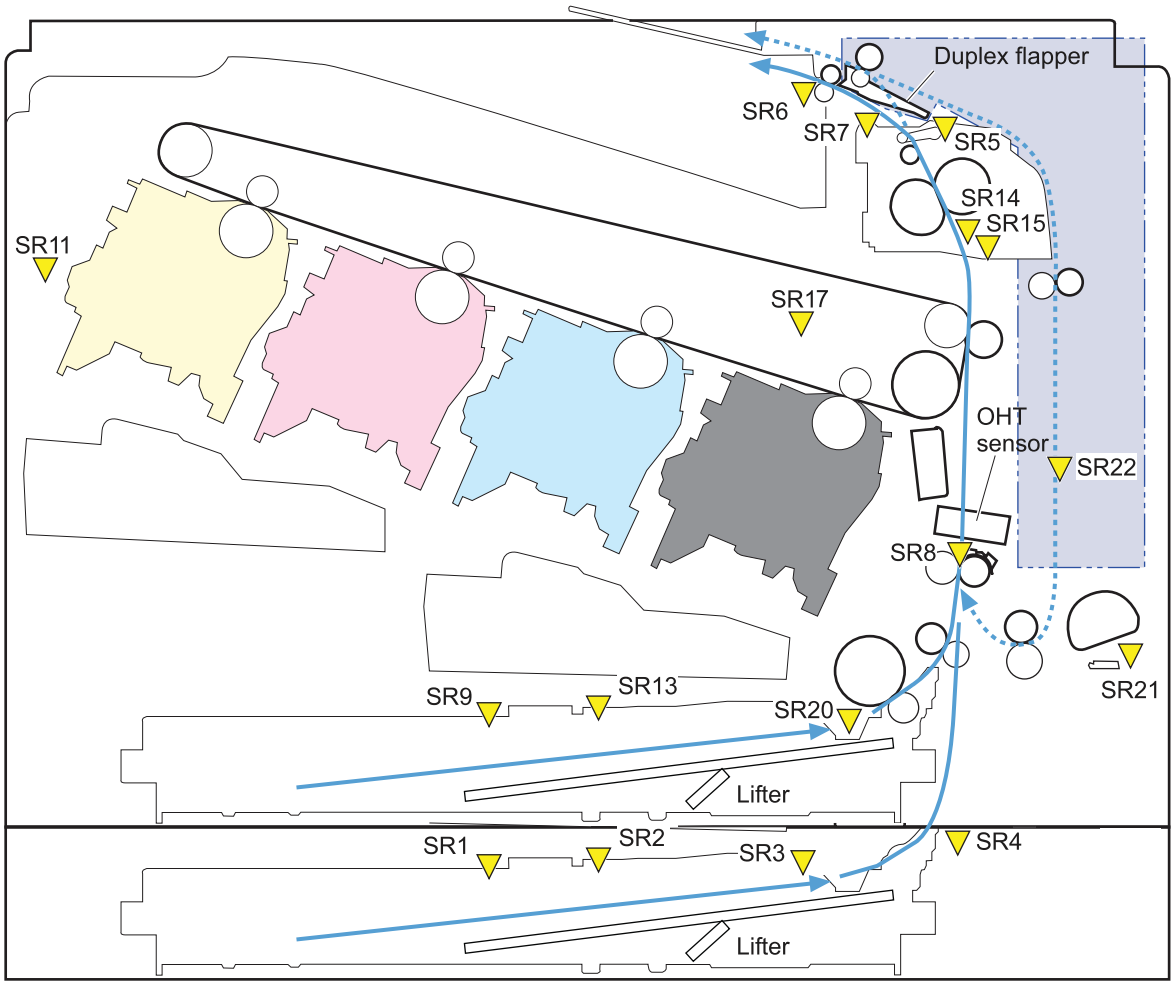


Table 3-10 Sensors

Component abbreviation	Component name
SR1	Tray 3 paper surface sensor 1
SR2	Tray 3 paper surface sensor 2
SR3	Tray 3 paper sensor
SR4	Tray 3 feed sensor
SR5	Fuser output

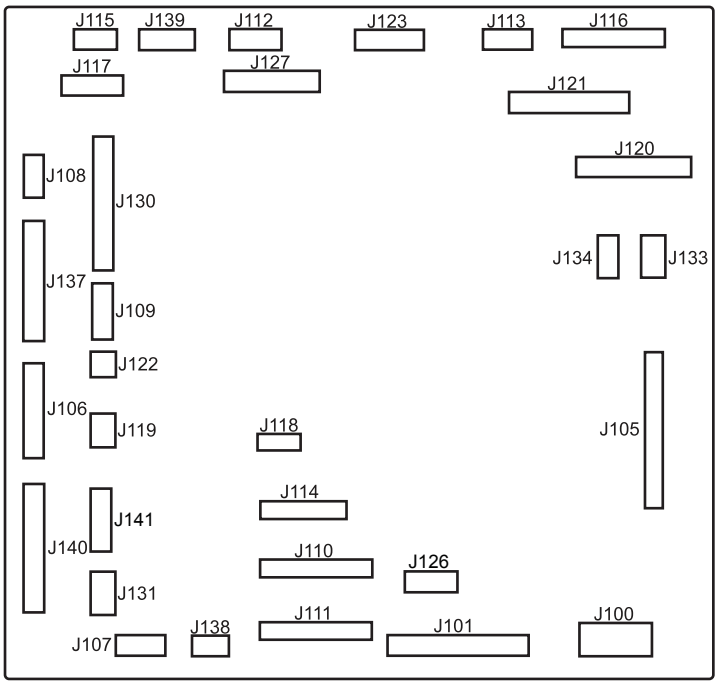
Table 3-10 Sensors (continued)

Component abbreviation	Component name
SR6	Output bin full
SR7	Fuser pressure release
SR8	Registration
SR9	Tray 2 cassette lifter
SR10	Paper width 1
SR11	Developer alienation
SR13	Tray 2 cassette sensor
SR14	Fuser loop 1
SR15	Fuser loop 2
SR17	ITB alienation
SR20	Tray 2 paper
SR21	Tray 1 paper
SR22	Duplexer refeed (HP LaserJet Enterprise 500 color M551dn and HP LaserJet Enterprise 500 color M551xh only)

Location of connectors

DC controller PCA

Figure 3-29 DC controller PCA

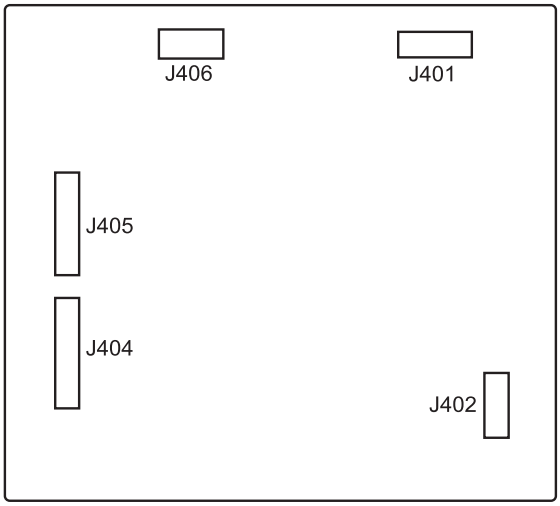


J100: 24 v from low-voltage power supply (LVPS) and interlock	**J114**: HVPS lower	**J126**: memory tag connector
J101: LVPS	**J115**: fuser sensors	**J127**: pre-exposure LEDs (rear), SR17, SL1
J105: interconnect board (ICB)	**J116**: HVPS upper	**J130**: registration density (RD) sensors (front and rear)
J106: 500-sheet feeder, developing home position, laser motors	**J117**: fuser motor	**J131**: pickup motor
J107: duplex sensor, Tray 1 solenoid, paper present sensor	**J118**: 5 v interlock	**J133**: not used
J108: environmental sensor	**J119**: LVPS fan	**J134**: not used
J109: duplex clutch, overhead transparency (OHT) in, top-of-page sensor	**J120**: drum motor 1 and drum motor 2	**J137**: toner collection unit (TCU) full, TCU motor, toner level detection
J110: YM laser	**J121**: drum motor 3, drum position 1,2,3	**J138**: 24 v to HVPS lower
J111: CK laser	**J122**: OHT out	**J139**: fuser sensors

J112: pre-exposure LEDs (front)	**J123**: pressure release, bin full, fuser delivery	**J140**: tray present, stack surface (lifter drive assembly)
J113: 24 v to high-voltage power supply (HVPS) upper		**J141**: lifter motor, media width sensor (lifter drive assembly; auto close assembly)

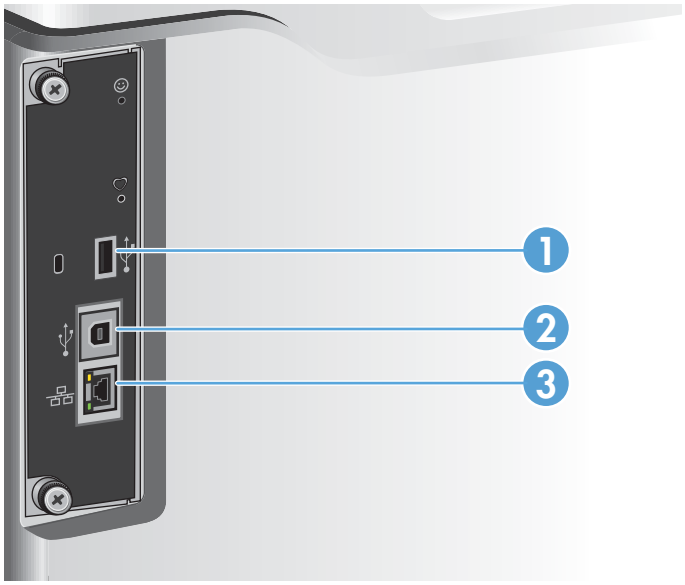
Paper feeder driver PCA

Figure 3-30 Paper feeder driver PCA



J401: engine connector
J402: not used
J404: SW1, SW2, lifter motor
J405: SR1, SR2, SR3, SR4, SL1
J406: feed motor

Plug/jack locations



1	USB port for a third-party device
2	Hi-speed USB 2.0 printing port
3	RJ-45 network port

Locations of major components

Use the diagrams to locate components. For a list of components, see Table 3-13 PCAs, motors, fans, switches, solenoids, and clutches on page 291

Base product

Figure 3-31 Component locations (1 of 6)

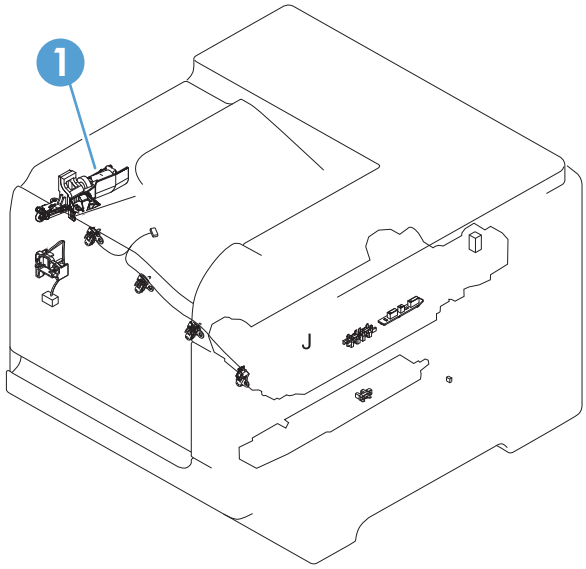


Figure 3-32 Component locations (2 of 6)

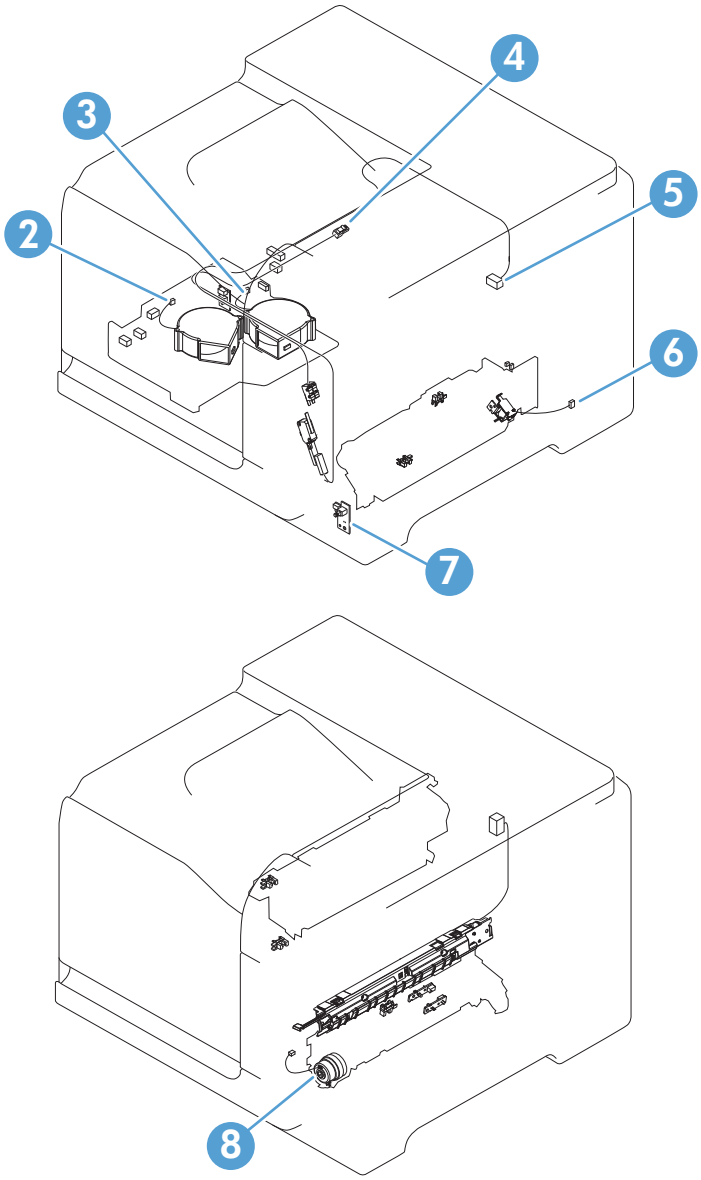


Figure 3-33 Component locations (3 of 6)

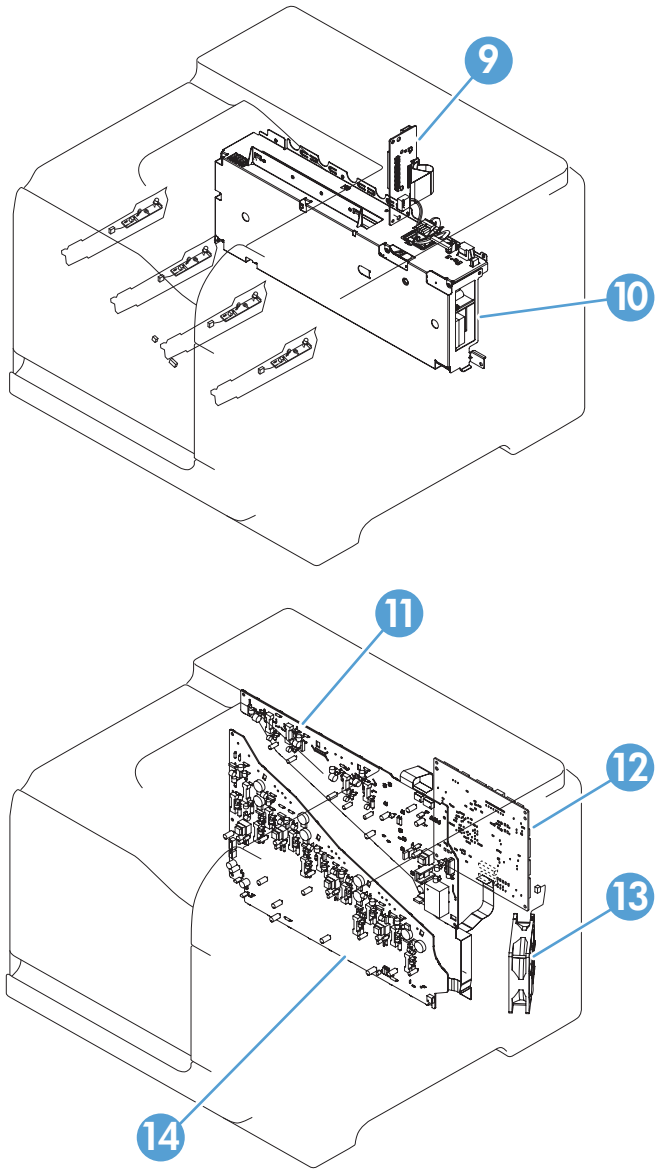


Figure 3-34 Component locations (4 of 6)

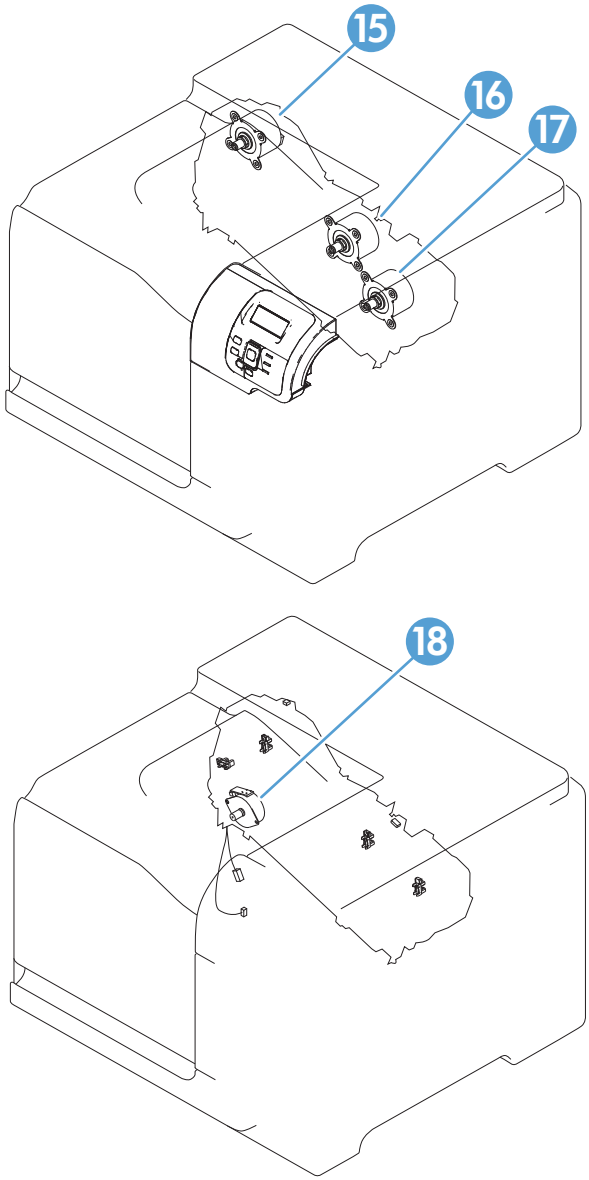


Figure 3-35 Component locations (5 of 6)

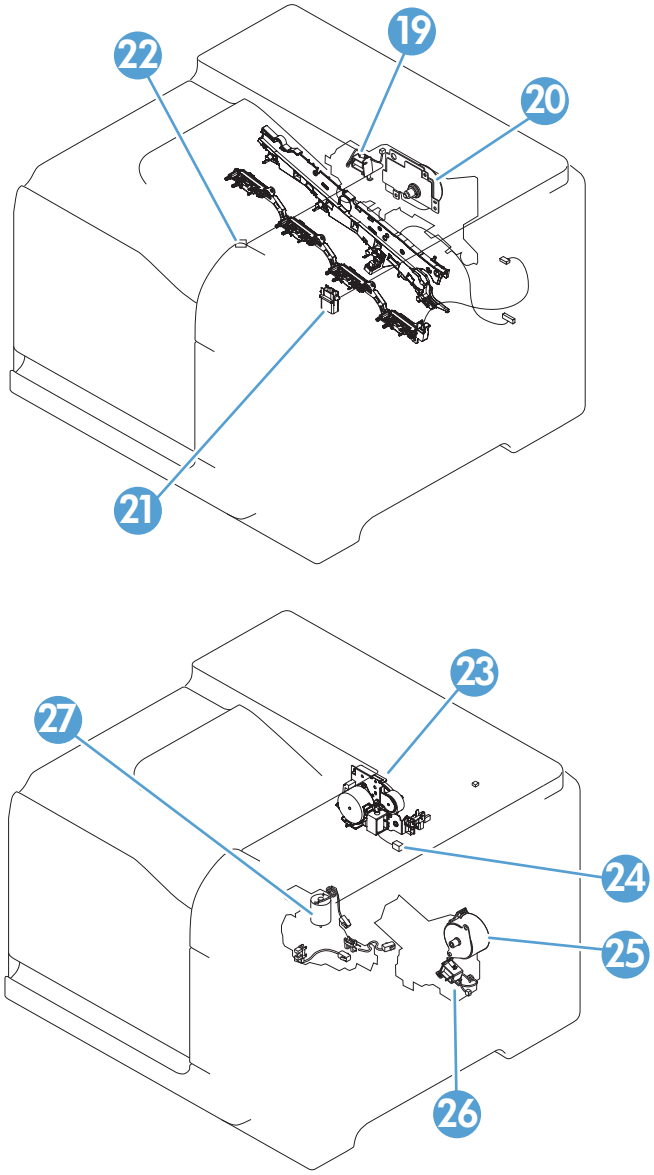


Figure 3-36 Component locations (6 of 6)

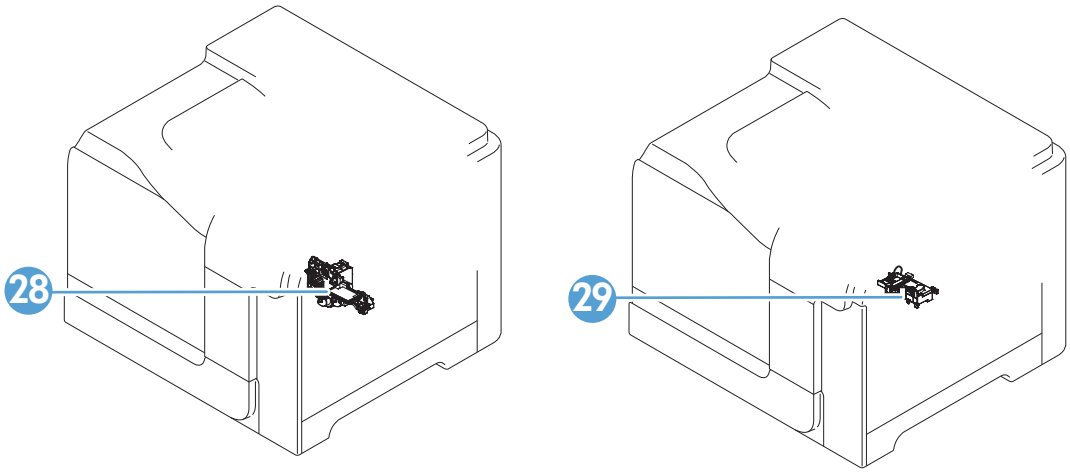


Table 3-13 PCAs, motors, fans, switches, solenoids, and clutches

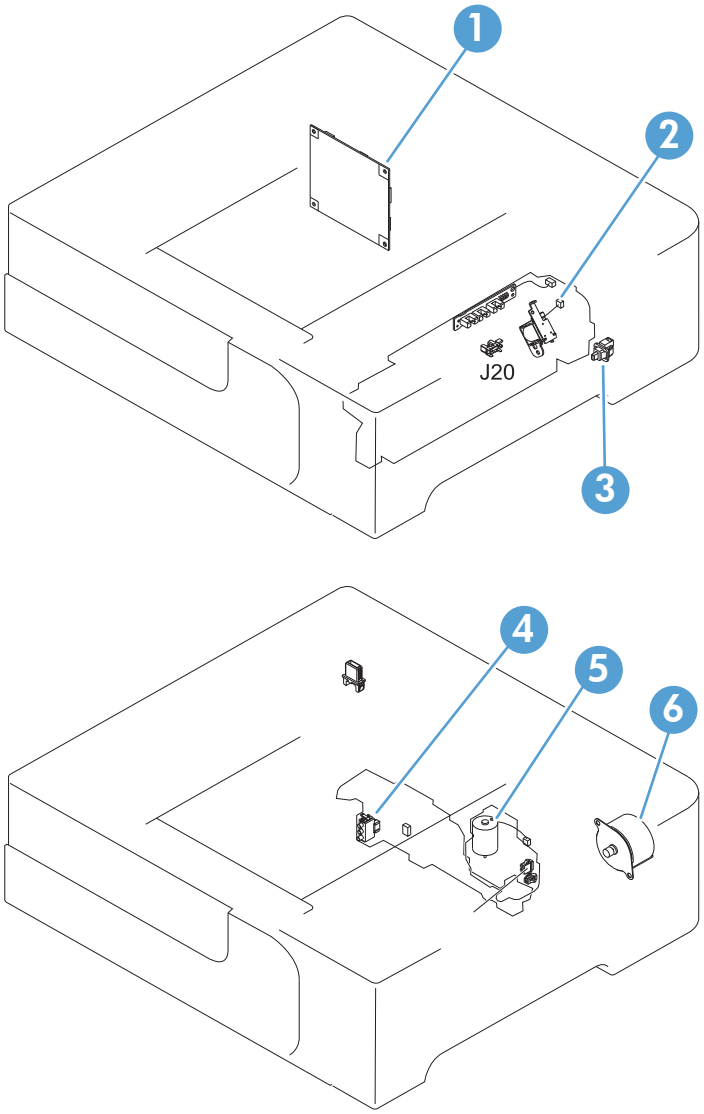
Location	Connector	Component abbreviation	Component name
1	J89	M12	Residual toner-feed motor
2	J26	FM2	Cartridge fan
3	J27	FM3	Delivery fan
4	J62	SW3	24V interlock switch
5	J118	SW1, SW2	5V interlock switch
6	J84	SL3	Multipurpose-tray pickup solenoid
7	J780	SW4	Power switch
8	J86	CL1	Duplex re-pick clutch
9		ICB	Interconnect board (ICB)
10		LVPS	Low-voltage power supply
11		HVPS (t)	HVPS-T upper
12		DCC	DC Controller
13	J119	FM1	Power-supply fan
14		HVPS (d)	HVPS-D (lower)
15	J41	M3	Drum motor 1
16	J40	M4	Drum motor 2
17	J42	M5	Drum motor 3
18	J25	M10	Development-disengagement motor
19	J8	SL1	Primary transfer roller disengagement solenoid
20	J15	M2	Fuser motor

Table 3-13 PCAs, motors, fans, switches, solenoids, and clutches (continued)

Location	Connector	Component abbreviation	Component name
21	J55	M9	Yellow/magenta scanner motor
22	J56	M8	Cyan/black scanner motor
23	J20	M11	Duplex reverse motor (HP LaserJet Enterprise 500 color M551dn and HP LaserJet Enterprise 500 color M551xh only)
24	J21	SL2	Duplex reverse solenoid (HP LaserJet Enterprise 500 color M551dn and HP LaserJet Enterprise 500 color M551xh only)
25	J6	M13	Pickup motor
26	J83	SL4	Cassette-pickup solenoid
27	J78	M7	Tray 2 lifter motor
28	J140 and J141 (DC controller)	N/A	Lifter drive assembly
29	J141 (DC controller)	N/A	Automatic close assembly

1 x 500 paper feeder

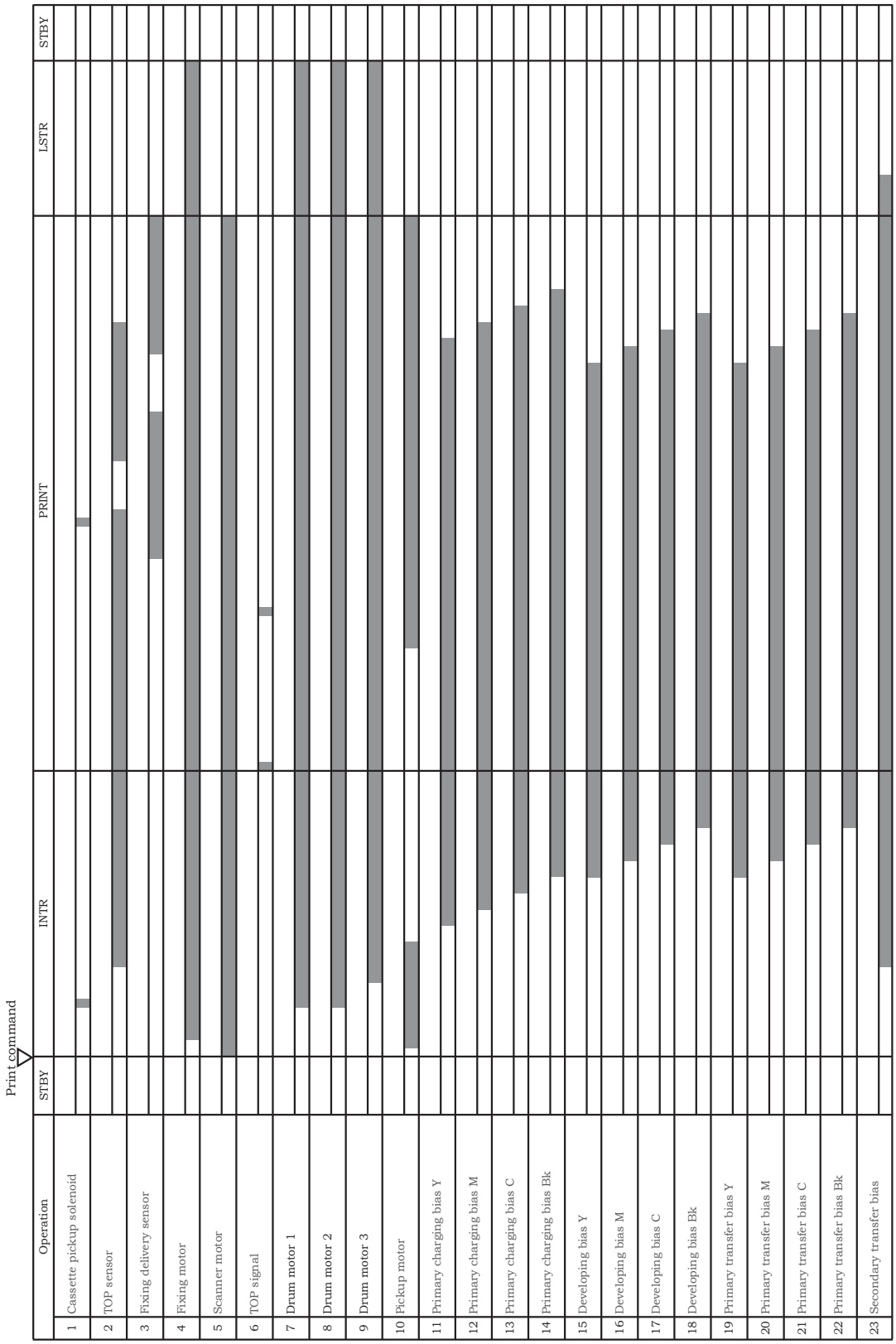
Figure 3-37 1 x 500 paper feeder



Location	Connector	Component abbreviation	Component name
1		PF PCA	Paper-feeder driver PCA
2	J18	SL1	Paper-feeder pickup solenoid
3	J21	SW2	Paper-feeder door switch
4	J16	SW1	Paper feeder cassette media size switch
5	J15	M2	Paper-feeder lifter motor
6	J14	M1	Paper-feeder motor

General timing chart

Figure 3-38 General timing chart



Timing chart is two consecutive print jobs on letter-size paper (full color using one-to-one speed mode)

Circuit diagrams

Figure 3-39 General circuit diagram

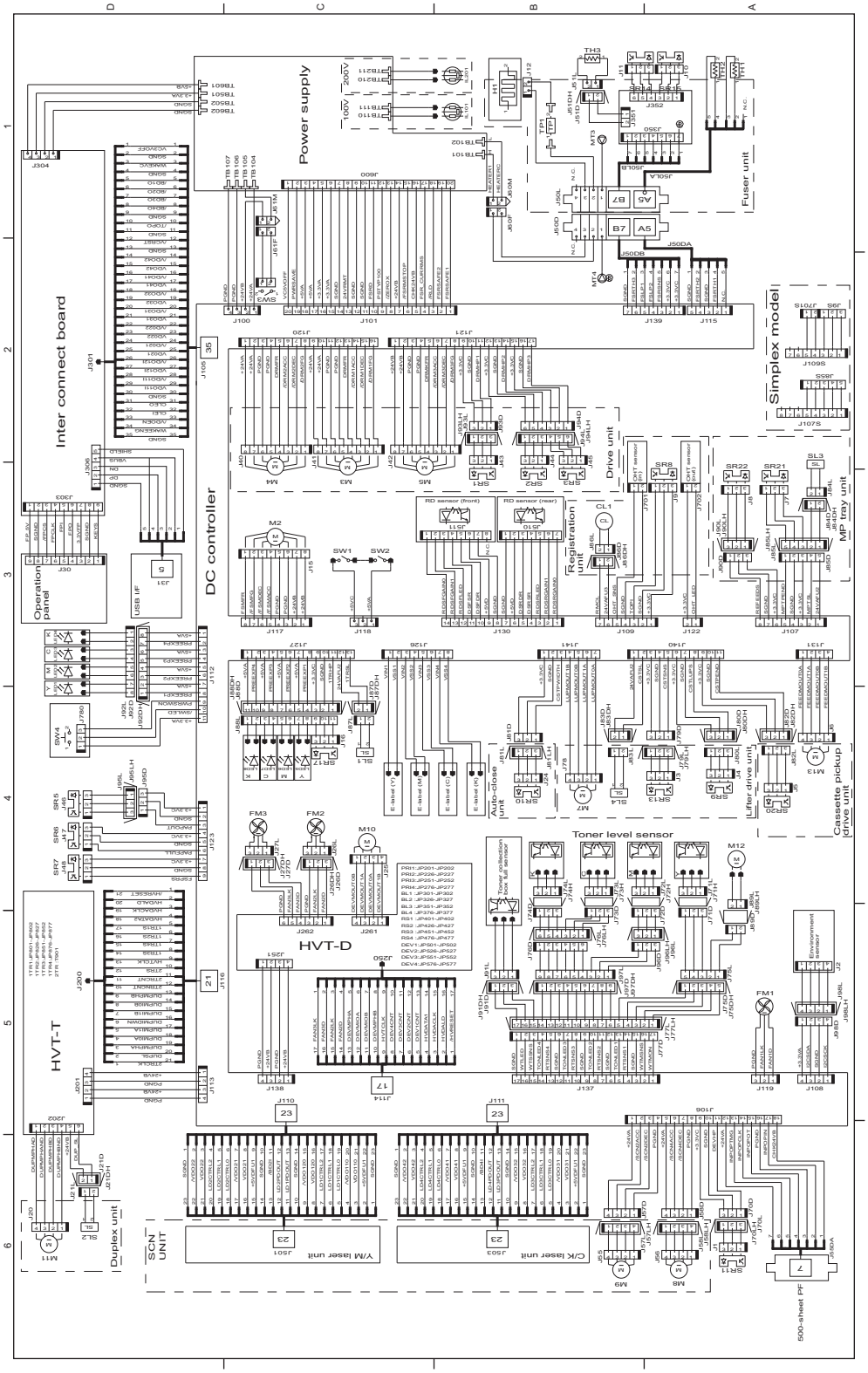
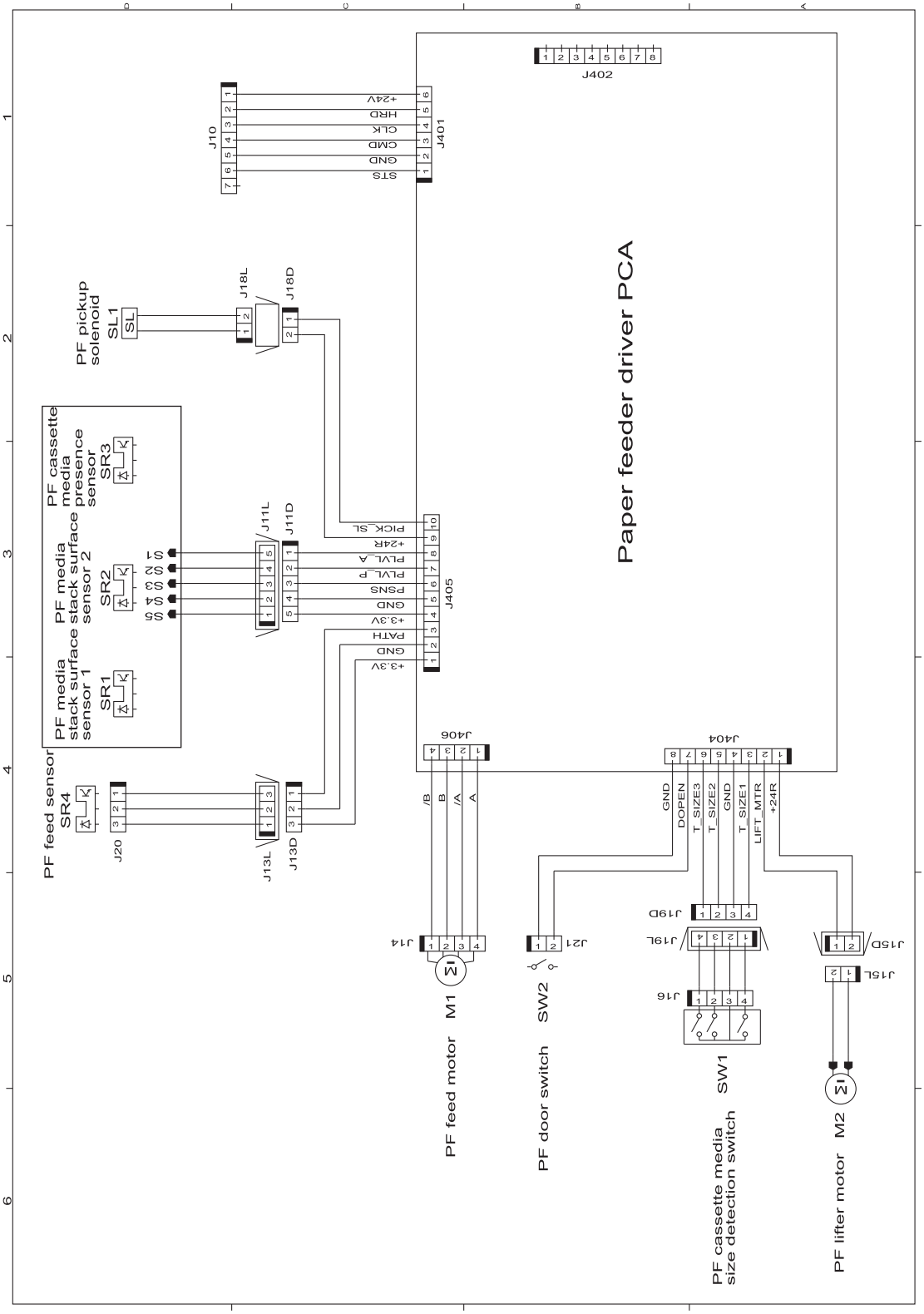


Figure 3-40 Paper feeder circuit diagram



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. Press the Down arrow ▼ button to highlight the **Print PQ Troubleshooting Pages** item, and then press the OK button to print the pages.

The product returns to the **Ready** state after printing the print-quality-troubleshooting pages. Follow the instructions on the pages that print out.

