# COLOR LASERJET ENTERPRISE CM4540

MFP SERIES

## Service Manual





# HP Color LaserJet Enterprise CM4540 MFP Series

## 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 feeders
- Document feeder/scanner assembly
- 3-bin stapling mailbox

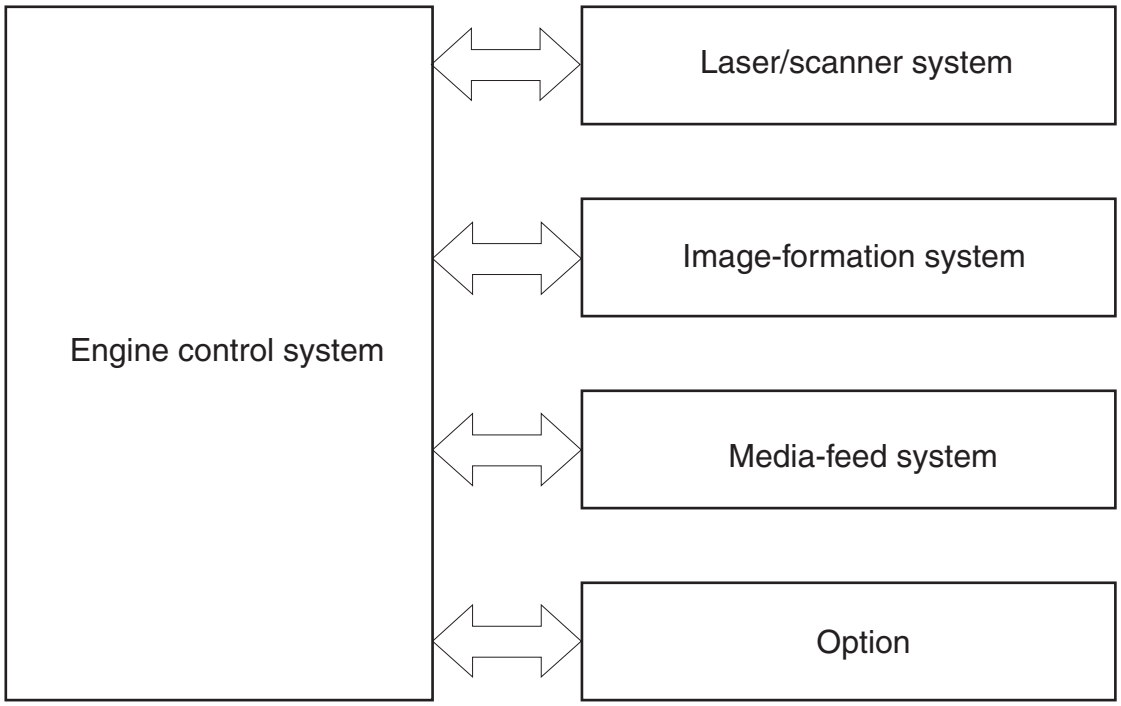
# Basic operation

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




The interconnect board (ICB) provides connections from the formatter to the following components:

- DC controller (DCC)
- Scan control board (SCB)
- Control panel, USB walkup port, USB hardware integration pocket through a USB cable

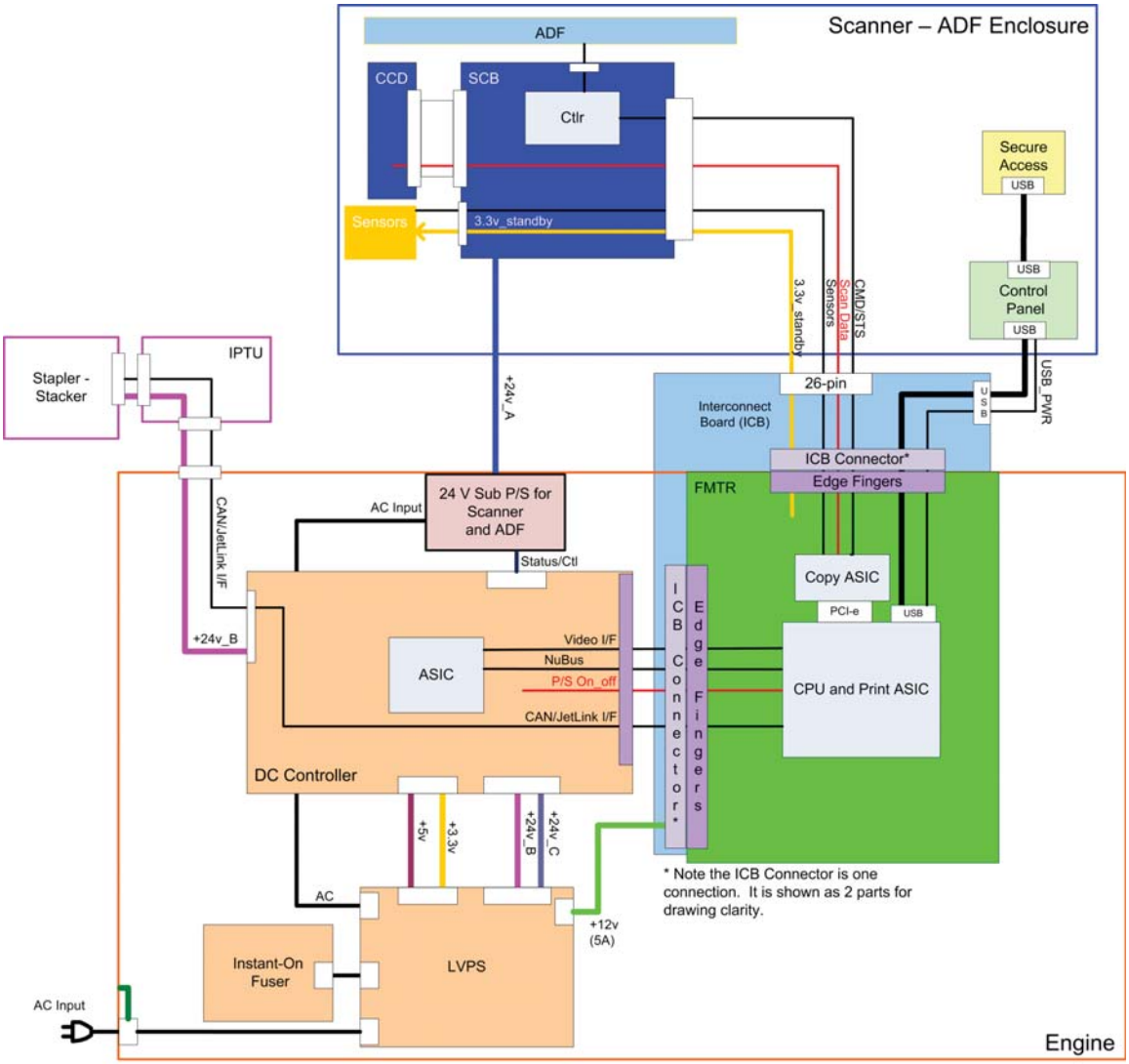
The formatter receives +12 volts from the low voltage power supply (LVPS).

The document feeder/scanner receives 24 volts from the scanner power supply, which is powered by an AC line from the LVPS.

The intermediate paper transport unit (IPTU) receives +24 volts and 3.3 volts from the DCC.

The Stapler/Stacker receives +24 volts and the JetLink control lines for communications from the DCC.

**Figure 1-2** System block diagram



## Sequence of operation

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

**Table 1-1 Sequence of operation**

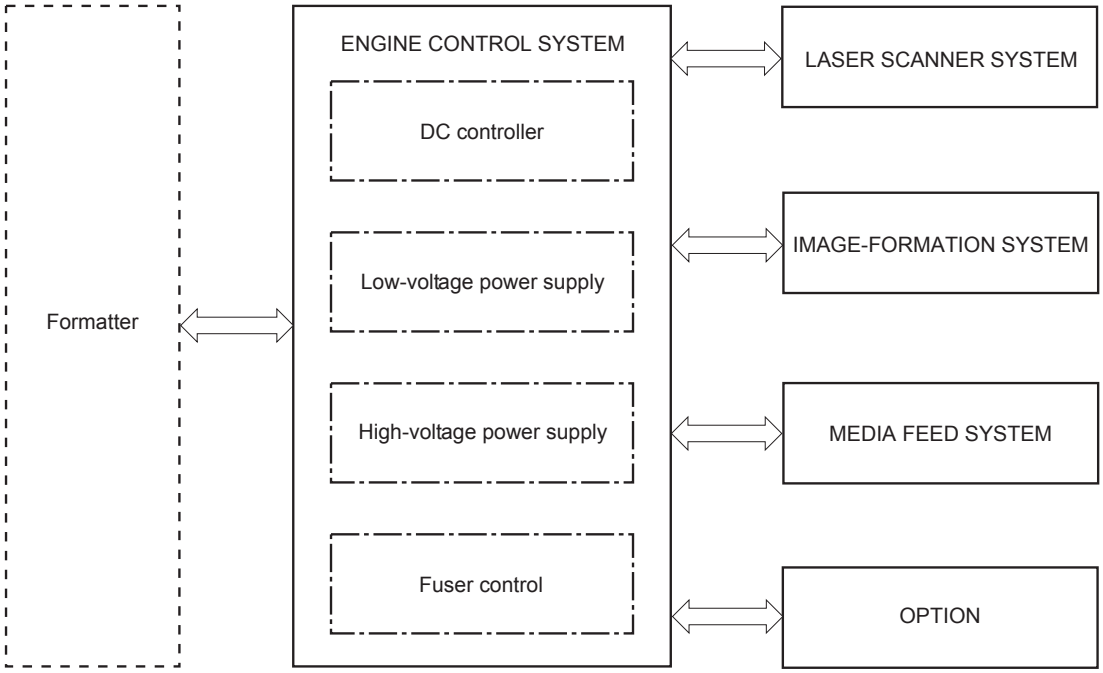
| Period | Duration | Description |
|---|---|---|
| Waiting | From the time the power is turned on, the door is closed, or when the product exits Sleep mode until the product is ready for printing | • Heats the fuser sleeve in the fuser<br>• Pressurizes the pressure roller in the fuser<br>• Detects the print cartridges<br>• Moves the ITB and developing unit to the home position<br>• Cleans the ITB and 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.<br>• The product enters Sleep mode if the sleep command is received from the formatter.<br>• 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<br>• Prepares each laser/scanner unit<br>• 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<br>• Transfers the toner to the paper<br>• Fuses the toner image onto the paper |
| 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<br>• Stops the high-voltage power supply<br>• Stops each laser/scanner unit<br>• If another print command is received, the product enters the initial rotation period when the last rotation is complete. |

# 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
- Low-voltage power supply
- High-voltage power supply
- Fuser control

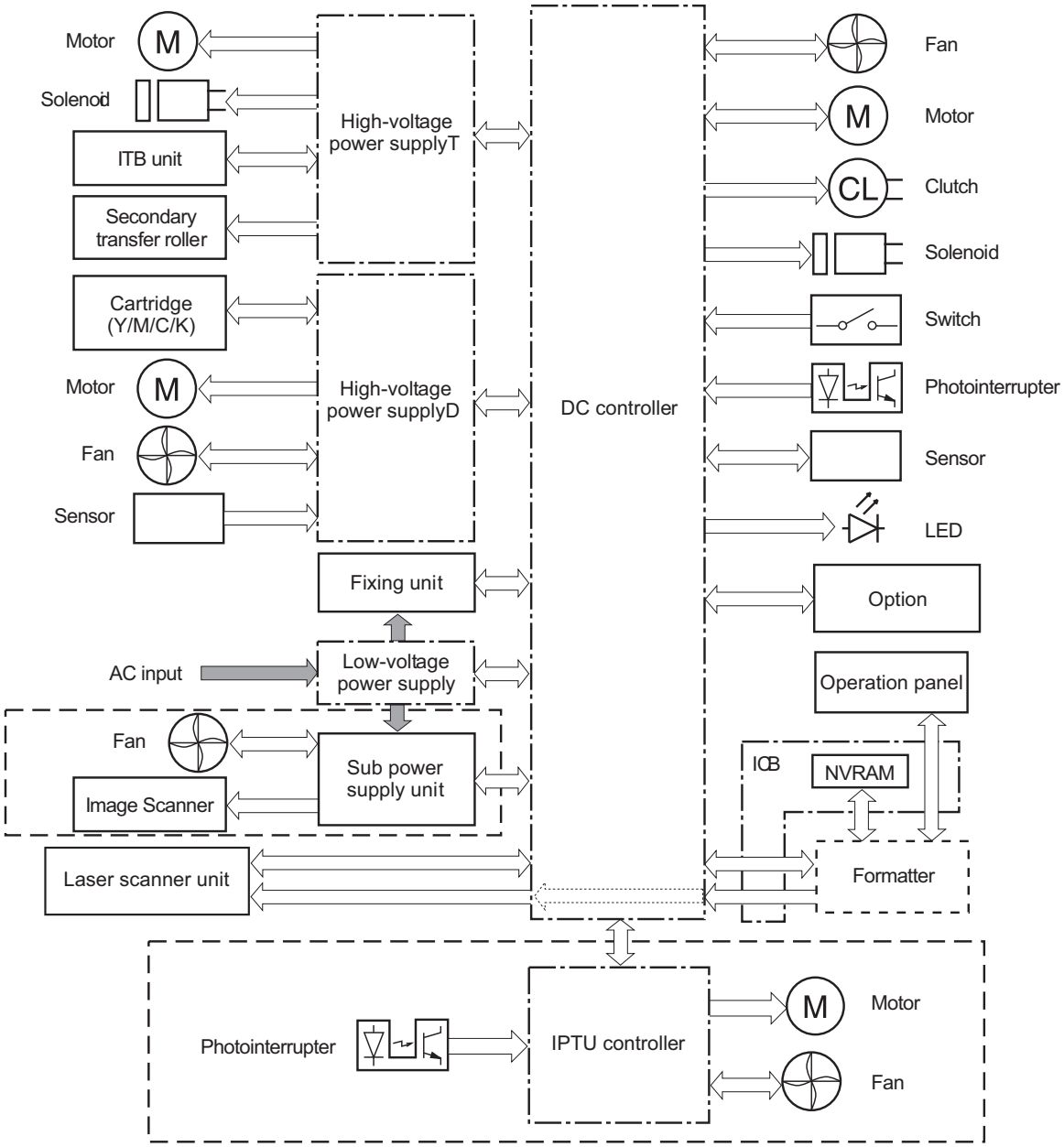
**Figure 1-3** Engine-control system



# DC controller

The DC controller controls the operational sequence of the product.

**Figure 1-4** DC controller block diagram




## Solenoids

**Table 1-2 Solenoids**

| Component abbreviation | Component name |
|---|---|
| SL1 | Primary transfer roller disengagement solenoid |
| SL2 | Duplex reverse solenoid |

**Table 1-2 Solenoids (continued)**

| Component abbreviation | Component name |
|---|---|
| SL3 | Multipurpose-tray pickup solenoid |
| SL4 | Cassette pickup solenoid |

## Clutches

| Component abbreviation | Component name |
|---|---|
| CL1 | Duplex re-pickup clutch |

## Switches

**Table 1-3 Switches**

| Component abbreviation | Component name |
|---|---|
| SW1 | 5V interlock switch |
| SW2 | 24V interlock switch |
| SW3 | Power switch |
| SW4 | Cassette media size switch |
| SW5 | Front door switch |
| SW6 | Right door switch |
| | Test print switch |

## Sensors

**Table 1-4 Sensors**

| Component abbreviation | Component name |
|---|---|
| SR1 | Yellow drum home position sensor |
| SR2 | Magenta drum home position sensor |
| SR3 | Cyan drum home position sensor |
| SR4 | Black drum home position sensor |
| SR5 | Fuser delivery sensor |
| SR7 | Fuser pressure release sensor |
| SR8 | MP-tray-media-presence sensor |
| SR9 | Primary-transfer-roller disengagement sensor |
| SR10 | New ITB sensor |
| SR11 | Developer alienation sensor |
| SR14 | Loop sensor 1 |
| SR15 | Loop sensor 2 |
| SR20 | Top of page (TOP) sensor |
| SR21 | Media sensor |
| SR22 | Duplex re-pickup sensor |
| SR23 | Tray 2 paper surface 1 sensor |
| SR24 | Tray 2 paper surface 2 sensor |
| SR25 | Tray 2 paper present sensor |
| SR26 | IPTU media full sensor |
| SR27 | IPTU media feed sensor |
| SR28 | Image scanner unit open sensor |
| | RD sensor |
| | Environment sensor (temperature and humidity) |
| | Yellow toner-level sensor |
| | Magenta toner-level sensor |
| | Cyan toner-level sensor |
| | Black toner-level sensor |
| | Residual toner full sensor |
| TH4 | Laser scanner temperature sensor |

## Motors

The product has 13 motors. The motors drive the components in the paper-feed and image-formation systems.

**Table 1-5 Motors**

| Abbreviation | Name | Purpose | Failure detection |
|---|---|---|---|
| M1 | ITB motor | Drives the ITB and residual toner feed screw | Yes |
| M2 | Fuser motor | Drives the fuser sleeve, pressure roller, fuser pressure roller, and primary transfer roller disengagement | Yes |
| M3 | Y drum motor | Drives the photosensitive drum (yellow), developing roller (yellow), and primary charging roller (yellow) | Yes |
| M4 | M drum motor | Drives the photosensitive drum (magenta), developing roller (magenta), and primary charging roller (magenta) | Yes |
| M5 | C drum motor | Drives the photosensitive drum (cyan), developing roller (cyan), and primary charging roller (cyan) | Yes |
| M6 | Bk drum motor | Drives the photosensitive drum (black), developing roller (black), and primary charging roller (black) | Yes |
| M7 | Lifter motor | Drives the lifter for the cassette | Yes |
| M8 | Cyan/black scanner motor | Drives the scanner mirror in the cyan/black laser scanner | Yes |
| M9 | Yellow/magenta scanner motor | Drives the scanner mirror in the yellow/magenta laser scanner | Yes |
| M10 | Developing disengagement motor | Drives the developing unit disengagement | No |
| M11 | Duplex reverse motor | Drives the duplex reverse roller and duplex feed roller | No |
| M12 | Residual toner-feed motor | Drives the residual toner feed screw | Yes |

**Table 1-5 Motors (continued)**

| Abbreviation | Name | Purpose | Failure detection |
|---|---|---|---|
| M13 | Pickup motor | Drives the cassette pickup roller, MP tray pickup roller, feed roller, and cassette separation roller | No |
| M14 | IPTU feed motor | Drive the IPTU feed rollers and IPTU delivery roller | No |

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

### The DC controller detects a failure by monitoring a motor:

- Startup failure: the motor does not reach a specified speed within a specified time from when the motor starts.
- Rotational failure: the rotational speed of the motor is not in the specified range for a specified time after the motor reaches a specified speed.
- Lock detection (for the residual toner feed motor): the value of the motor drive signal voltage is not in the specified range for a specified time.

### The DC controller detects a failure by monitoring a part related to the motor:

- Developing disengagement motor: A specified signal is not detected from the developing disengagement sensor during a developing assembly operation.
- Lifter motor: The cassette media stack surface sensor does not detect the media surface within a specified time period after the lifter motor starts.
- Scanner motor: The scanner motor does not reach a specified speed within a specified period after the scanner assembly starts.
- A specified beam-detect (BD) interval is not detected during a print operation.

## Fans

The product has eight fans for preventing the temperature from rising in the product.

**Table 1-6 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 |

**Table 1-6 Fans (continued)**

| Abbreviation | Name | Cooling area | Type | Speed |
|---|---|---|---|---|
| FM3 | Exhaust fan 2 | Around the delivery assembly | Exhaust | Full/half |
| FM4 | Exhaust fan 1 | Around the cartridge | Exhaust | Full/half |
| FM5 | Sub power supply fan | Around the sub power supply | Intake | Full |
| FM6 | IPTU fan 1 | Around the IPTU media feed unit and the product delivery assembly | Intake | Full |
| FM7 | IPTU fan 2 | Around the product delivery assembly | Exhaust | Full |
| FMx | Formatter fan | Formatter area | | |

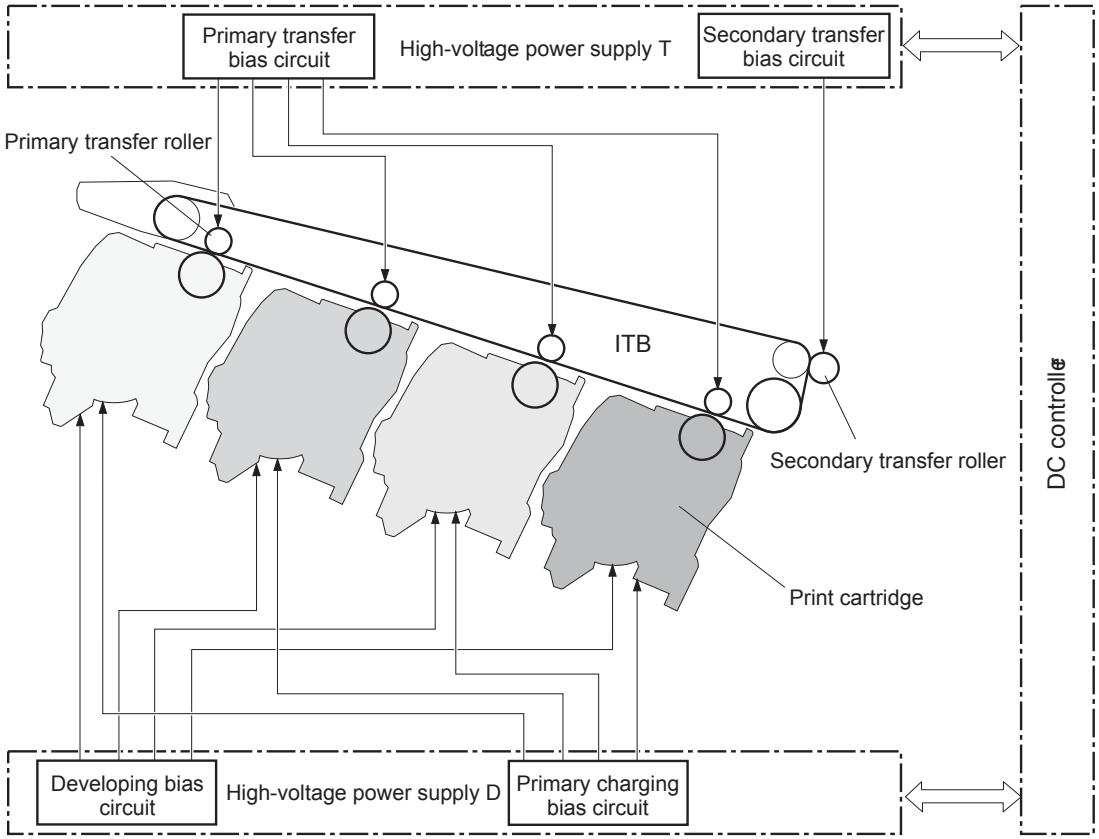
The DC controller determines if there is a fan failure and notifies the formatter if the fan locks for a specified time from when the fan starts.

# High-voltage power supply

The DC controller controls the high-voltage power supply to generate biases. 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 1-5** High-voltage power supply circuits




The high-voltage power supply contains several separate circuits.

**Table 1-7 High-voltage power supply circuits**

| Circuit | Description |
|---|---|
| Primary-charging-bias generation | The primary charging bias negatively charges the surface of the photosensitive drum to prepare for image formation. The primary-charging-bias circuit in the high-voltage power supply generates the biases for each color. |
| Developing-bias generation | The developing bias adheres toner to an electrostatic latent image formed on the photosensitive drum. The developing-bias circuit in the high-voltage power supply generates the biases for each color. |

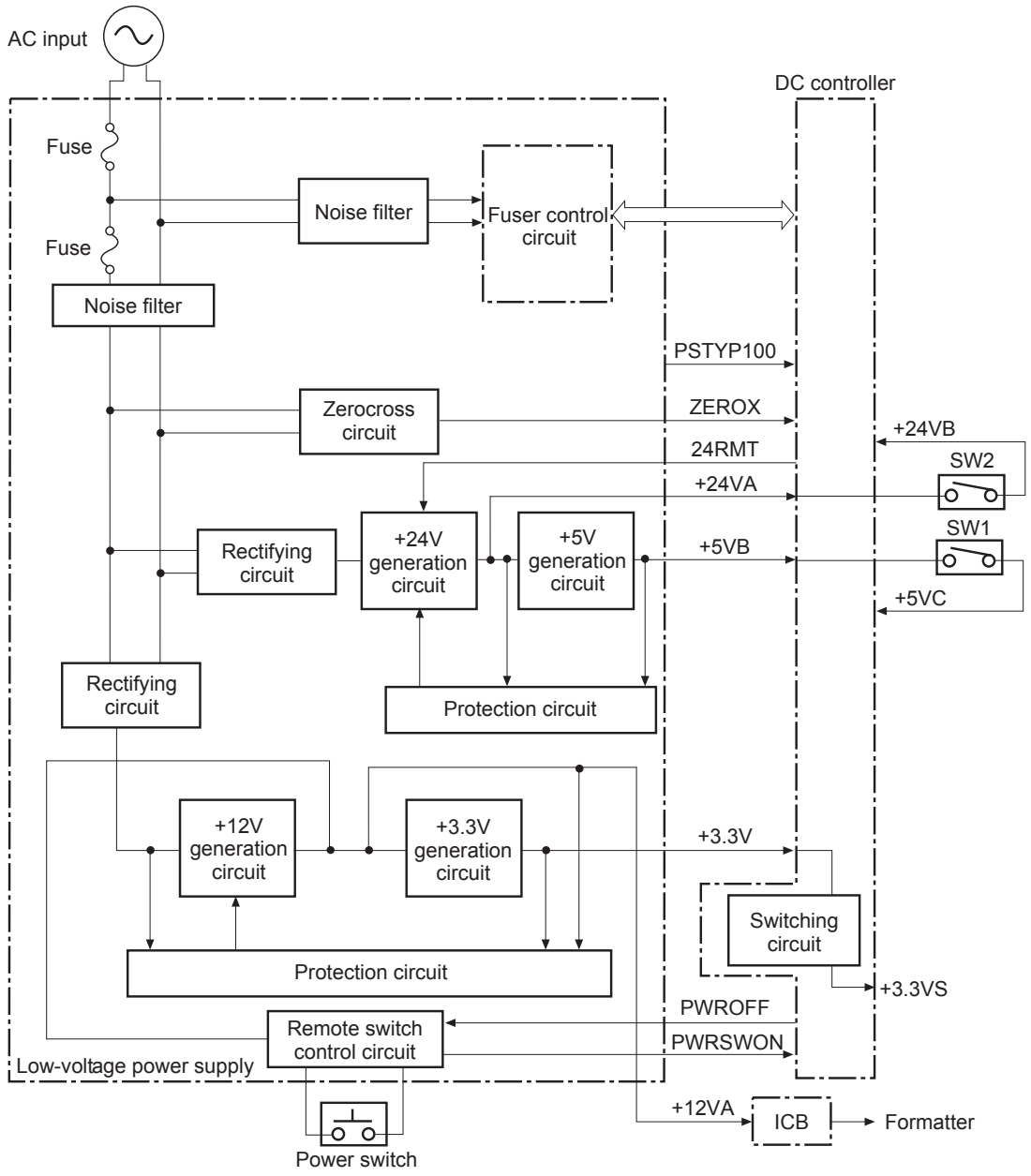
**Table 1-7 High-voltage power supply circuits (continued)**

| Circuit | Description |
|---|---|
| Primary-transfer-bias generation | The primary transfer bias transfers the toner from each photosensitive drum onto the ITB. The primary transfer bias circuit in the high-voltage power supply generates the biases for each color. |
| Secondary-transfer-bias generation | The secondary transfer bias transfers the toner image from the ITB onto the paper. The secondary transfer bias circuit in the high-voltage power supply generates the bias. The reversed bias transfers residual toner on the secondary transfer roller back to the ITB. The residual toner on the ITB is deposited in the toner collection box. |

## 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 1-6** 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 1-8 Converted DC voltages**

| Main DC voltage | Sub-voltage | Behavior |
|---|---|---|
| +24 V | +24 VA | Constantly supplied |
| | +24 VB | Interrupted when the front door or right door open |
| +5 V | +5 VB | Constantly supplied |
| | +5 VC | Interrupted when the front door or right door open |
| +3.3 V | 3.3 V | Constantly supplied |
| | 3.3 VS | Stopped during Sleep (powersave) mode |

## 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. If DC voltage is not being supplied from the low-voltage power supply, the protective function might be running. In this case, turn the power off and unplug the power cord. Do not turn the power switch on until the root cause is found. The DC controller notifies the formatter of a low-voltage power supply failure when the protective function is activated. In addition, the low-voltage power supply circuit and the fuser control unit have a fuse to protect against overcurrent. If overcurrent flows into the AC line, the fuse blows to stop AC power.

## Safety

For personal safety, the product interrupts 24 VB power to the fuser, high-voltage power supply, and motors, in addition to +5 VC to the laser scanners when the front or right door is opened. The power switch is on the dc line so that the ac power flows even if the power switch is turned off. Unplug the power cord before disassembling the product.

## 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 fuser operation.

## Sleep (powersave) mode

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

## 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.

# Fuser control

The fuser heater-control circuit and the fuser heater safety circuit control the fuser temperature according to commands from the DC controller.

**Figure 1-7** Fuser components

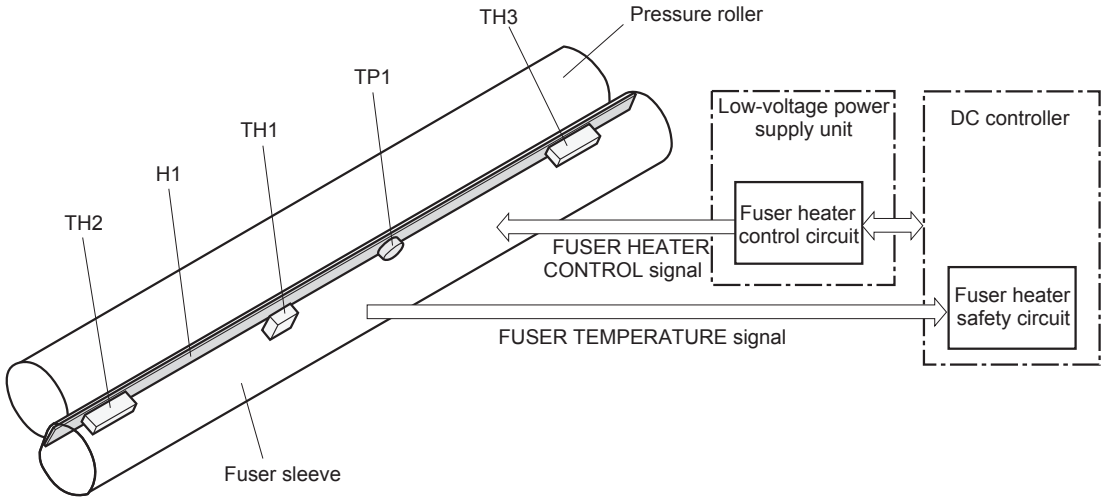


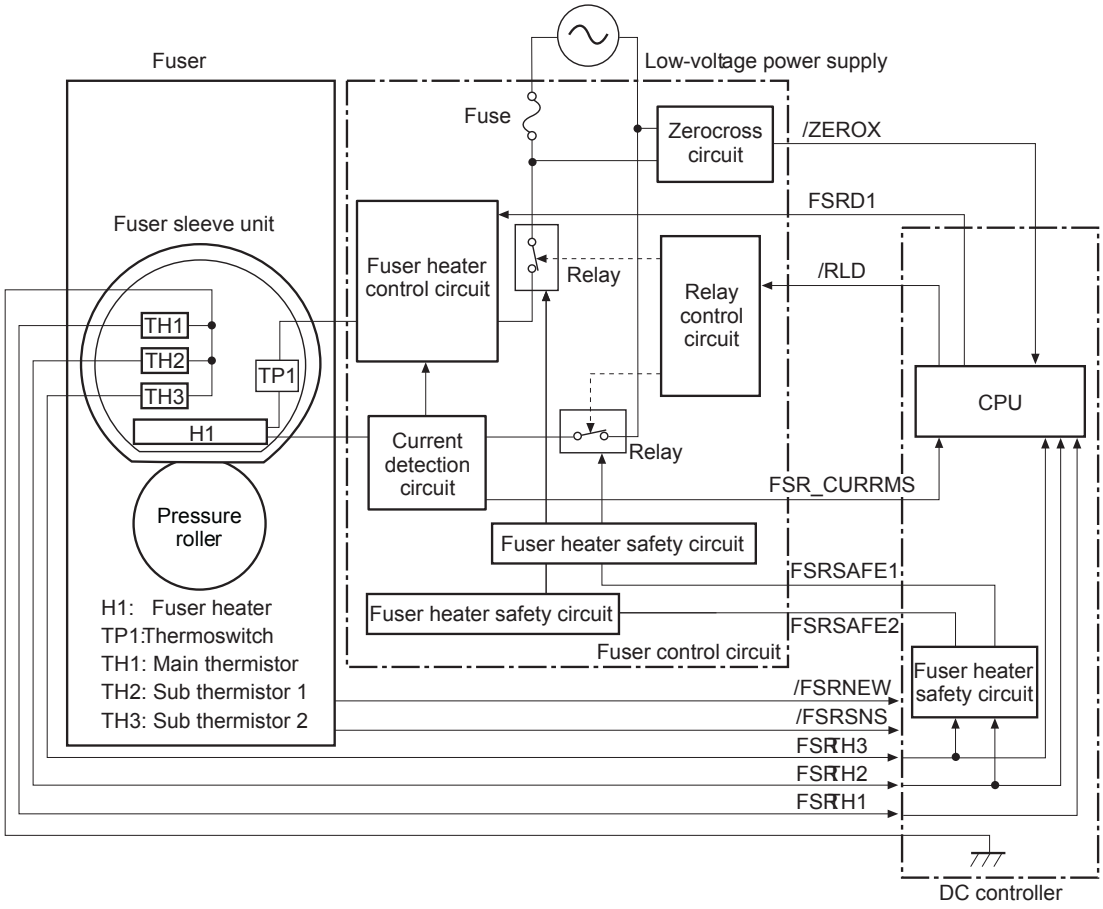

**Table 1-9 Fuser components**

| Type of component | Abbreviation | Name | Function |
|---|---|---|---|
| Heaters | H1 | Fuser heater | Heats the fuser sleeve. |
| Thermistors (Contact type) | TH1 | Main thermistor | Detects the center temperature of the fuser sleeve. |
| | TH2 | Sub thermistor 1 | Detects the temperature at one end of the fuser heater. |
| | TH3 | Sub thermistor 2 | |
| Thermoswitches (Contact type) | TP1 | For the fuser heater | Opens in the event of high temperature fault |

## Fuser temperature control

The fuser temperature control maintains the target surface temperature of the fuser sleeve.

**Figure 1-8** Fuser temperature-control circuit




## Fuser sleeve temperature protection

The fuser heater controls the temperature of the fuser sleeve. The DC controller detects the center area temperature by monitoring the main thermistor. The DC controller controls the FIXING HEATER CONTROL (FSRD1) signal, so that the fuser sleeve remains at the targeted temperature.

- **Protective function**: The protective function detects rising temperatures in the fuser and interrupts power to the fuser heater. The following four protective components prevent the fuser sleeve and pressure roller from excessive rising temperature:
  - DC controller
  - Fuser heater safety circuit

- Current detection circuit
- Thermoswitch

- **DC controller**: The DC controller monitors the detected temperature of the main thermistor and sub thermistors. The DC controller deactivates the FIXING HEATER CONTROL signal and releases the relay to interrupt power supply to the fuser heater under the following conditions:
  - 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**: The fuser heater safety circuit monitors the detected temperature of the sub thermistors. The fuser heater safety circuit releases the relay to interrupt power supply to the fuser heater under the following conditions:
  - TH2: 290° C (554° F) or higher
  - TH3: 290° C (554° F) or higher
- **Current-detection protection circuit**: The current detection circuit monitors the current flowing through the fuser heater control circuit. The current detection circuit deactivates the fuser heater control circuit to interrupt power supply to the fuser heater when it detects the current higher than a specified value.
- **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. 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).

## Failure detection

The DC controller determines a fuser unit failure, deactivates the FIXING HEATER CONTROL signal, releases the relay to interrupt power supply to the fuser heater, and notifies the formatter of a failure status when it encounters any of following conditions:

- **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
- **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 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 product is turned on or during the standby period
  - If the current detection circuit detects a current value that is out of a specified range
- **Fuser discrepancy**: The DC controller determines a fuser type mismatch when it detects an unexpected power supply voltage.

## Fuser unit identification

The product detects the type and presence of the fuser. The DC controller detects whether the fuser is installed and its type by monitoring the FIXING UNIT IDENTIFICATION (FSRSNS) signal when the product is turned on or when the right door is closed. The DC controller determines a low-voltage power supply failure and notifies the formatter when it fails to detect the type or presence of the fuser.

**NOTE:** This product detects if the correct fuser for the product is installed. The fuser from a different product (for example, the HP Color LaserJet CP 3525 Series printer) can be installed in this product, but it will not correctly function.

## Fuser unit life detection

The product detects the remaining life of a fuser. The DC controller recognizes a new fuser from the NEW FIXING UNIT (/FSRNEW) signal. The DC controller determines a fuser's end of life and then notifies the formatter when a specified number of pages has been printed after the fuser was replaced.

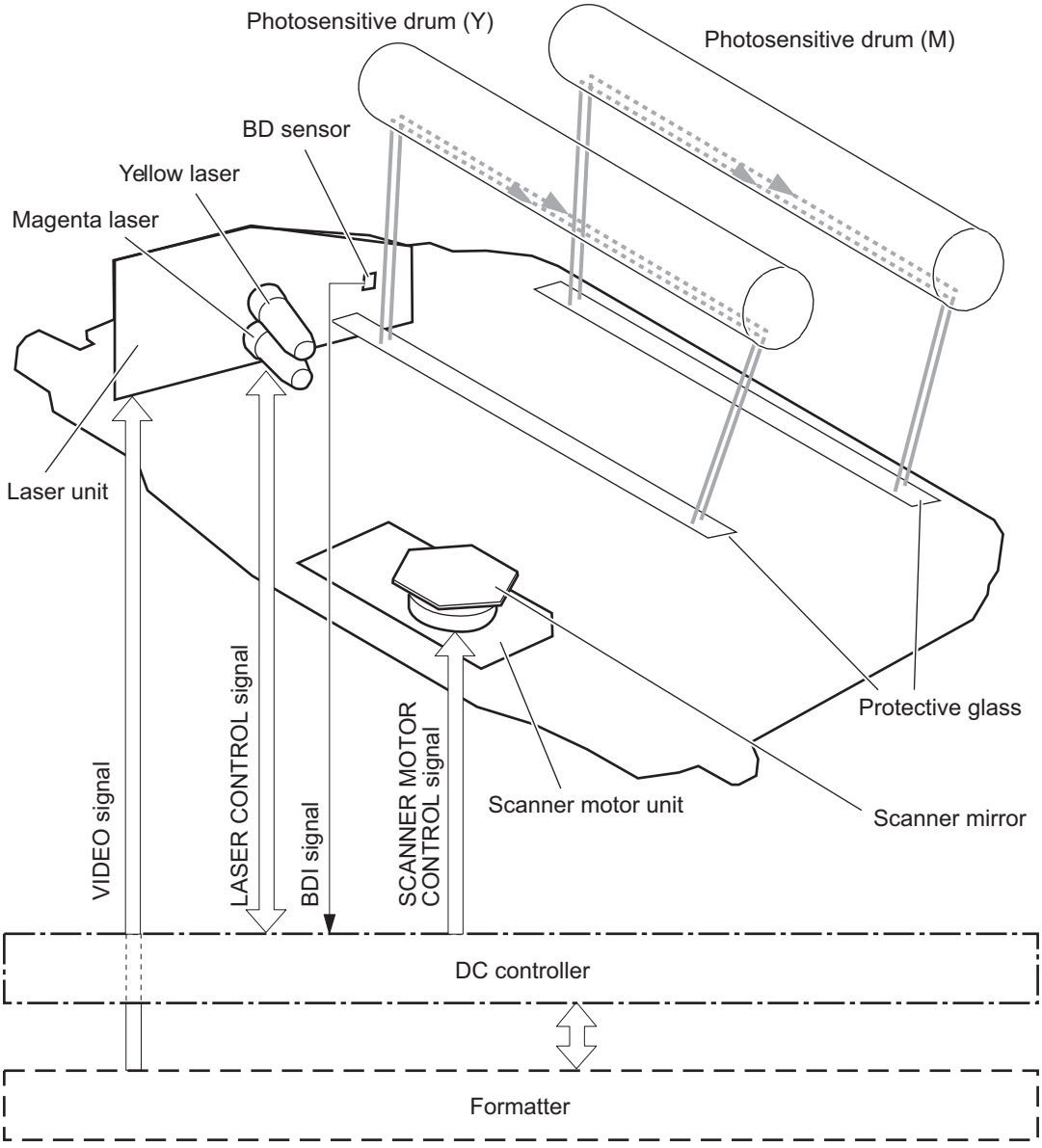
**NOTE:** The product detects a new fuser using a fusible link that breaks down after 100 pages of printing. If a new fuser is installed for troubleshooting purposes, be sure to remove it before printing 100 pages.

# 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 main components of the laser/scanner system are the laser unit and the scanner motor unit, which are controlled by the signals sent from the DC controller.

**Figure 1-9** Laser/scanner system



## Laser/scanner failure

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.
- **Scanner motor startup failure**: The scanner motor does not reach a specified rotation within a specified period from when the laser scanner starts driving.
- **Scanner-motor abnormal rotation**: When a specified BD interval is not detected during a print operation, a BD error is determined. If the BD interval does not recover within a specified period after the BD error occurs, the product determines a scanner motor abnormal rotation.

The laser/scanner system does not have a mechanical laser shutter. For safety reason, the product has a interlock switch. The interlock switch is turned off to interrupt +5 V power supply to the laser/scanner system, when the front or right door is open.

## Protective-glass cleaners

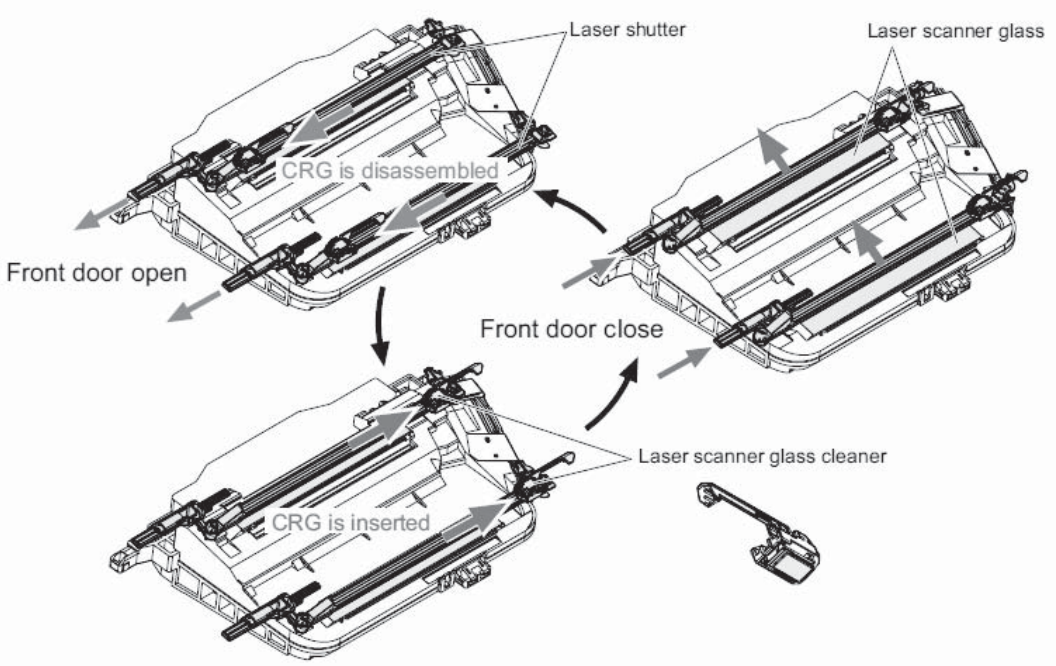
Each laser/scanner has two openings which allow the laser beam to pass to the surface of the photosensitive drum. These openings are covered by protective glass. When the protective glass gets dirty (for example, by paper dust or toner) a protective-glass cleaner (PGC) cleans them.

**NOTE:** When a glass is dirty, streaks appear on the printed page in the process direction.

The PGC is a cleaning pad which slides along the laser shutter. With the front door open, the laser shutter is positioned over the glass. As a print cartridge is inserted, the cleaning pad is pushed down and wipes the glass. When the front door is closed after cartridge insertion, the laser shutter (and PGC) move away from the glass which allows the laser beam to pass through the glass.

When the front door is opened, the laser shutter and PGC move back into position over the glass. When the cartridge is pulled out, the cleaning pad is returned to its starting position at the front of the cartridge opening.

**Figure 1-10** Protective-glass cleaners (PGCs)



# Image-formation system

The image-formation system creates the printed image on the paper. The system consists of the following components:

- Print cartridges
- ITB
- Secondary transfer roller
- Fuser
- Laser /scanner units

The DC controller controls the laser scanner unit and each of the high-voltage power supplies to form the toner image on the photosensitive drum surface, according to the VIDEO signals. The toner image is then transferred to the print-media and fused.

**Figure 1-11** Image-formation system

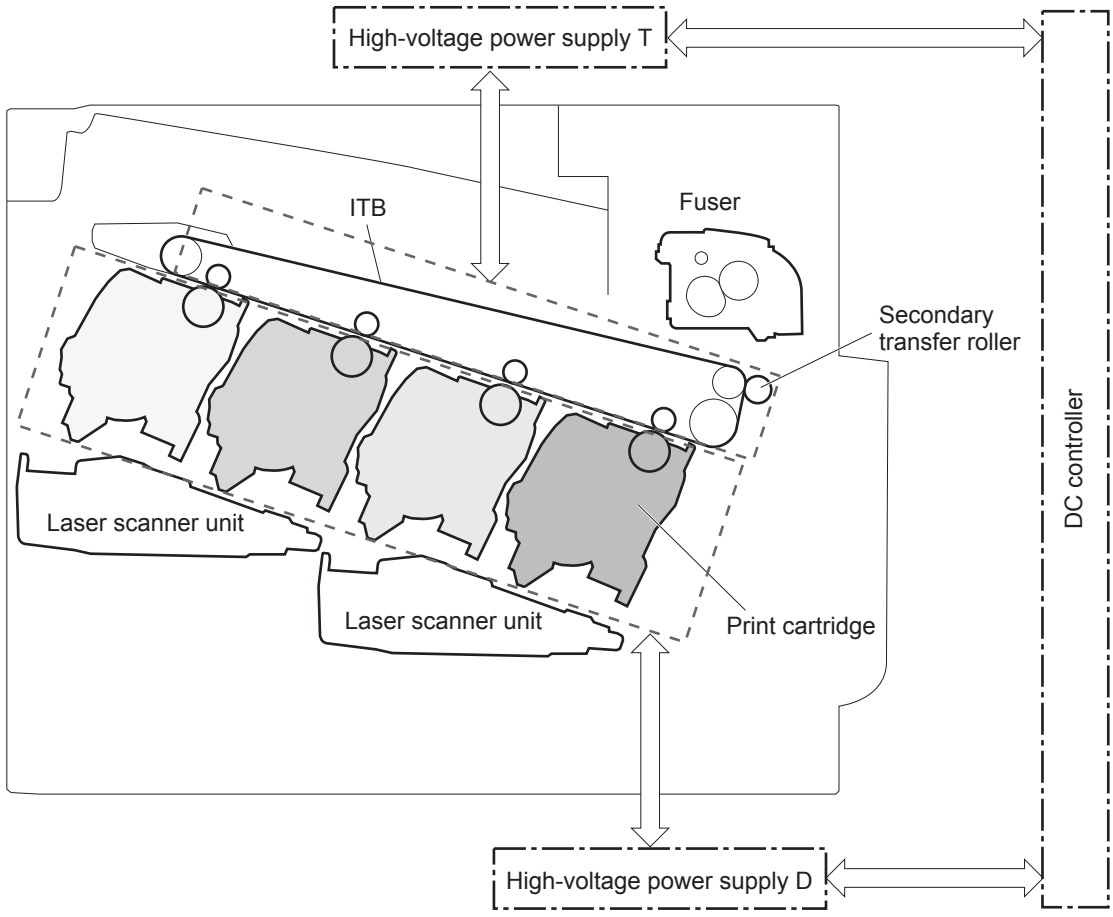
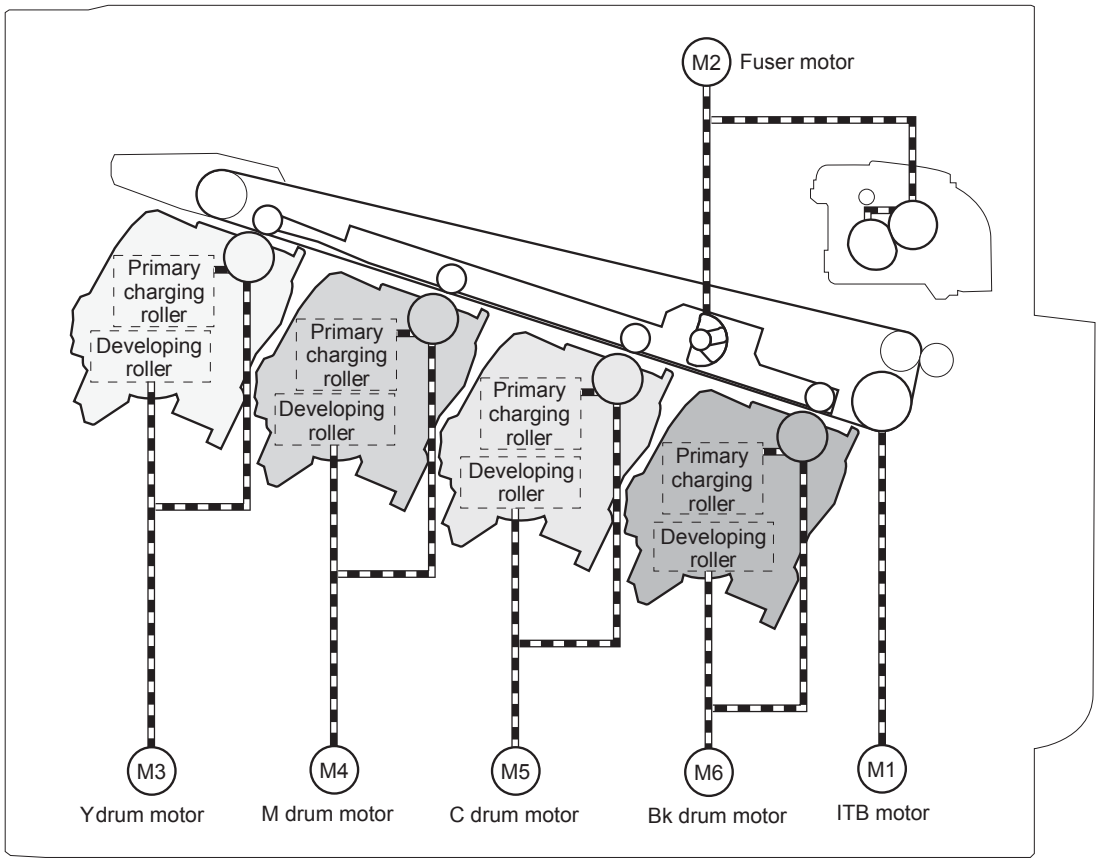


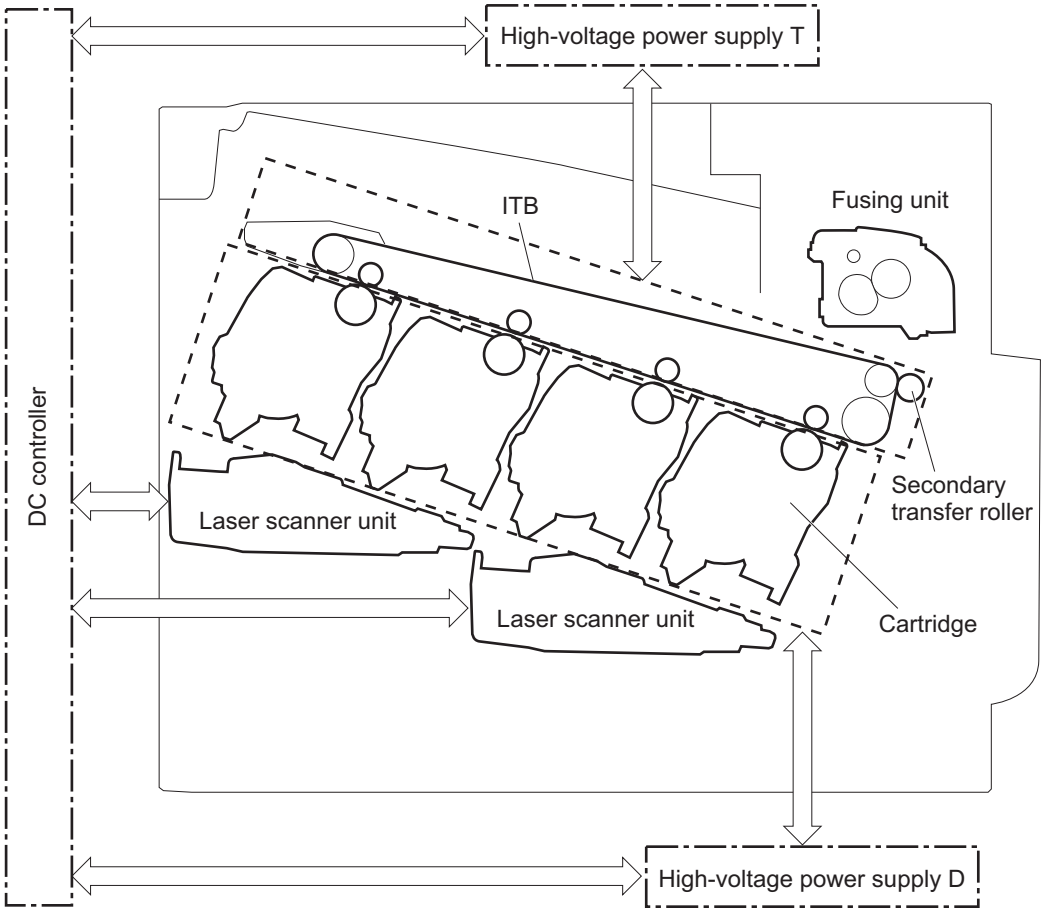
**Figure 1-12** Image-formation drive system



# Image-formation process

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

**Figure 1-13** Image-formation process



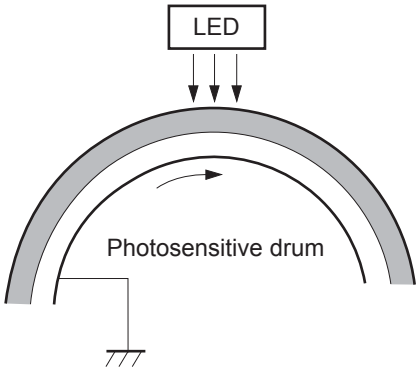

| Functional block | Steps | Description |
|---|---|---|
| Latent image formation | 1. Pre-exposure<br>2. Primary charging<br>3. Laser-beam exposure | An invisible latent image forms on the surface of the photosensitive drums. |
| Development | 4. Development | Toner adheres to the electrostatic latent image on the photosensitive drums. |
| Transfer | 5. Primary transfer<br>6. Secondary transfer<br>7. Separation | The toner image transfers to the ITB and later to the paper. |
| Fusing | 8. Fusing | The toner fuses to the paper to make a permanent image. |

| Functional block | Steps | Description |
|---|---|---|
| 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.

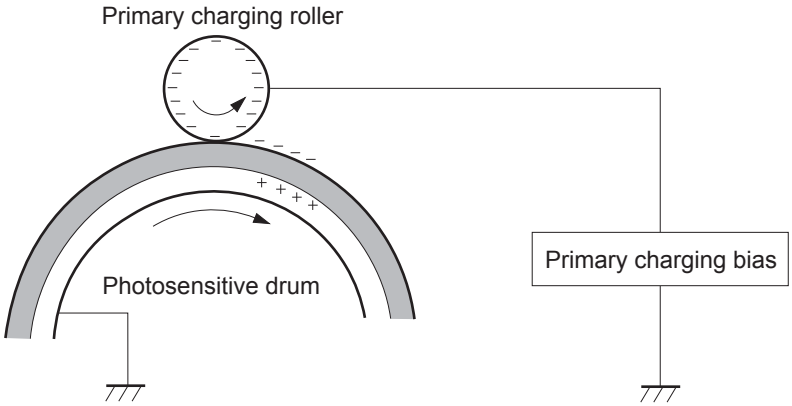
**Figure 1-14** Pre-exposure




## Step 2: Primary charging

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

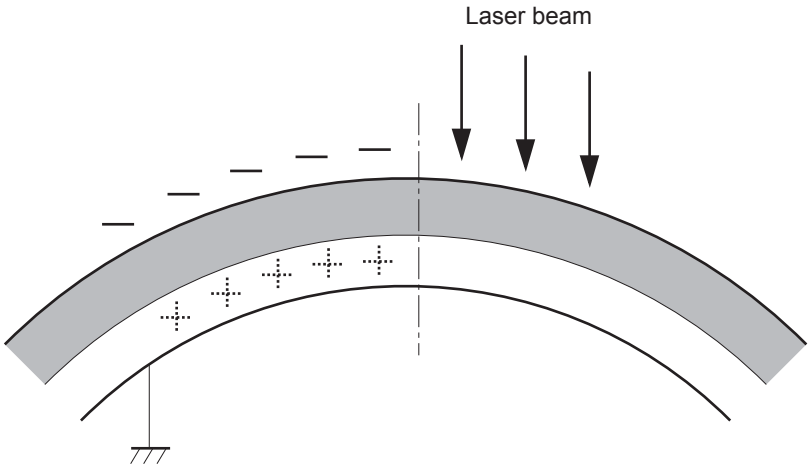
**Figure 1-15** Primary charging



## 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.

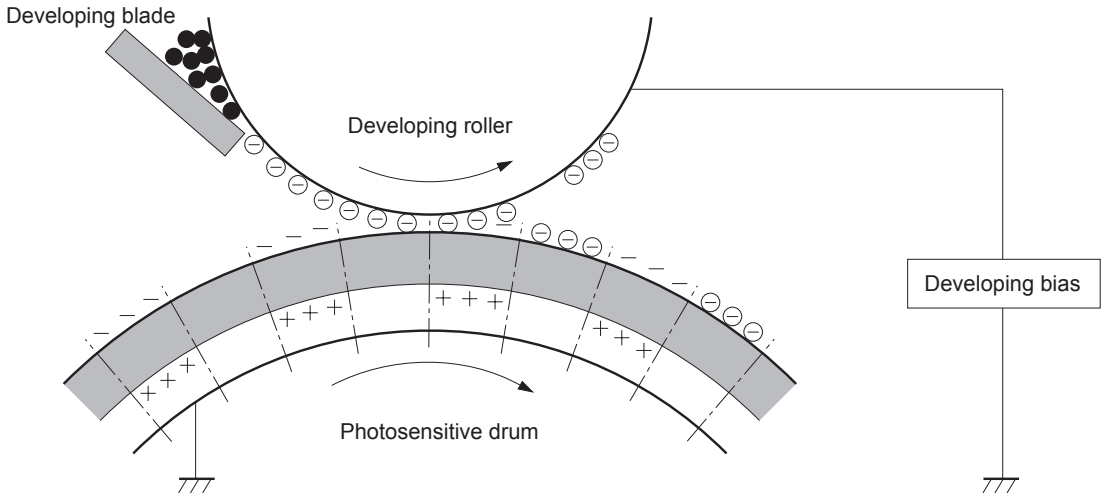
**Figure 1-16** Laser-beam exposure




## 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.

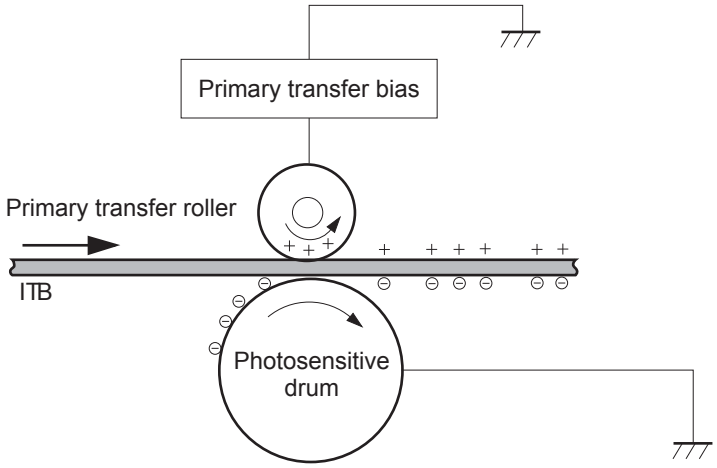
**Figure 1-17** Development



## 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.

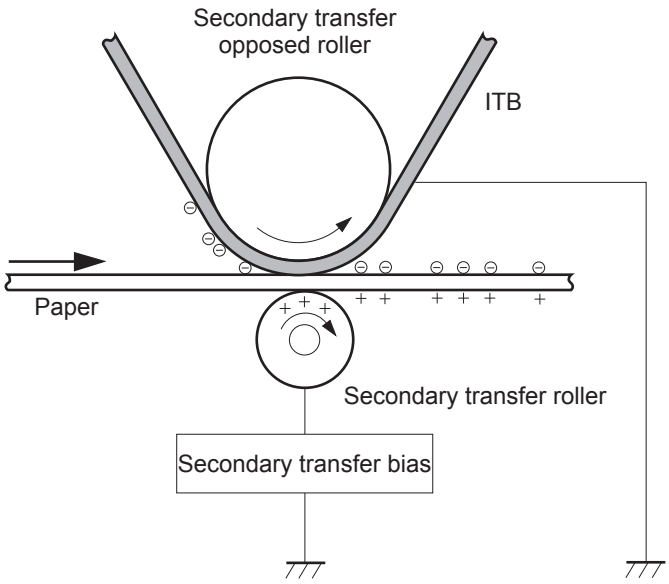
**Figure 1-18** Primary transfer




## 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.

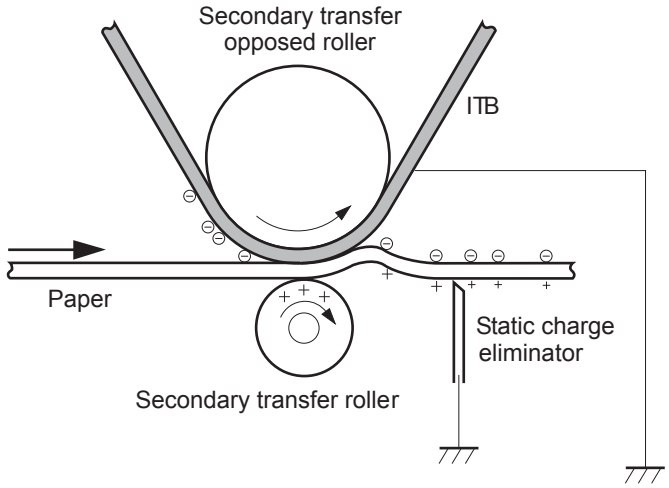
**Figure 1-19** Secondary transfer



## 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 make sure that the toner fuses correctly.

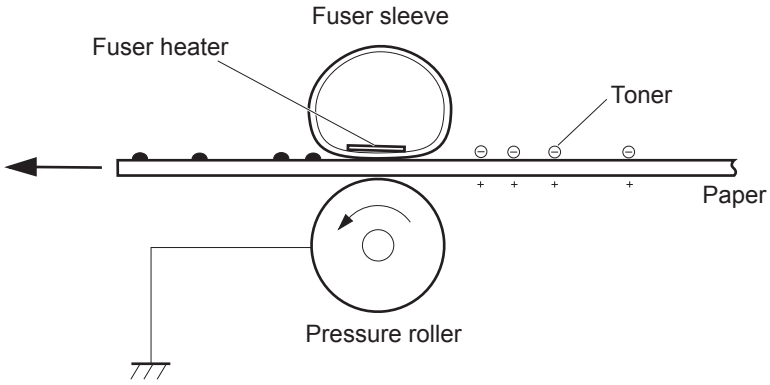
**Figure 1-20** Separation




## Step 8: Fusing

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

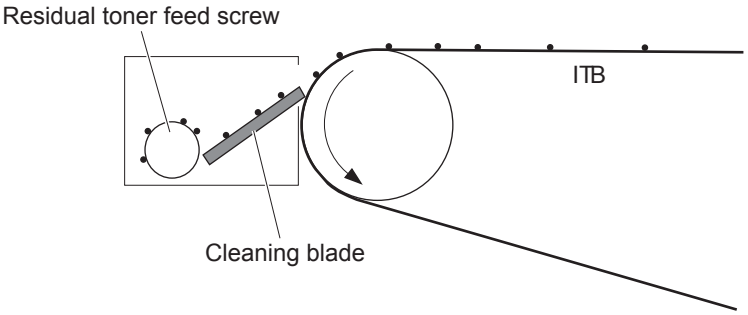
**Figure 1-21** Fusing



### 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.

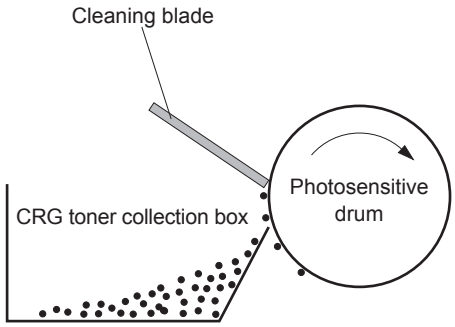
**Figure 1-22** ITB cleaning




### Step 10: Drum cleaning

The cleaning blade scrapes the residual toner off the surface of the photosensitive drum, and toner is deposited in the toner collection box in the cartridge.

**Figure 1-23** Drum cleaning



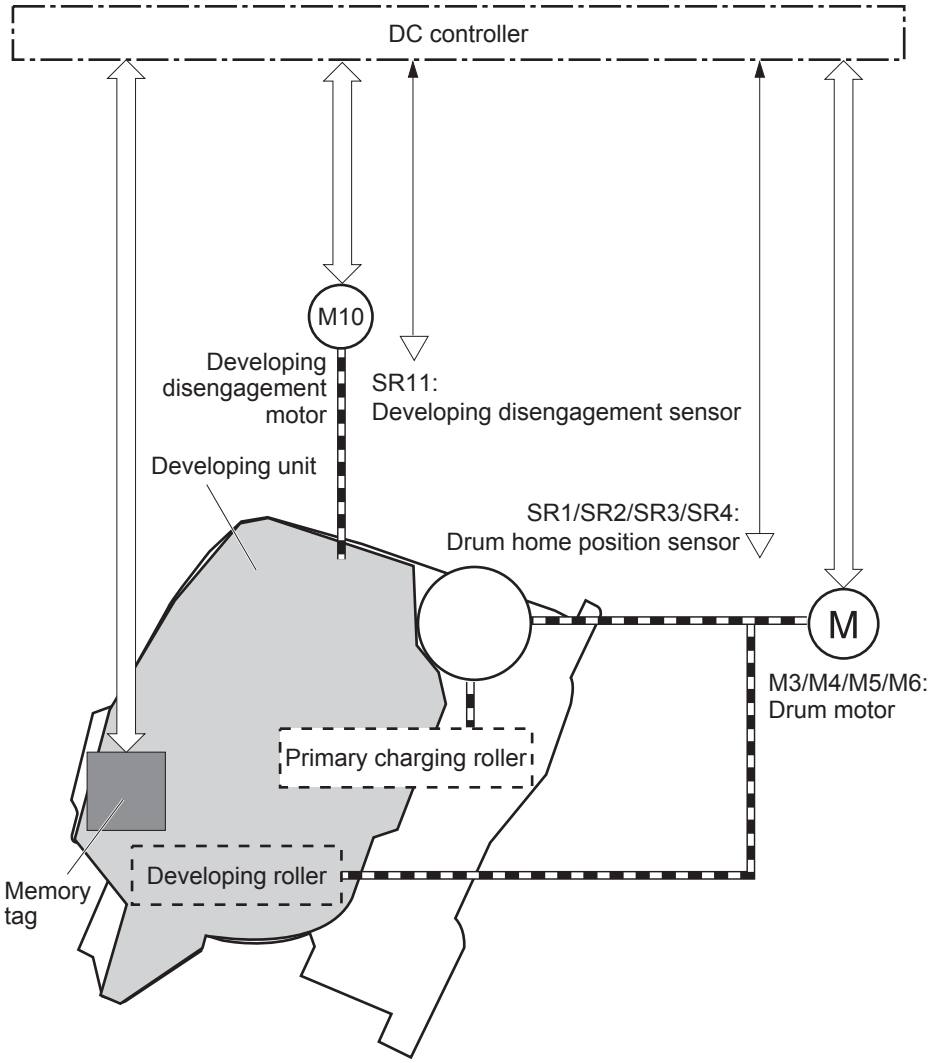

## Print cartridge

Each print cartridge is filled with toner and consists of the following components:

- Photosensitive drum
- Developing unit
- 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 1-24** 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 product reads and writes the data in the memory tag.

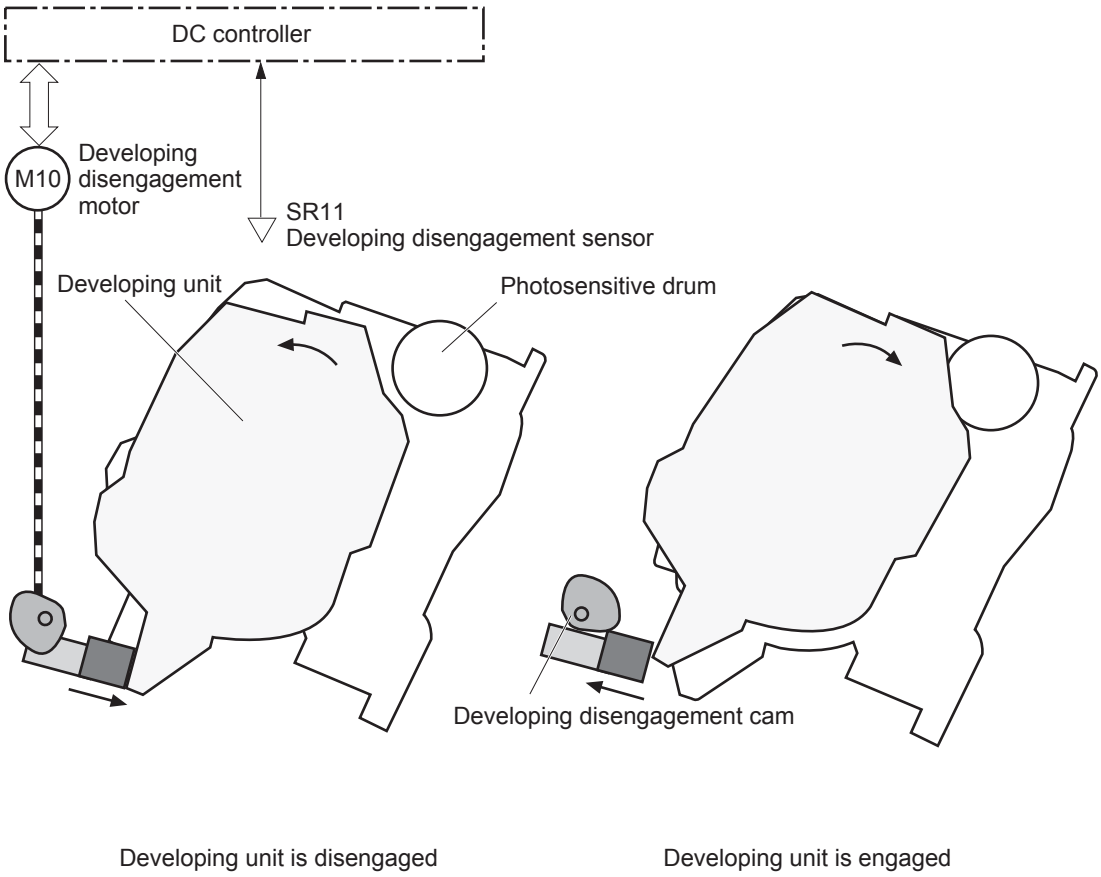
The DC controller determines a memory tag error and notifies the formatter when it fails to either read from or write to the memory tag.

- Cartridge presence detection: The DC controller detects the presence of the cartridges by monitoring the memory tag. The DC controller notifies the formatter when a cartridge is missing or installed in the incorrect slot.
- Toner level detection: The DC controller detects the remaining toner in a cartridge by the optical detection method and then notifies the formatter of the remaining toner level.
- Cartridge life detection: The DC controller detects the cartridge life by monitoring the total operating time or remaining toner level of the print cartridge. The DC controller determines a cartridge end of life and notifies the formatter when total operating time of the cartridge reaches a specified time or the cartridge runs out of toner.

## 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 which maximizes the life of the cartridges.

**Figure 1-25** Developing-roller engagement and disengagement control



The developing-roller engagement and disengagement control operates as follows: When the product is turned on and when each print job is completed, all four of the developing units are disengaged from the photosensitive drums.

- The drive of the developing disengagement motor rotates the developing disengagement cam.
- As the cam rotates, the developing unit engages with or separates from the photosensitive drum.

When the print mode is full color, the developing units engage with the drums. When the print mode is black-only, only the black developing units engages with the drum.

The DC controller determines a developing disengagement motor failure and notifies the formatter when it does not detect a specified signal from the developing disengagement sensor during the developing unit engagement and disengagement operation.

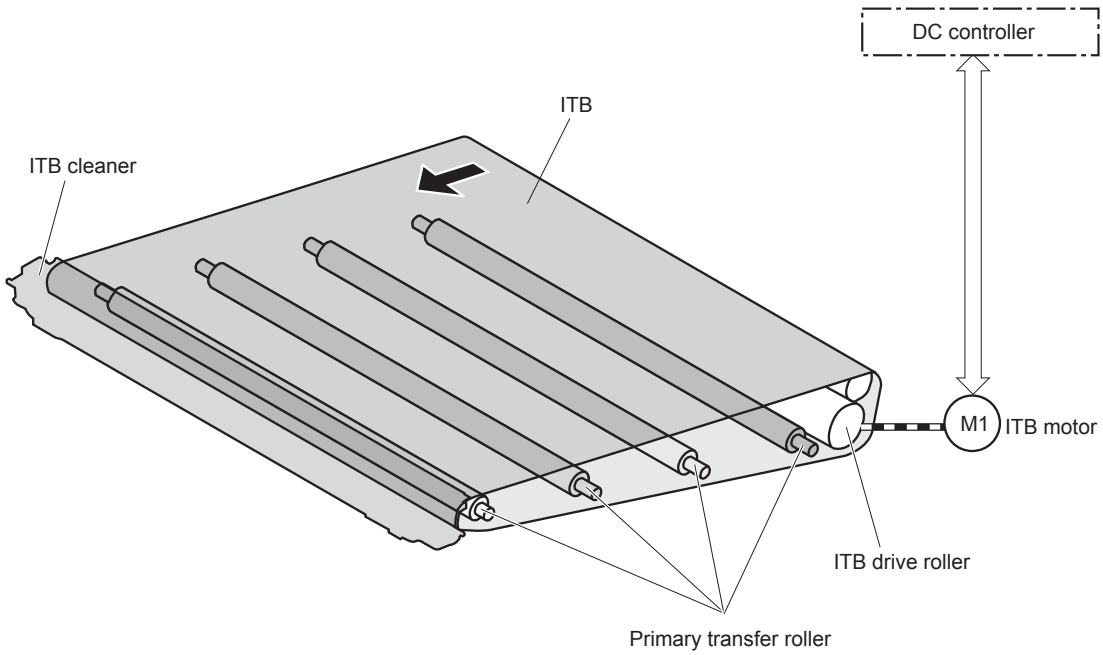
## Intermediate transfer belt (ITB) unit

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

- ITB
- ITB drive roller
- ITB-drive roller
- Primary-transfer roller
- 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 1-26** ITB unit



## Primary-transfer-roller engagement and disengagement

The sequence of the primary-transfer-roller engagement and disengagement control is as follows:

1. The fuser motor turns on the primary-transfer disengagement solenoid and rotates the primary-transfer-roller disengagement cam.
2. As the cam rotates, the Y/M/C primary-transfer-roller slide plate or the Bk primary-transfer-roller slide plate moves to the right or left, which causes the primary-transfer roller to move up or down.
3. The ITB engages with or separates from the photosensitive drum depending on the movement of the primary-transfer rollers.

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. The primary-transfer roller has three engagement states.

**Table 1-10 Primary-transfer-roller engagement states**

| | |
|---|---|
| All rollers disengaged | The ITB is disengaged from all the four photosensitive drums. This state is the home position for the ITB unit. |
| All rollers engaged | The ITB is engaged with all four photosensitive drums. The state for full-color printing. |
| Black roller engaged | The ITB is engaged with only the black photosensitive drum. The state for black-color mode printing . |

The DC controller determines a primary-transfer-roller disengagement failure and notifies the formatter when it does not detect a signal from the primary-transfer disengagement sensor even though the primary-transfer disengagement solenoid is turned on.

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.

The DC controller detects whether the ITB unit is new by monitoring the new ITB unit sensor. The DC controller determines the ITB unit is at end of life and notifies the formatter when a specified number of pages are printed after the ITB unit is replaced. If swapping ITB units between two products for troubleshooting purposes, be sure to return the ITB units to their original products to maintain the correct life count.

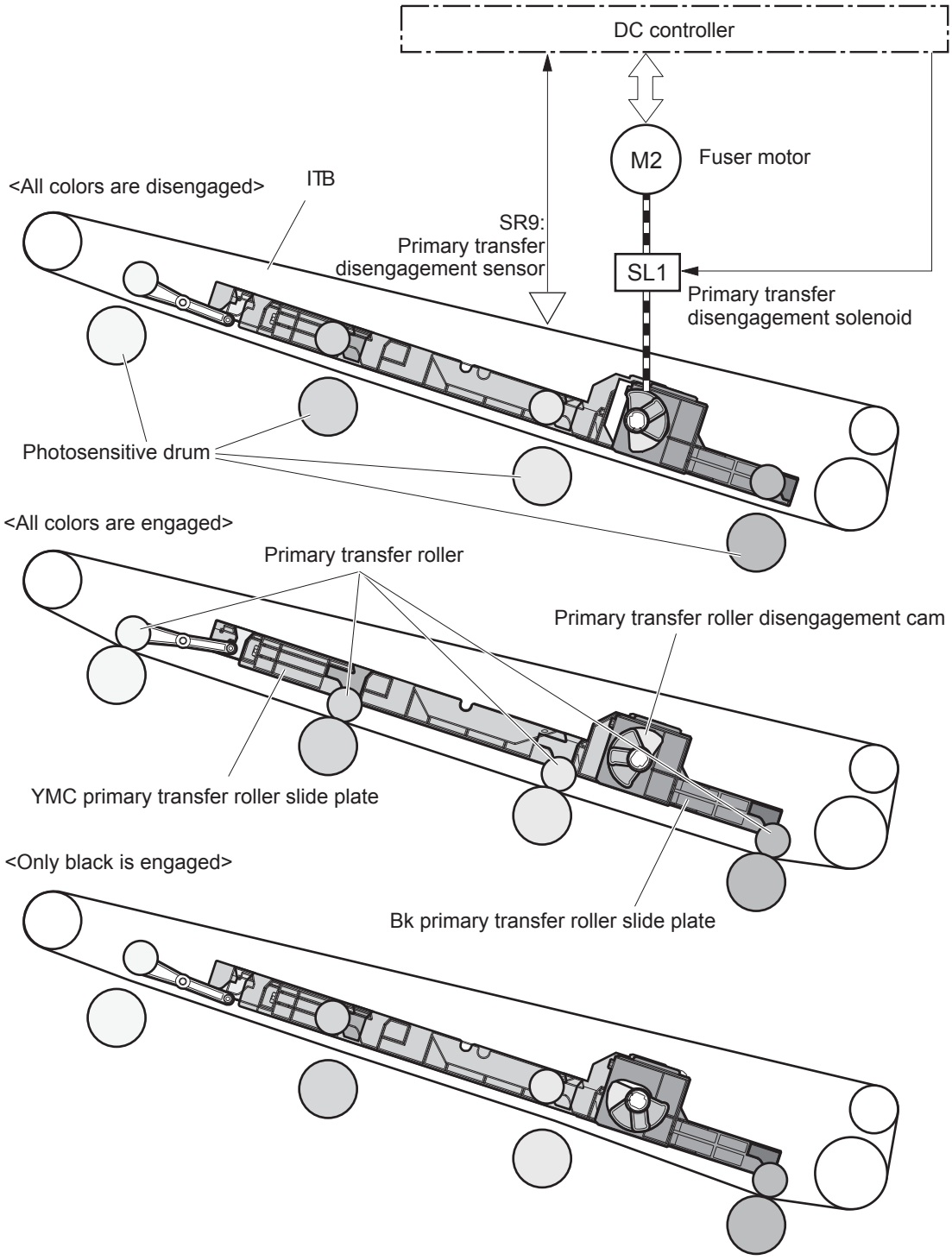
**NOTE:** A new ITB has a flag that causes the ITB life counter to be reset. When an ITB is installed in the product, it cannot be removed and used again as a new ITB.

The DC controller detects the presence of an ITB unit by monitoring the primary-transfer-roller disengagement sensor. The DC controller turns on the primary-transfer disengagement solenoid for specified times during an initial rotation period when the following events occur:

- The product is turned on.
- The product exits sleep mode.
- The door is closed.

The DC controller determines the absences of an ITB unit and notifies the formatter when it does not detect a specified signal from the new primary transfer-roller disengagement sensor.

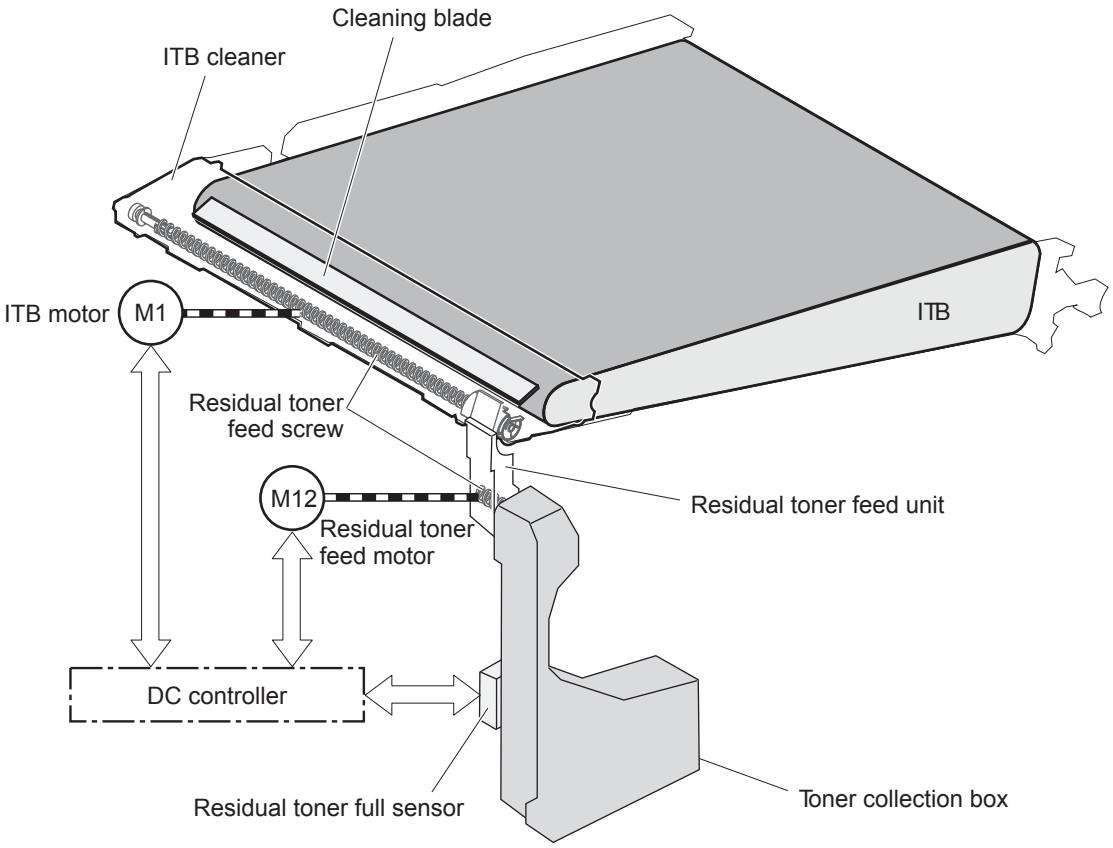
**Figure 1-27** Three states of primary-transfer-roller engagement and disengagement



## ITB cleaning

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

**Figure 1-28** 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.

**NOTE:** The product performs a drum-speed adjustment (DSA) during the full calibration operation. The DSA compensates for variations between each drum and the speed of the ITB surface.

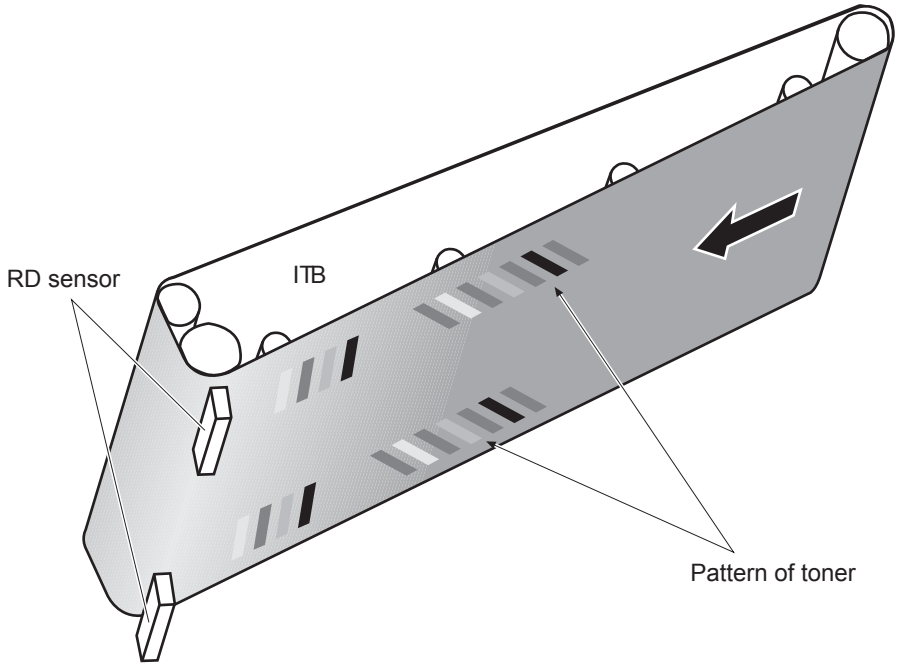
## Color-misregistration control

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 DC controller forms a pattern of toner on the surface of the ITB and measures a misaligned length with the RD sensor.

**Figure 1-29** Toner patterns for calibration




The DC controller signals the formatter to perform the color-misregistration control when one of the following events occur:

- A cartridge or the ITB is replaced.
- A specified number of pages have printed.
- The formatter sends a command.

The DC controller determines an RD sensor failure and notifies the formatter if it detects data from the RD sensor that is not in a specified range, when the product is turned on or when the color-misregistration control starts.

## Image-stabilization control

**NOTE:** The product contains a thermal sensor, located within the TCU level detection sensor, which monitors the temperature in the cartridge area and uses this information to make adjustments during CPR 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.

**Table 1-11 Image-stabilization controls**

| | |
|---|---|
| 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:<br><br>The image-stabilization control calibrates each high-voltage bias to stabilize the fluctuations in image density caused by deterioration of the photosensitive drums or toner or because of environmental changes. The DC controller determines the product's environment based on the surrounding temperature and humidity data from the environment sensor. The DC controller calibrates the biases according to the detected environment and usage condition of the print cartridge to obtain an appropriate image. The DC controller determines an environment sensor failure and notifies the formatter when it detects environmental data from the environment sensor with out of specified value. The DC controller commands the formatter to control the image density under the following conditions<br><br>• The temperature of the main thermistor is too low when the product is turned on.<br><br>• A print cartridge or the ITB is replaced.<br><br>• A specified number of pages have printed.<br><br>• After a specific period of the completion of a previous DMAX<br><br>• The environment changes for a specified condition after a previous DMAX. |
| Image halftone control (DHALF) | The formatter performs this control to calibrate the halftone, based on the halftone-density measurements, under the following conditions:<br><br>• The formatter sends a command.<br><br>• DMAX is completed.<br><br>The DC controller determines an RD sensor failure and notifies the formatter if it detects data from the RD sensor out of a specified range. |

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 1-30** Paper path

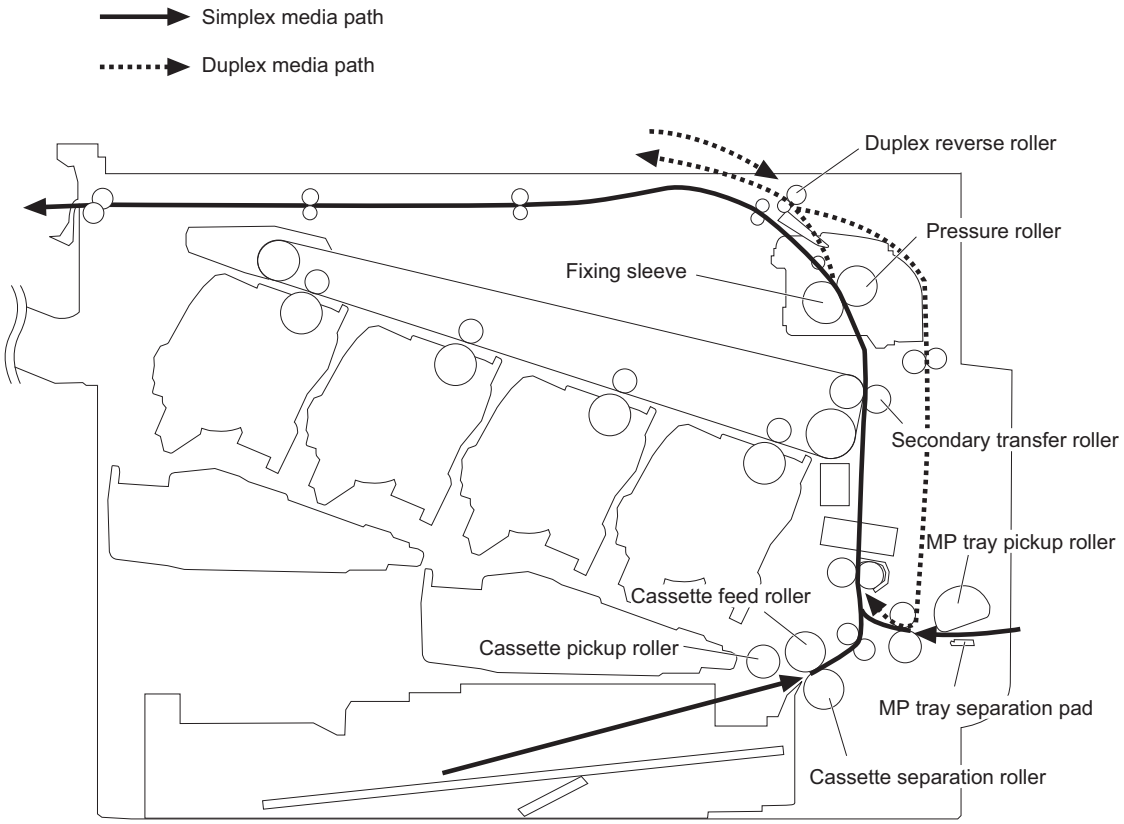
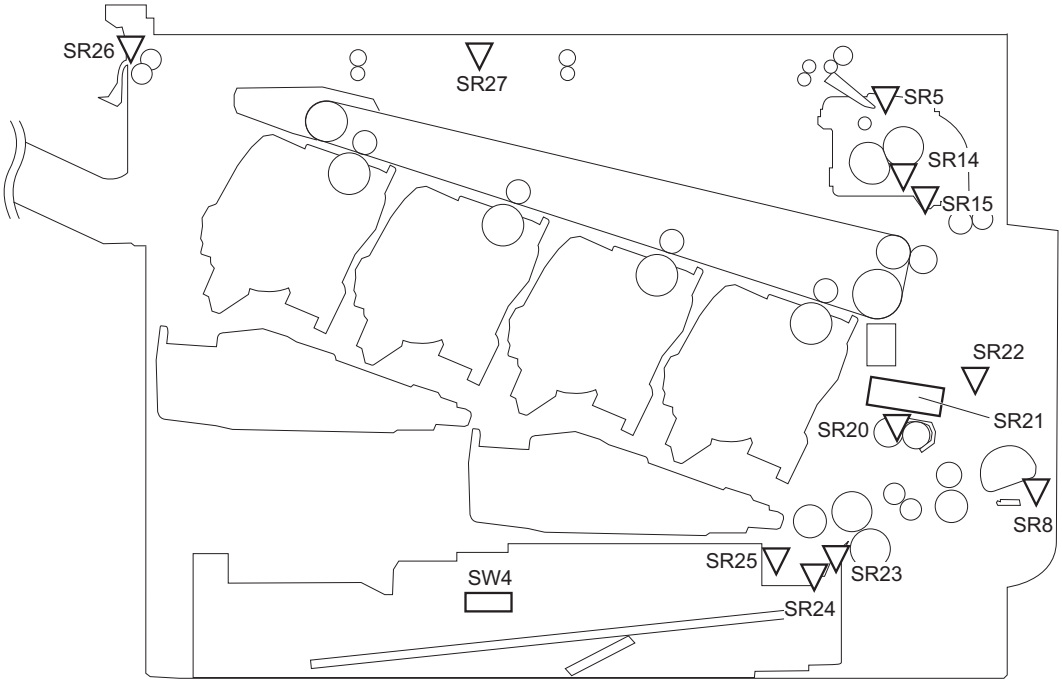
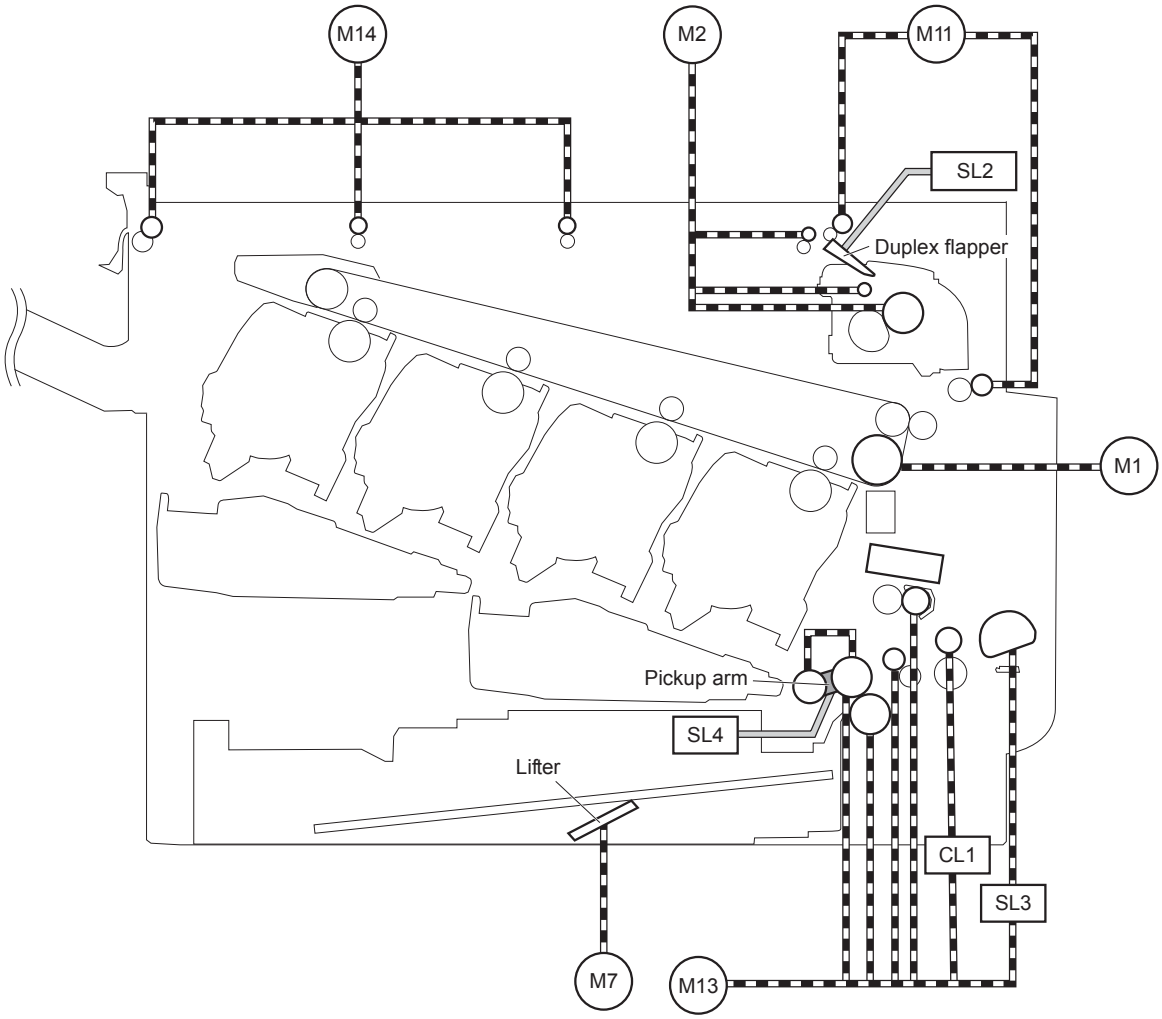


**Figure 1-31** Switches and sensors for the pickup, feed, and delivery system




| Abbreviation | Component |
|---|---|
| SR5 | Fuser delivery sensor |
| SR8 | MP tray media presence sensor |
| SR14 | Loop sensor 1 |
| SR15 | Loop sensor 2 |
| SR20 | Top of page (TOP) sensor |
| SR21 | Media sensor |
| SR22 | Duplex re-pickup sensor |
| SR23 | Cassette-media stack-surface sensor 1 |
| SR24 | Cassette-media stack-surface sensor 2 |
| SR25 | Cassette presence sensor |
| SR26 | IPTU media full sensor |
| SR27 | IPTU media feed sensor |
| SW4 | Cassette media size switch |

**Figure 1-32** Motors and solenoids for the pickup, feed, and delivery system

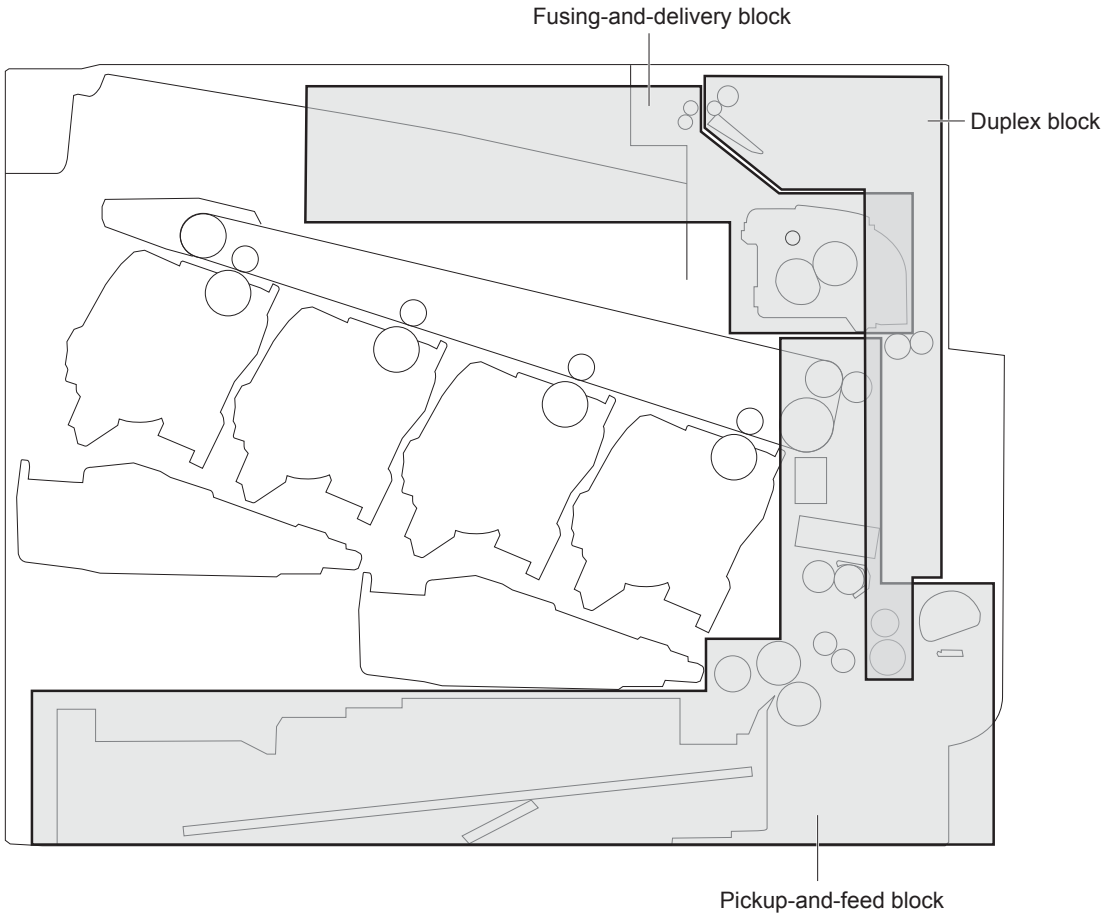



| Abbreviation | Component |
|---|---|
| M1 | ITB motor |
| M2 | Fuser motor |
| M7 | Lifter motor |
| M11 | Duplex reverse motor |
| M13 | Pickup motor |
| M14 | IPTU feed motor |
| CL1 | Duplex re-pickup clutch |
| SL2 | Duplex reverse solenoid |
| SL3 | Multipurpose tray pickup solenoid |
| SL4 | Cassette pickup solenoid |
| CL1 | Duplex re-pick clutch |

The pickup, feed, and delivery system is divided into the following three blocks:

- Pickup-and-feed block: From each pickup source to the fuser inlet
- Fuser-and-delivery block: From the fuser to the delivery destination
- Duplex block: From the duplex reverse unit to duplex re-pickup unit (for duplex models only)

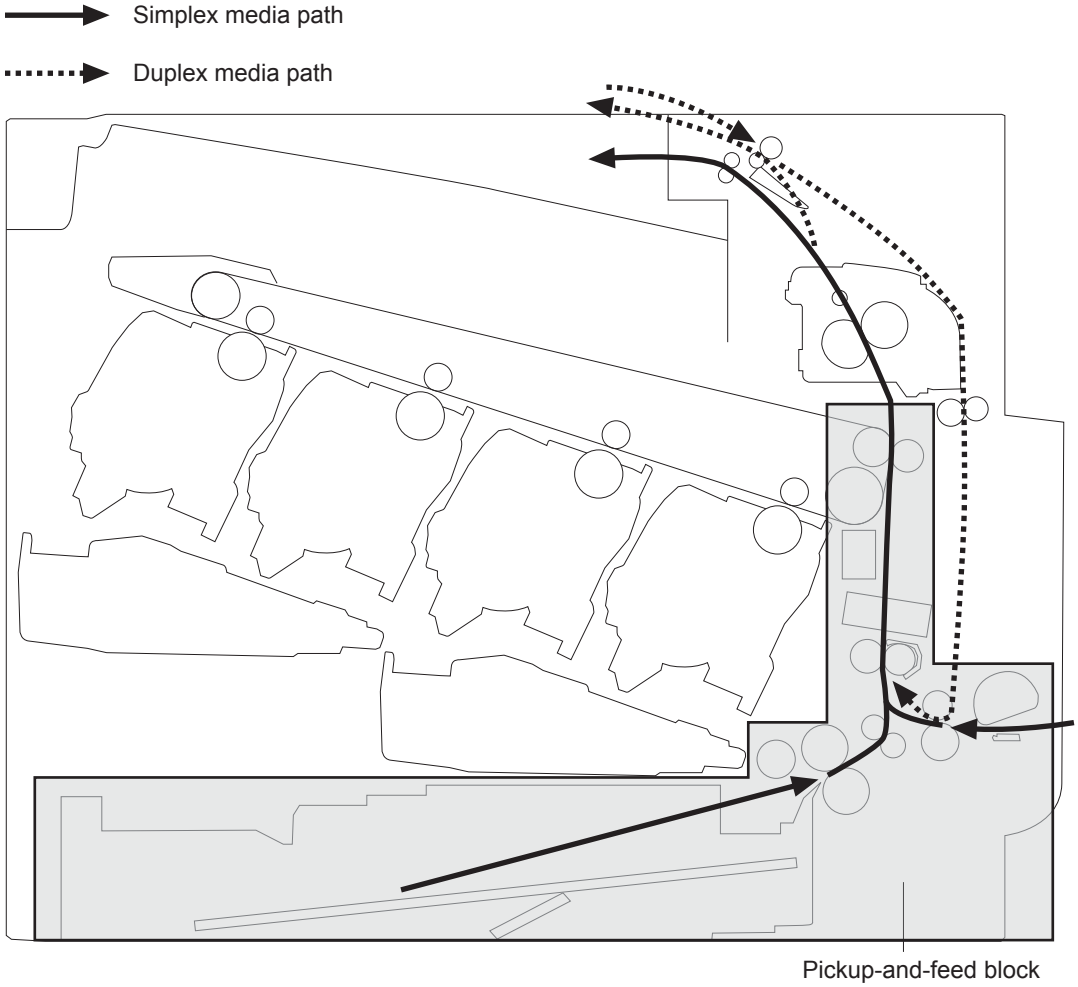
**Figure 1-33** Three main units of the pickup, feed, and delivery system



# 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 1-34** Pickup-and-feed unit



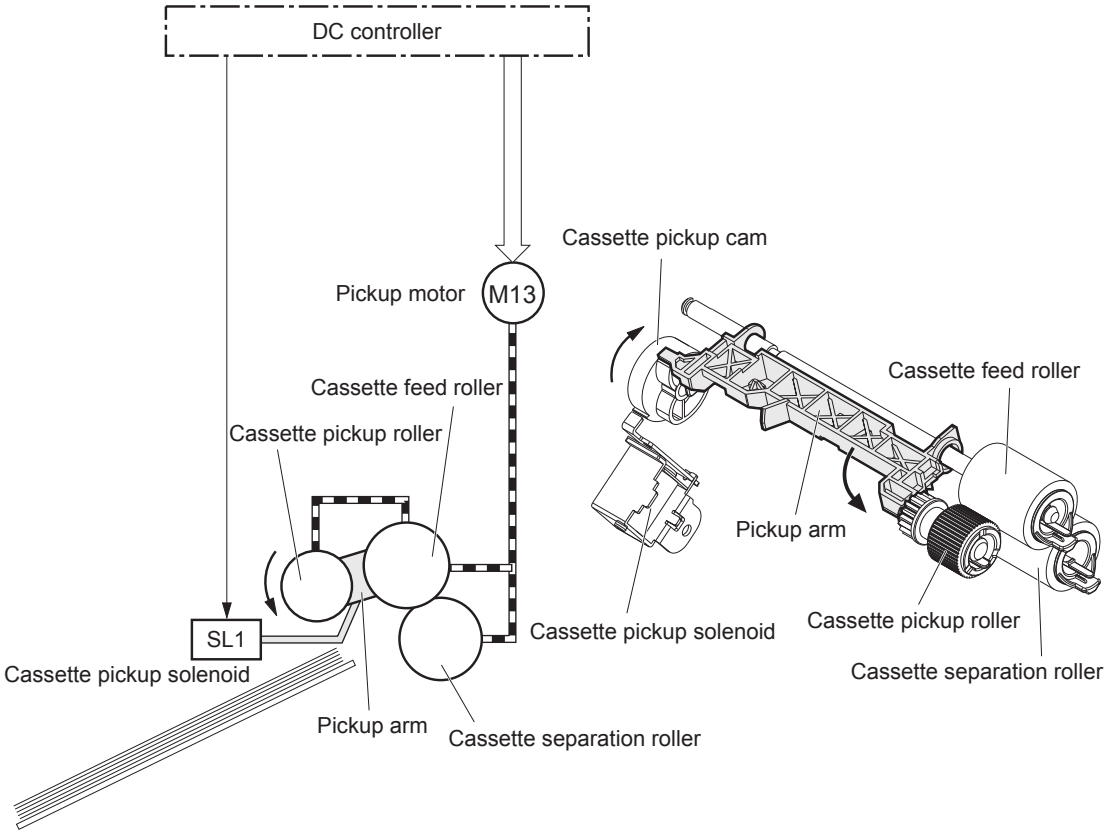

## Cassette pickup

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

1. The product is turned on or the cassette is inserted.
2. The cassette lift-up operation raises the lifting plate so paper can be picked up.
3. The pickup motor rotates when a print command is received from the formatter.
4. The cassette pickup roller, cassette feed roller, and cassette separation roller rotate.
5. The cassette pickup solenoid turns on at a specified time.
6. The cassette pickup cam rotates.

7. As the pickup arm lowers, the cassette pickup roller touches the surface of the paper stack.
8. One sheet of paper feeds into the product.

**Figure 1-35** Cassette-pickup mechanism




## Cassette-presence detection

The product detects the size of the paper loaded in the cassette and the presence of the cassette by monitoring the cassette media size switch. The DC controller notifies the formatter when it determines the absence of the cassette.

| Paper size | Cassette media size switch | | |
|---|---|---|---|
| | Top switch | Center switch | Bottom switch |
| Universal | ON | ON | ON |
| A5 | OFF | OFF | ON |
| B5 | OFF | ON | ON |
| Executive | ON | OFF | ON |
| Letter | OFF | ON | OFF |
| A4 | ON | OFF | OFF |

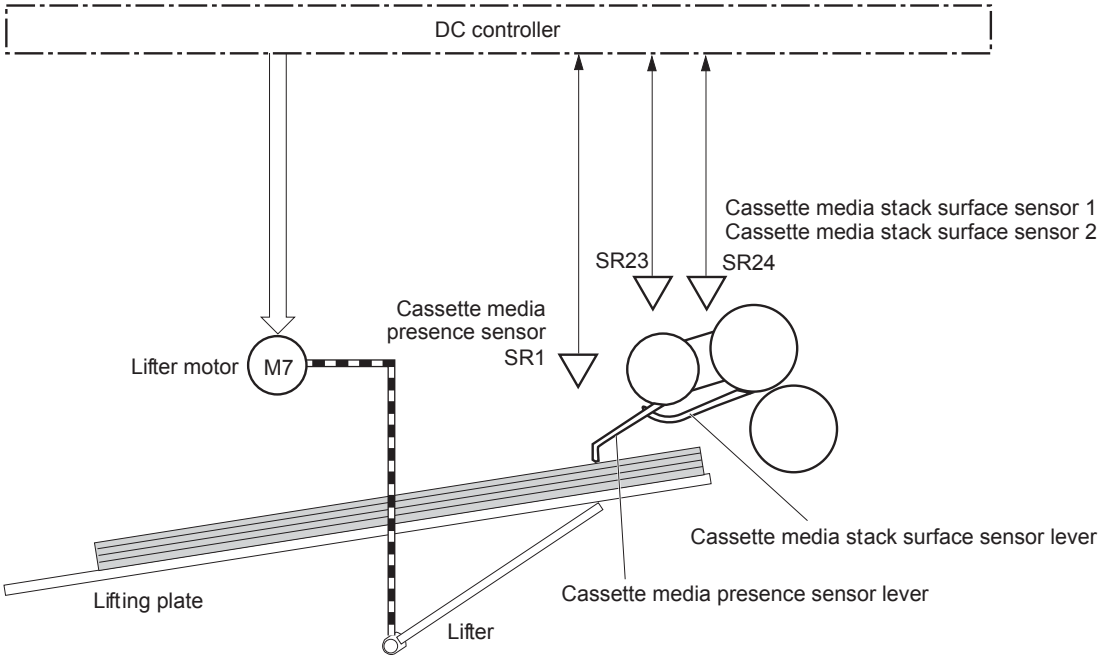
| Paper size | Cassette media size switch | | |
|---|---|---|---|
| | Top switch | Center switch | Bottom switch |
| Legal | ON | ON | OFF |
| Cassette absence | OFF | OFF | OFF |

## Cassette lift operation and cassette paper-presence detection

The product keeps the paper stack surface at the correct pickup position. The cassette lift-up operation is performed under the following conditions:

- The product is turned on
- The cassette is inserted
- The paper stack surface in the cassette lowers

**Figure 1-36** Cassette lift mechanism




The operational sequence of the cassette lift-up is as follows:

1. The lifter motor rotates and the lifter moves up.
2. When the cassette-media stack surface sensor 2 detects the stack surface of media, the lifter motor stops.
3. The lifter motor rotates again to lift the lifter when the cassette-media stack surface sensor 1 detects the stack surface and then lowers during printing.

When a cassette-media stack surface sensors does not detect the stack surface within a specified time period after the lifter motor starts rotating, the DC controller determines a lifter motor failure and notifies the formatter

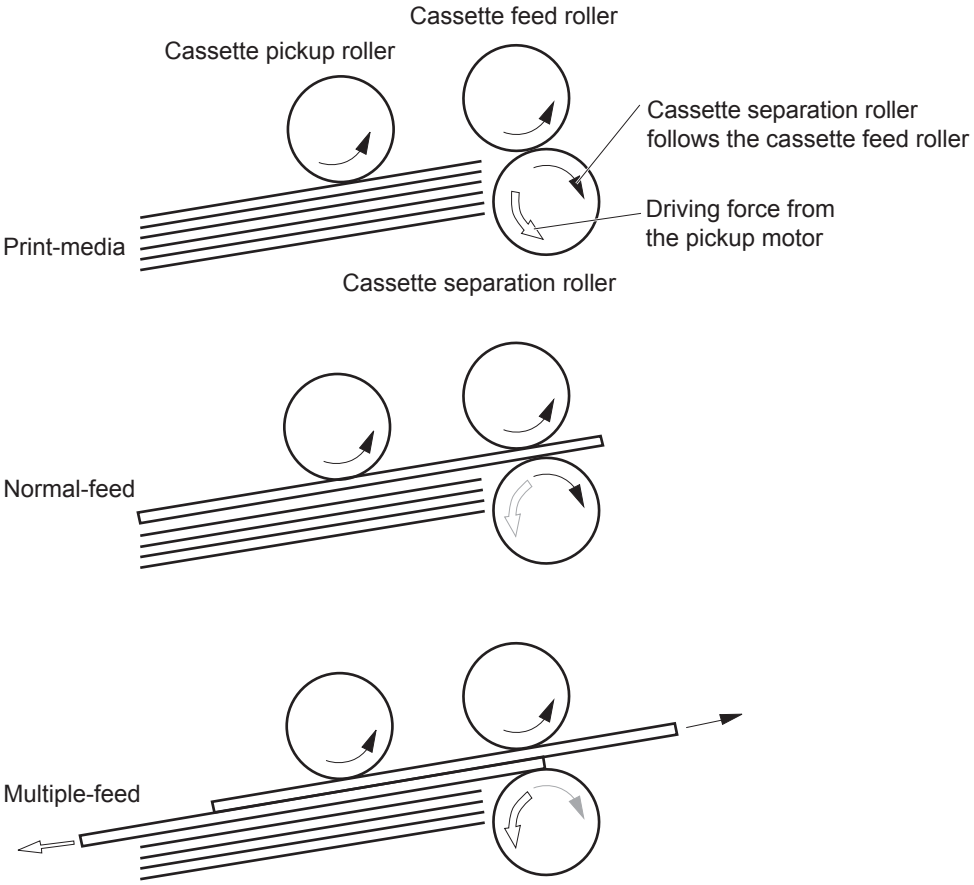
### Cassette multiple-feed prevention

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 rotation of the cassette feed roller through the sheet drives the cassette separation roller. Because it is equipped with a torque limiter, only one sheet is fed into the product.

The low friction force between the sheets weakens the driving force from the cassette feed roller. Therefore, the separation roller is driven by its own driving force and holds back any multiple-fed sheets from the cassette.

**Figure 1-37** Multiple-feed prevention




## Multipurpose tray pickup

The product picks up one sheet of paper from the MP tray.

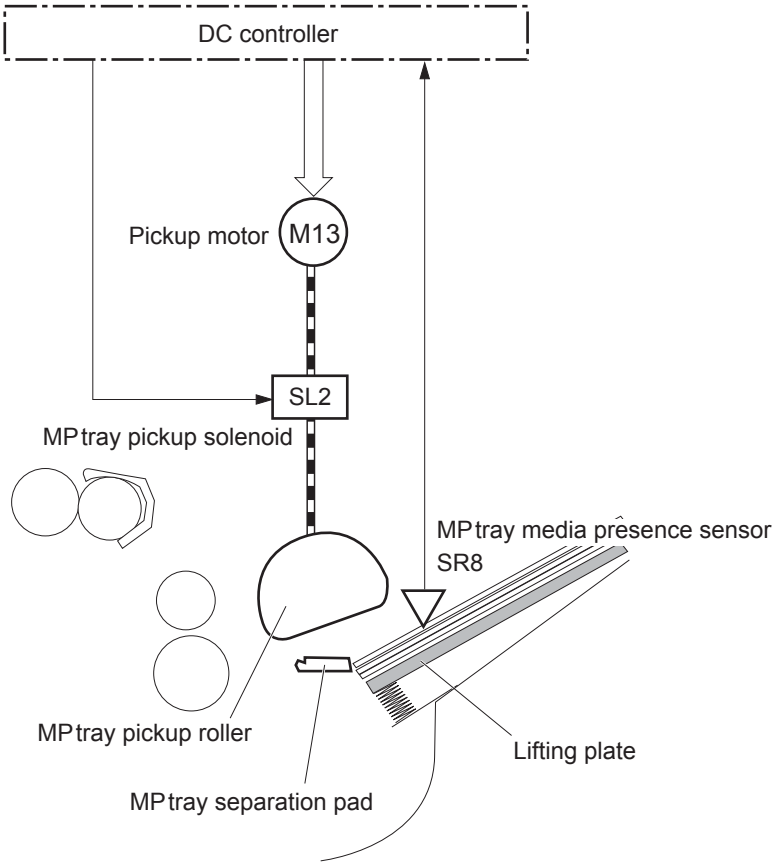
The sequence of steps for the multipurpose tray pickup operation as follows:

1. The pickup motor reverses when a print command is received from the formatter.
2. When the DC controller turns on the MP tray pickup solenoid, the MP tray pickup roller rotates and the lifting plate lifts.

3. As the lifting plate rises, the paper is picked up.
4. The multipurpose tray separation pad removes any multiple-fed sheets, and one sheet is fed into the product.

The MP-tray media-presence sensor (SR8) detects whether paper is present in the MP tray.

**Figure 1-38** Multipurpose tray pickup mechanism




## Paper feed

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

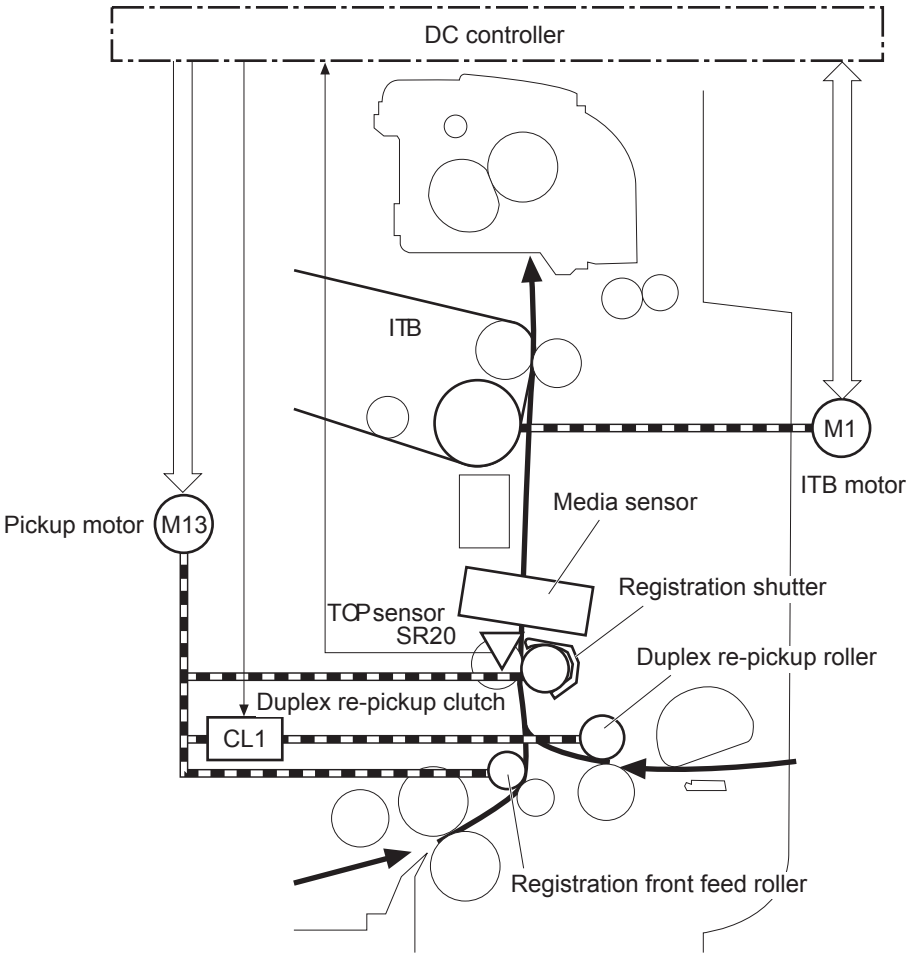
1. The paper picked up from the cassette is fed to the registration unit as the pickup motor rotates. The paper picked up from the multipurpose tray is fed to the registration unit as the pickup motor rotates. The duplex model has the duplex feed clutch. The driving force of the pickup motor is transmitted to the duplex re-pickup roller by turning on the clutch.
2. The registration shutter corrects the skew-feed.
3. When the TOP sensor detects the leading edge of paper, the DC controller stops the paper so that the media sensor detects the type of paper.
4. The DC controller controls the rotational speed of the pickup motor to align the paper with the leading edge of the toner image on the ITB.

5. The ITB motor rotates the ITB.

6. The toner image on the ITB is transferred onto the paper, and the paper is fed to the fuser.

The DC controller notifies the formatter of a paper size mismatch error when the paper length detected by the TOP sensor does not match the paper size specified by the formatter.

**Figure 1-39** Paper-feed mechanism

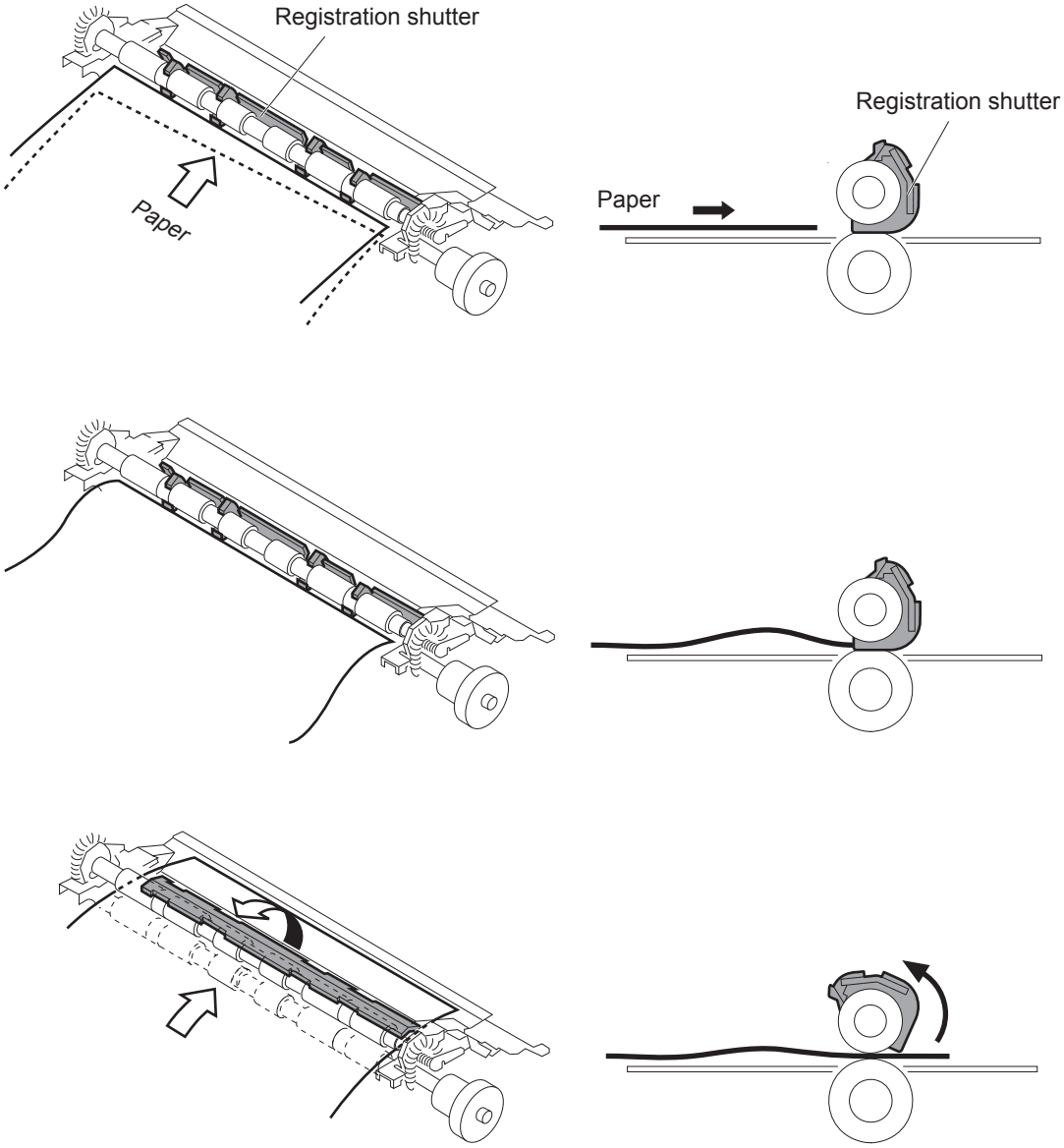


## Skew-feed prevention

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

1. The leading edge of paper strikes the registration shutter, and the leading edge is aligned with the shutter.
2. As the feed rollers keep pushing the paper, the paper warps.
3. When the force is great enough, the registration shutter opens, and the paper passes through and straightens

**Figure 1-40** Skew-feed prevention




## Paper detection

The product detects the type of paper by monitoring the media sensor. The media sensor detects the glossiness of paper by the reflected light and the thickness of paper by transmitted light. The DC

controller identifies the type of paper (for example, plain paper, light paper, heavy paper, glossy paper, glossy film, or overhead transparency) and switches to the correct print mode. The DC controller determines a media mismatch error and notifies the formatter under the following condition:

### Simplex printing

- The specified print mode is overhead transparency (OHT), but the media sensor detects another paper type.
- The specified print mode is not auto or OHT, but the media sensor detects OHT.

### Duplex printing

- The media sensor detects OHT.

The DC controller flashes the media sensor during the initial rotation period under the following conditions:

- The product is turned on
- The product exits Sleep mode

When the light intensity is not a specified value, the DC controller determines a media-sensor failure and notifies the formatter.

### Feed speed control

For the best print quality, the product adjusts the feed speed depending on the paper type.

**Table 1-12 Print mode and feed speed**

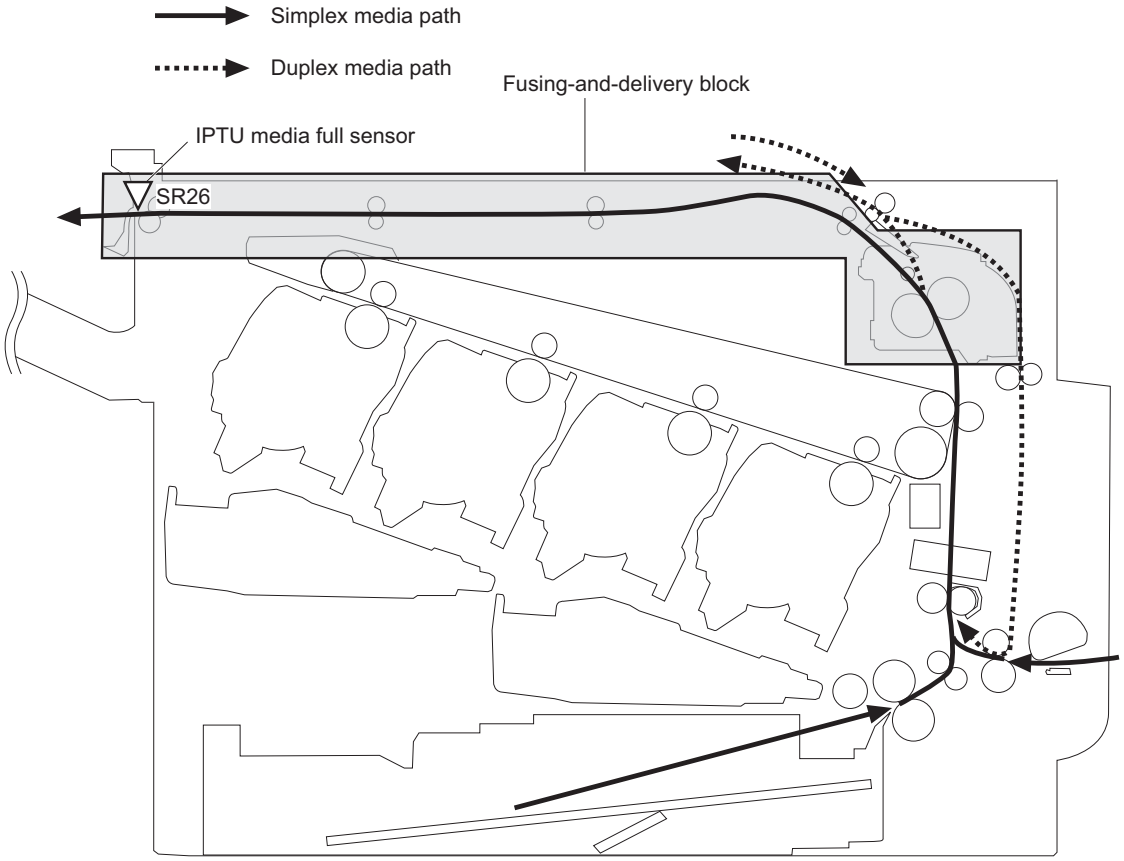
| Print mode | Feed speed | Media sensor detection |
|---|---|---|
| Normal | 1/1 | Yes |
| Heavy media 1 | 3/4 | |
| Heavy media 2 | 1/2 | Yes |
| Heavy media 3 | 1/3 | Yes |
| Light media 1 | 1/1 | Yes |
| Glossy media 1 | 1/3 | Yes |
| Glossy media 2 | 1/3 | Yes |
| Glossy media 3 | 1/4 | Yes |
| Glossy film | 1/4 | Yes |
| Envelope | 1/2 | No |
| OHT | 1/4 | Yes |
| Label | 1/2 | No |
| Designated media 1 | 1/2 | No |

## Fusing and delivery unit

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

The face-down tray media full sensor on the output bin detects whether the tray is full of printed pages. The DC controller notifies the formatter when the sensor is on for a specified time.

**Figure 1-41** Fuser and delivery unit



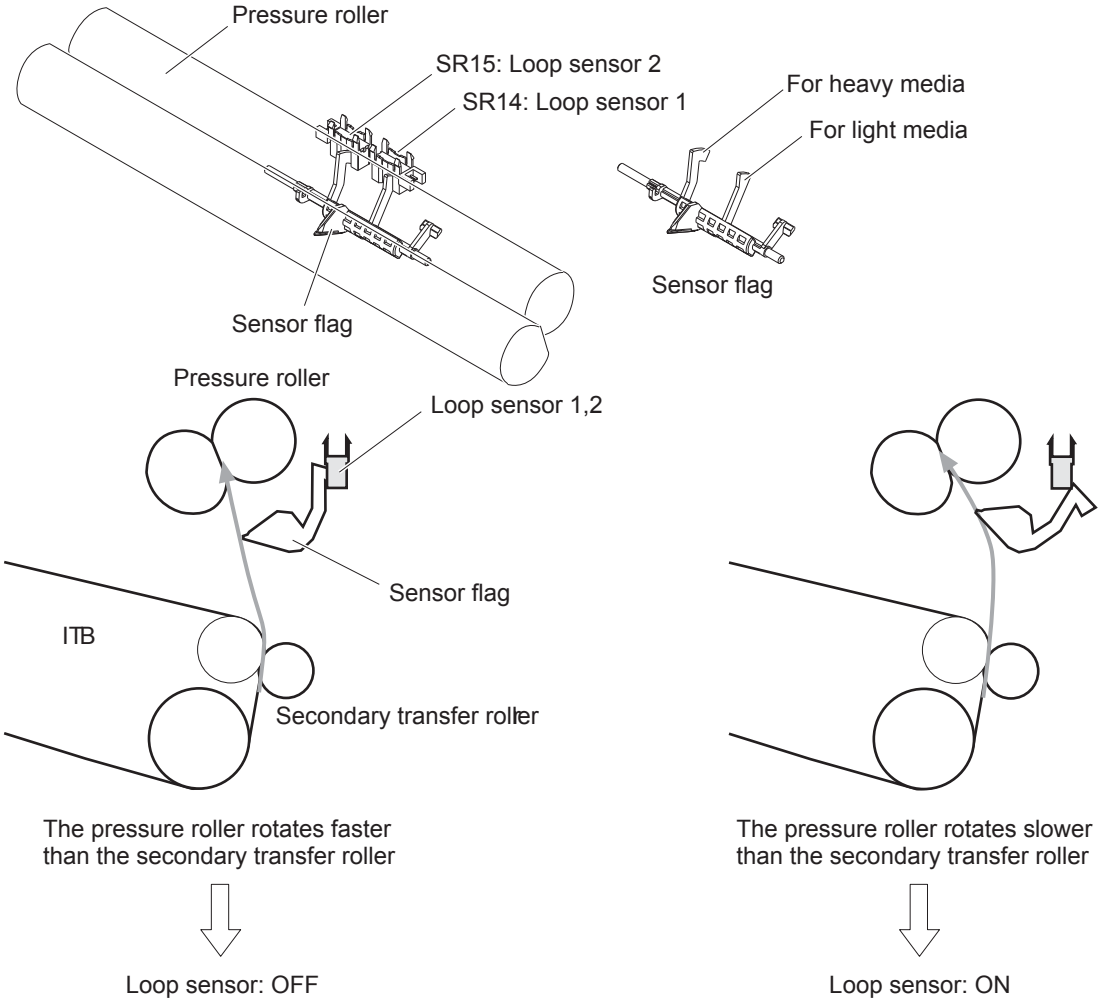

## Loop control

The loop control stabilizes the paper feed operation before the paper enters the fuser. If the pressure roller rotate slower than the secondary transfer roller, the paper loop increases and an image defect or paper crease occurs. If the pressure roller rotate faster than the secondary transfer roller, the paper loop decreases and a vertical scanning magnification failure occurs because the pressure roller pulls the paper.

To prevent these problems, loop sensor 1 and loop sensor 2 detect the paper loop before the paper enters the fuser. The DC controller adjusts the rotational speed of the fuser motor according to the output signals from the loop sensors and maintains the paper loop. Loop sensor 1 is for light media,

and loop sensor 2 is for heavy media. The DC controller slows the fuser motor when the sensor is off and speeds up the sensor when the sensor is on.

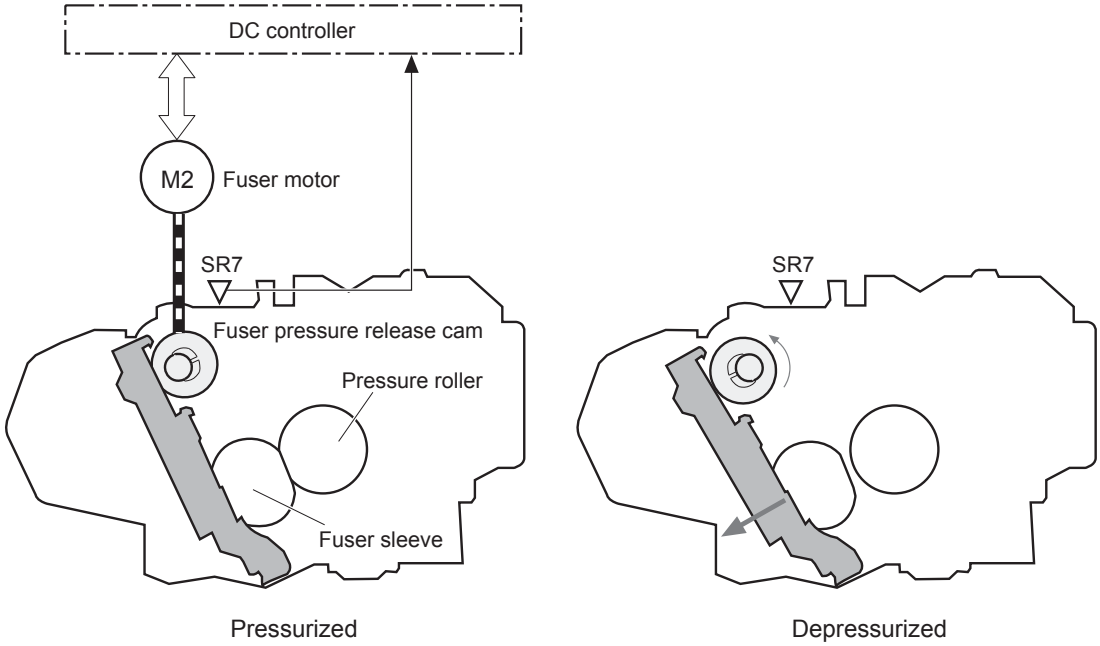
**Figure 1-42** Loop-control mechanism



## 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:

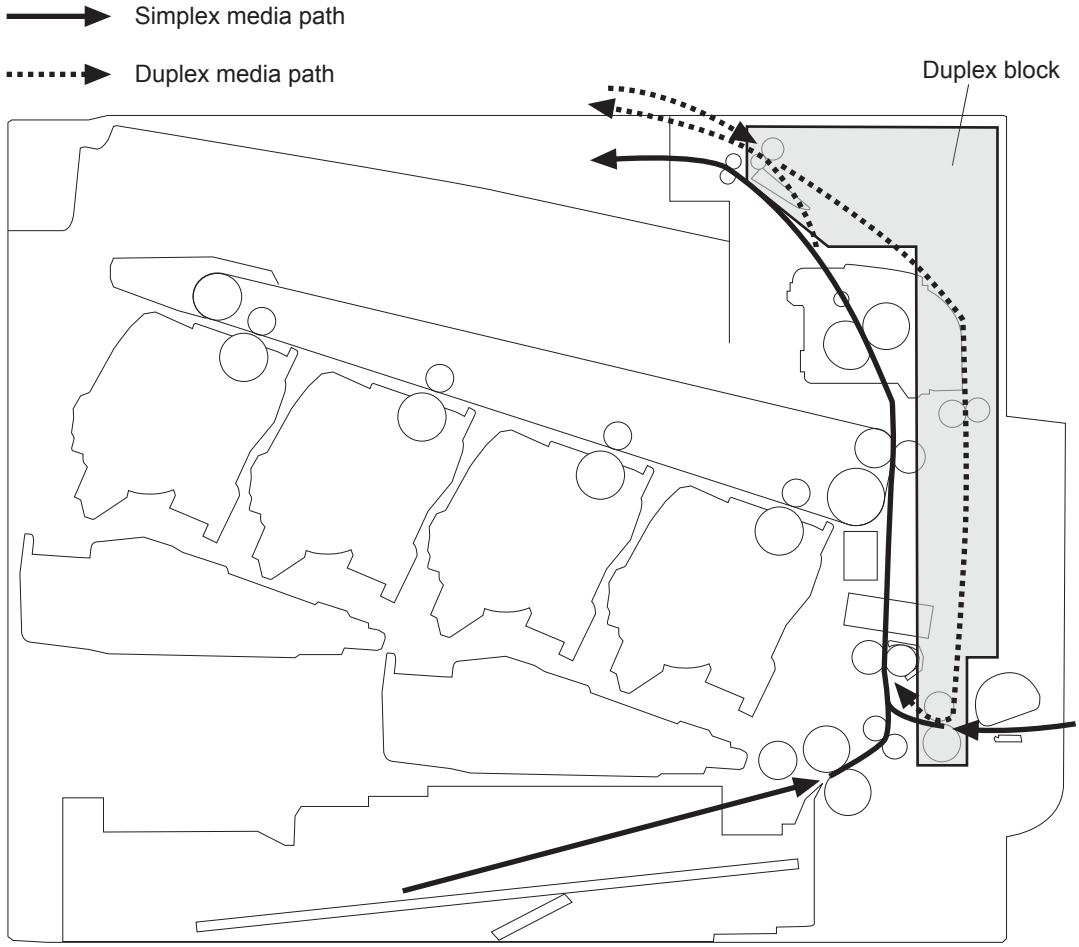
- The product is turned off
- Any failure occurs
- During powersave mode
- When a paper jam is detected

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.

## Duplexing unit

The duplexing unit reverses the paper and feeds it through the paper path to print the second side.

**Figure 1-44** Duplexing unit



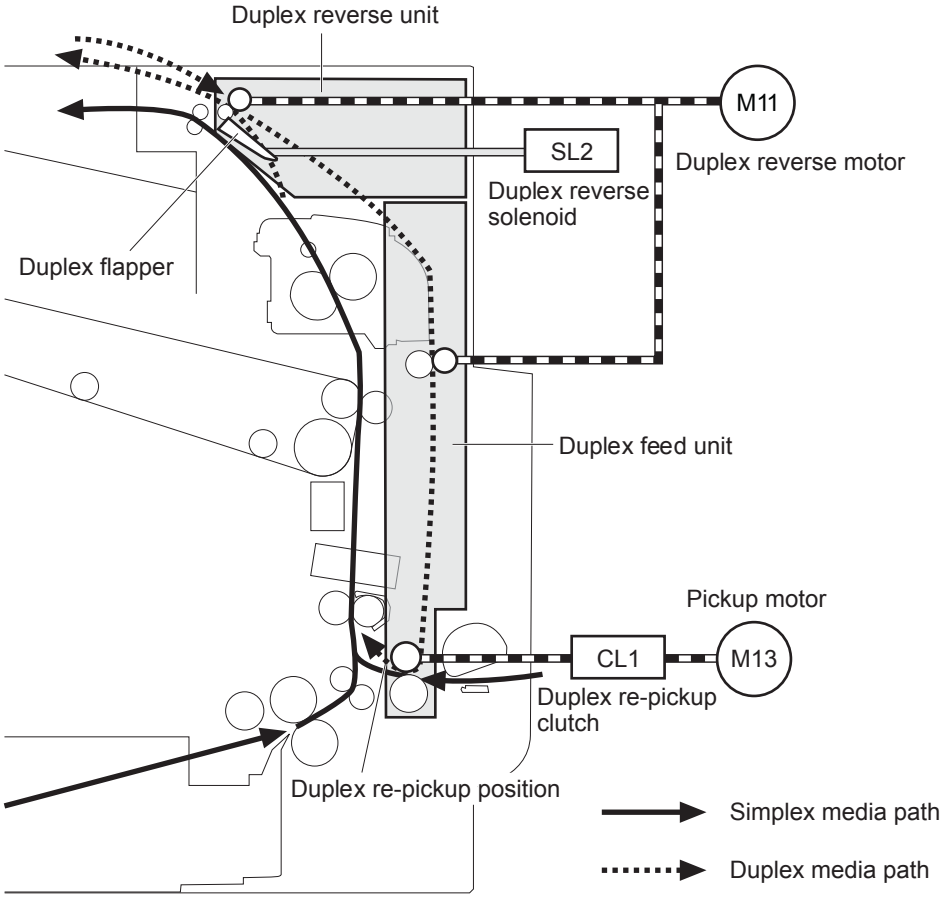

## Duplexing reverse and feed control

The duplex reverse control reverses the paper after the first side is printed and feeds it to the duplex re-pickup position to print the second side of the page.

1. At a specified time after the first side of a page is printed, the duplex reverse motor rotates, and the duplex reverse solenoid is turned on.
2. The duplex flapper moves, and the paper is fed to the duplex reverse unit.
3. After a specified period of time, the duplex reverse motor is reversed, and the paper is fed to the duplex feed unit.
4. The duplex reverse motor and the pickup motor move the paper to the duplex re-pickup position.

5. The duplex reverse motor and the duplex feed clutch stop, and the paper feed operation pauses.
6. After a specified period of time, the duplex reverse motor rotates, and the duplex feed clutch is turned on. The paper is then picked up again.

**Figure 1-45** Duplex reverse and feed control




## Duplex print operation

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

**Table 1-13 Paper sizes**

| Paper size | Duplex media feed mode |
|---|---|
| A4 | One-sheet operation |
| Letter | Two-sheet operation |
| B5 | |
| Executive | |
| Legal | One-sheet operation |

The formatter specifies the duplex-media-feed mode for each two-sided print job. Duplex printable media size (A4, Letter, B5, Legal and Executive) and designated print mode (Auto, Normal, Heavy media 1, Heavy media 2 (120 g/m2 or lighter), Glossy media 1, Glossy media 2, Glossy media 3, Glossy film, Designated media 1, and Designated media 2) must be specified.

# Jam detection

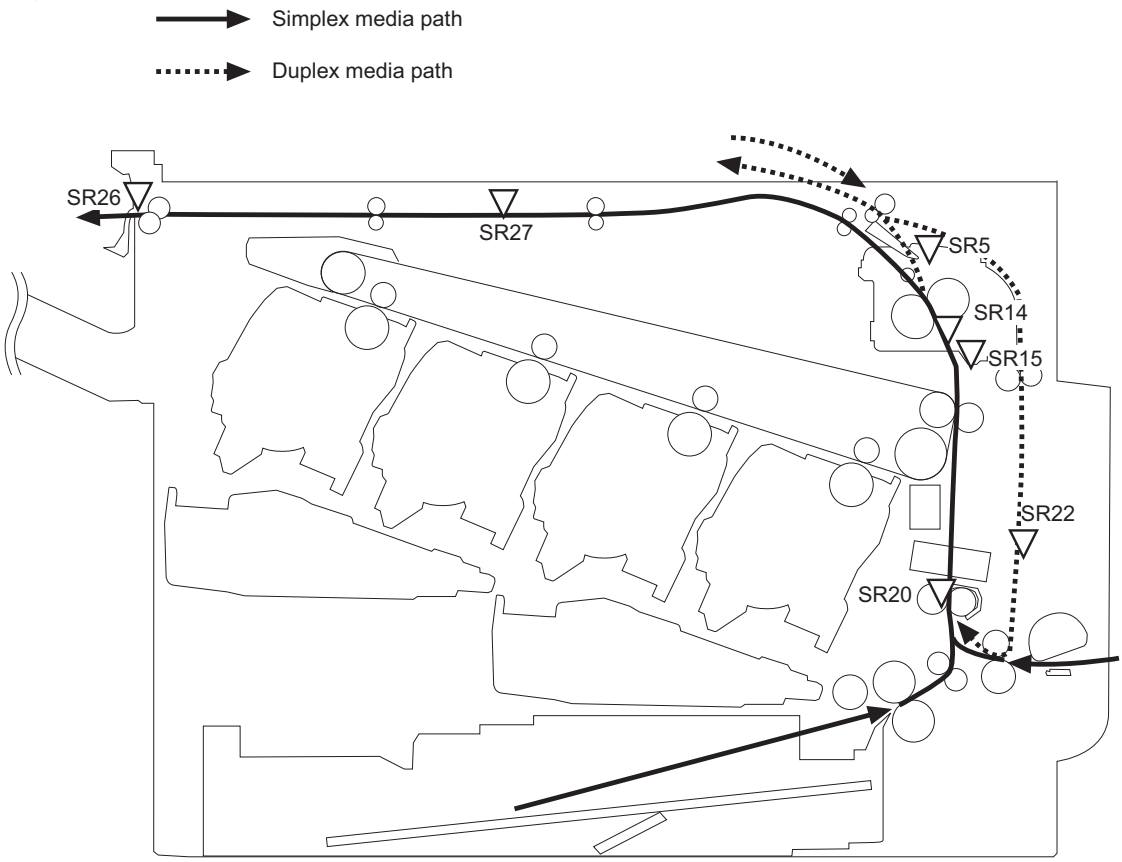
The product uses the following sensors to detect the paper as it moves through the paper path and to report to the DC controller if the paper has jammed.

- Fuser delivery sensor (SR5)
- Top of page (TOP) sensor (SR20)
- Loop sensor 1 (SR14)
- Loop sensor 2 (SR15)
- Duplex re-pickup sensor (SR22)
- IPTU media full sensor (SR26)

**NOTE:** SR26 sensor is not used on products that have a stapling mailbox is installed.

- IPTU media feed sensor (SR27)

**Figure 1-46** 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 1-14 Jams that the product detects**

| Jam | Description |
|---|---|
| Pickup delay jam | The TOP sensor does not detect the leading edge of the paper within a specified time (including two retries) after the pickup operation from the cassette, multipurpose tray, or optional paper feeder starts. |
| 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. |
| Fuser delivery delay jam | The fuser delivery 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 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 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:<br>• Fuser delivery sensor<br>• Loop sensor 1<br>• Loop sensor 2<br>One of the following sensors detects paper presence during the an automatic delivery operation:<br>• Fuser delivery sensor<br>• TOP sensor<br>• Loop sensor 1<br>• Loop sensor 2<br>• Duplex re-pickup sensor<br>• IPTU media feed sensor |
| 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. |
| IPTU delivery delay jam 1 | The IPTU media feed sensor does not detect the leading edge of paper within a specified time period after the fusing delivery sensor detects the leading edge. |
| IPTU delivery delay jam 2 | The IPTU media full sensor does not detect the leading edge of paper within a specified period after the IPTU media feed sensor detects the leading edge. |

**Table 1-14 Jams that the product detects (continued)**

| Jam | Description |
|---|---|
| IPTU delivery stationary jam 1 | The IPTU media feed sensor does not detect the trailing edge of paper within a specified period after it detects the leading edge. |
| IPTU delivery stationary jam 2 | The IPTU media feed sensor detects a paper absence yet it does not detect the trailing edge of paper after it detects the leading edge. |

Automatic delivery: The product automatically clears paper if the TOP sensor, duplex re-pickup sensor, IPTU media feed sensor, or PD media feed sensors detect residual paper during initialization.

# Optional paper feeders

Three types of optional paper feeders are available for the product:

- 1 x 500 sheet paper feeder
- 1 x 500 sheet paper feeder and cabinet
- 3 x 500 paper feeder and stand

The operational sequence of the paper feeders is controlled by the paper feeder controller.

**Figure 1-47** 1 x 500 optional paper feeder

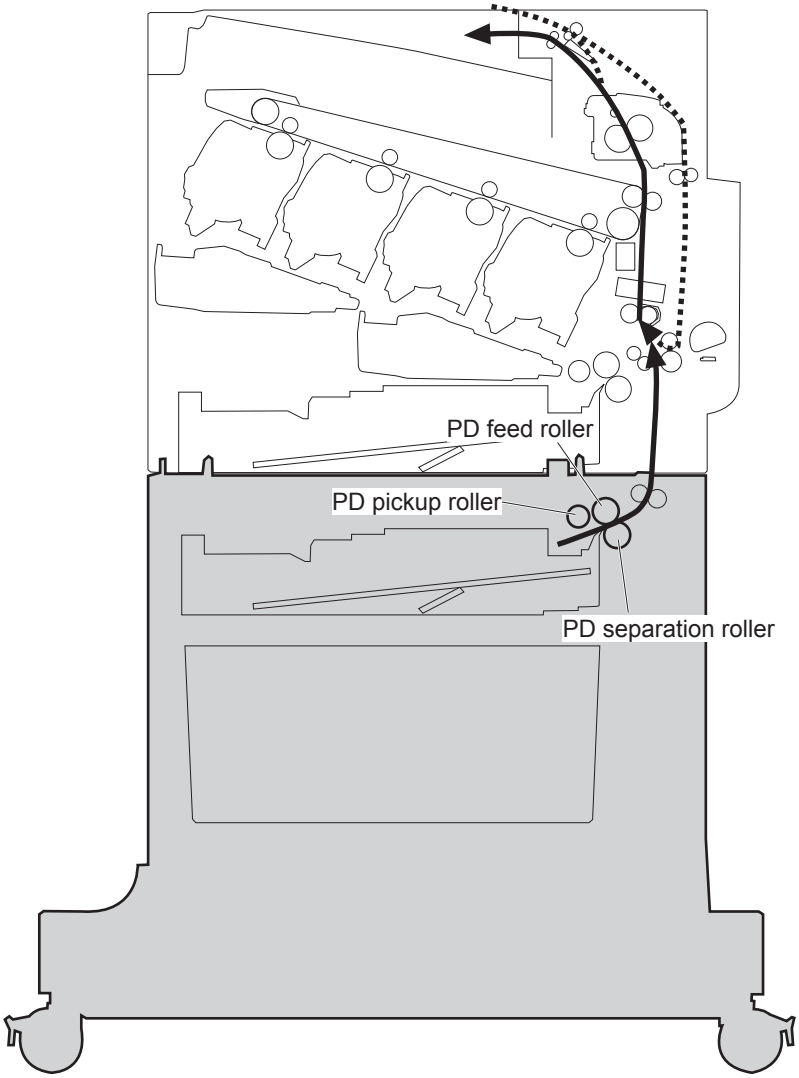


**Figure 1-48** 3 x 500-sheet optional paper feeder

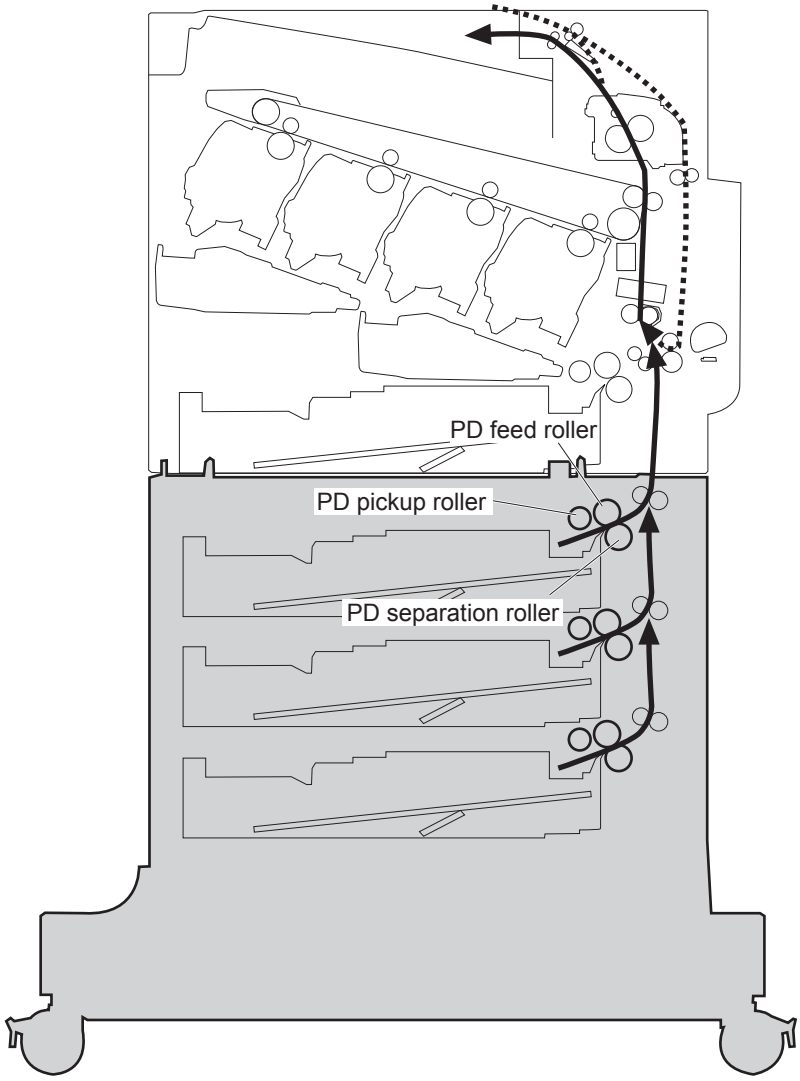
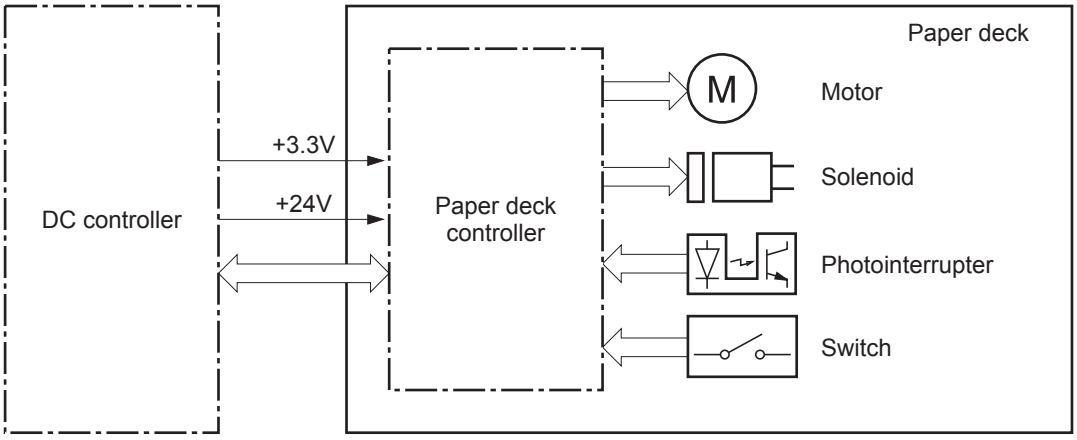



**Figure 1-49** Signals for the paper feeder




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

**Table 1-15 Electrical components for the paper feeder**

| Component type | Abbreviation | Component name |
|---|---|---|
| Motors | M1 | PD lifter motor 1 |
| | M2 | PD pickup motor |
| | M3 | PD lifter motor 2 (3 x 500-sheet paper feeder only) |
| | M4 | PD lifter motor 3 (3 x 500-sheet paper feeder only) |
| Solenoids | SL1 | PD pickup solenoid 1 |
| | SL2 | PD pickup solenoid 2 (3 x 500-sheet paper feeder only) |
| | SL3 | PD pickup solenoid 3 (3 x 500-sheet paper feeder only) |
| Sensors | SR1 | Tray 3 paper surface sensor 1 |
| | SR2 | Tray 3 paper surface sensor 2 |
| | SR3 | Tray 3 paper present presence sensor |
| | SR4 | Tray 3 feed sensor |
| | SR5 | Tray 4 paper surface sensor 1 (3 x 500-sheet paper feeder only) |
| | SR6 | Tray 4 paper present sensor (3 x 500-sheet paper feeder only) |
| | SR7 | Tray 4 feed sensor (3 x 500-sheet paper feeder only) |
| | SR8 | Tray 4 paper surface sensor 2 (3 x 500-sheet paper feeder only) |
| | SR9 | Tray 5 paper surface sensor 1 (3 x 500-sheet paper feeder only) |
| | SR10 | Tray 5 feed sensor (3 x 500-sheet paper feeder only) |
| | SR11 | Tray 5 paper present sensor (3 x 500-sheet paper feeder only) |
| | SR12 | Tray 5 paper surface sensor 2 (3 x 500-sheet paper feeder only) |
| Switches | SW1 | PD right door switch |
| | SW2 | PD media size switch 1 (3 x 500-sheet paper feeder only) |
| | SW3 | PD media size switch 2 (3 x 500-sheet paper feeder only) |
| | SW4 | PD media size switch 3 (3 x 500-sheet paper feeder only) |

## Motor control

The 1 x 500-sheet paper feeder has two motors, and the 3 x 500-sheet paper feeder has four motors for feeding paper.

| Component | | Drives | Failure detection |
|---|---|---|---|
| PD lifter motor 1 | M1 | Lifter of the upper cassette | No |

| Component | | Drives | Failure detection |
|---|---|---|---|
| PD lifter motor 2 (3 x 500-sheet paper feeder only) | M3 | Lifter of the middle cassette | No |
| PD lifter motor 3 (3 x 500-sheet paper feeder only) | M4 | Lifter of the lower cassette | No |
| PD pickup motor | M2 | PD pickup roller, PD feed roller, and PD separation roller | No |

## 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 1-50** Paper-feeder pickup and feed operation

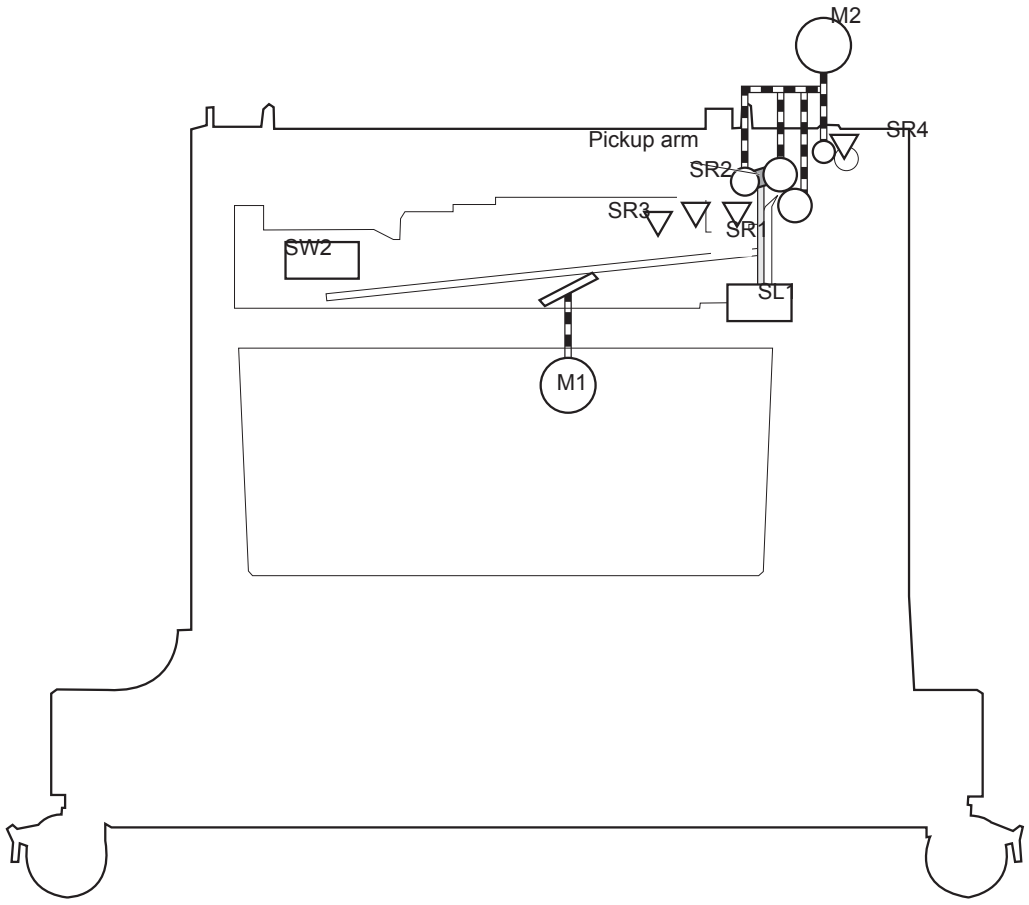
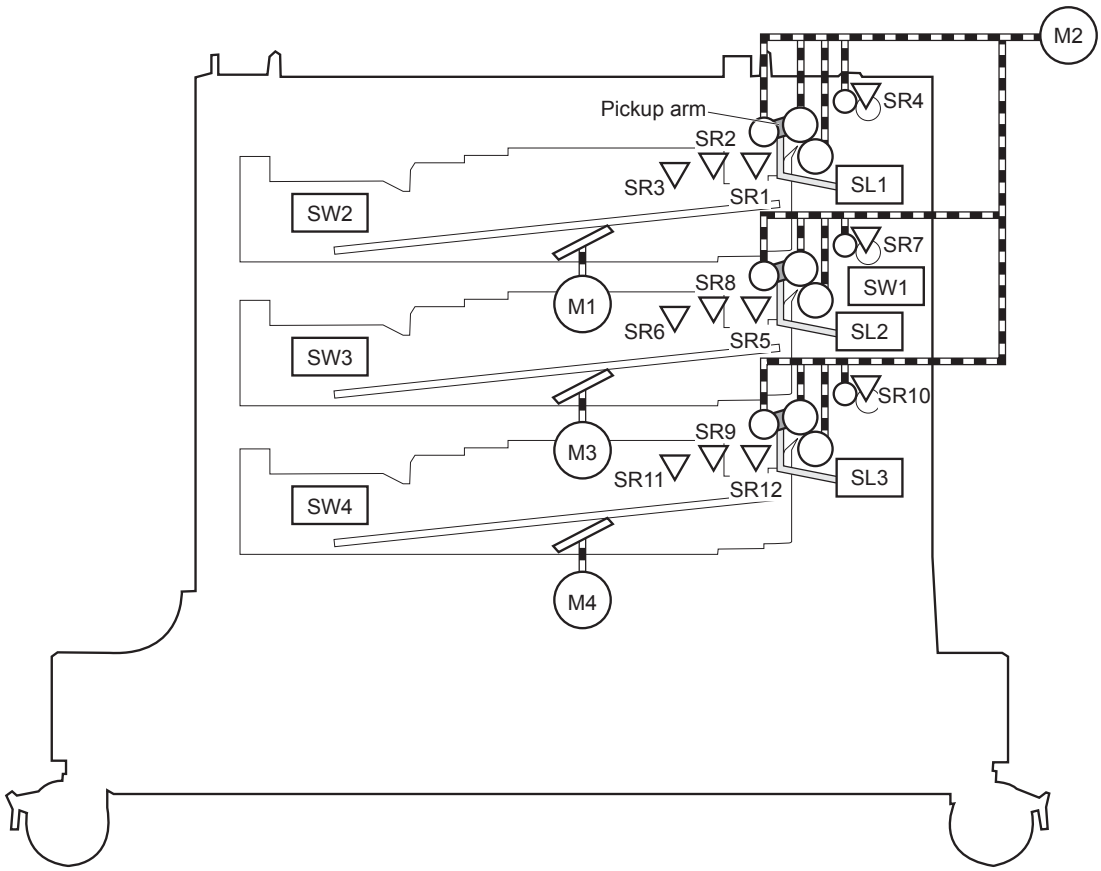



**Table 1-16 Pickup feed components (1 x 500-sheet paper feeder)**

| Component | |
|---|---|
| M1 | PD lifter motor 1 |
| M2 | PD pickup motor |

**Table 1-16 Pickup feed components (1 x 500-sheet paper feeder) (continued)**

| Component | |
|---|---|
| SL1 | PD pickup solenoid 1 |
| SR1 | Tray 3 paper surface sensor 1 |
| SR2 | Tray 3 paper surface sensor 2 |
| SR3 | Tray 3 paper presence sensor |
| SR4 | Tray 3 paper present sensor |
| SW2 | Tray 3 paper size switches |




| Components | |
|---|---|
| M1 | PD lifter motor 1 |
| M2 | PD pickup motor |
| M3 | PD lifter motor 2 (3 x 500-sheet paper feeder only) |
| M4 | PD lifter motor 3 (3 x 500-sheet paper feeder only) |
| SL1 | PD pickup solenoid 1 |
| SL2 | PD pickup solenoid 2 |

| | |
|---|---|
| SL3 | PD pickup solenoid 3 |
| SR1 | Tray 3 paper surface sensor 1 |
| SR2 | Tray 3 paper surface sensor 2 |
| SR3 | Tray 3 paper presence sensor |
| SR4 | Tray 3 paper presence sensor |
| SR5 | Tray 4 paper surface sensor 1 (3 x 500-sheet paper feeder only) |
| SR6 | Tray 4 paper surface sensor 2 (3 x 500-sheet paper feeder only) |
| SR7 | Tray 4 feed sensor (3 x 500-sheet paper feeder only) |
| SR8 | Tray 4 media-stack-surface sensor (3 x 500-sheet paper feeder only) |
| SR9 | Tray 5 paper surface sensor 1 (3 x 500-sheet paper feeder only) |
| SR10 | Tray 5 feed sensor (3 x 500-sheet paper feeder only) |
| SR11 | Tray 5 paper present sensor (3 x 500-sheet paper feeder only) |
| SR12 | Tray 5 media-stack-surface sensor (3 x 500-sheet paper feeder only) |
| SW1 | Tray 3, 4, and 5 right door switch |
| SW2 | Tray 3 paper size switches (3 x 500-sheet paper feeder only) |
| SW3 | Tray 4 paper size switches (3 x 500-sheet paper feeder only) |
| SW4 | Tray 5 paper size switches (3 x 500-sheet paper feeder only) |

## Paper-size detection and cassette-presence detection

The paper feeder detects the size of paper loaded in the paper feeder and the presence of the cassette using the PD media size switch.

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

## Paper-feeder cassette lift operation

The paper feeder keeps the paper stack surface at the correct pickup position. The cassette lift operation occurs under the following conditions:

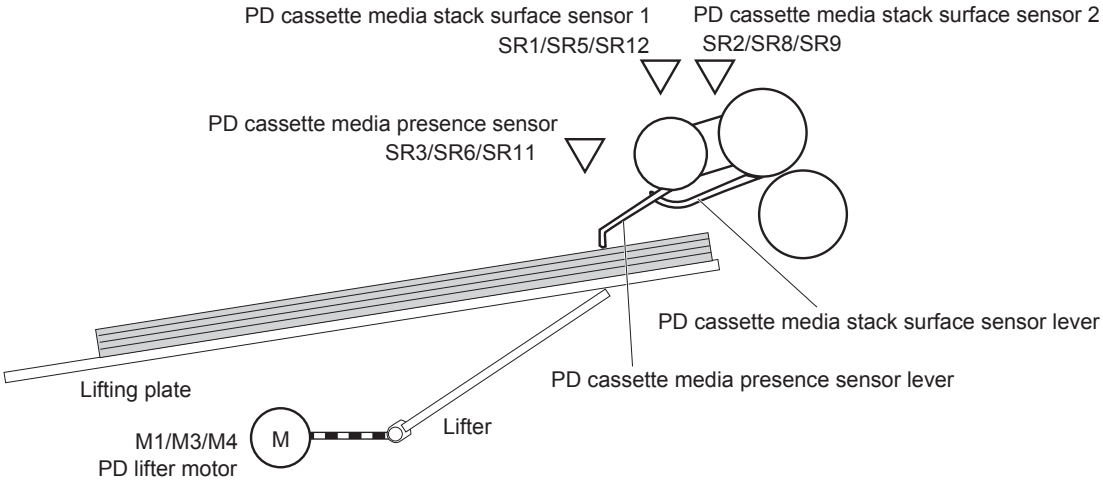
- The product is turned on.
- The cassette is inserted.
- The paper stack surface of the cassette lowers.

The sequence occurs as follows:

1. The PD lifter motor rotates and the lifter moves up.
2. When the tray media-stack-surface sensor detects the stack surface of the paper, the PD lifter motor stops.
3. The PD lifter motor rotates again to lift the lifter when the PD cassette media-stack-surface sensor detects the stack surface, and then lowers during printing.

If a tray media-stack-surface sensor does not detect a stack surface within a specified period after the PD lifter motor starts rotating, the paper feeder driver determines that the PD lifter motor has failed and through the DC controller notifies the formatter.

**Figure 1-51** Paper-feeder cassette lift

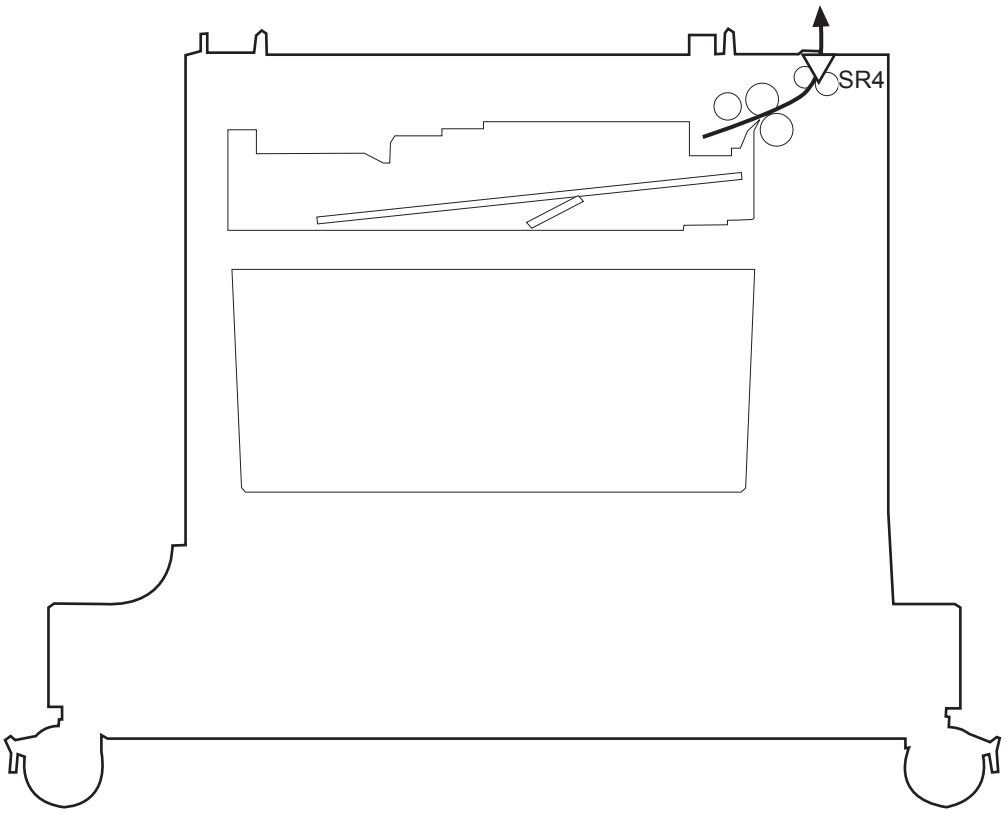



The paper-feeder driver notifies the formatter if either of the paper-feeder media-stack surface sensors fails to detect the stack surface within a specified period from when a lift-up operation starts.

## Paper feeder jam detection

The 1 x 500-sheet paper feeder uses the Tray 3 paper presence sensor (SR4) to detect the presence of paper and to check whether paper has jammed.