Figure 3-41 Print-quality troubleshooting procedure



Figure 3-42 Yellow print-quality troubleshooting page

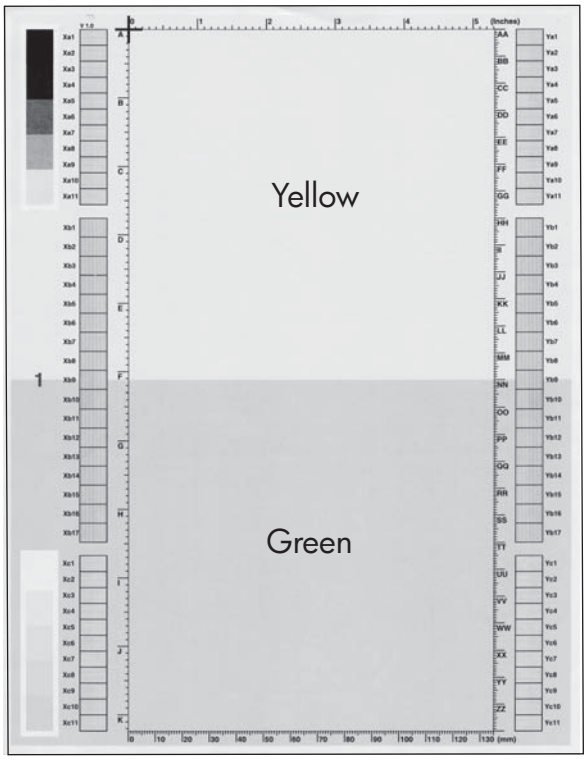
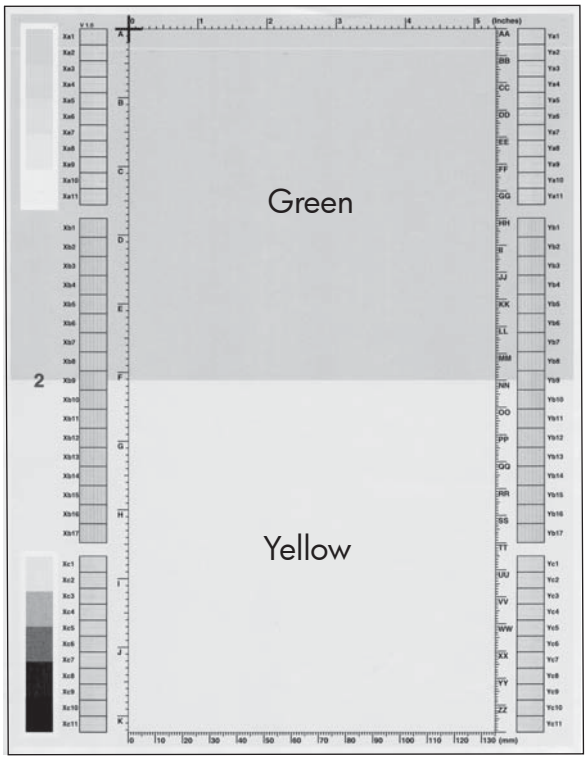
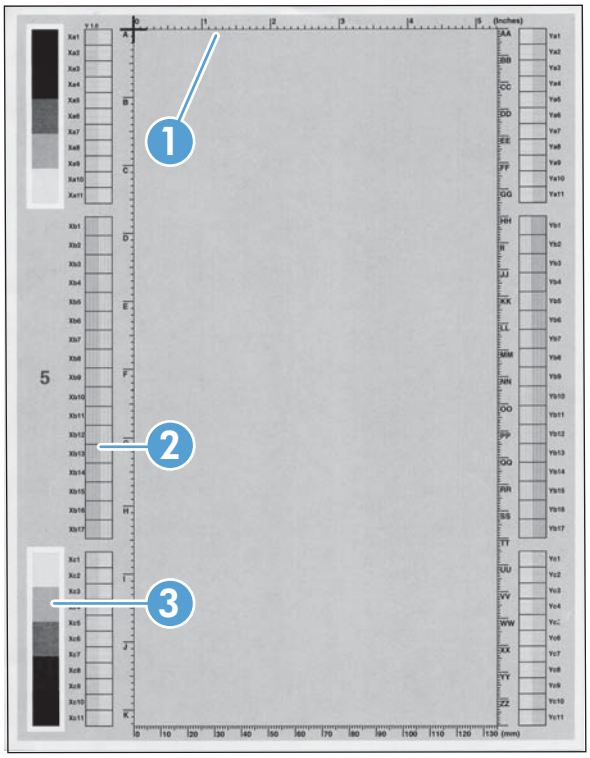


Figure 3-43 Yellow comparison page



Yellow cannot be easily seen unless combined with cyan, so half of each page is yellow and the other half is an amplified version of yellow problems (green half). Compare the yellow on page one with the corresponding green on page two for defects. You can also check the cyan page for defects.

Figure 3-44 Black print-quality troubleshooting page



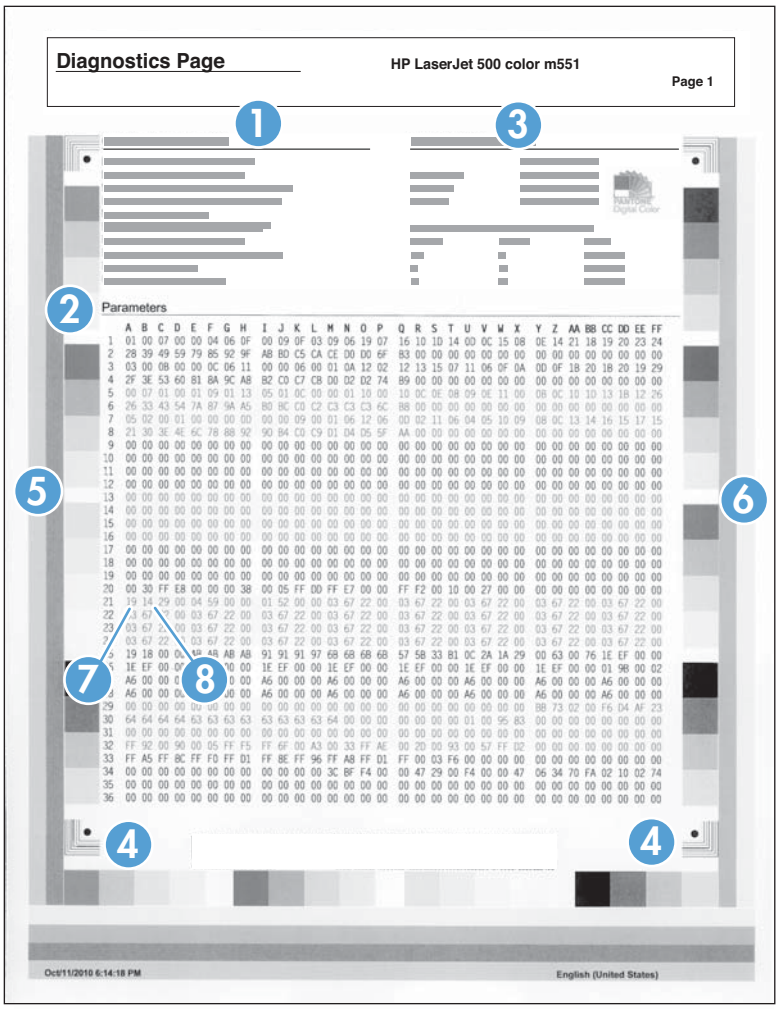
1. Grids	The grids are in inches and millimeters. They are label with letters and numbers so that defects can be described by position and by distance between repeats.
2. Color plane registration (CPR) bars	After printing, the box with no extra color in each area on each page shows how far off the CPR of that color is. Each page has two process direction areas and three scan direction areas that are labeled x and y and 1–11. The page should be fed by the long edge. Each square from the center equals 42 microns.
3. Color ramp patches	Used to detect offset for the OPC or developer in the image drum or offset in the fuser.

NOTE: To get further assistance in print quality troubleshooting, go to www.hp.com/support/lj500colorM551 and select PQ Troubleshooting Tools.

Print quality assessment page

Use the diagnostics page to evaluate problems with color plane registration, EP parameters, and print quality.

1. Press the Home button.
2. Open the following menus:
   - **Administration**
   - **Troubleshooting**
   - **Print Quality Pages**
3. Press the Down arrow ▼ button to highlight the **Print Diagnostic Page** item, and then press the OK button to print the page.



1	Calibration information
2	Parameters
3	Color density

4	Color plane registration
5	Primary colors
6	Secondary colors
7	Temperature values (21A)
8	Humidity values (21B)

Cleaning page

Process a cleaning page

1. Press the Home button.
2. Open the following menus:
   - **Device Maintenance**
   - **Calibrate/Cleaning**
3. Press the Down arrow ▼ button to highlight 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 ▼ button to highlight the **Cleaning Settings** item, and then select the **Auto Cleaning** item. Select the **On** item, and then press the OK button.
4. Press the Down arrow ▼ button to highlight 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.

5. Press the Down arrow ▼ button to highlight the **Auto Cleaning Size** item, and then use the arrow buttons to select the cleaning page size. Press the OK button.

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. Press the Down arrow ▼ button to highlight the **Configuration Page** item, and then press the OK button.
4. Press the Up arrow ▲ button to highlight the **Print** item, and then press the OK button.

The message **Submitted to Queue** displays on the control panel until the product finishes printing the configuration page. The product returns to the **Ready** state after printing the configuration page.

NOTE: If the product is configured with EIO cards (for example, an HP Jetdirect Print Server) or an optional hard-disk drive, additional pages will print that provide information about those devices.

Figure 3-45 Configuration page



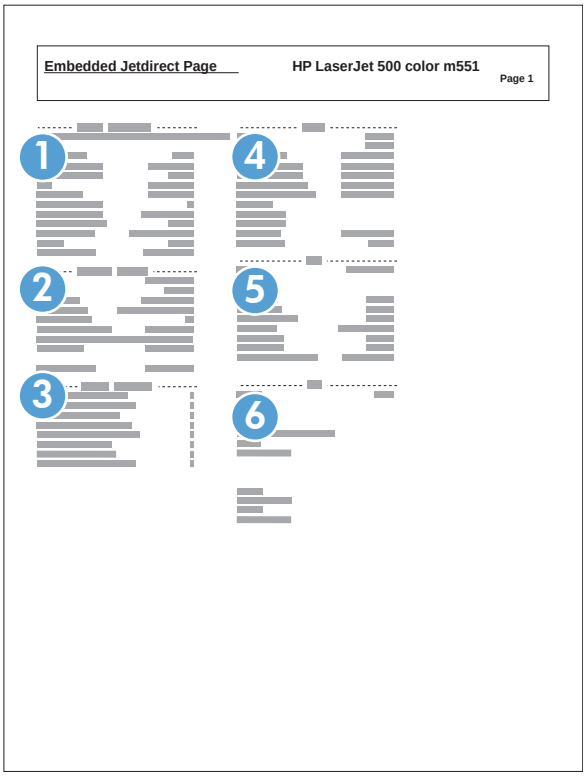
1	Printer information
2	Installed personalities and options
3	HP Web services
4	Color density
5	Calibration information
6	Memory
7	Event log
8	Security
9	Paper trays and options

HP embedded Jetdirect page

The second configuration page is the HP embedded Jetdirect page, which contains the following information:

Always make sure the status line under the HP Jetdirect configuration lines indicates "I/O Card Ready."

Figure 3-46 HP embedded Jetdirect page



1	**HP Jetdirect Configuration** indicates the product status, model number, hardware firmware version, port select, port configuration, auto negotiation, manufacturing identification, and manufactured date.
2	**Security Settings** information
3	**Network Statistics** indicates the total packets received, unicast packets received, bad packets received, framing errors received, total packets transmitted, unsendable packets, transmit collisions, and transmit late collisions.
4	**TCP/IP** information, including the IP address
5	**IPv4** information
6	**IPv6** information

Finding important information on the configuration pages

Certain information, such as the firmware date codes, the IP address, and the e-mail gateways, is especially helpful while servicing the product. This information is on the various configuration pages.

Table 3-14 Important information on the configuration pages

Type of information	Specific information	Configuration page
Firmware date codes When you use the remote firmware upgrade procedure, all of these firmware components are upgraded.	DC controller	Look on the main configuration page, under "Device Information."
	Firmware datecode	Look on the main configuration page, under "Device Information."
	Embedded Jetdirect firmware version	Look on the embedded Jetdirect page, under "HP Jetdirect Configuration."
Accessories and internal storage All optional devices that are installed on the product should be listed on the main configuration page. In addition, separate pages print for the optional paper handling devices and the fax accessory. These pages list more-detailed information for those devices.	External disk (optional)	Look on the main configuration page, under "Installed Personalities and Options." Shows model and capacity.
	Embedded HP Jetdirect	Look on the main configuration page, under "Installed Personalities and Options." Shows model and ID.
	Total RAM	Look on the main configuration page, under "Memory."
	Duplex unit	Look on the main configuration page, under "Paper Trays and Options."
Additional 500-sheet feeders	Additional 500-sheet feeders	Look on the main configuration page, under "Paper Trays and Options."
Engine cycles and event logs Total page counts and maintenance kit counts are important for ongoing product maintenance. The configuration page lists only the three most recent errors. To see a list of the 50 most recent errors, print an event log from the **Diagnostics** menu.	Engine cycles	Look on the main configuration page, under "Device Information."
Event-log information	Event-log information	Look on the main configuration page, under "Event log."

Color band test

The color-band test page shows bands of colors that can indicate whether or not the product is producing colors correctly.

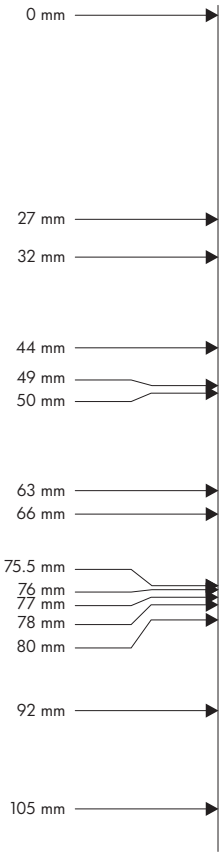
1. Press the Home button.
2. Open the following menus:
   - **Administration**
   - **Troubleshooting**
   - **Print Quality Pages**
3. Press the Down arrow ▼ button to highlight the **Color Band Test** item, and then press the OK button.
4. Press the Down arrow ▼ button to highlight the **Print Test Page** item, and then press the OK button.

Print quality troubleshooting tools

Repetitive defects ruler

If defects repeat at regular intervals on the page, use this ruler to identify the cause of the defect. Place the top of the ruler at the first defect. The marking that is beside the next occurrence of the defect indicates which component needs to be replaced.

Figure 3-47 Repetitive defects ruler



Distance between defects	Product components that cause the defect
27 mm	Print cartridge: primary charge roller
32 mm	Print cartridge: developer roller
44 mm	Printer: primary transfer roller
49 mm	Print cartridge: RS roller
50 mm	Printer: secondary transfer roller
63 mm	ITB: secondary transfer backing roller
66 mm	Printer: distance from secondary transfer roller to fuser
75.5 mm	Print cartridge: OPC drum
76 mm	ITB: driven roller

Distance between defects	Product components that cause the defect
77 mm	Fuser sleeve
78 mm	Fuser pressure roller
80 mm	Printer: distance from primary transfer roller to secondary transfer roller for black
92 mm	Print cartridge station to station pitch: distance from the centerline of one OPC to the centerline of the adjacent OPC ITB: drive roller
105 mm	Printer: distance from registration to secondary transfer roller

Calibrate the product

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

1. Press the Home button.
2. Open the following menus:
   - **Device Maintenance**
   - **Calibrate/Cleaning**
3. Press the Down arrow ▼ button to highlight the **Full Calibration** or **Quick Calibration** setting, and then press the OK button.
   - **Full Calibration**: takes about 70 seconds and performs color plane registration, environment change control, and Dmax and Dhalf adjustments. Use **Full Calibration** if colors are misaligned or appear blurry. **Full Calibration** runs automatically after a replacement transfer belt (ITB) is installed. **Full Calibration** must be run manually after a laser scanner is replaced.
   - **Quick Calibration**: takes about 45 seconds and performs Dmax and Dhalf adjustments. Use **Quick Calibration** if colors are wrong, highlights are missing, or if colors are too dark or too light.

Control panel menus

Sign In menu

Table 3-15 Sign In menu

First level	Second level	Values
User Access Code	**Access Code**	
Administrator Access Code	**Access Code**	
Service Access Code	**Access Code**	

Retrieve Job From USB menu

Use the **Retrieve Job From USB** menu to view listings of jobs stored on an external USB memory device.

NOTE: You must enable this feature by using the control-panel menus or the HP Embedded Web Server before it can be used.

Table 3-16 Retrieve Job From USB menu

First level	Second level	Values	Description
Retrieve Job From USB		OK **Cancel**	This product features walk-up USB printing, so you can quickly print files without sending them from a computer. The product accepts standard USB storage accessories in the USB port on the front of the product. You can print the following types of files: • .pdf • .prn • .pcl • .ps • .cht 1. Insert the USB storage accessory into the USB port on the front of the product. **NOTE:** You might need to remove the cover from the USB port. 2. Press the down arrow to select a folder from the list. 3. Select the name of the document that you want to print. 4. Press the **OK** button to print the document.
	Select a File or Folder	Select from the provided list.	

Retrieve Job From Device Memory menu

Use the **Retrieve Job From Device Memory** menu to view listings of jobs stored on the internal product memory.

Table 3-17 Retrieve Job From Device Memory menu

First level	Second level	Third level	Fourth level	Fifth level	Values	Description
Retrieve Job From Device Memory	**NOTE:** Select from a list of folders.	**All Jobs (With PIN)** **NOTE:** Individual job names also appear.	**Print**	**Enter Pin to Print**		Use this menu to view listings of all stored jobs. When a user name is selected the following options are available depending upon whether the job is PIN secured. **All Jobs (With PIN)** — Menu options include: If you have stored more than one job on the product, you have the option to print or delete all of them at the same time. **Print**: Select this option to print jobs that have been secured with a PIN. You will be prompted to **Enter Pin to Print**. In the **Copies** field, select the number of copies to print.

Table 3-17 Retrieve Job From Device Memory menu (continued)

First level	Second level	Third level	Fourth level	Fifth level	Values	Description
						NOTE: To print more copies than were specified in the driver when the job was stored, press the down arrow to highlight the **Copies** option, and then press the OK button. Press the up arrow or the down arrow to select the number of copies, and then press the OK button. The number of copies printed is the number of copies specified in the driver multiplied by the number of copies specified for the **Copies** option.
				Copies	Range: 1 – 9999 Default = **1**	

Table 3-17 Retrieve Job From Device Memory menu (continued)

First level	Second level	Third level	Fourth level	Fifth level	Values	Description
			Print and Delete	**Enter Pin to Print**		**Print and Delete**: Select this option to print and then delete all jobs that have been secured with a PIN. You will be prompted to **Print and Delete**. In the **Copies** field, select the number of copies to print. **NOTE:** **Print and Delete** is only available for certain types of stored jobs. **Delete** Select this option to delete all jobs that have been secured with a PIN. You will be prompted to **Enter Pin to Print**.
				Copies	Range: 1 – 9999 Default = **1**	
			Delete	**Enter Pin to Print**		**Delete**: Select this option to delete a job that has been secured with a PIN. You will be prompted to **Enter Pin to Print**.

Table 3-17 Retrieve Job From Device Memory menu (continued)

First level	Second level	Third level	Fourth level	Fifth level	Values	Description
		All Jobs (No PIN) **NOTE:** Individual job names also appear.	**Print**	**Copies**	Range: 1 – 9999 Default = **1**	**Job without PIN** — Menu options include: **Print**: Select this option to print a job without a PIN. In the **Copies** field, select the number of copies to print.
			Print and Delete	**Copies**	Range: 1 – 9999 Default = **1**	**Print and Delete**: Select this option to print and then delete a job without a PIN. In the **Copies** field, select the number of copies to print.
			Delete	**Delete All Jobs**	**Yes** **No**	**Delete**: Select this option to delete a job without a PIN.

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	Description
Manage Supplies	**Print Supplies Status**				Use the **Manage Supplies** menu to configure settings for the product supplies.
	Supply Settings	**Black Cartridge**	**Very Low Settings**	**Stop** **Prompt to continue*** **Continue**	Use the **Supply Settings** menu to configure how the product reacts when supplies are reaching the end of their estimated life. Use this feature to configure how the product responds when the black print cartridge is reaching the end of its estimated life. **Very Low Settings**: Specify how the product notifies you when the print cartridge is very low.

Table 3-18 Supplies menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
					• **Stop**: The product stops until you replace the print cartridge. • **Prompt to continue**: The product stops and prompts you to replace the print cartridge. You can acknowledge the prompt and continue printing. • **Continue**: The product alerts you that a print cartridge is very low, but it continues printing.
			Low Threshold Settings	1-100%	**Low Threshold Settings**: Set the estimated percentage at which the product notifies you when the print cartridge is very low.
		Color Cartridges	**Very Low Settings**	**Stop** **Prompt to continue*** **Continue**	Use this feature to configure how the product responds when each of the color print cartridges is reaching the end of its estimated life. **Very Low Settings**: Specify how the product notifies you when the print cartridge is very low.

Table 3-18 Supplies menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
					• **Stop**: The product stops until you replace the print cartridge. • **Prompt to continue**: The product stops and prompts you to replace the print cartridge. You can acknowledge the prompt and continue printing. • **Prompt to continue**: The product alerts you that a print cartridge is very low, but it continues printing.
			Low Threshold Settings	**Cyan Cartridge** **Magenta Cartridge** **Yellow Cartridge**	1-100% **Low Threshold Settings**: Set the estimated percentage at which the product notifies you when the print cartridge is very low. You can specify a different percentage for each color.

Table 3-18 Supplies menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
		Toner Collection Unit	**Very Low Settings**	**Stop***	**Low Threshold Settings**: Specify how the product notifies you when the toner collection unit is very low. • **Stop**: The product stops until you replace the toner collection unit. • **Prompt to continue**: The product stops and prompts you to replace the toner collection unit. You can acknowledge the prompt and continue printing. • **Continue**: The product alerts you that the toner collection unit is very low, but it continues printing.
				Prompt to continue	
				Continue	
					Low Threshold Settings: Set the estimated percentage at which the product notifies you when the toner collection unit is very low.

Table 3-18 Supplies menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
		Fuser Kit	**Very Low Settings**	**Stop** **Prompt to continue*** **Continue**	Use this feature to configure how the product responds when the fuser is reaching the end of its estimated life. **Very Low Settings**: Specify how the product notifies you when the fuser is very low. • **Stop**: The product stops until you replace the fuser. • **Prompt to continue**: The product stops and prompts you to replace the fuser. You can acknowledge the prompt and continue printing. • **Continue**: The product alerts you that the fuser is very low, but it continues printing.
			Low Threshold Settings	1-100%	**Low Threshold Settings**: Set the estimated percentage at which the product notifies you when the fuser is very low.
		Color/Black Mix		**Mostly Black Pages**	Use this feature to instruct the product when to switch between color and monochrome printing modes for the best overall performance. Select the setting depending on the types of jobs you typically print.

Table 3-18 Supplies menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
				Auto*	Select **Auto** to instruct the product to use the mode that is appropriate for the first page of the job. If necessary, the product switches modes during the middle of a job and then stays in that mode until the job is finished. This is the factory default setting.
				Mostly Color Pages	Select **Mostly Color Pages** if the majority of jobs that you print are in color. The product uses color mode for all jobs, even if the job contains no color pages. Using this setting can save time, but it increases wear on the color print cartridges. Select **Mostly Color Pages** if the majority of jobs that you print are in black & white. The product uses monochrome mode until it detects a color page. The product switches back to monochrome mode when it detects a sequence of several monochrome pages. Using this setting can increase the time required to print a job, but it decreases wear on the color print cartridges.

Table 3-18 Supplies menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
	Supply Messages	**Low Message**		**On*** **Off**	Use the **Supply Messages** menu to configure whether a message appears on the control panel when supplies are getting low, but have not yet reached the low threshold. Configure whether a message appears on the control panel when supplies are getting low, but have not yet reached the low threshold. To configure the Low Message select **On** or **Off**.
		Level Gauge		**On*** **Off**	Enable this feature to determine whether or not a supply level gauge appears on the control panel.
	Reset Supplies	**New Fuser Kit**		**No*** **Yes**	Use this menu to notify the product that a new supplies kit has been installed. These kits include the transfer kit, fuser kit, maintenance kit, and document feeder kit. Use this menu to notify the product that a new fuser kit has been installed.
Black Cartridge				The status is displayed.	
Cyan Cartridge				The status is displayed.	
Magenta Cartridge				The status is displayed.	
Yellow Cartridge				The status is displayed.	

Table 3-18 Supplies menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
Toner Collection Unit				The status is displayed.	
Fuser Kit				The status is displayed.	

Trays menu

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

Table 3-19 Trays menu

First level	Second level	Values	Description
Manage Trays	**Use Requested Tray**	**Exclusively***	The product automatically prompts you to configure a tray for paper type and size in the following situations: • When you load paper into the tray • When you specify a particular tray or media type for a print job through the printer driver or a software program and the tray is not configured to match the print-job's settings **NOTE:** The prompt does not appear if you are printing from Tray 1, and it is configured for the Any Size and Any Type settings. In this situation, if the print job does not specify a tray, the product prints from Tray 1, even if the paper size and type settings in the print job do not match the paper loaded in Tray 1.
		First	You can configure the trays for type and size without a prompt from the product. **NOTE:** Labels on each tray indicate the correct way to load paper. If you change the size or type of paper that is loaded in the tray, you need to configure the tray for the new size or type. **NOTE:** Before using any paper, verify that it is of good quality and is free of cuts, nicks, tears, spots, loose particles, dust, wrinkles, curls, or bent corners.

Table 3-19 Trays menu (continued)

First level	Second level	Values	Description
			Use Requested Tray Use this feature to control how the product handles jobs that have specified a specific input tray. Two options are available: • **First**: The product never selects a different tray when the user has indicated that a specific tray should be used, even if that tray is empty. This is the factory default setting. • **First**: The product pulls from another tray if the specified tray is empty, even though the user specifically indicated a tray for the job.
	Manually Feed Prompt	**Always*** **Unless loaded**	Use this feature to indicate whether a prompt should appear when the type or size for a job does not match the specified tray and the product pulls from the multipurpose tray instead. Two options are available: • **Always**: A prompt always appears before using the multipurpose tray. This is the factory default setting. • **Unless loaded**: A message appears only if the multipurpose tray is empty.
	Size/Type Prompt	**Display*** **Do not display**	Use this feature to control whether the tray configuration message appears whenever a tray is closed. Two options are available: • **Display**: This option shows the tray configuration message when a tray is closed. The user is able to configure the tray settings directly from this message. • **Do not display**: This option prevents the tray configuration message from automatically appearing.

Table 3-19 Trays menu (continued)

First level	Second level	Values	Description
	Use Another Tray	**Enabled*** **Disabled**	Use this feature to turn on or off the control-panel prompt to select another tray when the specified tray is empty. Two options are available: • **Enabled**: When this option is selected, the user is prompted either to add paper to the selected tray or to choose a different tray. This is the factory default setting. • **Disabled**: When this option is selected, the user is not given the option of selecting a different tray. The product prompts the user to add paper to the tray that was initially selected.
	Alternative Letterhead Mode	**Disabled*** **Enabled**	Use this feature so that you can load letterhead or preprinted paper into the tray the same way for all print jobs, whether you are printing to one side of the sheet or to both sides of the sheet. When this option is selected, load the paper as you would for printing on both sides. See the user documentation that came with the product for instructions about loading letterhead for printing on both sides. When this option is selected, the product speed slows to the speed required for printing on both sides.

Table 3-19 Trays menu (continued)

First level	Second level	Values	Description
	Duplex Blank Pages	**Auto*** **Yes**	Use this feature to control how the product handles two-sided jobs (duplexing). Two options are available: • **Auto**: This option enables Smart Duplexing, which instructs the product not to process blank pages. • **Yes**: This option disables Smart Duplexing and forces the duplexer to flip the sheet of paper even if it is printed on only one side. This might be preferable for certain jobs that use paper types such as letterhead or prepunched paper.
	Image Rotation	**Standard*** **Alternate**	The following **Image Rotation** settings allow the user to load asymmetrical paper, such as letterhead or prepunched paper, in the input tray using the same orientation regardless of whether the stapling feature is enabled or an external accessory is attached. The user can also load paper consistently across multiple products that may be installed and configured with different external accessories. The **Alternate** setting is also available for when the user does not want the product to rotate the image. This setting may be appropriate for aligning a preprinted form that was originally used with a legacy product. With this option, asymmetrical paper may need to be loaded differently for stapled jobs than for non-stapled jobs.

Table 3-19 Trays menu (continued)

First level	Second level	Values	Description
	Override A4/Letter	**Yes*** **No**	Use this feature to print on letter-size paper when an A4 job is sent but no A4-size paper is loaded in the product (or to print on A4 paper when a letter-size job is sent but no letter-size paper is loaded). This option will also override A3 with ledger-size paper and ledger with A3-size paper. Select **Yes** to enable this option. This is the factory default setting. Select **No** to disable this option.
Tray 1 Size		Select from a provided list.	Select the size of paper that is loaded in the tray.
Tray 1 Type		Select from a provided list.	Select the type of paper that is loaded in each tray.
Tray 2 Size		Select from a provided list.	Select the size of paper that is loaded in the tray.
Tray 2 Type		Select from a provided list.	Select the type of paper that is loaded in each tray.
Tray 3 Size		Select from a provided list.	Select the size of paper that is loaded in the tray.
Tray 3 Type		Select from a provided list.	Select the type of paper that is loaded in each tray.

Administration menu

Reports menu

Table 3-20 Reports menu

First level	Second level	Description
Configuration/Status Pages	**Print**	Select the name of the report you want to print.
	Administration Menu Map	**Administration Menu Map**: Shows a map of the entire **Administration** menu and the selected values for each setting.
	Configuration Page	**Configuration Page**: Shows the product settings and installed accessories.
	Supplies Status Page	**Supplies Status Page**: Shows the approximate remaining life for the supplies; reports statistics on total number of pages and jobs processed, serial number, page counts, and maintenance information. HP provides approximations of the remaining life for the supplies as a customer convenience. The actual remaining supply levels might be different than the approximations provided.
	Usage Page	**Usage Page**: Shows a count of all paper sizes that have passed through the product; lists whether they were simplex, duplex, monochrome, or color; and reports the page count.
	File Directory Page	**File Directory Page**: Shows the file name and folder name for files that are stored in the product memory.
	Current Settings Page	Print a summary of the current settings for the product. This might be helpful if you plan to make changes and need a record of the present configuration.
	Color Usage Job Log	The **Color Usage Job Log** page contains information about the number of color and black & white pages that each user has printed. It also indicates from which software program each of the jobs was printed.
Other Pages	**Print**	
	Demonstration Page	**Demonstration Page** — Prints a demonstration page.
	RGB Samples	**RGB Samples** — Prints color samples for different RGB values. Use the samples as a guide for matching printed colors.

Table 3-20 Reports menu (continued)

First level	Second level	Description
	CMYK Samples	**CMYK Samples** — Prints color samples for different CMYK values. Use the samples as a guide for matching printed colors.
	PCL Font List	**PCL Font List** — Prints the available PCL fonts.
	PS Font List	**PS Font List** — Prints the available PS fonts.

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	Description
Date/Time Settings	**Date/Time Format**	**Date Format**		**DD/MMM/YYYY** **MMM/DD/YYYY*** **YYYY/MMM/DD**	Use the Date/Time Settings menu to specify the date and time and to configure date/time settings. Select the format that the product uses to show the date and time, for example 12-hour format or 24-hour format.
		Time Format		**12 hour (AM/PM)*** **24 hours**	
	Date/Time	**Date**	**Month** **Day** **Year**		Set values from the lists.
		Time	**Hour** **Minute** **AM/PM**		Set values from the lists.
		Time Zone	**Month** **Day** **Year**		Set values from the lists.
		Adjust for Daylight Savings		**On** **Off***	If you are in an area that uses daylight savings time, select the **Adjust for Daylight Savings** box.
Energy Settings	**Sleep Timer Settings**	**Sleep/Auto Off Timer**		**Enable*** **Disable**	The settings within this menu affect how much power the product uses. Sleep/Auto Off Timer Use this menu item to enable or disable the sleep timer.

Table 3-21 General Settings menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
		Sleep/Auto Off After		The default value is 45 minutes. Enter a value between 1 and 120 minutes.	Use this menu item to set the number of minutes after which the product enters Sleep or Auto Off mode. Use the arrow buttons on the control panel to increase or decrease the number of minutes.
		Wake/Auto On Events		**All Events*** **Network port** **Power button only**	Use this menu item to select the events that will wake the product from Sleep/Auto Off mode. If you select the **All Events** option for the **Wake/Auto On Events** setting, any interaction with the product wakes it.
	Optimum Speed/ Energy Usage			**Faster First Page*** **Save Energy** **Save More Energy** **Save Most Energy**	Use this feature to specify how much the fuser cools down between print or copy jobs. Jobs print faster if the fuser is warm, but the product uses more energy. To maximize the product speed, select the **Faster First Page** option. To maximize energy conservation, select the **Save Most Energy** option. Or, select one of the other settings to compromise between speed and energy conservation.

Table 3-21 General Settings menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
Print Quality	**Adjust Color**	**Highlights**	**Cyan Density** **Magenta Density** **Yellow Density** **Black Density**	-5 to 5 Default = **0**	Highlights are the brightest color-values in an image. Restore Color Values: Use this feature to restore all the color-density settings to the factory default values. Cyan Density Increase the value to make colors appear more blue. Decrease the value to make colors appear less blue. Magenta Density Increase the value to make colors appear more pink. Decrease the value to make colors appear less pink. Yellow Density Increase the value to make colors appear more yellow. Decrease the value to make colors appear less yellow. Black Density Increase the value to make colors appear more black. Decrease the value to make colors appear less black.

Table 3-21 General Settings menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
		Midtones	**Cyan Density** **Magenta Density** **Yellow Density** **Black Density**	-5 to 5 Default = **0**	Midtones are the middle-range color-values in an image. For each color, select a setting to adjust the darkness or lightness of midtones on the printed page. Decrease the value to lighten the midtones. Increase the value to darken the midtones. Cyan Density Increase the value to make colors appear more blue. Decrease the value to make colors appear less blue. Magenta Density Increase the value to make colors appear more pink. Decrease the value to make colors appear less pink. Yellow Density Increase the value to make colors appear more yellow. Decrease the value to make colors appear less yellow. Black Density Increase the value to make colors appear more black. Decrease the value to make colors appear less black.

Table 3-21 General Settings menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
		Shadows	**Cyan Density** **Magenta Density** **Yellow Density** **Black Density**	-5 to 5 Default = **0**	Shadows are the darkest color-values in an image. For each color, select a setting to adjust the darkness or lightness of shadows on the printed page. Decrease the value to lighten the shadows. Increase the value to darken the shadows. Cyan Density Increase the value to make colors appear more blue. Decrease the value to make colors appear less blue. Magenta Density Increase the value to make colors appear more pink. Decrease the value to make colors appear less pink. Yellow Density Increase the value to make colors appear more yellow. Decrease the value to make colors appear less yellow. Black Density Increase the value to make colors appear more black. Decrease the value to make colors appear less black.
		Restore Color Values			Use this feature to restore all the color-density settings to the factory default values.

Table 3-21 General Settings menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
	Image Registration	**Adjust Tray <X>**	**Print Test Page**		Image Registration Use this feature to shift the margin alignment to center the image on the page from top to bottom and from left to right. You can also align the image on the front with the image printed on the back. **Adjust Tray <X>** Use this menu to adjust the registration settings for each tray. Before adjusting these values, print a registration test page. It provides alignment guides in the X and Y directions so you can determine which adjustments are necessary. You can adjust values for X1 Shift, X2 Shift, Y1 Shift, and Y2 Shift. Print Test Page Print this page to test the image registration. It provides alignment guides in the X and Y directions so you can determine which adjustments are necessary.

Table 3-21 General Settings menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
			X1 Shift **Y1 Shift** **X2 Shift** **Y2 Shift**	-5.00 mm to 5.00 mm Default = **0**	The direction that is perpendicular to the way the paper passes through the product is referred to as X. This is also known as the scan direction. X1 is the scan direction for a single-sided page or for the second side of a two-sided page. X2 is the scan direction for the first side of a two-sided page. The direction that the paper feeds through the product is referred to as Y. Y1 is the feed direction for a single-sided page or for the second side of a two-sided page. Y2 is the feed direction for the first side of a two-sided page.

Table 3-21 General Settings menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
	Auto Sense Behavior	**Tray 1 Sensing**		**Fuser Kit** **Expanded sensing** **Transparency only**	**Auto Sense Behavior** Use this feature to configure which paper types the product should automatically sense. The product can detect the type of paper in the tray. The following settings are available: **Tray 1 Sensing** • **Expanded sensing**: The product senses only the first page and assumes the rest of the pages are the same type. • **Transparency only**: The product senses only the first page. The product distinguishes transparencies from other paper types.
	Adjust Paper Types	Select from a list of paper types that the product supports. The available options are the same for each paper type.	**Print Mode**	Select from a list of print modes. Default = **Auto Sense Behavior**	Changing the **Print Mode** setting is usually the first thing to try to resolve print-quality problems. Problems can include toner not sticking well to the page, a faint image of the page repeated on the same or following page, incorrect gloss level, etc.

Table 3-21 General Settings menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
			Resistance Mode	**Normal*** **Up** **Down**	Use this setting to correct print quality problems in low-humidity environments and highly resistive paper. The default setting is **Normal**. Use the **Up** setting to solve print quality problems that are related to poor toner-transfer. Use the **Down** setting in the event that small, "pin-hole" defects occur.
			Humidity Mode	**Normal*** **High**	Use this setting to correct print quality problems in high-humidity environments. The default setting is **Normal**. Use the **High** setting if you are in a high-humidity environment and you are seeing problems with low toner density on the first page of a job.
			Pre-Rotation Mode	**Off*** **On**	Turn this feature on if horizontal lines appear on pages. Using this feature increases the first-page-out time by a few seconds.

Table 3-21 General Settings menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
			Fuser Temp Mode	**Normal*** **Up** **Down**	If you are seeing a faint image of the page repeated at the bottom of the page or on the following page, you should first make sure the Paper Type and Print Mode settings are correct for the type of paper you are using. If you continue to see ghost images on your print jobs, set the **Fuser Temp** feature to one of the **Alternate** settings . Try the **Normal** setting first and see if it solves the problem. If you continue to see the problem, try **Up** and then **Down**. With the **Up** and **Down** settings you may see an extra delay between jobs.
			Paper Curl Mode	**Normal*** **Reduced**	If excessive curling of paper occurs in warm, high-humidity environments above 23° C (73° F), set this feature to **Reduced**. Using this setting slows printing and increases the frequency of consumable replacements.

Table 3-21 General Settings menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
	Optimize	**Normal Paper**		**Standard*** **Smooth**	Use this menu to optimize various print modes to address print quality issues. **Normal Paper** Use this setting to correct print quality problems when using very smooth paper of normal weight. The default setting is **Standard**. The **Smooth** setting should be used if you are having print quality problems with very smooth paper.
		Heavy Paper		**Standard*** **Smooth**	Use this setting to correct print quality problems when using very smooth heavy weight paper (129-216 gsm). The default setting is **Standard**. The **Smooth** setting should be used if you are having print quality problems with very smooth heavy paper.
		Envelope Control		**Normal*** **Alternate 1** **Alternate 2**	Enable this feature if es are sticking together in the output bin. This setting reduces the fuser temperature.
		Environment		**Normal*** **Low Temp**	Enable this feature if the product is operating in a low temperature environment and you are having problems with print quality such as blisters in the printed image.

Table 3-21 General Settings menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
		Line Voltage		**Normal*** **Low Voltage**	Enable this feature if the product is operating in a low voltage environment and you are having problems with print quality such as blisters in the printed image.
		Tray 1		**Normal*** **Alternate**	This feature affects how often the product performs an internal cleaning procedure. Set this feature to **Alternate** if you are having problems with extra toner on pages. The product performs the cleaning procedure after each job that is printed from Tray 1. Using this mode increases wear on all the print cartridges.
		Background		**Normal*** **Alternate 1** **Alternate 2** **Alternate 3**	Use this setting if pages are printing with a shaded background. Using this feature might reduce gloss levels. The default setting is **Normal**. Use the **Alternate 1** setting if you are seeing a shaded background on the entire page. Use the **Alternate 2** setting if you are seeing thin vertical lines on the background. The **Alternate 3** setting applies the **Alternate 1** and **Alternate 2** settings at the same time. Use this setting if the first two settings do not correct the problem.

Table 3-21 General Settings menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
		Uniformity Control		**Normal*** **Alternate 1** **Alternate 2** **Alternate 3**	Use this setting to correct uniformity issues in print jobs. This may help correct print quality issues such as a mottled appearance due to poor transfer of toner onto the page. The default setting is **Normal**. The **Alternate 1** setting increases the T1 transfer bias and can be used for any media type. The **Alternate 2** setting decreases the fuser temperature and reduces the throughput. Use this setting if you are experiencing mottled output due to poor fusing on normal or light paper types. The **Alternate 3** setting applies the **Alternate 1** and **Alternate 2** settings at the same time. Use this setting if the first two settings do not correct the problem.
		Tracking Control		**On*** **Off**	Normally, this setting should be set to **On**.
		Registration		**Normal*** **Alternate**	Use this setting if you are having trouble with color-planes shifting or overlapping on the page. The default setting is **Normal**. Use the **Alternate** setting if you are seeing color mis-registration problems.

Table 3-21 General Settings menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
		Transfer Control		**Normal*** **Alternate 1** **Alternate 2** **Alternate 3**	Use this setting to correct transfer issues in print jobs. Turn this feature on if green, mottled images are printed on the page. Note that using this mode can increase problems with blurry images or specks of toner on the leading or trailing edge of the paper. The default setting is **Normal**. The **Alternate 1** setting reduces the T1 bias and should be used when re-transfer occurs. The **Alternate 2** setting increases the inter-page gap. Using this setting reduces throughput and might decrease the print-cartridge life. The **Alternate 3** setting applies the **Alternate 1** and **Alternate 2** settings at the same time. Use this setting if the first two settings do not correct the problem.
		Fuser Temp		**Normal*** **Alternate**	If you are seeing a faint image of the page repeated at the bottom of the page or on the following page, you should first make sure the Paper Type and Print Mode settings are correct for the type of paper you are using. If you continue to see ghost images on your print jobs, set the **Fuser Temp** feature to the **Alternate** setting.

Table 3-21 General Settings menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
		Restore Optimize			Use this feature to return all the settings in the **Optimize** menu to the factory-default values.
	Edge Control			**Off** **Light** **Normal*** **Maximum**	The **Edge Control** setting determines how edges are rendered. Edge control has two components: adaptive halftoning and trapping. Adaptive halftoning increases edge sharpness. Trapping reduces the effect of color-plane misregistration by overlapping the edges of adjacent objects slightly. • **Off**: Turns off both trapping and adaptive halftoning. • **Light**: Sets trapping at a minimal level, and adaptive halftoning is on. • **Normal**: Trapping is at a medium level and adaptive halftoning is on. • **Maximum**: Trapping is at the highest level, and adaptive halftoning is on.

Table 3-21 General Settings menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
Jam Recovery				**Auto*** **Off** **On**	This product provides a jam recovery feature that reprints jammed pages. Select one of the following options: • **Auto**: The product attempts to reprint jammed pages when sufficient memory is available. This is the default setting. • **Off**: The product does not attempt to reprint jammed pages. Because no memory is used to store the most recent pages, performance is optimal. **NOTE:** When using this option, if the product runs out of paper and the job is being printed on both sides, some pages can be lost. • **On**: The product always reprints jammed pages. Additional memory is allocated to store the last few pages printed. This might cause overall performance to suffer.

Table 3-21 General Settings menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
Auto Recovery				**Enable** **Disable***	The product attempts to reprint jammed pages when sufficient memory is available. This is the default setting.
Manage Stored Jobs	**Quick Copy Job Storage Limit**			1-300 Default = **32**	**Manage Stored Jobs** Use this menu to configure global settings for jobs that are stored in the product memory. **Quick Copy Job Storage Limit** Use this feature to specify the number of Quick Copy and Proof and Hold jobs that can be stored on the product. The maximum allowed value is 100.
	Quick Copy Job Held Timeout			**Off*** **1 Hour** **4 Hours** **1 Day** **1 Week**	Use this feature to set a maximum storage-time limit for stored Quick Copy and Proof and Hold jobs. If a stored job is not printed during this period, it is deleted.
	Default Folder Name				Type the name for the stored jobs folder that is accessible to all users.
	Sort Stored Jobs By			**Job Name*** **Date**	This option allows you list the jobs either Alphabetically or Chronologically.

Table 3-21 General Settings menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
Restore Factory Settings	**Reset**			**All** **General** **Print** **General Security** **Calibration**	Use this feature to restore all product settings to their factory defaults.
Restrict Color				**Enable color** **Disable color** **Color if allowed***	Use this feature to enable, restrict, or disable color printing or copying.

Retrieve From USB Settings menu

Table 3-22 Retrieve From USB Settings menu

First level	Second level	Values
Enable Retrieve from USB		**Enable** **Disable***

General Print Settings menu

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

Table 3-23 General Print Settings menu

First level	Second level	Values	Description
Manual Feed		**Enabled** **Disabled***	Use this feature to enable or disable the manual-feed feature, which allows the user to feed paper into the product by hand. When this feature is enabled, the user can select manual feed from the control panel as the paper source for a job. If a tray is not specified as part of a job, manual feed is selected. The factory default value for this option is **Disabled**.
Courier Font		**Regular*** **Dark**	Use this feature to select which version of the Courier font you want to use. The factory default setting is **Regular**, which uses an average stroke width. The **Dark** setting can be used if a heavier Courier font is needed.
Wide A4		**Enabled** **Disabled***	Use this feature to change the printable area of A4-size paper. If you enable this option, eighty 10-pitch characters can be printed on a single line of A4 paper. The factory default setting is **Disabled**.
Print PS Errors		**Enabled** **Disabled***	Use this feature to select whether a PostScript (PS) error page is printed when the product encounters a PS error. The factory default setting is **Disabled**.
Print PDF Errors		**Enabled** **Disabled***	Use this feature to select whether a PDF error page is printed when the product encounters a PDF error. The factory default setting is **Disabled**.

Table 3-23 General Print Settings menu (continued)

First level	Second level	Values	Description
Personality		**Auto*** **PCL** **PS** **PDF**	Use this feature to configure the default print language or personality for the product. Normally you should not change the product language (the default is **Auto**). If you change the setting to a specific product language, the product does not automatically switch from one language to another unless specific software commands are sent to it.
PCL	**Form Length**	Range: 5 – 128 Default = **60**	Use this menu to control the PCL print-command options. PCL is a set of printer commands that Hewlett-Packard developed to provide access to printer features. **Form Length** Use this feature to select the user-soft default vertical form length. The range is from 5 to 128 lines. The factory default setting is 60 lines.
	Orientation	**Portrait*** **Landscape**	Select the orientation that is most often used for copy or scan originals. Select **Portrait** if the short edge is at the top or select **Landscape** if the long edge is at the top.
	Font Source	**Internal*** **Soft** **USB <X>**	Use this feature to select the font source for the user-soft default font. The factory default setting is Internal. The list of available options varies depending on the installed product options.
	Font Number	Range: 0 – 999 Default = **0**	Use this feature to specify the font number for the user-soft default font using the source that is specified in the **Font Source** menu item. The product assigns a number to each font and lists it on the PCL font list. The font number appears in the Font # column of the printout.

Table 3-23 General Print Settings menu (continued)

First level	Second level	Values	Description
	Font Pitch	Range: 0.44 – 99.99 Default = **10**	If **Font Source** and **Font Number** indicate a contour font, then use this feature to select a default pitch (for a fixed-spaced font). The range for this setting is 0.44 to 99.99. The factory default setting is 10.
	Font Point Size	Range: 4.00 – 999.75 Default = **12.00**	If **Font Source** and **Font Number** indicate a contour font, then use this feature to select a default point size (for a proportional-spaced font). The range for this setting is 4.00 to 999.75. The factory default setting is 12.
	Symbol Set	Select from a list of symbol sets.	Use this feature to select any one of several available symbol sets from the control panel. A symbol set is a unique grouping of all the characters in a font. The factory default value for this option is PC-8. Either PC-8 or PC-850 are recommended for line-draw characters.
	Append CR to LF	**No*** **Yes**	Use this feature to configure whether a carriage return (CR) is appended to each line feed (LF) encountered in backwards-compatible PCL jobs (pure text, no job control). Select **Yes** to append the carriage return. The default setting is **No**. Some environments, such as UNIX, indicate a new line by using only the line-feed control code. This option allows the user to append the required carriage return to each line feed.

Table 3-23 General Print Settings menu (continued)

First level	Second level	Values	Description
	Suppress Blank Pages	**No*** **Yes**	This option is for users who are generating their own PCL, which could include extra form feeds that would cause blank pages to be printed. When **Yes** is selected, form feeds are ignored if the page is blank. The factory default setting is **No**.
	Media Source Mapping	**Standard*** **Classic**	Use this feature to select and maintain input trays by number when you are not using the product driver, or when the software program has no option for tray selection. The following options are available: • **Standard**: Tray numbering is based on newer HP LaserJet models. This is the factory default setting. • **Classic**: Tray numbering is based on HP LaserJet 4 and older models.

Default Print Options menu

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

Table 3-24 Default Print Options menu

First level	Second level	Values	Description
Number of Copies		Range: 1 – X Default = **1**	Use this feature to set the default number of copies for a copy job. This default applies when the Copy or Quick Copy function is initiated from the product Home screen. The factory default setting is 1.
Default Paper Size		Select from a list of sizes that the product supports.	Use this feature to configure the default paper size used for print jobs.

Table 3-24 Default Print Options menu (continued)

First level	Second level			Values	Description
Default Custom Paper Size	**Unit of Measure**	**Inches**	**X Dimension**	Range: 2.99 – 12.28 Default = **12.28**	Use the items in this menu to configure the default paper size that is used when the user selects **Custom** as the paper size for a print job.
			Y Dimension	Range: 5.00 – 18.50 Default = **18.5**	
		MM	**X Dimension**	Range: 76 – 312 Default = **312**	
			Y Dimension	Range: 127 – 470 Default = **470**	
Sides				**1-sided*** **2-sided**	Use this feature to indicate whether the original document is printed on one or both sides, and whether the copies should be printed on one or both sides. For example, select **1-sided original, 2-sided output** when the original is printed on one side, but you want to make two-sided copies. Select **Orientation** to specify portrait or landscape orientation and to select the way the second sides are printed.

Table 3-24 Default Print Options menu (continued)

First level	Second level	Values	Description
2-Sided Format		**Book-style*** **Flip-style**	Use this feature to configure the default style for 2-sided print jobs. If **Book-style** is selected, the back side of the page is printed the right way up. This option is for print jobs that are bound along the left edge. If **Flip-style** is selected, the back side of the page is printed upside-down. This option is for print jobs that are bound along the top edge.
Edge to Edge		**Enabled** **Disabled***	Use this feature to avoid shadows that can appear along the edges of copies when the original document is printed close to the edges.

Display Settings menu

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

Table 3-25 Display Settings menu

First level	Second level	Values	Description
Display Brightness		Range: -10 to 10 Default = **0**	Use the **Display Settings** menu to configure the display brightness.
Language		Select from a list of languages that the product supports.	Use this feature to select a different language for control-panel messages and specify the default keyboard layout. When you select a new language, the keyboard layout automatically changes to match the factory default for the selected language.
Show IP Address		**Display*** **Hide**	Use this feature to display or hide the IP address on the OKmenu. From the **Administration** menu, select the **Display Settings** menu. Use the down arrow to select **Show IP Address**. Select **Display** or **Hide**, and the press OK to save the settings.
Inactivity Timeout		Range: 10 – 300 seconds Default = **60**	Use this feature to specify the amount of time that elapses between any activity on the control panel and when the product resets to the default settings. The factory default setting is 60 seconds. When the timeout expires, the control-panel display returns to the Home menu, and any user signed in to the product is signed out.

Table 3-25 Display Settings menu (continued)

First level	Second level	Values	Description
Clearable Warnings		**On** **Job***	Use this feature to set the period that a clearable warning appears on the control panel. If the setting is **On**, clearable warnings appear until the **Clearable Warnings** button is pressed. If **Job** is selected, clearable warnings stay on the display during the job that generated the warning and disappear from the display when the next job starts.
Continuable Events		**Auto continue (10 seconds)*** **Press OK to continue**	Use this option to configure the product behavior when the product encounters certain errors. If **Auto continue (10 seconds)** is selected, the job will continue after 10 seconds. If **Press OK to continue** is selected, the job will stop and require the user to press OK before continuing.

Manage Supplies menu

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

Table 3-26 Manage Supplies menu

First level	Second level	Third level	Fourth level	Values	Description
Print Supplies Status					

Table 3-26 Manage Supplies menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
Supply Settings	**Black Cartridge**	**Very Low Settings**		**Stop** **Prompt to continue*** **Continue**	Use the **Supply Settings** menu to configure how the product reacts when supplies are reaching the end of their estimated life. **Supply Settings** Use this feature to configure how the product responds when the black print cartridge is reaching the end of its estimated life. **Very Low Settings**: Specify how the product notifies you when the print cartridge is very low. • **Stop**: The product stops until you replace the print cartridge. • **Prompt to continue**: The product stops and prompts you to replace the print cartridge. You can acknowledge the prompt and continue printing. • **Continue**: The product alerts you that a print cartridge is very low, but it continues printing.

Table 3-26 Manage Supplies menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
		Low Threshold Settings		1-100%	**Low Threshold Settings**: Set the estimated percentage at which the product notifies you when the print cartridge is very low.
	Color Cartridges	**Very Low Settings**		**Stop** **Prompt to continue*** **Continue**	Use this feature to configure how the product responds when each of the color print cartridges is reaching the end of its estimated life. **Very Low Settings**: Specify how the product notifies you when the print cartridge is very low. • **Stop**: The product stops until you replace the print cartridge. • **Prompt to continue**: The product stops and prompts you to replace the print cartridge. You can acknowledge the prompt and continue printing. • **Continue**: The product alerts you that a print cartridge is very low, but it continues printing.

Table 3-26 Manage Supplies menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
		Low Threshold Settings	**Cyan Cartridge** **Magenta Cartridge** **Yellow Cartridge**	1-100%	**Low Threshold Settings**: Set the estimated percentage at which the product notifies you when the print cartridge is very low. You can specify a different percentage for each color.

Table 3-26 Manage Supplies menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
	Toner Collection Unit	**Very Low Settings**		**Stop*** **Prompt to continue** **Continue**	Use this feature to configure how the product responds when the toner collection unit is reaching the end of its estimated life. This condition is equivalent to the supply life being very low. **Continuing to print without replacing the toner collection unit might damage the product, cause toner to spill, or cause an error condition**. **Very Low Settings**: Specify how the product notifies you when the toner collection unit is very low. • **Stop**: The product stops until you replace the toner collection unit. • **Prompt to continue**: The product stops and prompts you to replace the toner collection unit. You can acknowledge the prompt and continue printing. • **Continue**: The product alerts you that the toner collection unit is very low, but it continues printing.

Table 3-26 Manage Supplies menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
	Fuser Kit	**Very Low Settings**		**Stop** **Prompt to continue*** **Continue**	
		Low Threshold Settings		1-100%	
	Color/Black Mix			**Auto***	Use this feature to instruct the product when to switch between color and monochrome printing modes for the best overall performance. Select the setting depending on the types of jobs you typically print Select **Auto** to instruct the product to use the mode that is appropriate for the first page of the job. If necessary, the product switches modes during the middle of a job and then stays in that mode until the job is finished. This is the factory default setting.
				Mostly Color Pages	Select **Mostly Color Pages** if the majority of jobs that you print are in color. The product uses color mode for all jobs, even if the job contains no color pages. Using this setting can save time, but it increases wear on the color print cartridges.

Table 3-26 Manage Supplies menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
				Mostly Black Pages	Select **Mostly Black Pages** if the majority of jobs that you print are in black & white. The product uses monochrome mode until it detects a color page. The product switches back to monochrome mode when it detects a sequence of several monochrome pages. Using this setting can increase the time required to print a job, but it decreases wear on the color print cartridges.
Supply Messages	**Low Message**			**On*** **Off**	Use the **Supply Messages** menu to configure whether a message appears on the control panel when supplies are getting low, but have not yet reached the low threshold.
	Level Gauge			**On*** **Off**	Enable this feature to determine whether or not a supply level gauge appears on the control panel.
Reset Supplies	**New Fuser Kit**			**No*** **Yes**	Use this menu to notify the product that a new supplies kit has been installed. These kits include the transfer kit, fuser kit, maintenance kit, and document feeder kit. **New Fuser Kit** Use this menu to notify the product that a new fuser kit has been installed.

Manage Trays menu

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

Table 3-27 Manage Trays menu

First level	Values	Description
Use Requested Tray	**Exclusively*** **First**	Use this feature to control how the product handles jobs that have specified a specific input tray. Two options are available: • **Exclusively**: The product never selects a different tray when the user has indicated that a specific tray should be used, even if that tray is empty. This is the factory default setting. • **First**: The product pulls from another tray if the specified tray is empty, even though the user specifically indicated a tray for the job.
Manually Feed Prompt	**Always*** **Unless loaded**	Use this feature to indicate whether a prompt should appear when the type or size for a job does not match the specified tray and the product pulls from the multipurpose tray instead. Two options are available: • **Always**: A prompt always appears before using the multipurpose tray. This is the factory default setting. • **Unless loaded**: A message appears only if the multipurpose tray is empty.
Size/Type Prompt	**Display*** **Do not display**	Use this feature to control whether the tray configuration message appears whenever a tray is closed. Two options are available: • **Display**: This option shows the tray configuration message when a tray is closed. The user is able to configure the tray settings directly from this message. • **Do not display**: This option prevents the tray configuration message from automatically appearing.

Table 3-27 Manage Trays menu (continued)

First level	Values	Description
Use Another Tray	**Enabled*** **Disabled**	Use this feature to turn on or off the control-panel prompt to select another tray when the specified tray is empty. Two options are available: • **Enabled**: When this option is selected, the user is prompted either to add paper to the selected tray or to choose a different tray. This is the factory default setting. • **Disabled**: When this option is selected, the user is not given the option of selecting a different tray. The product prompts the user to add paper to the tray that was initially selected.
Alternative Letterhead Mode	**Disabled*** **Enabled**	Use this feature so that you can load letterhead or preprinted paper into the tray the same way for all print jobs, whether you are printing to one side of the sheet or to both sides of the sheet. When this option is selected, load the paper as you would for printing on both sides. See the user documentation that came with the product for instructions about loading letterhead for printing on both sides. When this option is selected, the product speed slows to the speed required for printing on both sides.
Blank Pages	**Auto*** **Yes**	
Override A4/Letter	**Yes*** **No**	Use this feature to print on letter-size paper when an A4 job is sent but no A4-size paper is loaded in the product (or to print on A4 paper when a letter-size job is sent but no letter-size paper is loaded). This option will also override A3 with ledger-size paper and ledger with A3-size paper. Select **Yes** to enable this option. This is the factory default setting. Select **No** to disable this option.

Network Settings menu

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

Table 3-28 Network Settings menu

First level	Values	Description
I/O Timeout	Range: 5 – 300 sec Default = **15**	Use this feature to set the I/O timeout period in seconds. I/O timeout refers to the elapsed time before a print job fails. If the stream of data that the product receives for a print job gets interrupted, this setting indicates how long the product will wait before it reports that the job has failed. The range is 5 - 300 seconds. The default setting is 15 seconds.
Jetdirect Menu	See the table that follows for details.	

Table 3-29 Jetdirect Menu

First level	Second level	Third level	Fourth level	Fifth level	Values	Description
Information	**Print Sec Report**				**Yes** **No***	**Yes**: Prints a page that contains the current security settings on the HP Jetdirect print server. **No**: A security settings page is not printed.
TCP/IP	**Enable**				**On*** **Off**	**On**: Enable the TCP/IP protocol. **Off**: Disable the TCP/IP protocol.
	Host Name				Use the arrow buttons to edit the host name. **NPIXXXXXX***	An alphanumeric string, up to 32 characters, used to identify the product. This name is listed on the HP Jetdirect configuration page. The default host name is NPIxxxxxx, where xxxxxx is the last six digits of the LAN hardware (MAC) address.

Table 3-29 Jetdirect Menu (continued)

First level	Second level	Third level	Fourth level	Fifth level	Values	Description
	IPv4 Settings	**Config Method**			**Bootp***	Specifies the method that TCP/IPv4 parameters will be configured on the HP Jetdirect print server.
					DHCP	
					Auto IP	
					Manual	
						Use **Bootp** (Bootstrap Protocol) for automatic configuration from a BootP server.
						Use **DHCP** (Dynamic Host Configuration Protocol) for automatic configuration from a DHCPv4 server. If selected and a DHCP lease exists, **DHCP Release** and **DHCP Renew** menus are available to set DHCP lease options.
						Use **Auto IP** for automatic link-local IPv4 addressing. An address in the form 169.254.x.x is assigned automatically.
						If you set this option to **Manual**, use the **Manual Settings** menu to configure TCP/IPv4 parameters.

Table 3-29 Jetdirect Menu (continued)

First level	Second level	Third level	Fourth level	Fifth level	Values	Description
		Manual Settings **NOTE:** This menu is available only if you select the **Manual** option under the **Config Method** menu.	**IP Address**		Enter the address	(Available only if **Config Method** is set to **Manual**) Configure parameters directly from the product control panel:
			Subnet Mask		Enter the address	
			Default Gateway		Enter the address	
		Default IP			**Auto IP*** **Legacy**	Specify the IP address to default to when the print server is unable to obtain an IP address from the network during a forced TCP/IP reconfiguration (for example, when manually configured to use BootP or DHCP). **NOTE:** This feature assigns a static IP address that might interfere with a managed network. **Auto IP**: A link-local IP address 169.254.x.x is set. **Legacy**: The address 192.0.0.192 is set, consistent with older HP Jetdirect products.

Table 3-29 Jetdirect Menu (continued)

First level	Second level	Third level	Fourth level	Fifth level	Values	Description
		DHCP Release			**Yes** **No***	This menu appears if **Config Method** is set to **DHCP** and a DHCP lease for the print server exists. **No**: The current DHCP lease is saved. **Yes**: The current DHCP lease and the leased IP address are released.
		DHCP Renew			**Yes** **No***	This menu appears if **Config Method** is set to **DHCP** and a DHCP lease for the print server exists. **No**: The print server does not request to renew the DHCP lease. **Yes**: The print server requests to renew the current DHCP lease.
		Primary DNS			Range: 0 – 255 Default = **xxx.xxx.xx.xx**	Specify the IP address (n.n.n.n) of a Primary DNS Server.
		Secondary DNS			Range: 0 – 255 Default = **0.0.0.0**	Specify the IP address (n.n.n.n) of a Secondary Domain Name System (DNS) Server.

Table 3-29 Jetdirect Menu (continued)

First level	Second level	Third level	Fourth level	Fifth level	Values	Description
	IPv6 Settings	**Enable**			**On*** **Off**	Use this item to enable or disable IPv6 operation on the print server. **Off**: IPv6 is disabled. **On**: IPv6 is enabled.
		Address	**Manual Settings**	**Enable**	**On** **Off***	Use this item to enable and manually configure a TCP/IPv6 address.
				Address	Select from a provided list.	**Address**: Use this item to type a 32 hexadecimal digit IPv6 node address that uses the colon hexadecimal syntax.

Table 3-29 Jetdirect Menu (continued)

First level	Second level	Third level	Fourth level	Fifth level	Values	Description
		DHCPV6 Policy			**Router Specified** **Router Unavailable*** **Always**	**Router Specified**: The stateful auto-configuration method to be used by the print server is determined by a router. The router specifies whether the print server obtains its address, its configuration information, or both from a DHCPv6 server. **Router Unavailable**: If a router is not available, the print server should attempt to obtain its stateful configuration from a DHCPv6 server. **Always**: Whether or not a router is available, the print server always attempts to obtain its stateful configuration from a DHCPv6 server.
		Primary DNS			Select from a provided list.	Specify the IP address (n.n.n.n) of a Primary DNS Server.
		Secondary DNS			Select from a provided list.	Specify the IP address (n.n.n.n) of a Secondary Domain Name System (DNS) Server.

Table 3-29 Jetdirect Menu (continued)

First level	Second level	Third level	Fourth level	Fifth level	Values	Description
	Proxy Server				Select from a provided list.	Specifies the proxy server to be used by embedded applications in the product. A proxy server is typically used by network clients for Internet access. It caches Web pages, and provides a degree of Internet security, for those clients. To specify a proxy server, enter its IPv4 address or fully-qualified domain name. The name can be up to 255 octets. For some networks, you might need to contact your Internet Service Provider (ISP) for the proxy server address.
	Proxy Port				Default = **00080**	Type the port number used by the proxy server for client support. The port number identifies the port reserved for proxy activity on your network, and can be a value from 0 to 65535.
	Idle Timeout				Default = **0270**	**Idle Timeout**: The time period, in seconds, after which an idle TCP print data connection is closed (default is 270 seconds, 0 disables the timeout).

Table 3-29 Jetdirect Menu (continued)

First level	Second level	Third level	Fourth level	Fifth level	Values	Description
General Security	**Secure Web**				**HTTPS Required*** **HTTPS Optional**	For configuration management, specify whether the embedded Web server will accept communications using HTTPS (Secure HTTP) only, or both HTTP and HTTPS. **HTTPS Required**: For secure, encrypted communications, only HTTPS access is accepted. The print server will appear as a secure site.
	IPSEC				**Keep** **Disable***	Specify the IPSec status on the print server. **Keep**: IPSec status remains the same as currently configured. **Disable**: IPSec operation on the print server is disabled.
	802.1x				**Reset** **Keep***	Specify whether the 802.1X settings on the print server are reset to the factory defaults. **Reset**: The 802.1X settings are reset to the factory defaults. **Keep**: The current 802.1X settings are maintained.

Table 3-29 Jetdirect Menu (continued)

First level	Second level	Third level	Fourth level	Fifth level	Values	Description
	Reset Security				**Yes** **No***	Specify whether the current security settings on the print server will be saved or reset to factory defaults. **Yes**: Security settings are reset to factory defaults. **No**: The current security settings are maintained.

Table 3-29 Jetdirect Menu (continued)

First level	Second level	Third level	Fourth level	Fifth level	Values	Description
Diagnostics	**Embedded Tests**	**LAN HW Test**			**Yes** **No***	This menu provides tests to help diagnose network hardware or TCP/IP network connection problems. Embedded tests help to identify whether a network fault is internal or external to the product. Use an embedded test to check hardware and communication paths on the print server. After you select and enable a test and set the execution time, you must select **Execute** to initiate the test. Depending on the execution time, a selected test runs continuously until either the product is turned off, or an error occurs and a diagnostic page is printed. **CAUTION:** Running this embedded test will erase your TCP/IP configuration. This test performs an internal loopback test. An internal loopback test will send and receive packets only on the internal network hardware. There are no external transmissions on your network.

Table 3-29 Jetdirect Menu (continued)

First level	Second level	Third level	Fourth level	Fifth level	Values	Description
						LAN HW Test Select **Yes** to choose this test, or **No** to not choose it.
		HTTP Test			**Yes** **No***	This test checks operation of HTTP by retrieving predefined pages from the product, and tests the embedded Web server. Select **Yes** to choose this test, or **No** to not choose it.
		SNMP Test			**Yes** **No***	This test checks operation of SNMP communications by accessing predefined SNMP objects on the product. Select **Yes** to choose this test, or **No** to not choose it.
		Data Path Test			**Yes** **No***	This test helps to identify data path and corruption problems on an HP postscript level 3 emulation product. It sends a predefined PS file to the product, However, the test is paperless; the file will not print. Select **Yes** to choose this test, or **No** to not choose it.

Table 3-29 Jetdirect Menu (continued)

First level	Second level	Third level	Fourth level	Fifth level	Values	Description
		Select All Tests			**Yes** **No***	Use this item to select all available embedded tests. Select **Yes** to choose all tests. Select **No** to select individual tests.
		Execution Time			Range: 1 – 60 hours Default = **1**	Use this item to specify the length of time (in hours) that an embedded test will be run. You can select a value from 0 to 24 hours. If you select zero (0), the test runs indefinitely until an error occurs or the product is turned off. Data gathered from the HTTP, SNMP, and Data Path tests is printed after the tests have completed.
		Execute			**Yes** **No***	**No**: Do not initiate the selected tests. **Yes**: Initiate the selected tests.

Table 3-29 Jetdirect Menu (continued)

First level	Second level	Third level	Fourth level	Fifth level	Values	Description
	Ping Test	**Dest Type**			**IPv4** **IPv6**	This test is used to check network communications. This test sends link-level packets to a remote network host, then waits for an appropriate response. To run a ping test, set the following items: **Dest Type** Specify whether the target product is an IPv4 or IPv6 node.
		Dest IPv4			Range: 0 – 255 Default = **127.0.0.1**	Type the IPv4 address.
		Dest IPv6			Select from a provided list. Default = **: : 1**	Type the IPv6 address.
		Packet Size			Default = **64**	Specify the size of each packet, in bytes, to be sent to the remote host. The minimum is 64 (default) and the maximum is 2048.
		Timeout			Default = **001**	Specify the length of time, in seconds, to wait for a response from the remote host. The default is 1 and the maximum is 100.

Table 3-29 Jetdirect Menu (continued)

First level	Second level	Third level	Fourth level	Fifth level	Values	Description
		Count			Default = **004**	Specify the number of ping test packets to send for this test. Select a value from 0 to 100. The default is 4. To configure the test to run continuously, select 0.
		Print Results			**Yes** **No***	
		Execute			**Yes** **No***	**No**: Do not initiate the selected tests. **Yes**: Initiate the selected tests.
	Ping Results	**Packets Sent**			Default = **00000**	**Packets Sent** Shows the number of packets (0 - 65535) sent to the remote host since the most recent test was initiated or completed. The default is 0.
		Packets Received			Default = **00000**	**Packets Received** Shows the number of packets (0 - 65535) received from the remote host since the most recent test was initiated or completed. The default is 0.

Table 3-29 Jetdirect Menu (continued)

First level	Second level	Third level	Fourth level	Fifth level	Values	Description
		Percent Lost			Default = **000**	**Percent Lost** Shows the percent (0 to 100) of ping test packets that were sent with no response from the remote host since the most recent test was initiated or completed. The default is 0.
		RTT Min			Default = **0000**	**RTT Min** Shows the minimum detected roundtrip-time (RTT), from 0 to 4096 milliseconds, for packet transmission and response. The default is 0.
		RTT Max			Default = **0000**	**RTT Max** Shows the maximum detected roundtrip-time (RTT), from 0 to 4096 milliseconds, for packet transmission and response. The default is 0.
		RTT Average			Default = **0000**	**RTT Average** Shows the average round-trip-time (RTT), from 0 to 4096 milliseconds, for packet transmission and response. The default is 0.

Table 3-29 Jetdirect Menu (continued)

First level	Second level	Third level	Fourth level	Fifth level	Values	Description
		Ping In Progress			**Yes** **No***	**Ping In Progress** Shows whether a ping test is in progress. **Yes** indicates a test in progress, and **No** indicates that a test completed or was not run.
		Refresh			**Yes** **No***	**Refresh** When viewing the ping test results, this item updates the ping test data with current results. Select **Yes** to update the data, or **No** to maintain the existing data. However, a refresh automatically occurs when the menu times out or you manually return to the main menu.

Table 3-29 Jetdirect Menu (continued)

First level	Second level	Third level	Fourth level	Fifth level	Values	Description
Link Speed					**Auto***	The link speed and communication mode of the print server must match the network. The available settings depend on the product and installed print server. Select one of the following link configuration settings: **CAUTION:** If you change the link setting, network communications with the print server and network product might be lost. **Auto*** The print server uses auto-negotiation to configure itself with the highest link speed and communication mode allowed. If auto-negotiation fails, either **100TX Half** or **10T Half** is set depending on the detected link speed of the hub/switch port. (A 1000T half-duplex selection is not supported.)
					10T Half	**10T Half** 10 Mbps, half-duplex operation.
					10T Full	**10T Full** 10 Mbps, full-duplex operation.

Table 3-29 Jetdirect Menu (continued)

First level	Second level	Third level	Fourth level	Fifth level	Values	Description
					100TX Half	**100TX Half** 100 Mbps, half-duplex operation.
					100TX Full	**100TX Full** 100 Mbps, full-duplex operation.
					100TX Auto	**100TX Auto** Limits auto-negotiation to a maximum link speed of 100 Mbps.
					1000T Full	**1000T Full** 1000 Mbps, full-duplex operation.

Troubleshooting menu

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

Table 3-30 Troubleshooting menu

First level	Second level	Third level	Fourth level	Values	Description
Exit Troubleshooting **NOTE:** This item only displays if you are backing out of the **Troubleshooting** menu. **NOTE:** The product shuts down and restarts when this menu item is selected.					
Print Event Log					Use this feature to print a list of the 1000 most recent events in the Event Log. For each event, the printed log shows the error number, page count, error code, and description or personality.

Table 3-30 Troubleshooting menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
View Event Log					Use this feature to view a list of the most recent events in the Event Log. For each event, the log shows the error number, page count, error code, and description or personality.
Print Paper Path Page					
Print Quality Pages	**Print PQ Troubleshooting Pages**				Use this menu to print pages that help you resolve problems with print quality.
	Print Diagnostic Page				Use this feature to print a diagnostics page. The page includes color swatches and a table of electro-photographic (EP) parameters.

Table 3-30 Troubleshooting menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
	Color Band Test	**Print Test Page**			The Color Band Test prints a page that helps you identify arcing in the high-voltage power supply for each color. The page contains a series of colored bars. If streaks appear on a bar, the high-voltage power supply for the corresponding color might have a problem. Some problems with the high-voltage power supply do not appear until after several pages have been printed, so this test includes an option to print up to 30 pages. To set the number of copies, select **Copies**, and then type the number of copies to print. Select **Print Test Page** when you are ready to begin the test.
		Copies		Range: 1 – 30 Default = **1**	

Table 3-30 Troubleshooting menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
Diagnostic Tests	**Disable Cartridge Check**				Use this feature to put the product into a special mode in which you can remove a print cartridge and still print internal pages. This can help you identify the source of a problem. When you are finished testing, press the OK button on the product control panel to return to the Troubleshooting menu. To return to normal product operation, press OK and reinstall the cartridge.
	Paper Path Sensors			**Start Test**	Use this feature to initiate a test of the paper path sensors.
	Paper Path Test	**Print Test Page**		**Print**	Use this menu to generate a test page for testing paper handling features. You can define the path that is used for the test in order to test specific paper paths.
		Source Tray		Select from a list of the available trays.	
		Test Duplex Path		**Off*** **On**	

Table 3-30 Troubleshooting menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
		Number of Copies		Range: 1 – 500 Default = **1**	Use this feature to set the default number of copies for a copy job. This default applies when the Copy or Quick Copy function is initiated from the product Home screen. The factory default setting is 1.
	Manual Sensor Test			Select from a list of the product sensors.	Use this feature to test the product sensors and switches for correct operation. Each sensor is displayed on the control-panel screen, along with its status. Manually trip each sensor and watch for it to change on the screen. Press the Stop ⊗ button to abort the test.
	Manual Tray/Bin Sensor Test			Select from a list of the product sensors.	Use this feature to test the sensors in the trays and bins for correct operation. Each sensor is displayed on the control-panel screen, along with its status. Manually trip each sensor and watch for it to change on the screen. Press the **Stop**button to abort the test.

Table 3-30 Troubleshooting menu (continued)

First level	Second level	Third level	Fourth level	Values	Description
	Component Test			Select from a list of available components.	Use this feature to exercise individual parts independently to isolate noise, leaking, or other issues. To start the test, select one of the components. The test will run the number of times specified by the **Repeat**option. You may be prompted to remove parts from the product during the test. Press the **Stop** button to abort the test.
		Repeat		**Off*** **On**	
	Print/Stop Test				Use this feature to isolate faults by stopping the printer during the print cycle and observing where in the process the image degrades. To run the test, specify a stop time. The next job that is sent to the product will stop at the specified time in the process.
Retrieve Diagnostic Data	**Export to USB**				
	Diagnostic Files			**Device Data File** **Debug Information File***	
	Include Crash Dumps			**Off** **On***	
	Cleanup Debug Info			**Off** **On***	
General Debug Data					

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.

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

Table 3-31 Backup/Restore menu

First level	Second level	Third level	Values	Description
Backup Data	**Scheduled Backups**	**Enable Scheduling**	**Disabled***	
			Enabled	
		Backup Time	Default = current time	
		Days Between Backups	Default = **1**	
	Backup Now			
	Export Last Backup			
Restore Data			Insert a USB drive that contains the backup file.	

Calibrate/Cleaning menu

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

Table 3-32 Calibrate/Cleaning menu

First level	Second level	Values	Description
Cleaning Settings	**Auto Cleaning**	**Off***	Use this menu to select **Auto Cleaning** or **Cleaning Interval**.
		On	
	Cleaning Interval	Select from a list of cleaning intervals.	Use this feature to set the interval when the cleaning page should be printed. The interval is measured by the number of pages printed.
	Auto Cleaning Size	**Letter***	
		A4	
Print Cleaning Page			Use this feature to process the cleaning page that was created by using the **Create Cleaning Page** menu item. The process takes up to 2.5 minutes.
Clean Laser Glass			Use this menu to perform laser glass cleaning tasks.

Table 3-32 Calibrate/Cleaning menu (continued)

First level	Second level	Values	Description
Quick Calibration			The product automatically calibrates itself at various times. However, you can calibrate the product immediately if you see problems with print quality. Use this feature to perform a partial calibration. Use this calibration if color density or tone seems incorrect. Before calibrating the product, make sure that **Ready** appears on the control-panel display. If a job is in progress, the calibration occurs when that job is complete.

Table 3-32 Calibrate/Cleaning menu (continued)

First level	Second level	Values	Description
Full Calibration			The product automatically calibrates itself at various times. However, you can calibrate the product immediately if you see problems with print quality. Use this feature to perform a full calibration, which can take up to three minutes. Use this calibration if the color layers seem to be shifted on the page. Before calibrating the product, make sure that **Ready** appears on the control-panel display. If a job is in progress, the calibration occurs when that job is complete.
Delay Calibration at Wake/Power On		**Yes*** **No**	This menu controls the timing of Power-on calibration when the product wakes up or is turned on. Select this menu item if you are not using the Wake Time feature and want to print jobs immediately when the product wakes up or is turned on, before calibration begins. • Select **No** to have the product calibrate immediately when it wakes up or is turned on. The product will not print any jobs until it finishes calibrating. • Select **Yes** to enable a product that is asleep to accept print jobs before it calibrates. It may start calibrating before it has printed all the jobs it has received. This option allows quicker printing when coming out of sleep mode or when you turn the product on, but print quality might be reduced. **NOTE:** For the best results, allow the product to calibrate before printing. Print jobs performed before calibration may not be of the highest quality.

USB Firmware Upgrade menu

To display: At the product control panel, 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.

Interpret control panel messages, status-alert messages, and event code errors

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

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 a print cartridge.

Memory error

- **10.00.00** (event code)

  Black print cartridge

- **10.01.00** (event code)

  Cyan print cartridge

- **10.02.00** (event code)

  Magenta print cartridge

- **10.03.00** (event code)

  Yellow print cartridge

E-label missing

- **10.00.10** (event code)

  Black print cartridge

- **10.01.10** (event code)

  Cyan print cartridge

- **10.02.10** (event code)

  Magenta print cartridge

- **10.03.10** (event code)

  Yellow 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 e-label. If it is damaged, replace the cartridge.
4. If the error persists, replace the indicated print cartridge.

10.22.50

Description

The transfer kit life was reset above the order threshold.

A new ITB was installed.

Recommended action

No action necessary.

10.22.51

Description

The transfer kit life was reset above the replace threshold.

A new ITB was installed.

Recommended action

No action necessary.

10.22.52

Description

The transfer kit life was reset above the reset threshold.

A new ITB was installed.

Recommended action

No action necessary.

10.23.50

Description

The fuser kit life was reset above the order threshold.

A new ITB was installed.

Recommended action

No action necessary.

10.23.51

Description

The fuser kit life was reset above the replace threshold.

A new ITB was installed.

Recommended action

No action necessary.

10.23.52

Description

The fuser kit life was reset above the reset threshold.

A new ITB was installed.

Recommended action

No action necessary.

10.23.60

Description

The product indicates when the fuser kit is very low. The actual remaining fuser kit life might vary. You do not need to replace the fuser kit at this time unless print quality is not acceptable.

NOTE: After an HP supply has reached the very low threshold, the HP premium protection warranty ends.

Recommended action

Replace the fuser kit if print quality is not acceptable.

10.23.70 Printing past very low

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.