**Figure 1-52** Jam detection (1 x 500-sheet paper feeder)



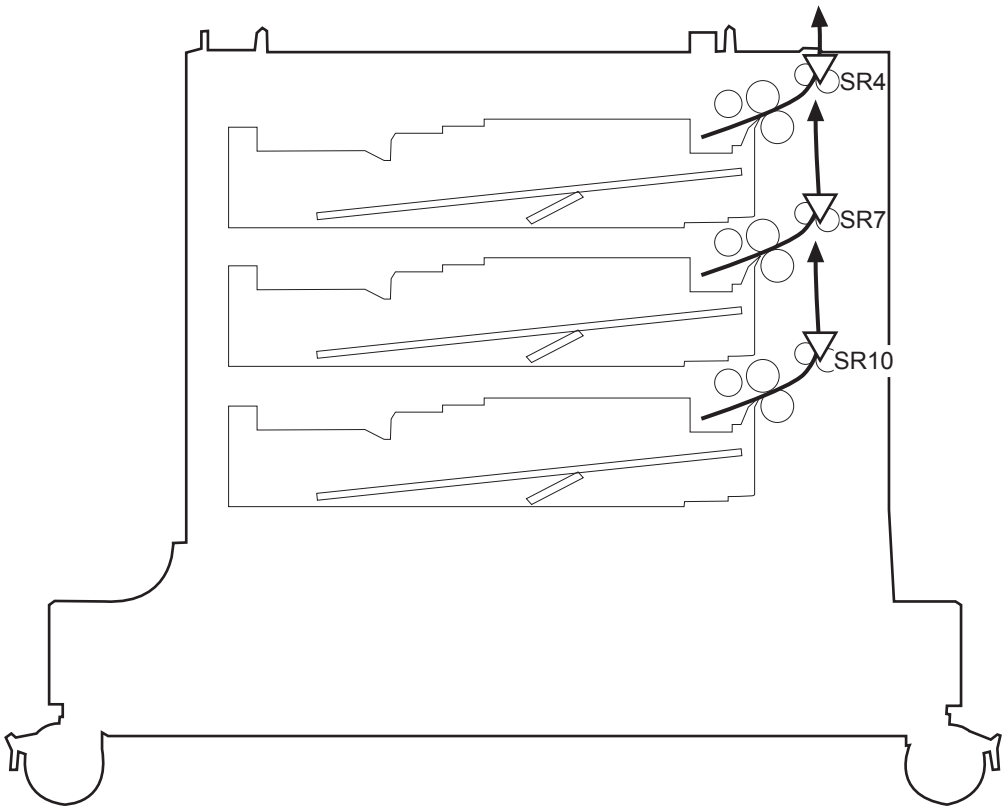

The 1 x 500-sheet paper feeder detects the following jams:

- 1 x 500-sheet PD pickup delay jam: Tray 3 feed sensor does not detect the leading edge of paper within a specified time (including two retries) after the pickup operation starts.
- 1 x 500-sheet PD pickup stationary jam: Tray 3 feed sensor does not detect the trailing edge of paper within a specified time after the sensor detects the leading edge.
- 1 x 500-sheet PD residual paper jam: Tray 3 feed sensor detects the presence of paper for a specified time during an automatic delivery operation.

The 3 x 500-sheet paper feeder uses the following sensors to detect the presence of paper and to check whether paper has jammed.

- Tray 3 paper presence sensor (SR4)
- Tray 4 feed sensor (SR7)
- Tray 5 feed sensor (SR10)

**Figure 1-53** Jam detection (3 x 500-sheet paper feeder)




The 3 x 500-sheet paper feeder detects the following jams:

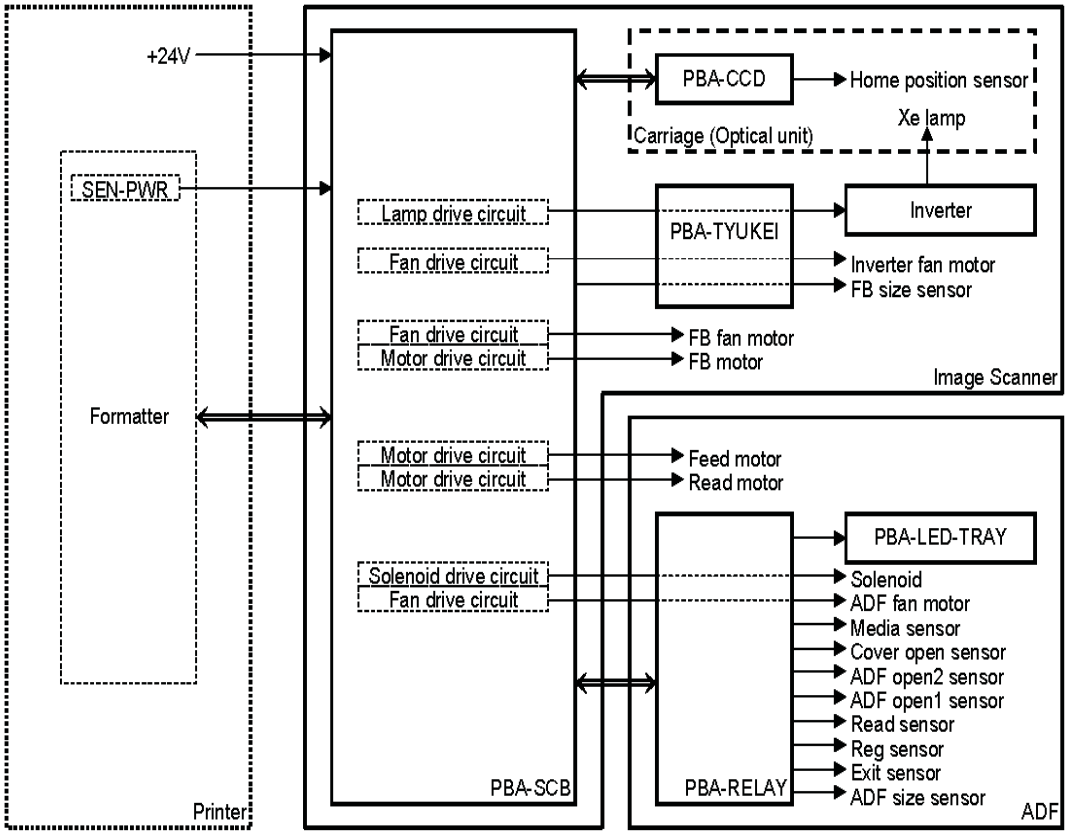
- 3 x 500-sheet PD pickup delay jam: One of the tray feed sensors does not detect the leading edge of paper within a specified time (including two retries) after the pickup operation starts.
- 3 x 500-sheet PD pickup delay jam 2: Tray 3 feed sensor does not detect the leading edge of paper within a specified time (including two retries) after the pickup operation starts.
- 3 x 500-sheet PD pickup stationary jam 1: Tray 4 or 5 feed sensors do not detect the trailing edge of paper within a specified time after the sensor detects the leading edge.
- 3 x 500-sheet PD pickup stationary jam 2: Tray 3 feed sensor does not detect the trailing edge of paper within a specified time after the sensor detects the leading edge.
- 3 x 500-sheet PD residual paper jam: Tray 3, 4, or 5 feed sensors detect the presence of paper for a specified time during an automatic delivery operation.
- 3 x 500-sheet PD door open jam: The door is open during paper feed operation.

# Document feeder/scanner assembly

The document feeder/scanner assembly consists of a document feeder and flatbed scanner. The document feeder can feed 50 pages of letter or A4 size paper at speeds up to 57 images per minute in simplex and 24 images per minute in duplex. The document feeder features legal size detection and customer replaceable feed and separation rollers and pads. The flatbed scanner also includes legal detection and does not require a scanner lock for transport. The sensors and motors in both the document feeder and flatbed scanner are controlled and monitored by the SCB that is located on the rear of the flatbed scanner. The copy process board (CPB) is integrated on the formatter. Image data is sent to the formatter through the scanner cable connected to the interconnect board (ICB).

## Scanner subsystem

**Figure 1-54** Scanner subsystem




The scan control board (SCB), located on the rear of the scanner, provides control of both the scanner and document feeder components. The scanner power supply—located on the rear of the printer above the DCC—provides a +24v current. The formatter supplies a 3.3v current to keep sensors energized while the +24v current is turned off during Sleep. The optical unit contains a Xenon lamp that is driven by a fan-cooled inverter power supply.

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The relay PCA in the document feeder provides connections only to the various components such as fans, motors, and sensors. The control and monitoring of these components takes place on the SCB.

## Document feeder/scanner motor and fan control

| Component | Purpose | Type | Rotation | Timing | Failure detection |
|---|---|---|---|---|---|
| Carriage motor | Drives the carriage | Step motor | Clockwise | Initializing | No |
| | | | Clockwise | Scanning mono | No |
| | | | Clockwise | Scanning color | No |
| | | | Counterclockwise | Return | No |
| Feed motor | Drives the pick, separation, and registration rollers | Step motor | Counterclockwise | Separation | No |
| | | | Clockwise | Feeding | No |
| | | | Clockwise | Scanning mono (600 x 300) | No |
| | | | Clockwise | Scanning mono (600 x 600) | No |
| | | | Clockwise | Scanning color (600 x 300) | No |
| | | | Clockwise | Scanning color (600 x 600) | No |
| Read motor | Drives the feed and delivery rollers | Step motor | Counterclockwise | Scanning mono (600 x 300) | No |
| | | | Counterclockwise | Scanning mono (600 x 600) | No |
| | | | Counterclockwise | Scanning color (600 x 300) | No |
| | | | Counterclockwise | Scanning color (600 x 600) | No |
| | | | Clockwise | Switch back for duplex scanning | No |
| Scanner fan | Cools the lamp and CCD | DC motor | Clockwise | Turns on when lamp is on | Yes |
| Document feeder fan | Cools the motor and solenoid | DC motor | Clockwise | Feeding originals | Yes |
| Inverter fan | Cools the inverter | DC motor | Clockwise | Turns on when lamp is on | Yes |

## Legal detection sensor sequence

The legal detection status displays in the following circumstances:

- Document feeder legal detection:
  - When the document feeder legal sensor is turned on.
- Flatbed legal detection:
  - When the flatbed legal sensor is turned on while the flatbed angle sensor is opened.
  - When the flatbed angle sensor is closed but the flatbed legal sensor is turned on.

## Fan timing sequence

### Fan activated timing

Fans are activated as follows:

- The image scanner fan is activated when the carriage motor or lamp is turned on.
- The document feeder fan is activated when the feed motor or read motor is activated.
- The inverter fan is activated when the carriage motor or lamp is activated.

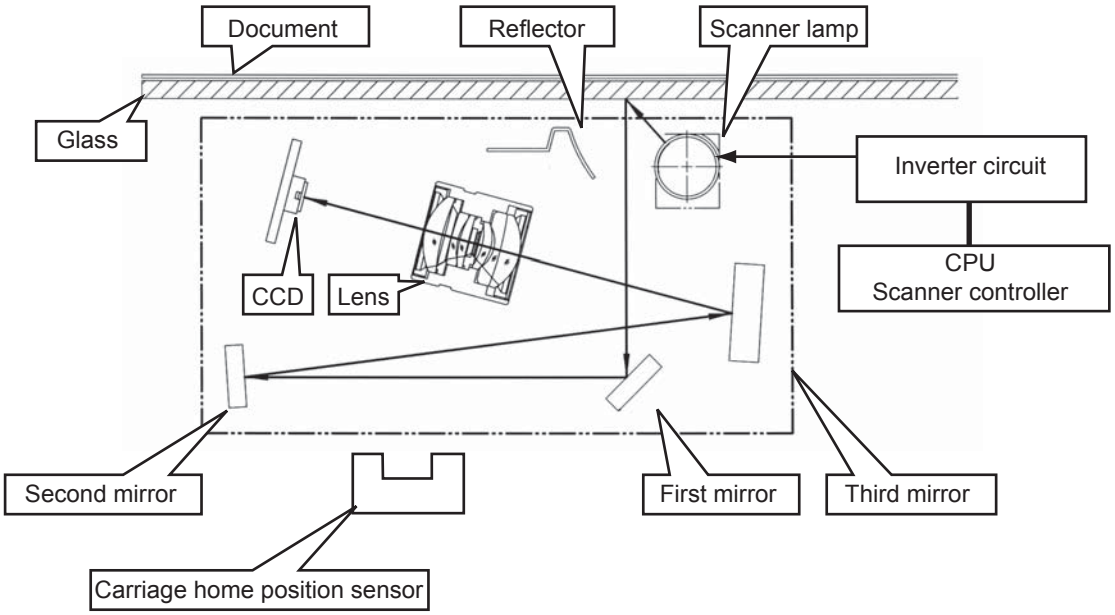
### Fan lock failure detection

The scanner, document feeder, and inverter fans have the following failure detection features:

- The fan is turned on. After 5 seconds, the scanner controller begins observing the fan lock signal.
- The fan fails in an error condition. After 5 seconds, the lock condition is detected.
- The scanner completes the job even if the scanner recognizes errors during the job.
- After completing the job, the scanner shifts to the error status and transfers the failure information to the formatter.

## Optical assembly operation

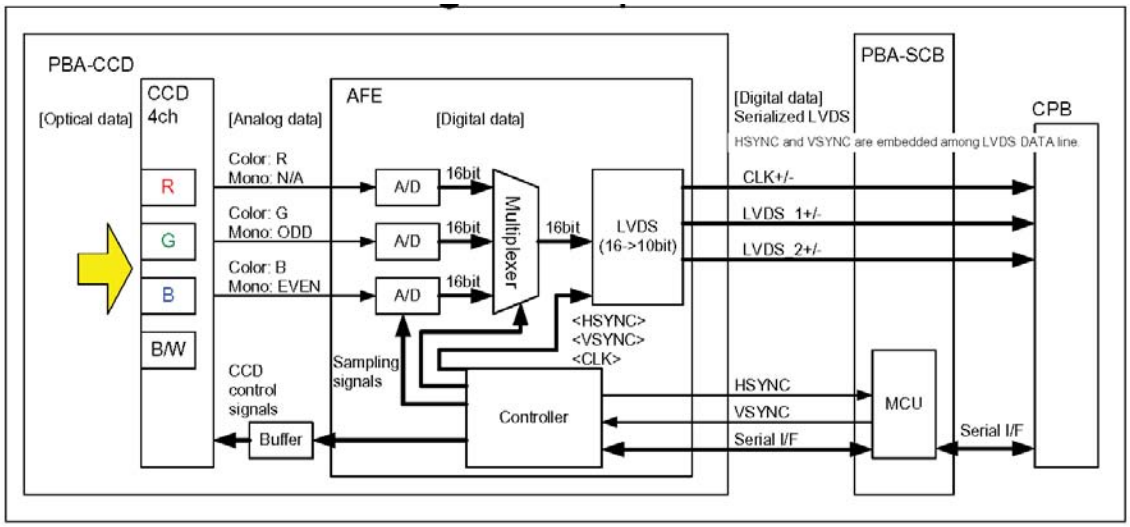
**Figure 1-55** Optical assembly operation




The optical assembly contains the lamp, mirrors, lens, and charge-coupled device (CCD). As the optical assembly moves across the original, the lens focuses the reflected image onto the CCD. The optical assembly home position is detected by the carriage home position sensor. During document feeder copying, the optical assembly remains near the home position and the product moves the paper across the document feeder glass strip.

## Image data path

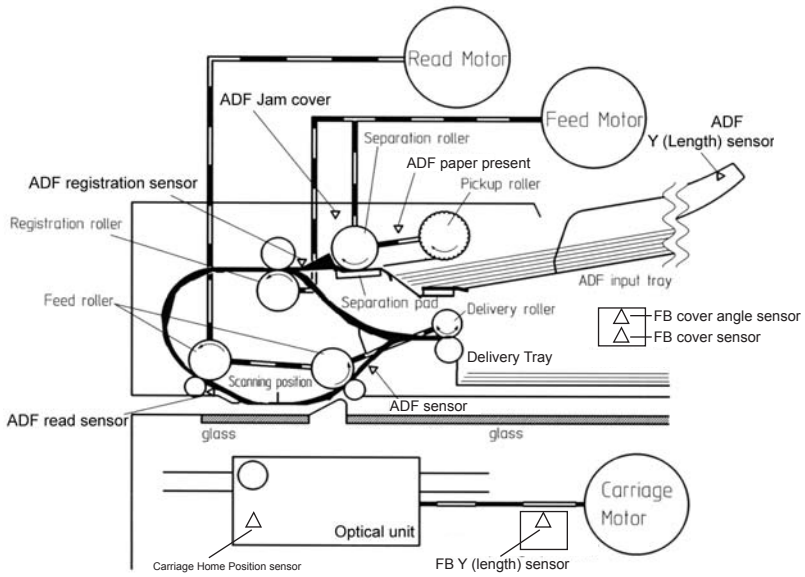
**Figure 1-56** Image data path




The product transfers the analog data produced by the CCD/image sensor to the analog front end (AFE), which is a PCA that converts this information to digital form. The digital data exits the scanner assembly and then passes through the scan control board (SCB) to the copy processor board (CPB), which is located on the formatter.

# Document feeder/scanner paper path and sensors

**Figure 1-57** Document feeder/scanner paper path and sensors




## Jam detection sequence

1. A jam error occurs in the document feeder.
2. The feed and read motors stop immediately.
3. The error bit of the scanner status is set. The status information is sent to the CPB.
4. Document feeder operation is terminated.
5. The error bit is held until the jam is cleared.

## Clearing a jam

1. Open the jam-access cover and then remove the paper.
2. After the jam-access cover is closed, the error bit is cleared if the sensors detect no media.

## Document feeder jam detection

1. After initialization or after the jam-access cover is opened and then closed, the registration sensor, read sensor, or exit sensor are checked for residual paper.
2. The paper did not reach the registration sensor within the standard time. After feeding paper from the input tray, paper is transferred. The motor is stopped if the registration sensor does not detect paper. The motor reverses and attempts to refeed the paper. A pick error occurs if the registration sensor continues to fail to detect paper after the refeed attempt. If there is paper ahead of jammed paper in the paper path, the pick error occurs after the preceding paper is scanned and ejected.
3. Document feeder sensors detect errors in the following situations:

| Sensor | Description |
| --- | --- |
| Registration sensor | A jam is detected when the registration sensor does not detected the leading edge of paper when turning paper over during the duplexing process. |
| | A jam is detected when the registration sensor does not detected the trailing edge of paper. |
| Read sensor | A jam is detected when the read sensor does not detected the leading edge of paper. |
| | A jam is detected when the read sensor does not detected the trailing edge of paper. |
| Exit sensor | A jam is detected when the exit sensor does not detected the leading edge of paper. |
| | A jam is detected when the exit sensor does not detect the trailing edge of paper. |

4. Jam-access cover open jam: A jam error occurs if the jam cover is opened while paper is being fed through the document feeder.
5. Document feeder open jam: A jam error occurs if the document feeder is open while a paper is being fed through the document feeder.

## Document feeder pick mechanism

1. The pickup-roller picks up a page from the input tray.
2. If multiple pages are picked up, the separation roller and separation pad separates them to prevent feeding of multiple pages.
3. After the page reaches the registration sensor, the pickup and separation rollers stop and registration and read rollers start.

# 3-bin stapling mailbox

The 3-bin stapling mailbox installs on the delivery assembly and delivers paper to the output bin. The 3-bin stapling mailbox has two modes:

- Stacker mode
- Mailbox/job separator mode

Stapling is available for both modes.

**Figure 1-58** 3-bin stapling mailbox

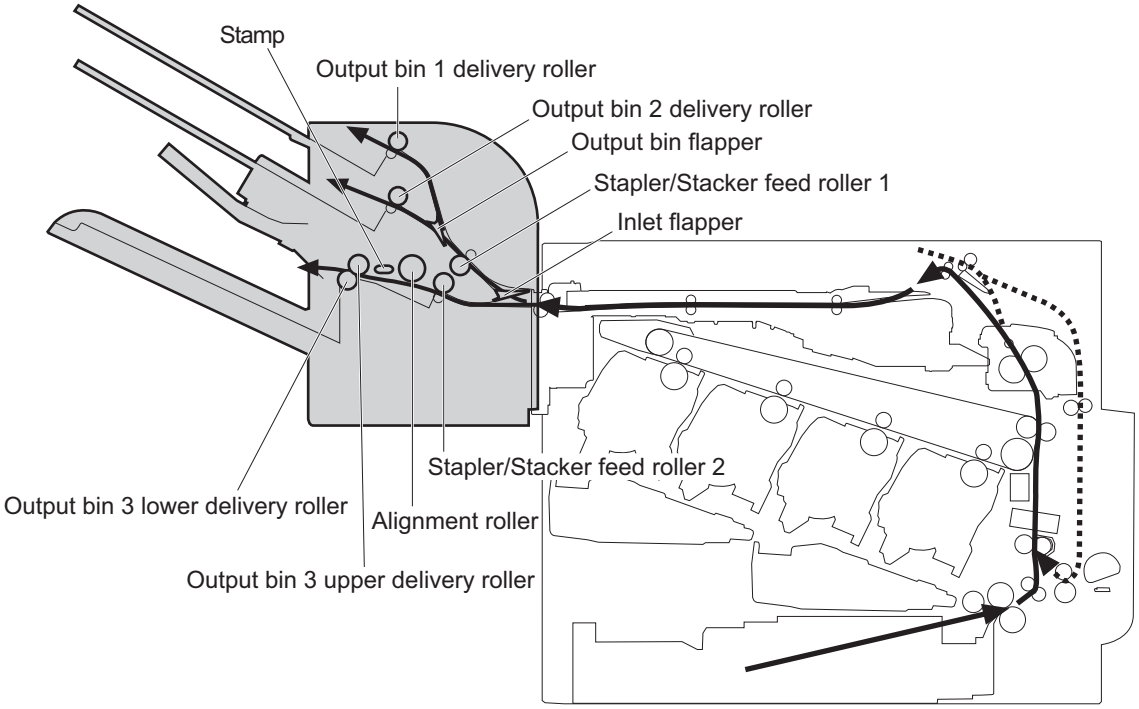
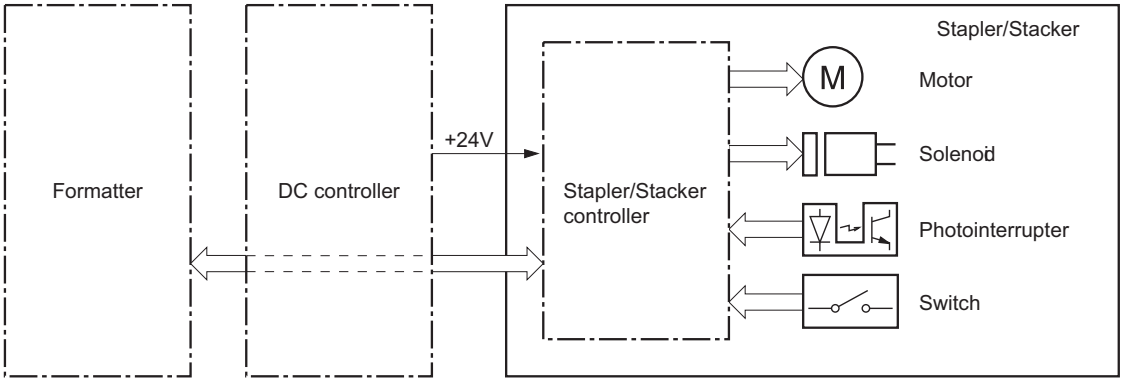



**Figure 1-59** Signals for the 3-bin stapling mailbox

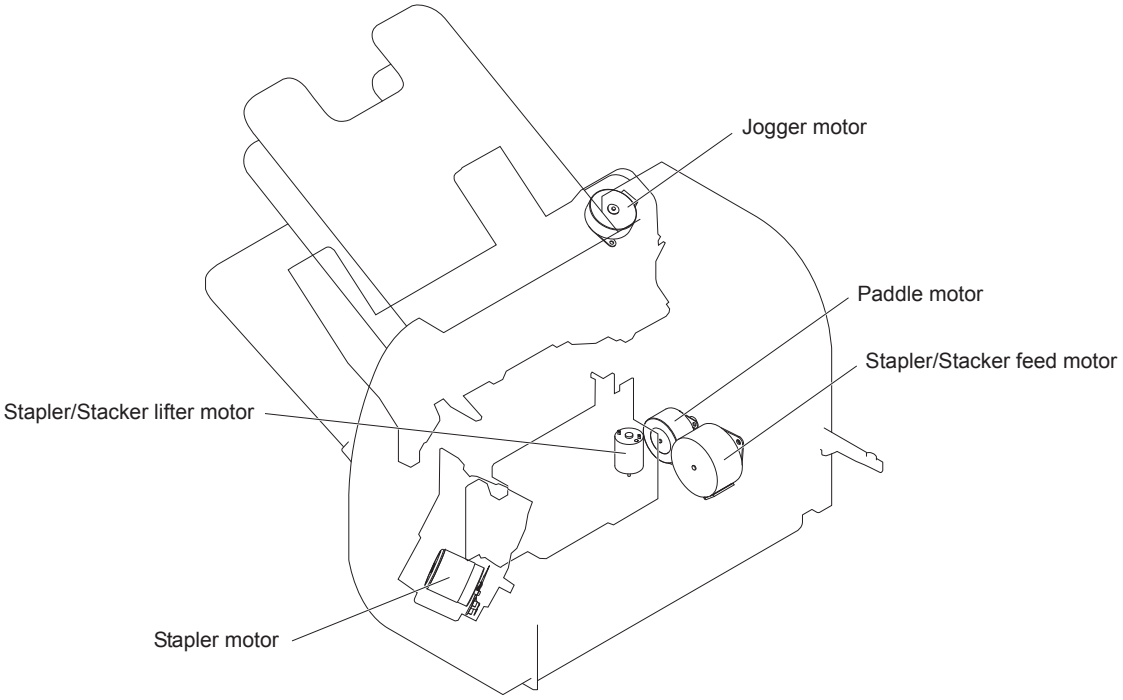



The 3-bin stapling mailbox contains several motors, solenoids, sensors, and switches.

**Table 1-17 Electrical components for the 3-bin stapling mailbox**

| Component type | Abbreviation | Component name |
|---|---|---|
| Motors | M1 | Stapler motor |
| | M3 | Jogger motor |
| | M4 | Paddle motor |
| | M5 | Stapler/Stacker feed motor |
| | M6 | Stapler/Stacker lifter motor |
| Solenoids | SL1 | Stamp solenoid |
| | SL2 | Inlet solenoid |
| | SL3 | Output bin solenoid |
| Sensors | SR1 | Output bin 3 delivery sensor |
| | SR2 | Stapler/Stacker media feed sensor 1 |
| | SR3 | Output bin 3 media full sensor |
| | SR4 | Alignment roller sensor |
| | SR5 | Stapler/Stacker media feed sensor 2 |
| | SR6 | Jogger sensor |
| | SR7 | Output bin 3 upper delivery roller sensor |
| | PS2501 | Output bin 1 media presence sensor |
| | PS2502 | Output bin 2 media full sensor |
| | PS2503 | Output bin 2 media presence sensor |
| | PS2504 | Output bin 1 media full sensor |
| | PS2601 | Output bin 3 higher limit sensor |
| | PS2602 | Output bin 3 lower limit sensor |
| | | Stapler sensor |
| | | Staple presence sensor |
| | | Staple ready sensor |
| Switches | SW1 | Stapler/Stacker door switch |

## Motor control




The 3-bin stapling mailbox has five motors for paper feed, paper delivery, and staple operation.

| Component | | Drives | Failure detection |
|---|---|---|---|
| Stapler motor | M1 | Stapler | Yes (type 2)[1] |
| Jogger motor | M3 | Jogger guide | Yes (type 2) |
| Paddle motor | M4 | Alignment roller, disengagement of the alignment roller, and disengagement of the output bin 3 lower delivery roller | Yes (type 2) |
| Stapler/Stacker feed motor | M5 | Stapler/Stacker feed roller, Stapler/Stacker delivery roller, output bin 3 upper delivery roller, and the output bin 3 lower delivery roller | No<br>When the motor fails a jam occurs. |
| Stapler/Stacker lifter motor | M6 | Output bin 3 | Yes (type 2) |

[1] There are two methods for detecting motor failure. Type 1 detects failure by monitoring the motor. Type 2 detects failure by monitoring a related part of the motor.

## Failure detection

The controller detects a motor failure by monitoring a part related to the motor. If the controller determines a motor failure or motor-related part failure, it notifies the formatter when it encounters the following conditions:

- Stapler motor: The stapler sensor is not sensed for a specified period of time after the stapler motor starts rotating.
- Jogger motor: The jogger sensor is not sensed for a specified period of time after the jogger motor starts rotating.
- Paddle motor: The output bin 3 upper delivery roller sensor is not sensed for a specified period of time after the paddle motor is rotated. The alignment roller sensor is not sensed for a specified period of time after the paddle motor is reversed.
- Stapler/Stacker lifter motor: The output bin 3 higher limit sensor or output bin 3 media full sensor is not sensed for a specified period of time after the stapler/stacker lifter motor is rotated. The output bin 3 higher limit sensor, output bin 3 lower limit sensor, or output bin 3 media full sensor is not sensed for a specified period from when the stapler/stacker lifter motor is reversed.

## Delivery operation

The 3-bin stapling mailbox has two modes.

- Stacker mode: The printed page is delivered to output bin 3 first and then delivered to the subsequent output bins.
- Mailbox/job separator mode: The printed page is delivered to the specified output bin for each print job.

**Figure 1-60** 3-bin stapling mailbox delivery operation

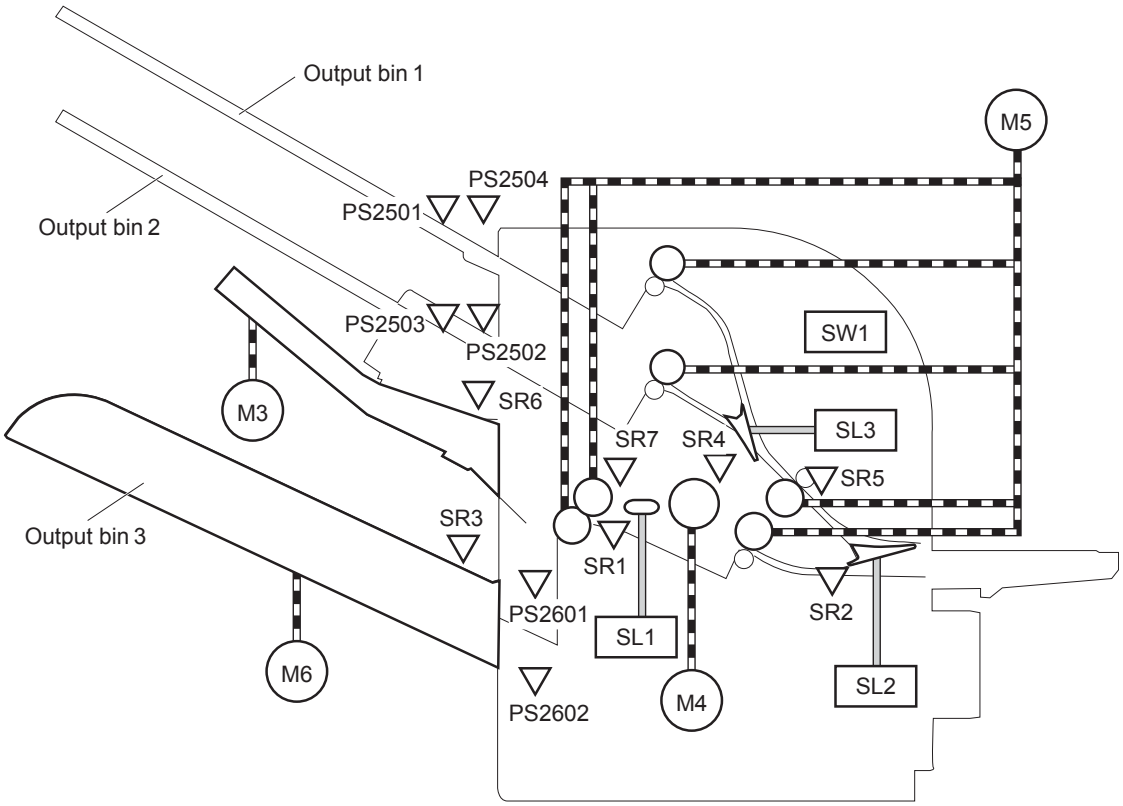



**Table 1-18 Delivery components (3-bin stapling mailbox)**

| Component | |
|---|---|
| M1 | Stapler motor |
| M3 | Jogger motor |
| M4 | Paddle motor |
| M5 | Stapler/Stacker feed motor |
| M6 | Stapler/Stacker lifter motor |
| SL1 | Stamp solenoid |
| SL2 | Inlet solenoid |
| SL3 | Output bin solenoid |
| SR1 | Output bin 3 delivery sensor |

**Table 1-18 Delivery components (3-bin stapling mailbox) (continued)**

| Component | |
|---|---|
| SR2 | Stapler/Stacker media feed sensor 1 |
| SR3 | Output bin 3 media full sensor |
| SR4 | Alignment roller sensor |
| SR5 | Stapler/Stacker media feed sensor 2 |
| SR6 | Jogger sensor |
| SR7 | Output bin 3 upper delivery roller sensor |
| PS2501 | Output bin 1 media presence sensor |
| PS2502 | Output bin 2 media full sensor |
| PS2503 | Output bin 2 media presence sensor |
| PS2504 | Output bin 1 media full sensor |
| PS2601 | Output bin 3 higher limit sensor |
| PS2602 | Output bin 3 lower limit sensor |
| | Stapler sensor |
| | Staple presence sensor |
| | Staple ready sensor |
| SW1 | Stapler/Stacker door switch |

## Staple operation

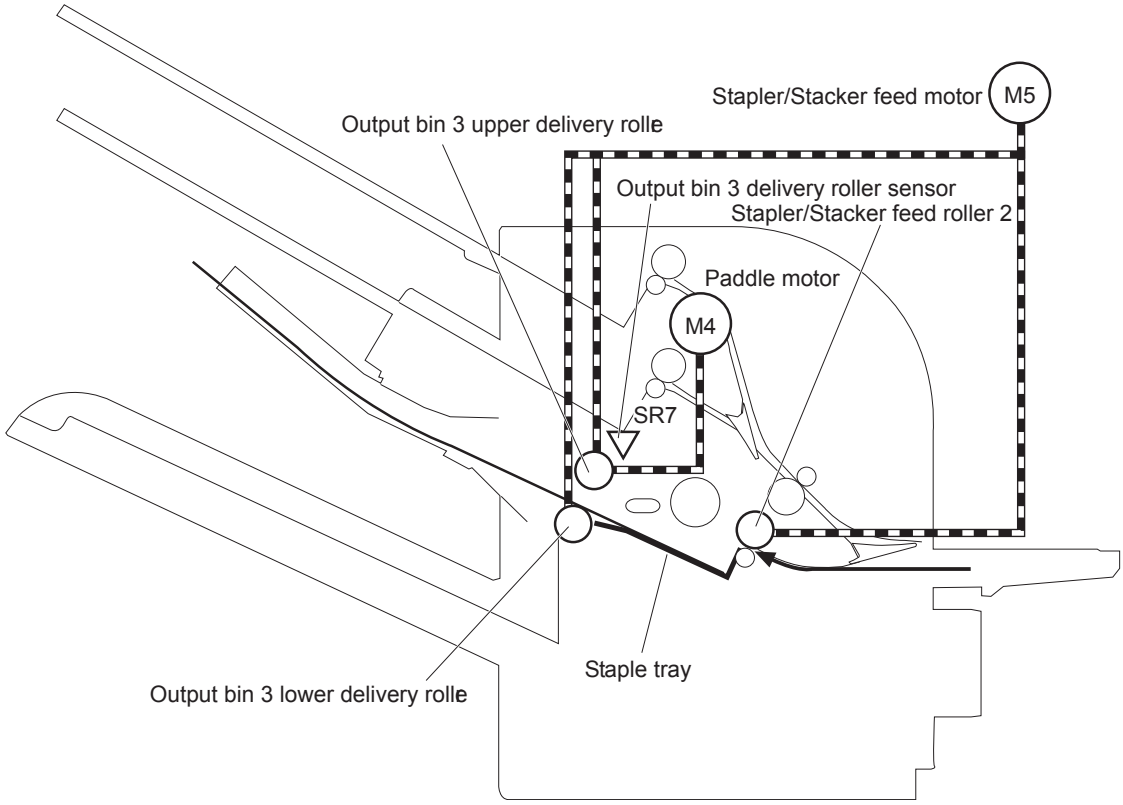
The staple operation staples 2 to 30 sheets of printed pages together into one set and then delivers it to the output bin 3. This staple operation is available for both stacker mode and mailbox/job separator mode.

The staple sequence is as follows:

1. The stapler/stacker controller rotates the paddle motor to disengage the output bin 3 upper delivery roller from the output bin 3 lower delivery roller.

2. The printed page from the product is fed to the staple tray.

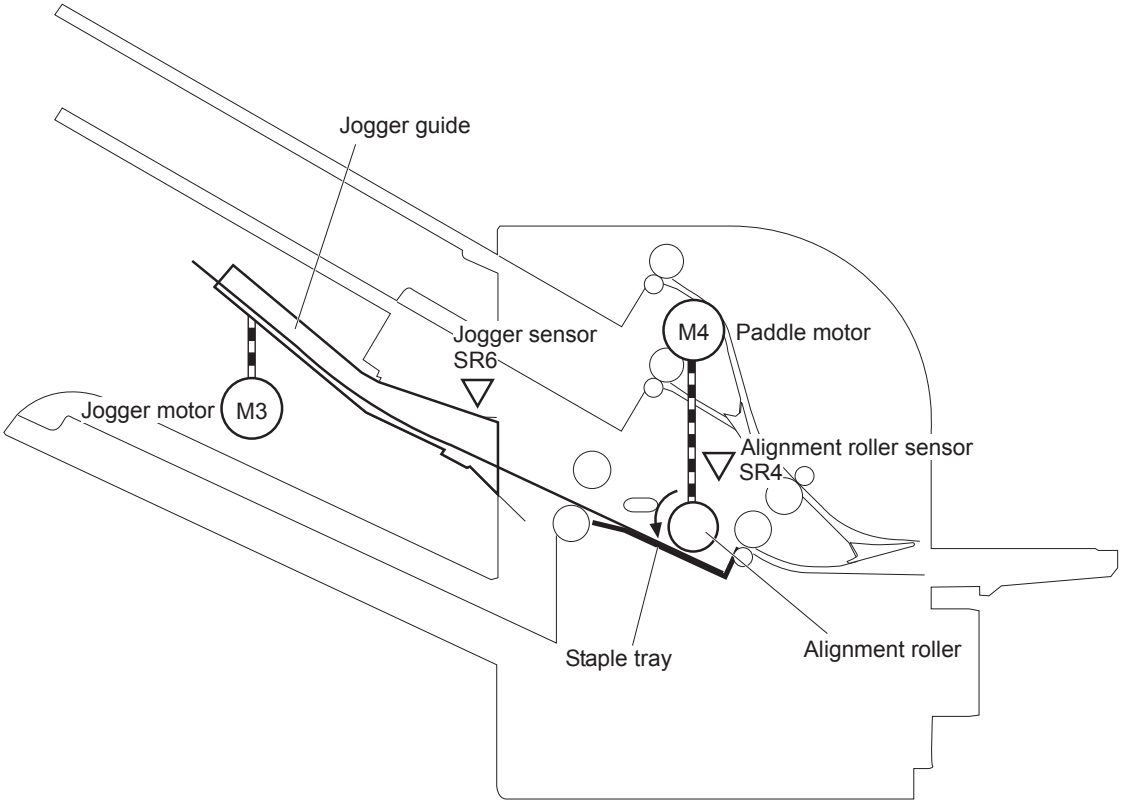
**Figure 1-61** 3-bin stapling mailbox stapler operation (1 of 4)




The controller determines an output bin 3 upper delivery roller failure and notifies the formatter through the DC controller when it does not detect the output bin 3 upper delivery roller sensor for a specified period after the paddle motor starts rotating.

3. The printed page on the staple tray is aligned. For horizontal alignment, the jogger motor rotates and moves the jogger guide. For vertical alignment, the paddle motor is reversed and the alignment roller pushes the page.

**Figure 1-62** 3-bin stapling mailbox stapler operation (2 of 4)

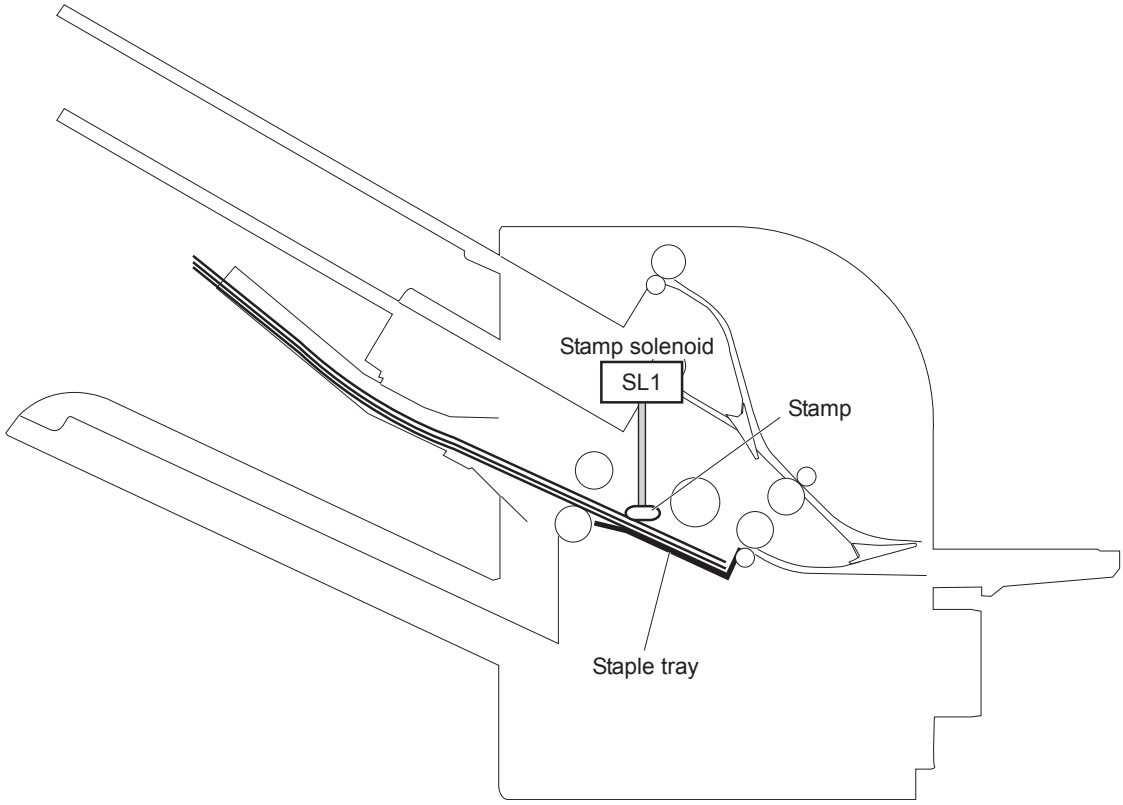



The controller determines a paddle motor failure and notifies the formatter through the DC controller when it does not detect the alignment roller sensor for a specified period after the paddle motor starts rotating.

4. After alignment, the stamp solenoid is driven and the stamp holds the page.
5. Step 1 to 4 repeat for a specified number of pages.

6. After all of the pages are aligned, the pages are stapled together while being held with the stamp.

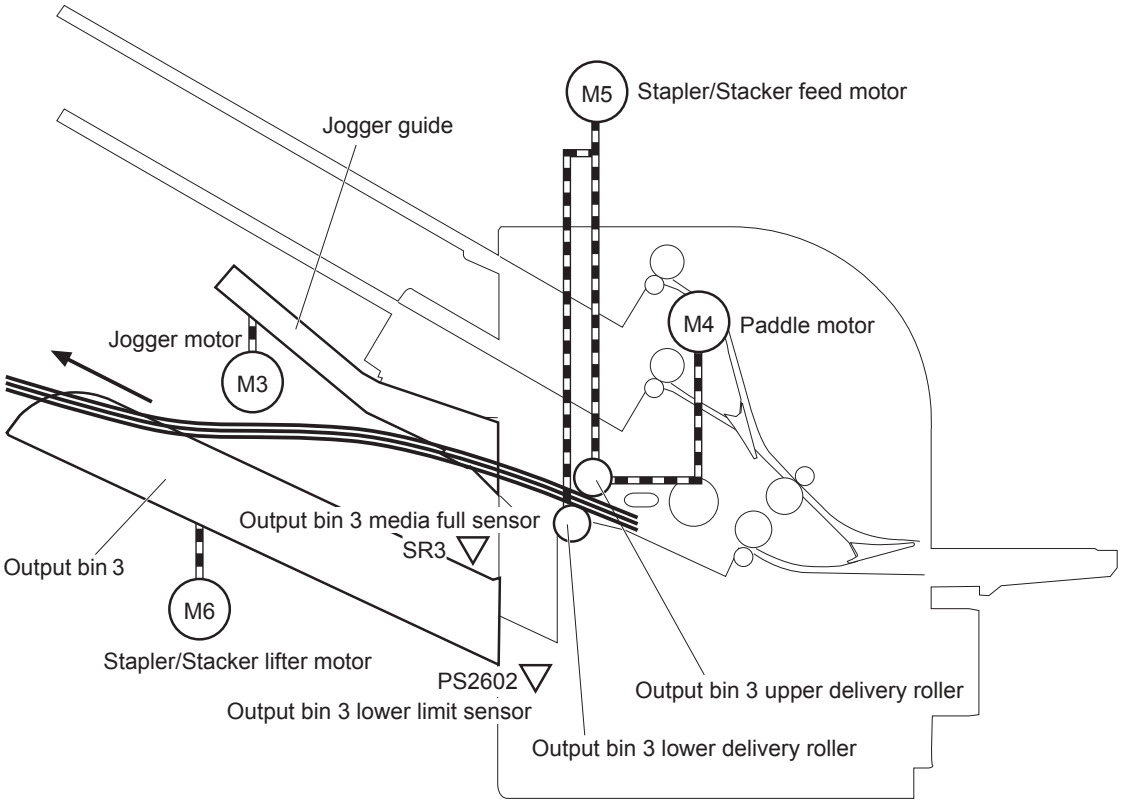
**Figure 1-63** 3-bin stapling mailbox stapler operation (3 of 4)




7. The paddle motor rotates, and the output bin 3 upper delivery roller touches the stapled pages.
8. The stapler/stacker feed motor rotates to rotate the output bin 3 upper delivery roller and the output bin 3 lower delivery roller. Accordingly, the set of printed-pages is delivered to output bin 3.

9. The stapler/stacker feed motor starts rotating while the jogger motor is reversed and the jogger guide moves to its home position.

**Figure 1-64** 3-bin stapling mailbox stapler operation (4 of 4)



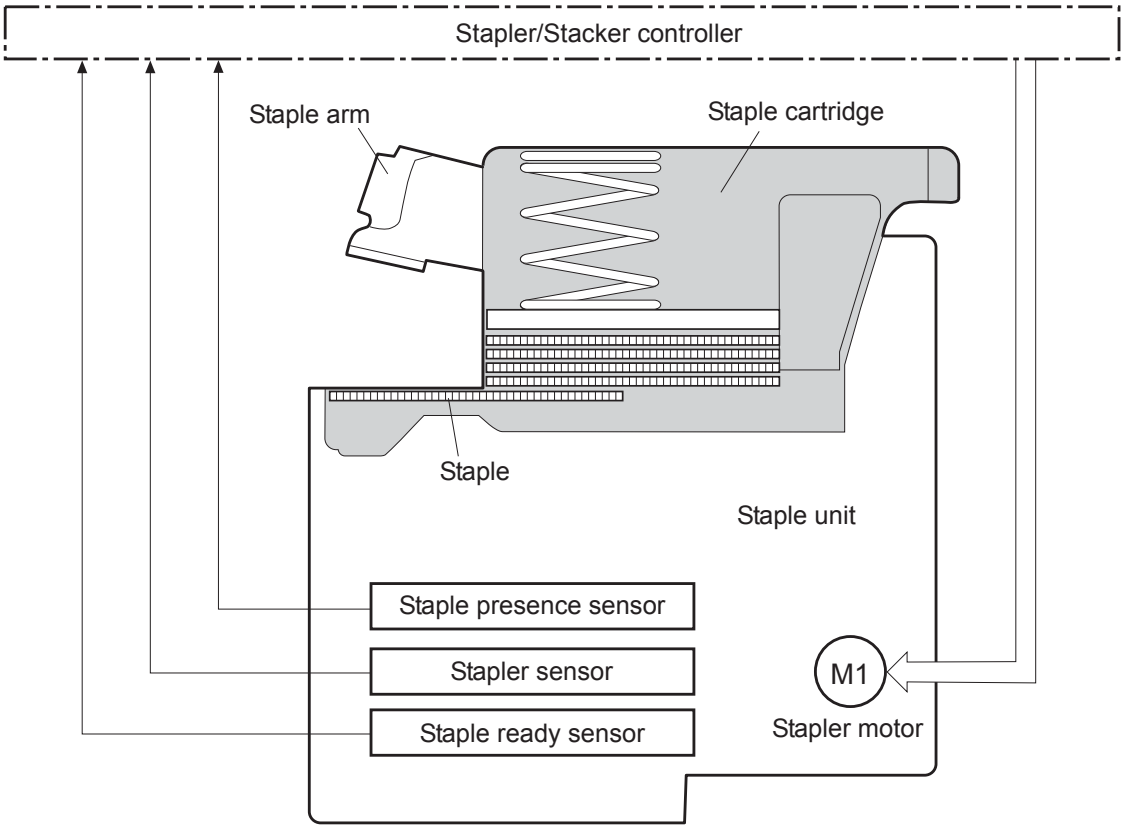

The output bin 3 media full sensor on output bin 3 detects whether the bin is full. The stapler/stacker controller determines that the media stack surface is high and reverses the stapler/stacker lifter motor to lower output bin 3 when the output bin 3 media full sensor is on for a specified period. If the output bin 3 lower limit sensor is turned on at this time, the stapler/stacker controller determines an output bin 3 media full and notifies the formatter through the DC controller.

The stapler/stacker controller determines a jogger motor failure and notifies the formatter through the DC controller when it does not detect the jogger sensor for a specified period after the jogger motor starts rotating.

## Stapler

The stapler consists of the staple cartridge and the stapler assembly. The staple cartridge holds up to 5,000 staples. The staple presence sensor detects the presence of staple. The staple ready sensor detects whether the stapler is in the correct position to staple. The staple assembly is equipped with the stapler motor. When the stapler/stacker controller rotates the stapler motor, the staple arm lowers and staple operation begins. The stapler sensor detects the position of the staple arm.

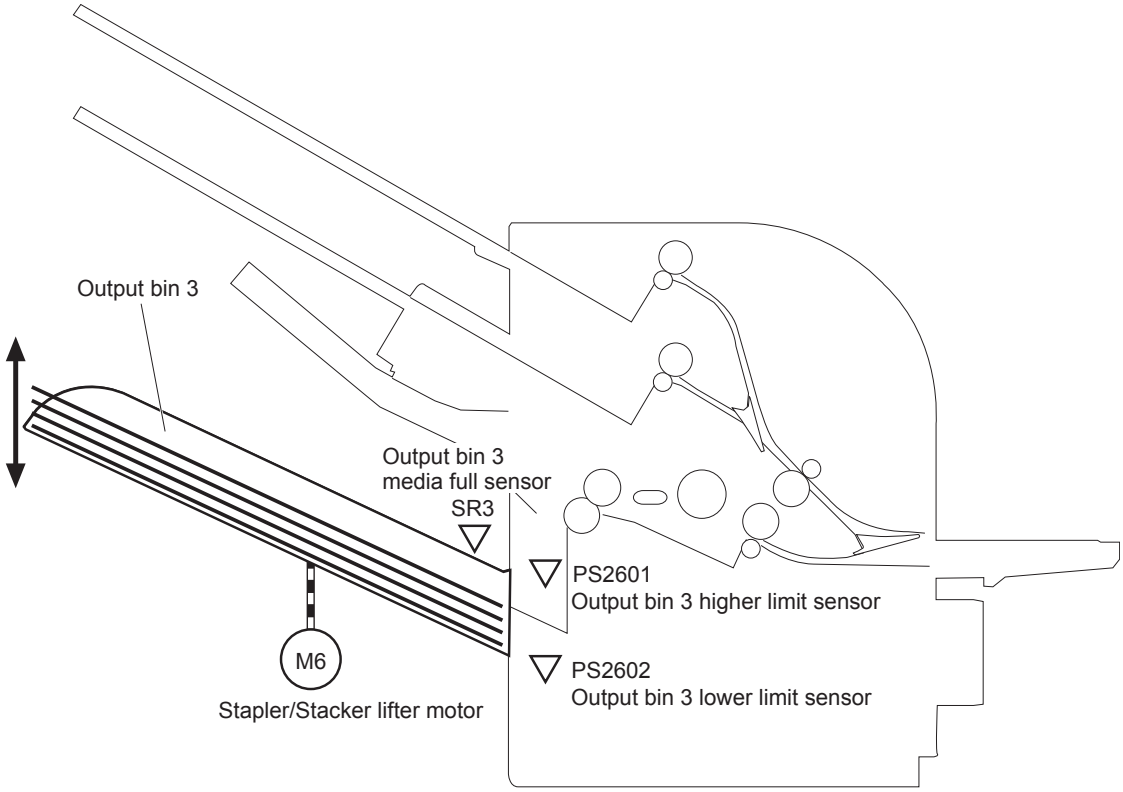
**Figure 1-65** 3-bin stapling mailbox sensors for the stapler




The stapler/stacker controller determines a stapler motor failure and notifies the formatter through the DC controller when it does not detect the stapler sensor for a specified period after the stapler motor starts rotating. The stapler/stacker controller determines a stapler jam and notifies the formatter through the DC controller if it senses the stapler sensor after a specified period of time from when the stapler motor starts rotating and then if the stapler sensor recovers within a specified period of time from when the stapler motor is reversed.

## Output bin 3 lift operation

**Figure 1-66** 3-bin stapling mailbox sensors for output bin 3 lift operation




The operational sequence of the output bin 3 lift operation is as follows:

1. The stapler/stacker lifter motor rotates if both the output bin 3 higher limit sensor and the output bin 3 media full sensor are off when the product is turned on until following conditions occur:

   - The output bin 3 higher limit sensor detects the output bin 3.
   - The output bin 3 media full sensor detects paper.

   The stapler/stacker lifter motor is reversed if either the output bin 3 higher limit sensor or the output bin 3 media full sensor is on, or if both sensors are on when the product is turned on to lower the output bin 3 to a specified level.

2. When the printed pages are stacked on the output bin 3, and the output bin 3 media full sensor detects the paper, the stapler/stacker lifter motor is reversed to lower the output bin 3 to a specified level.

3. The stapler/stacker controller notifies the formatter through the DC controller when the output bin 3 media full sensor detects paper. The output bin 3 lowers to the position of the output bin 3 lower limit sensor.

The stapler/stacker controller determines a stapler/stacker lifter motor failure. The controller notifies the formatter through the DC controller when it encounters the following conditions after the stapler/stacker lifter motor starts rotating:

- Output bin 3 does not reach the output bin 3 higher limit sensor within a specified period of time.
- The output bin 3 media full sensor does not detect paper

.

The stapler/stacker controller determines a stapler/stacker lifter motor failure. The controller notifies the formatter through the DC controller when the following sensor is not sensed after the stapler/stacker lifter motor is reversed:

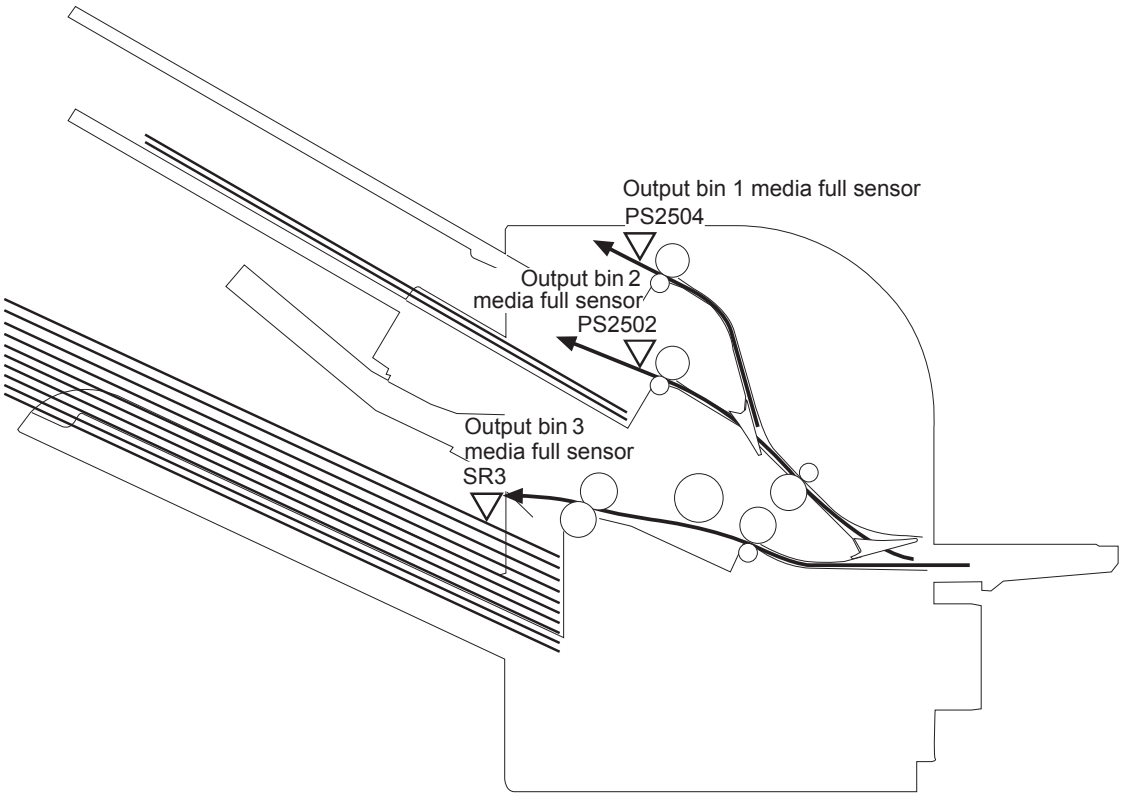
- Output bin 3 higher limit sensor
- Output bin 3 lower limit sensor
- Output bin 3 media full sensor

## Stacker mode

Stacker mode does not designate an output bin. It delivers the printed page to the output bin 3 first and then to the next bin up.

When the output bin 3 media full sensor detects that output bin 3 is full, the 3-bin stapling mailbox delivers to output bin 2. When the output bin 2 media full sensor detects that the output bin 2 is full, the 3-bin stapling mailbox delivers to output bin 1.

**Figure 1-67** 3-bin stapling mailbox sensors for stacker mode



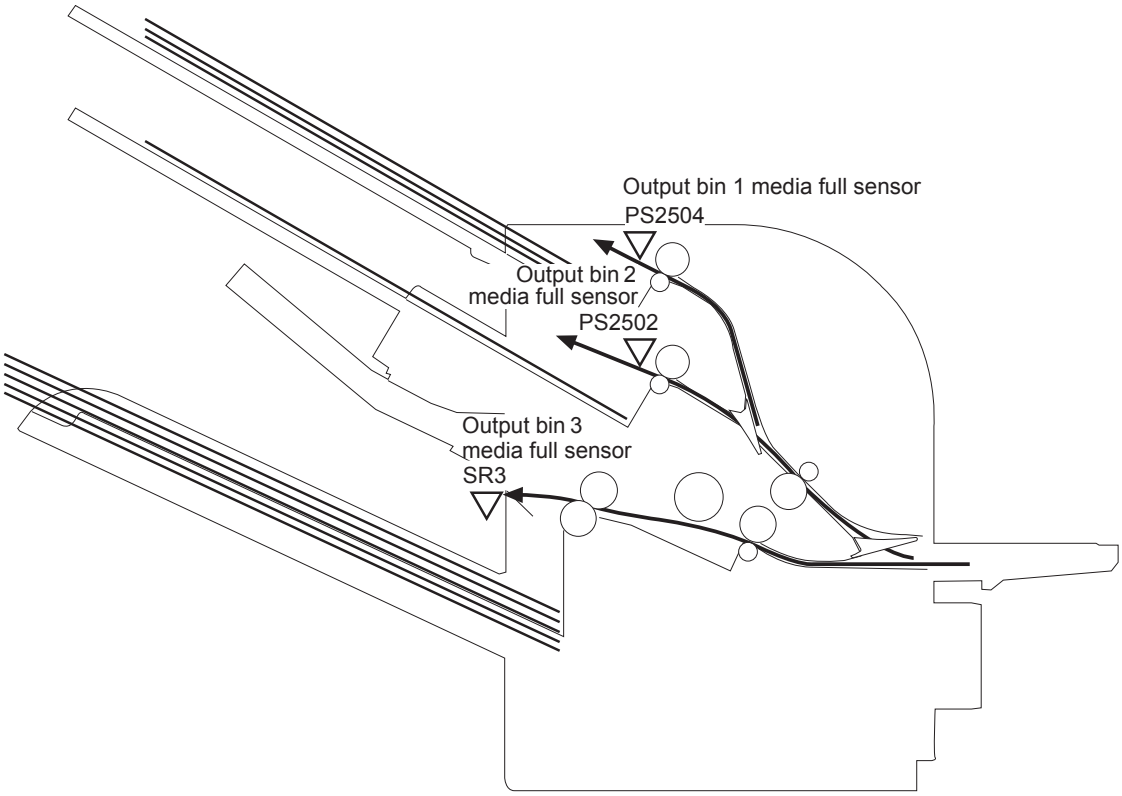
The stapler/stacker controller determines a if the 3-bin stapling mailbox is full and notifies the formatter through the DC controller when it encounters the following condition:

- The output bin 1 media full is detected.
- The staple operation is designated when the output bin 3 is full of paper.

## Mailbox/job separator mode

The mailbox/job separator mode delivers the printed page to the designated bin for each print job.

**Figure 1-68** 3-bin stapling mailbox sensors for mailbox/jam separation




The stapler/stacker controller determines if the 3-bin stapling mailbox is full and notifies the formatter through the DC controller when it encounters the following condition:

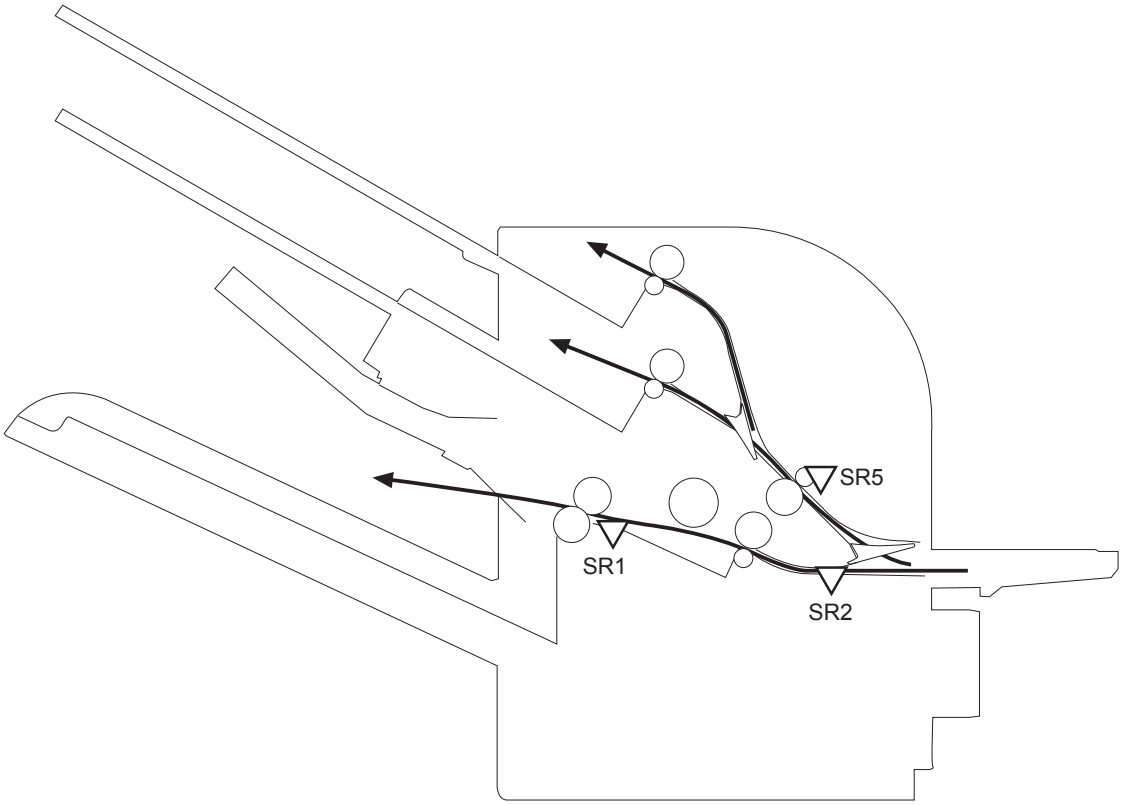
- The designated output bin media full is detected.
- The staple operation is designated when output bin 3 is full of paper.

## Jam Detection

The 3-bin stapling mailbox uses the following sensors to detect the presence of paper and to check whether paper is being fed correctly or has jammed:

- Output bin 3 delivery sensor (SR1)
- Stapler/stacker media feed sensor 1 (SR2)
- Stapler/stacker media feed sensor 2 (SR5)

**Figure 1-69** 3-bin stapling mailbox sensors for jam detection




The stapler/stacker detects the following jams:

- Stapler/Stacker feed delay jam 1: The stapler/stacker media feed sensor 1 does not detect the leading edge of paper within a specified period of time after the fixing delivery sensor in the product detects the leading edge.
- Stapler/Stacker feed delay jam 2: The stapler/stacker media feed sensor 2 does not detect the leading edge of paper within a specified period of time after the fixing delivery sensor in the product detects the leading edge.
- Stapler/Stacker feed stationary jam 1: The stapler/stacker media feed sensor 1 does not detect the trailing edge of paper within a specified period of time after it detects the leading edge.
- Stapler/Stacker feed stationary jam 2: The stapler/stacker media feed sensor 2 does not detect the trailing edge of paper within a specified period of time after it detects the leading edge.

- Stapler/Stacker feed stationary jam 3: The output bin 3 delivery sensor does not detect the trailing edge of paper within a specified period of time from when the stapler/stacker feed motor starts rotating after a staple operation.
- Stapler/Stacker residual paper jam: Any one of the following sensors detects a presence of paper for a specified period of time during an automatic delivery operation:
    - Output bin 3 delivery sensor
    - Stapler/Stacker media feed sensor 1
    - Stapler/Stacker media feed sensor 2

## Automatic Delivery

The stapler/stacker automatically clears the paper if any one of the following sensors detects the residual paper during the initial sequence after the stapler/stacker is turned on or after the door is closed.

- Output bin 3 delivery sensor
- Stapler/Stacker media feed sensor 1
- Stapler/Stacker media feed sensor 2

# 2 Removal and replacement


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- Document feeder
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- Internal assemblies
- Optional paper feeder assemblies (1 x 500-sheet and 3 x 500-sheet)
- Optional 500-sheet paper feeder assembly
- Stapling mailbox

# Introduction

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

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

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

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

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

# Removal and replacement strategy

**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.

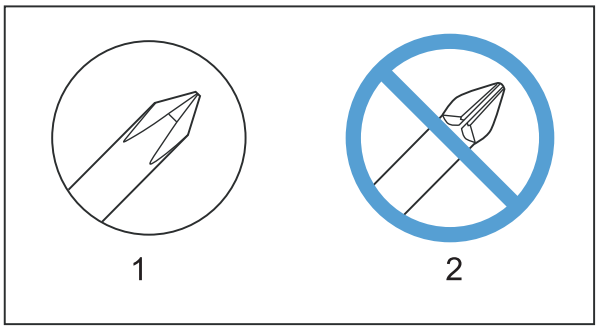
Protect the ESD-sensitive parts by placing them in ESD pouches when they are out of the product.

# 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)
- USB thumbdrive

**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



# 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 103.
- Remove the tray cassette or cassettes. See Tray on page 111.

# After performing service

- Plug in the power cable.
- Reinstall the print cartridges.
- Reinstall the tray cassette or cassettes.
- If the optional paper feeder was installed, place the product on the feeder.

**WARNING!** The product is heavy. Do not try to separate the product from the optional paper feeder by yourself. Three people are required to lift the product off of the feeder.

# 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. Print a demo page, and then verify that the print quality is as expected.
7. Send a print job from the host computer, and then verify that the output meets expectations.
8. If necessary, restore any customer-specified settings.
9. 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** | | | | | | |
| **Toner collection unit (TCU)** | | | | | | |
| **Formatter** | | | | | | |
| **Memory DIMMS** | | | | | | |
| **Fuser** | | | | | | |
| **Tray 1 pickup roller** | Roller cover | | | | | |
| **Tray 2-5 feed and separation rollers** | | | | | | |
| **Control panel** | | | | | | |
| **Standard output bin** | | | | | | |
| **Output bin bezel** | | | | | | |
| **S-CVR-REAR (scanner rear cover)** | | | | | | |
| **ASY-CBR-F-SP (ADF front cover)** | | | | | | |
| **ASY-CBR-F-R-SP (ADF rear cover)** | | | | | | |
| **S-CVR-LEFT (scanner left cover)** | | | | | | |
| **ADF** | | | | | | |
| **Scanner** | Control panel | S-CVR-REAR | ADF | | | |
| **Fan cover** | Standard output bin | Output bin bezel | | | | |
| **Right-front cover** | | | | | | |
| **Front-door assy** | Right-front cover | | | | | |
| **Right-door assy** | | | | | | |
| **Right-rear cover** | ADF | Standard output bin | Scanner assembly | | | |
| **Lower left cover** | | | | | | |
| **Left cover** | Standard output bin | Output bin bezel | Fan cover | | | |
| **Rear cover** | Fan cover | Lower-left cover | | | | |
| **Secondary transfer assy (T2)** | | | | | | |
| **Intermediate transfer belt (ITB)** | | | | | | |
| **Cassette feed guide** | | | | | | |
| **IPTU** | Standard output bin | Output bin bezel | S-CVR-REAR | ADF | Scanner assembly | |
| **Separation pad (Tray 1)** | Pickup roller | Right door assembly | | | | |
| **Registration density (RD) sensor** | ITB | Secondary transfer assembly | | | | |
| **Registration assembly** | ITB | Secondary transfer assembly | | | | |
| **Residual-toner duct and feed assembly** | Toner-collection unit | ITB | Standard output bin | Output bin bezel | S-CVR-REAR | Fan cover |
| **Residual-toner-feed motor** | ITB | Standard output bin | Output bin bezel | S-CVR-REAR | | |
| **Cartridge fan** | Standard output bin | Output bin bezel | Fan cover | Lower-left cover | Left cover | |
| **Toner-collection sensor** | Toner-collection unit | Standard output bin | Output bin bezel | Lower-left cover | Fan cover | Left cover |
| **Delivery fan** | Standard output bin | Output bin bezel | S-CVR-REAR | Fan cover | ADF | Scanner assembly |
| **Delivery assy** | Fuser | ITB | Standard output bin | Output bin bezel | S-CVR-REAR | Fan cover |
| **Duplex-drive assy** | Fuser | ITB | Standard output bin | Output bin bezel | S-CVR-REAR | Fan cover |
| **Power-supply (PS) fan** | Standard output bin | Output bin bezel | S-CVR-REAR | Lower-left cover | Left cover | ADF |
| **Image scanner power supply unit (PSU)** | S-CVR-REAR | Lower-left cover | Fan cover | Rear cover | ADF | Scanner assembly |
| **Interconnect board (ICB)** | Formatter | S-CVR-REAR | Fan cover | Lower-left cover | Rear cover | ADF |
| **DC controller (DCC)** | Standard output bin | Output bin bezel | S-CVR-REAR | Lower-left cover | Fan cover | Rear cover |
| **Low-voltage power supply (LVPS)** | Formatter | S-CVR-REAR | Lower-left cover | Fan cover | Rear cover | ADF |
| **High-voltage power supply (HVPS)-lower** | Formatter | S-CVR-REAR | Fan cover | Lower-left cover | Left cover | Rear cover |
| **High-voltage power supply (HVPS)-upper** | Formatter | S-CVR-REAR | Fan cover | Lower-left cover | Left cover | Rear cover |
| **Developing-disengagement motor** | Formatter | S-CVR-REAR | Fan cover | Lower-left cover | Left cover | Rear cover |
| **Exhaust fan and fan duct** | Formatter | S-CVR-REAR | Fan cover | Lower-left cover | Left cover | Rear cover |
| **Pickup motor** | Formatter | S-CVR-REAR | Fan cover | Lower-left cover | Left cover | Rear cover |
| **Lifter-drive assembly** | Formatter | ITB | S-CVR-REAR | Fan cover | Lower-left cover | Left cover |
| **Lifter base assembly** | Formatter | S-CVR-REAR | Fan cover | Lower-left cover | Left cover | Rear cover |
| **Tray-pickup drive assembly** | Formatter | S-CVR-REAR | Fan cover | Lower-left cover | Left cover | Rear cover |
| **Tray-pickup assy** | Formatter | ITB | S-CVR-REAR | Lower-left cover | Left cover | Rear cover |
| **Laser Scanner (Y/M)** | TCU | ITB | S-CVR-REAR | Fan cover | Lower-left cover | Left cover |
| **Laser scanner (C/Bk)** | TCU | ITB | S-CVR-REAR | Fan cover | Lower-left cover | Left cover |
| **Drum motors** | Formatter | S-CVR-REAR | Fan cover | Lower-left cover | Left cover | Rear cover |
| **Fuser motor** | Formatter | S-CVR-REAR | Fan cover | Lower-left cover | Left cover | Rear cover |
| **ITB motor** | Formatter | S-CVR-REAR | Fan cover | Lower-left cover | Left cover | Rear cover |
| **Main drive** | Formatter | S-CVR-REAR | Fan cover | Lower-left cover | Left cover | Rear cover |

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

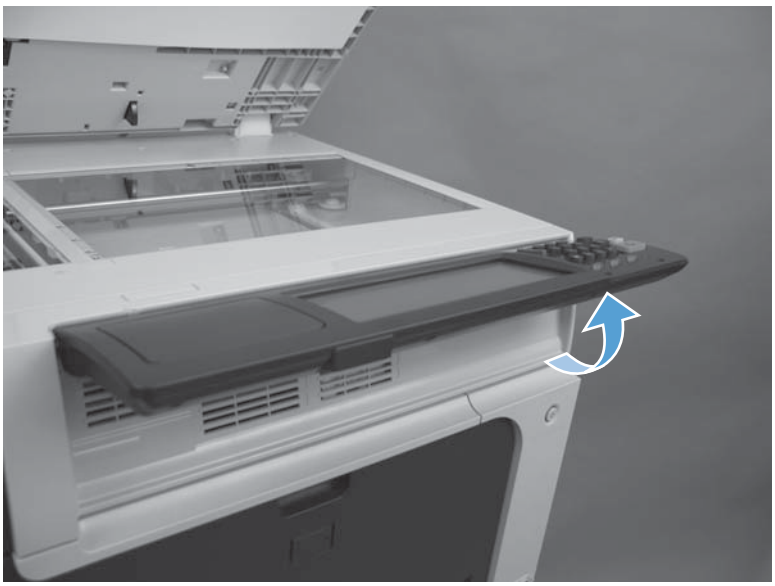
| Remove | Remove | Remove | Remove | Remove | Remove | Remove | Remove | Remove | Remove |
|---|---|---|---|---|---|---|---|---|---|
| ADF | Scanner | IPTU | Residual-toner feed motor | Delivery fan | | | | | |
| IPTU | | | | | | | | | |
| ADF | Scanner | IPTU | Delivery Fan | | | | | | |
| ADF | Scanner | IPTU | Delivery Fan | Delivery Assembly | | | | | |
| Scanner assy | IPTU | Delivery Fan | | | | | | | |
| Scanner assy | Image scanner power supply unit (PSU) | | | | | | | | |
| ADF | Scanner | Image scanner (PSU) | ICB | | | | | | |
| Scanner assy | Image scanner (PSU) | ICB | LVPS | | | | | | |
| ADF | Scanner assy | Image scanner (PSU) | | | | | | | |
| ADF | Scanner assy | Image scanner (PSU) | ICB | DCC and tray | | | | | |
| ADF | Scanner assy | Image scanner (PSU) | ICB | LVPS | HVPS-lower | | | | |
| ADF | Scanner | Image scanner (PSU) | ICB | LVPS | HVPS-lower | | | | |
| ADF | Scanner assy | Image scanner (PSU) | ICB | LVPS | | | | | |
| Rear cover | ADF | Scanner assembly | ICB | LVPS | HVPS-lower | | | | |
| ADF | Scanner | Image scanner (PSU) | ICB | LVPS | | | | | |
| ADF | Scanner assy | HVPS-lower | | | | | | | |
| ADF | Scanner | Secondary transfer assembly | Registration assembly | ICB | LVPS | HVPS-lower | | | |
| Rear cover | ADF | Scanner assembly | Cartridge fan and environ-mental sensor | Toner collection sensor and scanner-thermistor assembly | ICB | LVPS | HVPS-lower | Exhaust fan and fan duct | |
| Rear cover | ADF | Scanner assembly | | Toner collection sensor and scanner-thermistor assembly | ICB | LVPS | HVPS-lower | Exhaust fan and fan duct | Laser/scanner assy (Y/M) |
| ADF | Scanner assy | Image scanner (PSU) | ICB | LVPS | DCC | HVPS-upper | | | |
| ADF | Scanner assy | Image scanner (PSU) | ICB | LVPS | DCC | HVPS-upper | | | |
| ADF | Scanner assy | Image scanner (PSU) | ICB | LVPS | DCC | HVPS-upper | | | |
| ADF | Scanner assy | Image scanner (PSU) | ICB | LVPS | DCC | HVPS-lower | Exhaust fan and duct | HVPS-upper | Drum motors |

# Customer self repair (CSR) components

## Control panel

1. Lift the control panel.

**Figure 2-4** Remove the control panel (1 of 3)



2. Remove one screw.

**Figure 2-5** Remove the control panel (2 of 3)



3. Disconnect one connector, and then move the control panel to the right to remove.

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



4. When reinstalling the control panel, make sure the bracket fits correctly on the product.

**Figure 2-7** Incorrect installation of the control panel



**Figure 2-8** Correct installation of the control panel



# 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 2-9** Remove the print cartridge (1 of 2)



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

**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 2-10** Remove the print cartridge (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.

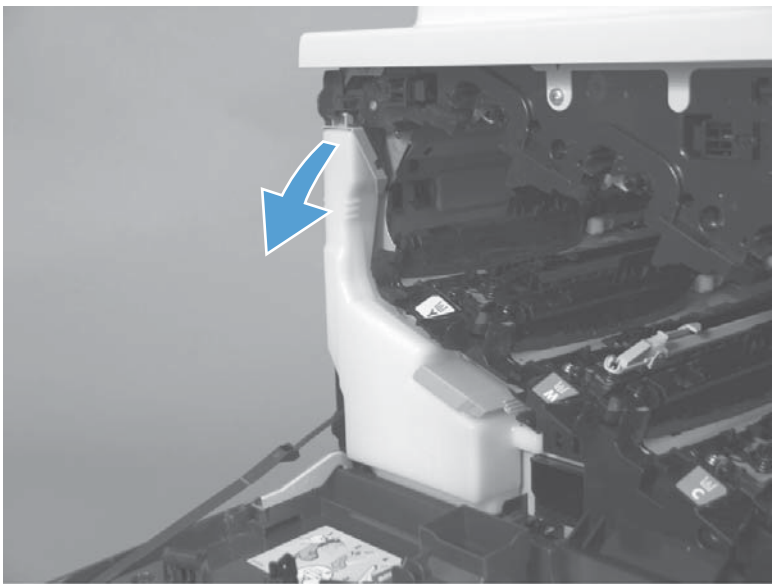
**Figure 2-11** Remove the toner-collection unit (1 of 4)



2. Grasp the top of the toner-collection unit and remove it 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 2-12** 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 2-13** Remove the toner-collection unit (3 of 4)

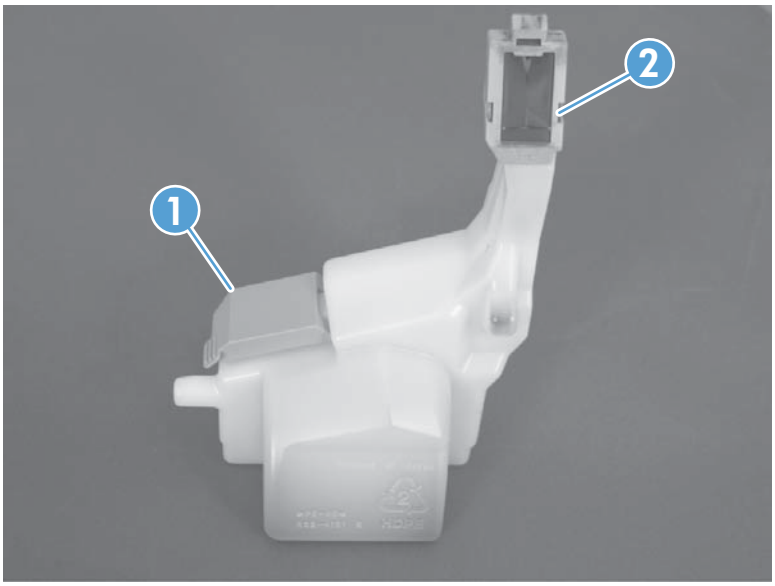
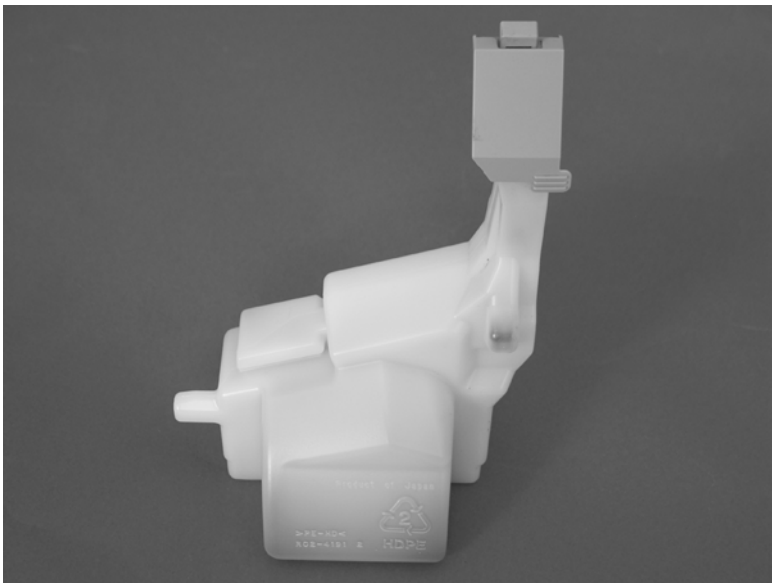



**Figure 2-14** Remove the toner-collection unit (4 of 4)



## 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 2-15** Remove the formatter



3. Remove the hard drive and fax card from the existing formatter and reinstall on the new formatter. See Fax card on page 107 and Hard drive on page 108.

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

# Fax card

### Before proceeding, remove the following components:

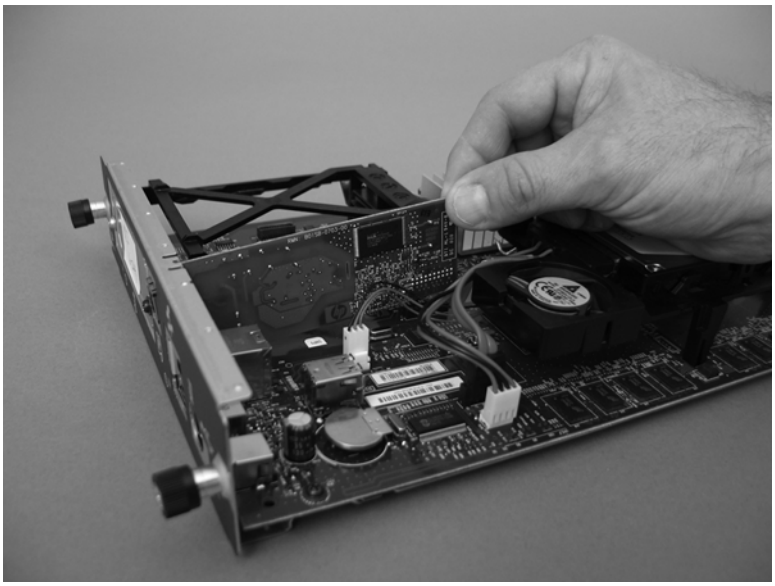
- Formatter PCA. See Formatter PCA on page 106.

## Remove the fax card

**CAUTION:** ESD sensitive component.

▲ Lift the inside edge of the fax card and then remove.

**Figure 2-16** Remove the fax card



**Reinstallation tip** Make sure that the fax card is installed correctly. If it is installed incorrectly, it can cause the formatter PCA to not connect properly when it is reinstalled. If this occurs, the product displays a **30.01.YY Scanner Failure** error message (error log message 30.01.42).

# Hard drive

### Before proceeding, remove the following components:

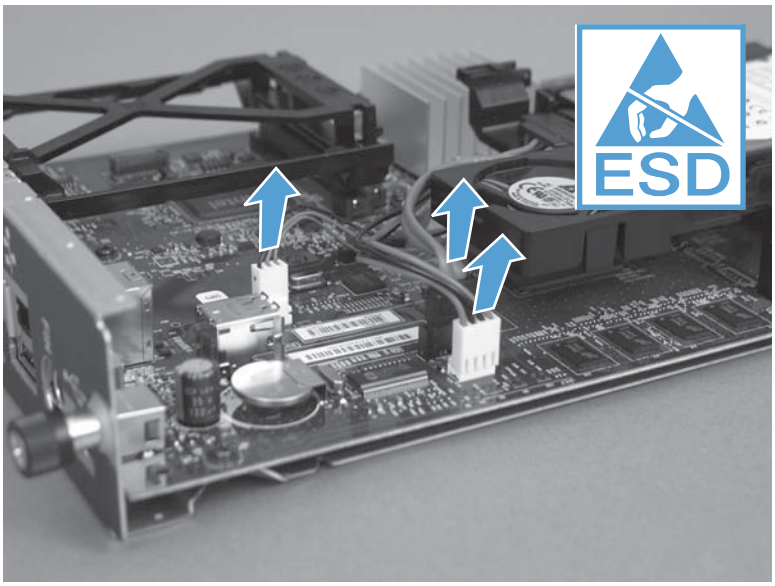
- Formatter PCA. See Formatter PCA on page 106.

## Remove the hard drive

**CAUTION:** ESD sensitive component.

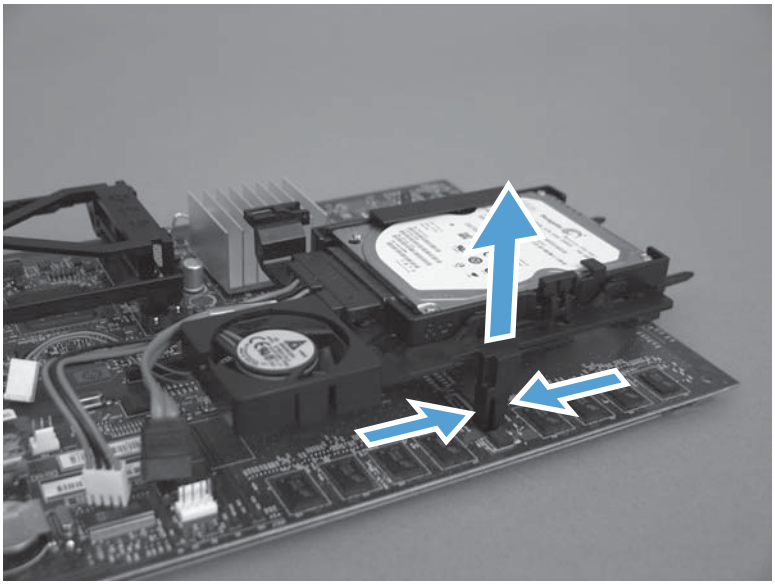
1. Disconnect three connectors.

**Figure 2-17** Remove the hard drive (1 of 3)



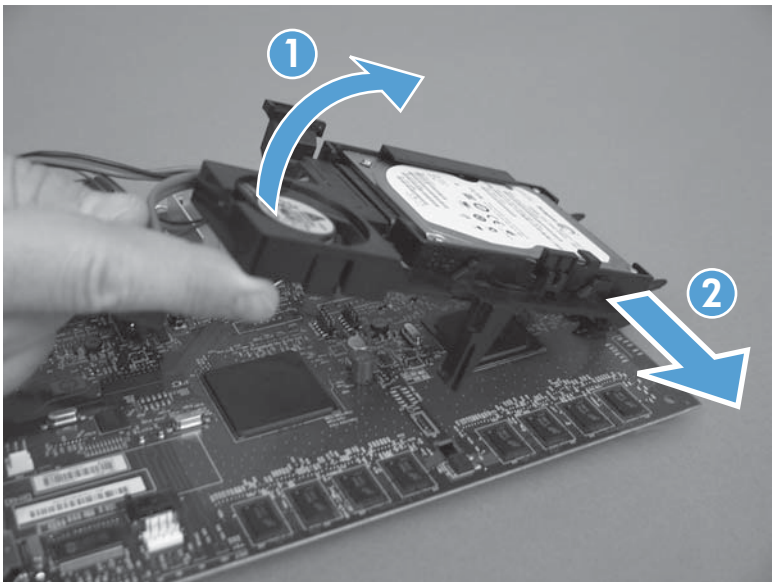
2. Release one tab.

**Figure 2-18** Remove the hard drive (2 of 3)



3. Rotate the hard drive assembly away from the formatter until the slots in the hinges are aligned with the elongated hinge pins, and then slide the hard drive assembly off the hinge pins.

**Figure 2-19** Remove the hard drive (3 of 3)




4. Upgrade the firmware to the new hard drive.

## Upgrade the firmware

1. Go to www.hp.com/go/cljcm4540mfp_firmware and follow the onscreen steps to download the most recent firmware upgrade files for your product.
2. Copy the firmware update file to a portable USB flash memory storage device (thumb drive).

3. Reinstall the formatter with the new hard drive and reconnect the power cord and network connection.
4. Turn the product on.
5. Press and hold the Stop button when all of the LEDs illuminate solid.
6. Press the 9 button to highlight the Administrator menu, and then press the 6 button.
7. Press the 9 button to highlight the Download menu, and then press the 6 button.
8. Insert the portable USB storage device with the firmware update 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.

9. Press the 9 button to highlight the USB Thumbdrive menu, and then press the 6 button.
10. Press the 9 button to highlight the firmware update file, and then press the 6 button.

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

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

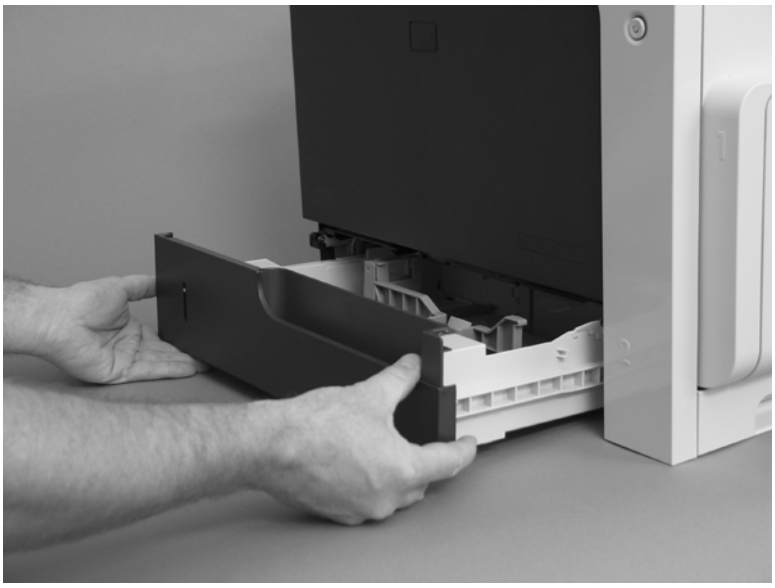
11. When the message **Complete** appears on the control-panel display, press the 5 button three times.
12. When the message Continue appears on the control-panel display, press the 6 button. The product will initialize.
13. When the upgrade process is complete, print a configuration page and verify that the upgrade firmware version was installed.

# Tray

**NOTE:** Use this procedure to remove Tray 2 and the optional Trays 3, 4, and 5.

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

**Figure 2-20** Remove the tray (1 of 2)



2. Push the tray in slightly, carefully lift up to release it, and then remove the tray.

**Figure 2-21** Remove the tray (2 of 2)



## Fuser

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

**NOTE:** The product detects a new fuser using a fusible link that blows after 100 pages have been printed. If a new fuser is installed for troubleshooting purposes, be sure to remove it before printing 100 pages.

1. Open the right-door assembly.

**Figure 2-22** Remove the fuser (1 of 2)



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

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

**Figure 2-23** Remove the fuser (2 of 2)



# Feed and separation rollers (Trays 2-5)

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

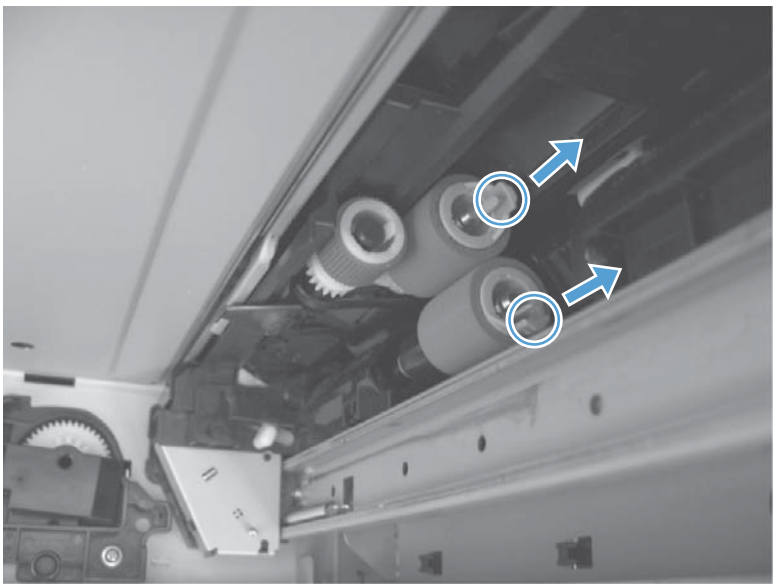
1. Locate the feed and separation rollers for the tray.

**TIP:** 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.

2. Release two tabs, and then remove the rollers.

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

**Figure 2-24** Remove the Pickup and feed rollers (Trays 2-5)

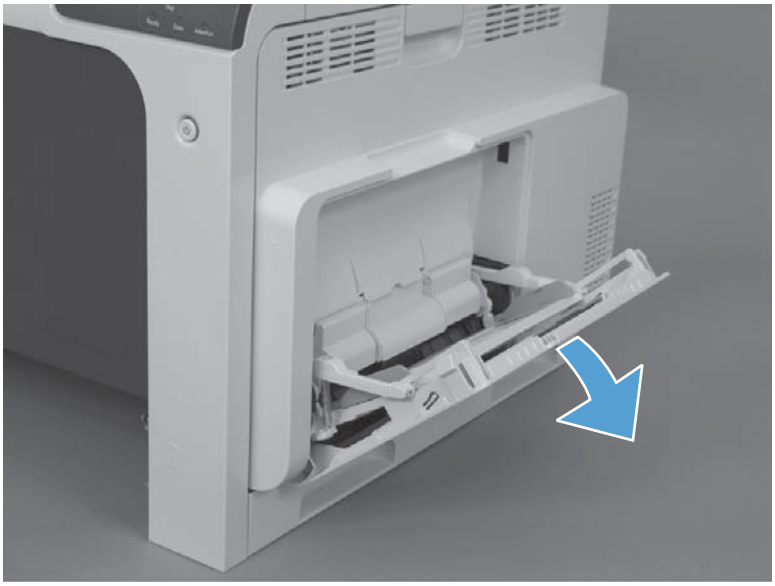


## Pickup roller (Tray 1)

⚠ **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.

**Figure 2-25** Remove the pickup roller (Tray 1) (1 of 5)



2. Push the top edge of the cover to release the tabs.

**Figure 2-26** Remove the pickup roller (Tray 1) (2 of 5)



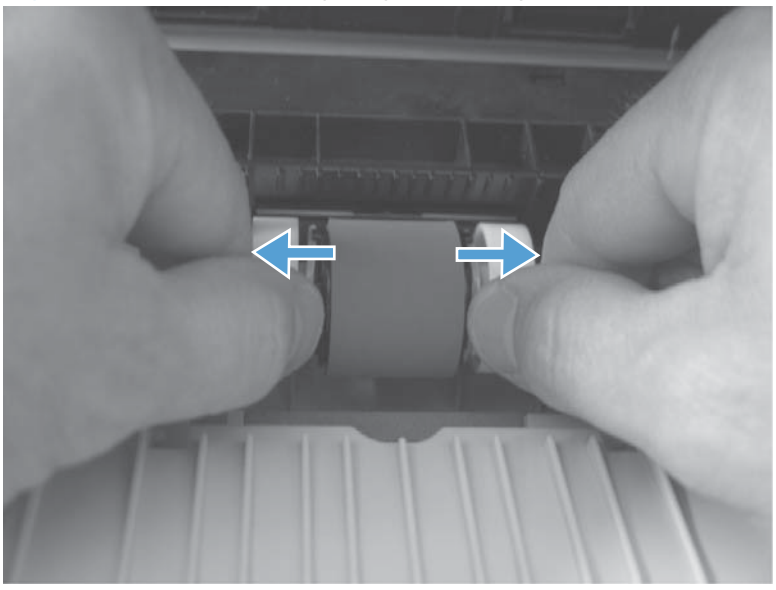
3. Open the right-door assembly, and then remove the cover.

**Figure 2-27** Remove the pickup roller (Tray 1) (3 of 5)



4. Release the two blue tabs.

**Figure 2-28** Remove the pickup roller (Tray 1) (4 of 5)



5. Rotate the roller body away from the product to remove it.

**Figure 2-29** Remove the pickup roller (Tray 1) (5 of 5)



## Reinstalling the pickup roller (Tray 1)

- When reinstalling the pickup roller, make sure the roller cover is installed correctly. Incorrect installation can cause paper to jam.

**Figure 2-30** Incorrect position of cover

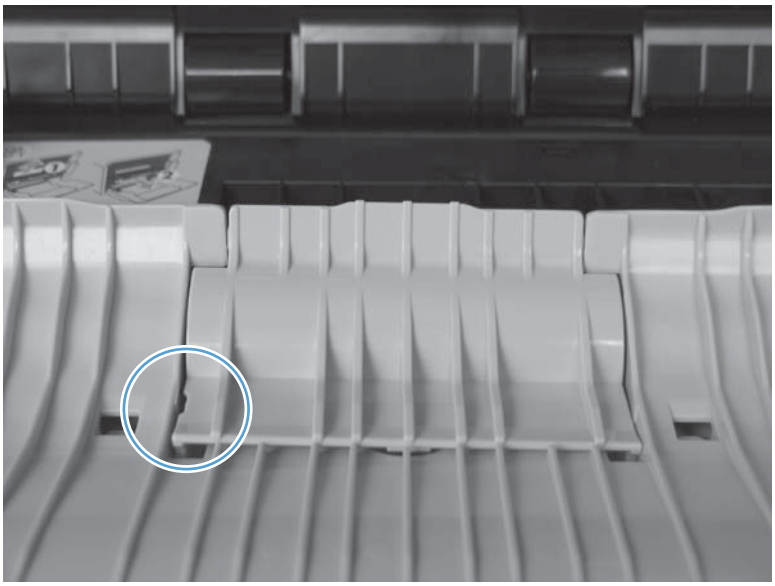


**Figure 2-31** Correct position of cover



## 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.

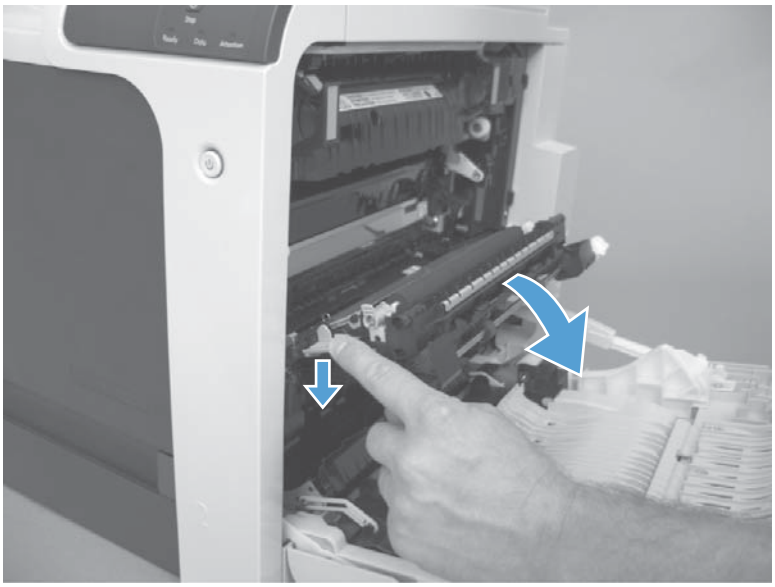
1. Open the right-door assembly.

**Figure 2-32** Remove the transfer roller (1 of 3)



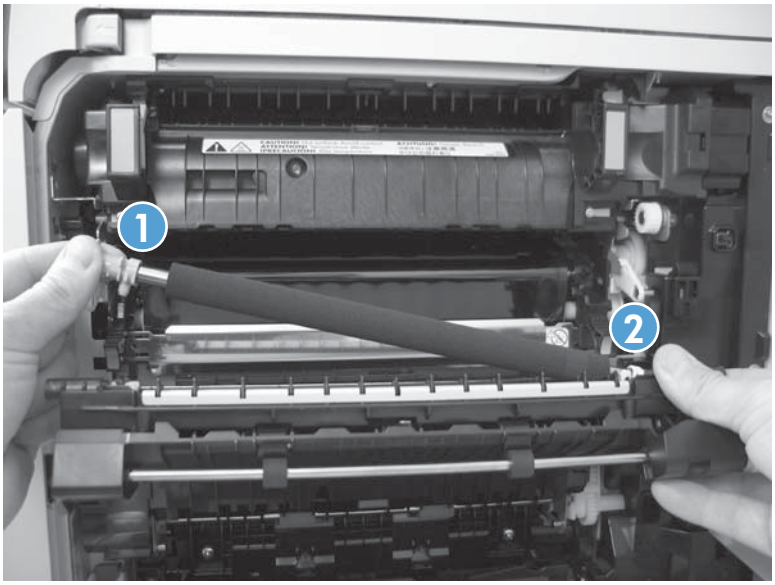
2. Use the blue lever to lower the secondary transfer assembly.

**Figure 2-33** Remove the transfer roller (2 of 3)



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

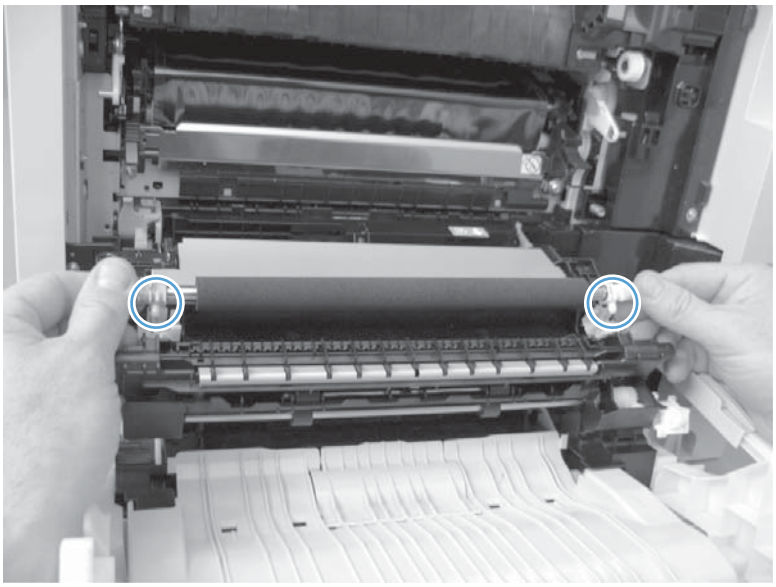
**Figure 2-34** Remove the transfer roller (3 of 3)




## Reinstall the transfer roller

When you reinstall the transfer roller, make sure that the pins on the shaft collars align with the holes in the mounting assembly. After installing the new transfer roller, remove the protective cover.

**Figure 2-35** Reinstall the transfer roller



## 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.

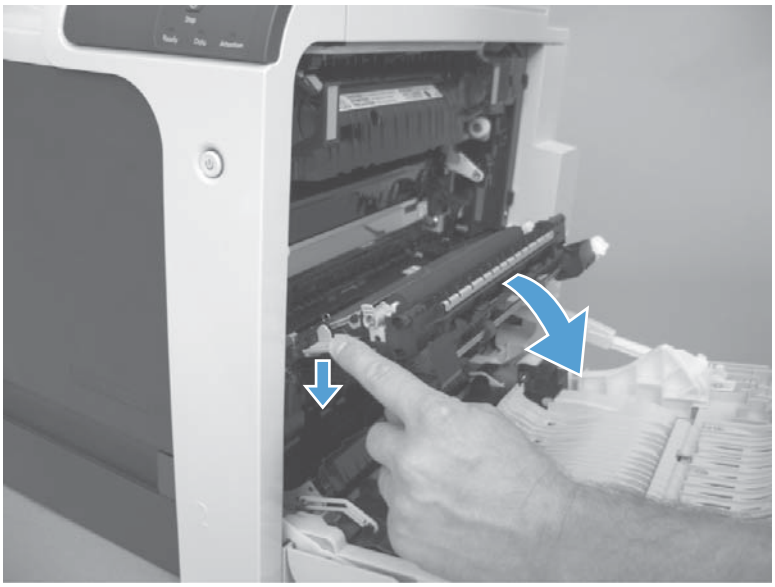
1. Open the right-door assembly.

**Figure 2-36** Remove the intermediate transfer belt (1 of 4)



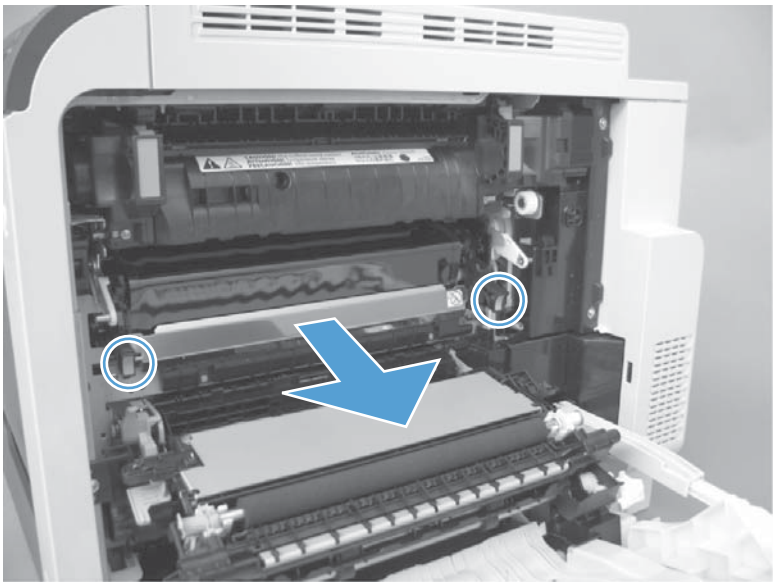
2. Use the blue lever to lower the secondary transfer assembly.

**Figure 2-37** Remove the intermediate transfer belt (2 of 4)



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.

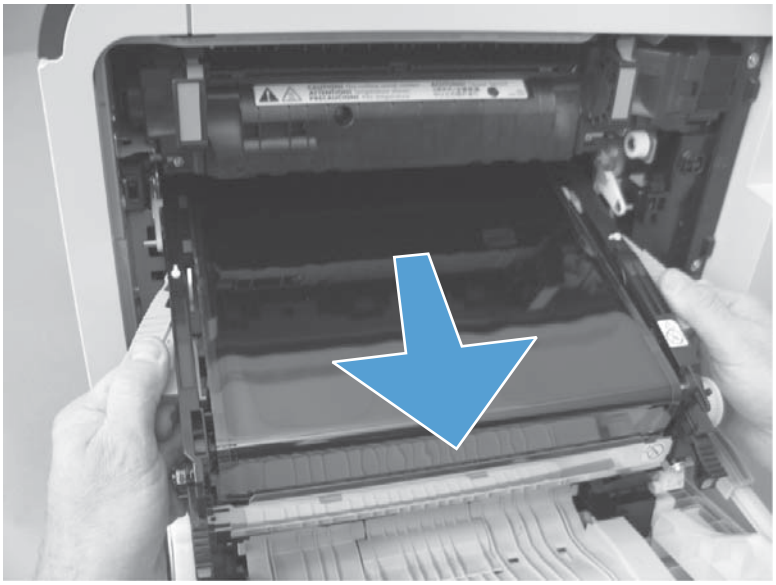
**Figure 2-38** Remove the intermediate transfer belt (3 of 4)



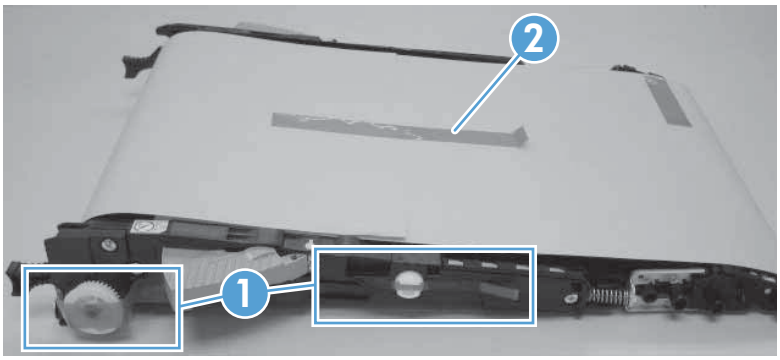
4. Grasp the large handles on the ITB and then pull the ITB straight out of the product to remove it.

**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 2-39** Remove the intermediate transfer belt (4 of 4)



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



## Standard output bin

▲ Lift and pull the output bin to remove.

**Figure 2-40** Remove the standard output bin



# Output bin bezel

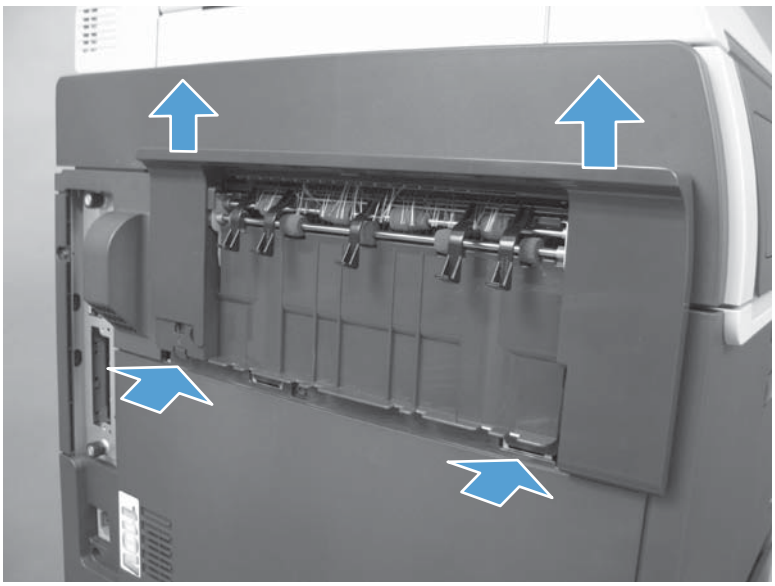
### Before proceeding, remove the following components:

- Standard output bin. See Standard output bin on page 123

## Remove the output bin bezel

▲ Release two latches, and then slide the bezel up to remove.

**Figure 2-41** Remove output bin bezel



# ASY-TRY-F-BASE-SP (document feeder tray extender)

▲ Pull the tray extender out, lift, and then remove.

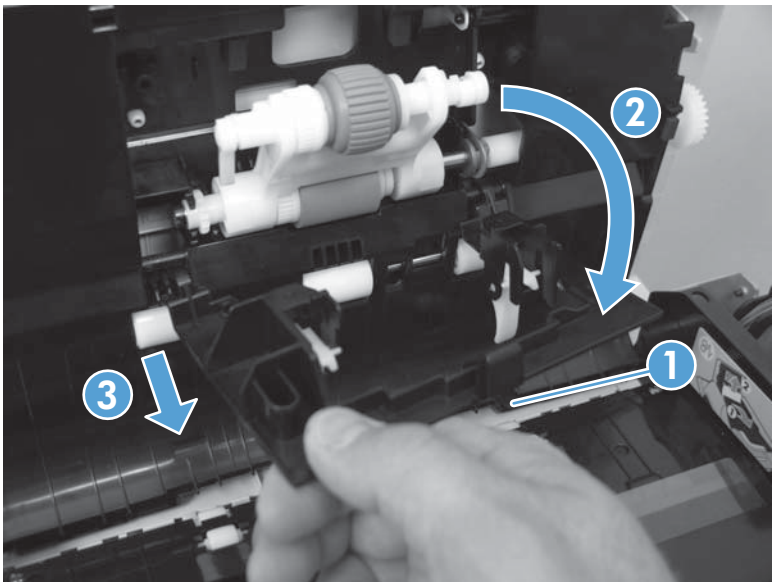
**Figure 2-42** Remove the document feeder tray extender



## ASY-CVR-FE-PICK-SP (pickup roller cover)

1. Open the jam access cover.
2. Release the cover latch (callout 1). Lower the cover (callout 2) and then pull (callout 3) the cover to remove.

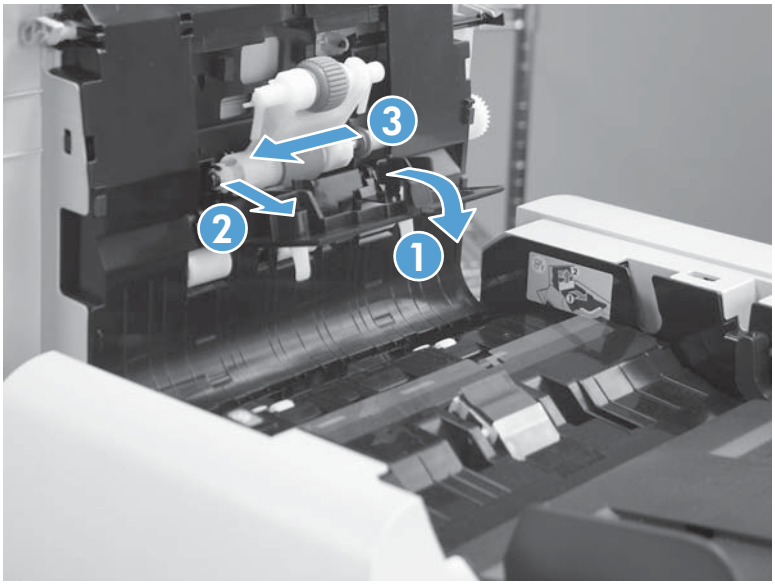
**Figure 2-43** Remove the ASY-CVR-FE-PICK-SP (pickup roller cover)




## ASY-ROL-FE-FEED-SP (pickup roller)

- Open the jam access cover (callout 1). Release the left side of the roller (callout 2) and remove (callout 3).

**Figure 2-44** Remove the ASY-CVR-FE-PICK-SP (pickup roller cover)



## ASY-HLD-REV-PAD-SP (pickup roller pad) and ASY-SP-REV-SPR (spring)

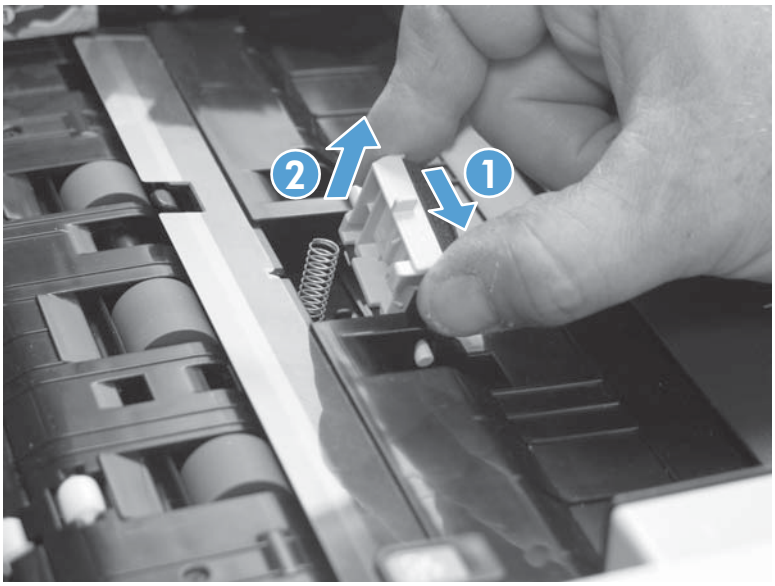
1. Open the jam access cover.
2. Release one tab.

**Figure 2-45** Remove the ASY-CVR-FE-PICK-SP (pickup roller cover)



3. Slide the pad (callout 1) and then lift back edge to remove (callout 2). Remove the spring if necessary.

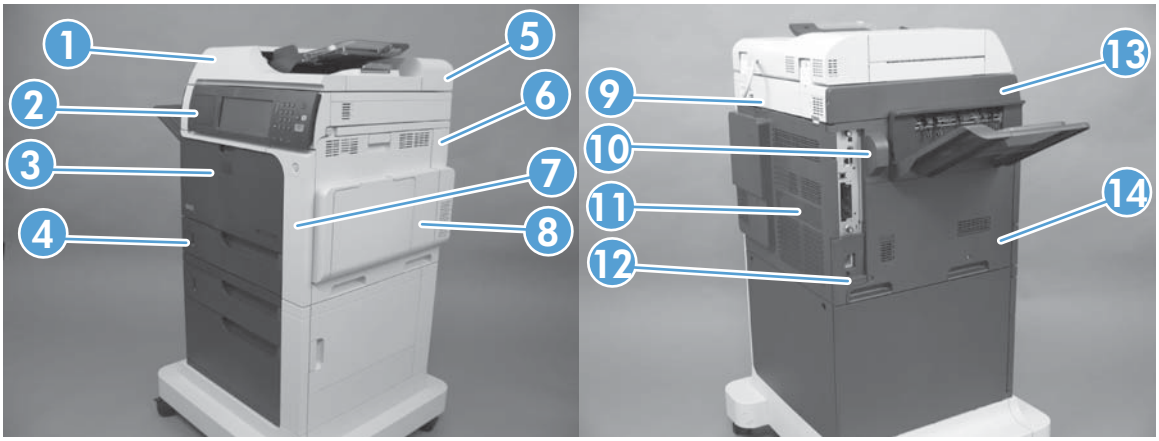
**Figure 2-46** Remove the ASY-CVR-FE-PICK-SP (pickup roller cover)



# External panels, covers, and doors

## Identification and location

**Figure 2-47** External panels, covers, and doors; identification and location




| Item | Description | Item | Description |
|---|---|---|---|
| 1 | ASY-CVR-F-SP (document feeder front cover) (see ASY-CVR-F-SP (document feeder front cover) on page 129) | 8 | Right-door assembly (see Right-door assembly on page 145) |
| 2 | Control-panel assembly (see Control panel on page 100). | 9 | Rear top cover (see S-CVR-REAR (scanner rear cover) on page 128 |
| 3 | Front-door assembly (see Front-door assembly on page 140) | 10 | Fan cover (see Fan cover on page 134) |
| 4 | Tray (see Tray on page 111) | 11 | Rear cover (see Rear cover on page 144) |
| 5 | ASY-CVR-F-R-SP (document feeder rear cover) (see ASY-CVR-F-R-SP (document feeder rear cover) on page 131) | 12 | Lower-left cover (see Lower-left cover on page 136) |
| 6 | Right-rear cover (see Right-rear cover on page 143) | 13 | S-CVR-LEFT (scanner left cover) (see S-CVR-LEFT (scanner left cover) on page 133) |
| 7 | Right-front cover (see Right-front cover on page 138) | 14 | Left cover (see Left cover on page 137) |

## S-CVR-REAR (scanner rear cover)

1. Remove one screw.

**Figure 2-48** Remove S-CVR-REAR (scanner rear cover) (1 of 2)



2. Release one tab, and then remove the scanner cover.

**Figure 2-49** Remove S-CVR-REAR (scanner rear cover) (2 of 2)



## ASY-CVR-F-SP (document feeder front cover)

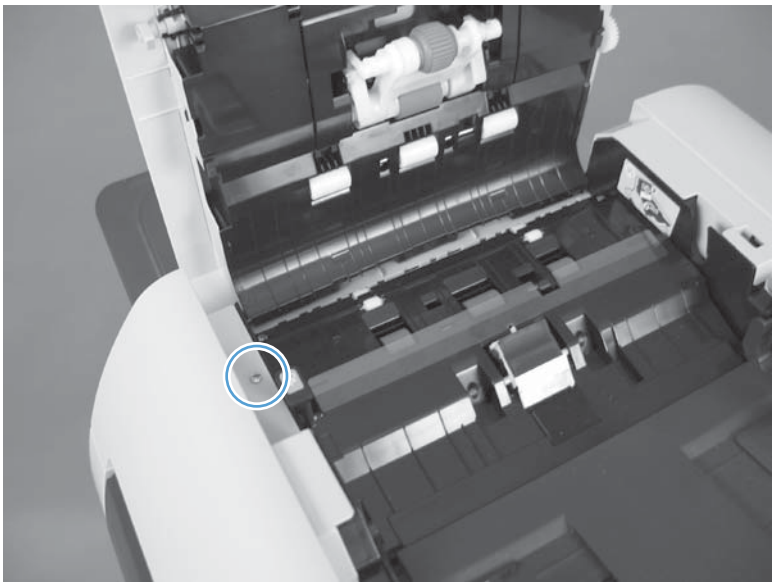
1. Lift the jam cover.

**Figure 2-50** Remove ASY-CVR-F-SP (document feeder front cover) (1 of 4)



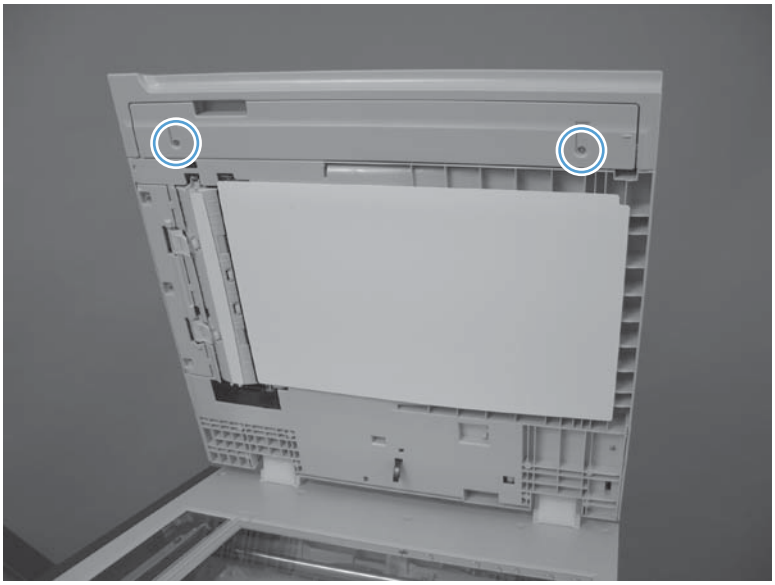
2. Remove one screw.

**Figure 2-51** Remove ASY-CVR-F-SP (document feeder front cover) (2 of 4)



3. Open the document feeder and then remove two screws.

**Figure 2-52** Remove ASY-CVR-F-SP (document feeder front cover) (3 of 4)



4. Close the document feeder and then remove the document feeder front cover.

**Figure 2-53** Remove ASY-CVR-F-SP (document feeder front cover) (4 of 4)



## ASY-CVR-F-R-SP (document feeder rear cover)

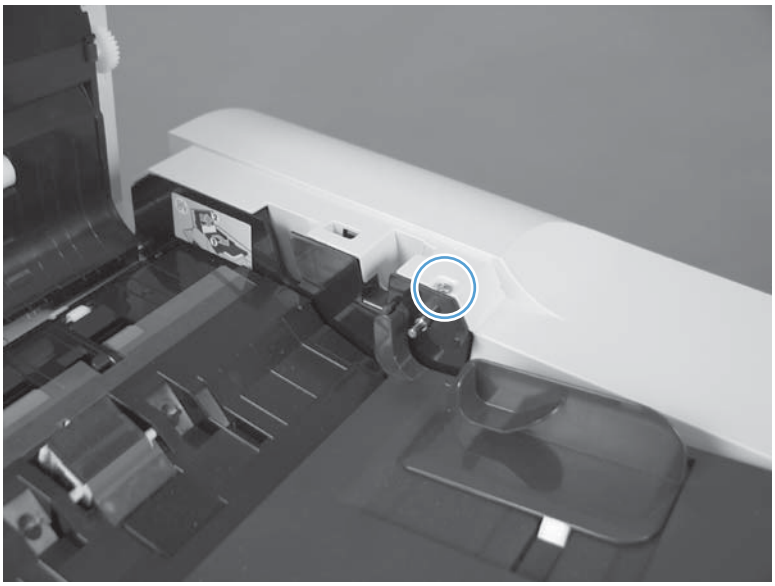
1. Open the jam cover.

**Figure 2-54** Remove the ASY-CVR-F-R-SP (document feeder rear cover) (1 of 5)



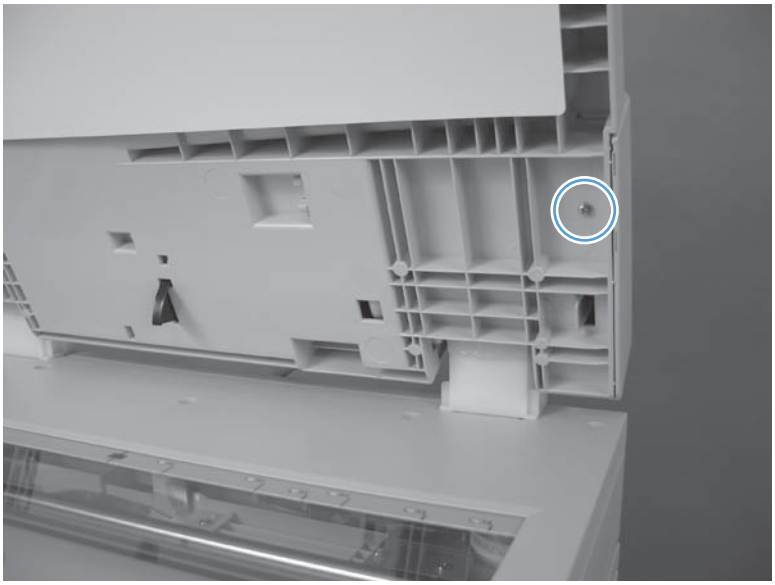
2. Remove one screw.

**Figure 2-55** Remove the ASY-CVR-F-R-SP (document feeder rear cover) (2 of 5)



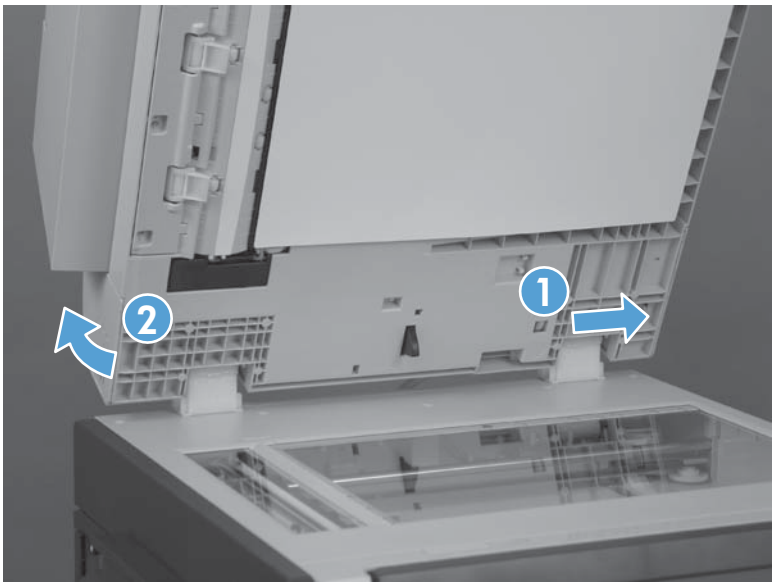
3. Open the document feeder and then remove one screw.

**Figure 2-56** Remove the ASY-CVR-F-R-SP (document feeder rear cover) (3 of 5)



4. Release one tab (callout 1) and then lift the document feeder rear cover (callout 2).

**Figure 2-57** Remove the ASY-CVR-F-R-SP (document feeder rear cover) (4 of 5)



5. Remove the document feeder rear cover.

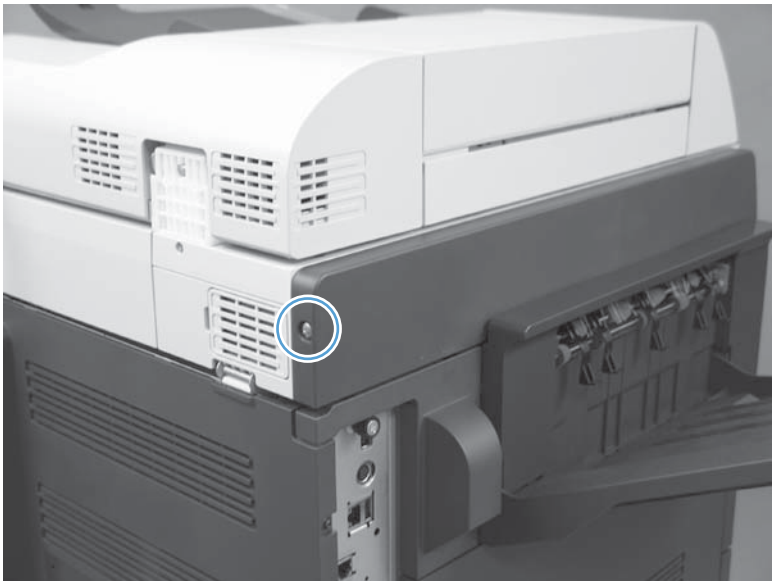
**Figure 2-58** Remove the ASY-CVR-F-R-SP (document feeder rear cover) (5 of 5)



## S-CVR-LEFT (scanner left cover)

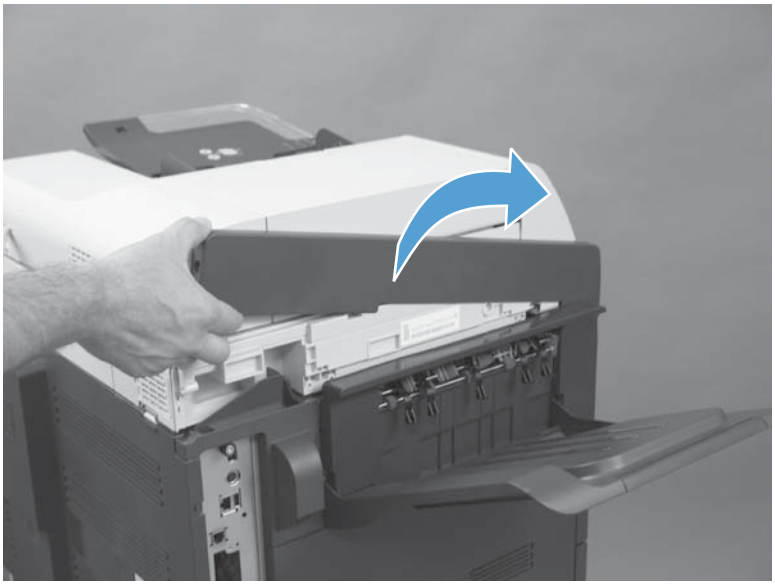
1. Remove one screw.

**Figure 2-59** Remove S-CVR-LEFT (scanner left cover) (1 of 2)



2. Lift the scanner left cover to remove.

**Figure 2-60** Remove S-CVR-LEFT (scanner left cover) (2 of 2)



## Fan cover

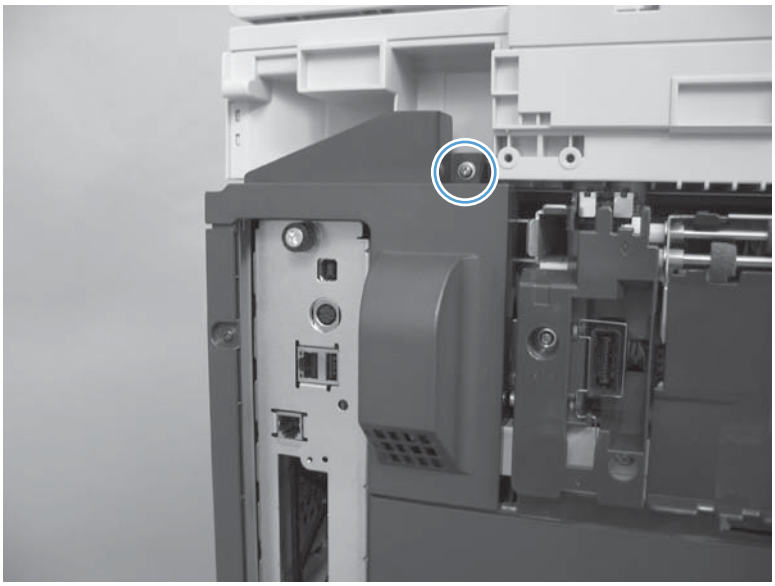
### Before proceeding, remove the following components:

- Standard output bin. See Standard output bin on page 123.
- Output bin bezel. See Output bin bezel on page 124.
- S-CVR-LEFT (scanner left cover). See S-CVR-LEFT (scanner left cover) on page 133.

## Remove the fan cover

▲ Remove one screw and then remove the fan cover.

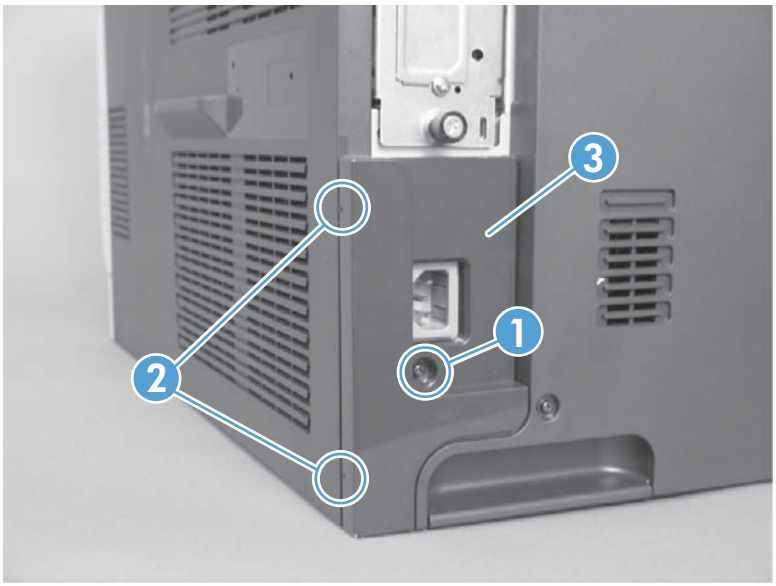
**Figure 2-61** Remove upper left cover



## Lower-left cover

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

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



# Left cover

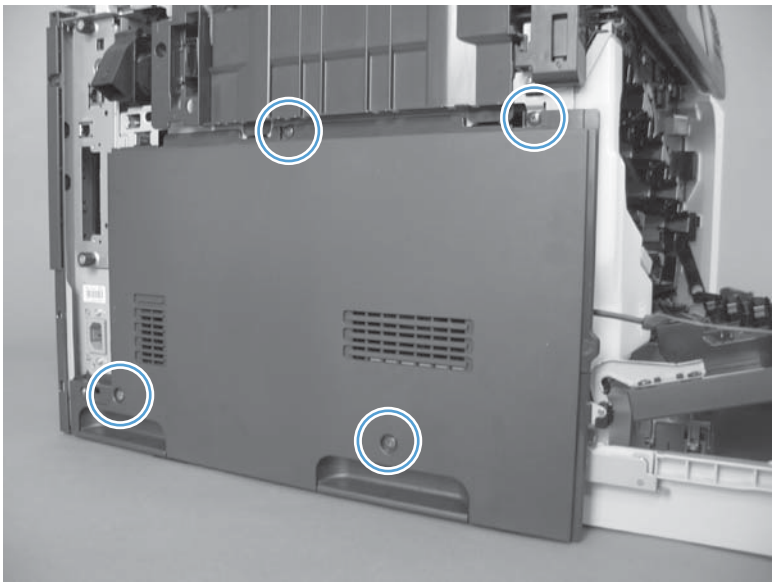
### Before proceeding, remove the following components:

- Standard output bin. See Standard output bin on page 123.
- Output bin bezel. See Output bin bezel on page 124.
- S-CVR-LEFT (scanner left cover). See S-CVR-LEFT (scanner left cover) on page 133.
- Fan cover. See Fan cover on page 134.
- Lower-left cover. See Lower-left cover on page 136.

## Remove the left cover

1. Open the front-door assembly. Open or remove Tray 2.
2. Remove four screws, and then remove the left cover.

**Figure 2-63** Remove the left cover



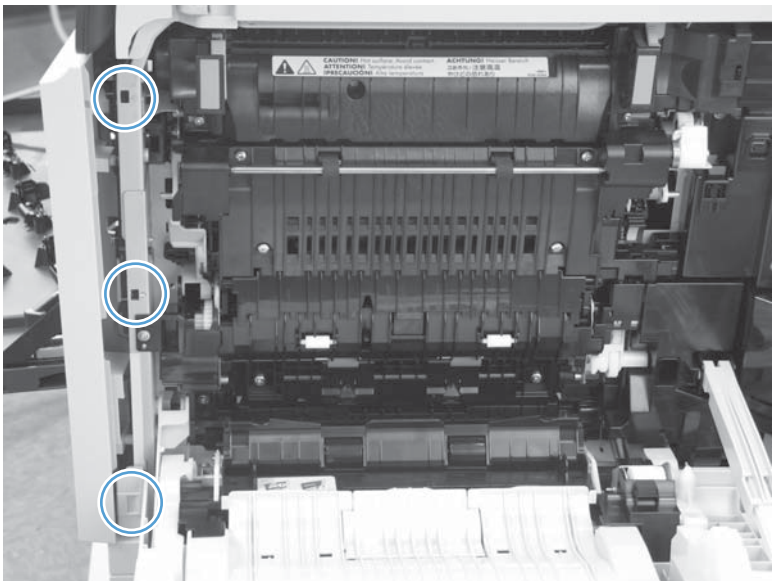
# Right-front cover

## 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 139 to reinstall it.

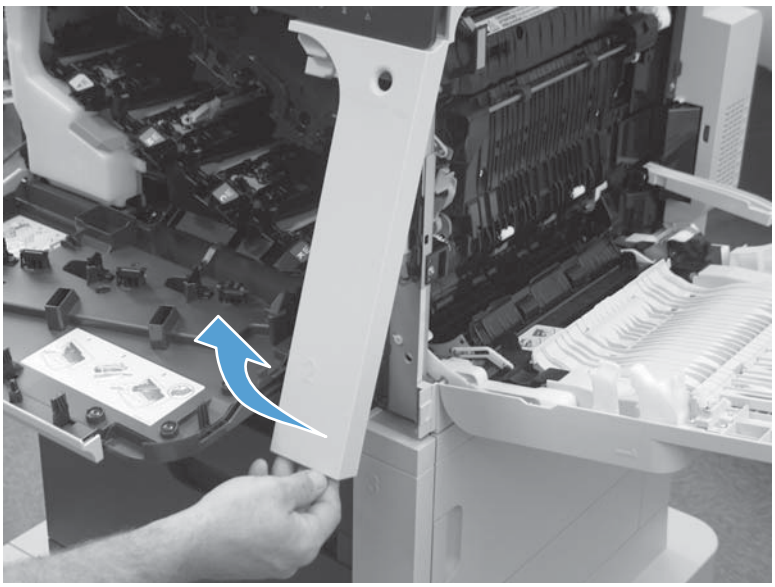
1. Open the right-door and front door assemblies.
2. Release three tabs.

**Figure 2-64** Remove the right-front cover (1 of 2)



3. Lift the right-front cover to remove

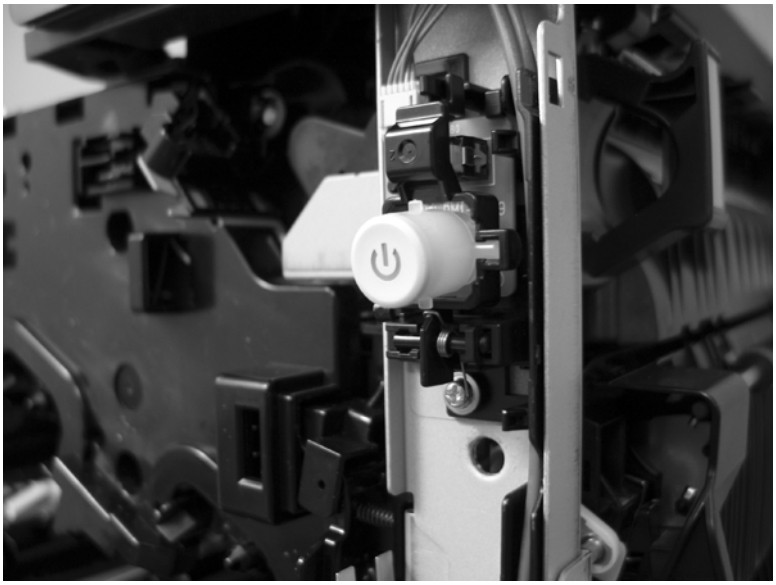
**Figure 2-65** Remove the right-front cover (2 of 2)



### Reinstall the power button

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

**Figure 2-66** Reinstall the power button



# Front-door assembly

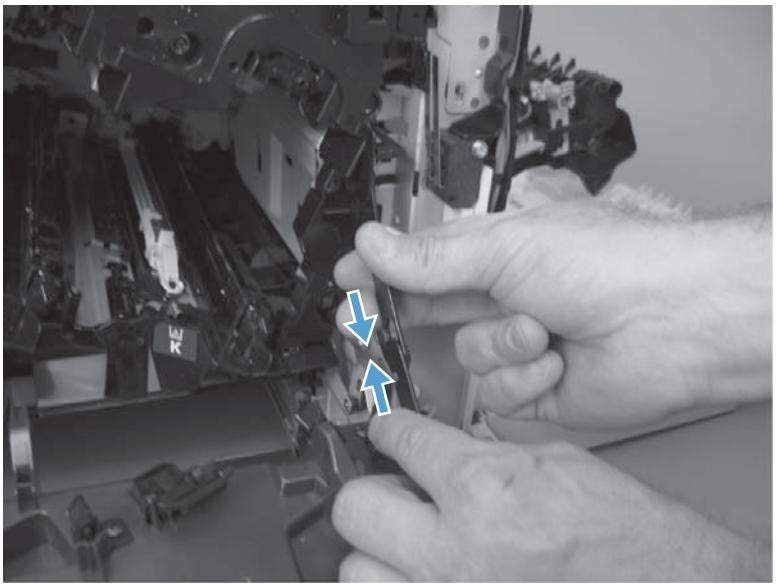
### Before proceeding, remove the following components:

- Right-front cover. See Right-front cover on page 138

## Remove the front-door assembly

1. Open the front-door assembly.
2. Release the right link arm by pushing the two segments together and then releasing.

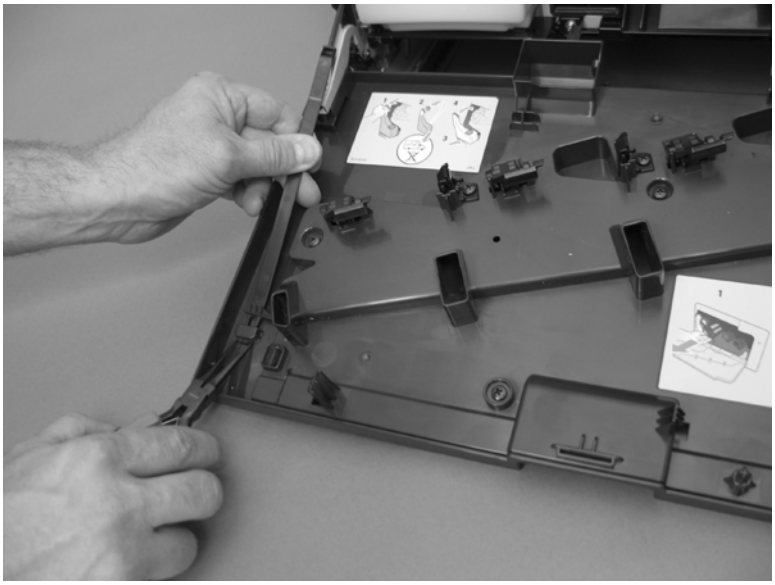
**Figure 2-67** Remove the front-door assembly (1 of 5)



3. Squeeze the tab on the left link arm using needle nose pliers to release it from the front door assembly.

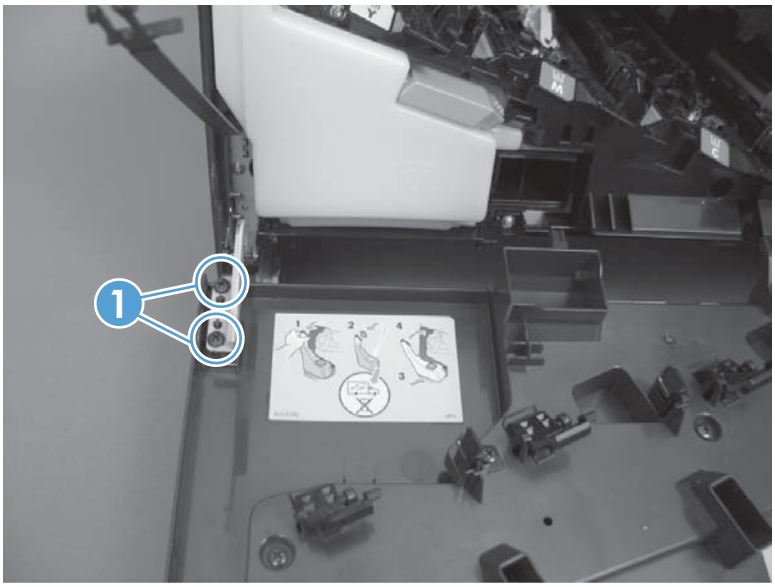
**NOTE:** Hold the link arm firmly when releasing to prevent it from snapping against the front of the product.

**Figure 2-68** Remove the front-door assembly (2 of 5)



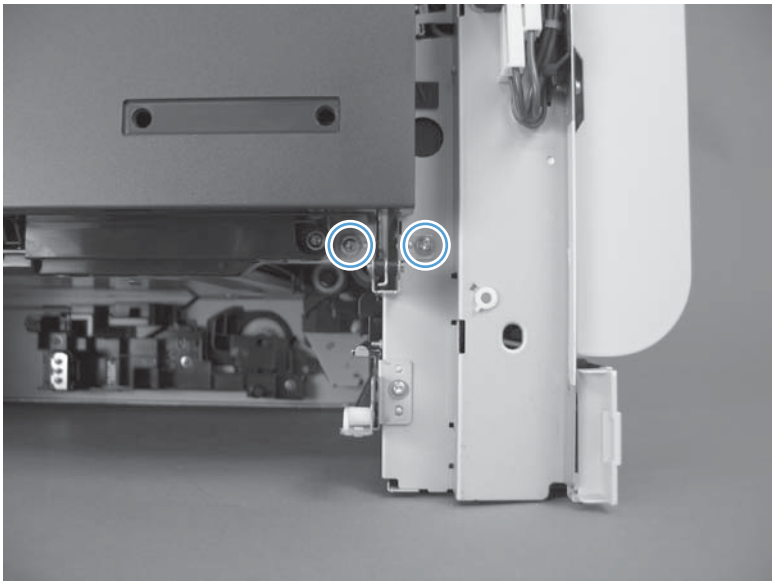
4. Remove two screws (callout 1).

**Figure 2-69** Remove the front-door assembly (3 of 5)



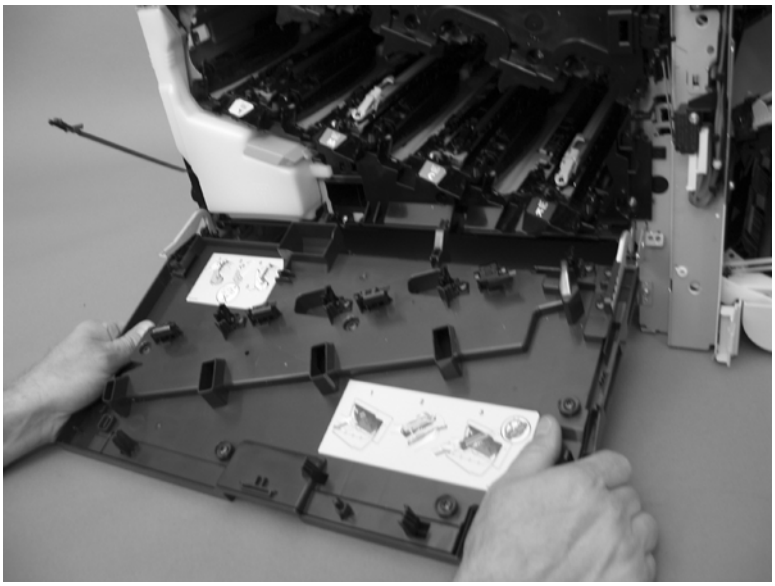
5. Remove two screws.

**Figure 2-70** Remove the front-door assembly (4 of 5)



6. Remove the front-door assembly.

**Figure 2-71** Remove the front-door assembly (5 of 5)



# Right-rear cover

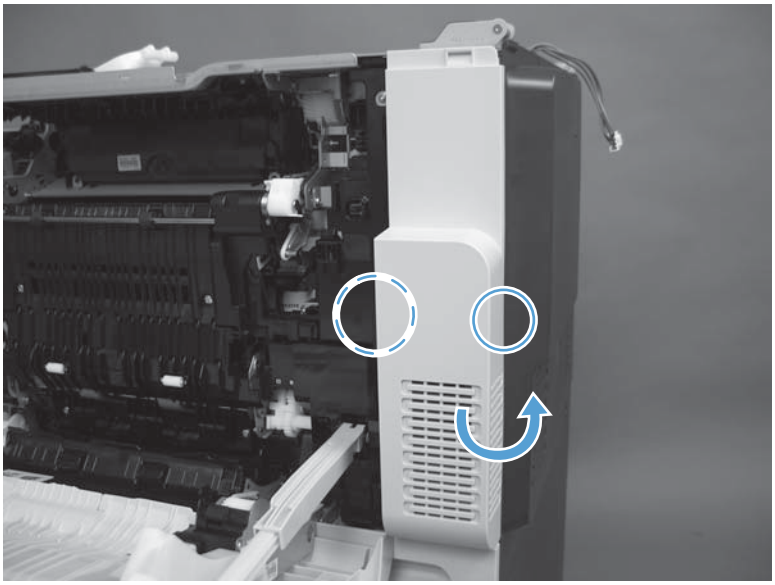
### Before proceeding, remove the following components:

- Document feeder. See Document feeder on page 151.
- Standard output bin. See S-CVR-REAR (scanner rear cover) on page 128.
- Scanner assembly. See Scanner on page 170.
- Intermediate cover and duplexing gear cover. See Intermediate cover and duplexing gear cover on page 229.

## Remove the right-rear cover

1. Open the right-door assembly.
2. Release two tabs and rotate the cover to remove.

**Figure 2-72** Remove the right-rear cover



# Rear cover

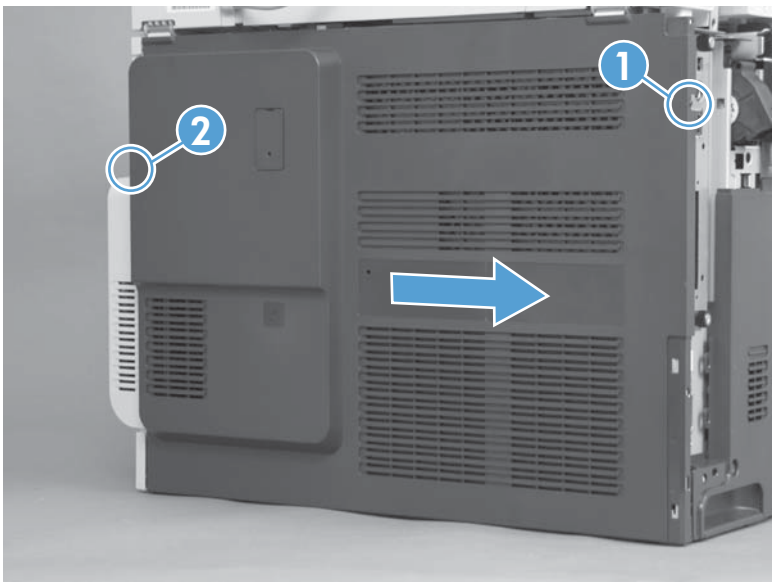
### Before proceeding, remove the following components:

- S-CVR-LEFT (scanner left cover). See S-CVR-LEFT (scanner left cover) on page 133.
- Fan cover. See Fan cover on page 134.
- Lower-left cover. See Lower-left cover on page 136.

## Remove the rear cover

▲ Remove one screws (callout 1), release one tab (callout 2), and then slide the cover to the right to remove.

**Figure 2-73** Remove the rear cover



## Right-door assembly

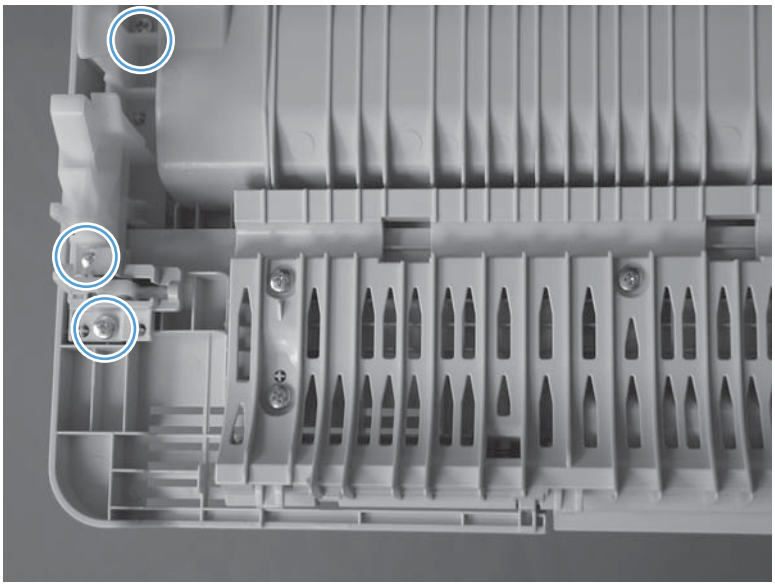
1. Open the right-door assembly.

**Figure 2-74** Remove the right-door assembly (1 of 9)



2. Remove three screws.

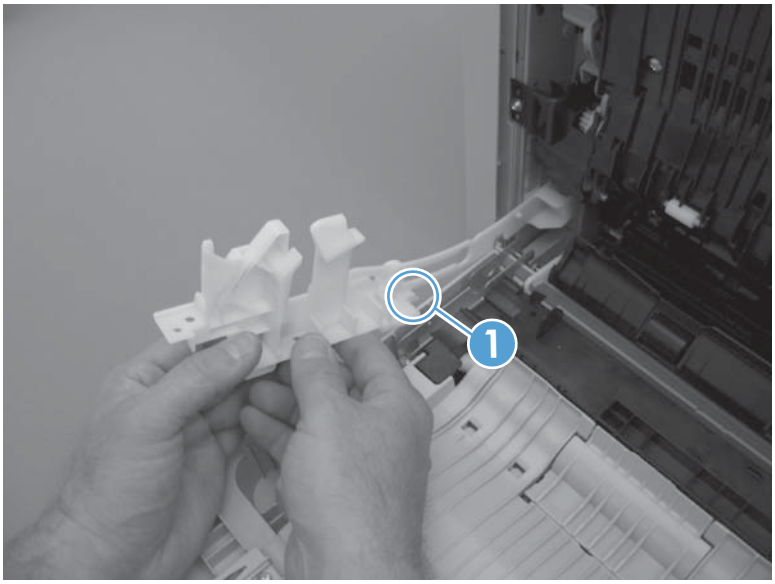
**Figure 2-75** Remove the right-door assembly (2 of 9)



3. Remove the hinge assembly.

**Reinstallation tip** When the hinge is reinstalled, make sure that the tab (callout 1) is correctly positioned on the door.

**Figure 2-76** Remove the right-door assembly (3 of 9)




4. Remove the hinge cover.

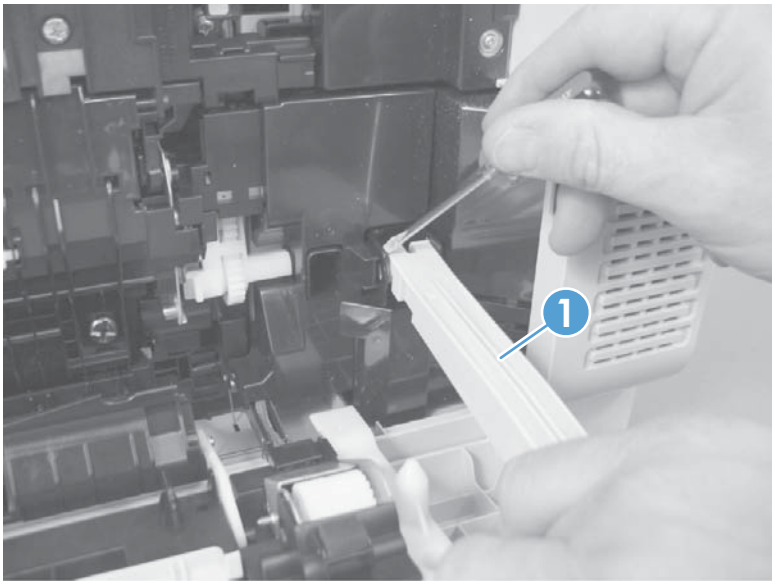
**Figure 2-77** Remove the right-door assembly (4 of 9)



5. Release one pin, and then release the link arm (callout 1).

**CAUTION:** The link arm is spring loaded. Hold the arm securely (as shown) to prevent the spring from abruptly retracting.

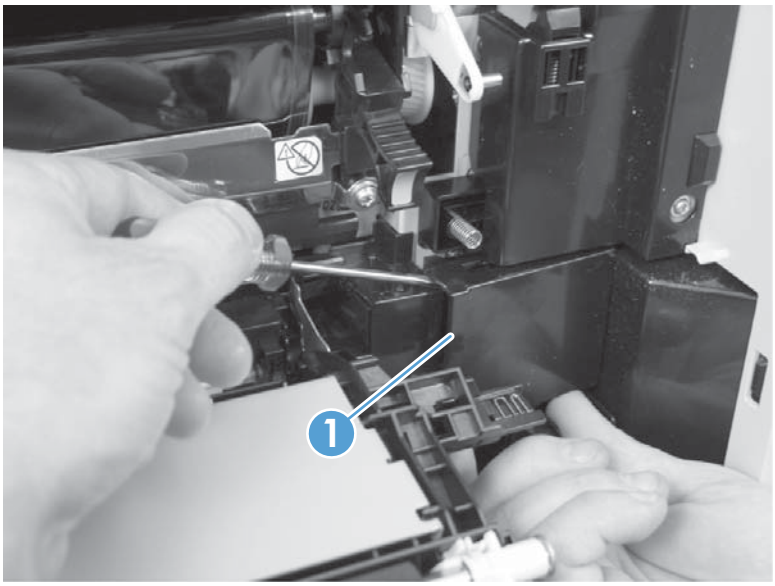
**Figure 2-78** Remove the right-door assembly (5 of 9)




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

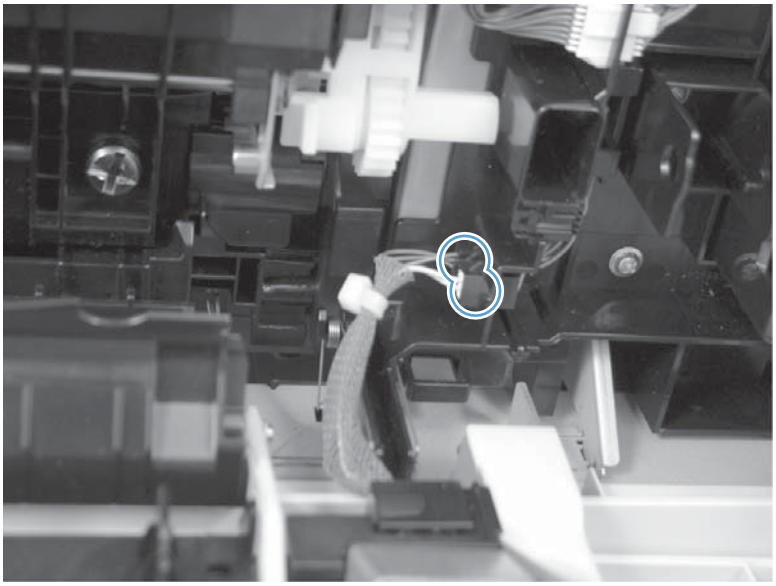
**TIP:** Lift up on the secondary transfer assembly to make removing the cover easier.

**Figure 2-79** Remove the right-door assembly (6 of 9)



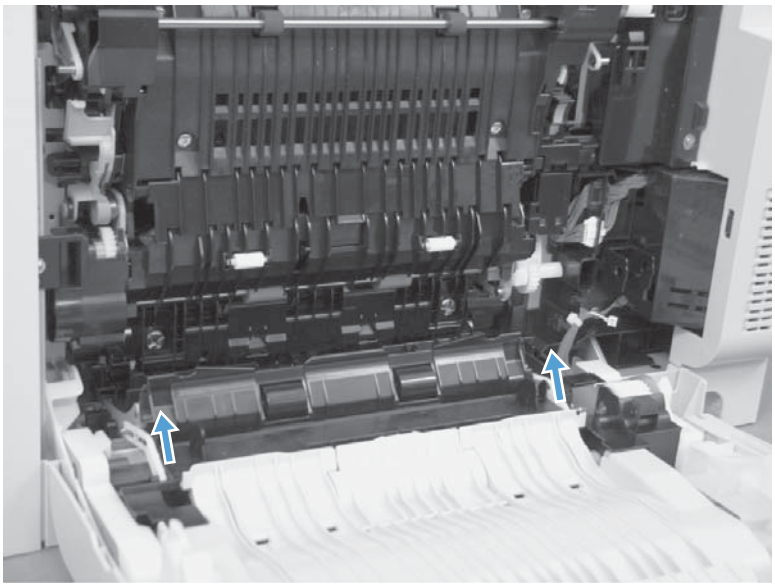
7. Disconnect two connectors.

**Figure 2-80** Remove the right-door assembly (7 of 9)



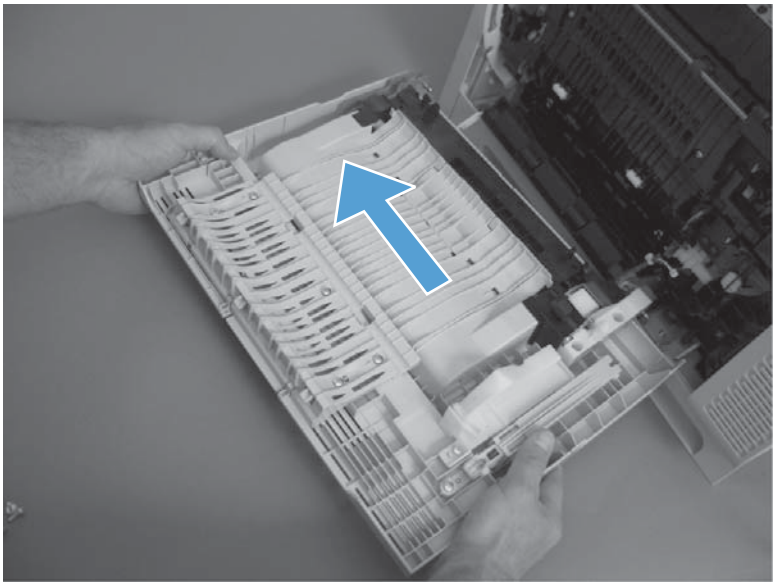
8. Lift two link arms to release.

**Figure 2-81** Remove the right-door assembly (8 of 9)



9. Slide the right-door assembly toward the front of the product and remove.

**Figure 2-82** Remove the right-door assembly (9 of 9)

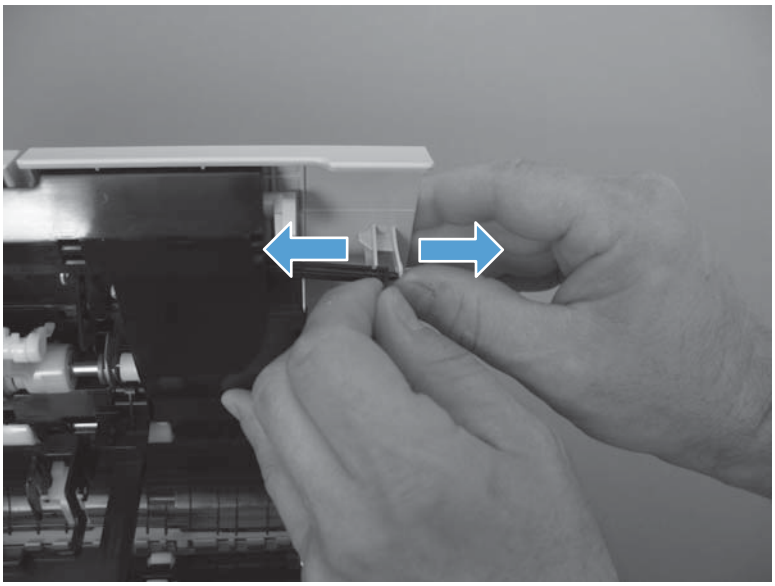


# Document feeder

## ASY-LVR-FE-EMP-SP (paper present flag)

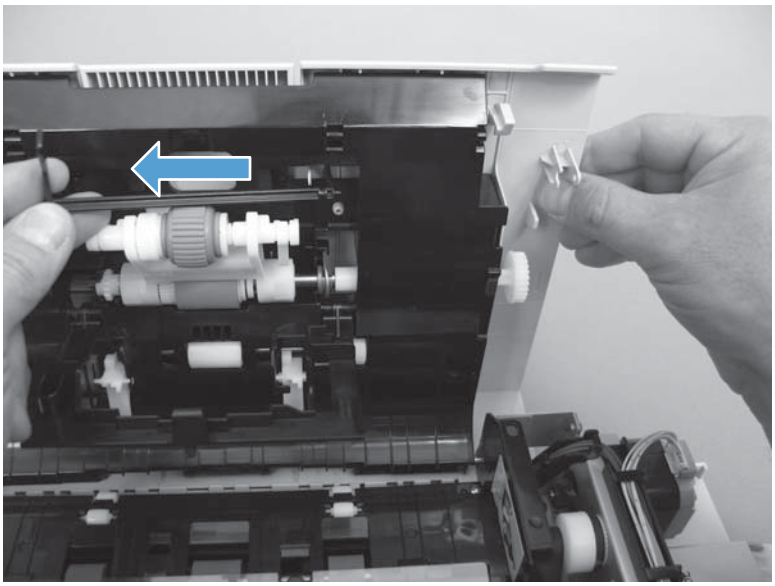
1. Open the jam access cover.
2. Release the flag from the hinge.

**Figure 2-83** Remove the ASY-LVR-FE-EMP-SP (paper present flag) (1 of 2)



3. Pull the flag to release and remove.

**Figure 2-84** Remove the ASY-LVR-FE-EMP-SP (paper present flag) (2 of 2)



# Document feeder

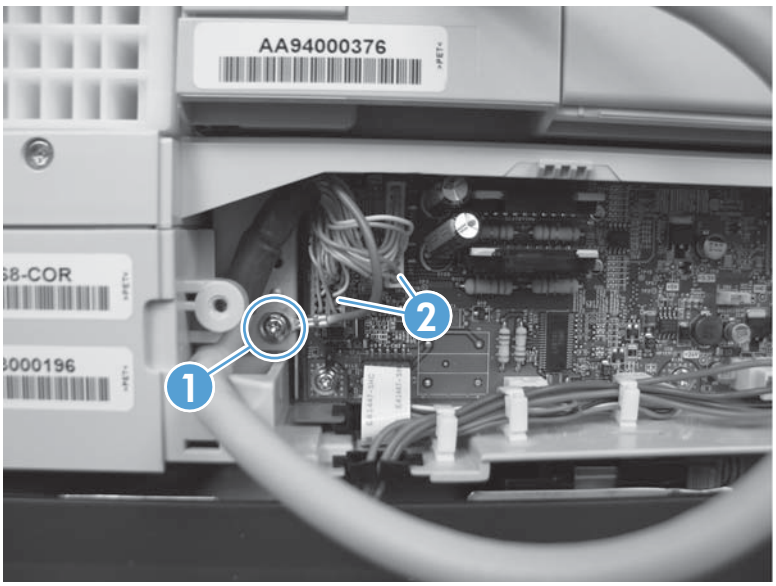
## Before proceeding, remove the following components

- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.

## Remove the document feeder

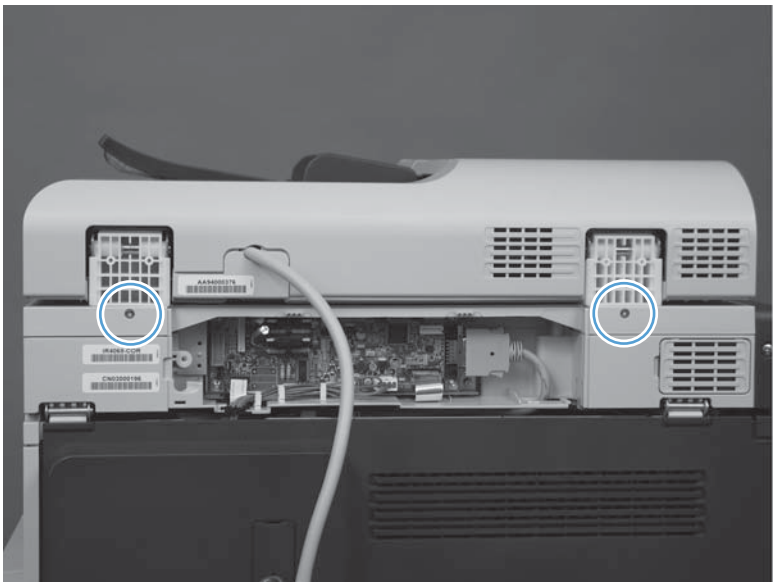
1. Remove one screw (callout 1) and disconnect two connectors (callout 2).

**Figure 2-85** Remove the document feeder (1 of 3)




2. Remove two screws.

**Figure 2-86** Remove the document feeder (2 of 3)



3. From the rear of the product, lift the document feeder to remove.

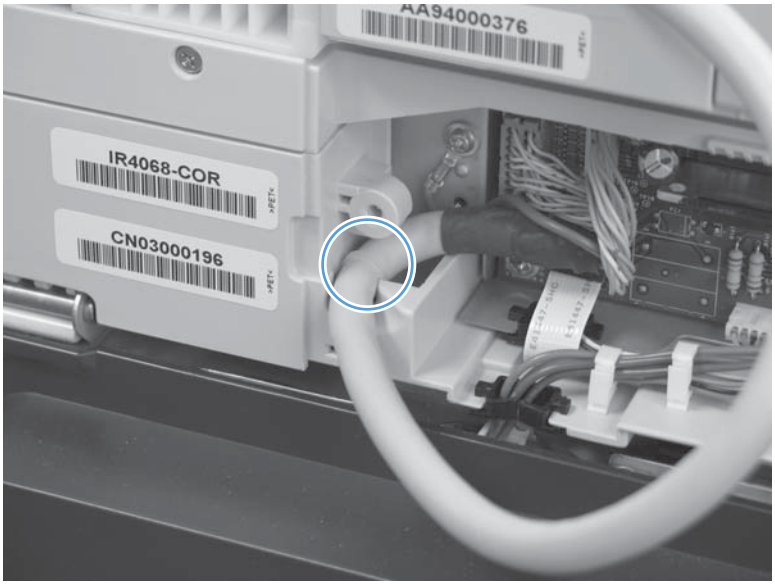
**Figure 2-87** Remove the document feeder (3 of 3)



## Reinstall the document feeder

▲ Make sure the cable retainer is installed inside the cavity.

**Figure 2-88** Reinstall the document feeder



# ASY-CVR-FE-FEED-SP (document feeder jam-access cover)

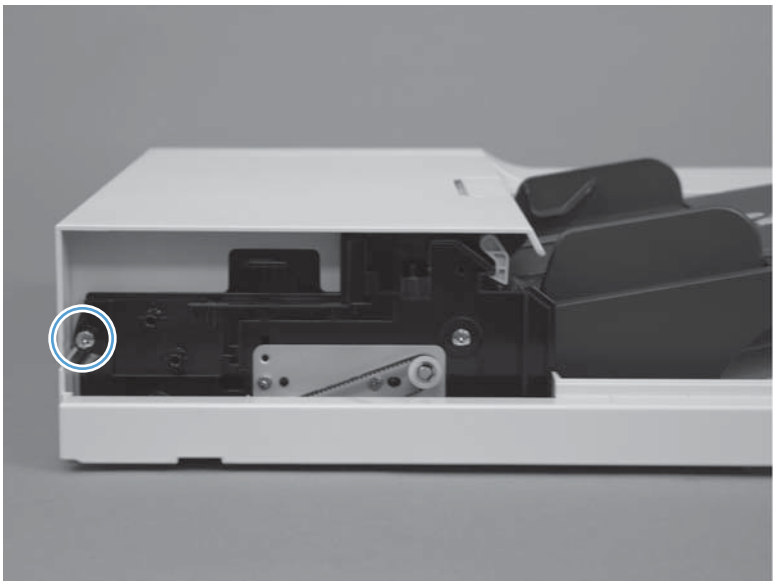
### Before proceeding, remove the following components:

- ASY-CVR-F-SP (document feeder front cover). See ASY-CVR-F-SP (document feeder front cover) on page 129.
- ASY-CVR-F-R-SP (document feeder rear cover). See ASY-CVR-F-R-SP (document feeder rear cover) on page 131.

## Remove the ASY-CVR-FE-FEED-SP (document feeder jam-access cover)

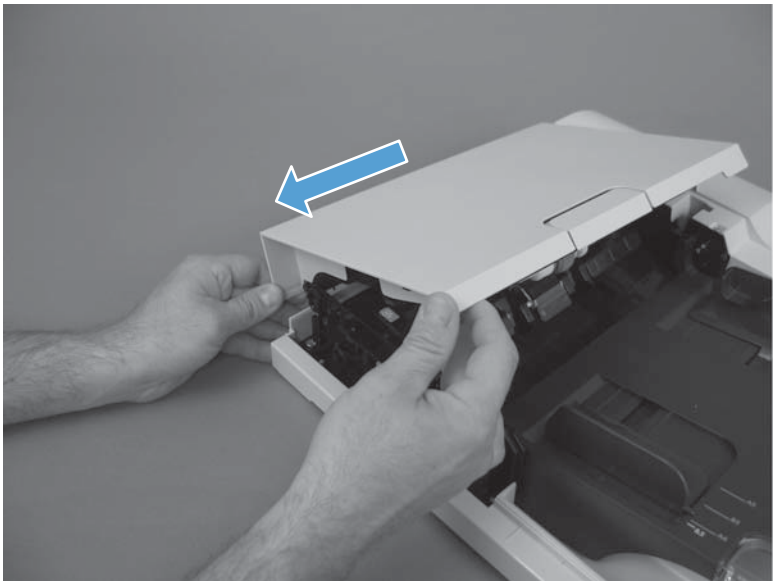
1. Remove one stepped screw.

**Figure 2-89** Remove the ASY-CVR-FE-FEED-SP (document feeder jam-access cover) (1 of 2)



2. Lift the cover slightly, and then pull the cover toward the front of the product to remove.

**Figure 2-90** Remove the ASY-CVR-FE-FEED-SP (document feeder jam-access cover) (2 of 2)



# ASY-TRY-SP (tray assembly)

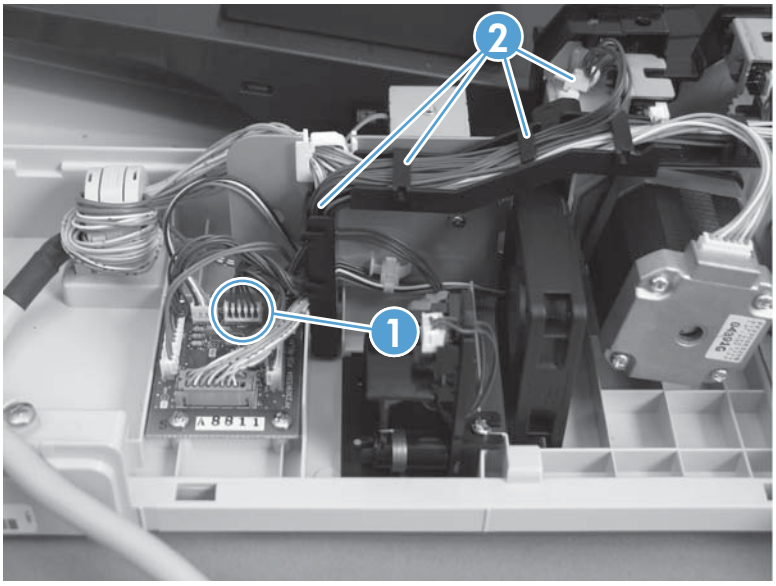
## Before proceeding, remove the following components

- ASY-CVR-F-R-SP (document feeder rear cover). See ASY-CVR-F-R-SP (document feeder rear cover) on page 131.

## Remove the ASY-TRY-SP (tray assembly)

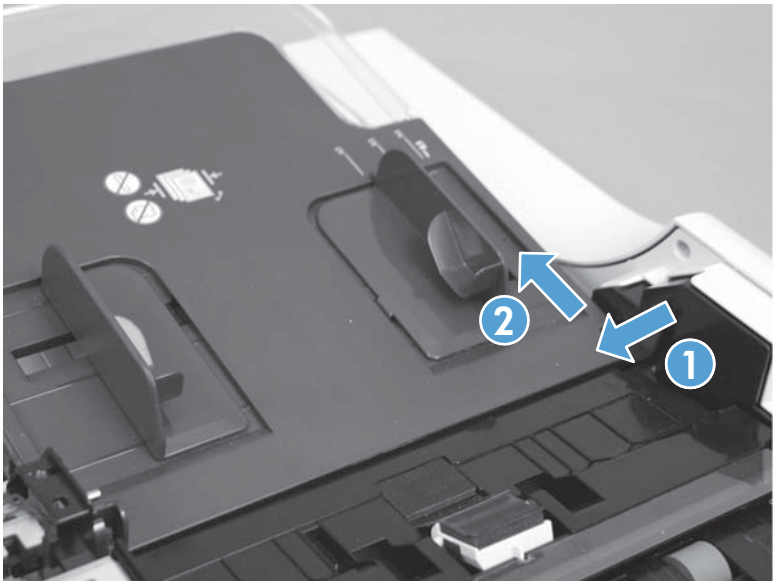
1. Open the jam-access cover.
2. Disconnect one connector (callout 1) and release the cable from the cable guides (callout 2).

**Figure 2-91** Remove the ASY-TRY-SP (tray assembly) (1 of 2)



3. Release the pin from the hinge (callout 1) and then remove the tray assembly (callout 2).

**Figure 2-92** Remove the ASY-TRY-SP (tray assembly) (2 of 2)



# ASY-FRM-RE-FEED-SP (internal assembly)

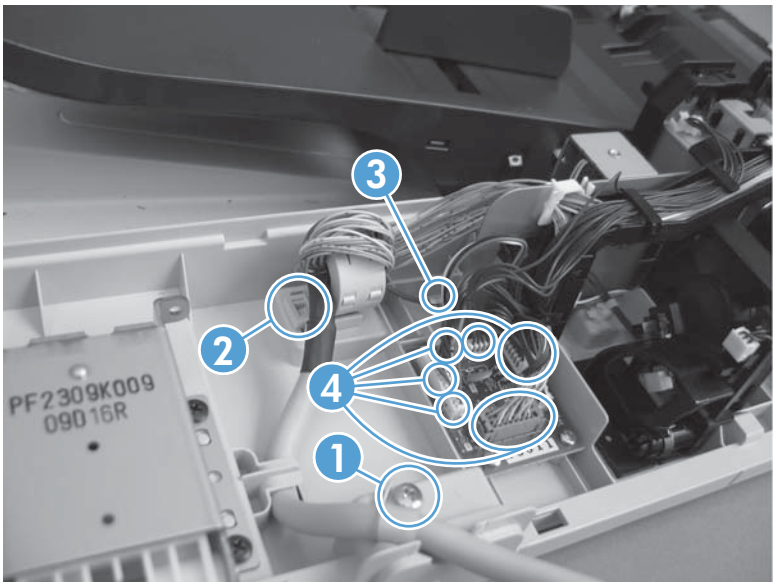
### Before proceeding, remove the following components

- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- ASY-CVR-F-SP (document feeder front cover). See ASY-CVR-F-SP (document feeder front cover) on page 129.
- ASY-CVR-F-R-SP (document feeder rear cover). See ASY-CVR-F-R-SP (document feeder rear cover) on page 131.
- Document feeder. See Document feeder on page 151.
- ASY-CVR-FE-FEED-SP (document feeder jam-access cover). See ASY-CVR-FE-FEED-SP (document feeder jam-access cover) on page 153.

## Remove ASY-FRM-RE-FEED-SP (internal assembly)

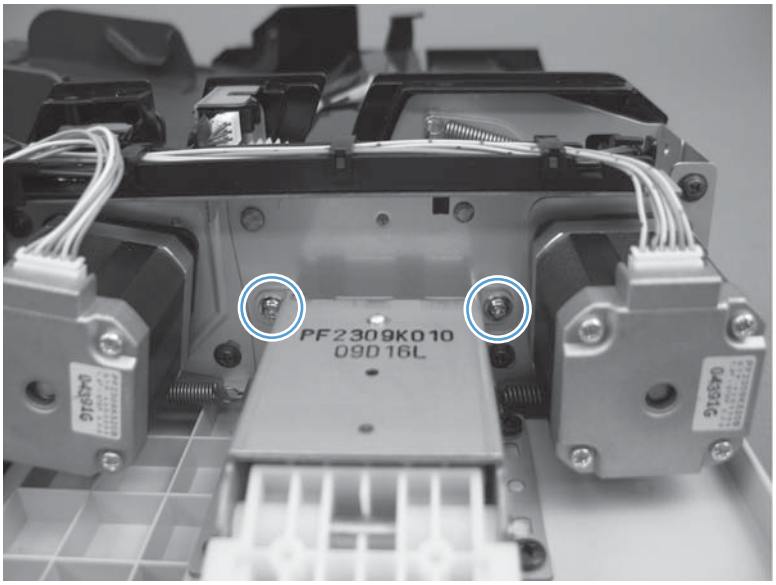
1. Remove one screw (callout 1), release one clamp (callout 2), and then disconnect six connectors (callout 3).

**Figure 2-93** Remove the ASY-FRM-RE-FEED-SP (internal assembly) (1 of 3)



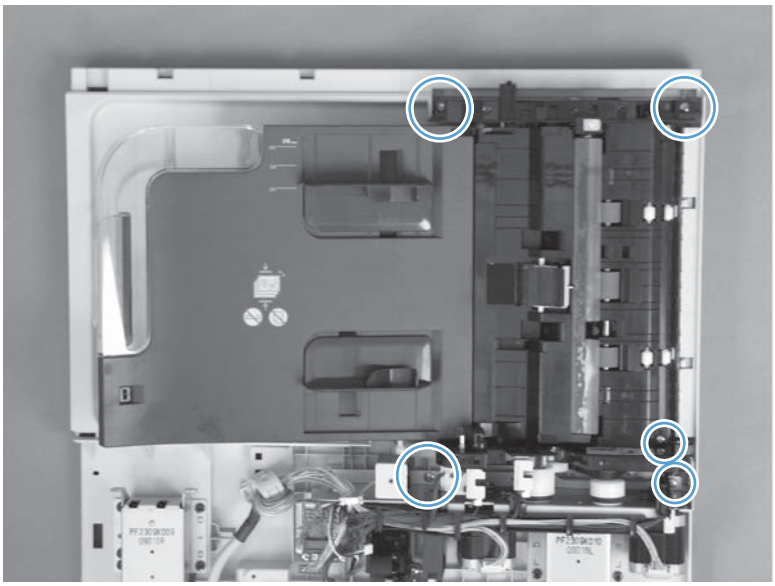
2. Remove two screws.

**Figure 2-94** Remove the ASY-FRM-RE-FEED-SP (internal assembly) (2 of 3)




3. Remove five screws, and then remove the assembly.

**Figure 2-95** Remove the ASY-FRM-RE-FEED-SP (internal assembly) (3 of 3)



# ASY-PBA-RELAY-SB (document feeder PCA)

## Before proceeding, remove the following components

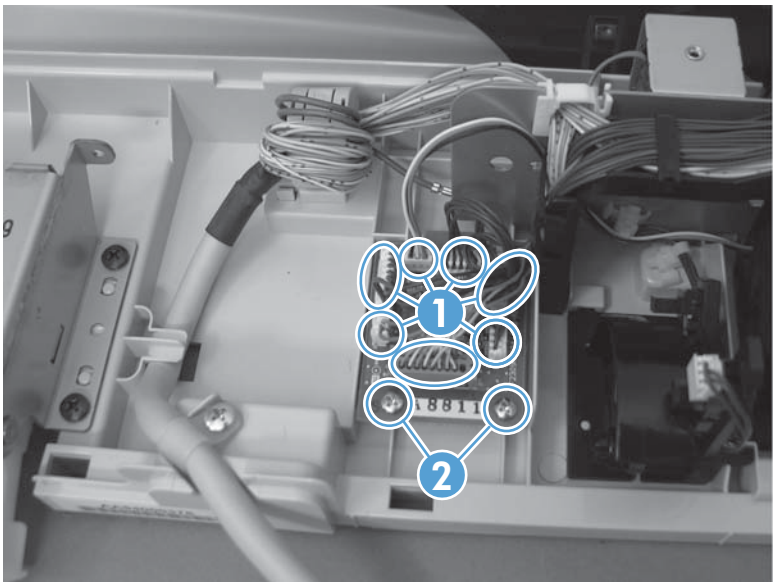
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- ASY-CVR-F-R-SP (document feeder rear cover). See ASY-CVR-F-R-SP (document feeder rear cover) on page 131.
- Document feeder. See Document feeder on page 151.

## Remove the ASY-PBA-RELAY-SB (document feeder PCA)

**CAUTION:** ESD-sensitive part.

▲ Disconnect seven connectors (callout 1), remove two screws (callout 2), and then remove the PCA.

**Figure 2-96** Remove the ASY-PBA-RELAY-SB (document feeder PCA)



# ASM-IF-SP (document feeder cable)

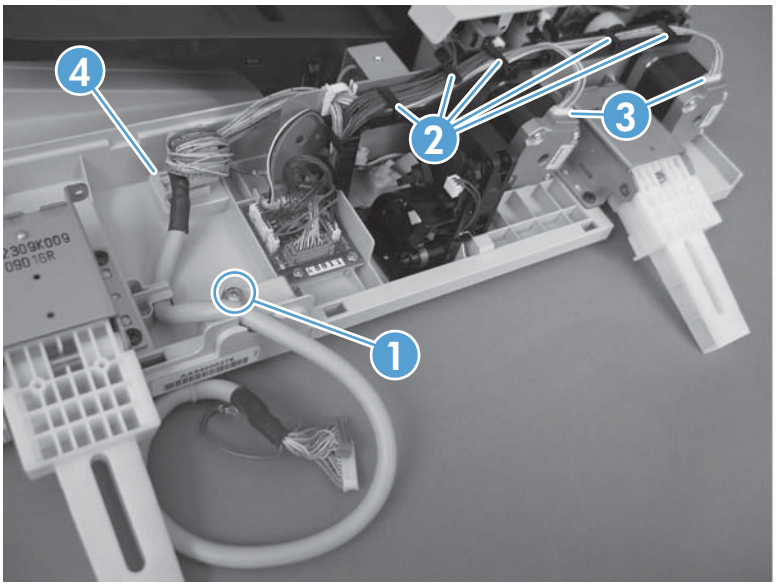
### Before proceeding, remove the following components

- S-CVR-REAR (scanner rear cover) S-CVR-REAR (scanner rear cover) on page 128
- ASY-CVR-F-R-SP (document feeder rear cover). See ASY-CVR-F-R-SP (document feeder rear cover) on page 131.
- Document feeder. See Document feeder on page 151.

## Remove the ASM-IF-SP (document feeder cable)

▲ Remove one screw (callout 1), release the cable guides (callout 2), disconnect two connectors (callout 3), release one tab (callout 4). Remove the document feeder cable.

**Figure 2-97** Remove the ASM-IF-SP (document feeder cable) (1 of 2)




**NOTE:** When reinstalling the cable, make sure to correctly wrap the cable in the toroid.

**Figure 2-98** Remove the ASM-IF-SP (document feeder cable) (2 of 2)



# ASY-HNG-L-SP (document feeder left hinge)

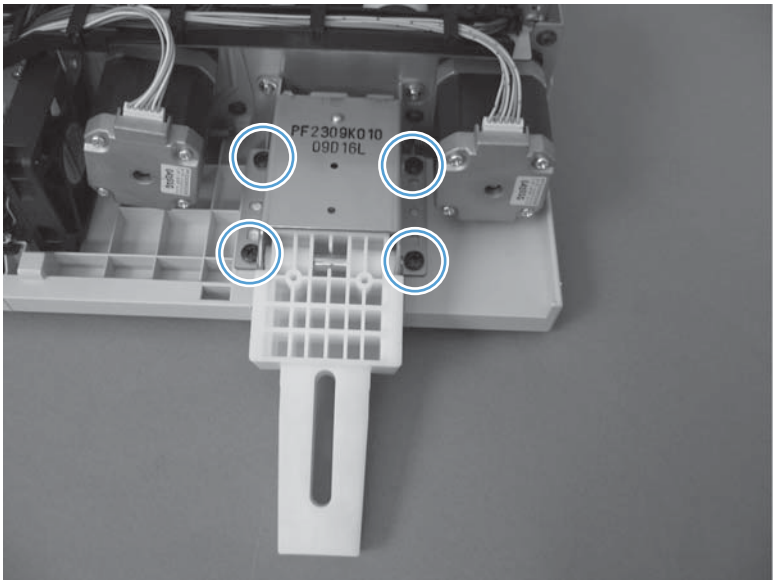
### Before proceeding, remove the following components

- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- ASY-CVR-F-R-SP (document feeder rear cover). See ASY-CVR-F-R-SP (document feeder rear cover) on page 131.
- Document feeder. See Document feeder on page 151.

## Remove the ASY-HNG-L-SP (document feeder left hinge)

▲ Remove four screws and then remove the hinge.

**Figure 2-99** Remove the ASY-HNG-L-SP (document feeder left hinge)



# ASY-HNG-R-SP (document feeder right hinge)

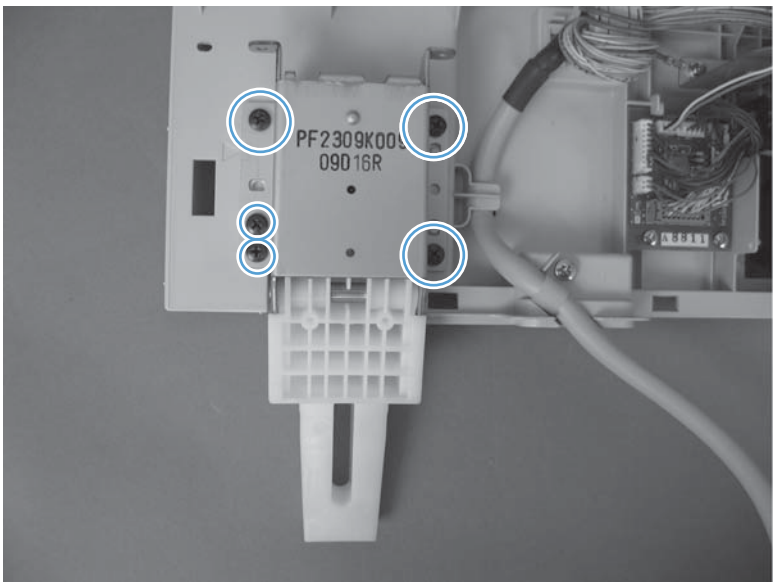
### Before proceeding, remove the following components

- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- ASY-CVR-F-R-SP (document feeder rear cover). See ASY-CVR-F-R-SP (document feeder rear cover) on page 131.
- Document feeder. See Document feeder on page 151.

## Remove the ASY-HNG-R-SP (document feeder right hinge)

▲ Remove five screws and then remove the hinge.

**Figure 2-100** Remove the ASY-HNG-L-SP (document feeder right hinge)



# ASY-FAN-SP (document feeder fan)

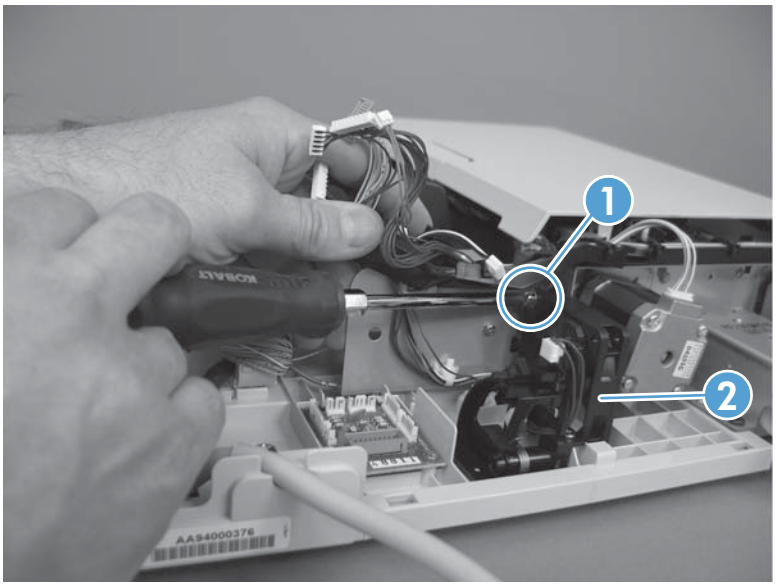
### Before proceeding, remove the following components

- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- ASY-CVR-F-R-SP (document feeder rear cover). See ASY-CVR-F-R-SP (document feeder rear cover) on page 131.
- Document feeder. See Document feeder on page 151.

## Remove the ASY-FAN-SP (document feeder fan)

▲ Disconnect all connectors from the document feeder PCA and lift the cable guide to provide access to the screw (callout 1). Remove one screw (callout 1), and then remove the document feeder fan (callout 2).

**Figure 2-101** Remove the ASY-FAN-SP (document feeder fan)



# ASY-MOT-FE-SP (motor)

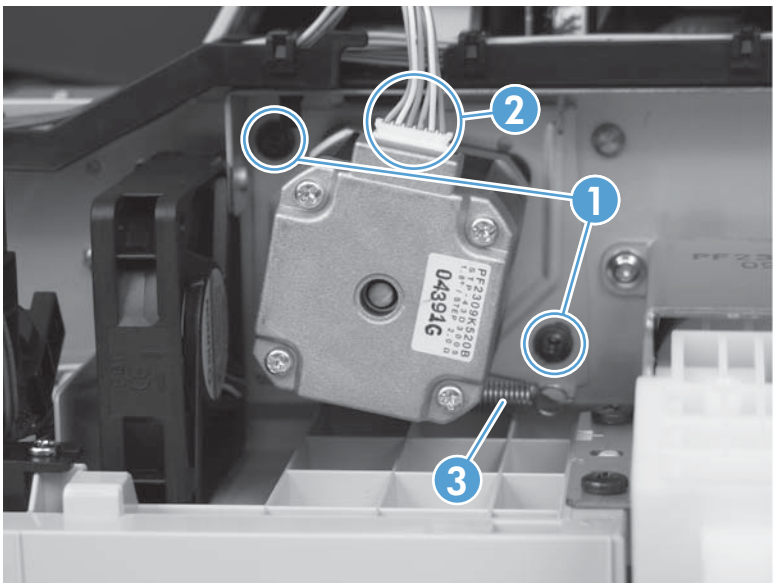
## Before proceeding, remove the following components

- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- ASY-CVR-F-R-SP (document feeder rear cover). See ASY-CVR-F-R-SP (document feeder rear cover) on page 131.
- Document feeder. See Document feeder on page 151.

## Remove the ASY-MOT-FE-SP (motor)

▲ Remove two screws (callout 1), disconnect one connector (callout 2), release one spring (callout 3), and then remove the motor.

**Figure 2-102** Remove the ASY-MOT-FE-SP (motor)




**NOTE:** When reassembling, reattach the spring before reinstalling screws.

# ASY-MOT-RE-SP (document feeder motor)

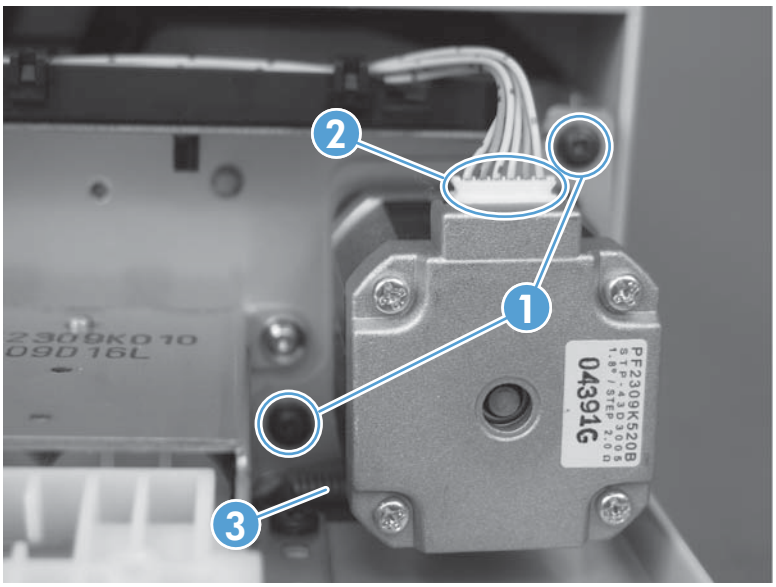
## Before proceeding, remove the following components

- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- ASY-CVR-F-R-SP (document feeder rear cover). See ASY-CVR-F-R-SP (document feeder rear cover) on page 131.
- Document feeder. See Document feeder on page 151.

## Remove the ASY-MOT-RE-SP (motor)

▲ Remove two screws (callout 1), disconnect one connector (callout 2), release one spring (callout 3), and then remove the motor.

**Figure 2-103** Remove the ASY-MOT-RE-SP (motor)




**NOTE:** When reassembling, reattach the spring before reinstalling screws.

# ASY-DFSENS-SP (document feeder open sensor)

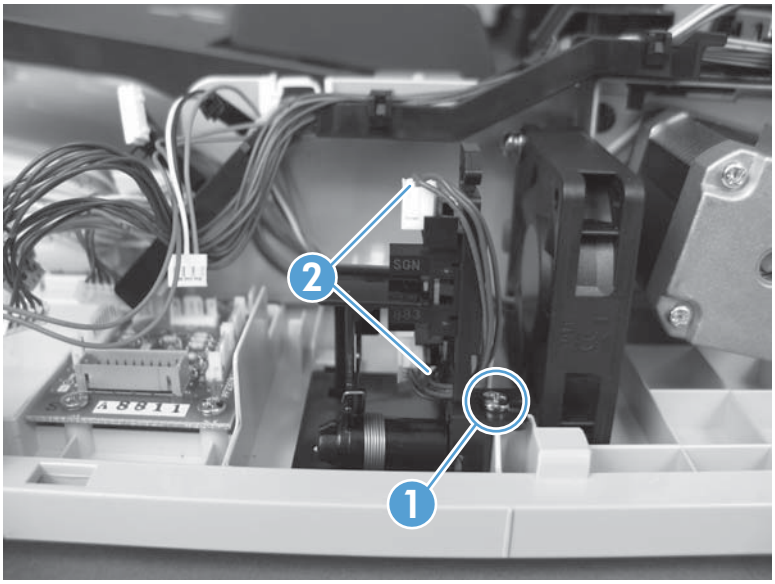
## Before proceeding, remove the following components

- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- ASY-CVR-F-R-SP (document feeder rear cover). See ASY-CVR-F-R-SP (document feeder rear cover) on page 131.
- Document feeder. See Document feeder on page 151.

## Remove the ASY-DFSENS-SP (document feeder open sensor)

▲ Remove one screw (callout 1), disconnect two connectors (callout 2), and then remove the sensor.

**Figure 2-104** Remove the ASY-DFSENS-SP (document feeder open sensor)



# ASY-GIDREV-SPR-SP (document feeder jam access plate)

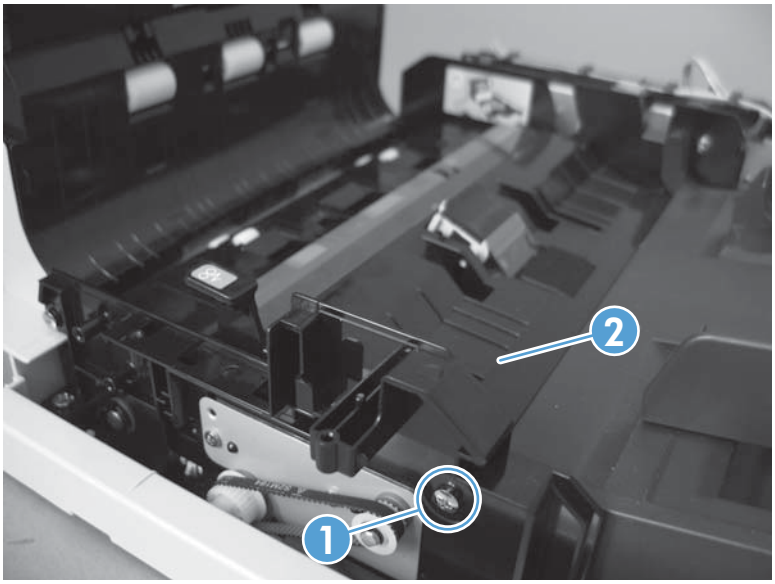
### Before proceeding, remove the following components

- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- ASY-CVR-F-R-SP (document feeder rear cover). See ASY-CVR-F-R-SP (document feeder rear cover) on page 131.
- Document feeder. See Document feeder on page 151.

## Remove the ASY-GIDREV-SPR-SP (document feeder jam access plate)

▲ Remove one stepped screw (callout 1) and then remove the jam access plate (callout 2).

**Figure 2-105** Remove the ASY-GIDREV-SPR-SP (document feeder jam access plate)



# ASY-BASE_SB (base assembly)

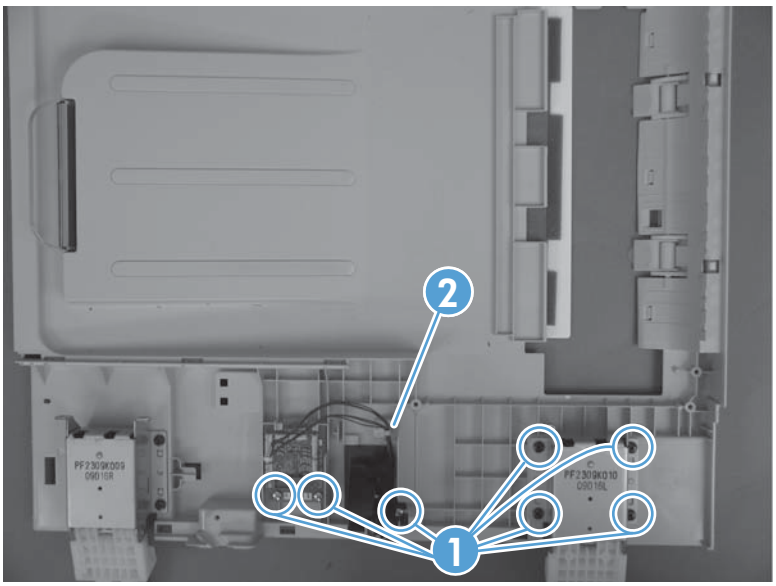
## Before proceeding, remove the following components

- ASY-CVR-F-SP (document feeder front cover). See ASY-CVR-F-SP (document feeder front cover) on page 129.
- ASY-CVR-F-R-SP (document feeder rear cover). See ASY-CVR-F-R-SP (document feeder rear cover) on page 131.
- ASY-CVR-FE-FEED-SP (document feeder jam-access cover). See ASY-CVR-FE-FEED-SP (document feeder jam-access cover) on page 153.
- ASY-FAN-SP (document feeder fan). See ASY-FAN-SP (document feeder fan) on page 164.
- ASY-FRM-RE-FEED-SP (internal assembly). See ASY-FRM-RE-FEED-SP (internal assembly) on page 157.

## Remove the ASY-BASE_SB (base assembly)

▲ Remove seven screws (callout 1) and then release one cable clamp (callout 2). Remove the right hinge, document feeder PCA, and document feeder open sensor from the base assembly.

**Figure 2-106** Remove the ASY-BASE_SB (base assembly)

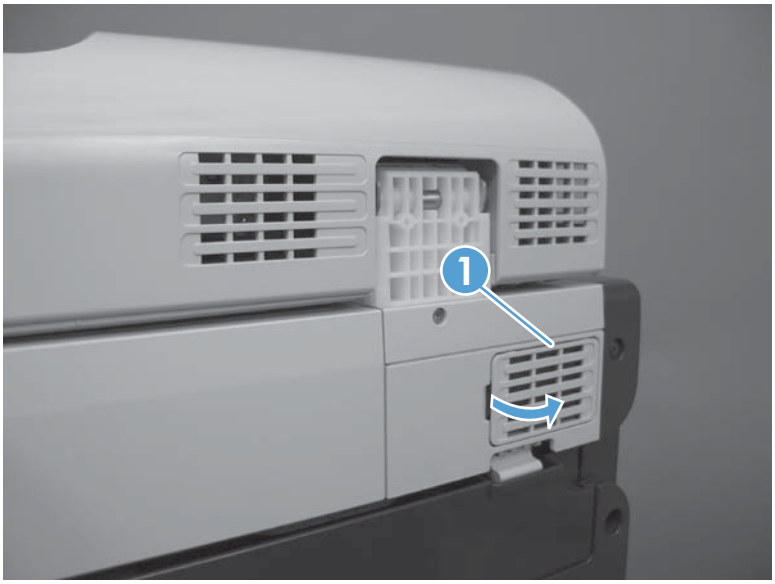


# Scanner

## Scanner filter cover and scanner filter

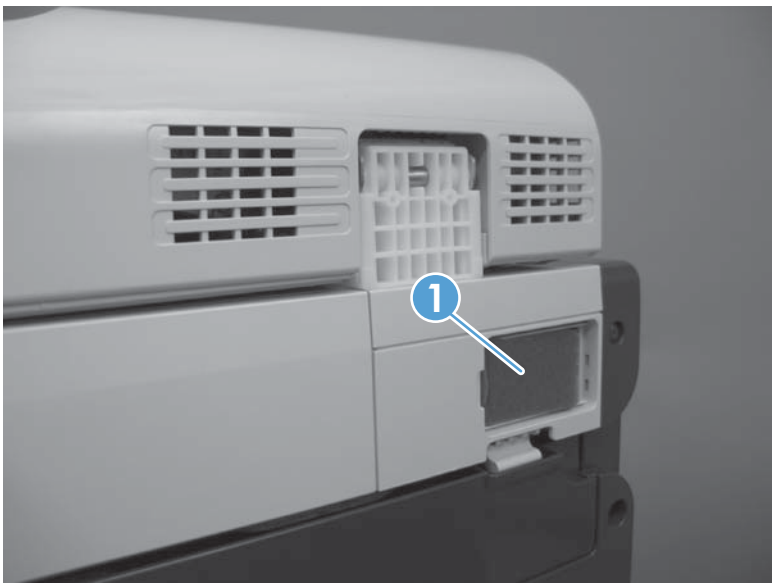
1. Remove the scanner-filter cover (callout 1).

**Figure 2-107** Remove the scanner filter (1 of 2)




2. Remove the filter (callout 1).

**Figure 2-108** Remove the scanner filter (2 of 2)



# Scanner assembly

## Before proceeding, remove the following components

- Control panel. See Control panel on page 100.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Document feeder. See Document feeder on page 151.

## Remove the scanner

1. Carefully open the scanner.

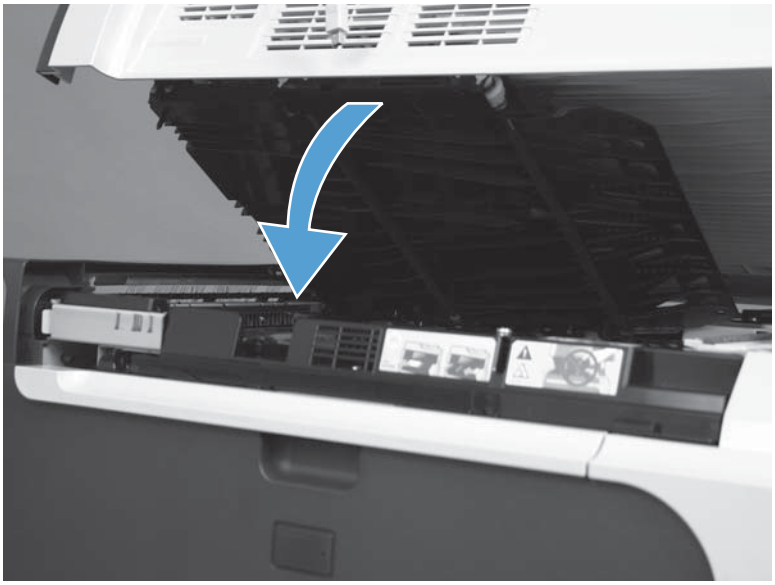
**WARNING!** When the document feeder is removed from the product, the scanner opens with force. Press down on the scanner with one hand when releasing the scanner latch.

**Figure 2-109** Remove the scanner assembly (1 of 6)



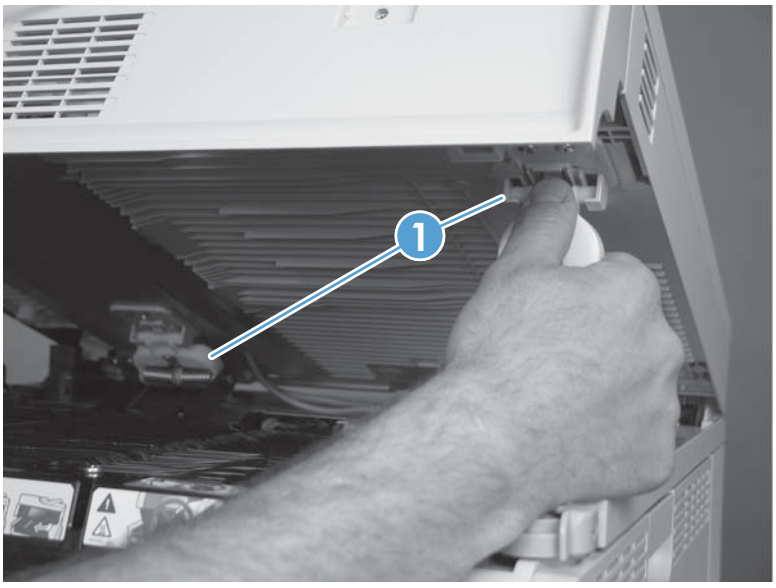
2. Lower the jam access cover.

**Figure 2-110** Remove the scanner assembly (2 of 6)



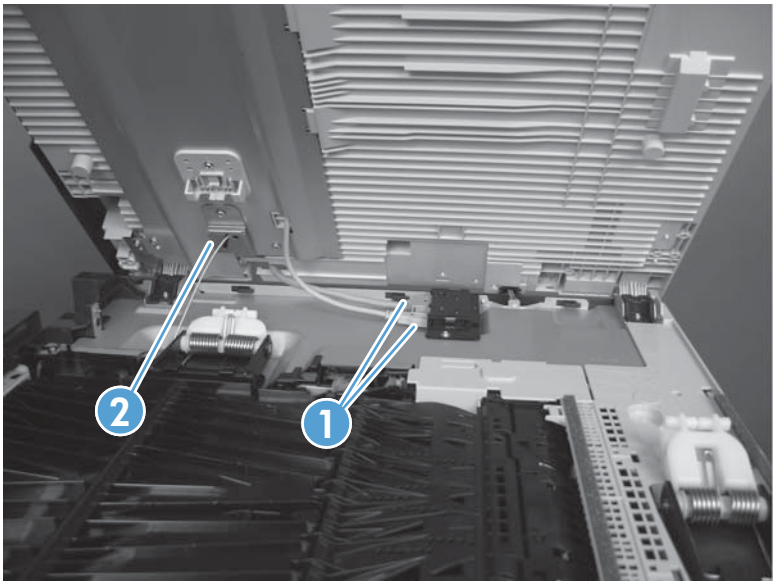
3. Release two scissor hinges (callout 1).

**Figure 2-111** Remove the scanner assembly (3 of 6)



4. Disconnect two connectors (callout 1) and release the safety cable (callout 2).

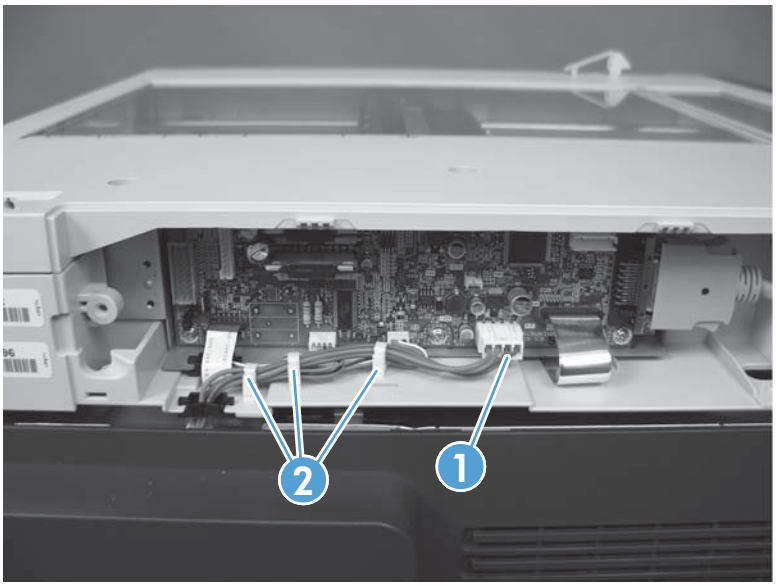
**Figure 2-112** Remove the scanner assembly (4 of 6)




**WARNING!** The scanner is no longer secured to the product. To prevent the scanner from falling from the product, firmly grasp the scanner when opening.

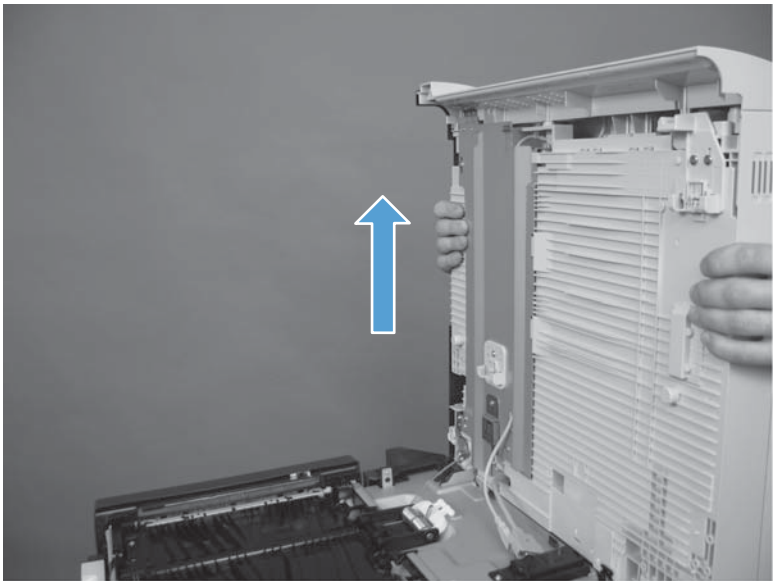
5. Disconnect one connector (callout 1), and then release the cable from the cable guides (callout 2).

**Figure 2-113** Remove the scanner assembly (5 of 6)



6. From the rear of the product, lift the scanner to remove.

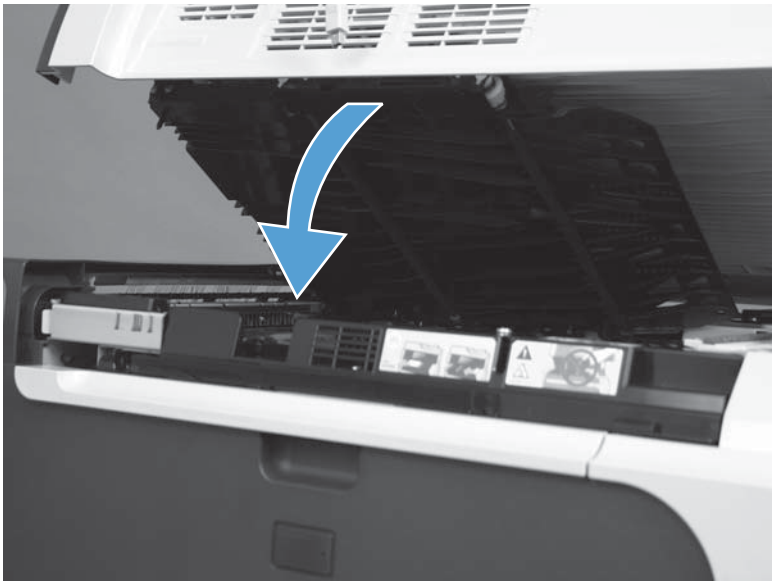
**Figure 2-114** Remove the scanner assembly (6 of 6)



## Scissor hinge assemblies

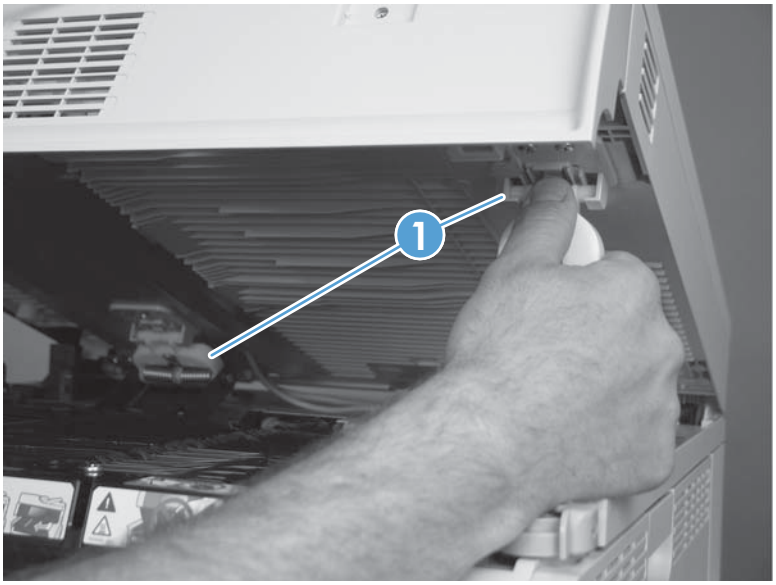
1. Open the scanner and then lower the jam access cover.

**Figure 2-115** Remove the scissor hinge assembly (1 of 3)



2. Release the top of the two scissor hinges (callout 1).

**Figure 2-116** Remove the scissor hinge assembly (2 of 3)




3. Release the bottom of the two scissor hinges and remove.

**Figure 2-117** Remove the scissor hinge assembly (3 of 3)



# S-ASSY-CP-ADAPTER (CP adapter assembly)

## Before proceeding, remove the following components

- Control panel. See Control panel on page 100.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- S-CVR-LEFT (scanner left cover). See S-CVR-LEFT (scanner left cover) on page 133
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.

## Remove the S-ASSY-CP-ADAPTER (CP adapter assembly)

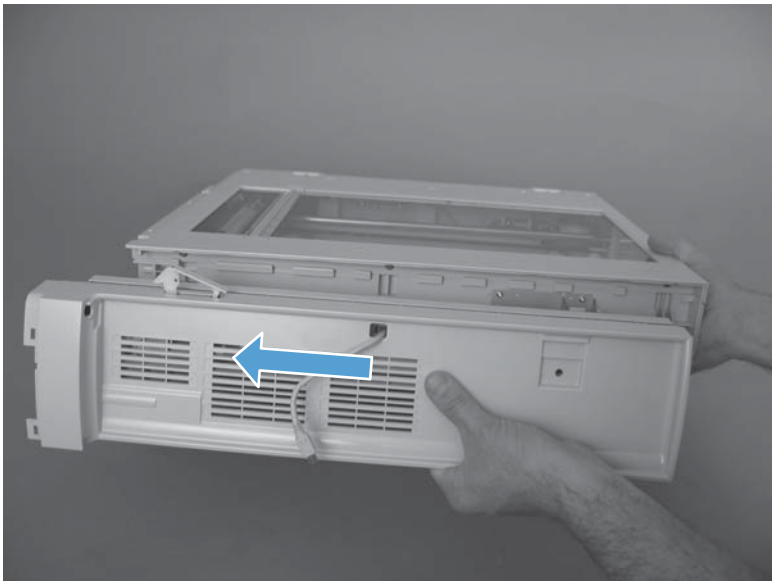
1. Remove two screws.

**Figure 2-118** Remove the S-ASSY-CP-ADAPTER (CP adapter assembly) (1 of 4)



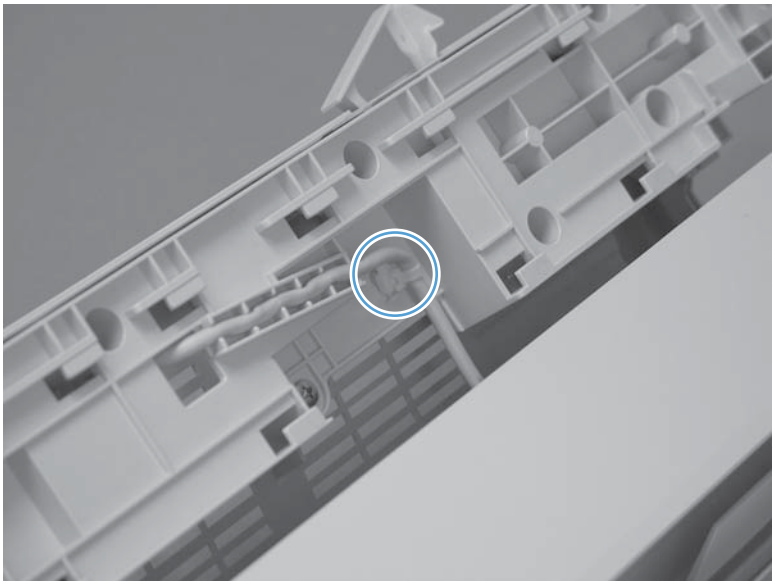
2. Slide the CP adapter assembly to the left to release.

**Figure 2-119** Remove the S-ASSY-CP-ADAPTER (CP adapter assembly) (2 of 4)



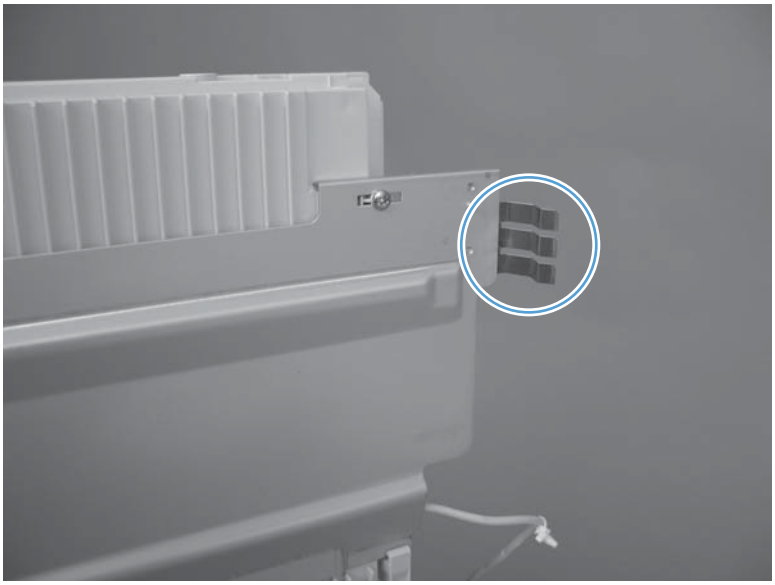
3. Squeeze the retainer to release the cable from the back of the CP adapter assembly.

**Figure 2-120** Remove the S-ASSY-CP-ADAPTER (CP adapter assembly) (3 of 4)



**CAUTION:** After removing the CP adapter assembly from the scanner, be careful not to damage the ground spring.

**Figure 2-121** Remove the S-ASSY-CP-ADAPTER (CP adapter assembly) (4 of 4)



# S-PBA-SCB (SCB)

## Before proceeding, remove the following components

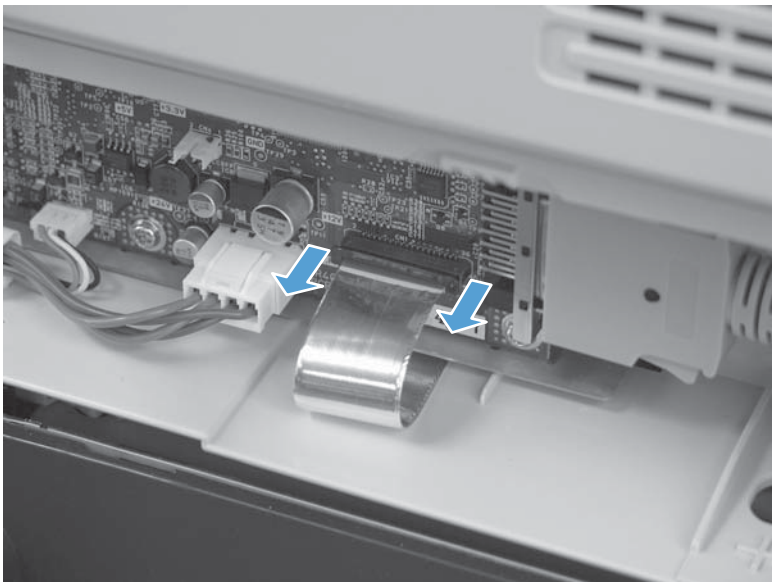
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.

## Remove the S-PBA-SCB (SCB)

**CAUTION:** ESD-sensitive part.

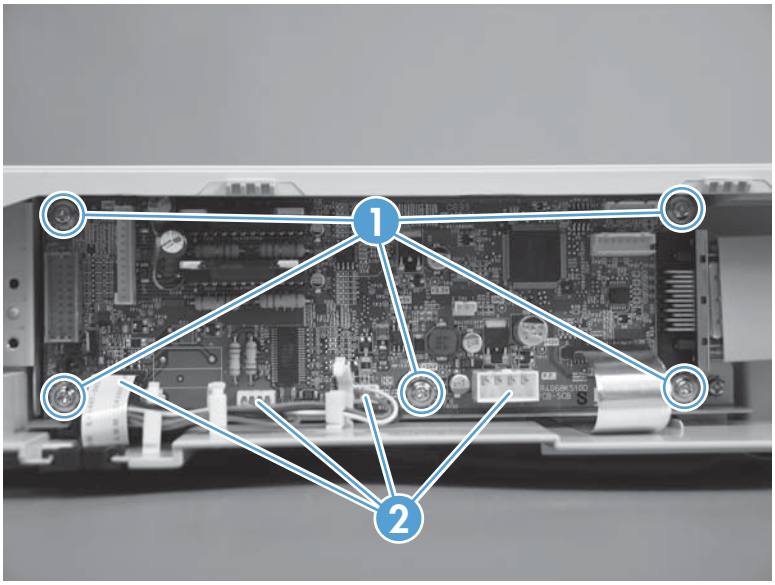
1. Carefully unlatch the top of the zero insertion force (ZIF) connector to release the flat flexible cable (FFC). Disconnect the FFC.

**Figure 2-122** Remove the S-PBA-SCB (SCB) (1 of 2)



2. Remove five screws (callout 1), disconnect four connectors (callout 2), and then remove the SCB.

**Figure 2-123** Remove the S-PBA-SCB (SCB) (2 of 2)



# S-ASM-USB (USB control panel cable)

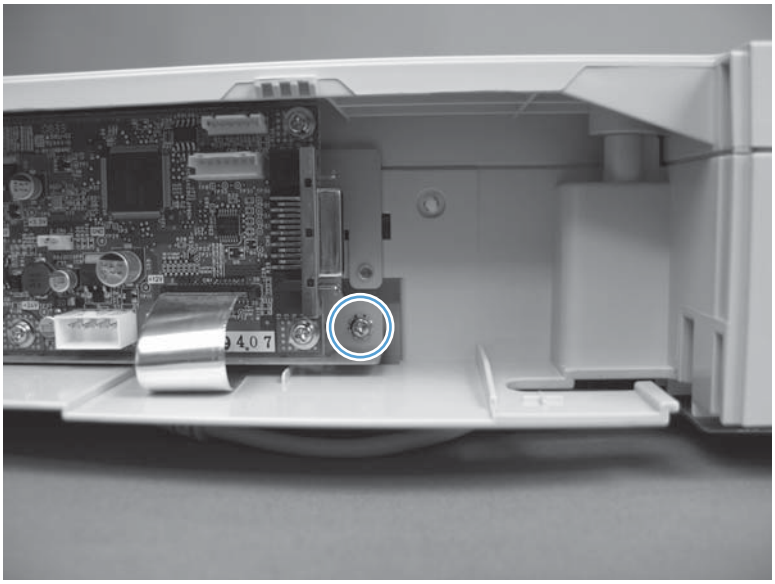
## Before proceeding, remove the following components

- Control panel. See Control panel on page 100.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- S-CVR-LEFT (scanner left cover). See S-CVR-LEFT (scanner left cover) on page 133.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- S-ASSY-CP-ADAPTER (CP adapter assembly). See S-ASSY-CP-ADAPTER (CP adapter assembly) on page 176

## Remove the S-ASM-USB (USB control panel cable)

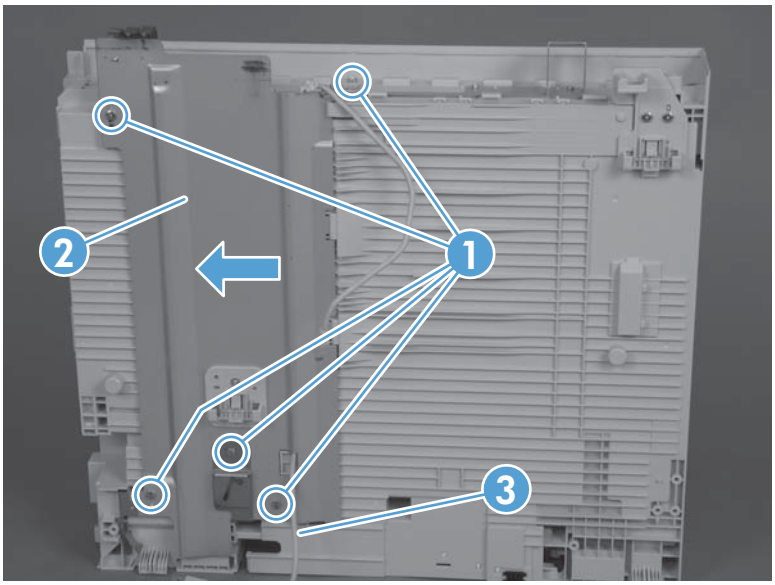
1. Remove one screw.

**Figure 2-124** Remove the S-ASM-USB (USB control panel cable) (1 of 2)



2. Remove five screws (callout 1), and then slide the lift plate (callout 2) and remove. Remove the cable (callout 3).

**Figure 2-125** Remove the S-ASM-USB (USB control panel cable) (2 of 2)



# S-HNG-LIFT-R (scanner release assembly)

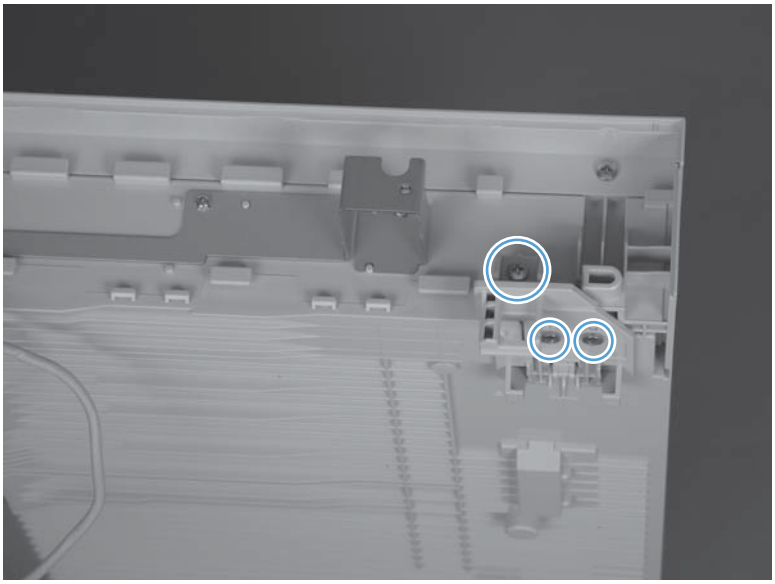
### Before proceeding, remove the following components

- Control panel. See Control panel on page 100.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- S-CVR-LEFT (scanner left cover). See S-CVR-LEFT (scanner left cover) on page 133.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- S-ASSY-CP-ADAPTER (CP adapter assembly). See S-ASSY-CP-ADAPTER (CP adapter assembly) on page 176.

## Remove the S-HNG-LIFT-R (scanner release assembly)

▲ Remove three screws, and then remove the scanner release assembly.

**Figure 2-126** Remove the S-HNG-LIFT-R (scanner release assembly)



# S-ASSY-UPPER-UNIT (tub top)

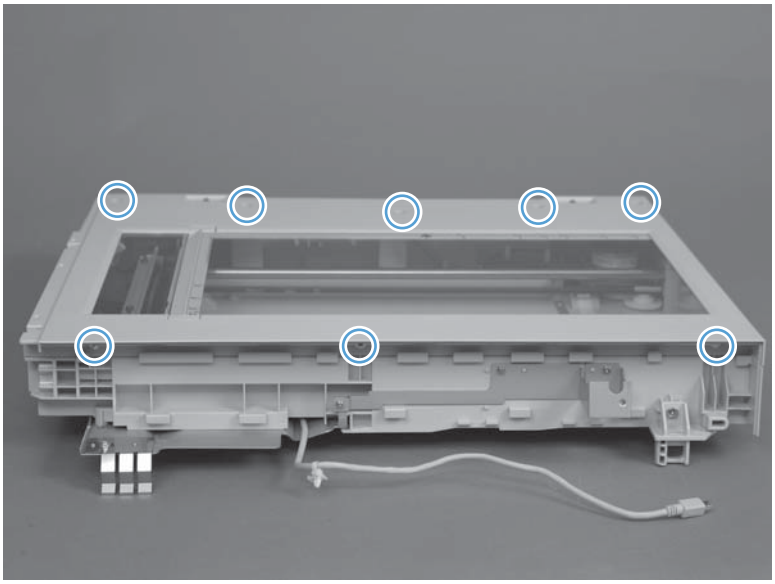
### Before proceeding, remove the following components

- Control panel. See Control panel on page 100.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- S-CVR-LEFT (scanner left cover). See S-CVR-LEFT (scanner left cover) on page 133.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- S-ASSY-CP-ADAPTER (CP adapter assembly). See S-ASSY-CP-ADAPTER (CP adapter assembly) on page 176.

## Remove the S-ASSY-UPPER-UNIT (tub top)

▲ Remove eight screws and then remove the tub top.

**Figure 2-127** Remove tub top



# S-PBA-TYUKEI (interconnect board) and S-SNS-EY3A1061–2 (size sensor)

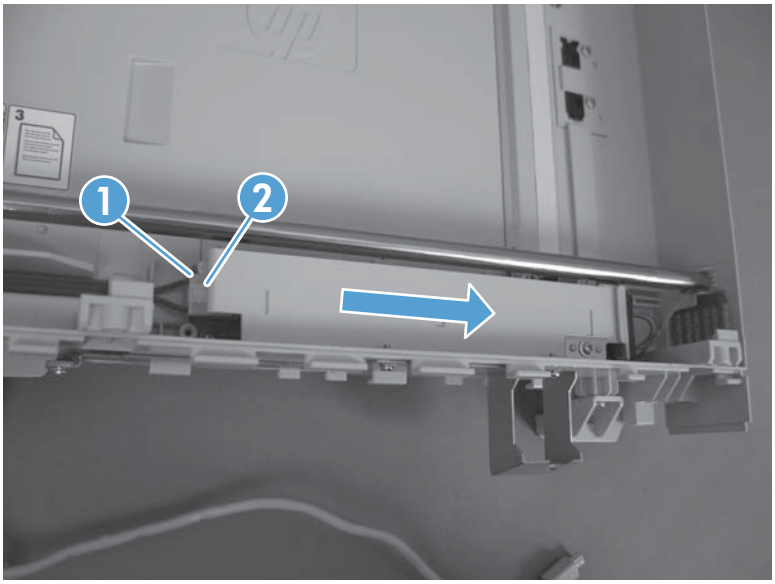
## Before proceeding, remove the following components

- Control panel. See Control panel on page 100.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- S-CVR-LEFT (scanner left cover). See S-CVR-LEFT (scanner left cover) on page 133.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- S-ASSY-CP-ADAPTER (CP adapter assembly). See S-ASSY-CP-ADAPTER (CP adapter assembly) on page 176.
- S-ASSY-UPPER-UNIT. See S-ASSY-UPPER-UNIT (tub top) on page 184.

## Remove the S-PBA-TYUKEI (interconnect board) and S-SNS-EY3A1061–2 (size sensor)

1. Disconnect one connector (callout 1), release one tab (callout 2), and then slide the inverter cover to the right to remove.

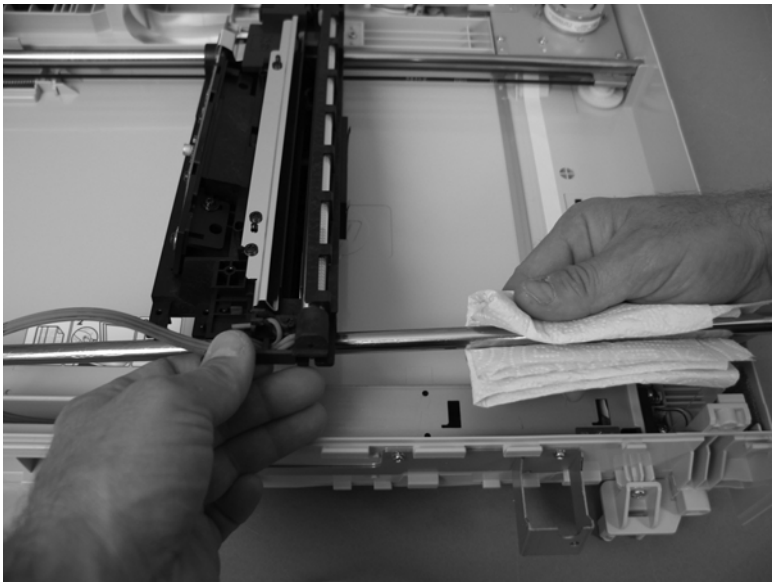
   **Figure 2-128** Remove the S-PBA-TYUKEI (interconnect board) and S-SNS-EY3A1061–2 (size sensor) (1 of 4)

2. Move the carriage to the center of the scanner.

3. Remove the front side shaft.

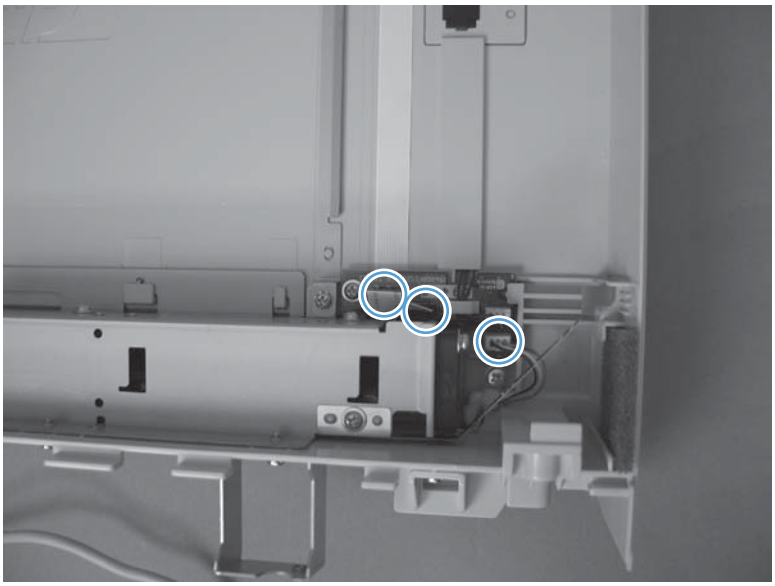
**Figure 2-129** Remove the S-PBA-TYUKEI (interconnect board) and S-SNS-EY3A1061–2 (size sensor) (2 of 4)



**CAUTION:** Grease is applied to the shaft. Avoid removing the grease from the shaft. Keep the grease away from other parts of the product.

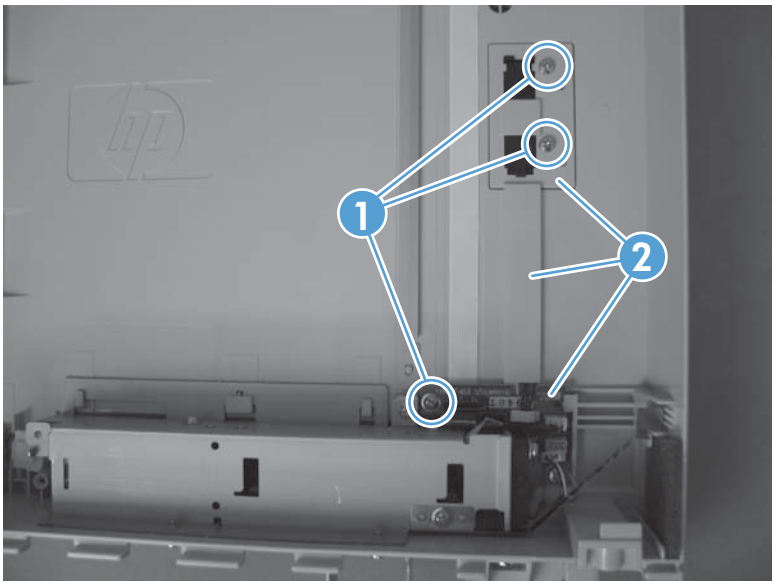
4. Disconnect two FFCs and one connector.

**Figure 2-130** Remove the S-PBA-TYUKEI (interconnect board) and S-SNS-EY3A1061–2 (size sensor) (3 of 4)



5. Remove three screws (callout 1) and the interconnect board and size sensor (callout 2).

**Figure 2-131** Remove the S-PBA-TYUKEI (interconnect board) and S-SNS-EY3A1061–2 (size sensor) (4 of 4)



# S-ASSY-INV (inverter)

- Control panel. See Control panel on page 100.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- S-CVR-LEFT (scanner left cover). See S-CVR-LEFT (scanner left cover) on page 133.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- S-ASSY-CP-ADAPTER (CP adapter assembly). See S-ASSY-CP-ADAPTER (CP adapter assembly) on page 176.
- S-ASSY-UPPER-UNIT (tub top). See S-ASSY-UPPER-UNIT (tub top) on page 184.
- S-PBA-TYUKEI (interconnect board) and S-SNS-EY3A1061–2 (size sensor). See S-PBA-TYUKEI (interconnect board) and S-SNS-EY3A1061–2 (size sensor) on page 185.

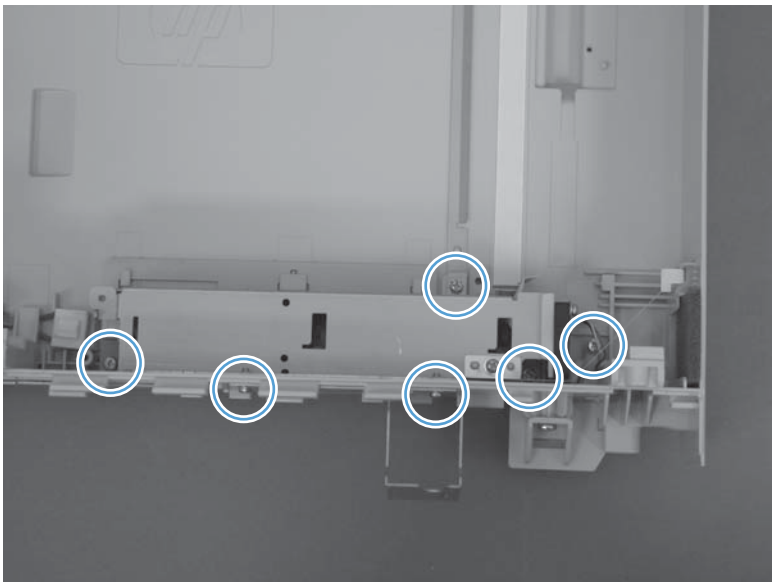
## Remove the S-ASSY-INV (inverter)

**CAUTION:** ESD-sensitive part.

1. Remove six screws.

**NOTE:** Make sure to note the locations of each screw type.

**Figure 2-132** Remove the S-ASSY-INV (inverter) (1 of 2)



2. Carefully lift the grounding plate and then remove the inverter.

**CAUTION:** Do not deform the grounding plate. Deforming the grounding plate can cause the optical carriage to malfunction.

**Figure 2-133** Remove the S-ASSY-INV (inverter) (2 of 2)



# S-FAN-MFB-30E-05A-006 (inverter fan)

## Before proceeding, remove the following components

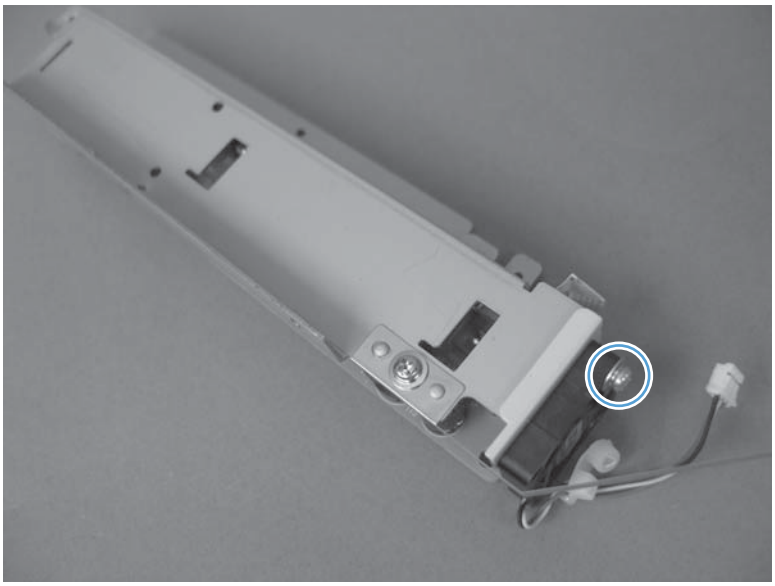
- Control panel. See Control panel on page 100.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- S-CVR-LEFT (scanner left cover). See S-CVR-LEFT (scanner left cover) on page 133.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- S-ASSY-CP-ADAPTER (CP adapter assembly). See S-ASSY-CP-ADAPTER (CP adapter assembly) on page 176.
- S-ASSY-UPPER-UNIT (tub top). See S-ASSY-UPPER-UNIT (tub top) on page 184.
- S-PBA-TYUKEI (interconnect board) and S-SNS-EY3A1061–2 (size sensor). See S-PBA-TYUKEI (interconnect board) and S-SNS-EY3A1061–2 (size sensor) on page 185.
- S-ASSY-INV (inverter). See S-ASSY-INV (inverter) on page 188.

## Remove the S-FAN-MFB-30E-05A-006 (inverter fan)

▲ Remove one screw, and then remove the inverter fan.

⚠ **CAUTION:** Check the arrows embossed on the fan frame that indicate air flow direction. When the fan is reinstalled, the air must flow in the correct direction.

**Figure 2-134** Remove the S-FAN-MFB-30E-05A-006 (inverter fan)



# ASSY-CRG-UNIT-IR4068 (optical assembly)

- Control panel. See Control panel on page 100.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- S-CVR-LEFT (scanner left cover). See S-CVR-LEFT (scanner left cover) on page 133.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- S-ASSY-CP-ADAPTER (CP adapter assembly). See S-ASSY-CP-ADAPTER (CP adapter assembly) on page 176.
- S-PBA-SCB (SCB). See S-PBA-SCB (SCB) on page 179.
- S-ASSY-UPPER-UNIT (tub top). See S-ASSY-UPPER-UNIT (tub top) on page 184.

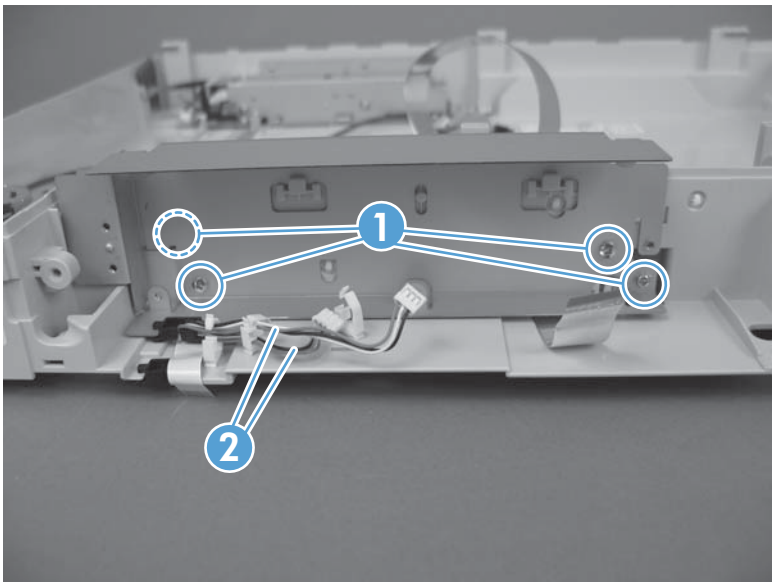
## Remove the ASSY-CRG-UNIT-IR4068 (optical assembly)

⚠ **CAUTION:** If removing both shafts, be sure to return each shaft in its original position. The front shaft has oil applied and rear shaft has grease applied.

**CAUTION:** Avoid removing the grease and oil from the shafts. Keep the grease and oil away from other parts of the product.

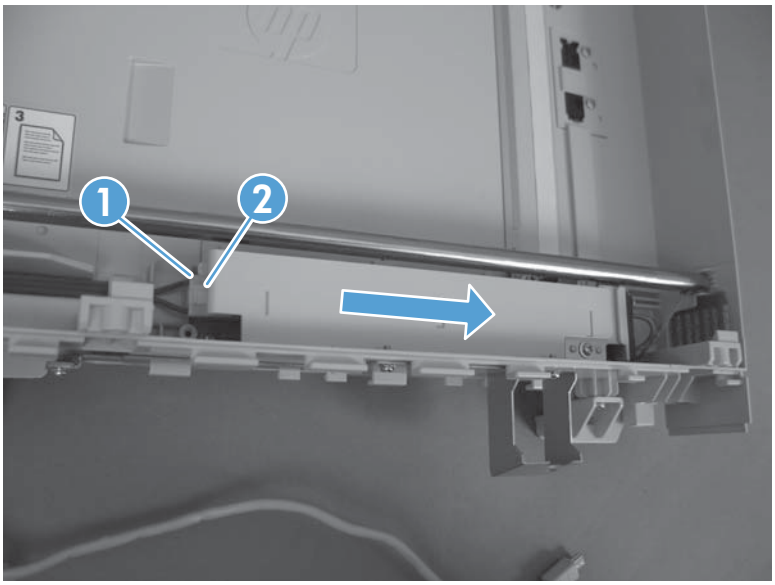
1. Remove four screws (callout 1), release two cables (callout 2) from the cable guides, and then remove the sheet metal box.

**Figure 2-135** Remove the ASSY-CRG-UNIT-IR4068 (optical assembly) (1 of 6)



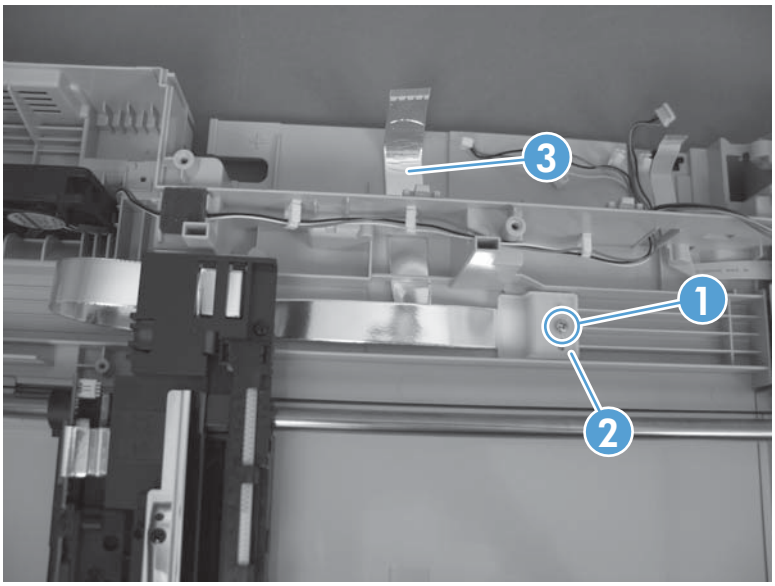
2. Disconnect one connector (callout 1), release one tab (callout 2), and then slide the inverter cover to the right to remove.

**Figure 2-136** Remove the ASSY-CRG-UNIT-IR4068 (optical assembly) (2 of 6)



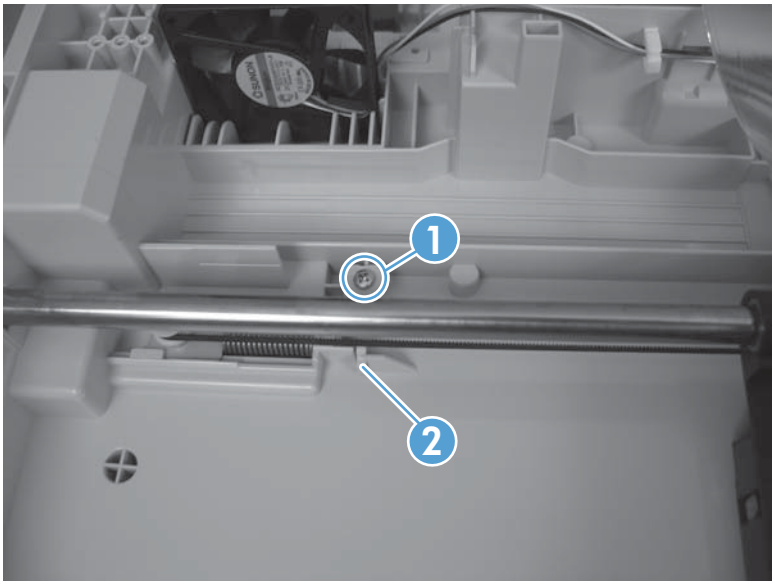

3. Move the carriage to the center of the scanner.
4. Remove one screw (callout 1) and restraint (callout 2). Release the FFC (callout 3) from the tape.

**Figure 2-137** Remove the ASSY-CRG-UNIT-IR4068 (optical assembly) (3 of 6)



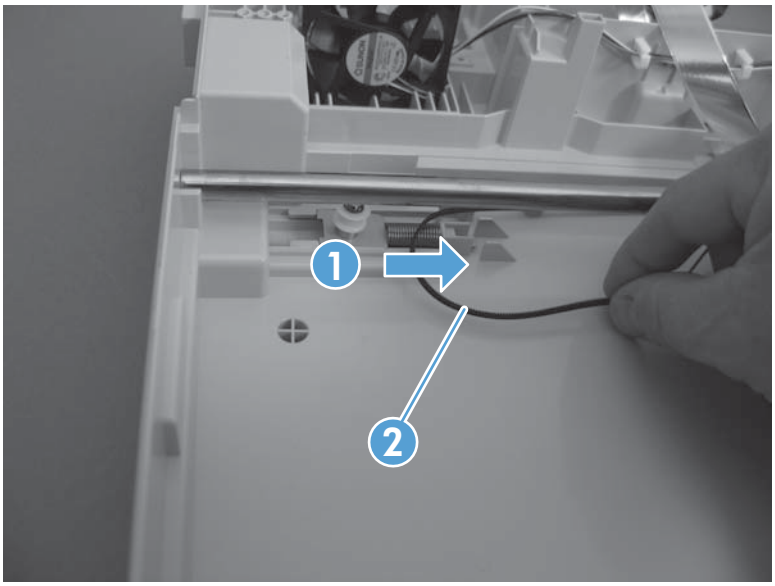
5. Remove one screw (callout 1), and then remove the stop (callout 2).

**Figure 2-138** Remove the ASSY-CRG-UNIT-IR4068 (optical assembly) (4 of 6)



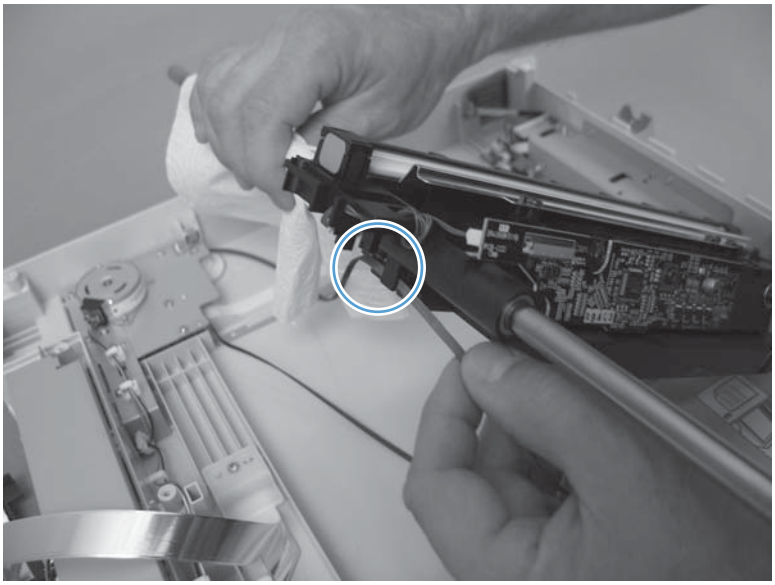

6. Compress the spring until it locks (callout 1), and then remove the belt (callout 2) from the pulley.

**Figure 2-139** Remove the ASSY-CRG-UNIT-IR4068 (optical assembly) (5 of 6)



7. Release the belt from the optical assembly and then remove the assembly.

**Figure 2-140** Remove the ASSY-CRG-UNIT-IR4068 (optical assembly) (6 of 6)



**CAUTION:** Oil is applied to the shaft. Keep oil away from other parts of the product.

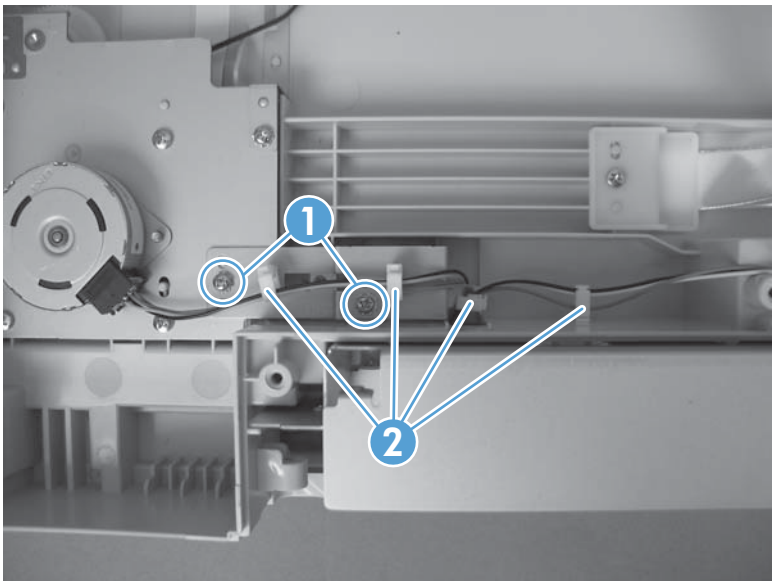
# S-ASSY-MOTOR-UNIT (motor assembly)

- Control panel. See Control panel on page 100.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- S-CVR-LEFT (scanner left cover). See S-CVR-LEFT (scanner left cover) on page 133.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- S-ASSY-CP-ADAPTER (CP adapter assembly). See S-ASSY-CP-ADAPTER (CP adapter assembly) on page 176.
- S-PBA-SCB (SCB). See S-PBA-SCB (SCB) on page 179
- S-ASSY-UPPER-UNIT (tub top). See S-ASSY-UPPER-UNIT (tub top) on page 184.
- ASSY-CRG-UNIT-IR4068 (optical assembly). See ASSY-CRG-UNIT-IR4068 (optical assembly) on page 191.

## Remove the S-ASSY-MOTOR-UNIT (motor assembly)

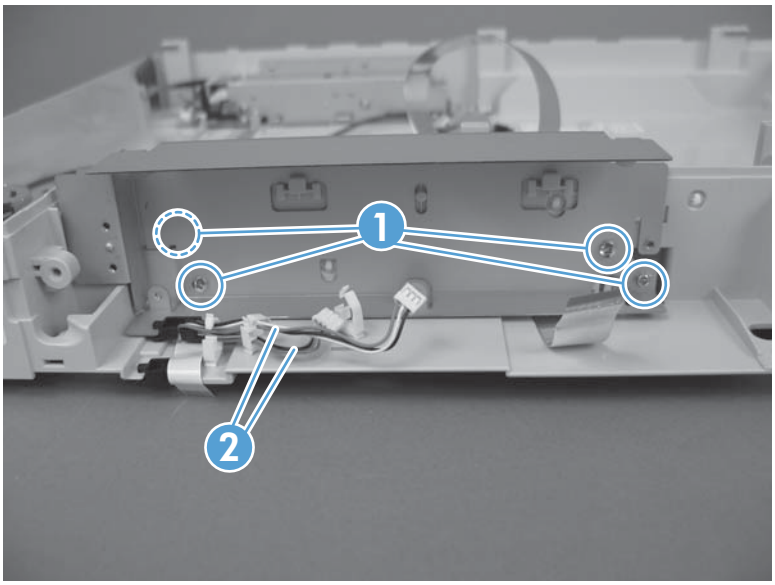
1. Remove two screws (callout 1) and then release the cables from the cable guides (callout 2).

**Figure 2-141** Remove the S-ASSY-MOTOR-UNIT (motor assembly) (1 of 3)



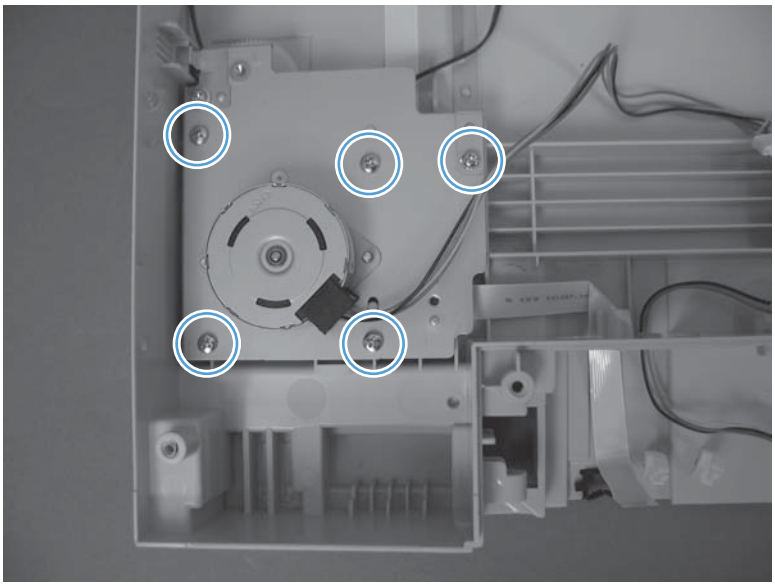
2. Remove three screws (callout 1), release two cables (callout 2) from the cable guides, and then remove the sheet metal box.

**Figure 2-142** Remove the S-ASSY-MOTOR-UNIT (motor assembly) (2 of 3)




3. Remove five screws, and then remove the motor assembly.

**Figure 2-143** Remove the S-ASSY-MOTOR-UNIT (motor assembly) (3 of 3)



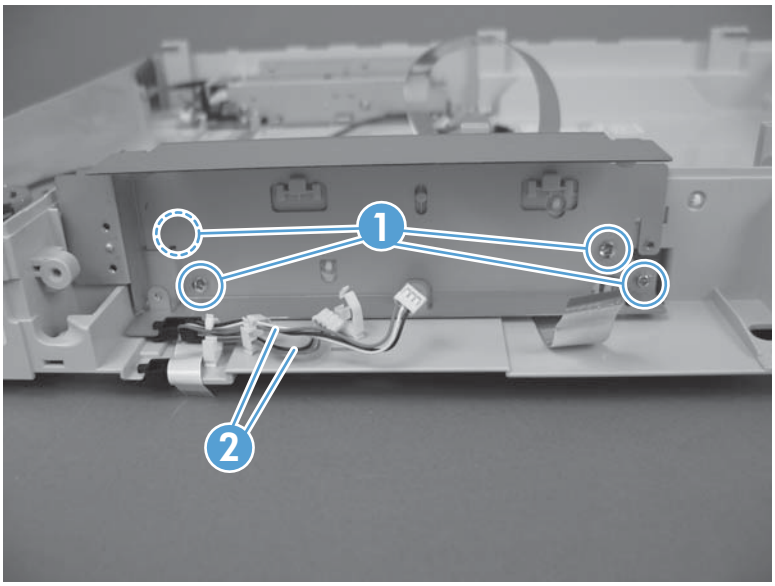
# S-FAN-D06037600G-001 (scanner fan)

- Control panel. See Control panel on page 100.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- S-CVR-LEFT (scanner left cover). See S-CVR-LEFT (scanner left cover) on page 133.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- S-ASSY-CP-ADAPTER (CP adapter assembly). See S-ASSY-CP-ADAPTER (CP adapter assembly) on page 176.
- S-PBA-SCB (SCB). See S-PBA-SCB (SCB) on page 179
- S-ASSY-UPPER-UNIT (tub top). See S-ASSY-UPPER-UNIT (tub top) on page 184.

## Remove the S-FAN-D06037600G-001 (scanner fan)

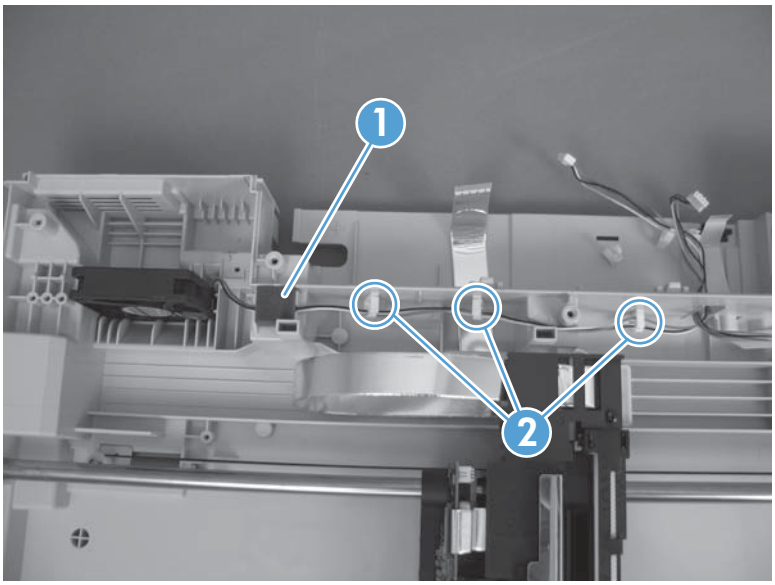
1. Remove four screws (callout 1), release two cables (callout 2) from the cable guides, and then remove the sheet metal box.

**Figure 2-144** Remove the S-FAN-D06037600G-001 (scanner fan) (1 of 2)



2. Remove the foam (callout 1), release the cable from the cable guides (callout 2), and then remove the fan.

**Figure 2-145** Remove the S-FAN-D06037600G-001 (scanner fan) (2 of 2)




**CAUTION:** When the fan is reinstalled, the air must flow into the product. Check the arrows embossed on the fan frame that indicate air flow direction.

# 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.

## IPTU

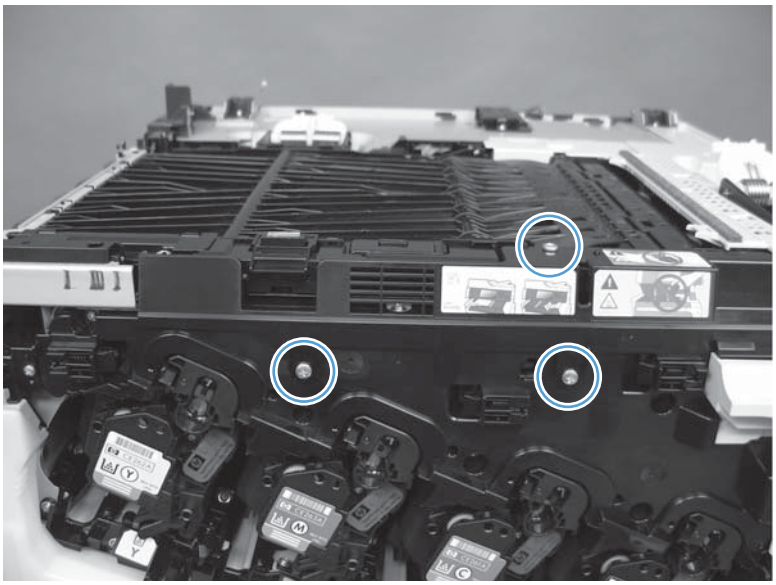
### Before proceeding, remove the following components

- Standard output bin. See Standard output bin on page 123.
- Output bin bezel. See Output bin bezel on page 124.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.

### Remove the IPTU

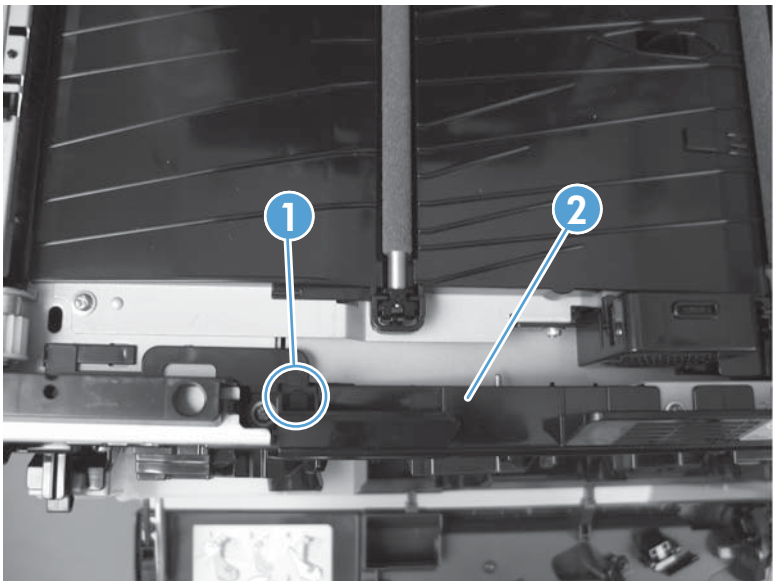
1. Open the front door and then remove three screws.

**Figure 2-146** Remove the IPTU (1 of 5)



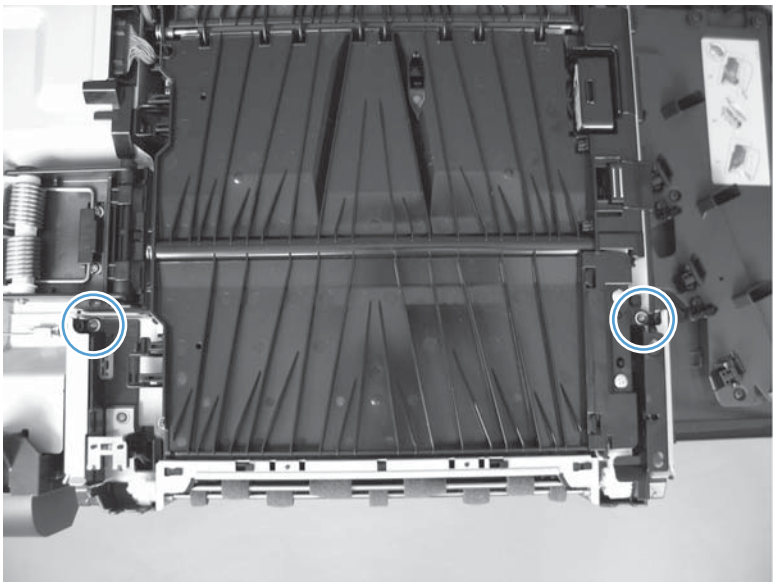
2. Lift the cover up on the right side to clear the pin, lift the paper path, rotate the cover on left side to release one tab (callout 1), and then remove the inner cover (callout 2).

**Figure 2-147** Remove the IPTU (2 of 5)



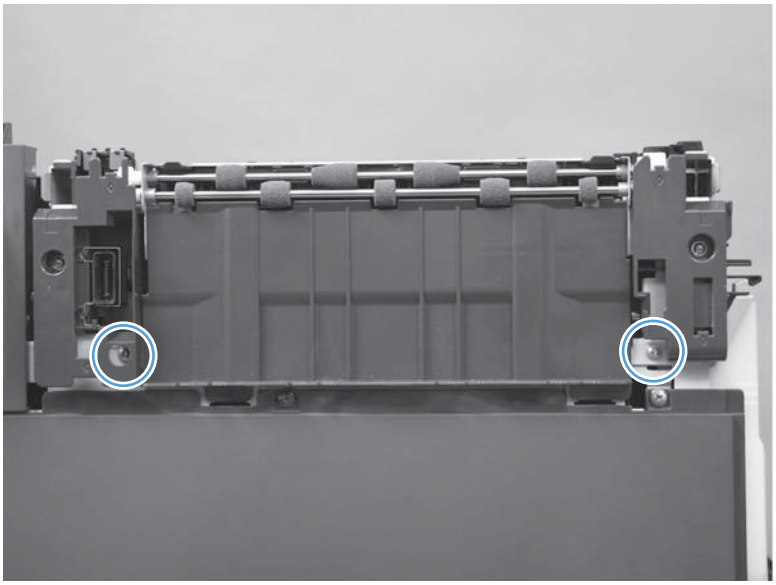

3. Remove two screws.

**Figure 2-148** Remove the IPTU (3 of 5)



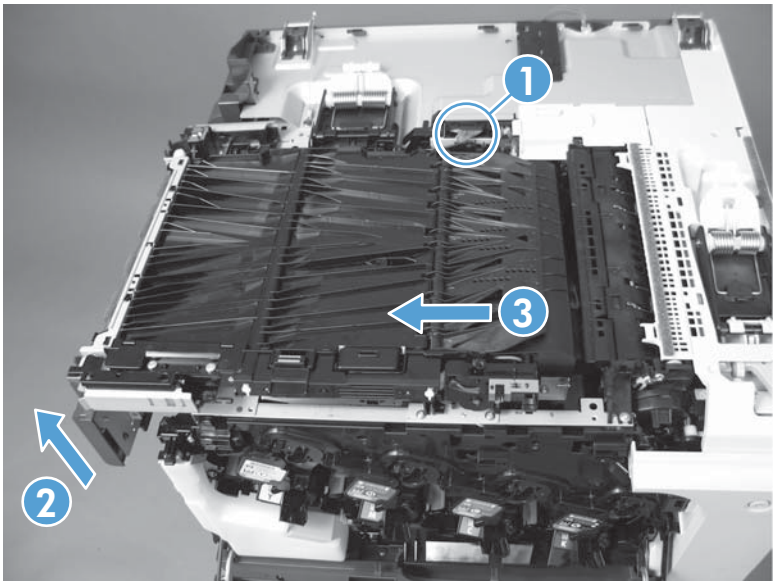
4. Remove two screws.

**Figure 2-149** Remove the IPTU (4 of 5)



5. Disconnect one connector (callout 1) and then lift (callout 2) and slide the IPTU (callout 3) to remove.

**Figure 2-150** Remove the IPTU (5 of 5)



# Cassette feed guide

**TIP:** If a page is jammed in the product, you might be able to access it by removing this guide.

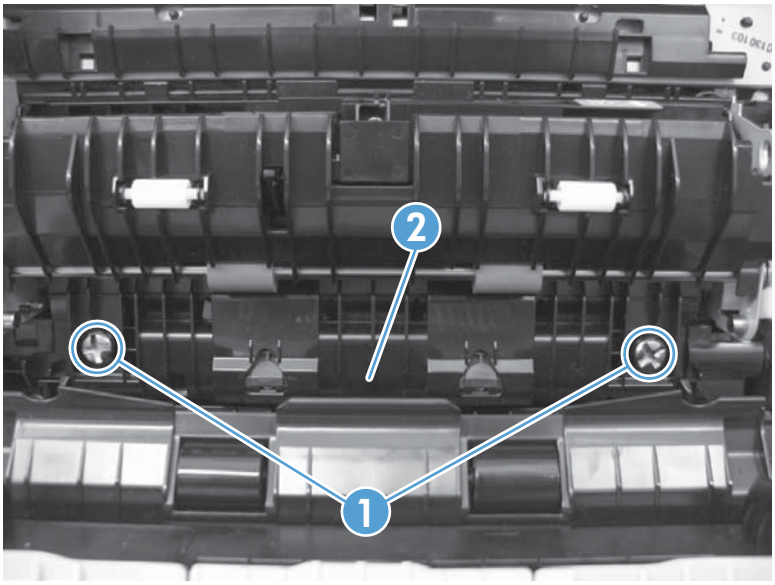
1. Open the right-door assembly.

**Figure 2-151** Remove the cassette feed guide (1 of 3)



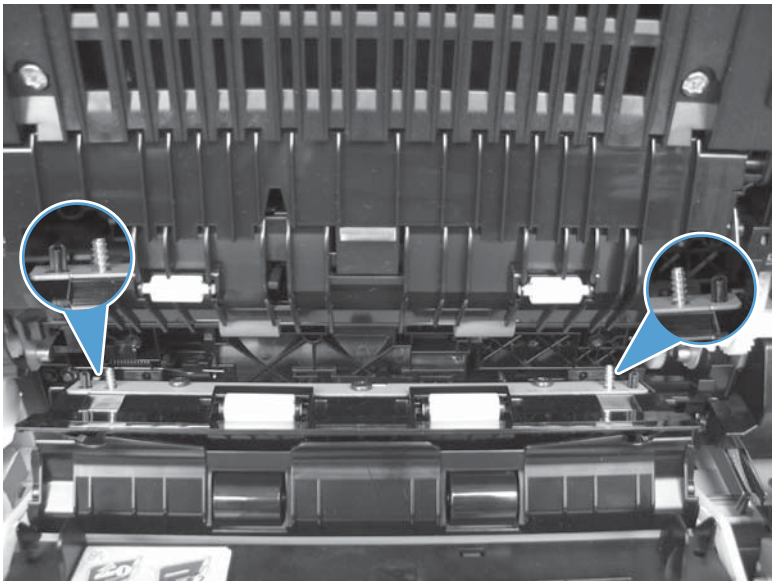
2. Remove two screws (callout 1), and then remove the cassette feed guide (callout 2).

**Figure 2-152** Remove the cassette feed guide (2 of 3)




**NOTE:** When reinstalling the cassette feed guide, make sure to correctly align each screw and pin with the corresponding hole and that the guide fits secure against the chassis.

**Figure 2-153** Remove the cassette feed guide (3 of 3)



## Secondary transfer assembly

The secondary transfer assembly includes the transfer roller.

1. Open the right-door assembly.

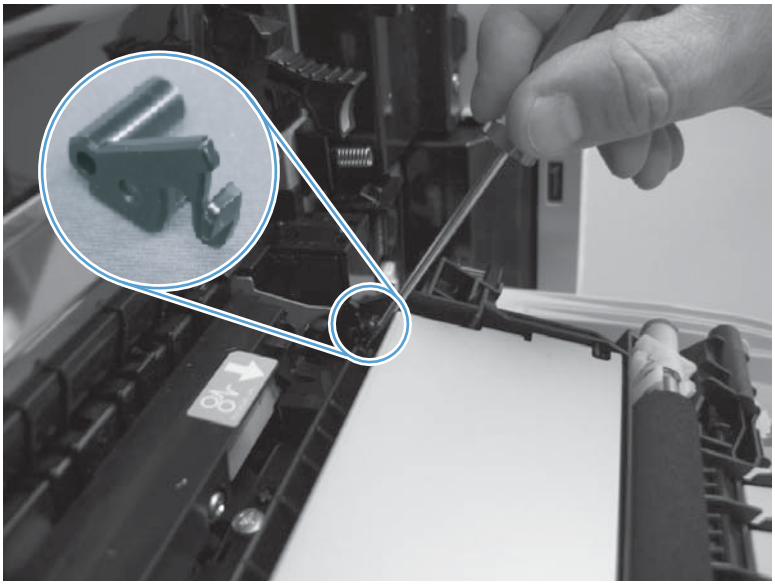
**Figure 2-154** Remove the secondary transfer assembly (1 of 3)



2. Release one tab and carefully remove the stopper.

**NOTE:** You might have to slightly lift up on the corner of the assembly to release the stopper pin from the hole in the chassis.

**Figure 2-155** Remove the secondary transfer assembly (2 of 3)



3. Remove the secondary transfer assembly.

**CAUTION:** Do not damage the blue release lever when removing the assembly.

**Figure 2-156** Remove the secondary transfer assembly (3 of 3)



## Reinstall the secondary transfer assembly

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

**Figure 2-157** Reinstall the secondary transfer assembly



# Separation pad (Tray 1)

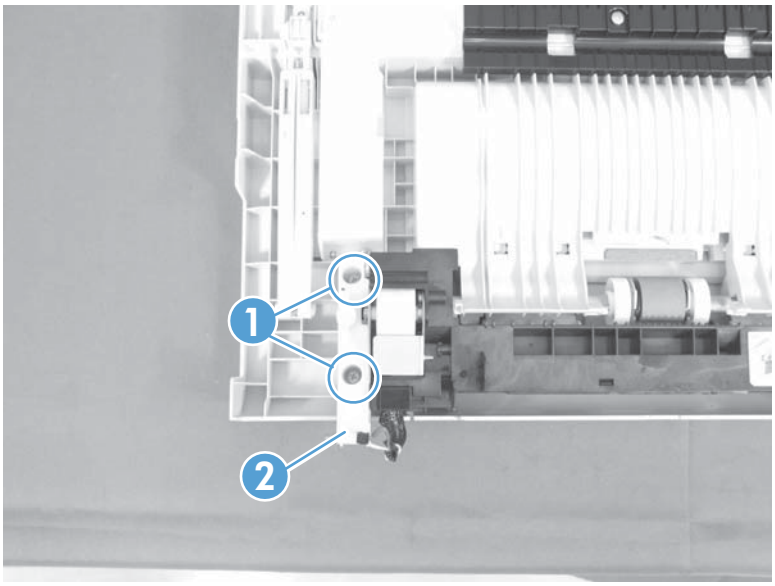
### Before proceeding, remove the following components:

- Pickup roller. See Pickup roller (Tray 1) on page 114.
- Right door assembly. See Right-door assembly on page 145.

## Remove the separation pad (Tray 1)

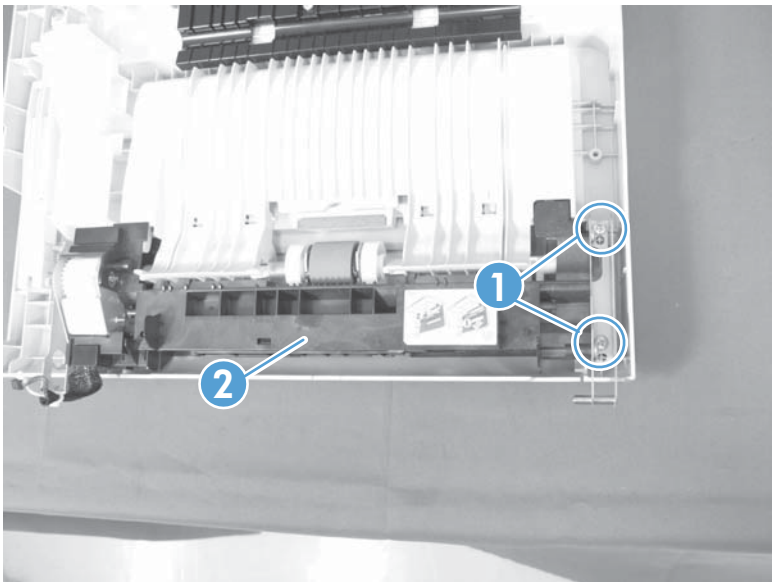
1. Remove two screws (callout 1) and the cover (callout 2).

**Figure 2-158** Remove the separation pad (1 of 6)



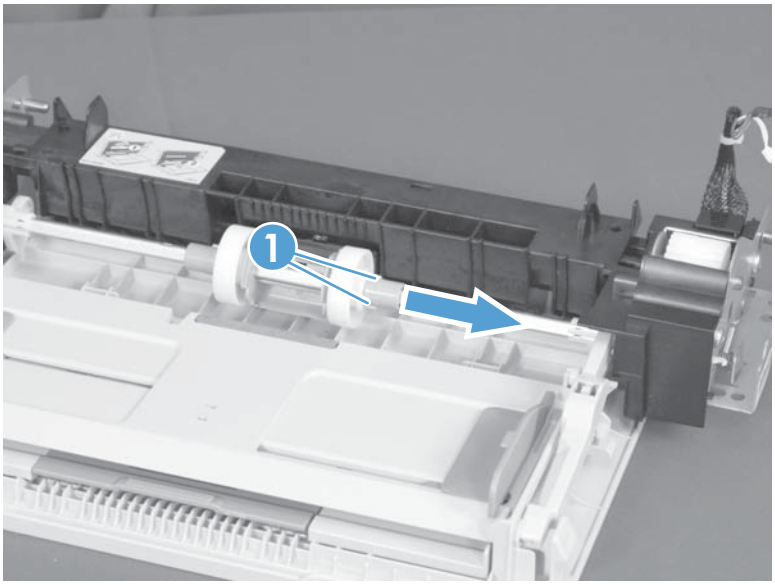

2. Remove two screws (callout 1) and separate Tray 1 (callout 2) from the door assembly.

**Figure 2-159** Remove the separation pad (2 of 6)



3. Release two tabs (callout 1) and slide the locking cap and sub roller toward the edge of the tray.

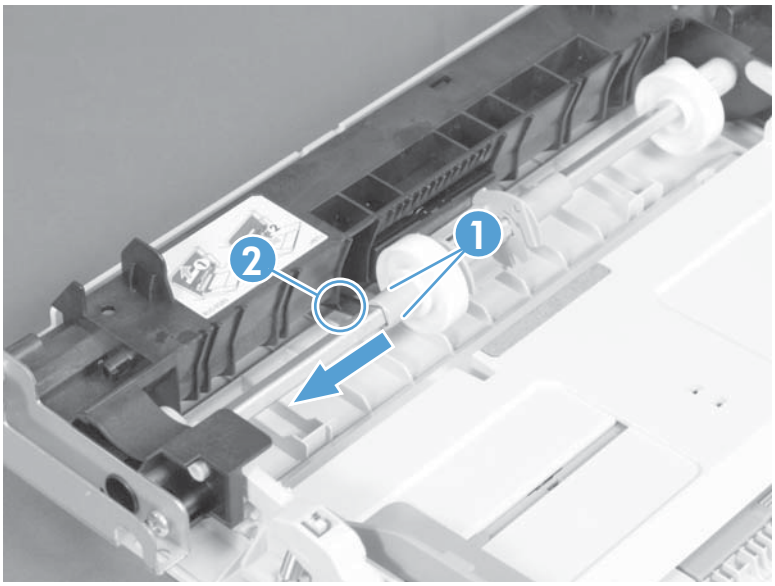
**Figure 2-160** Remove the separation pad (3 of 6)




4. Release two tabs (callout 1) and slide the locking cap and sub roller toward the edge of the tray.

**CAUTION:** Do not damage the flag (callout 2).

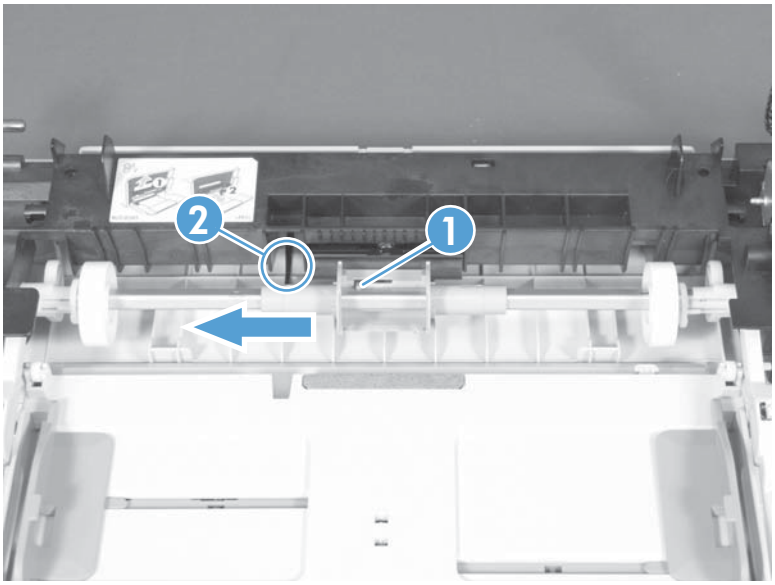
**Figure 2-161** Remove the separation pad (4 of 6)



5. Release one tab (callout 1) and slide the pickup-roller holder toward the edge of the tray.

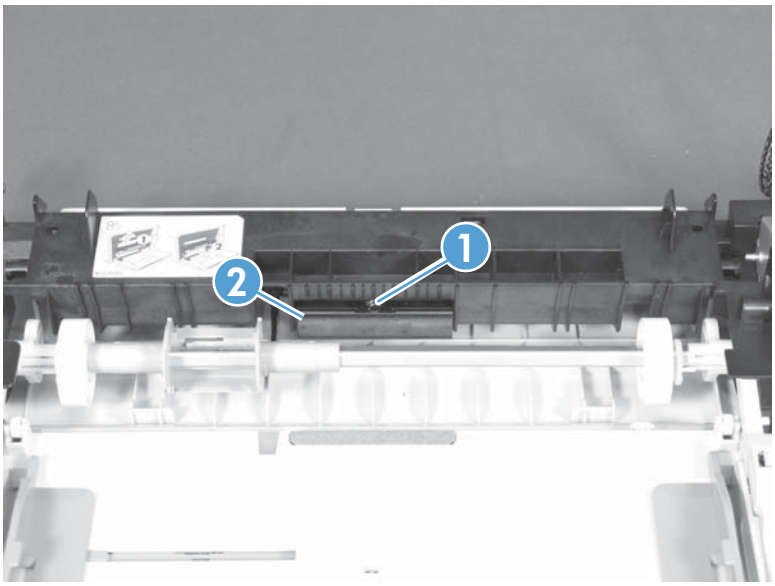
**CAUTION:** Do not damage the flag (callout 2).

**Figure 2-162** Remove the separation pad (5 of 6)




6. Release one tab (callout 1) and remove the separation pad.

**Figure 2-163** Remove the separation pad (6 of 6)



# Registration density (RD) sensor assembly

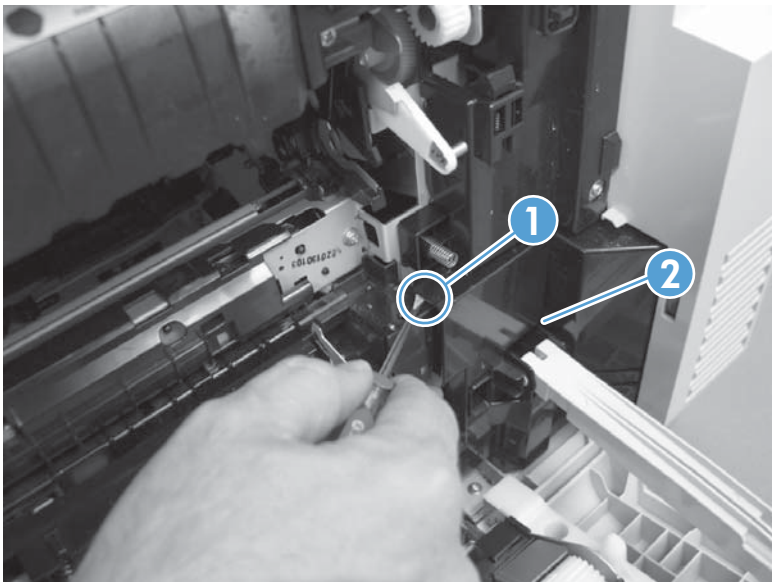
### Before proceeding, remove the following components:

- Intermediate transfer belt (ITB). See Intermediate transfer belt (ITB) on page 120.
- Secondary transfer assembly. See Secondary transfer assembly on page 204.

## Remove the RD sensor assembly

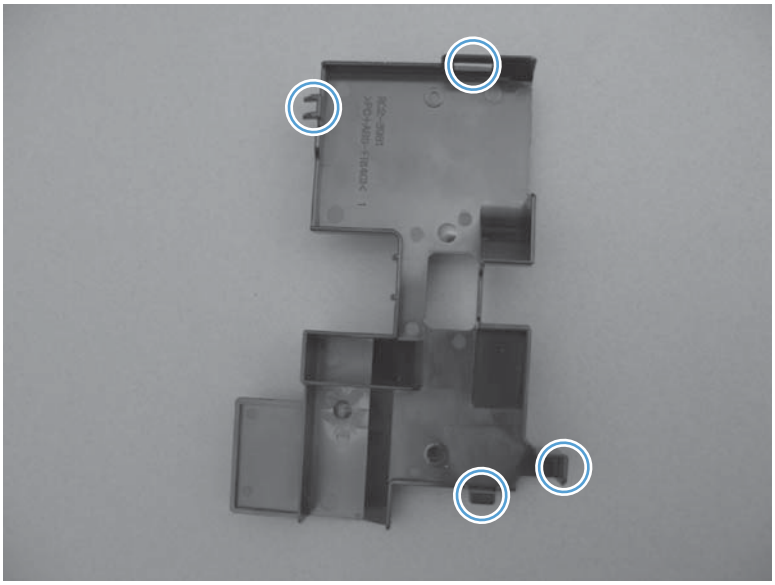
1. Release one tab (callout 1), and then remove the cover (callout 2).

**Figure 2-164** Remove the RD sensor assembly (1 of 7)




**NOTE:** When reinstalling the cover, make sure that the tabs are seated correctly.

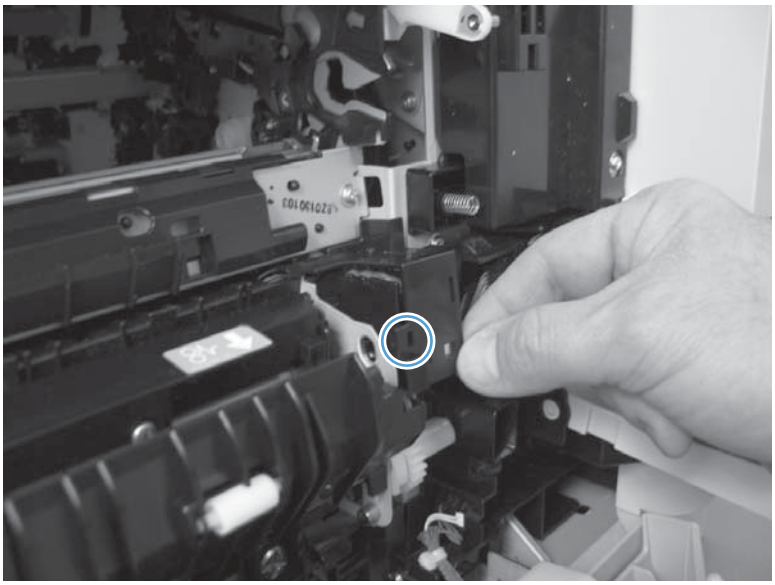
**Figure 2-165** Remove the RD sensor assembly (2 of 7)



2. Release one tab, and then remove the wire-harness cover.

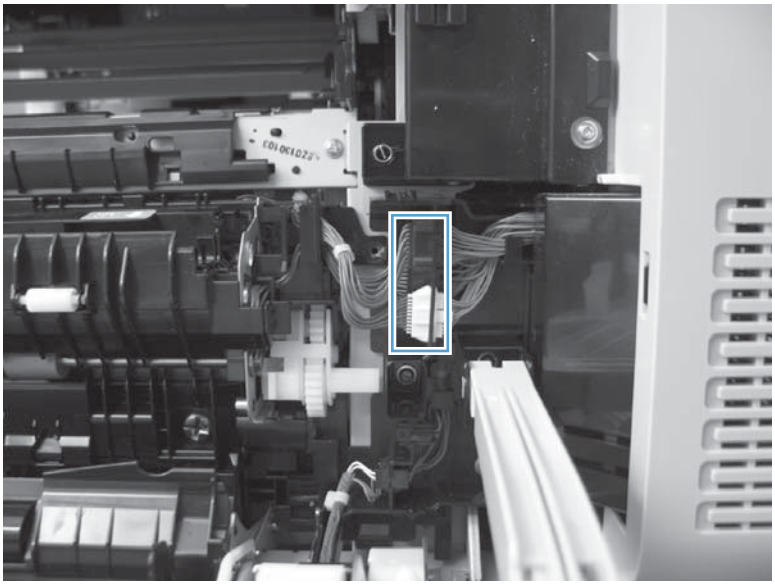
**TIP:** Open the front door to make it easier to remove the cover.

**Figure 2-166** Remove the RD sensor assembly (3 of 7)



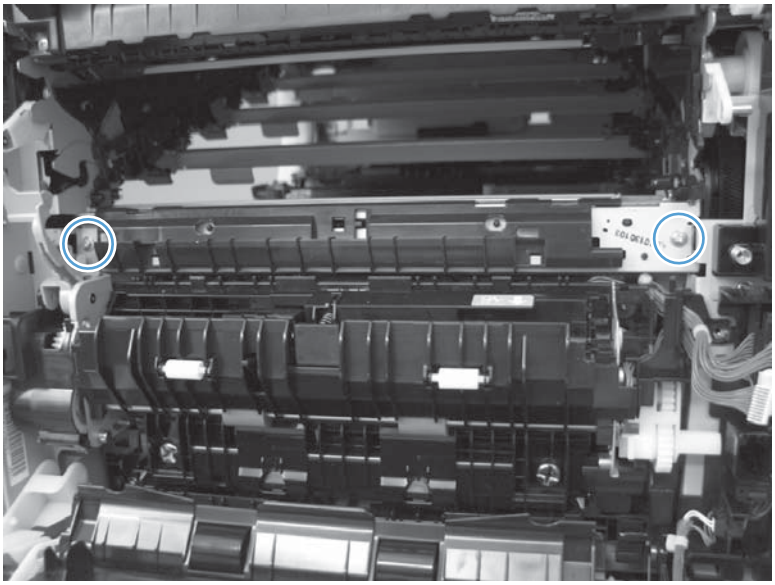
3. Disconnect three connectors.

**Figure 2-167** Remove the RD sensor assembly (4 of 7)



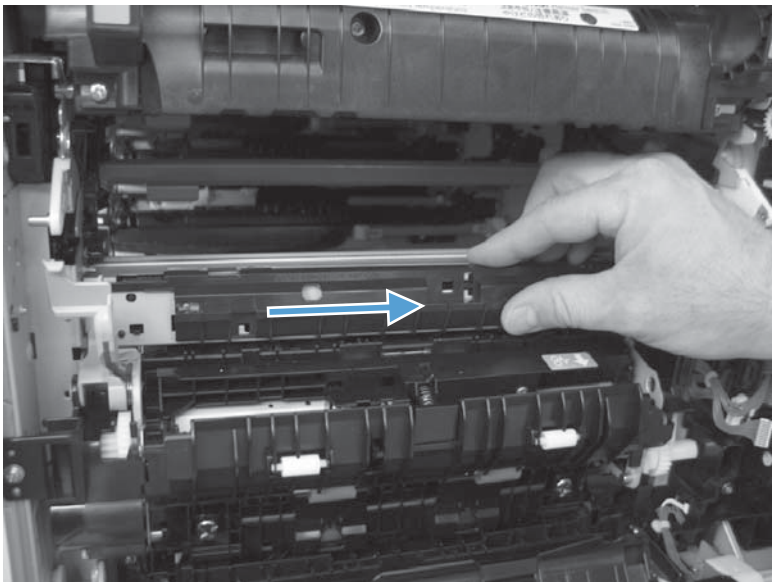
4. Remove two screws.

**Figure 2-168** Remove the RD sensor assembly (5 of 7)



5. Slide the shutter toward the back side of the product. Keep the shutter in this position for the following step.

**Figure 2-169** Remove the RD sensor assembly (6 of 7)



6. Carefully remove the assembly from the product.

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

**Figure 2-170** Remove the RD sensor assembly (7 of 7)



# Registration assembly

### Before proceeding, remove the following components:

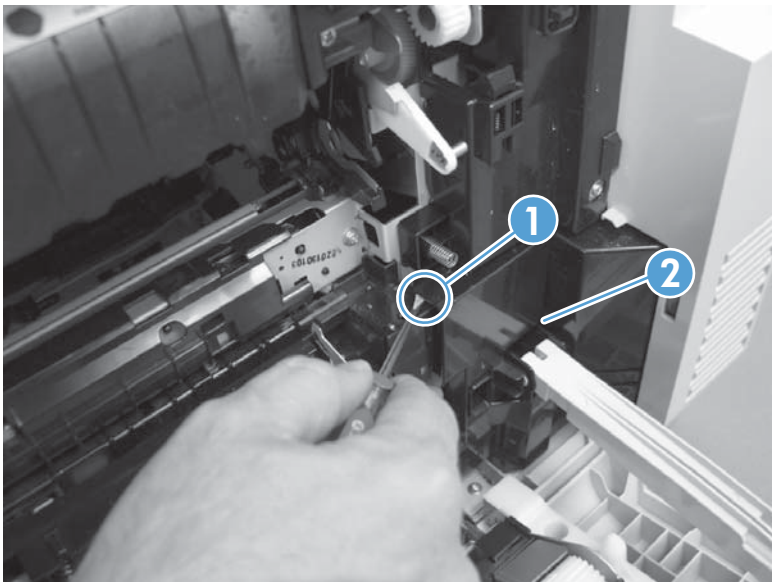
- Intermediate transfer belt (ITB). See Intermediate transfer belt (ITB) on page 120.
- Secondary transfer assembly. See Secondary transfer assembly on page 204.

## 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 and input the media sensor value. See Service menu on page 625.

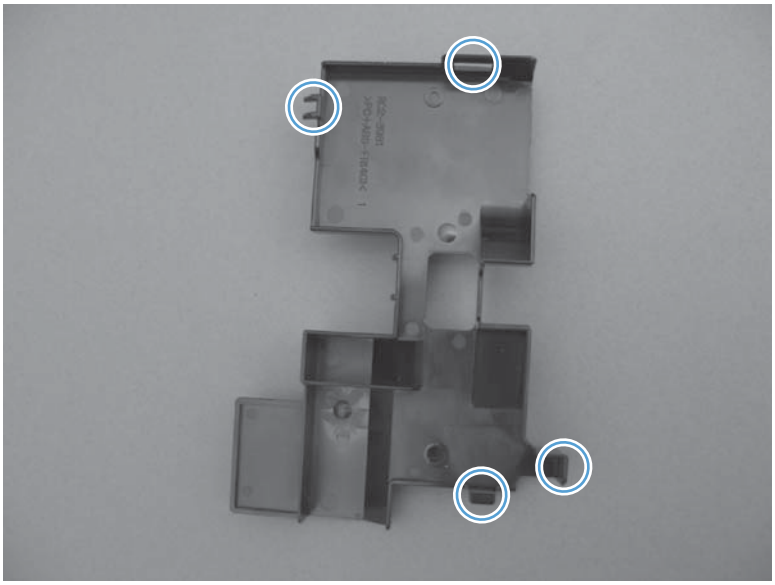
1. Release one tab (callout 1), and then remove the cover (callout 2).

**Figure 2-171** Remove the registration assembly (1 of 8)




**NOTE:** When reinstalling the cover, be sure that the tabs are seated correctly.

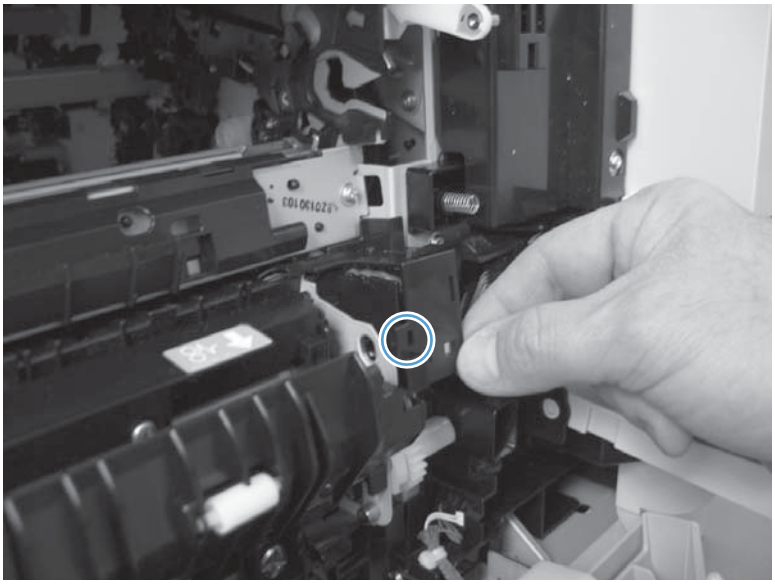
**Figure 2-172** Remove the registration assembly (2 of 8)



2. Release one tab, and then remove the wire-harness cover.

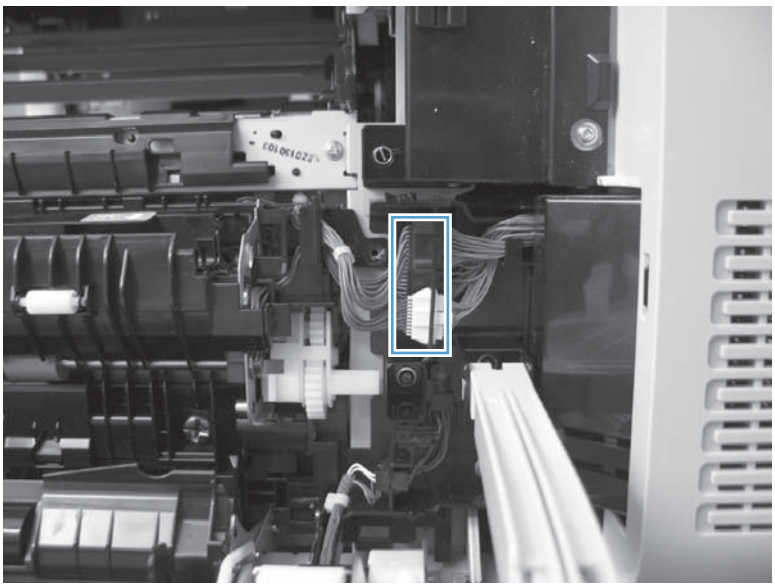
**TIP:** To make the cover easier to remove, open the front-door assembly to close the RD-sensor shutter.

**Figure 2-173** Remove the registration assembly (3 of 8)



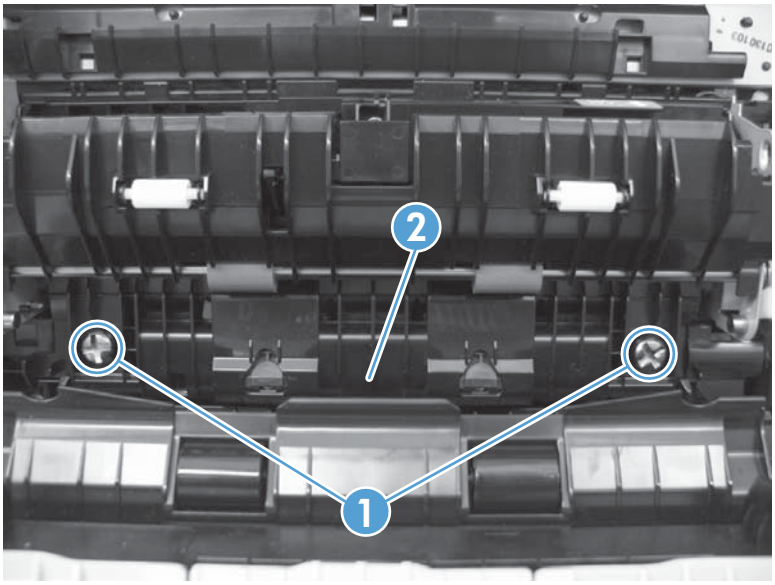
3. Disconnect two connectors.

**Figure 2-174** Remove the registration assembly (4 of 8)



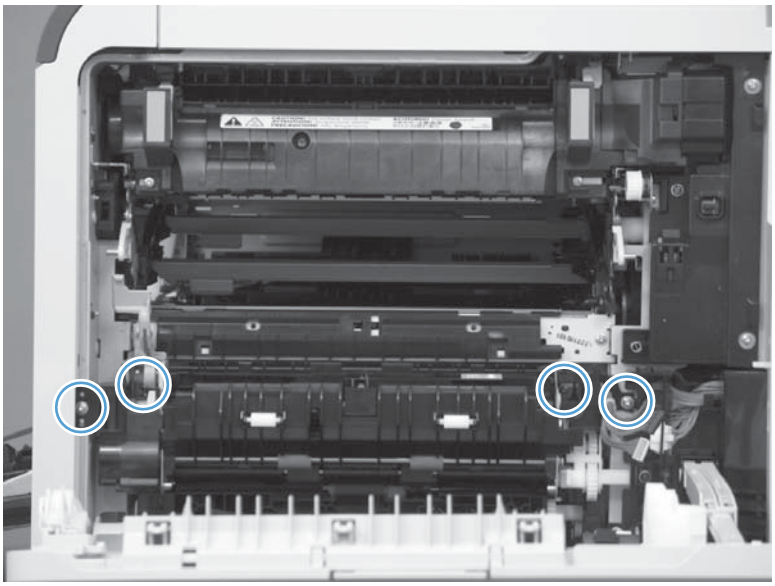
4. Remove two screws (callout 1), and then remove the cassette feed guide (callout 2).

**Figure 2-175** Remove the registration assembly (5 of 8)



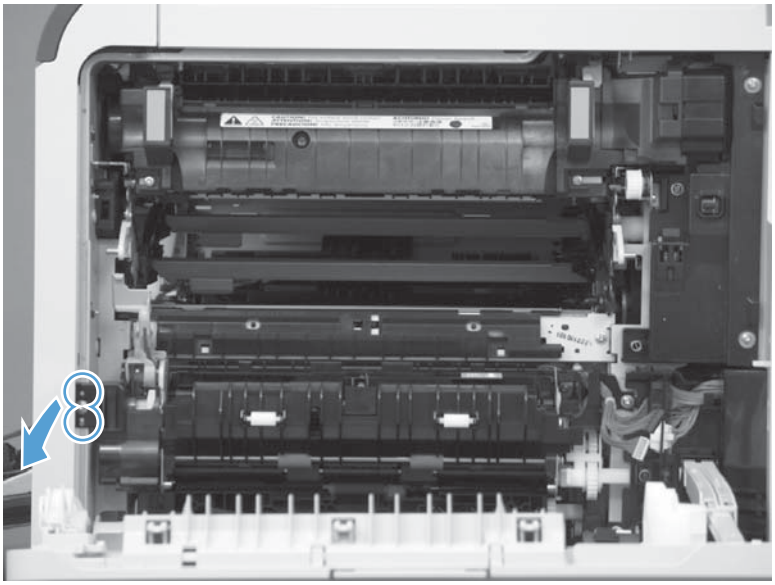

5. Remove four screws.

**Figure 2-176** Remove the registration assembly (6 of 8)



6. Release two pins and the front of the assembly.

**Figure 2-177** Remove the registration assembly (7 of 8)




7. Remove the assembly from the product.

**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 fits securely up against the product chassis.

**Figure 2-178** Remove the registration assembly (8 of 8)



# Residual-toner-feed motor

### Before proceeding, remove the following components:

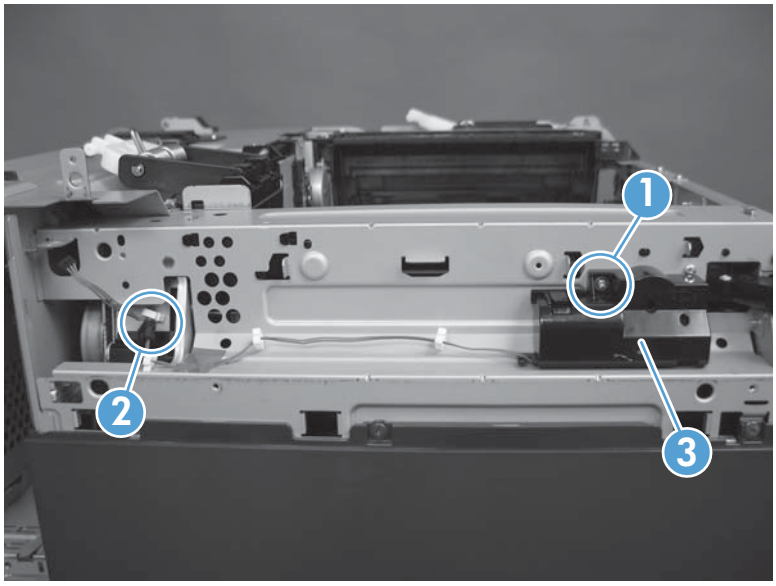
- Intermediate transfer belt (ITB). See Intermediate transfer belt (ITB) on page 120.
- Standard output bin. See Standard output bin on page 123.
- Output bin bezel. See Output bin bezel on page 124.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Fan cover. See Fan cover on page 134.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- IPTU. See IPTU on page 199.
- Delivery fan. See Delivery fan on page 228.

## Remove the residual-toner-feed motor

Remove one screw (callout 1), disconnect one connector (callout 2), and them remove the residual-toner-feed motor (callout 3).

**Reinstallation tip** When the motor (callout 3) is reinstalled, make sure that the keyed shaft on the product and motor component are correctly aligned and engaged.

**Figure 2-179** Remove the residual-toner-feed motor



# Residual-toner duct and feed assembly

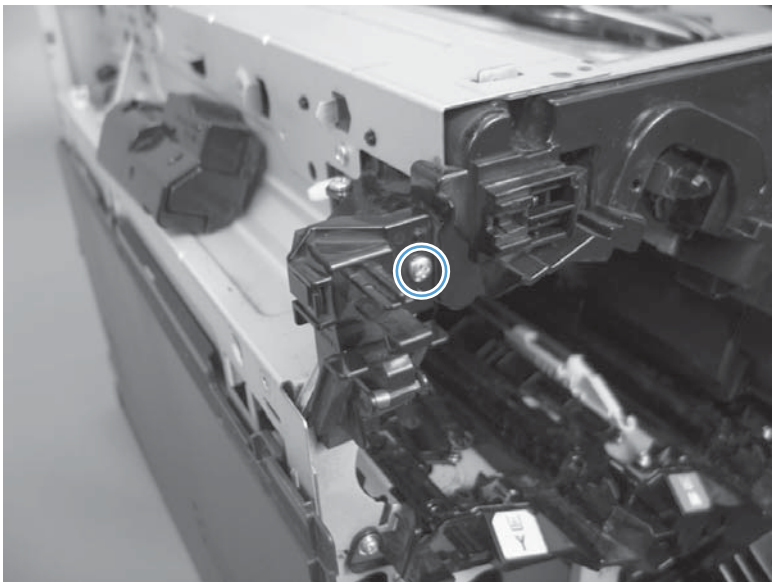
### Before proceeding, remove the following components:

- Toner-collection unit. See Toner-collection unit on page 104.
- Intermediate transfer belt (ITB). See Intermediate transfer belt (ITB) on page 120.
- Standard output bin. See Standard output bin on page 123.
- Output bin bezel. See Output bin bezel on page 124.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Fan cover. See Fan cover on page 134.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- IPTU. See IPTU on page 199.
- Residual-toner-feed motor. See Residual-toner-feed motor on page 218.
- Delivery fan. See Delivery fan on page 228.

## Remove the residual-toner duct and feed assembly

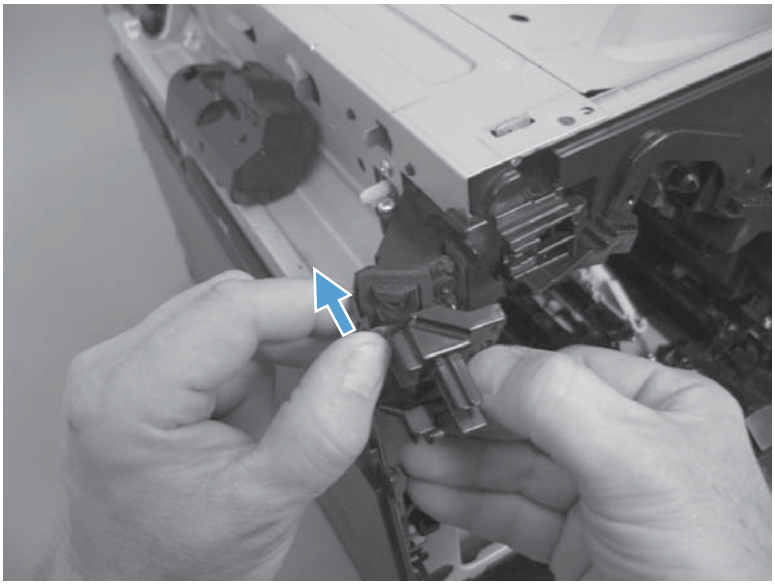
1. Remove one screw.

**Figure 2-180** Remove the residual-toner duct and feed assembly (1 of 4)



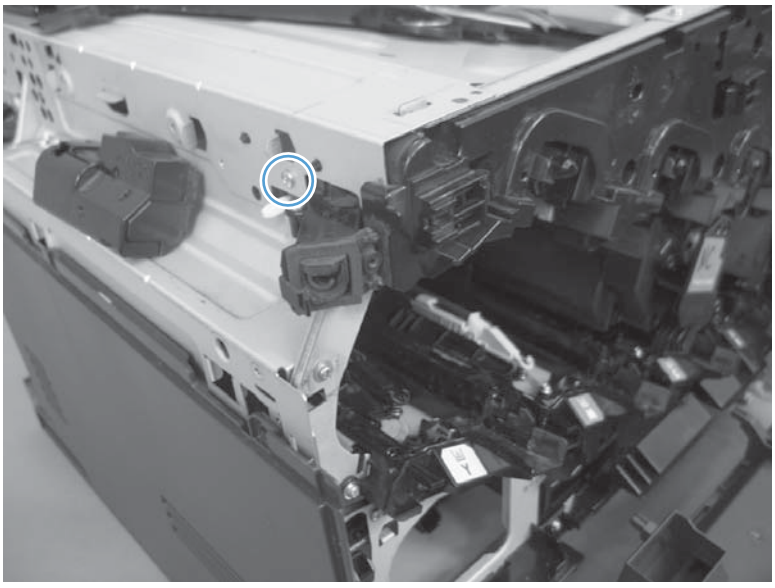
2. Release one tab, and then remove the waste toner duct.

**Figure 2-181** Remove the residual-toner duct and feed assembly (2 of 4)



3. Remove one screw.

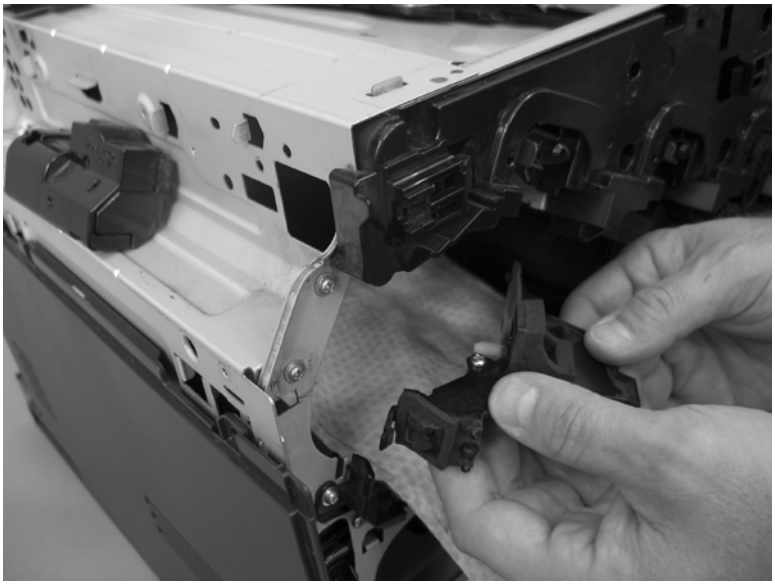
**Figure 2-182** Remove the residual-toner duct and feed assembly (3 of 4)



4. Push the residual-toner feed assembly into the product and then remove through the print cartridge cavity.

**CAUTION:** The waste toner feed assembly contains toner. Place a cloth below the work area to catch any spilled toner.

**Figure 2-183** Remove the residual-toner duct and feed assembly (4 of 4)



# Cartridge fan and environmental sensor

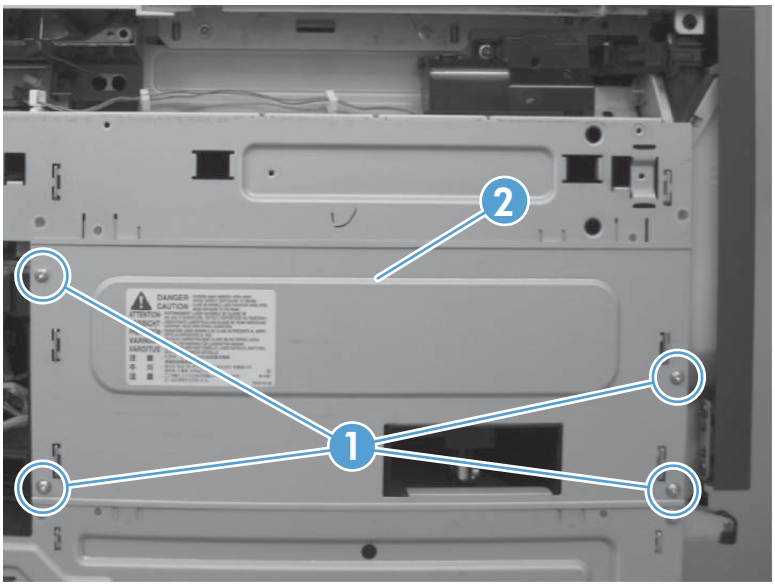
### Before proceeding, remove the following components:

- Standard output bin. See Standard output bin on page 123.
- Output bin bezel. See Output bin bezel on page 124.
- Fan cover. See Fan cover on page 134.
- Lower-left cover. See Lower-left cover on page 136.
- Left cover. See Left cover on page 137.

## Remove the cartridge fan and environmental sensor

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

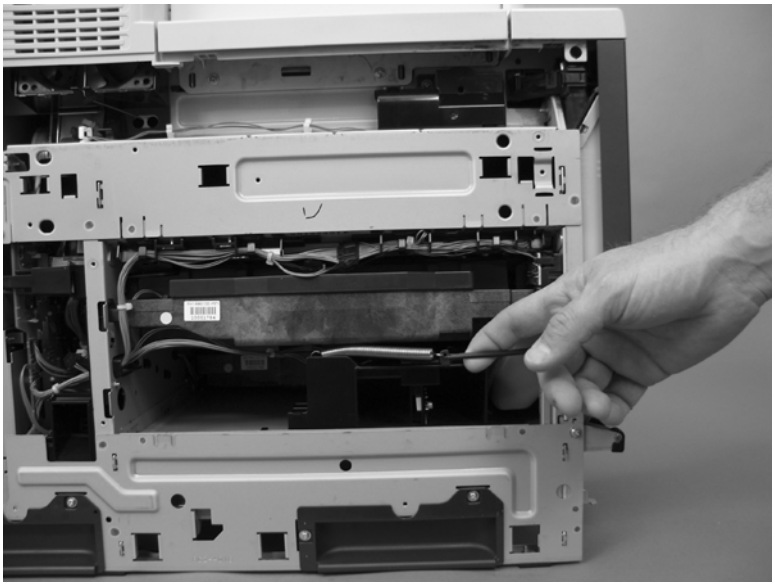
**Figure 2-184** Remove the cartridge fan and environmental sensor (1 of 7)



2. Release one spring.

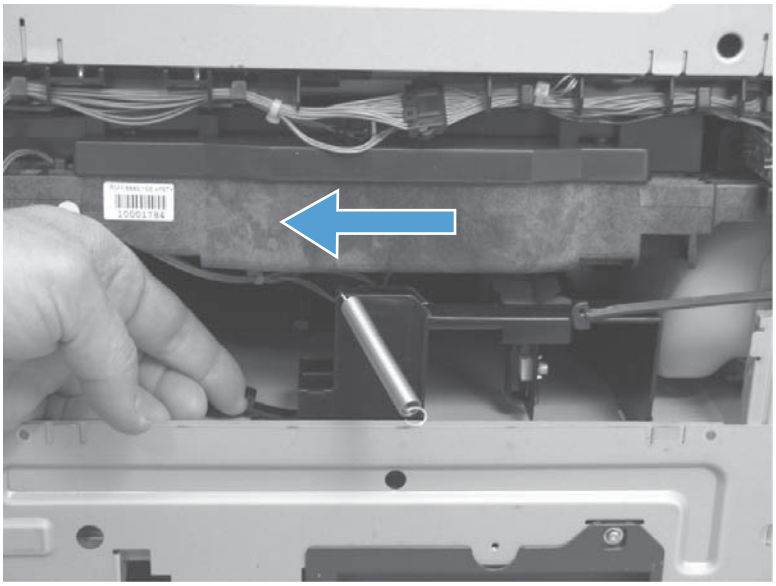
**TIP:** Close the front-door assembly to reduce tension in the spring.

**Figure 2-185** Remove the cartridge fan and environmental sensor (2 of 7)



3. Release one tab and then slide the fan assembly toward the back of the product.

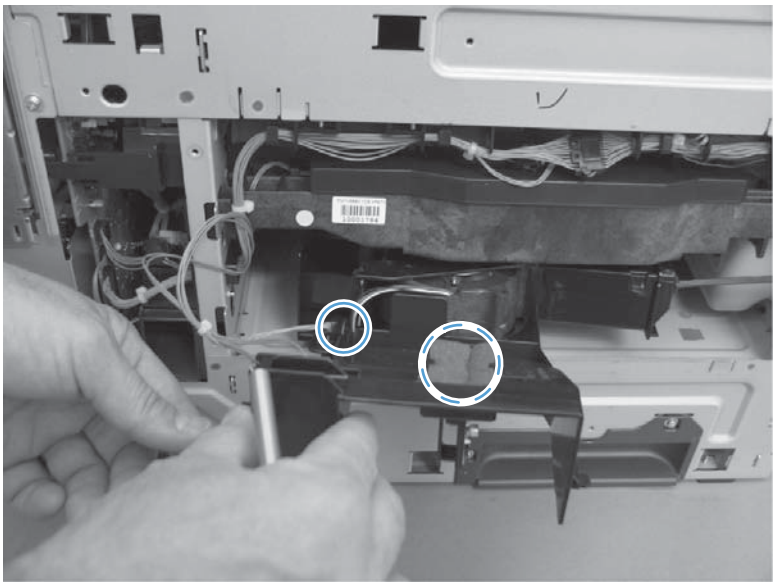
**Figure 2-186** Remove the cartridge fan and environmental sensor (3 of 7)



4. Pull the fan assembly out of the product, and then disconnect two connectors.

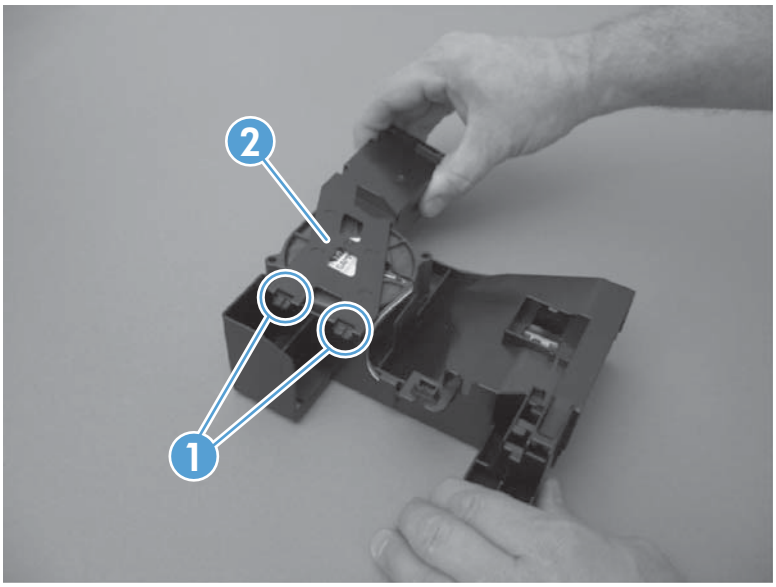
**TIP:** One connector is below the sponge.

**Figure 2-187** Remove the cartridge fan and environmental sensor (4 of 7)



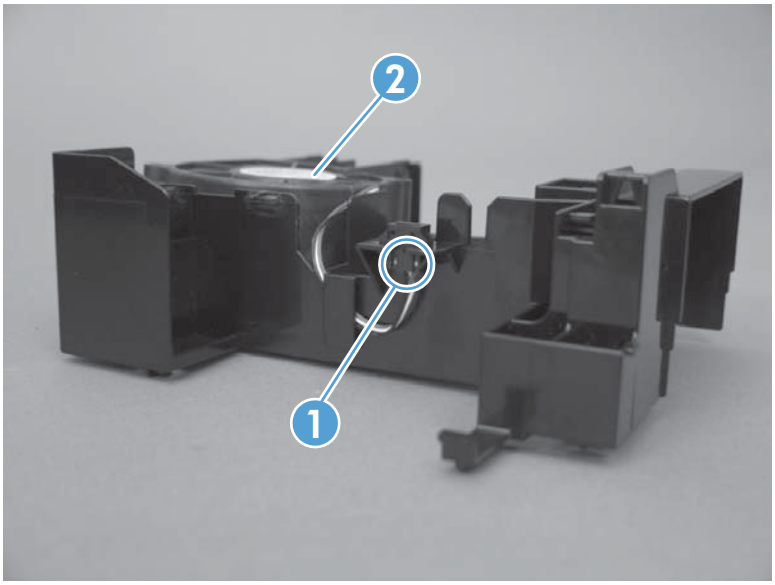
5. Release two tabs (callout 1), and then remove the cover (callout 2).

**Figure 2-188** Remove the cartridge fan and environmental sensor (5 of 7)



6. Disconnect one connector (callout 1), and then remove the fan (callout 2).

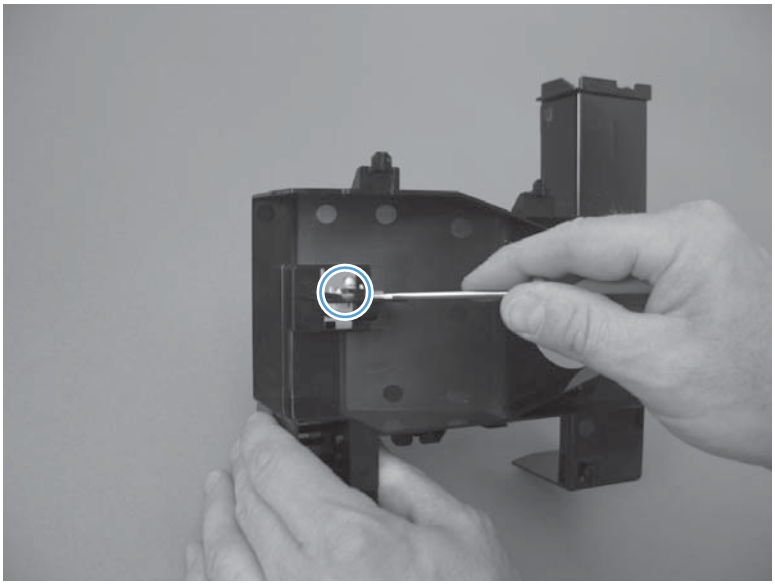
**Figure 2-189** Remove the cartridge fan and environmental sensor (6 of 7)




7. Carefully release one tab, and then remove the environmental sensor.

**CAUTION:** ESD-sensitive part.

**Figure 2-190** Remove the cartridge fan and environmental sensor (7 of 7)



# Toner-collection sensor and scanner-thermistor assembly

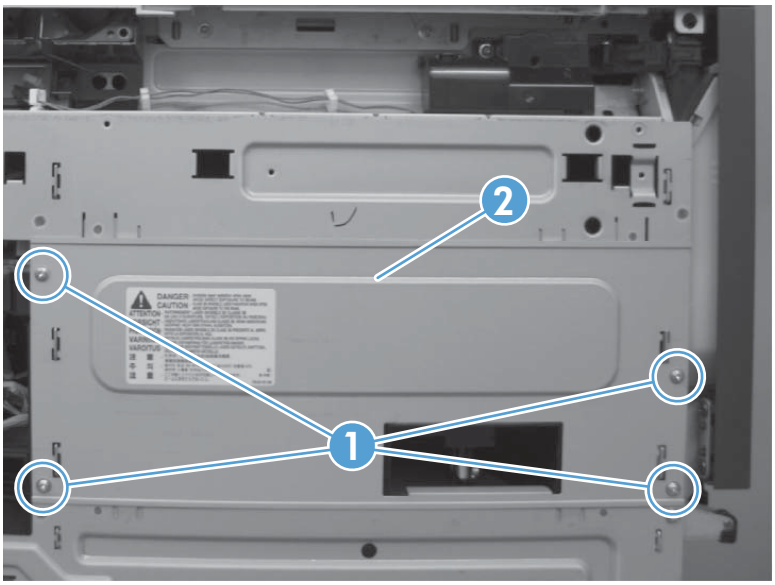
### Before proceeding, remove the following components:

- Toner-collection unit. See Toner-collection unit on page 104.
- Standard output bin. See Standard output bin on page 123.
- Output bin bezel. See Output bin bezel on page 124.
- Lower-left cover. See Lower-left cover on page 136.
- S-CVR-LEFT (scanner left cover). See S-CVR-LEFT (scanner left cover) on page 133.
- Fan cover. See Fan cover on page 134.
- Left cover. See Left cover on page 137.

## Remove the toner-collection sensor and scanner-thermistor assembly

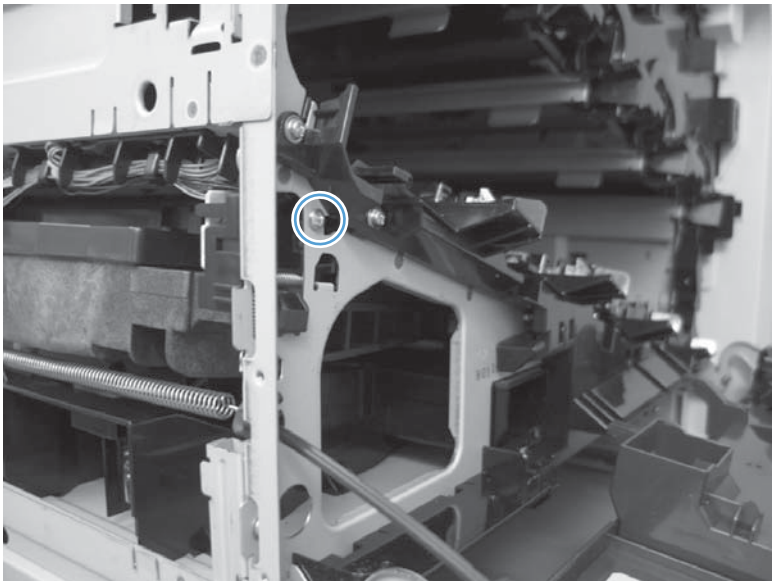
1. Remove four screws (callout 1), and then remove the sheet-metal plate (callout 2).

**Figure 2-191** Remove the toner-collection sensor and scanner-thermistor assembly (1 of 3)



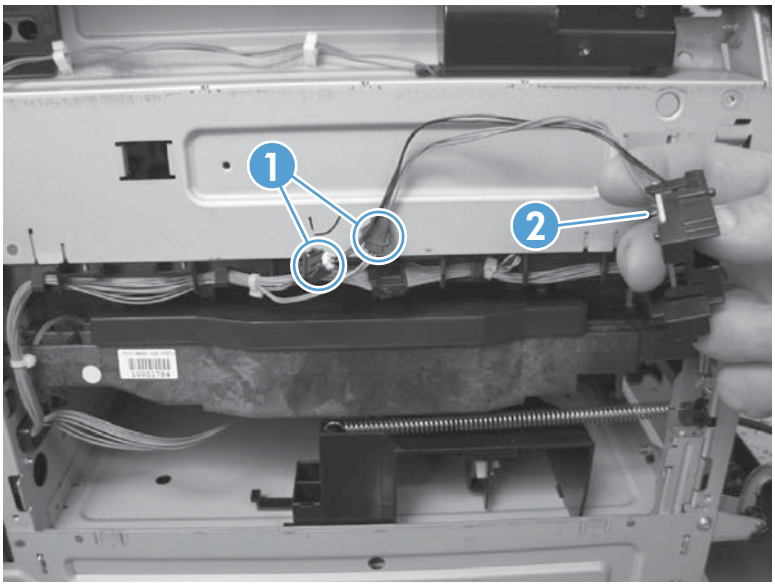
2. Open the front-door assembly, and then remove one screw.

**Figure 2-192** Remove the toner-collection sensor and scanner-thermistor assembly (2 of 3)



3. Disconnect two connectors (callout 1), and then remove the toner-collection sensor and scanner-thermistor assembly (callout 2).

**Figure 2-193** Remove the toner-collection sensor and scanner-thermistor assembly (3 of 3)



# Delivery fan

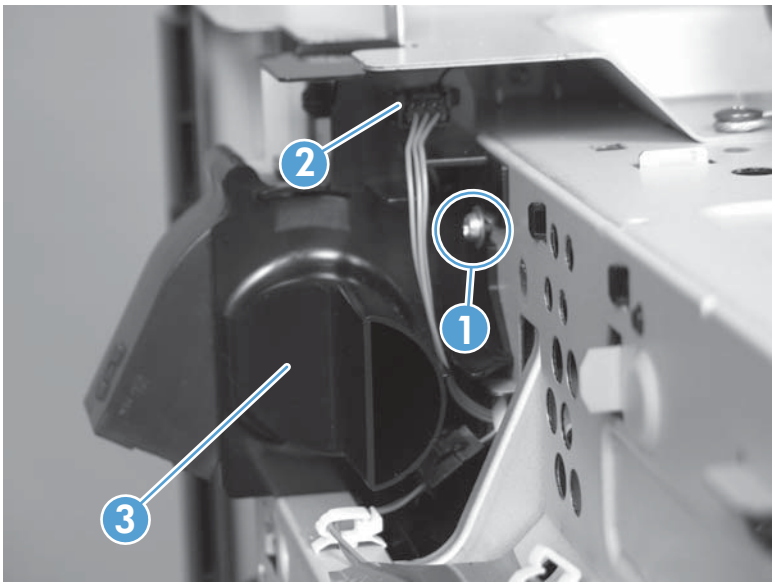
### Before proceeding, remove the following components:

- Standard output bin. See Standard output bin on page 123.
- Output bin bezel. See Output bin bezel on page 124.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- S-CVR-LEFT (scanner left cover). See S-CVR-LEFT (scanner left cover) on page 133.
- Fan cover. See Fan cover on page 134.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- IPTU. See IPTU on page 199.

## Remove the delivery fan

▲ Remove one screw (callout 1), disconnect one connector (callout 2) and then remove the fan (callout 3).

**Figure 2-194** Remove the delivery fan




**TIP:** When the fan is reinstalled, the air must flow into the product. Check the arrows embossed on the fan frame that indicate air flow direction.

# Intermediate cover and duplexing gear cover

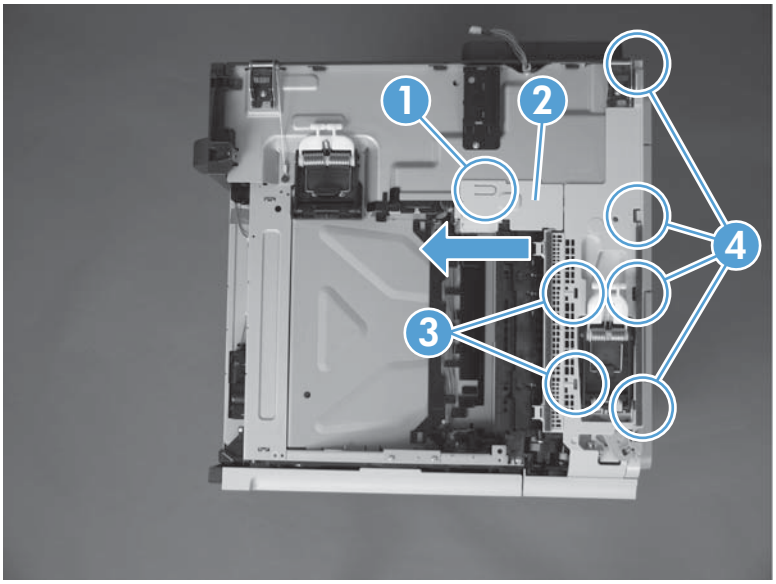
### Before proceeding, remove the following components:

- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.

## Remove the Intermediate cover and duplexing gear cover

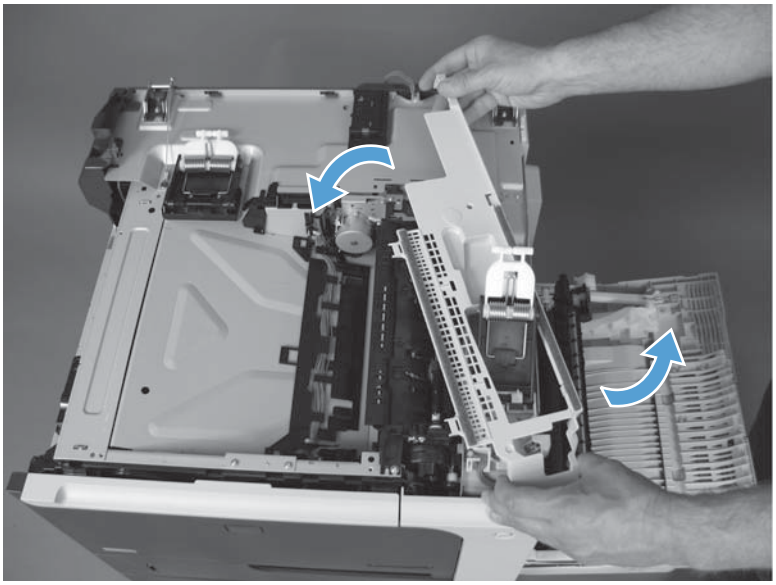
1. Open the right door. Release one pry points (callout 1). Slide the duplexing gear cover (callout 2) to the left to remove. Release two pry points (callout 3) and then release four pry points (callout 4).

**Figure 2-195** Remove the intermediate cover and duplexing gear cover (1 of 2)



2. Rotate the intermediate cover and remove.

**Figure 2-196** Remove the intermediate cover and duplexing gear cover (2 of 2)



# Delivery assembly

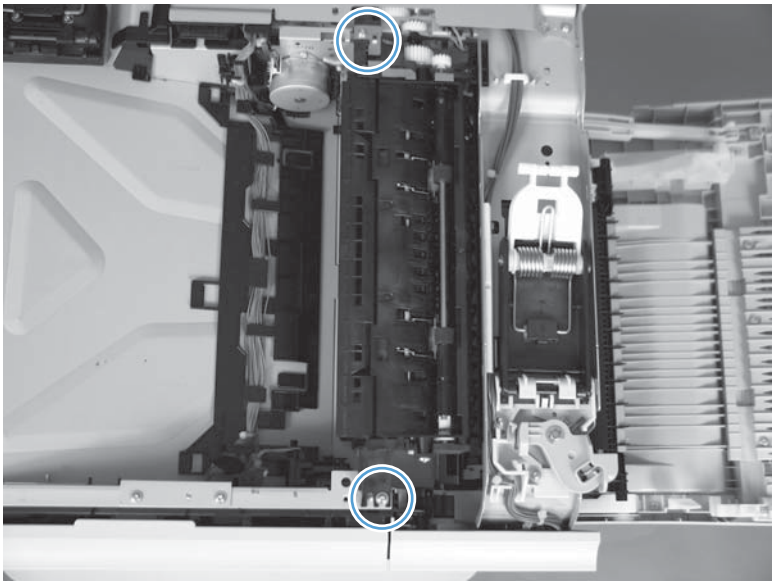
### Before proceeding, remove the following components:

- Fuser. See Fuser on page 112.
- Intermediate transfer belt (ITB). See Intermediate transfer belt (ITB) on page 120.
- Standard output bin. See Standard output bin on page 123.
- Output bin bezel. See Output bin bezel on page 124.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- S-CVR-LEFT (scanner left cover). See S-CVR-LEFT (scanner left cover) on page 133.
- Fan cover. See Fan cover on page 134.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- IPTU. See IPTU on page 199.
- Intermediate cover and duplexing gear cover. See Intermediate cover and duplexing gear cover on page 229.

## Remove the delivery assembly

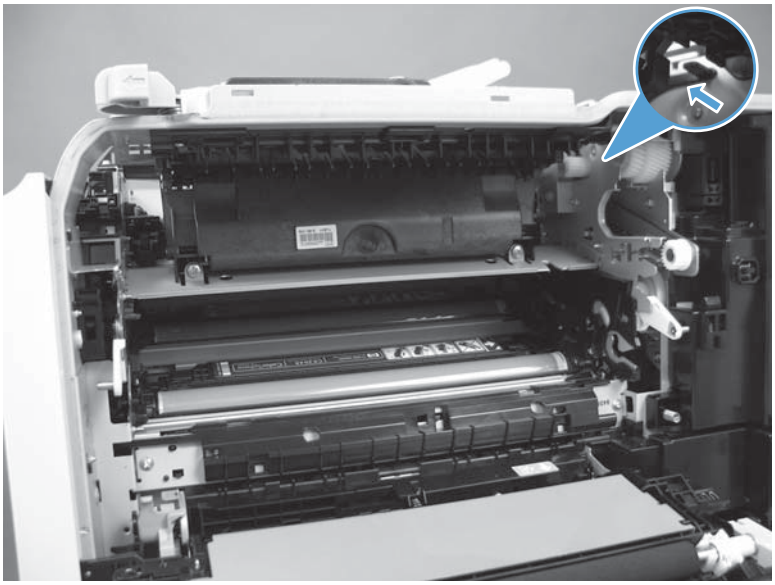
1. Remove two screws.

**Figure 2-197** Remove the delivery assembly (1 of 4)



2. Pull one tab out, and then push the tab down to release the bushing.

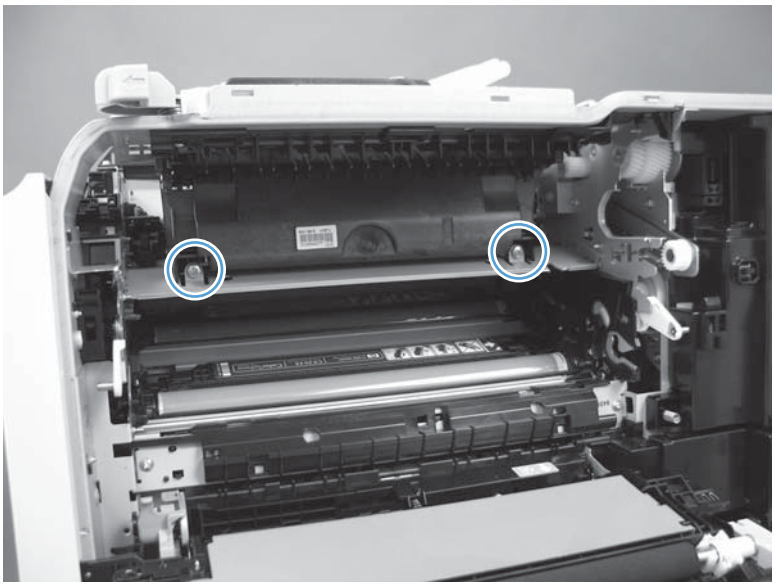
**Figure 2-198** Remove the delivery assembly (2 of 4)



**NOTE:** When reinstalling, make sure the tab is correctly installed and flush against the chassis.

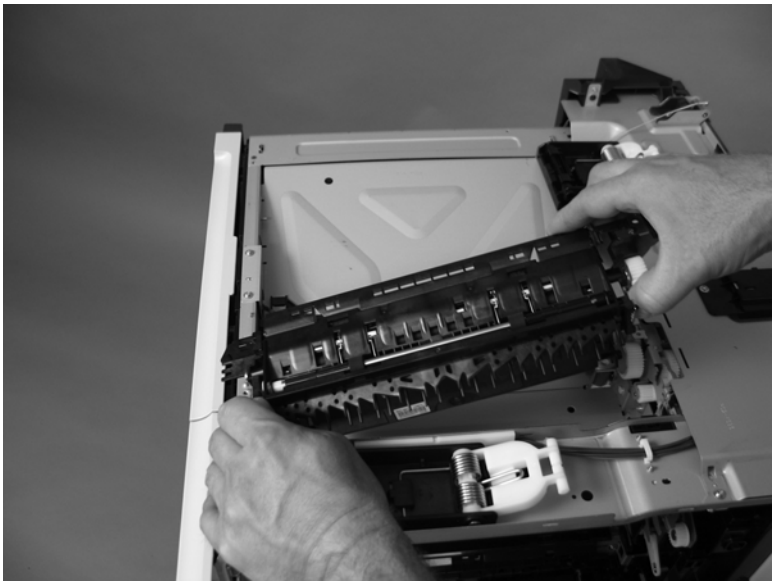
3. Remove two screws.

**Figure 2-199** Remove the delivery assembly (3 of 4)



4. Remove the assembly.

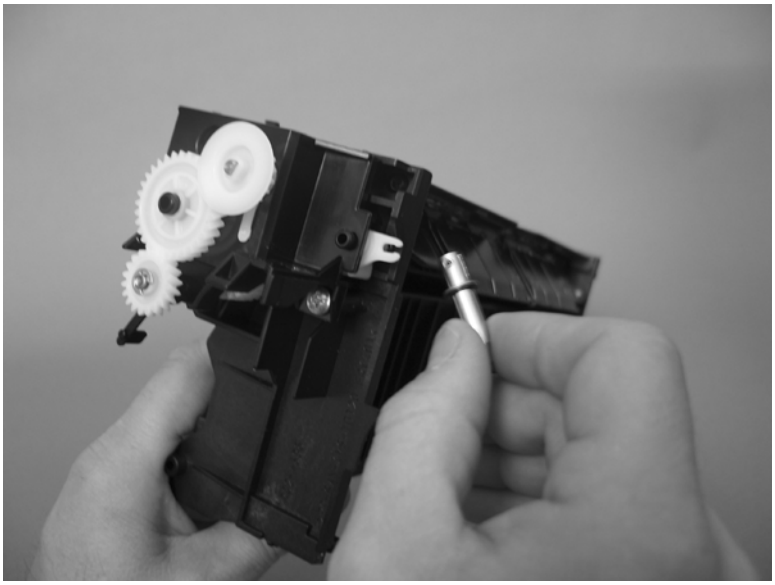
**Figure 2-200** Remove the delivery assembly (4 of 4)



### Reinstall the delivery assembly

- Make sure that the solenoid plunger is correctly installed on the replacement assembly.