CAUTION: 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.XX.34 Used supply in use

Description

The indicated cartridge is used.

- **10.00.34** (event code)

  Black print cartridge

- **10.01.34** (event code)

  Cyan print cartridge

- **10.02.34** (event code)

  Magenta print cartridge

- **10.03.34** (event code)

  Yellow print cartridge

Recommended action

If you believe this is a genuine HP supply, go to 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

More than one genuine HP print cartridge has been installed.

- **10.00.40** (event code)

  Black print cartridge

- **10.01.40** (event code)

  Cyan print cartridge

- **10.02.40** (event code)

  Magenta print cartridge

- **10.03.40** (event code)

  Yellow print cartridge

Recommended action

No action necessary.

10.XX.41 Unsupported supply in use

Description

The indicated print cartridge is for a different product.

- **10.00.41** (event code)

  Black print cartridge

- **10.01.41** (event code)

  Cyan print cartridge

- **10.02.41** (event code)

  Magenta print cartridge

- **10.03.41** (event code)

  Yellow print cartridge

Recommended action

Remove the indicated 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.

CAUTION: After an HP supply has reached the very low threshold, the HP premium protection warranty ends.

- **10.00.70** (event code)

  Black print cartridge

- **10.01.70** (event code)

  Cyan print cartridge

- **10.02.70** (event code)

  Magenta print cartridge

- **10.03.70** (event code)

  Yellow print cartridge

Recommended action

If print quality is no longer acceptable, replace the indicated 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

- **10.01.15** (event code)

  Cyan print cartridge

- **10.02.15** (event code)

  Magenta print cartridge

- **10.03.15** (event code)

  Yellow print cartridge

- **10.23.15**

  Fuser kit

- **10.31.15**

  TCU

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.25 Wrong cartridge in <color> slot

Description

The indicated cartridge is installed in the wrong position.

- **10.00.25** (event code)

  Black print cartridge

- **10.01.25** (event code)

  Cyan print cartridge

- **10.02.25** (event code)

  Magenta print cartridge

- **10.03.25** (event code)

  Yellow print cartridge

Recommended action

Install the indicated cartridge in the correct position.

From left to right, the correct cartridge order follows:

- Yellow
- Magenta
- Cyan
- Black

10.YY.35 Incompatible <supply>

Description

The indicated supply is not compatible with this product.

- **10.00.35** (event code)

  Black print cartridge

- **10.01.35** (event code)

  Cyan print cartridge

- **10.02.35** (event code)

  Magenta print cartridge

- **10.03.35** (event code)

  Yellow 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.

13.A3.D3

Description

Tray 3 misfeed jam.

Recommended action

Check the optional tray for a jam.

13.A3.FF

Description

Power on jam at the Tray 3 feed sensor.

Recommended action

Check the product for a jam.

13.B2.9C

Description

Page at duplex switchback jam.

Recommended action

Check the product for a jam.

13.B2.A1

Description

Media input stay Tray 1 jam.

Recommended action

Check the product for a jam.

13.B2.A2

Description

Media input stay Tray 2 jam.

Recommended action

Check the product for a jam.

13.B2.A3

Description

Media input stay Tray 3 jam.

Recommended action

Check the product for a jam.

13.B2.D1

Description

Media input delay Tray 1 jam.

Recommended action

Check the product for a jam.

13.B2.D2

Description

Media input delay Tray 2 jam.

Recommended action

Check the product for a jam.

13.B2.D3

Description

Media input delay Tray 3 jam.

Recommended action

Check the product for a jam.

13.D3.DZ

Description

Late to duplex re-feed jam

Z = fuser mode

Recommended action

Check the product for a jam. See the clear jams section in the service manual.

13.WX.EE

Description

This jam occurs when a door is opened during printing.

- **13.AA.EE** (event code)

  Tray 3 door open

- **13.BA.EE** (event code)

  Front door open

- **13.BB.EE** (event code)

  Right door open

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

- **13.B2.FF** (event code)

  Registration sensor - PS8

- **13.B4.FF** (event code)

  Loop sensor - PS14 and PS15

- **13.B9.FF** (event code)

Fuser output sensor - PS5

- **13.A3.FF** (event code)

  Tray 3 feed sensor - SR1

- **13.FF.FF** (event code)

  Multiple sensors

Recommended action

Clear the jam.

13.WX.YZ Fuser area jam

Description

- **13.B9.AZ** (event code)

  Stopped at fuser jam

  This jam occurs when the paper stays at the fuser output sensor for a designated amount of time after it has reached the fuser output sensor.

  Z = fuser mode

  - 1 = Normal auto sense
  - 2 = Normal non-auto sense
  - 3 = Light 1 to 3
  - 4 = Heavy 1
  - 5 = Heavy 2
  - 6 = Heavy 3
  - 7 = Glossy 1
  - 8 = Glossy 2
  - 9 = Glossy 3
  - A = Glossy film
  - B = Transparency
  - C = Label
  - D = Envelope 1 to 3

- E = Rough
- 0 = Photo 1 to 3

◦ **13.B9.DZ** (event code)

Z = the source tray number

This jam occurs when the paper does not reach the fuser output sensor in the designated amount of time.

◦ **13.E1.DZ** (event code)

Z = fuser mode

This jam occurs when the paper stays at the fuser output sensor for a designated amount of time after it has reached the fuser output sensor.

Recommended action

Clear the jam. See the clear jams section in the service manual.

For a 13.B9.DZ jam: 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

◦ **13.B9.CZ** (event code)

Fuser wrap jam

This jam occurs when the paper disappears from the fuser output sensor before a designated amount of time after the paper reached the fuser output sensor (It is determined that the paper is being wrapped around the fuser roller).

Z = fuser mode

- 1 = Normal auto sense
- 2 = Normal non-auto sense
- 3 = Light 1 to 3
- 4 = Heavy 1
- 5 = Heavy 2
- 6 = Heavy 3
- 7 = Glossy 1
- 8 = Glossy 2
- 9 = Glossy 3
- A = Glossy film

- B = Transparency
- C = Label
- D = Envelope 1 to 3
- E = Rough
- 0 = Photo 1 to 3

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 middle right door

Description

- **13.A3.D4** (event code)

  Late to path jam from Tray 3

  This jam occurs when the paper does not reach the Tray 3 feed sensor (SR1) in designated amount of time.

Recommended action

Clear the jam. See the clear jams section in the service manual.

13.WX.YZ Jam in right door

Description

- **13.B2.AZ** (event code)

  Stopped at registration jam.

  This jam occurs when the media is longer than the longest Universal size, (470 mm; 18.50 in), by 40 mm (1.57 in) or more, and printing from Tray 1.

  However, this jam occurs when the media that is longer than the designated length by 40 mm (1.57 in) and more is detected, if the media that is longer than the longest Universal is designated. This jam occurs when the media longer than LEDGER-P by 40 mm (1.57 in) or more is detected at printing from Tray 2.

  Z = the source tray number

- **13.B2.DD** (event code)

  Late to registration jam, from duplexer

  This jam occurs when the paper does not reach the registration (TOP; SR8) sensor in designated amount of time after it is reversed at the switchback position.

  Z = D for duplexer

- **13.B2.DZ** (event code)

  Late to registration jam, from tray <Z>

  This jam occurs when the paper does not reach the registration (TOP; SR8) sensor in the designated amount of time after the Tray 3 feed sensor sensed the leading edge at printing from Tray 3.

  Z = source tray

- **13.B9.DD** (event code)

  Late to fuser jam, from duplexer

  This jam occurs when the paper does not reach the fuser output sensor in designated amount of time.

Recommended action

Clear the 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 registration (TOP; SR8) 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

- **13.B2.D2** (event code)

  Misfeed jam from Tray 2

  This jam occurs when the paper does not reach the registration (TOP; SR8) sensor in designated amount of time from the start of paper pick-up at printing from Tray 2 and duplex printing.

- **13.A3.D3** (event code)

  Misfeed jam from Tray 3

  This jam occurs when the paper does not reach the feed sensor of each tray in designated amount of time after the start of paper pickup.

Recommended action

Clear the jam. See the clear jams section in the service manual.

20.00.00 Insufficient memory To continue, press OK

Description

The product has experienced a memory error. You might have tried to transfer too many fonts or macros.

Recommended action

Press 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

Press the OK button to continue printing (some data might be lost).

32.08.XX

Description

- **32.08.A1** (event code)

  Initialized after abnormal shutdown

- **32.08.A2** (event code)

  Clean shutdown

- **32.08.A3** (event code)

  Normal initialization

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.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.17** (event code)

  NVRAM restore timeout while communicating with the engine

- **32.1C.1B** (event code)

  Backup of print subsystem failed

- **32.1C.1C** (event code)

  Backup of networking 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.28** (event code)

  Reset of print subsystem failed

- **32.1C.29** (event code)

  Reset of networking subsystem failed

- **32.1C.2B** (event code)

  Reset formatter 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.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.17** (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.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.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.2B** (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.XX.YY

Description

- **33.01.01** (event code)

  Recover occurred

- **33.01.02** (event code)

  Initial save occurred

- **33.01.03** (event code)

  Save/recover status OK

- **33.02.01** (event code)

  Used board/disk installed

- **33.02.02** (event code)

  Save/recover disabled (one or both disabled)

- **33.02.03** (event code)

  Save/recover disabled (product functions normally)

Recommended action

No action necessary

33.XX.YY Used board/disk

Description

An encryped 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, press the OK button.

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 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.

- Z = 1

  Source is Tray 1

- Z = 2

  Source is Tray 2

- Z = 3

  Source is Tray 3

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 = 4 (expected type)

Glossy media

- Y = 5 (expected type)

  Gloss film

- 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 = A (expected type)

  Extra heavy glossy media (glossy media 3)

- Y = B (expected type)

  Heavy glossy media (glossy media 2)

- 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 = 4 (detected type)

  Glossy media

- Z = 5 (detected type)

  Gloss film

- 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 = A (detected type)

  Extra heavy glossy media (glossy media 3)

- 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.

41.07.YZ Error To continue, press OK

Description

A media transportation error has occurred.

- Y = 0

  Photo media 1, Photo media 2, Photo media 3, Designated media 2, Designated media 3, or N/A, typed or AutoSense

- Y = 1

  AutoSense (Normal): special case distinguished from typed Normal

- Y = 2

  Normal: typed (not AutoSense)

- Y = 3

Light media 1, 2, or 3: typed or AutoSense

- Y = 4

  Heavy media 1: typed or AutoSense

- Y = 5

  Heavy media 2: typed or AutoSense

- Y = 6

  Heavy media 3: typed or AutoSense

- Y = 7

  Glossy media 1: typed or AutoSense

- Y = 8

  Glossy media 2: typed or AutoSense

- Y = 9

  Glossy media 3: typed or AutoSense

- Y = A

  Glossy film: typed or AutoSense

- Y = B

  OHT: typed or AutoSense

- Y = C

  Label

- Y = D

  Envelope 1, Envelope 2, or Envelope 3

- Y = E

  Rough (designated media 1): typed or AutoSense

- Z = 1

  Tray 1

- Z = 2

  Tray 2

- Z = 3

  Tray 3

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

Backchannel 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 error To continue, press OK

Description

The device is unable to access or implement one of the image patterns files.

Y = calibration type, Z = event

- **47.FC.00** (event code)

  Color plane registration (CPR) Image not found at system initialization

- **47.FC.01** (event code)

  CPR Store Image failure

- **47.FC.02** (event code)

  CPR Image not found

- **47.FC.03** (event code)

  CPR Print engine execution failure

- **47.FC.10** (event code)

  Consecutive Dmax Dhalf Image not found at system initialization

- **47.FC.11** (event code)

  Consecutive Dmax Dhalf Store image failure

- **47.FC.12** (event code)

  Consecutive Dmax Dhalf Image not found

- **47.FC.13** (event code)

  Consecutive Dmax Dhalf Print engine execution failure

- **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.30** (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 initializatione

- **47.FC.41** (event code)

  Pulse Width Modulation Store image failure

- **47.FC.42** (event code)

  Pulse Width Modulation Image not found

- **47.FC.430** (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 print 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 (J50) between the fuser and the DC controller PCA.
2. Turn the product off. Remove the fuser, and then reinstall it.
3. If the error persists, replace the fuser wire harness.
4. If the error persists, replace the fuser.

W = 3

Low fuser temperature 1

1. Remove and then reseat the fuser.
2. Check the paper type setting using the product menus and in the printer driver. Make sure that they match and are correct for the type of media being used.
3. Replace the fuser.
4. If this product has been previously serviced, check the connector (J50) on the DC controller PCA.

W = 4

High fuser temperature 1

1. Remove and then reseat the fuser.
2. Check the paper type setting using the product menus and in the printer driver. Making sure that they match and are correct for the type of media being used.
3. Replace the fuser.
4. If this product has been previously serviced, check the connector (J50) on the DC controller PCA.

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 43 to 67Hz, the fuser temperature control does not work properly and causes this error.

2. If the error persists, replace the low-voltage power supply.
3. If this product has been previously serviced, check the connector (J101) on the DC controller PCA.

W = 8

Fuser type mis-match

1. Remove and then reseat the fuser.
2. Check the paper type setting using the product menus and in the printer driver. Making sure that they match and are correct for the type of media being used.
3. If this product has been previously serviced, check the connectors (J50; J139) on the DC controller PCA.
4. If the error persists, replace the fuser.

W = 10

Low fuser temperature 2

1. Remove and then reseat the fuser. Make sure there is no residual paper in the fuser. Make sure the device is not located in front of a vent or window where cool air may interfere with the ability of the fuser to heat up.
2. Check the product power source. Make sure the power source meets product requirements. Make sure this is the only device using the circuit.
3. Replace the fuser.
4. Check the connector (J50) between the fuser and the product. If it is damaged, replace the fuser.
5. If this product has been previously serviced, check the connector (J50) on the DC controller PCA.

W = 12

Fuser pressure-release mechanism failure

1. Remove and then reseat the fuser. Make sure there is no residual paper in the fuser.
2. Check the fuser pressure-release sensor flag. If it is damaged, replace the fuser.
3. Use the sensor test in the Manual sensor test to verify that the fuser pressure-release sensor (PS7) is properly functioning. If it is not, replace the fuser.
4. Use the fuser pressure-release drive test in the component test to verify that the fuser motor (M2) is properly functioning. If it is not, replace the fuser motor (M2).

5. If the error persists, replace the fuser.
6. If this product has been previously serviced, check the connector (J117; J123) on the DC controller PCA.

W = 11

High fuser temperature 2

1. Remove and then reseat the fuser. Make sure there is no residual paper in the fuser. Make sure the device is not located in front of a vent or window where cool air may interfere with the ability of the fuser to heat up.
2. Check the product power source. Make sure the power source meets product requirements. Make sure this is the only device using the circuit.
3. Replace the fuser.
4. Check the connector (J50) between the fuser and the product. If it is damaged, replace the fuser.
5. If this product has been previously serviced, check the connector (J50) on the DC controller PCA.

W = 13

Low fuser temperature 3

1. Remove and then reseat the fuser. Remove any residual paper in the product.
2. Check the paper type setting using the product menus and in the printer driver. Making sure that they match and are correct for the type of media being used.
3. If this product has been previously serviced, check the connector (J50) on the DC controller PCA.
4. If the error persists, replace the fuser.

W = 14

High fuser temperature 3

1. Remove and then reseat the fuser. Remove any residual paper in the product.
2. Check the paper type setting using the product menus and in the printer driver. Making sure that they match and are correct for the type of media being used.
3. If this product has been previously serviced, check the connector (J50) on the DC controller PCA.
4. If the error persists, replace the fuser.

51.00.YY Error

Description

Laser/scanner error

- YY = 20 or 21

  Cyan/black laser/scanner error (C/K)

- YY = 22 or 23

  Yellow/magenta laser/scanner error (Y/M)

Recommended action

51.00.20 or 51.00.21

1. Check the connector (J501) on the laser/scanner driver PCA and the connector (J111) on the DC controller PCA.
2. If the error persists, replace the C/K laser/scanner.

51.00.22 or 50.00.23

1. Check the connector (J501) on the laser/scanner driver PCA and the connector (J110) on the DC controller PCA.
2. If the error persists, replace the Y/M laser/scanner.

52.00.XX To continue, turn off then on

Description

Laser/scanner motor startup error

- XX = 04 or 05

  laser/scanner motor startup error

- XX = 05

  Laser/scanner rotation error

Recommended action

XX = 04

1. Check the connector (J501) on the laser/scanner driver PCA and the connector (J106) on the DC controller PCA.
2. If the error persists, replace the approriate laser/scanner.

XX = 05

1. Check the connector (J50-Y/K or J503-C/M) on the laser/scanner driver PCA and the connectors (J106; J110-C/K or J111-C/M) on the DC controller PCA.
2. If the error persists, replace the appropriate laser/scanner.

54.XX.YY Error

Description

A sensor error has occurred.

Recommended action

54.00.03

Environmental sensor failure

1. Turn the product off, and then on.
2. If the error persists, replace the environment sensor assembly.
3. If the environment sensor has been removed or replaced check the connector (J2) on the environment sensor and the connector (J108) on the DC controller PCA.

54.00.06 or 54.00.14 or 54.00.19

Registration density sensor failure

1. Open and close the right door (or turn on and then off the power switch) to perform the color plane registration.
2. If the error persists, replace the registration density sensor assembly.

54.01.05

Media sensor is out of calibration range

1. Turn the product off, and then clean the media sensor with a lint-free cloth. Turn the product on.
2. If the error persists, replace the paper pickup assembly.

54.06.21

Primary laser/scanner beam detect abnormality

1. Turn the product off, and then on.
2. If the error persists, replace the laser/scanner assembly.
3. If the product has had parts removed or replace, check the connector (J110-C/M or J111-C/M) on the DC controller PCA.

54.0X.0B or 54.0X.0C

Density sensor out of range error or Dhalf calibration failure

X = 0 black, X = 1 cyan, X = 2 magenta, X = 3 yellow

1. Check the supplies status page to make sure the toner cartridges are not past their useful life.
2. Check the ITB for damage.
3. Make sure the CPR sensor is not contaminated with toner or paper dust. Clean the sensor with compressed air and soft brush.
4. If error persists, replace the registration sensor assembly.

54.0X.0D or 54.0X.0E

Optical memory element abnormal or CPR sensor out of range

X = 0 black, X = 1 cyan, X = 2 magenta, X = 3 yellow

1. Check the supplies status page to make sure the toner cartridges are not past their useful life.
2. Check the ITB for damage.
3. Make sure the CPR sensor is not contaminated with toner or paper dust. Clean the sensor with compressed air and soft brush.
4. If error persists, replace the registration sensor assembly.

54.0X.0B or 54.0X.0C

Density sensor out of range error or Dhalf calibration failure

X = 0 black, X = 1 cyan, X = 2 magenta, X = 3 yellow

1. Check the supplies status page to make sure the toner cartridges are not past their useful life.
2. Check the ITB for damage.
3. Make sure the CPR sensor is not contaminated with toner or paper dust. Clean the sensor with compressed air and soft brush.
4. If error persists, replace the registration sensor assembly.

54.0X.0D or 54.0X.0E

Optical memory element abnormal or CPR sensor out of range

X = 0 black, X = 1 cyan, X = 2 magenta, X = 3 yellow

1. Check the supplies status page to make sure the toner cartridges are not past their useful life.
2. Check the ITB for damage.
3. Make sure the CPR sensor is not contaminated with toner or paper dust. Clean the sensor with compressed air and soft brush.
4. If error persists, replace the registration sensor 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

- **55.00.02** (event code)

  DC controller no engine response

- **55.00.07** (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 tray communication error

Recommended action

Turn the product off, and then on.

If the error persists, reseat the optional paper tray (1 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

Power supply fan (FM1) failure

1. Turn the product off, and then on. Listen for fan noise at the front lower-left corner of the product. If no noise is heard, replace the power supply fan (FM1).
2. If this part has been removed or replace, check the connector (J119) on the DC controller PCA.
3. Measure the voltage between the connectors (J119-1 and J119-3) on the DC controller PCA immediatly after the product power is turned on. If the voltage changes from 0 VDC to approximately 24 VDC, replace the fan (FM1).

57.00.04

Cartridge fan (FM2) failure

1. Turn the product off, and then on. Listen for fan noise at the front lower-right corner of the product. If no noise is heard, replace the cartridge fan (FM2).
2. If this part has been removed or replace, check the connector (J26) on the cartridge fan, connector (J262) on the high-voltage power supply (lower), and the connector (J114) on the DC controller.
3. Measure the voltage between the connectors (J262-1 and J262-3) on the high-voltage power supply (lower) immediatly after the product power is turned on. If the voltage changes from 0 VDC to approximately 24 VDC, replace the fan (FM2).

57.00.05

Delivery fan (FM3) failure

1. Turn the product off, and then on. Listen for fan noise at the lower back-center of the product. If no noise is heard, replace the delivery fan (FM3).
2. If this part has been removed or replace, check the connector on the intermediate connect board.
3. Measure the voltage between the connectors (J262-1 and J262-3) on the high-voltage power supply (lower) immediatly after the product power is turned on. If the voltage changes from 0 VDC to approximately 24 VDC, replace the fan (FM3).

58.00.04

Description

The low-voltage power supply is defective.

Recommended action

1. Turn the product off, and then on.
2. Check the connector (J143) on the DC controller PCA.
3. If the error persists, replace the low-voltage power supply.

59.00.YY Error To continue, turn off then on

Description

Printing error

Recommended action

59.00.04 or 59.00.05

Fuser motor (M2) start up error or fuser motor (M2) rotational error---preasure roller, delivery roller, fuser pressurization, primary transfer roller disengaement

1. Use the fuser motor (M2) drive test in the component test to verify that the fuser motor is properly functioning. If it is not, replace the fuser motor assembly.
2. If the product has been serviced, check the connector (J15) on the fuser motor and the connector (J17) on the DC controller PCA.

59.05.XX

Description

A drum startup or drum rotational error has occurred.

- XX = 06 Black drum startup error (M3); XX = 07 Black drum rotational error (M3)
- XX = 08 Yellow drum startup error (M1); XX = 09 Yellow drum rotational error (M1)
- XX = 10 Magenta drum startup error (M1); XX = 11 Magenta drum rotational error (M1)
- XX = 12 Cyan drum startup error; XX = 13 Cyan drum rotational error (M1)
- XX = B0 Residual toner feed motor error (M12)

Recommended action

59.05.06 or 59.05.07

1. Turn the product off, and then on.
2. Check the connector (J121) on the DC controller PCA.
3. Use the motor drive test in the componet test to verify that the motor is properly functioning. If it is not, replace the drum motor (M3).

59.05.08 or 59.05.09

1. Turn the product off, and then on.
2. Check the connector (J120) on the DC controller PCA.
3. Use the motor drive test in the componet test to verify that the motor is properly functioning. If it is not, replace the drum motor (M1).

59.05.10 or 59.05.11

1. Turn the product off, and then on.
2. Check the connector (J120) on the DC controller PCA.
3. Use the motor drive test in the componet test to verify that the motor is properly functioning. If it is not, replace the drum motor (M1).

59.05.12 or 59.05.13

1. Turn the product off, and then on.
2. Check the connector (J120) on the DC controller PCA.
3. Use the motor drive test in the componet test to verify that the motor is properly functioning. If it is not, replace the developing disengagement motor (M10).
4. Use the Manual sensor test to verify that the ITB alienation sensor (SR17) is properly functioning. If it is not, replace the ITB alienation sensor (SR17).

59.05.B0

1. Turn the product off, and then on.
2. Check the connector (J89) on the residual feed motor (M12), intermediate connectors (J75 and J77), and the connector (J137) on the DC controller.
3. Use the motor drive test in the componet test to verify that the motor is properly functioning. If it is not, replace the developing disengagement motor (M12).
4. Use the Manual sensor test to verify that the ITB alienation sensor (SR17) is properly functioning. If it is not, replace the ITB alienation sensor (SR17).

60.00.0Y Tray <Y> lifting error

Description

Tray lift motors error

Recommended action

60.00.11

Lifter motor failure (M7)

1. Turn the product off, and then on.
2. Check the connector (J141) on the DC controller PCA.
3. Check the connector (J78) on the lifter motor (M7).
4. Use the Cassette lifter sensor sensor (SR9) test in the Tray/Bin manual sensor test to verify that the sensor is properly functioning. If it is not, replace the lifter drive assembly.
5. If the error persists, replace the lifter drive assembly.

61.00.01

Description

Color table read 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.

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.

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.

81.0X.YY Embedded JetDirect error

Description

Embedded HP JetDirect print server critical error

- **81.01.00** (event code)

  EIO Networking Event: <UVWXYZ>

- **81.02.00** (event code)

  Wireless Networking Event: <UVWXYZ>

- **81.03.00** (event code)

  Access Point Wireless Networking Event: <UVWXYZ>

- **81.04.00** (event code)

  JetDirect Inside Networking Event: <UVWXYZ>

- **81.06.00** (event code)

  Internal EIO Networking Event: <UVWXYZ>

- **81.07.00** (event code)

  Internal Wireless Networking Event: <UVWXYZ>

- **81.08.00** (event code)

  Internal Access Point Wireless Networking Event: <UVWXYZ>

- **81.09.00** (event code)

  Internal JetDirect Inside Networking Event: <UVWXYZ>

Recommended action

Turn the product off, and then on.

If the error persists, replace the formatter.

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 HP website, and then resend the firmware upgrade.

99.00.27 only: Turn the product off, and then on again. Resend the firware 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 data 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 **Administration** 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.

99.XX.YY

Description

Firmware install 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> almost full

Description

Toner Collection bottle is almost full.

- **10.31.60** (event code)

  Toner collection unit

Recommended action

Replace the toner collection unit

<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

- **10.01.60** (event code)

  Cyan print cartridge

- **10.02.60** (event code)

  Magenta print cartridge

- **10.03.60** (event code)

  Yellow print cartridge

- **10.23.60** (event code)

  Fuser Kit

- **10.22.60** (event code)

  Transfer 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

- **10.01.70** (event code)

  Cyan print cartridge

- **10.02.70** (event code)

  Magenta print cartridge

- **10.03.70** (event code)

  Yellow print cartridge

- **10.23.70** (event code)

  Fuser Kit

- **10.22.70** (event code)

  Transfer 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.

<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

Recommended action

No action necessary.

[File System] device failure To clear, press OK

Description

The specified device has failed.

Recommended action

Press the OK button to clear the error.

[File System] file operation failed To clear, press OK

Description

A PJL file system command attempted to perform an illogical operation.

Recommended action

Press 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

Press 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.

Calibration reset pending

Description

A calibration reset occurs when all jobs are processed.

Recommended action

To begin the reset sooner, cancel all jobs by pressing the **Stop** button ⊗.

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.

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, press 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 front door

Description

The front door of the product is open.

Recommended action

Close the door.

Use the switch test in the manual sensor test to verify that the front-door switch is properly functioning. If the switch fails the test, replace the switch.

Check the sensor flag on the front-door assembly. If it is damaged, replace the front-door assembly.

If the product has been recently serviced, check the connector (j62) on the 24V interlock switch and the connectors (J61, J100, and J118) on the DC controller PCA.

Close lower right door

Description

The 1 x 500-sheet optional paper feeder right door is open.

Recommended action

Open, and then close the door.

Use the right-door switch (SW1) test in the Tray/Bin manual sensor test to verify that the switch is properly functioning. If the switch fails the test, replace the switch.

Check the sensor flag on the right door assembly. If it is damaged, replace the lower right door assembly.

Close upper right door

Description

The message appears even though the 1 x 500-sheet optional paper feeder right door is closed.

Recommended action

open, and then close the door.

Check the connector (J62) on the 24V interlock switch (SW2) and the connectors (J61, J100, and J118) on the DC controller.

Check the sensor flag on the upper right door assembly. If it is damaged, replace the upper right door assembly.

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

Press the OK button to print the last page of the job.

EIO <X> disk initializing

Description

The specified EIO disk device is initializing.

Recommended action

No action is necessary.

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.

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

- **10.01.35** (event code)

  Cyan print cartridge

- **10.02.35** (event code)

  Magenta print cartridge

- **10.03.35** (event code)

  Yellow 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

Press the OK button to identify the incompatible supplies.

Replace the supplies with those that are designed for this product.

Install <supply>

Description

A supply item is either not installed or installed incorrectly.

- Black cartridge

  10.00.15 (event code)

- Cyan cartridge

  10.10.15 (event code)

- Magenta cartridge

  10.02.15 (event code)

- Yellow cartridge

  10.03.15 (event code)

- Fuser kit

  10.23.15 (event code)

Recommended action

Install the supply item or make sure that the installed supply item is fully seated.

Install <supply> Close rear door

Description

The toner collection unit has been removed or has been installed incorrectly.

- Toner collection unit

  10.31.15 (event code)

Recommended action

Replace or reinstall the toner collection unit correctly to continue printing.

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. Wait for the fuser to cool before handling it.

1. Open the right door.
2. Install or adjust the fuser.
3. Close the right door.

Install supplies

Description

More than one supply is missing or is installed incorrectly.

Recommended action

Press the OK button to identify the supplies that need to be replaced.

Press 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 Transfer Unit

Description

The transfer unit is either not installed or not installed correctly.

Recommended action

1. Open the right door.
2. Install the ITB.

NOTE: If the ITB is already installed, remove it, and then reinstall the ITB.

3. Close the right door.
4. If the error persists, use the ITB alienation sensor (SR17) in the manual sensor test to verify that the sensor is properly functioning. If it is not, replace the ITB.
5. If the error persists, use the ITB alienation test in the component test to verify that the ITB alienation mechanism is properly functioning. If it is not, replace the ITB.

Internal disk not functional

Description

The internal hard drive is not correctly functioning.

Recommended action

Turn the product off, and then reinstall the hard drive.

If the error persists, replace the internal hard drive.

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.

Load Tray <X>: [Type], [Size]

Description

This message appears even though there is media loaded in the tray.

Recommended action

Use the cassette media present sensor test in the Tray/bin manual sensor test 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 (J85, J90) on the MP tray media out sensor and the connector (J107) on the DC controller PCA.
- Printer cassette: connectors (J6) on the cassette media out sensor and the connector (J131) on the DC controller PCA.
- 1 X 500-sheet paper feeder cassette: connector (J55D) on the paper feeder cassette media out sensor and the connector (J106) on the paper feeder controller PCA.

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.

Manually feed output stack Then press OK to print second sides

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. Press 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 not 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.

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 Color Band Test...

Description

A color-band test is being performed.

Recommended action

No action necessary.

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 CMYK samples...

Description

The product is printing the CMYK Sample pages.

Recommended action

No action necessary.

Printing Color Usage Log...

Description

The product is printing the Color Usage log.

Recommended action

No action necessary.

Printing Configuration...

Description

The product is printing the Configuration page.

Recommended action

No action necessary.

Printing Demo Page...

Description

The product is printing the Demo page.

Recommended action

No action necessary.

Printing Diagnostics Page...

Description

The product is printing the Diagnostics page.

Recommended action

No action necessary.

Printing Engine Test...

Description

The product is printing an engine test 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 PQ Troubleshooting...

Description

The product is printing the PQ Troubleshooting pages.

Recommended action

No action necessary.

Printing Registration Page...

Description

The product is printing the Registration pages.

Recommended action

No action necessary.

Printing RGB Samples...

Description

The product is printing the RGB Sample pages.

Recommended action

No action necessary.

Printing stopped

Description

Time has expired on the Print/Stop test.

Recommended action

Press 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.

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.

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.

Remove all print cartridges

Description

The product is testing the transfer unit assembly.

Recommended action

To perform the test, remove all the print cartridges. To cancel the test, press the **Stop** button ⊗.

To exit press ▼

Remove at least one print cartridge

Description

The product is testing the print-cartridge motor.

Recommended action

To perform the test, remove at least one print cartridge. To cancel the test, press the **Stop** button ⊗.

To exit press ▼

Remove shipping lock from Tray 2

Description

The Tray 2 shipping lock was not removed before you turned the product on.

Recommended action

Open Tray 2, and then remove the shipping lock.

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

- **10.01.70** (event code)

  Cyan print cartridge

- **10.02.70** (event code)

  Magenta print cartridge

- **10.03.70** (event code)

  Yellow print cartridge

- **10.23.70** (event code)

  Fuser Kit

- **10.31.70** (event code)

Toner collection unit

- **10.22.70** (event code)

  Transfer 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 supplies reach the very low threshold. Two or more supplies have reached the estimated end of life. 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

- **10.01.70** (event code)

  Cyan print cartridge

- **10.02.70** (event code)

  Magenta print cartridge

- **10.03.70** (event code)

  Yellow print cartridge

- **10.23.70** (event code)

  Fuser Kit

- **10.31.70** (event code)

  Toner collection unit

- **10.22.70** (event code)

  Transfer kit

Recommended action

Press 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.

Restore Factory Settings

Description

The product is restoring factory settings.

Recommended action

No action necessary.

Restricted from printing in color

Description

This message displays when color printing is disabled for the product or when it is disabled for a particular user or print job.

Recommended action

To enable color printing for the product, change the **Restrict Color Use** setting in the **Manage Supplies** menu.

Rotating <color> motor

Description

A component test is in progress. the component selected is the indicated <color> cartridge motor.

<color> =

- Black
- Cyan
- Magenta
- Yellow

Recommended action

Press the **Stop** button ⊗ when ready to stop this test.

To exit press ▼

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 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.

Supplies in wrong positions

Description

Two or more print-cartridge slots contain the wrong print cartridge.

From left to right, the print cartridges should be installed in the following order:

- Yellow
- Magenta
- Cyan
- Black

Recommended action

Install the correct cartridge in each slot.

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

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> open

Description

The specified tray is open or not closed completely.

- X = 2

  Tray 2

- X = 3

  Tray 3

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 (SW2,3 - SW82,83 - SW92,93) 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

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.

Troubleshooting

Description

The product is in the Troubleshooting process.

Recommended action

Press the **Stop** button ⊗.

To exit press ▼

Type mismatch Tray <X>

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, press 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, press OK

Description

A non-supported supply has been installed.

OR

One of the print cartridges is for a different HP product.

- XX = 00

  Black print cartridge

- XX = 01

  Cyan print cartridge

- XX = 02

  Magenta print cartridge

- XX = 03

  Yellow 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.

USB accessory needs too much power Remove USB and 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 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.

Used supply installed To continue, press OK OR Used supply in use

Description

One of the print cartridges has been previously used.

- XX = 00

  Black print cartridge

- XX = 01

  Cyan print cartridge

- XX = 02

  Magenta print cartridge

- XX = 03

  Yellow print cartridge

Recommended action

If you believe you purchased a genuine HP supply, go to www.hp.com/go/anticounterfeit.

Wrong cartridge in <color> slot

Description

The indicated slot for a print cartridge contains a cartridge that is not the correct color.

From left to right, the print cartridges should be installed in the following order:

- Yellow

  10.03.25 (event code)

- Magenta

  10.02.25 (event code)

- Cyan

  10.01.25 (event code)

- Black

  10.00.25 (event code)

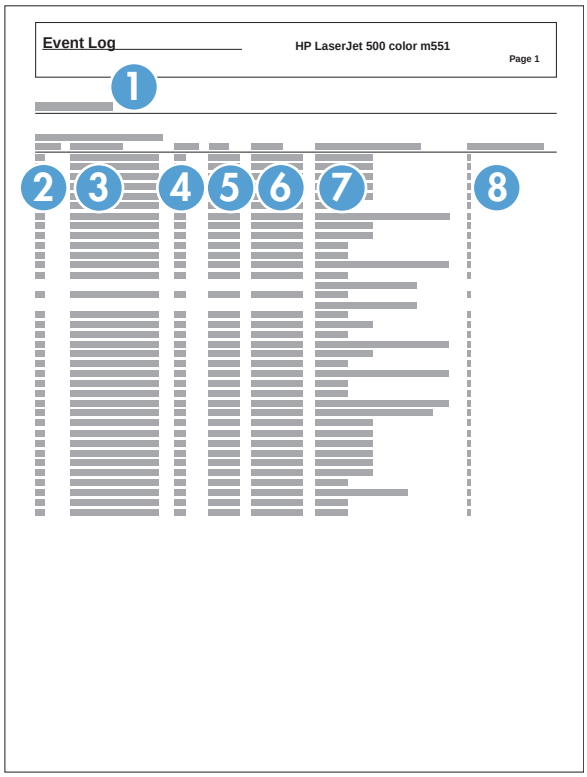
Recommended action

Remove the print cartridge from that slot, and install a cartridge that is the correct color.

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 3-48 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. Use the Down arrow ▼ button to select 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 required for the **Service** menu is 09055111.
3. Use the Down arrow ▼ button to select 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. Use the Down arrow ▼ button to select 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 required for the **Service** menu is 09055111.
3. Use the Down arrow ▼ button to select the **View Event Log** item, and then press the OK button.

Clear an event log

1. Press the Home button.
2. Open the following menus:
   - **Device Maintenance**
   - **Service**

     The PIN required for the **Service** menu is 09055111.
3. Use the Down arrow ▼ button to select the **Clear Event Log** item, and then press the OK button.

Clear jams

Common causes of jams

The product is jammed.

Cause	Solution
The paper does not meet specifications.	Use only paper that meets HP specifications.
A component is installed incorrectly.	Verify that the transfer belt and transfer roller are correctly installed.
You are using paper that has already passed through a product or copier.	Do not use paper that has been previously printed on or copied.
An input tray is loaded incorrectly.	Remove any excess paper from the input tray. Make sure that the stack is below the maximum stack height mark in the tray.
The paper is skewed.	The input-tray guides are not adjusted correctly. Adjust them so they hold the stack firmly in place without bending it.
The paper is binding or sticking together.	Remove the paper, flex it, rotate it 180°, or flip it over. Reload the paper into the input tray.
The paper is removed before it settles into the output bin.	Reset the product. Wait until the page completely settles in the output bin before removing it.
During two-sided printing, you removed the paper before the second side of the document was printed.	Reset the product and print the document again. Wait until the page completely settles in the output bin before removing it.
The paper is in poor condition.	Replace the paper.
The internal tray rollers are not picking up the paper.	If the paper is heavier than 220 g/m^2 (58 lb), it might not be picked from the tray. The rollers are worn. Replace the rollers.
The paper has rough or jagged edges.	Replace the paper.
The paper is perforated or embossed.	Perforated or embossed paper does not separate easily. Feed single sheets from Tray 1.
Paper was not stored correctly.	Replace the paper in the trays. Paper should be stored in the original packaging in a controlled environment.
Not all product packing material was removed.	Verify that the packing tape, cardboard, and plastic shipping locks have been removed from the product.

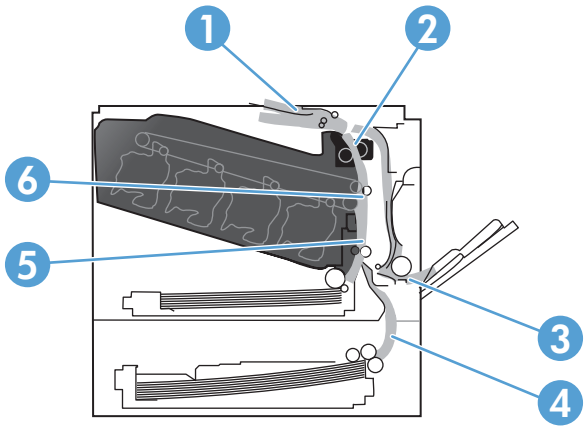
If the product still continues to jam, contact HP Customer Support or your authorized HP service provider.

Jam locations

Use this illustration to identify locations of jams. In addition, instructions appear on the control panel to direct you to the location of jammed paper and how to clear it.

NOTE: Internal areas of the product that might need to be opened to clear jams have green handles or green labels.