**Figure 2-201** Reinstall the delivery assembly



# Duplex-drive assembly

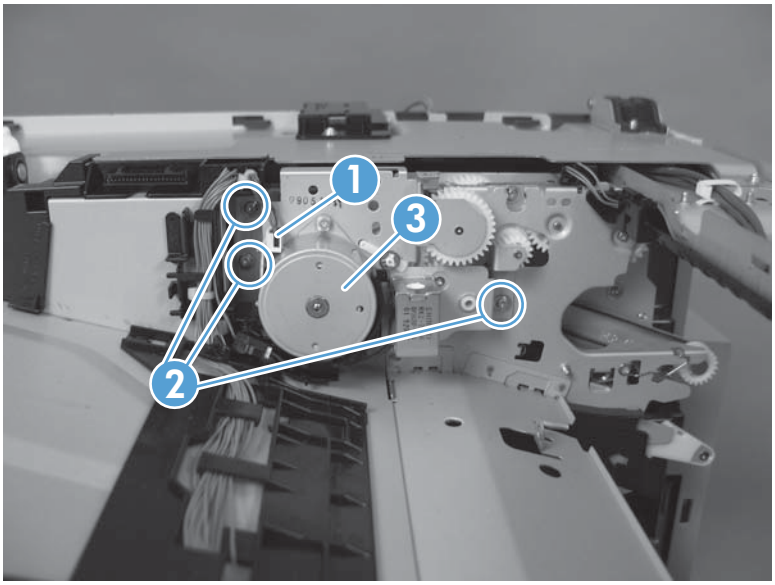
### Before proceeding, remove the following components:

- Fuser. See Fuser on page 112.
- Intermediate transfer belt (ITB). See Intermediate transfer belt (ITB) on page 120.
- Standard output bin. See Standard output bin on page 123.
- Output bin bezel. See Output bin bezel on page 124.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- S-CVR-LEFT (scanner left cover). See S-CVR-LEFT (scanner left cover) on page 133.
- Fan cover. See Fan cover on page 134.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- IPTU. See IPTU on page 199.
- Delivery assembly. See Delivery assembly on page 231.

## Remove the duplex-drive assembly

▲ Disconnect one connector (callout 1), remove three screws (callout 2), and then remove the assembly (callout 3).

**Figure 2-202** Remove the duplex-drive assembly



# Power-supply fan

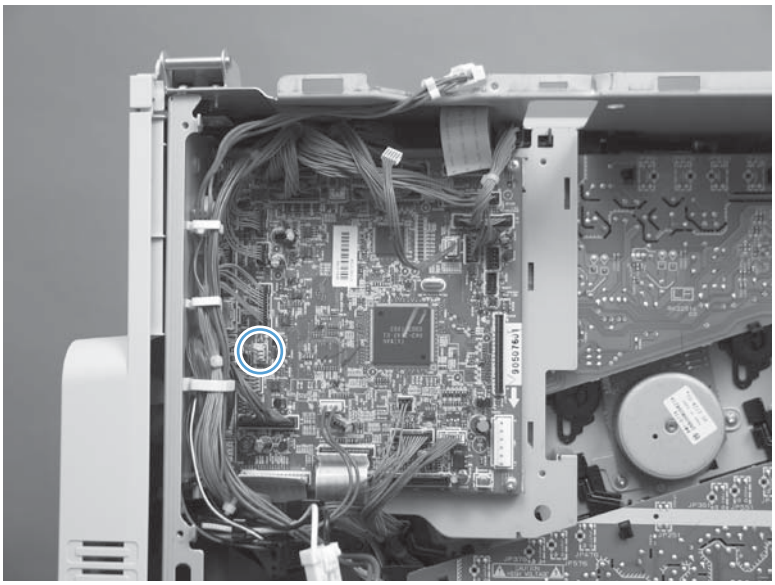
### Before proceeding, remove the following components:

- Standard output bin. See Standard output bin on page 123.
- Output bin bezel. See Output bin bezel on page 124.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Fan cover. See Fan cover on page 134.
- Lower-left cover. See Lower-left cover on page 136.
- Rear cover. See Rear cover on page 144.
- Image scanning power supply unit. See Image scanner power supply unit (PSU) on page 237.

## Remove the power-supply fan

1. Release the fan cable from the DC controller.

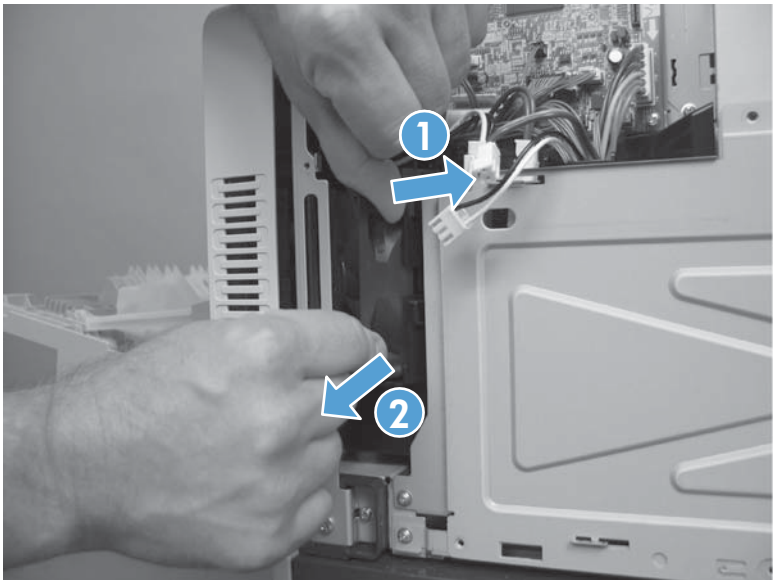
**Figure 2-203** Remove the power-supply fan (1 of 2)



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

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

**Figure 2-204** Remove the power-supply fan (2 of 2)




# Image scanner power supply unit (PSU)

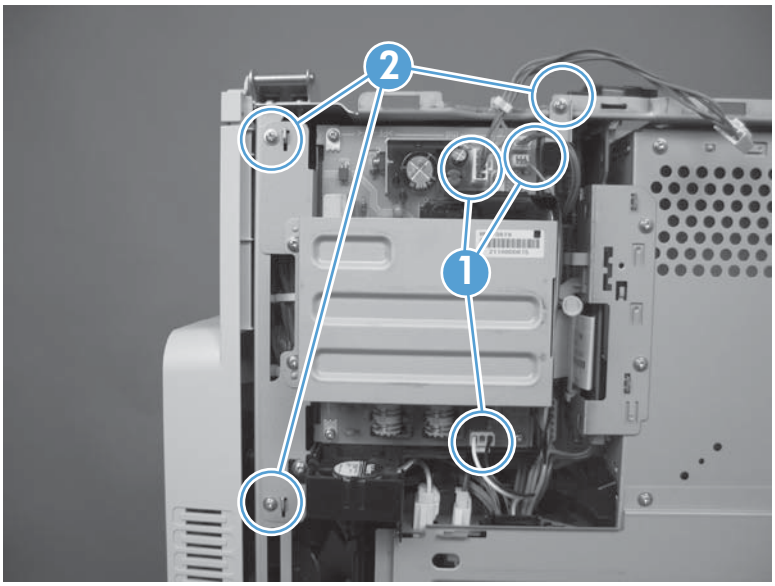
## Before proceeding, remove the following components

- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Lower-left cover. See Lower-left cover on page 136.
- Fan cover. See Fan cover on page 134.
- Rear cover. See Rear cover on page 144.

## Remove the image scanner supply unit (PSU) and fan

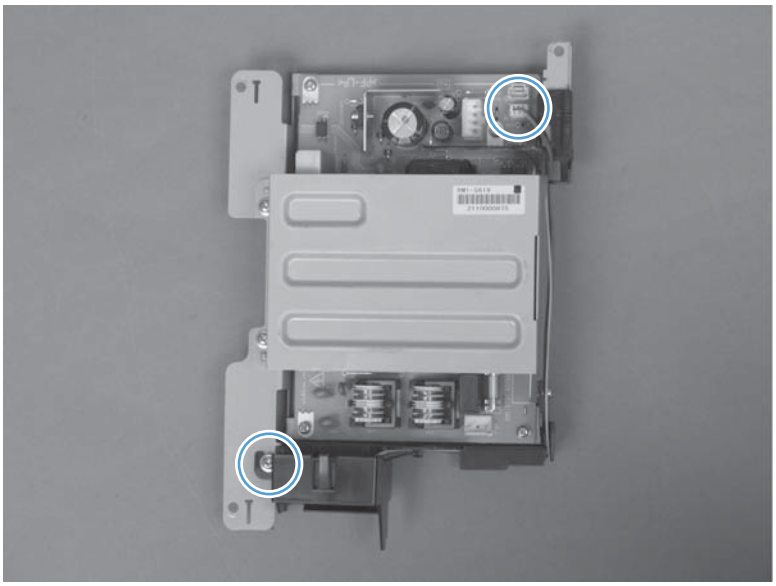
1. Disconnect three connectors (callout 1), remove three screws (callout 2), and then remove the image scanner supply unit (PSU).

**Figure 2-205** Remove the image scanner supply unit (PSU) and fan (1 of 2)




2. Remove one screw, disconnect one connector, and then remove the fan.

**Figure 2-206** Remove the image scanner supply unit (PSU) and fan (2 of 2)



# Interconnect board (ICB)

## Before proceeding, remove the following components:

- Formatter. See Formatter PCA on page 106.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Fan cover. See Fan cover on page 134.
- Lower-left cover. See Lower-left cover on page 136.
- Rear cover. See Rear cover on page 144.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- Image scanner power supply unit (PSU). See Image scanner power supply unit (PSU) on page 237.

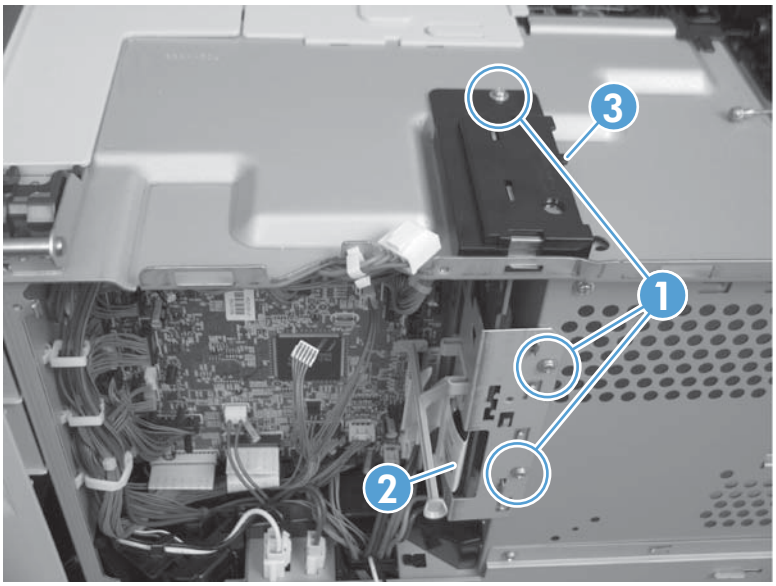
## Remove the ICB

⚠ **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.

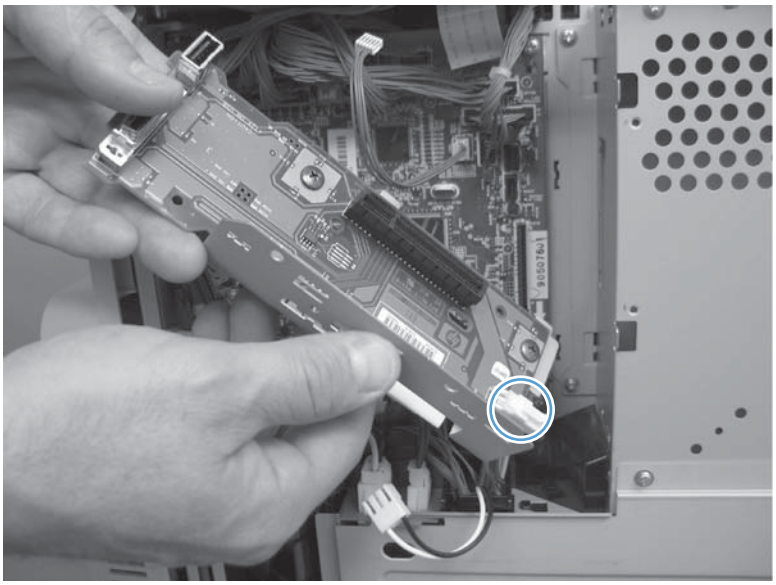
1. Remove three screws (callout 1), disconnect one FFC (callout 2), and remove the small cover (callout 3).

**Figure 2-207** Remove the ICB (1 of 2)



2. Carefully rotate and slide the ICB up and away from the chassis, disconnect one connector, and then remove the ICB.

**Figure 2-208** Remove the ICB (2 of 2)



# DC controller PCA only

**NOTE:** Use the following procedure to replace **only** the DC controller PCA. To access components behind the DC controller, remove the PCA and the sheet-metal backing tray. See DC controller PCA and tray on page 248.

### Before proceeding, remove the following components:

- Standard output bin. See Standard output bin on page 123.
- Output bin bezel. See Output bin bezel on page 124.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Lower-left cover. See Lower-left cover on page 136.
- Fan cover. See Fan cover on page 134.
- Rear cover. See Rear cover on page 144.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- Image scanner power supply unit (PSU). See Image scanner power supply unit (PSU) on page 237.
- Interconnect board (ICB). See Interconnect board (ICB) on page 239.

## Remove the DC controller PCA only

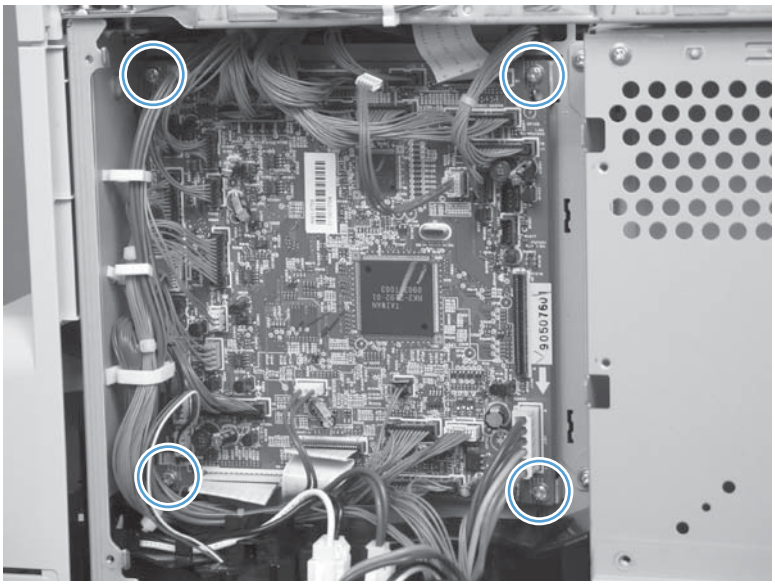
**CAUTION:** ESD-sensitive part.

**NOTE:** To locate DC controller connector locations, see DC controller connector locations on page 432. There are 34 connectors in all.

▲ Disconnect all the connectors. Remove four screws and then remove the DC controller PCA

**Reinstallation tip** The connector locations J101 and J102 are not used.

**Figure 2-209** Remove the DC controller PCA only



# Low-voltage power supply (LVPS)

### Before proceeding, remove the following components:

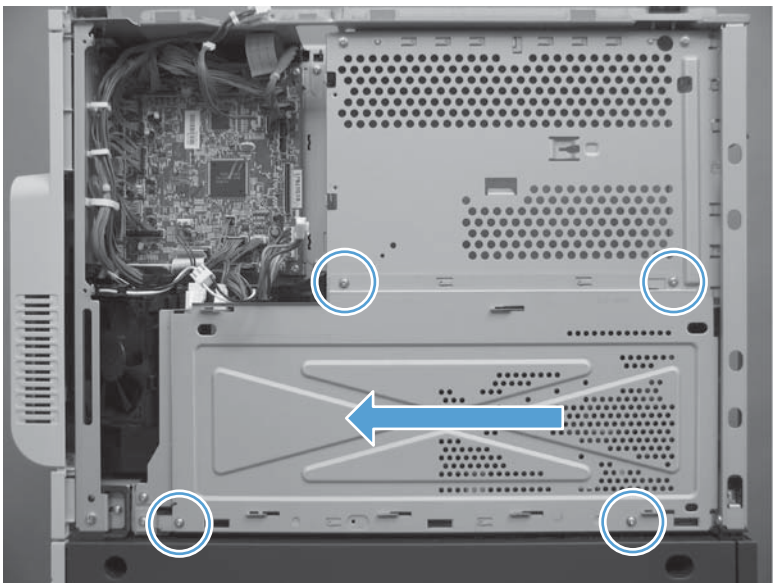
- Formatter. See Formatter PCA on page 106.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Lower-left cover. See Lower-left cover on page 136.
- Fan cover. See Fan cover on page 134.
- Rear cover. See Rear cover on page 144.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- Image scanner power supply. See Image scanner power supply unit (PSU) on page 237.
- Interconnect board (ICB). See Interconnect board (ICB) on page 239.

## Remove the low-voltage power supply

**CAUTION:** ESD-sensitive part.

1. Remove four screws, and then slide the sheet-metal plate toward the back of the product to remove.

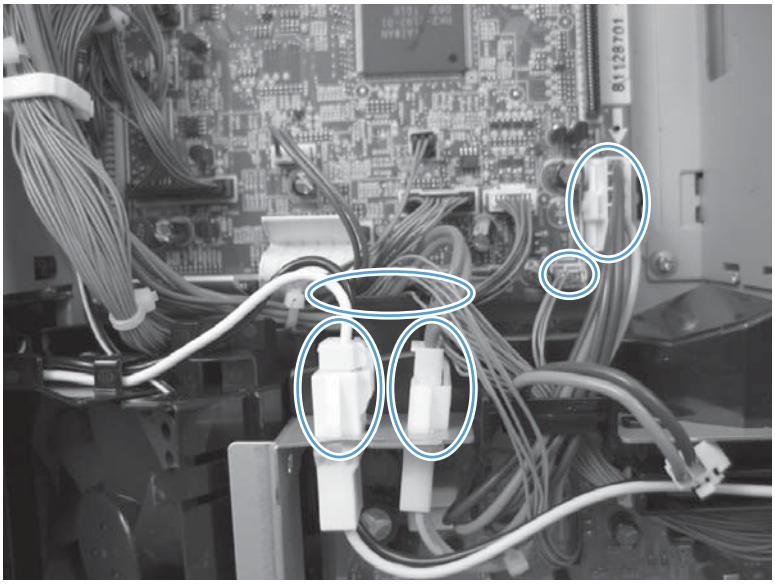
**Figure 2-210** Remove the low-voltage power supply (1 of 8)



2. Disconnect five connectors, and then release the wire harnesses from the guides as necessary.

**NOTE:** To locate DC controller connector locations, see DC controller connector locations on page 432.

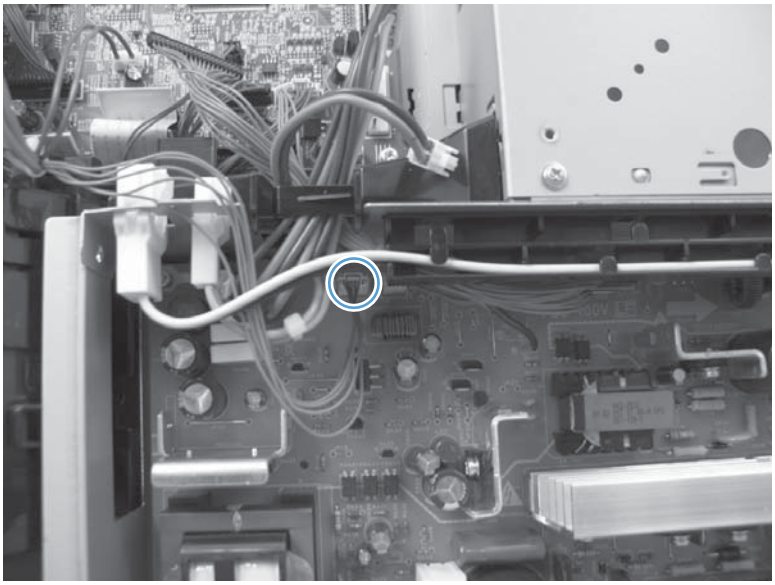
**Figure 2-211** Remove the low-voltage power supply (2 of 8)



3. Disconnect one connector, and then release the wire harness from the guide.

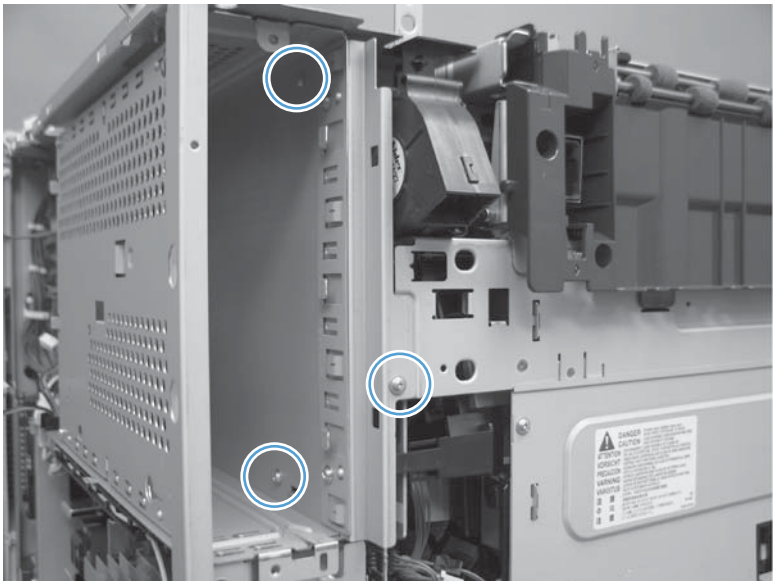
**Reinstallation tip** Make sure that you reconnect this connector when the power supply is reinstalled.

**Figure 2-212** Remove the low-voltage power supply (3 of 8)



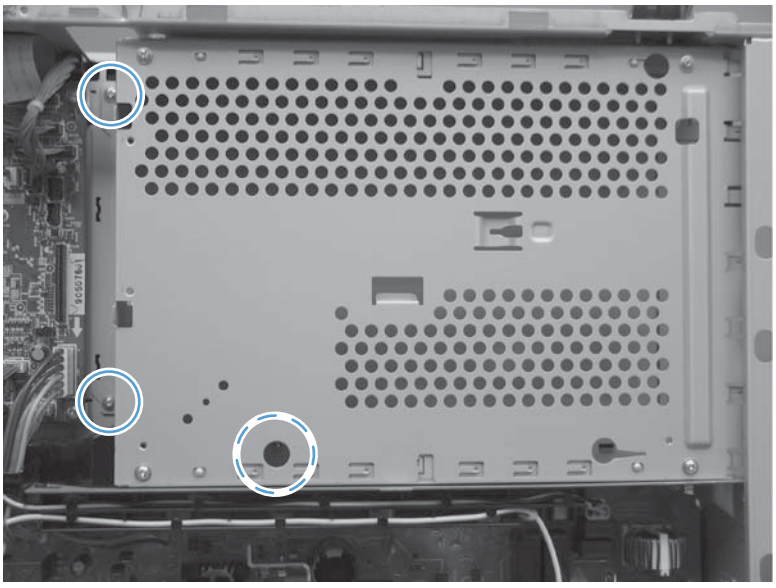
4. Remove three screws.

**Figure 2-213** Remove the low-voltage power supply (4 of 8)



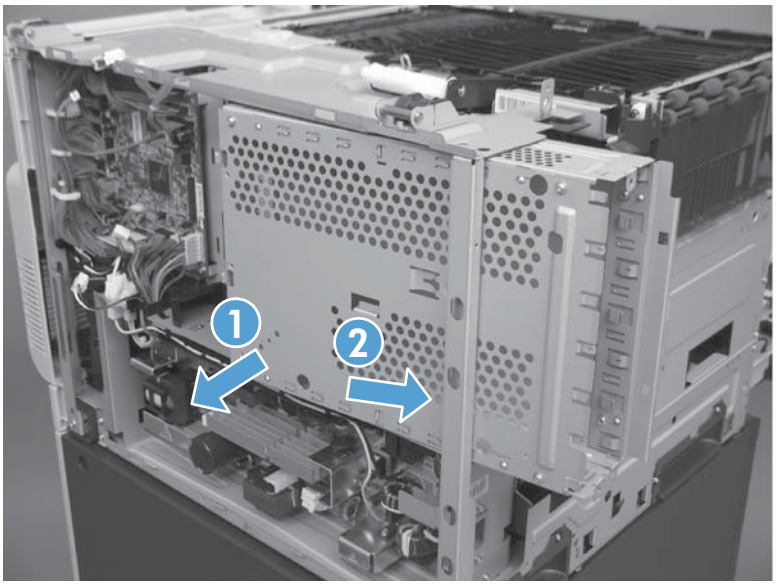
5. Remove three screws.

**Figure 2-214** Remove the low-voltage power supply (5 of 8)



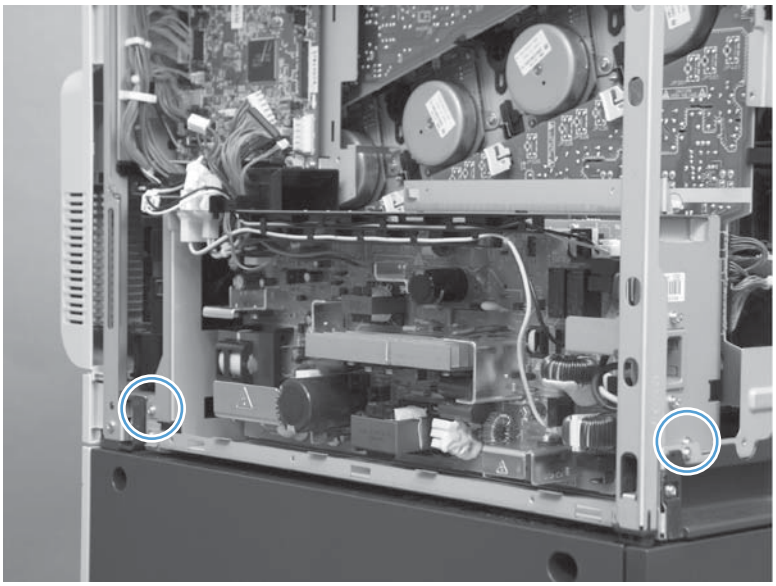
6. Slide the end of the formatter cage away from the product (callout 1) and the slide the cage out of the product (callout 2).

**Figure 2-215** Remove the low-voltage power supply (6 of 8)



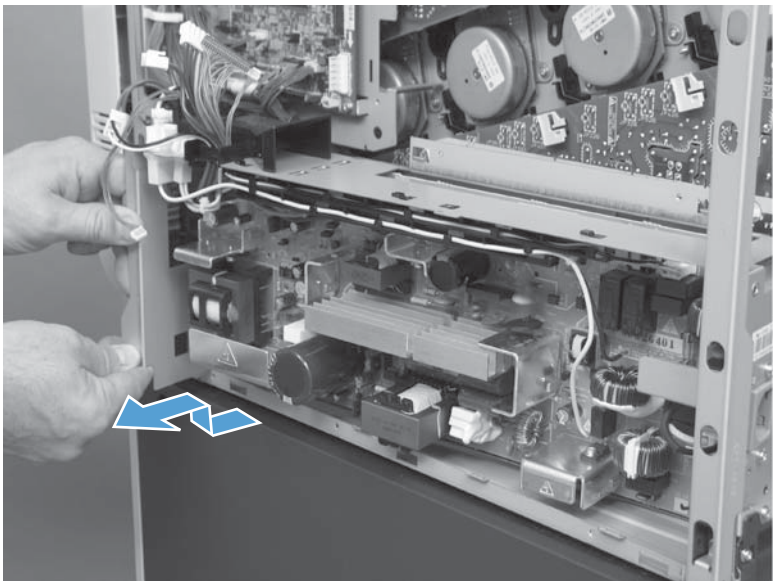

7. Remove two screws.

**Figure 2-216** Remove the low-voltage power supply (7 of 8)



8. Slide and then lift the end of low-voltage power supply until it is free of the product. Remove the low-voltage power supply.

**Figure 2-217** Remove the low-voltage power supply (8 of 8)



# DC controller PCA and tray

### Before proceeding, remove the following components:

- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Lower-left cover. See Lower-left cover on page 136.
- Fan cover. See Fan cover on page 134.
- Rear cover. See Rear cover on page 144.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- Image scanner power supply. See Image scanner power supply unit (PSU) on page 237.
- Interconnect board (ICB). See Interconnect board (ICB) on page 239.
- Low-voltage power supply. See Low-voltage power supply (LVPS) on page 243.

## Remove the DC controller PCA and tray

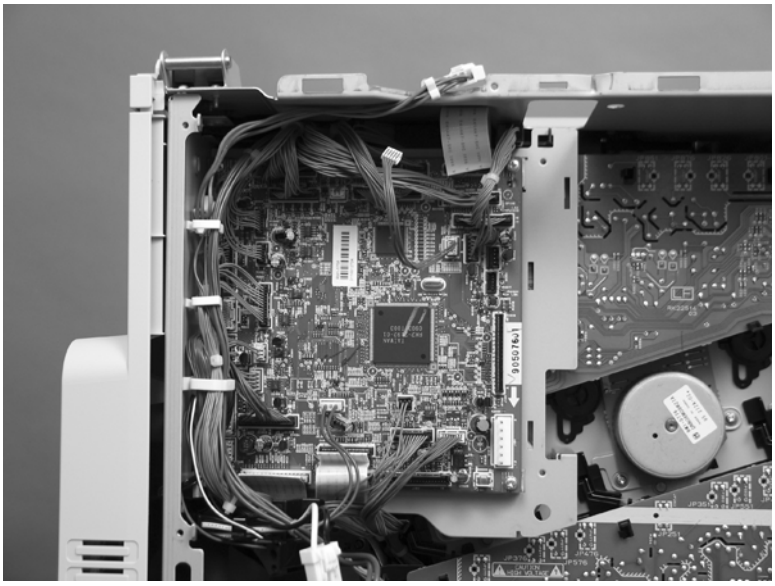
**CAUTION:** ESD-sensitive part.

**NOTE:** To locate DC controller connector locations, see DC controller connector locations on page 432.

1. Disconnect all the connectors. There are 34 connectors in all.

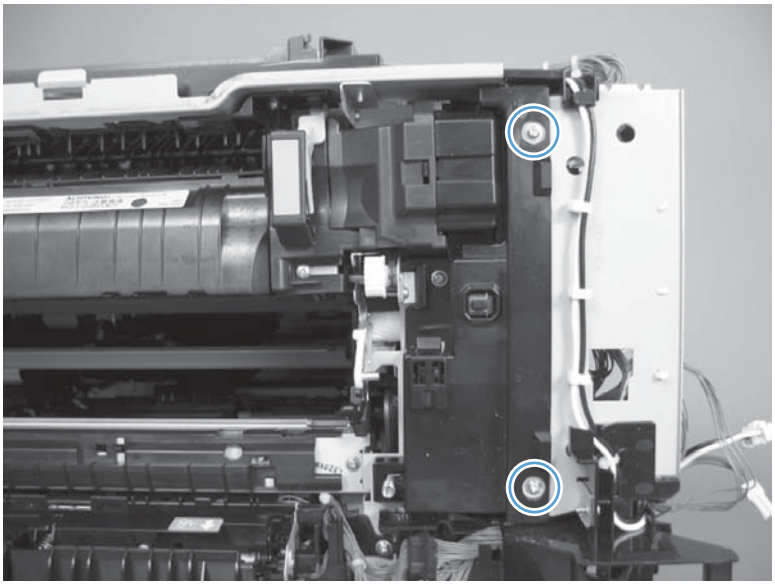
**Reinstallation tip** The connector locations J101 and J102 are not used.

**Figure 2-218** Remove the DC controller PCA and tray (1 of 3)



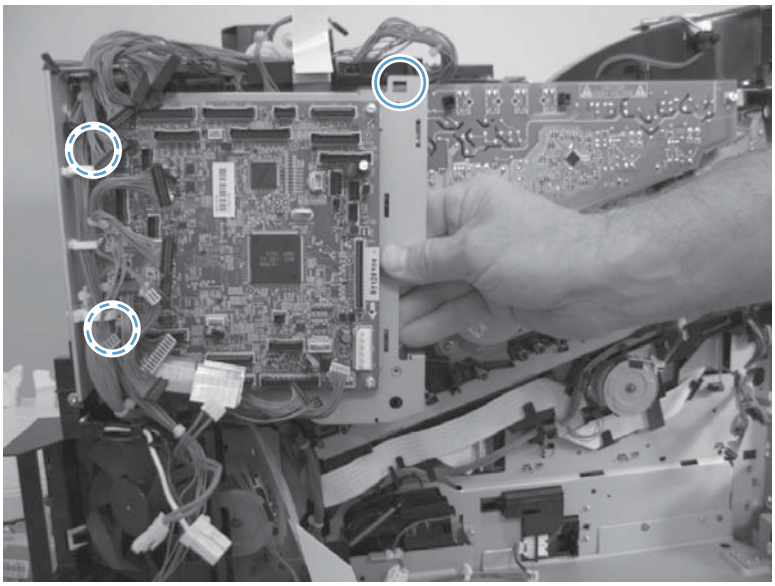
2. Remove two screws.

**Figure 2-219** Remove the DC controller PCA and tray (2 of 3)



3. Disengage three tabs (two along the left edge of the PCA and one at the top-right corner of the PCA).

**Figure 2-220** Remove the DC controller PCA and tray (3 of 3)



# High-voltage power supply lower (HVPS-D)

### Before proceeding, remove the following components:

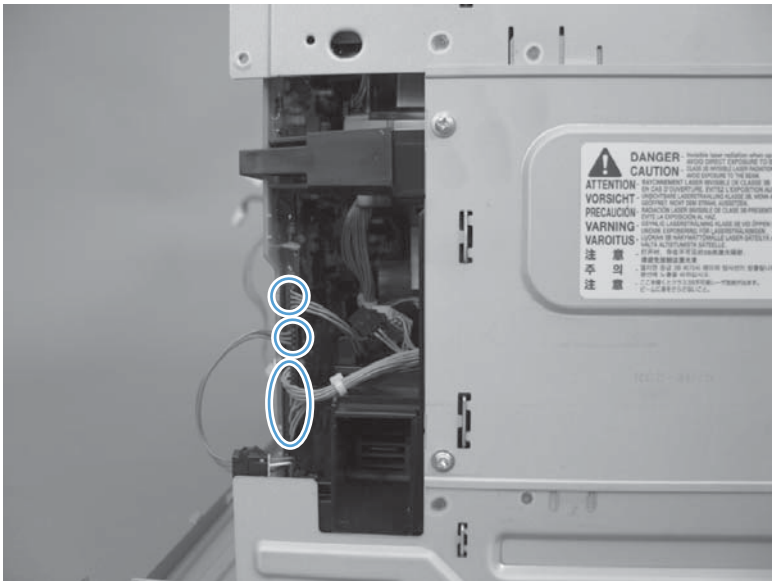
- Formatter. See Formatter PCA on page 106.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Fan cover. See Fan cover on page 134.
- Lower-left cover. See Lower-left cover on page 136.
- Left cover. See Left cover on page 137.
- Rear cover. See Rear cover on page 144.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- Image scanner power supply. See Image scanner power supply unit (PSU) on page 237.
- Interconnect board (ICB). See Interconnect board (ICB) on page 239.
- Low-voltage power supply. See Low-voltage power supply (LVPS) on page 243.

## Remove the high-voltage power supply lower

**CAUTION:** ESD-sensitive part.

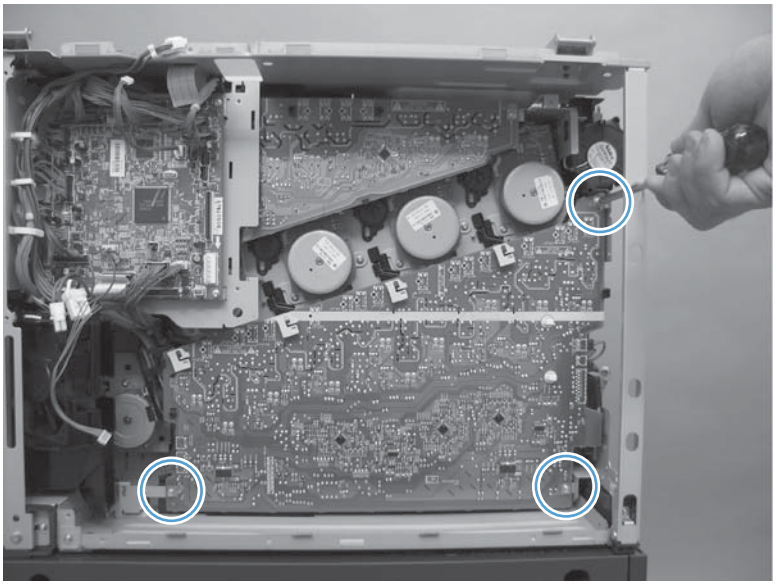
1. Disconnect three connectors.

**Figure 2-221** Remove the high-voltage power supply lower (1 of 7)



2. Remove three screws.

**Figure 2-222** Remove the high-voltage power supply lower (2 of 7)



3. Release four locking clips.

**NOTE:** Squeeze each locking clip to remove.

**Figure 2-223** Remove the high-voltage power supply lower (3 of 7)

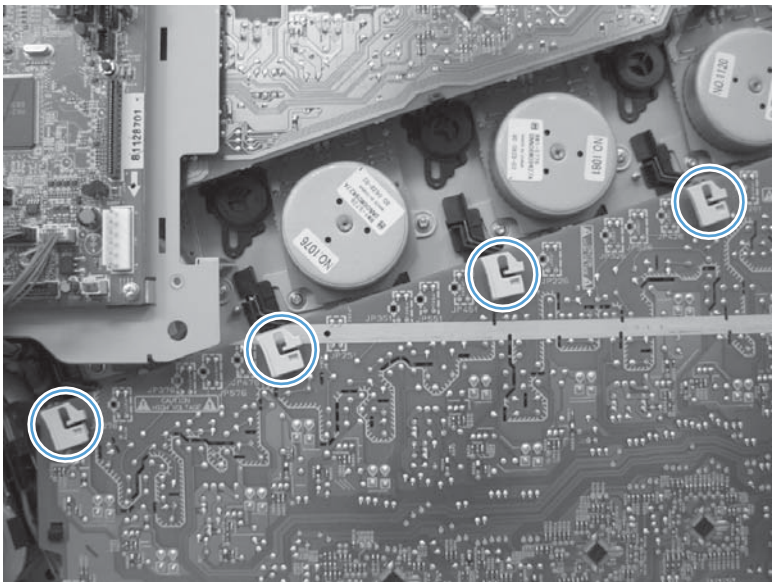
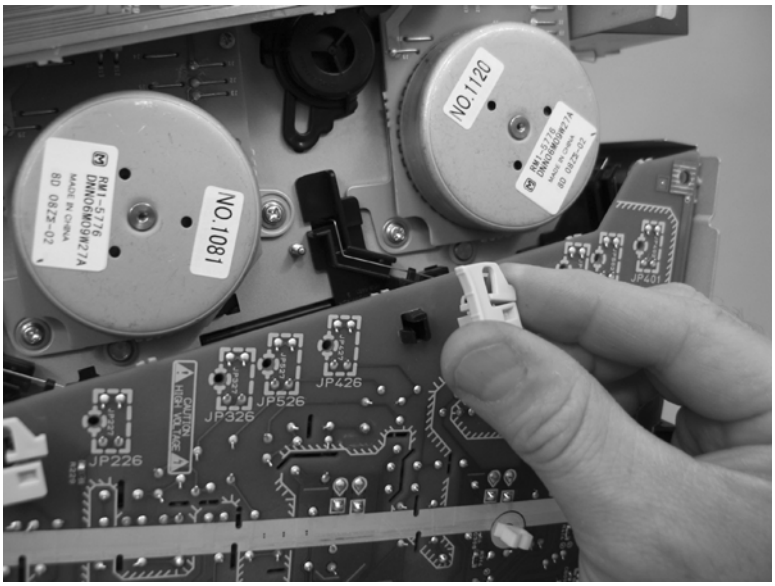
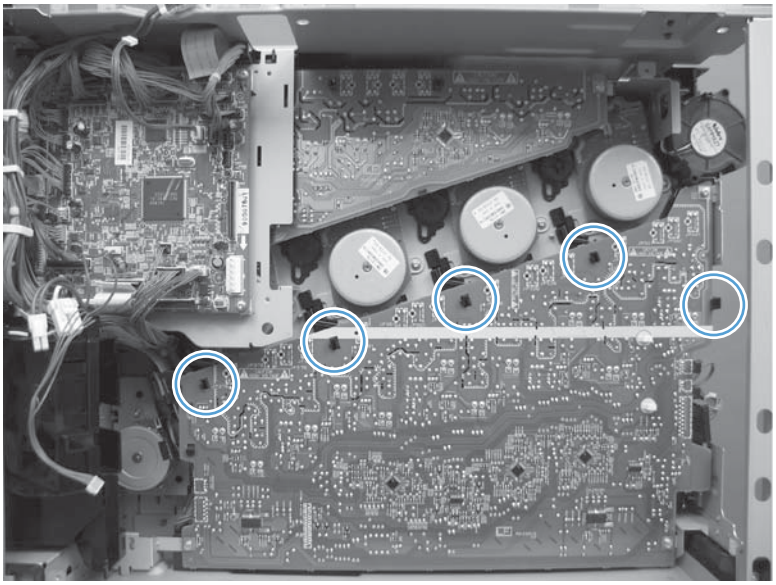


**Figure 2-224** Remove the high-voltage power supply lower (4 of 7)



4. Release five tabs.

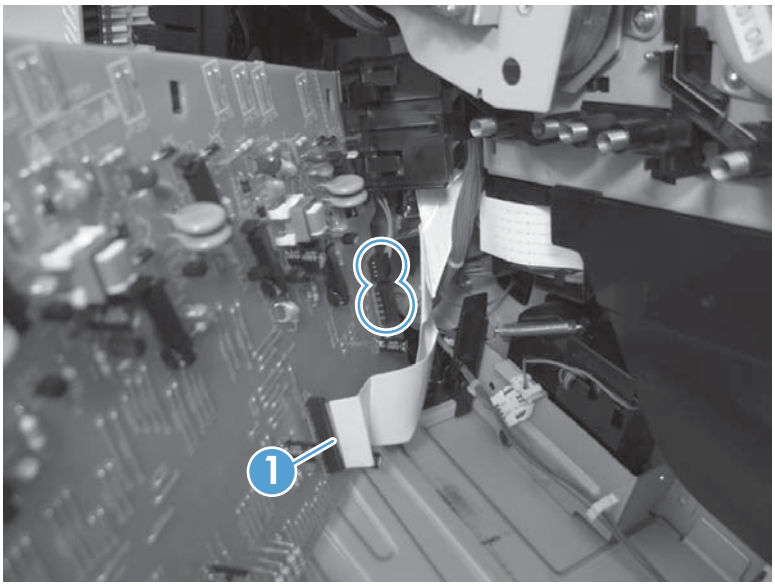
**Figure 2-225** Remove the high-voltage power supply lower (5 of 7)



5. Rotate the top of the power supply away from the chassis, and then disconnect two connectors on the back of the power supply.

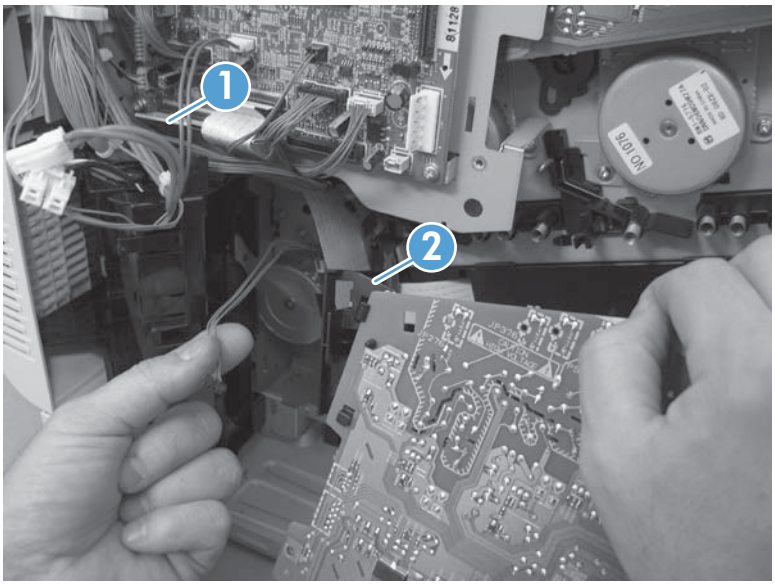
**NOTE:** Do not disconnect the FFC (callout 1). The FFC and the FFC wiring guide are supplied with the replacement assembly.

**Figure 2-226** Remove the high-voltage power supply lower (6 of 7)



6. Disconnect one FFC (callout 1). Release **only** the wire harnesses from the guide (callout 2) and then remove the power supply.

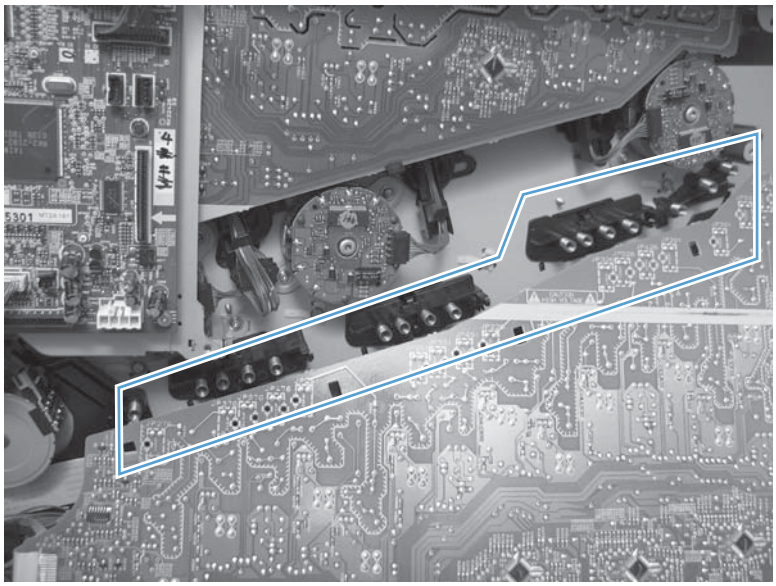
**Figure 2-227** Remove the high-voltage power supply lower (7 of 7)




## 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 2-228** Reinstall the high-voltage power supply lower



# Developing-disengagement motor

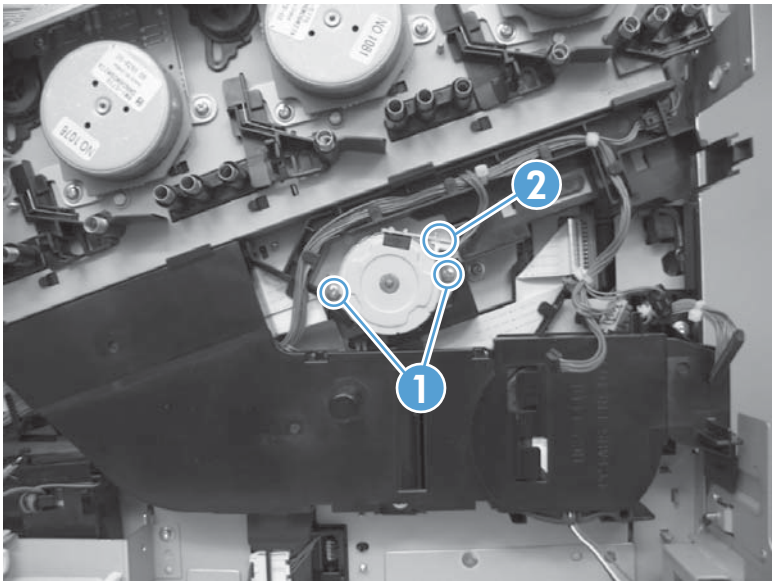
### Before proceeding, remove the following components:

- Formatter. See Formatter PCA on page 106.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Fan cover. See Fan cover on page 134.
- Lower-left cover. See Lower-left cover on page 136.
- Left cover. See Left cover on page 137.
- Rear cover. See Rear cover on page 144.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- Image scanner power supply. See Image scanner power supply unit (PSU) on page 237.
- Interconnect board (ICB). See Interconnect board (ICB) on page 239.
- Low-voltage power supply. See Low-voltage power supply (LVPS) on page 243.
- High-voltage power supply lower. See High-voltage power supply lower (HVPS-D) on page 250.

## Remove the developing-disengagement motor

▲ Remove two screws (callout 1), disconnect one connector (callout 2), and remove the motor.

**Figure 2-229** Remove the developing-disengagement motor



# Exhaust fan and fan duct

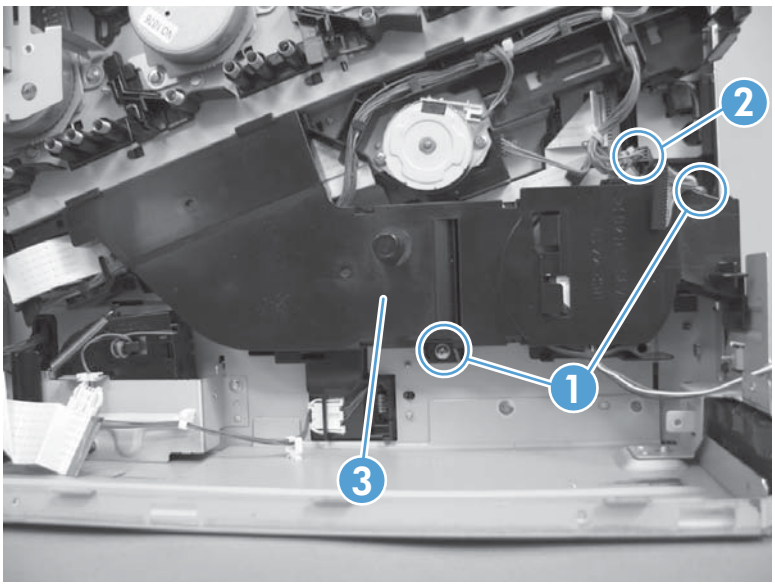
### Before proceeding, remove the following components:

- Formatter. See Formatter PCA on page 106.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Fan cover. See Fan cover on page 134.
- Lower-left cover. See Lower-left cover on page 136.
- Left cover. See Left cover on page 137.
- Rear cover. See Rear cover on page 144.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- Image scanner power supply. See Image scanner power supply unit (PSU) on page 237.
- Interconnect board (ICB). See Interconnect board (ICB) on page 239.
- Low-voltage power supply. See Low-voltage power supply (LVPS) on page 243.
- High-voltage power supply lower. See High-voltage power supply lower (HVPS-D) on page 250.

## Remove the exhaust fan and fan duct

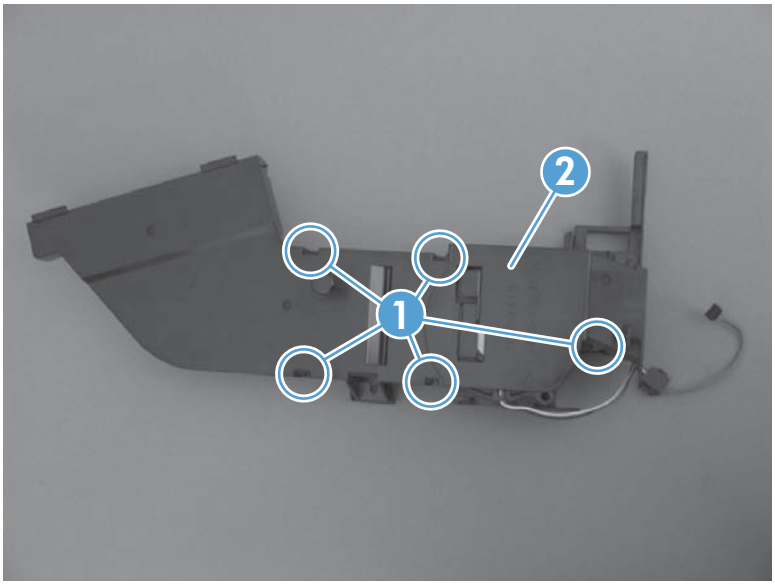
1. Remove two screws (callout 1), disconnect two connectors (callout 2), and then remove the exhaust fan and duct (callout 3) from the product.

**Figure 2-230** Remove the exhaust fan and fan duct (1 of 3)



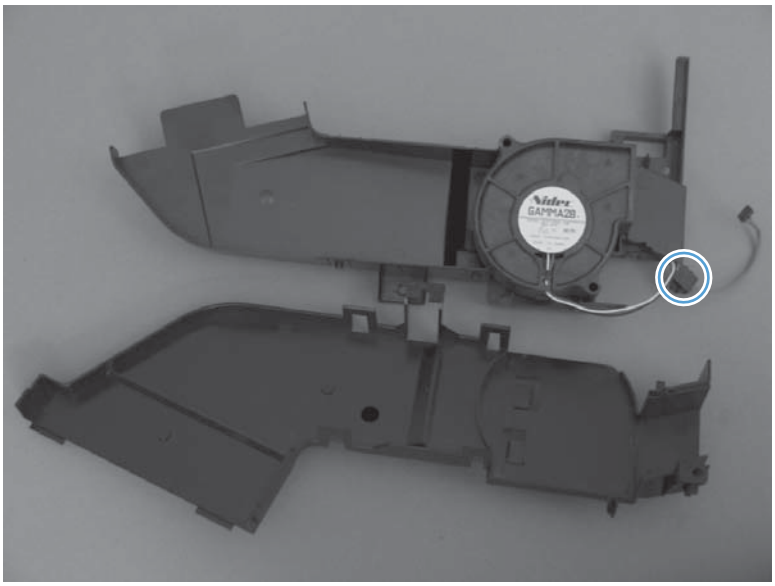
2. Release five tabs (callout 1) and remove the cover (callout 2).

**Figure 2-231** Remove the exhaust fan and fan duct (2 of 3)




3. Disconnect one connector, and then remove the fan from the duct.

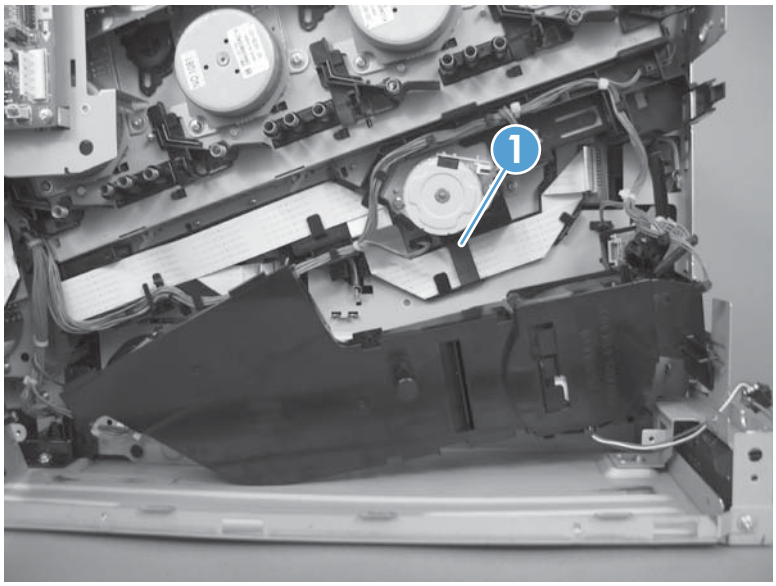
**Figure 2-232** Remove the exhaust fan and fan duct (3 of 3)



## Reinstall the exhaust fan and fan duct

Be sure that the toroid (callout 1) is correctly aligned in the FFC cable guide before attempting to reinstall the exhaust fan and duct.

**Figure 2-233** Reinstall the exhaust fan and fan duct



# Pickup motor

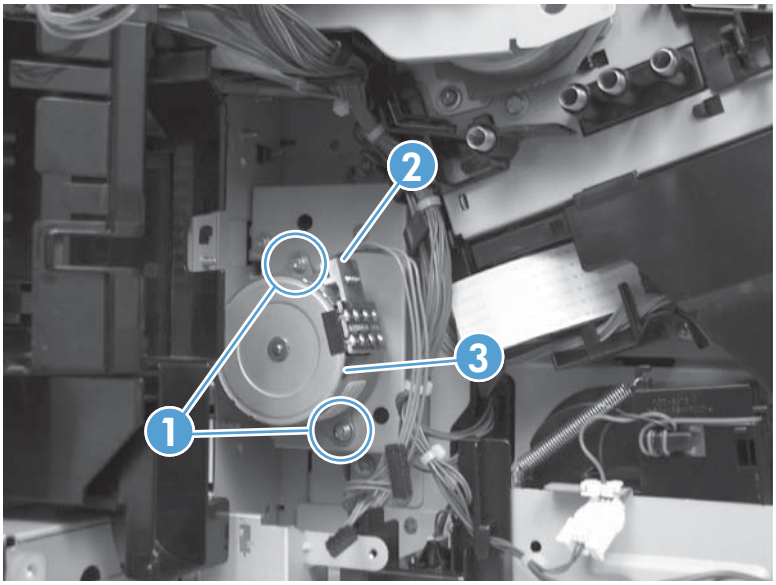
### Before proceeding, remove the following components:

- Formatter. See Formatter PCA on page 106.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Fan cover. See Fan cover on page 134.
- Lower-left cover. See Lower-left cover on page 136.
- Left cover. See Left cover on page 137.
- Rear cover. See Rear cover on page 144.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- Image scanner power supply. See Image scanner power supply unit (PSU) on page 237.
- Interconnect board (ICB). See Interconnect board (ICB) on page 239.
- Low-voltage power supply. See Low-voltage power supply (LVPS) on page 243.

## Remove the pickup motor

Remove two screws (callout 1), disconnect one connector (callout 2), and then remove the motor (callout 3).

**Figure 2-234** Remove the pickup motor



# Lifter-drive assembly

### Before proceeding, remove the following components:

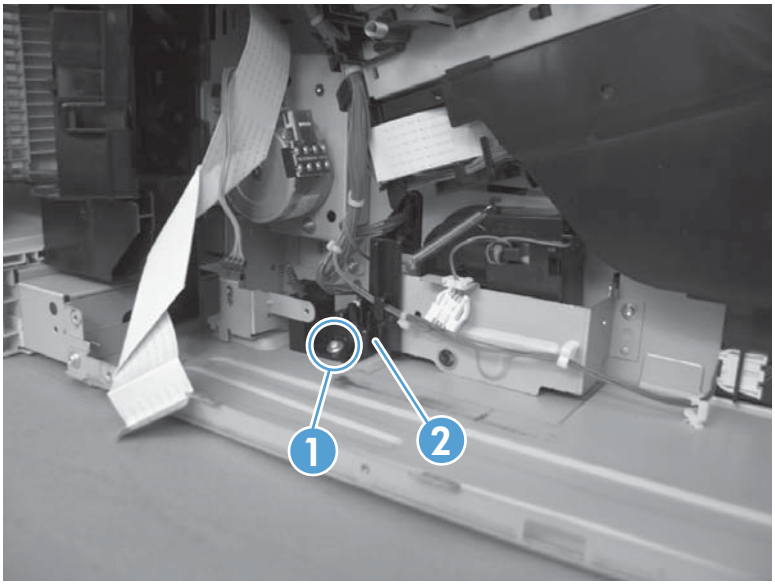
- Formatter. See Formatter PCA on page 106.
- Intermediate transfer belt (ITB). See Intermediate transfer belt (ITB) on page 120.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Lower-left cover. See Lower-left cover on page 136.
- Fan cover. See Fan cover on page 134.
- Left cover. See Left cover on page 137.
- Rear cover. See Rear cover on page 144.
- Document feeder. See Document feeder on page 151..
- Scanner assembly. See Scanner assembly on page 171.
- Interconnect board (ICB). See Interconnect board (ICB) on page 239.
- Low-voltage power supply. See Low-voltage power supply (LVPS) on page 243.
- High-voltage power supply lower. See High-voltage power supply lower (HVPS-D) on page 250.

## Remove the lifter-drive assembly

1. Remove one screw (callout 1), and then move the accessory-tray connector (callout 2) to access the screw behind it.

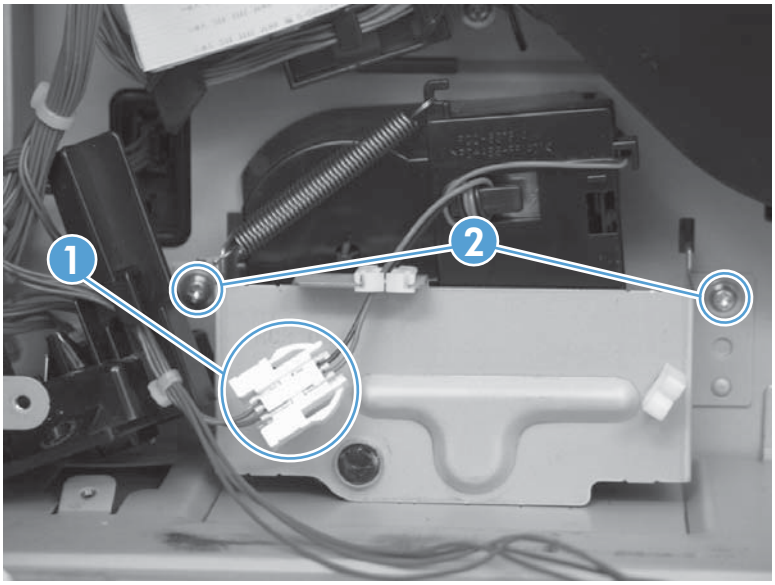
**Reinstallation tip** If the product is installed on the optional paper feeder, you must slightly separate the product and the feeder assembly to install this connector. Open the right door on the feeder. Use the blue handle to release the product-accessory lock, and then lift up on the edge of the product to create a slight gap between the product and the accessory.

**Figure 2-235** Remove the lifter-drive assembly (1 of 3)




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

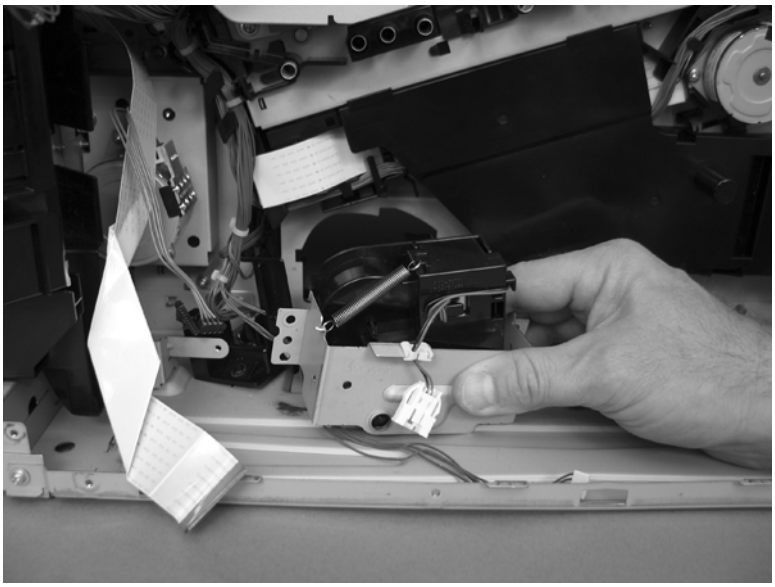
**Figure 2-236** Remove the lifter-drive assembly (2 of 3)



3. Remove the lifter-drive assembly from the product.

**CAUTION:** The spring on the assembly is not captive. Do not lose the spring when the assembly is removed.

**Figure 2-237** Remove the lifter-drive assembly (3 of 3)



**NOTE:** Make sure that the lifter-drive assembly moves up and down easily after reinstalling.

# Lifter base assembly

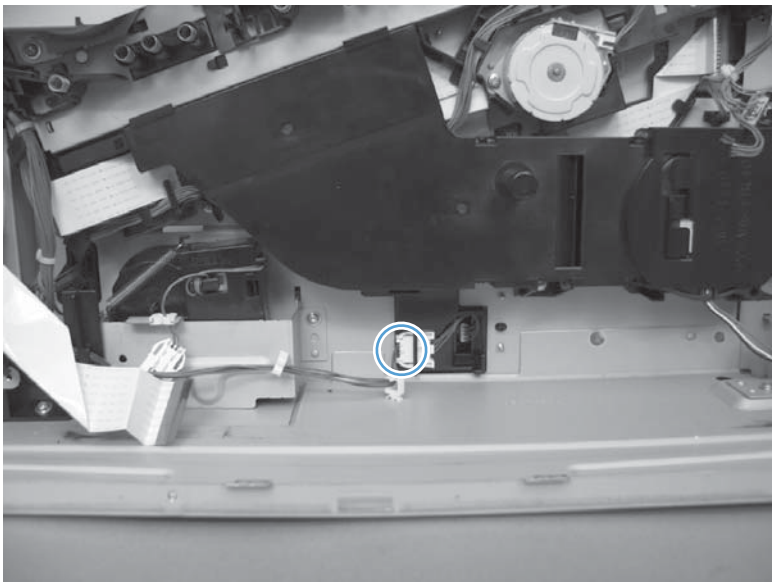
### Before proceeding, remove the following components:

- Formatter. See Formatter PCA on page 106
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Lower-left cover. See Lower-left cover on page 136.
- Fan cover. See Fan cover on page 134.
- Left cover. See Left cover on page 137.
- Rear cover. See Rear cover on page 144.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- Interconnect board (ICB). See Interconnect board (ICB) on page 239.
- Low-voltage power supply. See Low-voltage power supply (LVPS) on page 243.
- High-voltage power supply lower. See High-voltage power supply lower (HVPS-D) on page 250.

## Remove the lifter base assembly

1. Disconnect one connector.

**Figure 2-238** Remove the lifter base assembly (1 of 2)

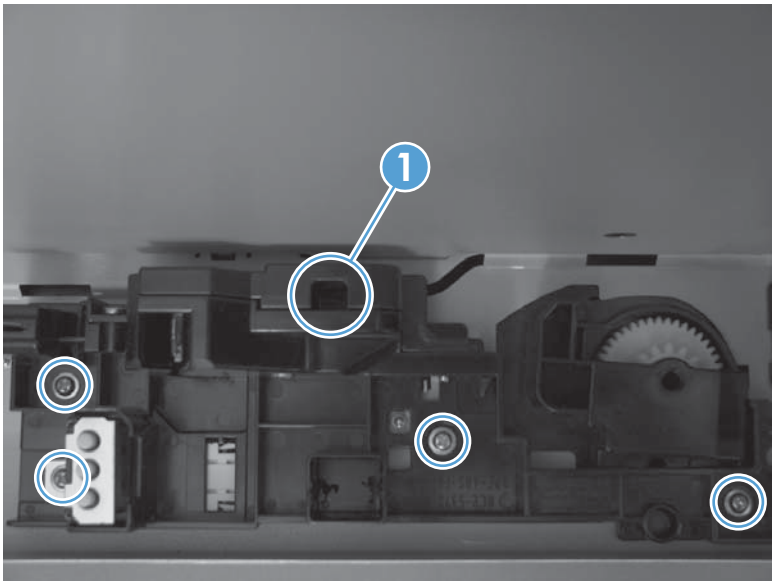


2. From inside the Tray 2 cavity, remove four screws, and then remove the lifter base assembly.

**NOTE:** Pull the assembly straight from the product without tipping to prevent the spring from falling from the assembly.

**Reinstallation tip** If the tray does not completely close when reinstalled, push on the lever in the opening (callout 1) with a flat blade screwdriver to reset the spring in the closing mechanism.

**Figure 2-239** Remove the lifter base assembly (2 of 2)

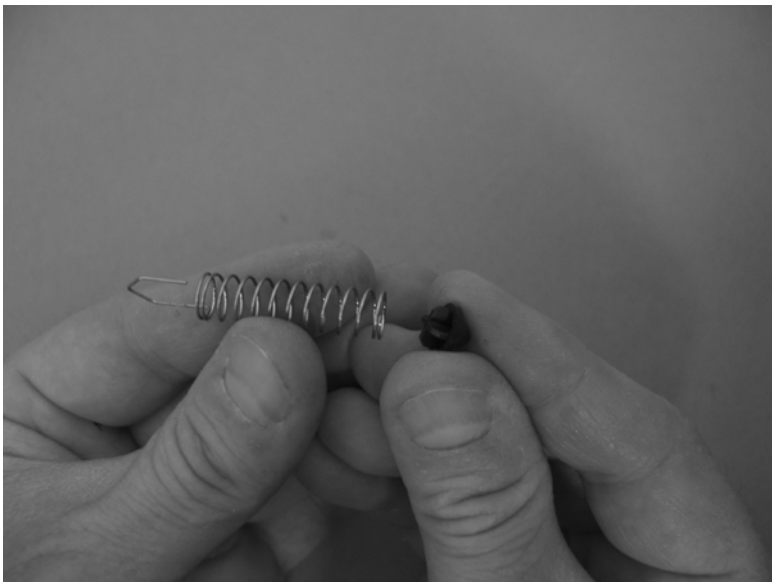



## Reinstall the lifter base assembly

If the spring falls from the lifter base assembly, reinstall it in the lifter before reinstalling the lifter base assembly.

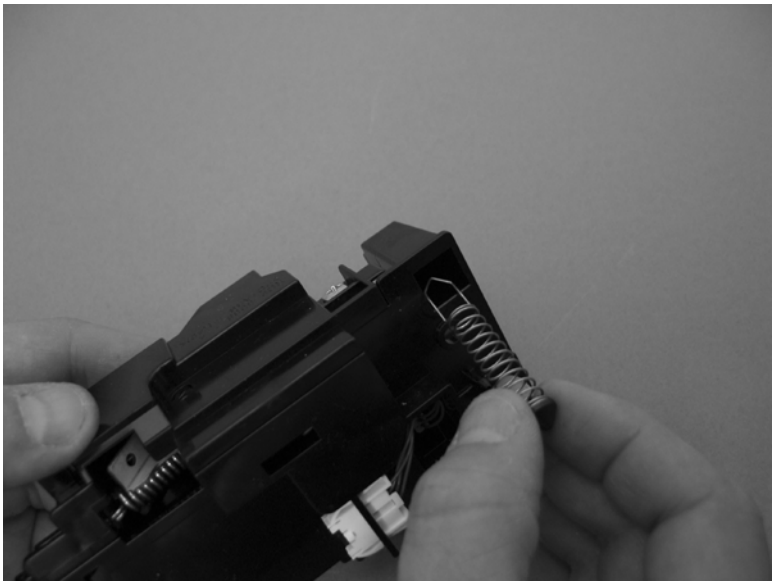
1. Make sure the black rubber end is seated on the spring.

**Figure 2-240** Reinstall the lifter base assembly (1 of 2)



2. Place the spring in the lifter before installing the assembly on the product.

**Figure 2-241** Reinstall the lifter base assembly (2 of 2)



# Tray-pickup drive assembly

### Before proceeding, remove the following components:

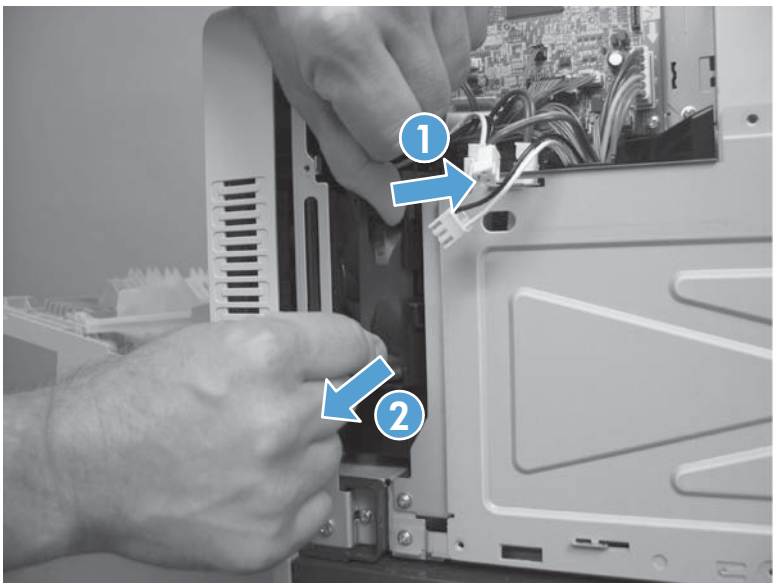
- Formatter. See Formatter PCA on page 106.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Lower-left cover. See Lower-left cover on page 136.
- Left cover. See Left cover on page 137.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- Rear cover. See Rear cover on page 144.
- Interconnect board (ICB). See Interconnect board (ICB) on page 239.
- Power-supply fan. See Power-supply fan on page 236.
- Low-voltage power supply. See Low-voltage power supply (LVPS) on page 243.
- High-voltage power supply lower. See High-voltage power supply lower (HVPS-D) on page 250.

## Remove the tray-pickup drive assembly

**NOTE:** To remove the pickup motor only, see Pickup motor on page 259.

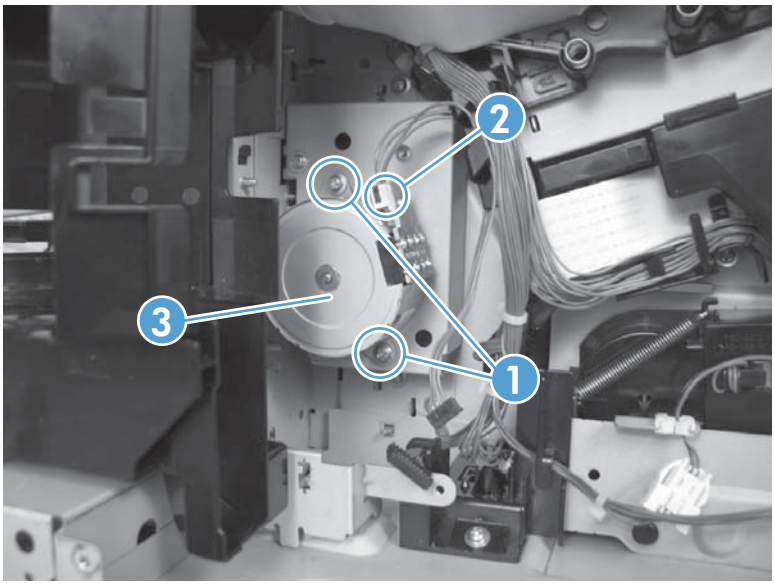
1. Release one tab (callout 1), and then remove the power-supply fan (callout 2).

**Figure 2-242** Remove the tray-pickup drive assembly (1 of 3)



2. Remove two screws (callout 1), disconnect one connector (callout 2), and then remove the pickup motor (callout 35).

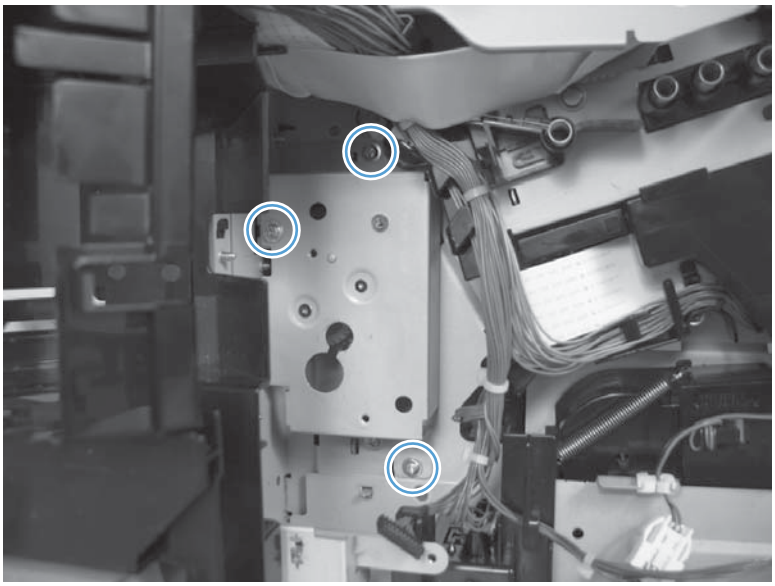
**Figure 2-243** Remove the tray-pickup drive assembly (2 of 3)




3. Remove three screws, and then remove the tray-pickup drive assembly.

**NOTE:** The cams on the main-drive assembly can prevent the tray-pickup drive assembly from releasing from the product. If you cannot remove the assembly, remove the DC controller and tray to provide additional space. See DC controller PCA and tray on page 248. You might also need to remove the wire guide from the main-drive assembly. See Figure 2-280 Remove the main-drive assembly (4 of 7) on page 295.

**Figure 2-244** Remove the tray-pickup drive assembly (3 of 3)



# Tray-pickup assembly

### Before proceeding, remove the following components:

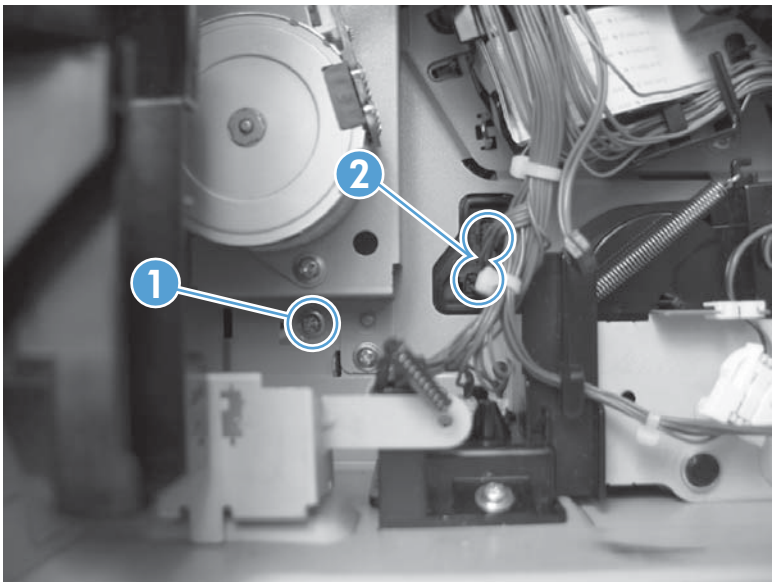
- Formatter. See Formatter PCA on page 106.
- Intermediate transfer belt (ITB). See Intermediate transfer belt (ITB) on page 120.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Lower-left cover. See Lower-left cover on page 136.
- Left cover. See Left cover on page 137.
- Right-rear cover. See Right-rear cover on page 143.
- Rear cover. See Rear cover on page 144.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- Secondary transfer assembly. See Secondary transfer assembly on page 204.
- Registration assembly. See Registration assembly on page 213.
- Interconnect board (ICB). See Interconnect board (ICB) on page 239.
- Low-voltage power supply. See Low-voltage power supply (LVPS) on page 243.
- High-voltage power supply lower. See High-voltage power supply lower (HVPS-D) on page 250.

## Remove the tray-pickup assembly

**NOTE:** This task requires that you remove three feed guides on the right side of the product before you can remove the tray-pickup assembly.

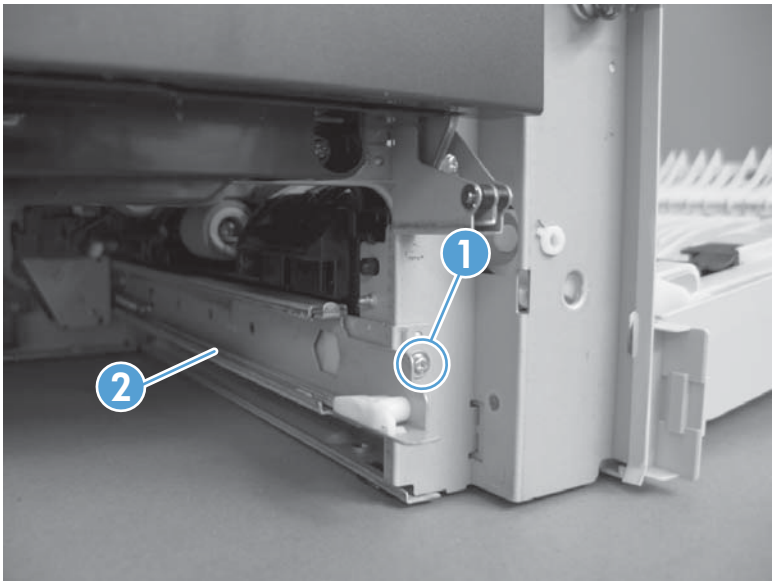
1. Remove one screw (callout 1), and then disconnect two connectors (callout 2).

**Figure 2-245** Remove the tray-pickup assembly (1 of 11)



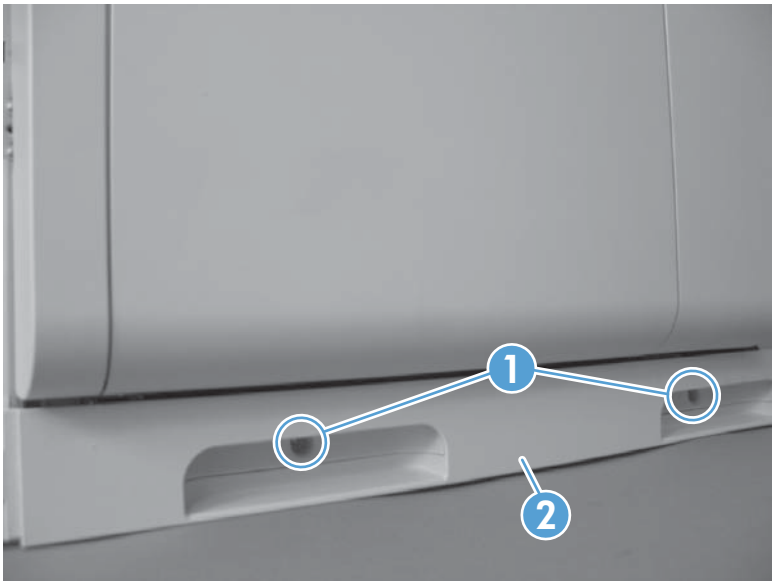

2. From the front of the product, remove one screw (callout 1), and then remove one tray rail (callout 2).

**Figure 2-246** Remove the tray-pickup assembly (2 of 11)



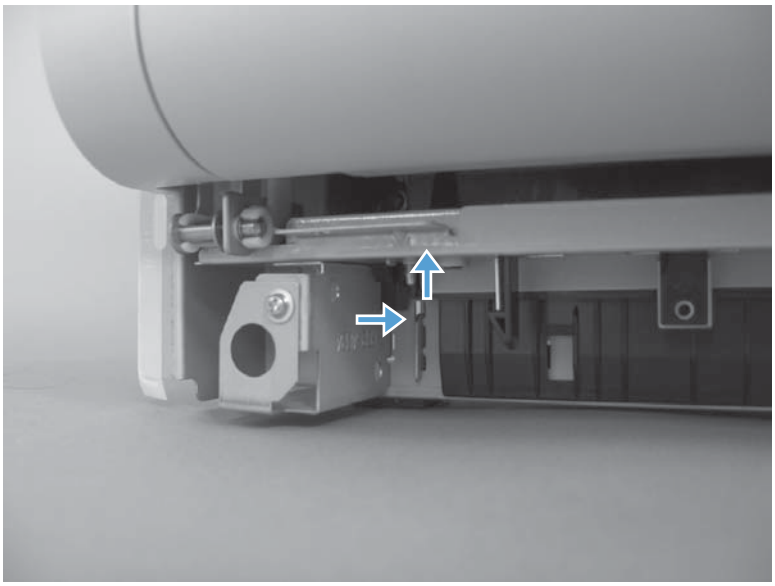
3. From the right side of the product, remove two screws (callout 1) and one cover (callout 2).

**Figure 2-247** Remove the tray-pickup assembly (3 of 11)



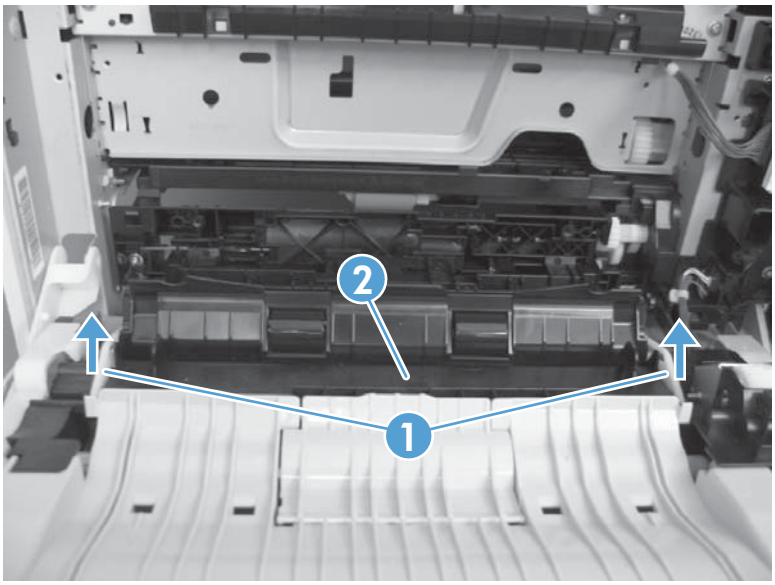

4. Close the right-door assembly. Push in and then push up on the stopper to release.

**Figure 2-248** Remove the tray-pickup assembly (4 of 11)



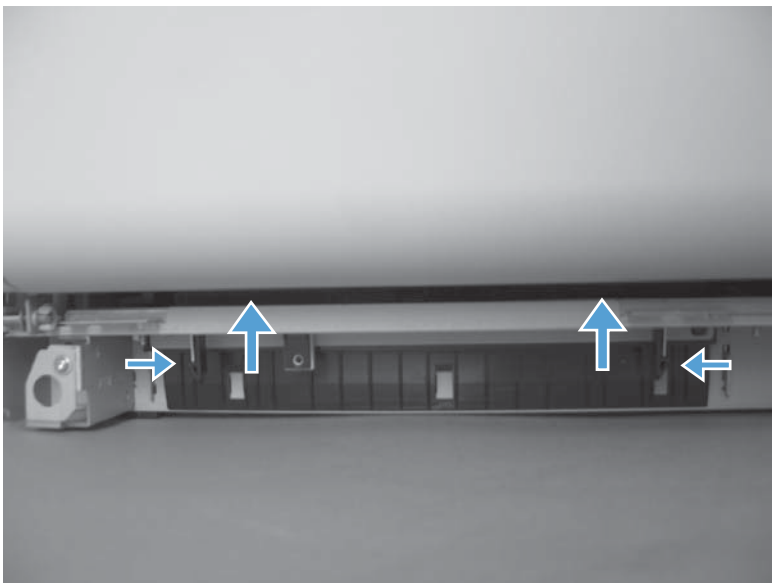
5. Open the right-door assembly. Lift the two link arms (callout 1) to release from the product, and then remove the paper guide (callout 2).

**Figure 2-249** Remove the tray-pickup assembly (5 of 11)




6. Close the right-door assembly. Push the two tabs toward each other, and then push up to release the feed guide.

**Figure 2-250** Remove the tray-pickup assembly (6 of 11)



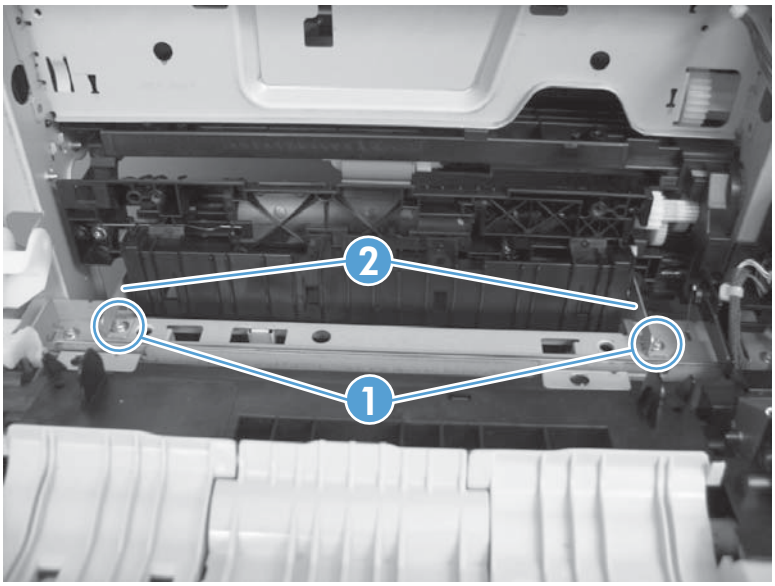
7. Open the right-door assembly, and then remove the feed guide.

**Figure 2-251** Remove the tray-pickup assembly (7 of 11)



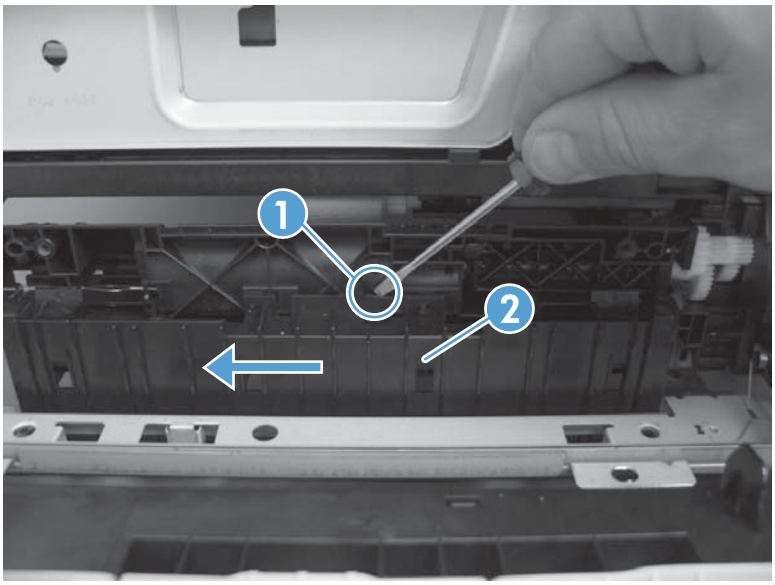
8. Remove two screws (callout 1), and then remove two brackets (callout 2).

**Figure 2-252** Remove the tray-pickup assembly (8 of 11)



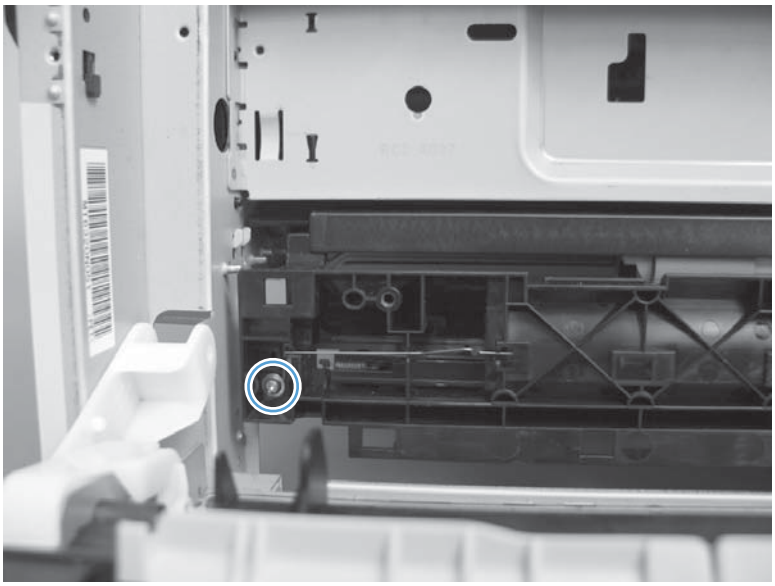
9. Release one tab (callout 1), and then slide the feed guide (callout 2) toward the front of the product to remove.

**Figure 2-253** Remove the tray-pickup assembly (9 of 11)




10. Remove one screw.

**Figure 2-254** Remove the tray-pickup assembly (10 of 11)



11. Remove the tray-pickup assembly.

**Figure 2-255** Remove the tray-pickup assembly (11 of 11)



# Laser/scanner assembly (Y/M)

### Before proceeding, remove the following components:

- Toner collection unit. See Toner-collection unit on page 104.
- Intermediate transfer belt (ITB). See Intermediate transfer belt (ITB) on page 120.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Lower-left cover. See Lower-left cover on page 136.
- Left cover. See Left cover on page 137.
- Rear cover. See Rear cover on page 144.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- Cartridge fan and environmental sensor. See Cartridge fan and environmental sensor on page 222.
- Toner collection sensor and scanner-thermistor assembly. See Toner-collection sensor and scanner-thermistor assembly on page 226.
- Interconnect board (ICB). See Interconnect board (ICB) on page 239.
- Low-voltage power supply. See Low-voltage power supply (LVPS) on page 243.
- High-voltage power supply lower. See High-voltage power supply lower (HVPS-D) on page 250.
- Exhaust fan and fan duct. See Exhaust fan and fan duct on page 256.

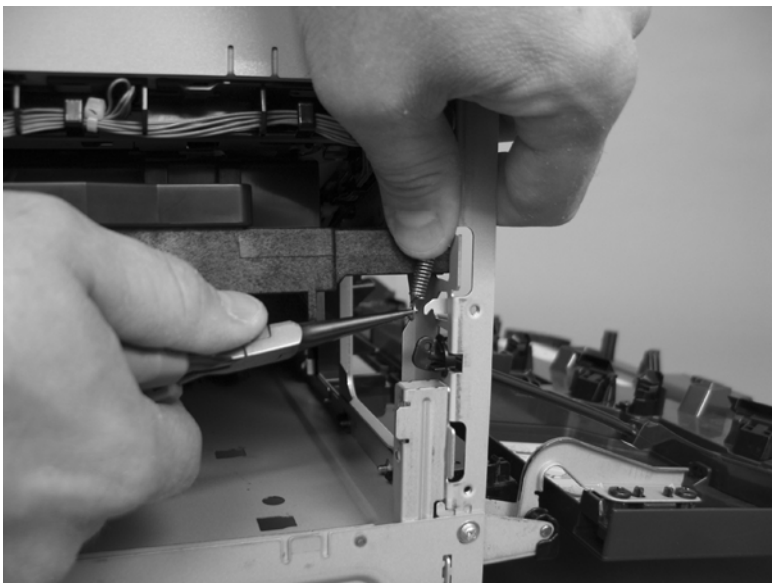
## Remove the laser/scanner assembly (Y/M)

**NOTE:** After installing a new laser/scanner assembly, be sure to calibrate the product. See Calibrate the product on page 468.

1. Release one spring.

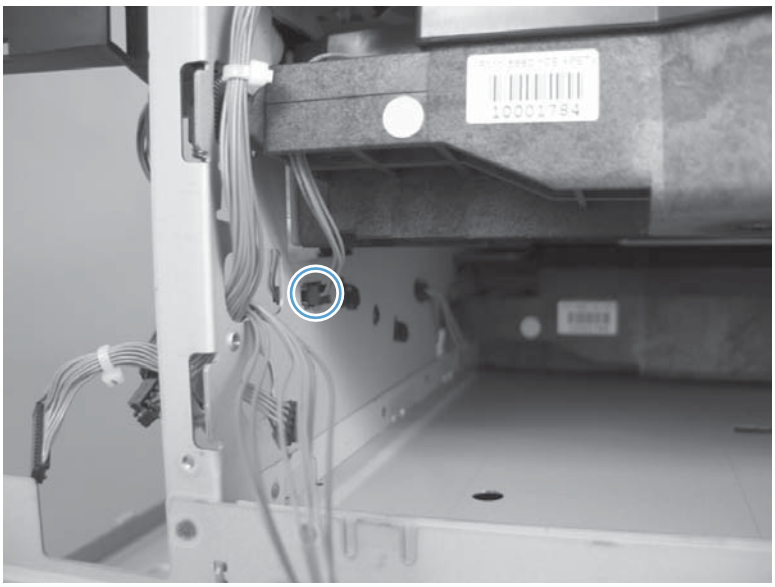
**CAUTION:** The spring is not captive. Do not lose the spring when it is removed. Use a pair of needle-nose pliers to safely retain the spring when it is removed. Do not use a flat blade screwdriver to remove the spring; the spring could forcibly leave the product and strike you.

**Figure 2-256** Remove the laser/scanner assembly (Y/M) (1 of 5)



2. Disconnect one connector.

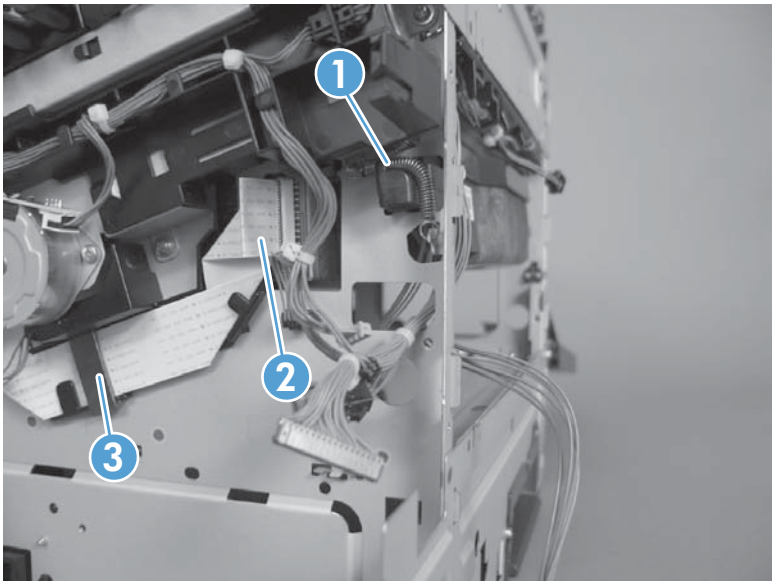
**Figure 2-257** Remove the laser/scanner assembly (Y/M) (2 of 5)



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

**Reinstallation tip** When reinstalled, the toroid (callout 3) must be correctly positioned on the wire guide (in the provided slots) so that the fan duct will fully seat in the product when it is reinstalled.

**Figure 2-258** Remove the laser/scanner assembly (Y/M) (3 of 5)



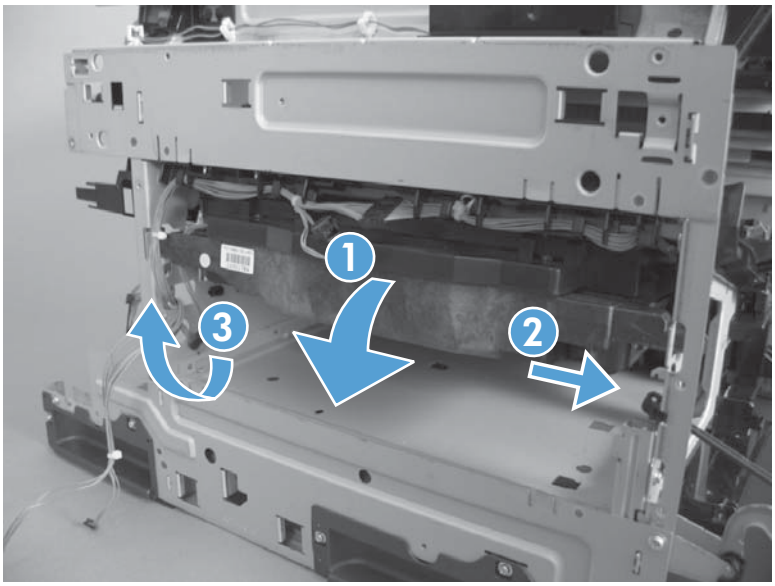

**CAUTION:** The spring is not captive. Do not lose the spring when it is removed. Use a pair of needle-nose pliers to safely retain the spring when it is removed. Do not use a flat blade screwdriver to remove the spring; the spring could forcibly leave the product and strike you.

**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.

4. 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).

**Reinstallation tip** When the scanner is reinstalled, make sure that the tab on the front of the laser/scanner is inserted in the alignment hole in the product chassis. See callout 1 in Figure 2-260 Remove the laser/scanner assembly (Y/M) (5 of 5) on page 278

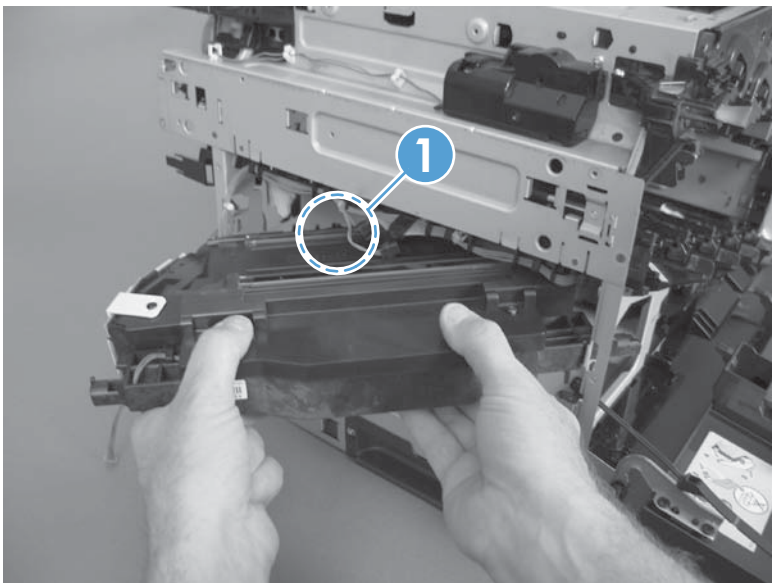
**Figure 2-259** Remove the laser/scanner assembly (Y/M) (4 of 5).




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

**Reinstallation tip** When the scanner is removed, locate the alignment tab (callout 1) on the front of the laser/scanner. The tab must be inserted in the alignment hole in the product chassis when the assembly is reinstalled.

**Figure 2-260** Remove the laser/scanner assembly (Y/M) (5 of 5)



# Laser/scanner assembly (C/Bk)

### Before proceeding, remove the following components:

- Toner collection unit. See Toner-collection unit on page 104.
- Intermediate transfer belt (ITB). See Intermediate transfer belt (ITB) on page 120.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Lower-left cover. See Lower-left cover on page 136.
- Left cover. See Left cover on page 137.
- Document feeder. See Document feeder on page 151.
- Rear cover. See Rear cover on page 144.
- Scanner assembly. See Scanner assembly on page 171.
- Cartridge fan and environmental sensor. See Cartridge fan and environmental sensor on page 222.
- Toner collection sensor and scanner-thermistor assembly. See Toner-collection sensor and scanner-thermistor assembly on page 226.
- Interconnect board (ICB). See Interconnect board (ICB) on page 239.
- Low-voltage power supply. See Low-voltage power supply (LVPS) on page 243.
- High-voltage power supply lower. See High-voltage power supply lower (HVPS-D) on page 250.
- Exhaust fan and fan duct. See Exhaust fan and fan duct on page 256.
- Laser/scanner assembly (Y/M). See Laser/scanner assembly (Y/M) on page 275.

## Remove the laser/scanner assembly (C/Bk)

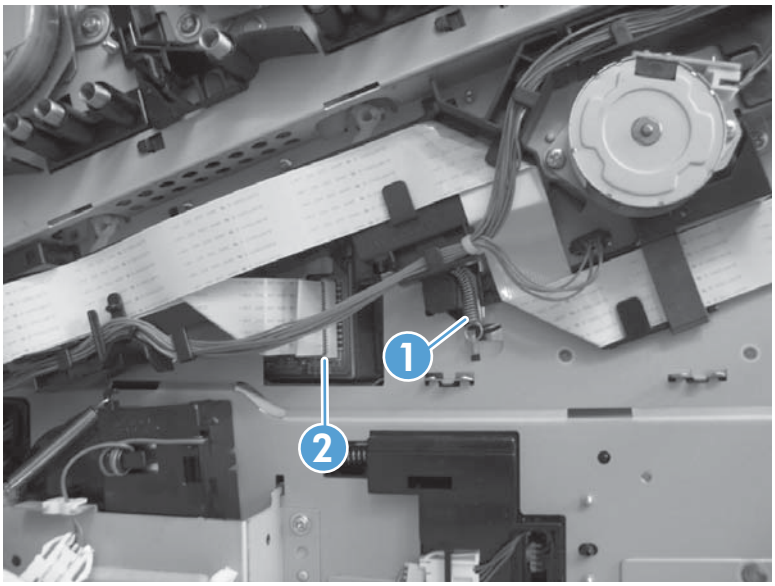
**NOTE:** After installing a new laser/scanner assembly, be sure to calibrate the product. See Calibrate the product on page 468.

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

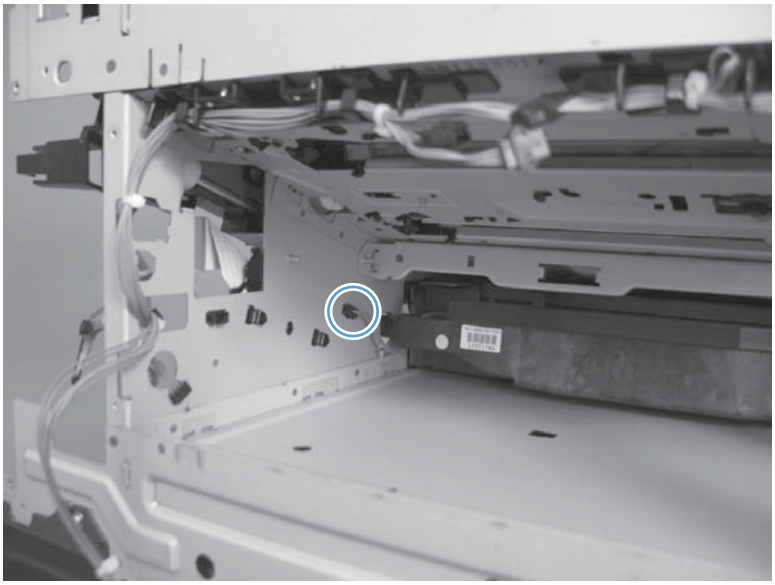
**Reinstallation tip** When you reinstall the spring, make sure that the laser/scanner fits tightly up against the product chassis, and make sure that the FFC is fully seated in the connector. The locator tabs on the front of the scanner must be firmly seated in the slots in the chassis.

**Figure 2-261** Remove the laser/scanner assembly (C/Bk) (1 of 5)



2. Disconnect one connector.

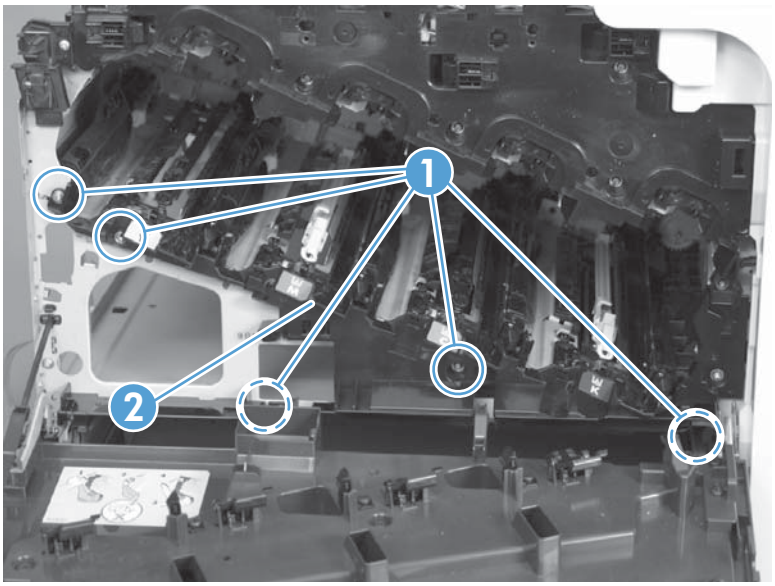
**Figure 2-262** Remove the laser/scanner assembly (C/Bk) (2 of 5)



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

**CAUTION:** Be careful. The PGC actuators are easily dislodged when the cover is removed. See Figure 2-266 Reinstall the PGC actuators (1 of 5) on page 283. To reinstall the actuators, see Reinstall the protective glass cleaner (PGC) actuators on page 283.

**Figure 2-263** Remove the laser/scanner assembly (C/Bk) (3 of 5)



4. Release one spring.

**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.

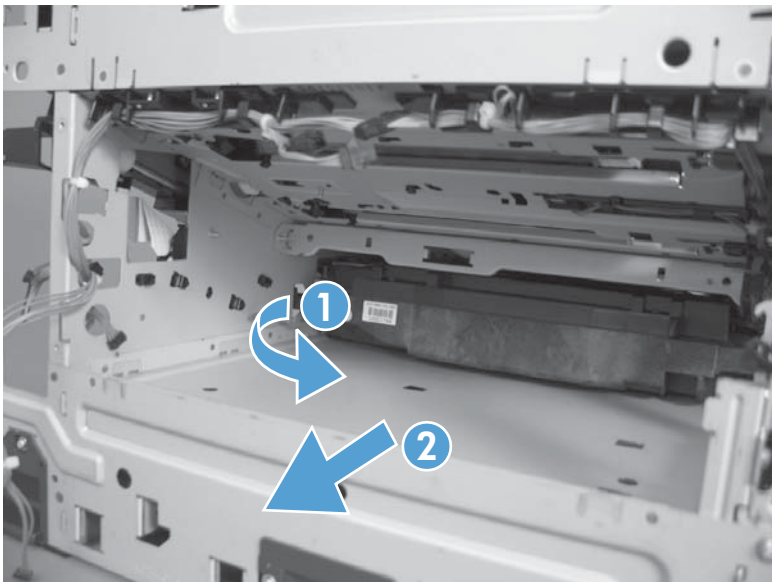
**Figure 2-264** Remove the laser/scanner assembly (C/Bk) (4 of 5)



5. 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 correctly 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 2-265** Remove the laser/scanner assembly (C/Bk) (5 of 5)

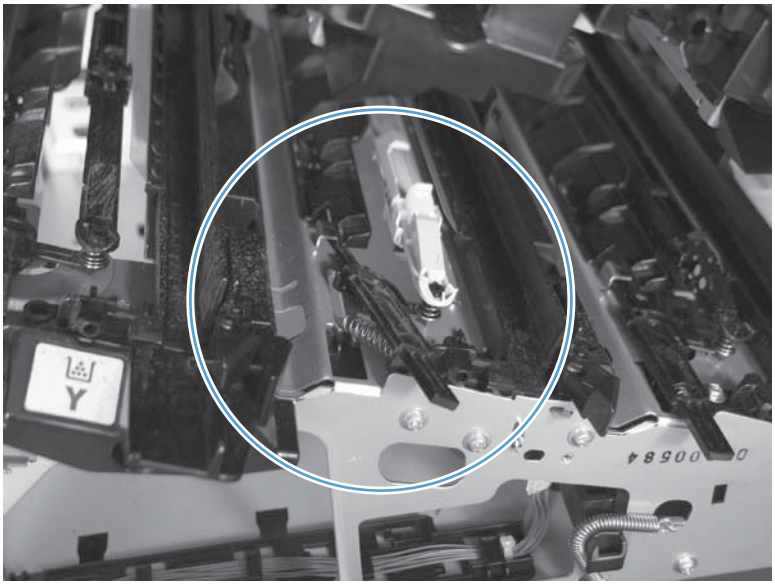



## Reinstall the protective glass cleaner (PGC) actuators

1. The following figure shows a dislodged PGC actuator.

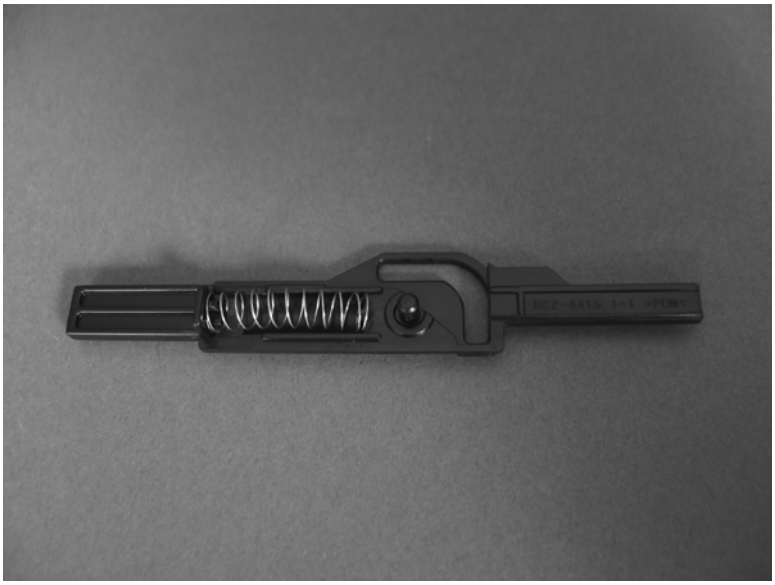
**TIP:** If the actuator and spring are only slightly dislodged, you might be able to easily push them back into place.

**Figure 2-266** Reinstall the PGC actuators (1 of 5)



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

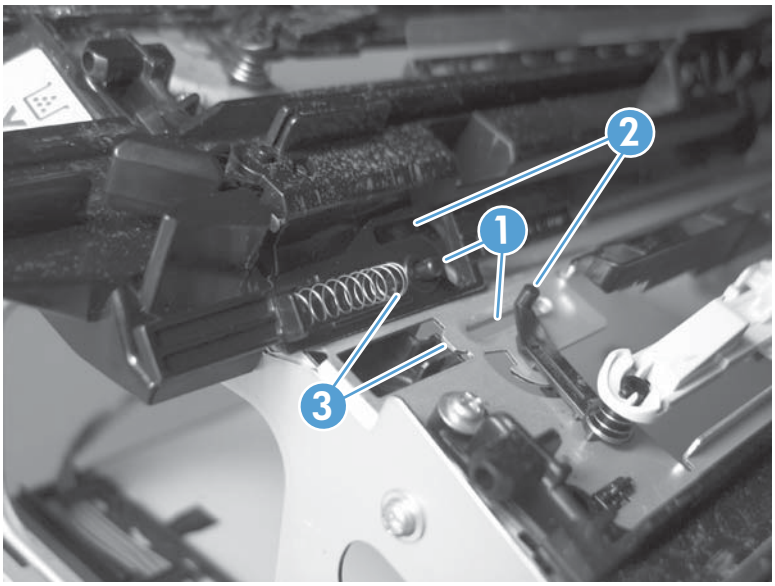
**Figure 2-267** Reinstall the PGC actuators (2 of 5)



3. Before proceeding, take note of the following:

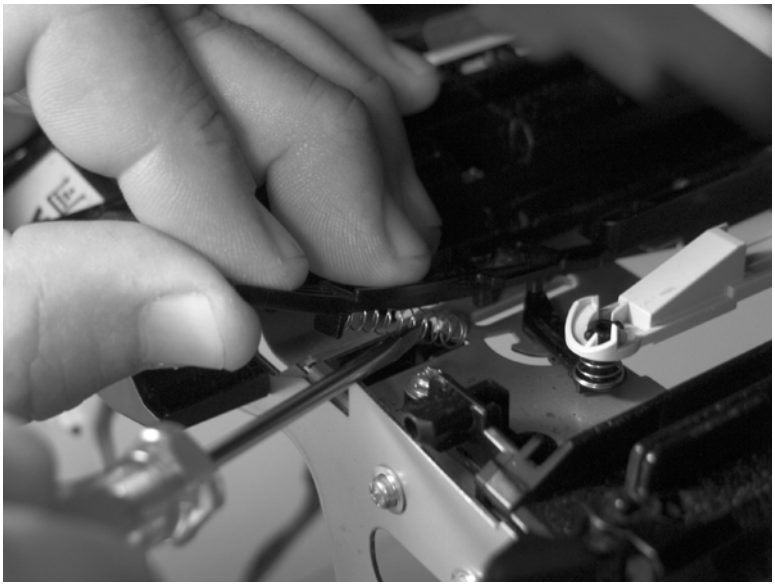
- **Callout 1**: The pin on the actuator will be installed into the slot in the chassis.
- **Callout 2**: The pin on the pivot arm will be installed into the slot on the actuator.
- **Callout 3**: The end of the spring will be installed onto the tab on the chassis.

**Figure 2-268** Reinstall the PGC actuators (3 of 5)



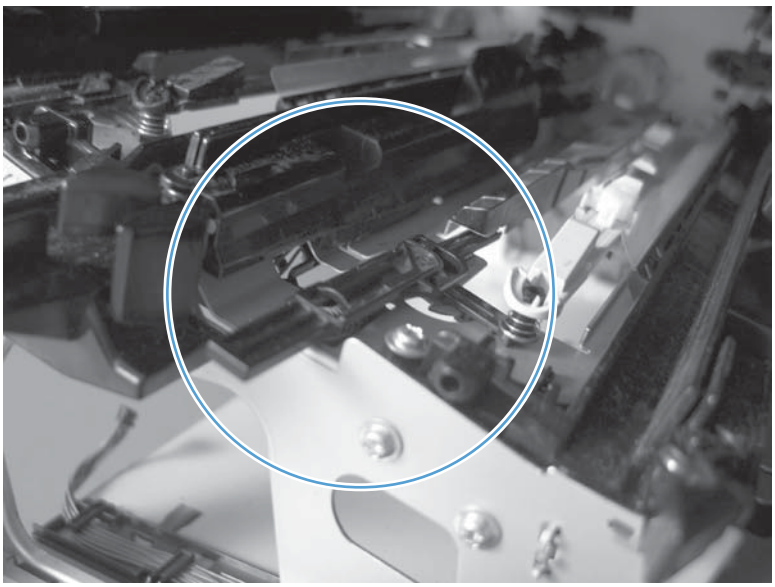
4. Place the end of the actuator into the PGC rod, and then use a small flat blade screw driver to fasten the end of the spring on the tab on the chassis.

**Figure 2-269** 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 must freely move when you push in on the actuator.

**Figure 2-270** Reinstall the PGC actuators (5 of 5)



# High-voltage power supply upper (HVPS-T)

### Before proceeding, remove the following components:

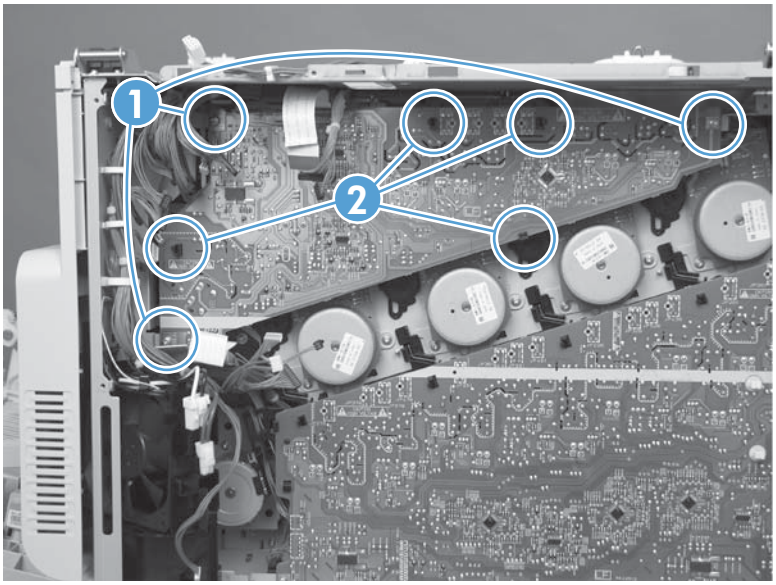
- Formatter. See Formatter PCA on page 106.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Fan cover. See Fan cover on page 134.
- Lower-left cover. See Lower-left cover on page 136.
- Left cover. See Left cover on page 137.
- Rear cover. See Rear cover on page 144.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- Image scanner power supply. See Image scanner power supply unit (PSU) on page 237.
- Interconnect board (ICB). See Interconnect board (ICB) on page 239.
- Low-voltage power supply. See Low-voltage power supply (LVPS) on page 243.
- DC controller and tray. See DC controller PCA and tray on page 248.

## Remove the high-voltage power supply upper

**CAUTION:** ESD-sensitive part.

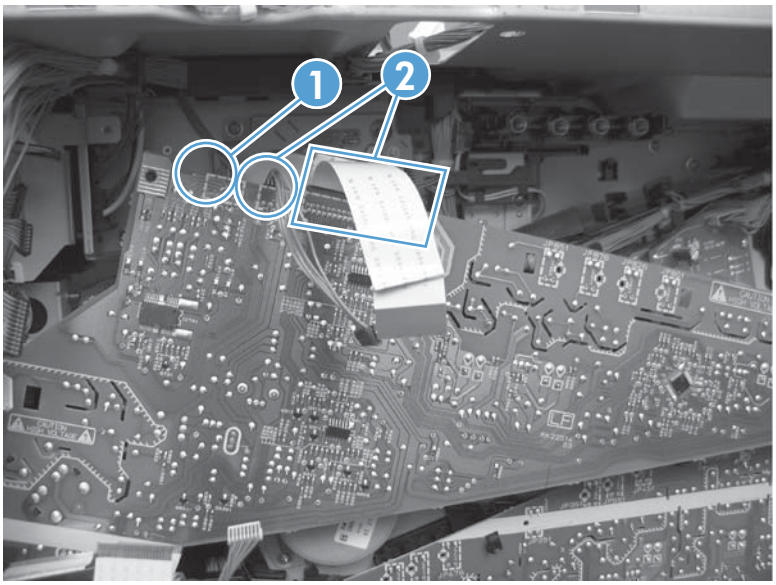
1. Remove three screws (callout 1), and then release four tabs (callout 2).

**Figure 2-271** Remove the high-voltage power supply upper (2 of 2)



2. Disconnect one connector (callout 1) and then remove the power supply.**Do not** disconnect two connectors (callout 2)

**Figure 2-272** Remove the high-voltage power supply upper (1 of 2)

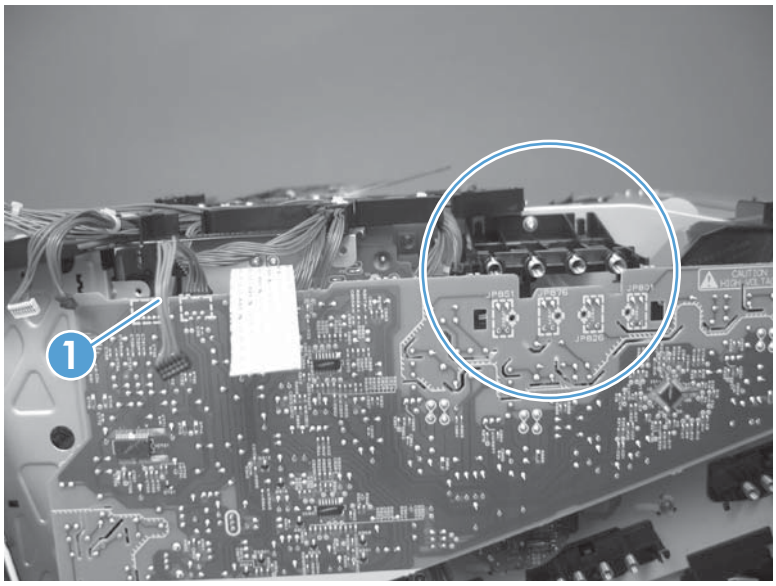


### Reinstall the high-voltage power supply upper

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 2-273** Reinstall the high-voltage power supply upper



# Yellow, magenta, cyan, and black drum motors

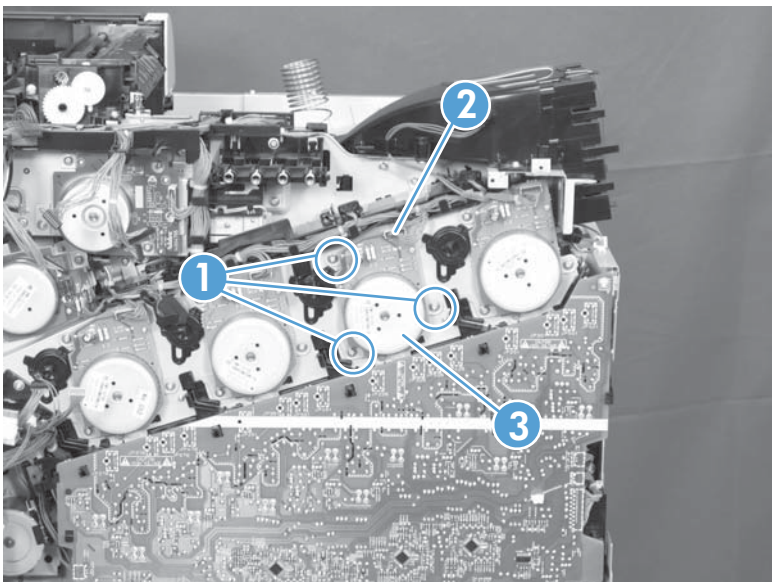
### Before proceeding, remove the following components:

- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Fan cover. See Fan cover on page 134.
- Lower-left cover. See Lower-left cover on page 136.
- Left cover. See Left cover on page 137.
- Rear cover. See Left cover on page 137.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- Image scanner power supply. See Image scanner power supply unit (PSU) on page 237.
- Interconnect board (ICB). See Interconnect board (ICB) on page 239.
- Low-voltage power supply. See Low-voltage power supply (LVPS) on page 243.
- DC controller PCA and tray. See DC controller PCA and tray on page 248.
- High-voltage power supply upper. See High-voltage power supply upper (HVPS-T) on page 286.

## Remove the yellow, magenta, cyan, and black drum motors

▲ For each motor, remove three screws (callout 1), disconnect one connector (callout 2), and then remove the motor (callout 3)

**Figure 2-274** Remove the yellow, magenta, cyan, and black drum motors



# Fuser motor

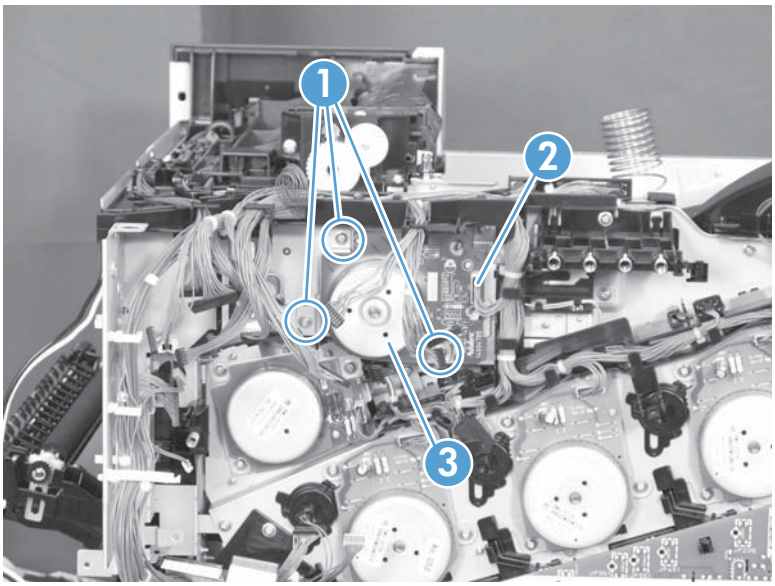
### Before proceeding, remove the following components:

- Formatter. See Formatter PCA on page 106.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Lower-left cover. See Lower-left cover on page 136.
- Fan cover. See Fan cover on page 134.
- Left cover. See Left cover on page 137.
- Rear cover. See Rear cover on page 144.
- Document feeder. See Document feeder on page 151.
- Image scanner power supply unit (PSU). See Image scanner power supply unit (PSU) on page 237.
- Scanner assembly. See Scanner assembly on page 171.
- Interconnect board (ICB). See Interconnect board (ICB) on page 239.
- Low-voltage power supply. See Low-voltage power supply (LVPS) on page 243.
- DC controller PCA. See DC controller PCA and tray on page 248.
- High-voltage power supply upper. See High-voltage power supply upper (HVPS-T) on page 286.

## Remove the fuser motor

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

**Figure 2-275** Remove the fuser motor



# ITB motor

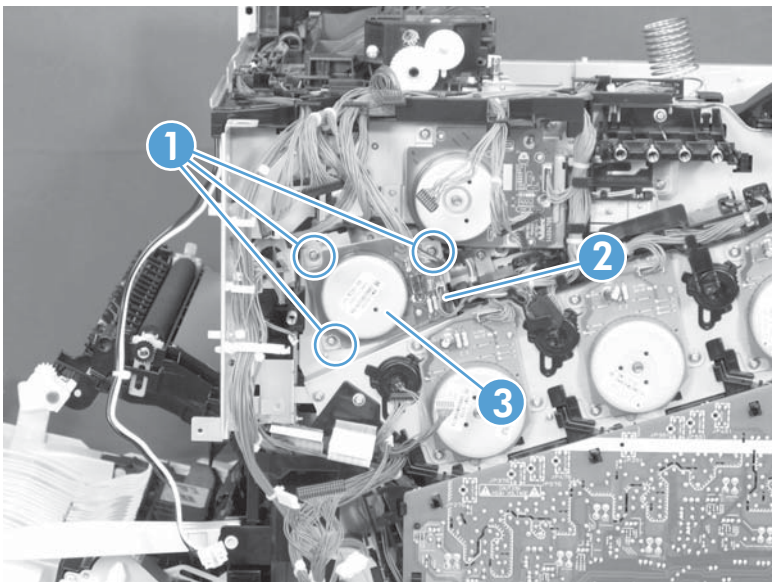
### Before proceeding, remove the following components:

- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Fan cover. See Fan cover on page 134.
- Lower-left cover. See Lower-left cover on page 136.
- Left cover. See Left cover on page 137.
- Rear cover. See Rear cover on page 144.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- Image scanner power supply. See Image scanner power supply unit (PSU) on page 237.
- Interconnect board (ICB). See Interconnect board (ICB) on page 239.
- Low-voltage power supply. See Low-voltage power supply (LVPS) on page 243.
- DC controller PCA. See DC controller PCA and tray on page 248.
- High-voltage power supply upper. See High-voltage power supply upper (HVPS-T) on page 286.

## Remove the ITB motor

▲ Remove three screws (callout 1), disconnect one connector (callout 2), and then remove the motor (callout 3).

**Figure 2-276** Remove the ITB motor (1 of 2)



# Main-drive assembly

**NOTE:** Removing the main-drive assembly typically requires more than 2 hours to complete.

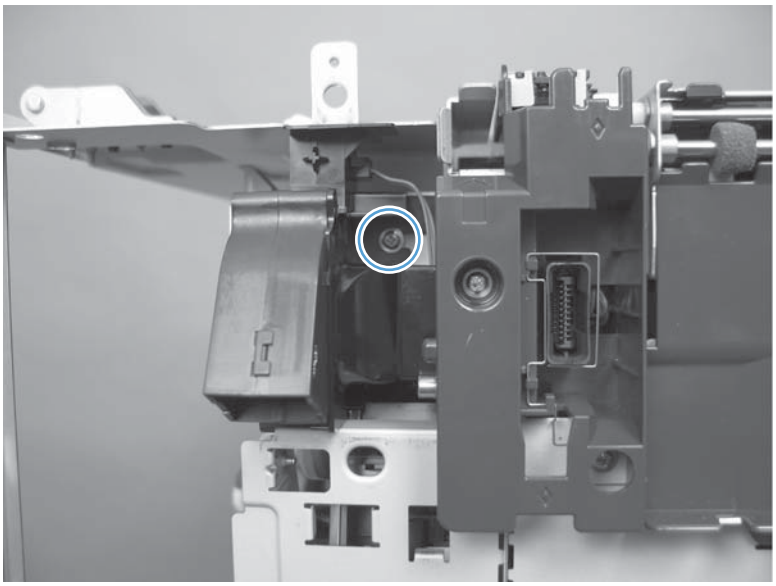
### Before proceeding, remove the following components:

- Formatter. See Formatter PCA on page 106.
- Intermediate transfer belt (ITB). See Intermediate transfer belt (ITB) on page 120.
- S-CVR-REAR (scanner rear cover). See S-CVR-REAR (scanner rear cover) on page 128.
- Fan cover. See Fan cover on page 134.
- Lower-left cover. See Lower-left cover on page 136.
- Left cover. See Left cover on page 137.
- Rear cover. See Rear cover on page 144.
- Document feeder. See Document feeder on page 151.
- Scanner assembly. See Scanner assembly on page 171.
- Image scanner power supply. See Image scanner power supply unit (PSU) on page 237.
- Interconnect board (ICB). See Interconnect board (ICB) on page 239.
- Low-voltage power supply. See Low-voltage power supply (LVPS) on page 243.
- DC controller PCA. See DC controller PCA and tray on page 248.
- High-voltage power supply lower. See High-voltage power supply lower (HVPS-D) on page 250.
- Exhaust fan and fan duct. See Exhaust fan and fan duct on page 256.
- High-voltage power supply upper. See High-voltage power supply upper (HVPS-T) on page 286.
- Yellow, magenta, cyan, and black drum motors. See Remove the yellow, magenta, cyan, and black drum motors on page 289.

## Remove the main-drive assembly

1. Remove one screw and then release the fan from the chassis.

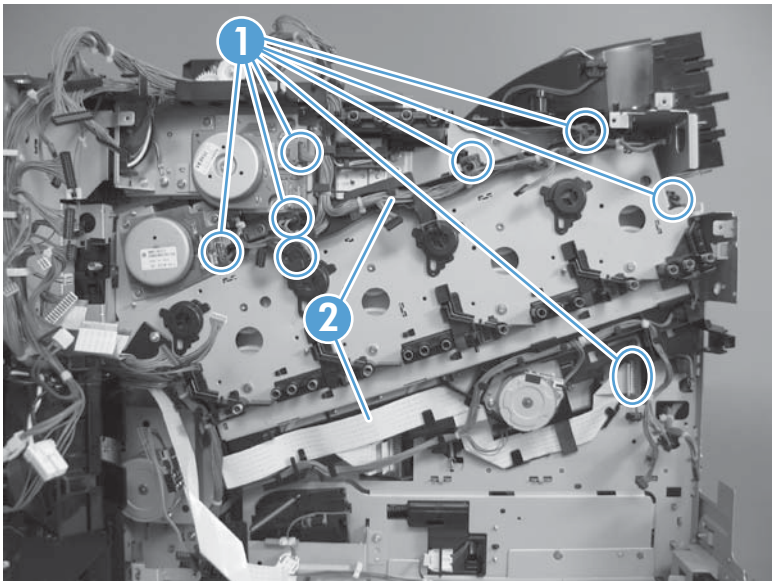
**Figure 2-277** Remove the main-drive assembly (1 of 7)



2. Remove eight connectors (callout 1), and then release the wire harnesses from the guides (callout 2).

**NOTE:** Leave the wire harnesses with the product.

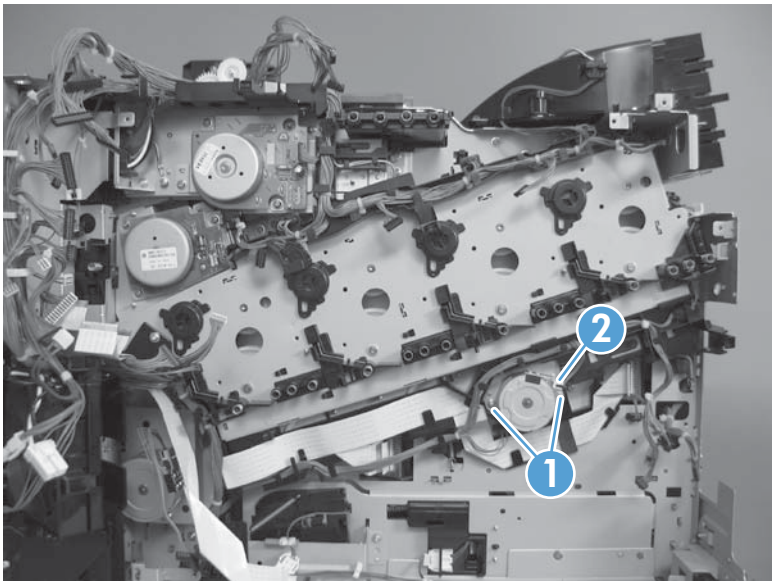
**Figure 2-278** Remove the main-drive assembly (2 of 7)



3. Remove two screws (callout 1), disconnect one connector (callout 2), and then remove the developing-disengagement motor.

**NOTE:** When the motor is reinstalled, make sure the motor PCA is positioned at the top of the assembly.

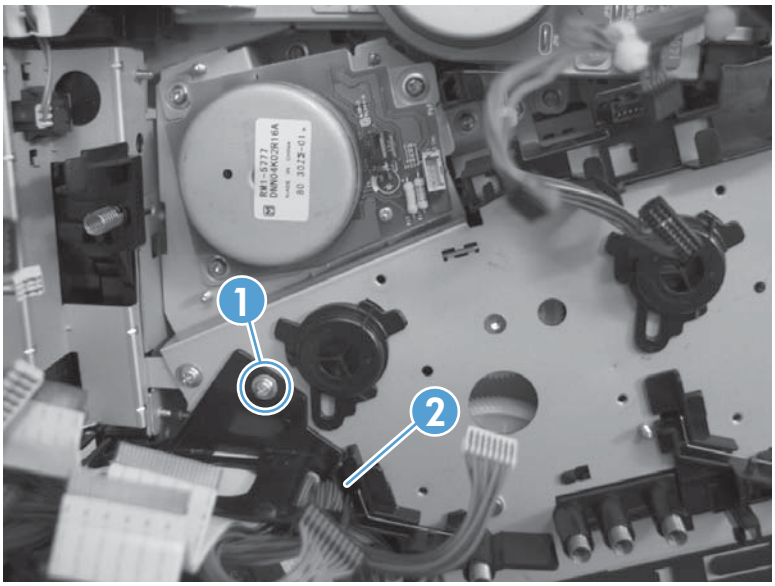
**Figure 2-279** Remove the main-drive assembly (3 of 7)




4. Remove one screw (callout 1), and then remove the wire guide from the main-drive assembly (callout 2).

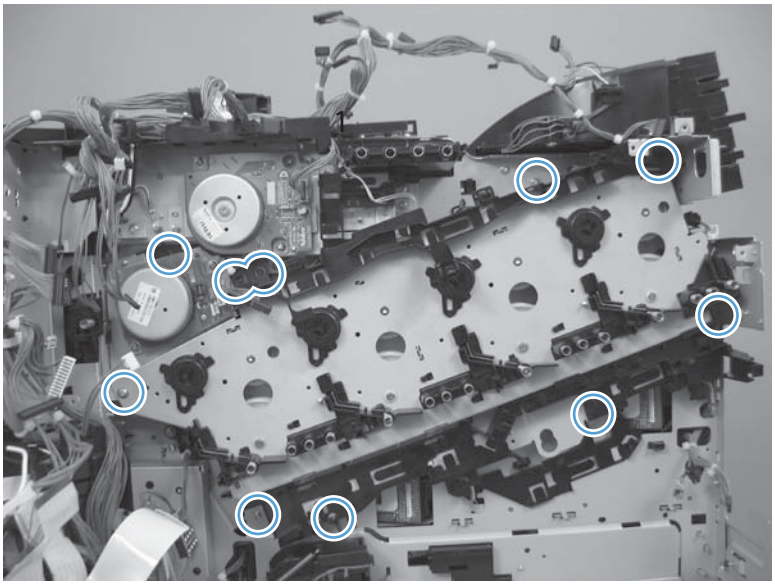
**NOTE:** Leave the wire harnesses connected to the wire guide and attached to the product for easier reinstallation.

**Figure 2-280** Remove the main-drive assembly (4 of 7)



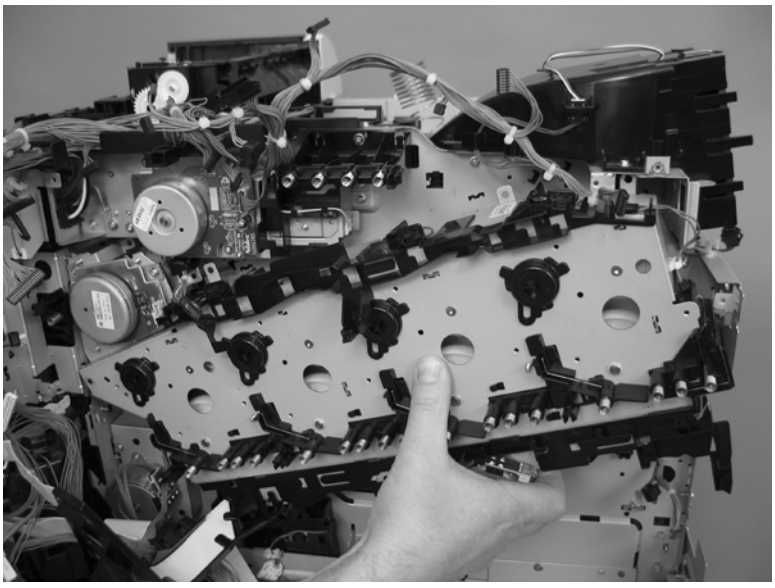
5. Remove 10 screws.

**Figure 2-281** Remove the main-drive assembly (5 of 7)



6. Separate the main-drive assembly from the product.

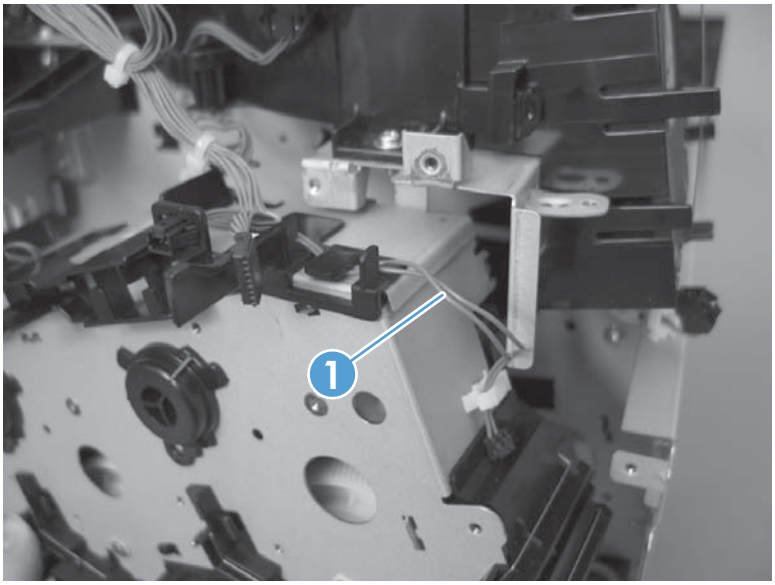
**Figure 2-282** Remove the main-drive assembly (6 of 7)



7. Release the wire harness (callout 1) from the guides, and then remove the main-drive assembly from the product.

**Reinstallation tip** It might be easier to pass this harness over the edge of the assembly chassis after the main-drive assembly is reinstalled.

**Figure 2-283** Remove the main-drive assembly (7 of 7)



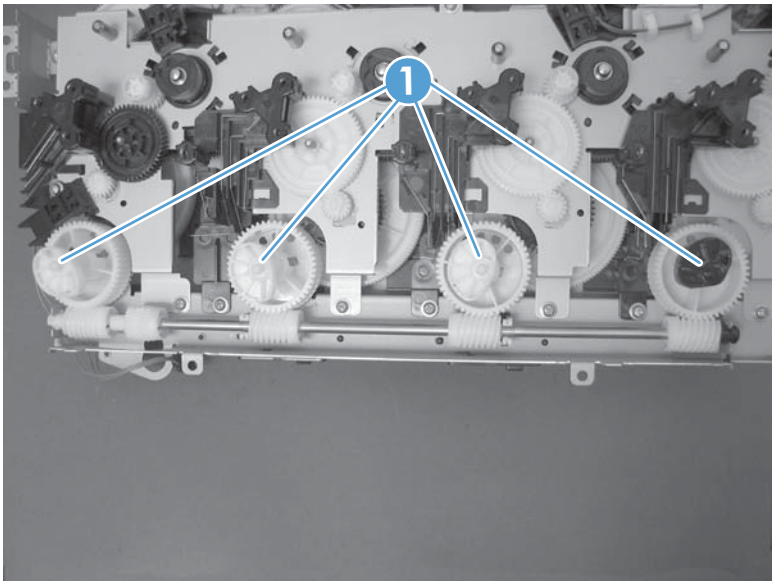

**CAUTION:** Be careful when you remove the assembly. The cams on the backside of the assembly can be dislodged. If the cams become dislodged, install them on the shafts as shown in Figure 2-284 Reinstall the main-drive assembly (1 of 7) on page 298.

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

### Reinstall the main-drive assembly

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

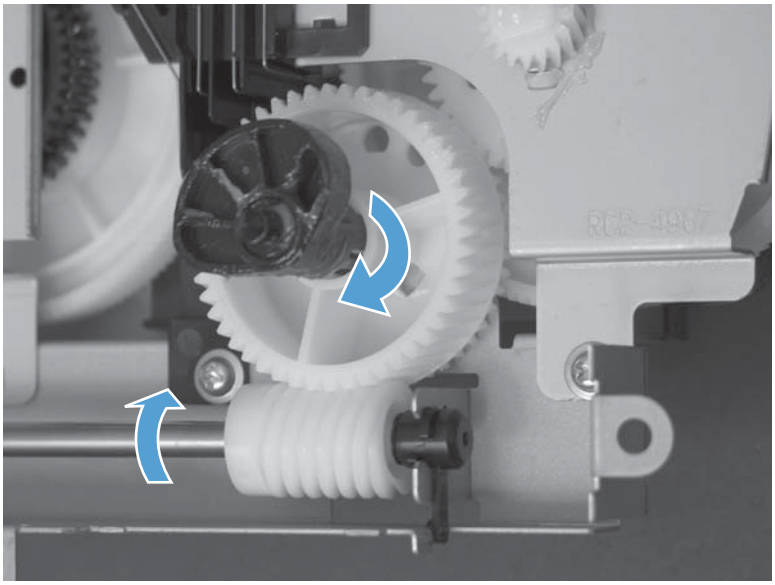
**Figure 2-284** Reinstall the main-drive assembly (1 of 7)




2. 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 2-285** Reinstall the main-drive assembly (2 of 7)

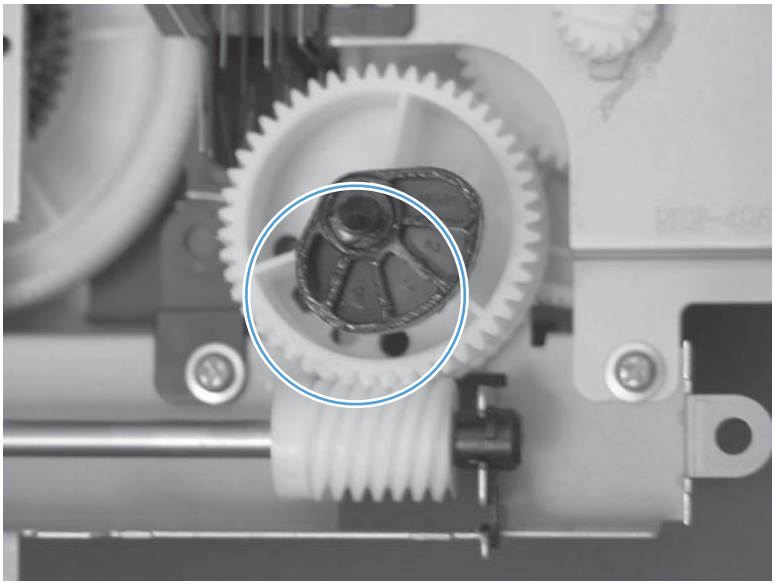


3. Continue to rotate the shaft until the holes in the black-cam gear align as shown below.

   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 2-286** Reinstall the main-drive assembly (3 of 7)



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

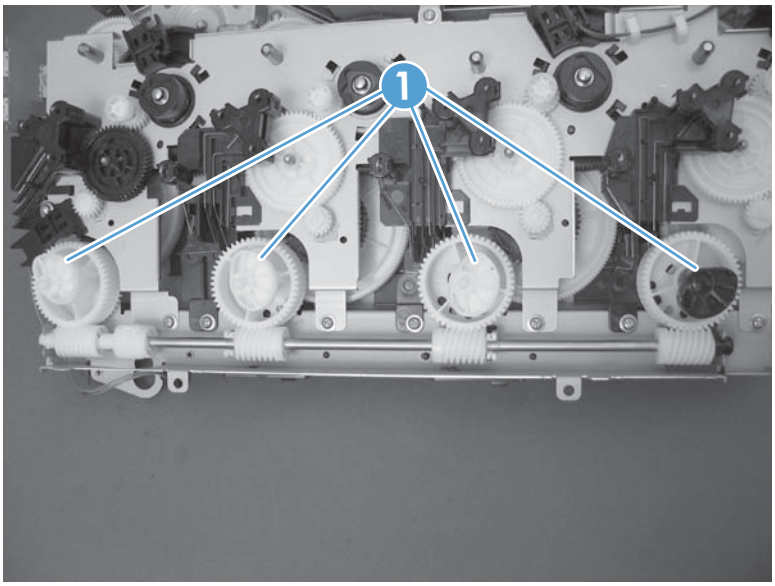
**TIP:** The second cam in from the right (the white cam to the left of the black cam), should have the *second* hole aligned with the hole in the sheet-metal chassis.

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.

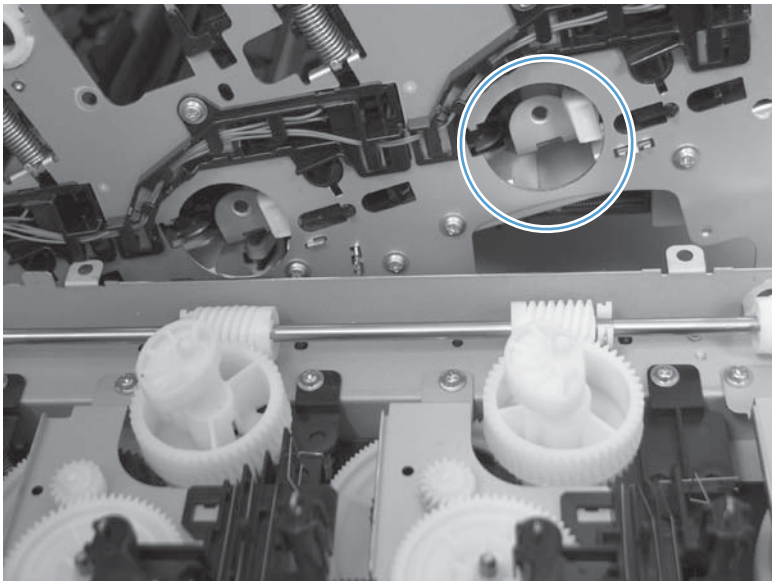
If the second, third, or fourth cams do not correctly align, do the following. Hold the long drive shaft, gently tilt the cam and gear away from the shaft to allow clearance to rotate the gear until the correct hole in the gear aligns with the hole in the chassis.

**Figure 2-287** Reinstall the main-drive assembly (4 of 7)



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

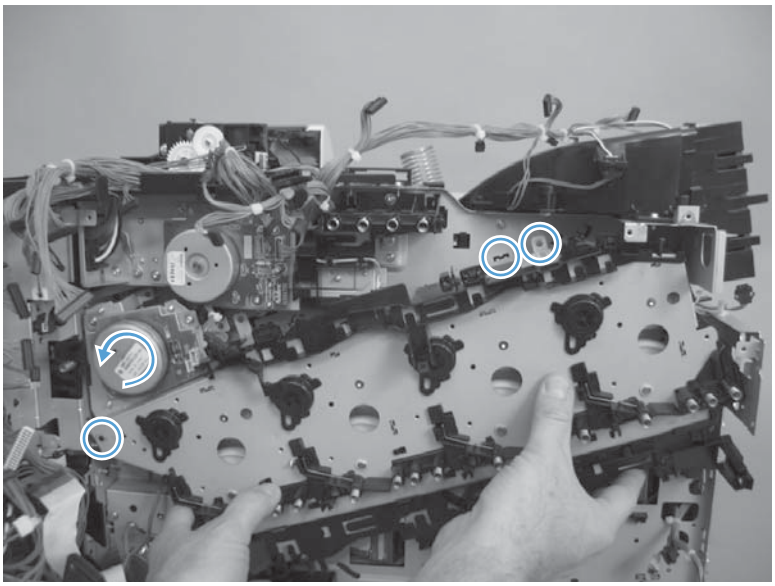
**Figure 2-288** Reinstall the main-drive assembly (5 of 7)



6. When placing the assembly on the chassis, align the holes in the assembly with the holes in the chassis.

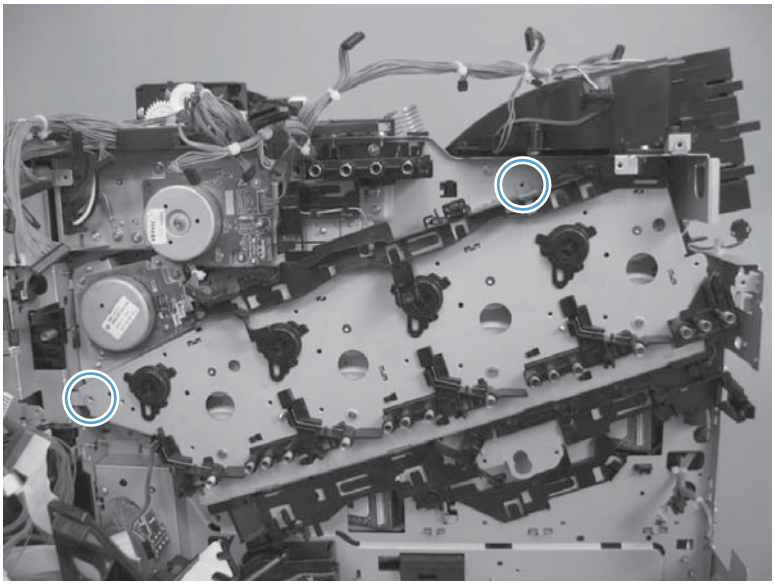
**Reinstallation tip** If the upper-left corner of the assembly is difficult to seat, you might need to rotate the ITB motor to align the gear shaft with the hole in the chassis.

**Figure 2-289** Reinstall the main-drive assembly (6 of 7)



7. When the assembly is correctly installed, the tabs are flat against the chassis.

**Figure 2-290** Reinstall the main-drive assembly (7 of 7)



**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.

# Optional paper feeder assemblies (1 x 500-sheet and 3 x 500-sheet)

**NOTE:** For information about removing the Tray 3, 4, or 5 feed and separation rollers, see Feed and separation rollers (Trays 2-5) on page 113.

For information about removing the Tray 3, 4, or 5 cassettes, see Tray on page 111.

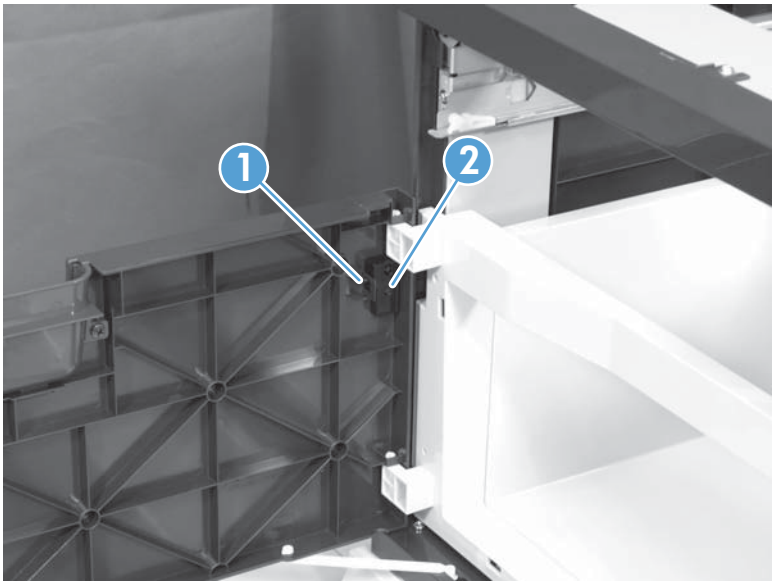
For information about removing the right door (optional paper feeder), see Right door (optional paper feeder) on page 307

The following procedures apply to both the 1 x 500-sheet optional paper feeder and the 3 x 500-sheet optional paper unless specifically noted.

## Front door (optional paper feeder)

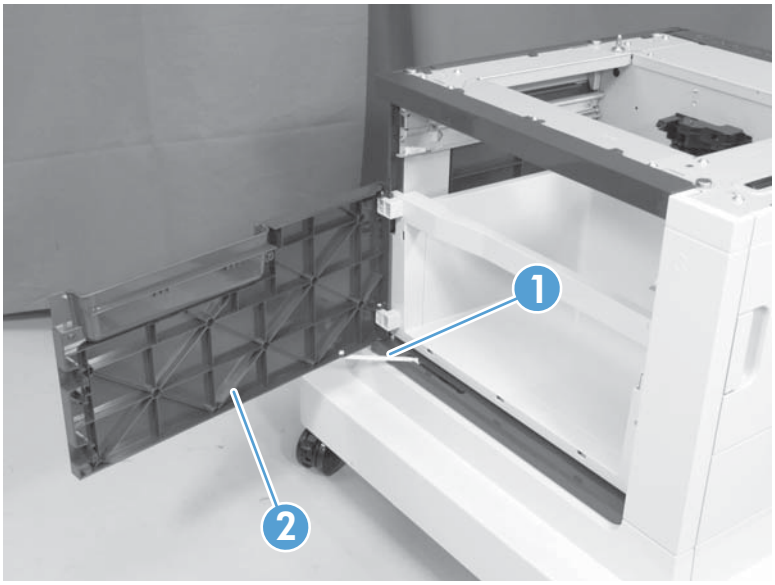
1. Release one tab (callout 1), and then remove the stopper (callout 2).

**Figure 2-291** Remove the front door (optional paper feeder) (1 of 2)



2. Release the link arm (callout 1), and then remove the front door (callout 2).

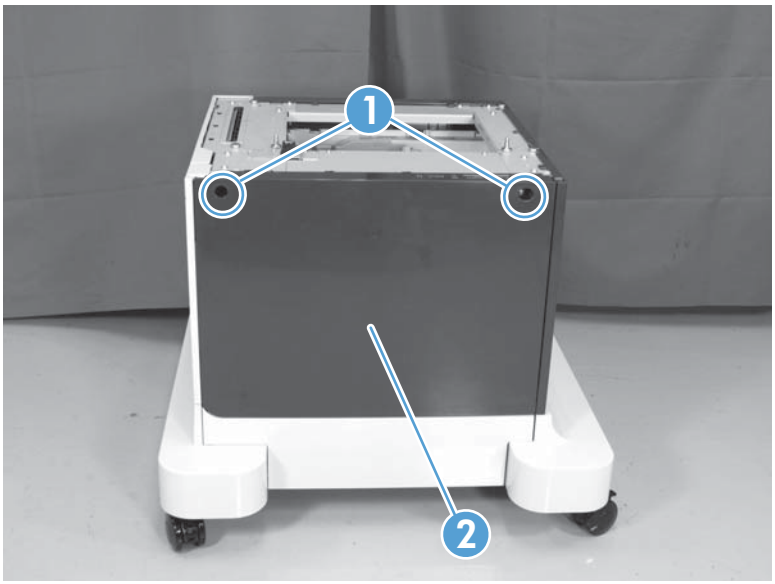
**Figure 2-292** Remove the front door (optional paper feeder) (2 of 2)



## Rear cover (optional paper feeder)

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

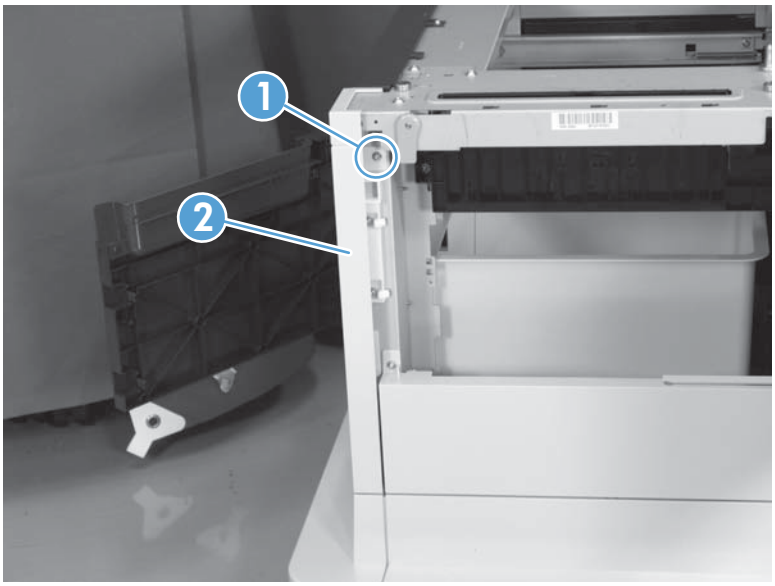
**Figure 2-293** Remove the rear cover (optional paper feeder)



## Right-front cover (optional paper feeder)

▲ Open the front and right doors, remove one screw (callout 1), and then lift the right-front cover (callout 2) to remove.

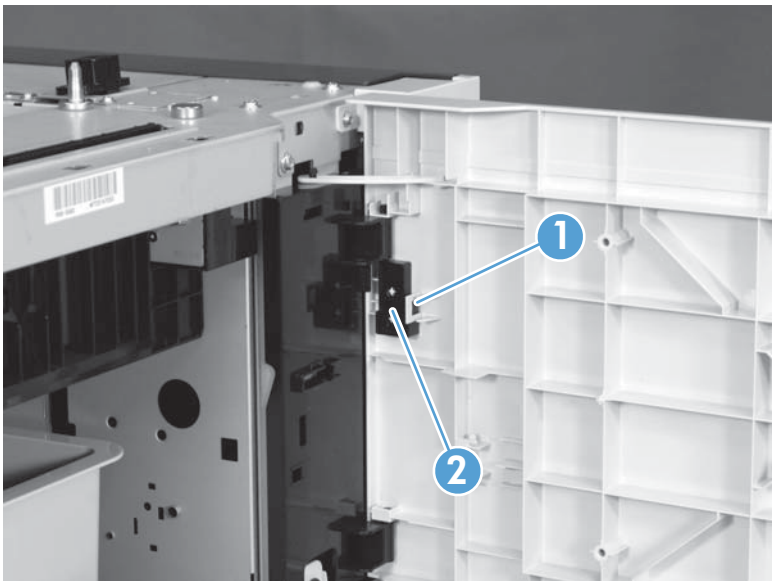
**Figure 2-294** Remove the right-front cover (optional paper feeder)



## Right door (optional paper feeder)

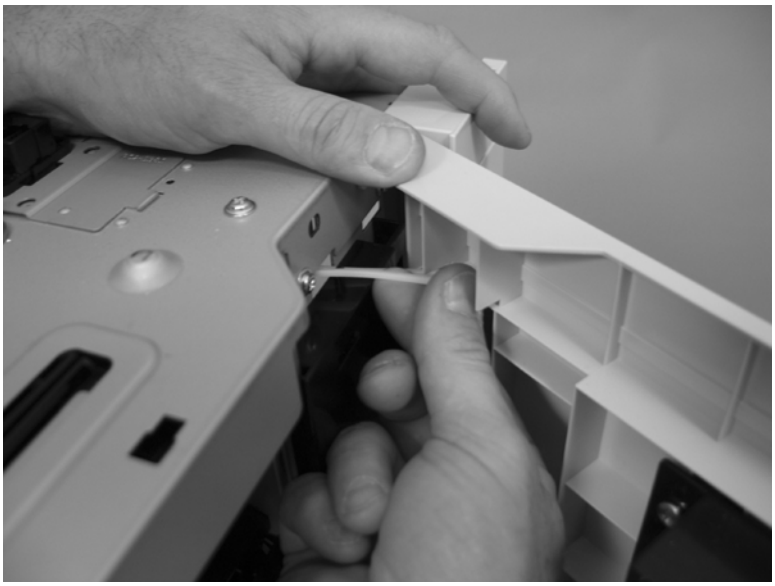
1. Open the right door, release one tab (callout 1), and then remove the stopper (callout 2)

**Figure 2-295** Remove the right door (optional paper feeder) (1 of 3)



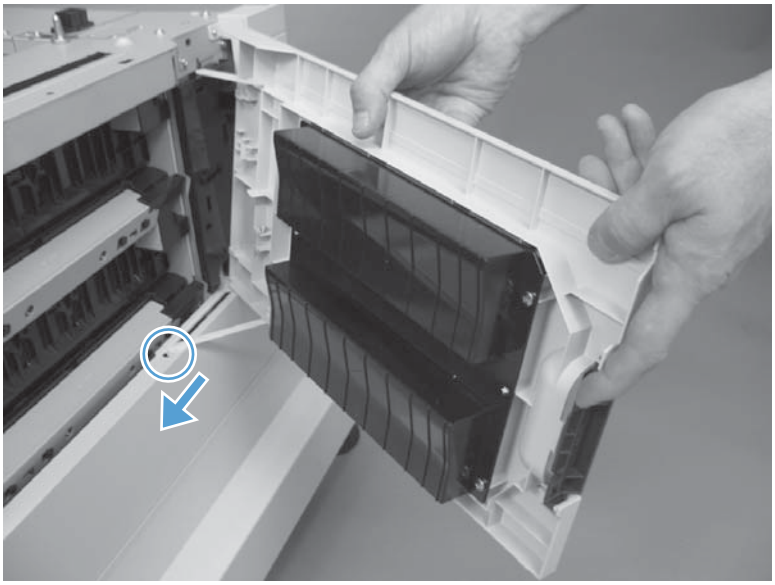

2. Close the right door slightly, and then release the upper link arm.

**Figure 2-296** Remove the right door (optional paper feeder) (2 of 3)



3. Slide the door to release the lower link arm, and then remove the right door.

**Figure 2-297** Remove the right door (optional paper feeder) (3 of 3)



# Left cover (optional paper feeder)

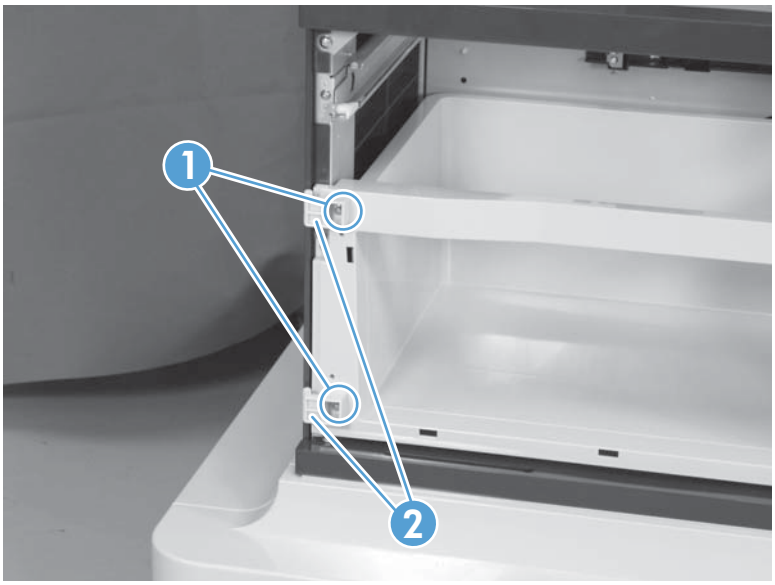
### Before proceeding, remove the following components:

- Front door (optional paper feeder). See Front door (optional paper feeder) on page 303.
- Right-front cover (optional paper feeder). See Right-front cover (optional paper feeder) on page 306.

## Remove the left cover (optional paper feeder)

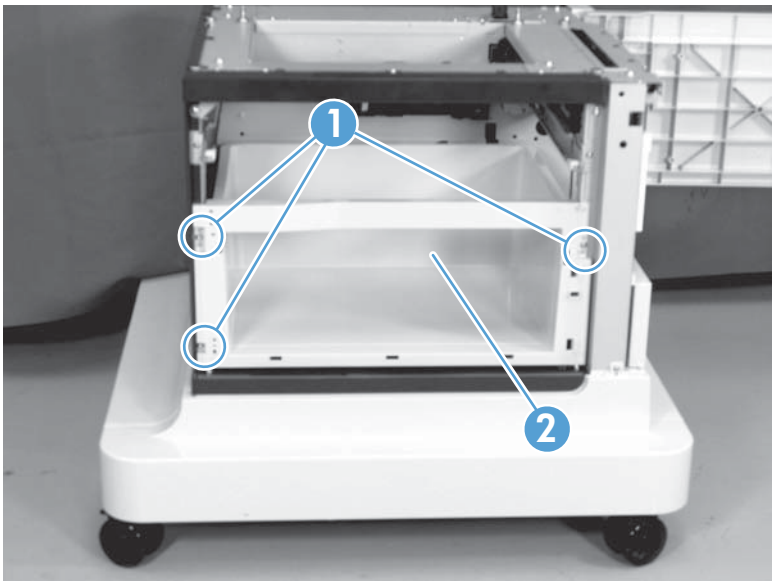
1. **1 x 500 paper feeder only:** Remove two screws (callout 1), and then remove two bushings (callout 2).

**Figure 2-298** Remove the left cover (optional paper feeder) (1 of 3)



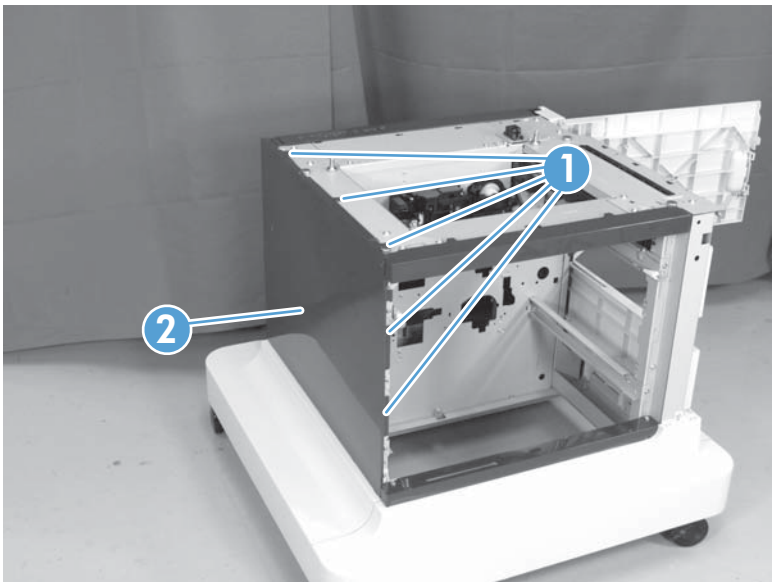
2. **1 x 500 paper feeder only:** Remove three screws (callout 1), and then remove the storage box (callout 2).

**Figure 2-299** Remove the left cover (optional paper feeder) (2 of 3)




3. Release five tabs (callout 1), and then remove the left cover (callout 2).

**Figure 2-300** Remove the left cover (optional paper feeder) (3 of 3)



# Right cover (optional paper feeder)

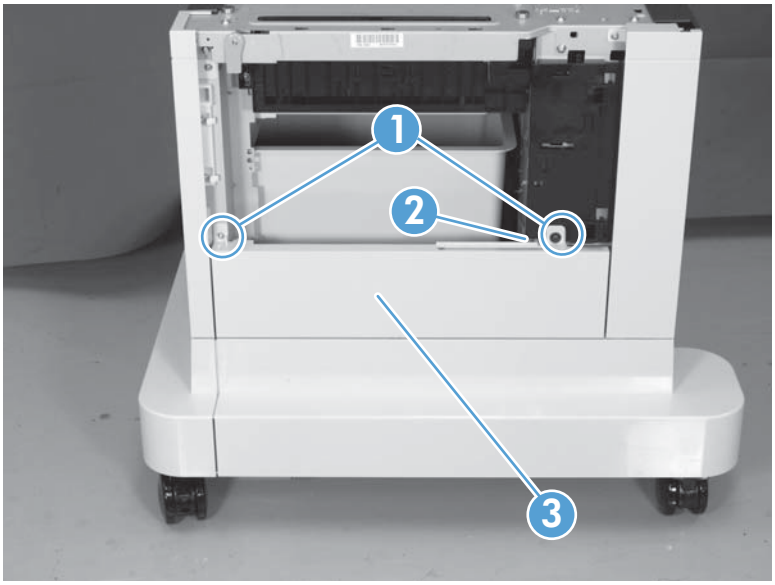
### Before proceeding, remove the following components:

- Right door (optional paper feeder). See Right door (optional paper feeder) on page 307.

## Remove the right cover (optional paper feeder)

▲ Remove two screws (callout 1), release one tab (callout 2), and then remove the right cover (callout 3).

**Figure 2-301** Remove the right cover (optional paper feeder)



# Rear-right cover (optional paper feeder)

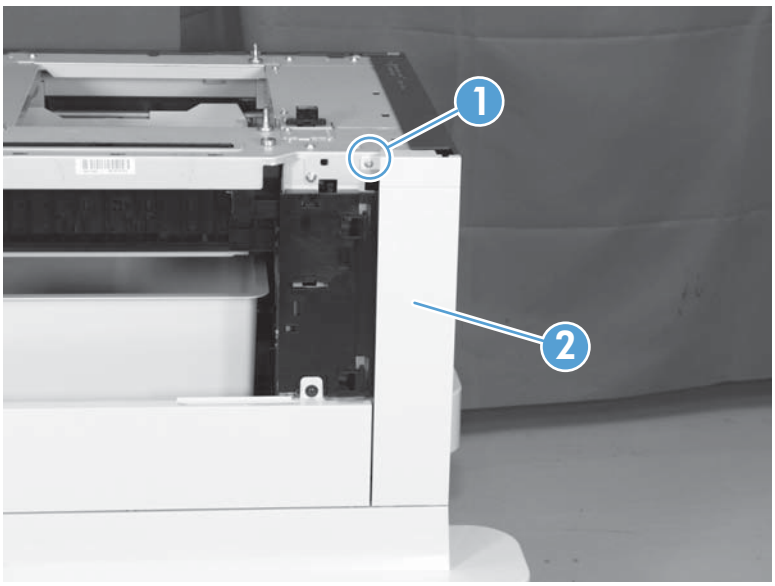
### Before proceeding, remove the following components:

- Right door (optional paper feeder). See Right door (optional paper feeder) on page 307.

## Remove the rear-right cover (optional paper feeder)

▲ Remove one screw (callout 1), and then lift the rear-right cover (callout 2) to remove.

**Figure 2-302** Remove the rear-right cover (optional paper feeder)



# Pickup assembly (optional paper feeder)

### Before proceeding, remove the following components:

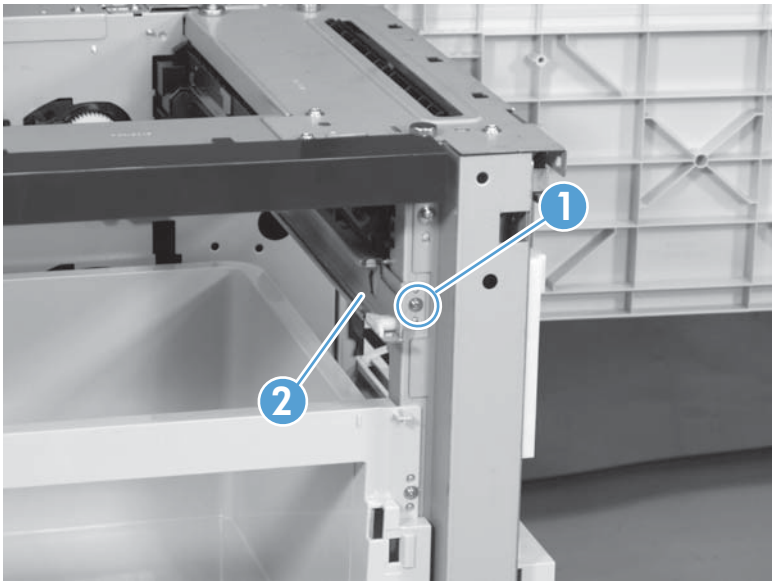
- Paper feeder right front cover. See Right-front cover (optional paper feeder) on page 306.
- Paper feeder rear cover. See Rear cover (optional paper feeder) on page 305.