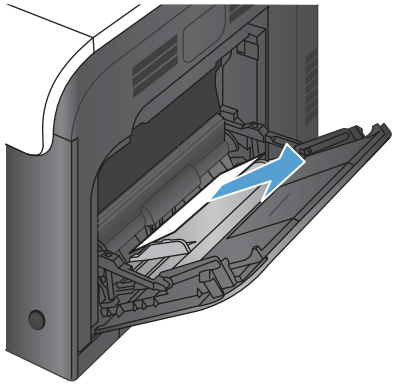
Figure 3-49 Jam locations



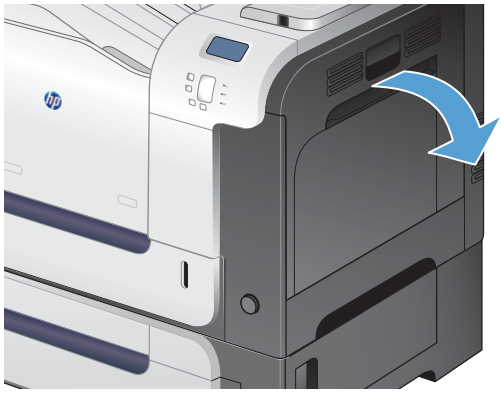
1	Output-bin area
2	Fuser area
3	Tray 1 area
4	Optional 500-sheet paper and heavy media tray (Tray 3)
5	Registration area
6	Transfer area

Clear jams in Tray 1

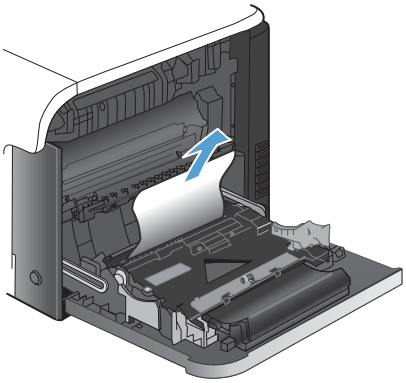
1. If jammed paper is visible in Tray 1, clear the jam by gently pulling the paper straight out. Touch the OK button to clear the message.



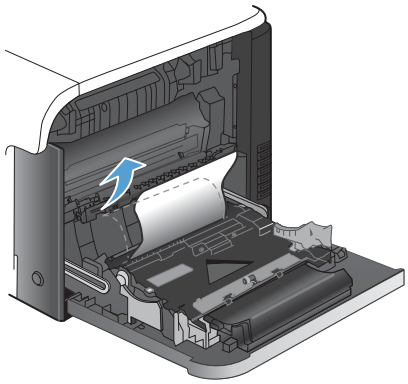
2. If you cannot remove the paper, or if no jammed paper is visible in Tray 1, close Tray 1 and open the right door.



3. If paper is visible inside the right door, gently pull the trailing edge to remove it.



4. Gently pull the paper out of the pick up area.



5. Close the right door.

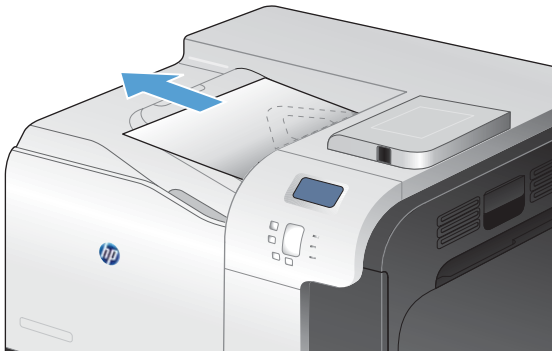


Clear jams in the output bin area

1. If paper is visible from the output bin, grasp the leading edge and remove it.



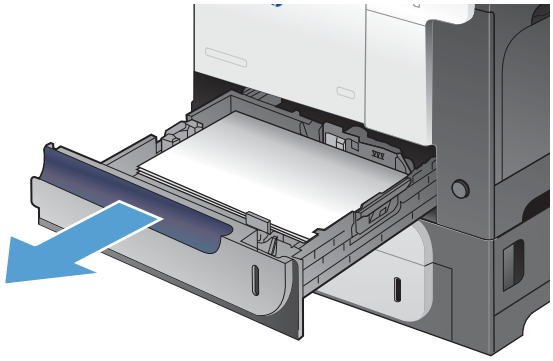
2. If jammed paper is visible in the duplex output area, gently pull it to remove it.



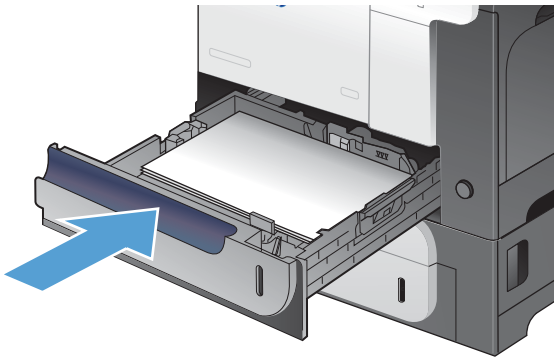
Clear jams in Tray 2

CAUTION: Opening a tray when paper is jammed can cause the paper to tear and leave pieces of paper in the tray, which might cause another jam. Be sure to clear jams before opening the tray.

1. Open Tray 2 and make sure that the paper is stacked correctly. Remove any jammed or damaged sheets of paper.



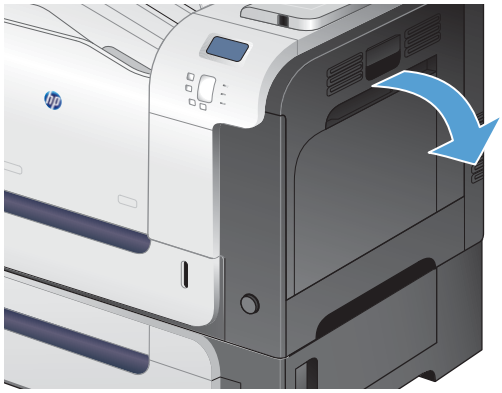
2. Close the tray.



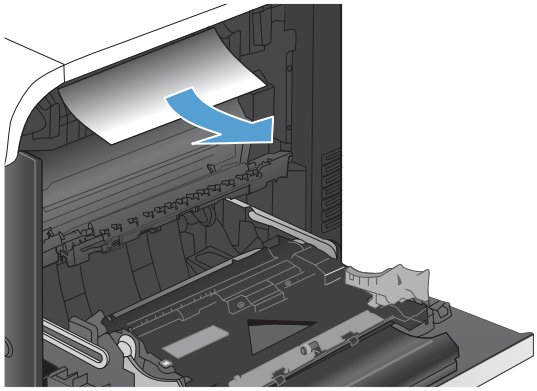
Clear jams in the right door

CAUTION: The fuser can be hot while the product is in use. Wait for the fuser to cool before clearing jams.

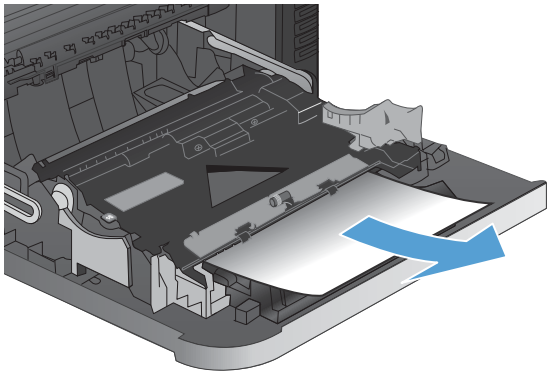
1. Open the right door.



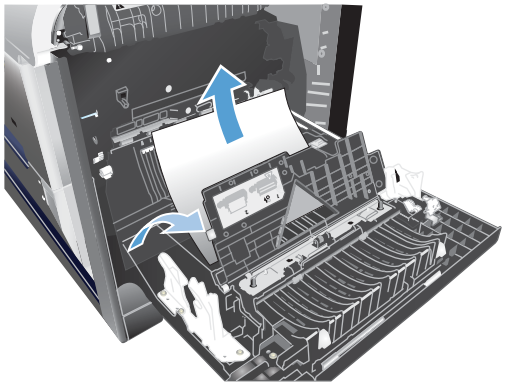
2. If paper is jammed as it enters the output bin, gently pull the paper downward to remove it.



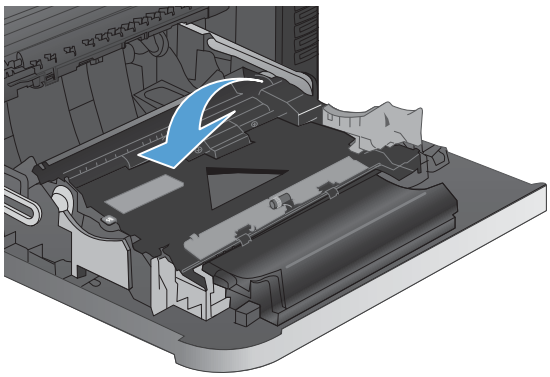
3. If paper is jammed inside the right door, gently pull the paper to remove it.



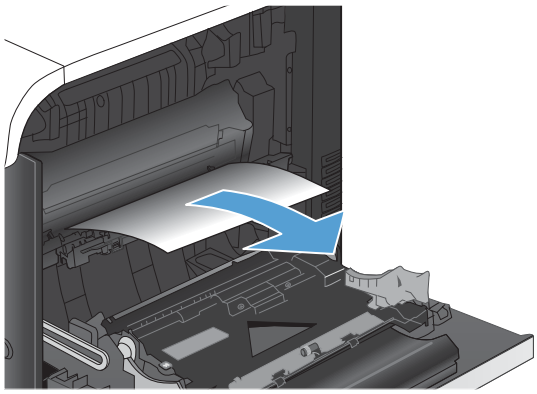
4. Lift the paper-feed cover on the inside of the right door. If jammed paper is present, gently pull the paper straight out to remove it.



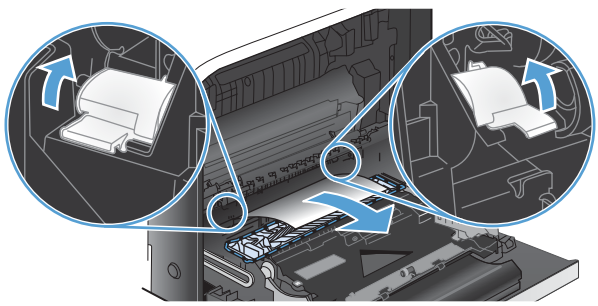
5. Close the paper-feed cover.



6. Gently pull the paper out of the pickup area.

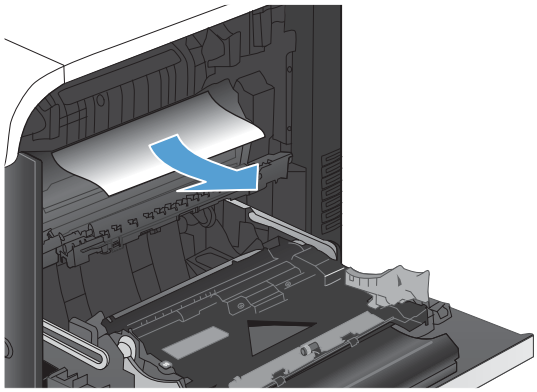


7. Look for paper in the Tray 2 roller area. Push up on the two green levers to release the jam-access door. Remove any jammed paper, and close the door.



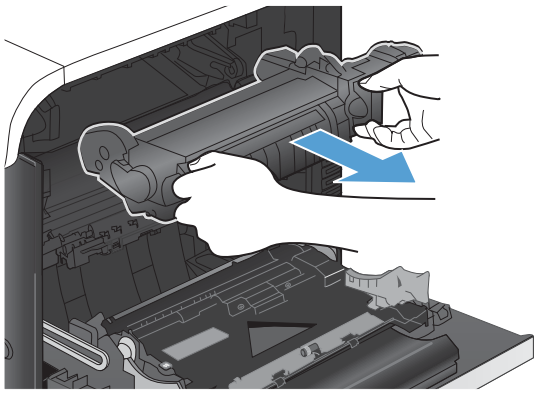
8. If paper is visible entering the bottom of the fuser, gently pull downward to remove it.

   CAUTION: Do not touch the rollers on the transfer roller. Contaminates can affect print quality.



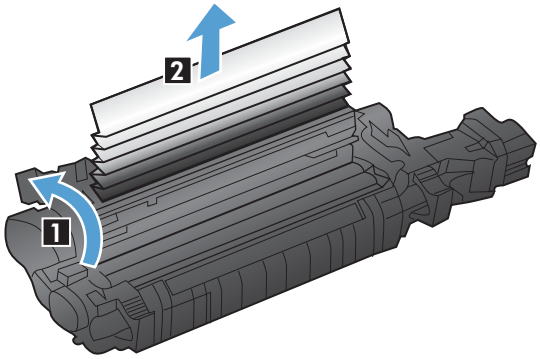
9. Paper could be jammed inside the fuser where it would not be visible. Grasp the fuser handles, lift up slightly, and pull straight out to remove the fuser.

   CAUTION: The fuser can be hot while the product is in use. Wait for the fuser to cool before clearing jams.

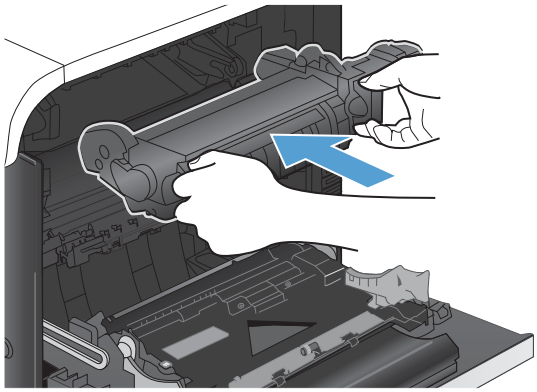


10. Open the jam-access door (callout 1). If paper is jammed inside the fuser, gently pull it straight up to remove it (callout 2). If the paper tears, remove all paper fragments.

    CAUTION: Even if the body of the fuser has cooled, the rollers that are inside could still be hot. Do not touch the fuser rollers until they have cooled.



11. Close the jam-access door, and push the fuser completely into the product.

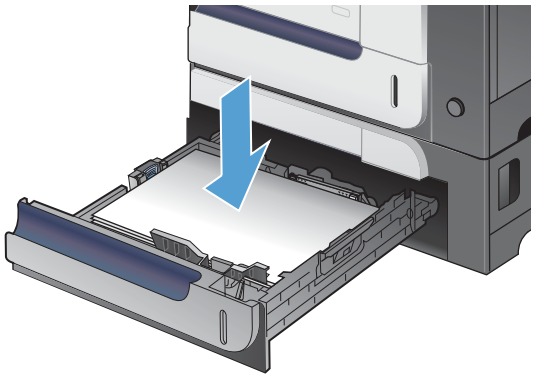


12. Close the right door.

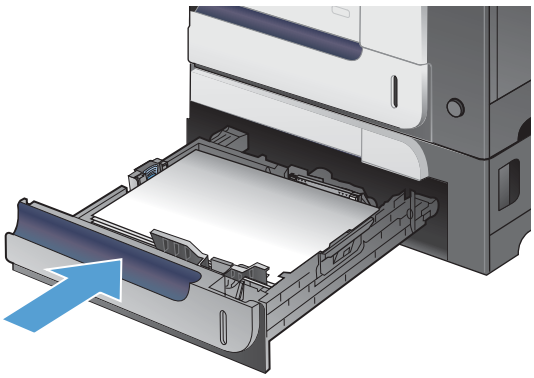


Clear jams in the optional 500-sheet paper and heavy media tray (Tray 3)

1. Open Tray 3 and make sure that the paper is stacked correctly. Remove any damaged or jammed sheets of paper.

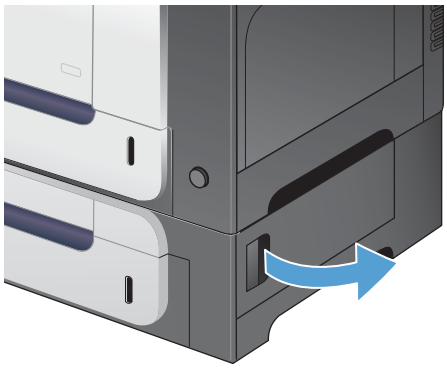


2. Close Tray 3.

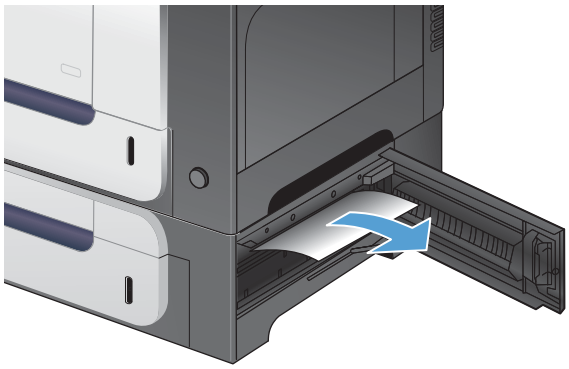


Clear jams in the lower right door (Tray 3)

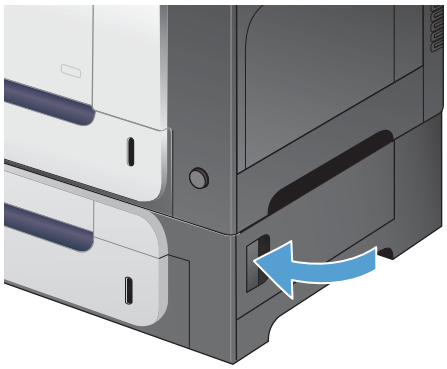
1. Open the lower right door.



2. If paper is visible, gently pull the jammed paper up or down to remove it.



3. Close the lower right door.



Jam causes and solutions

Jams in the output bin

Table 3-33 Causes and solutions for delivery delay jam

Cause	Solution
The output-bin media-full sensor lever is damaged.	Replace the paper delivery assembly. See Delivery assembly on page 228.
Poor contact of the output-bin media-full sensor connector.	Reconnect the connectors of the output bin full sensor (SR6) (J47) to DCC PCA (J123).
The output-bin media-full sensor is defective.	Check the output-bin full sensor (SR6) by using the manual sensor test. Toggle the sensor to determine if the value changes for "F." If the value does not change, replace paper delivery assembly.
Poor contact of the fuser-motor (M2) connector.	Reconnect the connectors of the fuser motor (J117), (J15), and the DC controller PCA (J105).
The fuser motor (M2) is defective.	Execute the fuser-motor driving test in the actuator-drive mode. If the motor is defective, replace the fuser motor (M2).

Jams in the fuser and transfer area

Table 3-34 Causes and solutions for fuser delivery delay jams

Cause	Solution
The lever for the loop-sensors (loop 1 and loop 2) is not set correctly.	Check the loop-sensor lever and place it in the correct position. If the jam persists, replace the fuser.
The spring of the fuser-delivery-sensor lever is unhooked.	Check the spring of the fuser and right-door sensor levers and place them in the correct position. If the jam persists, replace the fuser.
The fuser-delivery-sensor lever is damaged	Replace the fuser.
Poor contact with the fuser-delivery connector	Reconnect the connectors of the fuser output sensor (SR5) (J45), intermediate (J95) and the DC controller PCA (J123).
The fuser-delivery sensor is defective	Check the fuser-delivery sensor with the sensor monitor mode. If the sensor is defective, replace the sensor (SR5).
Poor contact of the fuser-motor connector (M2)	Reconnect the connectors of the fuser motor (J15) and the DC controller PCA (J117).
The fuser motor is defective	Execute the fuser-motor driving test in the actuator-drive mode. If the motor is defective, replace the fuser motor (M2).
The fuser pressure release sensor (SR7) is defective.	Execute a manual sensor test to verify the sensor is working by manually toggling the sensor. Check "H" to see if the value changes. If not, replace the sensor.

Table 3-35 Causes and solutions for wrapping jams

Cause	Solution
The fuser roller or pressure roller is dirty.	Execute a fuser roller cleaning.
The guide of the fuser delivery unit is dirty.	Clean the guide.
The fuser roller or the pressure roller is worn or deformed.	Replace the fuser.

Table 3-36 Causes and solutions for fuser delivery stationary jams

Cause	Solution
The fuser roller or pressure roller is worn or deformed.	Replace the fuser.
The fuser delivery roller is deformed.	
The gear of the fuser delivery roller is damaged.	
The fuser output sensor lever is set incorrectly or damaged.	Check the sensor lever to make sure it is set correctly. If it is damaged, replace the fuser.
The spring of the fuser output sensor lever is unhooked.	Check the spring and place it in correct position.
Poor contact of the fuser delivery sensor connector.	Reconnect the intermediate connector (J95) of the fuser output sensor and the connector (J123) on the DC controller PCA.
The fuser output sensor is defective.	Run the sensor test to verify that the fuser output sensor is functioning properly. If it is not replace the fuser output sensor.

Table 3-37 Causes and solutions for residual media jams

Cause	Solution
The fuser loop sensor is defective.	Check the fuser loop sensor using the sensor monitor mode. If the sensor is defective, replace the fuser.
The spring of the fuser-delivery-sensor lever is unhooked.	Check the spring of the fuser and place it in the correct position.
The fuser-delivery-sensor lever is damaged.	Replace the sensor (SR5).
Poor contact of the fuser-delivery-sensor connector.	Reconnect the connectors of the fuser-delivery media-feed connector (J46), intermediate (J95) and the DC controller PCA (J123).
The fuser-output sensor is defective.	Check the fuser output sensor using the sensor monitor mode. If the sensor is defective, replace the sensor (SR5).
Poor contact of the duplexing repick sensor connector.	Reconnect the connectors of the duplexing media-reverse sensor (J8 and J9) and the duplexing driver PCA (J107).
The duplexer re-feed is defective.	Check the duplexer re-feed sensor. If the sensor is defective, replace the right door.

Table 3-37 Causes and solutions for residual media jams (continued)

Cause	Solution
The sensor detecting a residual media jam is set incorrectly or damaged.	Run the sensor test to verify which sensor detects the media. Check the sensor lever to make sure it is set correctly. If it is damaged, replace the following corresponding part: • Registration sensor (SR8): Replace the registration assembly. • Fuser output sensor (SR5): Replace the fuser. • Fuser loop sensor 1 or 2 (SR14 and SR15): Replace the fuser. • Duplexer re-feed sensor (SR22): Replace the MP tray pickup assembly.
The spring of the residual media jam detective sensor lever is unhooked.	Run the sensor test to verify which sensor detects the media. Check the spring of the sensor lever to make sure it is set correctly.
Poor contact of the residual media jam detective sensor connector.	Run the sensor test to verify which sensor detects the media. Reconnect the following corresponding sensor connector: • Registration sensor (SR8): Connector (J109) on the DC controller PCA • Fuser output sensor (SR5): Intermediate connector (J95) and connector (J123) on the DC controller PCA • Fuser loop sensor 1 or 2 (SR14 and SR15): Connector (J139) on the DC controller PCA • Duplexer re-feed sensor (SR22): Connector (J107) on the DC controller PCA.
The residual media jam detective sensor is defective.	Run the sensor test to verify which sensor detects the media. Replace the following corresponding part: • Registration sensor (SR8): Replace the registration assembly. • Fuser output sensor (SR5): Replace the fuser. • Fuser loop sensor 1 or 2 (SR14 and SR15): Replace the fuser. • Duplexer re-feed sensor (SR22): Replace the MP tray pickup assembly.

Table 3-38 Causes and solutions for pickup delay jams 2

Cause	Solution
The registration roller is worn or deformed.	Replace the secondary-transfer unit.
The spring of the registration shutter is unhooked.	Check the spring and place it in correct position.
Poor contact of the pickup motor drive connector.	Reconnect the connectors of the registration motor (J6), intermediate, and the DC controller PCA (J131).
The pickup motor is defective.	Execute the pickup-motor driving test in the actuator-drive mode. If the motor is defective, replace the pickup motor.
The cassette pickup roller is worn or deformed.	Replace the cassette pickup roller.

Table 3-38 Causes and solutions for pickup delay jams 2 (continued)

Cause	Solution
The cassette separation roller is worn or deformed.	Replace the cassette separation roller.
Poor contact of the registration sensor connector.	Reconnect the connector (J109) on the DC controller PCA.
The registration sensor is defective.	Run the sensor test to verify that the registration sensor is functioning properly. If it is not, replace the registration assembly.
Poor contact of the cassette pickup solenoid drive connector.	Reconnect the connector (J140) on the DC controller PCA.
The cassette pickup solenoid is defective.	Run the solenoid drive test in the actuator drive mode to verify that the cassette pickup solenoid is functioning properly. If it is not, replace the cassette-pickup drive assembly.
Poor contact of the pickup motor drive connector.	Reconnect the connector (J131) on the DC controller PCA.
The pickup motor is defective.	Run the pickup motor drive test in the actuator drive mode to verify that the pickup motor is functioning properly. If it is not, replace the pickup motor.

Table 3-39 Causes and solutions for pickup stationary jams

Cause	Solution
Multiple feed of media.	Replace any worn or deformed parts (tray separation roller, tray feed roller, MP-tray pickup roller or MP-tray separation roller). Check the separation roller and MP-tray separation roller to see if they are firmly seated and coupled with the torque limiter. Replace the separation roller and feed roller in Tray 2. Replace the MP-tray pickup roller and MP-tray separation roller.
The secondary transfer roller is not set correctly.	Place the secondary-transfer-roller unit in the correct position.
The secondary transfer roller is worn or deformed.	Replace the secondary-transfer-roller unit.
Poor contact of the drum motor 3 drive connector.	Reconnect the connectors of the drum motor 3 (J42) and the DC controller PCA (J121).
The drum motor 3 is defective.	Execute the drum motor 3 driving test in the actuator-drive mode. If the motor is defective, replace the drum motor 3.
The ITB does not rotate smoothly.	Replace the ITB.
Multiple-feed of media.	If the Tray 2 pickup roller or separation roller are worn or deformed, replace any defective parts. If the Tray 1 pickup roller or separation pad are worn or deformed, replace any defective parts.
The registration sensor lever is set incorrectly or damaged.	Check the sensor lever to make sure it is set correctly. If it is damaged, replace the registration assembly.

Table 3-39 Causes and solutions for pickup stationary jams (continued)

Cause	Solution
The spring of the registration sensor lever is unhooked.	Check the spring and place it in correct position.
Poor contact of the registration sensor connector.	Reconnect the connector (J109) on the DC controller PCA.
The registration sensor is defective.	Run the sensor test to verify that the registration sensor is functioning properly. If it is not, replace the registration assembly.

Jams in the duplex area (duplex models)

Table 3-40 Causes and solutions for duplexing reverse jams

Cause	Solution
The duplex reverse roller is worn or deformed.	Replace the delivery assembly.
The duplex feed roller is worn or deformed.	Replace the duplex feed unit.
Poor contact of the duplex reverse-motor connector.	Reconnect the connectors (J202 and J201) on the high-voltage power supply (upper) PCA and connector (J113) on the DC controller PCA.
The duplex reverse motor is defective.	Replace the duplex drive assembly.
Poor contact of the duplexing reverse-motor connector.	Reconnect the connectors of the duplexing reverse motor (J20) and the duplexing driver PCA (J202).
The duplexing reverse motor is defective.	Replace the right door assembly.

Table 3-41 Causes and solutions for duplex repick jams

Cause	Solution
The duplexer re-feed sensor lever is set incorrectly or damaged.	Check the sensor lever to make sure it is set correctly. If it is damaged, replace the right door assembly.
The spring of the duplexer re-feed sensor lever is unhooked.	Check the spring and place it in correct position.
Poor contact of the duplexer re-feed sensor connector.	Reconnect the intermediate connector (J90) and connector (J107) on the DC controller PCA.
The duplexer re-feed sensor is defective.	Run the sensor test to verify that the duplexer re-feed sensor is functioning properly. If it is not, replace the right door assembly.
The spring of the duplexer-refeed-sensor lever is unhooked.	Check the spring and place it in the correct position.
The duplexer-refeed-sensor lever is damaged.	Replace the duplexer re-feed sensor.
Poor contact of the duplexer-refeed-sensor connector.	Reconnect the intermediate connector (J90) and connector (J107) on the DC controller PCA. If the problem persist, replace duplexer re-feed sensor.
The duplexer re-feed sensor is defective.	Check the duplexer re-feed sensor. If the sensor is defective, replace the duplexer re-feed sensor.

Table 3-41 Causes and solutions for duplex repick jams (continued)

Cause	Solution
Poor contact of the duplex reverse connector.	Reconnect the connectors of the duplex repick motor (J20), intermediate (J202 and J201) and the duplex driver PCA (J113).
The duplex-repick motor is defective.	Replace the duplex drive assembly.

Table 3-42 Causes and solutions for residual media jams

Cause	Solution
Poor contact of the loop-sensor connector and fuser loop sensors 1 and 2.	Reconnect the connectors of the fuser loop sensors (1 and 2): • Loop 1 (J11, J352, J350, J50) and the DC controller (J139) • Loop 2 (J10, J352, J350, J50) and the DC controller (J139)
The fuser loop sensor is defective.	Check the fuser loop sensor. If the sensor is defective, replace fuser.
The spring of the fuser output sensor lever is unhooked.	Check the spring of the fuser and right door and place it in the correct position.
The fuser-ouput-sensor lever is damaged.	Replace the sensor (SR5).
Poor contact of the fuser-output sensor connector.	Reconnect the connectors of the fuser-output sensor (J46), intermediate (J95) and the DC controller PCA (J123).
The fuser-output sensor is defective.	Check the fuser-output sensor. If the sensor is defective, replace the fuser.
The spring of the duplexer re-feed sensor lever is unhooked.	Check the spring and place it in the correct position. The sensor is located in the right door behind the cover close to the engine side.
The duplexer re-feed sensor lever is damaged.	Replace the right door assembly.
Poor contact of the duplexing media-reverse-sensor connector.	Reconnect the connectors of the duplexing media-reverse sensor (J8) and (J90) and the duplexing driver PCA (J107).
The duplexer re-feed sensor is defective.	Check the duplexer re-feed sensor. If the sensor is defective, replace the duplexer re-feed sensor.

NOTE: Even if jammed paper is visible in Tray 1, clear the jam from the inside of the product by opening the right door.

Jams in Tray 1, Tray 2 and internal paper path

Table 3-43 Causes and solutions for pickup delay jam 1: tray pickup

Cause	Solution
The MP tray pick up roller or the MP tray separation pad is worn or deformed.	Replace the MP tray pick up roller and separation pad.
Poor contact of the Tray 1 paper sensor.	Reconnect the connectors of the tray media-feed sensor (J7), intermediate (J85), and DC controller (J107).
The Tray 1 paper sensor is defective (SR21).	Check the Tray 1 paper sensor. If the sensor is defective, replace the right door assembly.

Table 3-43 Causes and solutions for pickup delay jam 1: tray pickup (continued)

Cause	Solution
The arm spring of the MP pickup solenoid is unhooked.	Check the spring and place it in the correct position.
Poor contact of the MP-pickup-solenoid drive connector.	Reconnect the connectors of the tray pickup solenoid (J84) and the DC controller PCA (J107).
The MP-pickup solenoid is defective.	Execute the tray-pickup-solenoid driving test in the actuator-drive mode. If the solenoid is defective, replace the right door assembly.
Poor contact of the pickup-motor drive connector (M13).	Reconnect the connectors of the pickup motor (J1705), intermediate (J6) and the DC controller PCA (J131).
The pickup motor (M13) is defective.	Execute the pickup-motor driving test in the actuator-drive mode. If the motor is defective, replace the pickup motor.

Table 3-44 Causes and solutions for pickup stationary jams

Cause	Solution
Multiple feed of media.	Replace any worn or deformed parts (tray separation pad, tray feed roller, MP tray pickup roller or MP tray separation pad). If replacing the MP tray separation pad, you must replace the right door assembly. Check the separation pad and MP tray separation pad to see if they are firmly seated and coupled with the torque limiter. Replace the separation pad and feed roller for Tray 2 and Tray 3. If the MP tray pickup roller if defective, replace the roller. If the MP tray separation pad is defective, replace the right door assembly.
The secondary transfer roller is not set correctly.	Place the secondary-transfer-roller unit in the correct position.
The secondary-transfer roller is worn or deformed.	Replace the secondary-transfer-roller assembly..
Poor contact of the drum 3 drive connector.	Reconnect the connectors of the ITB motor (J42) and the DC controller PCA (J121).
The drum motor 3 is defective.	Execute the drum 3 driving test in the actuator-drive mode. If the motor is defective, replace the ITB motor.
The ITB does not rotate smoothly.	Replace the ITB.

Table 3-45 Causes and solutions for pickup delay jam 1; MP tray pickup

Cause	Solution
The MP tray pickup roller or MP tray separation pad is worn or deformed.	If the MP tray pickup roller if defective, replace the roller. If the MP tray separation pad is defective, replace the right door assembly.
Poor contact of the MP tray media-presence-sensor connector.	Reconnect the connectors of the MP tray media-presence sensor (J2007), intermediate (J85) and the DC controller PCA (J1071).

Table 3-45 Causes and solutions for pickup delay jam 1; MP tray pickup (continued)

Cause	Solution
The Tray 1 paper sensor is defective (SR21).	Check the Tray 1 paper sensor using the sensor monitor mode. If the sensor is defective, replace the right-door assembly.
The arm spring of the MP tray pickup solenoid is unhooked.	Check the spring and place it in the correct position.
Poor contact of the MP tray-pickup-solenoid drive connector.	Reconnect the connectors of the MP tray pickup solenoid (J84) and the DC controller PCA (J107).
The MP tray pickup solenoid is defective.	Execute the MP tray-pickup-solenoid driving test in the actuator-drive mode. If the solenoid is defective, replace the right door assembly.
Poor contact of the pickup-motor (M13) drive connector.	Reconnect the connectors of the pickup motor (J1705), intermediate (J6) and the DC controller PCA (J131).
The pickup motor (M13) is defective.	Execute the pickup-motor (M13) driving test in the actuator-drive mode. If the motor is defective, replace the pickup motor.

Jams in Tray 3

Table 3-46 Causes and solutions for pickup delay and pickup stationary jams

Cause	Solution
The paper-feeder pickup roller is worn or deformed.	Replace the Tray 3 pickup roller.
The paper-feeder separation roller is worn or deformed.	Replace the Tray 3 separation roller.
The paper-feeder feed roller 1 is worn or deformed.	Replace the Tray 3 feed roller.
Poor contact of the Tray 3 feed sensor connector.	Reconnect the connector (J405) on the paper feeder driver PCA, intermediate connector (J13) and connector (J20) of the Tray 3 feed sensor.
The Tray 3 feed sensor is defective.	Run the sensor test to verify that the Tray 3 feed sensor is functioning properly. If it is not, replace the paper-feeder feed assembly.
Poor contact of the paper-feeder pickup solenoid drive connector.	Reconnect the connector (J405) on the paper feeder driver PCA and connector (J18). Replace the paper feeder assembly.
The paper-feeder pickup solenoid is defective.	Run the solenoid drive test in the actuator drive mode to verify that the paper-feeder pickup solenoid is functioning properly. If it is not, replace the paper feeder assembly.
Poor contact of paper-feeder pickup motor drive connector.	Reconnect the connector (J406) on the paper feeder driver PCA and connector (J14). Replace the paper feeder assembly.
The paper-feeder pickup motor is defective.	Run the pickup motor drive test in the actuator drive mode to verify that the paper-feeder pickup motor is functioning properly. If it is not, replace the paper-feeder assembly.
Multiple feed of media.	If the Tray 3 pickup roller, separation roller or feed roller is worn or deformed, replace any defective parts.

Table 3-46 Causes and solutions for pickup delay and pickup stationary jams (continued)

Cause	Solution
The Tray 3 feed sensor lever is set incorrectly or damaged.	Check the sensor lever to make sure it is set correctly. If it is damaged, replace the paper-feeder assembly.
The spring of the Tray 3 feed sensor lever is unhooked.	Check the spring and place it in correct position.
Poor contact of the Tray 3 feed sensor connector.	Reconnect the connector (J405) on the paper feeder driver PCA intermediate connector (J13) and connector (J20) of the Tray 3 feed sensor.
The Tray 3 feed sensor is defective.	Run a sensor test to verify that the Tray 3 feed sensor is functioning properly. If it is not, replace the paper-feeder assembly.

Change jam recovery

This product provides jam recovery, a feature that you can use to reprint jammed pages. The following options are available:

- **Auto** — The product attempts to reprint jammed pages when sufficient memory is available.
- **Off** — The product does not attempt to reprint jammed pages. Because no memory is used to store the most recent pages, performance is optimal.

NOTE: When using this option, if the product runs out of paper and the job is being printed on both sides, some pages can be lost.

- **On** — The product always reprints jammed pages. Additional memory is allocated to store the last few pages printed. This might cause overall performance to suffer.

1. At the product control panel, press the Home button.
2. Open the following menus:
   - **Administration**
   - **General Settings**
   - **Jam Recovery**
3. Select the appropriate setting, and then press the OK button.

Solve paper handling problems

Product feeds multiple sheets

Product feeds multiple sheets

Cause	Solution
The input tray is overfilled. Open the tray and verify that the paper stack is below the maximum stack height mark.	Remove excess paper from the input tray.
Print paper is sticking together.	Remove paper, flex it, rotate it 180 degrees or flip it over, and then reload it into the tray. **NOTE:** Do not fan paper. Fanning can cause static electricity, which can cause paper to stick together.
Paper does not meet the specifications for this product.	Use only paper that meets HP paper specifications for this product.
Trays are not properly adjusted.	Make sure that the paper guides match the size of paper being used.
Tray 2 feeds multiple sheets.	Make sure Tray 2 is not overfilled. Open the tray and verify that the paper stack is below the maximum stack height mark. Remove paper from Tray 2 to avoid jams.

Paper does not feed automatically

Paper does not feed automatically

Cause	Solution
Manual feed is selected in the software program.	Load Tray 1 with paper, or, if the paper is loaded, press the OK button.
The correct size paper is not loaded.	Load the correct size paper.
The input tray is empty.	Load paper into the input tray.
Paper from a previous jam has not been completely removed.	Open the product and remove any paper in the paper path.
The paper size is not configured correctly for the input tray.	Print a configuration page or use the control panel to determine the paper size for which the tray is configured.
The guides in the tray are not against the paper.	Verify that the rear and width paper guides are touching the paper.

Paper does not feed automatically

Cause	Solution
The **Manually Feed Prompt** item is set to **Always**. The product always prompts for manual feed, even if the tray is loaded.	Open the tray, reload the media, and then close the tray. Or, change the **Manually Feed Prompt** setting to **Unless loaded**, so that the product prompts for manual feed only when the tray is empty.
The **Use Requested Tray** setting on the product is set to **Exclusively**, and the requested tray is empty. The product will not use another tray.	Load the requested tray. Or, change the setting from **Exclusively** to **First** on the **Trays** menu. The product can use other trays if no media is loaded in the specified tray.

Use manual print modes

Try the following manual print modes to see if they solve the image-quality problems.

Select a manual print mode

1. Press the Home button.
2. Open the following menus:
   - **Administration**
   - **General Settings**
   - **Print Quality**
   - **Adjust Paper Types**
3. Press the Down arrow ▼ button to highlight a paper type, and then press the OK button.
4. Select a print mode, and then press the OK button.

Table 3-47 Print modes under the Adjust Paper Types sub menu

Print Mode	
	• **Auto sense mode** • **Normal mode** • **Light mode** • **Heavy mode** • **Cardstock mode** • **Transparency mode** • **Transparency 2 mode** • **Envelope mode** • **Label mode** • **Tough mode** • **Extra tough mode** • **Heavy glossy mode** • **Extra heavy mode** • **Rough mode** • **Card Glossy Mode** • **4 mm trans mode** • **Light rough mode** **NOTE:** Not all print modes are available for all paper types.

Table 3-47 Print modes under the Adjust Paper Types sub menu (continued)

Resistance Mode	Set to **Up** to resolve print-quality issues caused by poor secondary transfer in low-humidity environments with resistive or rough surface media.
Humidity Mode	With glossy film, set to **High** when the product is in a high-humidity environment and print-quality defects occur on HP Tough Paper or Opaque film. With transparencies, set to **High** 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. With all other paper types, set to **High** when the product is in a high-humidity environment and light density occurs on the first page of a print job.
Pre-Rotation Mode	Set to **Alternate 1** when horizontal banding occurs with the drum pitch. Set to **Alternate 2** when problems like fade finger (trailing edge toner starvation) occurs after high coverage continuous printing.
Fuser Temp Mode	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 (**Adjust Paper Types** menu) 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 settings. **Normal** **Up** **Down**
Paper Curl Mode	Use in high-humidity and high-temperature environments. The **Reduced** setting decreases fuser temperature and increases the interpage gap.

Table 3-48 MP modes under the Optimize submenu

Normal Paper	Set to **Smooth** when printing on smooth paper of normal weight.
Heavy Paper	Set to **Smooth** when printing on smooth, heavy media types.
Envelope Control	Use this mode if envelopes are sticking together due to moisture in the envelope adhisive. **Normal** **Reduced Temperature Multipurpose Mode**
Environment	Set to **Low Temp** if the product is operating in a low-temperature environment and you are having problems with print quality such as blisters in the printed image.

Table 3-48 MP modes under the Optimize submenu (continued)

Line Voltage	Set to **Low Voltage** if the product is operating in a low-voltage environment and you are having problems with print quality such as blisters in the printed image.
Tray 1	Set to **Alternate** if you are seeing marks on the back side of the paper when printing from Tray 1. This sets the product to initiate a clean sequence every time a job finishes when the product is set for **Any Size** and **Any Type** for Tray 1.
Background	Set to **Alternate 1** when a background occurs all over the page. Set to **Alternate 2** when thin vertical lines appear on the page. Set to **Alternate 3** when the other alternatives do not correct the problem.
Uniformity Control	Set to **Alternate 1** to improve uniformity on any paper type. Set to **Alternate 2** to improve uniformity on normal and light paper types. Set to **Alternate 3** when the other alternatives do not correct the problem.
Tracking Control	The default setting is **On**. This item is for manufacturing use only.
Registration	Set to **Alternate** when color misregistration occurs.
Transfer Control	Set to **Alternate 1** to reduce primary transfer bias and to resolve low density or blotchy images. Set to **Alternate 2** to resolve ghosting outlines that look like a finger or fingers. Set to **Alternate 3** when the other alternatives do not correct the problem.
Fuser Temp	The default setrting for this item is **Normal**. Use the **Alternate** setting to reduce the occurance of first-page fuser wrinkle or toner blister.
Restore Optimize	Use this item to reset the menu defaults.

Solve image quality problems

This section helps you define print-quality problems and what to do to correct them. Often print-quality problems can be handled easily by making sure that the product is maintained, using paper that meets HP specifications, or running a cleaning page.

Image defects table

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

Table 3-49 Image defects table

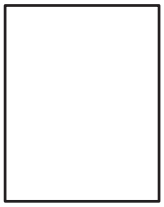
Problem	Sample	Cause	Solution
Print is light or faded on entire page.		Poor contacts exist on the ITB unit and the product grounding unit.	Clean the grounding contacts. If the problem remains after cleaning, check the contacts for damage. Replace any deformed or damaged parts.
		Poor secondary transfer contacts exist on the secondary transfer roller and the ITB.	Clean the contacts. If the problem remains after cleaning, check the contacts for damage. Replace any deformed or damaged parts.
Print is light or faded in a particular color.		Poor primary transfer bias contacts on the ITB unit and product.	Clean the contacts of the color that produces the light print. If the problem remains after cleaning, check the contacts for damage. Replace any deformed or damaged parts.
		Poor primary charging bias contacts with the print cartridge and product.	
		Poor developing bias contacts with the print cartridge and product.	
Image is too dark.		The RD sensor is defective.	Replace the RD sensor.
Page is blank.		The high-voltage power-supply lower is defective (no developing bias output).	Replace the high-voltage power-supply lower.

Table 3-49 Image defects table (continued)

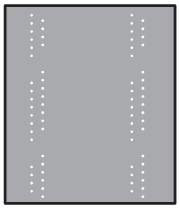
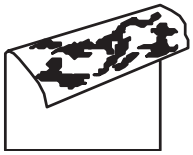
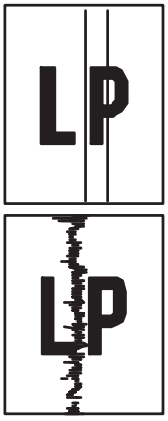
Problem	Sample	Cause	Solution
The page is all black or a solid color.		Poor contact exists in the primary charging bias or developing bias contacts between the print cartridge and the product.	Clean each contact of the color that produces the all black or solid color. If the problem remains after cleaning, check the contacts for damage. Replace any deformed or damaged parts. Replace the affected print cartridge.
White spots appear in an image		The primary transfer roller is deformed or has deteriorated.	Replace the ITB.
		The secondary transfer roller is deformed or has deteriorated.	Replace the secondary-transfer-roller.
The back of the page is dirty.		The secondary transfer roller is dirty.	Replace the secondary transfer roller.
		The fuser inlet guide or separation guide is dirty.	Clean the dirty parts. If the dirt does not come off, replace the guide.
		The pressure roller is dirty.	Run the cleaning page several times. If the issue persists, replace the fuser.
Vertical streaks or bands appear on the page.		Scratches are present on the circumference of the photosensitive drum.	Replace the print cartridge of the color that matches the defect.
		Scratches are present on the circumference of the fuser roller.	Replace the fuser.
		Scratches are present on the circumference of the ITB.	Replace the ITB.
		The ITB drive roller is deformed or has deteriorated.	
		The ITB cleaning mechanism is malfunctioning.	

Table 3-49 Image defects table (continued)

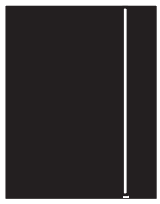
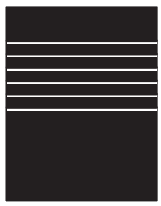
Problem	Sample	Cause	Solution
Vertical white lines appear in a particular color.		The laser beam window is dirty.	Clean the window and remove any foreign substances.
		Scratches are present on the circumference of the developing cylinder or photosensitive drum. White scratch down the page could mean the scanner glass needs to be cleaned.	Remove the affected print cartridge and re-install. The PGCs will clean the glass. If the problem persists, replace the affected print cartridge.
		The laser/scanner-unit mirror is dirty.	Replace the laser/scanner assembly.
Vertical white lines appear in all colors.		Horizontal scratches on the fuser roller.	Replace the fuser.
		Scratches are present on the circumference of the ITB. White scratch down the page could mean the scanner glass needs to be cleaned.	Remove the affected print cartridge and re-install. The PGCs will clean the glass. Replace the ITB.
Horizontal lines appear on the page.		Repetitive horizontal lines appear.	Use the repetitive defects ruler to identify the dirty roller. Clean the roller. If the roller cannot be cleaned, replace the fuser.
		Horizontal scratches are present on the photosensitive drum.	Replace the print cartridge of the color that matches the defect.
		Horizontal scratches are present on the fuser roller.	Replace the fuser.
A horizontal white line appears on the page.		Repetitive horizontal white lines appear.	Use the repetitive defects ruler to identify the dirty roller. Clean the roller. If the roller cannot be cleaned, replace the roller.
		Horizontal scratches are present on the photosensitive drum.	Replace the print cartridge of the color that matches the defect.
		Scratches are present on the circumference of the ITB.	Replace the ITB.

Table 3-49 Image defects table (continued)

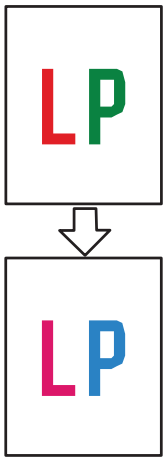
Problem	Sample	Cause	Solution
Image in a particular color does not print in the correct color.		Poor contact exists in the primary charging bias or developing bias contacts between the print cartridge and the product.	Clean each contact of the color that produces the missing color. If the problem remains after cleaning, check the contacts for damage. Replace any deformed or damaged parts.
		The print cartridge (primary charging roller, developing roller, or photosensitive drum) is defective.	Replace the print cartridge of the color that matches the defect.
		The high-voltage power-supply lower is defective (no primary charging bias or developing bias output).	Replace the high-voltage power-supply lower.
		The laser/scanner unit is defective.	Replace the laser/scanner assembly.
Dropouts appear.		The secondary transfer roller is deformed or has deteriorated.	Replace the secondary-transfer-roller.
		The primary charging roller, developing roller, or photosensitive drum is deformed or has deteriorated.	Replace the print cartridge of the color that matches the defect.
		The fuser roller is deformed or has deteriorated.	Replace the fuser.
		The high-voltage power-supply T PCA is defective (no transfer bias output).	Replace the high-voltage power-supply upper.
The toner is not fully fused to the paper.		The fuser roller or pressure roller is scarred or deformed.	Replace the fuser.
		The thermistor is defective.	Replace the fuser.
		The fuser heater is defective.	

Table 3-49 Image defects table (continued)

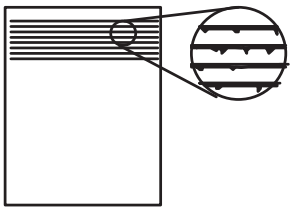
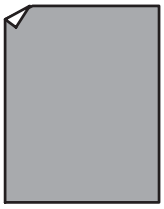
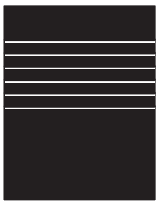
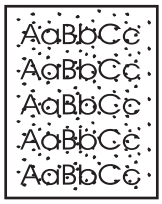
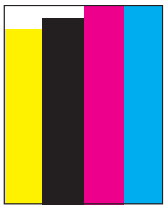
Problem	Sample	Cause	Solution
Some color is misregistered.		The product is incorrectly calibrated.	Calibrate the product.
		The ITB unit is defective.	If the ITB does not rotate smoothly or a cleaning malfunction occurs (ITB is dirty), replace the ITB.
		The drive gear of the ITB motor is worn or chipped.	Check each drive gear between the ITB drive roller and the ITB motor. If the gear is worn or chipped, replace the drive unit.
		The RD sensor is defective.	Open and close the front door several times to clean the RD sensor. If the problem persists, replace the RD sensor.
		The laser/scanner unit is defective.	Replace the laser/scanner assembly.
		The print cartridge is defective.	Replace the print cartridge of the affected color.
Toner smears appear on the media.		The product has residual media.	Remove the residual media.
		The fuser inlet guide is dirty.	Clean the fuser inlet guide.
The printed page contains misformed characters.		The product is experiencing page skew.	See the “Text or graphics are skewed on the printed page” row in this table.
		The laser/scanner unit is defective.	Replace the laser/scanner assembly.
Text or graphics are skewed on the printed page.		The registration shutter spring is unhooked.	Check the spring and place it in the correct position.
		The registration shutter spring is deformed.	Replace the secondary transfer assembly.
The printed page contains wrinkles or creases.		The roller or media feed guide is dirty.	Clean any dirty components.
		A feed roller is deformed or has deteriorated.	Replace any deformed or deteriorated rollers.
		The paper feed guide is damaged.	Replace the paper-feed-guide unit.

Table 3-49 Image defects table (continued)

Problem	Sample	Cause	Solution
The front of the page is dirty.		The photosensitive drum is dirty.	Replace the print cartridge.
		The fuser roller or pressure roller is dirty.	Execute a **Pressure roller clean mode**. If the dirt does not come off, replace the fuser. **NOTE:** Cleaning the fuser with HP tough paper provides better results than with plain paper. You might need to execute the cleaning process several times to remove all contaminates on the fuser.
Repetitive horizontal lines			See repetitive image defect ruler. Clean the indicated roller. If the contaminate does not come off, replace appropriate roller or assembly.
Pages have flecks of toner			Execute a cleaning page to clean the contaminate off the fuser. The cleaning page may need to be run several time to clean the fuser. Do not replace the fuser. **NOTE:** Cleaning the fuser with HP tough paper provides better results than with plain paper. You might need to execute the cleaning process several times to remove all contaminates on the fuser.
Pages have one or more skewed color planes (can appear on the right or left side of the page)			Remove, and then reinstall the print cartridge associated with the defect.

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.

Process a cleaning page

1. Press the Home button.
2. Open the following menus:
   - **Device Maintenance**
   - **Calibrate/Cleaning**
3. Press the Down arrow ▼ button to highlight 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 ▼ button to highlight the **Cleaning Settings** item, and then select the **Auto Cleaning** item. Select the **On** item, and then press the OK button.
4. Press the Down arrow ▼ button to highlight 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.

5. Press the Down arrow ▼ button to highlight the **Auto Cleaning Size** item, and then use the arrow buttons to select the cleaning page size. Press the OK button.

Solve performance problems

Table 3-50 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.
Pages print very slowly.	Heavier paper types can slow the print job.	Print on a different type of paper.
	Complex pages can print slowly.	Proper fusing may require a slower print speed to ensure the best print quality.
	Large batches, narrow paper, and special paper such as gloss, transparency, cardstock, and HP Tough Paper can slow the print job.	Print in smaller batches, on a different type of paper, or on a different size of paper.
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.	• Disconnect the USB cable at both ends and reconnect it. • Try printing a job that has printed in the past. • Try using a different USB cable.
	Other devices are running on your computer.	The product might not share a USB port. If you have an external hard drive or network switchbox that is connected to the same port as the product, the other device might be interfering. To connect and use the product, you must disconnect the other device or you must use two USB ports on the computer.

Solve connectivity problems

Solve direct connect problems

If you have connected the product directly to a computer, check the cable.

- Verify that the cable is connected to the computer and to the product.
- Verify that the cable is not longer than 2 meters (6 feet). Replace the cable if necessary.
- Verify that the cable is working correctly by connecting it to another product. Replace the cable if necessary.

Solve network problems

Check the following items to verify that the product is communicating with the network. Before beginning, print a configuration page.

1. Are there any physical connection problems between the workstation or file server and the product?

   Verify that the network cabling, connections, and router configurations are correct. Verify that the network cable lengths meet network specifications.

2. Are your network cables connected properly?

   Make sure that the product is attached to the network using the appropriate port and cable. Check each cable connection to make sure it is secure and in the right place. If the problem continues, try a different cable or ports on the hub or transceiver. The amber activity light and the green link status light next to the port connection on the back of the product should be lit.

3. Are the link speed and duplex settings set correctly?

   Hewlett-Packard recommends leaving this setting in automatic mode (the default setting).

4. Can you "ping" the product?

   Use the command prompt to ping the product from your computer. For example:

   ```
   ping 192.168.45.39
   ```

   Ensure that the ping displays round-trip times.

   If you are able to ping the product, verify that the IP address configuration for the product is correct on the computer. If it is correct, delete and then add the product again.

   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.

5. Have any software applications been added to the network?

   Make sure they are compatible and that they are installed correctly with the correct printer drivers.

6. Are other users able to print?

   The problem may be workstation-specific. Check the workstation network drivers, printer drivers, and redirection (capture in Novell NetWare).

7. If other users are able to print, are they using the same network operating system?

   Check your system for proper network operating system setup.

8. Is your protocol enabled?

   Check the status of your protocol on the Configuration page. You can also use the embedded Web server to check the status of other protocols.

9. Does the product appear in HP Web Jetadmin or other management application?

   - Verify network settings on the Network configuration page.
   - Confirm the network settings for the product using the product control panel (for products with control panels).

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 500 color M551 is 09055111.

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.

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.

First level	Second level	Third level	Description
User Access Code			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.
Administrator Access Code			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.
Service Access Code			This item allows access to the **Service** sub menus.
	Print Event Log		Use this item to print the service event log.

First level	Second level	Third level	Description
	View Event Log		Use this item to view the service event log.
	Clear Event Log		Use this item to clear (erase) the service event log.
	Cycle Counts	**Mono Cycle Counts**	Use this item to reset the mono print job page count.
		Color Cycle Count	Use this item to reset the color print job page count.
		Refurbish Cycle Count	Use this item to reset the refurbuish print job page count.
	Serial Number		Use this item to reset the product serial number.
	Service ID		Use this item to reset the product service identification number.
	Cold Reset Paper		Use this item to set the cold reset paper size.
	New Registration Roller		Use this item to reset the registration roller page count.
	Media Sensor Value		Use this item to record the media sensor value found on a replacement paper pickup assembly.
	Manual Laser Glass Cleaning		Use this item to execute a manual laser glass cleaning. The laser shutters are moved away from the laser glass windows so that they can be manually cleaned.
Test Support	**Continuous Print from USB**		Use this item to test print from an external USB.
	Automatic Calibrations		Use this item to enable automatic calibrations.

Product resets

Restore factory-set defaults

1. Press the Home button.
2. Open the following menus:
   - **Administration**
   - **General Settings**
   - **Restore Factory Settings**
3. Press the Down arrow ▼ button to highlight the select type of reset from a list, and then press the OK button.
4. Press the Down arrow ▼ button to highlight the **Reset** item, and then press the OK button.

Restore factory-set defaults values

- **Calibration**
  - Persisted calibration engine data
  - Engine color density data
  - LaserJet engine calibration data
- **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
- **General Security**
  - Default Authentication agent
  - Authentication agents
  - Policy agents
  - Color access control

Product cold reset

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 arrow ⮌ button twice to highlight **Continue**, and then press the OK button.

NOTE: The product will initialize.

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 product automatically copies over the OS and firmware files from the Repository location and the product 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 product 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. Press the Down arrow ▼ button to highlight **Administration**, and then press the OK button.
4. Press the Down arrow ▼ button to highlight **Partial Clean**, and then press the OK button.

5. Press the OK button again.
6. Press the back arrow ⮌ 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. Press the Down arrow ▼ button to highlight **Administration**, and then press the OK button.

4. Press the Down arrow ▼ button to highlight **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.

Preboot menu options

If an error occurs while the product is initializing, 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.

Table 3-51 Preboot menu options (1 of 5)

Menu option	First level	Second level	Third level	Description
Continue				Selecting the **Continue** 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 **Continue**. If the user navigates to another menu, the timeout does not apply.
Sign In				Enter the administrator PIN or service PIN if one is required to access the **Preboot** menu.

Table 3-51 Preboot menu options (1 of 5) (continued)

Menu option	First level	Second level	Third level	Description
Administrator				This item navigates to the **Administrator** sub menus. If authentication is required (and the user is not already signed in) the **Sign In** displays. The user is required to sign in.
	Download			This item initiates a preboot firmware download process. A USB device interface or a Network connection can be used to download firmware.
		Network		See the service manual for information about product updates.
		USB <X>		See the service manual for information about product updates.
	Clean Disk			This item reinitializes the disk and cleans all disk partitions. **CAUTION:** Selecting the **Clean Disk** item removes **all** data. A delete confirmation prompt is **not** provided. The system is **not** bootable after this action—a firmware download must be performed to return the system to a bootable state.
	Partial Clean			This item reinitializes the disk (removing all data except the firmware repository where the master firmware bundle is downloaded and saved). **CAUTION:** Selecting the **Partial Clean** item removes **all** data except the firmware repository. A delete confirmation prompt is **not** provided. 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).
	Change Password			Select this item to set or change the administrator password.
	Clear Password			Select the **Clear Password** 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. When the confirmation prompt appears, press the OK button to clear the password.

Table 3-52 Preboot menu options (2 of 5)

Menu option	First level	Second level	Third level	Description
Administrator continued	**Manage Disk**	**Clear Disk**		Select the **Clear Disk** 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.
		Lock Disk		Select the **Lock Disk** 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 then 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.
		Leave Unlocked		Select the **Leave Unlocked** 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.
		Clear Password		Select the **Clear Password** item to continue using the non-secure disk and clear the password associated with the yet to be installed secure disk. **CAUTION:** Data on the missing secure disk will be permanently inaccessible.
		Retain Password		Select the **Retain Password** item to use the non-secure disk for this session only, and then search for the missing secure disk in future sessions.
		Boot Device	**Secure Erase**	Select the **Secure Erase** item to erase all of the data on the disk and unlock it if required. This might take a long time. **NOTE:** 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.
			Erase and Unlock	Select the **Erase and Unlock** item to cryptographically erase all data on disk and unlock the disk to allow access to it from any product. **NOTE:** The system will be unusable until the system files are reinstalled. Erases the crypto key. The disk becomes a non-encrypted disk.
			Get Status	This item provides disk status information if any is available.

Table 3-53 Preboot menu options (3 of 5)

Menu option	First level	Second level	Third level	Description
Administrator continued	**Manage Disk** continued	**Internal Device**		Select the **Internal Device** item to erase the internal device or get status about the internal device.
			Secure Erase	Select the **Secure Erase** item to erase all of the data on the disk and unlock it if required. This might take a long time. **NOTE:** 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.
			Erase and Unlock	Select the **Erase and Unlock** item to cryptographically erase all data on disk and unlock the disk to allow access to it from any product. **NOTE:** The system will be unusable until the system files are reinstalled. Erases the crypto key. The disk becomes a non-encrypted disk.
			Get Status	This item provides disk status information if any is available.
		External Device		Select the **External Device** item to erase the internal device or get status about the internal device.
			Secure Erase	Select the **Secure Erase** item to erase all of the data on the disk and unlock it if required. This might take a long time. **NOTE:** 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.
			Erase and Unlock	Select the **Erase and Unlock** item to cryptographically erase all data on disk and unlock the disk to allow access to it from any product. **NOTE:** The system will be unusable until the system files are reinstalled. Erases the crypto key. The disk becomes a non-encrypted disk.
			Get Status	This item provides disk status information if any is available.

Table 3-54 Preboot menu options (4 of 5)

Menu option	First level	Second level	Third level	Description
Administrator continued	**Configure LAN**			Select the **Configure LAN** 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.
		DHCP		Use this item for automatic IP address acquisition from the DHCP server.
		Static		Use this item to manually assign the network addresses.
			IP Address	Use this item to manually enter the IP addresses.
			Subnet Mask	Use this item to manually enter the subnet mask.
			Default Gateway	Use this item to manually enter the default gateway.
			Save and Exit	Select the **Save and Exit** item to save the manual settings.

Table 3-55 Preboot menu options (5 of 5)

Menu option	First level	Second level	Third level	Description
Administrator continued	**Startup Options**			Select the **Startup Options** item to specify options that can be set for the next time the product is turned on and initializes to the to **Ready** state.
		Cold Reset		Check the **Cold Reset** item to clear the IP address and all customer settings (this item also returns all settings to factory defaults). **NOTE:** Items in the **Service** menu are not reset.
		First Power		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.
		Skip Plug-ins		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. **NOTE:** The files on the disk will be available after the printer enters the **Ready** state.
		Skip Cal		Select the **Skip Cal** item to initialize the product the next time the power is turned on without calibrating.
		Show Revision		Not currently functional: Check the **Show Revision** item to allow the product to initialize and show the firmware version when the device reaches the **Ready** state. Once the product power is turned on the next time, the **Show Revision** item is unchecked so the firmware revision is not shown.
		Lock Service		**CAUTION:** Select the **Lock Service** item to lock the Service menu access (both PreBoot and Device Maintenance application). Service personnel must have the Administrator remove the **Lock Service** setting before they can enter the **Service** menu.

Table 3-56 Preboot menu options (5 of 5)

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

Product updates

To download the most recent firmware upgrade for the product, go to www.hp.com/support/cljcp5525 or www.hp.com/go/cljcp5525_firmware.

Determine the installed revision of firmware

Print a configuration page to determine the installed revision of firmware.

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 `xxxxxxx.bdl` file. This file requires an interactive upgrade method. You cannot upgrade the product 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 switch.

USB storage device (Preboot menu)

1. Copy the `xxxxxxx.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. Press the Down arrow ▼ button to highlight **Administrator**, and then press the OK button.
5. Press the Down arrow ▼ button to highlight **Download**, and then press the OK button.
6. Insert the portable USB storage device with the `xxxxxxx.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. Press the Down arrow ▼ button to highlight **USB Thumb Drive**, and then press the OK button.
8. Press the Down arrow ▼ button to highlight the`xxxxxxx.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 `xxxxxxx.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 arrow ⮌ 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.

USB storage device (control-panel menu)

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

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

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.

4 Parts and diagrams

- Order parts, accessories, and supplies
- Part numbers
- Screws
- How to use the parts lists and diagrams
- Covers
- Right-door assembly
- Internal assemblies
- Assessories
- Alphabetical parts list
- Numerical parts list

Order parts, accessories, and supplies

You can obtain the following items directly from HP:

- **Replacement parts:** To order replacement parts in the U.S., go to www.hp.com/go/hpparts/. Outside the United States, order parts by contacting your local authorized HP service center.
- **Supplies and accessories:** To order supplies in the U.S., go to www.hp.com/go/ljsupplies. To order supplies worldwide, go to www.hp.com/ghp/buyonline.html. To order accessories, go to www.hp.com/support/lj500colorM551.

Part numbers

The following list of accessories was current at the time of printing. Ordering information and availability of the accessories might change during the life of the product.

Accessories

Product name	Product number	Part number
1 x 500-sheet paper feeder	CF084A	CF084-67901

Print cartridges and toner collection unit

Product name	Cartridge number	Part number (service)
HP Color LaserJet standard black print cartridge	507A	CE400-67901
HP Color LaserJet high capacity black print cartridge	507X	CE400-67902
HP Color LaserJet cyan print cartridge	507A	CE401A-67901
HP Color LaserJet yellow print cartridge	507A	CE402-67901
HP Color LaserJet magenta print cartridge	507A	CE403-67901
Toner collection unit (TCU)	CE254A	RM1-4989-000CN

Memory

Product name	Part number
Memory replacement kit (n and dn models only) • 4GB SSM • Retainer • Installation instructions	CF081-67902
Hard drive replacement kit (n and xh model) • 250GB HDD • Bracket • Installation instructions	CF083-67901

Customer self repair (CSR) and service kits

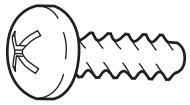
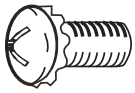
Product name	Part number
Front-door assembly and name plate • Front-door assembly • HP Jewel • Name plate • Installation instructions	CF081-67901
1 x 500-sheet paper feeder right door kit • Right-door assembly • Right-door stopper • Right-door link • Installation instructions	CC468-67906
Toner collection unit (TCU) kit • Toner collection unit • Installation instructions	CC468-67910
Pick/feed and separation roller kit (Tray 1/2) • Separation roller assembly (tray/cassette) • Pickup roller assembly (tray/casette) • Pickup roller (MP tray • Installation instructions	CF081-67903
Pick/feed and separation roller kit (Tray 3) • Paper feed assembly (tray/cassette) • Pickup roller assembly (tray/casette) • Pickup roller (MP tray • Installation instructions	CF081-67913
ITB kit • Intermediate transfer belt (ITB) • Secondary transfer roller assembly • Installation instructions	CF081-67904

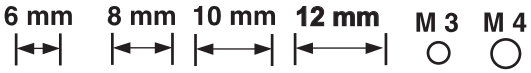
Product name	Part number
Service fuser kit • Fuser assembly (110 V or 220 V) • Installation instructions **CAUTION:** Make sure that you order the correct kit for the rated voltage of your product.	CF081-67905 (110 V) CF081-67906 (220 V)
Duplex reverse guide kit • Duplex reverse guide • Installation instructions	CC468-67913
Secondary transfer (T2) roller kit • Secondary transfer roller • Installation instructions	CF081-67907
Secondary transfer assembly kit • Secondary transfer assembly (simplex or duplex) • Installation instructions **NOTE:** Make sure that you order the correct kit for your product model (simplex or duplex).	CF081-67908 (simplex) CF081-67909 (duplex)
Laser scanner assembly kit • Laser/scanner assembly • Installation instructions	CC468-67917
Main drive assembly kit • Main drive assembly • Installation instructions	CF081-67910
Formatter assembly kit (exchange) • Formatter PCA • Formatter tray • Screw (2) • Installation instructions	CF081-69001
Formatter assembly kit (China only) • Formatter PCA • Formatter tray • Screw (2) • Installation instructions	CF081-67912
HDD Replacement Kit (U.S. government only)	CF083-67902

Screws

NOTE: The screw illustrations in the following table are for reference only. Screws might vary in size and appearance from those shown in this table.

Table 4-1 Common fasteners

Example	Description	Size	Part Number
	Screw, tapping, truss head	M4X10	XB4-7401-005CN
	Screw, D	M3X8	XA9-1671-000CN



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 all-in-one 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.

Covers

Figure 4-1 External covers, panels, and doors

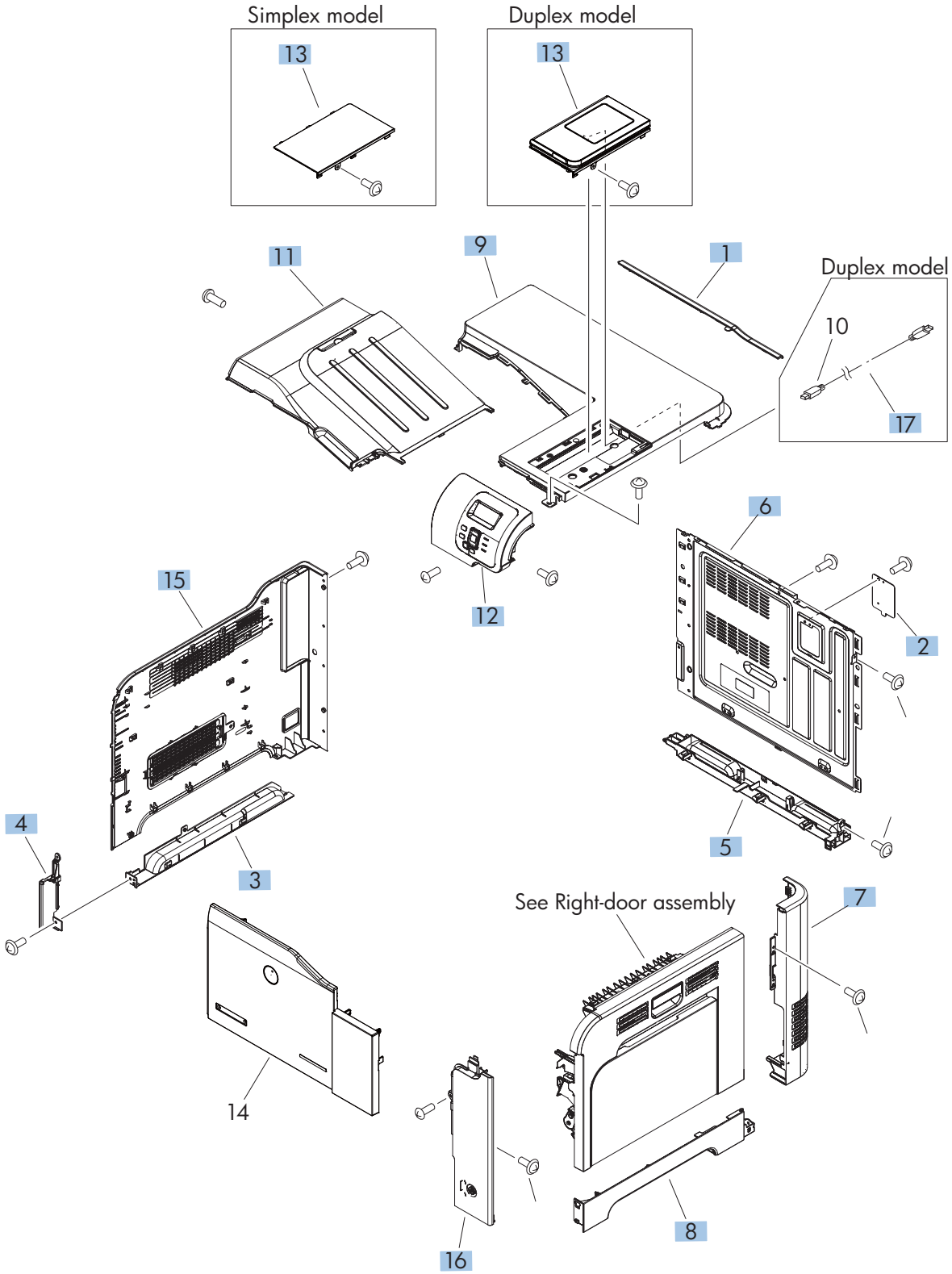


Table 4-2 External covers, panels, and doors

Ref	Description	Part number	Qty
1	Cover, rear upper	RC2-5058-000CN	1
2	Plate, blanking	RC2-5938-000CN	1
3	Cover, left lower	RC3-1112-000CN	1
4	Cover, left front	RC3-1113-000CN	1
5	Cover, rear lower	RC3-1114-000CN	1
6	Cover, rear	RC3-1115-000CN	1
7	Cover, right rear	RC3-1116-000CN	1
8	Cover, right lower	RC3-1117-000CN	1
9	Cover, upper	RC3-1118-000CN	1
11	Tray, paper delivery	RL1-1941-030CN	1
12	Operation (control) panel assembly	RM1-8096-000CN	1
13	Cover, USB (simplex)	RC3-1093-000CN	1
13	Cover, USB (duplex)	RM1-8173-000CN	1
15	Cover, left assembly	RM1-8159-000CN	1
16	Cover, right-front assembly	RM1-8165-000CN	1

Right-door assembly

Figure 4-2 Right-door assembly

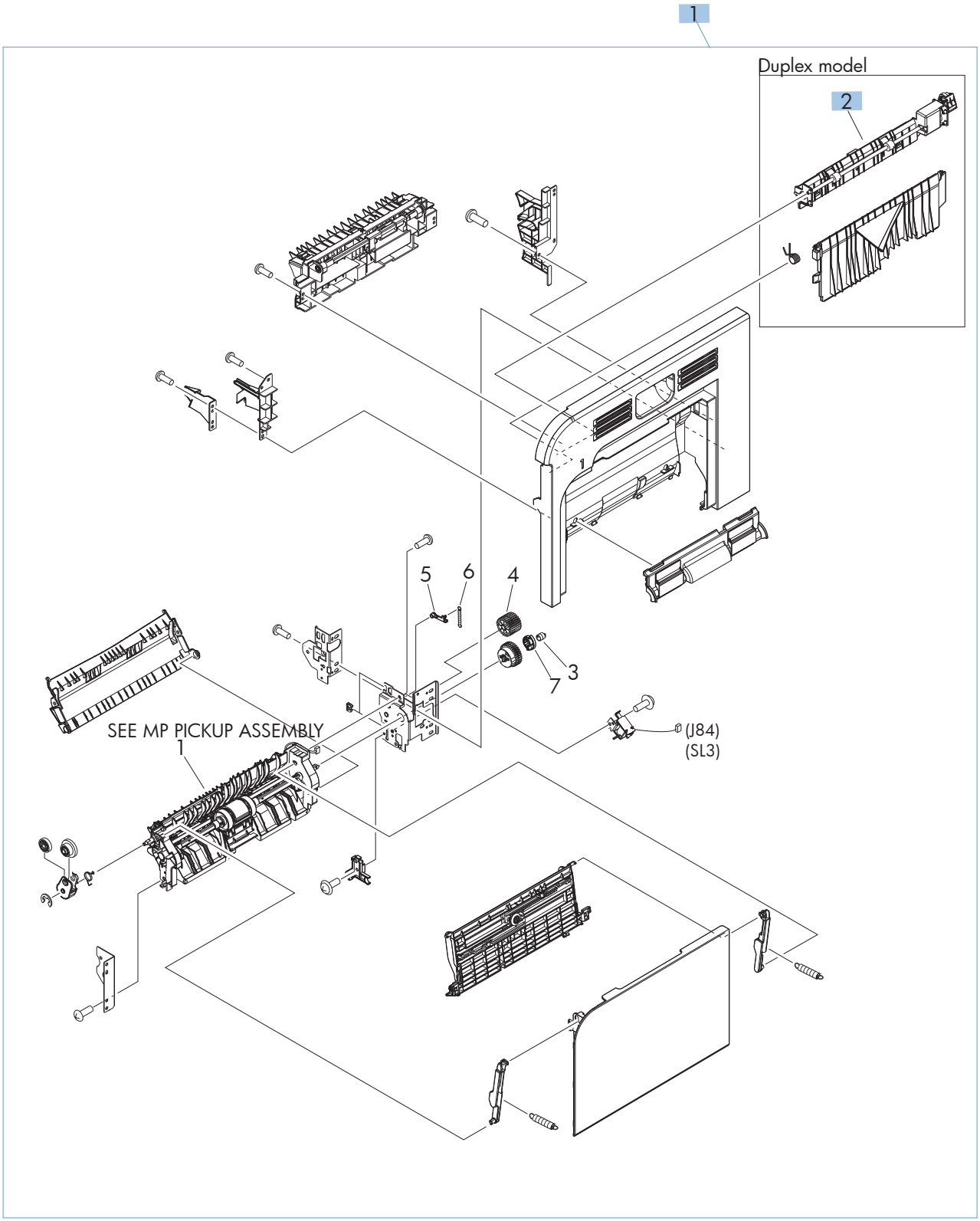


Table 4-3 Right-door assembly

Ref	Description	Part number	Qty
1	Right-door assembly (simplex)	RM1-8167-000CN	1
1	Right-door assembly (duplex)	RM1-8123-000CN	1
2	Duplexing paper feed assembly	RM1-4959-000CN	2

Internal assemblies

Internal assemblies (1 of 5)

Figure 4-3 Internal assemblies (1 of 5)

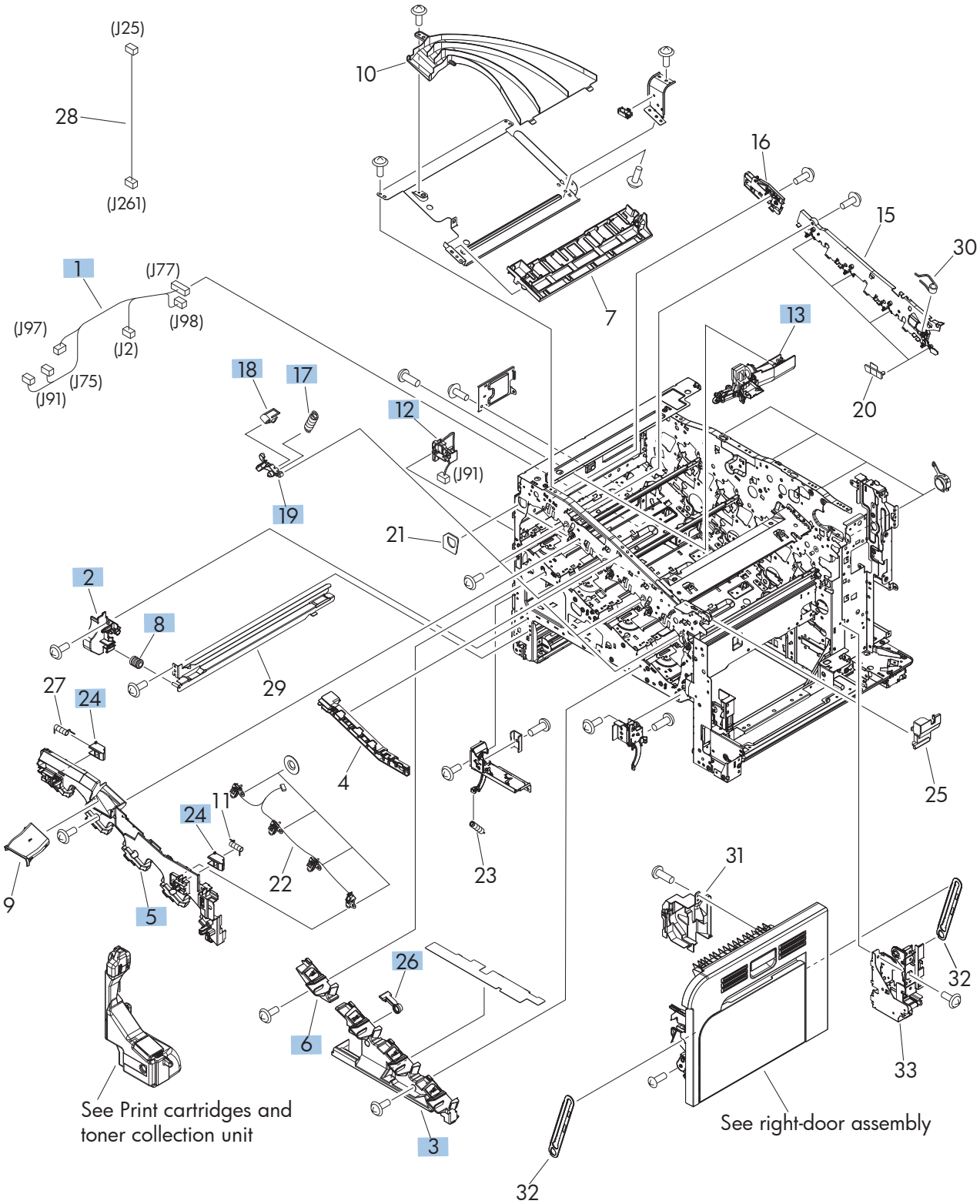


Table 4-4 Internal assemblies (1 of 5)