**NOTE:** The following procedure shows steps for removing the pickup assembly for Tray 3. **3 x 500-sheet optional paper feeder only:** The steps for removing the pickup assemblies for Tray 4 and Tray 5 are the same unless noted. You must remove the pickup assemblies in sequence beginning with the pickup assembly for Tray 5.

## Remove the pickup assembly (optional paper feeder)

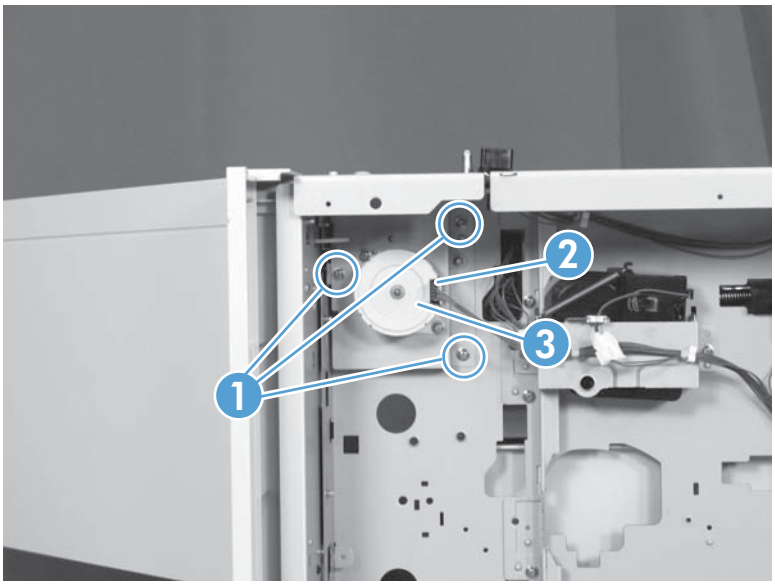
1. Remove one screw (callout 1), and then remove the tray rail (callout 2).

**Figure 2-303** Remove the pickup assembly (optional paper feeder) (1 of 5)



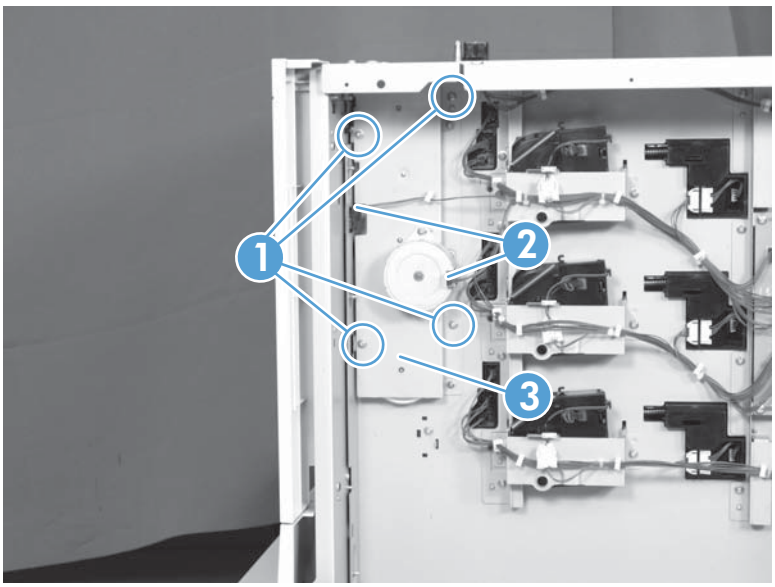
2. **1 x 500-sheet optional paper feeder only:** Remove three screws (callout 1), disconnect one connector (callout 2), and then remove the motor assembly (callout 3).

**Figure 2-304** Remove the pickup assembly (optional paper feeder) (2 of 5)



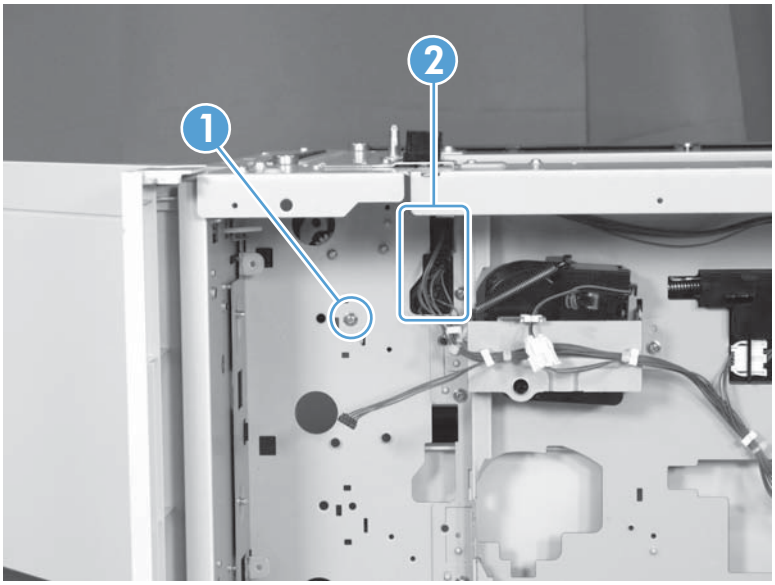

3. **3 x 500-sheet optional paper feeder only:** Remove four screws (callout 1), disconnect two connector (callout 2), and then remove the motor assembly (callout 3).

**Figure 2-305** Remove the pickup assembly (optional paper feeder) (3 of 5)



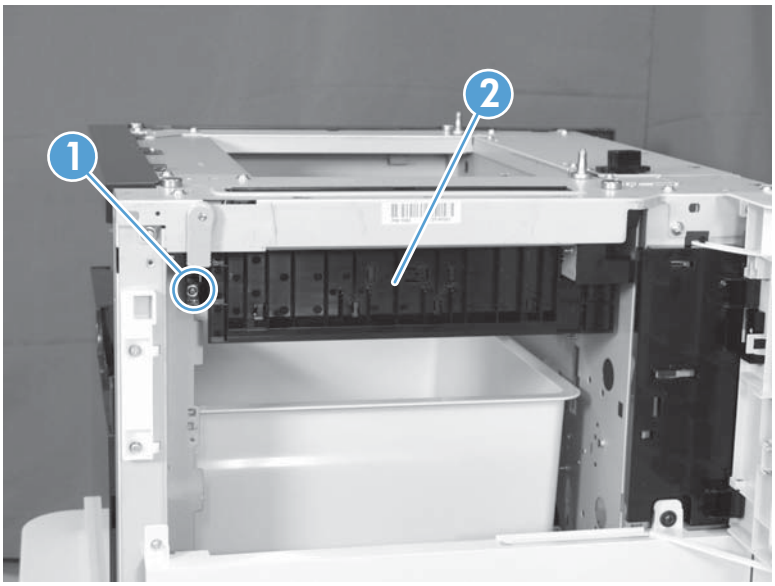
4. Remove one screw (callout 1), and then disconnect three connectors (callout 2).

**Figure 2-306** Remove the pickup assembly (optional paper feeder) (4 of 5)




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

**Figure 2-307** Remove the pickup assembly (optional paper feeder) (5 of 5)



# Lifter assembly (optional paper feeder)

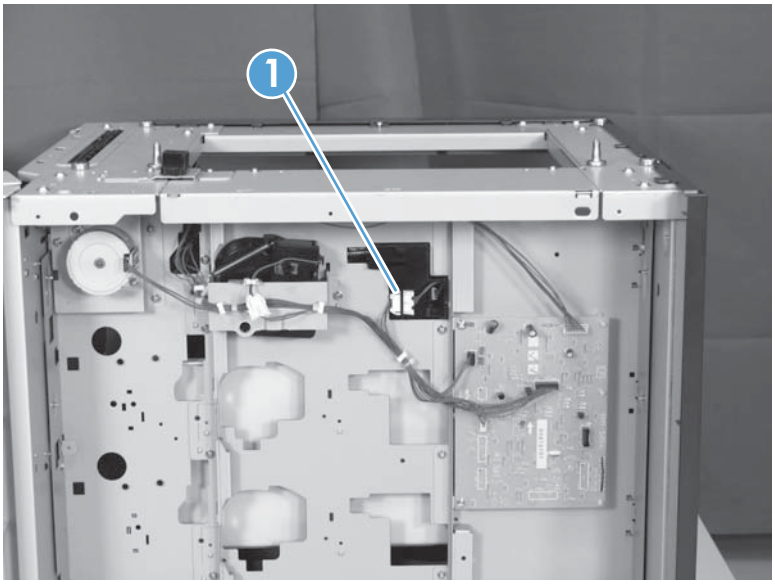
### Before proceeding, remove the following components:

- Rear cover (optional paper feeder). See Rear cover (optional paper feeder) on page 305.

## Remove the lifter assembly (optional paper feeder)

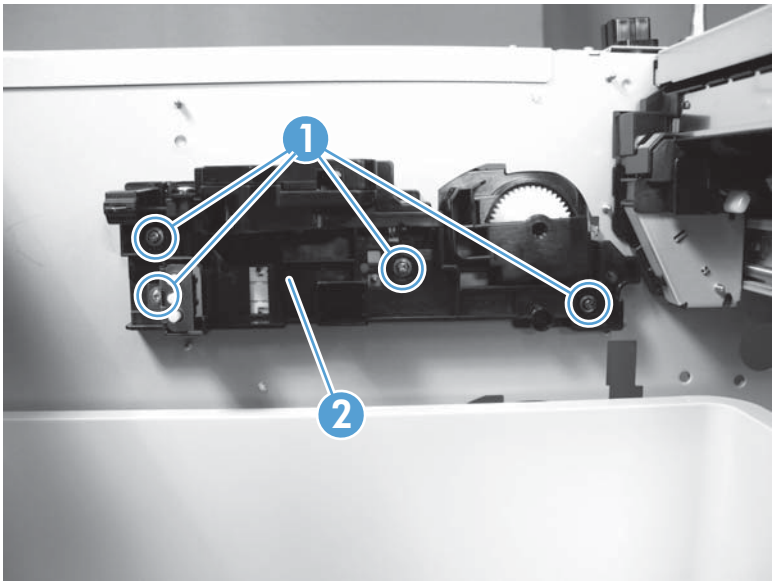
1. Disconnect one connector (callout 1).

**Figure 2-308** Remove the lifter assembly (optional paper feeder) (1 of 2)




2. Remove four screws (callout 1), and then remove the lifter assembly (callout 2).

**Figure 2-309** Remove the lifter assembly (optional paper feeder) (2 of 2)



# Lifter-drive assembly (optional paper feeder)

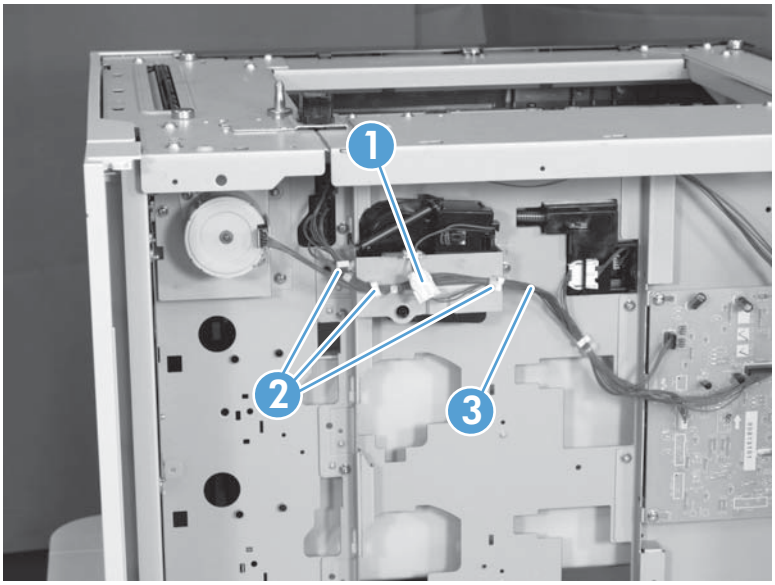
### Before proceeding, remove the following components:

- Rear cover (optional paper feeder). See Rear cover (optional paper feeder) on page 305.

## Remove the lifter-drive assembly (optional paper feeder)

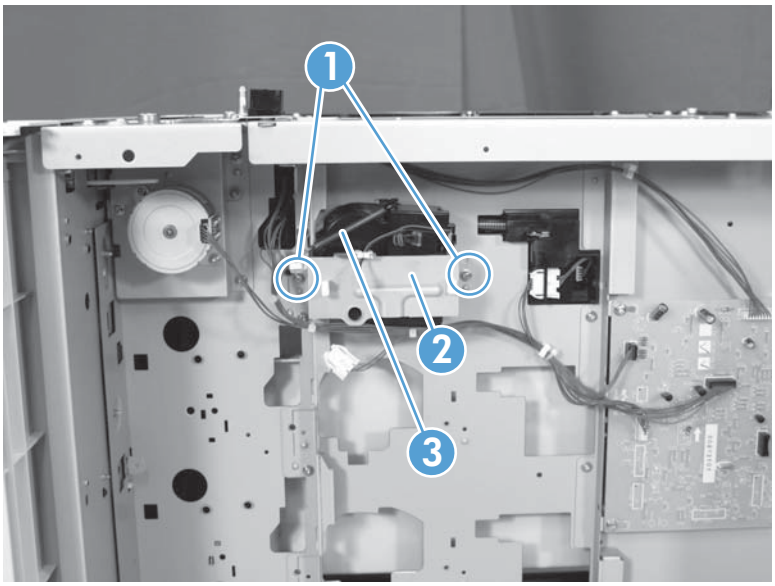
1. Disconnect one connector (callout 1), and then release the wire harnesses (callout 3) from the guides (callout 2).

**Figure 2-310** Remove the lifter-drive assembly (optional paper feeder) (1 of 2)




2. Remove two screws (callout 1), and then remove the sheet-metal plate (callout 2). Remove one spring (callout 3), and then remove the lifter drive assembly.

**Figure 2-311** Remove the lifter-drive assembly (optional paper feeder) (2 of 2)



# Pickup motor assembly (optional paper feeder)

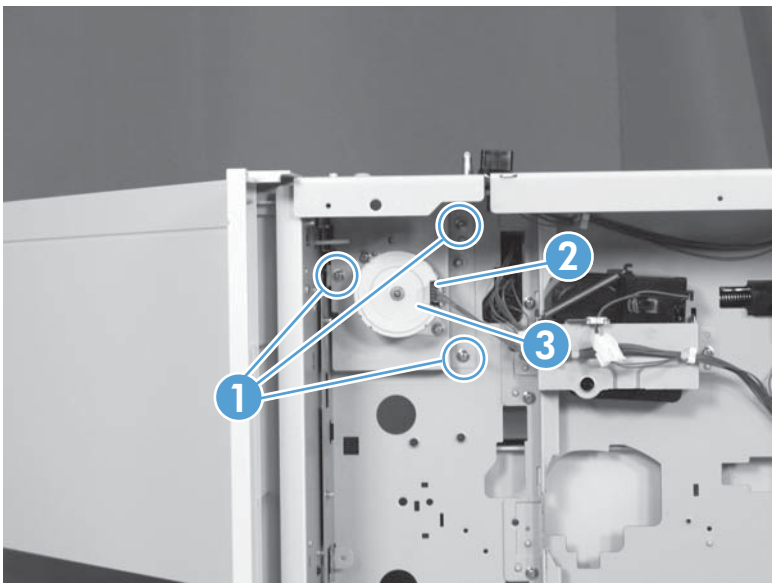
### Before proceeding, remove the following components:

- Rear cover (optional paper feeder). See Rear cover (optional paper feeder) on page 305.

## Remove the pickup motor (optional paper feeder) assembly

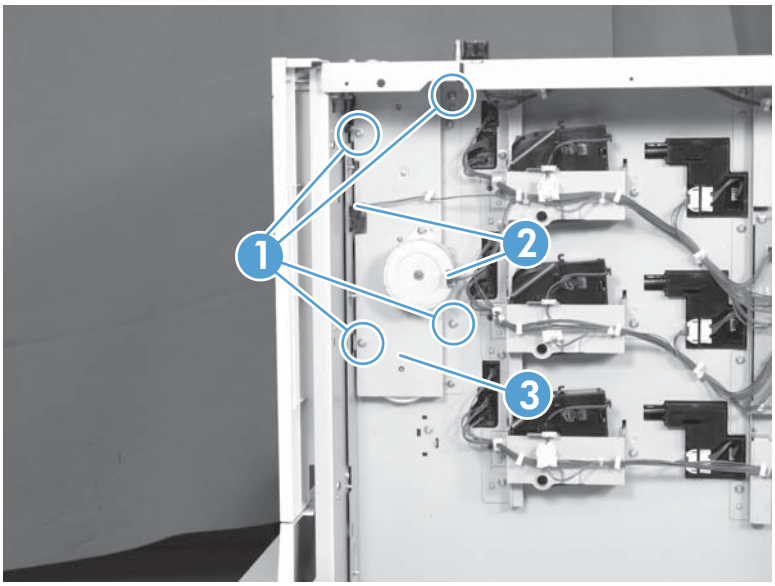
1. **1 x 500-sheet optional paper feeder only:** Remove three screws (callout 1), disconnect one connector (callout 2), and then remove the motor assembly (callout 3).

**Figure 2-312** Remove the pickup motor assembly (optional paper feeder) (1 of 2)




2. **3 x 500-sheet optional paper feeder only:** Remove four screws (callout 1), disconnect two connector (callout 2), and then remove the motor assembly (callout 3).

**Figure 2-313** Remove the pickup motor assembly (optional paper feeder) (2 of 2)



# Controller PCA (optional paper feeder)

### Before proceeding, remove the following components:

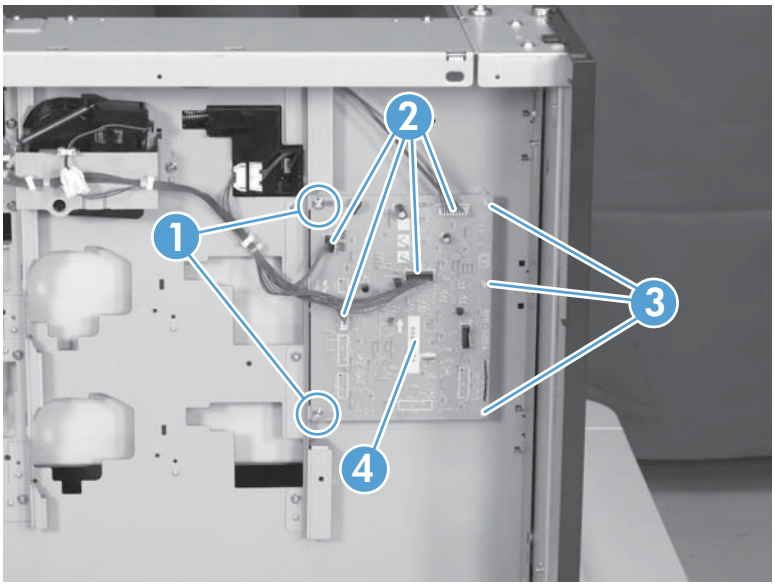
- Rear cover (optional paper feeder). See Rear cover (optional paper feeder) on page 305.

## Remove the controller PCA (optional paper feeder)

**CAUTION:** ESD-sensitive part.

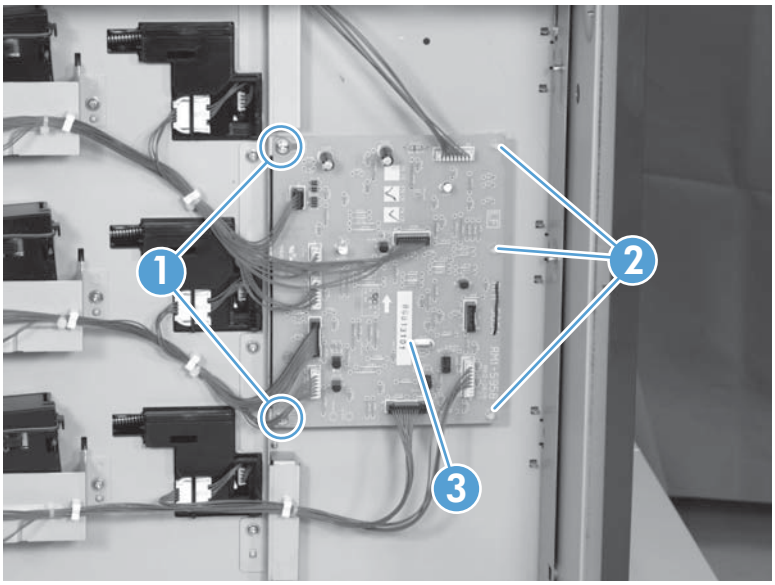
1. **1 x 500-sheet optional paper feeder only:** Disconnect four connector (callout 2), and then remove two screws (callout 1). Release three tabs (callout 3), and then remove the PCA (callout 4).

**Figure 2-314** Remove the controller PCA (optional paper feeder) (1 of 2)



2. **3 x 500-sheet optional paper feeder only:** Disconnect all connectors, and then remove two screws (callout 1). Release three tabs (callout 2), and then remove the PCA (callout 3).

**Figure 2-315** Remove the controller PCA (optional paper feeder) (2 of 2)



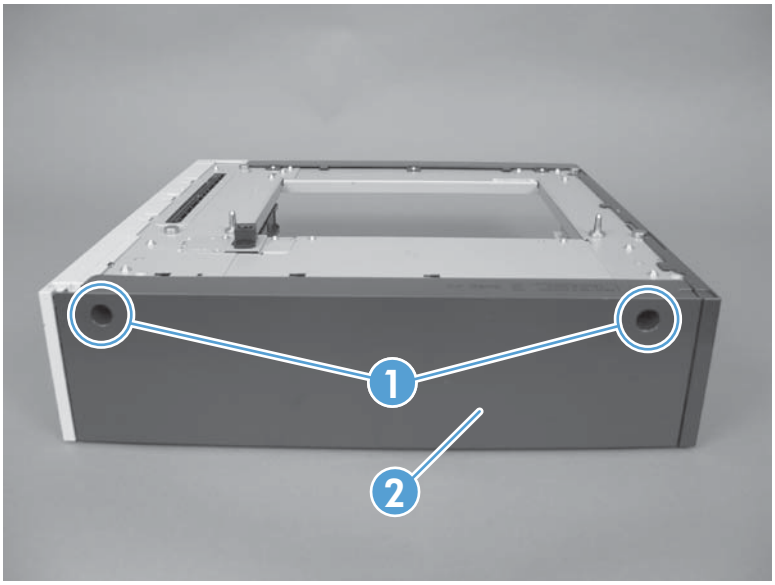
# Optional 500-sheet paper feeder assembly

For information about removing the optional paper feeder assemblies (1 x 500-sheet and 3 x 500-sheet), see Optional paper feeder assemblies (1 x 500-sheet and 3 x 500-sheet) on page 303

## Rear cover (500-sheet paper feeder)

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

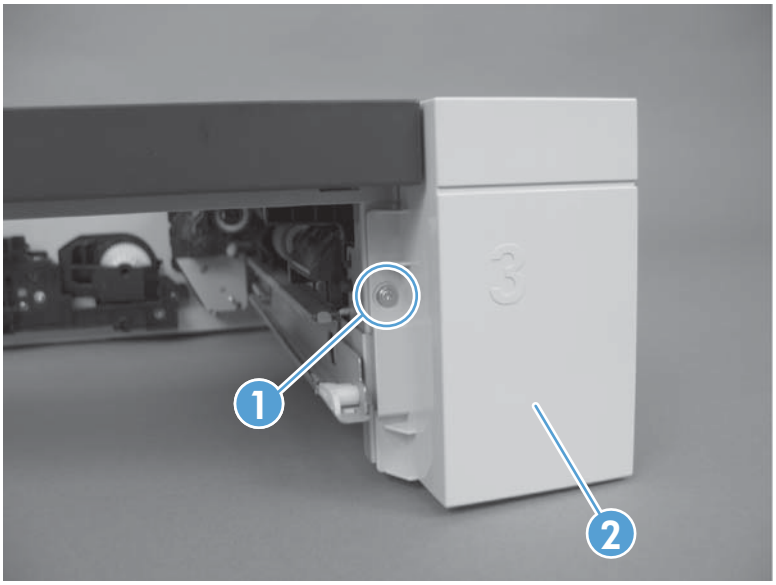
**Figure 2-316** Remove the rear cover (500-sheet paper feeder)




## Right-front cover (500-sheet paper feeder)

- Remove one screw (callout 1), and then lift the right-front cover (callout 2) to remove.

**Figure 2-317** Remove the right-front cover (500-sheet paper feeder)



# Left cover (500-sheet paper feeder)

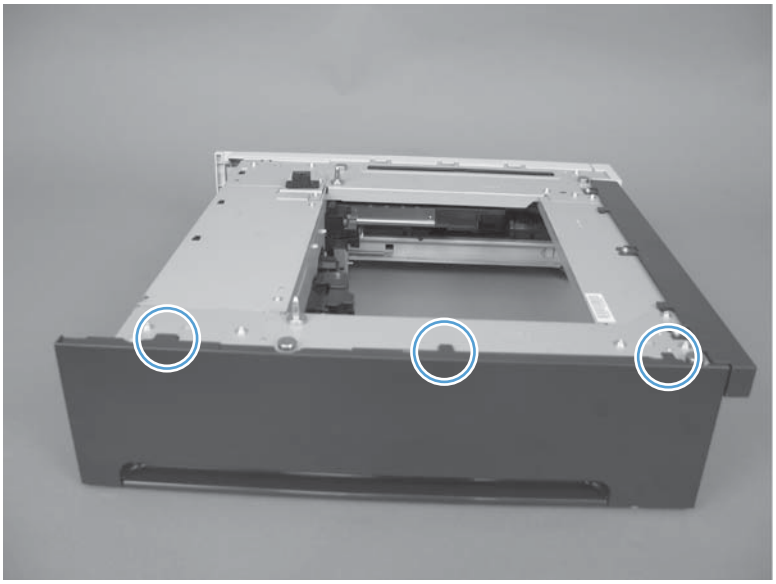
### Before proceeding, remove the following components:

- Rear cover (500-sheet paper feeder). See Rear cover (500-sheet paper feeder) on page 321.

## Remove the left cover (500-sheet paper feeder)

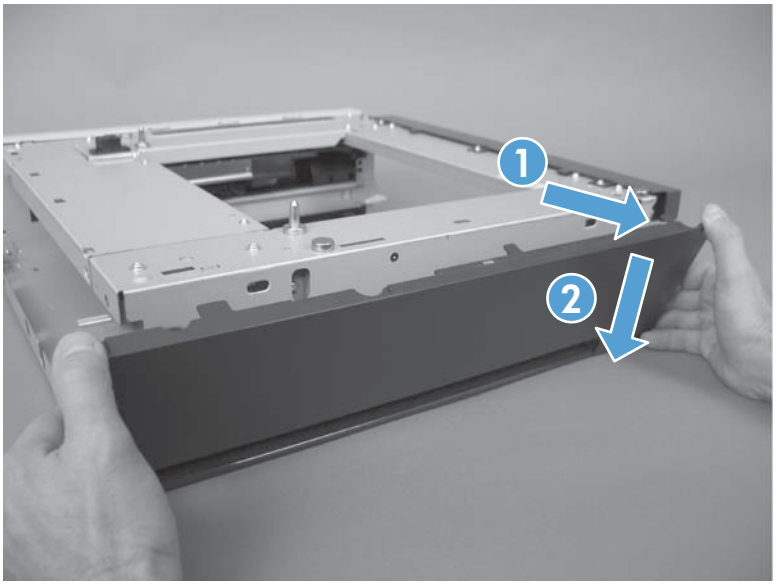
1. Release three tabs.

**Figure 2-318** Remove the left cover (500-sheet paper feeder) (1 of 2)



2. Pull the top of the cover out (callout 1), and then press down (callout 2) to remove the cover.

**Figure 2-319** Remove the left cover (500-sheet paper feeder) (2 of 2)



# Right cover (500-sheet paper feeder)

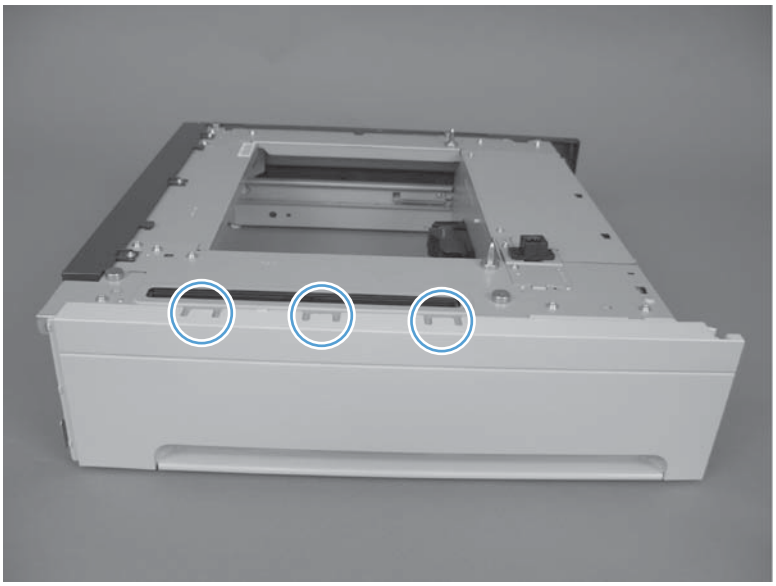
### Before proceeding, remove the following components:

- Right front cover (500-sheet paper feeder). See Right-front cover (500-sheet paper feeder) on page 321.

## Remove the right cover (500-sheet paper feeder)

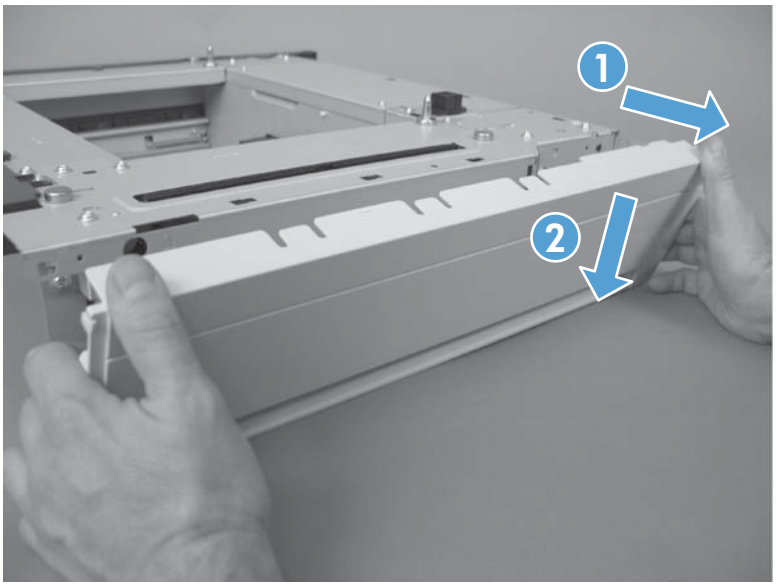
1. Remove two screws (callout 1), release one tab (callout 2), and then remove the right cover (callout 3).

**Figure 2-320** Remove the right cover (500-sheet paper feeder) (1 of 2)



2. Pull the top of the cover out (callout 1), and then press down (callout 2) to remove the cover.

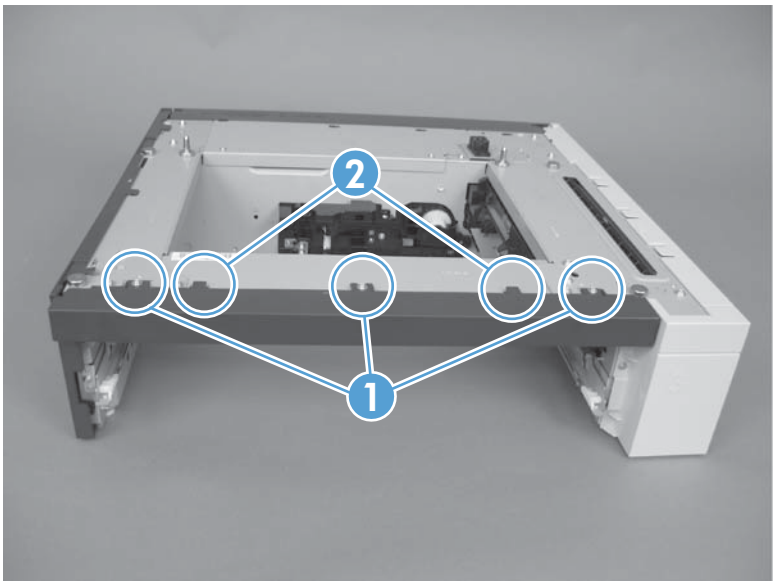
**Figure 2-321** Remove the right cover (500-sheet paper feeder) (2 of 2)



## Front cover (500-sheet paper feeder)

▲ Remove three screws (callout 1), release two tabs (callout 2), and then remove the front cover.

**Figure 2-322** Remove the rear-right cover (500-sheet paper feeder)



# Pickup assembly (500-sheet paper feeder)

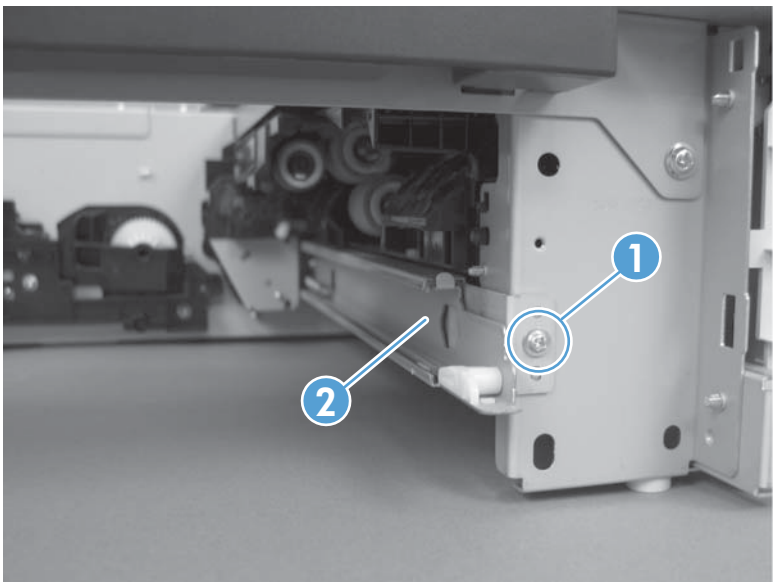
### Before proceeding, remove the following components:

- Right front cover (500-sheet paper feeder). See Right-front cover (500-sheet paper feeder) on page 321.
- Right cover (500-sheet paper feeder). See Right cover (500-sheet paper feeder) on page 323
- Rear cover (500-sheet paper feeder). See Rear cover (500-sheet paper feeder) on page 321.

## Remove the pickup assembly (500-sheet paper feeder)

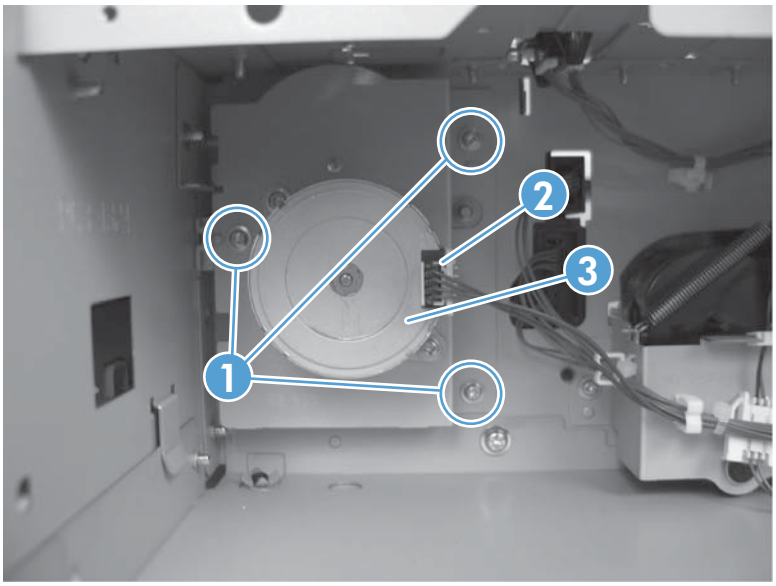
1. Remove one screw (callout 1), and then remove the tray rail (callout 2).

**Figure 2-323** Remove the pickup assembly (500-sheet paper feeder) (1 of 5)



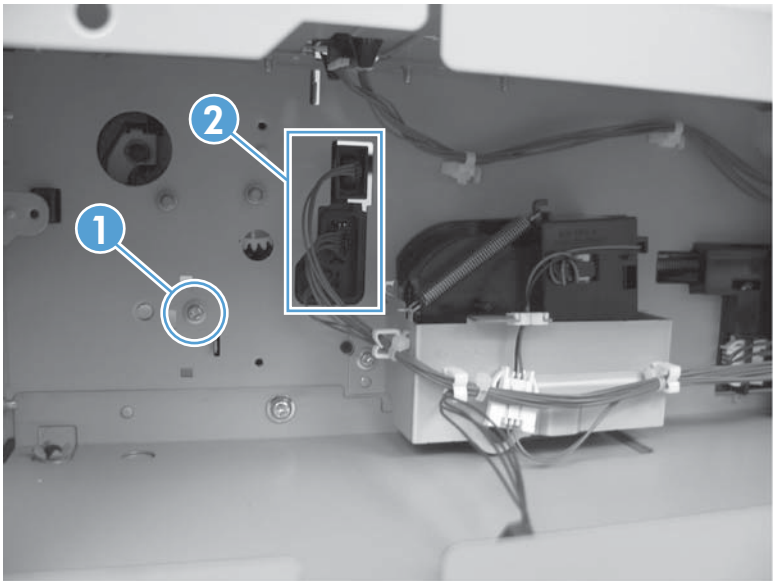
2. Remove three screws (callout 1), disconnect one connector (callout 2), and then remove the motor assembly (callout 3).

**Figure 2-324** Remove the pickup assembly (500-sheet paper feeder) (2 of 5)



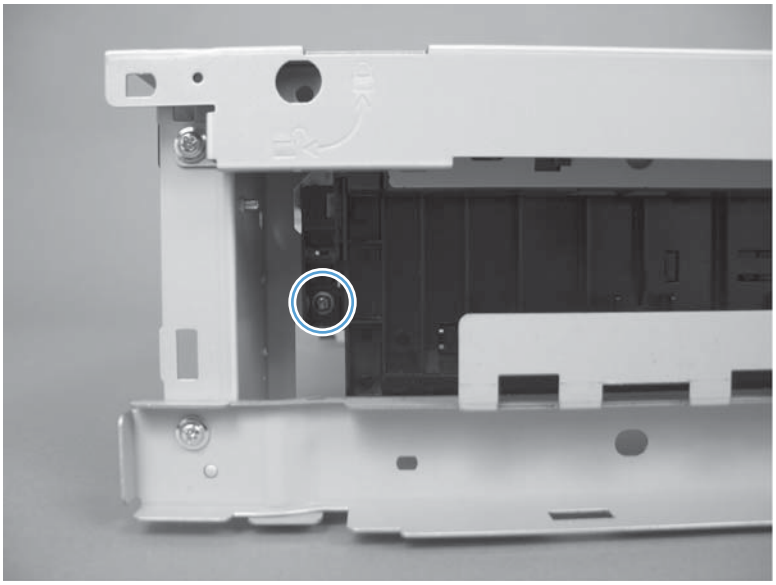

3. Remove one screw (callout 1), and then disconnect three connectors (callout 2).

**Figure 2-325** Remove the pickup assembly (500-sheet paper feeder) (3 of 5)



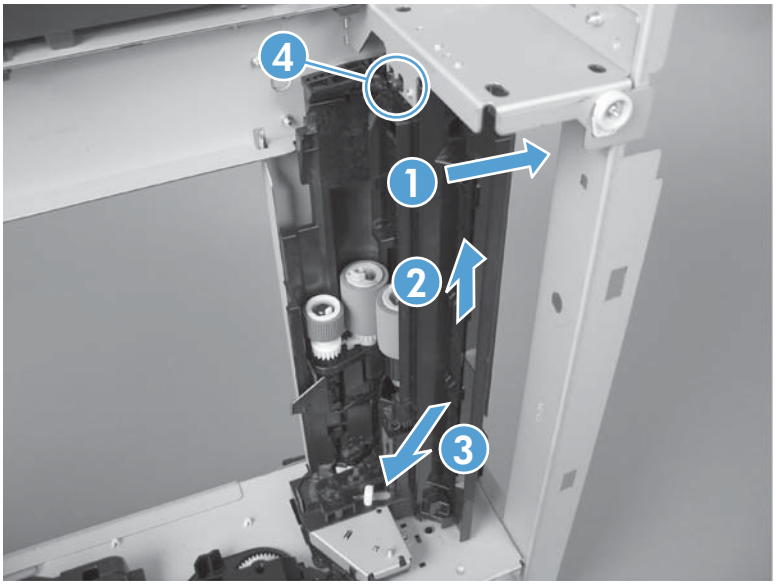
4. Remove one screw.

**Figure 2-326** Remove the pickup assembly (500-sheet paper feeder) (4 of 5)



5. Move the top of the assembly to the right (callout 1) until the post (callout 4) is free of the hole. Lift the assembly (callout 2), and then pull the bottom of the assembly (callout 3) to remove.

**Figure 2-327** Remove the pickup assembly (500-sheet paper feeder) (5 of 5)



# Lifter assembly (500-sheet paper feeder)

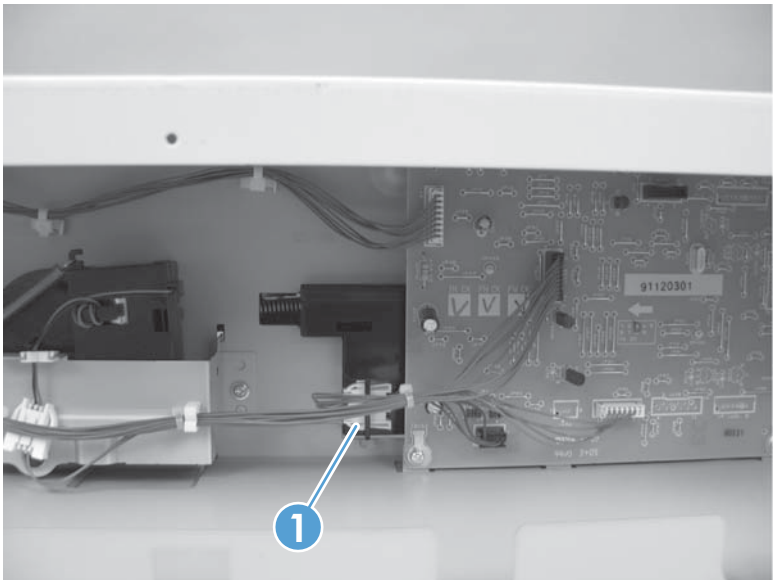
### Before proceeding, remove the following components:

- Rear cover (500-sheet paper feeder). See Rear cover (500-sheet paper feeder) on page 321.

## Remove the lifter assembly (500-sheet paper feeder)

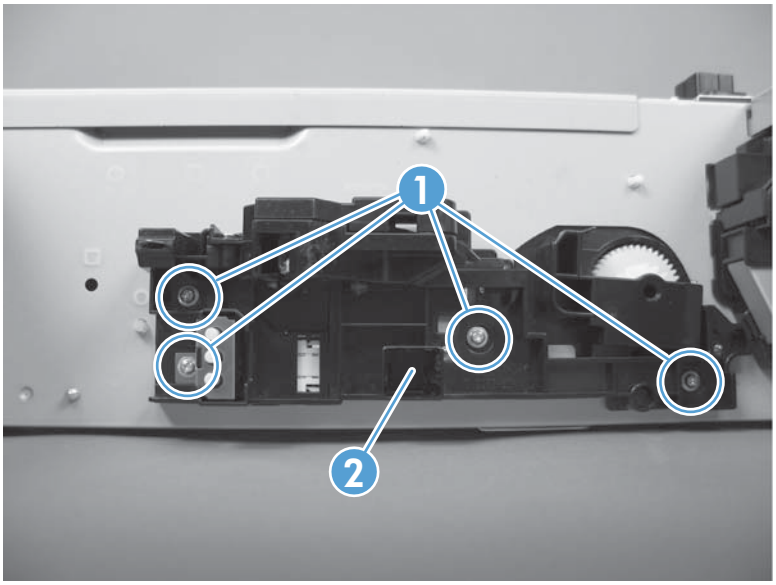
1. Disconnect one connector (callout 1).

**Figure 2-328** Remove the lifter assembly (500-sheet paper feeder) (1 of 2)




2. Remove four screws (callout 1), and then remove the lifter assembly (callout 2).

**Figure 2-329** Remove the lifter assembly (500-sheet paper feeder) (2 of 2)



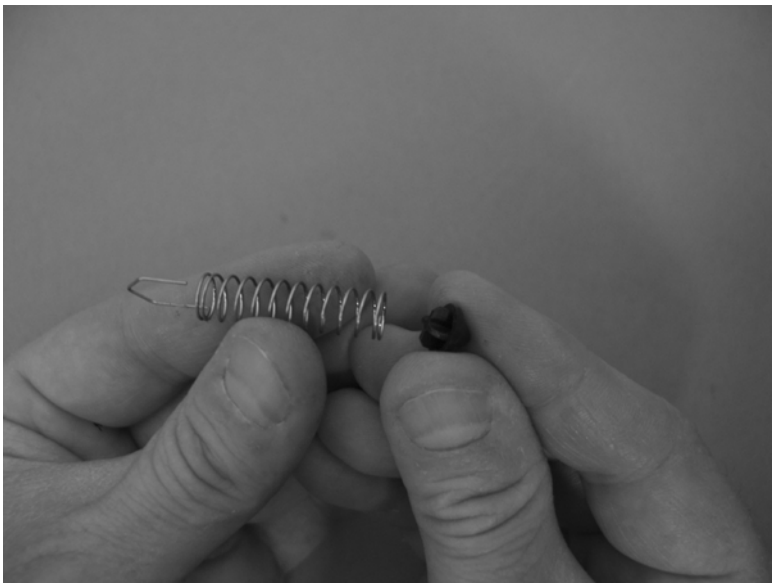
## Reinstall the lifter assembly

If the spring falls from the lifter assembly, reinstall it in the lifter before reinstalling the lifter assembly.

### Reinstall the lifter assembly

- Place the spring in the lifter before installing the assembly on the product.

**Figure 2-330** Reinstall the lifter assembly (500-sheet paper feeder)



# Lifter-drive assembly (500-sheet paper feeder)

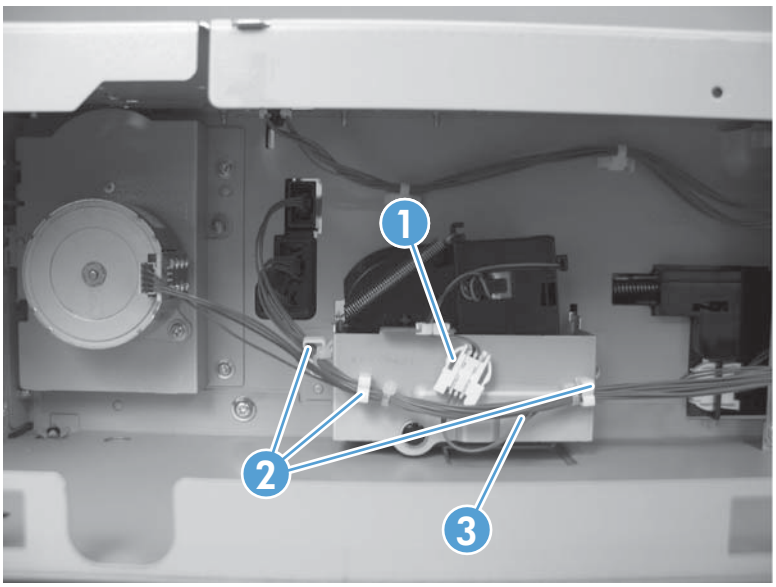
### Before proceeding, remove the following components:

- Rear cover (500-sheet paper feeder). See Rear cover (500-sheet paper feeder) on page 321.

## Remove the lifter-drive assembly (500-sheet paper feeder)

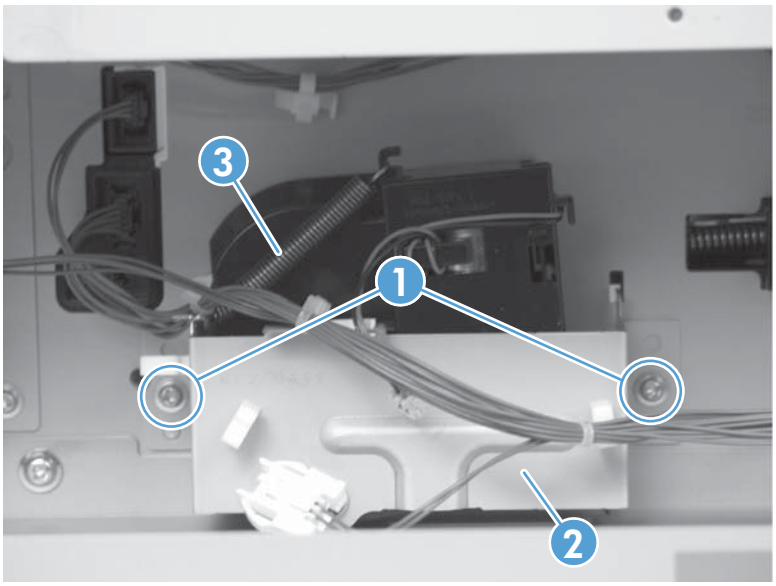
1. Disconnect one connector (callout 1), and then release the wire harnesses (callout 3) from the guides (callout 2).

**Figure 2-331** Remove the lifter-drive assembly (500-sheet paper feeder) (1 of 2)




2. Remove two screws (callout 1), and then remove the sheet-metal plate (callout 2). Remove one spring (callout 3), and then remove the lifter drive assembly.

**Figure 2-332** Remove the lifter-drive assembly (500-sheet paper feeder) (2 of 2)



# Pickup motor assembly (500-sheet paper feeder)

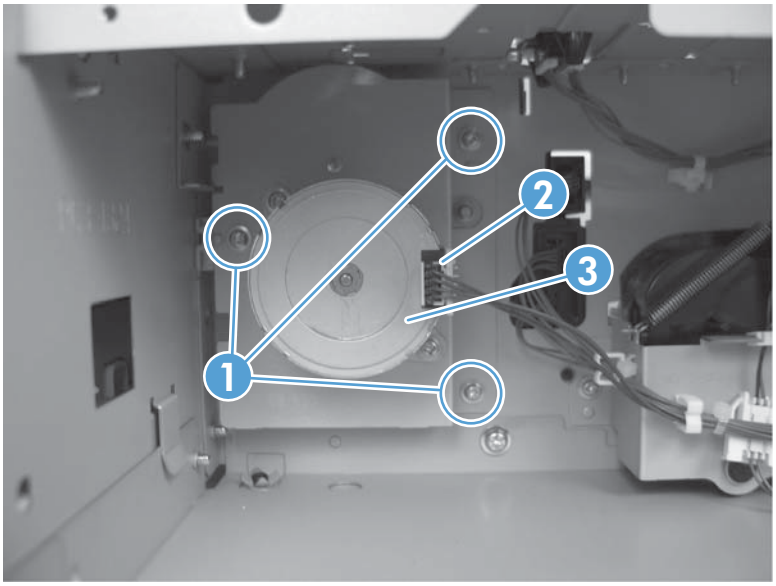
### Before proceeding, remove the following components:

- Rear cover (500-sheet paper feeder). See Rear cover (500-sheet paper feeder) on page 321.

## Remove the pickup motor (500-sheet paper feeder) assembly

▲ Remove three screws (callout 1), disconnect one connector (callout 2), and then remove the motor assembly (callout 3).

**Figure 2-333** Remove the pickup motor assembly (500-sheet paper feeder)



# Controller PCA (500-sheet paper feeder)

### Before proceeding, remove the following components:

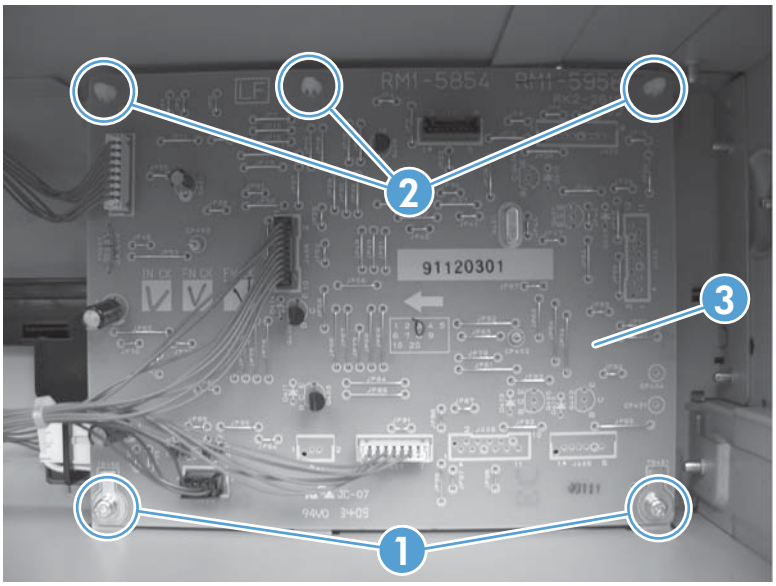
- Rear cover (500-sheet paper feeder). See Rear cover (500-sheet paper feeder) on page 321.

## Remove the controller PCA (500-sheet paper feeder)

**CAUTION:** ESD-sensitive part.

▲ Disconnect all connectors, and then remove two screws (callout 1). Release three tabs (callout 2), and then remove the PCA (callout 3).

**Figure 2-334** Remove the controller PCA (500-sheet paper feeder)



# Stapling mailbox

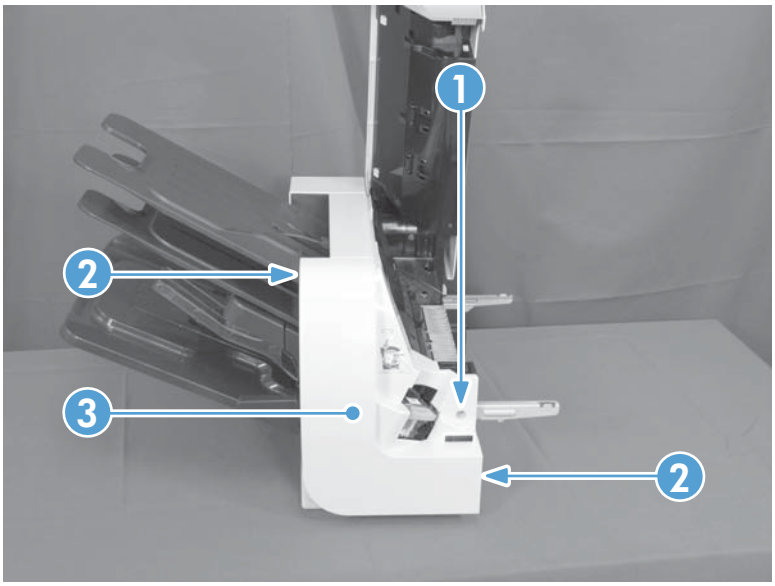
This section provides stapling mailbox removal and replacement procedures.

**NOTE:** The stapling mailbox is also referred to as the SSMBM.

## Stapling mailbox front cover

▲ Open the stapling mailbox door, remove one screw (callout 1), release two tabs (callout 2), and then remove the front cover (callout 3).

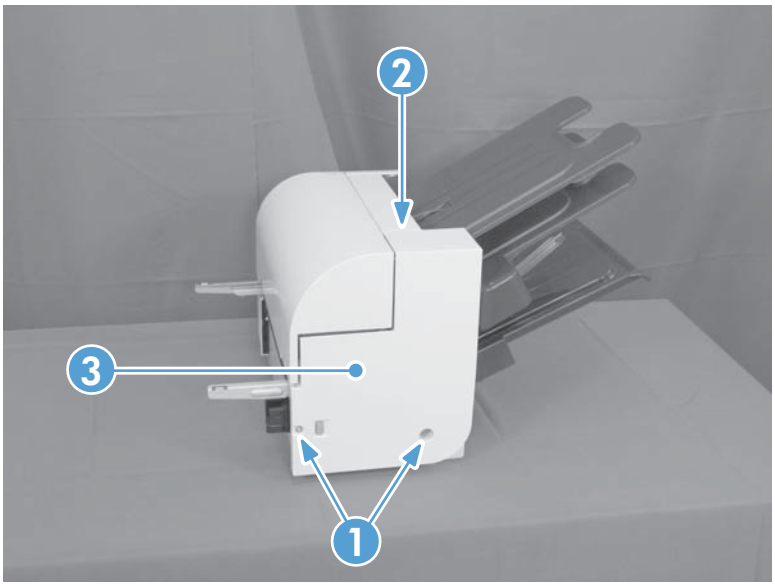
**Figure 2-335** Remove the stapling mailbox front cover



## Stapling mailbox rear cover

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

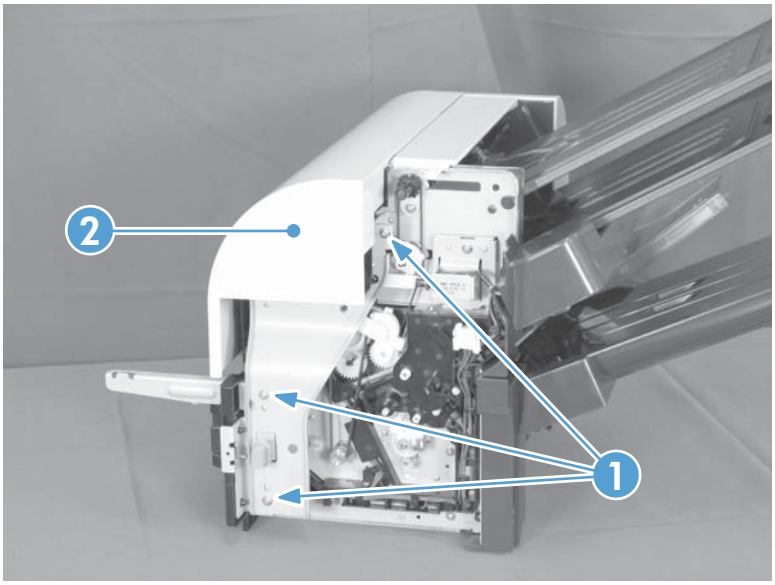
**Figure 2-336** Remove the stapling mailbox rear cover



## Stapling mailbox door

1. Remove the following components or assemblies:
   - Stapling mailbox rear cover. See Stapling mailbox rear cover on page 334.
2. Remove three screws (callout 1), and then remove the stapling mailbox door (callout 2).

**Figure 2-337** Remove the stapling mailbox door




## Holder connector

### Before proceeding, remove the following components:

- Stapling mailbox rear cover. See Stapling mailbox rear cover on page 334.

## Remove the holder connector

▲ Remove one screw, and then remove the holder connector.

**Figure 2-338** Remove the holder connector



# Top cover

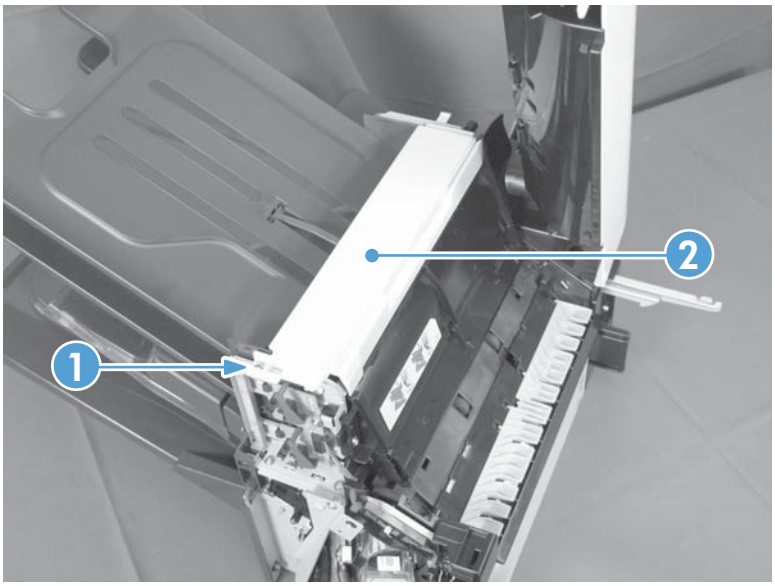
### Before proceeding, remove the following components:

- Stapling mailbox front cover. See Stapling mailbox front cover on page 333.
- Stapling mailbox rear cover. See Stapling mailbox rear cover on page 334.

## Remove the top cover

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

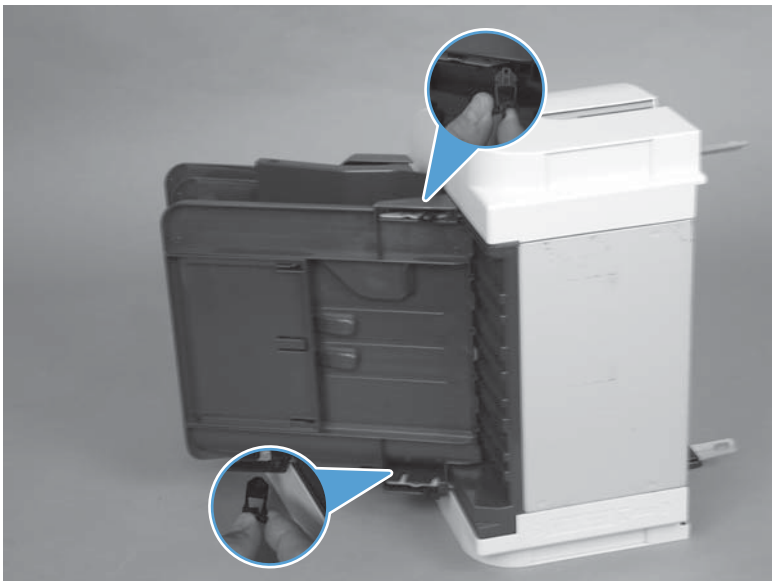
**Figure 2-339** Remove the top cover



## Output bin 3

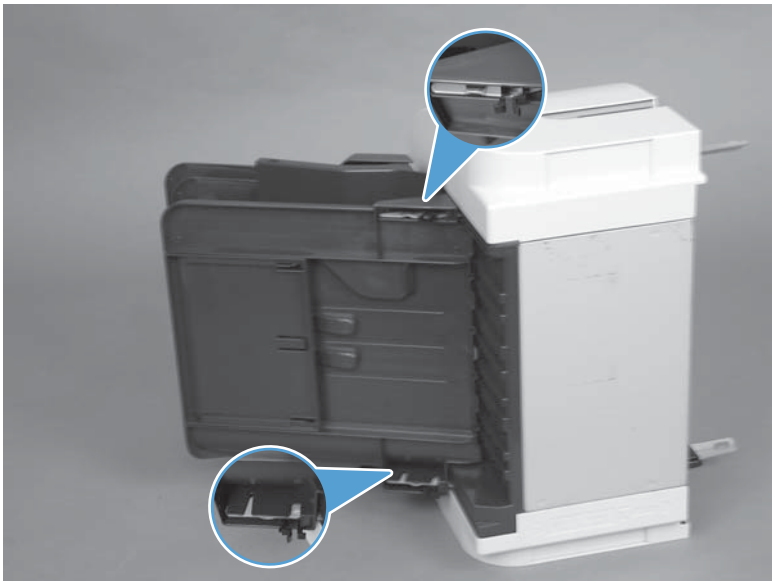
1. Squeeze and pull two stoppers to remove from the output bin.

**Figure 2-340** Remove the output bin (1 of 3)



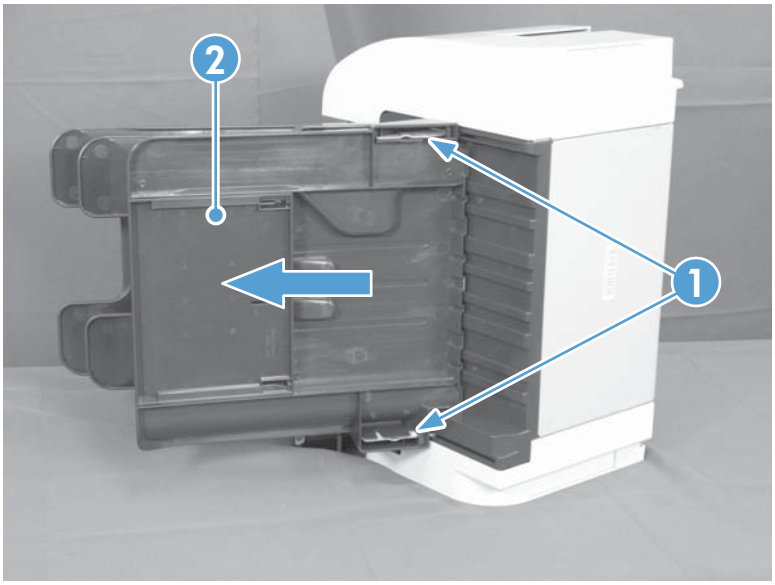
**NOTE:** When reinstalling the output bin, make sure the two stoppers are installed in the correct position.

**Figure 2-341** Remove the output bin (2 of 3)



2. Release two tabs (callout 1) and slide the output bin (callout 2) to remove.

**Figure 2-342** Remove the output bin (3 of 3)



# Stapling mailbox PCA

**CAUTION:** ESD-sensitive part.

1. Remove two screws.

**Figure 2-343** Remove the stapling mailbox PCA (1 of 5)



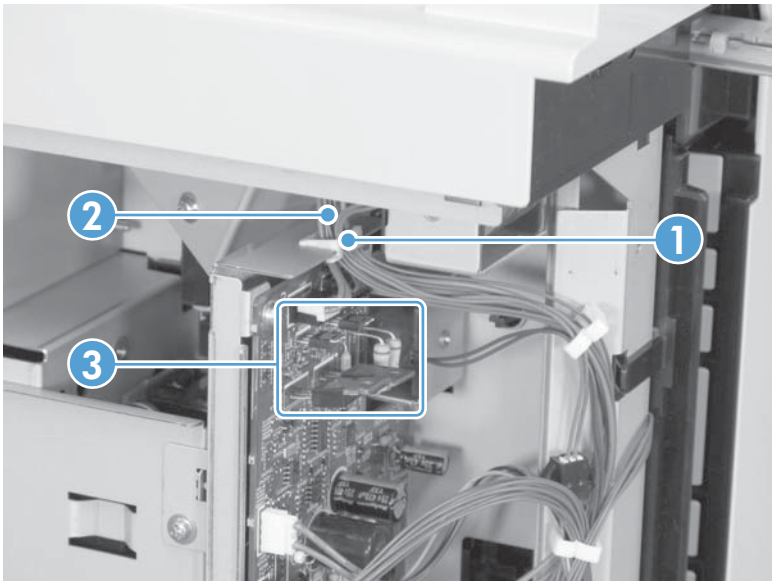
2. Remove the PCA cover.

**Figure 2-344** Remove the stapling mailbox PCA (2 of 5)



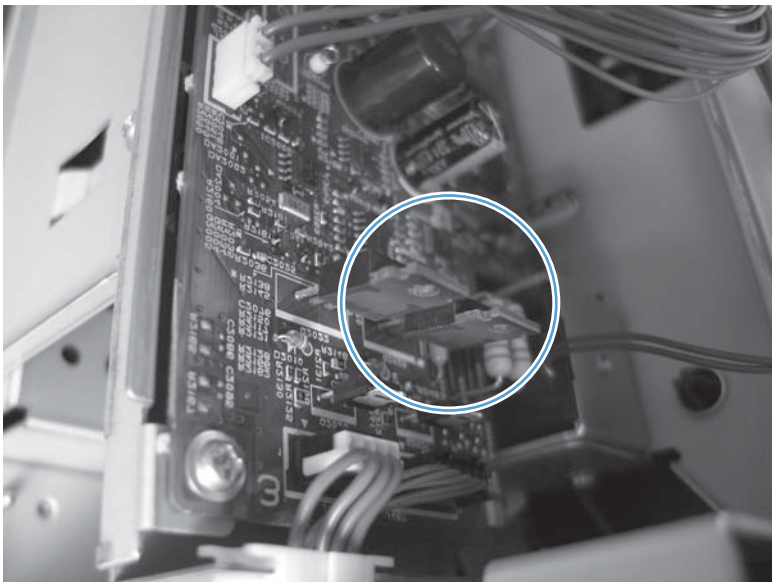
3. Release the cables (callout 2) from the cable guide (callout 1).

**Figure 2-345** Remove the stapling mailbox PCA (3 of 5)



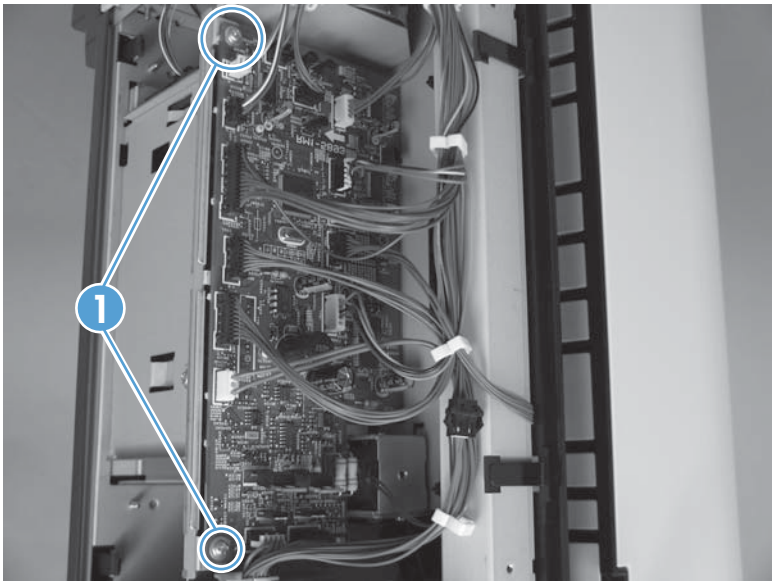

**NOTE:** Be careful not to damage components (callout 3) on the PCA.

**Figure 2-346** Remove the stapling mailbox PCA (4 of 5)



4. Remove two screws (callout 1), disconnect all connectors from the PCA, and then remove the PCA.

**Figure 2-347** Remove the stapling mailbox PCA (5 of 5)




**NOTE:** There is no connection for J460.

# Stapler assembly

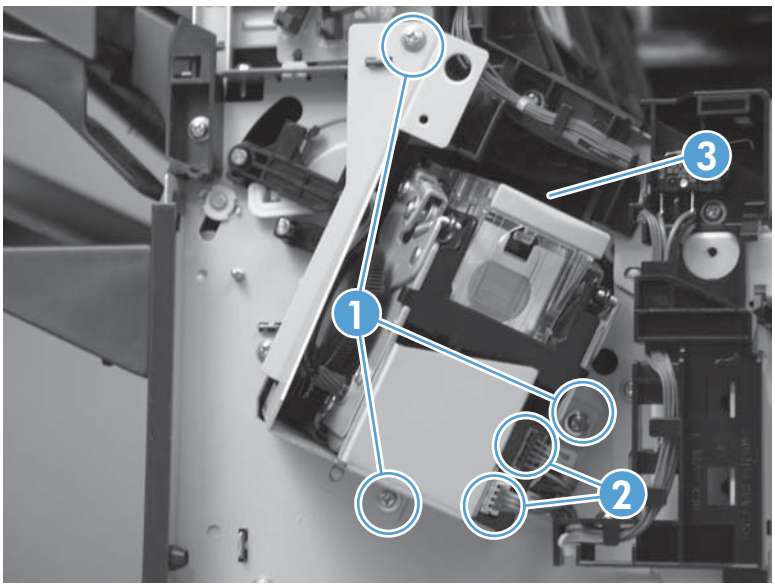
### Before proceeding, remove the following components:

- Stapling mailbox front cover. See Stapling mailbox front cover on page 333.

## Remove the stapler assembly

▲ Remove three screws (callout 1), disconnect two connectors (callout 2), and then remove the stapler assembly (callout 3).

**Figure 2-348** Remove the stapler assembly



# Stamp solenoid

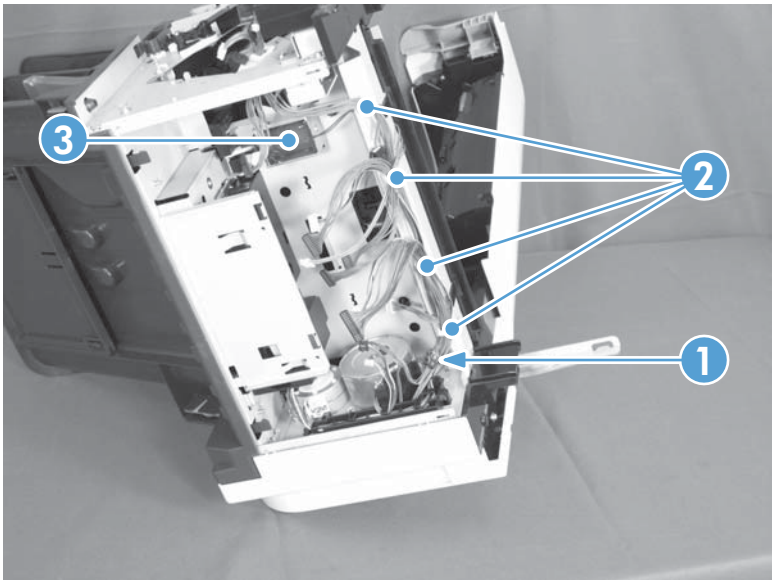
Before proceeding, remove the following components:

- Stapling mailbox front cover. See Stapling mailbox front cover on page 333.
- Stapling mailbox PCA. See Stapling mailbox PCA on page 340.
- Stapler assembly. See Stapler assembly on page 343.

## Remove the stamp solenoid

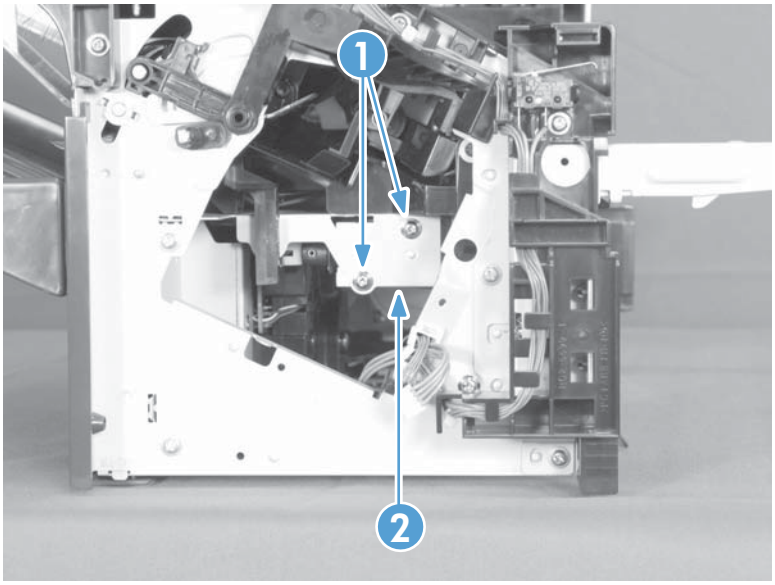
1. Disconnect one connector (callout 1), and then release the cables (callout 3) from the cable guides (callout 2).

**Figure 2-349** Remove the stamp solenoid (1 of 2)



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

**Figure 2-350** Remove the stamp solenoid (2 of 2)



# Output bin sensor PCA

Before proceeding, remove the following components:

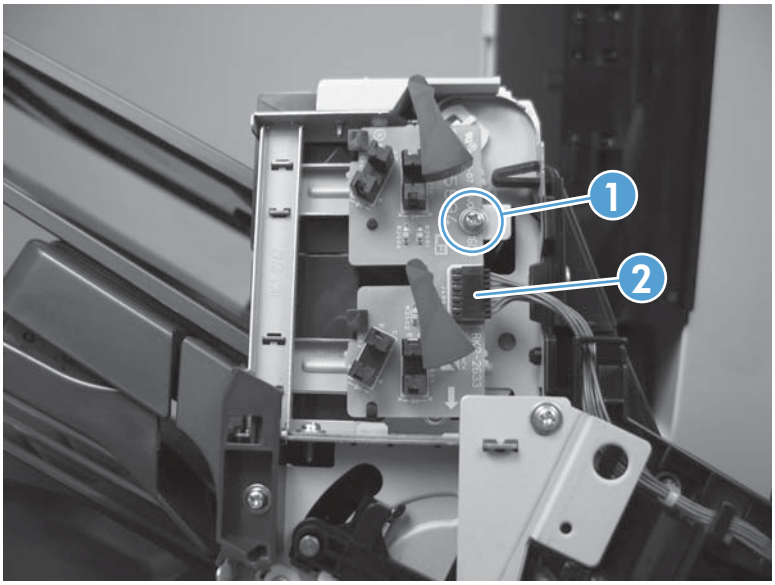
- Stapling mailbox front cover. See Stapling mailbox front cover on page 333.

## Remove the output bin sensor PCA

**CAUTION:** ESD-sensitive part.

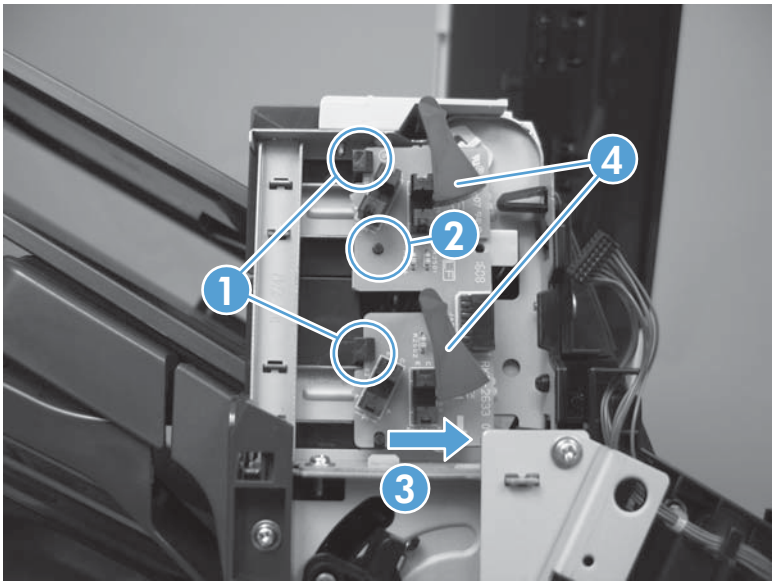
1. Remove one screw (callout 1) and disconnect one connector (callout 2).

**Figure 2-351** Remove the output bin sensor PCA (1 of 2)



2. Release two tabs (callout 1), clear one post (callout 2), and slide the PCA to remove (callout 3).

**Figure 2-352** Remove the output bin sensor PCA (2 of 2)




**CAUTION:** Be careful not to damage the flags (callout 4) when removing and installing the PCA.

**TIP:** When reinstalling, make sure the PCA is seated correctly with the tabs (callout 1) and post (callout 2).

# Stacking panel

Before proceeding, remove the following components:

- Stapling mailbox front cover. See Stapling mailbox front cover on page 333.
- Stapling mailbox rear cover. See Stapling mailbox rear cover on page 334.
- Output bin 3. See Output bin 3 on page 338.

## Remove the stacking panel

1. Remove two screws

**Figure 2-353** Remove the output bin 3 drive assembly (1 of 3)



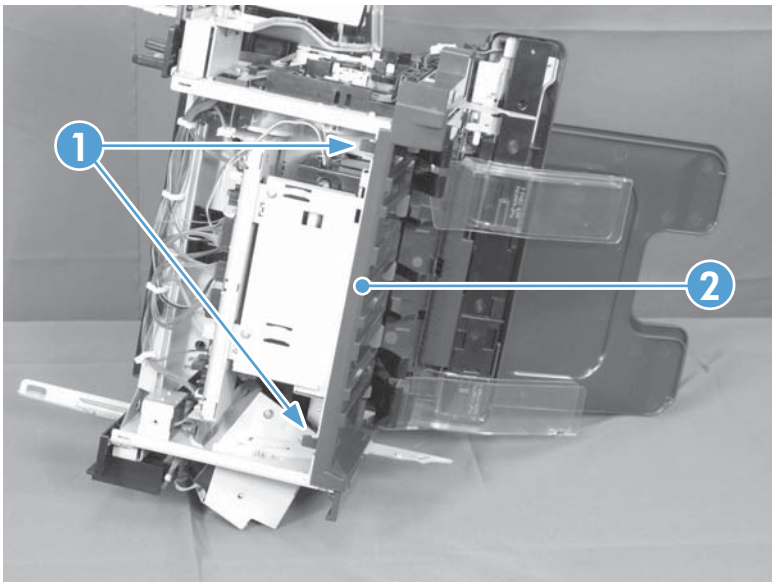
2. Remove the PCA cover.

**Figure 2-354** Remove the output bin 3 drive assembly (2 of 3)



3. Release two tabs (callout 1) and them remove the stacking panel (callout 2).

**Figure 2-355** Remove the output bin 3 drive assembly (3 of 3)



# Jogger assembly

Before proceeding, remove the following components:

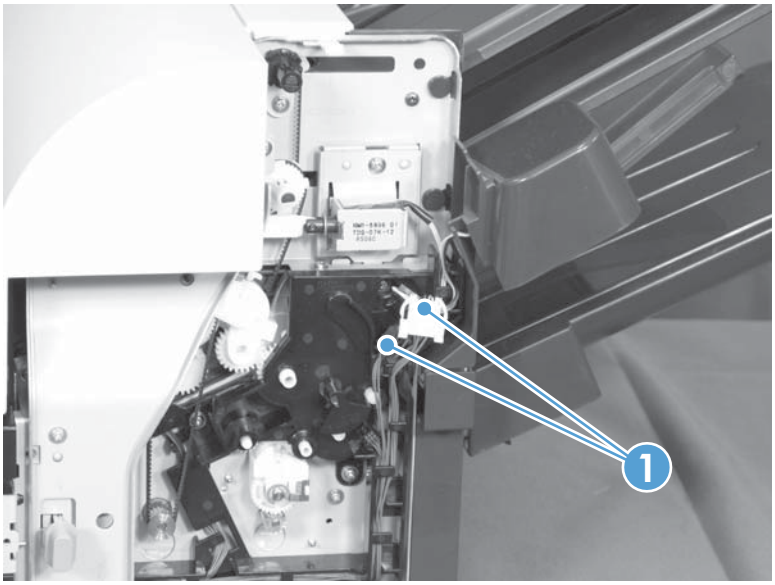
### Before proceeding, remove the following components:

- Stapling mailbox front cover. See Stapling mailbox front cover on page 333.
- Stapling mailbox rear cover. See Stapling mailbox rear cover on page 334.

## Remove the jogger assembly

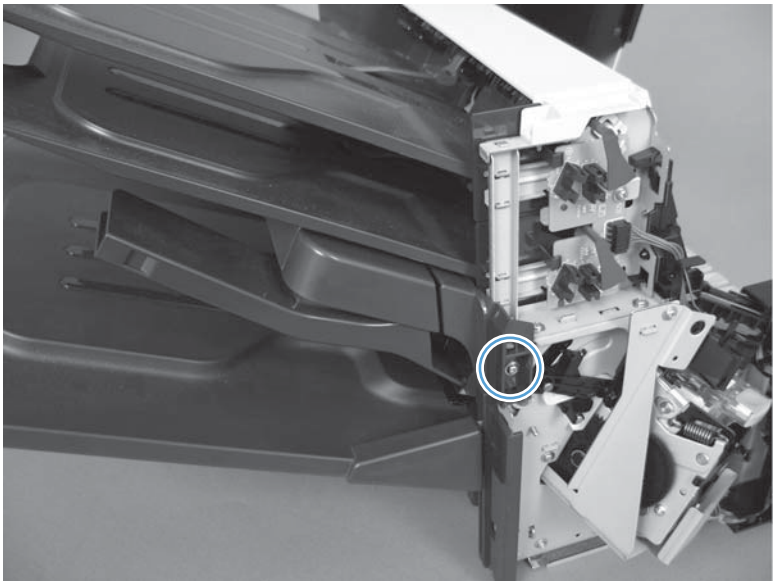
1. Disconnect two connectors (callout 1).

**Figure 2-356** Remove the jogger assembly (1 of 3)



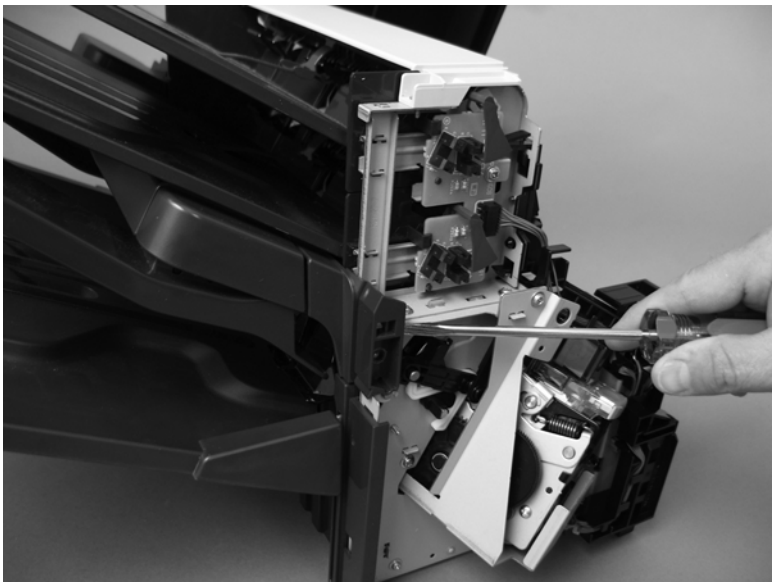
2. Remove one screw.

**Figure 2-357** Remove the jogger assembly (2 of 3)



3. Disengage pin and remove the jogger assembly.

**Figure 2-358** Remove the jogger assembly (3 of 3)



## Flapper guide assembly

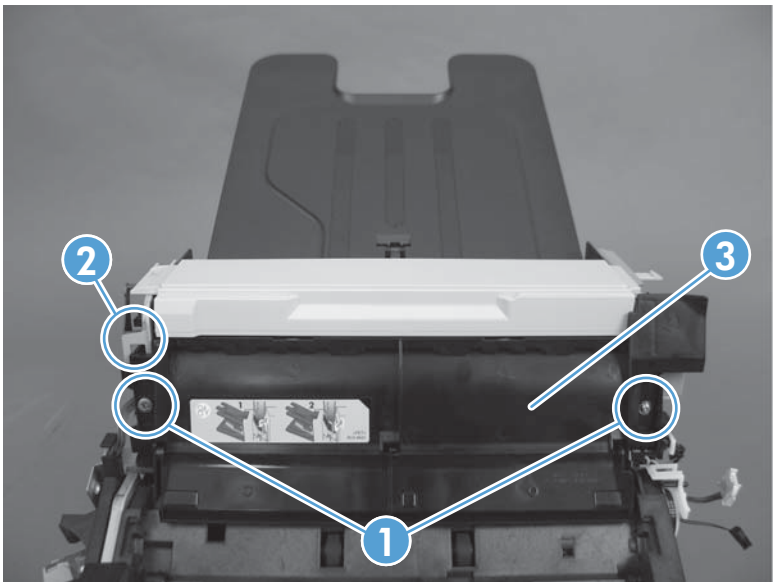
Before proceeding, remove the following components:

- Stapling mailbox front cover. See Stapling mailbox front cover on page 333.
- Stapling mailbox rear cover. See Stapling mailbox rear cover on page 334.
- Stapling mailbox door. See Stapling mailbox door on page 335.
- Top cover. See Top cover on page 337.
- Jogger assembly. See Jogger assembly on page 350.

## Remove the flapper guide assembly

▲ Remove two screws (callout 1), release one tab (callout 2), and then remove the flapper guide assembly (callout 3).

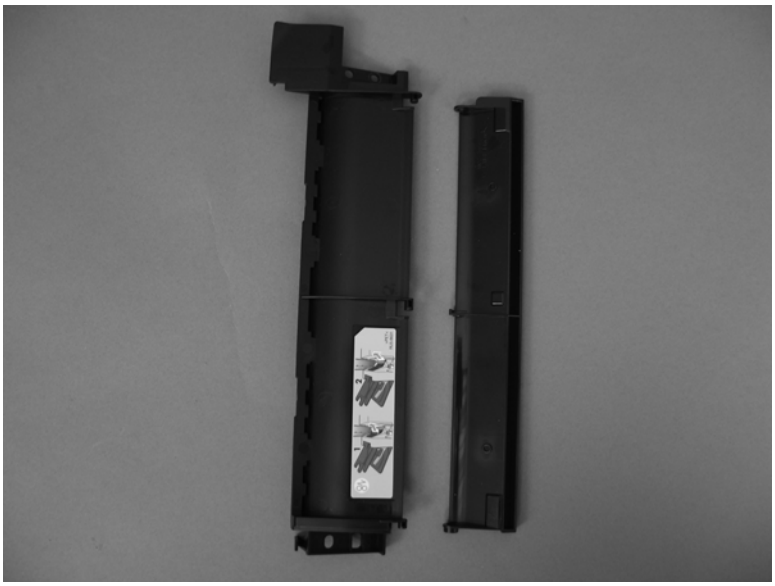
**Figure 2-359** Remove the flapper guide assembly (1 of 2)




**NOTE:** Make sure to reinstall the stepped screw on the left side of the assembly.

**NOTE:** When reinstalling the assembly, makes sure to correctly reattach the two pieces of the assembly.

**Figure 2-360** Remove the flapper guide assembly (2 of 2)



## Flapper assembly

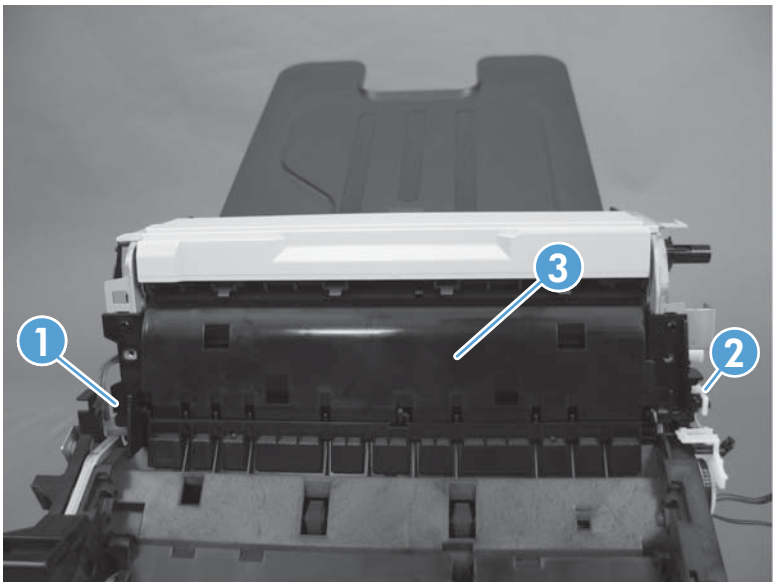
Before proceeding, remove the following components:

- Stapling mailbox front cover. See Stapling mailbox front cover on page 333.
- Stapling mailbox rear cover. See Stapling mailbox rear cover on page 334.
- Stapling mailbox door. See Stapling mailbox door on page 335.
- Top cover. See Top cover on page 337.
- Jogger assembly. See Jogger assembly on page 350.
- Flapper guide assembly. See Flapper guide assembly on page 352.

## Remove the flapper assembly

▲ Remove one tab (callout 1), release the solenoid arm (callout 2), and then remove the flapper assembly (callout 3).

**Figure 2-361** Remove the flapper guide assembly (1 of 2)




**NOTE:** When reinstalling the assembly, makes sure to correctly reattach the solenoid and arm.

**Figure 2-362** Remove the flapper guide assembly (2 of 2)



# MBM output bin assembly

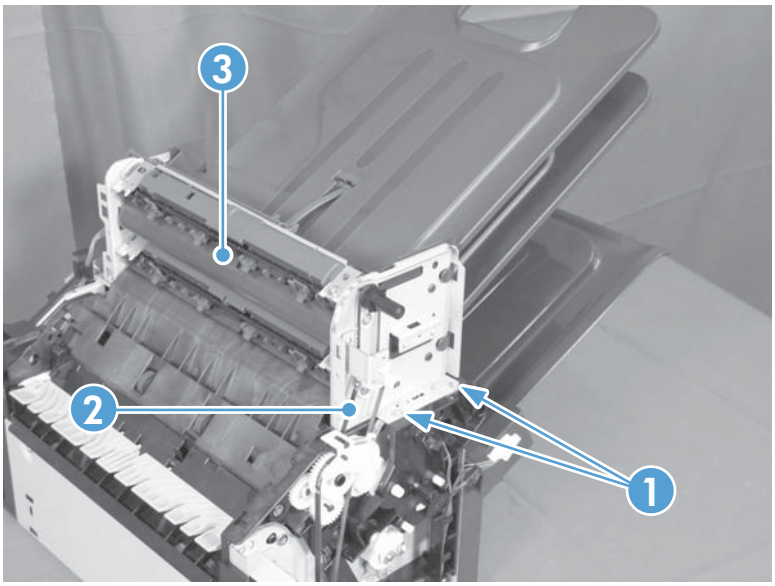
Before proceeding, remove the following components:

- Stapling mailbox rear cover. See Stapling mailbox rear cover on page 334.
- Stapling mailbox door. See Stapling mailbox door on page 335.
- Top cover. See Top cover on page 337.
- Output bin sensor PCA. See Output bin sensor PCA on page 346.
- Jogger assembly. See Jogger assembly on page 350.
- Flapper guide assembly. See Flapper guide assembly on page 352.
- Flapper guide assembly. See Flapper assembly on page 354.
- Solenoid. See Output bin solenoid on page 361.

## Remove the MBM output bin assembly

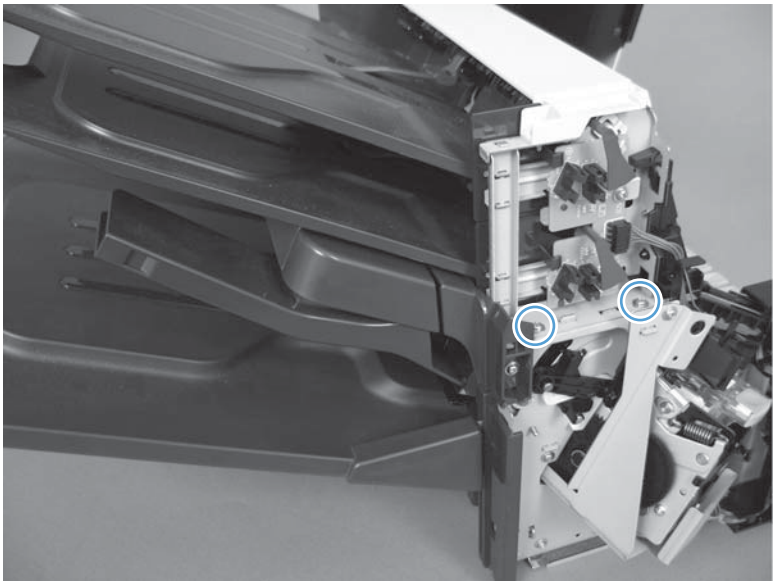
1. Remove two screws (callout 1).

**Figure 2-363** Remove the MBM output bin assembly (1 of 3)



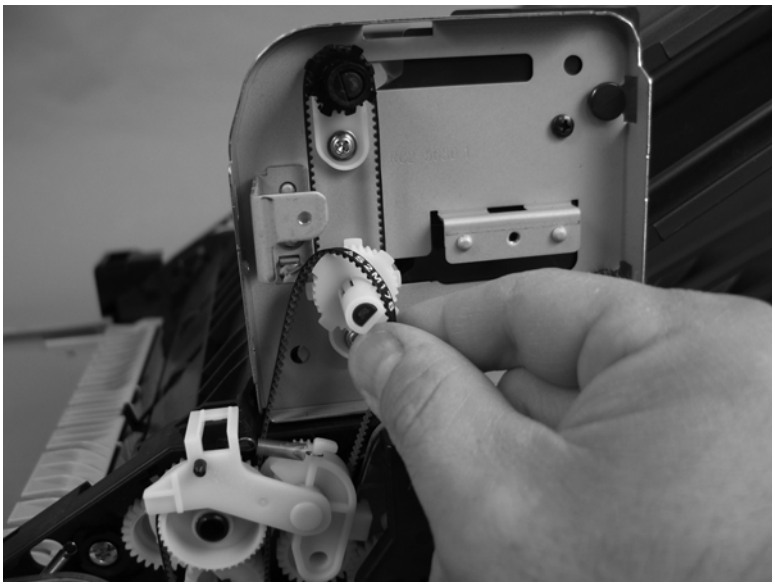
2. Remove two screws.

**Figure 2-364** Remove the MBM output bin assembly (2 of 3)



3. Remove the belt and then the assembly.

**Figure 2-365** Remove the MBM output bin assembly (3 of 3)



# Output bin 3 drive assembly

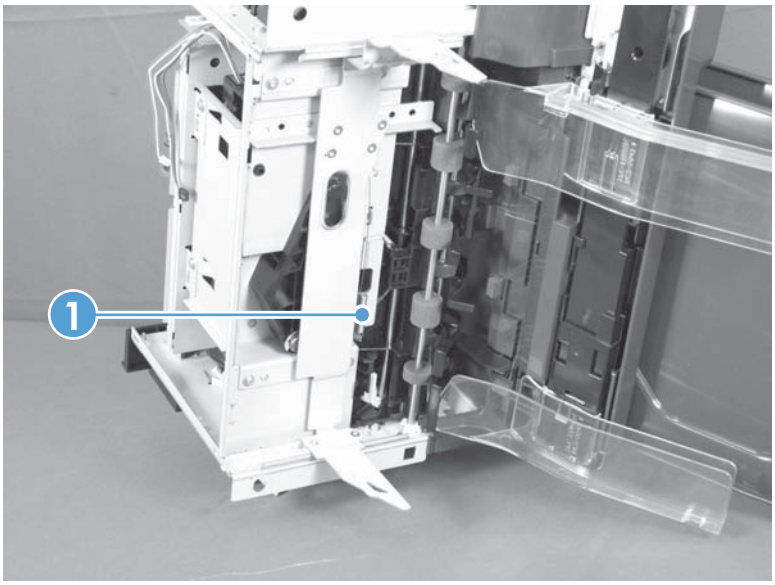
Before proceeding, remove the following components:

- Stapling mailbox front cover. See Stapling mailbox front cover on page 333.
- Stapling mailbox rear cover. See Stapling mailbox rear cover on page 334.
- Output bin 3. See Output bin 3 on page 338.
- Stacking panel. See Stacking panel on page 348.

## Remove the output bin drive assembly

1. Release one spring (callout 1).

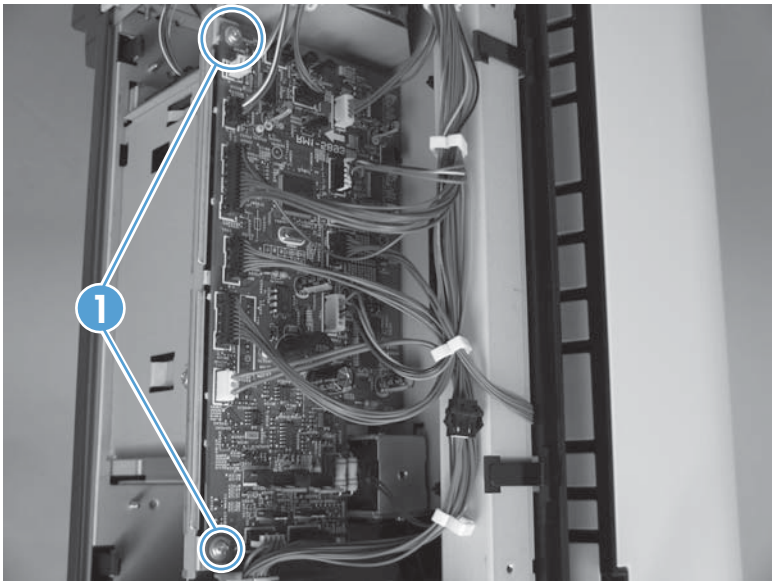
**Figure 2-366** Remove the output bin 3 drive assembly (1 of 4)




**NOTE:** If you cannot reach the spring, lower the tray support until you have clearance as shown in the next step.

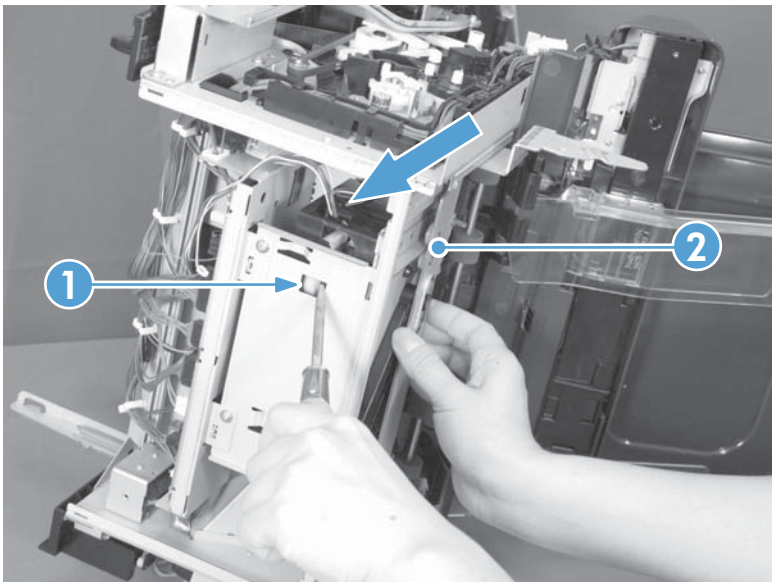
2. Disconnect two connectors.

**Figure 2-367** Remove the output bin 3 drive assembly (2 of 4)



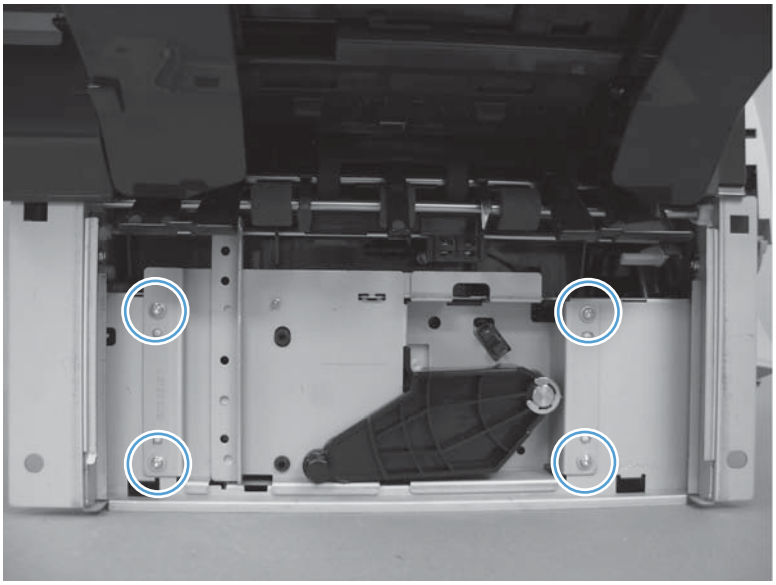

3. Using a screwdriver to disengage the gear (callout 1) and then slide the tray support (callout 2) to remove it.

**Figure 2-368** Remove the output bin 3 drive assembly (3 of 4)



4. Remove four screws and then remove the output bin 3 drive assembly.

**Figure 2-369** Remove the output bin 3 drive assembly (4 of 4)



# Output bin solenoid

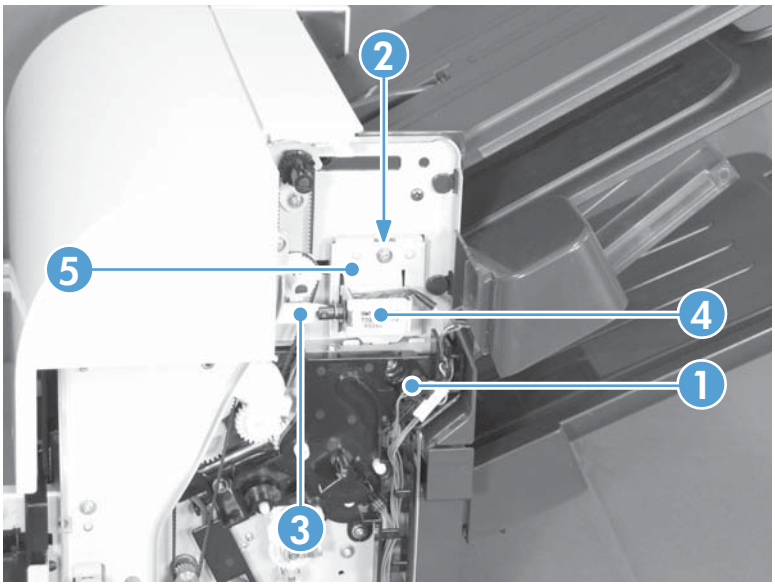
Before proceeding, remove the following components:

- Stapling mailbox rear cover. See Stapling mailbox rear cover on page 334.

## Remove the output bin solenoid

▲ Disconnect one connector (callout 1), remove one screw (callout 2), disconnect the solenoid arm (callout 3), and then remove the solenoid (callout 4) and bracket (callout 5).

**Figure 2-370** Remove the output bin solenoid



# 3 Solve problems

To use the information in this chapter, you need to 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-only service manual. Do not perform any of these troubleshooting processes unless you understand the function of each product component.


- Solve problems checklist
- Administration Menu Map
- Troubleshooting process
- Tools for troubleshooting
- Clear jams
- Paper does not feed automatically
- Product feeds multiple sheets
- Use manual print modes
- Solve image-quality problems
- Clean the product
- Solve performance problems
- Solve connectivity problems
- Service mode functions
- Preboot menu options
- Solve fax problems
- Product updates

# Solve problems checklist

1. Make sure that the product control panel is lit and that the product is in Ready state. If the product is not on, complete these steps:

   a. Check the power-cable connections.

   b. Check that the power is turned on.

   c. Make sure that the line voltage is correct for the product power configuration. (See the label that is on the back of the product for voltage requirements.) If you are using a power strip and its voltage is not within specifications, plug the product directly into the wall. If it is already plugged into the wall, try a different outlet.

   d. If none of these measures restores power, see Power subsystem on page 370.

2. Check the cabling.

   a. Check the cable connection between the product and the computer or network port. Make sure that the connection is secure.

   b. Make sure that the cable itself is not faulty by using a different cable, if possible.

   c. Check the network connection. See Solve connectivity problems on page 624.

3. Check to see if any messages appear on the control-panel display. If any error messages appear, see Control-panel messages on page 470.

4. Ensure that the paper that you are using meets specifications.

5. Print a configuration page. See Configuration pages on page 462. 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 paper.

   b. If the page jams in the product, see Clear jams on page 581.

6. If the configuration page prints, check the following items:

   a. If the page does not print correctly, the problem is with the product hardware.

   b. If the page prints correctly, then the product hardware is working. The problem is with the computer you are using, with the printer driver, or with the program.

7. Select one of the following options:

   **Windows**: Click **Start**, click **Settings**, and then click **Printers** or **Printers and Faxes**. Double-click the name of the product.

   **-or-**

   **Mac OS X**: Open the **Printer Setup Utility** and double-click the line for the product.

8. Verify that you have installed the printer driver for this product. Check the program to make sure that you are using the printer driver for this product.
9. Print a short document from a different program that has worked in the past. If this solution works, then the problem is with the program 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.

# Administration Menu Map

The Administration Menu Map report presents the entire structure of the Administration menu so you can identify how to navigate to any option.

1. From the Home screen, scroll to and touch the Administration button.
2. Open the following menus:
   - Reports
   - Configuration/Status Pages
   - Administration Menu Map
3. Touch the Print button to print the report.

# Troubleshooting process

## Determine the problem source

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

- Use the pre-troubleshooting checklist to evaluate the source of the problem and to reduce the number of steps that are required to fix the problem.
- Use the troubleshooting flowchart to pinpoint the root cause of hardware malfunctions. The flowchart guides you to the 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.

## Pre-troubleshooting checklist

The list below describes basic questions to ask the customer to help quickly define the problem or problems.

**Table 3-1 Pre-troubleshooting checklist**

| | |
|---|---|
| Environment | • Is the product installed on a solid, level surface?<br>• Is the product exposed to particle matter or dust?<br>• Is the power-supply voltage within ± 10 volts of the specified power source?<br>• Is the power supply plug inserted in the product and directly to the wall outlet (not a power strip)?<br>• Is the operating environment within the specified parameters, as listed in chapter 1 of this manual?<br>• Is the product exposed to ammonia gas, such as that produced by diazo copiers or office cleaning materials?<br>• Is the product exposed to direct sunlight? |

**Table 3-1 Pre-troubleshooting checklist (continued)**

| | |
|---|---|
| Media | • Does the customer use only supported media?<br>• Is the media in good condition (contains no curls, folds, and so forth)?<br>• Is the media stored correctly and within environmental limits? |
| Input trays | • Is the amount of media in the tray within specifications?<br>• Is the media correctly placed in the tray?<br>• Are the paper guides aligned with the stack?<br>• Is the paper tray correctly installed in the product? |
| Print cartridges | • Is each print cartridge installed correctly?<br>• Are original HP print cartridges installed?<br>• Are the cartridges damaged? |
| ITB and fuser | • Are the ITB and fuser correctly installed?<br>• Is the ITB or fuser damaged? |
| Covers | • Are the right and front doors closed? |
| Condensation | • Does condensation occur following a temperature change (particularly in winter following cold storage)? If so, wipe the affected area dry or leave the product on for 10 to 20 minutes.<br>• Was a print cartridge installed soon after being moved from a cold to a warm room? If so, allow the product to sit at room temperature for one to two hours. |
| Miscellaneous | • Check for and remove any non-HP components (print cartridges, memory modules, and EIO cards) from the product.<br>• Remove the product from the network, and make sure that the failure is with the product before beginning troubleshooting.<br>• For any print-quality issues, calibrate the product. See Calibrate the product on page 468. |

## Troubleshooting flowchart

This flowchart highlights the general processes that you can follow to quickly isolate and solve product hardware problems.

Each row depicts a major troubleshooting step. A “yes” answer to a question allows you to proceed to the next major step. A “no” answer indicates that additional testing is needed. Proceed to the appropriate section in this chapter, and follow the instructions there. After completing the instructions, proceed to the next major step in this troubleshooting flowchart.

**Table 3-2 Troubleshooting flowchart**

| | | | |
|---|---|---|---|
| **1**<br>**Power on** | Is the product on and does a readable message display? | | Follow the power-on troubleshooting checks. See Power subsystem on page 370.<br>After the control-panel display is functional, go to step 2. |
| | Yes ↓ | No → | |
| **2**<br>**Control panel messages** | Does the message **Ready** display on the control panel? | | If an error message appears, see Control-panel messages on page 470.<br>After the errors have been corrected, go to step 3. |
| | Yes ↓ | No → | |
| **3**<br>**Event log** | Open the Troubleshooting menu and print an event log to see the history of errors with this product.<br>Does the event log print? | | If the event log does not print, see Print an event log on page 570.<br>If paper jams inside the product, see Clear jams on page 581.<br>If error messages appear on the control-panel display when you try to print an event log, see Control-panel messages on page 470.<br>After successfully printing and evaluating the event log, go to step 4. |
| | Yes ↓ | No → | |
| **4**<br>**Information pages** | Open the **Information** menu and print the configuration pages to verify that all of the accessories are installed.<br>Are all the accessories installed? | | If accessories that are installed are not listed on the configuration page, remove the accessory and reinstall it.<br>After evaluating the configuration pages, go to step 5. |
| | Yes ↓ | No → | |
| **5**<br>**Image quality** | Does the print quality meet the customer's requirements? | | Compare the images with the sample defects in the image defect tables. See Print quality examples on page 614.<br>After the print quality is acceptable, go to step 6. |
| | Yes ↓ | No → | |
| **6**<br>**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.<br>If error messages display on the control panel, see Control-panel messages on page 470.<br>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 fans operating.

After the fans are operating, the engine initializes (unless the right or front cover is open, a jam condition is sensed, or the paper-path sensors are damaged). You should be able to visually and audibly determine if the engine has initialized.

If the fans turn on and the engine initializes correctly, the next troubleshooting step is to isolate print engine, formatter, and control panel problems. Perform an engine test (see Engine-test button on page 376). 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 USB cable 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 HP Jetdirect or other EIO cards, and then try to turn the product on again.

**NOTE:** If the control panel display is blank, but the main cooling fan runs briefly after the product power is turned on, try printing an engine-test page to determine whether the problem is with the control-panel display, formatter, or other product components. See Engine-test button on page 376.

### Power-on timing (approximate)

- 0 seconds: Power button initiates power-on sequence
- 2 seconds: Blank control panel screen
- 8 seconds: HP circle logo (without trademark symbol) appears
- 15 seconds: Fans reach full speed
- 18 seconds: HP logo (with trademark symbol) and progress bar appear; stage 1 of 8 begins
- 21 seconds: Stage 2 of 8 begins; warning not to unplug product appears
- 40 seconds: Stage 4 of 8 begins
- 42 seconds: Stage 6 of 8 begins
- 43 seconds: Stage 7 of 8 begins
- 44 seconds: Document feeder and scanner initialize
- 45 seconds: Stage 8 of 8 begins
- 50 seconds: HP logo and activity indicator, with “Checking Hardware” message
- 58 seconds: HP logo and activity indicator, with “Checking Data” message
- 1:02 minutes: HP logo and activity indicator, with “Initializing” message
- 1:55 minutes: Stapling mailbox initializes
- 1:58 minutes: Product engine initializes
- 2:30 minutes: Fans slow down
- 3:05 minutes: Home screen displays
- 3:10 minutes: Control panel enters **Ready** state

**NOTE:** If the product does not enter the **Ready** state within 5 minutes, turn off the product and then restart it.

# Control-panel checks

The product includes a diagnostic test mode for the control panel. This mode allows you to troubleshoot issues with the touchscreen, keypad, LEDs and speaker.

## Start diagnostic mode

1. Press and hold the asterisk button (*) and the plus sign (+) key at the same time.
2. Press the Start button to initiate diagnostic mode.

Many of the diagnostic tests are for factory use only. You can use the following tests:

- Calibrate: calibrates the touchscreen
- Touch Grid: verifies that all areas respond to a touch
- Keyboard LED: tests the functionality of keys and LEDs
- Sound: tests the speaker
- Panel Reset: reboots the control panel

If the touchscreen does not function, use the keypad to navigate:

- Press the 3 button to move up.
- Press the 5 button to move left.
- Press the 6 button to move right.
- Press the 9 button to move down.

## Exit diagnostic mode

▲ Do one of the following:

- Press and hold the asterisk key (*) and the minus key (-) at the same time.
- Touch the Panel Reset button.
- Touch the Stop button.

# Scanning subsystem

## Calibrate the scanner

Use this procedure to properly position the copied image on the page.

**TIP:** This adjustment might be required after the scanner or document feeder are replaced.

1. Touch the Device Maintenance button.
2. Touch the Calibrate/Cleaning button.
3. Touch the Calibrate Scanner button, and then follow the instructions provided on the screen.

# Tools for troubleshooting

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

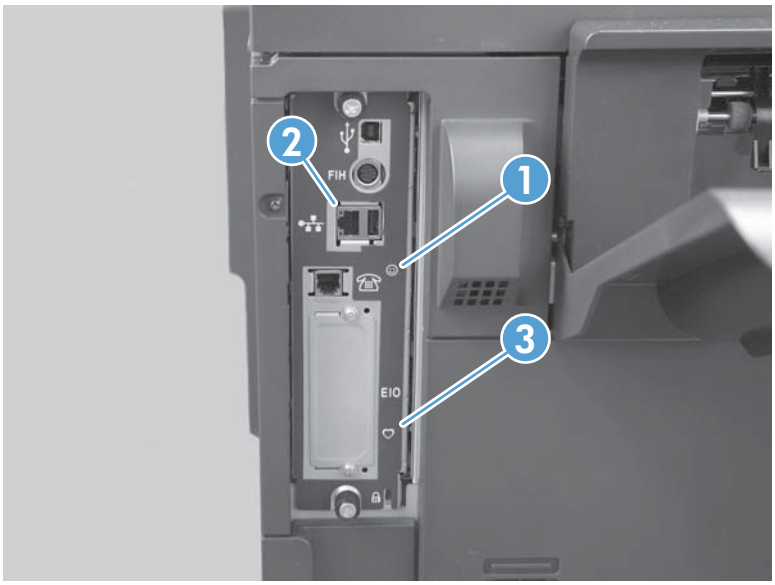
## Component diagnostics

### LED diagnostics

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

#### LED indicators

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




| | |
|---|---|
| 1 | Formatter connectivity LED (lit when formatter is correctly seated and scanner cable is properly connected at ICB and SCB) |
| 2 | HP Jetdirect LEDs |
| 3 | Heartbeat LED |

#### HP Jetdirect LEDs

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

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

1. From the Home screen, scroll to and touch the Administration button.
2. Touch the Network Settings button, and then touch the Embedded Jetdirect button.

3. Touch the Link Speed button.
4. Select the appropriate link speed, and then touch the Save button.

### Formatter heartbeat LED

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

## Engine diagnostics

This section provides an overview of the engine diagnostics that are available in the HP Color LaserJet Enterprise CM4540 MFP Series product. The product contains extensive internal diagnostics that help in troubleshooting print quality, paper path, noise, component, and timing issues.

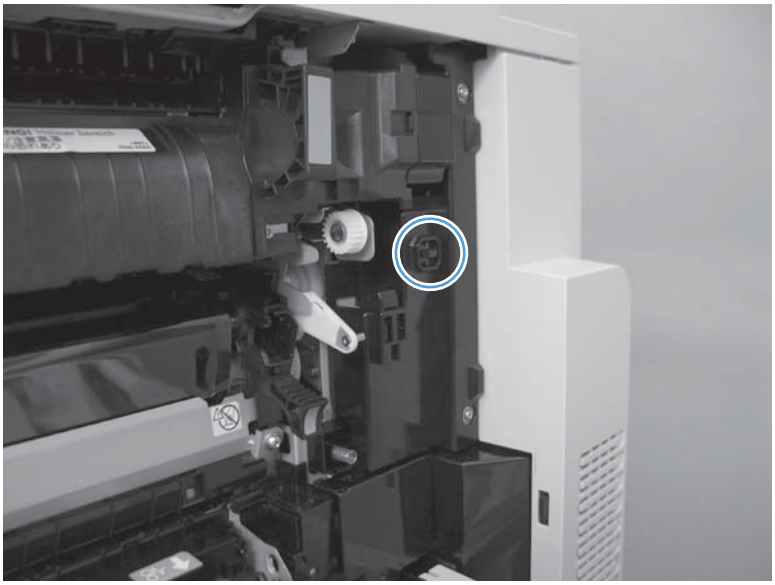
### Defeating interlocks

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 or the doors open. Never touch any of the power supplies when the printer is turned on.

1. Open the right and front doors.
2. Use a piece of tape to defeat the right door logic switch.

**Figure 3-1** Diagnostic test (1 of 2)



3. Insert a folded piece of paper into each slot to defeat the front and right door interlock switches.

**Figure 3-2** Diagnostic test (2 of 2)



4. Fold a stiff piece of paper, for example a business card or index card, into a 10 mm (.375 in) strip with a bend at the end, and insert the strip into the opening at the front of the product to defeat the front door logic switch.

## 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 menus and print internal pages or send an external print job to the product. This test can be used isolate problems, such as noise, and to isolate print-quality problems that are related to individual print cartridges.

**NOTE:** Color cartridges are not keyed and can be interchanged. The black print cartridge is keyed and cannot fit into any other position. An error will display on the control panel if a print cartridge is installed in the wrong position. The Supplies Status 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. From the Home screen, scroll to and touch the Administration button.
2. Touch the Troubleshooting button, and then touch the Diagnostic Tests button.
3. Touch the Disable Cartridge Check button.

To exit this diagnostic, touch the Exit Troubleshooting button.

## 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 in the primary colors (CYMK). The test page can use only Tray 2 as the paper source, so make sure that paper is loaded in Tray 2.

**Figure 3-3** Engine-test button



The test functions differently depending on the presence of the formatter or stapler/stacker.

### Engine test with the formatter and the stapler/stacker removed

1. Turn on the product, wait 30 seconds, and then press the test button.
2. Wait for the product to initialize (approximately 30 more seconds), and then press the test button a second time to print the test page.

### Engine test with the formatter installed and the stapler/stacker removed

1. Turn on the product, and then wait for the product to enter the Ready state.
2. Press the test button to print the test page.

### Engine test with the stapler/stacker installed and the formatter removed

1. Turn on the product, wait for the engine and fans to initialize (approximately 40 seconds), and then press the test button.
2. Wait for the stapler/stacker to initialize (approximately 40 more seconds), and then press the test button again to print the test page.

### Engine test with the formatter and the stapler/stacker installed

1. Turn on the product, and then wait for the product to enter the Ready state, and then press the test button.
2. Because the stapler/stacker rollers will be stopped, the test page will jam at the stapler/stacker entrance. Open the top cover of the stapler/stacker, and then remove the jammed engine test page.

## 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. Select Tray 1, Tray 2, or the optional trays.
- Duplex. Enable or disable 2-sided printing.
- Copies. Set the number of copies to be printed; the choices are 1,10, 50, 100, or 500.

1. From the Home screen, scroll to and touch the Administration button.
2. Touch the Troubleshooting button, and then touch the Diagnostic Tests button.
3. Touch the Paper Path Test button.
4. Select the paper-path test options for the test you want to run.

## Manual sensor test

1. From the Home screen, scroll to and touch the Administration button.
2. Touch the Troubleshooting button, and then touch the Diagnostic Tests button.
3. Touch the Manual Sensor Test button.
4. Select from the list of sensors.

**NOTE:** When a sensor is selected, a graphic appears on the control-panel display that identifies the location of the sensor.

**Table 3-3 Manual sensor diagnostic tests**

| Sensor or switch name | Sensor or switch number | Sensor or switch test |
|---|---|---|
| Front door switch | SW5 | See Front-door switch on page 380. |
| Right door switch | SW6 | See Right-door switch on page 381. |
| Registration sensor | SR20 | See Registration sensor on page 382. |
| Fuser loop 1 sensor | SR14 | See Fuser loop 1 and 2 sensors on page 383. |
| Fuser loop 2 sensor | SR15 | |
| Fuser pressure release sensor | SR7 | See Fuser pressure-release sensor on page 389. |
| Fuser output sensor | SR5 | See Fuser output sensor on page 384. |

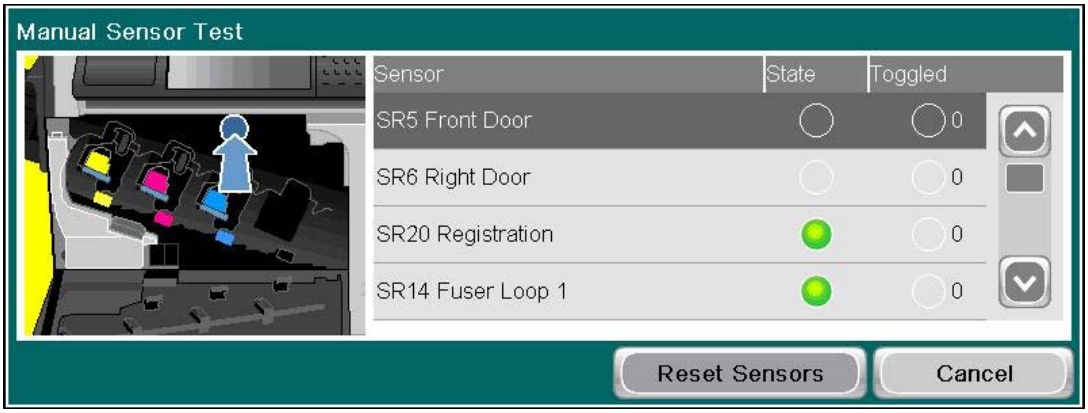
**Table 3-3 Manual sensor diagnostic tests (continued)**

| Sensor or switch name | Sensor or switch number | Sensor or switch test |
|---|---|---|
| Duplexer refeed sensor | SR22 | See Duplexer refeed sensor on page 386. |
| Developer alienation sensor<br><br>**NOTE:** The Developer alienation sensor can not be manually actuated. See Developer alienation sensor on page 388 for information about testing this sensor. | SR11 | See Developer alienation sensor on page 388. |
| ITB alienation sensor | SR9 | See ITB alienation sensor on page 390. |
| IPTU feed sensor | SR27 | See IPTU feed sensor on page 392. |
| IPTU bin full sensor | SR26 | See IPTU-bin-full sensor on page 387. |
| Scanner open sensor | SR28 | See Scanner open sensor on page 392. |

When performing these tests, watch the control panel for the corresponding sensor to change from green to clear or clear to green. It can take a few seconds to change.

**TIP:** The Toggled column indicates how many times a sensor changed state.

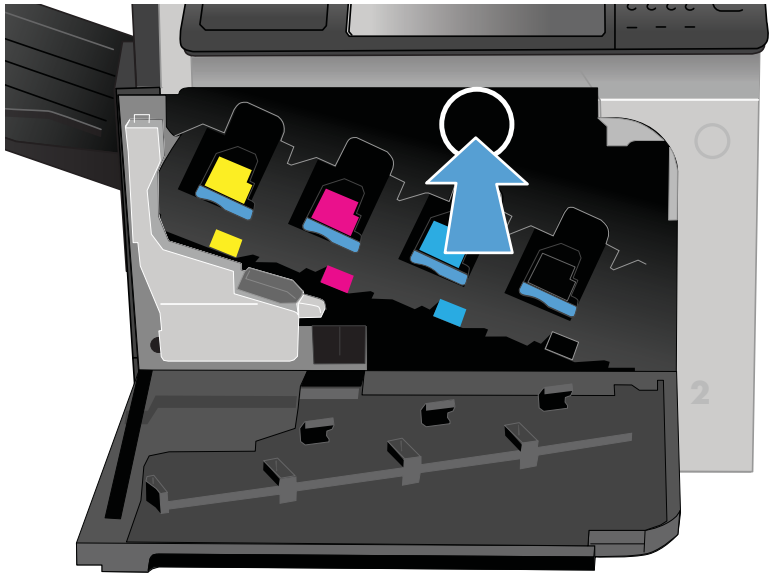
**Figure 3-4** Manual sensor test



### Front-door switch

1. Open the front-door assembly to disengage the front-door switch.

**Figure 3-5** Test the front-door switch



2. Close the front-door assembly, and then check the control panel on the product for sensor response.

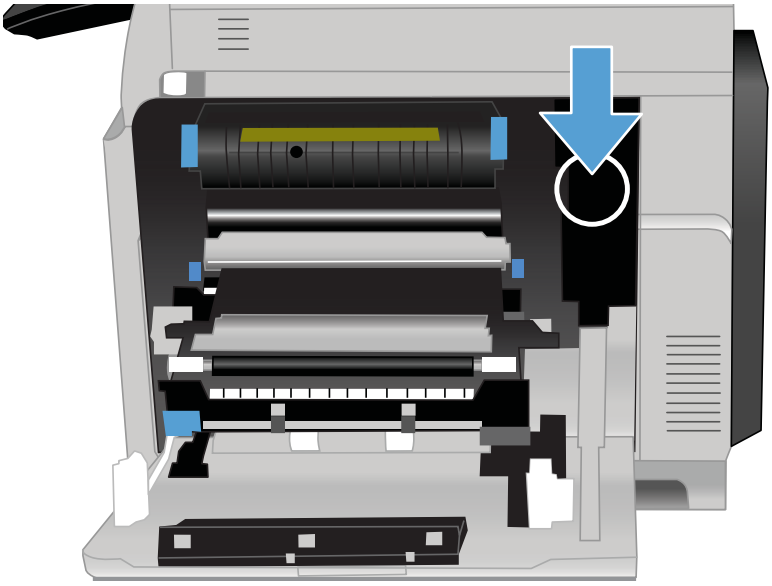
**TIP:** You can leave the front door open and use a slender blade screw driver or pencil to activate the switch.

3. If there is no response, replace the front-door switch.

### Right-door switch

1. Open the right-door assembly to disengage the right-door switch.

**Figure 3-6** Test the right door switch

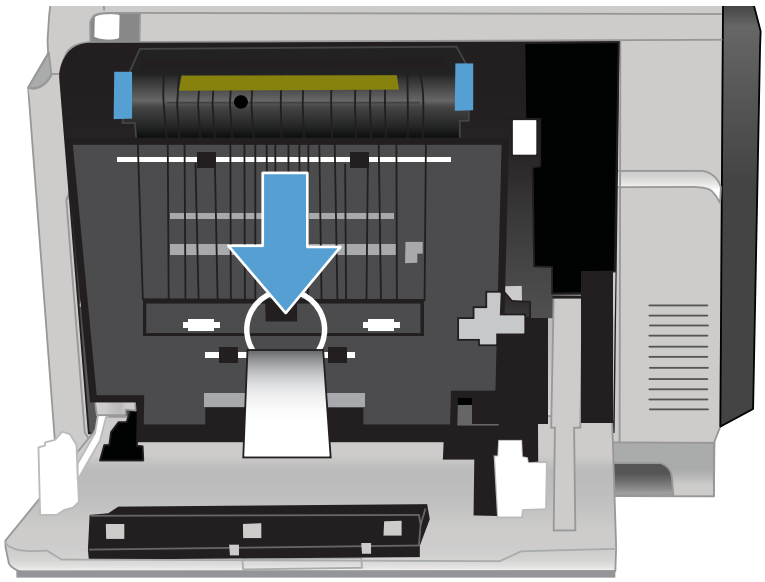


2. Close the right-door assembly, or use your finger to depress the switch flag, and check the control panel on the product for sensor response.
3. If there is no response, replace the right-door switch.

### Registration sensor

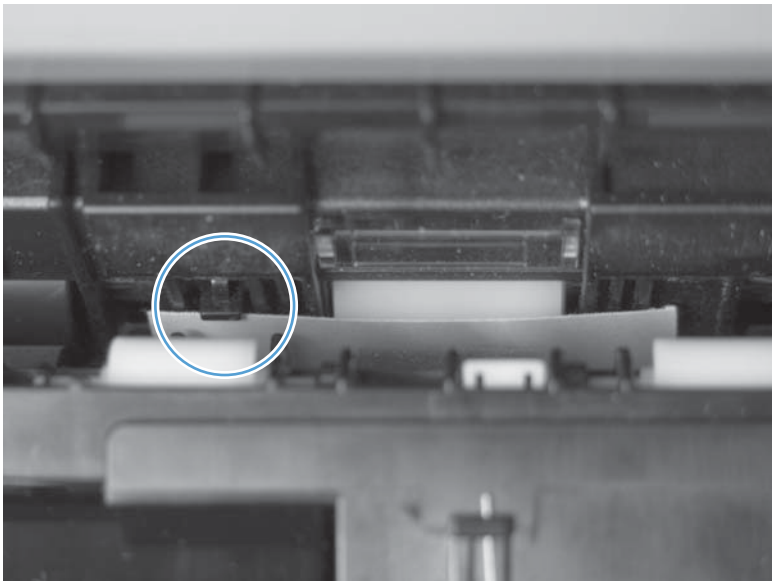
1. Open the right door.
2. Insert a piece of paper to activate the registration sensor.

**Figure 3-7** Test the TOP sensor (1 of 2)



**NOTE:** Open the registration shutter to verify the paper activates the sensor.

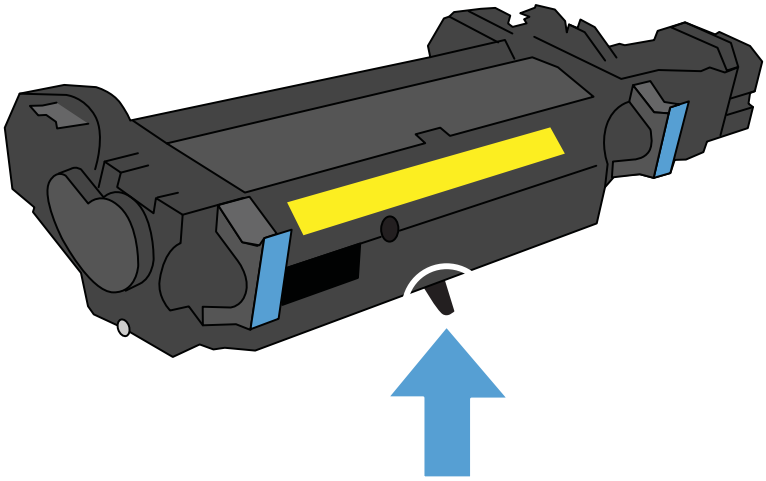
**Figure 3-8** Test the TOP sensor (2 of 2)



3. Check the control-panel display for sensor response.
4. If there is no response, replace the registration assembly. See Registration assembly on page 213.

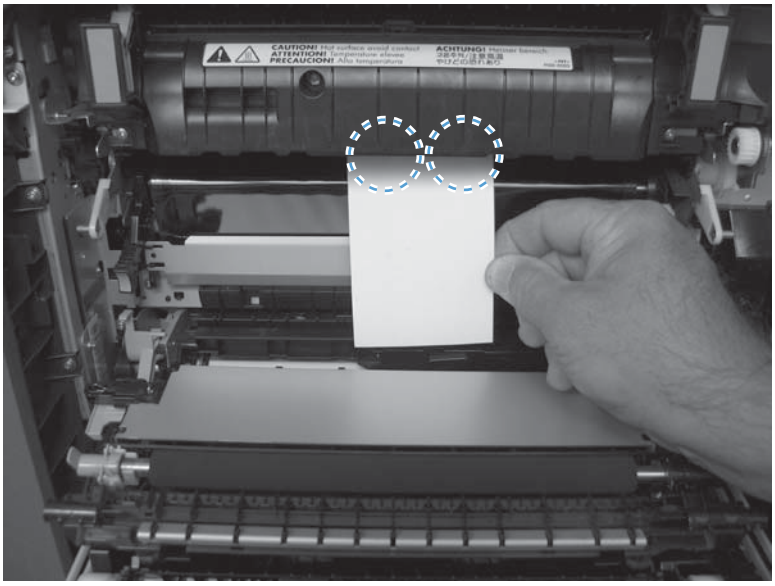
### Fuser loop 1 and 2 sensors

**Figure 3-9** Fuser loop 1 and 2 sensors location



1. Open the right door.
2. Lower the secondary transfer assembly.
3. Slowly insert a piece of paper at the entrance of the fuser to activate the fuser loop sensors underneath the fuser.

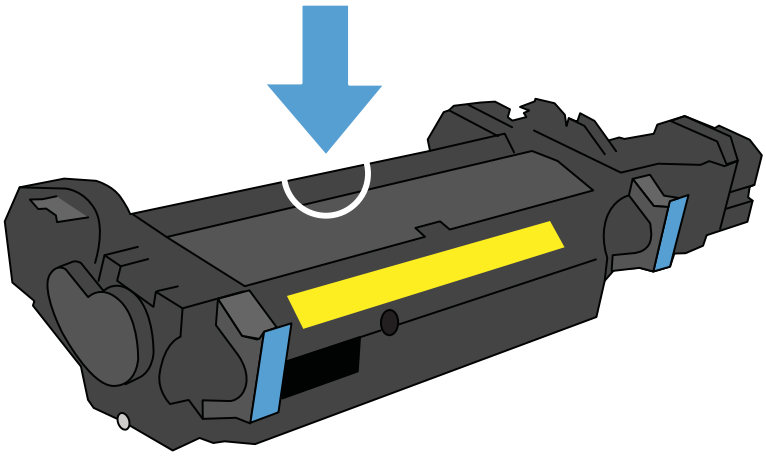
**Figure 3-10** Test the loop sensors



4. Check the control-panel display for a sensor response.
5. If there is no response, replace fuser. See Fuser on page 112.

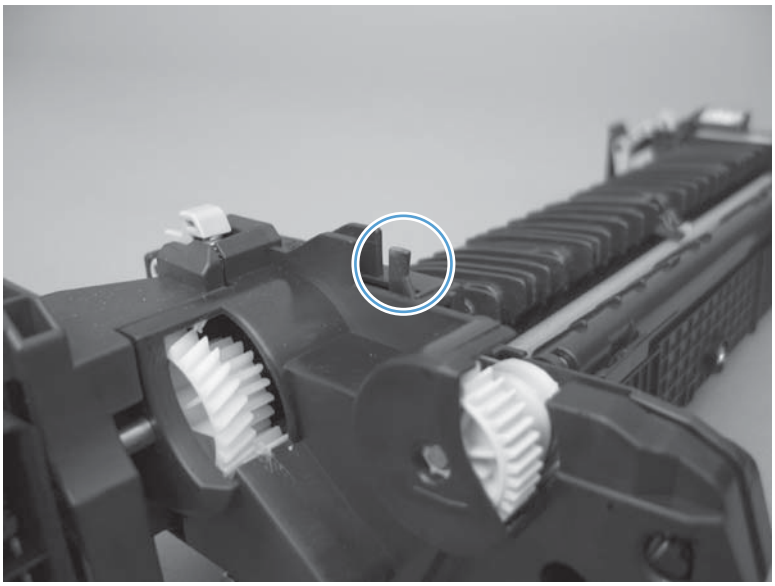
### Fuser output sensor

**Figure 3-11** Fuser output sensor flag location



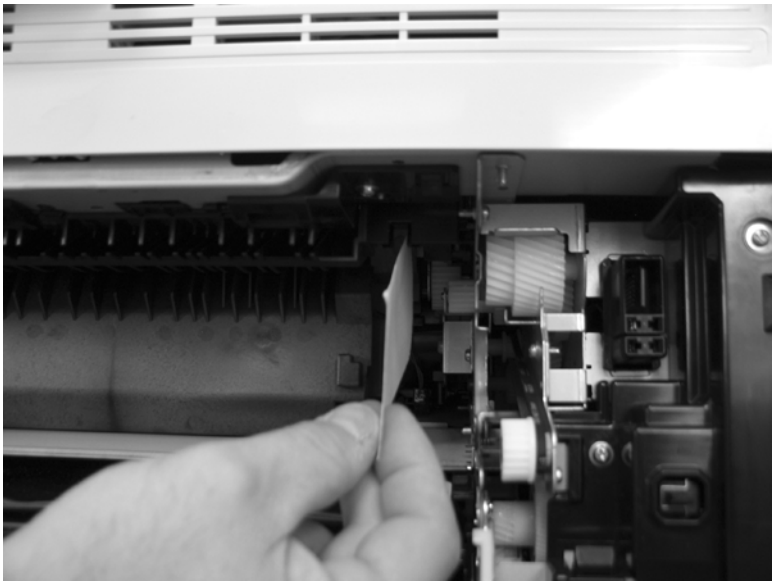
1. Open the right-door assembly.
2. Lower the secondary transfer assembly.
3. Remove the fuser, and then verify that the sensor flag on the fuser moves freely. If the sensor flag does not move freely, replace the fuser. See Fuser on page 112.

**Figure 3-12** Test the fuser output sensor (1 of 2)



4. Insert a piece of paper to activate the fuser output sensor.

**Figure 3-13** Test the fuser output sensor (2 of 2)



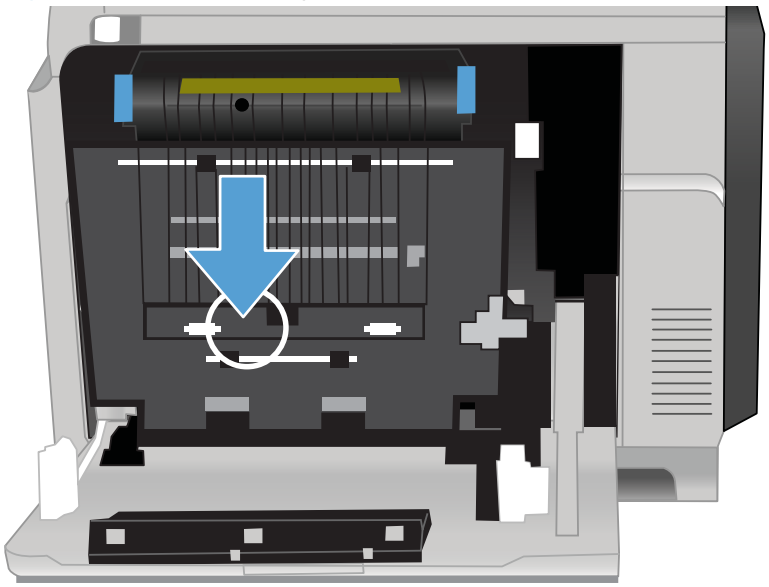
5. Check the control-panel display for a sensor response.
6. If there is no response, replace the fuser output sensor.

### Duplexer refeed sensor

1. Open the right door.
2. Lift the secondary-transfer assembly.
3. Press the flag to activate the sensor.

**NOTE:** The sensor and sensor flag are located on the back side of the registration assembly.

**Figure 3-14** Test the duplexer refeed sensor



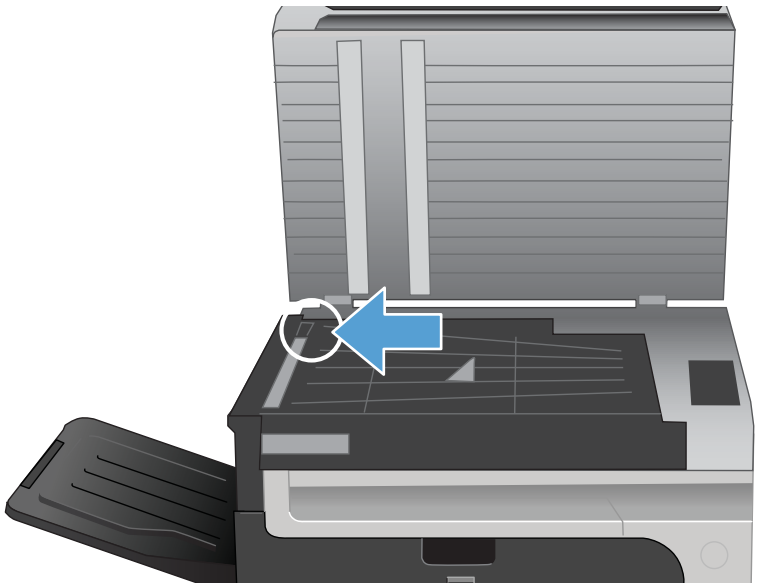
4. Check the control-panel display for sensor response.
5. If there is no response, replace the registration assembly. See Registration assembly on page 213.

### IPTU-bin-full sensor

**NOTE:** The IPTU-bin-full sensor is used only when the output tray is present. If the optional stapler/stacker is installed, the IPTU-bin-full sensor is not used.

1. Lift the scanner.

**Figure 3-15** Test the IPTU-bin-full sensor



2. Move the IPTU-bin-full sensor flag in the output tray to activate the sensor.
3. Check the control-panel display for sensor response. If the test fails, replace the IPTU.

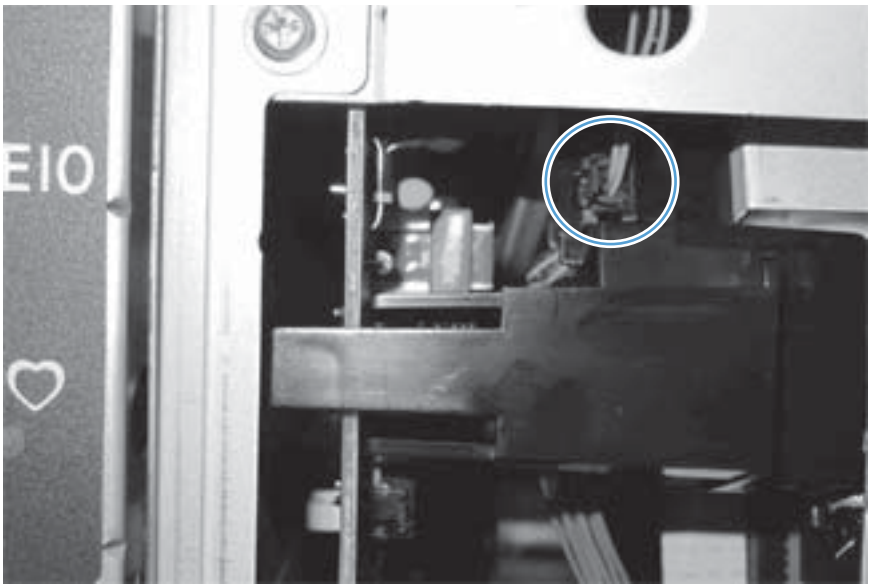
### Developer alienation sensor

This sensor is located inside the main-drive assembly and cannot be accessed for direct manual testing. To test this sensor, do the following.

1. Access the manual-sensor test menu and select sensor test SR11.
2. Locate the in-line connector J87. Disconnect, and the reconnect the connector. The sensor indicator on the control-panel display should indicate that the sensor changed state. If it does not, check the connector J112 on the DC controller PCA.

**CAUTION:** ESD sensitive component.

**Figure 3-16** Developer alienation sensor connector J87

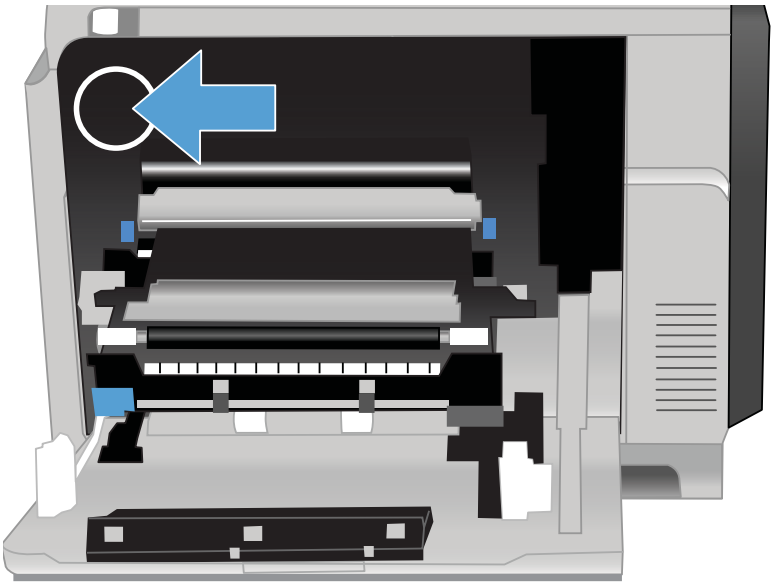



3. Check the control-panel display for sensor response.

### Fuser pressure-release sensor

1. Open the right-door assembly.
2. Lower the secondary transfer assembly.
3. Remove the fuser.
4. Insert a piece of paper to activate the fuser pressure-release sensor.

**Figure 3-17** Test the fuser pressure-release sensor



5. Check the control-panel display for sensor response.
6. If there is no response, replace fuser pressure-release sensor.

### ITB alienation sensor

**NOTE:** The document feeder, scanner, and IPTU have been removed for clarity.

1. Open the right-door assembly.
2. Lower the secondary transfer assembly, and then remove the fuser and ITB.
3. Rotate the gear (callout 1) to move the flag (callout 2). If the flag does not move, replace the ITB.

**Figure 3-18** Test the ITB alienation sensor (1 of 4)

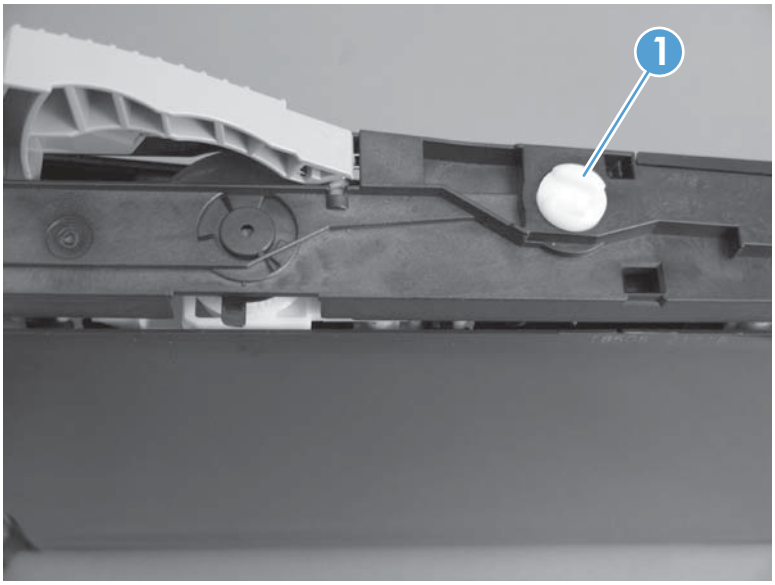
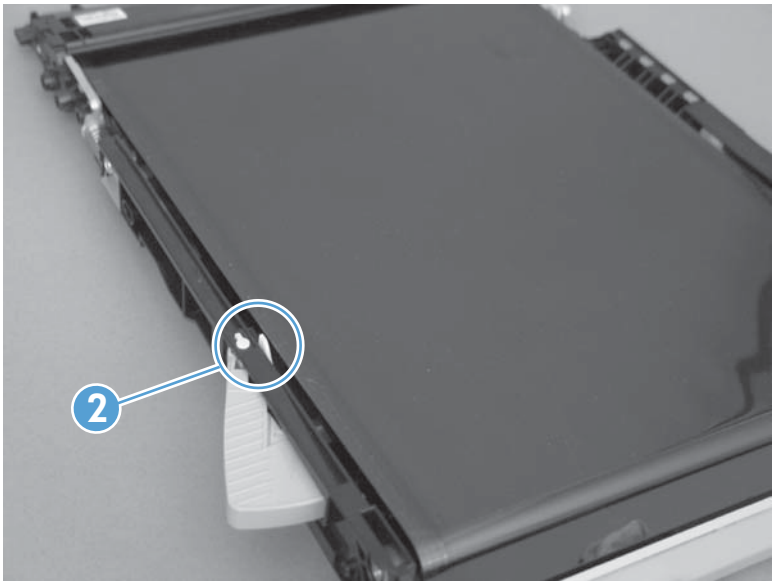
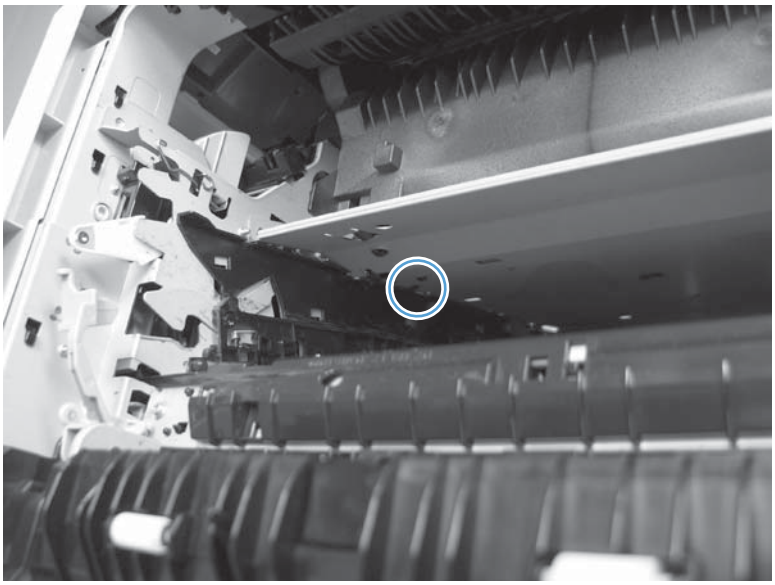



**Figure 3-19** Test the ITB alienation sensor (2 of 4)



4. From inside the ITB cavity, press up on the primary-transfer-roller-disengagement flag to activate the sensor.

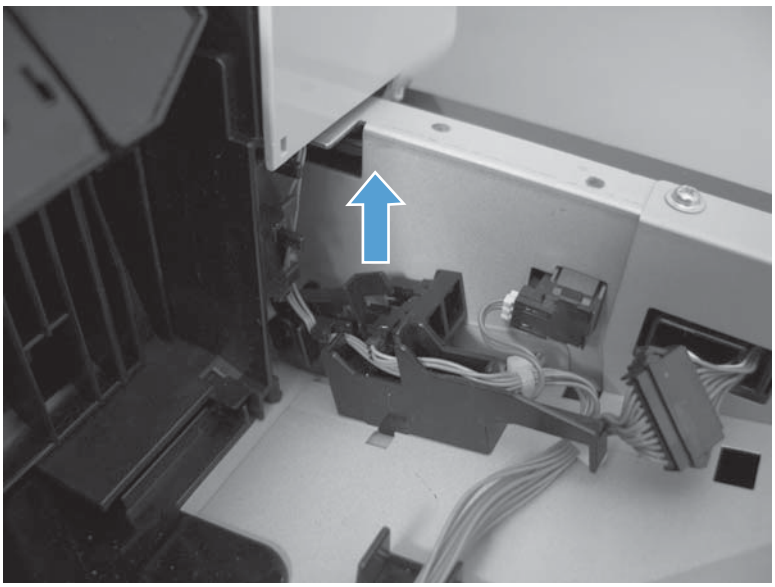
**Figure 3-20** Test the ITB alienation sensor (3 of 4)



5. Check the control-panel display for sensor response.
6. If there is no response, verify that the flag is moving.

**NOTE:** Figure shows the sensor with the IPTU removed.

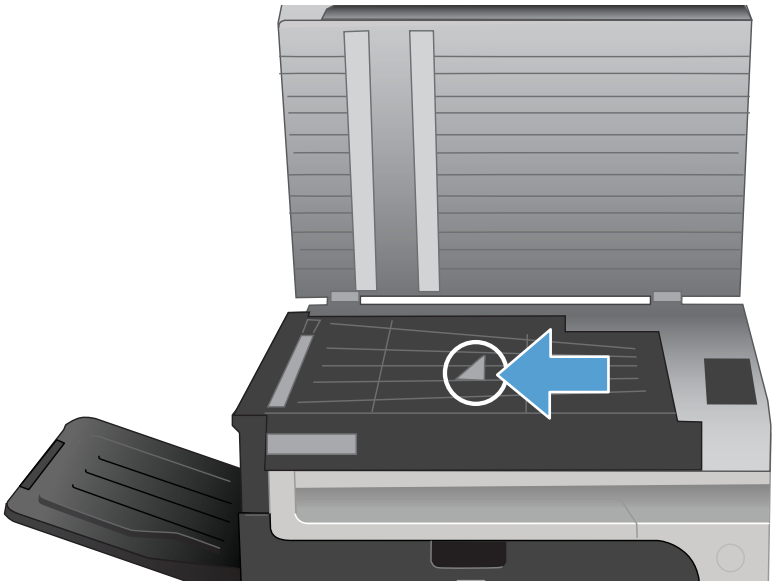
**Figure 3-21** Test the ITB alienation sensor (4 of 4)



7. If the flag moves correctly, replace the sensor.

### IPTU feed sensor

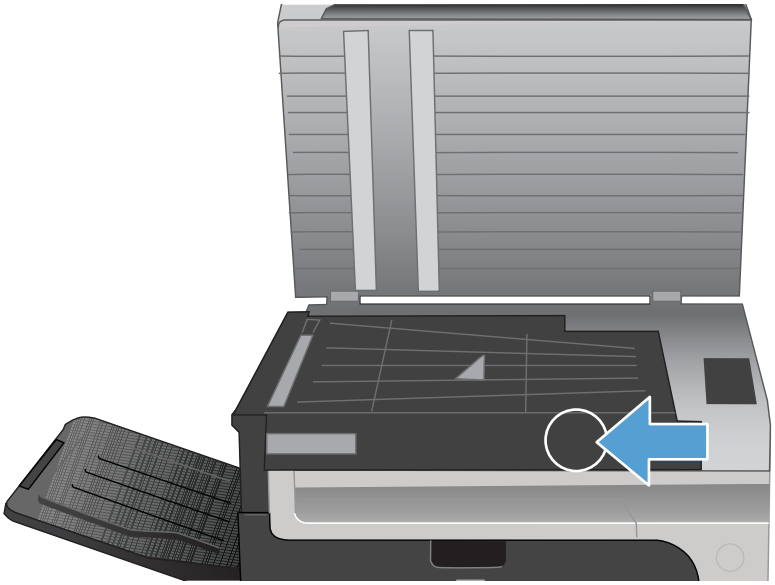
**Figure 3-22** IPTU feed sensor test



1. Lift the scanner.
2. Activate the sensor.
3. Check the control-panel display for sensor response. If the test fails, replace the IPTU.

### Scanner open sensor

1. Open the scanner and locate the sensor.



2. Use a folded piece of paper to actuate the sensor and watch the control-panel display for a response.
3. If the test fails, replace the IPTU.

## 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. Scroll to and touch the Administration button.
2. Touch the Troubleshooting button, and then touch the Diagnostic Tests button.
3. Touch the Tray/Bin Manual Sensor Test button.
4. Select from the list of sensors.

**Table 3-4 Tray/bin manual sensor test**

| Sensor or switch name | Sensor or switch number | Sensor or switch test |
|---|---|---|
| Tray 1 paper sensor | SR8 | See Tray 1 paper sensor on page 395. |
| Tray 2 paper sensor | SR25 | See Tray 2 paper sensor on page 396. |
| Tray 2 paper surface sensor | SR24 | See Tray 2 paper surface 1 and 2 sensors on page 397. |
| Tray 2 paper size switches | SW4 | See Tray 2 paper size switches on page 398. |
| Tray 3 paper sensor | SR3 (paper feeder) | See Tray 3 paper sensor on page 399. |
| Tray 3 feed sensor | SR4 (paper feeder) | See Tray 3 feed sensor on page 399. |
| Tray 3 paper surface sensors | SR2 (paper feeder) | See Tray 3 paper surface 1 and 2 sensors on page 400. |
| Tray 3 paper size 1 sensor | SW2 (paper feeder) | See Tray 3 paper size switches on page 401. |
| Tray 3 paper size 2 sensor | | |
| Tray 3 paper size 3 sensor | | |
| Tray 4 paper sensor | SR6 (paper feeder) | See Tray 4 paper sensor on page 401. |
| Tray 4 feed sensor | SR7 (paper feeder) | See Tray 4 feed sensor on page 402. |
| Tray 4 paper surface sensors | SR8 (paper feeder) | See Tray 4 paper surface 1 and 2 sensors on page 402. |
| Tray 4 paper size 1 sensor | SW3 (paper feeder) | See Tray 4 paper size switches on page 403. |
| Tray 4 paper size 2 sensor | | |
| Tray 4 paper size 3 sensor | | |
| Tray 5 paper sensor | SR11 (paper feeder) | See Tray 5 paper sensor on page 403. |
| Tray 5 feed sensor | SR10 (paper feeder) | See Tray 5 feed sensor on page 404. |
| Tray 5 paper surface sensor | SR9 and SR12 (paper feeder) | See Tray 5 paper surface 1 and 2 sensors on page 404. |

**Table 3-4 Tray/bin manual sensor test (continued)**

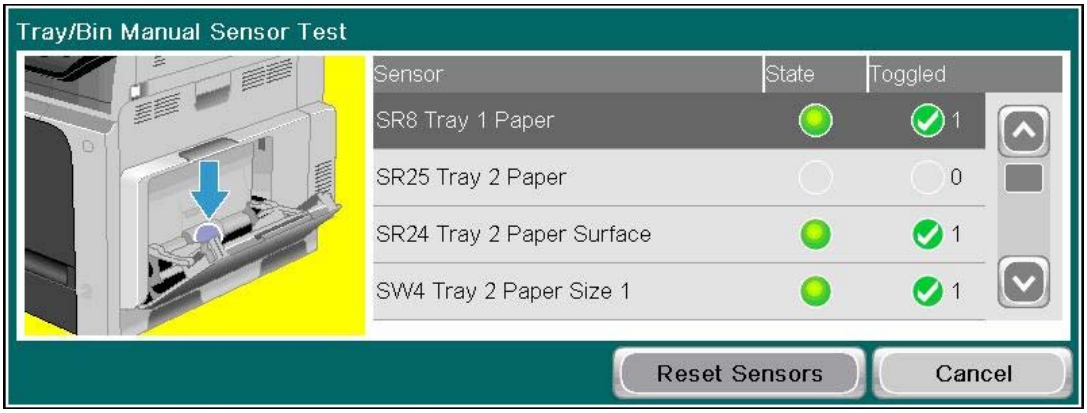
| Sensor or switch name | Sensor or switch number | Sensor or switch test |
|---|---|---|
| Tray 5 paper size 1 sensor | SW4 (paper feeder) | See Tray 5 paper size switches on page 405. |
| Tray 5 paper size 2 | | |
| Tray 5 paper size 3 | | |
| Output bin full sensor | SR1 | |
| The following items cannot be tested using the manual sensor test. | | |
| 5 V laser and 24 V interlock switches | SW1 and SW2 | See 5V laser and 24V interlock and logic switches (and power switch) on page 406. |
| Power switch | SW3 | |
| New ITB sensor | SR10 | See New ITB sensor on page 410. |
| Tray 3, 4, and 5 right door switch | SW1 (paper feeder) | See Tray 3, 4, and 5 right door switch on page 412. |

To perform these tests, do the following:

- Remove the appropriate tray.
- Test each switch or sensor individually.
- Watch the control panel for the corresponding sensor to change from green to clear or clear to green. It can take a few seconds to change.

**TIP:** The Toggled column indicates how many times a sensor changed state.

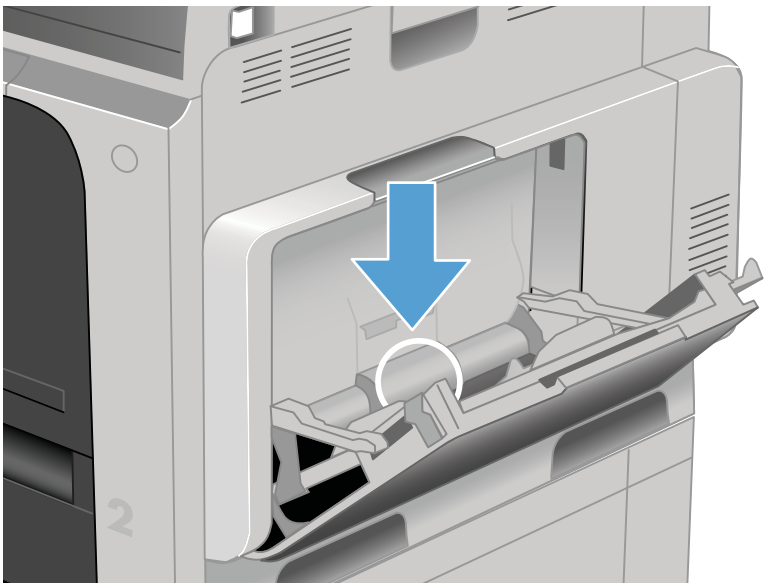
**Figure 3-23** Tray/Bin sensor test



### Tray 1 paper sensor

1. Open Tray 1.
2. Toggle the Tray 1 paper-present sensor flag.

**Figure 3-24** Test the Tray 1 paper sensor

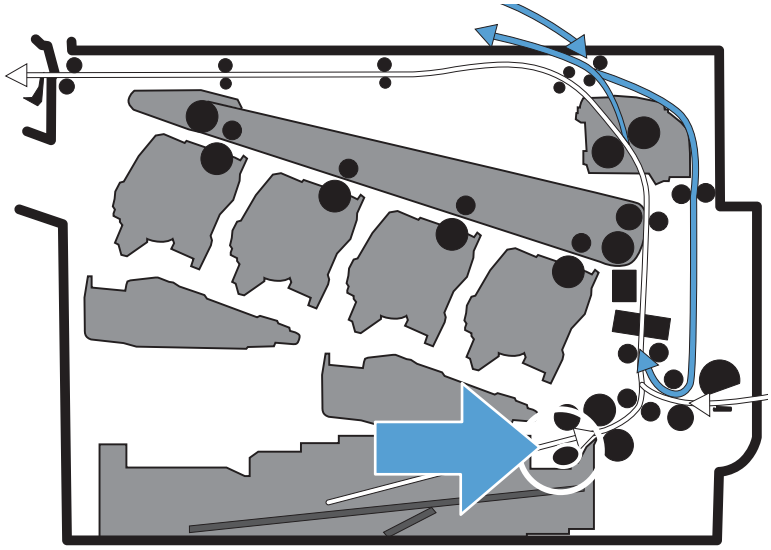


3. Check the control-panel display for sensor response.
4. If there is no response, replace the right door assembly. See Right-door assembly on page 145.

### Tray 2 paper sensor

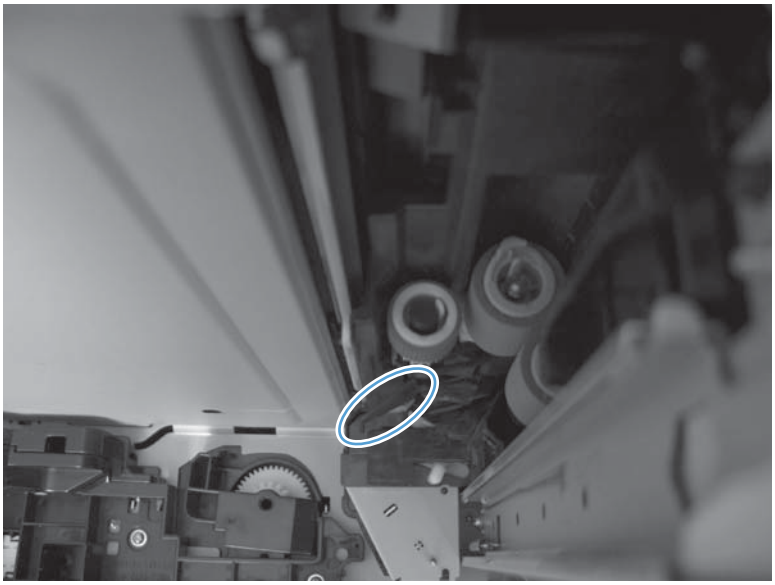
1. Remove Tray 2 and locate the sensor.

**Figure 3-25** Tray 2 paper sensor location



2. Toggle the Tray 2 paper-present sensor flag.

**Figure 3-26** Test the Tray 2 paper-present sensor



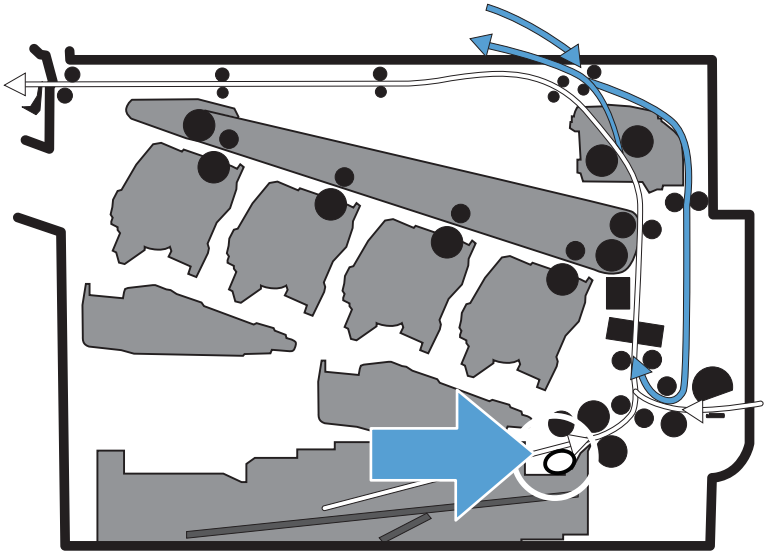
3. Check the control-panel display for sensor response.
4. If there is no response, replace the cassette-pickup assembly. See Tray-pickup assembly on page 268.

### Tray 2 paper surface 1 and 2 sensors

**NOTE:** Only paper surface sensor 2 can be tested.

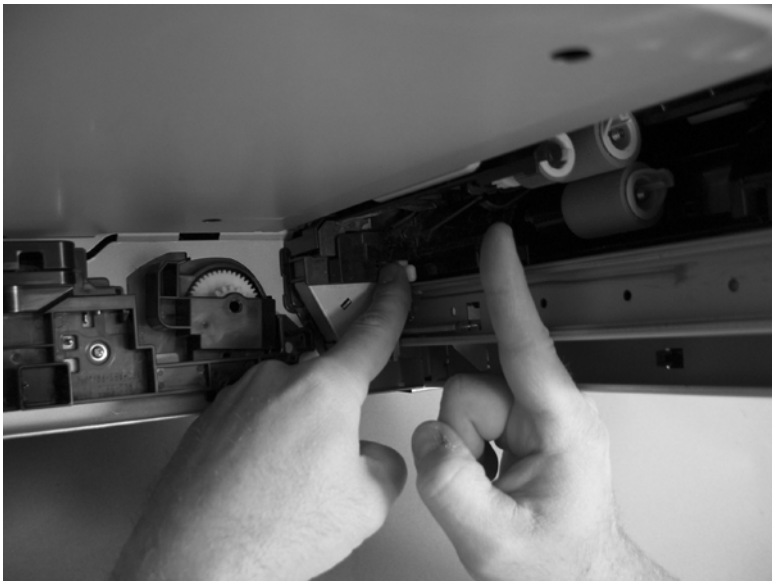
1. Remove the tray and locate the sensor flag.

   **Figure 3-27** Tray 2 paper surface 1 and 2 sensors location

2. In the tray cavity, press the tray-closed tab to release the flag, and then toggle the flag.

   **Figure 3-28** Tray 2 paper surface 1 and 2

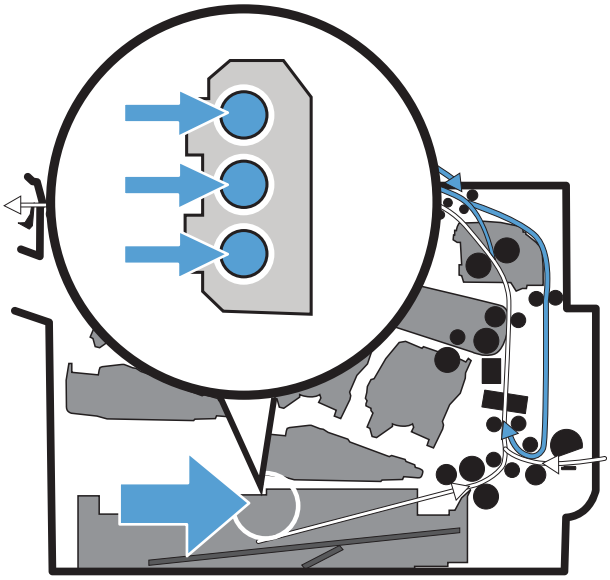
3. Check the control-panel display for sensor response.
4. If there is no response, replace the cassette-pickup assembly. See Tray-pickup assembly on page 268.

### Tray 2 paper size switches

**NOTE:** These three switches also detect cassette presence. If these switches fail, the message **Tray <X> open** could appear on the control-panel display.

1. Remove the tray. From inside the tray cavity, push any of the three switches.

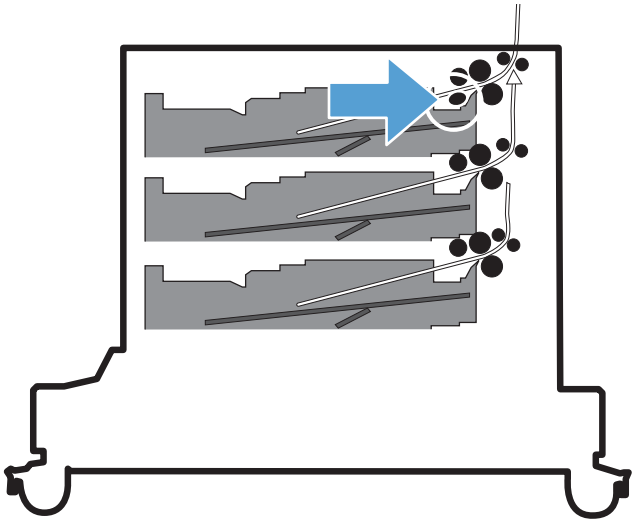
**Figure 3-29** Test the Tray 2 paper size switches



2. Check the control-panel display for sensor response.
3. If there is no response, replace the lifter base assembly. See Lifter base assembly on page 263.

### Tray 3 paper sensor

**Figure 3-30** Tray 3 paper sensor location

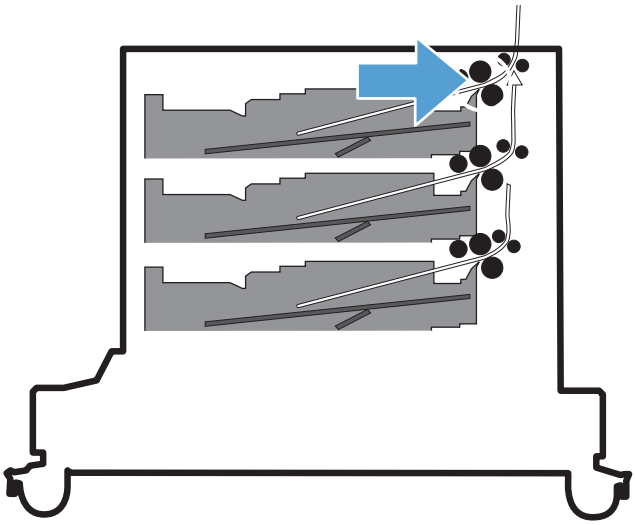


See Tray 2 paper sensor on page 396.

### Tray 3 feed sensor

1. Remove the tray and locate the sensor.

**Figure 3-31** Tray 3 feed sensor location



2. Insert a piece of paper between the rollers to activate the feed sensor.

**TIP:** Use stiff paper when performing this test (for example a business card or index card).

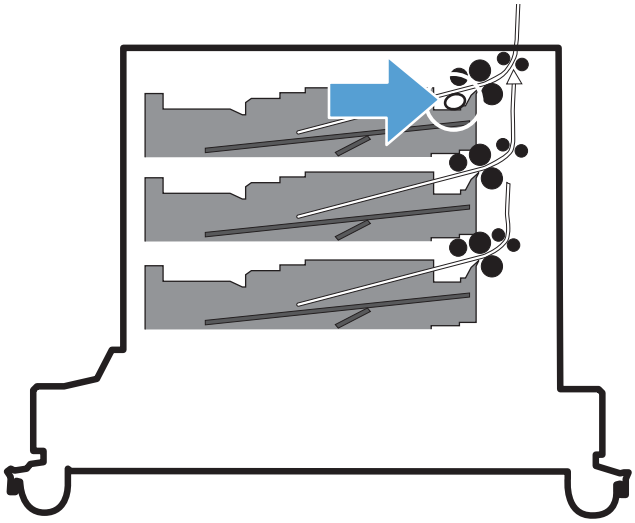
**Figure 3-32** Test the Tray 3 feed sensor



3. Check the control-panel display for sensor response.
4. If no response, replace the cassette-pickup assembly. See Tray-pickup assembly on page 268.

## Tray 3 paper surface 1 and 2 sensors

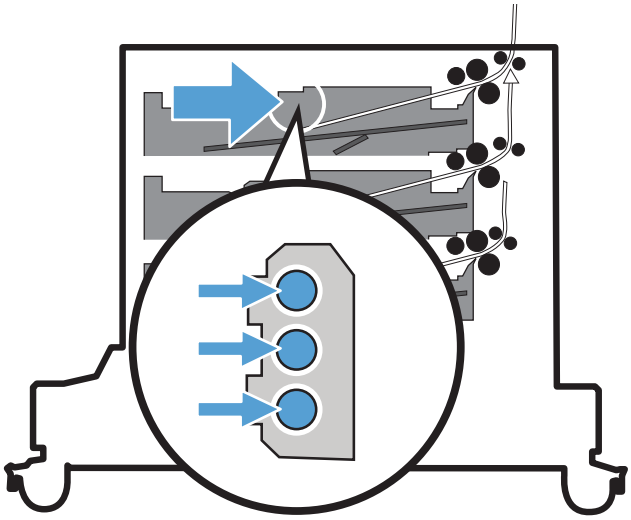
**Figure 3-33** Tray 3 paper surface 1 and 2 sensors location



See Tray 2 paper surface 1 and 2 sensors on page 397.