Ref	Description	Part number	Qty
1	Left cable assembly	RM1-5742-000CN	1
2	Holder, CST positioning	RC3-1231-000CN	1
3	Cover, front inner lower unit (CMK)	RL1-1914-020CN	1
5	Cover, front inner, upper	RC3-1070-000CN	1
6	Cover, front inner lower (Y)	RL1-1915-000CN	1
8	Roller, rail	RC2-4831-000CN	1
12	Waste toner detect assembly	RM1-5696-000CN	1
13	Waste toner duct assembly	RM1-8138-000CN	1
17	Spring, tension	RU7-2192-000CN	4
18	Spring, ground	RU6-2237-000CN	4
19	Lever, cartridge pressure front	RC2-3983-030CN	4
24	Lock, door	RC2-5937-000CN	2
26	Lever, box presence detect	RC2-5951-000CN	1

Internal assemblies (2 of 5)

Figure 4-4 Internal assemblies (2 of 5)

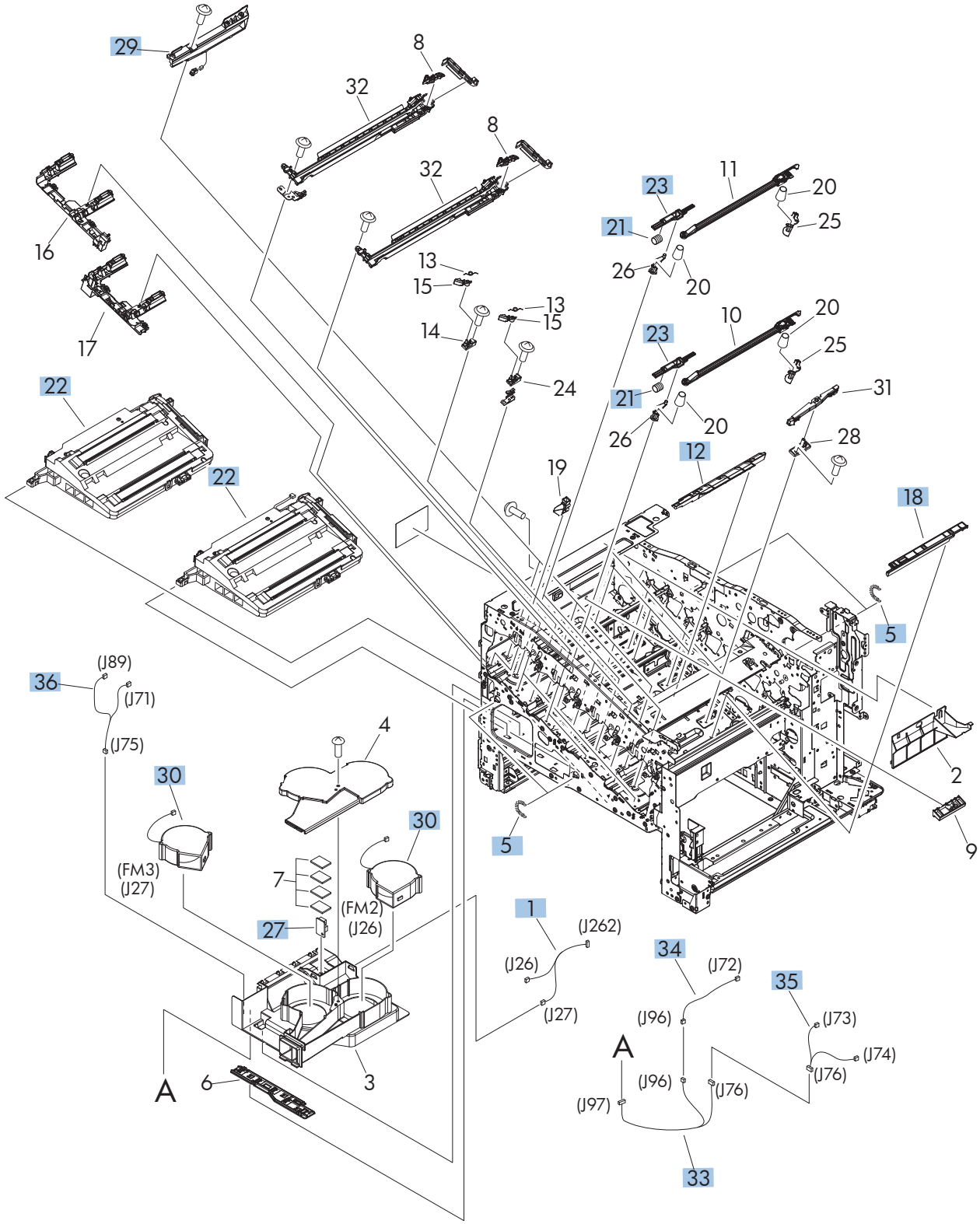


Table 4-5 Internal assemblies (2 of 5)

Ref	Description	Part number	Qty
1	Fan cable assembly	RM1-5746-000CN	1
5	Spring, tension	RU6-2436-000CN	2
12	Cover	RC2-5912-000CN	3
18	Cover	RC2-5962-000CN	1
21	Spring, compression	RU6-2316-000CN	2
23	Lever, shutter	RC2-4415-000CN	2
27	Temperature sensor assembly	RK2-3267-000CN	1
29	Toner sensor holder assembly	RM1-5700-000CN	4
30	Fan (FM2, FM3)	RK2-2418-000CN	2
33	Connecting cable assembly	RM1-5749-000CN	1
34	Sensor cable assembly	RM1-5740-000CN	1
35	Sensor cable assembly	RM1-5741-000CN	1
36	Motor/sensor cable assembly	RM1-5752-000CN	1

Internal assemblies (3 of 5)

Figure 4-5 Internal assemblies (3 of 5)

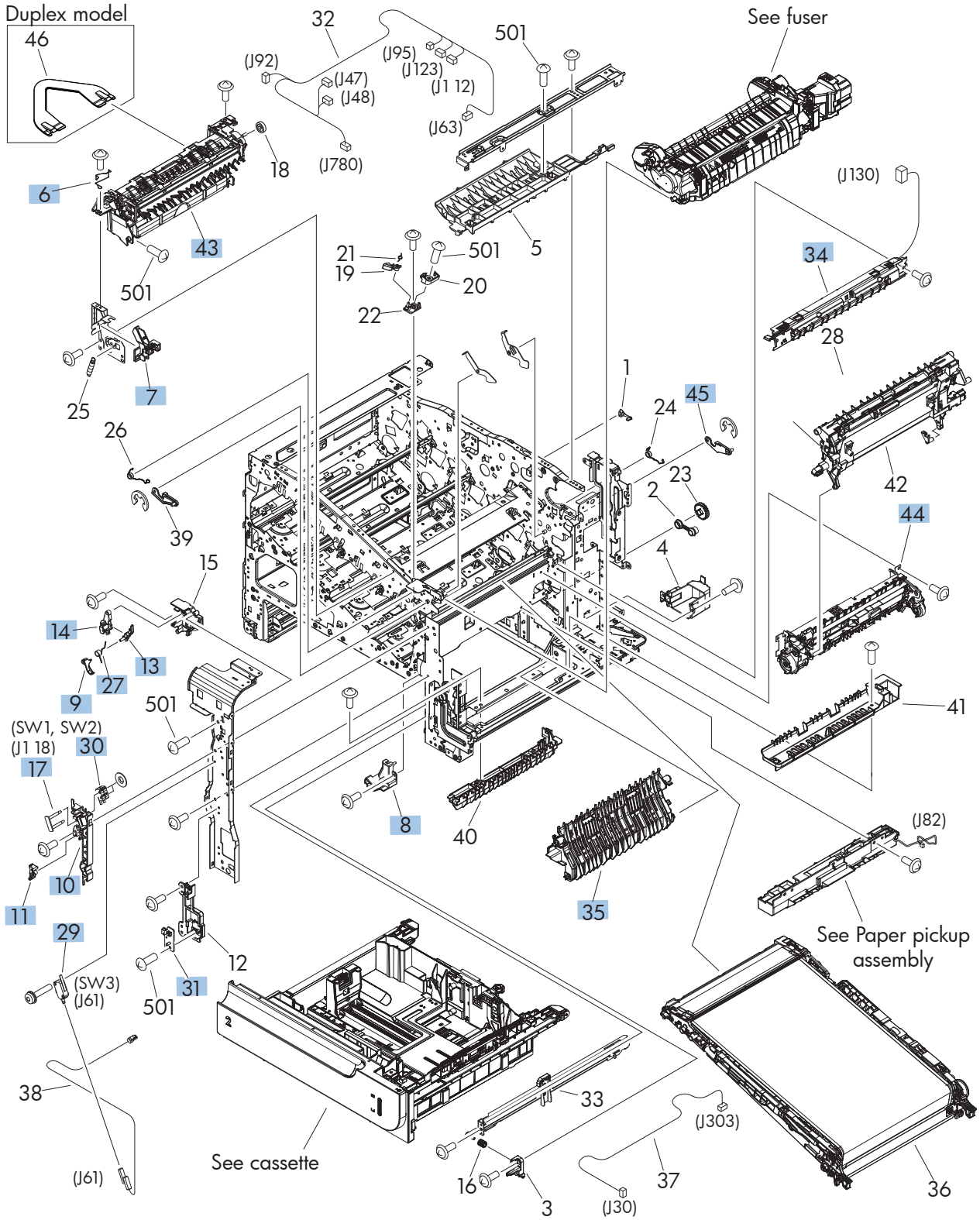


Table 4-6 Internal assemblies (3 of 5)

Ref	Description	Part number	Qty
6	Wire, (mech) sensor protect	RC2-4828-000CN	1
7	Sensor cable guide assembly	RM1-8178-000CN	1
8	Cover, right lower inner	RC2-5019-000CN	1
9	Link, interlock	RC2-5120-000CN	1
10	Mount, interlock switch	RC2-5123-000CN	1
11	Arm, interlock link switch	RC2-5121-000CN	1
13	Link, interlock	RC2-5119-000CN	1
14	Link, interlock	RC2-5118-000CN	1
17	Shaft	RC2-5913-000CN	1
27	Link, interlock	RC2-5122-000CN	1
29	Microswitch	WC4-5171-000CN	1
30	Door switch assembly	RM1-5732-000CN	1
31	Switch, PCA assembly	RM1-8097-000CN	1
34	Density detect assembly	RM1-8163-000CN	1
35	Pick up lower guide assembly	RM1-8132-000CN	1
43	Paper delivery assembly (simplex)	RM1-5003-050CN	1
43	Paper delivery assembly (duplex)	RM1-4970-060CN	1
44	Registration assembly (simplex)	RM1-5009-000CN	1
44	Registration assembly (duplex)	RM1-4969-000CN	1
45	Rear lock arm assembly	RM1-5533-000CN	1

Internal assemblies (4 of 5)

Figure 4-6 Internal assemblies (4 of 5)

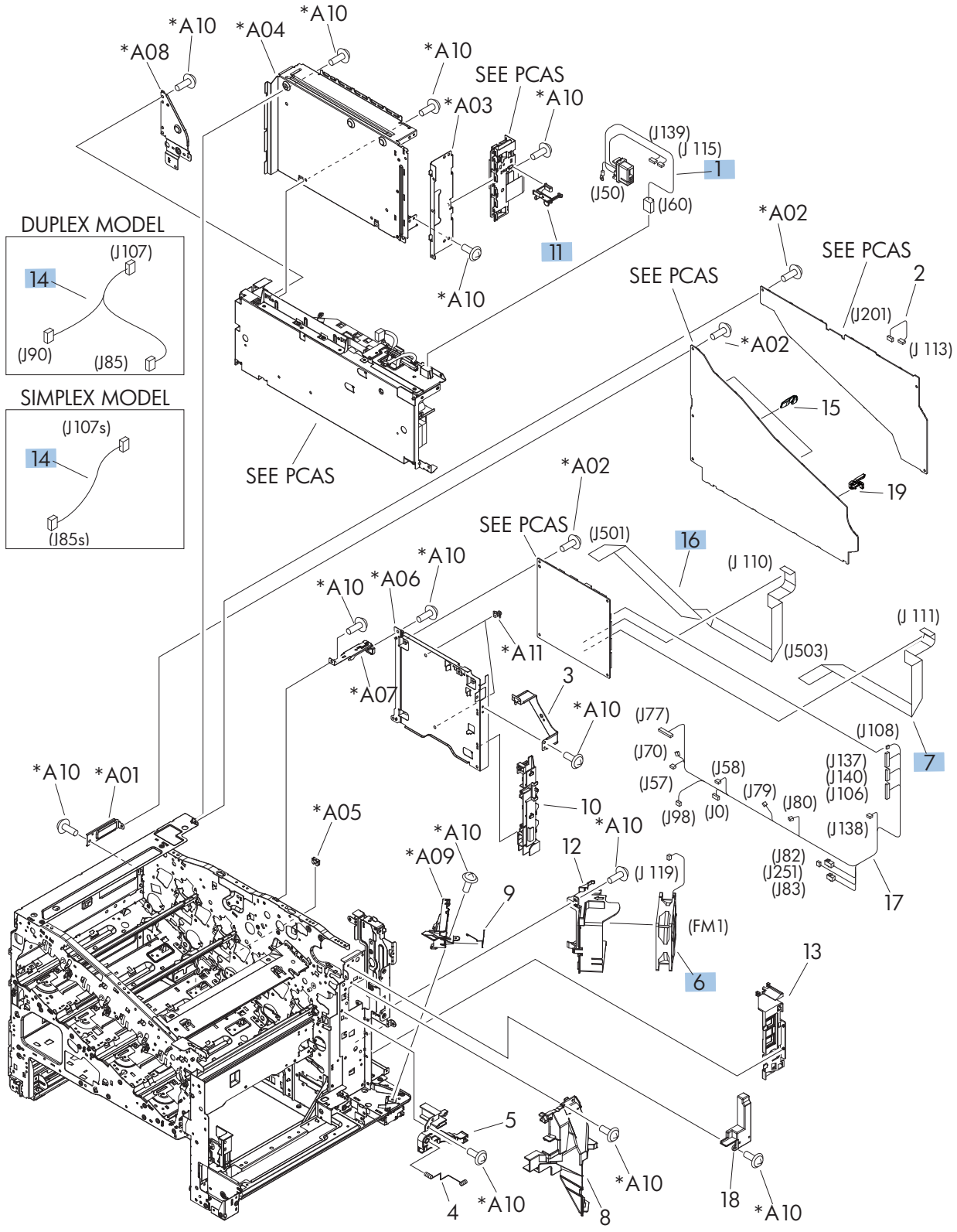


Table 4-7 Internal assemblies (4 of 5)

Ref	Description	Part number	Qty
1	Fusing connecting cable assembly	RM1-5714-000CN	1
6	Fan (FM1)	RK2-2416-000CN	1
7	Cable, flat 2 laser	RK2-3943-000CN	1
11	Switch arm	RC2-5943-000CN	1
14	MP sensor cable assembly (simplex)	RM1-5750-000CN	1
14	MP sensor cable assembly (duplex)	RM1-5737-000CN	1
16	Cable, flat 1 scanner	RK2-3941-000CN	1

Internal assemblies (5 of 5)

Figure 4-7 Internal assemblies (5 of 5)

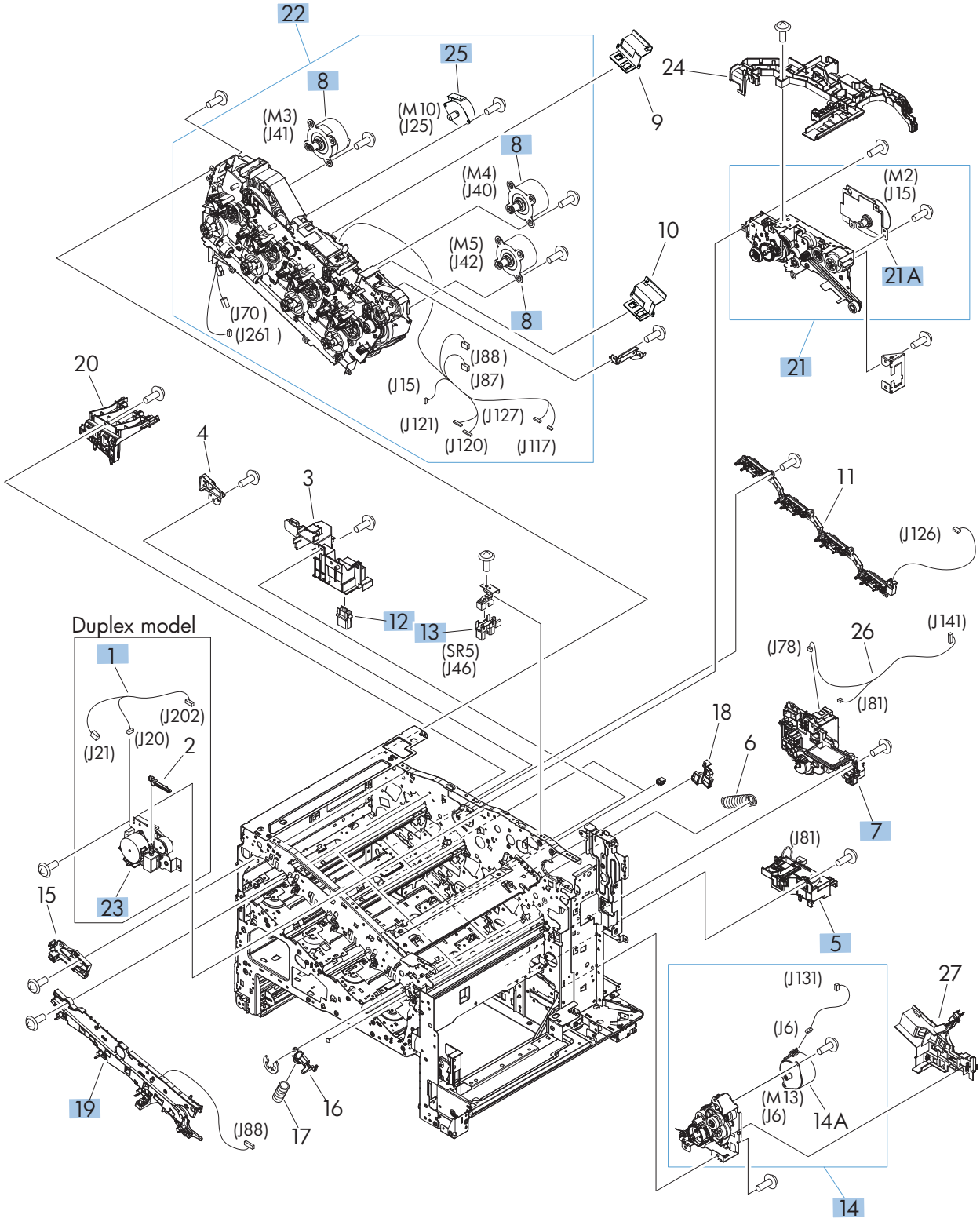


Table 4-8 Internal assemblies (5 of 5)

Ref	Description	Part number	Qty
1	Duplexing unit cable assembly	RM1-5730-000CN	1
5	Auto close assembly	RM1-8137-000CN	1
7	Lifter drive assembly	RM1-8136-000CN	1
8	Main motor unit (M3, M4, M5)	RM1-8105-000CN	3
12	Connector, drawer	VS1-7258-007CN	1
13	Photo interrupter, TLP1243	WG8-5935-000CN	1
14	Cassette paper pick up drive assembly (M13)	RM1-8135-000CN	1
14A	Pickup motor assembly (M13)	RM1-5773-000CN	1
19	Rear Pre-exposure PCA assembly	RM1-5705-000CN	1
21	Fusing (fixing) drive assembly (simplex)	RM1-8169-000CN	1
21	Fusing (fixing) drive assembly (duplex)	RM1-8134-000CN	1
22A	Fusing (fixing) motor assembly (M2)	RM1-4983-000CN	1
23	Duplexing drive assembly	RM1-4973-000CN	1
25	Stepping motor, DC (developing disengagement; M10)	RK2-2415-000CN	1

Cassette

Figure 4-8 Cassette

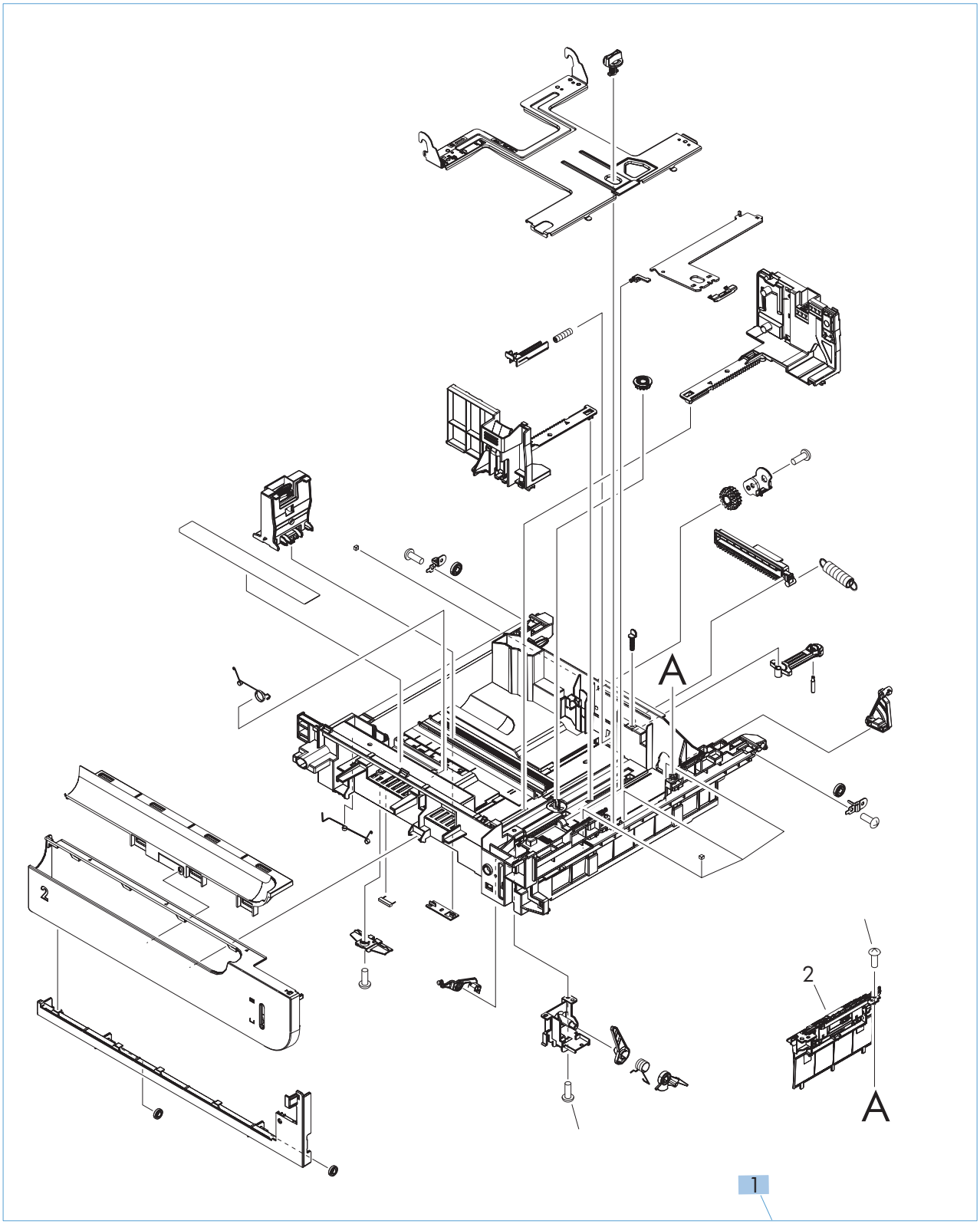


Table 4-9 Cassette

Ref	Description	Part number	Qty
1	Cassette	RM1-8125-000CN	1

Paper pickup assembly

Figure 4-9 Paper pickup assembly

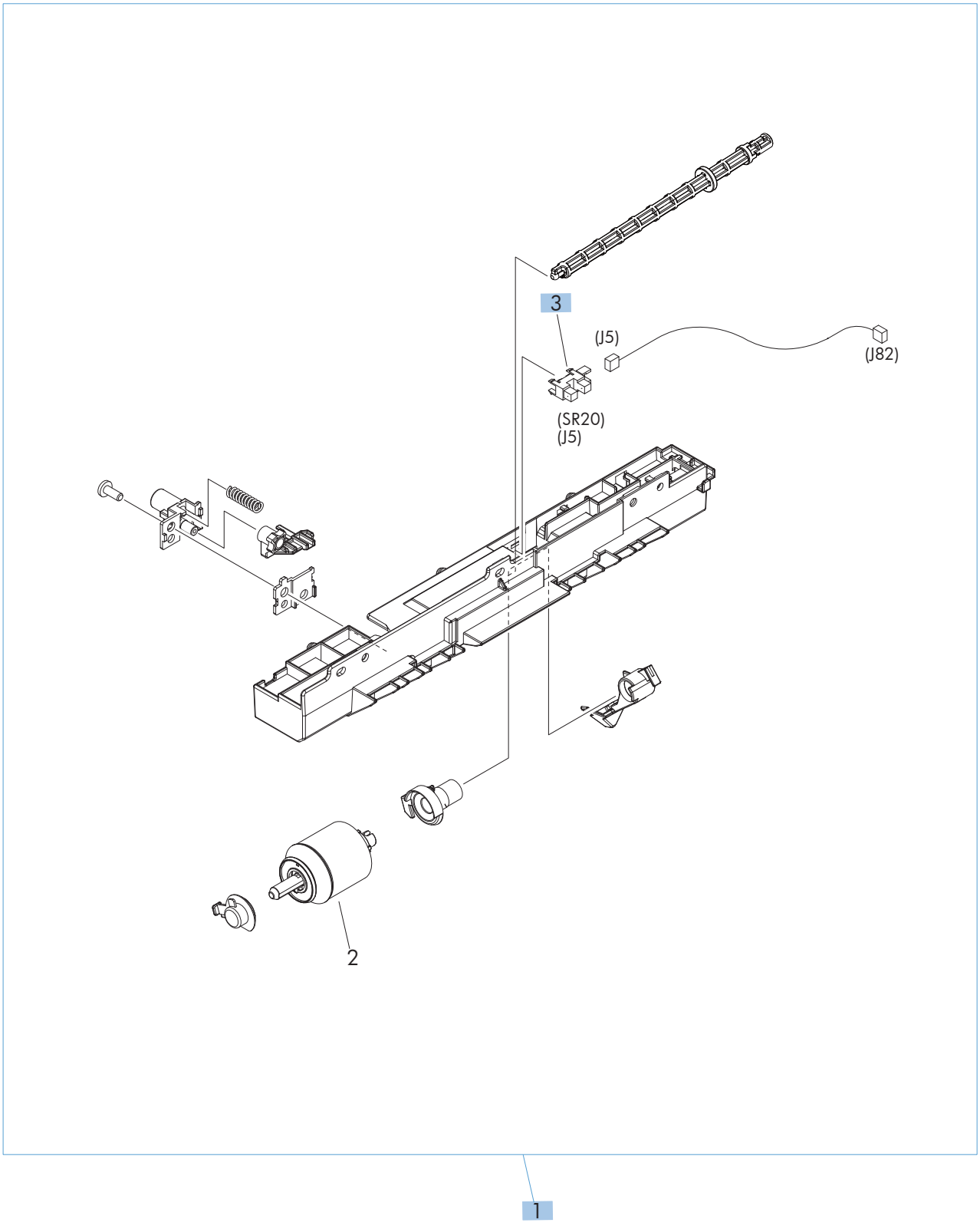


Table 4-10 Paper pickup assembly

Ref	Description	Part number	Qty
1	Paper pickup assembly (simplex)	RM1-8168-000CN	1
1	Paper pickup assembly (duplex)	RM1-8124-000CN	1
3	Photointerrupter	WG8-5935-000CN	1

PCAs

Figure 4-10 PCAs

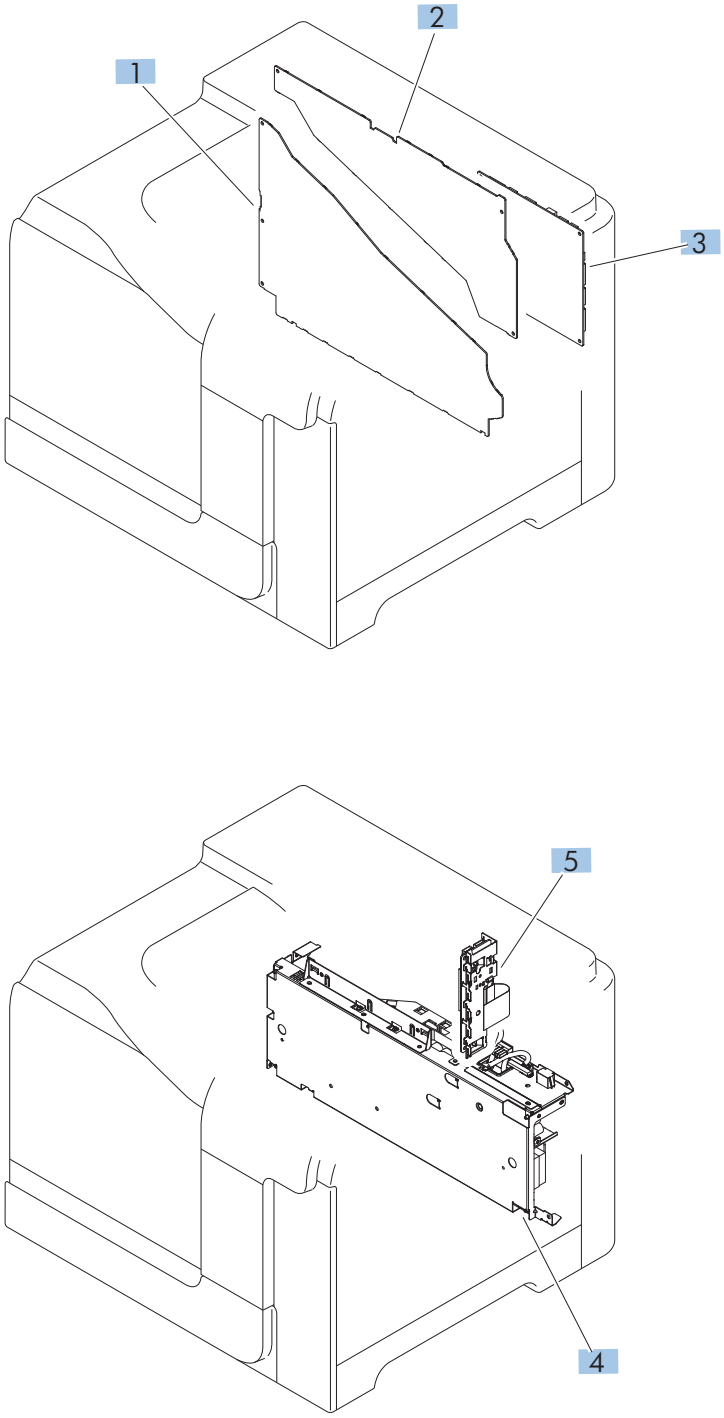


Table 4-11 PCAs

Ref	Description	Part number	Qty
1	Lower HVPS-D PCA	RM1-8087-000CN	1
2	Upper HVPS-T PCA (simplex)	RM1-8089-000CN	1
2	Upper HVPS-T PCA (duplex)	RM1-8088-000CN	1
3	DC controller PCA	RM1-8104-000CN	1
4	Low-voltage power supply 110V	RM1-8091-000CN	1
4	Low-voltage power supply 220V	RM1-8093-000CN	1
5	Inner connecting PCA (ICB)	RM1-8143-000CN	1
Not shown	Formatter assembly kit (exchange)	CF081-69001	1
Not shown	Formatter assembly kit (China)	CF081-67912	1

Assessories

1 x 500-sheet paper feeder

Figure 4-11 1 x 500-sheet paper feeder

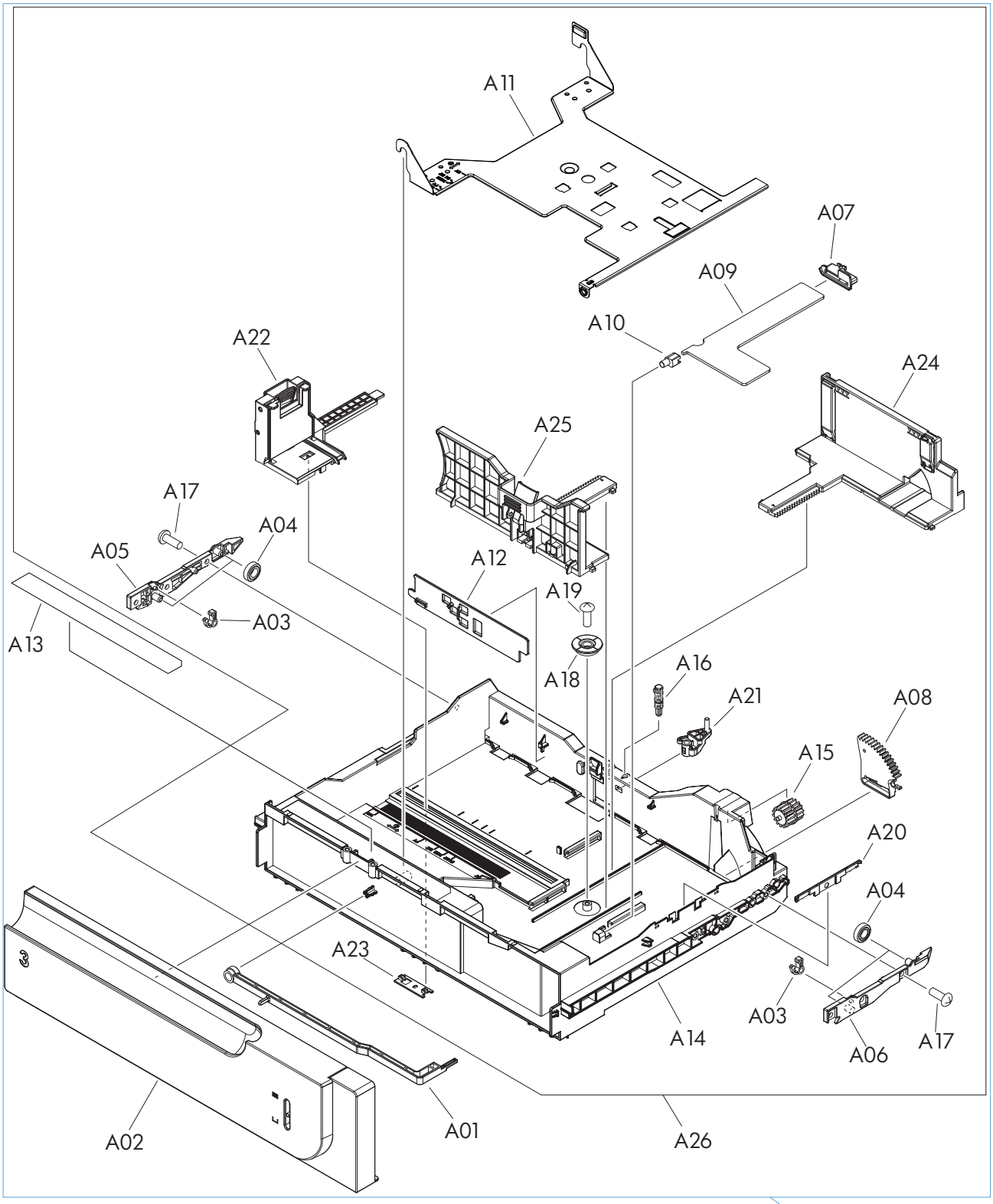


Table 4-12 1 x 500-sheet paper feeder

Ref	Description	Part number	Qty
1	1 x 500-sheet feeder replacement kit	CF084-67901	1

Paper feeder covers

Figure 4-12 Paper feeder covers

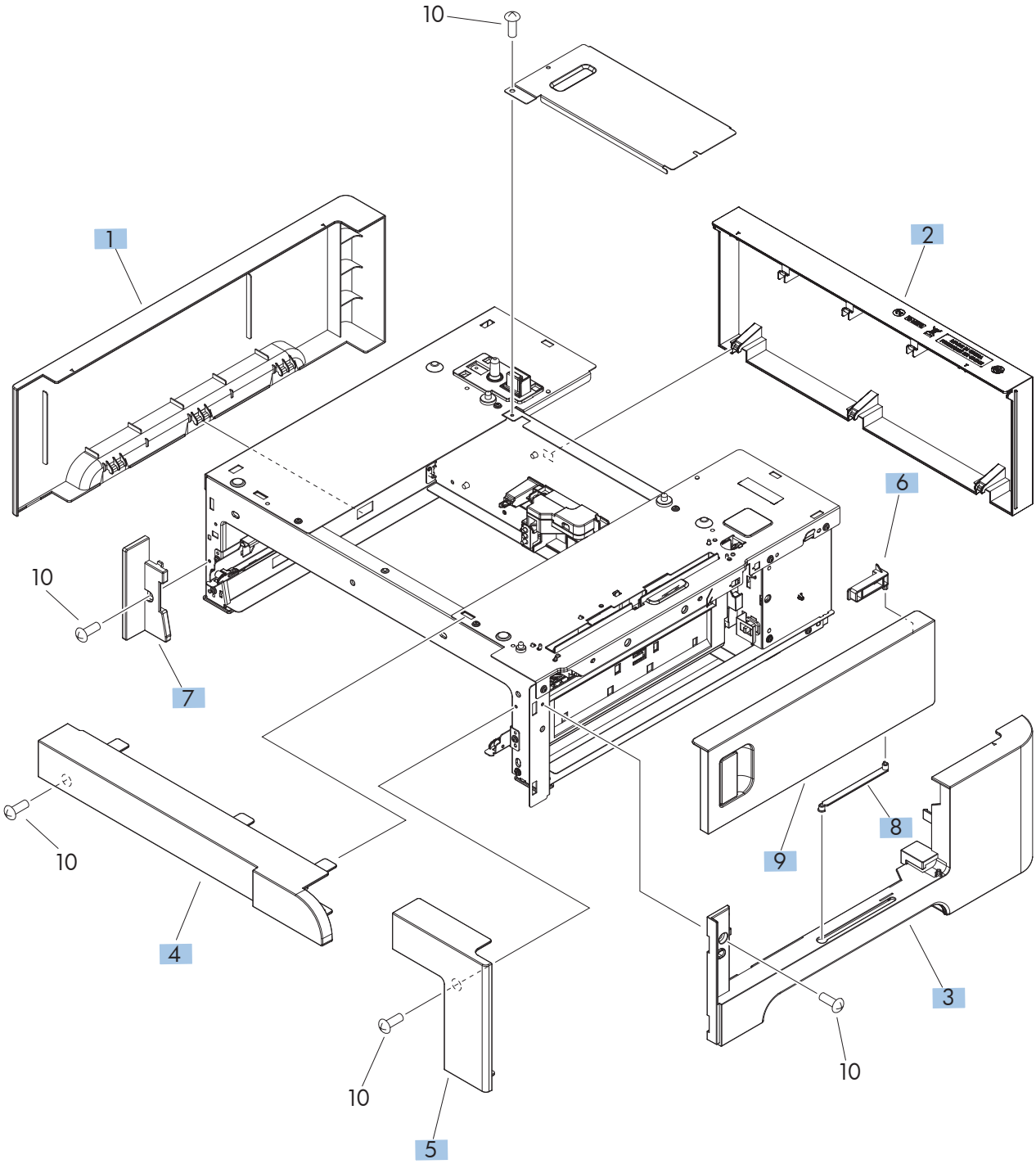


Table 4-13 Paper feeder covers

Ref	Description	Part number	Qty
1	Cover, left	RC2-5428-000CN	1
2	Cover, rear	RC2-5429-000CN	1
3	Cover, right	RC2-5427-000CN	1
4	Cover, front upper	RC2-5425-000CN	1
5	Cover, front right	RC2-5426-000CN	1
6	Stopper, door	RC2-5417-000CN	1
7	Cover, left front	RC2-5430-000CN	1
8	Link, door right	RC2-5435-000CN	1
9	Right door assembly	RM1-6192-000CN	1