### Tray 3 paper size switches

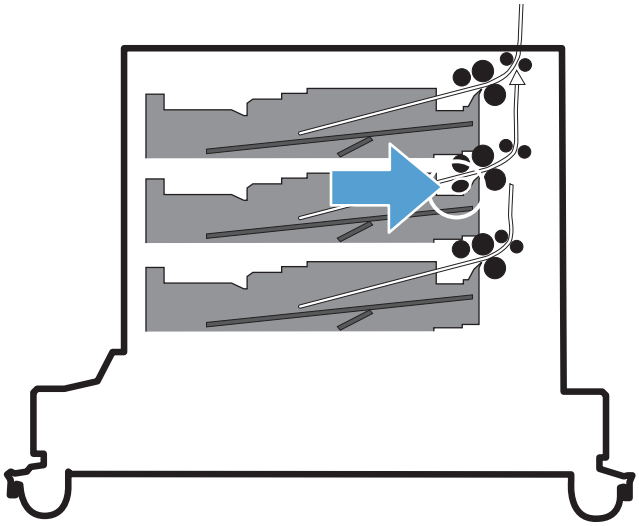
**Figure 3-34** Tray 3 paper size switches location



See Tray 2 paper size switches on page 398.

### Tray 4 paper sensor

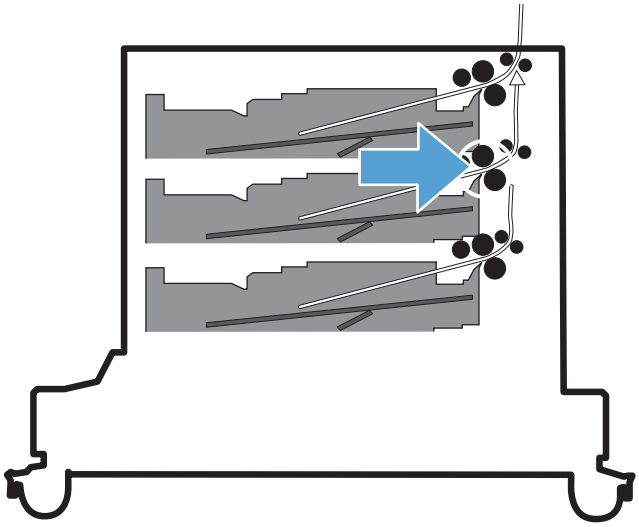
**Figure 3-35** Tray 4 paper sensor location



See Tray 2 paper sensor on page 396.

### Tray 4 feed sensor

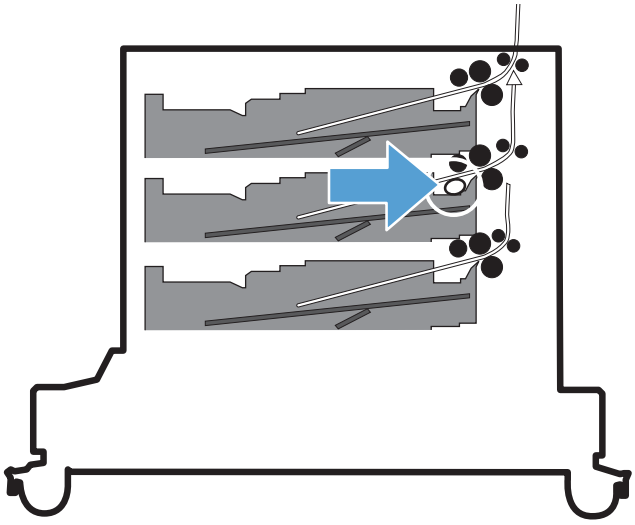
**Figure 3-36** Tray 4 feed sensor location



See Tray 3 feed sensor on page 399.

### Tray 4 paper surface 1 and 2 sensors

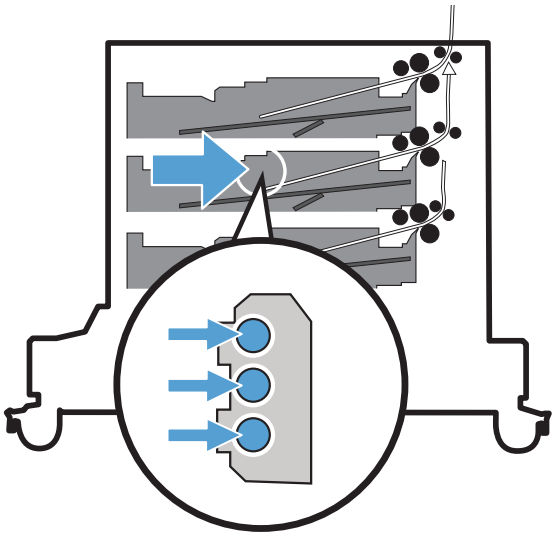
**Figure 3-37** Tray 4 paper surface 1 and 2 sensors location



See Tray 2 paper surface 1 and 2 sensors on page 397.

### Tray 4 paper size switches

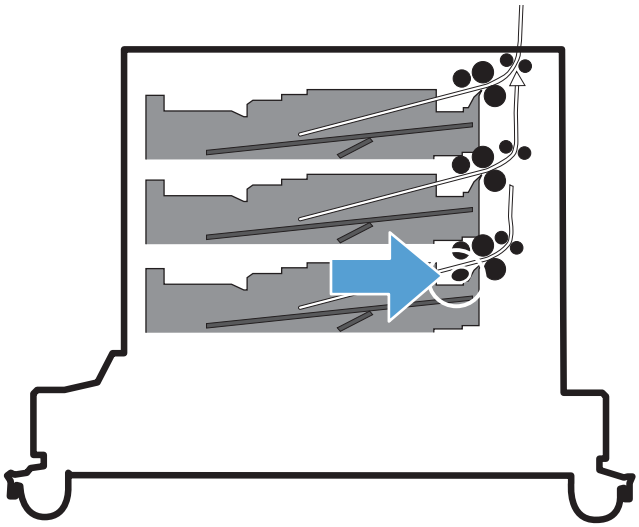
**Figure 3-38** Tray 4 paper size switches location



See Tray 2 paper size switches on page 398.

### Tray 5 paper sensor

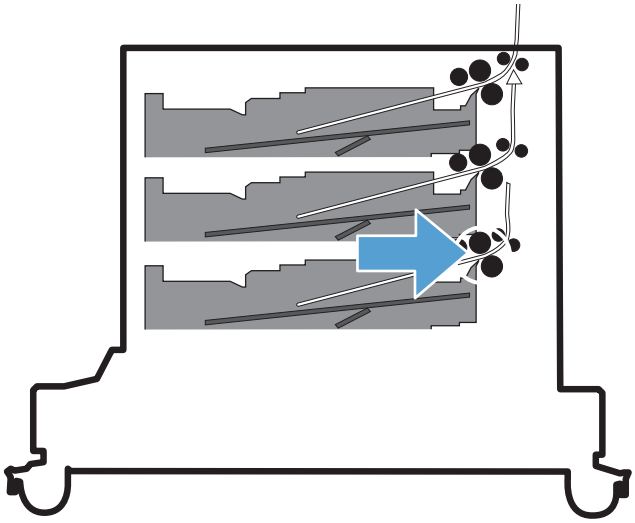
**Figure 3-39** Tray 5 paper sensor location



See Tray 2 paper sensor on page 396.

### Tray 5 feed sensor

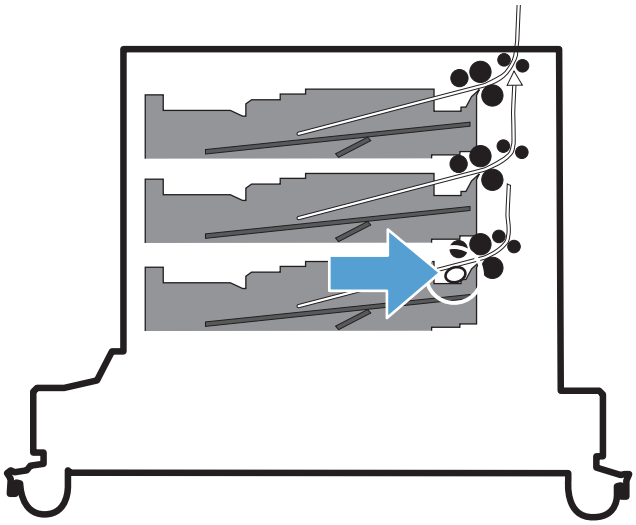
**Figure 3-40** Tray 5 feed sensor location



See Tray 3 feed sensor on page 399.

### Tray 5 paper surface 1 and 2 sensors

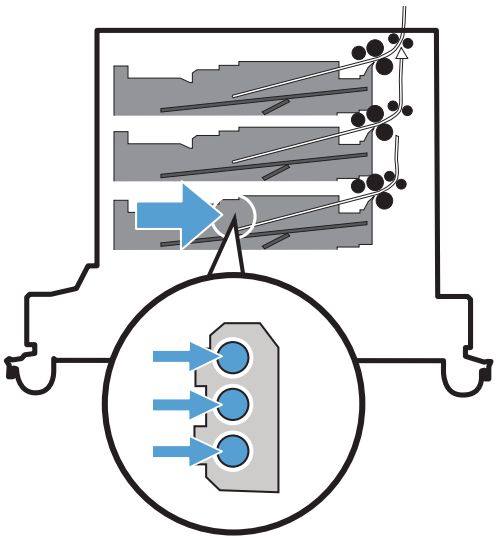
**Figure 3-41** Tray 5 paper surface 1 and 2 sensors location



See Tray 2 paper surface 1 and 2 sensors on page 397.

### Tray 5 paper size switches

**Figure 3-42** Tray 5 paper size switches location



See Tray 2 paper size switches on page 398.

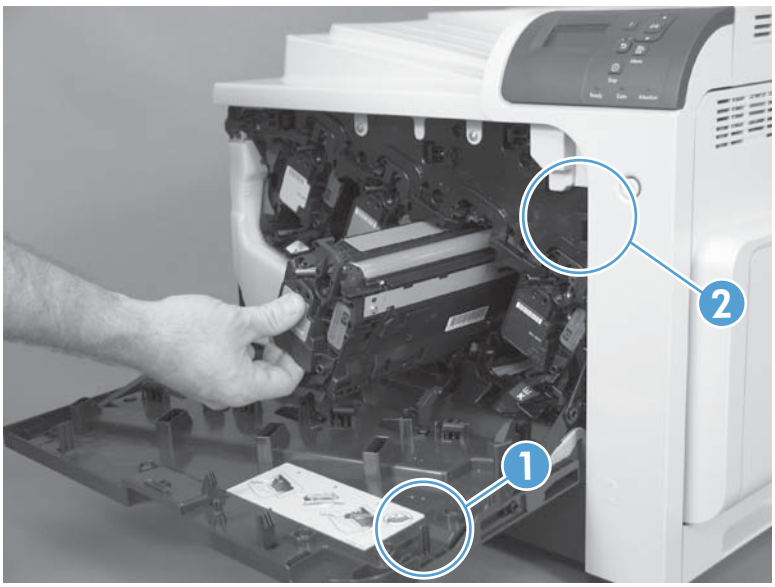
## 5V laser and 24V interlock and logic switches (and power switch)

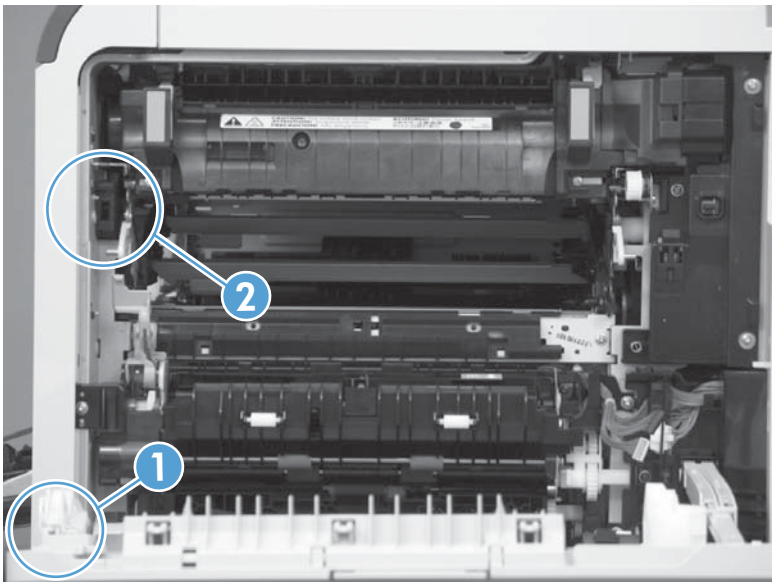
### Location and testing

**NOTE:** When a door is opened, the 5V interlock switch prevents the lasers from operating (no power). When a door is opened, the 24V interlock switch prevents the motors and high-voltage power supply from operating (no power).

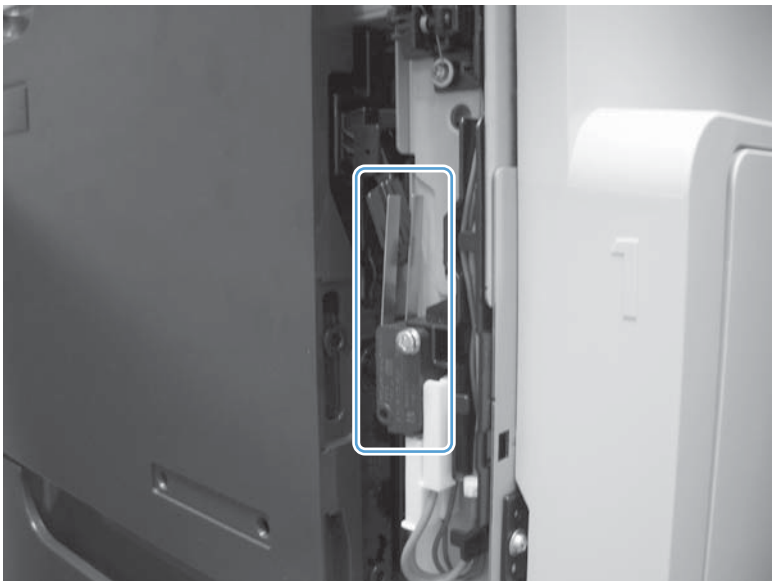
The front and right door each have a logic switch that indicates when a door is open.

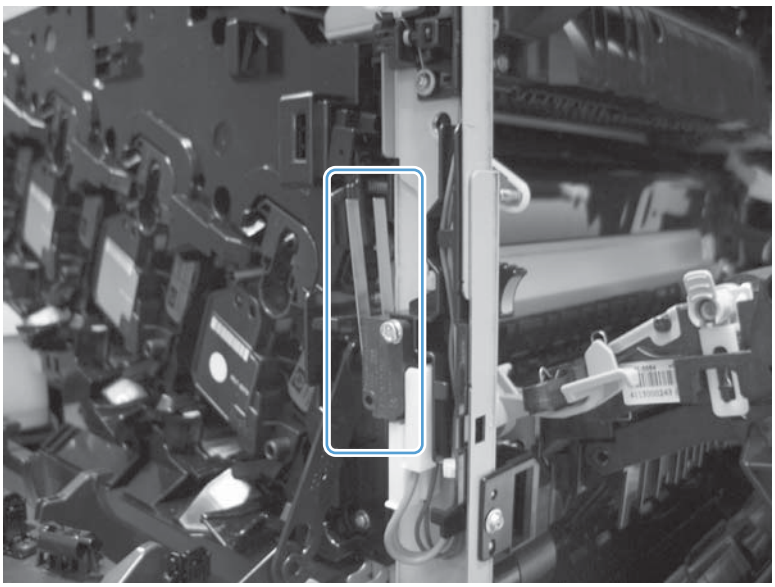
1. Press the power switch to turn the product off then on to test the switch function.
2. Remove the right-front cover. See Right-front cover on page 138.
3. Locate the link arms (callout 1) on the front and right doors (and access ports in the covers; callout 2) that actuate the front- and right-door interlock switchs (behind the right-front cover).



4. Open and close the doors to make sure that the interlock switches are correctly functioning. The following figures show the interlock switch positions with the front and right doors closed and open.





## Defeating

- Front-door interlock switch
  - Fold a stiff piece of paper, for example a business card or index card, into a 10 mm (.375 in) strip, and then wedge the strip into the opening at the front of the product.



- Front-door logic switch
    - Fold a stiff piece of paper, for example a business card or index card, into a 10 mm (.375 in) strip with a bend at the end, and insert the strip into the opening at the front of the product.

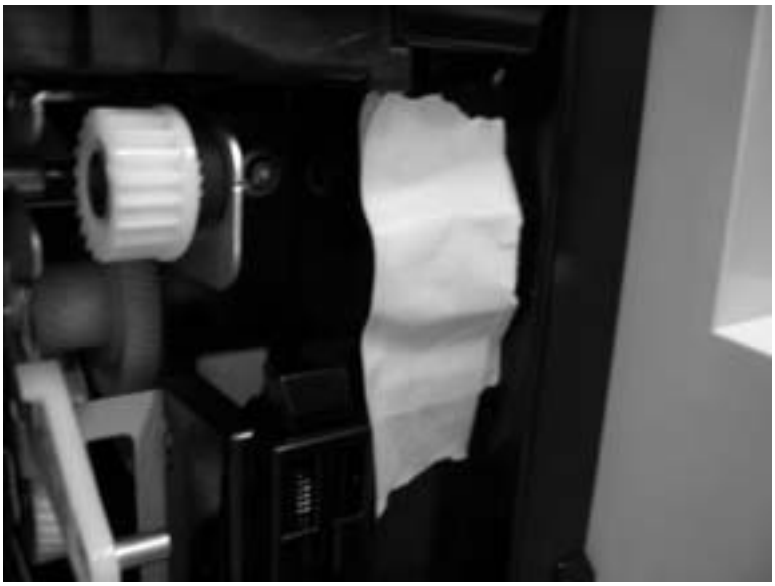


- Right-door interlock switch
    - Fold a stiff piece of paper, for example a business card or index card, into a 10 mm (.375 in) strip, and then insert the strip into the opening at the right of the product.



- Right-door logic switch
  - Use masking tape to keep the switch flag depressed.

**TIP:** You might have to use two pieces of tape to overcome the tension return spring on the flag.

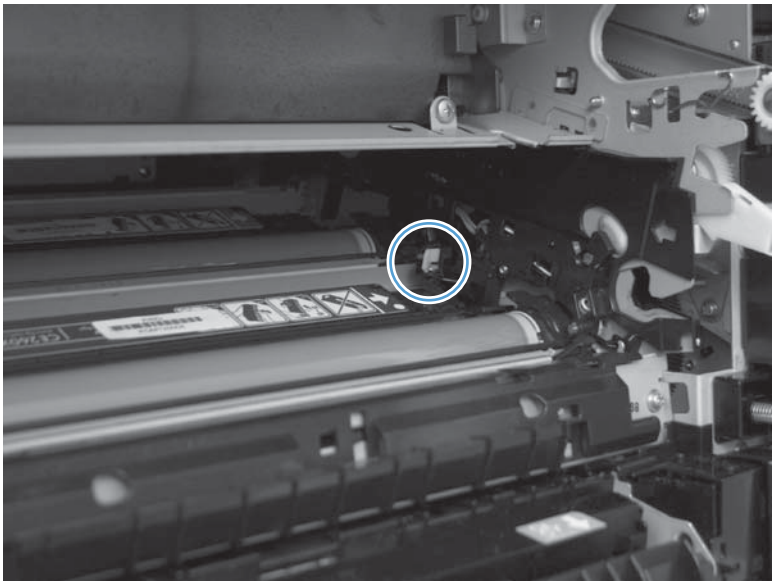


### New ITB sensor

**NOTE:** This sensor cannot be tested, but you can inspect the sensor, actuator, and the flag on the ITB for damage.

1. Remove the existing ITB.
2. Inspect the new ITB sensor. Press the actuator on the sensor toward the black print cartridge to verify that the actuator moves.

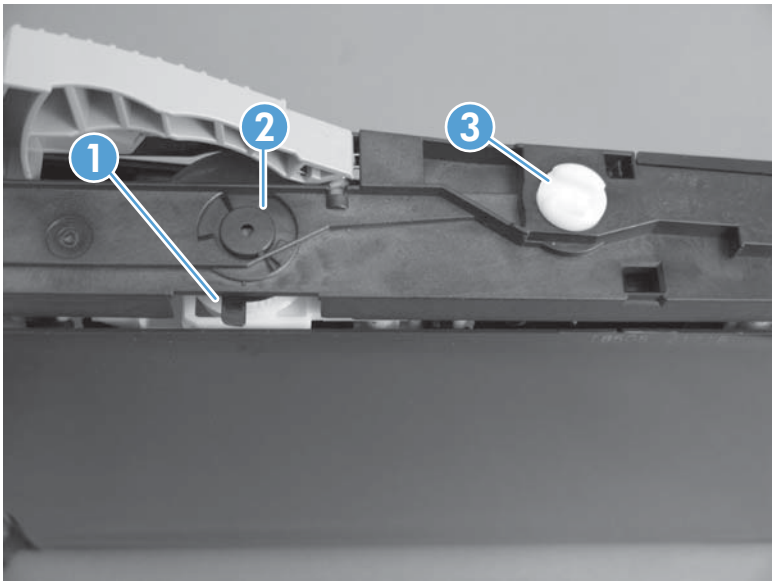
**Figure 3-43** Test the new ITB sensor



3. On the new ITB, locate and inspect the new ITB flag (callout 1).

**TIP:** The new ITB flag is only present prior to installation. To see the flag on a previously installed ITB, insert the end of a paperclip in the hole just below the handle (callout 2) and then rotate the ITB alienation gear (callout 3).

**Figure 3-44** Test the new ITB sensor



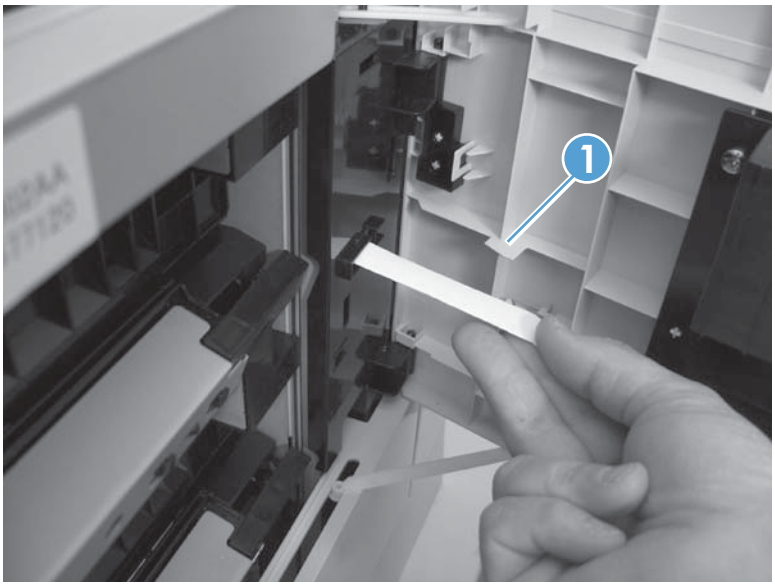
### Tray 3, 4, and 5 right door switch

**NOTE:** There is no manual sensor test for this sensor.

1. Open the paper feeder right door. Check the control-panel display for the **Close lower right door** message. If the message does not display, open the door and inspect the flag for damage (callout 1).
2. Insert a piece of paper to activate the sensor. If there is no response, replace the switch.

**NOTE:** Make sure that the door flag (callout 1) is not damaged or missing.

**Figure 3-45** Test the right door switch



## 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. From the Home screen, scroll to and touch the Administration button.
2. Touch the Troubleshooting button, and then touch the Diagnostic Tests button.
3. Touch the Paper Path Sensors button.
4. Touch the Start Test button and observe the sensors change state as the test page prints.

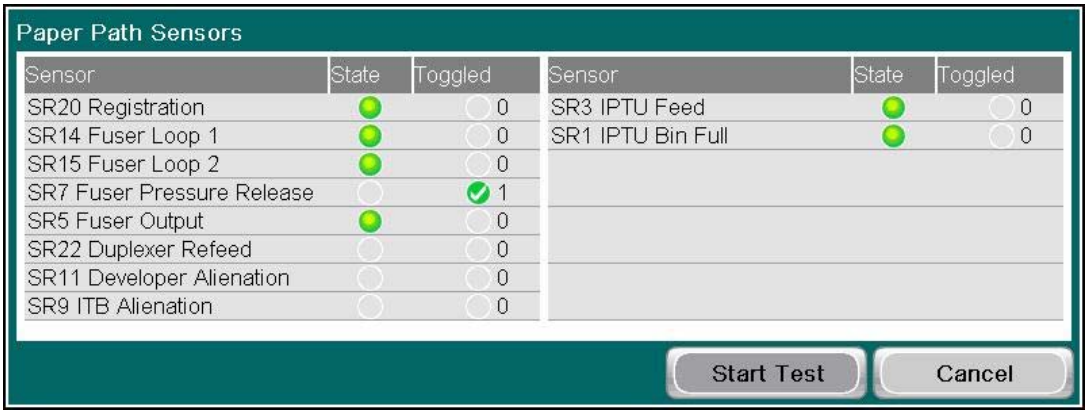
**Table 3-5 Paper-path sensors diagnostic tests**

| Sensor name | Sensor number |
|---|---|
| Registration sensor | SR20 |
| Fuser loop 1 sensor | SR14 |
| Fuser loop 2 sensor | SR15 |
| Fuser pressure release sensor | SR7 |
| Fuser output sensor | SR5 |
| Duplexer refeed sensor | SR22 |
| Developer alienation | SR11 |
| ITB alienation sensor | SR9 |
| IPTU feed sensor | SR27 |
| IPTU bin full sensor | SR26 |

**NOTE:** The IPTU bin full sensor is only active if the stapler/stacker is removed.

When performing these tests, watch the control panel for the corresponding sensor to change from green to clear or clear to green. It can take a few seconds to change.

**Figure 3-46** Paper path sensors



## 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.

1. From the Home screen, scroll to and touch the Administration button.
2. Touch the Troubleshooting button.
3. Touch the Diagnostic Tests button.
4. Scroll to and touch the Print/Stop Test button.
5. Enter a range, and then touch the OK button.

- After the print job is completed press OK button to return to the Troubleshooting menu before the timer times out.
- After the timer times out, touch the Stop button. Activate the door switch to restart the engine and return it to a normal state.

**NOTE:** Do not try to perform a print/stop test while the product is calibrating, because you be required to power-cycle the product. If a jam message displays on the control panel during testing, activate the door switch.

## Scanner tests

This test activates individual document feeder and scanner parts independently to isolate problems.

### Scanner tests

1. From the Home screen, scroll to and touch the Administration button.
2. Touch the Troubleshooting button, and then touch the Diagnostic Tests button.
3. Touch the Scanner Tests button.
4. Select the document feeder or scanner component test option you want to run, and then touch the OK button.
5. Press the Stop button to stop the test.

| Component | Actions |
|---|---|
| Document feeder LED indicator | This test turns the green input tray (on the document feeder) on and off. If the test fails, replace the document feeder. See Document feeder on page 151. If the problem continues, replace the SCB. See S-PBA-SCB (SCB) on page 179. |

| Component | Actions |
|---|---|
| Document feeder input motor | This test runs the motor in either the forward or reverse direction. If you do not hear noise when the motor is activated, replace the document feeder. See Document feeder on page 151. If the problem continues, replace the SCB. See S-PBA-SCB (SCB) on page 179. |
| Document feeder read motor | This test runs the motor in either the forward or reverse direction. If you do not hear noise when the motor is activated, replace the document feeder. See Document feeder on page 151. If the problem continues, replace the SCB. See S-PBA-SCB (SCB) on page 179. |
| Lower lamp | This test turns the lamp, inverter fan, and the scanner fan. If the flatbed lamp and fans fail to turn on, replace the scanner. See Scanner assembly on page 171. If the problem continues, replace the SCB. See S-PBA-SCB (SCB) on page 179. |
| Flatbed Motor | This test moves the optics to the right, and then back to the home position. If the scanner optics fail to move, replace the scanner. See Scanner assembly on page 171. If the problem continues, replace the SCB. See S-PBA-SCB (SCB) on page 179. |

## Scanner sensor tests

1. From the Home screen, scroll to and touch the Administration button.
2. Touch the Troubleshooting button, and then touch the Diagnostic Tests button.
3. Touch the Scanner Tests button.
4. Touch the Sensors button, and then touch the OK button.
5. Select from the list of sensors.

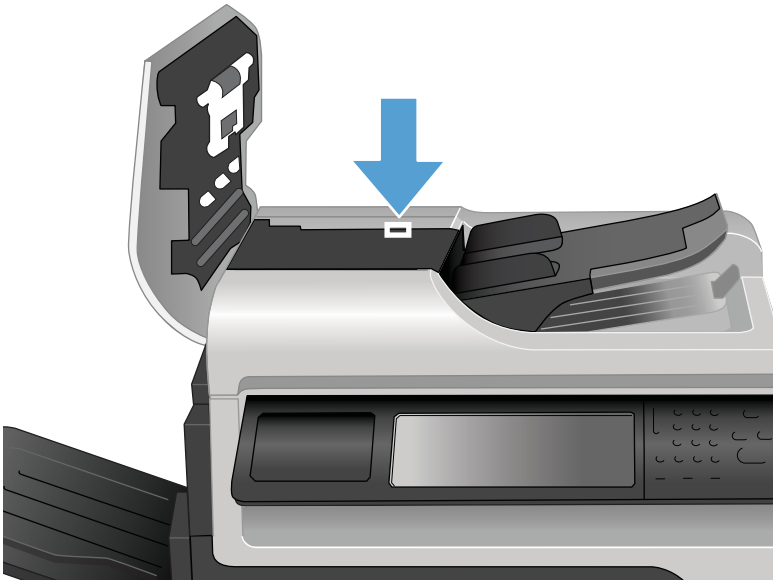
| Sensor or switch name | Sensor or switch test |
|---|---|
| Document feeder paper present sensor | SeeDocument feeder paper present sensor on page 416. |
| Document feeder Y (length) sensor | See Document feeder Y (length) sensor on page 416. |
| Document feeder jam cover sensor | See Document feeder jam cover sensor on page 417. |
| Flatbed Y (length) sensor | See Flatbed Y (length) sensor on page 418. |
| Flatbed cover angle sensor | See Flatbed cover angle sensor on page 419. |
| Flatbed cover sensor | See Flatbed cover sensor on page 420. |

### Document feeder paper present sensor

1. Open the jam-access cover and locate the document feeder paper present sensor.

**TIP:** To help locate the sensor, find the black paper present flag on the rear of the cover.

**Figure 3-47** Document feeder paper present sensor test

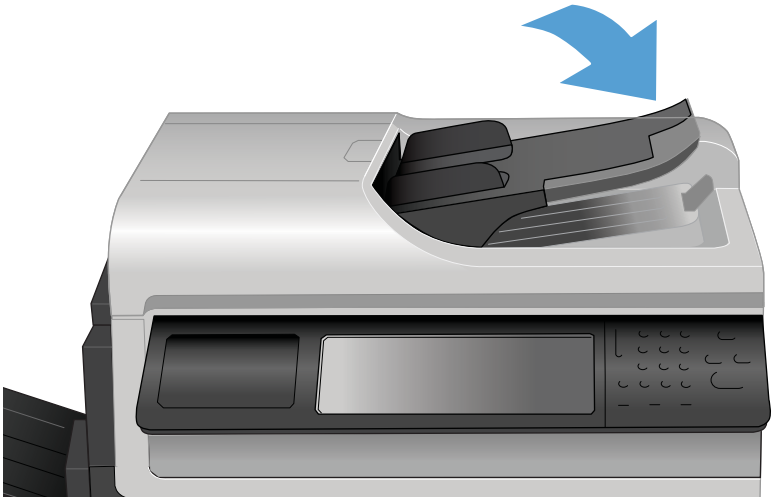


2. Use a folded piece of paper to toggle the sensor and watch the control-panel display for a response. If the test fails, replace the document feeder. See Document feeder on page 151.

### Document feeder Y (length) sensor

1. Locate the sensor on the input tray.

2. Place a finger over the sensor, and then watch the control-panel display for a response. If the test fails, replace the document feeder. See Document feeder on page 151.

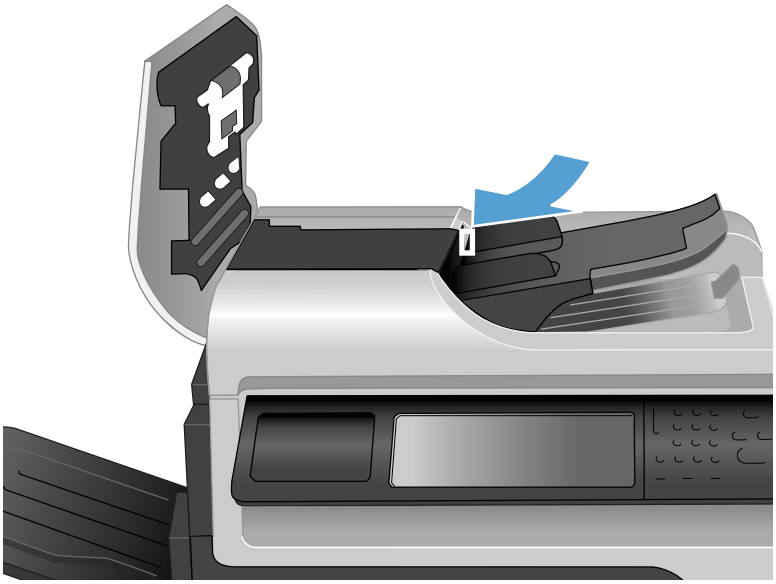


### Document feeder jam cover sensor

1. Open the jam-access cover and locate the sensor.

**TIP:** To help locate the sensor, find the white sensor flag on the top of the cover.

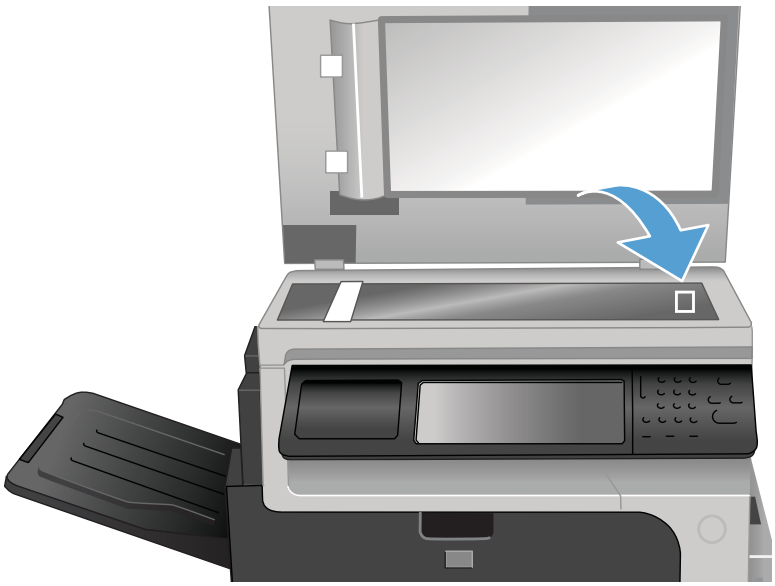
**Figure 3-48** Document feeder jam cover sensor test



2. Use a folded piece of paper to actuate the sensor.
3. Check the control-panel display for sensor response. If the test fails, replace the document feeder. See Document feeder on page 151.

### Flatbed Y (length) sensor

1. Lift the scanner and locate the sensor.



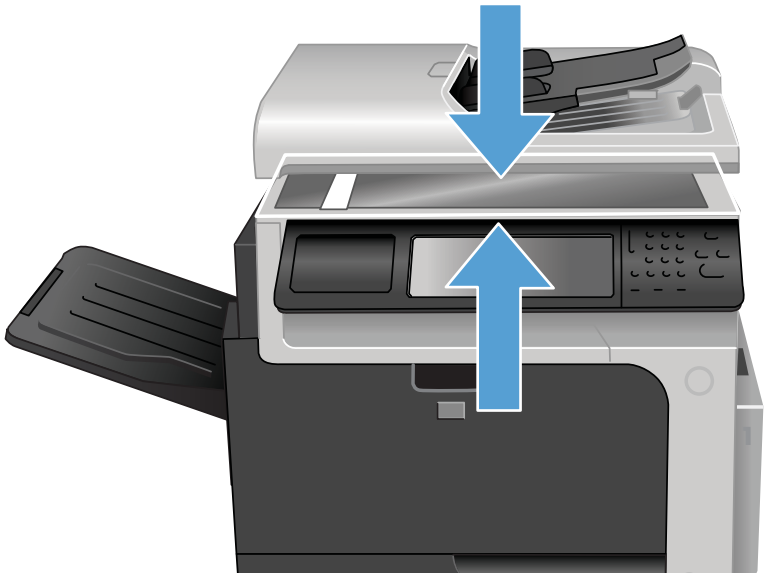
2. Block the sensor by placing a piece of paper on the glass and watch the control-panel display for a response.
3. Check the control-panel display for sensor response. If the test fails, replace the scanner. See Scanner assembly on page 171.

### Flatbed cover angle sensor

1. Lift the scanner and locate the sensor.

**NOTE:** The flatbed cover angle and the flatbed cover open sensors use the same sensor assembly.

The sensor changes state when the scanner is raised approximately 50 mm (2 in).



2. Actuate the sensor by closing and then slowly opening the scanner.
3. Check the control-panel display for sensor response. If the test fails, replace the document feeder. See Document feeder on page 151.

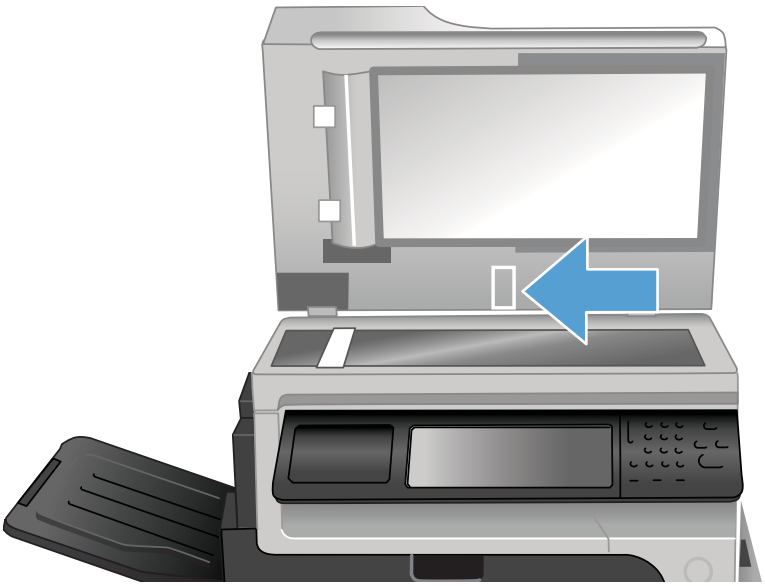
### Flatbed cover sensor

1. Open the scanner and locate the sensor.

**NOTE:** The flatbed cover angle and the flatbed cover open sensors use the same sensor assembly.

The sensor changes state when the scanner is raised approximately 150 mm (6 in).

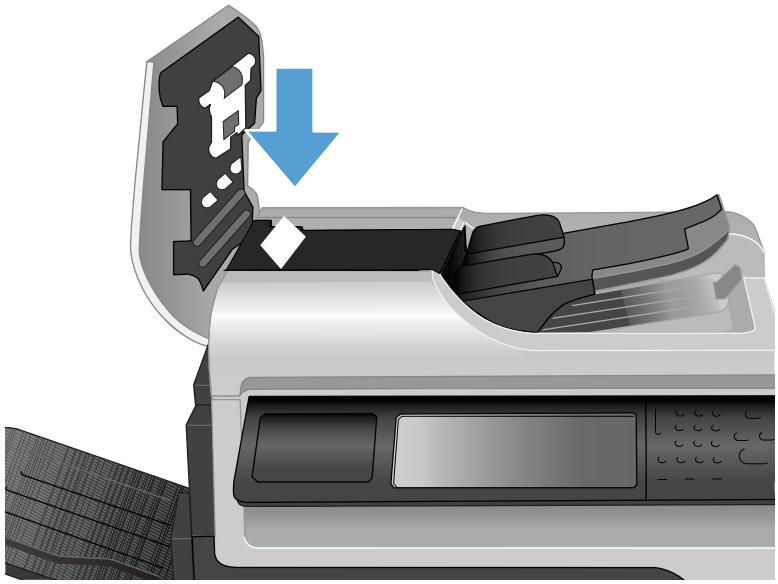
**Figure 3-49** Flatbed cover sensor test



2. Actuate the sensor and watch the control-panel display for a response.
3. Check the control-panel display for sensor response. If the test fails, replace the document feeder. See Document feeder on page 151.

### Document feeder registration sensor

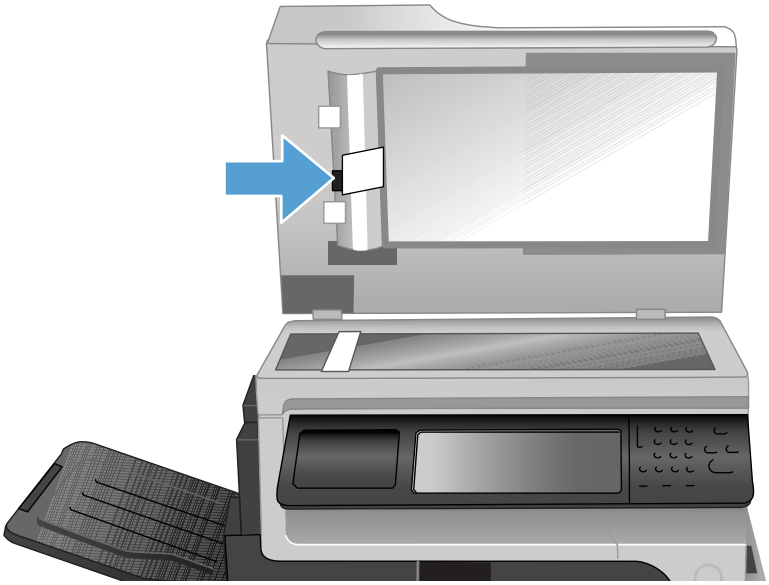
1. Lift the document feeder and locate the sensor.



2. Actuate the sensor by inserting a stiff piece of paper, like a business card, into the paper path.
3. Check the control-panel display for sensor response.

### Document feeder exit sensor

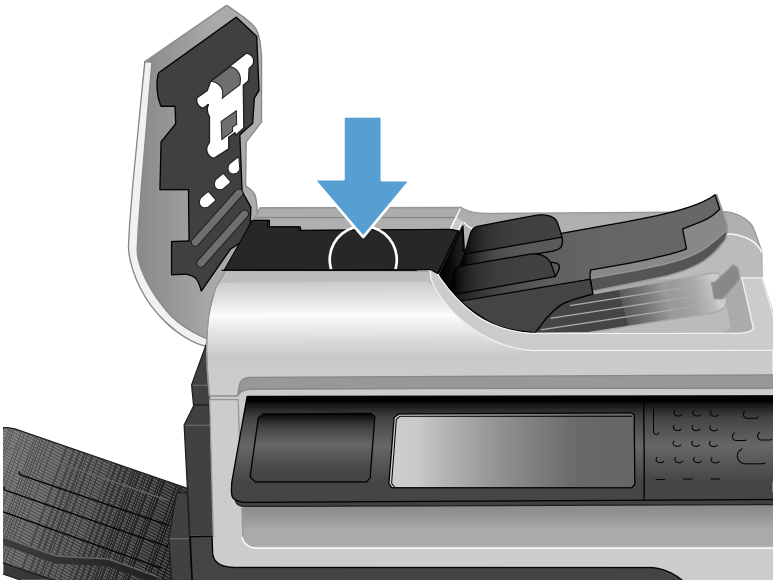
1. Lift the document feeder and locate the sensor.



2. Actuate the sensor by inserting a stiff piece of paper, like a business card, into the paper path.
3. Check the control-panel display for sensor response.

### Document feeder read sensor

1. Lift the document feeder and locate the sensor.



2. Actuate the sensor by inserting a stiff piece of paper, like a business card, into the paper path.
3. Check the control-panel display for sensor response.

## Component tests

### Control-panel tests

Open the following menus:

- Administration
- Troubleshooting
- Diagnostic Tests

### Available control-panel tests

- LEDs: test the LEDs on the control panel.
- Display: sequence through display tests.
- Buttons: tests the key pad and other buttons.
- Touchscreen: tests the control-panel touchscreen.

For more control-panel diagnostics, see Control-panel checks on page 372.

### 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 select Continuous from the drop-down menu as the repeat option, 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. From the Home screen, scroll to and touch the Administration button.
2. Touch the Troubleshooting button, and then touch the Diagnostic Tests button.
3. Touch the Component Test button.
4. Select the component you want to test, and then touch the OK button.

**Table 3-6 Component test details**

| Component test | Motor or solenoid number | Comments |
|---|---|---|
| Transfer Motors | M1<br>M3<br>M4<br>M5<br>M6 | Activates four drum motors and the ITB motor (M1). |
| Belt Only | M1 | Activates the ITB motor. |
| Cartridge Motors | M3: yellow<br>M4: magenta<br>M5: cyan<br>M6: black | Activates each drum motor sequentially (K, C, M, Y). |
| 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 fuser. |
| 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<br>SL1 | Activates the fuser motor and primary transfer solenoid to cycle through the ITB alienation stages. |
| TCU Motor | M12 | Activates the motor at a specified speed for 10 seconds. |

**Table 3-6 Component test details (continued)**

| Component test | Motor or solenoid number | Comments |
|---|---|---|
| Tray <X> Pickup Motor | Tray 2: M13<br>Tray 3: M2<br>Tray 4: M2<br>Tray 5: M2 | Tray 2: Activates the pickup motor in reverse for 10 seconds.<br>Trays 3-5: Activates the motor in the paper-feeder assembly and drives the separation roller for each tray in reverse. |
| Tray <X> Pickup Solenoid | Tray 1: SL3<br>Tray 2: SL4<br>Tray 3: SL1<br>Tray 4: SL2<br>Tray 5: SL3 | Activates the solenoid for 10 seconds. |
| Duplexer Pickup Motor | M11: Duplex reverse motor | Activates the motor 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. |
| Repeat | | Allows you to specify whether or not the product repeats the test sequences. |

## Stapler/stacker

There are no component or sensor tests for the stapler/stacker. The stapler/stacker initializes when the product power is turned on.

Stapler/stacker initialization:

- The jogger moves out toward the front of the stapler/stacker, and then moves back.
- The bin-3 flapper raises up, and then down.

The product power must be turned off before the stapler/stacker is removed or installed. If the stapler/stacker is removed when the product power is on, the following messages appear on the control-panel display.

Stapler/stacker error messages:

- **65.80.A1 Output accessory disconnected**

  This error message appears if the stapler/stacker is removed while the product power is on and the product is at the Ready state. Turn the power off, reinstall the stapler/stacker, and then turn the power on again.

- **49.21.49 The device has a detection problem. Turn off the device...**

  This error message appears if the stapler/stacker is removed while the product power is on and the product in the Sleep state. Turn the power off, reinstall the stapler/stacker, and then turn the power on again.

- **Staple Cartridge very low**

  This error message appears if the staple cartridge in the stapler/stacker is very low on staples. This error message also displays if the top cover of the stapler/staker is closed and a staple cartridge is not installed. If a staple cartridge is not installed, printed pages are delived to the output bin without being stapled.

If the stapler/stacker is defective, the product configure the product to operate without it until a replacement is obtained.

1. Turn the power off.
2. Remove the defective stapler/stacker.
3. Install the output bezel and output bin.



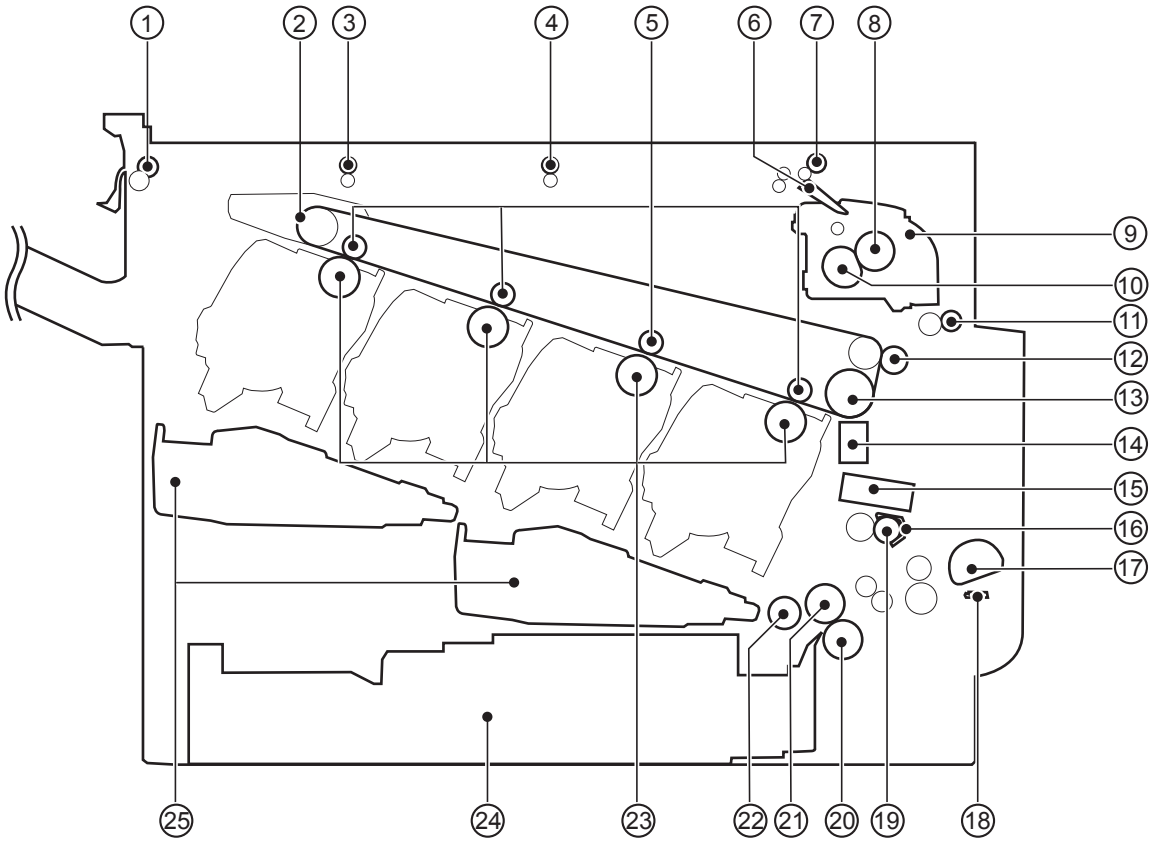
**NOTE:** The output bin full sensor is only activated when the product power is on and the stapler/stacker is not installed. You must install the output bezel. The output bin full sensor flag is part of the bezel.

4. Turn the power on.

# Diagrams

## Block diagrams

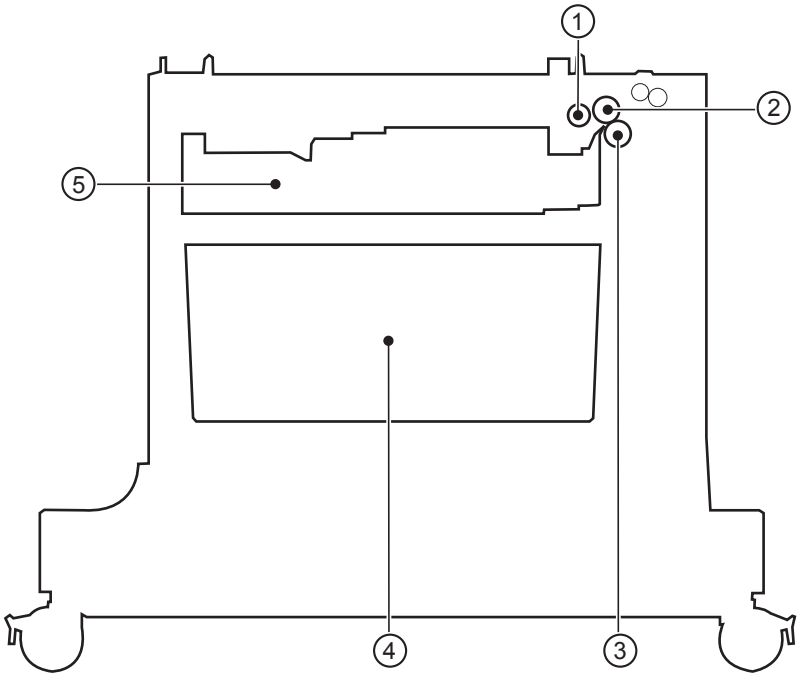
**Figure 3-50** Product cross section




| Item | Description | Item | Description |
|---|---|---|---|
| 1 | ITB delivery roller | 14 | RD sensor |
| 2 | ITB | 15 | Media sensor |
| 3 | IPTU feed roller 2 | 16 | Registration shutter |
| 4 | IPTUB feed roller 1 | 17 | MP tray pickup roller |
| 5 | Primary transfer roller | 18 | MP tray separation pad |
| 6 | Duplex flapper | 19 | Registration roller |
| 7 | Duplex reverse roller | 20 | Cassette separation roller |
| 8 | Pressure roller | 21 | Cassette feed roller |
| 9 | Fuser | 22 | Cassette pickup roller |
| 10 | Fuser sleeve | 23 | Photosensitive drum |
| 11 | Duplex feed roller | 24 | Cassette |

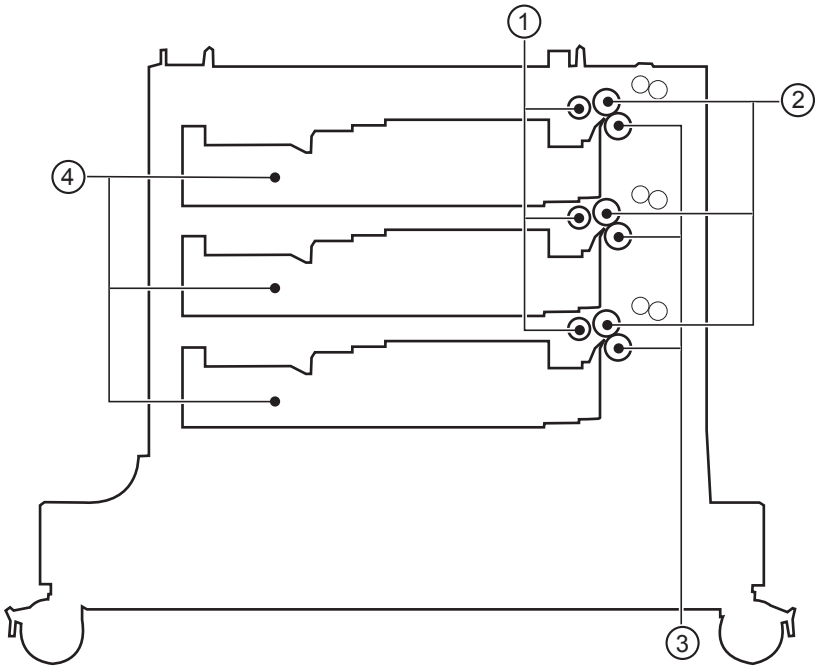
| Item | Description | Item | Description |
|---|---|---|---|
| 12 | Secondary transfer roller | 25 | Laser/scanner assembly |
| 13 | ITB drive roller | | |

**Figure 3-51** Optional paper feeder (1 x 500-sheet)



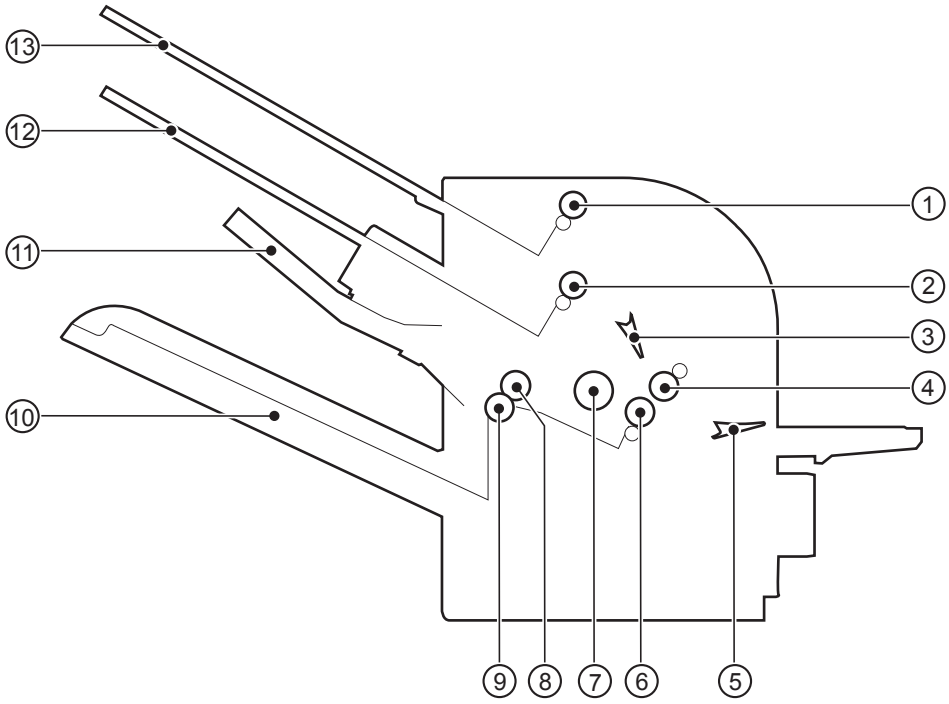

| Item | Description |
|---|---|
| 1 | Pickup roller |
| 2 | Feed roller |
| 3 | Separation roller |
| 4 | Storage space |
| 5 | Cassette |

**Figure 3-52** Optional paper feeder (3 x 500-sheet)



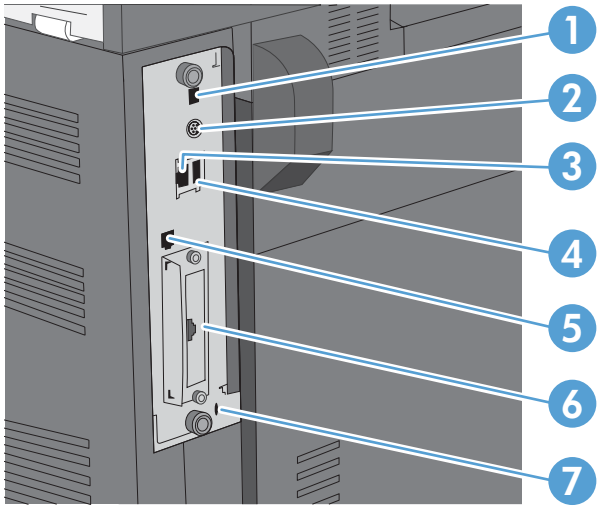

| Item | Description |
|---|---|
| 1 | Pickup roller |
| 2 | Feed roller |
| 3 | Separation roller |
| 4 | Cassette |

**Figure 3-53** Stapler/stacker




| Item | Description |
|---|---|
| 1 | Output bin 1 delivery roller |
| 2 | Output bin 2 delivery roller |
| 3 | Output bin flapper |
| 4 | Stapler/stacker feed roller 1 |
| 5 | Inlet flapper |
| 6 | Stapler/stacker feed roller 2 |
| 7 | Alignment roller |
| 8 | Output bin 3 upper delivery roller |
| 9 | Output bin 3 lower delivery roller |
| 10 | Output bin 3 |
| 11 | Jogger guide |
| 12 | Output bin 2 |
| 13 | Output bin 1 |

## Plug/jack locations




| | |
|---|---|
| 1 | Hi-speed USB 2.0 printing port |
| 2 | Foreign interface harness for connecting third-party devices |
| 3 | Local area network (LAN) Ethernet (RJ-45) network port |
| 4 | USB port for connecting external USB devices |
| 5 | Fax port (RJ-11) |
| 6 | EIO interface expansion slot |
| 7 | Slot for a cable-type security lock |

**Figure 3-54** Formatter PCA

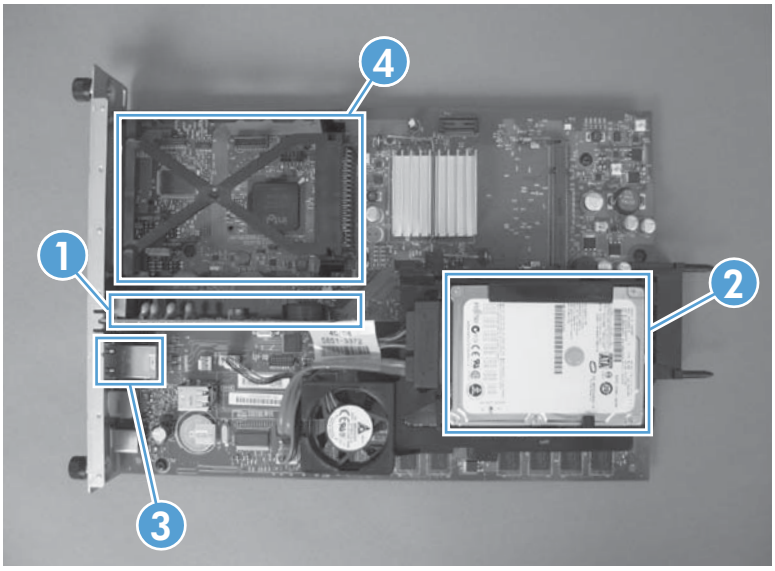



**Table 3-7 Formatter PCA**

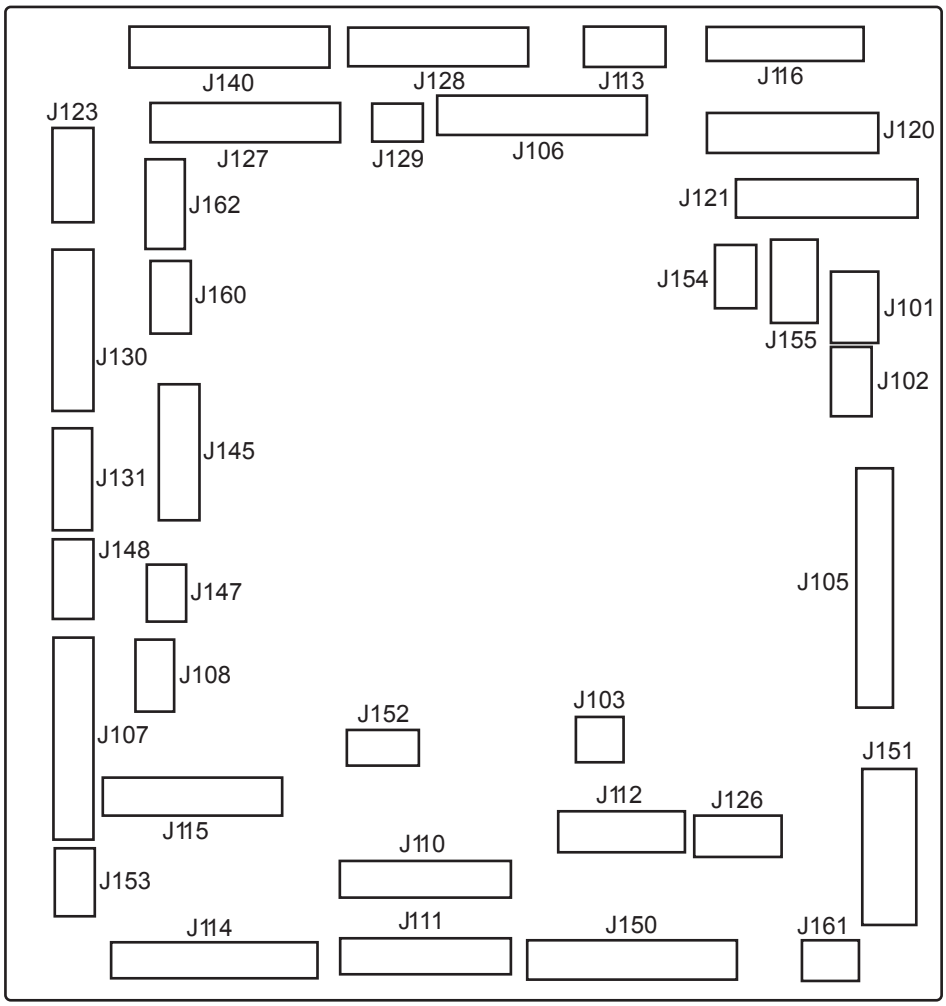
| Item | Description |
|---|---|
| 1 | Fax card |
| 2 | Internal hard drive |
| 3 | USB ports |
| 4 | EIO slot |

# Location of connectors

## DC controller connector locations

**NOTE:** The DC controller has 34 connectors: Six are for FFCs, 26 are for wire harnesses, and two are not used.

**Figure 3-55** DC controller connector locations




| | | |
|---|---|---|
| **J101**: not used | **J115**: SL4, SL23, SL24, SL25, and HVPS lower | **J145**: top of page (TOP) sensor (SR20)<br><br>Top of page (TOP) sensor (SR20), duplex re-pickup sensor (SR22), and duplex re-pickup clutch (CL1) |
| **J102**: not used | **J116**: HVPS upper (FFC) | **J147**: right-door switch (SW6) |
| **J103**: laser scanner temperature sensor (TH4) | **J120**: yellow drum motor (M3) and magenta drum motor (M4) | **J148**: MP-tray-media-presence sensor (SR8) and MP-tray pickup solenoid (SL3) |
| **J105**: interconnect board (ICB) (FFC) | **J121**: cyan drum motor (M5) and black drum position (M6) | **J150**: LVPS |
| **J106**: IPTU | **J123**: fuser motor (M2) | **J151**: LVPS |

| | | |
|---|---|---|
| **J107**: Tray 3, 4, and 5 lifter motors (M7), and cassette paper size switch (SW4) | **J126**: memory tag connector | **J152**: 5V interlock switch (SW1) |
| **J108**: environmental sensor | **J127**: pre-exposure LEDs (rear), fuser delivery sensor (SR5), New ITB sensor (SR10) | **J153**: power supply fan (FM1) |
| **J110**: YM laser (FFC) | **J128**: Delivery tray media full sensor (SR6), Fuser pressure release sensor (SR7), and pre-exposure LEDs (front) (SR9) | **J154**: image scanner power supply unit (PSU) |
| **J111**: CK laser (FFC) | **J129**: front-door switch (SW5) | **J155**: Residual toner-feed motor (M12) and delivery fan (FM3) |
| **J112**: cyan/black scanner motor (M8), yellow/magenta scanner motor (M9), and developing disengagement sensor (SR11) | **J130**: registration density (RD) sensors (front and rear) | **J160**: fuser |
| **J113**: 24 v to high-voltage power supply (HVPS) upper (FFC) | **J131**: media sensors | **J161**: LVPS |
| **J114**: HVPS lower (FFC) | **J140**: ITB motor (M1), yellow drum home-position sensor (SR1), magenta drum home-position sensor (SR2), cyan drum home-position sensor (SR3), black drum home-position sensor (SR4), and primary transfer roller disengagement solenoid (SL1) | **J162**: fuser |

## Controller PCA (1 x 500-sheet and 3 x 500-sheet optional paper feeders)

**Figure 3-56** Controller PCA connectors

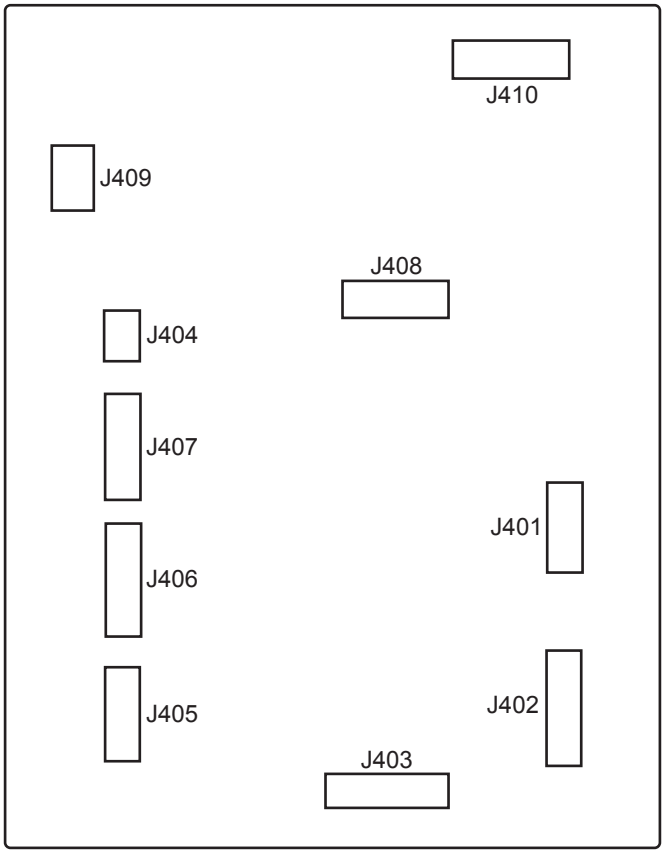


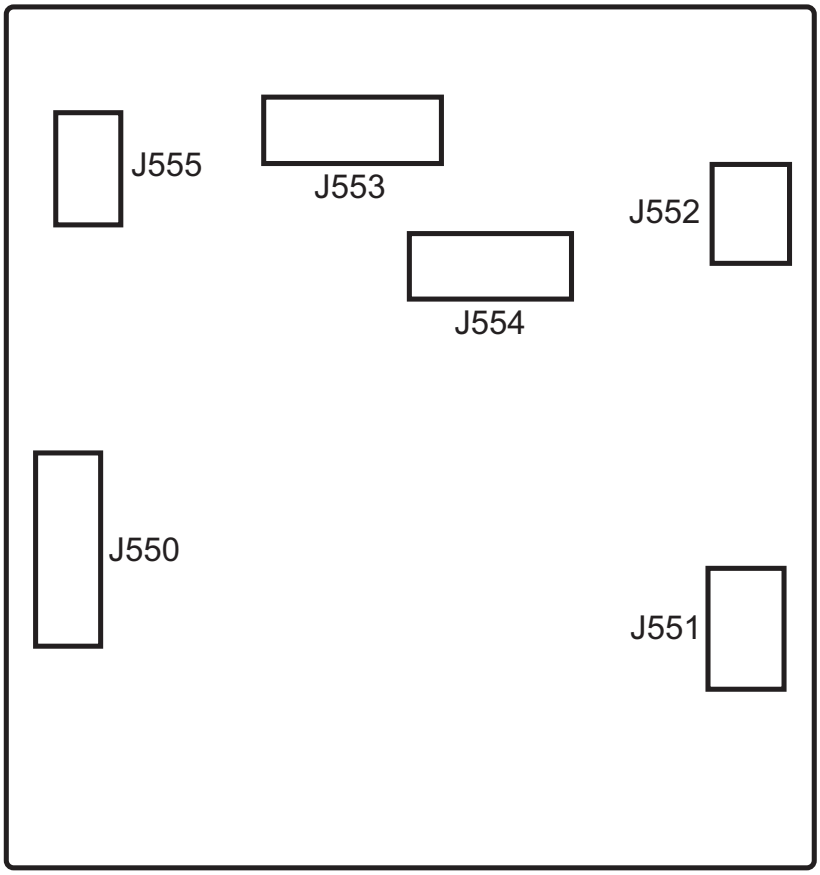

**Table 3-9 Controller PCA connectors**

| |
|---|
| **J401**: not used |
| **J402**: lifter motor 3 signal |
| **J403**: cassette media presence 3 |
| **J404**: right door open sensor |
| **J405**: lifter motor 2 signal |
| **J406**: cassette media presence 2 |
| **J407**: lifter motor 1 signal |
| **J408**: cassette media presence 1 |
| **J409**: pickup motor |
| **J410**: communication (command) |

### Stapler/stacker PCA

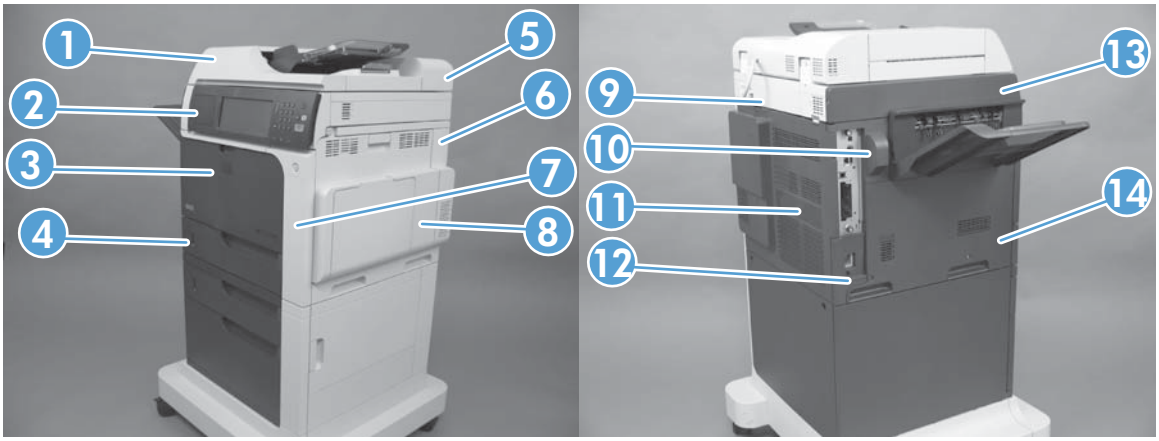


### IPTU PCA



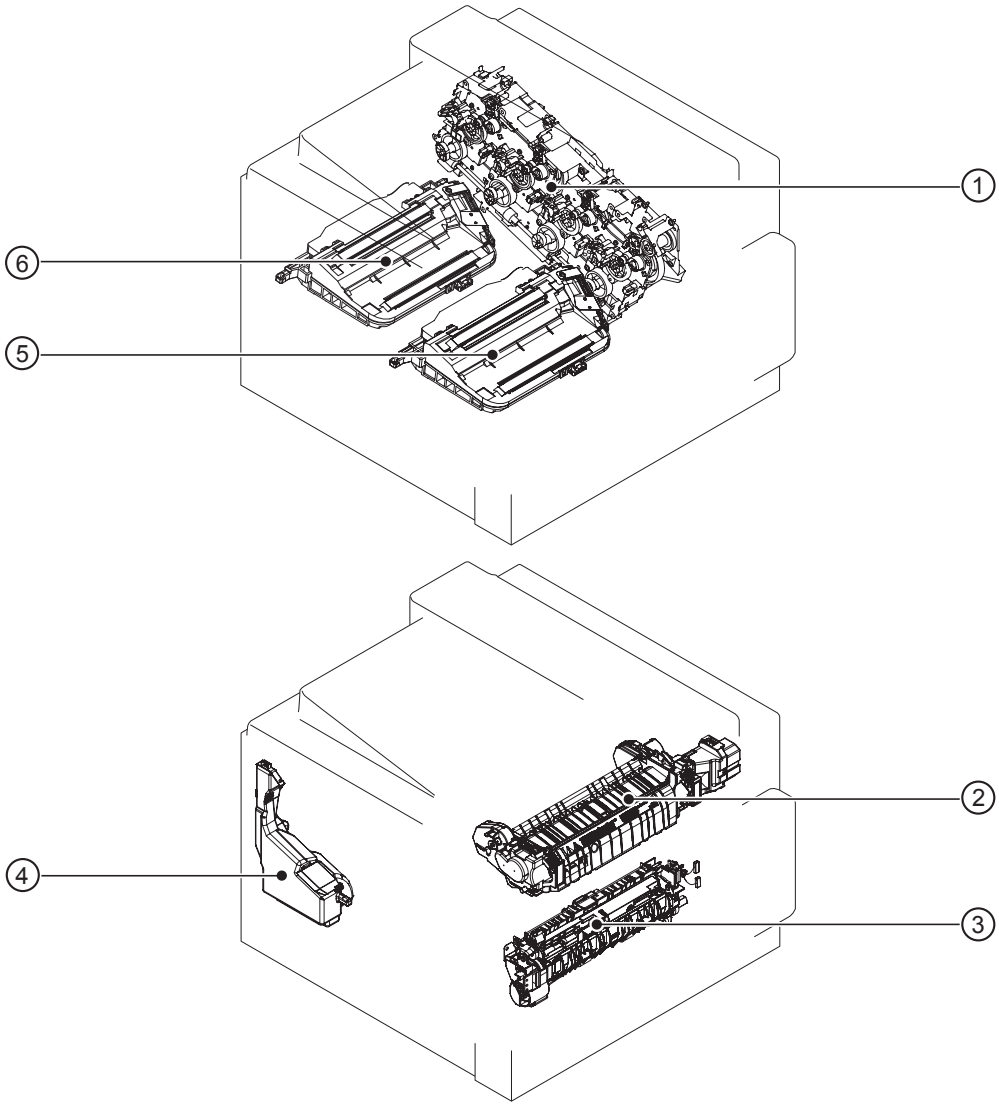
## Locations of major components

**Figure 3-57** External panels, covers, and doors; identification and location



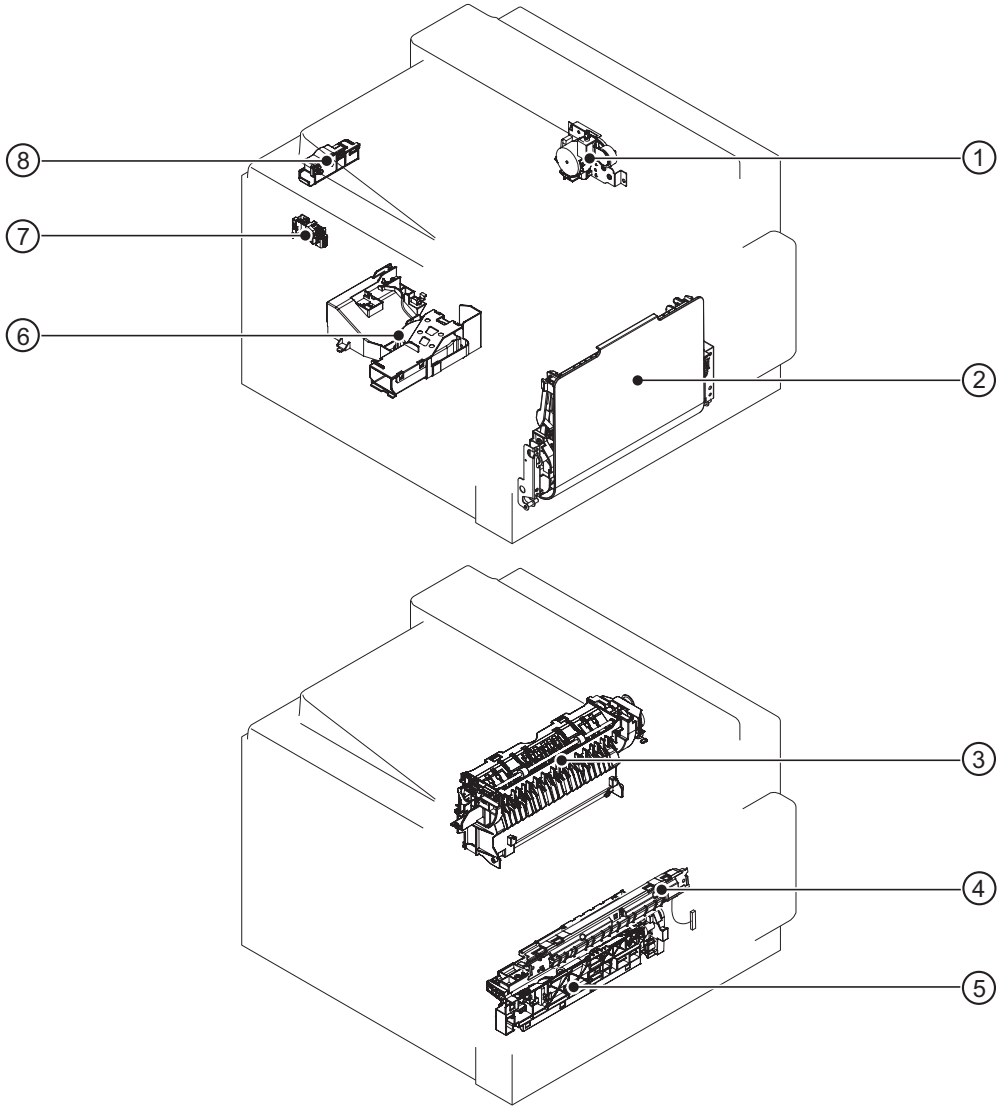

| Item | Description | Item | Description |
|---|---|---|---|
| 1 | ASY-CVR-F-SP (document feeder front cover) (see ASY-CVR-F-SP (document feeder front cover) on page 129) | 8 | Right-door assembly (see Right-door assembly on page 145) |
| 2 | Control-panel assembly (see Control panel on page 100). | 9 | Rear top cover (see S-CVR-REAR (scanner rear cover) on page 128 |
| 3 | Front-door assembly (see Front-door assembly on page 140) | 10 | Fan cover (see Fan cover on page 134) |
| 4 | Tray (see Tray on page 111) | 11 | Rear cover (see Rear cover on page 144) |
| 5 | ASY-CVR-F-R-SP (document feeder rear cover) (see ASY-CVR-F-R-SP (document feeder rear cover) on page 131) | 12 | Lower-left cover (see Lower-left cover on page 136) |
| 6 | Right-rear cover (see Right-rear cover on page 143) | 13 | S-CVR-LEFT (scanner left cover) (see S-CVR-LEFT (scanner left cover) on page 133) |
| 7 | Right-front cover (see Right-front cover on page 138) | 14 | Left cover (see Left cover on page 137) |

**Figure 3-58** Major component locations (1 of 4)



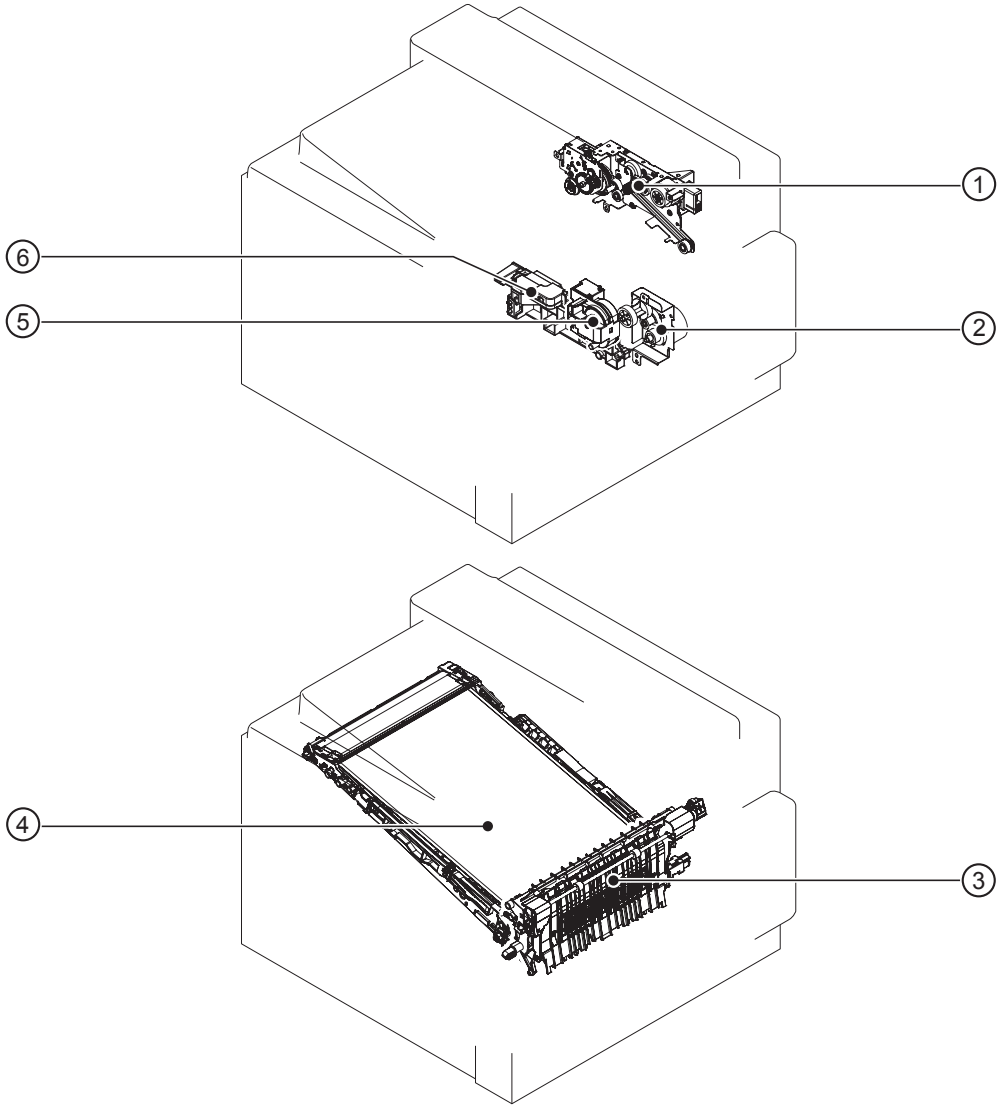

| Item | Description |
|---|---|
| 1 | Main drive assembly |
| 2 | Fuser |
| 3 | Registration assembly |
| 4 | Toner collection unit |
| 5 | Laser/scanner assembly (C/Bk) |
| 6 | Laser/scanner assembly (Y/M) |

**Figure 3-59** Major component locations (2 of 4)



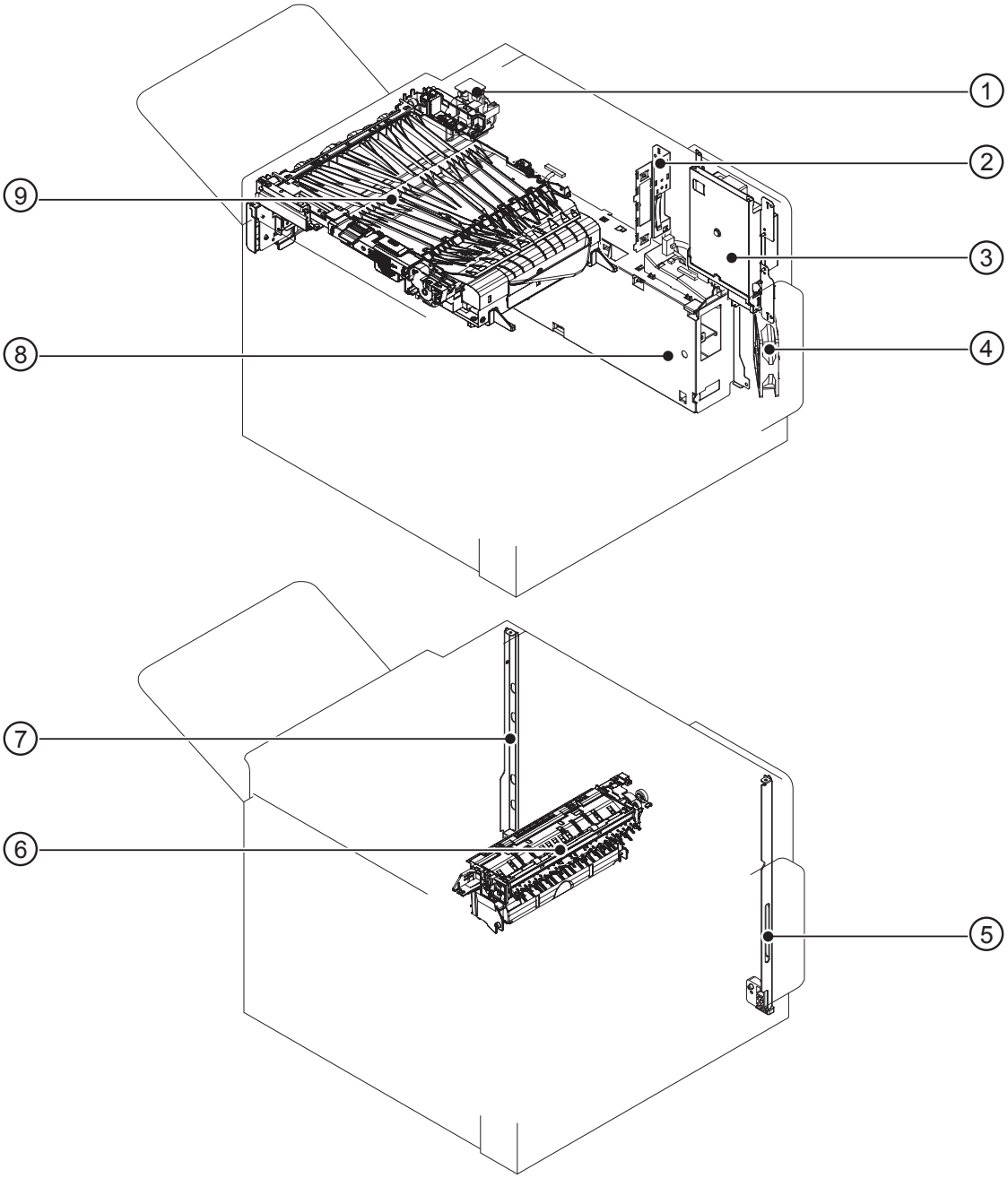

| Item | Description | Item | Description |
|---|---|---|---|
| 1 | Duplex-drive assembly | 5 | Tray-pickup assembly |
| 2 | MP tray assembly | 6 | Cartridge fan |
| 3 | Delivery assembly | 7 | Residual toner full sensor |
| 4 | RD sensor assembly | 8 | Residual-toner-feed motor |

**Figure 3-60** Major component locations (3 of 4)




| Item | Description |
|---|---|
| 1 | Fuser-drive assembly |
| 2 | Tray-pickup drive assembly |
| 3 | Secondary transfer assembly |
| 4 | ITB |
| 5 | Lifter-drive assembly |
| 6 | Lifter base assembly |

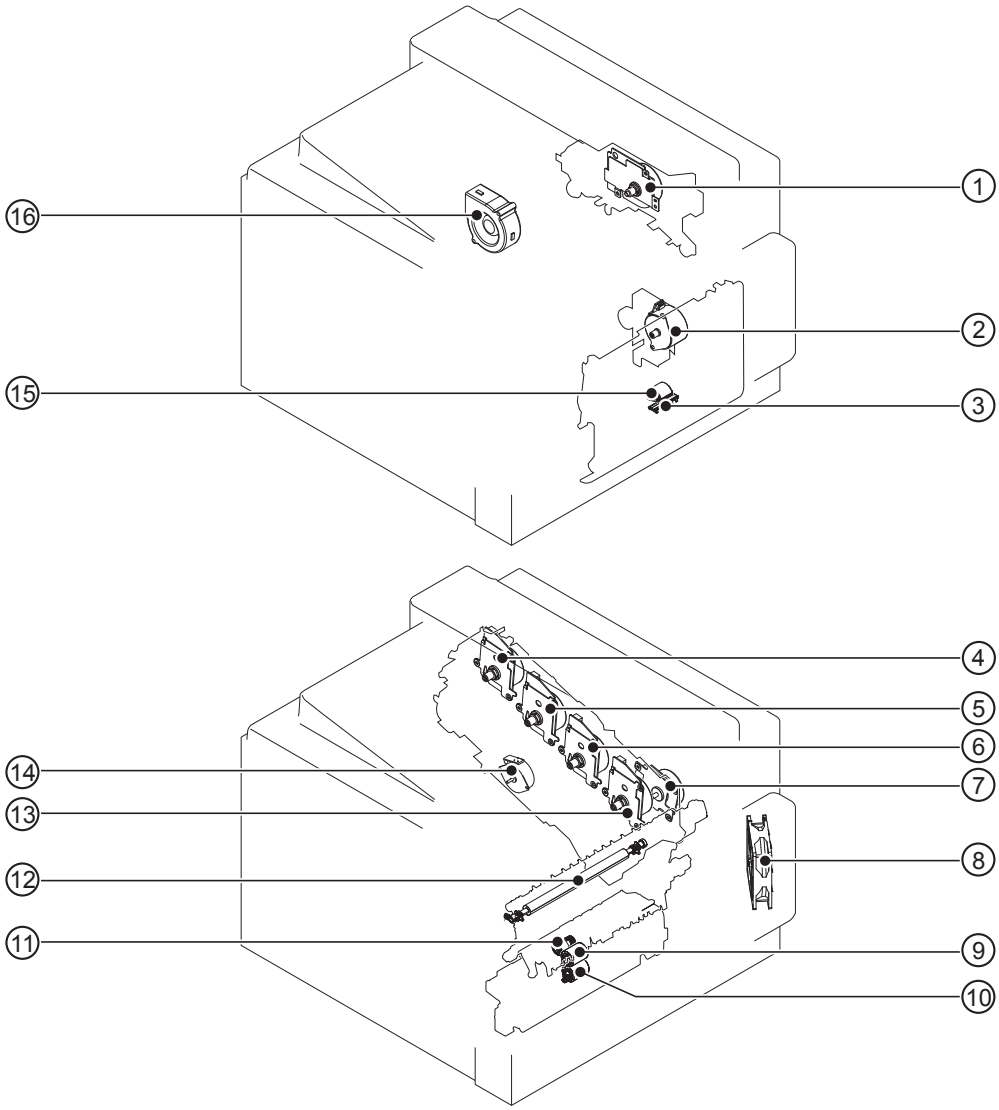
**Figure 3-61** Major component locations (4 of 4)




| item | Description |
|---|---|
| 1 | Exhaust fan |
| 2 | ICB assembly |
| 3 | Sub power supply assembly |
| 4 | Power supply fan |
| 5 | Rear right frame |
| 6 | Delivery assembly |

| item | Description |
|---|---|
| 7 | Left rear frame |
| 8 | Low voltage assembly |
| 9 | IPTU |

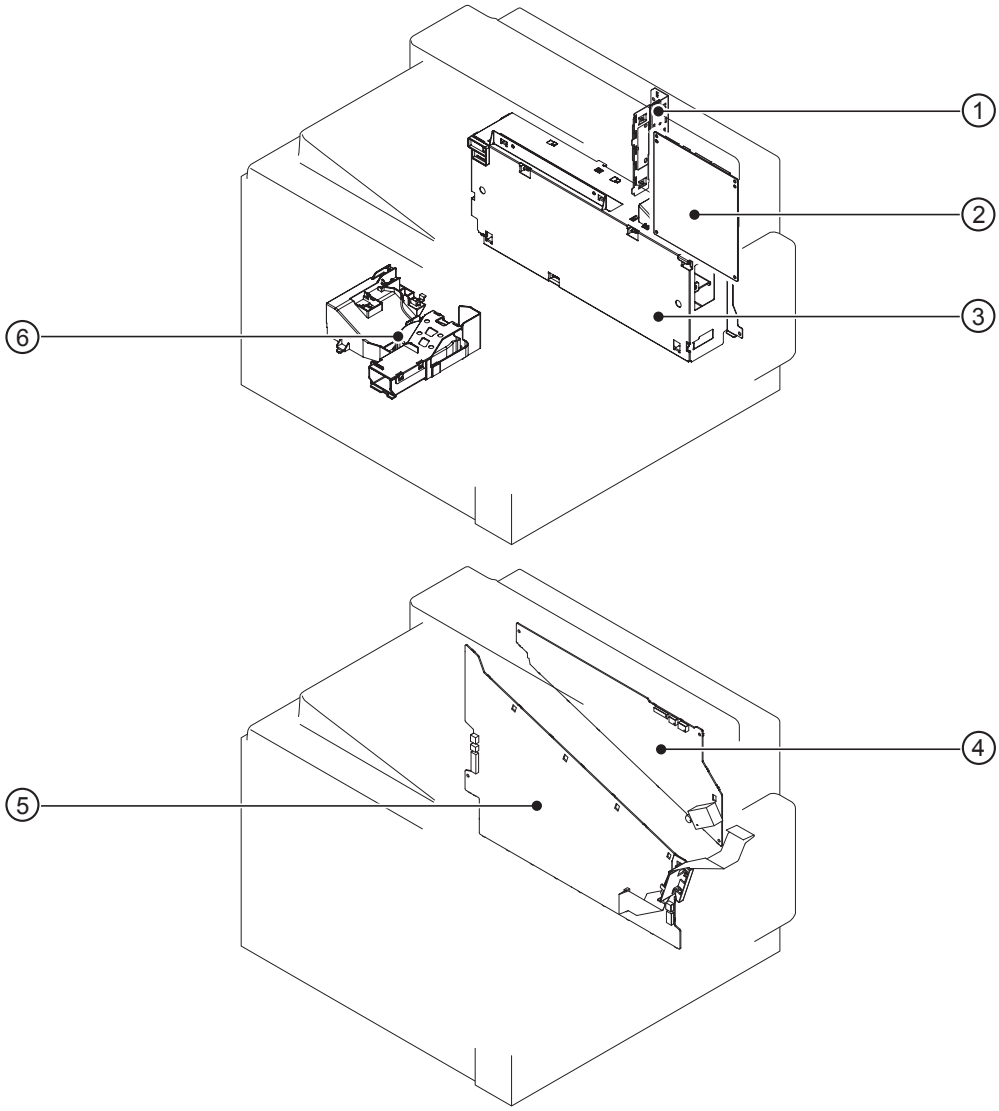
**Figure 3-62** Motors, fans, and rollers component locations




| Item | Description | Item | Description |
|---|---|---|---|
| 1 | Fuser motor | 9 | Tray 2 feed roller |
| 2 | Pickup motor | 10 | Tray 2 separation roller |
| 3 | Tray 1 separation pad | 11 | Tray 2 pickup roller |
| 4 | Yellow drum motor | 12 | Secondary transfer roller |

| Item | Description | Item | Description |
|---|---|---|---|
| 5 | Magenta drum motor | 13 | Black drum motor |
| 6 | Cyan drum motor | 14 | Developing-disengagement motor |
| 7 | ITB motor | 15 | Tray 1 pickup roller |
| 8 | Power supply fan | 16 | Exhaust fan |

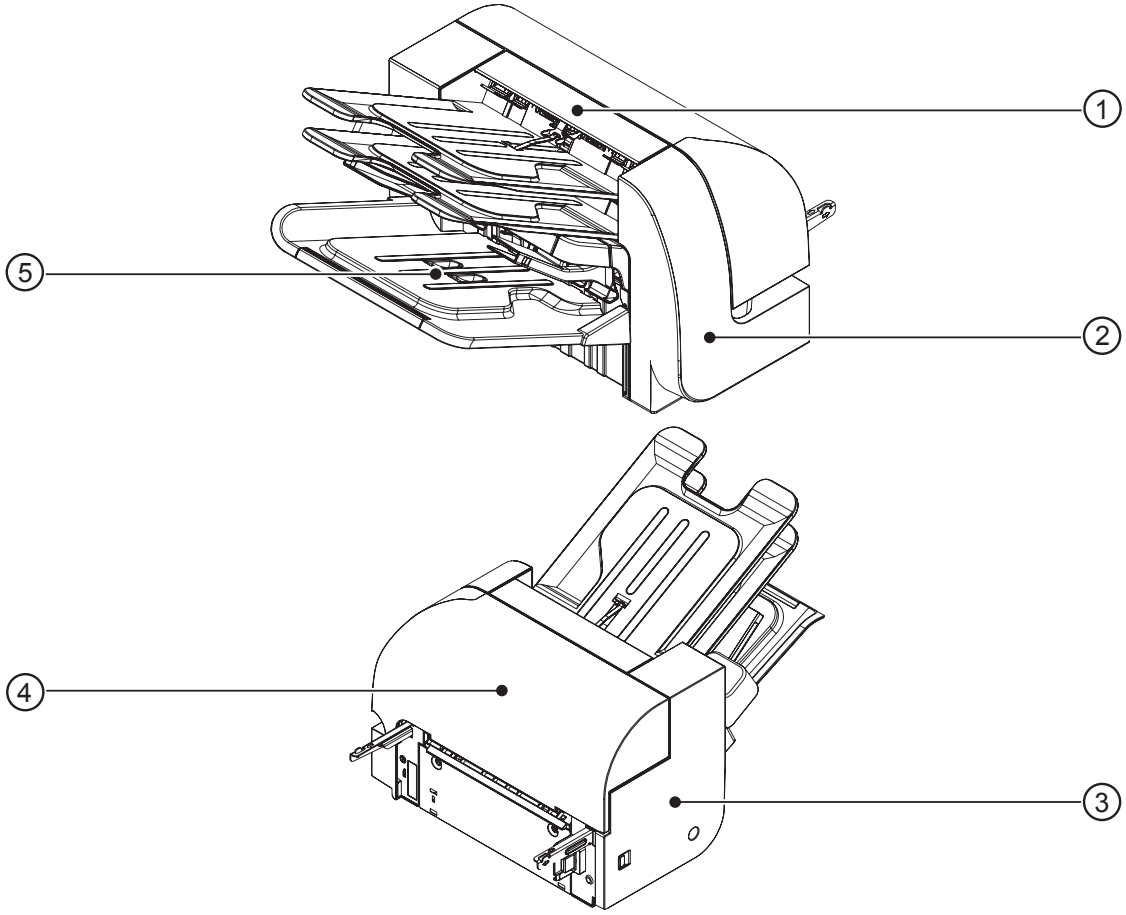
**Figure 3-63** PCA component locations




| Item | Description | Item | Description |
|---|---|---|---|
| 1 | Interconnect board (ICB) | 4 | High-voltage power supply upper (HVPS-T) |

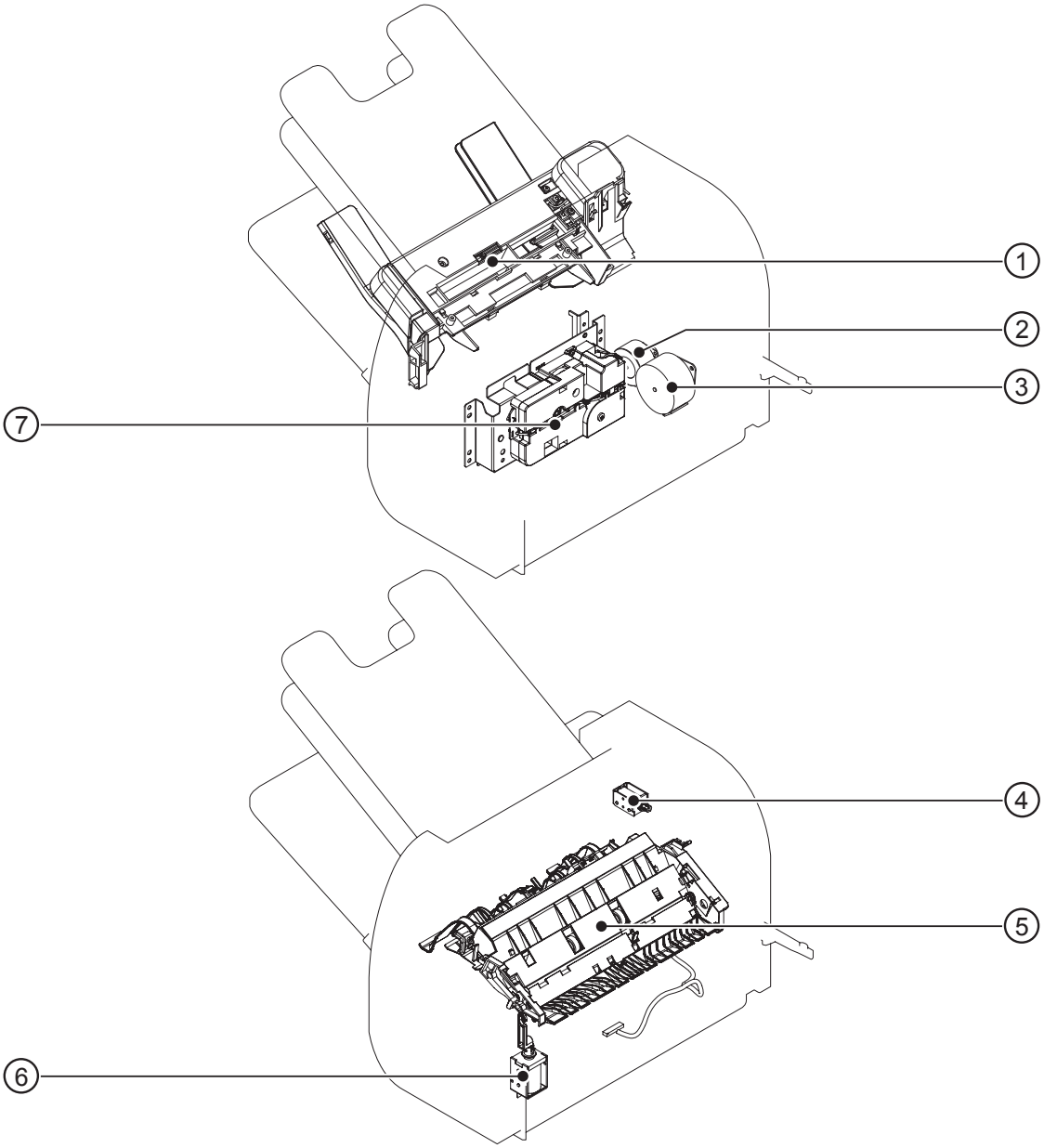
| Item | Description | Item | Description |
|---|---|---|---|
| 2 | DC controller PCA | 5 | High-voltage power supply lower (HVPS-D) |
| 3 | Low-voltage power supply | 6 | Environment sensor PCA |

**Figure 3-64** Stapler/stacker component locations (1 of 3)



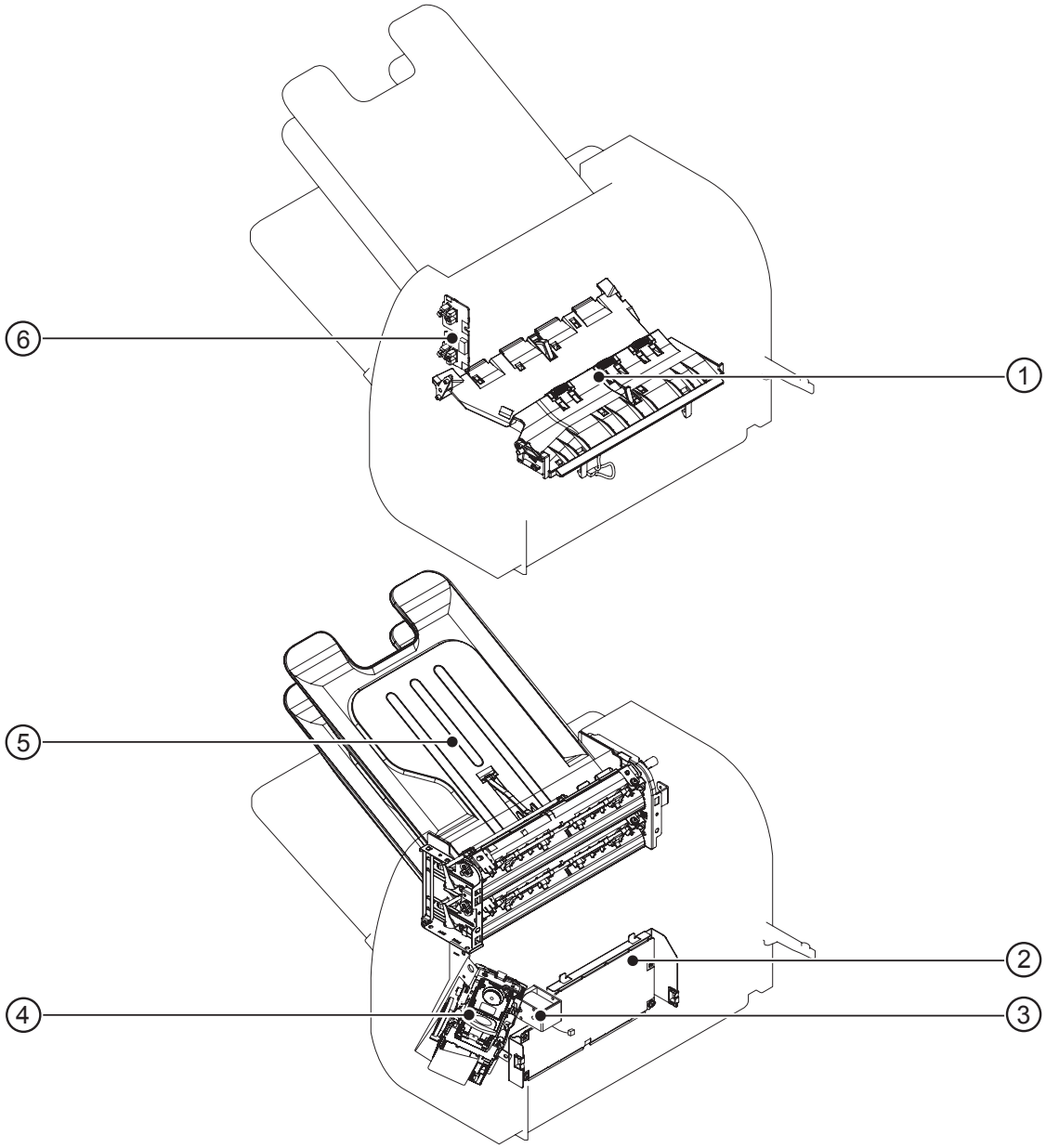

| item | Description |
|---|---|
| 1 | Top cover |
| 2 | Front cover |
| 3 | Rear cover |
| 4 | Stapler/stacker door |
| 5 | Output bin 3 |

**Figure 3-65** Stapler/stacker component locations (2 of 3)



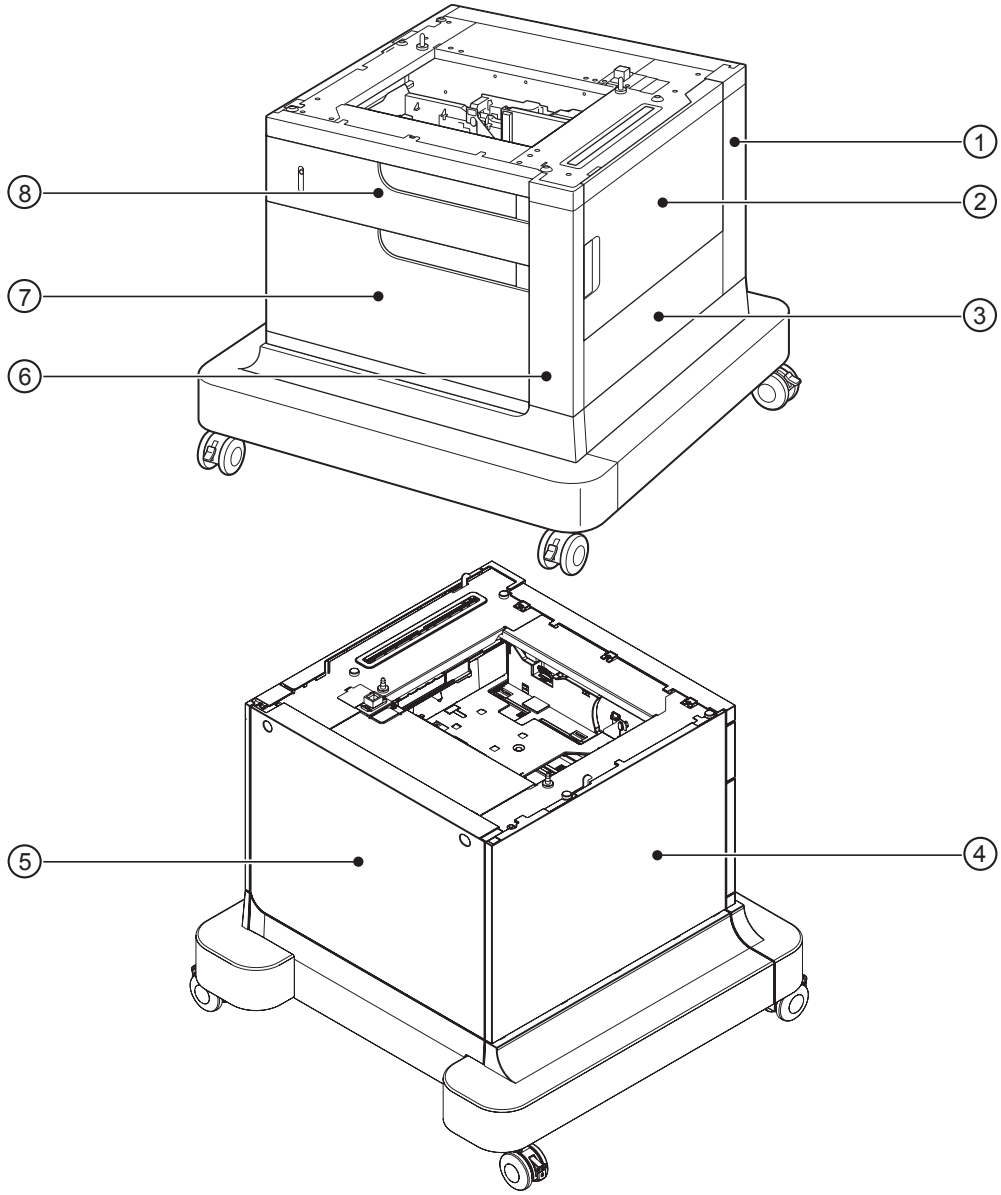

| item | Description |
|---|---|
| 1 | Jogger assembly |
| 2 | Paddle motor |
| 3 | Stapler/stacker feed motor |
| 4 | Output bin solenoid |
| 5 | Stage top unit |
| 6 | Inlet solenoid |
| 7 | Output bin 3 driver assembly |

**Figure 3-66** Stapler/stacker component locations (3 of 3)



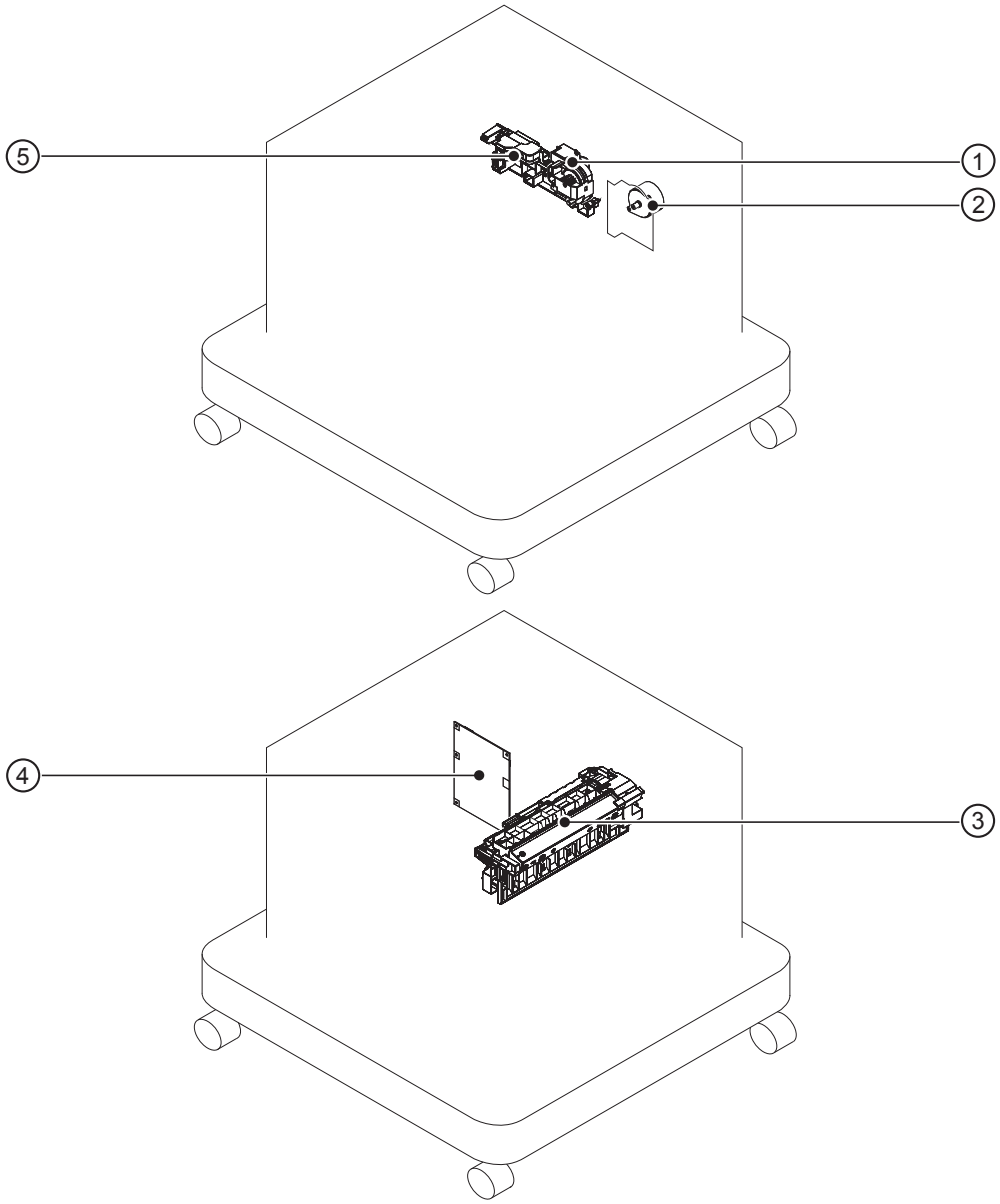

| item | Description |
|---|---|
| 1 | Stage assembly |
| 2 | Stapler/stacker PCA |
| 3 | Stamp solenoid |
| 4 | Stapler assembly |
| 5 | Output bin |
| 6 | Output bin sensor |

**Figure 3-67** Optional paper feeder (1 x 500-sheet) component locations (1 of 2)



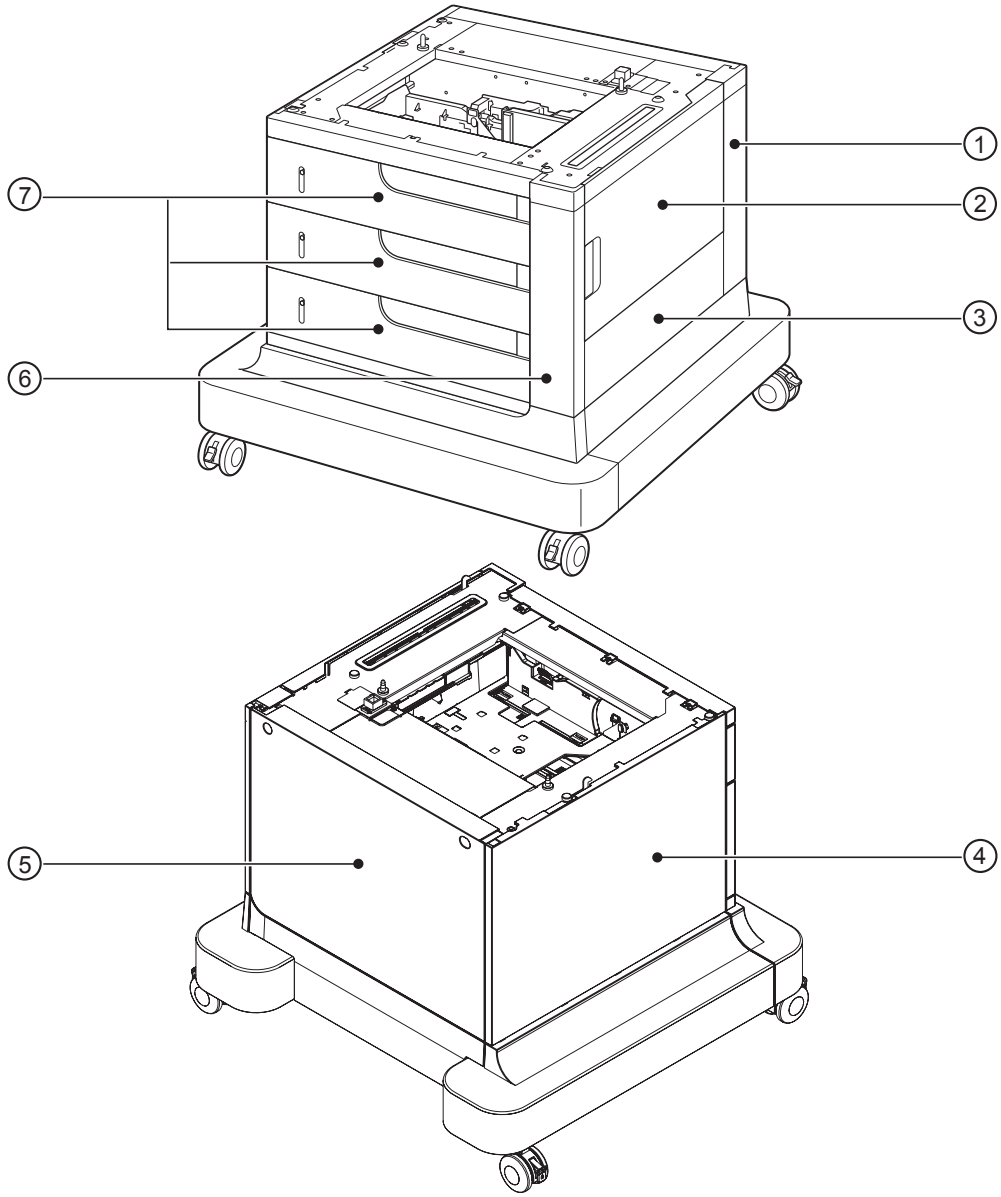

| Item | Description | Item | Description |
|---|---|---|---|
| 1 | Rear-right cover | 5 | Rear cover |
| 2 | Right door | 6 | Right front cover |
| 3 | Right cover | 7 | Front door |
| 4 | Left cover | 8 | Tray 3 |

**Figure 3-68** Optional paper feeder (1 x 500-sheet) component locations (2 of 2)



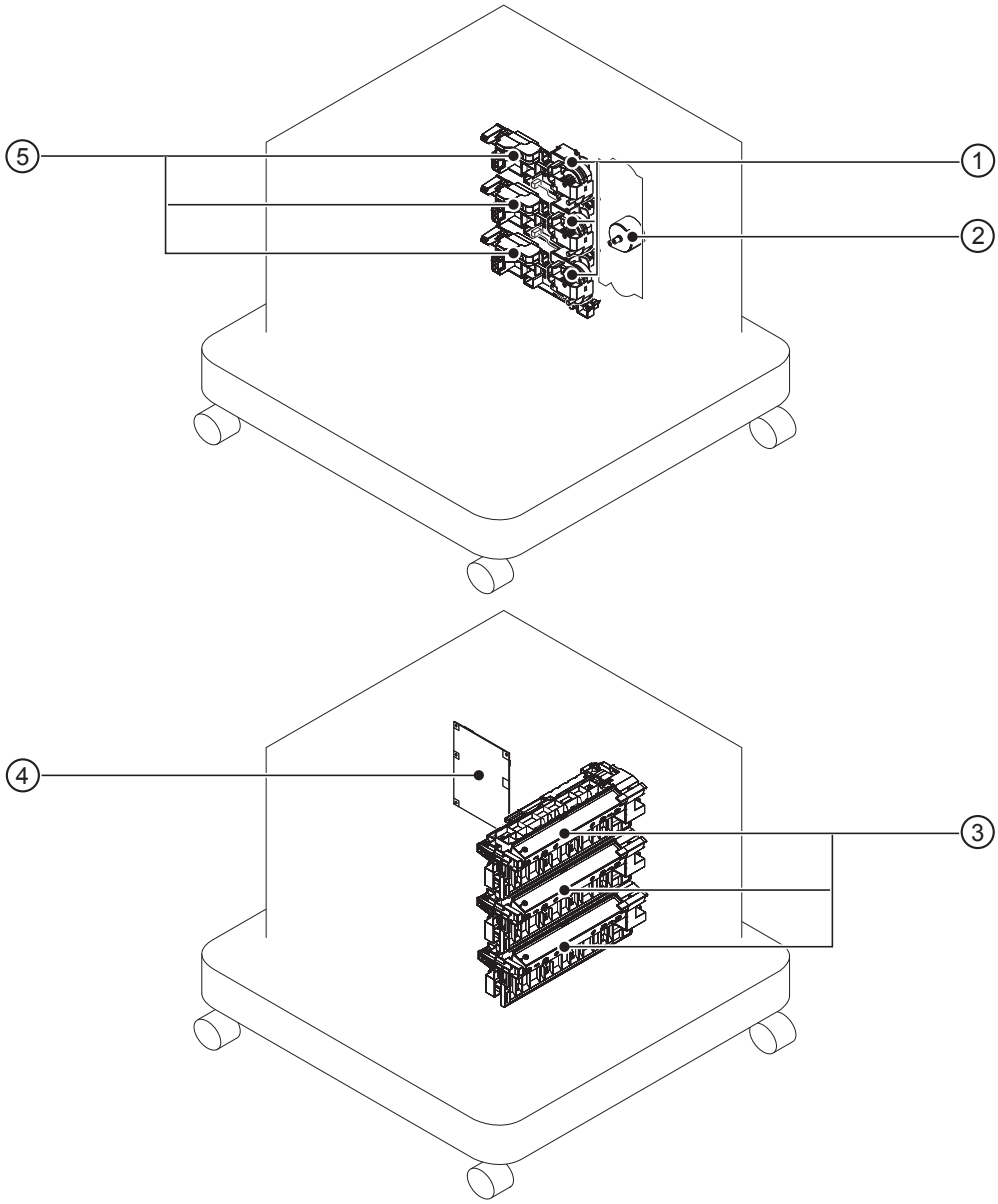

| Item | Description | Item | Description |
|---|---|---|---|
| 1 | Lifter-drive assembly | 4 | Controller PCA |
| 2 | Pickup motor | 5 | Lifter base assembly |
| 3 | Pickup assembly | | |

**Figure 3-69** Optional paper feeder (3 x 500-sheet) component locations (1 of 2)




| Item | Description | Item | Description |
|---|---|---|---|
| 1 | Rear right cover | 5 | Rear cover |
| 2 | Right door | 6 | Right front cover |
| 3 | Right cover | 7 | Trays 3, 4, and 5 |
| 4 | Left cover | | |

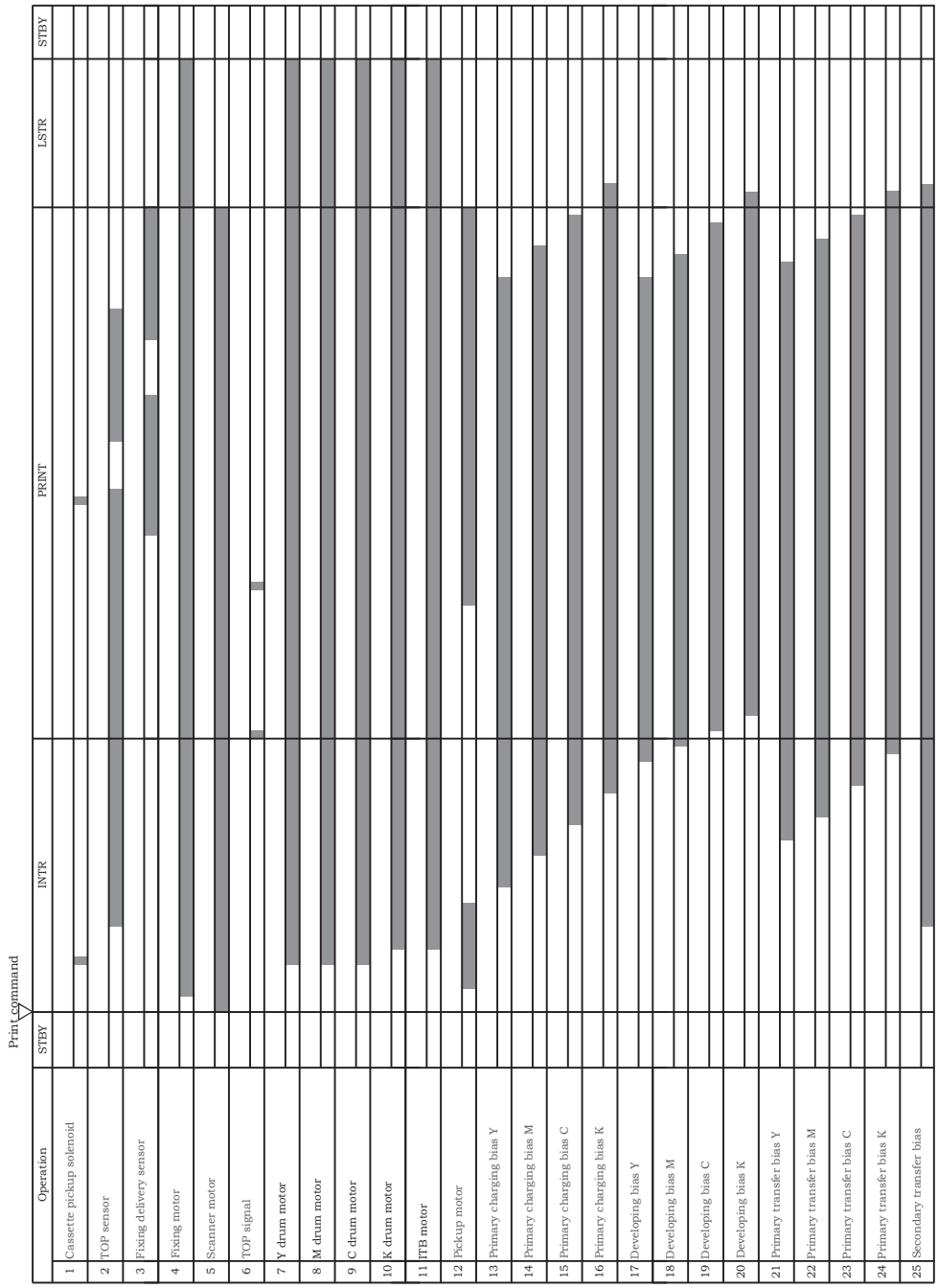
**Figure 3-70** Optional paper feeder (3 x 500-sheet) component locations (2 of 2)




| Item | Description | Item | Description |
|---|---|---|---|
| 1 | Lifter-drive assembly (Trays 3, 4, and 5) | 4 | Controller PCA |
| 2 | Pickup motor | 5 | Lifter base assembly (Trays 3, 4, and 5) |
| 3 | Pickup assembly (Trays 3, 4, and 5) | | |

## General timing chart

**Figure 3-71** General timing chart



# Circuit diagrams

## Figure 3-72 General circuit diagram (1 of 2)

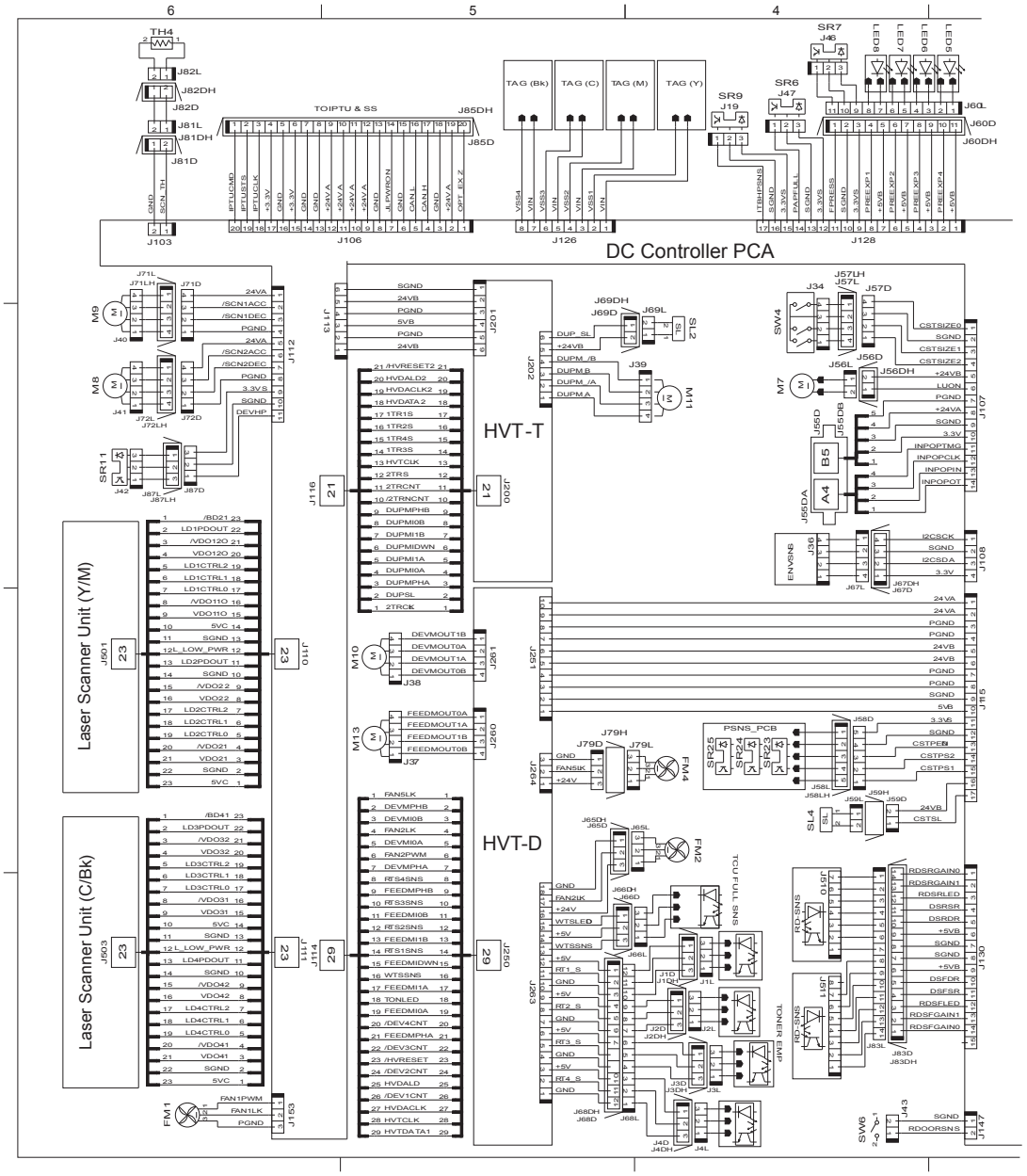


**Figure 3-73** General circuit diagram (2 of 2)

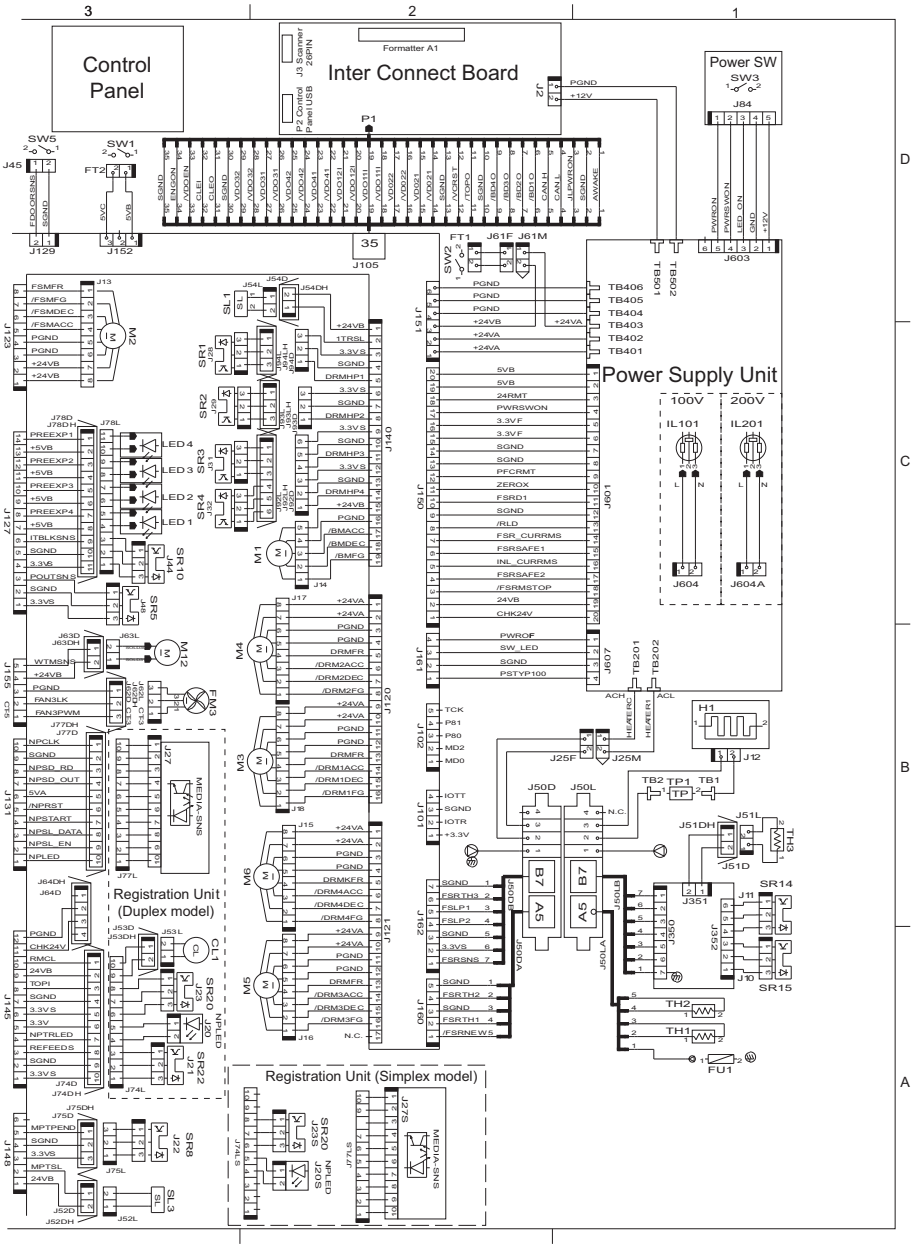


**Figure 3-74** Paper feeder circuit diagram (1 X 500-sheet)

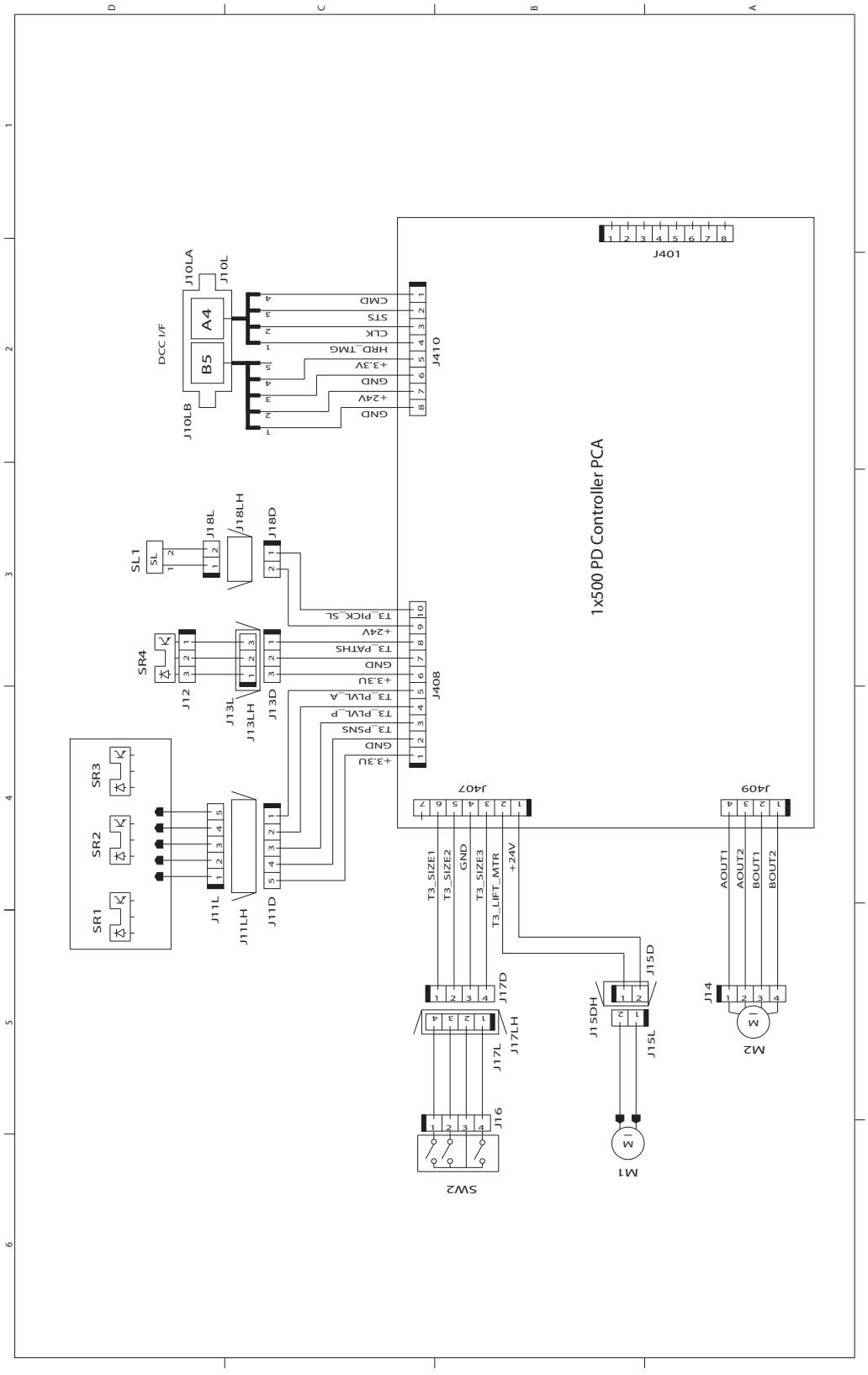


**Figure 3-75** Paper feeder circuit diagram (3 X 500-sheet)

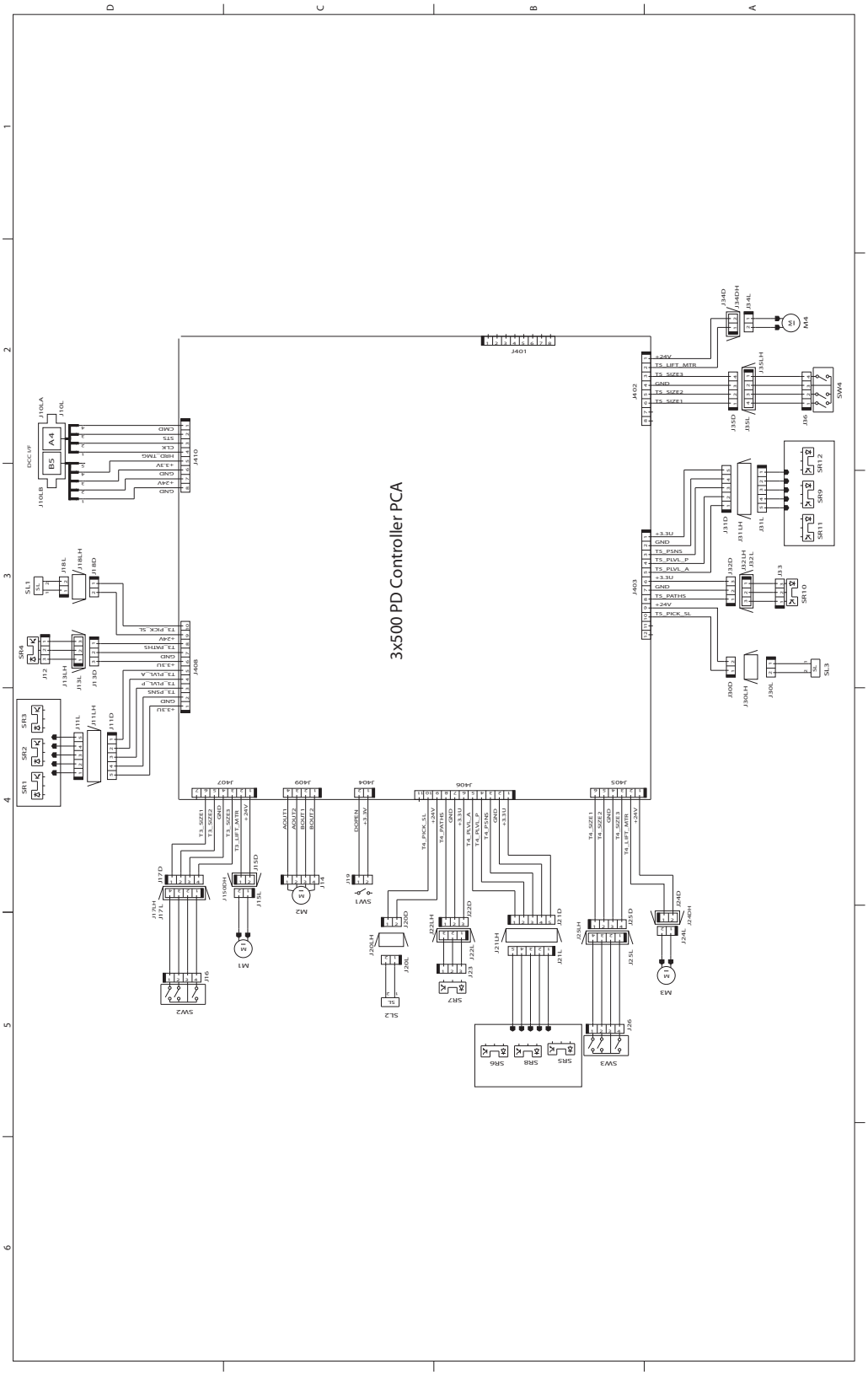


**Figure 3-76** IPTU circuit diagram

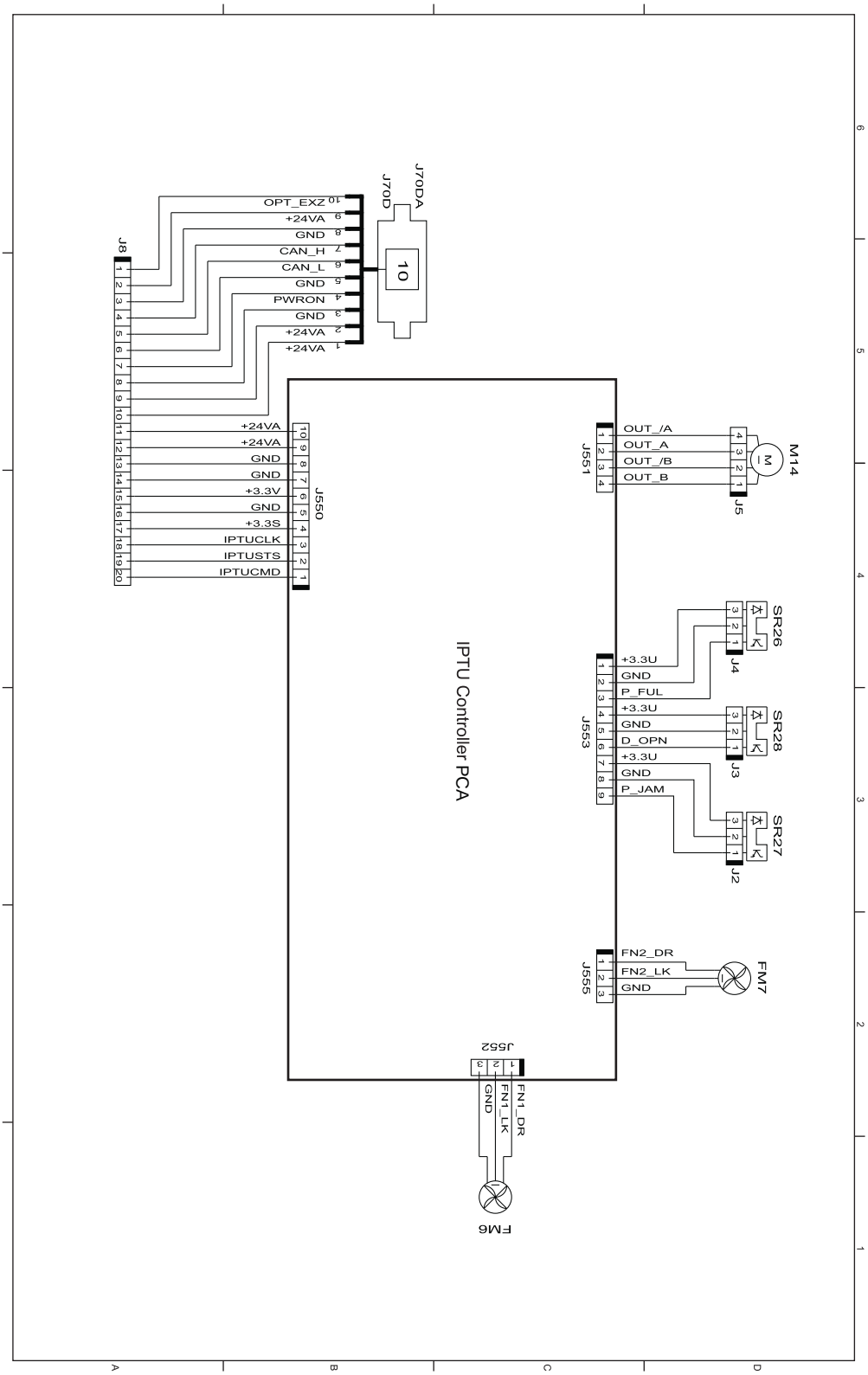
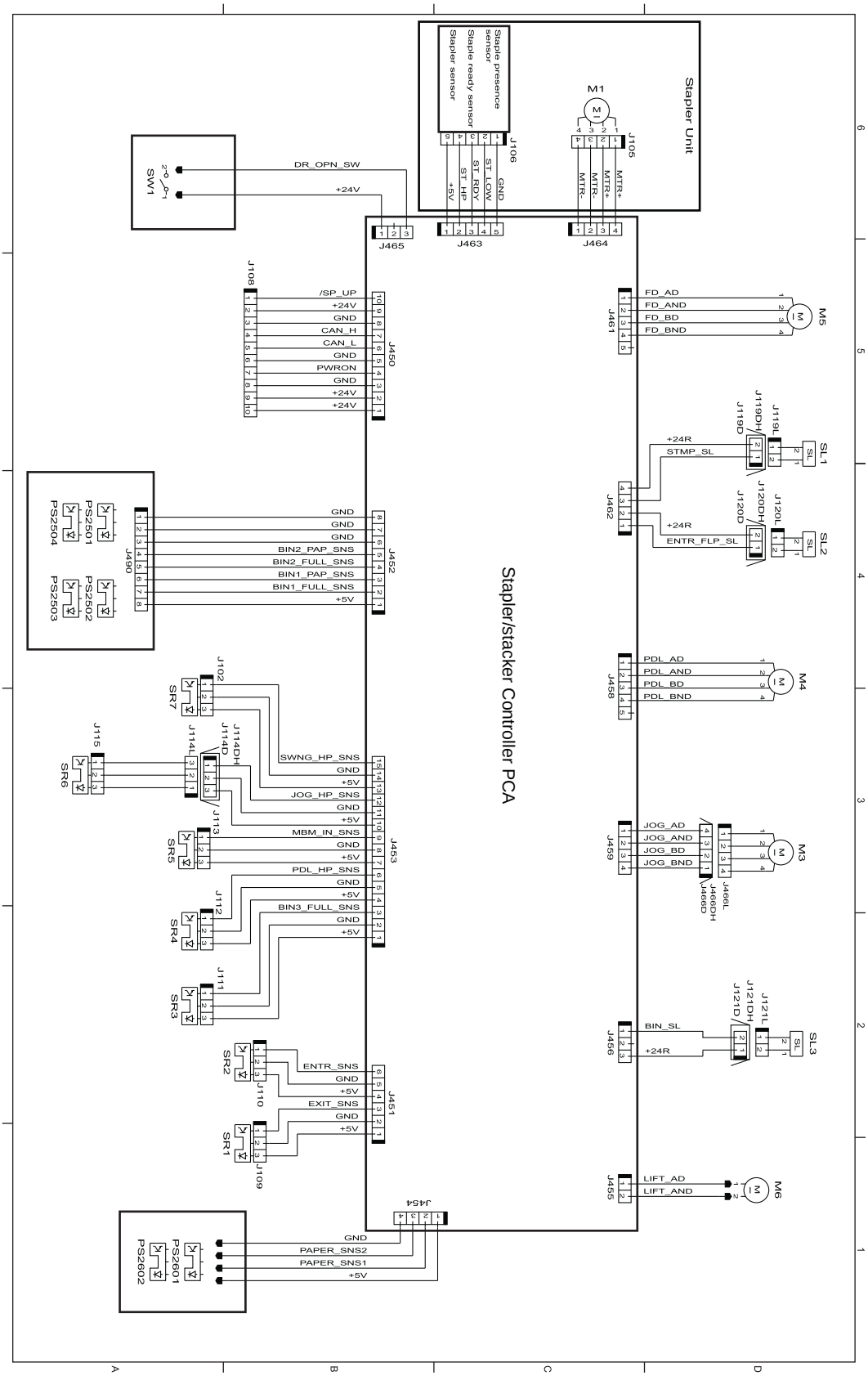


**Figure 3-77** Stapler/stacker circuit diagram



# 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. Scroll to and touch the Administration button.
2. Scroll to and touch the Troubleshooting button.
3. Touch the Print Quality Pages button.
4. Touch the Print PQ Troubleshooting Pages button.
5. Touch the Print button.

The product returns to the **Ready** state after printing the print-quality-troubleshooting pages. Follow the instructions on the pages that print out.

**Figure 3-78** Print-quality troubleshooting procedure



**Figure 3-79** Yellow print-quality troubleshooting page

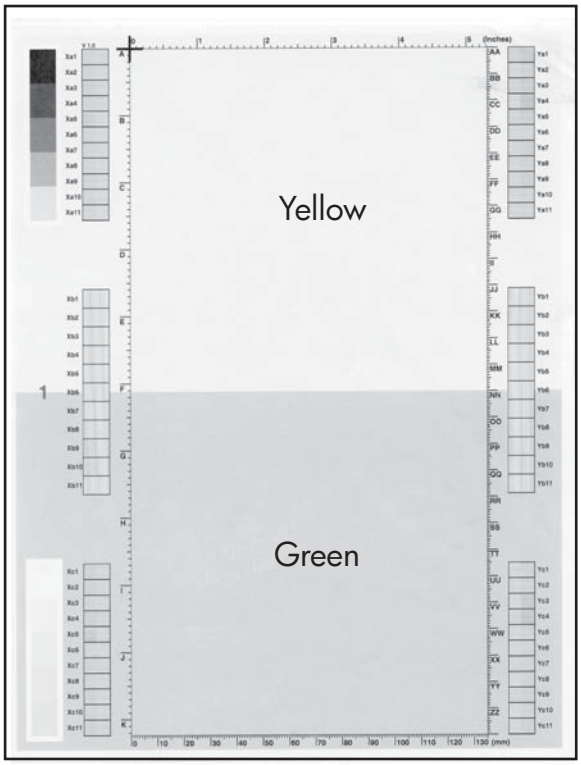
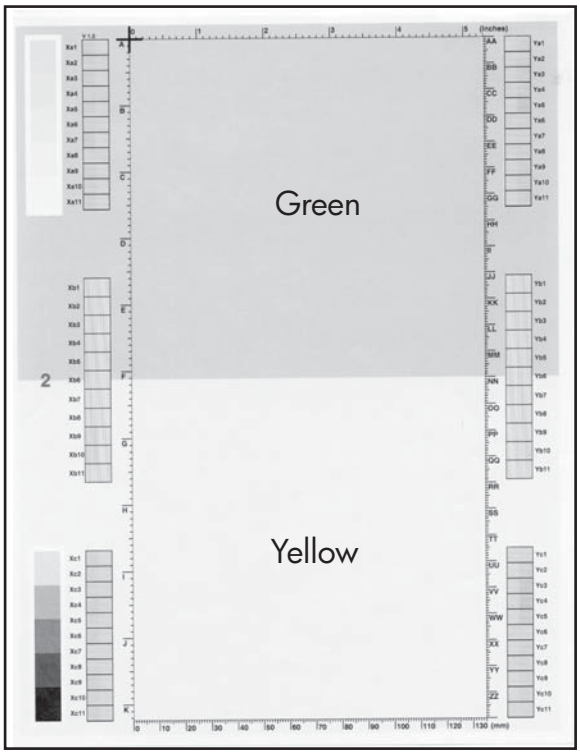
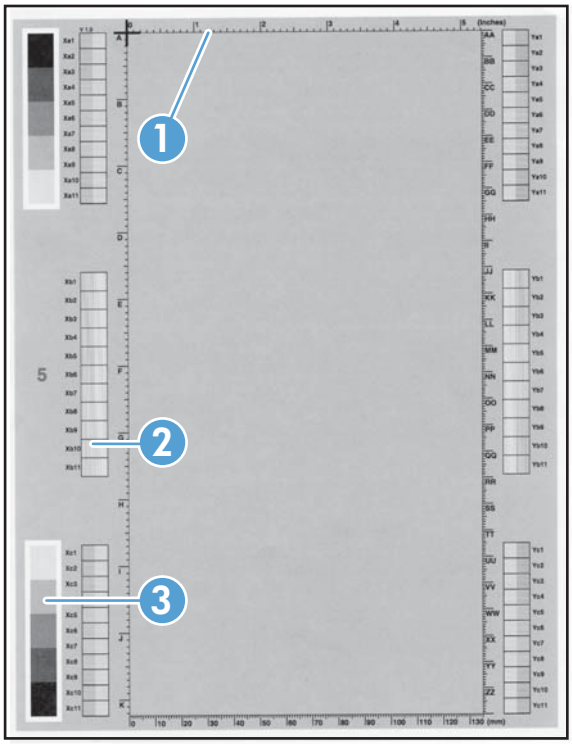



**Figure 3-80** Yellow comparison page




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 3-81** Black print-quality troubleshooting page



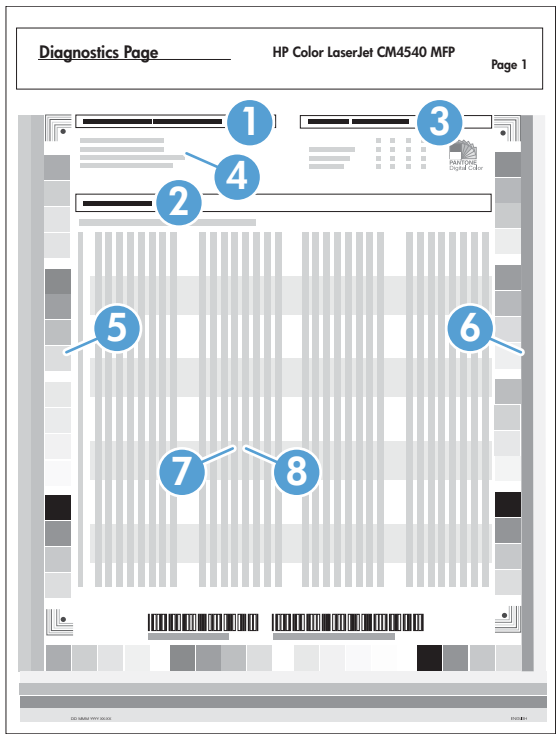

| | |
|---|---|
| 1. Grids | The grids are in inches and millimeters. They are label with letters and numbers so that defects can be described by position and by distance between repeats. |
| 2. Color plane registration (CPR) bars | After printing, the box with no extra color in each area on each page 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/cljcm4540mfp and select PQ Troubleshooting Tools.

## Diagnostics page

Use the diagnostics page to evaluate problems with color plane registration, EP parameters, and print quality.

1. Scroll to and touch the Administration button.
2. Scroll to and touch the Troubleshooting button.
3. Touch the Print Quality Pages button.
4. Touch the Diagnostics Page button.
5. Touch the Print button.




| | |
|---|---|
| 1 | Calibration information |
| 2 | Parameters |
| 3 | Color density |
| 4 | Color plane registration |
| 5 | Primary colors |
| 6 | Secondary colors |
| 7 | Temperature values (22M) |
| 8 | Humidity values (22N) |

## Cleaning page

Use the cleaning page to remove paper dust and toner that accumulates on the pressure roller or heat sleeve.

### Create and use the cleaning page

1. Scroll to and touch the Administration button.
2. Scroll to and touch the Calibrate/Cleaning button.
3. Touch the Process Cleaning Page button.

## Configuration pages

Depending on the model, up to three pages print. In addition to the main configuration page, an embedded Jetdirect configuration page prints.

### 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. Scroll to and touch the Administration button.
2. Open the following menus:
   - Reports
   - Configuration/Status Pages
   - Configuration Page
3. Touch the Print button to print the report, or touch the View button to view the report on the screen. The report consists of several pages.

**NOTE:** The product IP address or host name is listed on the Jetdirect Page.

**NOTE:** If the product is configured with EIO cards (for example, an HP Jetdirect Print Server) or an optional hard-disk drive, an additional configuration page will print that provides information about those devices.

**Figure 3-82** Configuration page




| | |
|---|---|
| 1 | Printer information |
| 2 | Installed personalities and options |
| 3 | Color density |
| 4 | Calibration information |
| 5 | Memory |
| 6 | Event log |
| 7 | Security<br>**NOTE:** The support key is intended for factory use only. |
| 8 | Paper trays and options |

## HP embedded Jetdirect page

The second configuration page is the HP embedded Jetdirect page, which contains the following information:

**Figure 3-83** HP embedded Jetdirect page



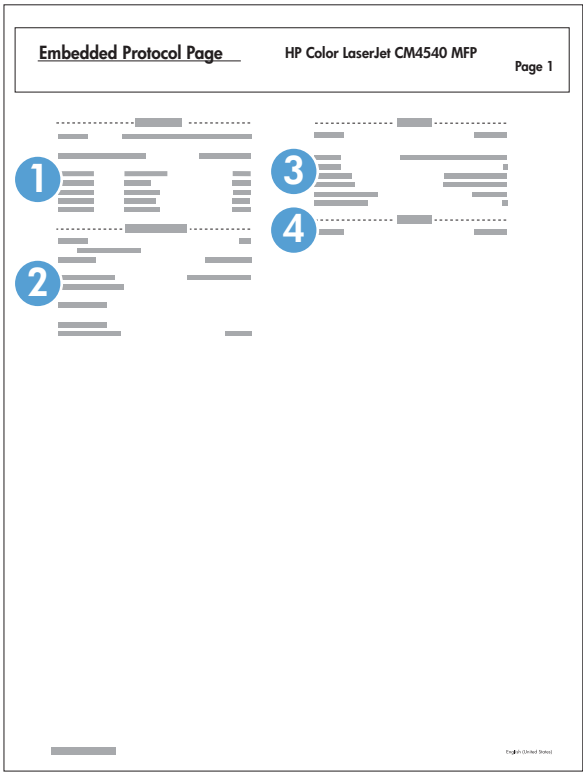

| | |
|---|---|
| 1 | **HP Jetdirect Configuration** indicates the product status, model number, hardware firmware version, port select, port configuration, auto negotiation, manufacturing identification, and manufactured date. |
| 2 | **Security Settings** information |
| 3 | **Network Statistics** 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 |

Always make sure the status line under the HP Jetdirect configuration lines indicates "I/O Card Ready".

## Embedded protocol page

The embedded protocol page contains the following information:

**Figure 3-84** Embedded protocol page




| | |
|---|---|
| 1 | IPX/SPX |
| 2 | Novell/NetWare |
| 3 | AppleTalk |
| 4 | DLC/LLC |

### Finding important information on the configuration pages

Certain information, such as the firmware date codes, the IP address, and the e-mail gateways, is especially helpful while servicing the product. This information is on the various configuration pages.

**Table 3-10 Important information on the configuration pages**

| Type of information | Specific information | Configuration page |
|---|---|---|
| **Firmware date codes**<br><br>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**<br><br>All optional devices that are installed on the product should be listed on the main configuration page.<br><br>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**<br><br>Total page counts and maintenance kit counts are important for ongoing product maintenance.<br><br>The configuration page lists only the three most recent errors. To see a list of the 50 most recent errors, print an event log from the **Diagnostics** menu. | Engine cycles | Look on the main configuration page, under "Device Information." |
| Pages since last maintenance (print engine maintenance count) | Pages since last maintenance (print engine maintenance count) | Look on the main configuration page, under "Device Information." |
| Event-log information | Event-log information | Look on the main configuration page, under "Event log." |

## 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. Scroll to and touch the Administration button.
2. Touch the Troubleshooting button.

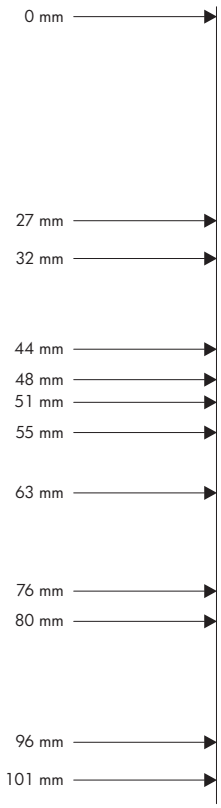
3. Touch the Print Quality Pages button.
4. Touch the Color Band Test button.
5. Touch the Print Test Page button.
6. Touch the Print button.

# 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 3-85** Repetitive defects ruler




| Distance between defects | Product components that cause the defect |
|---|---|
| 27 mm | Print cartridge |
| 32 mm | Print cartridge |
| 44 mm | Transfer unit |
| 48 mm | Print cartridge |
| 51 mm | Transfer roller |

| Distance between defects | Product components that cause the defect |
|---|---|
| 55 mm | Print engine |
| 63 mm | Transfer unit |
| 76 mm | Print cartridge |
| 76 mm | Fuser |
| 80 mm | Fuser |
| 96 mm | Print engine |
| 101 mm | Print engine |

## Calibrate the product

Calibration is a product function that optimizes print quality. If you experience any image-quality problems, calibrate the product.

1. From Home screen, scroll to and touch the Device Maintenance button.
2. Touch the Calibrate/Cleaning button.
3. Touch the Full Calibration or the Quick Calibration button, and then touch the Start button.
    - Full Calibration: takes about three minutes and performs color plane registration, drum speed adjustment, and Dmax and Dhalf adjustments. UseFull Calibration if colors are misaligned or appear blurry. Full Calibration runs automatically after a new transfer belt is installed. Full Calibration must be run manually after a laser scanner is replaced.
    - Quick Calibration: takes approximately 1 minute and performs Dmax and Dhalf calibrations. Use Quick Calibration if colors are wrong, highlights are missing, or if colors are too dark or too light.

Calibrate the scanner to compensate for offsets in the scanner imaging system (carriage head) for document feeder and flatbed scans. Because of mechanical tolerances, the scanner's carriage head might not read the position of the image accurately. During the calibration procedure, scanner offset values are calculated and stored. The offset values are then used when producing scans so that the correct portion of the document is captured.

Scanner calibration should be carried out only if you notice offset problems with the scanned images. The scanner is calibrated before it leaves the factory. It needs to be calibrated again only rarely.

Before calibrating the scanner, print the calibration target.

1. Place letter- or A4-size paper in Tray 1, and adjust the side guides.
2. From Home screen, scroll to and touch the Device Maintenance button.
3. Touch the Calibrate/Cleaning button.
4. Touch the Calibrate Scanner button.
5. Follow the steps displayed on the control panel to calibrate the scanner.

# Control panel menus

## Navigate the Administration menu

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

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

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

**CAUTION:** This product includes a Backup/Restore menu. 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.

**NOTE:** You can perform basic product setup by using the Administration menu. Use the HP Embedded Web Server for more advanced product setup. To open the HP Embedded Web Server, enter the product IP address or host name in the address bar of a Web browser.

# Interpret control-panel messages

## Control-panel message types

Four types of control-panel messages can indicate the status of or problems with the product.

| Message type | Description |
|---|---|
| Status messages | Status messages reflect the current state of the product. They inform you of normal product operation and require no interaction to clear them. They change as the state of the product changes. Whenever the product is ready, not busy, and has no pending warning messages, the status message **Ready** appears if the product is online. |
| Warning messages | Warning messages inform you of data and print errors. These messages typically alternate with the **Ready** or status messages and remain until you touch the OK button. Some warning messages are clearable. If the Clearable Warnings setting is set to Job on the product Device Behavior menu, the next print job clears these messages. |
| Error messages | Error messages communicate that some action must be performed, such as adding paper or clearing a jam.<br><br>Some error messages are auto-continuable. If the Auto-Continue setting is set on the menus, the product will continue normal operation after an auto-continuable error message appears for 10 seconds.<br><br>**NOTE:** Pressing any button during the 10-second auto-continuable error message overrides the auto-continue feature, and the button function takes precedence. For example, pressing the Stop button pauses printing and offers the option to cancel the print job. |
| Critical-error messages | Critical error messages inform you of a product failure. Some of these messages can be cleared by turning the product off and then on. These messages are not affected by the Auto-Continue setting. If a critical error persists, service is required. |

## Control-panel messages

### Clear All Blocked Numbers

#### Description

This message is displayed while the list of blocked numbers is cleared. The product exits the menus when finished.

#### Recommended action

No action is necessary.

### Clear 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.

## Replace Supplies

### Description

At least two supplies on the product have reached the At very low condition and the user has set the Very Low Settings menu item to Stop.

### Recommended action

Press the OK button to see which supplies need to be replaced. Or, configure the product to continue printing by using the Manage Supplies menu.

## Cleaning Page

### Description

The product is generating a fuser cleaning page.

### Recommended action

No action is necessary.

## 10.00.70 Printing past very low

### Event log error message

10.00.70

### Description

The product indicates when at least one cartridge is past very low.

**NOTE:** Ignore product calibration failures which occur in the event log after this message. The calibration patterns that are written to the ITB might be missing becuase of a very low cartridge.

You do not need to replace the print cartridge at this time unless 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.

### Recommended action

If print quality is no longer acceptable, replace the indicated print cartridge.

### 10.0X.90 Replace <Supply>

#### Description

The product displays this error when there is a toner replenishment malfunction for a specific print cartridge.

#### Recommended action

1. Open the front door.
2. Remove the old print cartridge.
3. Remove the orange cover and install the new cartridge.

   **CAUTION:** Do not touch the shiny green drum.

4. Close the front door.

### 10.0X.Y0 Supply memory error

#### Event log error message

10.0X.Y0

#### Description

The product is unable to read the print cartridge data. The print cartridge is present but defective.

When this error occurs, a question mark appears on the gas gauge of the supply or supplies with the error.

If multiple supplies have this error, a 10.0X.Y0 error for the first supply detected with the error will be shown. After the user resolves the error that corresponds to the first supply, another 10.0X.Y0 error displays for the next supply. This continues for all supplies memory errors.

### 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. Open the front door and remove the print cartridge, and then reinsert it.
2. Close the front door. If the message reappears, turn the product off and then on.
3. If the error persists, replace the print cartridge.

### 10.XX.69 <Supply> very low To continue, touch "OK"

**Event log error message**

10.XX.69

**Description**

The product indicates when a supply level is very low. Actual print cartridge life might vary. Consider having a replacement print cartridge available to install when print quality is no longer acceptable. You do not need to replace the print cartridge at this time unless the print quality is no longer acceptable.

**NOTE:** After an HP supply has reached the very low threshold, the HP Premium Protection Warranty for that supply has ended.

- 10.00.69 (event code): Black print cartridge very low
- 10.01.69 (event code): Cyan print cartridge very low
- 10.02.69 (event code): Magenta print cartridge very low
- 10.03.690 (event code): Yellow print cartridge very low

**Recommended action**

If print quality is no longer acceptable, replace the print cartridge.

### 10.YY.60 <color> cartridge low

**Event log error message**

10.YY.60

**Description**

The product indicates when a supply level 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.

- 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

### Recommended action

If print quality is no longer acceptable, replace the print cartridge. Consider purchasing a replacement cartridge so it is available when the installed cartridge has reached the end of its estimated life.

## 11.00.YY Internal clock error To continue, touch "OK"

### Event log error message

11.00.YY

### Description

The product real-time clock has experienced an error.

- XX = 01: Clock battery failed
- XX = 02: Real-time clock failed

### Recommended action

Whenever the product is turned off and then turned on again, set the time and date at the control panel. See the user guide for more information.

## 13.WX.EE Door open jam

### Event log error message

13.WX.EE

### Description

This error occurs when a door is opened during printing.

- 13.AA.EE: Lower right door
- 13.BA.EE: Right door
- 13.EA.EE: Scanner cover

**NOTE:** This jam can occur if the scanner cover is not securely latched. The sensor is located on the front of the IPTU, and the flag is located on the bottom of the scanner.

- 13.8A.EE: Stapler/stacker
- 13.FF.EE: Multiple doors

### Recommended action

Clear the jam and firmly close the door when finished. For instructions on clearing the jam, see Clear jams on page 581.

## 13.WX.FF Jam

### Event log error message

13.WX.FF

### Description

This error indicated paper in the path at power on or after a door is closed.

- 13.A3.FF: Tray 3 feed sensor
- 13.A4.FF: Tray 4 feed sensor
- 13.A5.FF: Tray 5 feed sensor
- 13.B2.FF: Registration sensor
- 13.B9.FF: Fuser output sensor
- 13.D3.FF: Duplex re-feed sensor
- 13.E2.FF: IPTU feed sensor
- 13.E5.FF: IPTU bin full sensor
- 13.AF.FF: Multiple feed sensors
- 13.BF.FF: Registration and fuser output sensor
- 13.EF.FF: IPTU feed and output sensors
- 13.FF.FF: multiple sensors across areas

### Recommended action

Clear the jam. For instructions on clearing the jam, see Clear jams on page 581.

## 13.WX.YZ Fuser Area Jam

### Event log error message

13.B9.DZ or 13.B9.DD

### Description

The product has experienced a jam in the fuser output sensor area.

- 13.B2.AZ: Z = source tray 1–5

  This jam occurs when picking from tray <Z>, SR20 sensor triggered, but the fuser output SR5 is not triggered.

- 13.B2.AD:

  This jam occurs when picking from duplexer, SR20 sensor triggered, but the fuser output SR5 is not triggered.

- 13.B9.AZ: Z Fuser Mode

  This jam occurs when the paper stays at fuser output SR5.

### Recommended action

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

For instructions on clearing the jam, see Clear jams in the right door on page 591.

## 13.WX.YZ Fuser wrap jam

### Event log error message

13.B9.CZ

### Description

Media in the product is wrapping around the fuser.

The paper triggered fuser output SR5 and then un-triggered it unexpectedly.

### Recommended action

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

For instructions on clearing the jam, see Clear jams in the right door on page 591.

## 13.WX.YZ Jam below control panel Clear jam, then touch "OK"

### Event log error message

13.B2.9Z or 13.E2.DZ or 13.E5.DZ or 13.E5.AZ or 13.E2.CZ

### Description

A jam has occurred in the area below the product's control panel.

- 13.B2.9Z: Jam at duplex switchback

  The paper has stopped in the duplex switchback area on top of the IPTU.

- 13.E2.DZ: Late to IPTU feed jam

  The paper has triggered the fuser output SR5 but IPTU feed SR27 has not been triggered.

- 13.E5.DZ: Late to IPTU feed jam

  The paper IPTU feed SR27 has IPTU bin full SR26 has not been triggered.

- 13.E5.AZ: Stopped at IPTU feed jam

  The paper stays at IPTU feed SR27.

- 13.E2.CZ: IPTU wrap jam

  This jam occurs when the paper leaves the IPTU feed SR27 before the designated amount of time after it has reached the IPTU feed SR27.

### Recommended action

1. Open the top cover below the control panel.
2. Remove all paper found, and then close the top cover.

## 13.WX.YZ Jam in left cover

### Event log error message

13.80.AZ or 13.80.DZ or 13.80.FZ or 13.85.AZ or 13.85.DZ or 13.85.FZ

### Description

A jam has occurred below the product's left cover.

- 13.80.AZ: Stopped at stapler/stacker jam

  This jam occurs when the paper stops at the stapler/stacker lower bin on the way to destination bin 'Z'.

- 13.80.DZ: Late to stapler/stacker jam

  This jam occurs when the paper is late to the stapler/stacker lower bin on the way to destination bin 'Z'.

- 13.80.FZ: Power on or residual stapler/stacker jam

  This jam occurs when the product is turned on with paper in the lower bin on the way to destination bin 'Z' (power on jam). This jam can also occur if the stapler/stacker cover is closed with paper still at the sensor (residual jam).

- 13.85.AZ: Stopped at stapler/stacker jam

  This jam occurs when the paper stops at the stapler/stacker upper bin on the way to destination bin 'Z'.

- 13.85.DZ: Late to stapler/stacker jam

  This jam occurs when the paper stops at the stapler/stacker upper bin on the way to destination bin 'Z'.

- 13.85.FZ: Power on jam at stapler/stacker

  This jam occurs when the paper stops at the stapler/stacker upper bin on the way to destination bin 'Z'.

### Recommended action

1. Open the left cover.
2. Remove all paper found, and then close the left cover.

### 13.WX.YZ Jam in lower bin area

#### Event log error message

13.84.A3

#### Description

A jam has occurred below the product's lower bin area.

#### Recommended action

1. Remove all paper from lower bin.
2. Open the left cover.
3. Remove all paper found, and then close the left cover.

### 13.WX.YZ Jam in top cover area

#### Description

A jam has occurred in the top cover of the product.

#### Recommended action

1. Open the top cover.
2. Remove all paper found, and then close the top cover.

### 13.WX.YZ Jam in Tray 1 Clear jam, then touch "OK"

#### Description

The product has a jam in Tray 1.

#### Recommended action

For instructions on clearing the jam, see Clear jams in Tray 1 on page 594.

### 13.WX.YZ Jam in Tray <X>

#### Event log error message

13.WX.YZ

**Description**

The product has a page jammed in tray <X>.

- 13.B2.D2: Misfeed jam from Tray 2

  This jam occurs when the paper does not reach the SR20 feed sensor in a designated amount of time from the start of paper pick-up at printing from Tray 2 and duplex printing.

- 13.A3.D3: Misfeed jam from Tray 3

  This jam occurs when the paper does not reach the SR4 feed sensor of the tray in a designated amount of time after the start of paper pickup.

- 13.A4.D4: Misfeed from Tray 4

  This jam occurs when the paper does not reach the SR7 feed sensor in a designated amount of time.

- 13.A5.D5: Misfeed from Tray 5

  This jam occurs when the paper does not reach the SR10 feed sensor in a designated amount of time.

- 13.B2.16: Misfeed jam from Tray 1

  This jam occurs when the paper does not reach the SR20 feed sensor in a designated amount of time after the start of paper pickup.

- 13.B2.D1: Misfeed jam from Tray 1

  This jam occurs when the paper does not reach the feed sensor of each tray in a designated amount of time after the start of paper pickup.

**Recommended action**

Clear the jam.

### 13.WX.YZ Jam inside lower right door

**Description**

The product has a jam accessible from the lower right door.

**Recommended action**

1. Open the lower right door.
2. Remove all paper found and close the right door.

### 13.WX.YZ Jam inside output accessory bridge

**Description**

A jam has occurred inside the output accessory bridge.

### Recommended action

Remove the output accessory, clear the jam, and then reinstall the output accessory.

## 13.WX.YZ Jam inside right door

### Event log error message

13.B2.D3 or 13.D3.DZ or 13.B2.DD or 13.E2.DZ

### Description

The product has a jam accessible from the right door.

- 13.B2.D3:

  This jam occurs when the paper is picked from Tray 3 and SR4 is triggered, but SR20 is not triggered. Paper might also be in the fuser area.

- 13.D3.DZ: Late to duplex re-feed jam

  This jam occurs when the paper is coming from the duplexer, and the fuser output SR5 is triggered, but the duplex re-feed SR22 is not triggered. Paper might also be in the fuser area.

- 13.B2.DD: Late to registration jam, from duplexer

  This jam occurs when the paper is coming from the duplexer, and the duplex refeed SR22 is triggered, but the SR20 sensor is not triggered. Paper might also be in the fuser area.

- 13.E2.DZ: Late to IPTU feed jam

  This jam occurs when the fuser output SR5 is triggered, but the IPTU feed SR27 sensor is not triggered. Paper might also be in the fuser area.

### Recommended action

For instructions on clearing the jam, see Clear jams in the right door on page 591.

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

## 13.WX.YZ Jams inside lower right door

### Event log error message

13.B2.DX or 13.A3.DX or 13.A4.A4 or 13.A5.A5 or 13.A3.A4 or 13.A3.A5

### Description

The product has experienced a jam accessible from the lower right door.

- 13.B2.D4: Late to registration jam, from tray 4

  This jam occurs when the product is picking from Tray 4 and SR7 is triggered, but SR20 sensor is not triggered.

- 13.B2.D5: Late to registration jam, from tray 5

  This jam occurs when the product is picking from Tray 5 and SR10 is triggered, but SR20 sensor is not triggered.

- 13.A3.D4: Late to tray path jam, from tray 4

  This jam occurs when the product is picking from Tray 4 and SR7 is triggered, but SR4 sensor is not triggered.

- 13.A3.D5: Late to tray path jam, from tray 5

  This jam occurs when the product is picking from Tray 5 and SR10 is triggered, but SR4 sensor is not triggered.

- 13.A4.A4: Stopped at tray path jam, from tray 4

  This jam occurs when the product is picking from Tray 4 and paper stays at SR7.

- 13.A5.A5: Stopped at tray path jam, from tray 5

  This jam occurs when the product is picking from Tray 5 and paper stays at SR10.

- 13.A3.A4: Stopped at tray path jam, from tray 4

  This jam occurs when the product is picking from Tray 4 and paper stays at SR4.

- 13.A3.A5: Stopped at tray path jam, from tray 5

  This jam occurs when the product is picking from Tray 5 and paper stays at SR4.

### Recommended action

For instructions on clearing the jam, see Clear jams in the lower-right door (Trays 3, 4, or 5) on page 597.

## 13.WX.YZ Jams inside right door

### Event log error message

13.B2.AZ or 13.B2.AD

### Description

Paper stopped at the registration jam, from the tray indicated.

- 13.B2.AZ: Z = source tray 1–5

  The product is picking from the indicated tray, and the paper stays at SR20. Paper might also be in the fuser area.

- 13.B2.AD:

  The product is picking from the duplexer, and the paper stays at SR20. Paper might also be in the fuser area.

### Recommended action

For instructions on clearing the jam, see Clear jams in the right door on page 591.

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

## 13.WX.YZ Staple jam inside left cover

### Event log error message

13.89.33

### Description

A jam has occurred in the staple cartridge.

### Recommended action

1. Open the left cover.
2. Replace the staple cartridge.
3. Close left cover.

## 20.00.00 Insufficient memory: <Device> To continue, touch "OK"

### Event log error message

20.00.00

### Description

The product does not have enough memory to print the page.

The product received more data than can fit in the available memory. You might have tried to transfer too many macros, soft fonts, or complex graphics.

### Recommended action

Touch the OK button to print the transferred data. Some data might be lost. Reduce the page complexity or add product memory.

### 21.00.00 Page Too Complex To continue, touch “OK”

#### Event log error message

21.00.00

#### Description

The product displays this message to indicate that the page decompression process was too slow for the product.

#### Recommended action

Touch the OK button to continue. There may be some data loss on the page that was being formatted when the error occurred.

### 30.01.YY Scanner Failure

#### Event log error message

30.01.06

#### Description

The product experienced a scanner fan error.

#### Recommended action

Turn the product off, then on again. If the message remains, turn the product off, check the fan, and reconnect any loose cables.

If the error persists, replace the fan or the scanner control board.

### 30.01.YY Scanner Failure

#### Event log error message

30.01.08

#### Description

The scanner failed to return to home position.

#### Recommended action

Turn the product off, then on again.

Observe the movement of the optics assembly.

If the error persists, replace the optics assembly, scanner motor, or entire scanner.

### 30.01.YY Scanner Failure

#### Event log error message

30.01.14

**Description**

The scanner experienced a scanner control board EEPROM error.

**Recommended action**

Turn the product off, then on again.

If the error persists, replace the scanner control board.

### 30.01.YY Scanner Failure

**Event log error message**

30.01.15

**Description**

The scanner failed to be initialized due to an internal error.

**Recommended action**

Turn the product off, then on again.

If the error persists, replace the scanner.

### 30.01.YY Scanner Failure

**Event log error message**

30.01.18

**Description**

The scanner experienced an error with the internal optical sensor.

**Recommended action**

Turn the product off, then on again.

If the error persists, replace the optics or entire scanner unit.

### 30.01.YY Scanner Failure

**Event log error message**

30.01.19

**Description**

The scanner experienced an error with the internal lamp sensor.

**Recommended action**

Turn the product off, then on again.

If the error persists, replace the optics or entire scanner unit.

## 30.01.YY Scanner Failure

### Event log error message

30.01.23

### Description

The scanner experienced an error during the scanner calibration process.

### Recommended action

Turn the product off, then on again.

After the product warms up, repeat the calibration process.

## 30.01.YY Scanner Failure

### Event log error message

30.01.41

### Description

The product experienced an internal communication error involving the copy processor board (CPB). The CPB is part of the formatter.

### Recommended action

Turn the product off, then on again.

If the error persists, turn the product off, remove the formatter, and then reinstall the formatter.

If the error persists, replace the formatter.

## 30.01.YY Scanner Failure

### Event log error message

30.01.36

### Description

The product experienced an error during the scanner firmware upgrade.

### Recommended action

Resend the scanner firmware upgrade.

If the error persists, replace the scanner control board.

## 30.01.YY Scanner Failure

### Event log error message

30.01.42

**Description**

The product experienced an internal communication error.

**Recommended action**

Turn the product off, then on again. If the message remains, turn the product off, and then check the cables connecting the scanner control board.

If this error occurs after a formatter, fax card or hard disk has been replaced, check that the formatter is fully seated and the "smiley face" is illuminated. Check the fax card for proper seating on the formatter. If it is not properly seated, it can prevent the formatter from seating properly.

If the error persists, replace the scanner control board.

### 30.01.YY Scanner Failure

**Event log error message**

30.01.43

**Description**

There was a scan memory error.

**Recommended action**

Turn the product off, then on again. If the message remains, turn the product off, remove the formatter, and then reinstall the formatter.

If the error persists, replace the formatter.

### 30.01.YY Scanner Failure

**Event log error message**

30.01.44

**Description**

The product experienced an internal communication error.

**Recommended action**

Turn the product off, then on again. If the message remains, turn the product off, check the scanner cable, remove the formatter, and then reinstall the formatter.

If the error persists, replace the scanner control board or formatter.

### 30.01.YY Scanner Failure

**Event log error message**

30.01.45

**Description**

The product experienced an internal communication error involving the CPB.

**Recommended action**

Turn the product off, then on again. If the message remains, turn the product off, remove the formatter, and then reinstall the formatter.

If the error persists, replace the formatter.

### 30.01.YY Scanner Failure

**Event log error message**

30.01.46

**Description**

The product experienced an internal communication error involving the CPB.

**Recommended action**

Turn the product off, then on again. If the message remains, turn the product off, remove the formatter, and then reinstall the formatter.

If the error persists, replace the formatter.

### 30.01.YY Scanner Failure

**Event log error message**

30.01.48

**Description**

The scanner control board (SCB) has lost 24v power.

**Recommended action**

Turn the product off, then on again. If the message remains, check the 24v cable connections at the SCB and the scanner power supply. This error also can occur if the scanner power supply fan fails.

If the error persists, replace the scanner power supply or the scanner power supply fan.

### 30.01.YY Scanner Failure

**Event log error message**

30.01.49

**Description**

The product experienced a scanner inverter fan error.

**NOTE:** The scanner inverter power supply is located inside the scanner.

**Recommended action**

Turn the product off, then on again.

If the error persists, replace the scanner or the scanner control board (SCB).

### 30.01.YY Scanner Failure

**Event log error message**

30.01.50

**Description**

The product experienced a scanner control board error.

**Recommended action**

Turn the product off, then on again.

If the error persists, replace the scanner control board.

### 30.01.YY Scanner Failure

**Event log error message**

30.01.10

**Description**

The product experienced a document feeder fan error.

**Recommended action**

Turn the product off, then on again. If the message remains, turn the product off, check the fan and cables, and then turn the product on again.

If the error persists, replace the document feeder fan or document feeder.

### 30.01.YY Scanner Failure

**Event log error message**

30.01.47

**Description**

The product experienced a document feeder error.

**Recommended action**

Turn the product off, then on again. If the message remains, turn the product off, check the document feeder cables, and then turn the product on again.

If the error persists, replace the document feeder.

### 31.01.02 Jam in document feeder

**Event log error message**

31.01.02

**Description**

Originals are jammed inside the document feeder top cover.

**Recommended action**

1. Open the document feeder top cover.
2. Remove all media found.
3. Remove the remaining pages from the document feeder input tray.
4. Close the document feeder top cover.
5. Place the jammed page on top of any remaining pages, and reinsert them into the document feeder.
6. Align the paper guides with both edges on the paper.
7. Press the Start button to continue.

If the message remains, check the read and exit sensors.

If the error persists, replace the document feeder.

### 31.01.03 Document feeder pick error

**Event log error message**

31.01.03

**Description**

This message displays when the document feeder cannot pick up media.

**Recommended action**

1. Open the document feeder top cover.
2. Remove all media found.
3. Remove the remaining pages from the document feeder input tray.
4. Close the document feeder top cover.
5. Place the jammed page on top of any remaining pages, and reinsert them into the document feeder.
6. Align the paper guides with both edges on the paper.
7. Press the Start button to continue.

If message remains, check the paper guides, check and clean the rollers and separation pad, and test the registration sensor.

If the error persists, replace pickup roller assembly, separation pad, or document feeder.

### 40.00.01 USB I/O buffer overflow To continue, touch “OK”

**Description**

The USB buffer overflowed during a busy state.

**Recommended action**

Touch the OK button to print the transferred data. Some data might be lost.

Check the host configuration.

### 40.00.02 Embedded I/O buffer overflow To continue, touch “OK”

**Description**

Too much data was sent to the embedded HP Jetdirect print server. An incorrect communications protocol might be in use.

**Recommended action**

Press the OK button to print the transferred data. Some data might be lost.

Check the host configuration.

### 40.00.03 EIO <X> buffer overflow To continue, touch “OK”

**Description**

The product displays this message when the EIO card in the indicated slot has overflowed its I/O buffer during a busy state.

**Recommended action**

Touch the OK button to continue.

### 40.00.04 EIO <X> bad transmission To continue, touch “OK”

**Description**

The product displays this message when a connection with the card in the indicated slot has been abnormally broken.

**Recommended action**

Touch the OK button to continue.

### 40.00.05 Embedded I/O bad transmission To continue, touch "OK"

#### Description

The product experienced a temporary printing error. The connection between the product and the EIO card in the specified slot has been broken.

#### Recommended action

Touch the OK button to clear the error message and continue printing.

### 41.02.00 Error To continue, touch "OK"

#### Event log error message

41.02.00

#### Description

The product experienced an error in the laser/scanner assembly.

#### 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>

#### Event log error message

41.03.YZ

#### 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
- Z = 4: Source is Tray 4
- Z = 5: Source is Tray 5
- Z = 6: Source is Tray 6

### 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 manual/tray bin 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>

### Event log error message

41.05.YZ

### 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 that 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, touch "OK"

**Event log error message**

41.07.YZ

**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
- Z = 4: Tray 4
- Z = 5: Tray 5
- Z = 6: Tray 6
- Z = D: Duplexer

**Recommended action**

Turn the product off and then on. If the error persists, replace the DC controller PCA.

### 42.XX.YY Error

**Event log error message**

42.XX.YY

**Description**

An internal system failure error has occurred.

**Recommended action**

Turn the product off, and then on and retry.

If the error persists, clear the firmware image from the active partition using the Partial Clean item in the preboot menu.

### 44.01.XX Error

**Event log error message**

44.01.XX

**Description**

A digital send error has occurred.

**Recommended action**

Try to send the job again.

### 44.03.XX Error

**Event log error message**

44.03.XX

**Description**

A digital send error has occurred.

**Recommended action**

Try to send the job again.

### 44.10.XX Error

**Event log error message**

44.10.XX

**Description**

A send to e-mail error has occurred.

**Recommended action**

No action required.

### 44.34.XX Error

**Event log error message**

44.34.XX

**Description**

A fax error has occurred.

**Recommended action**

Try to send the job again. See the fax troubleshooting sections in the service manual.

### 44.92.XX Error

**Event log error message**

44.92.XX

**Description**

A fax error has occurred.

**Recommended action**

Try to send the job again. See the fax troubleshooting sections in the service manual.

### 47.00.XX Error

**Event log error message**

47.00.XX

**Description**

A back channel internal error has occurred.

**Recommended action**

Turn the product off, and then on. Resend the job.

If the error persists, execute the Partial Clean item in the preboot menu.

### 47.01.XX Error

**Event log error message**

47.01.XX

**Description**

An image transformer internal error has occurred.

**Recommended action**

Turn the product off, and then on. Resend the job.

If the error persists, execute the Partial Clean item in the preboot menu.

### 47.02.XX Error

**Event log error message**

47.02.XX

**Description**

A job parser internal error has occurred.

**Recommended action**

Turn the product off, and then on. Resend the job.

If the error persists, execute the Partial Clean item in the preboot menu.

### 47.03.XX Error

**Event log error message**

47.03.XX

**Description**

A print job internal error has occurred.

**Recommended action**

Turn the product off, and then on. Resend the job.

If the error persists, execute the Partial Clean item in the preboot menu.

### 47.04.XX Error

**Event log error message**

47.04.XX

**Description**

A print spooler 9100 internal error has occurred.

**Recommended action**

Turn the product off, and then on. Resend the job.

If the error persists, execute the Partial Clean item in the preboot menu.

### 47.06.XX Error

**Event log error message**

47.06.XX

**Description**

A print app internal error has occurred.

**Recommended action**

Turn the product off, and then on. Resend the job.

If the error persists, execute the Partial Clean item in the preboot menu.

### 47.WX.YZ Printer Calibration Failed To continue, touch "OK"

**Event log error message**

47.WX.YZ

**Description**

The product is unable to access or implement one of the image pattern files.

### Y = calibration type, Z = event

- 47.FC.00: Color plane registration (CPR) image not found at system initialization
- 47.FC.01: CPR Store Image failure
- 47.FC.02: CPR Image not found
- 47.FC.03: CPR Print engine execution failure
- 47.FC.10: Consecutive Dmax Dhalf Image not found at system initialization
- 47.FC.11: Consecutive Dmax Dhalf Store image failure
- 47.FC.12: Consecutive Dmax Dhalf Image not found

- 47.FC.13: Consecutive Dmax Dhalf Print engine execution failure
- 47.FC.20: Error Diffusion Image not found at system initialization
- 47.FC.21: Error Diffusion Store image failure
- 47.FC.22: Error Diffusion Image not found
- 47.FC.23: Error Diffusion Print engine execution failure
- 47.FC.30: Drum Speed Adjustment Image not found at system initialization
- 47.FC.31: Drum Speed Adjustment Store image failure
- 47.FC.32: Drum Speed Adjustment Image not found
- 47.FC.33: Drum Speed Adjustment Print engine execution failure
- 47.FC.40: Pulse Width Modulation Image not found at system initialization
- 47.FC.41: Pulse Width Modulation Store image failure
- 47.FC.42: Pulse Width Modulation Image not found
- 47.FC.43: Pulse Width Modulation Print engine execution failure

**Recommended action**

Turn the product off and then on.

If the error persists, reload the firmware.

### 48.01.XX Error

**Event log error message**

48.01.XX

**Description**

A job framework internal error has occurred.

**Recommended action**

No action necessary.

### 48.03.XX Error

**Event log error message**

48.03.XX

**Description**

A job framework internal error has occurred.

**Recommended action**

No action necessary.

### 48.05.XX Error

**Event log error message**

48.05.XX

**Description**

A job framework internal error has occurred.

**Recommended action**

No action necessary.

### 49.21.49 The device has a detection problem

**Event log error message**

49.21.49

**Description**

This error occurs as the product comes out of sleep mode if the optional stapler/stacker is removed when the product is in sleep mode.

**Recommended action**

Turn the product off, install the stapler/stacker, and then turn the product on.

### 49.XX.YY Error To continue turn off then on

**Event log error message**

49.XX.YY

**Description**

A firmware error has occurred. This error can be caused by corrupted print jobs, software applications issues, non-product specific printer drivers, poor-quality USB or network cables, bad network connections or incorrect configurations, invalid firmware operations, or unsupported accessories.

### Recommended action

1. Turn the product off, then on.
2. If the error returns, check the following:
   - The error might be caused by a network connectivity problem, such as a bad interface cable, a bad USB port, or an invalid network configuration setting.
   - The error might be caused by the print job, such as an invalid printer driver, a problem with the software application, or a problem with the file you are printing.
   - Upgrading the product firmware might help resolve the error. See the product user guide for more information.

## 50.WX.YZ Fuser Error To continue turn off then on

### Event log error message

50.1X.YZ or 50.2X.YZ

### Description

The product experienced a fuser error.

- X = fuser mode
- Y = previous printer sleep state
- Z = next printer sleep state

### Recommended action

### Low fuser temperature and fuser warm-up failure

1. Remove the fuser, and then reinstall the fuser. Make sure that there is no residual paper in the fuser. Make sure that the product 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 that the power source meets product requirements. Make sure that this is the only device using the circuit.
3. Replace the fuser.
4. Check the connector (J50) between the fuser and the printer. If it is damaged, replace the fuser drive assembly or fuser.
5. If the error persists, replace the low-voltage power supply.
6. If this product has been previously serviced, check the connectors (J160 and J162) on the DC controller PCA and the connector (J25) on the power line between the low-voltage power supply assembly and the fuser.

## 50.WX.YZ Fuser Error To continue turn off then on

### Event log error message

50.3X.YZ

### Description

The product experienced a fuser error.

- X = fuser mode
- Y = previous printer sleep state
- Z = next printer sleep state

### Recommended action

### High fuser temperature

1. Remove the fuser, and then reinstall 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 the error persists, replace the low-voltage power supply.
5. If this product has been previously serviced, check the connectors (J160 and J162) on the DC controller PCA.

## 50.WX.YZ Fuser Error To continue turn off then on

### Event log error message

50.4X.YZ

### Description

The product experienced a fuser error.

- X = fuser mode
- Y = previous printer sleep state
- Z = next printer sleep state

**Recommended action**

**Drive circuit fault**

1. Check the power source. Make sure that 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 connectors (J160 and J162) on the DC controller PCA.

## 50.WX.YZ Fuser Error To continue turn off then on

**Event log error message**

50.4X.YZ

**Description**

The product experienced a fuser error.

- X = fuser mode
- Y = previous printer sleep state
- Z = next printer sleep state

**Recommended action**

1. Check the power source. Make sure that the power source meets product requirements.
2. Reconnect the connector (J150) on the DC controller PCA.
3. If the error persists, replace the low-voltage power supply.

## 50.WX.YZ Fuser Error To continue turn off then on

**Event log error message**

50.7X.YZ

**Description**

The product experienced a fuser error.

- X = fuser mode
- Y = previous printer sleep state
- Z = next printer sleep state

**Recommended action**

**Fuser pressure-release mechanism failure**

1. Remove the fuser, and then reinstall the fuser. Make sure that 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 (SR7) is properly functioning. If it is not, replace the sensor.
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.
5. If this product has been previously serviced, check the connector (J128) on the DC controller PCA.

## 50.WX.YZ Fuser Error To continue turn off then on

**Event log error message**

50.8X.YZ

**Description**

The product experienced a fuser error.

- X = fuser mode
- Y = previous printer sleep state
- Z = next printer sleep state

**Recommended action**

**Low fuser temperature 2**

1. Remove the fuser, and then reinstall the fuser. Make sure that there is no residual paper in the fuser. Make sure that the product 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 that the power source meets product requirements. Make sure that this is the only device using the circuit.
3. Replace the fuser.
4. If the error persists, replace the low-voltage power supply.
5. Check the connector (J50) between the fuser and the product. If it is damaged, replace the fuser drive assembly or fuser.
6. If this product has been previously serviced, check the connectors (J160 and J162) on the DC controller PCA and the connectors (J25) on the power line between the low-voltage power supply assembly and the fuser.

## 50.WX.YZ Fuser Error To continue turn off then on

### Event log error message

50.9X.YZ

### Description

The product experienced a fuser error.

- X = fuser mode
- Y = previous printer sleep state
- Z = next printer sleep state

### Recommended action

### High fuser temperature 2

1. Remove the fuser, and then reinstall 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 connectors (J160 and J162) on the DC controller PCA.

## 50.WX.YZ Fuser Error To continue turn off then on

### Event log error message

50.AX.YZ

### Description

The product experienced a fuser error.

- X = fuser mode
- Y = previous printer sleep state
- Z = next printer sleep state

### Recommended action

### Low fuser temperature 3

1. Remove the fuser, and then reinstall the fuser. Make sure that there is no residual paper in the fuser. Make sure that the product 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 that the power source meets product requirements. Make sure that 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 drive assembly or fuser.
5. If this product has been previously serviced, check the connectors (J160 and J162) on the DC controller PCA and the connector (J25) on the power line between the low-voltage power supply assembly and the fuser.

## 50.WX.YZ Fuser Error To continue turn off then on

### Event log error message

50.BX.YZ

### Description

The product experienced a fuser error.

- X = fuser mode
- Y = previous printer sleep state
- Z = next printer sleep state

### Recommended action

### High fuser temperature 3

1. Remove the fuser, and then reinstall 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. Check the connector (J50) between the fuser and the product. If it is damaged, replace the fuser drive assembly or fuser.
5. If this product has been previously serviced, check the connectors (J160 and J162) on the DC controller PCA.

## 51.00.YY Error To continue turn off then on

### Event log error message

51.00.YY

### Description

An error with the laser/scanner assembly has occurred in the product.

- YY = 00: Laser malfunction
- YY = 19: Laser malfunction
- YY = 20: Black laser/scanner error
- YY = 21: Cyan laser/scanner error

- YY = 22: Magenta laser/scanner error
- YY = 23: Yellow laser/scanner error

**Recommended action**

Turn the product off, then on.

If the error persists, check the flat flexible cable connection at the laser scanner and DC controller.

If the error persists, check the motor connection at the laser scanner assembly.

If the error persists, replace the laser/scanner assembly.

### 52.00.00 Error To continue turn off then on

**Description**

The laser/scanner experienced a startup error.

**Recommended action**

1. Perform the laser/scanner component tests in the Troubleshooting menu.
2. Depending on the test results, perform one of the following steps:
   - If the cyan or black component tests showed a startup failure, reconnect the connectors of the cyan/black scanner motor (J41 and J72) and the DC controller PCA (J111).
   - If the yellow or magenta component tests showed a startup failure, reconnect the connectors of the yellow/magenta scanner motor (J40 and J71) and the DC controller PCA (J110).
3. Replace the cyan/black laser scanner unit or the yellow/magenta laser scanner unit. See Laser/scanner assembly (C/Bk) on page 279 or Laser/scanner assembly (Y/M) on page 275.

### 52.20.00 Error To continue turn off then on

**Description**

The laser/scanner experienced a rotational error.

**Recommended action**

1. Perform the laser/scanner component tests in the Troubleshooting menu.
2. Depending on the test results, perform one of the following steps:
   - If the cyan or black component tests showed a rotational failure, reconnect the connectors of the cyan/black scanner motor (J41 and J72) and the DC controller PCA (J111).
   - If the yellow or magenta component tests showed a rotational failure, reconnect the connectors of the yellow/magenta scanner motor (J40 and J71) and the DC controller PCA (J110).
3. Replace the cyan and black laser-scanner assembly or the yellow and magenta laser-scanner assembly. See Laser/scanner assembly (C/Bk) on page 279 or Laser/scanner assembly (Y/M) on page 275.

### 53.10.0X Unsupported DIMM

#### Description

An unsupported DIMM is installed.

#### Recommended action

Turn the product off, and then replace the DIMM that caused the error.

### 54.XX.YY Error

#### Event log error message

54.00.03

#### Description

The product experienced a sensor error.

#### Recommended action

#### 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 or cartridge fan assembly has been removed or replaced, check the sensor connector (J36), the inline connector (J67), and the connector (J108) on the DC controller PCA.

### 54.XX.YY Error

#### Event log error message

54.00.06

#### Description

The product experienced a sensor error.

#### Recommended action

#### Registration density sensor failure

1. Open and close the front door to clean the RD sensor assembly.
2. Open the right door and check the RD sensors for toner or paper dust.
3. If the error persists, replace the registration density sensor assembly.

### 54.XX.YY Error

#### Event log error message

54.00.35

### Description

The product experienced a sensor error.

### Recommended action

### Drum speed adjustment abnormal warning

1. Turn the product off and then on.

## 54.XX.YY Error

### Event log error message

54.01.05

### Description

The product experienced a sensor error.

### Recommended action

### Media sensor is out of calibration range

1. Turn the product off and then on.
2. If the error persists, replace the registration assembly.

## 54.XX.YY Error

### Event log error message

54.0X.07

### Description

The product experienced a sensor error.

- X = 5: Black
- X = 6: Cyan
- X = 7: Magenta
- X = 8: Yellow

### Recommended action

### Drum home position sensor failure

1. Turn the product off and then on.
2. If the error persists, replace the main drive assembly.
3. If the product has had parts removed or replaced, check all the connectors on the main drive assembly, and check the connector (J140) on the DC controller PCA.

## 54.XX.YY Error

### Event log error message

54.0X.0B or 54.0X.0C

### Description

The product experienced a sensor error.

- X = 0: Black
- X = 1: Cyan
- X = 2: Magenta
- X = 3: Yellow

### Recommended action

**Density sensor out of range error or Dhalf calibration failure**

1. Check the supplies status page to make sure that the print cartridges are not past their useful life.
2. Check the ITB for damage.
3. Make sure that the CPR sensor is not contaminated with toner or paper dust. Clean the sensor with compressed air and a soft brush.
4. If the error persists, replace the density detect assembly.

## 54.XX.YY Error

### Event log error message

54.0X.0D or 54.0X.0E

### Description

The product experienced a sensor error.

- X = 0: Black
- X = 1: Cyan
- X = 2: Magenta
- X = 3: Yellow

### Recommended action

**Optical memory element abnormal or CPR sensor out of range**

1. Check the supplies status page to make sure that the print cartridges are not past their estimated 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 a soft brush.
4. If the error persists, replace the density detect sensor assembly.

## 54.XX.YY Error

**Event log error message**

54.0X.1E or 54.1X.1E or 54.2X.1E

**Description**

The product experienced a sensor error.

- X = 0: Black
- X = 1: Cyan
- X = 2: Magenta
- X = 3: Yellow

**Recommended action**

**Halftone calibration error**

1. Check the supplies status page to make sure that the print cartridges are not past their estimated 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 a soft brush.
4. If the error persists, replace the density detect sensor assembly.

## 55.00.05 Engine Firmware RFU Error To continue turn off then on

**Event log error message**

55.00.05

**Description**

The firmware upgrade failed.

**Recommended action**

Turn the product off and then on.

## 55.00.YY DC Controller Error To continue turn off then on

**Event log error message**

55.00.YY

**Description**

The communication link between the formatter and DC controller was lost.

- 55.00.01: DC controller memory error.
- 55.00.03: DC controller no engine response.
- 55.00.04: DC controller communications timeout.

**Recommended action**

Turn the product off and then on.

If the error persists, replace the DC controller.

### 55.00.YY DC Controller Error To continue turn off then on

**Description**

The DC controller experienced a communication error.

**Recommended action**

1. Turn the product off and then on.
2. Perform an engine test.
3. Verify that the connectors on the DC controller are seated correctly.
4. Replace the DC controller. See DC controller PCA and tray on page 248.

### 56.00.01 Illegal Input Printer Error To continue turn off then on

**Description**

The product experienced an illegal input.

**Recommended action**

1. Turn the product off and then on.
2. Remove any third-party hardware.

### 56.00.YY Error To continue turn off then on

**Event log error message**

56.00.01

**Description**

The product experienced a communication error with the optional paper trays.

**Recommended action**

Turn the product off, then on.

If the error persists, remove the optional paper trays and check the connector on the bottom of the engine and the connector on top of the input tray for damage. If a connector is damaged, replace the connector.

### 58.00.04 Error To continue turn off then on

**Event log error message**

58.00.04

**Description**

The product experienced a low voltage power supply unit malfunction.

**Recommended action**

Turn the product off, then on. If the error persists, replace the low voltage power supply.

### 59.00.B0 Cleaning motor error Replace Toner Collection Unit

**Description**

The cleaning motor is stuck, the waste toner chute is clogged, or the TCU is full.

**Recommended action**

If the TCU is full, replace the TCU. If the TCU is not full, remove the TCU motor and check the rotation of the waste toner auger. Replace the TCU motor or the auger.

### 59.00.YY Error To continue turn off then on

**Event log error message**

59.00.YY

**Description**

The product experienced a printing error.

**Recommended action**

### 59.00.00: Paper path malfunction

- Turn the product off and then on.

### 59.00.30 or 59.00.40: Fuser motor (M2) start up error or fuser motor (M2) rotational error

- 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.
- If the product has been serviced, check the connectors at the fuser motor assembly and the DC controller. See the circuit diagram for details.

  If the error occurred the first time the product was turned on, or after a fuser replacement, check the fuser bearings for damage.

### 59.00.90 or 59.00.A0: ITB motor (M1) start up error or ITB motor (M1) abnormal rotational error

- Remove the ITB and check for damage.
- Use the ITB motor (M1) drive test in the component test to verify that the ITB motor is properly functioning. If it is not, replace the ITB motor assembly.
- If the product has been serviced, check the connectors at the ITB motor assembly and the DC controller. See the circuit diagram for details.

### 59.00.C0: Developer alienation motor (M10) error

- Use the developer engagement and disengagement drive test in the component test to verify that the disengagement mechanisms are properly functioning. If they are not, replace the developer alienation motor.
- Use the manual sensor test to verify that the developer disengagement sensor (SR11) is properly functioning. The sensor is located inside the main drive assembly and cannot be reached for testing. Disconnect the connector (J112) at the DC controller while in manual sensor test mode to verify the sensor operation. If it is not operating, replace the main drive assembly.
- If the product has been serviced, check the intermediate connector (J87) of the developing disengagement sensor, the connector (J112) on the DC controller PCA, the connector (J38) of the developing disengagement motor, and the connector (J261) on the high-voltage power supply D PCA.

### 59.00.F0: T1 alienation mechanism failure

- Make sure that the ITB is correctly installed.
- Use the T1 roller alienation sensor (SR9) test in the manual sensor test to verify that the sensor is properly functioning. If it is not, replace the sensor assembly.
- Use the T1 roller engagement and disengagement drive test in the component test to verify that the T1 roller disengagement mechanism is properly functioning. If it is not, remove the ITB and manually actuate the alienation mechanism. If it fails, replace the ITB. If the ITB is working correctly, replace the fuser drive assembly.
- If the product has been serviced, check the connector (J128) on the DC controller PCA.

### 59.0X.50 Error To continue turn off then on

#### Event log error message

59.0X.50

#### Description

The product experienced a drum motor startup error.

- X= 5: Black
- X = 6: Cyan

- X = 7: Magenta
- X = 8: Yellow

**Recommended action**

Each cartridge slot has a drum motor. Use the disable cartridge check and run the drum motor component test with the print cartridge removed. If the test passes, replace the print cartridge. If the test fails, replace the drum motor. If the product has been serviced, check the connector at the drum motor assembly and the DC controller. See the circuit diagram for details.

### 59.0X.60 Error To continue turn off then on

**Event log error message**

59.0X.60

**Description**

The product experienced a drum motor rotation error.

- X= 5: Black
- X = 6: Cyan
- X = 7: Magenta
- X = 8: Yellow

**Recommended action**

Each cartridge slot has a drum motor. Use the disable cartridge check and run the drum motor component test with the print cartridge removed. If the test passes, replace the print cartridge. If the test fails, replace the drum motor. If the product has been serviced, check the connector at the drum motor assembly and the DC controller. See the circuit diagram for details.

### 60.00.0Y Tray <Y> lifting error

**Event log error message**

60.00.0Y

**Description**

The indicated tray has not lifted into the paper feed position.

**Recommended action**

- Remove the tray and manually rotate the gear on the rear of the tray to make sure that the lift mechanism is working.
- With the tray removed, pressing any of the paper size switches will cause the tray lift motor to run. If the motor does not work, replace the lifter assembly.

- Use the manual sensor test to make sure that the paper surface sensor for the tray is working. If not, replace the paper pickup assembly.
- If the product has been serviced, check the connections for the motor and the sensor. See the circuit diagram for details.

### 62.00.00 No system To continue turn off then on

**Event log error message**

62.00.00

**Description**

The product experienced an internal system failure.

**Recommended action**

Turn the product off, then on.

If the error persists, reload the firmware. If the error still persists, perform a firmware upgrade.

If the firmware upgrade does not resolve the problem, replace the hard disk.

### 65.80.A1 Output accessory disconnected

**Description**

The product displays this message when the stapler/stacker connection has been interrupted with no media in the accessory.

**Recommended action**

1. Turn the product off.
2. Make sure that the stapler/stacker is clear of all packing material and other obstructions.
3. Check the stapler/stacker connection and make sure that it is properly connected.
4. Turn the product on.

### 66.80.YY <Output device> failure

**Event log error message**

66.80.YY

**Description**

The stapler/stacker controller on the product has detected a failure.

- YY = 01: Y-align failure
- YY = 02: Jogger failure
- YY = 03: Stapler failure

- YY = 21: Lift up failure
- YY = 22: Lift down failure
- YY = 23: Left sensor failure
- YY = 33: Output roller failure

**Recommended action**

1. Turn the product off.
2. Disconnect and then reconnect the stapler/stacker.
3. Turn the product on.
4. If the error persists, replace the stapler/stacker.

### 69.11.YY Error To continue, touch "OK"

**Event log error message**

69.11.YY

**Description**

This message displays to indicate an error during a duplex (2-sided printing) operation.

**Recommended action**

Turn the product off and then on.

### 70.00.00 Error To continue turn off then on

**Event log error message**

70.00.00

**Description**

The product experienced a DC controller failure.

**Recommended action**

Turn the product off, then on.

If the error persists, replace the DC controller.

### 79.XX.YY Error To continue turn off then on

**Event log error message**

79.XX.YY

### Description

This error can be caused by corrupted print jobs, software application issues, non-product-specific printer drivers, poor-quality USB or network cables, bad network connections, incorrect configurations, invalid firmware operations, or unsupported accessories.

### Recommended action

1. Turn the product off, then on
2. If the error persists, check the following items:
   - The error might be caused by a network connectivity problem, such as a bad interface cable, a bad USB port, or an invalid network configuration setting.
   - The error might be caused by the print job, such as an invalid printer driver, a problem with the software application, or a problem with the file that you are printing.
   - A firmware upgrade might help resolve the error.

## 80.0X.YY Embedded JetDirect Error To continue turn off then on

### Event log error message

80.0X.YY

### Description

The product experienced an embedded HP JetDirect print server critical error.

### Recommended action

Turn the product off, then on.

If the error persists, replace the formatter.

## 80.YYYY EIO Error To continue turn off then on

### Event log error message

81.WX.YY

### Description

An external I/O card has failed on the product.

### Recommended action

Turn the product off and then on.

If the error persists, replace the EIO card.

## 98.00.0X Corrupt data in X volume

### Event log error message

98.00.0X

**Description**

The product has experienced a data corruption in the volume indicated by the error message.

- **98.00.01 Corrupt data in firmware volume**
- **98.00.02 Corrupt data in solutions volume**
- **98.00.03 Corrupt data in configuration volume**
- **98.00.04 Corrupt data in job data volume**

**Recommended action**

### 98.00.01 or 98.00.02 or 98.00.03

- Turn the product off and then on.
- Use the Clean Disk item in the preboot menu.
- Reload the firmware.

### 98.00.04

- Turn the product off and then on.
- Rerun the file erase function.

### 99.00.01 Upgrade not performed file is corrupt

**Event log error message**

99.00.01

**Description**

A remote firmware upgrade (RFU) failed.

The product experienced an 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

**Event log error message**

99.00.02

**Description**

A remote firmware upgrade (RFU) failed.

The product experienced an I/O timeout when reading the file header number and size.

**Recommended action**

The most common cause is an issue with the network environment. Make sure that there is a good network connection to the product, and then attempt the upgrade again, or perform the upgrade by using the walk-up USB port on the product control panel.

### 99.00.03 Upgrade not performed error writing to disk

**Event log error message**

99.00.03

**Description**

A remote firmware upgrade (RFU) failed.

The product encountered a 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**

Download the RFU file, and then attempt the upgrade again.

If the error persists, perform the Clean Disk process. You will then need to upload the firmware file from the preboot menu.

If the error persists, replace the hard disk.

### 99.00.04 Upgrade not performed timeout during receive

**Event log error message**

99.00.04

**Description**

A remote firmware upgrade (RFU) failed.

The product experienced an I/O timeout when reading the rest of the header.

**Recommended action**

The most common cause is an issue with the network environment. Make sure that there is a good network connection to the product, and then attempt the upgrade again, or perform the upgrade by using the walk-up USB port on the product control panel.

### 99.00.05 Upgrade not performed timeout during receive

**Event log error message**

99.00.05

**Description**

A remote firmware upgrade (RFU) failed.

The product experienced an 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 network connection to the product, and then attempt the upgrade again, or perform the upgrade by using the walk-up USB port on the product control panel.

### 99.00.06 Upgrade not performed error reading upgrade

**Event log error message**

99.00.06

**Description**

A remote firmware upgrade (RFU) failed.

The product experienced an error when reading header number and size.

**Recommended action**

Download the RFU file, and then attempt the upgrade again.

If the error persists, replace the hard disk.

### 99.00.07 Upgrade not performed error reading upgrade

**Event log error message**

99.00.07

**Description**

A remote firmware upgrade (RFU) failed.

The product experienced an error when reading the rest of the header.

**Recommended action**

Download the RFU file, and then attempt the upgrade again.

If the error persists, replace the hard disk.

### 99.00.08 Upgrade not performed error reading upgrade

**Event log error message**

99.00.08

**Description**

A remote firmware upgrade (RFU) failed.

The product experienced an error when reading image data.

**Recommended action**

Download the RFU file, and then attempt the upgrade again.

If the error persists, replace the hard disk.

### 99.00.09 Upgrade canceled by user

**Event log error message**

99.00.09

**Description**

A remote firmware upgrade (RFU) failed.

The RFU process was canceled by the user.

**Recommended action**

Attempt the upgrade again.

### 99.00.10 Upgrade canceled by user

**Event log error message**

99.00.10

**Description**

A remote firmware upgrade (RFU) failed.

The user canceled the job when the upgrade process was reading the header number and size.

**Recommended action**

Attempt the upgrade again.

### 99.00.11 Upgrade canceled by user

**Event log error message**

99.00.11

**Description**

A remote firmware upgrade (RFU) failed.

The user canceled the job when the upgrade process was reading the rest of the header.

**Recommended action**

Attempt the upgrade again.

### 99.00.12 Upgrade not performed the file is invalid

**Event log error message**

99.00.12

#### Description

A remote firmware upgrade (RFU) failed.

The header number is 1, but the header size does not match the version 1 size.

#### Recommended action

Download the RFU file again. Make sure that you download the file for the correct product model. Attempt the upgrade again.

### 99.00.13 Upgrade not performed the file is invalid

#### Event log error message

99.00.13

#### Description

A remote firmware upgrade (RFU) failed.

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. Attempt the upgrade again.

### 99.00.14 Upgrade not performed the file is invalid

#### Event log error message

99.00.14

#### Description

A remote firmware upgrade (RFU) failed.

The file is invalid.

#### Recommended action

Download the RFU file again. Make sure that you download the file for the correct product model. Attempt the upgrade again.

### 99.09.60 Unsupported disk

#### Event log error message

99.09.60

#### Description

This message is a 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

#### Event log error message

99.09.61

#### Description

This message is a preboot menu error.

The hard disk is installed in a product configured for an encrypted hard disk.

#### Recommended action

Open the preboot menu, and then select the Lock Disk item to lock the disk.

### 99.09.62 Unknown disk

#### Event log error message

99.09.62

#### Description

This message is a 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, and then reload the firmware and lock the disk.

### 99.09.63 Incorrect disk

#### Event log error message

99.09.63

#### Description

A new or blank disk has been installed in a product 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

#### Event log error message

99.09.64

#### Description

The product experienced a fatal hard disk failure.

#### Recommended action

Replace the hard disk drive.

### 99.09.65 Disk data error

#### Event log error message

99.09.65

#### Description

The product experienced disk data corruption.

#### Recommended action

Execute the Clean Disk procedure from the preboot menu, and then attempt the firmware upgrade again.

### 99.09.66 No disk installed

#### Event log error message

99.09.66

#### 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

#### Event log error message

99.09.67

#### 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 uploaded to the product.

#### Recommended action

1. Press any key to continue to the main preboot menu.
2. Press the Help ? button to see the help text for the error.
3. Select the Administrator menu.

**NOTE:** If there is a password assigned to the administrator, a prompt to enter the password displays.

4. Select the Download item.
5. The user can now upload a new firmware file to the product.

### 99.09.68 Expecting secondary disk

**Event log error message**

99.09.68

**Description**

The product is searching for a secondary disk.

**Recommended action**

Reinstall the secondary encrypted storage device.

### <binname> full Remove all paper from bin

**Description**

The specified output bin on the product is full but is not currently needed for a job.

**Recommended action**

Remove all paper from the bin.

**NOTE:** The bin full sensor flag is part of the output bin bezel and is used only when the output bin is installed. If the stapler/stacker is installed, the bin full sensor is not used by the product.

Check the bin full flag for proper movement.

Replace the stapler/stacker.

### <X> destinations received 1 copy

**Description**

A digital send job was sent to the number of destinations indicated.

**Recommended action**

No action is necessary.

### Accept bad signature?

**Event log error message**

99.00.28

**Description**

The product is performing a remote firmware upgrade, and the code signature is invalid.

#### Recommended action

Download the RFU file again. Make sure that you download the file for the correct product model. Attempt the firmware upgrade again.

### Authentication required

#### Description

Authentication is enabled for this feature or destination. A user name and password are required.

#### Recommended action

Type the user name and password, or contact the network administrator.

### Authentication required to use this feature

#### Description

A user name and password are required.

#### Recommended action

Type the user name and password, or contact the network administrator.

### Bad optional tray connection

#### Description

The optional tray is not connected properly.

#### Recommended action

1. Turn the product off.
2. Remove and reinstall the optional tray.
3. Turn the product on.

### Calibrating...

#### Description

This message displays during the execution of a calibration. Inline engines perform calibrations on power-on, waking from sleep, at page-count limits (sometimes restricted to job boundaries), and environmental changes.

#### Recommended action

Touch the Hide button to remove this message.

### Calibration reset pending

#### Description

A calibration reset will occur when all jobs are processed.

**Recommended action**

To begin the reset sooner, cancel all jobs by pressing the Stop button.

### Card slot device failure To clear touch "OK"

**Description**

The specified device failed.

**Recommended action**

Touch the OK button to clear the message.

### Card slot file system is full

**Description**

The file system on a card installed in the card slot is full.

**Recommended action**

Touch the OK button to clear the message.

### Card slot is write protected

**Description**

The card slot device is protected, and no new files can be written to it.

**Recommended action**

Touch the OK button to clear the message.

### Card slot not initialized

**Description**

The card slot file system must be initialized before it can be used.

**Recommended action**

Use the embedded Web server or HP Web Jetadmin to initialize the component.

### Cartridge ship mode

**Description**

Manufacturing use only - should not be seen in field.

**Recommended action**

Contact HP support for steps to resolve this condition.

## Checking engine

### Description

The product is checking the engine.

### Recommended action

No action is necessary.

## Checking output device

### Description

The product is checking the stapler/stacker.

### Recommended action

No action is necessary.

## Checking paper path

### Description

The engine is checking the rollers for possible paper jams.

### Recommended action

No action is necessary.

## Chosen personality not available To continue, touch “OK”

### Description

A print job requested a product language (personality) that is not available for this product. The job will not print and will be cleared from memory.

### Recommended action

Print the job by using a printer driver for a different printer language, or add the requested language to the product (if possible). To see a list of available personalities, print a configuration page.

## Cleaning disk <X>% complete Do not power off

### Description

A storage device is being sanitized or cleaned.

### Recommended action

Do not turn off the product. The product's functions are unavailable. The product will automatically restart when finished.

### Cleaning...

#### Description

A two-step cleaning page is being processed (after having been created) on the product. Products with duplexers that create and process the cleaning page in one step also display this message.

#### Recommended action

No action is necessary.

### Clearing activity log

#### Description

This message is displayed while the activity log is cleared. The product exits the menus when the log has been cleared.

#### Recommended action

No action is necessary.

### Clearing paper path

#### Description

The product jammed or was turned on and paper was detected where it should not be. It is attempting to eject these pages automatically.

#### Recommended action

No action is necessary.

### Clearing paper path

#### Description

The product is attempting to eject jammed paper.

#### Recommended action

No action is necessary.

### Close front door

#### Description

The front door of the product is open.

#### Recommended action

Close the front door.

Run the switch test in the sensor monitor mode to verify that the front-door switch is functioning properly.

Check the sensor flag on the front-door assembly. If it is damaged, replace the front-door assembly.

If this product has been previously serviced, reconnect the connector (J708) on the 24V interlock switch and the connector (J121) on the DC controller PCA.

## Close lower right door

### Description

The optional paper feeder right door is open.

### Recommended action

Close the door.

If the error persists, run the manual tray/bin sensor test SW1 right door opening/closing sensor. If the sensor fails, replace the right door switch.

If the error persists, check the right door sensor flag. If it is damaged, replace the right door.

## Close right door

### Description

A door on the right side of the product is open.

### Recommended action

Close the right door.

If the error persists, run the manual sensor test SP15 right door opening/closing sensor. If the sensor fails, replace the right door switch.

If the error persists, check the right door sensor flag. If it is damaged, replace the right door.

If this product has been previously serviced, reconnect the connector (J708) on the 24V interlock switch and the connector (J181) on the DC controller PCA.

## Close top cover

### Description

The scanner is open. Check the latch behind the control panel.

### Recommended action

Use the sensors test to check the sensor located on the front of the IPTU.

Check the sensor flag located on the bottom of the scanner.

## Close upper right door

### Description

The upper right door is open.

**Recommended action**

Close the upper right door.

If the error persists, run the manual sensor test SP15 right door opening/closing sensor. If the sensor fails, replace the right door switch.

If the error persists, check the right door sensor flag. If it is damaged, replace the right door.

If this product has been previously serviced, reconnect the connector (J708) on the 24V interlock switch and the connector (J181) on the DC controller PCA.

### Code CRC error Send full RFU on <X> port

**Description**

The product displays this message before the firmware is loaded at startup when an error has occurred during a firmware upgrade.

**Recommended action**

Resend the upgrade using either a network cable or the walk-up USB port.

### Color RFU failed Send full RFU on <X> port

**Description**

The product displays this message before the firmware is loaded at startup when an error has occurred during a firmware upgrade.

**Recommended action**

Resend the upgrade using either a network port or the walk-up USB port.

### Communication Lost

**Description**

The control panel cannot communicate with the formatter.

**Recommended action**

- Check the control panel USB connection.
- Remove the formatter and then reinstall the formatter to make sure that it is seated correctly.

### Connect output accessory

**Description**

The product has no output accessory connected and cannot print.

**Recommended action**

1. Turn the product off.
2. Connect an output accessory and reconnect any loose external accessory cables.
3. Turn the product on.

**NOTE:** To continue without an output accessory, turn the product off, remove the output accessory bridge, and then turn on the product.

## Cooling device

**Description**

This product recently experienced a period of heavy use. In order to maintain a supported operating temperature, the product cycles through intervals of printing and pausing.

**Recommended action**

No action is necessary.

## Data received

**Description**

The product is waiting for more data to continue the print job. To print the remaining data, touch the Clear button. To close the dialog and wait for the command to print the last page, touch the OK button.

**Recommended action**

No action is necessary.

## Data received To print last page press "OK"

**Description**

The product is waiting for the command to print the last page.

**Recommended action**

Touch the OK button to print the last page.

## Digital send communication error

**Description**

A digital send job failed and cannot be delivered.

**Recommended action**

Touch the Hide button to remove this message.

### Digital send communication error

#### Description

A digital send job failed and cannot be delivered.

#### Recommended action

Try to send the job again.

### Document feeder bin full

#### Description

Too many pages are in the document feeder.

#### Recommended action

Remove excess media from document feeder output bin.

### Document feeder kit low

#### Event log error message

10.39.60

#### Description

The product indicates when a supply level is low.

#### Recommended action

Replace the document feeder kit.

### Document feeder kit very low To continue, touch "OK"

#### Event log error message

10.39.70

#### Description

The product indicates when a supply level is very low.

**NOTE:** After an HP supply has reached the very low threshold, the HP Premium Protection Warranty for that supply has ended.

#### Recommended action

Replace the document feeder kit.

### Document feeder top cover open

#### Description

The document feeder jam access cover is open.

### Recommended action

Close the cover.

## EIO <X> disk initializing

### Description

The specified EIO disk device is initializing.

### Recommended action

No action is necessary.

## EIO <X> disk not functional

### Event log error message

82.0X.YY

### Description

The EIO disk in the indicated slot is not working correctly.

- X = 1: Slot 1
- X = 2: Slot 2

### Recommended action

Turn the product off and then on. If the message remains, turn the product off, and remove and reseat the EIO disk.

## EIO <X> disk spinning up

### Description

The EIO disk product in the indicated slot is spinning up. Jobs that require disk access must wait.

- X = 1: Slot 1
- X = 2: Slot 2

### Recommended action

No action is necessary.

## EIO device failure

### Description

The EIO device file system must be initialized before it can be used.

### Recommended action

Initialize the EIO file system.

### EIO device failure To clear touch “OK”

**Description**

The specified device failed.

**Recommended action**

Touch the OK button to clear the message.

### EIO file operation failed

**Description**

A PJL file system command attempted to perform an illogical operation, such as downloading a file to a directory that does not exist.

**Recommended action**

Touch the OK button to clear the message.

### EIO file system is full

**Description**

A PJL file system command attempted to write data to the disk but was unsuccessful due to the disk being full.

**Recommended action**

Touch the OK button to clear the message.

### EIO is write protected

**Description**

The device is protected and no new files can be written to it.

**Recommended action**

Touch the OK button to clear the message.

### EIO not initialized

**Description**

The EIO disk file system must be initialized before it can be used.

**Recommended action**

Use the HP Embedded Web Server or HP Web Jetadmin to initialize the component.

## Event log is empty

### Description

This message displays when the user has attempted to view an empty event log by selecting Show Event Log from the control panel.

### Recommended action

Touch the Hide button to remove this message.

## Expected drive missing

### Description

The product cannot find the encrypted hard drive during power on.

### Recommended action

Insert the encrypted hard drive.

## External device initializing

### Description

An external accessory is initializing.

### Recommended action

No action is necessary.

## Fax is disabled – ignoring call

### Description

The product received a call, but the fax feature was not configured with the required settings (country/region, date/time, company name, fax number, etc.).

### Recommended action

Configure the fax with the required settings from the Administration menu on the control panel.

## Finisher low on finishing agent

### Description

A finishing device on the product is low on its supply material (glue, staples, etc.).

### Recommended action

Refill the product finishing device supply.

### Finishing process not functional

#### Description

The finishing device indicates it cannot perform the requested finishing action (like stapling or binding).

#### Recommended action

The job proceeds without the finishing action being performed.

### Flatbed cover open

#### Description

The scanner cover has been opened to access the glass.

#### Recommended action

Close the scanner cover.

### Fuser Kit Low

#### Event log error message

10.23.60

#### Description

The product indicates when a supply level is low.

#### Recommended action

Replace the fuser kit.

**NOTE:** After replacing the fuser kit, reset the fuser page counter by selecting the New Fuser Kit item in the Reset Supplies sub-menu.

### Fuser Kit Very Low To continue, touch "OK"

#### Event log error message

10.23.70

#### Description

The product indicates when a supply level is very low.

**NOTE:** After an HP supply has reached the very low threshold, the HP Premium Protection Warranty for that supply has ended.

#### Recommended action

Replace the fuser kit.

**NOTE:** After replacing the fuser kit, reset the fuser page counter by selecting the New Fuser Kit item in the Reset Supplies sub-menu.

## Gateways failed

### Description

The gateway configuration is incorrect.

### Recommended action

Check the gateway configuration and correct it if necessary.

## Gateways OK

### Description

This message appears when gateway test results are satisfactory.

### Recommended action

No action is necessary.

## Genuine HP cartridge installed

### Description

A new HP cartridge has been installed. This message appears for approximately 6 seconds before the product returns to the Ready state.

### Recommended action

No action is necessary.

## Genuine HP supply installed

### Event log error message

10.XX.40

### Description

The product displays this message when a new cartridge has been installed and all cartridges and drums are Genuine HP

- 10.00.40 (event code): Black print cartridge
- 10.10.40 (event code): Cyan print cartridge
- 10.02.40 (event code): Magenta print cartridge
- 10.03.40 (event code): Yellow print cartridge

### Recommended action

Touch the Hide button to remove this message.

## HP Secure drive disabled

### Description

The HP high-performance hard disk is disabled, or the product does not recognize the hard disk.

After an encrypted hard disk is paired with a specific product, it cannot be used in another product unless it is reinitialized.

**NOTE:** After the encrypted hard disk is paired to the product, all other hard disks are disabled.

### Recommended action

Use the embedded Web server to configure the hard disk.

1. Open the embedded Web server by typing the product IP address into a Web browser.
2. Click the **Digital Sending** tab.
3. Select the **Security** link from the left navigation menu, and open the **Hard Disk and Mass Storage Security Settings** section.
4. The following options are available:
   - **Disk Init**: This option does not affect the disk encryption status.
   - **NVram Init**: This option does not affect the disk encryption status.
   - **Disable Hard Disk Encryption and Reboot**: This option completely erases the hard disk including all stored jobs, digital-send settings, and authentication settings. All pre-loaded fonts, after-market fonts, and other programs must be reloaded.
   - **Reinitialize Hard Disk**: This option has the same effect as the **Disable Hard Disk Encryption and Reboot**, but it does not restart the product.

## Incompatible <Supply>

### Event log error message

10.YY.35

### Description

A supply has been installed that is intended for another product and printing is not allowed.

- 10.00.35 (event code): Black print cartridge
- 10.10.35 (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 kit

### Recommended action

Replace the incompatible supply.

## Incompatible Supplies

### Description

Print cartridges or other supply items are installed that were not designed for this product. The product cannot print with these supplies installed.

Event codes are supply specific.

### Recommended action

Touch the OK button to identify the incompatible supplies.

Replace the supplies with those that are designed for this product.

## Initializing scanner... Please wait

### Description

The product is waiting for the scanner to initialize.

### Recommended action

No action is necessary. Wait until the **Ready** message appears on the display.

## Initializing...

### Description

The product is starting.

### Recommended action

No action is necessary. Wait until the **Ready** message appears on the display.

## Install <color> cartridge

### Event log error message

10.YY.15

### Description

A supply is either not installed or not correctly installed in the product.

- 10.00.15 (event code): Black cartridge
- 10.01.15 (event code): Cyan cartridge
- 10.02.15 (event code): Magenta cartridge
- 10.03.15 (event code): Yellow cartridge

### Recommended action

Replace or reinstall the print cartridge correctly to continue printing.

## Install Fuser Unit

### Event log error message

10.23.15

### Description

The fuser is either not installed or not correctly installed in the product.

### Recommended action

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

Reseat the fuser.

## Install Supplies

### Event log error message

10.YY.15

### Description

More than one supply is missing or is 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 (event code): Fuser kit
- 10.31.15 (event code): Toner collection unit

### Recommended action

Touch the OK button to identify which supplies need to be replaced.

Touch the OK button a second time for more information about the specific supply.

Insert the supply item or make sure the installed supply item is fully seated.

## Install Transfer Unit

### Event log error message

10.22.15

**Description**

The transfer unit has been removed or installed incorrectly.

**Recommended action**

Install the transfer unit. If already installed, remove and replace it.

If the product could not find the ITB contact alienation home position, check the ITB alienation sensor (SR9).

Run the ITB contact alienation test to verify that the ITB alienation mechanism is functioning properly. If it is not, replace the fuser drive assembly.

If the product has been serviced, reconnect the connector (J128) on the DC controller PCA.

### Internal disk device failure To clear touch "OK"

**Description**

The internal disk failed.

**Recommended action**

Touch the OK button to clear the message.

### Internal disk file operation failed

**Description**

A PJL file system command attempted to perform an illogical operation, such as downloading a file to a nonexistent directory.

**Recommended action**

Touch the OK button to clear the message.

### Internal disk file system is full

**Description**

A PJL file system command attempted to write data to the internal disk but was unsuccessful due to the disk being full.

**Recommended action**

Touch the OK button to clear the message.

### Internal disk is write protected

**Description**

The internal disk is protected and no new files can be written to it.

#### Recommended action

Touch the OK button to clear the message.

### Internal disk not found

#### Description

The product cannot find the hard drive.

#### Recommended action

Check the hard drive cable connections.

### Internal disk not functional

#### Event log error message

82.0X.YY

#### Description

The product internal disk is not working correctly

#### Recommended action

Turn off the product, and then remove and reinstall the disk. Turn on the product.

If the error persists, replace the internal hard drive.

### Internal disk not initialized

#### Description

The internal disk file system must be initialized before it can be used.

#### Recommended action

Initialize the internal file system.

### Internal disk spinning up

#### Description

The internal disk is spinning up its platter. The message usually shows for approximately 15 seconds when the product comes out of power-save mode. Jobs can still print, but jobs that require disk access, such as stored jobs, must wait.

#### Recommended action

No action is necessary.

### Job not stapled due to mixed sizes

**Description**

This message displays when the job to staple has more than one paper size with different paper width.

**Recommended action**

Media of different widths cannot be stapled. Use the same width pages for stapled jobs.

### Load Tray 1 [Type] [Size]

**Description**

Tray 1 is not loaded, but there is not another tray available for the user to use instead.

**Recommended action**

Load the tray with the requested paper.

### Load Tray 1 [Type] [Size] To continue, touch “OK”

**Description**

Tray 1 is empty.

**Recommended action**

Load Tray 1 with the requested paper. Or, if paper is already in Tray 1, touch the OK button to print.

If paper is in another tray, remove the paper and insert it in Tray 1, and then touch the OK button.

### Load Tray 1 [Type] [Size] To use another tray, touch "Options"

**Description**

This message occurs when Tray 1 is not loaded, but another tray is available for use instead.

**Recommended action**

Load the tray with the requested paper, or touch the Options button to select another tray.

### 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 (J736) on the MP tray media out sensor and the connector (J152) on the DC controller PCA.
- Printer cassette: connectors (J739 and J742) on the cassette media out sensor and the connector (J151) on the DC controller PCA.
- 1 X 500-sheet paper feeder cassette: connector (J702D) on the paper feeder cassette media out sensor and the connector (J2003) on the paper feeder controller PCA.
- Paper deck cassette 1: connector (J702D) on the paper deck cassette 1 media out sensor and connector (J2003) on the paper deck controller PCA 1
- Paper deck cassette 2: connector (J802D) on the paper deck cassette 2 media out sensor and connector (J2003B) on the paper deck controller PCA 2.
- Paper deck cassette 3: connector (J902D) on the paper deck cassette 3 media out sensor and connector (J2003C) on the paper deck controller PCA 3.

## Load Tray <X>: [Type], [Size] To use another tray, touch "Options"

### 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, touch the OK button to select another tray.

## Loading program <XX> Do not power off

### Description

Programs and fonts can be stored on the product's file system and are loaded into RAM when the product is turned on. The number XX specifies a sequence number indicating the current program being loaded.

### Recommended action

No action is necessary. Do not turn the product off.

## Manually feed output stack Then touch "OK" to print second side

### Description

The first side of a manual duplex job printed and the product is waiting for the user to insert the output stack to complete the second side. For the normal **Manually Feed** message, printing continues

automatically when the paper is reinserted. With this message, printing stops until the user touches the OK button, which allows time for straightening the output stack.

**Recommended action**

The even-numbered pages of the two-sided document have printed. Follow the next steps to print the odd-numbered pages.

1. Maintaining the same orientation, remove the document from the output bin. Do not discard blank pages.
2. Flip the document over so the printed side is up.
3. Load Tray 1 with the face-up document.
4. To continue printing, touch the OK button.

### Manually feed: <Type><Size>

**Description**

This message appears when the manual feed setting is selected and all trays are empty

**Recommended action**

Load tray with requested paper.

If paper is already in tray, touch the Help button to clear the message, and then touch the OK button to print.

To use another tray, clear paper from Tray 1, touch the Help button to clear the message, and then touch the OK button.

### Manually feed: <Type><Size> To continue, touch "OK"

**Description**

This message occurs when the job specified is manual feed and Tray 1 is loaded.

**Recommended action**

Load Tray 1 with requested paper. If paper is already in Tray 1, touch the OK button to print. To use another tray, clear paper from Tray 1, and then touch the OK button.

### Manually feed: <Type><Size> To use another tray, press "OK"

**Description**

This message appears when the manual feed setting 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, touch the Help button to clear the message, and then touch the OK button to print.

To use another tray, clear paper from Tray 1, touch the Help button to clear the message, and then touch the OK button.

To override the message, touch the OK button to use the type and size of paper that is available in the tray.

### Moving solenoid To exit press

**Description**

The solenoid is moving as part of a component test.

**Recommended action**

To exit, touch the Stop button.

### Moving solenoid and motor To exit press

**Description**

The solenoid and a motor are moving as part of a component test.

**Recommended action**

To exit, touch the Stop button.

### Output Bin Full

**Description**

The output bin is full and must be emptied for printing to continue.

**Recommended action**

Empty the bin to continue printing.

### Paperless Mode

**Description**

This is a test mode used in manufacturing and should not be seen on a normally operating product.

**Recommended action**

Contact HP support for steps to resolve this condition.

## Paused... Press to Resume

### Description

This message displays when the product is paused and shows the job queue. 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

The color-band test is being performed.

### Recommended action

No action is necessary.

## Performing Paper Path Test...

### Description

The product is performing a paper-path test.

### Recommended action

No action is necessary.

## Please wait... Canceling test

### Description

The product is performing an ITB contact, alienation drive, or fuser pressure release test.

### Recommended action

No action is necessary.

## Printing CMYK samples...

### Description

The CMYK-samples page is being generated. The product will return to the Ready state when the page is complete.

### Recommended action

No action is necessary.

### Printing Color Usage Log...

#### Description

The color-usage-log page is being generated. The product will return to the Ready state when the page is complete.

#### Recommended action

No action is necessary.

### Printing Demo Page...

#### Description

The demo page is being generated. The product will return to the Ready state when the page is complete.

#### Recommended action

No action is necessary.

### Printing Diagnostics Page...

#### Description

The diagnostics page is being generated. The product will return to the Ready state when the page is complete.

#### Recommended action

No action is necessary.

### Printing PQ Troubleshooting...

#### Description

The print-quality troubleshooting test is being generated. The product will return to the Ready state when the test completes.

#### Recommended action

No action is necessary.

### Printing Registration Page...

#### Description

The product is printing the registration page that is used to adjust image placement.

#### Recommended action

No action is necessary.

## Printing RGB samples...

### Description

The print-quality troubleshooting test is being generated. The product will return to the Ready state when the test completes.

### Recommended action

No action is necessary.

## Printing stopped To continue, touch "OK"

### Description

The product displays this message when a print/stop test is run and the time expires.

### Recommended action

Touch the OK button to continue.

## Printing...engine test

### Description

This message displays while the engine test page is being printed. This page is triggered by pressing the test button on the formatter.

### Recommended action

No action is necessary.

## Processing...

### Description

The product is processing the current job but has not begun to pick up pages yet.

When paper motion begins, this message will be replaced by a message that indicates which tray the job is being printed from.

### Recommended action

No action is necessary.

## Processing... copy <X> of <Y>

### Description

The product is currently processing or printing collated copies. The message indicates that copy X of Y total copies is currently being processed.

### Recommended action

No action is necessary.

### Processing... from tray <X>

**Description**

The product is processing a job from the tray indicated.

**Recommended action**

No action is necessary.

### RAM disk device failure To clear touch “OK”

**Description**

The specified device failed.

**Recommended action**

Touch the OK button to clear the message.

### RAM disk file operation failed To clear touch “OK”

**Description**

A PJL file system command was received that attempted to perform an illogical operation, such as downloading a file to a non-existent directory.

**Recommended action**

Touch the OK button to clear the message.

### RAM disk file system is full To clear touch “OK”

**Description**

The disk is full.

**Recommended action**

Touch the OK button to clear the message.

### RAM disk is write protected To clear touch “OK”

**Description**

The device is protected and no new files can be written to it.

**Recommended action**

Touch the OK button to clear the message.

### RAM disk not initialized

**Description**

The RAM disk file system must be initialized before it can be used.

### Recommended action

Initialize the RAM disk file system.

## Ready

### Description

The product is online and ready for data. No status or product attendance messages are pending at the display.

### Recommended action

No action is necessary.

## Reattach output bin

### Description

This message displays when the standard output bin is detached at power-up or optional output bin (stapler/stacker) and does not have the Jetlink cable attached at power-up.

### Recommended action

Touch the Hide button to remove this message.

## Receiving Upgrade

### Description

The product is receiving a firmware update.

### Recommended action

Do not turn the product off until the product returns to the Ready state.

## Remove all print cartridges To exit press

### 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.

## Remove at least one print cartridge To exit press

### 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.

## Remove shipping sheet

### Description

The product displays this message if the user attempts to use the product without removing the transfer unit shipping sheet.

### Recommended action

1. Open the front door.
2. Remove the shipping sheet.
3. Close the front door.

## Remove USB accessory

### Description

This message displays when an unsupported host USB device is inserted into a host USB port in the product.

### Recommended action

Remove the USB accessory.

## Replace DIMM <X> MEM test failure

### Description

The listed DIMM is not functioning properly and must be replaced.

### Recommended action

Replace the DIMM.

## Replace Fuser Kit

### Event log error message

10.23.70

### Description

The product indicates when the fuser kit is at its estimated end of life. The actual life remaining might be different than the estimation. Have a replacement fuser kit available to install when print quality is no longer acceptable.

The fuser kit does not need to be replaced now unless the print quality is no longer acceptable.

**NOTE:** After the fuser kit reaches its approximated end of life, the HP Premium Protection Warranty on that fuser kit ends.

### Recommended action

Replace the fuser kit.

**WARNING!** The fuser can be hot while the product is in use. Use caution. Wait for the fuser to cool before handling it.

Open the right door.

Grasp the blue handles on both sides of the fuser and pull straight out to remove it.

Install the new fuser.

Close the right door.

## Replace staple cartridge

### Description

The staple cartridge is empty.

### Recommended action

Replace the staple cartridge located in the stapler/stacker

1. Open the left cover.
2. Remove the staple cartridge.
3. Install a new staple cartridge.
4. Close the left cover.

## Replace Toner Collection Unit

### Event log error message

10.31.70

### Description

The product indicates when a toner collection unit is at its estimated end of life.

**NOTE:** After a toner collection unit has reached its end of life, the HP Premium Protection Warranty on that toner collection unit ends.

### Recommended action

Replace the toner collection unit.

If you wish to have the toner collection unit operate past its estimated capacity, configure the product to continue printing by using the Manage Supplies menu.

**NOTE:** This is not a recommended option because of the risk of overfilling the toner collection unit, which could result in the need to service the product.

## Replace Transfer Kit

### Event log error message

10.22.70

**Description**

The product indicates when a transfer kit is at its estimated end of life. The actual life remaining might be different than the estimation. Have a replacement transfer kit available to install when print quality is no longer acceptable.

The transfer kit does not need to be replaced now unless the print quality is no longer acceptable.

**NOTE:** After a transfer kit has reached its approximated end of life, the HP Premium Protection Warranty on that transfer kit ends.

**Recommended action**

Replace the transfer kit. Instructions are included with the transfer kit.

## Resend external accessory firmware

**Description**

An external accessory requires a firmware upgrade. Printing can continue, but jams may occur if the job uses the external accessory.

**Recommended action**

Perform a firmware upgrade.

## Resend Upgrade

**Description**

A firmware upgrade did not complete successfully.

**Recommended action**

Upgrade the firmware again.

## Restoring factory settings

**Description**

The product is restoring the data for the external paper accessory. Either a Restore Factory Settings reset is selected, or a device number is selected under Restore accessory data for accessory.

**Recommended action**

No action is necessary.

## Restricted from printing in color

**Description**

The print job is being forced to print in black either because the product is set to print only in black or because the user ID and application ID do not have color printing permissions.

#### Recommended action

To enable color printing for the product, change the Restrict Color setting in the Manage Supplies menu.

### RFU Load Error Send full RFU on <X> port

#### Description

The product displays this message before the firmware is loaded at startup when an error has occurred during a firmware upgrade.

#### Recommended action

Resend the firmware upgrade.

### ROM disk device failed To clear touch "OK"

#### Description

The specified device failed.

#### Recommended action

Touch the OK button to clear the message.

### ROM disk file operation failed To clear touch "OK"

#### Description

A PJL file system command was received that attempted to perform an illogical operation, such as downloading a file to a non-existent directory.

#### Recommended action

Touch the OK button to clear the message.

### ROM disk file system is full To clear touch "OK"

#### Description

The disk is full.

#### Recommended action

Touch the OK button to clear the message.

### ROM disk is write protected To clear touch "OK"

#### Description

The device is protected and no new files can be written to it.

#### Recommended action

Touch the OK button to clear the message.

### ROM disk not initialized

#### Description

The ROM disk file system must be initialized before it can be used.

#### Recommended action

Initialize the ROM disk file system.

### Rotating <color> Motor To exit press

#### Description

This message displays during the execution of a component test and the component that is moving is a group of motors representing a color function.

#### Recommended action

Touch the Hide button to remove this message.

### Rotating <color> Motor To exit press

#### Description

A component test is in progress; the component selected is the indicated cartridge motor.

#### Recommended action

Press the Stop button when ready to stop the test.

### Rotating Motor

#### Description

This message displays during the execution of a component test and the component that is moving is a single motor.

#### Recommended action

Touch the Hide button to remove this message.

### Rotating Motor To exit press

#### 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 the test.

### Sanitizing disk <X>% complete Do not power off

#### Description

The hard disk is being cleaned.

#### Recommended action

Contact the network administrator.

### Size mismatch in Tray <X>

#### Description

The media in the listed tray does not match the size specified for that tray.

#### Recommended action

1. Load the correct paper.
2. Verify that the paper is positioned correctly.
3. Close the tray and verify that the control panel lists the correct paper size and type. Reconfigure the size and type if necessary.

### Sleep mode on

#### Description

The product is in power-save mode.

#### Recommended action

The product exits power-save mode when a control-panel button is touched, an error condition occurs, or printable data is received.

### Staple Cartridge low

#### Description

The product indicates when a supply level is low.

#### Recommended action

Replace the staple cartridge.

### Staple Cartridge very low

#### Description

The staple cartridge is at its estimated end of life.

#### Recommended action

1. Open the left cover.
2. Remove the staple cartridge.

3. Insert a new staple cartridge.
4. Close the left cover.

## Staple Cartridge very low To continue, touch "OK"

### Description

The product indicates when a supply level is very low.

**NOTE:** After an HP supply has reached the very low threshold, the HP Premium Protection Warranty for that supply has ended.

### Recommended action

Replace the staple cartridge.

## Supplies in wrong position

### Description

The product displays this message when two or more cartridges are installed in the wrong slots and the cover is closed.

### Recommended action

Install the correct color cartridge in each slot.

From left to right, the print cartridges should be installed in the following order:

- Yellow
- Magenta
- Cyan
- Black

## Supplies low

### Description

Multiple supplies on the product have reached the User Defined Low threshold.

### Recommended action

Replace the supply when print quality is no longer acceptable.

## Supplies very low To continue, touch "OK"

### Description

More than one color supply on the product has reached the At very low condition and the user has set the Very Low Settings menu item to Continue or Prompt to continue after the user pressed OK when prompted.

**Recommended action**

Replace the supply when print quality is no longer acceptable.

To continue printing in color, either replace the supply or reconfigure the product by using the Manage Supplies menu on the control panel.

### The Device Fan Has Failed

**Description**

The formatter fan has failed.

**Recommended action**

Check the cabling to the formatter fan.

If the error persists, replace the formatter fan.

### Toner collection unit almost full

**Event log error message**

10.31.60

**Description**

Toner collection unit bottle is almost full.

**Recommended action**

Replace the toner collection unit.

### Too many jobs in queue

**Description**

This message displays when the user selects a USB file to print, and 100 files are already in the print queue.

**Recommended action**

To select another file, touch the OK button.

### Too many pages in job to staple

**Description**

The stapler/stacker received too many pages to staple.

The pages are ejected, unstapled.

**Recommended action**

Reduce the amount of pages to be stapled.

## Transfer Kit low

### Event log error message

10.22.60

### Description

The product indicates when a supply level is low.

### Recommended action

Replace the ITB kit.

**NOTE:** After replacing the ITB kit, reset the ITB page counter by selecting the New Transfer Kit item in the Reset Supplies sub-menu.

## Transfer Kit very low To continue, touch "OK"

### Event log error message

10.22.70

### Description

The product indicates when a supply level is very low.

**NOTE:** After an HP supply has reached the very low threshold, the HP Premium Protection Warranty for that supply has ended.

### Recommended action

Replace the ITB kit.

**NOTE:** After replacing the ITB kit, reset the ITB page counter by selecting the New Transfer Kit item in the Reset Supplies sub-menu.

## Tray <x> empty

### Description

The indicated tray is empty.

### Recommended action

Load paper in the indicated tray.

## Tray <X> empty: [Type], [Size]

### Description

The specified tray is empty and needs to be loaded, but the current job does not need this tray to print.

### Recommended action

Refill the tray at a convenient time.

## Tray <X> open

### Description

The specified tray is open or not closed completely; the tray is not required to print and is not blocking the paper path of a tray required for printing.

### Recommended action

Close the tray.

**NOTE:** If this message appears and the lifter-base assembly was removed or replaced, make sure that the connector on the assembly is correctly connected and fully seated.

Use the manual tray/bin sensor test to test the end/width switches (SW2 ,3 - SW82, 83 - SW92, 93). If they do not respond, replace the lift drive assembly.

## Tray <X> overfilled Remove excess paper

### Description

A tray in the product is overfilled with print media. Printing can continue from a different tray.

### Recommended action

Remove enough paper so that the paper stack does not exceed the limit for the tray.

**NOTE:** If this message appears and the paper-pickup assembly was removed or replaced, make sure that the connector at the back of the assembly is correctly connected and fully seated.

## Tray <X> overfilled To use another tray, press “OK”

### Description

Too much media was loaded into the indicated tray.

### Recommended action

Remove enough paper so that the paper stack does not exceed the limit for the tray or touch the OK button to use another tray.

**NOTE:** If this message appears and the paper-pickup assembly was removed or replaced, make sure that the connector at the back of the assembly is correctly connected and fully seated.

## Troubleshooting To exit press

### Description

The product is in the troubleshooting process.

### Recommended action

Press the Stop button to exit.

## Type Mismatch Tray

### Description

The specified tray contains a media 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. Verify the paper type configuration.

## Unable to Install

### Description

The product displays this message when one of the following conditions occurs during a firmware upgrade.

- A file I/O error occurs when there is an interruption while reading the firmware upgrade file.
- A firmware installation is already in progress, possibly by a remote service application.
- A firmware installation is pending.
- An internal system failure has occurred while doing firmware upgrades
- An unknown error occurs while doing firmware upgrades.
- The memory is full when the user is doing firmware upgrades
- The firmware upgrade file does not support this product.
- The upgrade file is invalid or corrupted while doing firmware upgrades

### Recommended action

Refer to the walk-up help for each of these error conditions for specific instructions on resolving the error.

## Unsupported drive installed

### Description

The product has a non-HP encrypted drive that has been encrypted by another device. This drive is unusable by the product.

### Recommended action

Replace the unsupported drive.

## Unsupported supply in use

### Event log error message

10.XX.41

### Description

The product has one or more HP genuine supplies, designed for a different product, in use.

- 10.00.41 (event code): Black print cartridge
- 10.10.41 (event code): Cyan print cartridge
- 10.02.41 (event code): Magenta print cartridge
- 10.03.41 (event code): Yellow print cartridge

### Recommended action

Turn off the product, and then replace the supply with a supply designed for the product.

## Unsupported supply installed

### Event log error message

10.XX.41

### Description

The product has one or more HP genuine supplies, designed for a different product, installed. The product will either shut down or slow down unless the user acknowledges the condition.

### Recommended action

Touch the OK button to continue.

## Unsupported tray configuration

### Description

The product has too many optional trays installed.

### Recommended action

Remove the unsupported trays from the product, and then restart the product.

## Unsupported USB accessory detected Remove USB accessory

### Event log error message

40.00.04

### Description

The USB accessory is not recognized and cannot be used by this product.

### Recommended action

Turn off the product, remove the USB accessory, and then turn on the product. To clear this message, touch the Hide button.

## Upgrade complete To continue turn off then on

### Description

The firmware upgrade is complete.

### Recommended action

Turn the product off and then on.

## Upper bin full

### Description

The upper bin of the stapler/stacker is full.

### Recommended action

Remove pages from the upper bin.

Check the bin full flag for proper movement. Replace the stapler/stacker, if needed.

## USB accessory needs too much power Remove USB Accessory and Turn Off then On

### Description

### Recommended action

Remove the USB accessory, and then restart the product.

Use a USB accessory that uses less power or that contains its own power supply.

## USB accessory not functional

### Event log error message

40.XX.05

### Description

A USB accessory is not working correctly.

### Recommended action

1. Turn off the product.
2. Disconnect the USB accessory, and then replace it with a new USB accessory.

### USB hubs are not fully supported Some operations may not work properly

#### Description

Some USB hubs require more power than the product has available.

#### Recommended action

1. Remove the USB hub.

### USB is write protected To clear touch "OK"

#### Description

The device is protected and no new files can be written to it.

#### Recommended action

Touch the OK button to clear the message.

### USB needs too much power

#### Description

Power requirements for the USB accessory attached to this product are beyond supported limits.

#### Recommended action

Detach the accessory, and then turn the product off and then on. Try a similar accessory that has its own power supply or requires less power.

### USB not initialized

#### Description

The USB device file system must be initialized before it can be used.

#### Recommended action

Use the embedded Web server or HP Web Jetadmin to initialize the component.

### USB storage accessory removed Clearing any associated data

#### Description

This message displays for six seconds after removal of the USB storage accessory.

#### Recommended action

Touch the Hide button to remove this message.

### USB storage device failure To clear touch "OK"

#### Description

The specified device failed.

### Recommended action

Touch the OK button to clear the message.

## USB storage file operation failed To clear touch "OK"

### Description

A PJL file system command was received that attempted to perform an illogical operation, such as downloading a file to a non-existent directory.

### Recommended action

Touch the OK button to clear the message.

## USB storage file system is full

### Description

The file system on a USB device installed in the product is full.

### Recommended action

Touch the OK button to clear the message.

## Used supply in use

### Event log error message

10.XX.33 or 10.XX.34

### Description

One or more used supplies have been installed.

### Recommended action

1. Install new supplies.
2. If you believe you purchased a genuine HP supply, go to www.hp.com/go/anticounterfeit. Any repair required as a result of using used cartridges is not covered under warranty. Supply status and features depending on supply status are not available.

## Used supply installed

### Event log error message

10.XX.34

**Description**

The product displays this message when a used supply (a remanufactured or refilled genuine HP or non-HP product) has been installed.

- 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**

The print cartridge has been previously used. Touch the OK button to continue.

**NOTE:** If you believe you purchased a genuine HP supply, go to www.hp.com/go/anticounterfeit.

## Waiting for tray <X> to lift

**Description**

The tray specified is in the process of lifting the paper to the top of the tray for proper feeding.

**Recommended action**

No action is necessary.

## Windows Login Required to Use this Feature

**Description**

A Windows login is required.

**Recommended action**

Enter a Windows login.

## Wrong cartridge in <color> slot

**Event log error message**

10.YY.25

**Description**

The product displays this message when a cartridge is installed in the wrong slot.

## 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**

From left to right, the print cartridges should be installed in this order:

- Yellow
- Magenta
- Cyan
- Black

Reinstall the print cartridges in the correct slots.

# Event log messages

This section describes messages that only appear in the event log. For additional numeric messages, see the control-panel message section in this manual. See Interpret control-panel messages on page 470.

## Print an event log

### Print the event log

1. Touch the Administration button.
2. Scroll to and touch the Troubleshooting button.
3. Touch the Event Log button, and then touch the Print button.

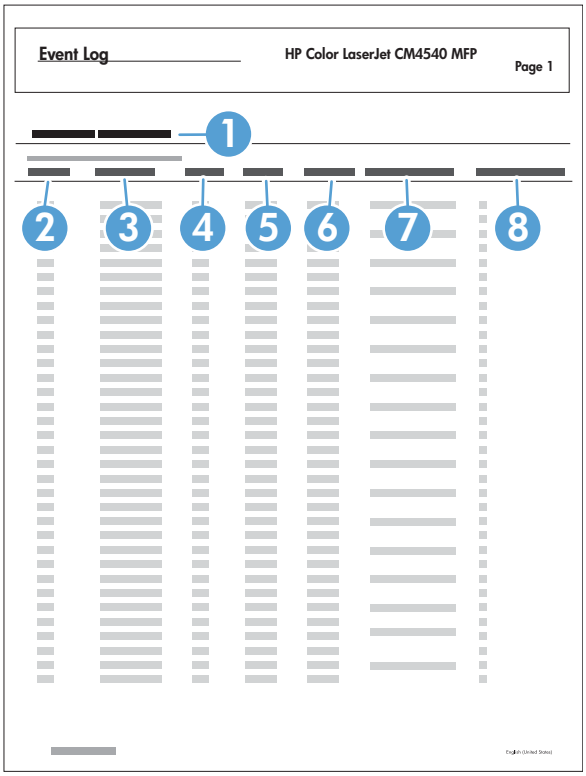
## Show an event log

### View the event log from the control panel

1. Touch the Administration button.
2. Scroll to and touch the Troubleshooting button.
3. Touch the Event Log button.

## Sample event log

**Figure 3-86** 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 |

## Clear the event log

Use the Service menu to clear the event log.

1. Touch the Device Maintenance button.
2. Scroll to and touch the Service button.
3. Touch the Clear Event Log button.

## Event log message table

| Event log message | Description | Comments |
|---|---|---|
| 10.00.00 | Black print cartridge | Memory tag is present but is defective. This condition prevents accurate authentication. |
| 10.01.00 | Cyan print cartridge | Memory tag is present but is defective. This condition prevents accurate authentication. |
| 10.02.00 | Magenta print cartridge | Memory tag is present but is defective. This condition prevents accurate authentication. |
| 10.03.00 | Yellow print cartridge | Memory tag is present but is defective. This condition prevents accurate authentication. |
| 10.00.10 | Black print cartridge | Memory tag is missing but is defective. This condition prevents accurate authentication. |
| 10.01.10 | Cyan print cartridge | Memory tag is missing but is defective. This condition prevents accurate authentication. |
| 10.02.10 | Magenta print cartridge | Memory tag is missing but is defective. This condition prevents accurate authentication. |
| 10.03.10 | Yellow print cartridge | Memory tag is missing but is defective. This condition prevents accurate authentication. |
| 10.00.34 | Black print cartridge | |
| 10.01.34 | Cyan print cartridge | |
| 10.02.34 | Magenta print cartridge | |
| 10.03.34 | Yellow print cartridge | |
| 10.00.40 | Black print cartridge | Genuine HP supplies installed. |
| 10.01.40 | Cyan print cartridge | Genuine HP supplies installed. |
| 10.02.40 | Magenta print cartridge | Genuine HP supplies installed. |
| 10.03.40 | Yellow print cartridge | Genuine HP supplies installed. |
| 10.00.41 | Black print cartridge | Unsupported supply in use. |
| 10.01.41 | Cyan print cartridge | Unsupported supply in use. |
| 10.02.41 | Magenta print cartridge | Unsupported supply in use. |
| 10.03.41 | Yellow print cartridge | Unsupported supply in use. |
| 10.00.70 | Black print cartridge | Supply is printing beyond very low. |
| 10.01.70 | Cyan print cartridge | Supply is printing beyond very low. |

| Event log message | Description | Comments |
|---|---|---|
| 10.02.70 | Magenta print cartridge | Supply is printing beyond very low. |
| 10.03.70 | Yellow print cartridge | Supply is printing beyond very low. |
| 10.00.90 | Black print cartridge | Print cartridge replacement issue. |
| 10.01.90 | Cyan print cartridge | Print cartridge replacement issue. |
| 10.02.90 | Magenta print cartridge | Print cartridge replacement issue. |
| 10.03.90 | Yellow print cartridge | Print cartridge replacement issue. |
| 10.22.50 | | The transfer kit life was set above the replacement threshold. |
| 10.23.50 | | The fuser kit life was set above the replacement threshold. |
| 10.23.70 | | Printing past very low. |
| 10.39.50 | New document feeder kit | The document feeder kit has been reset. |
| 10.99.31 | Non-HP supply in use | A non-HP supply has been installed. |
| 11.00.01 | Internal clock error | Replace clock battery. |
| 11.00.02 | Internal clock error | |
| 13.80.AZ | • Z=1 Output bin 1<br>• Z=2 Output bin 2<br>• X=3 Output bin 3 | Jam in the stapler/stacker. |
| 13.80.DZ | • Z=1 Output bin 1<br>• Z=2 Output bin 2<br>• Z=3 Output bin 3 | Paper is late arriving to the stapler/stacker. |
| 13.80.FZ | • Z=1 Output bin 1<br>• Z=2 Output bin 2<br>• Z=3 Output bin 3 | Jam in the stapler/stacker. |
| 13.81.AZ | • Z=1 Output bin 1<br>• Z=2 Output bin 2<br>• Z=3 Output bin 3 | Paper stopped at the stapler/stacker upper bin path. |
| 13.81.DZ | • Z=1 Output bin 1<br>• Z=2 Output bin 2<br>• Z=3 Output bin 3 | Paper is late arriving to the stapler/stacker and is jammed. |
| 13.81.FZ | • Z=1 Output bin 1<br>• Z=2 Output bin 2<br>• Z=3 Output bin 3 | Jam in the stapler/stacker upper bin path. |

| Event log message | Description | Comments |
|---|---|---|
| 13.83.A3 | Paper stopped at stapler/stacker lower bin path and is jammed. | Density sensor has failed. |
| 13.89.33 | Media sensor is out of range. | Staple jam in the stapler/stacker |
| 13.A3.A3 | Paper stopped at tray 3 path and is jammed. | |
| 13.A3.A4 | Paper stopped at tray 4 path and is jammed. | Rotary motor error |
| 13.A3.A5 | Paper stopped at tray 5 path and is jammed. | |
| 13.A3.D3 | Paper did not feed from tray 3. | |
| 13.A3.D4 | Late to tray path jam, from tray 4 | |
| 13.A3.D5 | Late to tray path jam, from tray 5 | |
| 13.A3.FF | Power on or residual jam | |
| 13.A4.A4 | Stopped at tray path jam, from tray 4 | |
| 13.A4.FF | Power on or residual jam | |
| 13.A5.A5 | Stopped at tray path jam, from tray 5 | |
| 13.A5.D5 | Misfeed jam, from tray 5 | |
| 13.A5.FF | Power on or residual jam | |
| 13.AF.FF | Power on or residual jam. | |
| 13.B2.9Z | Page at duplex switchback jam, | DCC NVRAM was restored from the formatter. |
| 13.B2.AD | Stopped at registration jam, from duplexer | |
| 13.B2.AZ | Stopped at registration jam, from tray<br>• Z=1 Tray 1<br>• Z=2 Tray 2<br>• Z=3 Tray 3<br>• Z=4 Tray 4<br>• Z=5 Tray 5 | |
| 13.B2.D1 | Late to registration jam, from tray 1 | |
| 13.B2.D2 | Late to registration jam, from tray 3 | |
| 13.B2.D3 | New registration roller | |
| 13.B2.D4 | Late to registration jam, from tray 4 | |
| 13.B2.D5 | Late to registration jam, from tray 5 | |
| 13.B2.DD | Late to registration jam, from duplexer | |

| Event log message | Description | Comments |
|---|---|---|
| 13.B2.FF | Power on or residual jam | |
| 13.B9.AZ | Stopped at fuser jam, | |
| 13.B9.CZ | Fuser wrap jam, | |
| 13.B9.DD | Late to fuser jam, from duplexer | |
| 13.B9.DZ | Late to fuser jam, from tray<br>• Z=1 Tray 1<br>• Z=2 Tray 2<br>• Z=3 Tray 3<br>• Z=4 Tray 4<br>• Z=5 Tray 5 | |
| 13.B9.FF | Power on or residual jam | |
| 13.BF.FF | Power on or residual jam | |
| 13.C2.CZ | IPTU wrap jam, | |
| 13.C2.DZ | Late to IPTU feed jam | |
| 13.C5.AZ | Stopped at IPTU feed jam, | |
| 13.C5.DZ | Late to IPTU bin full jam, | |
| 13.D3.FF | | Duplex re-feed sensor |
| 13.D3.DZ | Late to duplex re-feed jam, | |
| 13.E2.FF | IPTU feed sensor | |
| 13.E5.FF | IPTU bin full sensor | Power on or residual jam |
| 13.EF.FF | IPTU feed and output sensors | Power on or residual jam |
| 13.FF.FF | Multiple sensors | Power on or residual jam |
| 13.WX.EE | • WX=AA Lower right door<br>• WX=BA Right door<br>• WX=EA IPTU door<br>• WX=8A Stapler/stacker<br>• WX=FF Multiple doors | Door open jam |
| 30.01.06 | Scanner fan error, power off/on | Scanner fan error. Power off/on is required. |
| 30.01.14 | Scanner error, power off/on, check SCB | SCB EEPROM error. Power off/on is required. Condition 2 does not require checking the lock |

| Event log message | Description | Comments |
|---|---|---|
| 30.01.15 | Scanner error, power off/on | Scanner internal error. Can't be initialized. Power off/on is required. Condition 2 does not require checking the lock. |
| 30.01.18 | Scanner error, power off/on | Scanner lamp error. Power off/on is required. Condition 2 does not require checking the lock. |
| 30.01.19 | Scanner lamp error, power off/on. | Scanner lamp error. Power off/on is required. Condition 2 does not require checking the lock. |
| 30.01.30 | HP image ASIC error | HP Image ASIC error. Power off/on is required. DC FIFO overrun. Condition 2 does not require checking the lock. |
| 30.01.32 | HP image ASIC error | HP Image ASIC error. Power off/on is required. Corrupt scan. Condition 2 does not require checking the lock. |
| 30.01.36 | Upgrade failed, must resend upgrade. | SCB upgrade error. Power off/on is required. Condition 2 does not require checking the lock |
| 30.01.41 | Scanner error, power off/on | CPB general error. No details to know where the system crash is. Power off/on is required. SD detects error with communication with CPB. |
| 30.01.42 | Scanner error, power off/on, check cables | Scanner cable disconnected. Power off/on is required. Condition 3 require user to check the cable. |
| 30.01.43 | Scan memory failure, check formatter. | CPB memory failure. Needs to replace formatter. Power off/on is required. Condition 2. |
| 30.01.44 | Power off/on, check SCP/CPB connection | SCB communication error. Power off/on is required. Condition 2. |
| 30.01.45 | Scanner error, power off/on, check formatter | CPB assertion failure. Event log will have filename (only first and last characters of a filename) and line number. Power off/on is required. Condition 2. |
| 30.01.46 | Scanner error, power off/on | Formatter can't find ONYX ASIC. Power off/on is required. Condition 2. |
| 30.01.48 | Scanner error, power off/on | Scanner power is not connected. Power off/on is required. Condition 2. |
| 30.01.49 | Scanner inverter fan error, power off/on | Scanner inverter fan error. Power off/on is required. Condition 2. |
| 30.01.50 | Scanner Control Board error, power off/on | Scanner flash read/write problem. Power off/on is required. |

| Event log message | Description | Comments |
|---|---|---|
| 31.01.02 | Jam in document feeder | The document feeder is jammed or the sensor failed. Refer to “Jam in document feeder” message. |
| 31.01.03 | Document feeder pick error | An document feeder pick failure occurred. Refer to the “document feeder pick error” VHS message. |
| 31.01.10 | Document feeder fan error, power off/on | Scanner document feeder fan error. Power off/on is required |
| 31.01.47 | Document feeder not detected | The document feeder is not connected. User can still use FB to scan. (warning message only) |
| 40.00.04 | USB accessory error | |
| 40.XX.05 | USB storage accessory removed | |
| 41.02.0Y | Beam detected misprint error | |
| 41.03.YZ | General misprint error | Size mismatch or multifeed detected. |
| 41.05.YZ | General misprint error | Type mismatch or multifeed detected. |
| 41.07.YZ | Media transportation error | |
| 50.1X.YZ | Low temperature error | |
| 50.2X.YZ | Fuser warm up error | |
| 50.3X.YZ | High temperature error | |
| 50.4X.YZ | Fuser PS driving circuit failure | |
| 50.7X.YZ | Pressure release failure. | |
| 50.8X.YZ | Low temperature error | |
| 50.9X.YZ | High temperature error | |
| 50.AX.YZ | Low temperature error | |
| 50.BX.YZ | High temperature error | |
| 51.00.19 | Black laser error | |
| 51.00.20 | Black laser scanner failure | |
| 51.00.21 | Cyan laser scanner failure | |
| 51.00.22 | Magenta laser scanner failure | |
| 51.00.23 | Yellow laser scanner failure | |
| 52.00.00 | Scanner startup error | |
| 52.20.00 | Scanner rotation error | |
| 52.00.03 | Abnormal humidity environmental sensor | |
| 54.00.04 | Abnormal engine temperature sensor 1 | |

| Event log message | Description | Comments |
|---|---|---|
| 54.00.06 | Density sensor out of range | |
| 54.00.35 | Abnormal drum speed adjustment | |
| 54.01.05 | Media sensor out of range | Media sensor 1 error |
| 54.0X.07 | • X=5 Black<br>• X=6 Cyan<br>• X=7 Magenta<br>• X=8 Yellow | Imaging drum phase sensor out of range |
| 54.0X.0B | • X=1 Black<br>• X=2 Cyan<br>• X=3 Magenta | Density out of range |
| 54.0X.0C | Halftone calibration errors<br>• X=1 Black<br>• X=2 Cyan<br>• X=3 Magenta | Abnormal density measurement |
| 54.0X.0E | • X=1 Black<br>• X=2 Cyan<br>• X=3 Magenta<br>• X=4 Yellow | CPR sensor out of range |
| 54.0X.1E | Halftone calibration error<br>• X=1 Black<br>• X=2 Cyan<br>• X=3 Magenta<br>• X=4 Yellow | Halftone data out of range. |
| 54.1X.1E | • X=1 Black<br>• X=2 Cyan<br>• X=3 Magenta<br>• X=4 Yellow | Halftone calibration error |
| 54.20.1E | Halftone calibration error | Halftone bad internal data |
| 54.21.1E | Halftone calibration error | Halftone bad internal data |
| 54.22.1E | Halftone calibration error | Halftone memory allocation |
| 54.23.1E | Halftone calibration error | Halftone has no default tables. |

| Event log message | Description | Comments |
|---|---|---|
| 54.24.1E | Halftone calibration error | Halftone has bad parameters. |
| 55.00.01 | | DC controller memory error. |
| 55.01.06 | DC controller NVRAM abnormal read/ write | NVRAM memory data error warning. |
| 55.02.06 | DC controller NVRAM not accessible | NVRAM memory access error warning. |
| 56.00.01 | | Selected paper input unavailable |
| 58.00.04 | | Lower voltage power supply assemble failure |
| 59.00.B0 | TCU auger motor error | |
| 59.00.YY | • YY=00 Paper path<br>• YY=30 Fuser motor startup error<br>• YY=40 Fuser motor rotational error<br>• YY=90 ETB/ITB motor startup error<br>• YY=A0 ETB/ITB motor rotated abnormally | |
| 59.0X.50 | • X=5 Black image drum<br>• X=6 Cyan image drum<br>• X=7 Magenta image drum<br>• X=8 Yellow image drum | Motor startup error |
| 59.0X.60 | • X=5 Black image drum<br>• X=6 Cyan image drum<br>• X=7 Magenta image drum<br>• X=8 Yellow image drum | Motor rotation error |
| 60.00.0Y | • Y=2 Tray 2<br>• Y=3 Tray 3<br>• Y=4 Tray 4<br>• Y=5 Tray 5 | Lifting motor failure |
| 61.00.01 | Color table error | The color table is not able to read a table from the disk and the component reverts to the version in RAM. The file could be corrupt, missing, or the disk has failed. |
| 67.XX.00 | | |
| 74.00.00 | New registration roller | |
| 82.73.45 | Disk successfully cleaned. | |

| Event log message | Description | Comments |
|---|---|---|
| 82.73.46 | Cleaning disk failure | Check the disk hardware. |
| 82.73.47 | Could not verify disks. | |
| 99.00.01 | The upgrade was not performed. The file is corrupt. | A corrupted file was received. Do not replace hardware. |
| 99.00.02 | The upgrade was not performed. Error encountered when receiving. | I/O error encountered when reading the header number and size. Error indicates a problem with the network environment, not the product. Do not replace hardware. |
| 99.00.03 | The upgrade was not performed. Error encountered when writing to the disk. | Check the connection to the hard disk or replace it. |
| 99.00.04 | The upgrade was not performed. | I/O error encountered when reading the header. |
| 99.00.06 | The upgrade was not performed. | Error encountered when reading the header number and size. |
| 99.00.07 | The upgrade was not performed. | Error encountered when reading the header. |
| 99.00.14 | The upgrade was not performed. | The file is invalid. |

# Clear jams

## Prevent jams

Follow these guidelines to prevent paper from jamming in the product:

- Use only paper that meets HP specifications.
- Store paper in the original packaging in a controlled environment.
- Use paper that has not been previously printed on or copied and that is free from cuts, nicks, tears, or wrinkles.
- Make sure the tray is loaded correctly, the paper guides are aligned against the stack of paper, and that the paper stack does not exceed the stack height mark in the tray.
- Remove the paper, flex it, rotate it 180°, or flip it over. Reload the paper into the input tray.
- Wait until pages completely settle in the output bin before removing them.
- If you are using perforated or embossed paper, feed single sheets from Tray 1.

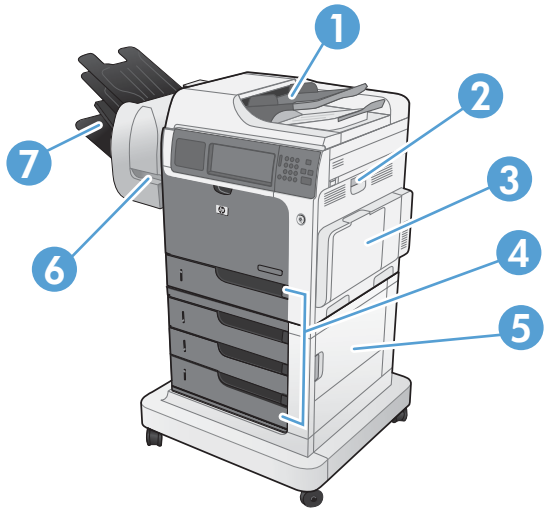
# Jam locations

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.

**WARNING!** To avoid electrical shock, remove any necklaces, bracelets, or other metal items before reaching into the inside of the product.

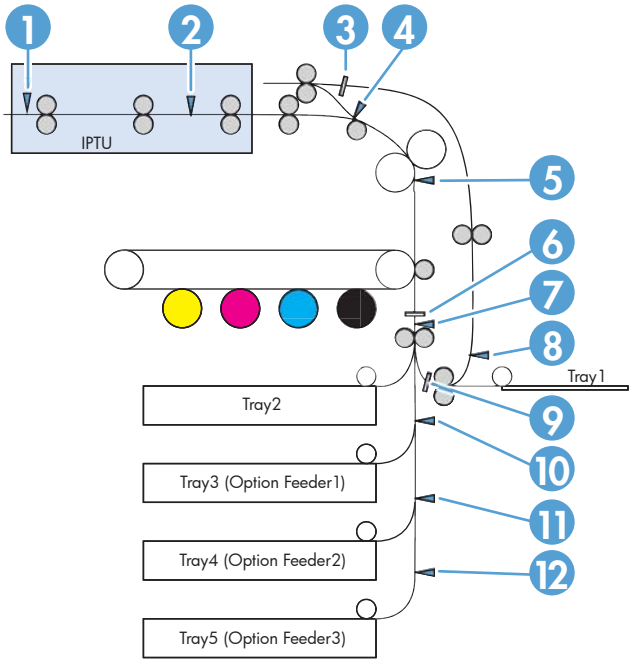
**Figure 3-87** Jam locations




| | |
|---|---|
| 1 | Document feeder |
| 2 | Right door |
| 3 | Tray 1 area |
| 4 | Tray 2, and optional Trays 3, 4, and 5 |
| 5 | Lower-right door |
| 6 | Stapler/stacker |
| 7 | Output bins |

The following illustration shows the paper path sensors that determine when the product is experiencing a paper jam.

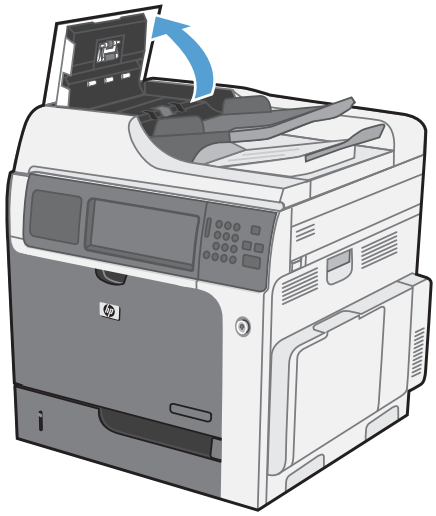
**Figure 3-88** Paper path sensor locations



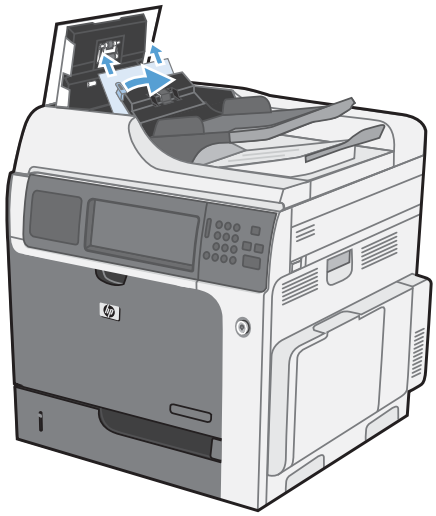

| | |
|---|---|
| 1 | SR26: IPTU bin full sensor |
| 2 | SR27: IPTU feed sensor |
| 3 | Duplex media waiting position 1 |
| 4 | SR5: Fuser output sensor |
| 5 | SR14, 15: Fuser loop sensor |
| 6 | Registration stop position |
| 7 | SR20: Registration sensor |
| 8 | SR22: Duplex refeed sensor |
| 9 | Duplex media waiting position 2 |
| 10 | SR4: Tray 3 feed sensor |
| 11 | SR7: Tray 4 feed sensor |
| 12 | SR10: Tray 5 feed sensor |

## Clear jams in the document feeder

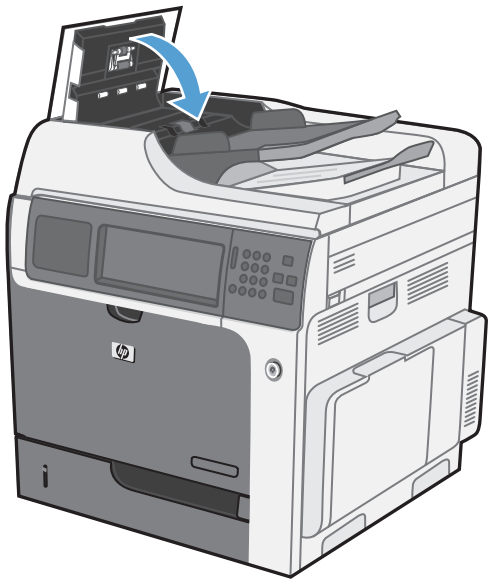
1. Open the document feeder cover.



2. Lift the jam-access door, and remove any jammed paper.

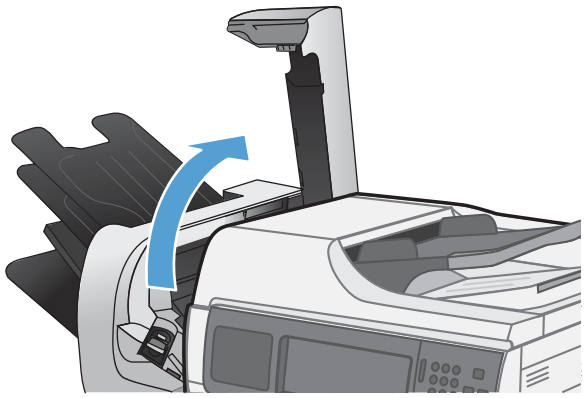


3. Close the document feeder cover.

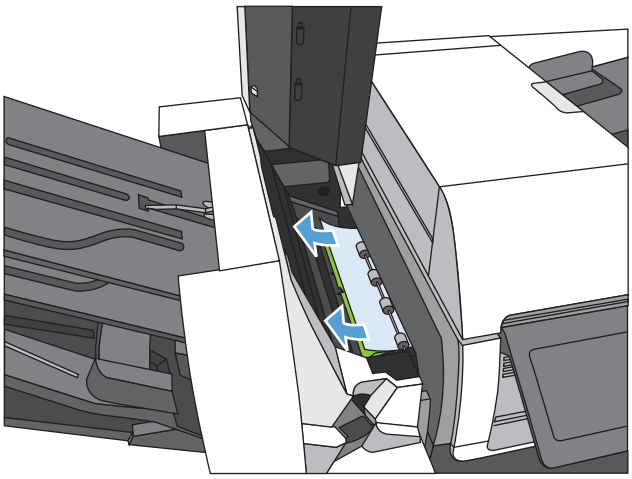


## Clear paper jams in the stapler/stacker assembly

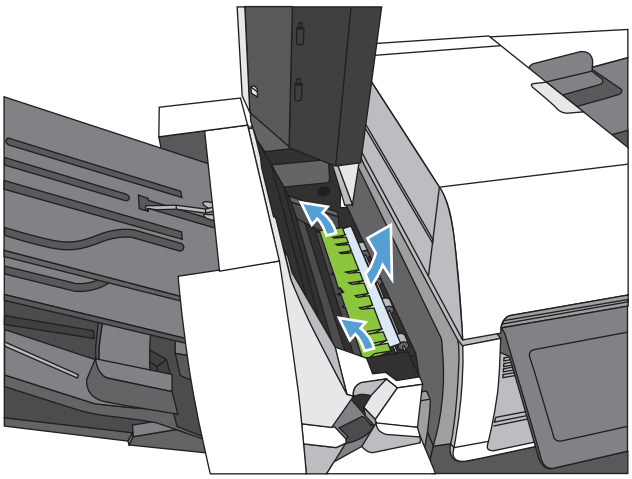
1. Lift the gray latch on the front of the stapler/stacker, and open the stapler cover.



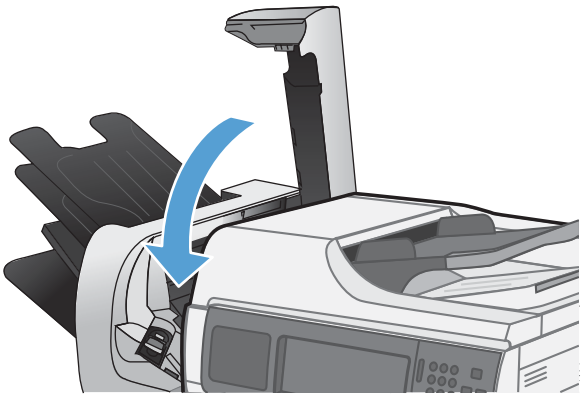
2. If jammed paper is visible underneath the paper guide, pull it straight out.



3. Lift the green jam-access door. If jammed paper is visible under the jam-access door, pull it straight out,

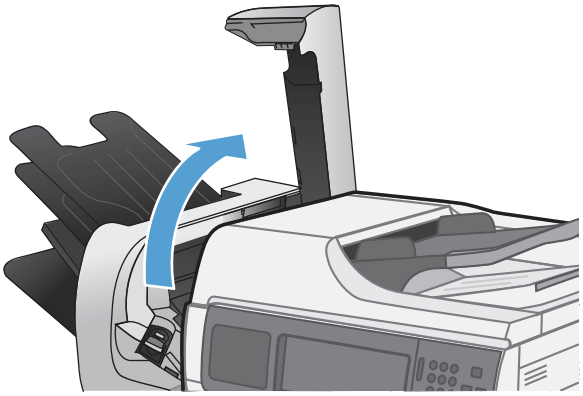


4. Close the stapler cover.

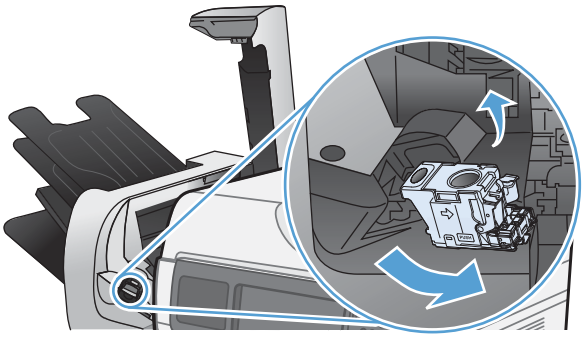


## Clear staple jams

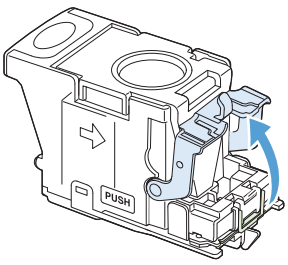
1. Lift the gray latch on the front of the stapler, and open the stapler cover.



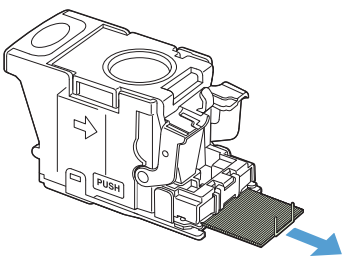
2. Lift the green tab on the staple cartridge up, and then pull the staple cartridge straight out.



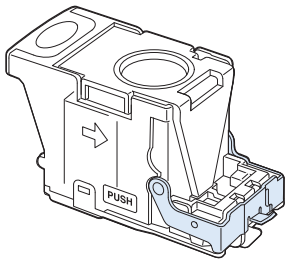
3. Lift up on the small lever at the back of the staple cartridge.



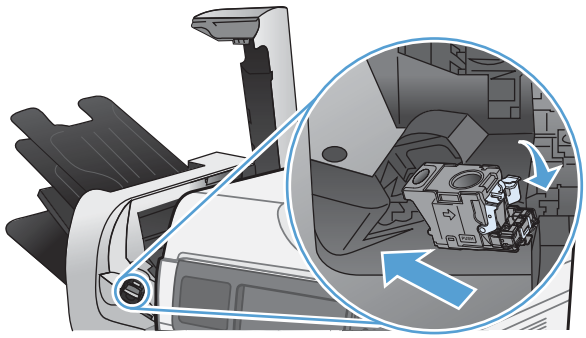

4. Remove the jammed staples.



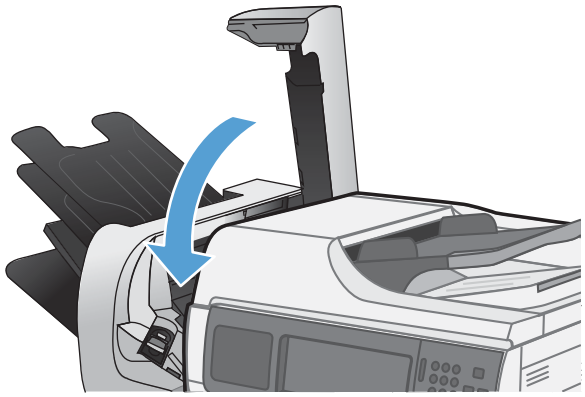
5. Close the lever at the back of the staple cartridge. Be sure that it snaps into place.




6. Insert the staple cartridge into the stapler and push down on the green handle until it snaps into place.

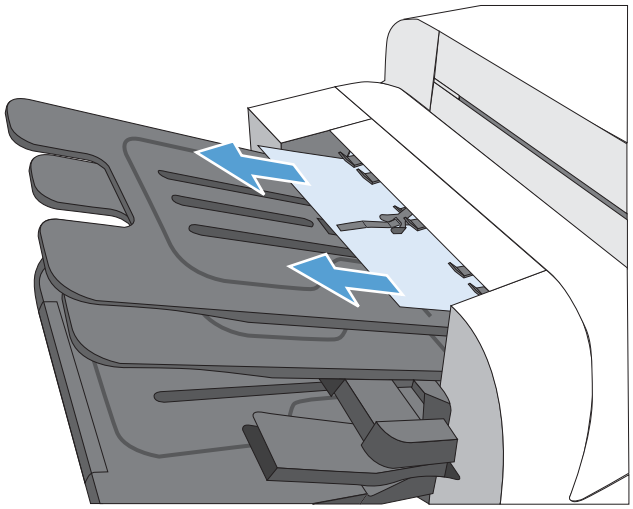


7. Close the stapler cover.



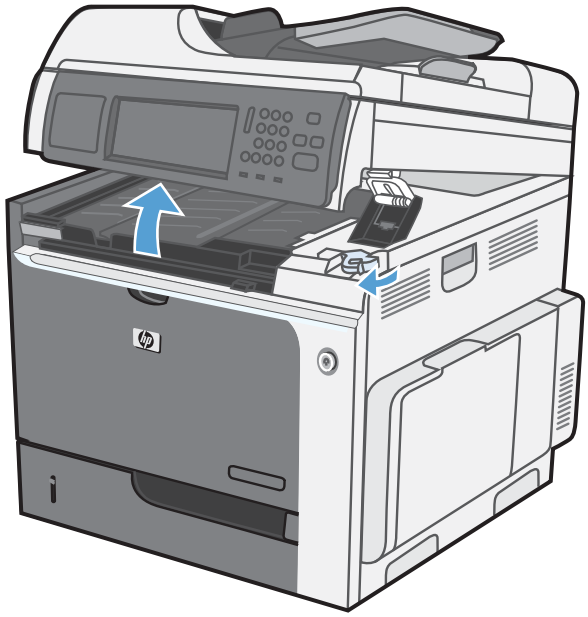
## Clear jams in the output bin area

1. If paper is visible from the output bin, grasp the leading edge and remove it.



## Clear jams from under the scanner assembly

1. Pull the scanner latch forward, and then lift the scanner assembly up.

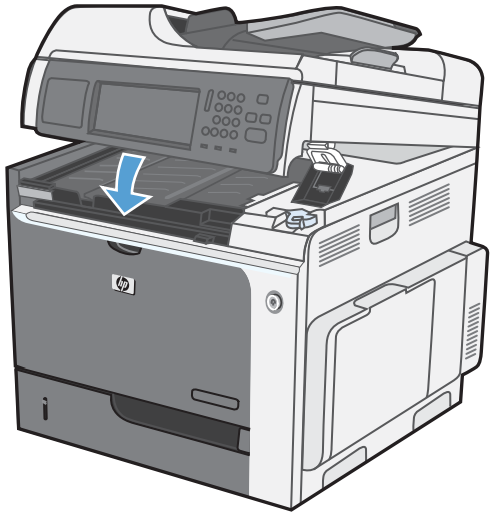


**NOTE:** Lift the jam-access cover if it has fallen.

2. Remove any jammed sheets that are under the scanner assembly.



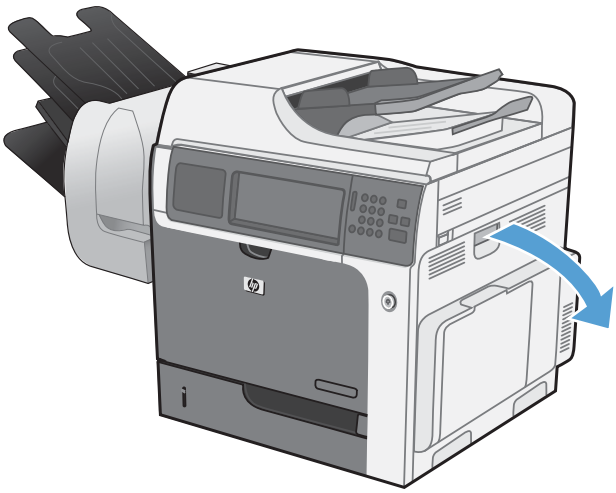
3. Close the scanner assembly.



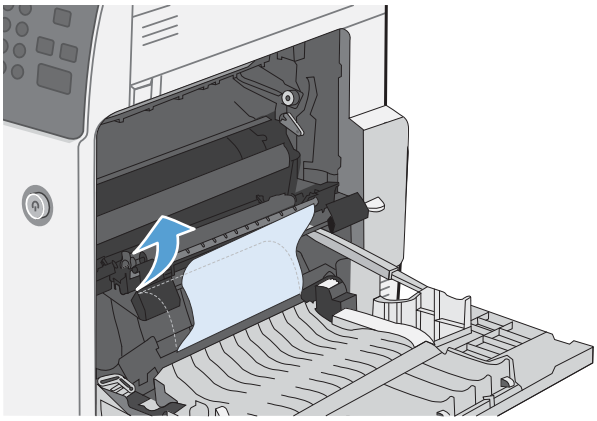
# Clear jams in the right door

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

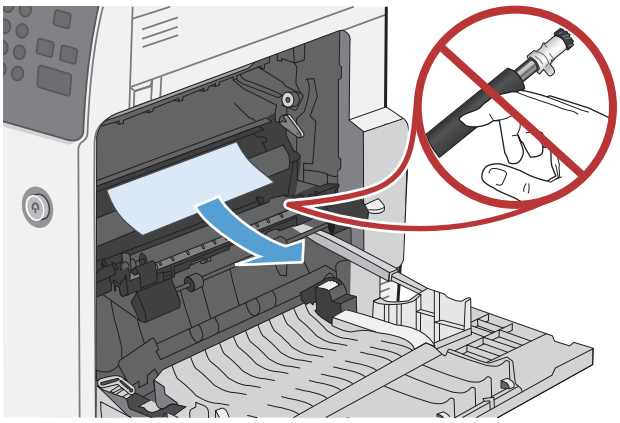
1. Open the right door.



2. Gently pull the paper out of the pickup area.

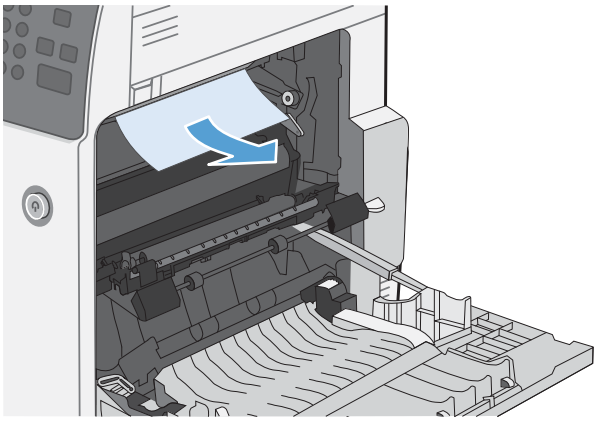


3. If paper is visible entering the bottom of the fuser, gently pull downward to remove it.



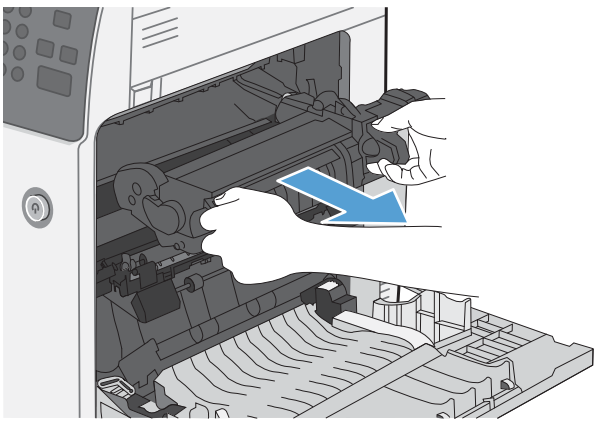
**CAUTION:** Do not touch the rollers on the transfer roller. Contaminants can affect print quality.

4. If paper is jammed as it enters the output bin, remove the fuser and gently pull the paper downward to remove it.



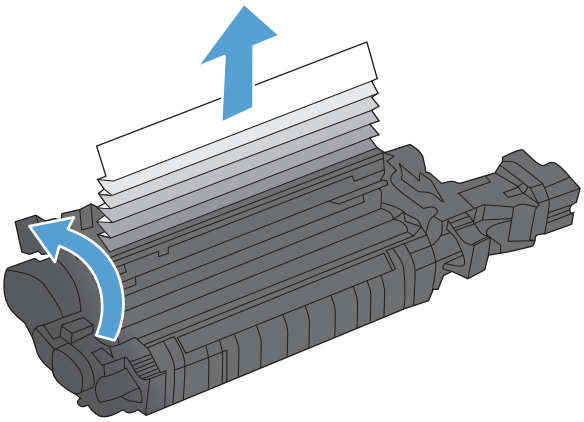
5. Paper could be jammed inside the fuser where it would not be visible. Grasp the fuser handles, lift up slightly, and then pull straight out to remove the fuser.

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

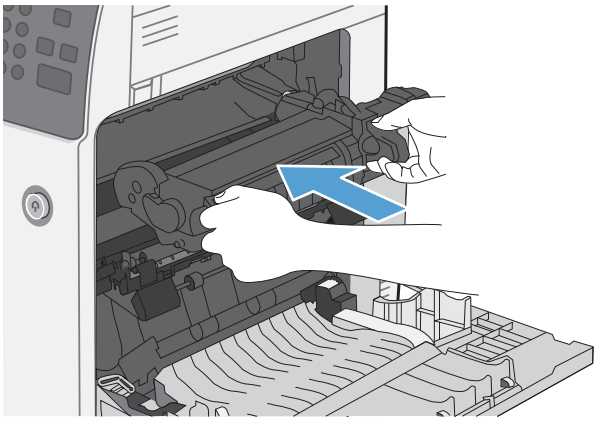


6. Open the jam-access door. If paper is jammed inside the fuser, gently pull it straight up to remove it. If the paper tears, remove all paper fragments.

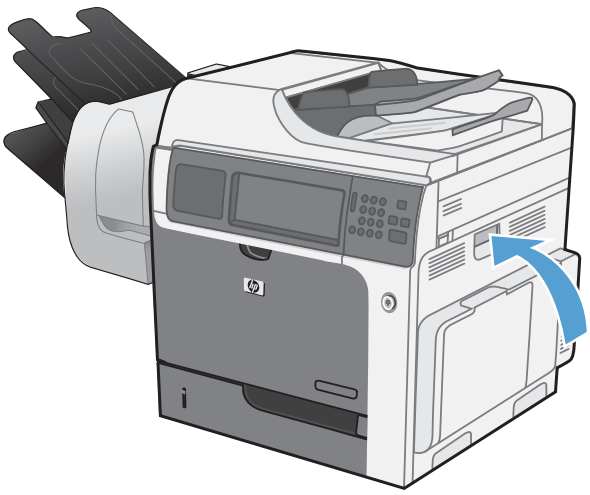
**CAUTION:** Even if the body of the fuser has cooled, the rollers that are inside could still be hot. Do not touch the fuser rollers until they have cooled.



7. Close the jam-access door, and push the fuser completely into the product.

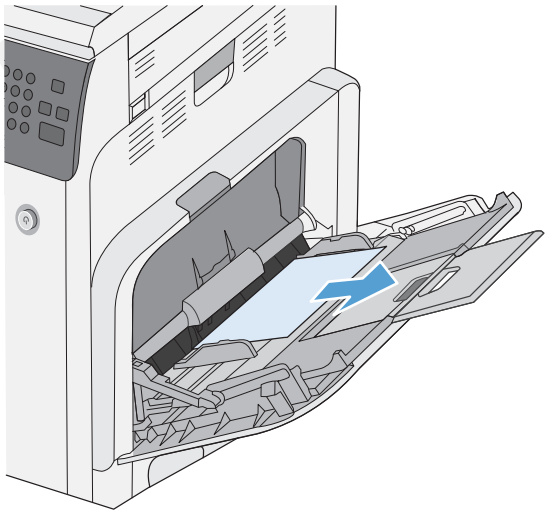


8. Close the right door.

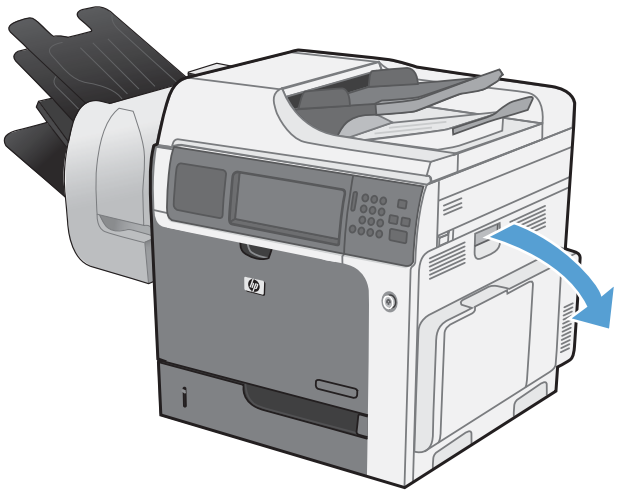


## Clear jams in Tray 1

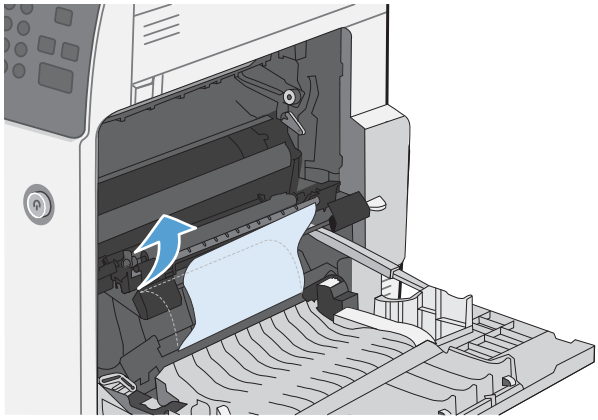
1. If jammed paper is visible in Tray 1, clear the jam by gently pulling the paper straight out. Touch the OK button to clear the message.



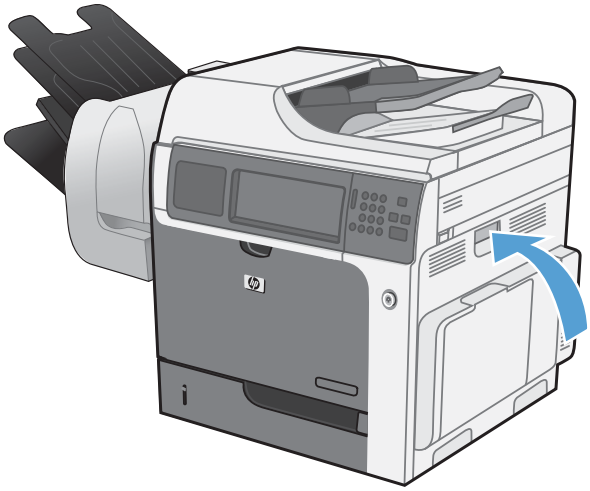
2. If you cannot remove the paper, or if no jammed paper is visible in Tray 1, close Tray 1 and open the right door.



3. Gently pull the paper out of the pick up area.



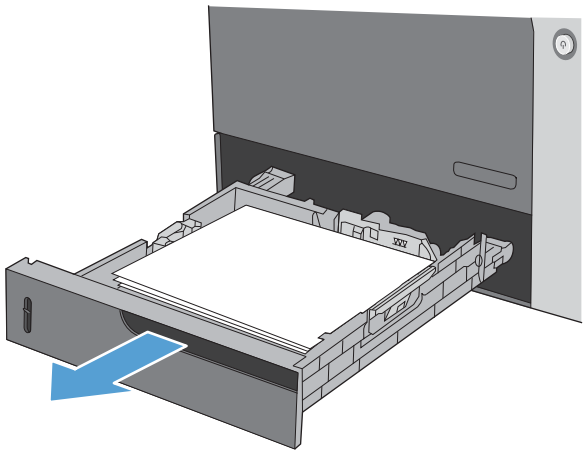
4. Close the right door.



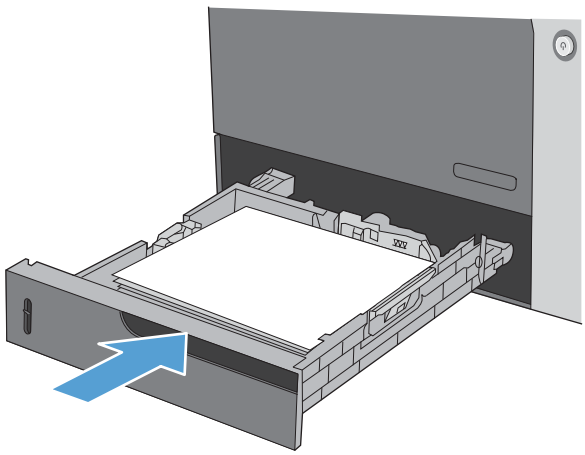
# Clear jams in Trays 2, 3, 4, or 5

**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 the tray and make sure that the paper is stacked correctly. Remove any jammed or damaged sheets of paper. To access jammed paper from the tray cavity, remove the tray from the product.

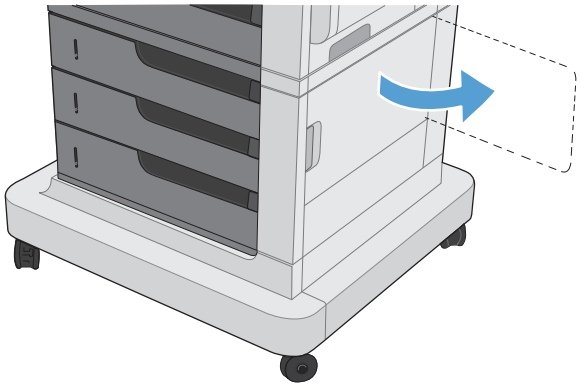


2. Close the tray.

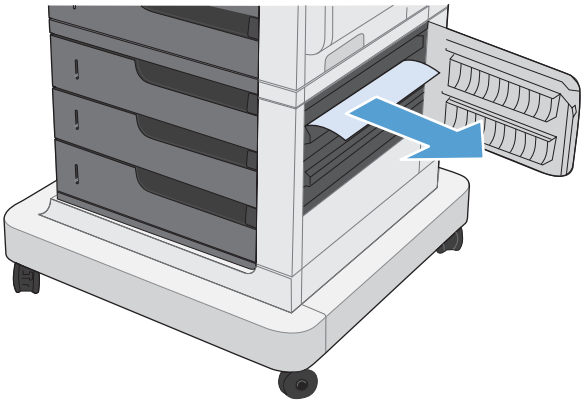


## Clear jams in the lower-right door (Trays 3, 4, or 5)

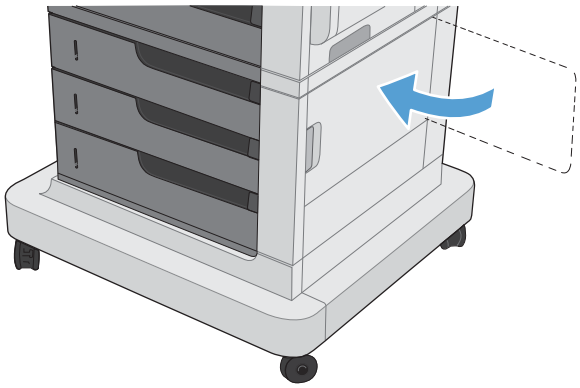
1. Open the lower-right door.



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 fuser and transfer area

### Table 3-12 Causes and solutions for fuser delivery delay jams

| Cause | Solution |
|---|---|
| The fuser-delivery-sensor flag is damaged. | Replace the fuser. See Fuser on page 112. |
| Poor contact with the fuser-delivery connector. | Reconnect the connectors of the fuser-delivery sensor (J48) and the DC controller PCA (J127). |
| The fuser-delivery sensor (SR5) is defective. | Check the fuser-delivery sensor (SR5) with the manual sensor test. See Manual sensor test on page 378. If the sensor is defective, replace the sensor. |

### Table 3-13 Causes and solutions for wrapping jams

| Cause | Solution |
|---|---|
| The fuser roller or pressure roller is dirty. | Create and use a cleaning page. See Cleaning page on page 462. |
| 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. See Fuser on page 112. |
| The lever for the output bin full sensor on the face-down tray is set incorrectly or is damaged. | Set the lever correctly. If the lever is damaged, replace the delivery assembly. See Delivery assembly on page 231. |
| The spring on the lever for the output bin full sensor on the face-down tray is unhooked. | Reattached the spring. |

### Table 3-14 Causes and solutions for fuser delivery stationary jams

| Cause | Solution |
|---|---|
| The fuser roller or pressure roller is worn or deformed. | Replace the fuser. See Fuser on page 112. |
| The fuser-delivery roller is deformed. | |
| The gear of the fuser-delivery roller is damaged. | |
| The fuser-delivery sensor flag is stuck or broken. | Check the flag to make sure it moves correctly. See Manual sensor test on page 378 for information. If the flag is damaged, replace the fuser. See Fuser on page 112. |
| Poor contact of the fuser-delivery sensor connector. | Reconnect connector (J48) of the fuser-delivery sensor and connector (J127) on the DC controller PCA. |
| The fuser delivery sensor (SR5) is defective. | Run the sensor test in the sensor monitor mode to verify that the fuser delivery sensor is functioning properly. If it is not, replace the fuser delivery sensor (SR5). |

### Table 3-15 Causes and solutions for residual media jams

| Cause | Solution |
|---|---|
| The sensor detecting a residual media jam is not working. | One of the four sensors is reporting a residual jam. Test each sensor using the manual sensor test. See Manual sensor test on page 378 for information. If the sensor does not respond, replace the component indicated:<br>• TOP sensor (SR20): Replace the registration assembly. See Registration assembly on page 213.<br>• Fuser delivery sensor (SR5): Replace the sensor.<br>• Loop sensor 1 or 2 (SR14 and SR15): Replace the fuser. See Fuser on page 112.<br>• Duplex re-pickup sensor (SR22): Replace the registration assembly. See Registration assembly on page 213. |
| If service was recently performed on the product, a sensor connector might be disconnected. | Run the manual sensor tests to verify which sensor detects the media. See Manual sensor test on page 378 for information. Reconnect the corresponding sensor connector:<br>• TOP sensor: Connector (J74) and (J145) on the DC controller PCA<br>• Fuser delivery sensor: Connector (J48) and connector (J127) on the DC controller PCA<br>• Loop sensor 1 or 2: Connector (J162) on the DC controller PCA<br>• Duplex re-pickup sensor: Intermediate connector (J74) and connector (J145) on the DC controller PCA. |

### Table 3-16 Causes and solutions for pickup delay jams 2

| Cause | Solution |
|---|---|
| Poor contact of the pickup motor drive connector. | Reconnect the connector (J37) of the pickup motor and connector (J260) of the DC controller PCA . |
| 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. See Pickup motor on page 259. |
| The pickup roller is worn or deformed. | Replace the pickup roller. See Feed and separation rollers (Trays 2-5) on page 113. |
| The tray 2 separation roller is worn or deformed. | Replace the separation roller. See Feed and separation rollers (Trays 2-5) on page 113. |
| Poor contact of the TOP sensor connector. | Reconnect the intermediate connector (J74) of the TOP sensor and connector (J145) on the DC controller PCA. |
| The TOP sensor (SR20) is defective. | Run the manual sensor test to verify that the TOP sensor is functioning properly. See Manual sensor test on page 378 for information. If it is not, replace the registration assembly. See Registration assembly on page 213. |
| Poor contact of the pickup solenoid drive connector. | Reconnect the connector (J59) of the pickup solenoid and (J115) on the DC controller PCA. |

**Table 3-16 Causes and solutions for pickup delay jams 2 (continued)**

| Cause | Solution |
|---|---|
| The pickup solenoid is defective. | Run the solenoid drive test in the actuator drive mode to verify that the pickup solenoid is functioning properly. If it is not, replace the tray-pickup drive assembly. See Tray-pickup drive assembly on page 266. |
| 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. See Pickup motor on page 259. |

**Table 3-17 Causes and solutions for pickup stationary jams**

| Cause | Solution |
|---|---|
| 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 TOP 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. See Registration assembly on page 213. |
| The spring of the TOP sensor lever is unhooked. | Check the spring and place it in correct position. |
| Poor contact of the TOP sensor connector | Reconnect intermediate connector (J74) of the TOP sensor and connector (J145) on the DC controller PCA. |
| The TOP sensor is defective. | Run the manual sensor test to verify that the TOP sensor (SR20) is functioning properly. See Manual sensor test on page 378 for information. If it is not, replace the registration assembly. See Registration assembly on page 213. |

## Jams in the duplex area

**Table 3-18 Causes and solutions for duplexing reverse jams**

| Cause | Solution |
|---|---|
| The duplex reverse roller is worn or deformed. | Replace the delivery assembly. See Delivery assembly on page 231. |
| The duplex feed roller is worn or deformed. | Replace the duplex feed unit. |
| Poor contact of the duplex reverse-motor connector | Reconnect the connectors (J39) of the duplex reverse motor, 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. See Duplex-drive assembly on page 235. |

**Table 3-19 Causes and solutions for duplex repick jams**

| Cause | Solution |
|---|---|
| The duplex re-pickup 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. See Right-door assembly on page 145. |

**Table 3-19 Causes and solutions for duplex repick jams (continued)**

| Cause | Solution |
|---|---|
| The spring of the duplex re-pickup sensor lever is unhooked. | Check the spring and place it in correct position. |
| Poor contact of the duplex re-pickup sensor connector | Reconnect the intermediate connector (J74) and connector (J145) on the DC controller PCA. |
| The duplex re-pickup sensor (SR22) is defective. | Run the manual sensor test to verify that the duplex re-pickup sensor (SR22) is functioning properly. See Manual sensor test on page 378 for information. If it is not, replace the right-door assembly. See Right-door assembly on page 145. |
| Poor contact of the duplex reverse solenoid connector | Reconnect the connector (J69) of the duplex reverse solenoid, connectors J202 and J201 on the high-voltage power supply (upper), and connector J113 on the DC controller PCA. |
| The duplex reverse solenoid is defective. | Replace the duplex-drive assembly. See Duplex-drive assembly on page 235. |
| The duplex flapper is damaged or malfunctioning. | Replace the delivery assembly. See Delivery assembly on page 231. |
| Poor contact of the duplex reverse solenoid connector | Reconnect the connector (J69) of the duplex reverse solenoid, connectors (J202) and (J201) on the high-voltage power supply (upper), and connector (J113) on the DC controller PCA. |
| The duplex reverse solenoid is defective. | Replace the duplex-drive assembly. See Duplex-drive assembly on page 235. |
| The duplex flapper is damaged or malfunctioning. | Replace the delivery assembly. See Delivery assembly on page 231. |
| The duplex repick roller is worn or damaged. | Replace the registration assembly. See Registration assembly on page 213. |
| Poor contact of the duplex repick clutch connector. | Reconnect the intermediate connector (J74) of the duplex repick clutch and connector (J145) on the DC controller PCA. |
| The duplex repick clutch is defective. | Run the solenoid drive test in actuator drive mode to verify that the duplex repick clutch is functioning properly. If it is not, replace the registration assembly. See Registration assembly on page 213. |

**Table 3-20 Causes and solutions for residual media jams**

| Cause | Solution |
|---|---|
| Poor contact of the loop-sensor connector and loop sensor 1 and 2. | Reconnect the connectors of the loop 1 sensor (1 and 2):<br>• Loop 1 (J11, J352, J350, J50) and the DC controller (J139)<br>• Loop 2 (J10, J352, J350, J50) and the DC controller (J139) |
| The loop sensor is defective. | Run the manual sensor test. See Manual sensor test on page 378 for information. If the sensor is defective, replace fuser. See Fuser on page 112. |
| The spring of the fuser-delivery-sensor lever is unhooked. | Check the spring of the fuser and right door 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 sensor (J46), intermediate (J95) and the DC controller PCA (J123). |

**Table 3-20 Causes and solutions for residual media jams (continued)**

| Cause | Solution |
|---|---|
| The fuser-delivery sensor is defective. | Run the manual sensor test to make sure the fuser-delivery sensor is functioning properly. See Manual sensor test on page 378 for information. If the sensor is defective, replace the fuser. See Fuser on page 112. |
| The spring of the duplex repickup 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 duplex pickup sensor lever is damaged. | Replace the right door assembly. See Right-door assembly on page 145. |
| 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 duplex repickup sensor (SR22) is defective. | Run the manual sensor test to verify that the duplex repickup sensor is functioning properly. See Manual sensor test on page 378 for information. If the sensor is defective, replace the duplex repickup 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 3-21 Causes and solutions for pickup delay jam 1: tray pickup**

| Cause | Solution |
|---|---|
| The tray 1 pick up roller or the tray 1 separation pad is worn or deformed. | Replace the tray 1 pickup roller and separation pad. See Pickup roller (Tray 1) on page 114. Replace the right door. See Right-door assembly on page 145. |
| Poor contact of the tray 1 media-presence-sensor connector | Reconnect the connectors of the tray media-feed sensor (J7), intermediate (J85), and DC controller (J107). |
| Poor contact of the TOP sensor connector. | Reconnect the intermediate connector (J74) of the TOP sensor and connector (J145) on the DC controller PCA. |
| The TOP sensor is defective. | Run the manual sensor test to verify that the TOP sensor is functioning properly. If not, replace the registration assembly. See Registration assembly on page 213. |
| Poor contact of the MP-pickup-solenoid drive connector | Reconnect the connector of the tray pickup solenoid (J52) and the DC controller PCA (J148). |
| 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. See Right-door assembly on page 145. |
| Poor contact of the pickup-motor drive connector (M13) | Reconnect the connector (J37) and connector (J260) on the DC controller PCA. |
| 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. See Pickup motor on page 259. |

**Table 3-22 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. See Right-door assembly on page 145.<br><br>Check the separation pad and MP tray separation pad to see if they are firmly seated and coupled with the torque limiter.<br><br>Replace the separation pad and feed roller for Tray 2 and Tray 3.<br><br>If the MP tray pickup roller if defective, replace the roller. See Pickup roller (Tray 1) on page 114. If the MP tray separation pad is defective, replace the right door assembly. See Right-door assembly on page 145. |
| 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. See Secondary transfer assembly on page 204. |
| 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. See Intermediate transfer belt (ITB) on page 120. |

## Jams in Tray 3, 4, and 5

**Table 3-23 Causes and solutions for pickup delay and pickup stationary jams**

| Cause | Solution |
|---|---|
| The paper-feeder pickup roller is worn or deformed. | Replace the pickup roller. See Feed and separation rollers (Trays 2-5) on page 113. |
| The paper-feeder separation roller is worn or deformed. | Replace the separation roller. See Feed and separation rollers (Trays 2-5) on page 113. |
| The paper-feeder feed roller is worn or deformed. | Replace the feed roller. See Feed and separation rollers (Trays 2-5) on page 113. |
| Poor contact of the paper-feeder media-feed sensor connector (1, 2, or 3) | • Tray 3: Reconnect connectors (J408) and (J13)<br>• Tray 4: Reconnect connectors (J406) and (J22)<br>• Tray 5: Reconnect connectors (J403) and (J32) |
| A tray feed sensor is defective. | Run the manual sensor test to verify that the paper-feeder media feed sensor is functioning properly. See Tray/Bin manual sensor test on page 393 for information. If it is not, replace the pickup assembly of the specific tray. See Pickup assembly (optional paper feeder) on page 313. |

**Table 3-23 Causes and solutions for pickup delay and pickup stationary jams (continued)**

| Cause | Solution |
|---|---|
| Poor contact of a paper-feeder pickup solenoid drive connector (1, 2, or 3) | • Tray 3: Reconnect connectors (J408) and (J18)<br>• Tray 4: Reconnect connectors (J406) and (J20)<br>• Tray 5: Reconnect connectors (J403) and (J30) |
| 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 pickup assembly of the specific tray. See Pickup assembly (optional paper feeder) on page 313. |
| Poor contact of paper-feeder pickup motor drive connector. | Reconnect the connector (J409) on the paper feeder driver PCA and connector (J14). |
| 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 pickup assembly of the specific tray. See Pickup assembly (optional paper feeder) on page 313. |
| Multiple feed of media | If the tray 3 pickup roller, separation roller, or feed roller is worn or deformed, replace any defective parts. See Feed and separation rollers (Trays 2-5) on page 113. |
| The paper-feeder media-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 paper-feeder media-feed sensor lever is unhooked. | Check the spring and place it in correct position. |
| Poor contact of the paper-feeder media-feed sensor connector. | Reconnect the connector (J406) on the connector PCA and connector (J22) of the paper-feeder media feed sensor. |
| A tray feed sensor is defective. | Run the manual sensor test to verify that the tray feed sensor is functioning properly. See Tray/Bin manual sensor test on page 393 for information. If it is not, replace the pickup assembly of the specific tray. See Pickup assembly (optional paper feeder) on page 313. |

**Table 3-24 Causes and solutions for residual media jams**

| Cause | Solution |
|---|---|
| The sensor that detects residual paper jams is set incorrectly or damaged. | Run the manual sensor test to verify which sensor detects the paper. See Tray/Bin manual sensor test on page 393 for information. Check the sensor lever to make sure it is set correctly. If it is damaged, replace the corresponding pickup assembly. See Pickup assembly (optional paper feeder) on page 313. |
| The spring of the sensor lever that detects residual paper jams is unhooked. | Run the manual sensor test to verify which sensor detects the paper. See Tray/Bin manual sensor test on page 393 for information. Check the spring of the sensor lever to make sure it is set correctly. |

**Table 3-24 Causes and solutions for residual media jams (continued)**

| Cause | Solution |
|---|---|
| Poor contact exists in the sensor that detects residual paper jams. | Run the manual sensor test to verify which sensor detects the paper. See Tray/ Bin manual sensor test on page 393 for information. Reconnect the following corresponding sensor connectors:<br>• Tray 3: Reconnect connectors (J408) and (J13)<br>• Tray 4: Reconnect connectors (J406) and (J22)<br>• Tray 5: Reconnect connectors (J403) and (J32) |
| The sensor that detects residual paper jams is defective. | Run the sensor test in the sensor monitor mode to verify which sensor detects the paper. Replace media feed sensor 1, 2 or 3. |

**Table 3-25 Causes and solutions for IPTU delivery delay jams**

| Cause | Solution |
|---|---|
| Poor contact exists in the IPTU media feed sensor conector. | Reconnect the connector (J553) on the IPTU controller PCA. |
| The IPTU media feed sensor is defective. | Run a manual sensor test to verify that the IPTU media feed sensor is functioning properly. If it is not, replace the IPTU media feed sensor. |
| Poor contact exists in the IPTU feed motor drive connector. | Reconnect the connector (J551) on the IPTU controller PCA and the connector (J5) for the IPTU feed motor. |
| The IPTU feed motor is defective. | Run a manual sensor test for the IPTU feed motor sensor to verify that the IPTU feed motor is functioning properly. If it is not, replace the IPTU drive assembly. |
| Poor contact exists in the IPTU media full sensor connector. | Reconnect the connector (J553) on the IPTU controller PCA. |
| The IPTU media full sensor is defective. | Run a manual sensor test to verify that the IPTU media full sensor is functioning properly. If it is not, replace the IPTU media full sensor. |

**Table 3-26 Causes and solutions for IPTU stationary jams**

| Cause | Solution |
|---|---|
| The lever for the IPTU media feed sensor is set incorrectly or damaged. | Check the sensor lever to make sure it is set correctly. If it is damaged, replace the IPTU media feed sensor. |
| The spring of the IPTU media feed sensor lever is unhooked | Put the spring in the correct position. |
| Poor contact exists in the IPTU media feed sensor connector. | Reconnect the connector (J553) on the IPTU controller PCA. |
| The IPTU media feed sensor is defective. | Run a manual sensor test to verify that the IPTU media feed sensor is functioning properly. If it is not, replace the IPTU media feed sensor. |
| The lever for the IPTU media feed sensor is set incorrectly or damaged. | Check the sensor lever to make sure it is set correctly. If it is damaged, replace the IPTU media feed sensor. |
| The spring of the IPTU media feed sensor lever is unhooked. | Place the spring in the correct position. |

**Table 3-26 Causes and solutions for IPTU stationary jams (continued)**

| Cause | Solution |
|---|---|
| Poor contact exists in the IPTU media feed sensor connector. | Reconnect the connector (J553) on the IPTU controller PCA. |
| The IPTU media feed sensor is defective. | Run a manual sensor test to verify that the IPTU media feed sensor is functioning properly. If it is not, replace the IPTU media feed sensor. |
| Paper is wrapped around the delivery roller in the product. | Remove the wrapped paper. |

**Table 3-27 Causes and solutions for stapler/stacker feed delay jams**

| Cause | Solution |
|---|---|
| Poor contact exists in the stapler/stacker media feed sensor connector (SR1). | Reconnect the connector (J451) on the stapler/stacker controller PCA. |
| The stapler/stacker media feed sensor (SR1) is defective. | Replace the stage unit. |
| Poor contact exists in the inlet solenoid drive connector. | Reconnect the connector (J462) on the stapler/stacker controller PCA and the connector (J120) of the inlet solenoid. |
| The inlet solenoid is defective. | Replace the inlet solenoid. |
| Poor contact exists in the stapler/stacker media feed sensor (SR5) connector. | Reconnect the connector (J453) on the stapler/stacker controller PCA. |
| The stapler/stacker media feed sensor (SR5) is defective. | Replace the stage top unit. |
| Poor contact exists in the inlet solenoid drive connector. | Reconnect the connector (J462) on the stapler/stacker controller PCA and the connector (J120) of the inlet solenoid. |
| The inlet solenoid is defective. | Replace the inlet solenoid. |

**Table 3-28 Causes and solutions for stapler/stacker stationary jams**

| Cause | Solution |
|---|---|
| The lever for the stapler/stacker media feed sensor (SR2) is set incorrectly or damaged | Check the sensor lever to make sure it is set correctly. If it is damaged, replace the stage unit. |
| The spring of the stapler/stacker media feed sensor (SR2) lever is unhooked. | Check the spring and place it in correct position. |
| Poor contact exists in the stapler/stacker media feed sensor (SR1) connector. | Reconnect the connector (J451) on the stapler/stacker controller PCA. |
| The stapler/stacker media feed sensor (SR2) is defective. | Replace the stage unit. |
| Poor contact exists in the stapler/stacker feed motor drive connector. | Reconnect the connector (J461) on the stapler/stacker controller PCA. |
| The stapler/stacker feed motor is defective. | Replace the stapler/stacker feed motor. |

**Table 3-28 Causes and solutions for stapler/stacker stationary jams (continued)**

| Cause | Solution |
|---|---|
| The lever for the stapler/stacker media feed sensor (SR5) is set incorrectly or damaged. | Check the sensor lever to make sure it is set correctly. If it is damaged, replace the stage top unit. |
| The spring of the stapler/stacker media feed sensor (SR5) lever is unhooked. | Check the spring and place it in correct position. |
| Poor contact exists in the stapler/stacker media feed sensor (SR5) connector. | Reconnect the connector (J453) on the stapler/stacker controller PCA. |
| The stapler/stacker media feed sensor (SR5) is defective. | Replace the stage top unit. |
| Poor contact exists in the stapler/stacker feed motor drive connector. | Reconnect the connector (J461) on the stapler/stacker controller PCA. |
| The stapler/stacker feed motor is defective. | Replace the stapler/stacker feed motor. |
| The lever for the output bin 3 delivery sensor (SR1) is set incorrectly or damaged. | Check the sensor lever to make sure it is set correctly. If it is damaged, replace the stage unit. |
| The spring of the output bin 3 delivery sensor (SR1) lever is unhooked. | Place the spring in the correct position. |
| Poor contact exists in the output bin 3 delivery sensor (SR1) connector. | Reconnect the connector (J451) on the stapler/stacker controller PCA. |
| The output bin 3 delivery sensor (SR1) is defective. | Replace the stage unit. |

**Table 3-29 Causes and solutions for stapler/stacker residual paper jams**

| Cause | Solution |
|---|---|
| The stapler/stacker contains residual paper. | Remove any residual paper. |
| The sensor detecting the stapler/stacker residual paper jam is set incorrectly or damaged. | Check the sensor lever to make sure it is set correctly. If it is damaged, replace the following: Output bin 3 delivery sensor (SR1), stapler/stacker media feed sensor (SR2), stapler/stacker media feed sensor (SR5), and stage top unit. |
| The spring of the sensor lever detecting the stapler/stacker residual paper jam is unhooked. | Check the spring of the sensor lever to make sure it is set correctly. |
| Poor connector contact exists in the sensor detecting the stapler/stacker residual paper jam. | Reconnect the following: Output bin 3 delivery sensor, connector (J451) on the stapler/stacker controller PCA stapler/stacker media feed sensor (SR2), connector (J451) on the stapler/stacker controller PCA stapler/stacker media feed sensor (SR5), and connector (J453) on the stapler/stacker controller PCA. |
| The sensor detecting the stapler/stacker residual paper jam is defective. | Replace the following: Output bin 3 delivery sensor (SR1), stapler/stacker media feed sensor (SR2): stapler/stacker media feed sensor (SR5), and stage top unit. |

## Change jam recovery

This product provides a jam recovery feature that reprints jammed pages.

1. From the Home screen, touch the Administration button.
2. Open the General Settings menu, and then open the Jam Recovery menu.
3. Select one of the following options:
   - Automatic — 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.

# 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, touch the Start 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 paper guides are touching the paper. |
| The Manually Feed Prompt menu in the Manage Trays menu is set to the Always setting. The product always prompts for manual feed, even if the tray is loaded. | Load Tray 1 with paper, or, if the paper is loaded, touch the Start button.<br><br>Or, change the manual-feed prompt setting to **Unless Loaded**, so that the product prompts for manual feed only when the tray is empty. |
| The Use Requested Tray menu in the Manage Trays menu is set to the Exclusively setting, and the requested tray is empty. The product will not use another tray. | Load the requested tray.<br><br>Or, change the setting to First. The product can use other trays if no paper is loaded in the specified tray. |

# Product feeds multiple sheets

**Product feeds multiple sheets**

| Cause | Solution |
| --- | --- |
| Print paper is sticking together. | Remove paper, flex it, rotate it 180 degrees or flip it over, and then reload it into the tray.<br><br>**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. |

# Use manual print modes

Try the following multi-purpose (MP) modes to see if they solve the image-quality problems. These options can be found in the Adjust Paper Types and Optimize submenus under the Print Quality menu on the control panel.

**Table 3-30 MP modes under the Adjust Paper Types sub menu**

| | |
|---|---|
| Print Mode | • Auto Sense Mode<br>• Normal mode<br>• Light Mode<br>• Light Rough Mode<br>• Heavy Mode<br>• Extra Heavy Mode<br>• Card Stock Mode<br>• Heavy Glossy Mode<br>• X-Heavy Glossy Mode<br>• Card Glossy Mode<br>• Rough Mode<br>• Transparency Mode<br>• Transparency 2 Mode<br>• 4 mm trans mode<br>• Tough Mode<br>• Label Mode<br>• Envelope Mode<br>**NOTE:** Not all print modes are available for all paper types. |
| 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.<br>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.<br>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. |

**Table 3-30 MP modes under the Adjust Paper Types sub menu (continued)**

| | |
|---|---|
| Pre-Rotation Mode | Set this feature to On if horizontal banding occurs on pages. |
| 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 and Print Mode settings are correct for the type of paper you are using. If you continue to see ghost images on your print jobs, set the Fuser Temp feature to one of the Alternate settings . Try the Alternate 1 setting first and see if it solves the problem. If you continue to see the problem, try Alternate 2 and then Alternate 3. Using the Alternate 2 and Alternate 3 settings might cause an extra delay between jobs. |
| Paper Curl Mode | Use in high-humidity and high-temperature environments. The Reduced setting decreases fuser temperature and increases the interpage gap. |

**Table 3-31 MP modes under the Optimize submenu**

| | |
|---|---|
| Normal Paper | Set toSmooth when printing on smooth paper of normal weight. |
| Heavy Paper | Set to Smooth when printing on smooth, heavy media types. |
| Envelop Control | Set to Reduced Temp if envelopes are sticking due to moisture in the envelop adhesive. |
| 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. |
| 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 the mode 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 | Improves color stability by adjusting the bias voltage. Make sure this mode is set to On. |
| Registration | Set to Alternate when color misregistration occurs. |

**Table 3-31 MP modes under the Optimize submenu (continued)**

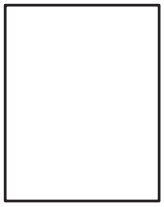
| | |
|---|---|
| Transfer Control | Set to Alternate 1 to reduce primary transfer bias and to resolve low density or blotchy images. Set to Alternate 2 to resolve ghosting outlines that look like a finger or fingers. Set to Alternate 3 when the other alternatives do not correct the problem. |
| Process Cleaning Page | Generates and processes a fuser cleaning page. |

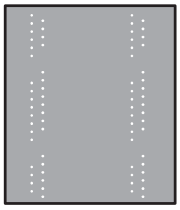
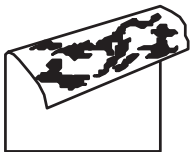
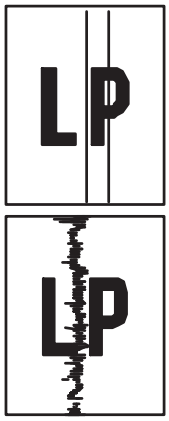
# Solve image-quality problems

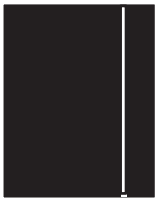
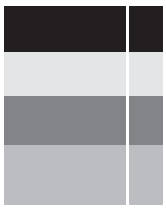
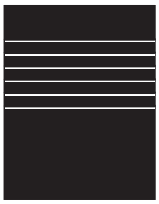
This section helps you define print-quality problems and what to do to correct them. Often print-quality problems can be handled easily by making sure that the product is maintained, using paper that meets HP specifications, or running a cleaning page.

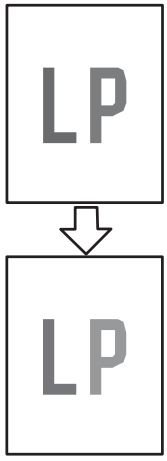
## Print quality examples

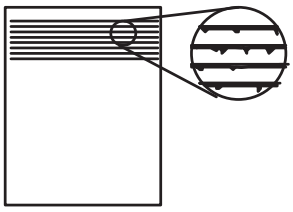
The following examples depict letter-size paper that has passed through the product short-edge first. These examples illustrate problems that would affect all the pages that you print, whether you print in color or in black only. The topics that follow list the typical cause and solution for each of these examples.

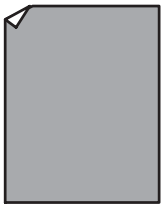
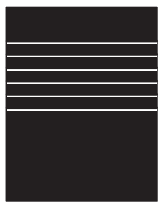
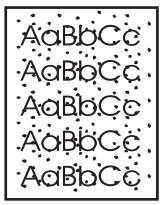
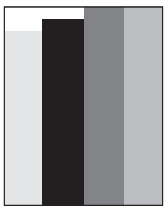
| Problem | Sample | Cause | Solution |
|---|---|---|---|
| Print is light or faded on entire page. |  | Poor contacts exist on the ITB unit and the product grounding unit. | Clean the grounding contacts. If the problem remains after cleaning, check the contacts for damage. Replace any deformed or damaged 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. See Registration density (RD) sensor assembly on page 209. |
| Page is blank. |  | The high-voltage power-supply lower is defective (no developing bias output). | Replace the high-voltage power-supply lower. See High-voltage power supply lower (HVPS-D) on page 250. |

| 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. See Intermediate transfer belt (ITB) on page 120. |
| | | The secondary transfer roller is deformed or has deteriorated. | Replace the secondary-transfer-roller. See Secondary transfer roller on page 118. |
| The back of the page is dirty. |  | The secondary transfer roller is dirty. | Replace the secondary transfer roller. See Secondary transfer roller on page 118. |
| | | 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 dirt does not come off, send a fuser cleaning kit. If the issue persists, replace the fuser. See Fuser on page 112. |
| Vertical streaks or bands appear on the page. |  | Scratches are present on the circumference of the photosensitive drum. | Replace the print cartridge of the color that matches the defect. |
| | | Scratches are present on the circumference of the fuser roller. | Replace the fuser. See Fuser on page 112. |
| | | Scratches are present on the circumference of the ITB. | Replace the ITB. See Intermediate transfer belt (ITB) on page 120. |
| | | The ITB drive roller is deformed or has deteriorated. | |
| | | The ITB cleaning mechanism is malfunctioning. | |

| Problem | Sample | Cause | Solution |
|---|---|---|---|
| Vertical white lines appear in a particular color. |  | The laser beam window is dirty. | Remove the affected print cartridge and reinstall it. The PGCs will clean the glass. |
| | | Scratches are present on the circumference of the developing cylinder or photosensitive drum.<br><br>White scratch down the page could mean the scanner glass needs to be cleaned. | Remove the affected print cartridge and reinstall it. The PGCs will clean the glass.<br><br>If the problem persists, replace the affected print cartridge. |
| | | The laser/scanner-unit mirror is dirty. | Replace the laser/scanner assembly. See Laser/scanner assembly (Y/M) on page 275 or Laser/scanner assembly (C/Bk) on page 279. |
| Vertical white lines appear in all colors. |  | Horizontal scratches on the fuser roller. | Replace the fuser. See Fuser on page 112. |
| | | Scratches are present on the circumference of the ITB.<br><br>White scratch down the page could mean the scanner glass needs to be cleaned. | Remove the affected print cartridge and reinstall it. The PGCs will clean the glass.<br><br>Replace the ITB. See Intermediate transfer belt (ITB) on page 120. |
| 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. See Fuser on page 112. |
| | | 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. See Fuser on page 112. |
| 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. See Intermediate transfer belt (ITB) on page 120. |

| 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. See High-voltage power supply lower (HVPS-D) on page 250. |
| | | The laser/scanner unit is defective. | Replace the laser/scanner assembly. See Laser/scanner assembly (Y/M) on page 275 or Laser/scanner assembly (C/Bk) on page 279. |
| Dropouts appear. |  | The secondary transfer roller is deformed or has deteriorated. | Replace the secondary-transfer-roller. See Secondary transfer roller on page 118. |
| | | 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. See High-voltage power supply upper (HVPS-T) on page 286. |
| The toner is not fully fused to the paper. |  | The fuser roller or pressure roller is scarred or deformed. | Replace the fuser. See Fuser on page 112. |
| | | The thermistor is defective. | Replace the fuser. See Fuser on page 112. |
| | | The fuser heater is defective. | |

| 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. See Intermediate transfer belt (ITB) on page 120. |
| | | 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. See Registration density (RD) sensor assembly on page 209. |
| | | The laser/scanner unit is defective. | Replace the laser/scanner assembly. See Laser/scanner assembly (Y/M) on page 275 or Laser/scanner assembly (C/Bk) on page 279. |
| | | 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. See Laser/scanner assembly (Y/M) on page 275 or Laser/scanner assembly (C/Bk) on page 279. |
| 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. See Secondary transfer assembly on page 204. |

| Problem | Sample | Cause | Solution |
|---|---|---|---|
| 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. |
| 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. See Fuser on page 112.<br><br>**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.<br><br>**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

To clean the product exterior, use a soft, water-moistened cloth.

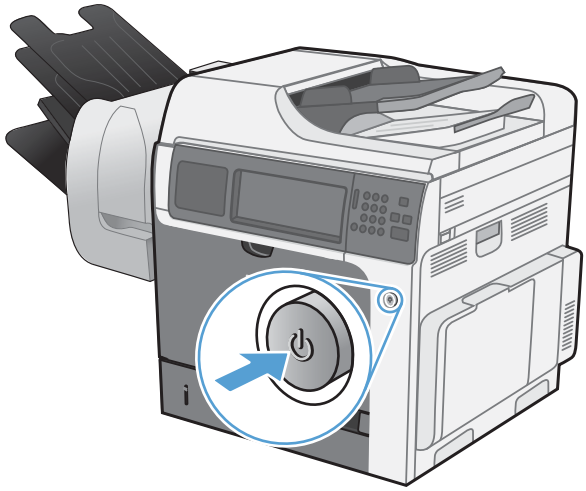
## Clean the paper path

1. From the Home screen, touch the Device Maintenance button.
2. Open the following menus:
   - Calibrate/Cleaning
   - Cleaning Page
3. Touch the Print button to print the page.
4. The cleaning process can take several minutes. When it is finished, discard the printed page.

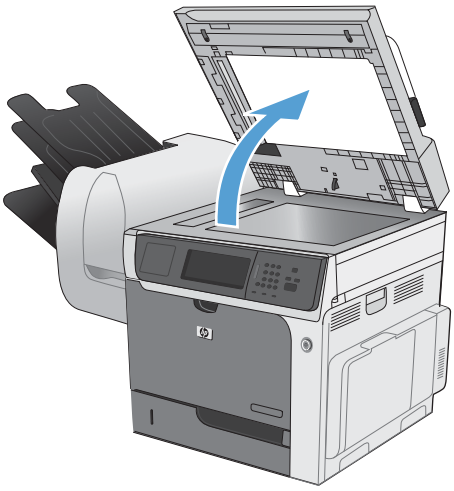
## Clean the scanner glass

Over time, specks of debris might collect on the scanner glass and white plastic backing, which can affect performance. Use the following procedure to clean the scanner glass and white plastic backing.

1. Use the power switch to turn off the product, and then unplug the power cord from the electrical socket.



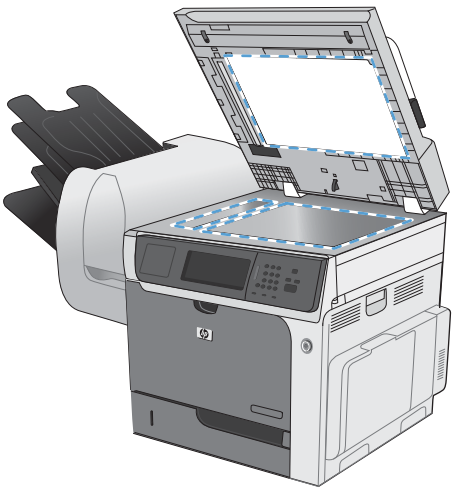
2. Open the scanner lid.



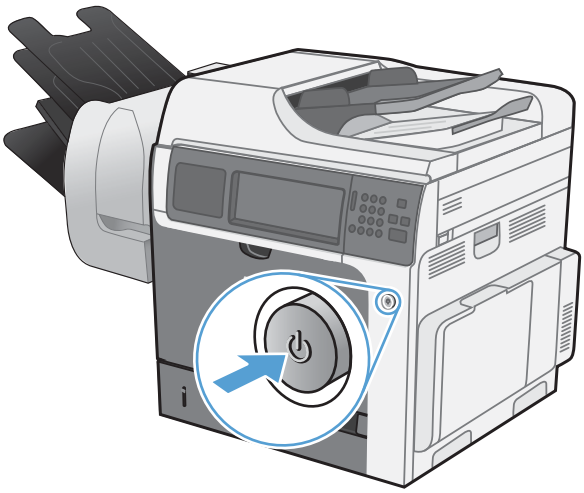
3. Clean the scanner glass and the white plastic backing with a soft cloth or sponge that has been moistened with nonabrasive glass cleaner. Dry the glass and white plastic backing with a chamois or a cellulose sponge to prevent spotting.

**CAUTION:** Do not use abrasives, acetone, benzene, ammonia, ethyl alcohol, or carbon tetrachloride on any part of the product; these can damage the product. Do not place liquids directly on the glass or platen. They might seep and damage the product.

**NOTE:** Carefully clean the small glass strip to the left of the scanner glass. Small marks on this glass result in streaks on copies made from the document feeder.



4. Plug in the product, and then use the power switch to turn on the product.



## Clean the fuser

1. Open Tray 1. Adjust the guides so that they are fully open, then load the appropriate size paper into the tray so that it fills the space between the guides. Make sure that the guides are fully open, and that you use the paper supplied in the fuser cleaning kit.
2. Touch the Device Maintenance button, and then touch the Calibrate/Cleaning button.
3. Touch the Cleaning Page button. The cleaning process can take up to 1.5 minutes.
4. Repeat the process 1 to 6 times until the paper comes out clean.

# Solve performance problems

| Problem | Cause | Solution |
|---|---|---|
| Pages print but are totally blank. | The document might contain blank pages. | Check the document that you are printing to see if content appears on all of the pages. |
| | The product might be malfunctioning. | To check the product, print a Configuration page. |
| | All of the print cartridges might be very low on toner. | Replace the print cartridges if a **Supplies very low** message appears. |
| Pages print very slowly. | Heavier paper types can slow the print job. | Print on a different type of paper. Proper fusing may require a slower print speed to ensure the best print quality. |
| | Complex pages can print slowly. | Simplify the page. |
| Pages did not print. | The product might not be pulling paper correctly. | Make sure paper is loaded in the tray correctly. |
| | The paper is jamming in the product. | Clear the jam. |
| | The USB cable might be defective or incorrectly connected. | • Disconnect the USB cable at both ends and reconnect it.<br>• Try printing a job that has printed in the past.<br>• 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 m (6.5 ft). Replace the cable if necessary.
- Verify that the cable is working correctly by connecting it to another product. Replace the cable if necessary.

## Solve network problems

Check the following items to verify that the product is communicating with the network. Before beginning, print a configuration page. See Configuration pages on page 462.

| Problem | Solution |
|---|---|
| Poor physical connection | Verify that the product is attached to the correct network port using a cable of the correct length.<br><br>Verify that cable connections are secure.<br><br>Look at the network port connection on the back of the product, and verify that the amber activity light and the green link-status light are lit.<br><br>If the problem continues, try a different cable or port on the hub. |
| The computer is unable to communicate with the product. | Use the command prompt to ping the product from your computer. For example:<br><br>`ping 192.168.45.39`<br><br>Verify that the ping displays round-trip times, which indicates that it is working.<br><br>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. |
| Incorrect link and duplex settings | Hewlett-Packard recommends leaving this setting in automatic mode (the default setting). |
| Incorrect IP address for the product on the computer | Use the correct IP address. The IP address is listed on the configuration page.<br><br>If the IP address is correct, delete the product, and then add it again. |
| New software programs have caused compatibility problems. | Verify that any new software programs are correctly installed and that they use the correct printer driver. |
| Your computer or workstation is set up incorrectly. | Check the network drivers, printer drivers, and the network redirection.<br><br>Verify that the operating system is configured correctly. |
| The protocol is disabled, or other network settings are incorrect. | Review the configuration page to check the status of the protocol. Enable it if necessary.<br><br>Reconfigure the network settings if necessary. |

# 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 type an eight-digit personal identification number (PIN). The PIN for the HP Color LaserJet Enterprise CM4540 MFP Series is 11454010.

**NOTE:** The product automatically exits the Service menu after about one minute if no items are selected or changed.

1. Scroll to and touch the Device Maintenance button.
2. Touch the Service button.
3. The drop-down menu shows the User Access Code list item. Select the Service Access Code list item, and then touch the Access Code text box. The touchscreen numeric keypad appears.
4. Type the PIN (xxxxxx).
5. Touch the OK button to save the PIN or the Cancel button to exit the screen.
6. The PIN displays in the Service use only: text box as ********.
7. Touch the OK button to open the Service menu or the Cancel button to exit the screen.