Paper feeder main body

Figure 4-13 Paper feeder main body

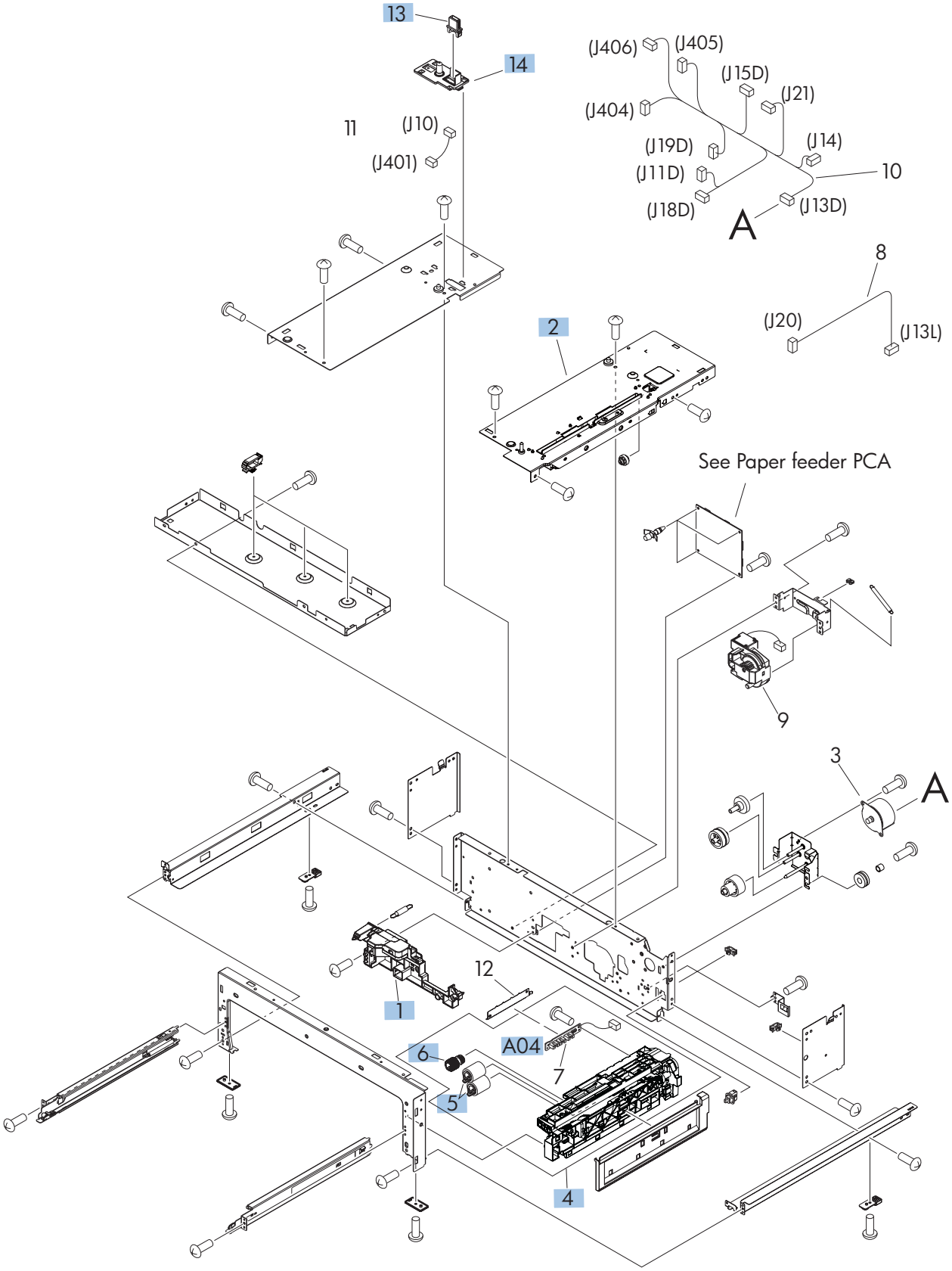


Table 4-14 Paper feeder main body

Ref	Description	Part number	Qty
1	Lifter base assembly	RM1-5913-000CN	1
2	Paper feed assembly	RM1-6194-030CN	1
4	Paper pickup assembly	RM1-5919-000CN	1
5	Paper feed roller assembly	CF081-67913	1
6	Roller, paper pickup	CF081-67913	1
13	Drawer connector holder	VS1-7257-007CN	1
14	Holder, drawer connector	RC2-5416-000CN	1
A04	Screw, tapping, pan head M4X10	XB4-7401-007CN	1

Paper feeder cassette

Figure 4-14 Cassette

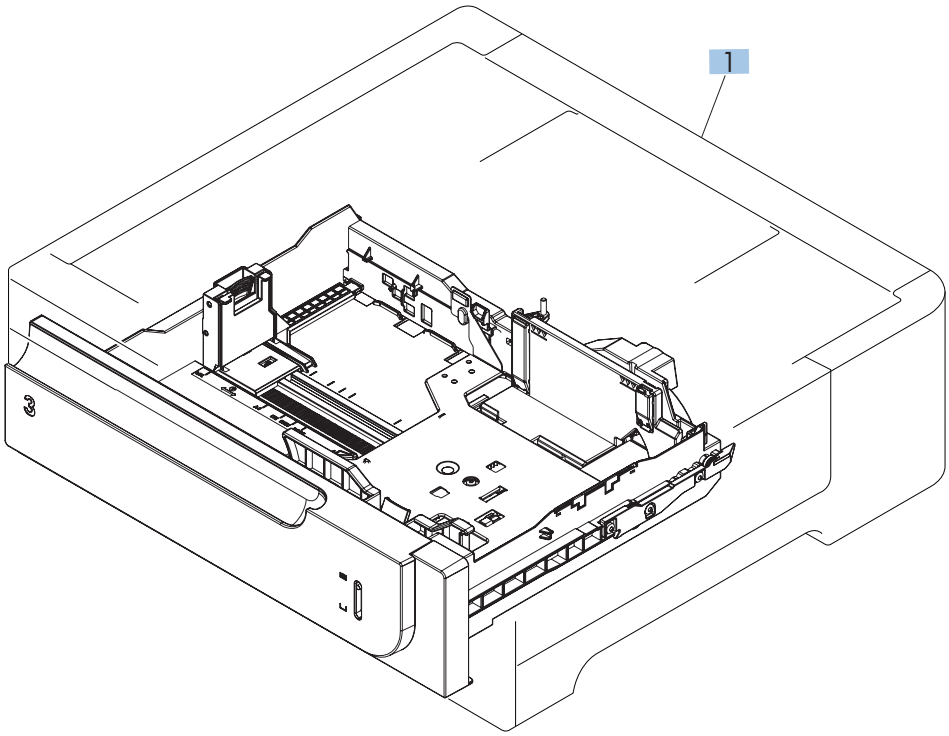


Table 4-15 Cassette

Ref	Description	Part number	Qty
1	Cassette assembly (Tray 3)	RM1-6198-000CN	1

Paper feeder PCA

Figure 4-15 Paper feeder PCA

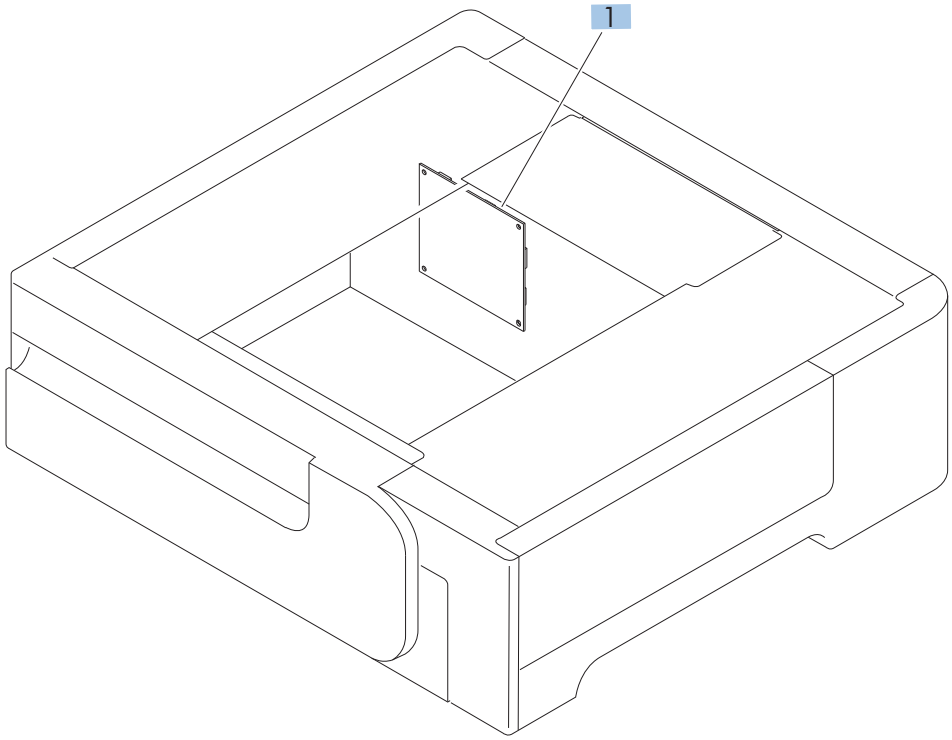


Table 4-16 Paper feeder PCA

Ref	Description	Part number	Qty
1	PCA, paper feeder driver	RM1-5839-000CN	1

Alphabetical parts list

Table 4-17 Alphabetical parts list

Description	Part number	Table and page
1 x 500-sheet feeder replacement kit	CF084-67901	1 x 500-sheet paper feeder on page 553
Arm, interlock link switch	RC2-5121-000CN	Internal assemblies (3 of 5) on page 541
Auto close assembly	RM1-8137-000CN	Internal assemblies (5 of 5) on page 545
Cable, flat 1 scanner	RK2-3941-000CN	Internal assemblies (4 of 5) on page 543
Cable, flat 2 laser	RK2-3943-000CN	Internal assemblies (4 of 5) on page 543
Cassette	RM1-8125-000CN	Cassette on page 547
Cassette assembly (Tray 3)	RM1-6198-000CN	Cassette on page 559
Cassette paper pick up drive assembly (M13)	RM1-8135-000CN	Internal assemblies (5 of 5) on page 545
Connecting cable assembly	RM1-5749-000CN	Internal assemblies (2 of 5) on page 539
Connector, drawer	VS1-7258-007CN	Internal assemblies (5 of 5) on page 545
Cover	RC2-5912-000CN	Internal assemblies (2 of 5) on page 539
Cover	RC2-5962-000CN	Internal assemblies (2 of 5) on page 539
Cover, front inner lower (Y)	RL1-1915-000CN	Internal assemblies (1 of 5) on page 537
Cover, front inner lower unit (CMK)	RL1-1914-020CN	Internal assemblies (1 of 5) on page 537
Cover, front inner, upper	RC3-1070-000CN	Internal assemblies (1 of 5) on page 537
Cover, front right	RC2-5426-000CN	Paper feeder covers on page 555
Cover, front upper	RC2-5425-000CN	Paper feeder covers on page 555
Cover, left	RC2-5428-000CN	Paper feeder covers on page 555
Cover, left assembly	RM1-8159-000CN	External covers, panels, and doors on page 533
Cover, left front	RC3-1113-000CN	External covers, panels, and doors on page 533

Table 4-17 Alphabetical parts list (continued)

Description	Part number	Table and page
Cover, left front	RC2-5430-000CN	Paper feeder covers on page 555
Cover, left lower	RC3-1112-000CN	External covers, panels, and doors on page 533
Cover, rear	RC3-1115-000CN	External covers, panels, and doors on page 533
Cover, rear	RC2-5429-000CN	Paper feeder covers on page 555
Cover, rear lower	RC3-1114-000CN	External covers, panels, and doors on page 533
Cover, rear upper	RC2-5058-000CN	External covers, panels, and doors on page 533
Cover, right	RC2-5427-000CN	Paper feeder covers on page 555
Cover, right lower	RC3-1117-000CN	External covers, panels, and doors on page 533
Cover, right lower inner	RC2-5019-000CN	Internal assemblies (3 of 5) on page 541
Cover, right rear	RC3-1116-000CN	External covers, panels, and doors on page 533
Cover, right-front assembly	RM1-8165-000CN	External covers, panels, and doors on page 533
Cover, upper	RC3-1118-000CN	External covers, panels, and doors on page 533
Cover, USB (duplex)	RM1-8173-000CN	External covers, panels, and doors on page 533
Cover, USB (simplex)	RC3-1093-000CN	External covers, panels, and doors on page 533
DC controller PCA	RM1-8104-000CN	PCAs on page 551
Density detect assembly	RM1-8163-000CN	Internal assemblies (3 of 5) on page 541
Door switch assembly	RM1-5732-000CN	Internal assemblies (3 of 5) on page 541
Drawer connector holder	VS1-7257-007CN	Paper feeder main body on page 557
Duplexing drive assembly	RM1-4973-000CN	Internal assemblies (5 of 5) on page 545
Duplexing paper feed assembly	RM1-4959-000CN	Right-door assembly on page 535

Table 4-17 Alphabetical parts list (continued)

Description	Part number	Table and page
Duplexing unit cable assembly	RM1-5730-000CN	Internal assemblies (5 of 5) on page 545
Fan (FM1)	RK2-2416-000CN	Internal assemblies (4 of 5) on page 543
Fan (FM2, FM3)	RK2-2418-000CN	Internal assemblies (2 of 5) on page 539
Fan cable assembly	RM1-5746-000CN	Internal assemblies (2 of 5) on page 539
Formatter assembly kit (China)	CF081-67912	PCAs on page 551
Formatter assembly kit (exchange)	CF081-69001	PCAs on page 551
Fusing (fixing) drive assembly (duplex)	RM1-8134-000CN	Internal assemblies (5 of 5) on page 545
Fusing (fixing) drive assembly (simplex)	RM1-8169-000CN	Internal assemblies (5 of 5) on page 545
Fusing (fixing) motor assembly (M2)	RM1-4983-000CN	Internal assemblies (5 of 5) on page 545
Fusing connecting cable assembly	RM1-5714-000CN	Internal assemblies (4 of 5) on page 543
Holder, CST positioning	RC3-1231-000CN	Internal assemblies (1 of 5) on page 537
Holder, drawer connector	RC2-5416-000CN	Paper feeder main body on page 557
Inner connecting PCA (ICB)	RM1-8143-000CN	PCAs on page 551
Left cable assembly	RM1-5742-000CN	Internal assemblies (1 of 5) on page 537
Lever, box presence detect	RC2-5951-000CN	Internal assemblies (1 of 5) on page 537
Lever, cartridge pressure front	RC2-3983-030CN	Internal assemblies (1 of 5) on page 537
Lever, shutter	RC2-4415-000CN	Internal assemblies (2 of 5) on page 539
Lifter base assembly	RM1-5913-000CN	Paper feeder main body on page 557
Lifter drive assembly	RM1-8136-000CN	Internal assemblies (5 of 5) on page 545
Link, door right	RC2-5435-000CN	Paper feeder covers on page 555
Link, interlock	RC2-5120-000CN	Internal assemblies (3 of 5) on page 541

Table 4-17 Alphabetical parts list (continued)

Description	Part number	Table and page
Link, interlock	RC2-5119-000CN	Internal assemblies (3 of 5) on page 541
Link, interlock	RC2-5118-000CN	Internal assemblies (3 of 5) on page 541
Link, interlock	RC2-5122-000CN	Internal assemblies (3 of 5) on page 541
Lock, door	RC2-5937-000CN	Internal assemblies (1 of 5) on page 537
Low-voltage power supply 110V	RM1-8091-000CN	PCAs on page 551
Low-voltage power supply 220V	RM1-8093-000CN	PCAs on page 551
Lower HVPS-D PCA	RM1-8087-000CN	PCAs on page 551
Main motor unit (M3, M4, M5)	RM1-8105-000CN	Internal assemblies (5 of 5) on page 545
Microswitch	WC4-5171-000CN	Internal assemblies (3 of 5) on page 541
Motor/sensor cable assembly	RM1-5752-000CN	Internal assemblies (2 of 5) on page 539
Mount, interlock switch	RC2-5123-000CN	Internal assemblies (3 of 5) on page 541
MP sensor cable assembly (duplex)	RM1-5737-000CN	Internal assemblies (4 of 5) on page 543
MP sensor cable assembly (simplex)	RM1-5750-000CN	Internal assemblies (4 of 5) on page 543
Operation (control) panel assembly	RM1-8096-000CN	External covers, panels, and doors on page 533
Paper delivery assembly (duplex)	RM1-4970-060CN	Internal assemblies (3 of 5) on page 541
Paper delivery assembly (simplex)	RM1-5003-050CN	Internal assemblies (3 of 5) on page 541
Paper feed assembly	RM1-6194-030CN	Paper feeder main body on page 557
Paper feed roller assembly	CF081-67913	Paper feeder main body on page 557
Paper pickup assembly	RM1-5919-000CN	Paper feeder main body on page 557
Paper pickup assembly (duplex)	RM1-8124-000CN	Paper pickup assembly on page 549
Paper pickup assembly (simplex)	RM1-8168-000CN	Paper pickup assembly on page 549

Table 4-17 Alphabetical parts list (continued)

Description	Part number	Table and page
PCA, paper feeder driver	RM1-5839-000CN	Paper feeder PCA on page 561
Photo interrupter, TLP1243	WG8-5935-000CN	Internal assemblies (5 of 5) on page 545
Photointerrupter	WG8-5935-000CN	Paper pickup assembly on page 549
Pick up lower guide assembly	RM1-8132-000CN	Internal assemblies (3 of 5) on page 541
Pickup motor assembly (M13)	RM1-5773-000CN	Internal assemblies (5 of 5) on page 545
Plate, blanking	RC2-5938-000CN	External covers, panels, and doors on page 533
Rear lock arm assembly	RM1-5533-000CN	Internal assemblies (3 of 5) on page 541
Rear Pre-exposure PCA assembly	RM1-5705-000CN	Internal assemblies (5 of 5) on page 545
Registration assembly (duplex)	RM1-4969-000CN	Internal assemblies (3 of 5) on page 541
Registration assembly (simplex)	RM1-5009-000CN	Internal assemblies (3 of 5) on page 541
Right door assembly	RM1-6192-000CN	Paper feeder covers on page 555
Right-door assembly (duplex)	RM1-8123-000CN	Right-door assembly on page 535
Right-door assembly (simplex)	RM1-8167-000CN	Right-door assembly on page 535
Roller, paper pickup	CF081-67913	Paper feeder main body on page 557
Roller, rail	RC2-4831-000CN	Internal assemblies (1 of 5) on page 537
Screw, tapping, pan head M4X10	XB4-7401-007CN	Paper feeder main body on page 557
Sensor cable assembly	RM1-5740-000CN	Internal assemblies (2 of 5) on page 539
Sensor cable assembly	RM1-5741-000CN	Internal assemblies (2 of 5) on page 539
Sensor cable guide assembly	RM1-8178-000CN	Internal assemblies (3 of 5) on page 541
Shaft	RC2-5913-000CN	Internal assemblies (3 of 5) on page 541

Table 4-17 Alphabetical parts list (continued)

Description	Part number	Table and page
Spring, compression	RU6-2316-000CN	Internal assemblies (2 of 5) on page 539
Spring, ground	RU6-2237-000CN	Internal assemblies (1 of 5) on page 537
Spring, tension	RU7-2192-000CN	Internal assemblies (1 of 5) on page 537
Spring, tension	RU6-2436-000CN	Internal assemblies (2 of 5) on page 539
Stepping motor, DC (developing disengagement; M10)	RK2-2415-000CN	Internal assemblies (5 of 5) on page 545
Stopper, door	RC2-5417-000CN	Paper feeder covers on page 555
Switch arm	RC2-5943-000CN	Internal assemblies (4 of 5) on page 543
Switch, PCA assembly	RM1-8097-000CN	Internal assemblies (3 of 5) on page 541
Temperature sensor assembly	RK2-3267-000CN	Internal assemblies (2 of 5) on page 539
Toner sensor holder assembly	RM1-5700-000CN	Internal assemblies (2 of 5) on page 539
Tray, paper delivery	RL1-1941-030CN	External covers, panels, and doors on page 533
Upper HVPS-T PCA (duplex)	RM1-8088-000CN	PCAs on page 551
Upper HVPS-T PCA (simplex)	RM1-8089-000CN	PCAs on page 551
Waste toner detect assembly	RM1-5696-000CN	Internal assemblies (1 of 5) on page 537
Waste toner duct assembly	RM1-8138-000CN	Internal assemblies (1 of 5) on page 537
Wire, (mech) sensor protect	RC2-4828-000CN	Internal assemblies (3 of 5) on page 541

Numerical parts list

Table 4-18 Numerical parts list

Part number	Description	Table and page
CF081-67912	Formatter assembly kit (China)	PCAs on page 551
CF081-67913	Paper feed roller assembly	Paper feeder main body on page 557
CF081-67913	Roller, paper pickup	Paper feeder main body on page 557
CF081-69001	Formatter assembly kit (exchange)	PCAs on page 551
CF084-67901	1 x 500-sheet feeder replacement kit	1 x 500-sheet paper feeder on page 553
RC2-3983-030CN	Lever, cartridge pressure front	Internal assemblies (1 of 5) on page 537
RC2-4415-000CN	Lever, shutter	Internal assemblies (2 of 5) on page 539
RC2-4828-000CN	Wire, (mech) sensor protect	Internal assemblies (3 of 5) on page 541
RC2-4831-000CN	Roller, rail	Internal assemblies (1 of 5) on page 537
RC2-5019-000CN	Cover, right lower inner	Internal assemblies (3 of 5) on page 541
RC2-5058-000CN	Cover, rear upper	External covers, panels, and doors on page 533
RC2-5118-000CN	Link, interlock	Internal assemblies (3 of 5) on page 541
RC2-5119-000CN	Link, interlock	Internal assemblies (3 of 5) on page 541
RC2-5120-000CN	Link, interlock	Internal assemblies (3 of 5) on page 541
RC2-5121-000CN	Arm, interlock link switch	Internal assemblies (3 of 5) on page 541
RC2-5122-000CN	Link, interlock	Internal assemblies (3 of 5) on page 541
RC2-5123-000CN	Mount, interlock switch	Internal assemblies (3 of 5) on page 541
RC2-5416-000CN	Holder, drawer connector	Paper feeder main body on page 557
RC2-5417-000CN	Stopper, door	Paper feeder covers on page 555
RC2-5425-000CN	Cover, front upper	Paper feeder covers on page 555

Table 4-18 Numerical parts list (continued)

Part number	Description	Table and page
RC2-5426-000CN	Cover, front right	Paper feeder covers on page 555
RC2-5427-000CN	Cover, right	Paper feeder covers on page 555
RC2-5428-000CN	Cover, left	Paper feeder covers on page 555
RC2-5429-000CN	Cover, rear	Paper feeder covers on page 555
RC2-5430-000CN	Cover, left front	Paper feeder covers on page 555
RC2-5435-000CN	Link, door right	Paper feeder covers on page 555
RC2-5912-000CN	Cover	Internal assemblies (2 of 5) on page 539
RC2-5913-000CN	Shaft	Internal assemblies (3 of 5) on page 541
RC2-5937-000CN	Lock, door	Internal assemblies (1 of 5) on page 537
RC2-5938-000CN	Plate, blanking	External covers, panels, and doors on page 533
RC2-5943-000CN	Switch arm	Internal assemblies (4 of 5) on page 543
RC2-5951-000CN	Lever, box presence detect	Internal assemblies (1 of 5) on page 537
RC2-5962-000CN	Cover	Internal assemblies (2 of 5) on page 539
RC3-1070-000CN	Cover, front inner, upper	Internal assemblies (1 of 5) on page 537
RC3-1093-000CN	Cover, USB (simplex)	External covers, panels, and doors on page 533
RC3-1112-000CN	Cover, left lower	External covers, panels, and doors on page 533
RC3-1113-000CN	Cover, left front	External covers, panels, and doors on page 533
RC3-1114-000CN	Cover, rear lower	External covers, panels, and doors on page 533
RC3-1115-000CN	Cover, rear	External covers, panels, and doors on page 533
RC3-1116-000CN	Cover, right rear	External covers, panels, and doors on page 533

Table 4-18 Numerical parts list (continued)

Part number	Description	Table and page
RC3-1117-000CN	Cover, right lower	External covers, panels, and doors on page 533
RC3-1118-000CN	Cover, upper	External covers, panels, and doors on page 533
RC3-1231-000CN	Holder, CST positioning	Internal assemblies (1 of 5) on page 537
RK2-2415-000CN	Stepping motor, DC (developing disengagement; M10)	Internal assemblies (5 of 5) on page 545
RK2-2416-000CN	Fan (FM1)	Internal assemblies (4 of 5) on page 543
RK2-2418-000CN	Fan (FM2, FM3)	Internal assemblies (2 of 5) on page 539
RK2-3267-000CN	Temperature sensor assembly	Internal assemblies (2 of 5) on page 539
RK2-3941-000CN	Cable, flat 1 scanner	Internal assemblies (4 of 5) on page 543
RK2-3943-000CN	Cable, flat 2 laser	Internal assemblies (4 of 5) on page 543
RL1-1914-020CN	Cover, front inner lower unit (CMK)	Internal assemblies (1 of 5) on page 537
RL1-1915-000CN	Cover, front inner lower (Y)	Internal assemblies (1 of 5) on page 537
RL1-1941-030CN	Tray, paper delivery	External covers, panels, and doors on page 533
RM1-4959-000CN	Duplexing paper feed assembly	Right-door assembly on page 535
RM1-4969-000CN	Registration assembly (duplex)	Internal assemblies (3 of 5) on page 541
RM1-4970-060CN	Paper delivery assembly (duplex)	Internal assemblies (3 of 5) on page 541
RM1-4973-000CN	Duplexing drive assembly	Internal assemblies (5 of 5) on page 545
RM1-4983-000CN	Fusing (fixing) motor assembly (M2)	Internal assemblies (5 of 5) on page 545
RM1-5003-050CN	Paper delivery assembly (simplex)	Internal assemblies (3 of 5) on page 541
RM1-5009-000CN	Registration assembly (simplex)	Internal assemblies (3 of 5) on page 541
RM1-5533-000CN	Rear lock arm assembly	Internal assemblies (3 of 5) on page 541

Table 4-18 Numerical parts list (continued)

Part number	Description	Table and page
RM1-5696-000CN	Waste toner detect assembly	Internal assemblies (1 of 5) on page 537
RM1-5700-000CN	Toner sensor holder assembly	Internal assemblies (2 of 5) on page 539
RM1-5705-000CN	Rear Pre-exposure PCA assembly	Internal assemblies (5 of 5) on page 545
RM1-5714-000CN	Fusing connecting cable assembly	Internal assemblies (4 of 5) on page 543
RM1-5730-000CN	Duplexing unit cable assembly	Internal assemblies (5 of 5) on page 545
RM1-5732-000CN	Door switch assembly	Internal assemblies (3 of 5) on page 541
RM1-5737-000CN	MP sensor cable assembly (duplex)	Internal assemblies (4 of 5) on page 543
RM1-5740-000CN	Sensor cable assembly	Internal assemblies (2 of 5) on page 539
RM1-5741-000CN	Sensor cable assembly	Internal assemblies (2 of 5) on page 539
RM1-5742-000CN	Left cable assembly	Internal assemblies (1 of 5) on page 537
RM1-5746-000CN	Fan cable assembly	Internal assemblies (2 of 5) on page 539
RM1-5749-000CN	Connecting cable assembly	Internal assemblies (2 of 5) on page 539
RM1-5750-000CN	MP sensor cable assembly (simplex)	Internal assemblies (4 of 5) on page 543
RM1-5752-000CN	Motor/sensor cable assembly	Internal assemblies (2 of 5) on page 539
RM1-5773-000CN	Pickup motor assembly (M13)	Internal assemblies (5 of 5) on page 545
RM1-5839-000CN	PCA, paper feeder driver	Paper feeder PCA on page 561
RM1-5913-000CN	Lifter base assembly	Paper feeder main body on page 557
RM1-5919-000CN	Paper pickup assembly	Paper feeder main body on page 557
RM1-6192-000CN	Right door assembly	Paper feeder covers on page 555
RM1-6194-030CN	Paper feed assembly	Paper feeder main body on page 557

Table 4-18 Numerical parts list (continued)

Part number	Description	Table and page
RM1-6198-000CN	Cassette assembly (Tray 3)	Cassette on page 559
RM1-8087-000CN	Lower HVPS-D PCA	PCAs on page 551
RM1-8088-000CN	Upper HVPS-T PCA (duplex)	PCAs on page 551
RM1-8089-000CN	Upper HVPS-T PCA (simplex)	PCAs on page 551
RM1-8091-000CN	Low-voltage power supply 110V	PCAs on page 551
RM1-8093-000CN	Low-voltage power supply 220V	PCAs on page 551
RM1-8096-000CN	Operation (control) panel assembly	External covers, panels, and doors on page 533
RM1-8097-000CN	Switch, PCA assembly	Internal assemblies (3 of 5) on page 541
RM1-8104-000CN	DC controller PCA	PCAs on page 551
RM1-8105-000CN	Main motor unit (M3, M4, M5)	Internal assemblies (5 of 5) on page 545
RM1-8123-000CN	Right-door assembly (duplex)	Right-door assembly on page 535
RM1-8124-000CN	Paper pickup assembly (duplex)	Paper pickup assembly on page 549
RM1-8125-000CN	Cassette	Cassette on page 547
RM1-8132-000CN	Pick up lower guide assembly	Internal assemblies (3 of 5) on page 541
RM1-8134-000CN	Fusing (fixing) drive assembly (duplex)	Internal assemblies (5 of 5) on page 545
RM1-8135-000CN	Cassette paper pick up drive assembly (M13)	Internal assemblies (5 of 5) on page 545
RM1-8136-000CN	Lifter drive assembly	Internal assemblies (5 of 5) on page 545
RM1-8137-000CN	Auto close assembly	Internal assemblies (5 of 5) on page 545
RM1-8138-000CN	Waste toner duct assembly	Internal assemblies (1 of 5) on page 537
RM1-8143-000CN	Inner connecting PCA (ICB)	PCAs on page 551
RM1-8159-000CN	Cover, left assembly	External covers, panels, and doors on page 533
RM1-8163-000CN	Density detect assembly	Internal assemblies (3 of 5) on page 541
RM1-8165-000CN	Cover, right-front assembly	External covers, panels, and doors on page 533

Table 4-18 Numerical parts list (continued)

Part number	Description	Table and page
RM1-8167-000CN	Right-door assembly (simplex)	Right-door assembly on page 535
RM1-8168-000CN	Paper pickup assembly (simplex)	Paper pickup assembly on page 549
RM1-8169-000CN	Fusing (fixing) drive assembly (simplex)	Internal assemblies (5 of 5) on page 545
RM1-8173-000CN	Cover, USB (duplex)	External covers, panels, and doors on page 533
RM1-8178-000CN	Sensor cable guide assembly	Internal assemblies (3 of 5) on page 541
RU6-2237-000CN	Spring, ground	Internal assemblies (1 of 5) on page 537
RU6-2316-000CN	Spring, compression	Internal assemblies (2 of 5) on page 539
RU6-2436-000CN	Spring, tension	Internal assemblies (2 of 5) on page 539
RU7-2192-000CN	Spring, tension	Internal assemblies (1 of 5) on page 537
VS1-7257-007CN	Drawer connector holder	Paper feeder main body on page 557
VS1-7258-007CN	Connector, drawer	Internal assemblies (5 of 5) on page 545
WC4-5171-000CN	Microswitch	Internal assemblies (3 of 5) on page 541
WG8-5935-000CN	Photo interrupter, TLP1243	Internal assemblies (5 of 5) on page 545
WG8-5935-000CN	Photointerrupter	Paper pickup assembly on page 549
XB4-7401-007CN	Screw, tapping, pan head M4X10	Paper feeder main body on page 557

A Service and support

- Hewlett-Packard limited warranty statement
- HP's Premium Protection Warranty: LaserJet print cartridge limited warranty statement
- Color LaserJet Fuser Kit, Toner Collection Unit, and Transfer Kit Limited Warranty Statement
- Data stored on the print cartridge
- End User License Agreement
- OpenSSL
- Customer self-repair warranty service
- Customer support

Hewlett-Packard limited warranty statement

HP PRODUCT	DURATION OF LIMITED WARRANTY
HP LaserJet Enterprise 500 color M551n, M551dn, M551xh	One-year on-site 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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HP's limited warranty is valid in any country/region or locality where HP has a support presence for this product and where HP has marketed this product. The level of warranty service you receive may vary according to local standards. HP will not alter form, fit or function of the product to make it operate in a country/region for which it was never intended to function for legal or regulatory reasons.

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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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Color LaserJet Fuser Kit, Toner Collection Unit, and Transfer Kit Limited Warranty Statement

This HP product is warranted to be free from defects in materials and workmanship until the printer provides a low-life indicator on the control panel.

This warranty does not apply to products that (a) have been 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) 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). 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.

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Rev. 04/09

OpenSSL

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/)

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This product includes cryptographic software written by Eric Young (eay@cryptsoft.com). This product includes software written by Tim Hudson (tjh@cryptsoft.com).

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

Get telephone support for your country/region Have the product name, serial number, date of purchase, and problem description ready.	Country/region phone numbers are on the flyer that was in the box with your product or at www.hp.com/support/.
Get 24-hour Internet support	www.hp.com/support/lj500colorM551
Get support for products used with a Macintosh computer	www.hp.com/go/macosx
Download software utilities, drivers, and electronic information	www.hp.com/go/lj500colorM551_software
Order additional HP service or maintenance agreements	www.hp.com/go/carepack
Register your product	www.register.hp.com

B Product specifications

- Physical specifications
- Power consumption, electrical specifications, and acoustic emissions
- Environmental specifications

Physical specifications

Table B-1 Product dimensions

Product	Height	Depth	Width	Weight
HP LaserJet Enterprise 500 color M551n	389 mm (15.3 in)	489 mm (19.3 in)	514 mm (20.2 in)	36.5 kg (80.5 lb)
HP LaserJet Enterprise 500 color M551dn	408 mm (16.1 in)	489 mm (19.3 in)	514 mm (20.2 in)	37 kg (81.6 lb)
HP LaserJet Enterprise 500 color M551xh	575 mm (22.6 in)	489 mm (19.3 in)	514 mm (20.2 in)	44.6 kg (98.3 lb)

Table B-2 Product dimensions, with all doors and trays fully opened

Product	Height	Depth	Width
HP LaserJet Enterprise 500 color M551n	389 mm (15.3 in)	804 mm (31.7 in)	824 mm (32.4 in)
HP LaserJet Enterprise 500 color M551dn	408 mm (16.1 in)	804 mm (31.7 in)	824 mm (32.4 in)
HP LaserJet Enterprise 500 color M551xh	575 mm (22.6 in)	804 mm (31.7 in)	824 mm (32.4 in)

Power consumption, electrical specifications, and acoustic emissions

See www.hp.com/go/lj500colorM551_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.

Environmental specifications

Environmental condition	Recommended	Allowed
Temperature (product and print cartridge)	17° to 25°C (63° to 77°F)	15° to 27°C (59° to 81°F)
Relative humidity	30% to 70% relative humidity (RH)	10% to 70% RH
Altitude	N/A	0 m (0 ft) to 3000 m (9842 ft)

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 B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If this equipment is not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase separation between equipment and receiver.
- Connect equipment to an outlet on a circuit different from that to which the receiver is located.
- Consult your dealer or an experienced radio/TV technician.

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 B 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_3).

Power consumption

Power usage drops significantly while in Ready or Sleep or Auto-off 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

Paper use

This product's manual/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 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.

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. For the location of your nearest FedEx shipping center/ store, please call 1-800-GOFEDEX or visit www.fedex.com.

For more information, or to order additional labels or boxes for bulk returns, visit 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. 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:

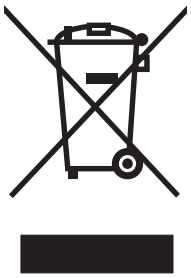
HP LaserJet Enterprise 500 color M551	
Type	Carbon monofluoride lithium
Weight	1.5 g
Location	On formatter board
User-removable	No



廢電池請回收

For recycling information, you can go to www.hp.com/recycle, or contact your local authorities or the Electronics Industries Alliance: 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.

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 or 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 or 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-0802-03-rel.1.0
Manufacturer's Address:	11311 Chinden Boulevard	
	Boise, Idaho 83714-1021, USA	
declares, that the product		
Product Name:	HP LaserJet Enterprise 500 color M551n	
	HP LaserJet Enterprise 500 color M551dn	
	HP LaserJet Enterprise 500 color M551xh	
Regulatory Model Number[2)]	BOISB-0802-03	
	Including:	
	CF084A – 500 Sheet Input Tray	
Product Options:	ALL	
Print Cartridges:	CE400A, CE400X, CE401A, CE402A, CE403A	
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 B[1), 3)]	
	EN 61000-3-2:2006	
	EN 61000-3-3:2008	
	EN 55024:1998 +A1 +A2	
	FCC Title 47 CFR, Part 15 Class B[1), 3)] / ICES-003, Issue 4	
	GB9254-2008, GB17625.1-2003	
Energy Use:	Regulation (EC) No. 1275/2008 (Applies only for Class B products)	
	ENERGY STAR® Qualified Imaging Equipment Typical Electricity Consumption (TEC) Test Procedure	

Supplementary Information:

The product herewith complies with the requirements of the EMC Directive 2004/108/EC, the Low Voltage Directive 2006/95/EC and the EuP Directive 2005/32/EC carries the CE-Marking CE 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).

Boise, Idaho USA

September 2011

For Regulatory Topics only, contact:

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
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. It also outlines how to securely erase data from the product.

Types of memory

Volatile memory

The product utilizes 1024 MB of volatile memory used for temporary storage during the process of jobs, and for applications running on the operating system. When the printer is powered off, the memory is erased.

Non-volatile memory

The product utilizes non-volatile memory (EEPROM, Flash) containing the boot code and factory product configuration data required for the device to function. No customer print data is stored in non-volatile memory. There are no steps to clear this data.

Mass Storage memory

The product contains an internal Hard Disk Drive (HDD) or Solid State Disk (SSD) to store customer data, device operating system, applications, digitally signed firmware images, persistent data, and temporary data used for processing and system functions.

This data can be erased using the device BIOS menu, embedded web server (EWS), and HP Web Jetadmin with the following commands:

- Erase and Unlock Encrypted Disk - This changes the encryption keys rendering all data unreadable
- Secure Disk Erase - Industry standard ATA Secure Erase. Overwrites all data on the disk
- Secure Storage Erase - Erases temporary files and job data by overwriting information one or three times (HDD only)
- Secure File Erase - Erases files when jobs finish processing by overwriting them one or three times (HDD only)

Secure Storage Erase and Secure Disk 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 B requirements.

« Conforme à la classe B des normes canadiennes de compatibilité électromagnétiques. « CEM ». »

VCCI statement (Japan)

この装置は、クラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。取扱説明書に従って正しい取り扱いをして下さい。

VCCI-B

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 (Korea)

B급 기기 (가정용 방송통신기기)	이 기기는 가정용(B급)으로 전자파적합등록을 한 기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.

Laser statement for Finland

Luokan 1 laserlaite

Klass 1 Laser Apparat

HP LaserJet Enterprise 500 color M551n, M551dn, M551xh, laserkirjoitin on käyttäjän kannalta turvallinen luokan 1 laserlaite. Normaalissa käytössä kirjoittimen suojakotelointi estää lasersäteen pääsyn laitteen ulkopuolelle. Laitteen turvallisuusluokka on määritetty standardin EN 60825-1 (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 Enterprise 500 color M551n, M551dn, M551xh - 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 näkymättömällelasersäteilylle laitteen ollessa toiminnassa. Älä katso säteeseen.

VARNING !

Om laserprinterns skyddshölje öppnas då apparaten är i funktion, utsättas användaren för osynlig laserstrålning. Betrakta ej strålen.

Tiedot laitteessa käytettävän laserdiodin säteilyominaisuuksista: Aallonpituus 775-795 nm Teho 5 m W Luokan 3B laser.

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 warden.

Substances Table (China)

有毒有害物质表

根据中国电子信息产品污染控制管理办法的要求而出台

部件名称	有毒有害物质和元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
打印引擎	X	0	X	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

3685

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

Restriction on Hazardous Substances statement (Ukraine)

Обладнання відповідає вимогам Технічного регламенту щодо обмеження використання деяких небезпечних речовин в електричному та електронному обладнанні, затвердженого постановою Кабінету Міністрів України від 3 грудня 2008 № 1057

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