The following menu items appear in the **Service** menu:

| Menu item | Sub-menu item | Sub-menu item | Description |
|---|---|---|---|
| Event Log | | | Allows you to print or view the product event log. |
| Clear Event Log | | | Use this item to clear the product event log. |
| Cycle Counts | Total Engine Cycles | | |
| | Mono Cycle Count | | The page count that is stored in NVRAM and printed on the configuration page represents the number of pages that the formatter has formatted (not including engine-test prints). |
| | Color Cycle Count | | The page count that is stored in NVRAM and printed on the configuration page represents the number of pages that the formatter has formatted (not including engine-test prints). |
| | Refurbish Cycle Count | | Use this item to record the page count when the product was refurbished. |

| Menu item | Sub-menu item | Sub-menu item | Description |
|---|---|---|---|
| | Document Feeder Count: | | Set the total number of pages that have been fed through the document feeder. |
| | Document Feeder Kit Interval | | Total number of pages since the document feeder kit was replaced. |
| | ADF Count | | Set the total pages fed through the document feeder. |
| | Flatbed Count | | Set the total pages scanned from the flatbed. |
| | ADF Simplex Count | | Set the total single-sided pages fed through the document feeder. |
| | ADF Duplex Count | | Set the total two-sided pages fed through the document feeder. |
| | Copy Scan Count | | Set the total copy pages that have been scanned. |
| | Send Scan Count | | Set the number of scanned pages sent to e-mail. |
| | Copy Pages Count | | Set the number of scanned pages that have been printed. |
| | Fax Scan Count | | |
| Scanner Settings | | | Set the calibration values.<br>**WARNING!** Do not change these values unless instructed to do so. |
| Serial Number | | | Set the serial number. |

| Menu item | Sub-menu item | Sub-menu item | Description |
|---|---|---|---|
| Service ID | | | Use this item to show the date that the product was first used on the control panel. This eliminates the need for users to keep paper receipts for proof of warranty.<br><br>**Restore the service ID**<br><br>If you replace the formatter, the date is lost. Use this menu item to reset the date to the original date that the product was first used. The date format is YYDDD. Use the following formula to calculate the dates:<br><br>1. To calculate YY, subtract 1990 from the calendar year. For instance, if the product was first used in 2002, calculate YY as follows: 2002 - 1990 = 12. YY = 12.<br><br>2. Subtract 1 from 10 (October is the tenth month of the year): 10 - 1 = 9.<br><br>◦ Multiply 9 by 30: 9 x 30 = 270 or add 17 to |

| Menu item | Sub-menu item | Sub-menu item | Description |
|---|---|---|---|
| | | | 270: 270 + 17 = 287.<br>Thus, DDD = 287.<br><br>**Convert the service ID to an actual date**<br><br>You can use the product Service ID number to determine whether the product is still under warranty. Use the following formula to convert the Service ID into the installation date as follows:<br><br>1. Add 1990 to YY to get the actual year that the product was installed.<br><br>2. Divide DDD by 30. If there is a remainder, add 1 to the result. This is the month.<br><br>3. The remainder from the calculation in step 2 is the date.<br><br>Using the Service ID 12287 as an example, the date conversion is as follows:<br><br>1. 12 + 1990 = 2002, so the year is 2002.<br><br>2. 287 divided by 30 = 9 with a remainder of 17. Since there is a remainder, add 1 to 9 to get 10, which represents October.<br><br>3. The remainder in step 2 is 17, so that is the date.<br><br>4. The complete date is 17-October-2002.<br><br>**NOTE:** A six-day grace period is built into the date system. |
| Cold Reset Paper | | | When you perform a cold reset, the paper size that is stored in NVRAM is reset to the default factory setting. If you replace a formatter board in a country/region that uses A4 as the standard paper size, use this menu to reset the default paper size to A4. LETTER and A4 are the only available values. |

| Menu item | Sub-menu item | Sub-menu item | Description |
|---|---|---|---|
| New Registration Roller | | | Reset the counter for the registration roller after replacing the registration assembly. |
| Media Sensor Value | | | After replacement of the registration assembly, set the media sensor values found on the label of the new registration assembly. |
| PTT Test Mode | | | |
| | Hook Operations | | |
| | Generate Random Data | | |
| | Generate DTMF Tone Burst | | |
| | Generate DTMF Continuous Tone | | |
| | Generate Pulse Burst | | |
| | Generate Tone Dial Number | | |
| | Generate Pulse Dial Number | | |
| | Generate Single Modem Tone | | |
| | Line Measurements | | |
| | Fax Transmit Signal Loss | | |

# Product resets

## Restore factory settings

Use the Resets menu to restore factory settings.

1. Scroll to and touch the Administration button, and then touch the General Settings button.
2. Touch the Restore Factory Settings button, and then touch an option. Touch the Select All button to reset factory settings for all options.
3. Touch the Reset button to restore factory settings.

The values for each reset are as follows:

### 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
- Security
  - Default Authentication agent
  - Authentication agents
  - Policy agents
  - Color access control

# 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.

## Open the preboot menu

1. Turn the product on.
2. Press and hold the Stop button when the LED lights are illuminated solid.
3. Use the 3 button and the 9 button to highlight one of the menu items listed below, and then press the 6 to open the selected item.

**Table 3-32 Preboot menu options (1 of 6)**

| Menu option | First level | Second level | Third level | Description |
|---|---|---|---|---|
| Continue | | | | Selecting theContinue item exits the preboot menu and continues the normal boot process.<br><br>If a selection is not made in the initial menu within 30 seconds, the product returns to a normal boot (the same as selecting the Continue item.<br><br>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 open the preboot menu. |

**Table 3-32 Preboot menu options (1 of 6) (continued)**

| Menu option | First level | Second level | Third level | Description |
|---|---|---|---|---|
| Administrator | | | | This item navigates to the Administrator sub menus.<br><br>If authentication is required (and the user is not already signed in) the Sign In prompt 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 Product updates on page 651. |
| | | USB | | See Product updates on page 651. |
| | Clean Disk | | | This item reinitializes the disk and cleans all disk partitions.<br><br>**CAUTION:** Selecting the Clean Disk item removes **all** data.<br><br>A delete confirmation prompt is **not** provided.<br><br>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).<br><br>**CAUTION:** Selecting the Partial Clean item removes **all** data except the firmware repository.<br><br>A delete confirmation prompt is **not** provided.<br><br>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 theClear 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 6 button to confirm the action. |

**Table 3-33 Preboot menu options (2 of 6)**

| Menu option | First level | Second level | Third level | Description |
|---|---|---|---|---|
| Administrator<br><br>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 item is disabled 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.<br><br>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.<br><br>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.<br><br>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.<br><br>**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.<br><br>This process might take a long time.<br><br>**NOTE:** The system will be unusable until the system files are reinstalled. The process is an ATA secure-erase command one-pass overwrite. This process 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.<br><br>**NOTE:** The system will be unusable until the system files are reinstalled. This process erases the crypto key. The disk becomes a non-encrypted disk. |
| | | | Get Status | This item provides disk status information if any is available. |

**Table 3-34 Preboot menu options (3 of 6)**

| Menu option | First level | Second level | Third level | Description |
|---|---|---|---|---|
| Administrator<br><br>continued | Manage Disk<br><br>continued | Internal Device | | Select the Internal Device item to erase the internal device or view the status of the internal device. |
| | | | Secure Erase | Select the Secure Erase item to erase all of the data on the disk and unlock it, if required.<br><br>This process might take a long time.<br><br>**NOTE:** The system will be unusable until the system files are reinstalled. The process is an ATA secure-erase command one-pass overwrite. This process 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.<br><br>**NOTE:** The system will be unusable until the system files are reinstalled. This process 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 external device or get status about the external device. |
| | | | Secure Erase | Select the Secure Erase item to erase all of the data on the disk and unlock it if required.<br><br>This process might take a long time.<br><br>**NOTE:** The system will be unusable until the system files are reinstalled. The process is an ATA secure-erase command one-pass overwrite. This process 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.<br><br>**NOTE:** The system will be unusable until the system files are reinstalled. This process erases the crypto key. The disk becomes a non-encrypted disk.. |
| | | | Get Status | This item provides disk status information if any is available. |

**Table 3-35 Preboot menu options (4 of 6)**

| Menu option | First level | Second level | Third level | Description |
|---|---|---|---|---|
| Administrator<br><br>continued | **Configure LAN** | | | Select the **Configure LAN** item to set the network settings for the preboot menu firmware upgrade.<br><br>The network can be configured to 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 3-36 Preboot menu options (5 of 6)**

| Menu option | First level | Second level | Third level | Description |
|---|---|---|---|---|
| Administrator<br><br>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 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).<br><br>**NOTE:** Items in the Service menu are not reset. |
| | | First Power | | Not currently functional: This item allows the product to initialize as if it is the first time it has been turned on.<br><br>For example, the user is prompted to configure first-time settings like date/time, language, and other settings.<br><br>Check this item so that it is enabled for the next time the product power is turned on.<br><br>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 Plugins | | This item allows the product to be started without loading the third-party applications.<br><br>This means that files including Accessible Architecture on the disk will not be available at boot-up. 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.<br><br>In this case, this function will cause the product to configure the HP firmware first, followed by the third-party applications.<br><br>**NOTE:** The files on the disk will be available after the product 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 product reaches the Ready state.<br><br>Once the product power is turned on the next time, the Show Revision item is unchecked so that the firmware revision is not shown. |
| | | Lock Service | | **CAUTION:** Select the Lock Service item to lock the Service menu access (both in the preboot menu and the Device Maintenance menu).<br><br>Service personnel must have the administrator remove the Lock Service setting before they can open the Service menu. |

**Table 3-37 Preboot menu options (6 of 6)**

| Menu option | First level | Second level | Third level | Description |
|---|---|---|---|---|
| Administrator<br><br>continued | Startup Options<br><br>continued | Skip Disk Scan | | Check the Skip Disk Scan item to allow the product to initialize without scanning the disk.<br><br>If the product is crashing on step 4/8, checking this item may allow the problem to be isolated.<br><br>Once the product 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.<br><br>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 reset the administrator password. |
| | Subsystems | | | For manufacturing use only. Do not change these values. |

# Solve fax problems

## Is your fax set up correctly?

Use the following checklist to help identify the cause of any fax related problems you are encountering:

- **Are you using the phone cord supplied with the fax accessory?** This fax accessory has been tested with the supplied phone cord to meet RJ11 and functional specifications. Do not substitute another phone cord; the analog-fax accessory requires an analog phone cord. It also requires an analog phone connection.
- **Is the fax/phone line connector seated in the socket on the fax accessory?** Make sure that the phone jack is well seated in the socket. The connector should be inserted into the socket until it "clicks."
- **Is the phone wall jack working properly?** Verify that a dial tone exists by attaching a phone to the wall jack. Can you hear a dial tone, and can you make a phone call?

## What type of phone line are you using?

- **Dedicated line:** A standard fax/phone number assigned to receive or send faxes.

**NOTE:** The phone line should be for product fax use only and not shared with other types of telephone devices. Examples include alarm systems that use the phone line for notifications to a monitoring companies.

- **PBX system:** A business-environment phone system. Standard home phones and the fax accessory use an analog phone signal. Some PBX systems are digital and might not be compatible with the fax accessory. You need to have access to a standard analog phone line to be able to send and receive faxes.
- **Roll-over lines:** A phone system feature where a new call "rolls over" to the next available line when the first incoming line is busy. Try attaching the fax accessory to the first incoming phone line. The fax accessory will answer the phone after it rings the number of times set in the rings-to-answer setting.

**NOTE:** Roll-over lines can cause problems with the fax accessory's ability to receive faxes. Using roll-over lines with this product is not recommended.

## Are you using a surge-protection device?

A surge-protection device can be used between the wall jack and the fax accessory to protect the fax accessory against electrical power passed through the phone lines. These devices can cause some fax communication problems by degrading the quality of the phone signal. If you are having problems sending or receiving faxes and are using one of these devices, connect the fax accessory directly to the phone jack on the wall to determine whether the problem is with the surge-protection device.

### Are you using a phone company voice-messaging service or an answering machine?

If the rings-to-answer setting for the messaging service is lower than the rings-to-answer setting for the fax accessory, the messaging service answers the call, and the fax accessory is not able to receive faxes. If the rings-to-answer setting for the fax accessory is lower than that of the messaging service, the fax accessory answers all calls, and no calls are routed to the messaging service.

### Does your phone line have a call-waiting feature?

If the fax telephone line has an activated call-waiting feature, a call-waiting notice can interrupt a fax call in progress, which causes a communication error. Ensure that a call-waiting feature is not active on the fax telephone line.

## Check fax accessory status

If the analog-fax accessory does not appear to be functioning, print a Configuration Page report to check the status.

1. From the Home screen, scroll to and touch the Administration button.
2. Open the following menus:
   - Reports
   - Configuration/Status Pages
   - Configuration Page
3. Touch the Print button to print the report, or touch the View button to view the report on the screen. The report consists of several pages.

**NOTE:** The product IP address or host name is listed on the Jetdirect Page.

On the fax accessory page of the configuration page, under the Hardware Information heading, check the Modem Status. The following table identifies the status conditions and possible solutions.

| | |
|---|---|
| Operational / Enabled[1] | The analog-fax accessory is installed and ready. |
| Operational / Disabled[1] | The fax accessory is installed and operational, however, HP Digital Sending utility has either disabled the product fax feature or has enabled LAN fax. When LAN fax is enabled, the analog-fax feature is disabled. Only one fax feature, either LAN fax or analog fax, can be enabled at a time. |
| Non-Operational / Enabled/Disabled[1] | A firmware failure has been identified. The firmware should be updated. |
| Damaged / Enabled/Disabled[1] | Fax accessory has failed; reseat the fax accessory card and check for bent pins. If the status is still DAMAGED, replace the analog-fax accessory card. |

[1] ENABLED indicates that the analog fax accessory is enabled, turned on; DISABLED indicates that LAN fax is enabled (analog fax is turned off).

## Fax feature is not operating

**The fax accessory is installed but the icon does not appear on the product main screen.**

| Cause | Solution |
|---|---|
| HP MFP Digital Sending Software Configuration utility has disabled the analog-fax feature. | Use the HP MFP Digital Sending Software Configuration utility to enable the analog-fax feature. |
| The accessory is not operating correctly. | Check the fax accessory status. If the status is<br><br>NON-OPERATIONAL, new firmware might need to be installed.<br><br>If the status is DAMAGED and you just installed the card, try reseating the card and check for bent pins.<br><br>If the status is DAMAGED and the card is installed correctly, the card might need to be replaced. |
| Faulty formatter board. | Contact your HP service representative for service. |

**The product is not displaying the fax menus.**

| Cause | Solution |
|---|---|
| LAN fax is enabled. | This is normal operation. When the HP Digital Sending Software enables LAN fax, the analog fax is disabled and the fax menu, which is used for the analog fax only, does not open. |

## General fax problems

| Problem | Cause | Solution |
|---|---|---|
| Fax failed to send. | JBIG is enabled and receiving fax does not have JBIG capability. | Set JBIG off. |
| An "Out of Memory" status message appears on the status message bar. | The product storage disk is full. | Delete some files from the disk, see the product user guide for information about managing the disk. |
| Print quality of a photo is poor or prints as a gray box. | Wrong Page Content mode setting. | Try setting the Optimize Text/Picture option to Photograph. |
| Pressed the Cancel button on the product keyboard to cancel a fax transmission and the fax was still sent. | Cancellation takes place after making a selection in the cancellation menu (displayed after pressing red Stop button) and acknowledging with OK. | Cancel faxes using the fax menu. |
| No fax address book button appears. | The fax address book feature has not been enabled. | Use the HP MFP Digital Sending Software Configuration utility to enable the fax address book feature. |

| Problem | Cause | Solution |
|---|---|---|
| Not able to locate the Fax settings in HP Web Jetadmin. | Fax settings in HP Web Jetadmin are located under the device's status page drop-down menu. | Select **Digital Sending and Fax** from the drop-down menu. |
| The header is being appended to the top of the page when I have overlay enabled. | The fax will append the overlay header to the top of a page when overlay is set, when the fax has been forwarded. | This is normal operation. |
| Have a mix of names and numbers in the recipients box. | This is normal for both names and numbers to appear, depending on where they are from, the fax address book lists names, and all other databases list numbers. | Normal, no action required. |
| My one page fax prints as two pages. | The fax header is being appended to the top of the fax, pushing text to a second page. | If you want your one page fax to print on one page, set the overlay header to overlay mode or adjust the Fit to page setting. |
| Document stops feeding in the middle of faxing. | There might be a jam in the ADF. | If there is a jam, see the product user guide for instructions on clearing jams. |
| The volume for sounds coming from the fax accessory is too high or too low. | The volume setting needs to be adjusted. | |

## Problems with receiving faxes

**Incoming fax calls are not being answered by the fax accessory (no fax detected).**

| Cause | Solution |
|---|---|
| The rings-to-answer setting might not be set correctly. | Check the rings-to-answer setting. |
| The phone cord might not be connected properly, or the phone cord is not working. | Check the installation. Make sure you are using the phone cord that came with the fax accessory. |
| The phone line might not be working. | Disconnect the fax accessory from the phone jack, and connect a phone. Try to make a phone call to ensure the phone line is working. |
| A voice-messaging service might be interfering with the fax accessory's ability to answer calls. | Do one of the following:<br>• Discontinue the messaging service.<br>• Get a phone line dedicated to fax calls.<br>• Decrease the rings-to-answer for the fax accessory to a number less than the rings-to-answer for the voice mail. |

**Faxes are transmitting or being received very slowly.**

| Cause | Solution |
|---|---|
| You might be sending or receiving a very complex fax, such as one with many graphics. | Complex faxes take longer to be sent or received. |

**Faxes are transmitting or being received very slowly.**

| Cause | Solution |
|---|---|
| The receiving fax machine might have a slow modem speed. | The fax accessory only sends the fax at the fastest modem speed the receiving fax machine can use. |
| The resolution at which the fax was sent or is being received is very high. A higher resolution typically results in better quality, but also requires a longer transmission time. | If you are receiving the fax, call and ask the sender to decrease the resolution and resend the fax. If you are sending, decrease the resolution and change the Optimize Text/Picture option. |
| If there is a poor phone-line connection, the fax accessory and the receiving fax machine slow down the transmission to adjust for errors. | Cancel and resend the fax. Have the phone company check the phone line. |

**Faxes are not printing on the product.**

| Cause | Solution |
|---|---|
| There is no media in the media input tray. | Load media. Any faxes received while the input tray is empty are stored and will print after the tray has been refilled. |
| Schedule Printing of Faxes is set. | If Schedule Printing of Faxes is enabled, faxes will not print until it is disabled. |
| The product is either low on toner or has run out of toner. | The product stops printing as soon as it is low on toner or runs out of toner. Any faxes received are stored in memory and print after the toner has been replaced. For other product printing problems, see the product user guide. |
| Incoming call may be a voice call. | Incoming voice calls usually show up in the call report as a **Communication Error (17)** As these are voice calls and not a fax error, no action is needed to be taken. Ensure that those calling you have a voice number that is different from the fax number. |
| The incoming fax was interrupted. | Verify that the fax telephone line does not have an activated call-waiting feature. A call-waiting notice can interrupt a fax call in progress, which causes a communication error. |
| The Fax Printing Schedule feature is set to Always store faxes. | Change the Fax Printing Schedule setting to Always print faxes. |

## Problems with sending faxes

| Problem | Cause | Solution |
|---|---|---|
| **Faxes quit during sending.** | The fax machine to which you are sending might be malfunctioning. | Try sending to another fax machine. |
| | Your phone line might not be working. | Disconnect the fax accessory from the phone jack, and connect a phone. Try to make a phone call to ensure the phone line is working. |

| Problem | Cause | Solution |
|---|---|---|
| | Your phone line might be noisy or poor quality | Try using a lower baud rate to improve the reliability of transmission. See maximum baud rate setting. |
| | A call-waiting feature might be active | Verify that the fax telephone line does not have an activated call-waiting feature. A call-waiting notice can interrupt a fax call in progress, which causes a communication error. |
| **The fax accessory is receiving faxes but is not sending them.** | If the fax accessory is on a PBX system, the PBX system might be generating a dial tone the fax accessory cannot detect. | Disable the detect dial tone setting. |
| | There might be a poor phone connection. | Try again later. |
| | The fax machine to which you are sending might be malfunctioning. | Try sending to another fax machine. |
| | Your phone line might not be working. | Disconnect the fax accessory from the phone jack, and connect a phone. Try to make a phone call to ensure the phone line is working. |
| **Outgoing fax calls keep dialing.** | The fax accessory automatically redials a fax number if the Redial on Busy option is set to on or if the Redial On No Answer is set on. | This is normal operation. If you do not want the fax to retry, set Redial on Busy to 0 and set Redial On No Answer to 0. |
| **Faxes you send are not arriving at the receiving fax machine.** | The receiving fax machine might be turned off or might have an error condition, such as being out of paper. | Call the recipient to make sure the fax machine is turned on and ready to receive faxes. |
| | A fax might be in memory because it is waiting to redial a busy number, or there are other jobs ahead of it waiting to be sent. | If a fax job is in memory for either of these reasons, an entry for the job appears in the fax log. Print the fax activity log, and check the **Result** column for jobs with a **Pending** designation. |

## Error codes

If a fax problem occurs which prevents or interrupts sending or receiving of a fax, an error code is generated that will help in determining the cause of the problem. Error codes show up in the fax activity log, the fax call report, and the T.30 Protocol Trace. Print one of these three reports to obtain the error code. A detailed description of the error codes and the appropriate action can be found at www.hp.com by searching for HP LaserJet Analog Fax Accessory 500.

## Fax error messages

When an analog fax is sent or received on an HP LaserJet product, any errors that occur during the fax process will be displayed on the product control panel and entered into the fax reports. Fax errors can occur for many reasons and often they are due to interruptions or noise on the telephone connection.

Any error that takes place during the fax process regardless of where it originates will be displayed by the product.

If the fax process is interrupted or an error occurs during a fax transmission or reception, a two part status/error description is generated by the fax subsystem on the product. Normal or successful faxes also generate messages indicating success. The message information consists of a text description and a numeric code (a few messages don't include numeric codes). Only the text part of the message will be displayed on the product control panel; however, both the text message and numeric code will be listed in the fax activity report, fax call report, and the fax T.30 trace (these fax reports can be printed out individually from the product control panel – under the Administration > Reports > Fax Reports and Administration > Troubleshooting > Fax > Fax T.30 Trace menus). The numeric code is shown in parentheses after the text part of the message in the reports. For example, if a communication error occurred, the control panel display would show Fax Failed: Communication Error. The same error would be shown in the Result field in the fax activity report as **Communication Error (17)**. For this example, the numeric code associated with this communication error is '17'.

The numeric code is generated by the fax modem. Usually a numeric code of (0) indicates a normal modem response. Some messages will always display a numeric code of (0), whereas other messages can have a range of numeric codes depending on the circumstances, and a few messages will have no numeric code. Usually a numeric code of (0) indicates an error was not associated with the fax modem, but occurred in another part of the fax subsystem or other product subsystem such as the printing subsystem. Non-zero error codes give further detail into the particular action or process that the modem is executing, and they don't necessarily indicate that there is a problem with the modem.

In the tables that follow, the fax messages with the most common number codes are given with recommended corrective action. Several messages that are normal or indicate a normal event are also included in tables. For example, if a fax was not able to be sent to a busy number, a **Fail Busy** message will be shown. Nothing is wrong with the fax subsystem; the message indicates the fax was not completed due to a busy telephone number at the receiving end.

Persistent error messages with numeric codes different than those listed here require assistance of customer support. A more detailed listing of the last fax call can be printed out before contacting customer support to help identify the problem. The detailed fax listing is called a fax T.30 trace and can be printed for the last fax, or it can be set to print whenever a fax error occurs. To print or configure the fax T.30 trace, touch Administration, Troubleshooting, and then Fax T.30 Trace. You can then print the report for the last fax or configure when to print the T.30 trace.

## Send-fax messages

**Table 3-38 Send-fax messages**

| Message | Error No. | Description | Action(s) |
|---|---|---|---|
| **Cancelled** | 0 | Fax was cancelled by user at control panel of product. | None. |
| **Success** | n/a | Fax sent successfully. | None. |
| **Fail Busy** | 0 | The receiving fax machine is busy. | The fax will be retired automatically (if configured), otherwise try resending fax later. |
| **No Answer** | 0 | The receiving fax machine is not answering the call. | The receiving fax machine may be disconnected or turned off; contact the receiver to check the machine. Try resending. |
| **Compression Error** | Any | Fax may be corrupted or not sent. | Try resending fax. |
| **No Dial** | 0 | No dial tone is detected when sending the fax. | Verify the phone line is active; set the sending fax to "not" to detect a dial tone. |
| **Modem Fail** | Any | Unexpected or bad response from the internal fax modem to product. | Try resending fax; if the error persists, contact service.<br>**NOTE:** This does not necessarily indicate that the modem hardware is bad. |
| **Communication Error** | 17 or 36 | Lost telephone connection between sender and receiver. May be due to voice calls. | Try resending the fax. |
| **Communication Error** | Any besides 17 or 36 | General communications issue where the fax transmission was interrupted or did not proceed as expected. | Try resending fax; if the error persists, contact service. |
| **Space Fail** | 0 | Unable to read or write the fax image file to disk; could be corrupt product disk or no space available on the product's disk. | Try resending fax; if the error persists, contact service. |
| **Page Fail** | 0 | Incompatible page width, or page had too many bad lines. | Try resending fax; if the error persists, contact service. |
| **Memory Error** | 0 | Out of RAM memory on product. | If error persists, may need to add RAM to product. |
| **Job Fail** | Any | Fax failure; the fax job did not complete. | Try resending fax; if the error persists, contact service. |

**Table 3-38 Send-fax messages (continued)**

| Message | Error No. | Description | Action(s) |
|---|---|---|---|
| **Power Failure** | 0 | A power failure occurred during the fax transmission on the sending fax product. | Try resending the fax. |
| **No Fax Detected** | 17 or 36 | No fax machine was detected at receiving end. May be due to voice calls. | Verify fax number and have receiver verify fax machine is on and connected; then try resending fax. |

## Receive-fax messages

**Table 3-39 Receive-fax messages**

| Message | Error No. | Description | Action(s) |
|---|---|---|---|
| **Success** | n/a | Fax received ok. | None. |
| **Blocked** | n/a | Fax reception was blocked by receiving fax machine using blocked number feature. | None. |
| **Modem Fail** | Any | Unexpected or bad response from the internal modem to the product - example is trying to send a fax just as another fax is arriving. | Have fax resent; if the error persists, contact service. |
| **Communication Error** | 17, 36 | Lost telephone connection or interruption between sender/receiver. | Have the sender resend the fax (if the sending machine does not automatically retry). |
| **Communication Error** | Any besides 17 or 36 | General communications issue where the fax transmission was interrupted or did not proceed as expected. | Have fax resent; if the error persists, contact service. |
| **Space Fail** | 0 | Unable to read or write image file to disk; could be corrupt product disk or no space on disk. | Have fax resent; if the error persists, contact service. |
| **Page Fail** | 0 | Incompatible page width or page had too many bad lines. | Have fax resent; if the error persists, contact service. |
| **Memory Error** | 0 | Out of RAM memory on product. | If error persists, may need to add additional RAM memory to product. |
| **Compression Error** | 0 | Corrupted fax - the received image file cannot be decoded. | Have fax resent; enable ECM (Error Correction Mode) if not already. |
| **Print Fail** | 0 | Corrupted fax - the received image file cannot be decoded. | Have fax resent; enable ECM (Error Correction Mode) if not already. |
| **Poll Invalid** | 0 | The fax polling feature attempted to retrieve a fax from another machine but no fax was available. | Contact the administrator of the fax machine being polled and verify a fax is available, and then retry. |
| **Job Fail** | Any | Fax failure; this includes all non-specific failures. | Have fax resent; if the error persists, contact service. |
| **Power Failure** | 0 | A power failure occurred during the fax reception. | Have the sender resend the fax. |
| **No Fax Detected** | 17, 36 | A voice call was made to the fax. | None |

# Fax reports

The following sections list the fax reports available on this product. These reports can be printed or viewed on the product control panel.

### The following fax reports are available on this product:

- Fax Activity Log
- Billing Codes Report
- Blocked Fax List
- Speed Dial List
- Fax Call Report

### Use the following steps to print or view a fax report:

1. From the Home screen, scroll to and touch the Administration button.
2. Open the following menus:
   - Reports
   - Fax Reports
3. Touch the log or report to print or view.
4. Touch the Print or View button.

## Fax activity log

The fax activity log includes the following information.

- The fax header information configured on the product.
- The job number of each fax job.
- Date and time of all faxes received, sent, or failed to send.
- The type of fax job; send or receive.
- Identification (phone number, if available)
- Duration (off-hook time)
- Number of pages
- Result (successfully sent, pending, or failed to send which includes error type and code)

The database stores the most recent 500 fax entries (older faxes are deleted from the log). The database fax entries include any fax session as an entry. For example, a fax session could be a sent fax, received fax, or firmware upgrades. Depending on the activity, there might be fewer than 500 entries in the report (unless you sent 500 faxes without receiving any faxes or other completing another activity).

If you want to use the log for record keeping purposes, you should print the log periodically (at least every 500 faxes), and then clear it.

## Billing code report

The billing code report is a list of the most recent 500 faxes that were successfully sent, listed by billing code. The following information is provided in this report.

- Billing code number
- Date and time of all faxes that were successfully sent
- Identification number
- Duration (off hook time)
- Number of pages sent
- Result (success)

The database stores the most recent 500 faxes (older faxes are deleted from the database). If you want to use the report for record keeping purposes, you should print the report periodically (at least every 500 faxes), and then clear it.

## Blocked fax list report

The blocked fax list report contains the list of fax numbers that the product has been configured to not receive faxes from.

## Speed dial list report

A speed dial list report lists the fax numbers assigned to speed dial names.

## Fax call report

The fax call report is a brief report that indicates the status of the last fax that was sent or received.

## Clear the fax activity log

To clear the fax activity log, complete the following steps.

1. On the control panel, touch the Administration button.
2. Open the following menus:
   - Fax Settings
   - Clear fax activity log
3. Touch the Clear button to clear the fax activity log.

# Service settings

These items in the control-panel menus can help with troubleshooting if the corrective action taken under the Error Codes section is unsuccessful. They are intended to be used when an HP service representative is assisting you.

## Settings in the Troubleshooting menu

Open the Administration menu, and then select the Troubleshooting menu.

| Troubleshooting menu settings | |
|---|---|
| | Fax T.30 Trace: The T.30 trace is a printed report which produces a record of all the communications between the sending and receiving fax machines for the last fax transmission or reception. The report has many technical details which are usually beyond the scope of most users. However the report contains detailed error codes and other information that might be useful in troubleshooting a particular problem related to sending or receiving a fax. The report contents might be requested by an HP service representative when trying to determine the cause of a problem and will help to determine the appropriate action. |
| | Transmit Signal Loss: This selection compensates for phone line signal loss. It is not recommended to modify this setting unless requested to do so by an HP service representative as it might render the fax inoperable. |
| | V34: This setting has two values, Normal and Off, that control the modem baud rate. The Normal setting allows the modem to select any of the supported baud rates up to 33,600 bps. The Off setting sets the baud rate to 14,400 bps. This setting remains set, until changed. |
| | Speaker Mode: This service setting has two modes, Normal and Diagnostic. In Normal mode, the modem speaker is turned on during dialing through the initial connection and then shuts off. For Diagnostic mode, the speaker is turned on and remains on for all fax communications until the setting is returned to Normal mode. |

## Settings in the Resets menu

Open the Administration menu, and then select the Resets menu.

| Resets menu settings | |
|---|---|
| | Restore Factory Telecom Settings or Restore Default Telecom Settings: This selection resets menu changes back to their default settings. This includes the maximum baud rate, ring-burst off time, V.34, speaker mode, and transmit signal loss. |

# Firmware upgrades

The firmware on the fax accessory can be updated. Fax firmware updates occur as part of an overall product firmware update. See the product user guide for more information.

# Product updates

To download the most recent firmware upgrade for the product, go to www.hp.com/go/cljcm4540mfp_firmware.

## Determine the installed revision of firmware

Print a configuration page to determine the installed revision of firmware. See Configuration pages on page 462.

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 product firmware.

### Use the HP Embedded Web Server

1. Open an browser window.
2. Enter the product IP address in the URL line.
3. Click the **Troubleshooting** tab, and then click the **Firmware Upgrade** link.



**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. Click the **Install** button to perform the upgrade.



**NOTE:** Do not close the browser window until the HP Embedded Web Server (EWS) displays the confirmation page.

5. Click the **Restart Now** button on the EWS confirmation page, or turn the product off, and then on again using the power switch.

## Use a USB storage device with the preboot menu

1. Copy the firmware update file to a portable USB flash memory storage device (thumb drive).
2. Turn the product on.
3. Press and hold the Stop button when all of the LEDs illuminate solid.
4. Press the 9 button to highlight the Administrator menu, and then press the 6 button.
5. Press the 9 button to highlight the Download menu, and then press the 6 button.
6. Insert the portable USB storage device with the firmware update 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.

7. Press the 9 button to highlight the USB Thumbdrive menu, and then press the 6 button.
8. Press the 9 button to highlight the firmware update file, and then press the 6 button.

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

**TIP:** If there is more than one firmware update 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 5 button three times.
10. When the message Continue appears on the control-panel display, press the 6 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.

## Use a USB storage device with the Device Maintenance menu

1. Copy the firmware update 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. Touch the Device Maintenance button.
4. Touch the USB Firmware Upgrade menu.
5. Insert the portable USB storage device with the firmware upgrade file on it into the USB port on the front of the product, and then press the OK button.
6. Touch the firmware update file, and then touch the Upgrade button.

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

7. When the product prompts you to confirm the upgrade, touch the Upgrade button.

   When the upgrade is complete, the product will initialize.

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

8. 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
- External covers, panels, and doors
- Right door assembly
- Front door assembly
- Internal components
- Stapling mailbox
- 500-sheet paper feeder
- 1x500 and 3x500 paper feeders
- Document feeder/scanner
- 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 partsurfer.hp.com. 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/cljcm4540mfp.

# 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 |
|---|---|---|
| HP Color LaserJet 1x500 Paper Feeder and stand | CC422A | CC493-67902 |
| HP Color LaserJet 3x500 Paper Feeder and stand | CC423A | CC493-67903 |
| HP Color LaserJet Stapler Stacker Multi-Bin Mail Box | CC424A | CC424-67901 |
| HP Color LaserJet 1x500 Paper Feeder | CC425A | CC425-67901 |
| HP LaserJet MFP Analog 500 Fax Accessory | CC487A | CC456-60002 |

## Supplies and maintenance kits

| Product name[1] | Product number | Part number |
|---|---|---|
| HP Color LaserJet standard black print cartridge (8.5K) | CE260A | CE260-67901 |
| HP Color LaserJet high capacity black print cartridge (18K) | CE264X | CE264-67901 |
| HP Color LaserJet cyan print cartridge | CF031A | CF031-67901 |
| HP Color LaserJet yellow print cartridge | CF032A | CF032-67901 |
| HP Color LaserJet magenta print cartridge | CF033A | CF033-67901 |
| Toner collection unit | CE265A | CC493-67913 |
| Staple cartridge | C8091A | C8085-60541 |
| Document feeder maintenance kit<br><br>Includes:<br><br>• Pickup roller/feed roller assembly<br>• Separation pad<br>• Instructions | CE248A | CE248-67901 |

| Product name[1] | Product number | Part number |
|---|---|---|
| Maintenance transfer kit<br><br>Includes:<br>• ITB<br>• Secondary transfer roller<br>• Tray 1 pickup roller<br>• 8 paper feed and separation rollers<br>• Instructions | CE249A | CC493-67910 |
| 110V fuser kit<br><br>Includes:<br>• Fuser assembly, 110 v<br>• Instructions | CE246A | CC493-67911 |
| 220V fuser kit<br><br>Includes:<br>• Fuser assembly, 220 v<br>• Instructions | CE247A | CC493-67912 |

[1] For more information, go to www.hp.com/go/learnaboutsupplies

## Cables and interfaces

| Product name | Product number | Part number |
|---|---|---|
| Enhanced I/O (EIO) card | J7961G | |

| Product name | Product number | Part number |
|---|---|---|
| USB cable 2 meter standard | Q6264A | |
| Power cord | China 220V - 10A: 8121-0943 | |
| | Taiwan 110V - 13A: 8121-0964 | |
| | Korea 220V - 10A: 8121-0731 | |
| | Japan 110V - 12A: 8121-1143 | |
| | India 220V - 6A: 8121-0564 | |
| | Asia Pacific 220V - 10A: 8121-0739 | |
| | Austrailia/New Zealand 220V - 10A: 8121-0837 | |
| | Israel 220V - 10A: 8121-1004 | |
| | Denmark 220V - 10A: 8121-0733 | |
| | South Africa 220V - 10A: 8121-0737 | |
| | Switzerland 220V - 10A: 8121-0738 | |
| | Brazil 110V - 10A: 8121-0734 | |
| | Argentina 220V - 10A: 8121-0729 | |
| | North America 110V - 13A: 8121-1141 | |
| | Israel unique cord: 8120-8913 | |
| | Switzerland unique cord: 8121-0844 | |
| | Rest of world standard 2-wire RJ11: 8121-0811 | |

## Customer self repair (CSR) parts

| Product name | Part number |
|---|---|
| Document feeder roller cover (ASY-CVR-FE-PICK-SP) | PF2309K132NI |
| Formatter assembly kit | CE871-69001 |
| Includes:<br>• Formatter PCA<br>• Formatter tray assembly (face plate)<br>• Screws<br>• EIO card guide<br>• Instructions | |

| Product name | Part number |
| --- | --- |
| Internal hard-disk drive kit<br>Includes:<br>• Disk drive cradle<br>• Right plastic rail<br>• Left plastic rail<br>• Encrypted hard drive<br>• SATA combo power and data cable<br>• Formatter fan<br>• Instructions | CC419-67902 |
| Fuser cleaning kit<br>Includes:<br>• 50-sheets of HP tough paper<br>• Instructions | CC468-67919 |
| Output bin bezel service kit<br>Includes:<br>• Output bin bezel<br>• Instructions | CC419-67904 |
| Document feeder tray extender service kit<br>Includes:<br>• ASY-TRY-BASE-SP<br>• Instructions | CC419-67903 |
| Control panel kit<br>Includes:<br>• Control panel<br>• Instructions | CC419-67901 |
| Service manual (this manual) | CC419-90987 |

# Service kits

**Table 4-1 Service kits**

| Product name | Part number |
|---|---|
| Feed and separation roller kit (Trays 2–5)<br>Includes:<br>• One each, feed and separation rollers<br>• Instructions | CC493-67907 |
| Secondary transfer (T2) roller kit<br>Includes:<br>• Roller<br>• Instructions | CC493-67908 |
| Tray 1 roller kit<br>Includes:<br>• Pickup roller<br>• Instructions | CC493-67906 |
| Repair transfer kit<br>Includes:<br>• ITB<br>• Secondary transfer roller<br>• Instructions | CC493-67909 |
| Formatter fan | 3160-4244 |
| Duplex registration assembly kit<br>Includes:<br>• Registration assembly<br>• Instructions | CC493-67917 |

**Table 4-1 Service kits (continued)**

| Product name | Part number |
| --- | --- |
| Laser/scanner assembly kit<br>Includes:<br>• Laser/scanner assembly<br>• Instructions | CC493-67914 |
| Secondary transfer assembly kit<br>Includes:<br>• Secondary transfer assembly<br>• Instructions | CC492-67901 |

## Unique components

Use the following tables as a quick reference to identify component part numbers by product voltage.

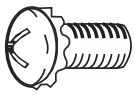
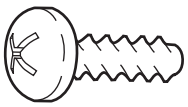
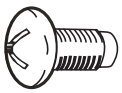
**Table 4-2 110 V and 220 V unique components**

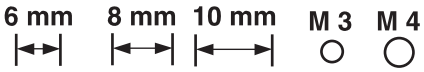
| Item | Part number |
|---|---|
| Fuser kit, 110 V | CC493-67911 |
| Fuser kit, 220 V | CC493-67912 |
| Low-voltage power supply, 110 V | RM1-5763-000CN |
| Low-voltage power supply, 220 V | RM1-5764-000CN |

# 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 4-3 Common fasteners**

| Example | Description | Size | Part Number |
|---|---|---|---|
|  | Screw, D | M3X8 | XA9-1671-000CN |
|  | Screw, tapping, truss head | M4X10 | XB4-7401-005CN |
|  | Screw, step | Not applicable | RC3-0912-000CN |
|  | Screw, RS | M3X8 | XA9-1449-000CN |



# 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.

# External covers, panels, and doors

**Figure 4-1** External covers, panels, and doors

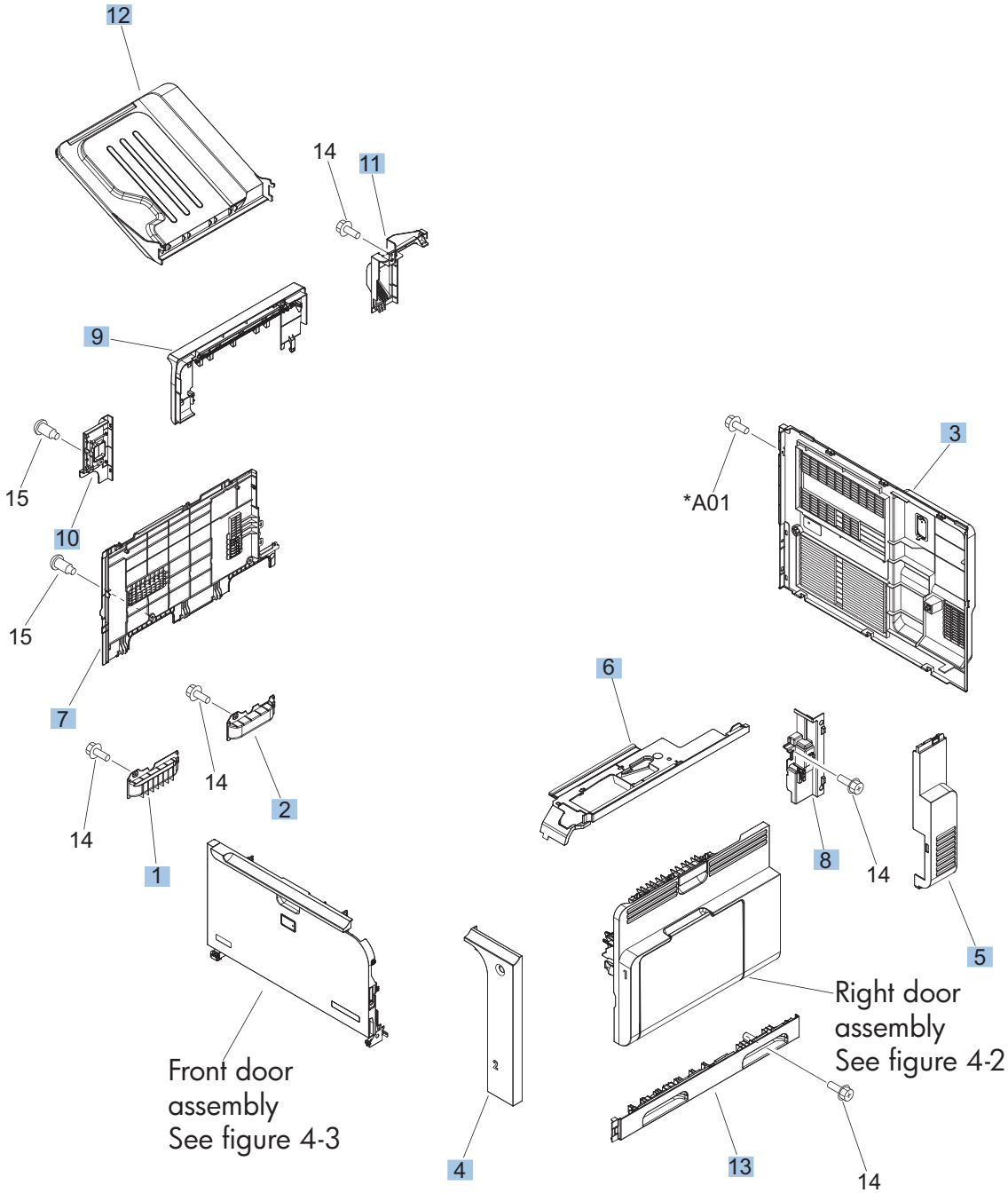


**Table 4-4 External covers, panels, and doors;**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1 | Grip, left front | RC2-4268-000CN | 1 |
| 2 | Grip, left rear | RC2-4269-000CN | 1 |
| 3 | Rear cover assembly | RM1-5613-000CN | 1 |
| 4 | Cover, right front | RC2-4287-000CN | 1 |
| 5 | Cover, right rear | RC2-4273-000CN | 1 |
| 6 | Cover, intermediate assembly | RM1-5645-000CN | 1 |
| 7 | Cover, left lower | RC2-4300-000CN | 1 |
| 8 | Cover, inner | RM1-5520-000CN | 1 |
| 9 | Output bezel kit | CC419-67904 | 1 |
| 10 | Cover, left rear | RC2-8213-000CN | 1 |
| 11 | Cover, fan | RC2-4288-000CN | 1 |
| 12 | Output bin, left paper delivery assembly | RM1-5632-000CN | 1 |
| 13 | Right handle cover assembly | RM1-5507-000CN | 1 |

# Right door assembly

**Figure 4-2** Right door assembly

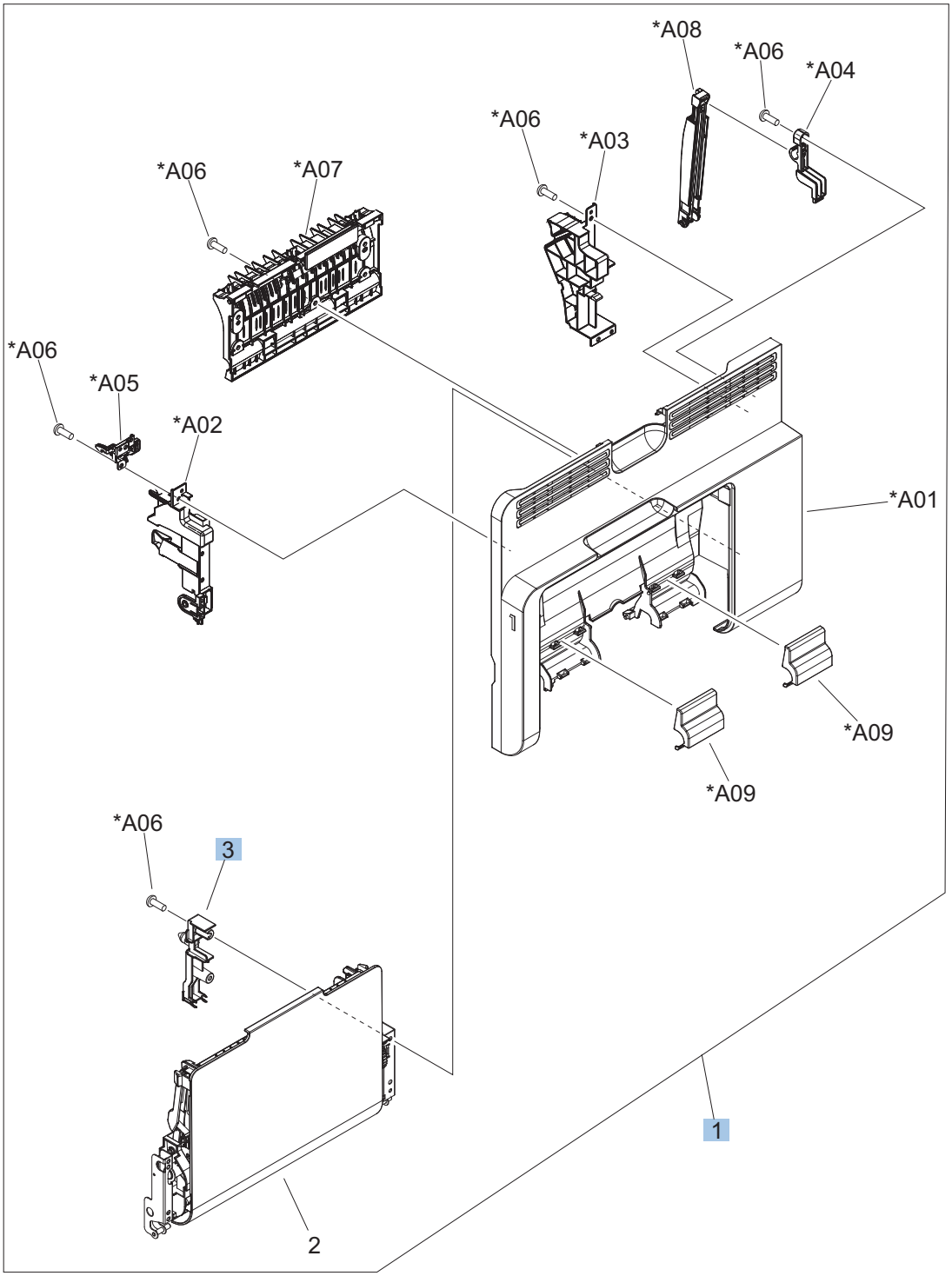


**Table 4-5 Right door assembly**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1 | Right door assembly | RM1-5509-000CN | 1 |
| 3 | Cover, M.P. crossmember R | RC2-4747-000CN | 1 |

# Front door assembly

**Figure 4-3** Front door assembly

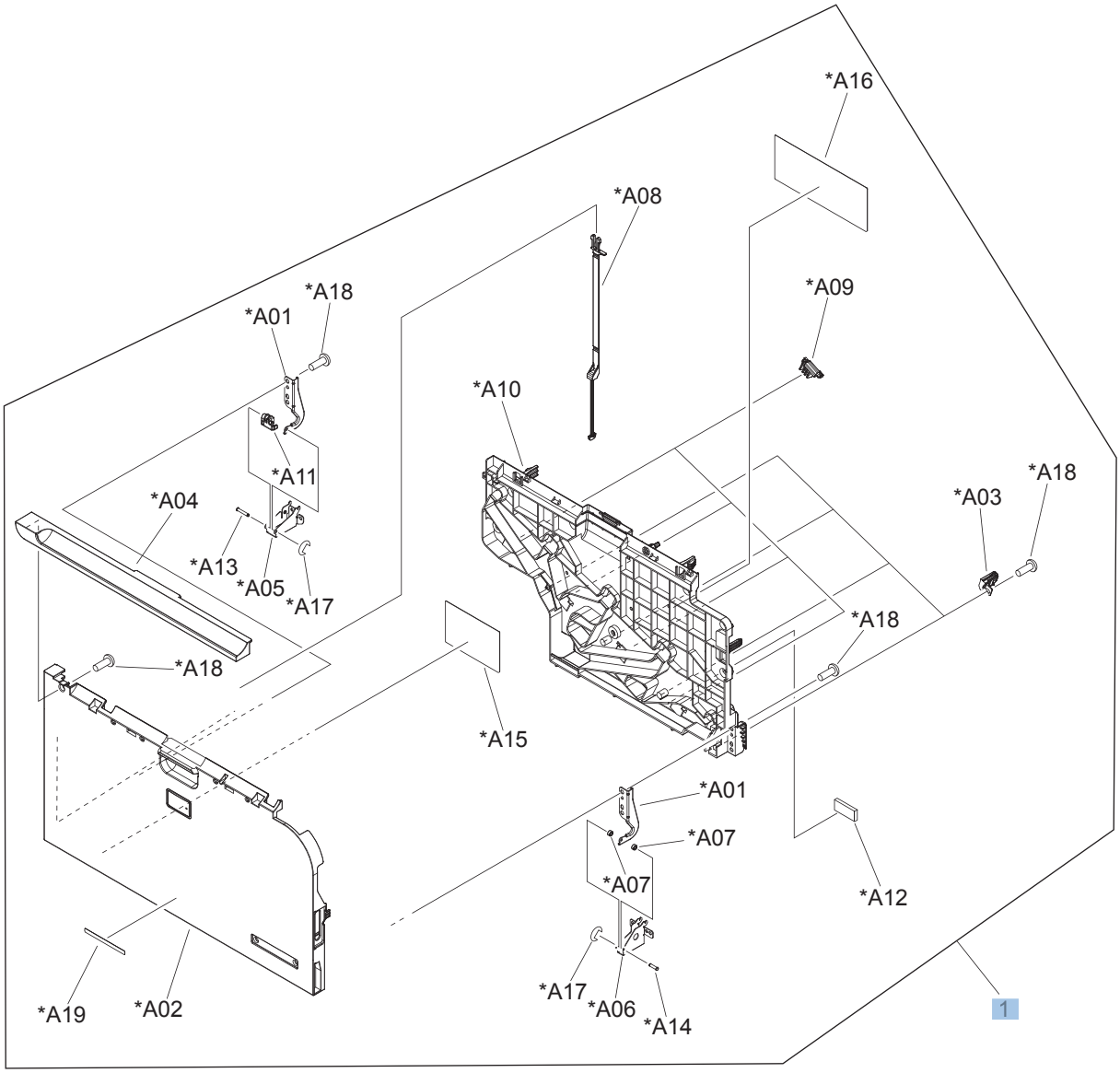


**Table 4-6 Front door assembly**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1 | Front door assembly | RM1-5612-000CN | 1 |

# Internal components

## Internal components (1 of 7)

**Figure 4-4** Internal components 1 of 7

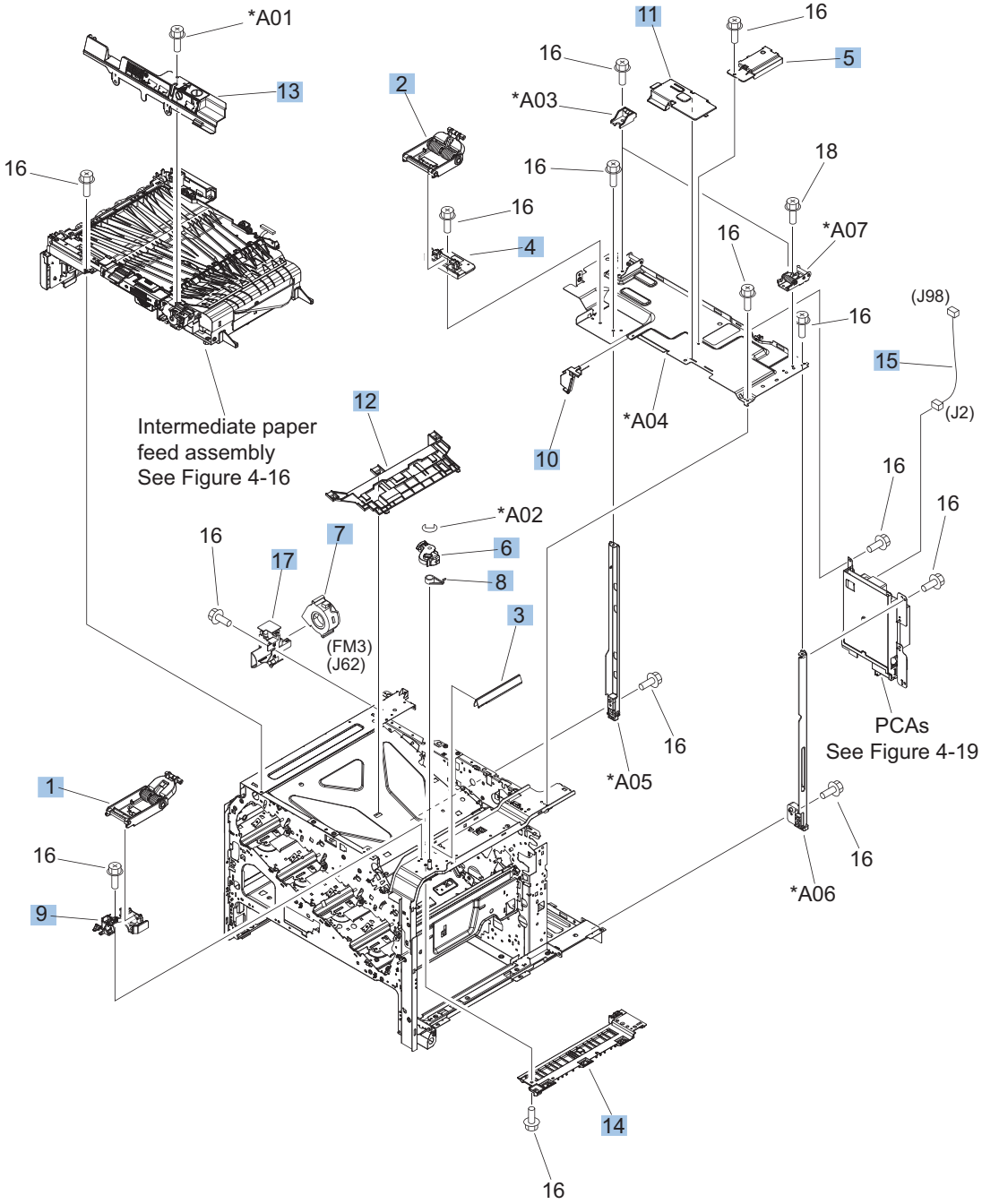


**Table 4-7 Internal components (1 of 7)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1 | Scissors hinge assembly, right | RM1-5614-000CN | 1 |
| 2 | Scissors hinge assembly, left | RM1-5616-000CN | 1 |
| 3 | Guide, interlock cable | RC2-4632-000CN | 1 |
| 4 | Stand, scissors hinge, left | RC2-4642-000CN | 1 |
| 5 | Image scanner CN cover assembly | RM1-5646-000CN | 1 |
| 6 | Lever, release | RC2-4644-000CN | 1 |
| 7 | Fan | RK2-2575-000CN | 1 |
| 8 | Spring, torsion | RC2-4645-000CN | 1 |
| 9 | Stand, scissors hinge, right | RC2-4646-000CN | 1 |
| 10 | Cover, high voltage | RC2-4662-000CN | 1 |
| 11 | Cover, duplexing gear | RC2-4664-000CN | 1 |
| 12 | Guide, crossmember cable, upper | RC2-8206-000CN | 1 |
| 13 | IPTU inner cover assembly | RL1-2181-000CN | 1 |
| 14 | Holder, door handle, right | RC2-4661-000CN | 1 |
| 15 | DC cable assembly | RM1-5827-000CN | 1 |
| 17 | Holder, exhaust fan | RC2-4665-000CN | 1 |

# Internal components (2 of 7)

**Figure 4-5** Internal components 2 of 7

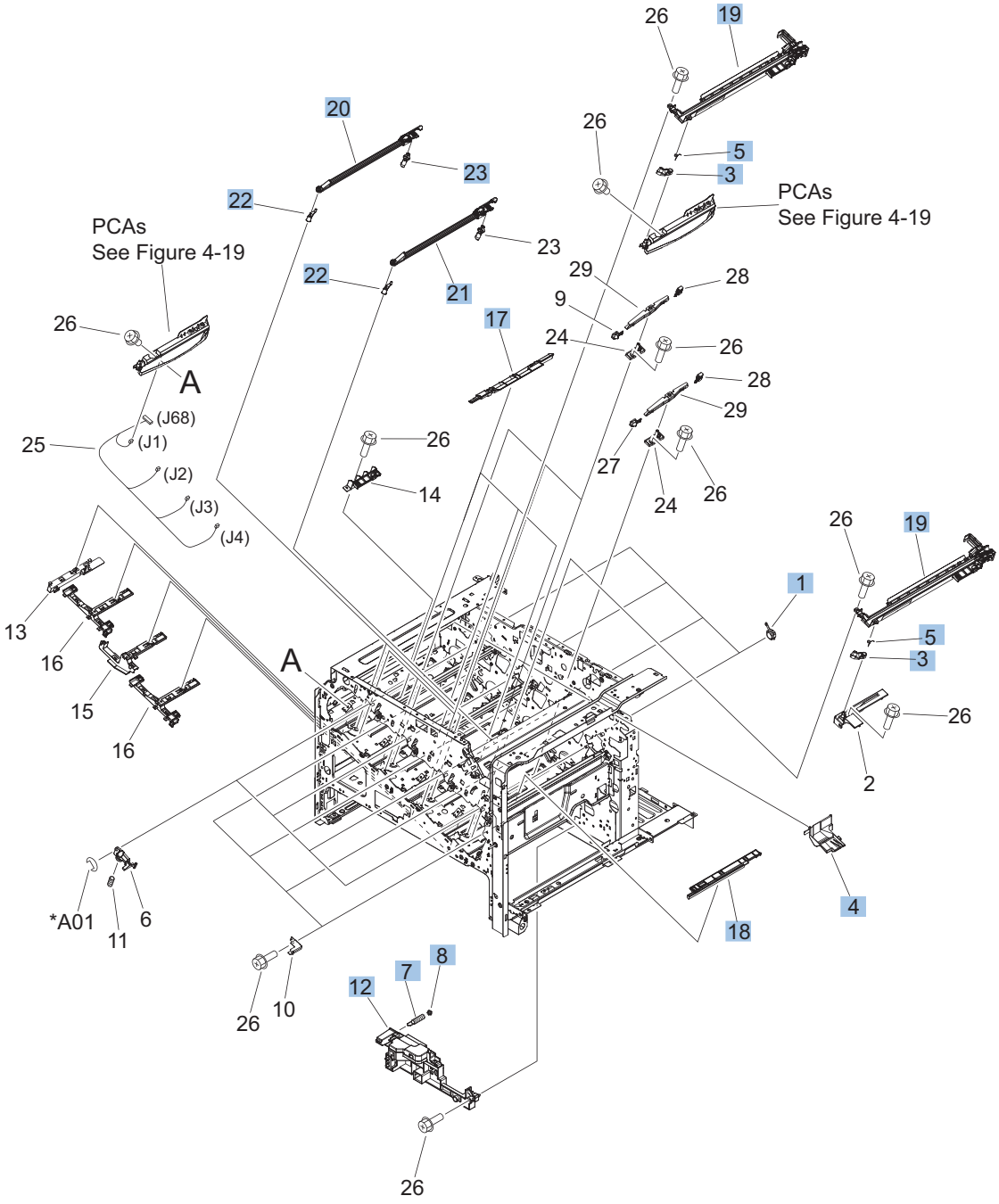


**Table 4-8 Internal components (2 of 7)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1 | Bushing | RC2-9719-000CN | 4 |
| 3 | Lever, CRG. lock | RC2-3986-000CN | 4 |
| 4 | Tray, waste toner catch | RC2-4218-000CN | 1 |
| 5 | Spring, torsion | RU6-2247-000CN | 4 |
| 7 | Spring, grounding | RC2-4469-000CN | 1 |
| 8 | Bushing | RC2-4470-000CN | 1 |
| 12 | Lifter base assembly | RM1-5913-000CN | 1 |
| 17 | Cover | RC2-4403-000CN | 3 |
| 18 | Cover | RC2-5962-000CN | 1 |
| 19 | Crg. Guide lower assembly | RM1-5486-000CN | 4 |
| 20 | Shutter assembly | RM1-5488-000CN | 2 |
| 21 | Shutter assembly | RM1-5489-000CN | 2 |
| 22 | Shutter arm assembly | RM1-5585-000CN | 4 |
| 23 | Shutter arm assembly | RM1-5586-000CN | 4 |

# Internal components (3 of 7)

**Figure 4-6** Internal components 3 of 7

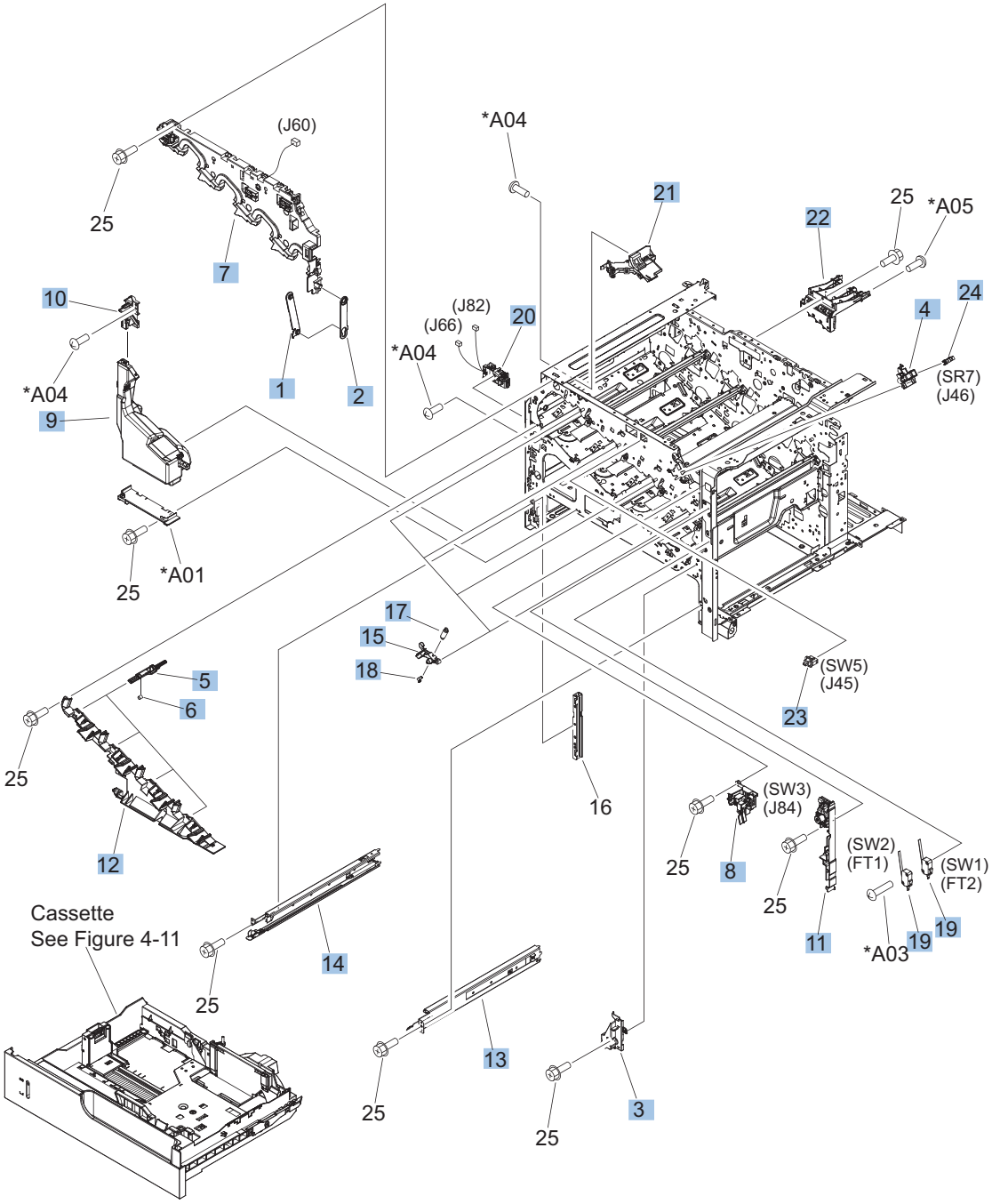


**Table 4-9 Internal components (3 of 7)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1 | Hinge, front door | RC2-4291-000CN | 1 |
| 2 | Hinge, front door | RC2-4292-000CN | 1 |
| 3 | Cover | RC2-4467-000CN | 1 |
| 4 | Holder, sensor | RC2-4369-000CN | 1 |
| 5 | Lever, shutter | RC2-4415-000CN | 4 |
| 6 | Spring, compression | RU6-2316-000CN | 4 |
| 7 | Front inner cover upper assembly | RM1-5495-000CN | 1 |
| 8 | Interlock assembly | RM1-5496-000CN | 1 |
| 9 | Toner collection unit (TCU) kit (includes instructions and wipe) | CC493-67913 | 1 |
| 10 | Waste toner duct assembly | RM1-5519-000CN | 1 |
| 11 | Power switch assembly | RM1-5582-000CN | 1 |
| 12 | Front inner cover lower assembly | RM1-5598-000CN | 1 |
| 13 | Cassette rail right assembly | RM1-6195-000CN | 1 |
| 14 | Cassette rail left assembly | RM1-6196-000CN | 1 |
| 15 | Lever, crg. pressure, front | RC2-3983-020CN | 4 |
| 17 | Spring, tension | RU6-2236-000CN | 4 |
| 18 | Spring, grounding | RU6-2237-000CN | 4 |
| 19 | Switch | WC4-5303-000CN | 2 |
| 20 | Waste toner detect assembly | RM1-5545-000CN | 1 |
| 21 | Waste toner paper feed assembly | RM1-5584-000CN | 1 |
| 22 | High voltage holder assembly | RM1-6694-000CN | 1 |
| 23 | Switch, push | WC2-5637-000CN | 1 |
| 24 | Photo interrupter | WG8-5696-000CN | 1 |

# Internal components (4 of 7)

**Figure 4-7** Internal components 4 of 7

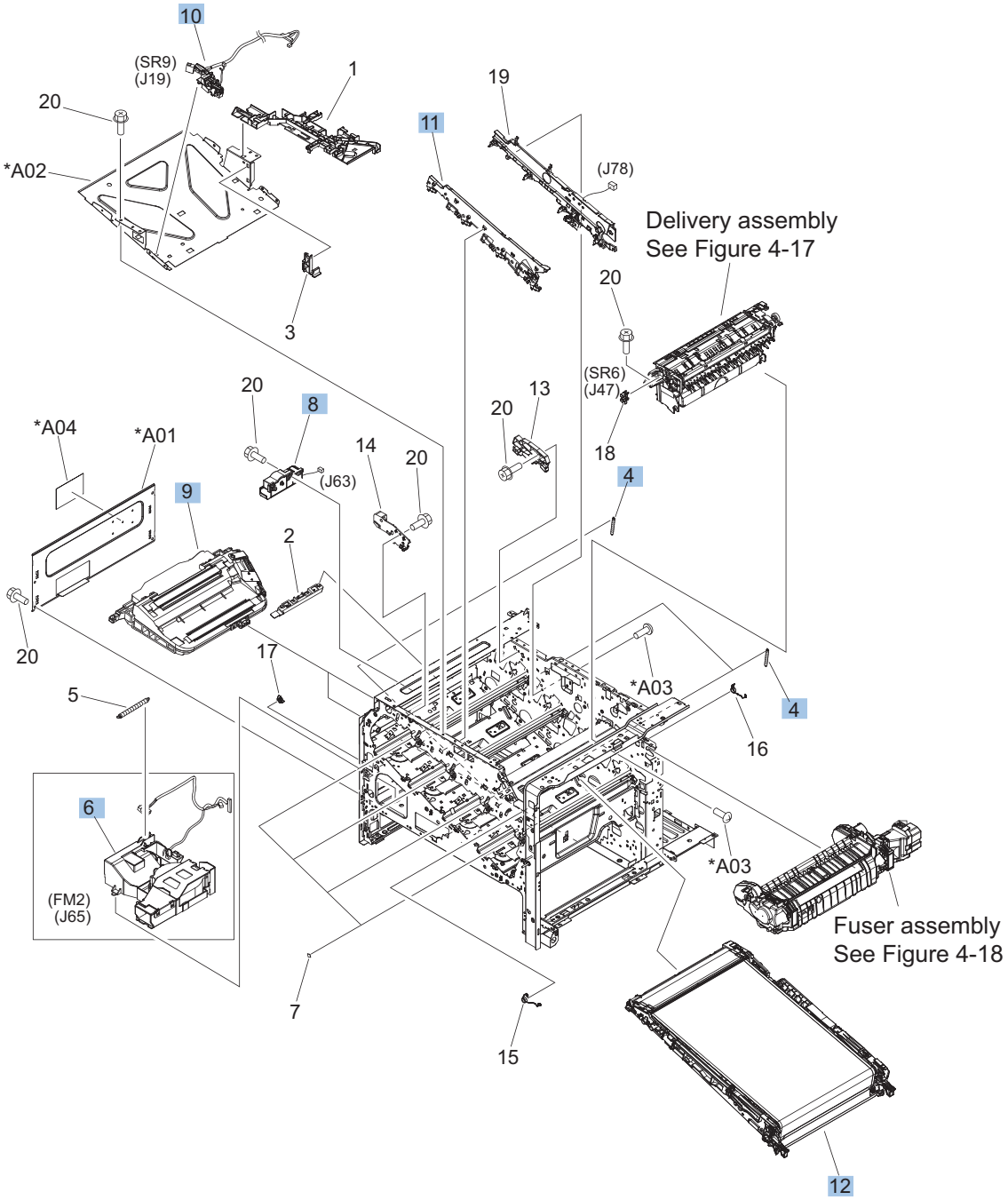


**Table 4-10 Internal components (4 of 7)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 4 | Spring, tension | RU6-2235-000CN | 4 |
| 6 | Cartridge fan assembly | RM1-5589-000CN | 1 |
| 8 | Waste toner motor assembly | RM1-5605-000CN | 1 |
| 9 | Laser scanner kit (includes instructions and one scanner assembly) | CC493-67914 | 1 |
| 10 | Position detect assembly | RM1-5604-000CN | 1 |
| 11 | Front light guide assembly | RM1-5492-000CN | 1 |
| 12 | Repair transfer kit (includes instructions, ITB, and secondary transfer roller) | CC493-67909 | 1 |

# Internal components (5 of 7)

**Figure 4-8** Internal components 5 of 7

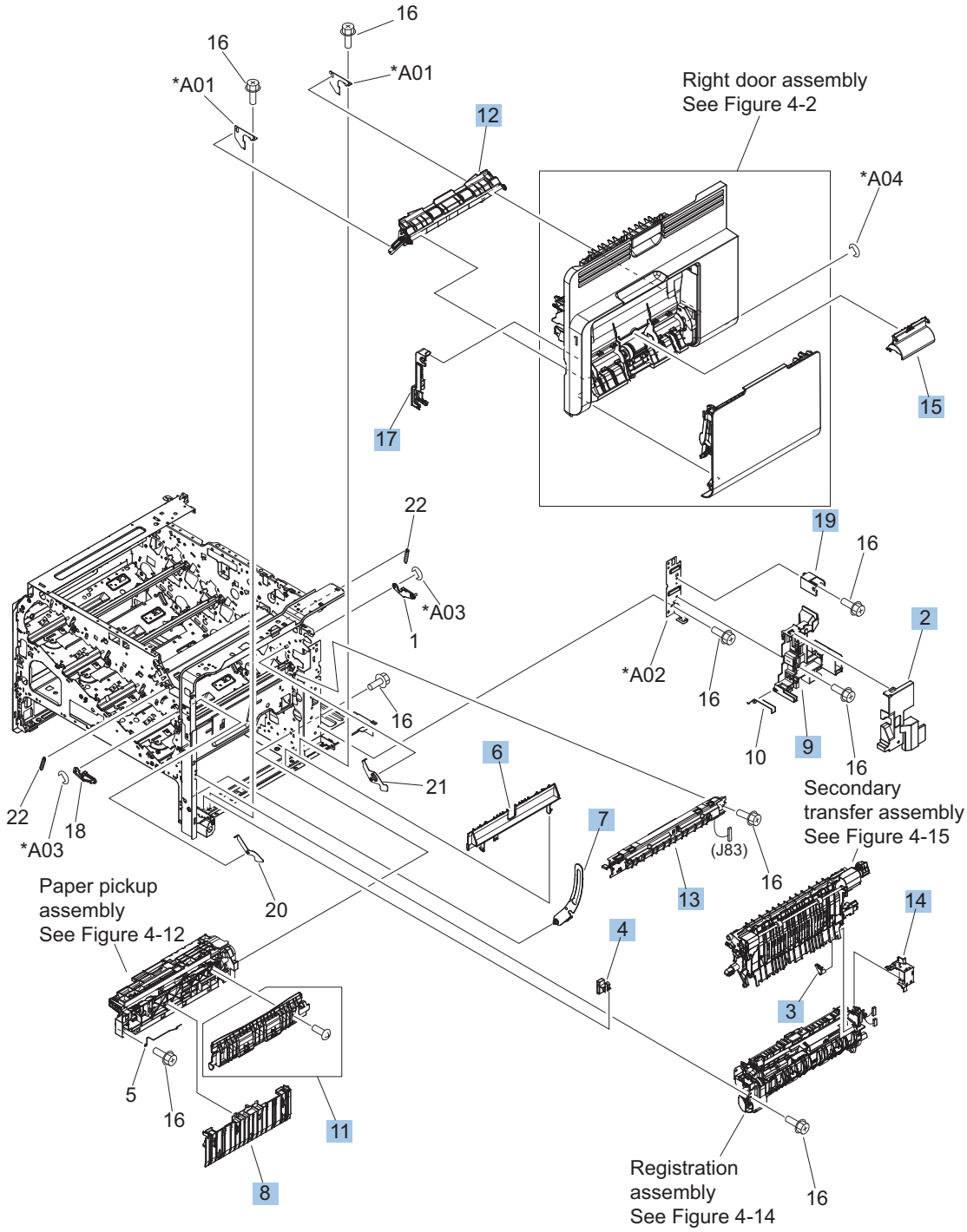


**Table 4-11 Internal components (5 of 7)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 2 | Cover, inner | RC2-3981-000CN | 1 |
| 3 | Shaft support (included in secondary transfer kit; see Figure 4–15) | RC2-4162-000CN | 1 |
| 4 | Spacer | RC2-4514-000CN | 1 |
| 6 | Guide | RC2-4527-000CN | 1 |
| 7 | Link, right door | RC2-4726-000CN | 1 |
| 8 | Guide, cassette option | RC2-4741-000CN | 1 |
| 9 | Holder, duct cable | RM1-5601-000CN | 1 |
| 11 | Cassette guide assembly (jam access) | RM1-5504-000CN | 1 |
| 12 | Paper feed roller assembly | RM1-5525-000CN | 1 |
| 13 | Density detect assembly | RM1-5641-000CN | 1 |
| 14 | Cable cover assembly | RM1-6695-000CN | 1 |
| 15 | Cover, roller | RC2-4483-000CN | 1 |
| 17 | Cover, M.P. crossmember F | RC2-9189-000CN | 1 |
| 19 | Arm, door link supporting, right | RC2-4055-000CN | 1 |

# Internal components (6 of 7)

**Figure 4-9** Internal components 6 of 7

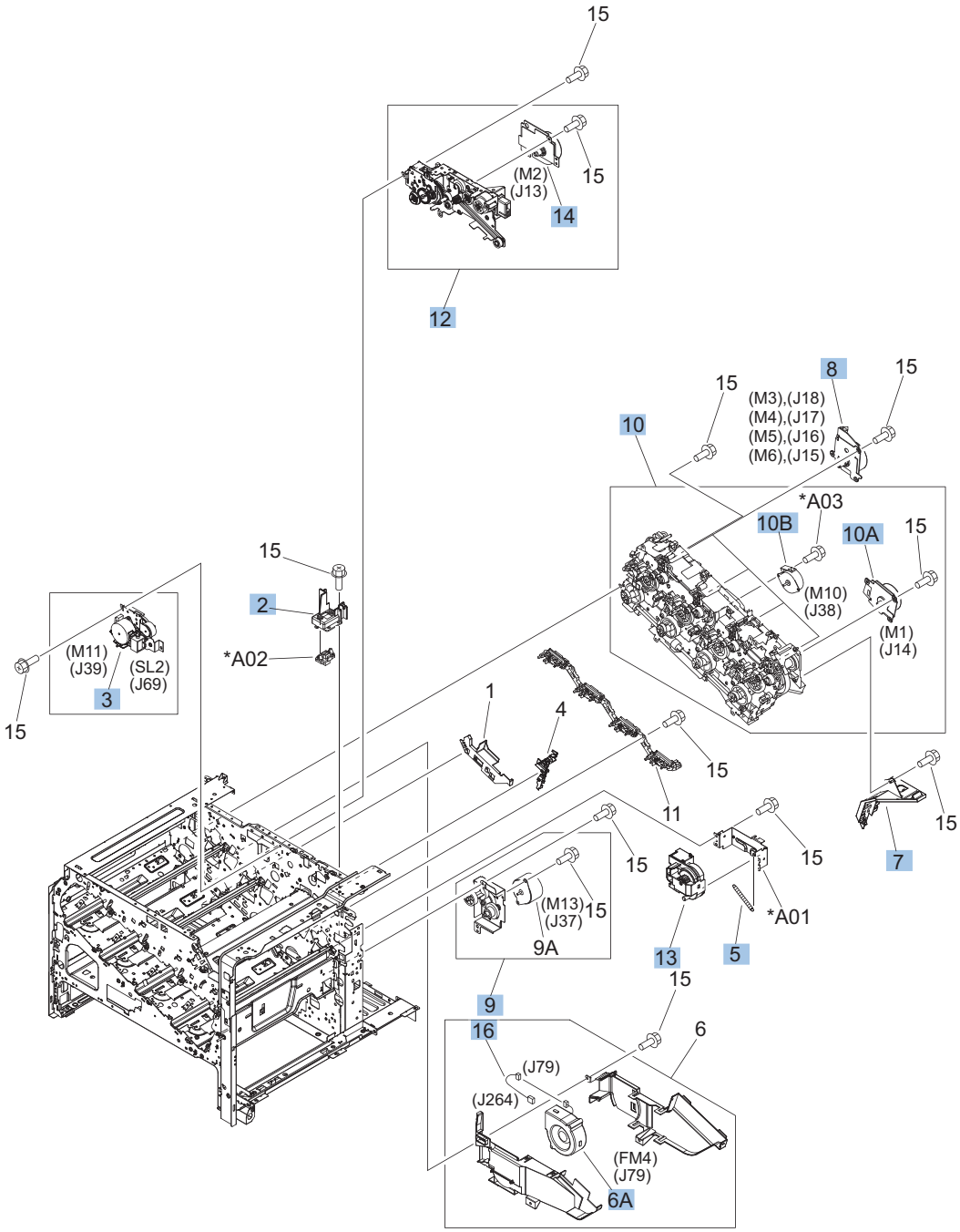


**Table 4-12 Internal components 6 of 7**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 2 | Holder, paper pickup connector | RC2-4044-000CN | 1 |
| 3 | Duplexing drive assembly | RM1-4973-000CN | 1 |
| 5 | Spring, tension | RU6-2468-000CN | 1 |
| 6A | Cartridge fan | RK2-2418-000CN | 1 |
| 7 | Flexible flat cable assembly (includes two FFCs; DCC to laser/scanner) | RM1-5498-000CN | 1 |
| 8 | Main DC motor assembly | RM1-5521-000CN | 4 |
| 9 | Paper pickup drive assembly | RM1-5549-000CN | 1 |
| 10 | Main drive kit (includes instructions) | CC493-67915 | 1 |
| 10A | ITB motor assembly | RM1-5777-000CN | 1 |
| 10B | Developing disengaging motor | RK2-2415-000CN | 1 |
| 12 | Fuser drive assembly, duplex | RM1-5656-000CN | 1 |
| 13 | Lifter assembly | RM1-5914-000CN | 1 |
| 14 | Fuser motor assembly | RM1-4983-000CN | 1 |
| 16 | Cable, fan | RM1-5821-000CN | 1 |

# Internal components (7 of 7)

**Figure 4-10** Internal components 7 of 7

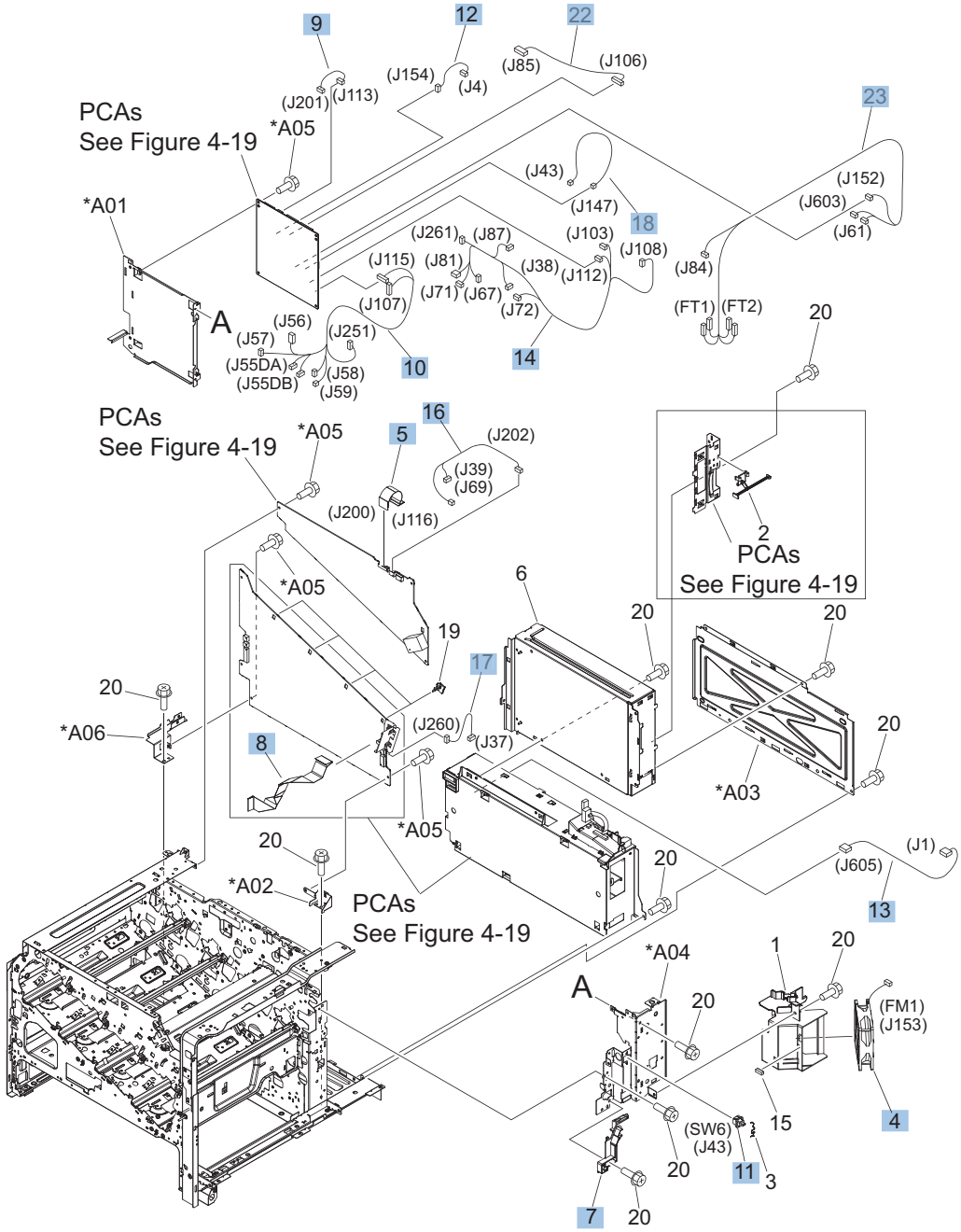


**Table 4-13 Internal components 7 of 7**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 4 | Fan | RK2-2577-000CN | 1 |
| 5 | Cable, flexible flat, H.V.T. | RK2-2603-000CN | 1 |
| 7 | Contact assembly | RM1-5502-000CN | 1 |
| 8 | Cable, flat flexable (FFC) | RK2-2604-000CN | 1 |
| 9 | H.V. power supply cable assembly | RM1-5724-000CN | 1 |
| 10 | Lower main cable assembly | RM1-5801-000CN | 1 |
| 11 | Switch, push | WC2-5637-000CN | 1 |
| 12 | Sub controller cable assembly | RM1-5826-000CN | 1 |
| 13 | Sub PS AD cable assembly | RM1-5825-000CN | 1 |
| 14 | Connecting cable assembly | RM1-5799-000CN | 1 |
| 16 | Duplexing cable assembly, duplex | RM1-5803-000CN | 1 |
| 17 | Feed cable assembly | RM1-5804-000CN | 1 |
| 18 | Switch cable assembly | RM1-5807-000CN | 1 |
| 22 | Sensor cable assembly | RM1-5815-000CN | 1 |
| 23 | Interlock switch cable assembly | RM1-5832-000CN | 1 |

# Cassettes 2-5

**Figure 4-11** Cassettes 2-5

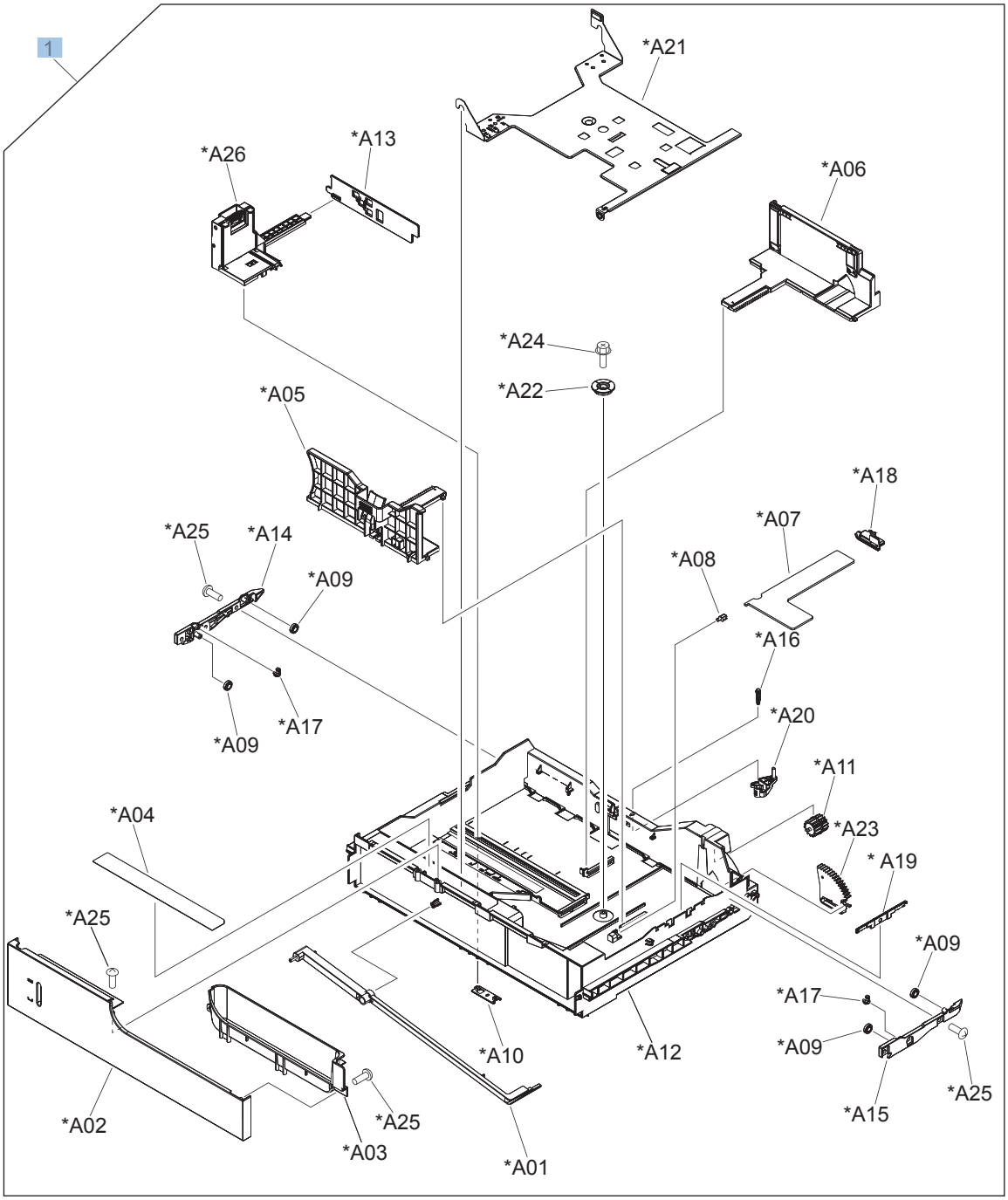


**Table 4-14 Cassette**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1 | Cassette | RM1-5928-000CN | 1 |

# Paper pickup assembly

**Figure 4-12** Paper pickup assembly

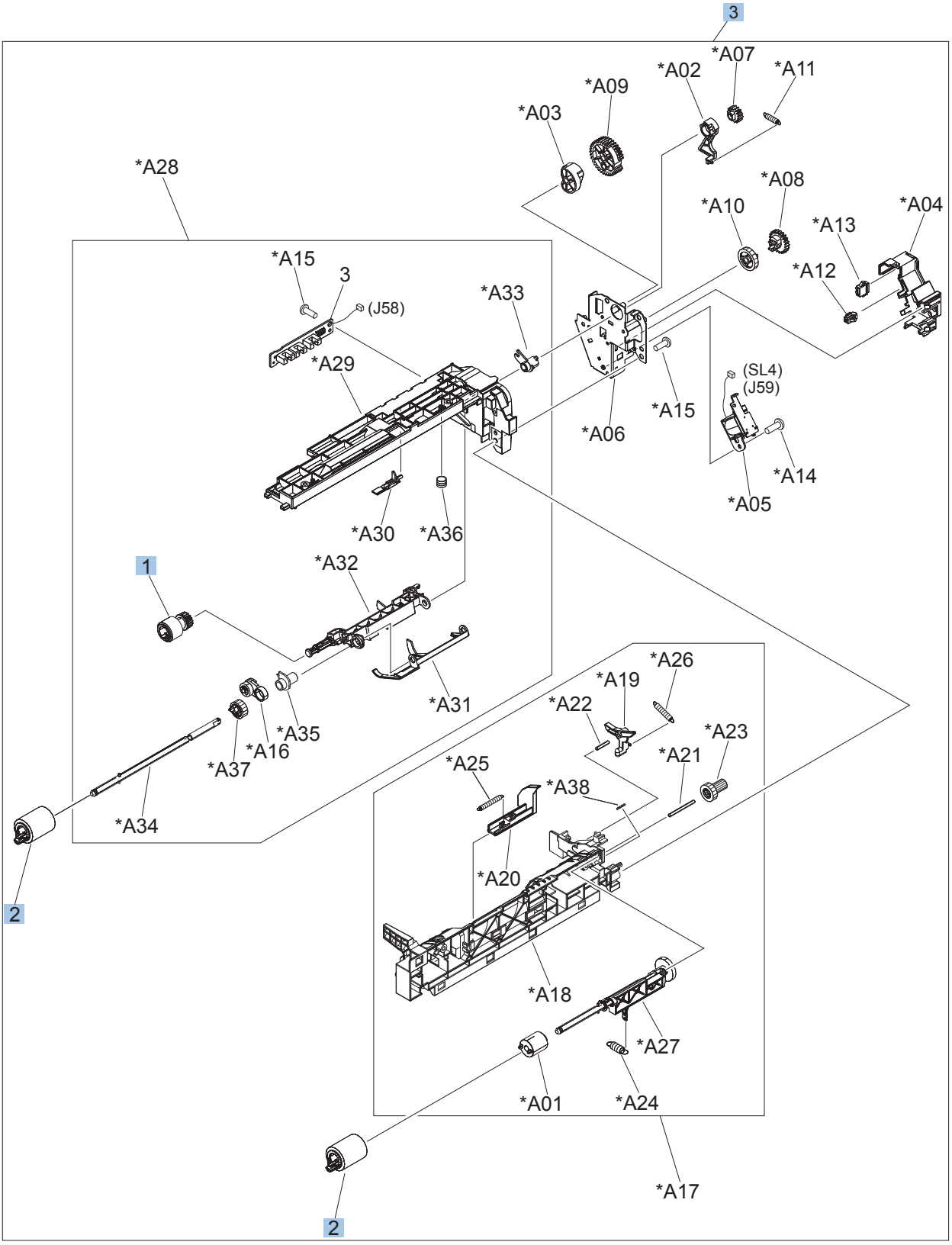


**Table 4-15 Paper pickup assembly**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1 | Roller, paper pickup | RL1-2099-000CN | 1 |
| 2 | Paper feed roller | RM1-0037-020CN | 2 |
| 3 | Paper pickup assembly | RM1-5919-000CN | 1 |

# Tray 1 paper pickup assembly

**Figure 4-13** Tray 1 paper pickup assembly

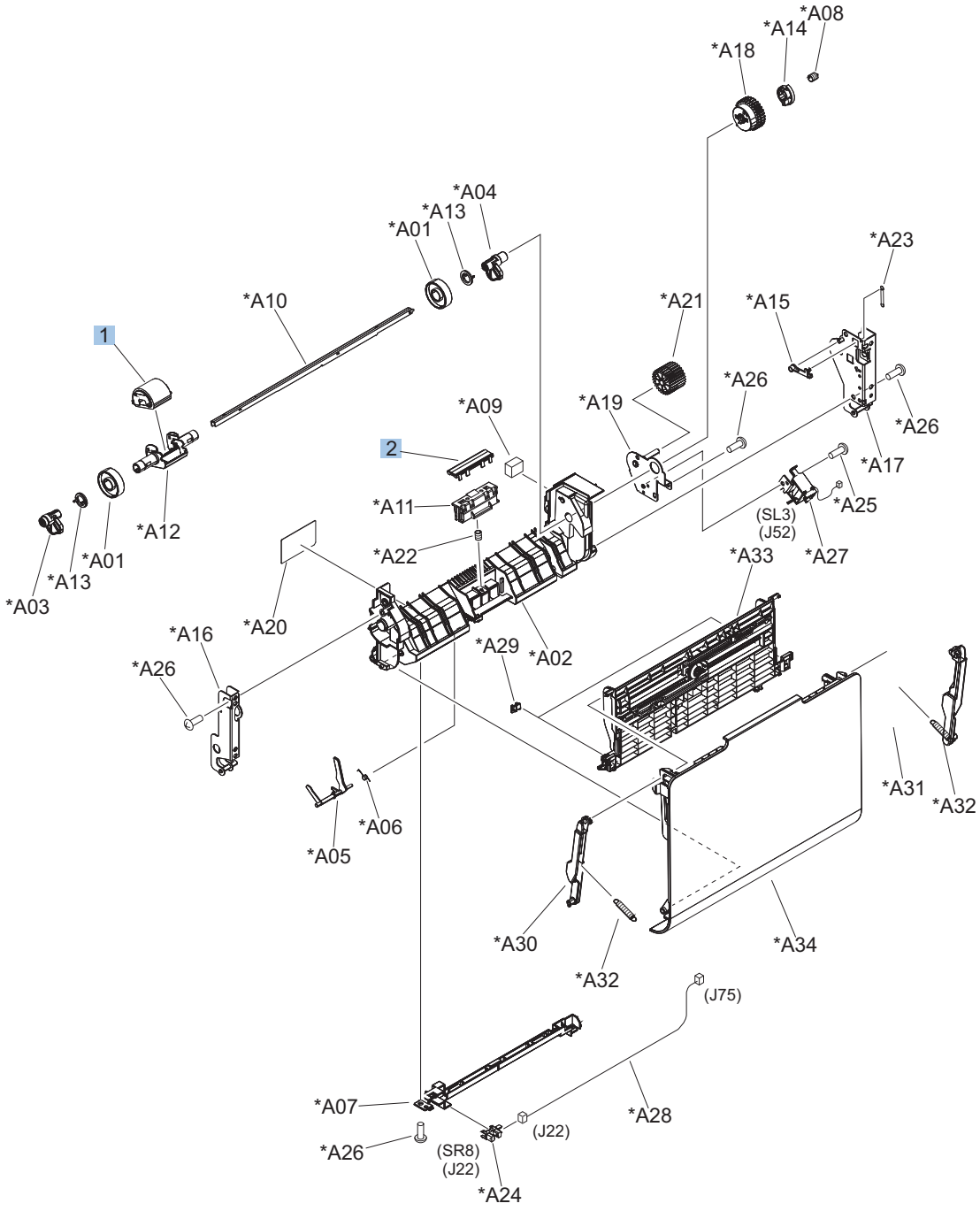


**Table 4-16 Tray 1 paper pickup assembly**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1 | Pickup roller (Tray 1) kit (includes instructions | CC493-67906 | 1 |
| 2 | Separation pad (Tray 1) | RL1-1937-000CN | 1 |

# Registration assembly

**Figure 4-14** Registration assembly

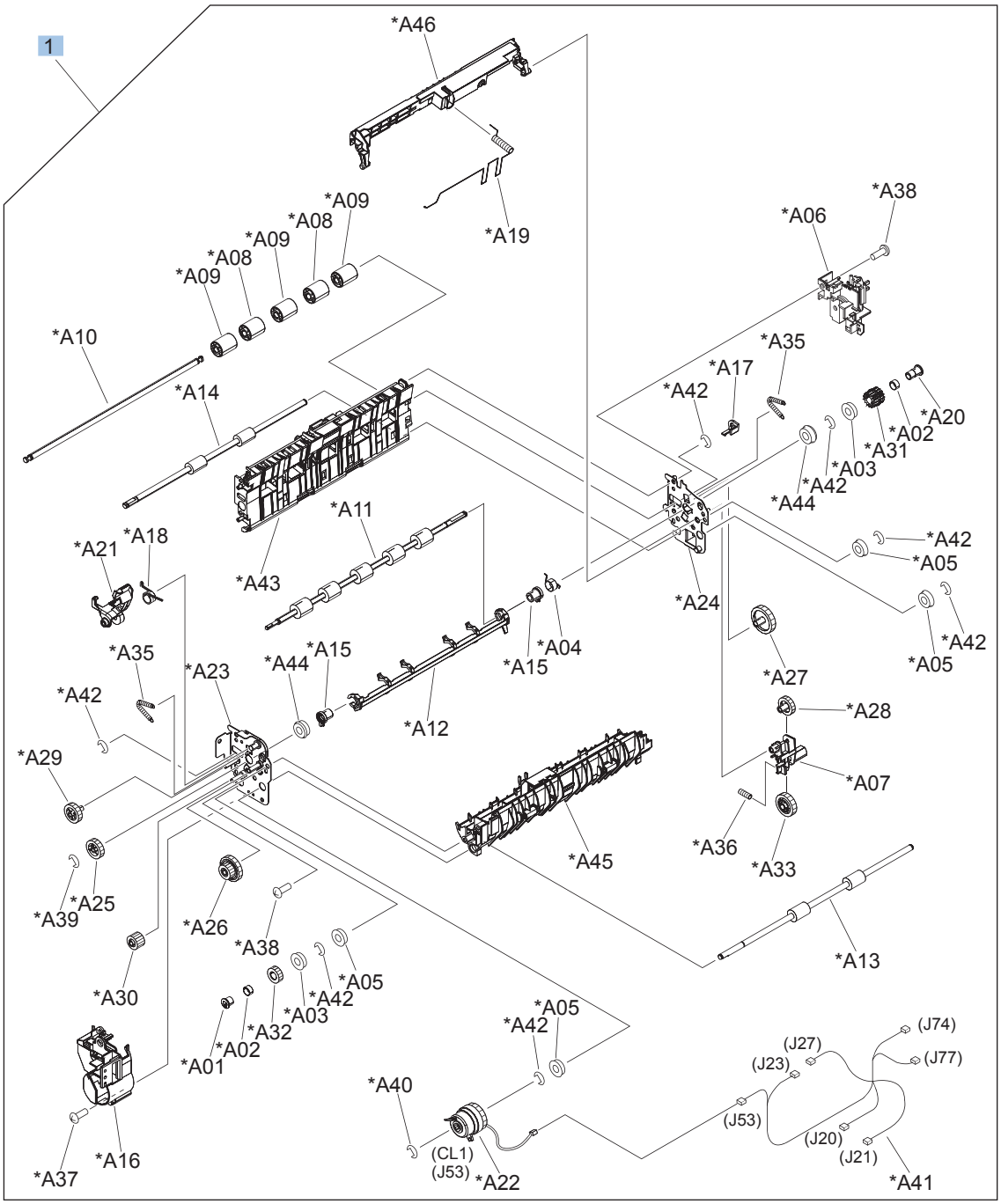


**Table 4-17 Registration assembly**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1 | Duplex registration assembly kit (includes instructions) | CC493-67917 | 1 |

# Secondary transfer assembly

**Figure 4-15** Secondary transfer assembly

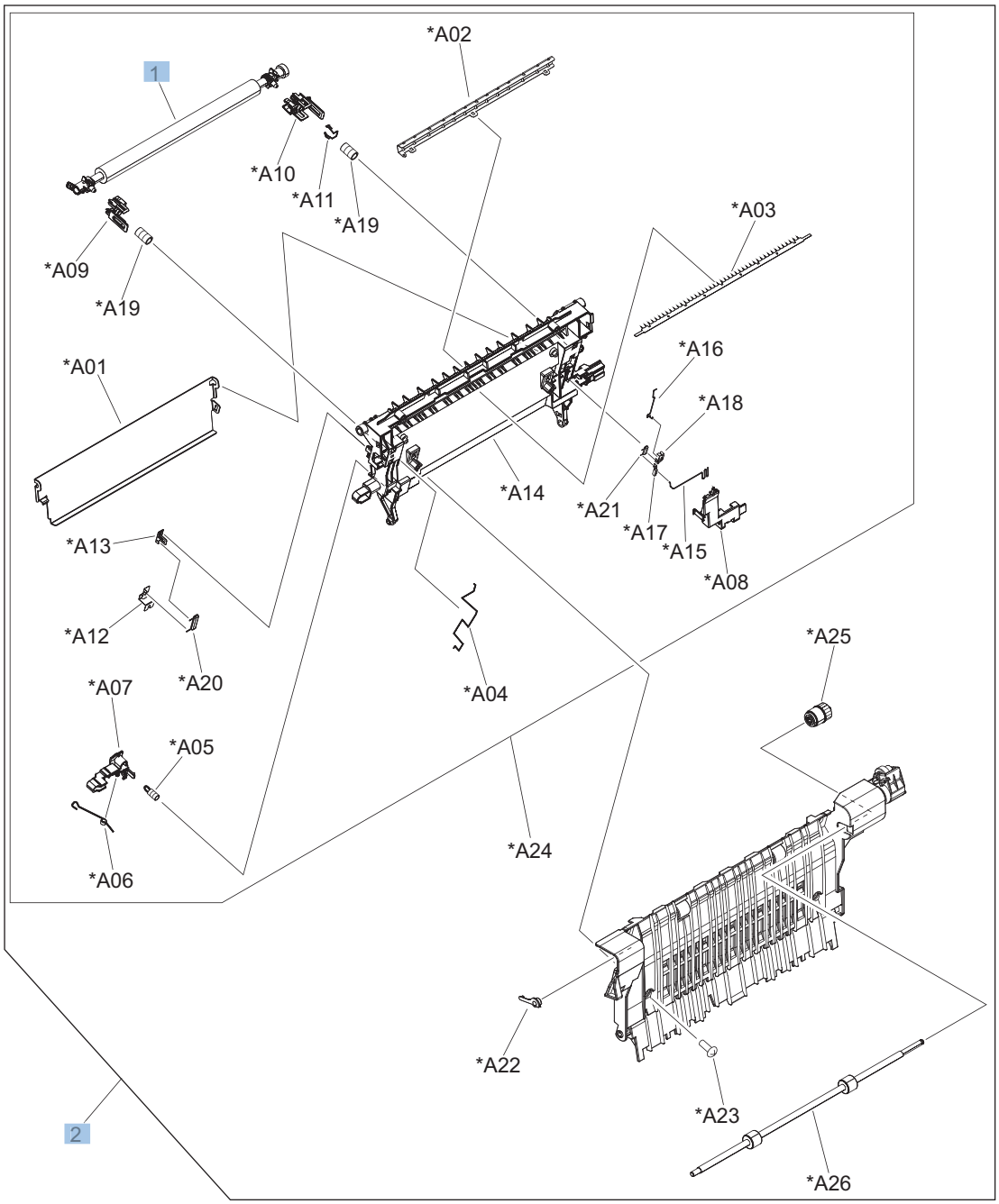


**Table 4-18 Secondary transfer assembly**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1 | Secondary transfer roller assembly kit (includes instructions) | CC493-67908 | 1 |
| 2 | Secondary transfer assembly, duplex kit (includes instructions, and shaft-support clip; RC2-4162-000CN) | CC492-67901 | 1 |

# Intermediate paper transfer unit (IPTU)

**Figure 4-16** Intermediate paper transfer unit (IPTU)

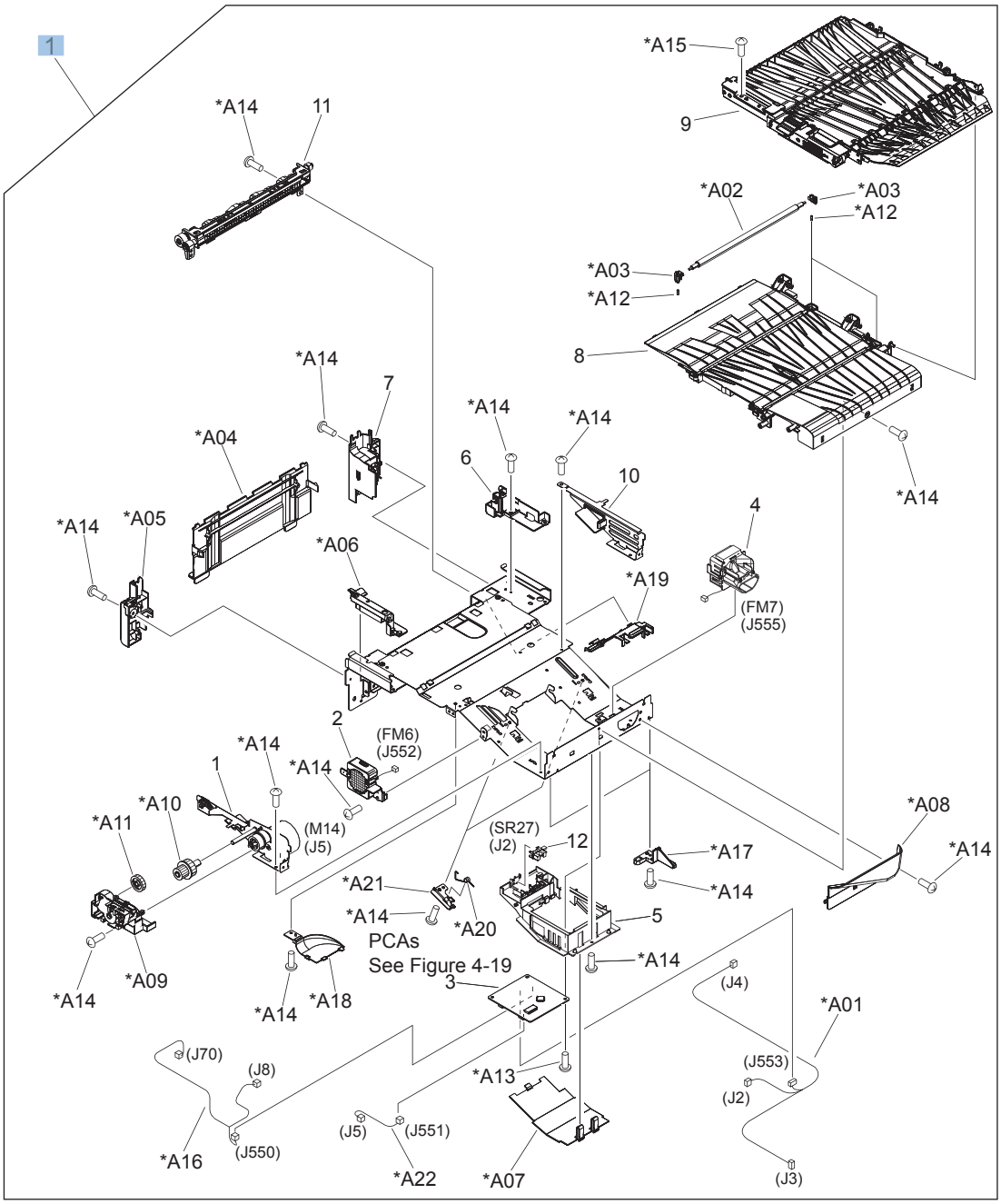


**Table 4-19 Intermediate paper transfer unit (IPTU)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1 | Intermediate paper transfer unit (IPTU) | RM1-5621-000CN | 1 |

# Delivery assembly

**Figure 4-17** Delivery assembly

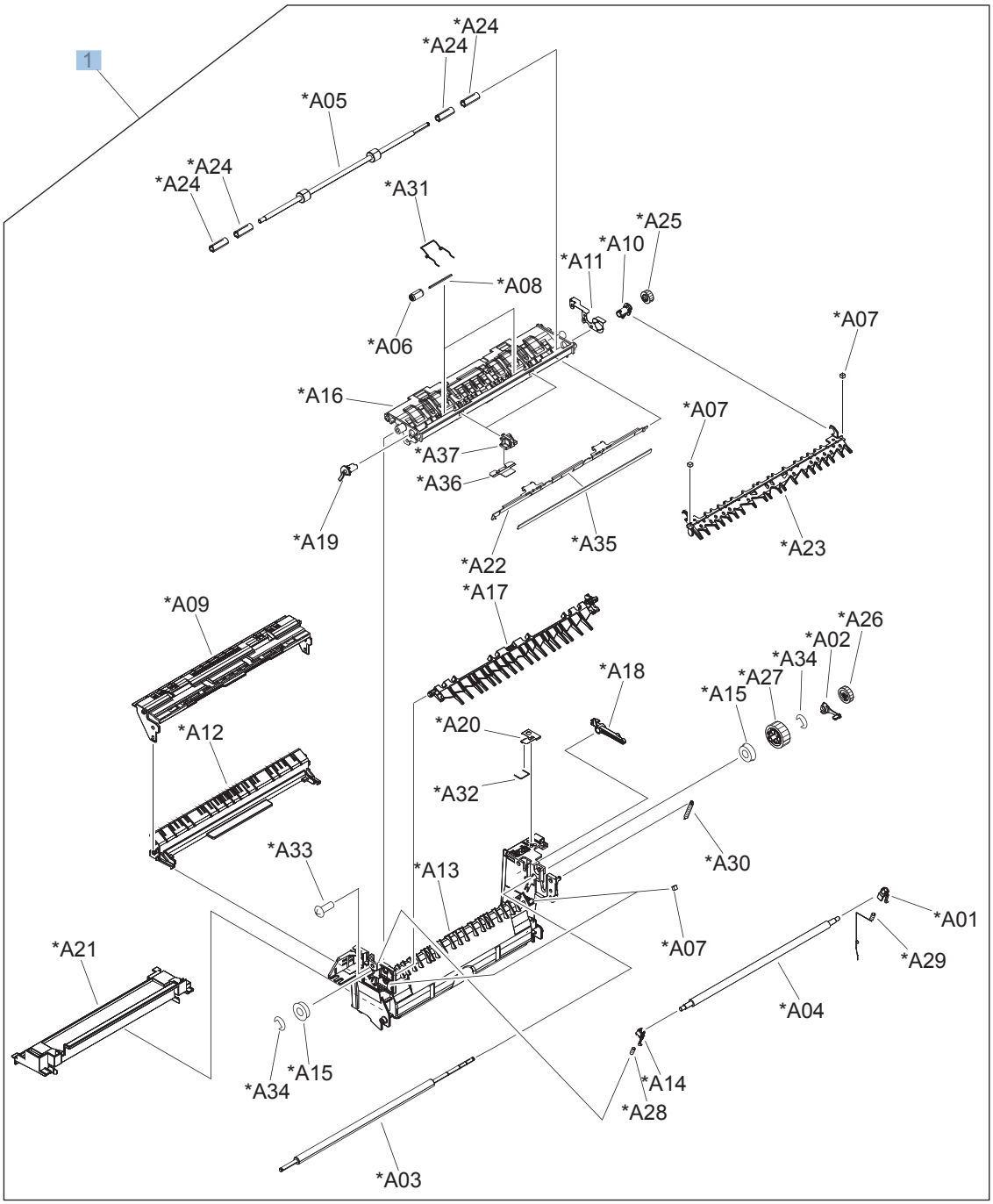


**Table 4-20 Delivery assembly**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1 | Delivery assembly | RM1-5615-000CN | 1 |

# Fuser assembly

**Figure 4-18** Fuser assembly

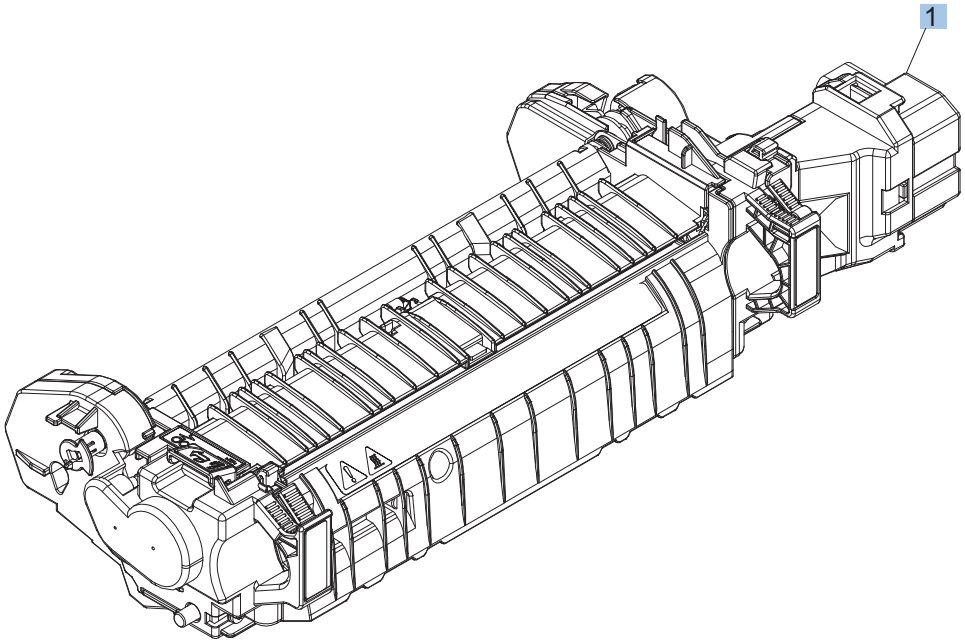


**Table 4-21 Fuser assembly**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1 | Fuser 110 V assembly kit (includes instructions) | CC493-67911 | 1 |
| 1 | Fuser 220 V assembly kit (includes instructions) | CC493-67912 | 1 |

# PCAs

**Figure 4-19** PCAs

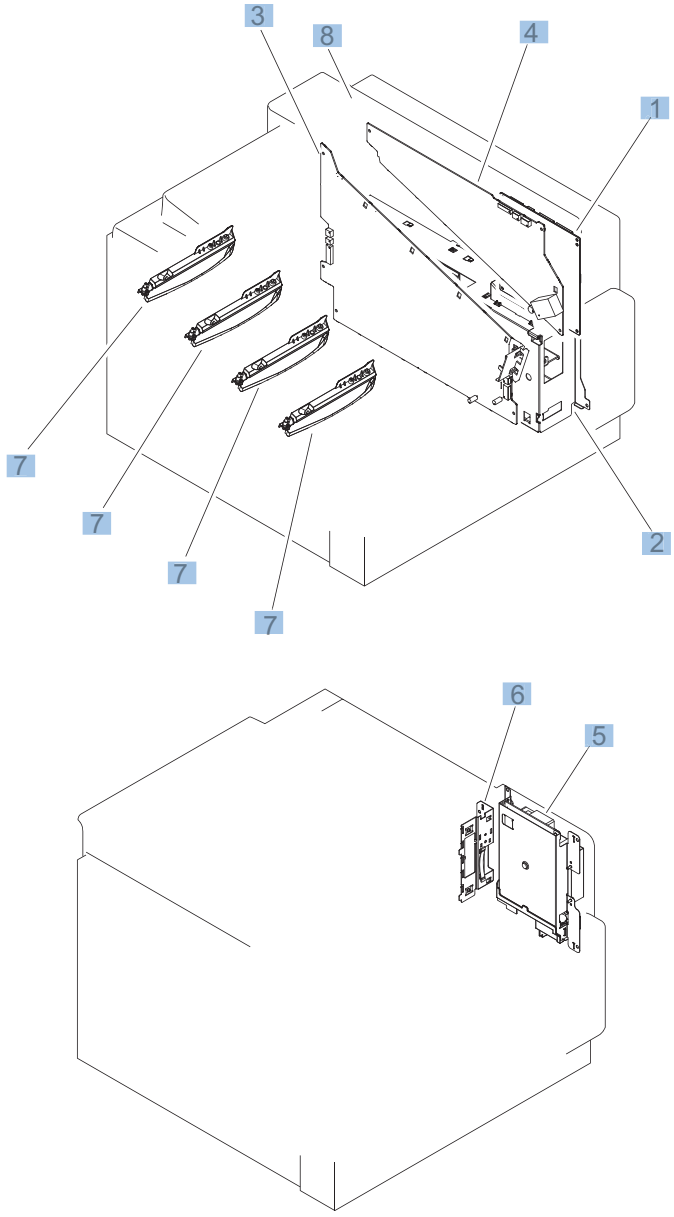


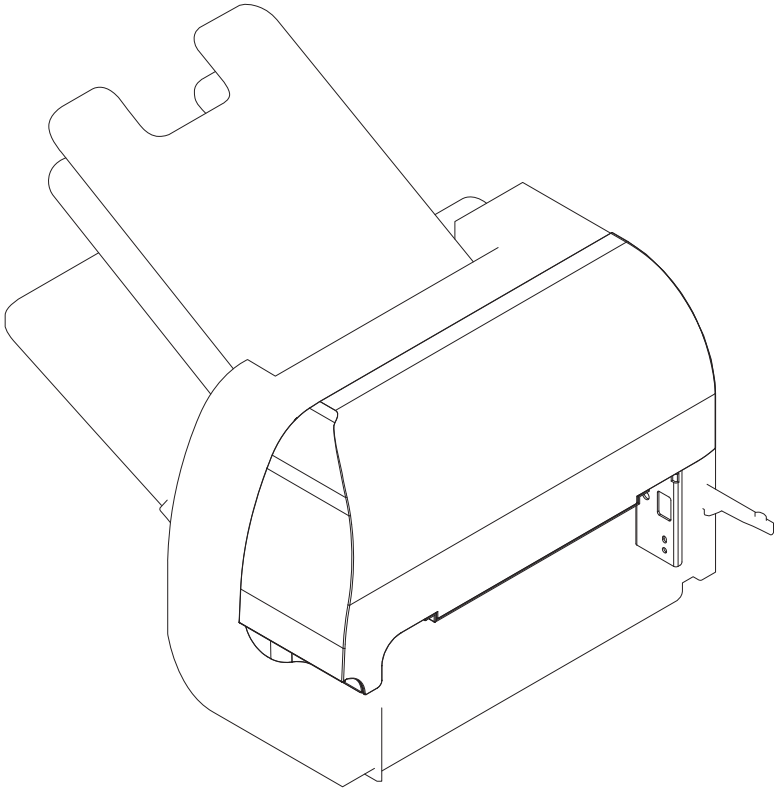
**Table 4-22 PCAs**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1 | DC controller PCA assembly | RM1-5758-000CN | 1 |
| 2 | Low voltage power supply PCA assembly, 110V | RM1-5763-000CN | 1 |
| 2 | Low voltage power supply PCA assembly, 220V | RM1-5764-000CN | 1 |
| 3 | High voltage power supply PCA, lower (includes FFC; DCC to HVPS lower) | RM1-5779-000CN | 1 |
| 4 | High voltage power supply, upper | RM1-5781-000CN | 1 |
| 5 | Image scanner power supply assembly | RM1-5619-000CN | 1 |
| 6 | Inner connecting board (ICB) assembly | RM1-5544-020CN | 1 |
| 7 | Toner remain PCA assembly | RM1-5771-020CN | 4 |
| 8 | Formatter assembly kit (exchange; includes instructions) | CE871-69001 | 1 |

# Stapling mailbox

The stapling mailbox is also referred to as the SSMBM.

**Figure 4-20** Stapling mailbox



**NOTE:** Under warranty, replace the whole unit with customer self repair part number CC424-67901.

# External covers, panels, and doors (SSMBM)

**Figure 4-21** External covers, panels, and doors (SSMBM)

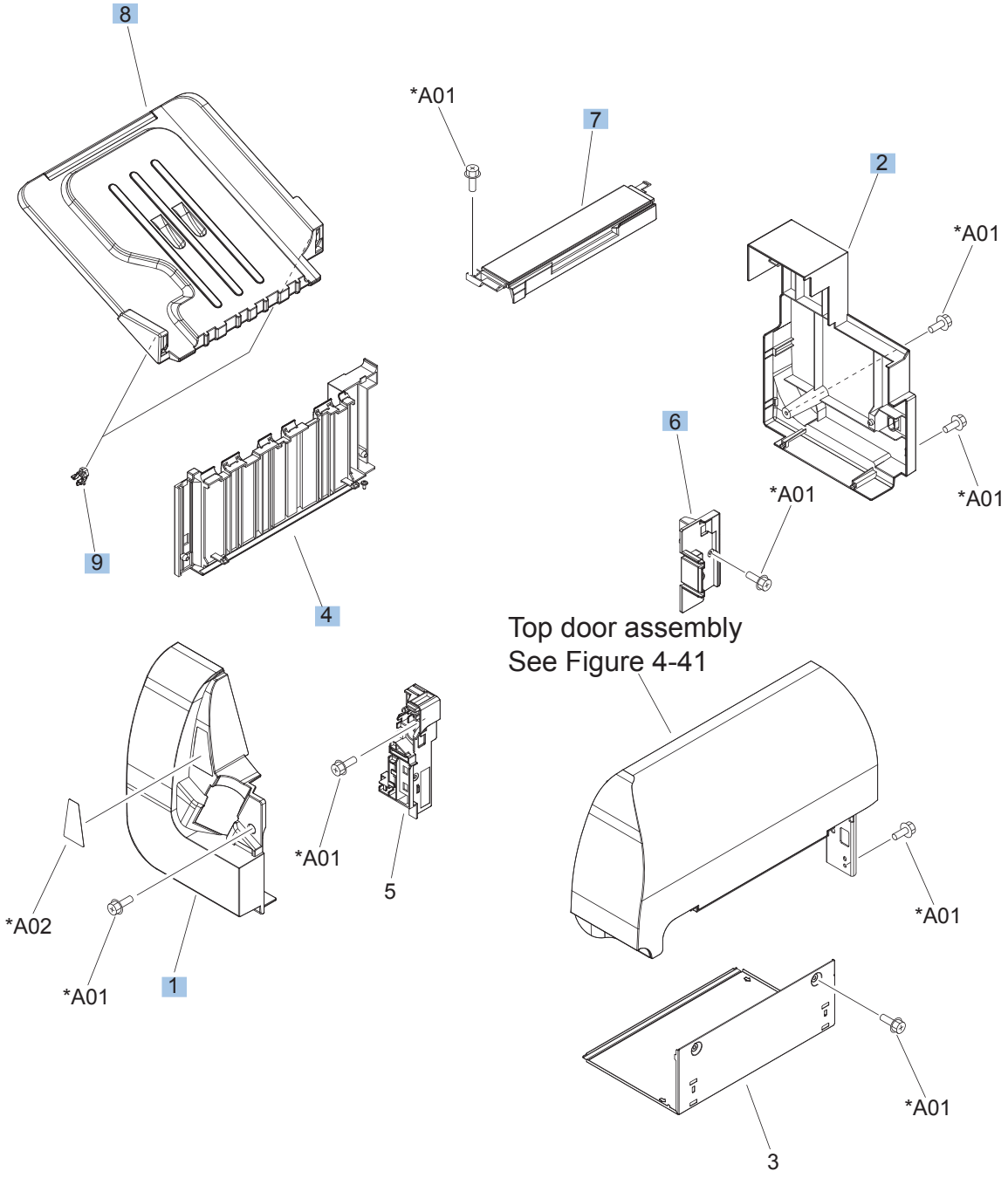


**Table 4-23 External covers, panels, and doors (SSMBM)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1 | Cover, front (SSMBM) | RC2-5571-000CN | 1 |
| 2 | Cover, rear (SSMBM) | RC2-5572-000CN | 1 |
| 4 | Panel, stacking (SSMBM) | RL1-1984-000CN | 1 |
| 6 | Holder, connector (SSMBM) | RC2-5625-000CN | 1 |
| 7 | Top cover assembly (SSMBM) | RM1-6669-000CN | 1 |
| 8 | Tray assembly (SSMBM) | RM1-5161-000CN | 1 |
| 9 | Stopper, tray (SSMBM) | RC2-5576-000CN | 1 |

# Top door assembly (SSMBM)

**Figure 4-22** Top door assembly (SSMBM)

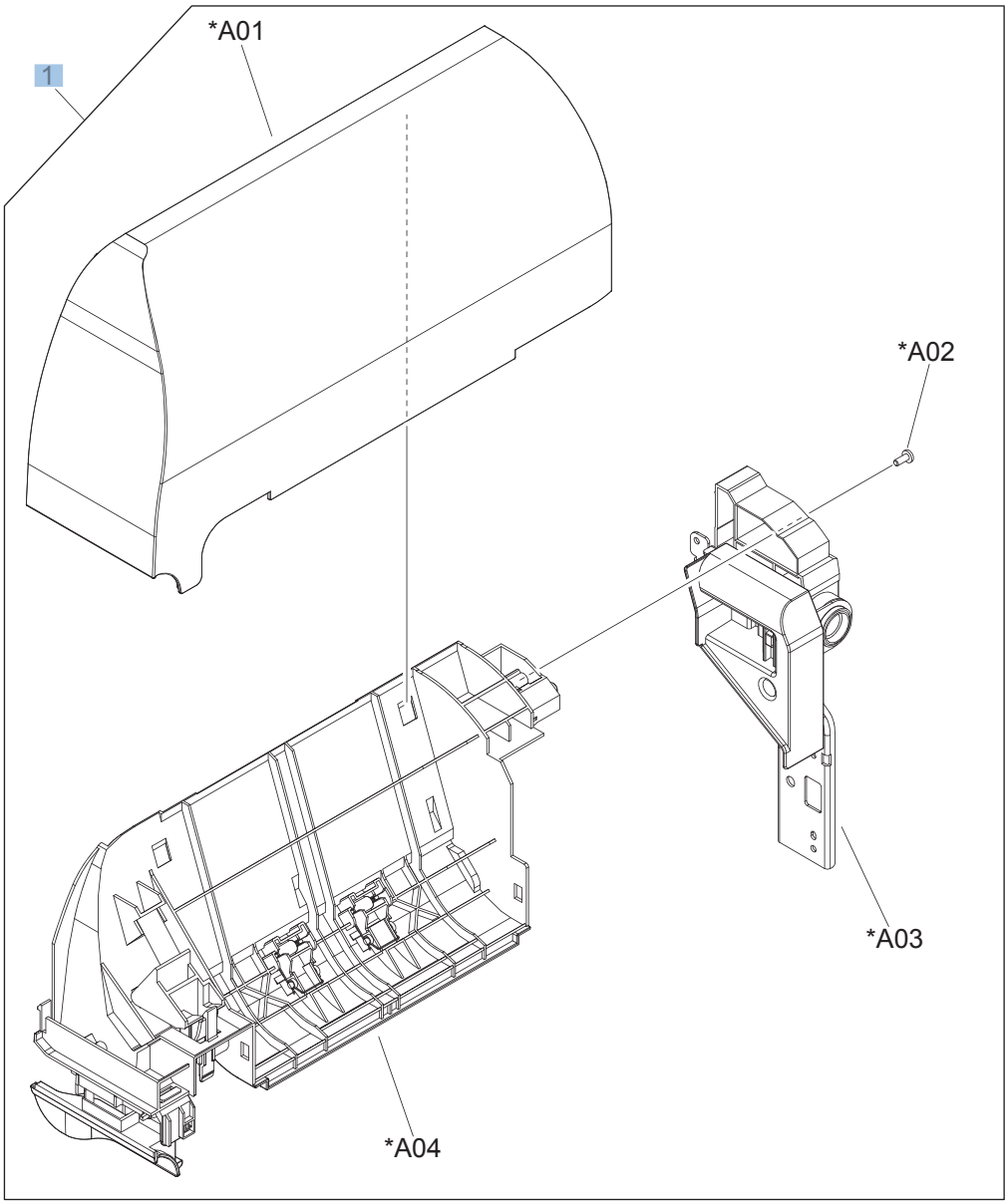


**Table 4-24 Top door assembly (SSMBM)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1 | Top door assembly (SSMBM) | RM1-5160-000CN | 1 |

# Main body (SSMBM; 1 of 2)

**Figure 4-23** Main body (SSMBM; 1 of 2)

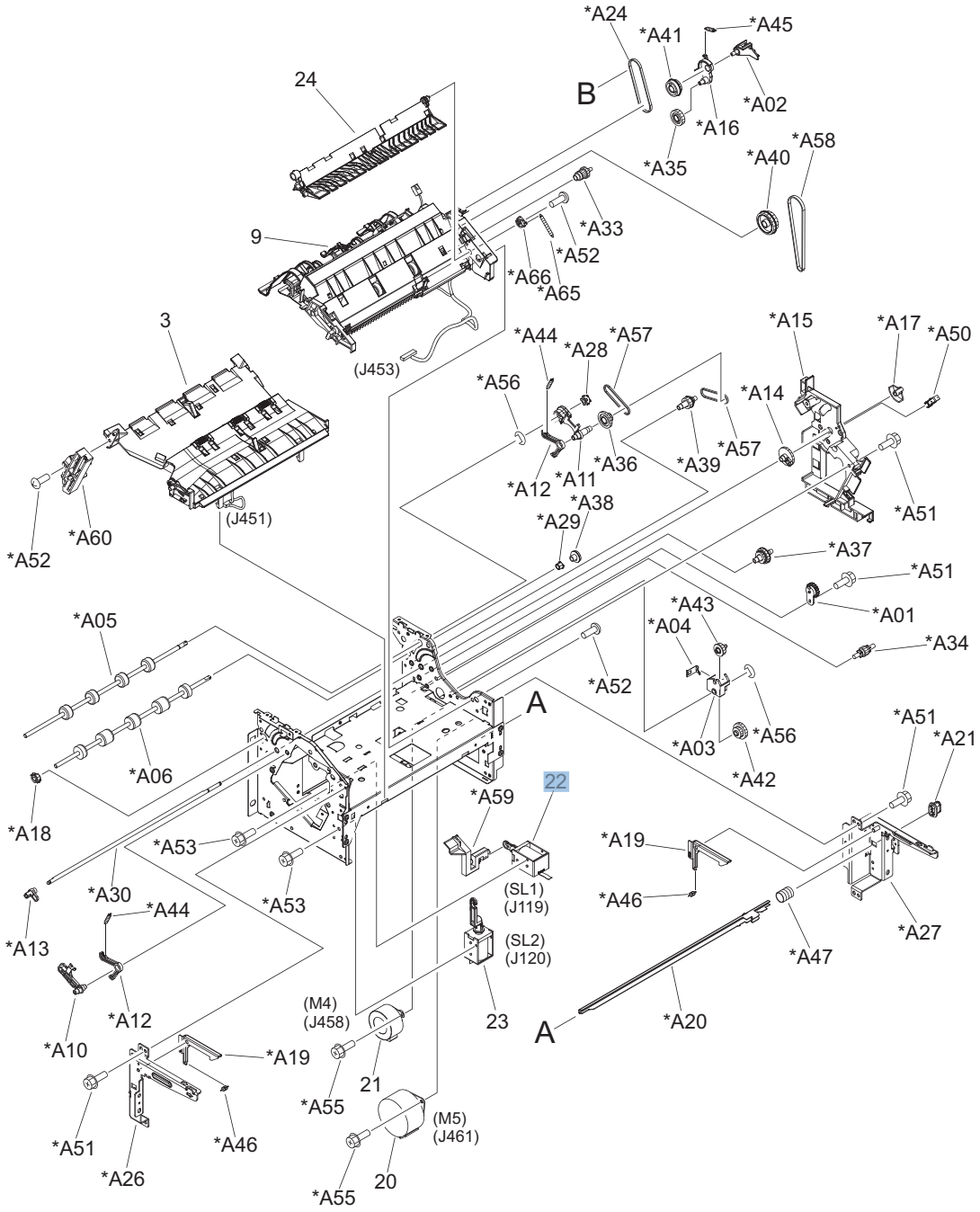


**Table 4-25 Main body (SSMBM; 1 of 2)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 22 | Stamp solenoid assembly (SSMBM) | RM1-6664-000CN | 1 |

# Main body (SSMBM; 2 of 2)

**Figure 4-24** Main body (SSMBM; 2 of 2)

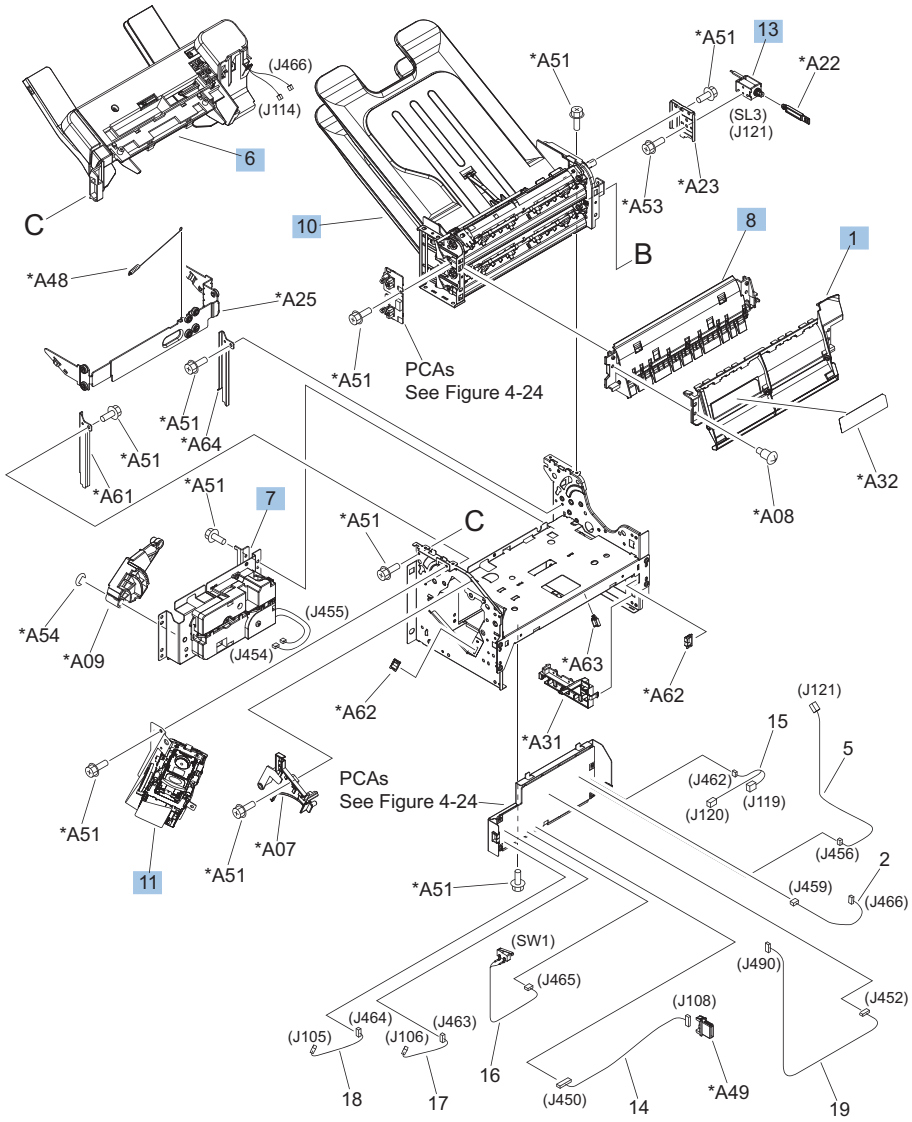


**Table 4-26 Main body (SSMBM; 2 of 2)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1 | Flapper guide assembly (SSMBM) | RM1-5153-000CN | 1 |
| 6 | Jog assembly (SSMBM) | RM1-5155-000CN | 1 |
| 7 | Lift tray assembly (SSMBM) | RM1-5156-000CN | 1 |
| 8 | MBM flapper assembly (SSMBM) | RM1-5157-000CN | 1 |
| 10 | MBM bin assembly (SSMBM) | RM1-6670-000CN | 1 |
| 11 | Stapler assembly (SSMBM) | RM1-5166-000CN | 1 |
| 13 | Bin solenoid assembly (SSMBM) | RM1-5896-000CN | 1 |

## PCAs (SSMBM)

**Figure 4-25** PCAs (SSMBM)

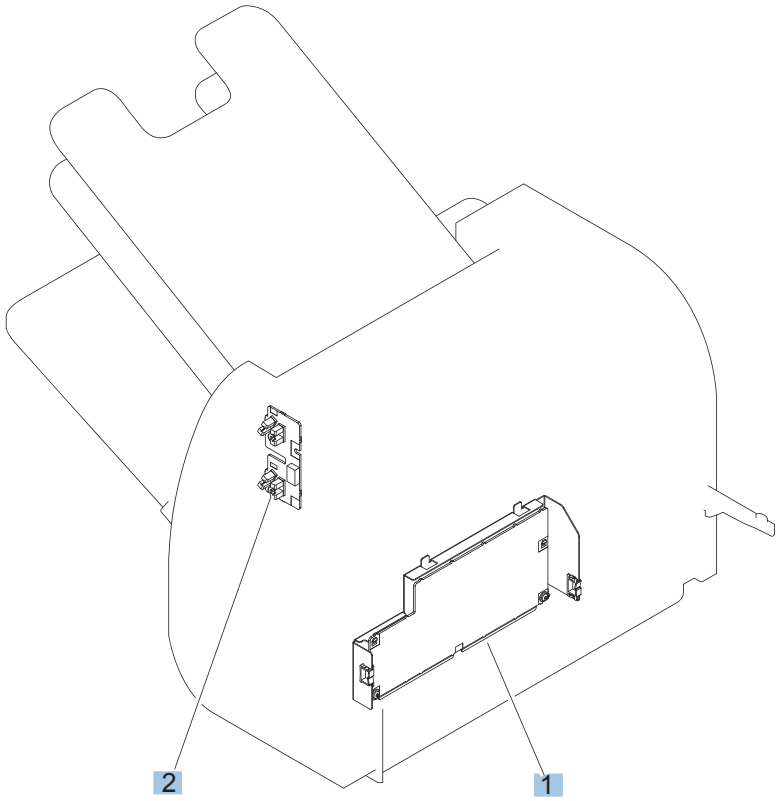


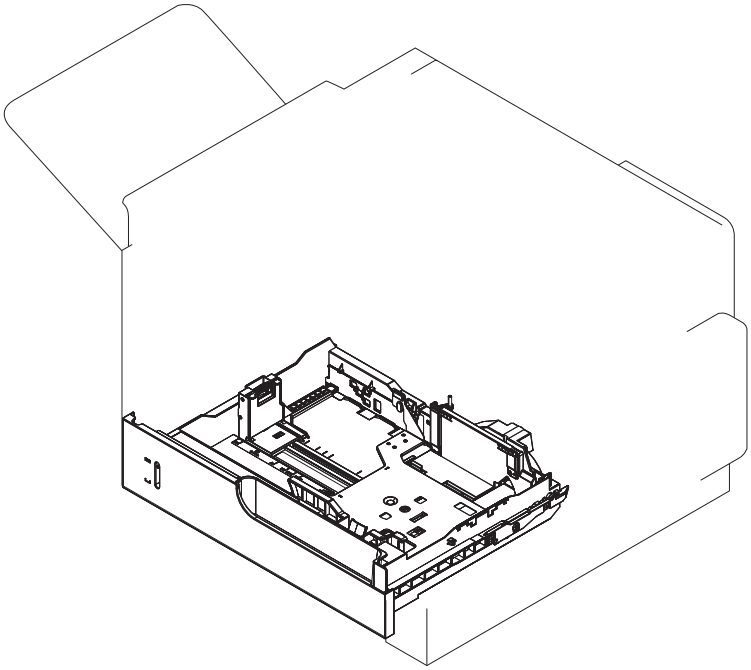
**Table 4-27 PCAs (SSMBM)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1 | MBM driver PCA (SSMBM) | RM1-5168-000CN | 1 |
| 2 | Bin sensor PCA (SSMBM) | RM1-5894-000CN | 1 |

# 500-sheet paper feeder

The 500-sheet paper feeder is referred to as the 1x500-SPF.

**Figure 4-26** 500-sheet paper feeder



**NOTE:** Under warranty, replace the whole unit with customer self repair part number CC425-67901.

# External covers, panels, and doors (1x500-SPF)

**Figure 4-27** External covers, panels, and doors (1x500-SPF)

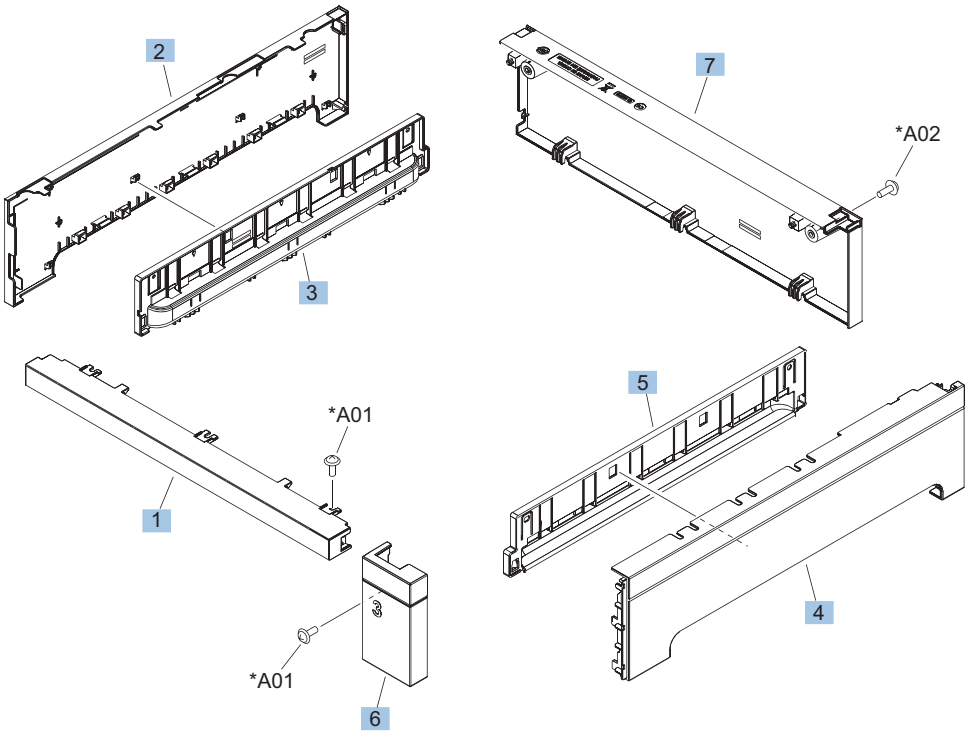


**Table 4-28 Paper feeders**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1 | Cover, front upper (1x500-SPF) | RC2-5395-000CN | 1 |
| 2 | Cover, left (1x500-SPF) | RC3-1314-000CN | 1 |
| 3 | Cover, handle, left (1x500-SPF) | RC3-1315-000CN | 1 |
| 4 | Cover, right (1x500-SPF) | RC3-1316-000CN | 1 |
| 5 | Cover, handle, right (1x500-SPF) | RC3-1317-000CN | 1 |
| 6 | Cover, right front (1x500-SPF) | RC3-1318-000CN | 1 |
| 7 | Cover, rear (1x500-SPF) | RC3-1319-000CN | 1 |

# Main body (1x500-SPF)

**Figure 4-28** Main body (1x500-SPF)

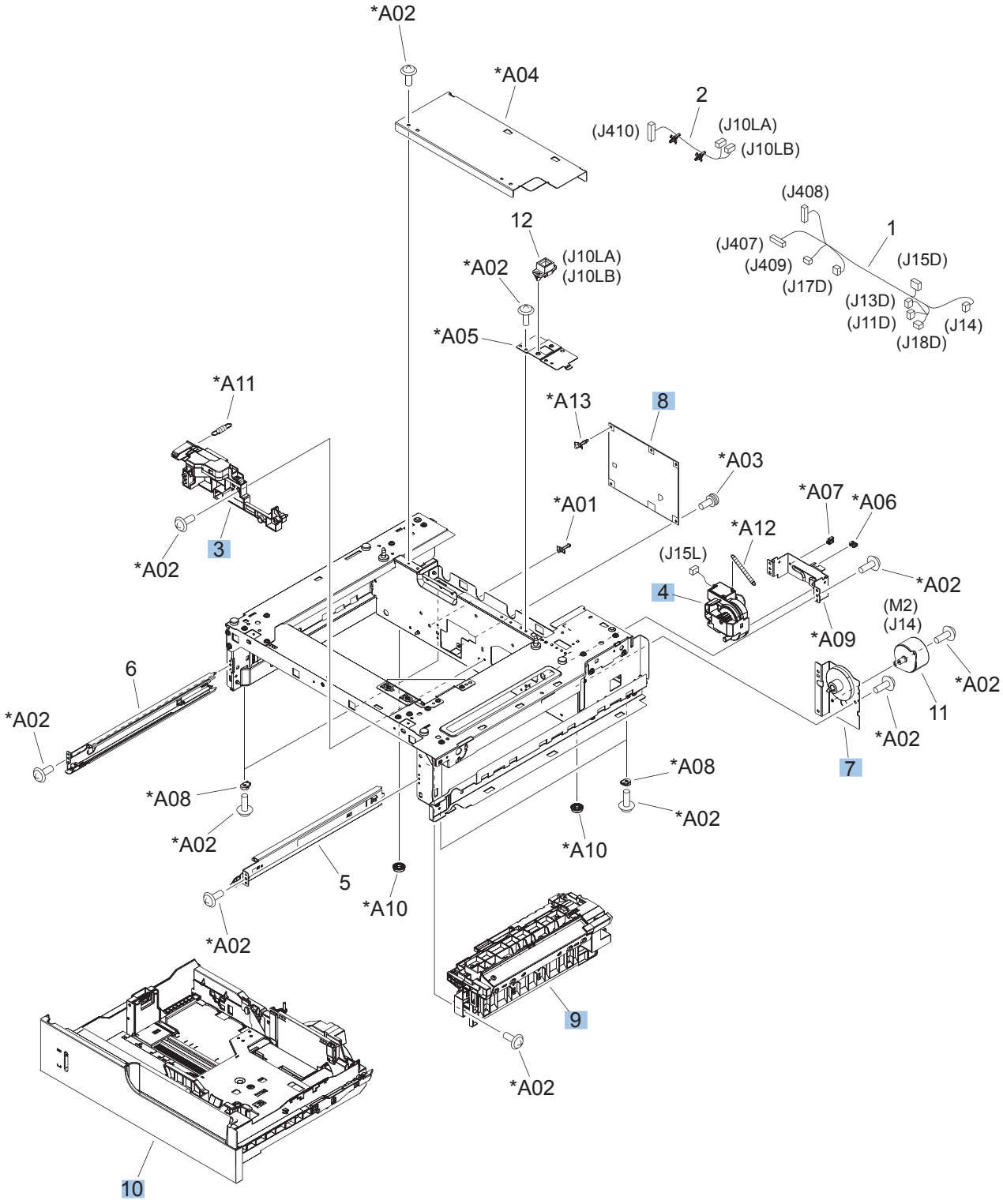


**Table 4-29 Main body (1x500-SPF)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 3 | Lifter base assembly (1x500-SPF) | RM1-5913-000CN | 1 |
| 4 | Lifter assembly (1x500-SPF) | RM1-5914-000CN | 1 |
| 7 | Paper pickup drive assembly (1x500-SPF) | RM1-5934-000CN | 1 |
| 8 | Feeder PCA (1x500-SPF) | RM1-5854-000CN | 1 |
| 9 | Paper pickup assembly (1x500-SPF) | RM1-5929-000CN | 1 |
| 10 | Cassette (1x500-SPF) | RM1-5928-000CN | 1 |

# 1x500 and 3x500 paper feeders

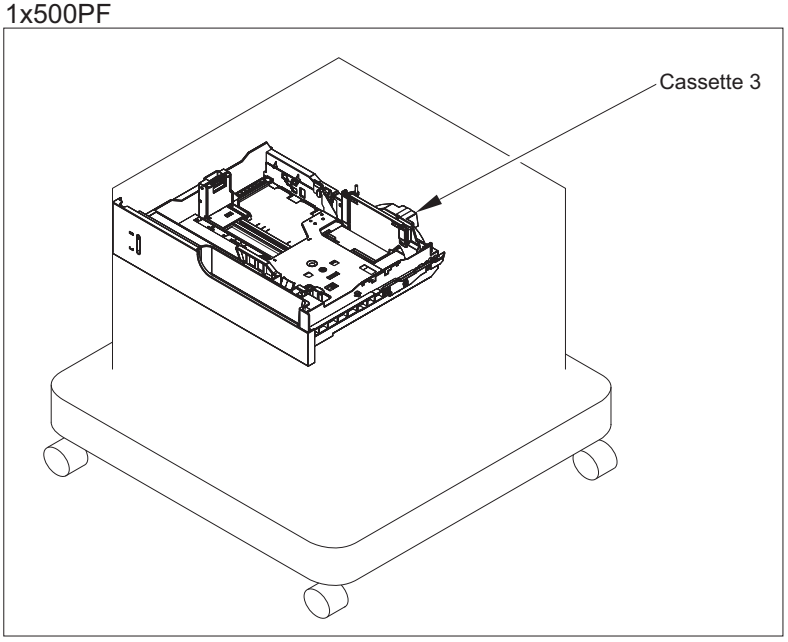
The 1x500 and 3x500 paper feeders are referred to as the 1x500PF and 3x500PF.

**NOTE:** Under warranty, replace the whole unit with customer self repair part number CC493-67902 (1x500) or CC493-67903 (3x500).

## Paper feeders

**Figure 4-29** Paper feeders

1x500PF




3x500PF

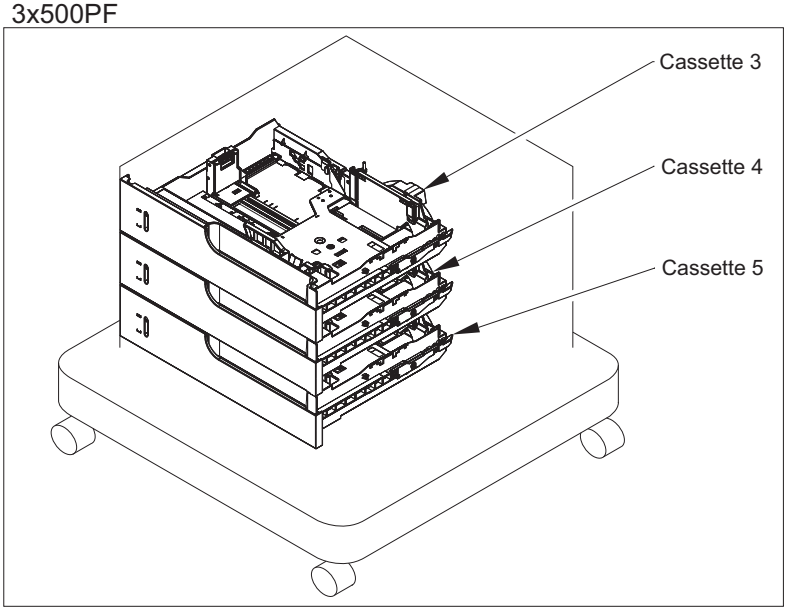


**Table 4-30 Paper feeders**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| NA | Cassette (1x500PF and 3x500PF) | RM1-5928-000CN | NA |

# External covers, panels, and doors (1x500PF and 3x500PF)

**Figure 4-30** Paper feeder external covers, panels, and doors (1x500PF and 3x500PF)

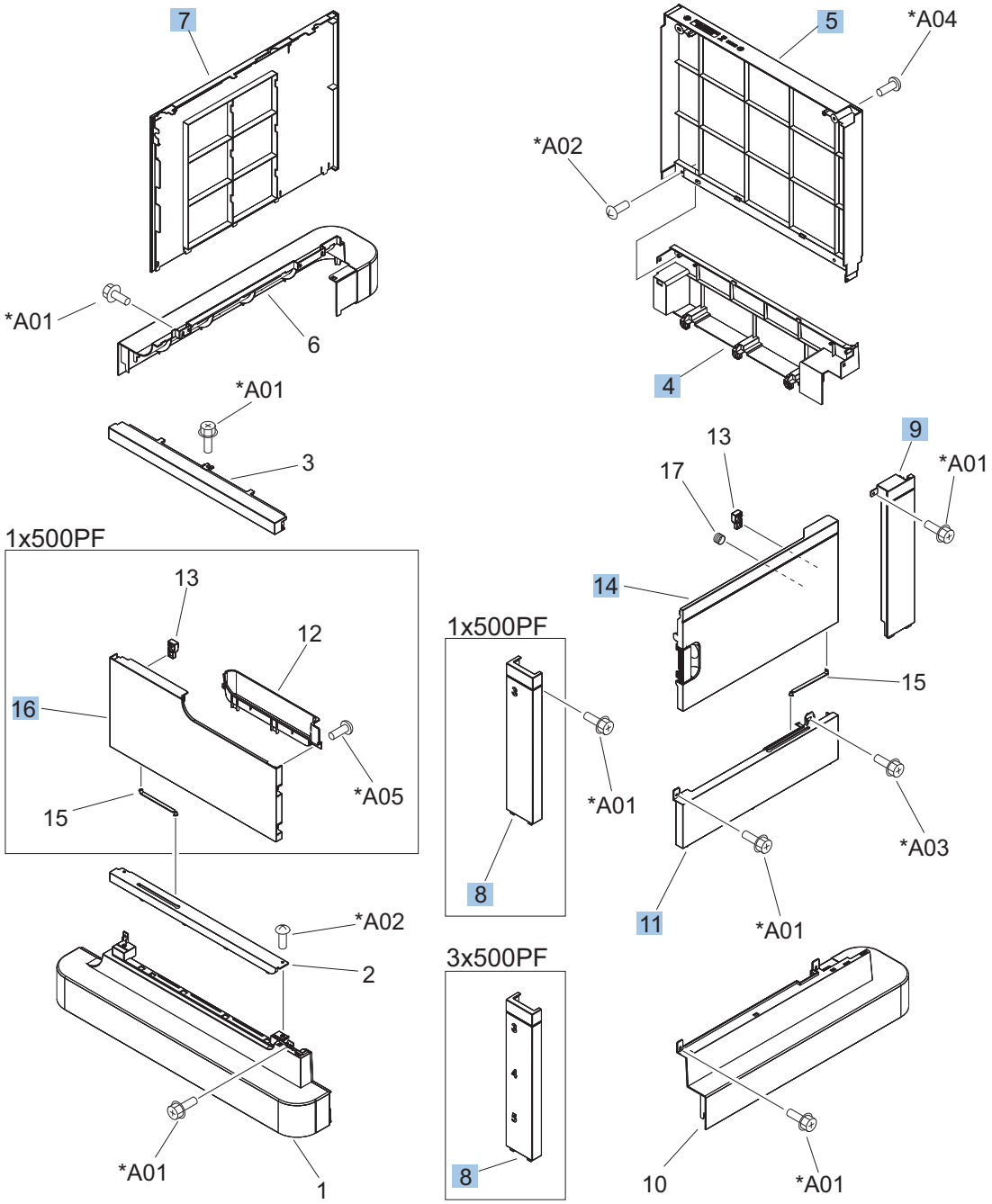


**Table 4-31 External covers, panels, and doors (1x500PF and 3x500PF)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 4 | Cover, rear lower (1x500PF and 3x500PF) | RC2-5378-000CN | 1 |
| 5 | Cover, rear (1x500PF and 3x500PF) | RC2-5379-000CN | 1 |
| 7 | Cover, left (1x500PF and 3x500PF) | RC2-5393-000CN | 1 |
| 8 | Cover, right front, (1x500PF) | RC2-5356-000CN | 1 |
| 8 | Cover, right front, (3x500PF) | RC2-5357-000CN | 1 |
| 9 | Cover, right rear (1x500PF and 3x500PF) | RC2-5380-000CN | 1 |
| 11 | Cover, right center (1x500PF and 3x500PF) | RC2-5394-000CN | 1 |
| 14 | Right door assembly (3x500PF) | RM1-5937-000CN | 1 |
| 14 | Right door assembly (1x500PF) | RM1-5936-000CN | 1 |
| 16 | Door, stock, (1x500PF) | RC2-5377-000CN | 1 |

# Main body (1x500PF)

**Figure 4-31** Main body (1x500PF)

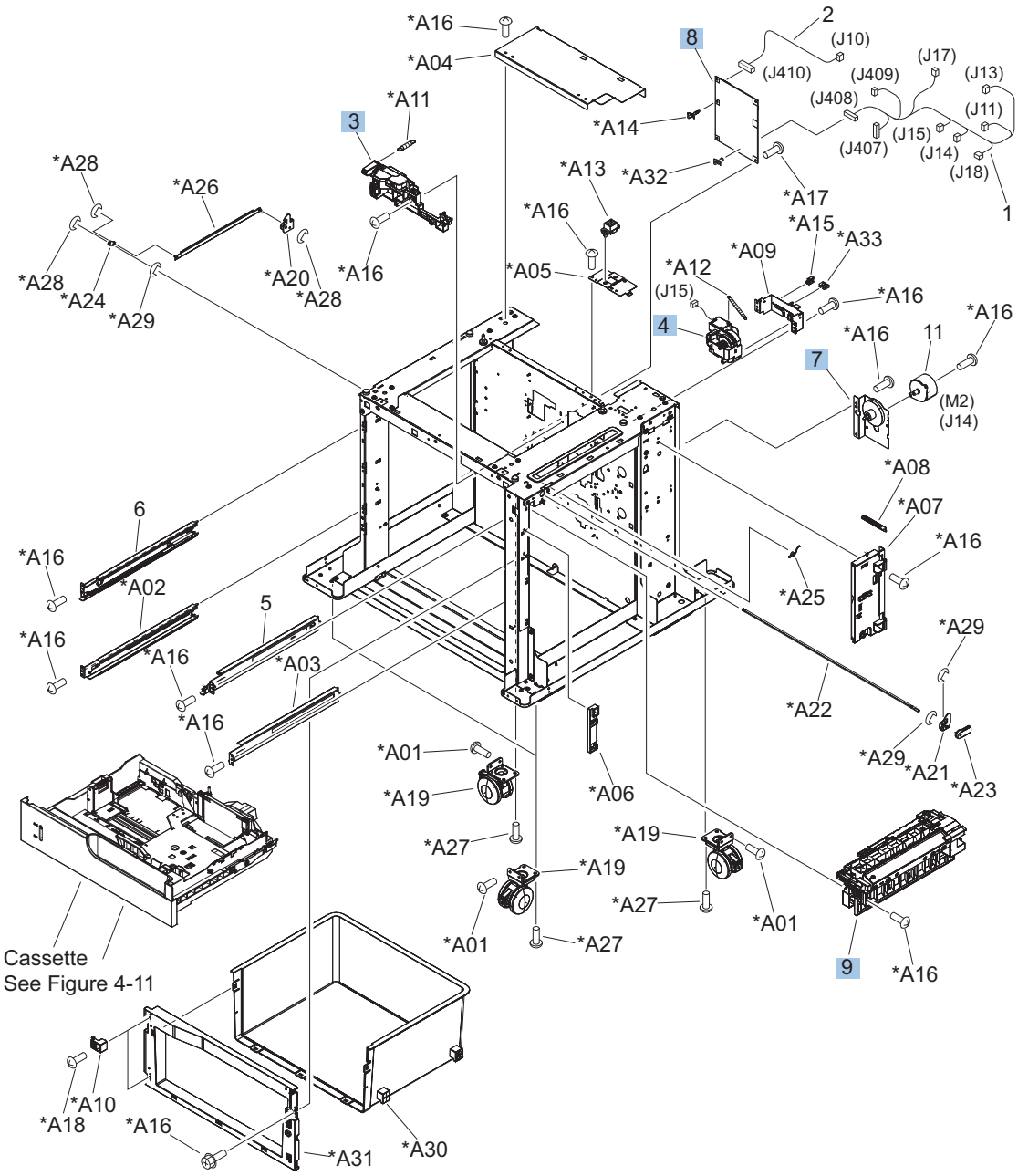


**Table 4-32 Main body (1x500PF)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 3 | Lifter base assembly (1x500PF) | RM1-5913-000CN | 1 |
| 4 | Lifter assembly (1x500PF) | RM1-5914-000CN | 1 |
| 7 | Paper pickup drive assembly (1x500PF) | RM1-5934-000CN | 1 |
| 8 | Feeder PCA assembly (1x500PF) | RM1-5854-000CN | 1 |
| 9 | Paper pickup assembly (1x500PF) | RM1-5929-000CN | 1 |

# Main body (3x500PF)

**Figure 4-32** Main body (3x500PF)

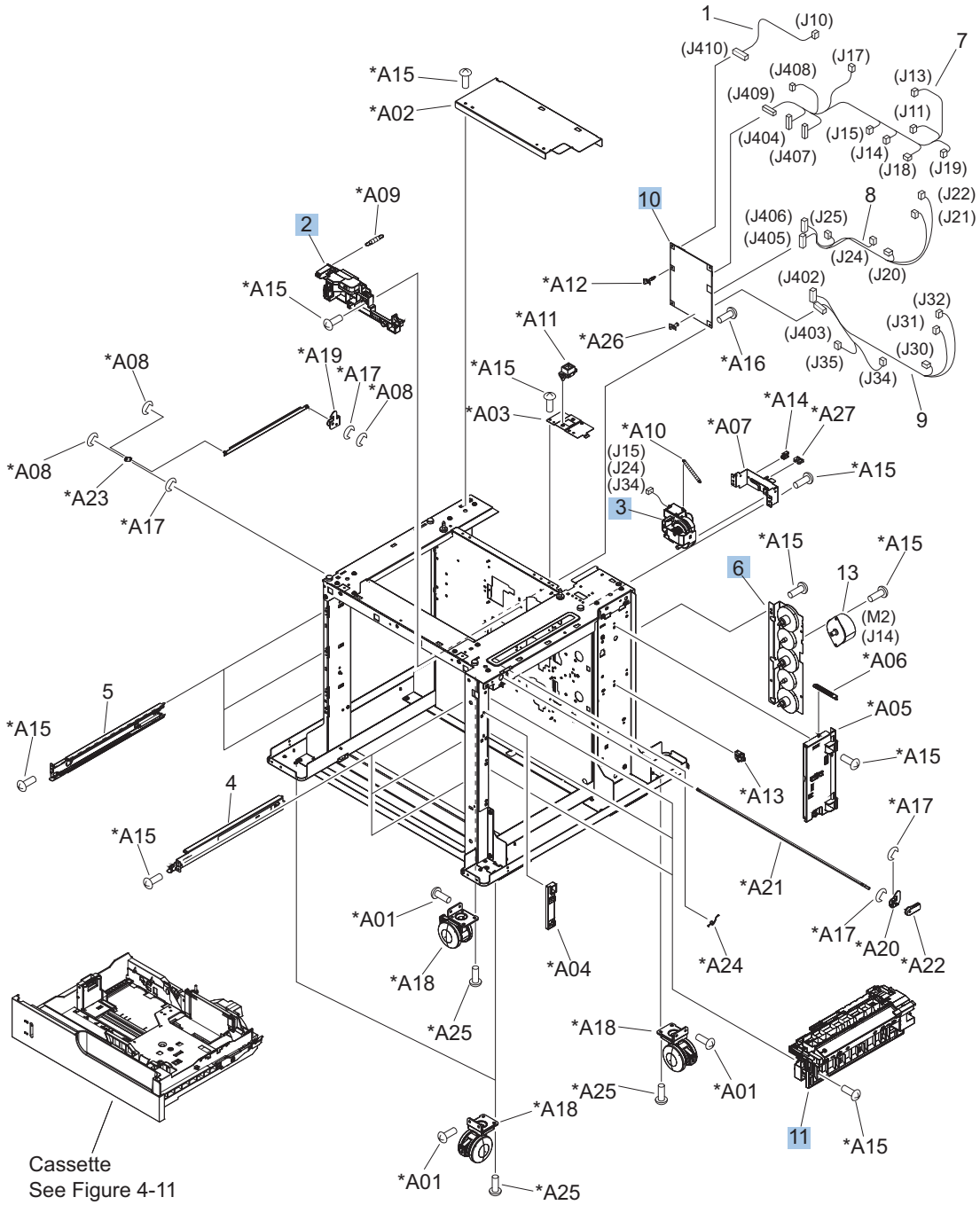


**Table 4-33 Main body (3x500PF)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 2 | Lifter base assembly (3x500PF) | RM1-5913-000CN | 1 |
| 3 | Lifter assembly (3x500PF) | RM1-5914-000CN | 1 |
| 6 | Paper pickup drive assembly (3x500PF) | RM1-5935-000CN | 1 |
| 10 | Feeder PCA assembly (3x500PF) | RM1-5958-000CN | 1 |
| 11 | Paper pickup assembly (3x500PF) | RM1-5929-000CN | 3 |

# Document feeder/scanner

**NOTE:** Under warranty, replace the whole scanner assembly or document feeder with either replacement part number IR4068-SVPNI (scanner assembly) or PF2309-SVPNI (document feeder assembly).

## Document feeder/scanner assemblies

**Figure 4-33** Document feeder/scanner assemblies

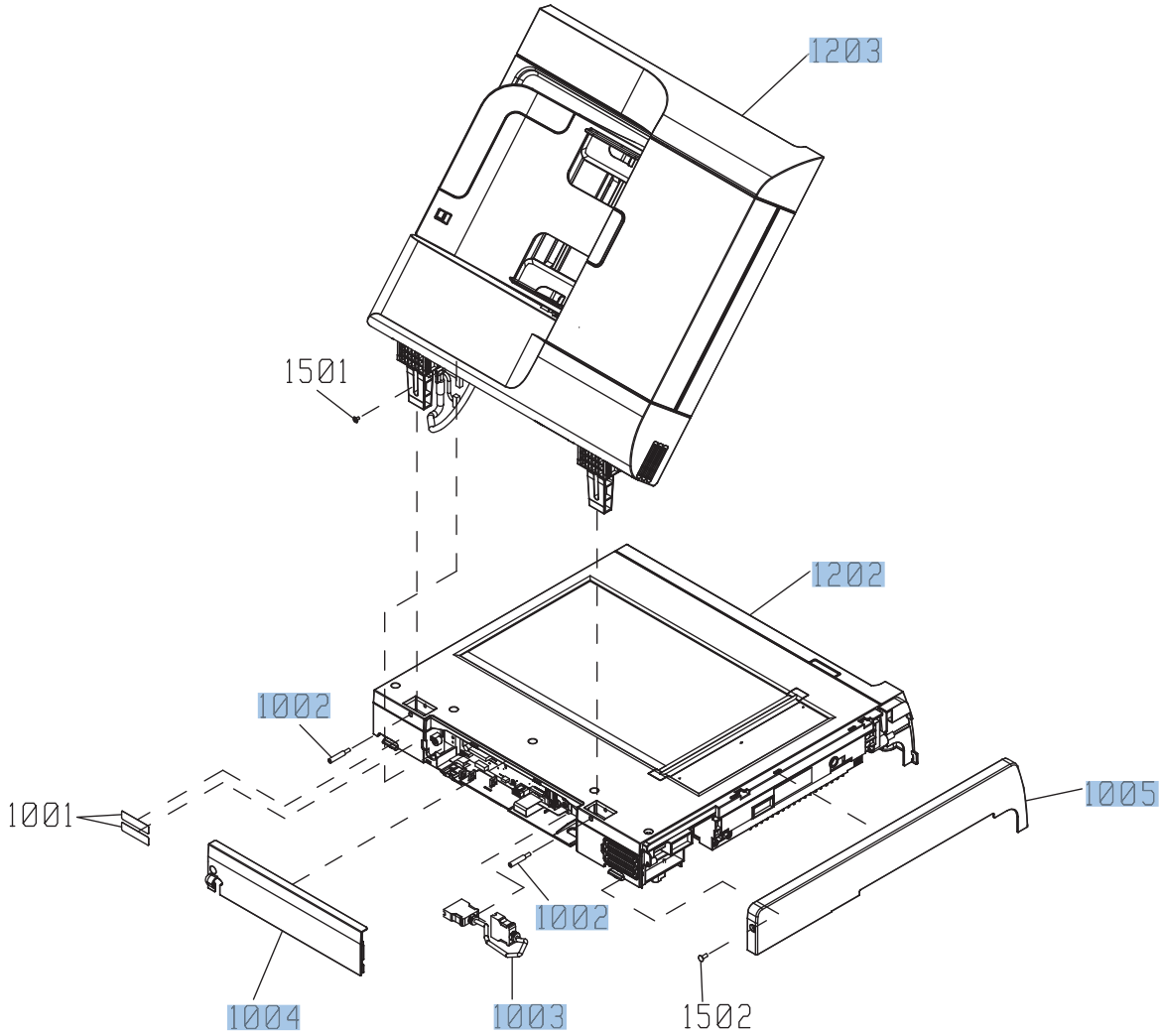


**Table 4-34 Document feeder/scanner assemblies**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1002 | S-SFT-STP-HNG (hinge screw) | IR4068K319NI | 2 |
| 1003 | S-ASM-ICB-COR (scanner cable) | IR4068K320NI | 1 |
| 1004 | S-CVR-REAR | IR4068K321NI | 1 |
| 1005 | S-CVR-LEFT | IR4068K322NI | 1 |
| 1202 | Scanner assembly (includes SCB and control panel adapter) | IR4068-SVPNI | 1 |
| 1203 | Document feeder complete assembly | PF2309-SVPNI | 1 |

## Scanner inverter assembly

**Figure 4-34** Scanner inverter assembly

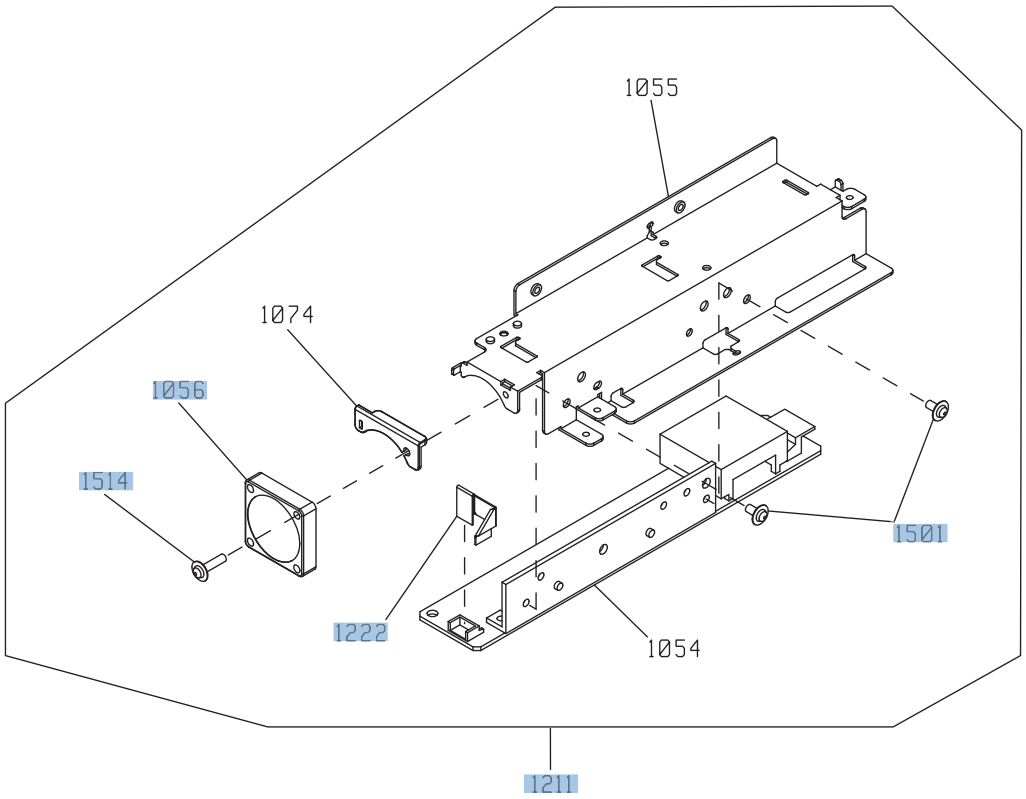


**Table 4-35 Scanner inverter assembly**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1211 | Scanner inverter assembly | IR4068K306NI | 1 |
| 1222 | S-K-CBP-INV-FFC | IR4068K303NI | 1 |
| 1501 | ASY-030060NIT | IR4068K341NI | 9 |
| 1056 | S-FAN-MFB30E-05A-006 | IR4068K304NI | 1 |
| 1514 | ASY-030120FWWS | IR4068K340NI | 1 |

# Scanner assembly (1 of 6)

**Figure 4-35** Scanner assembly (1 of 6)

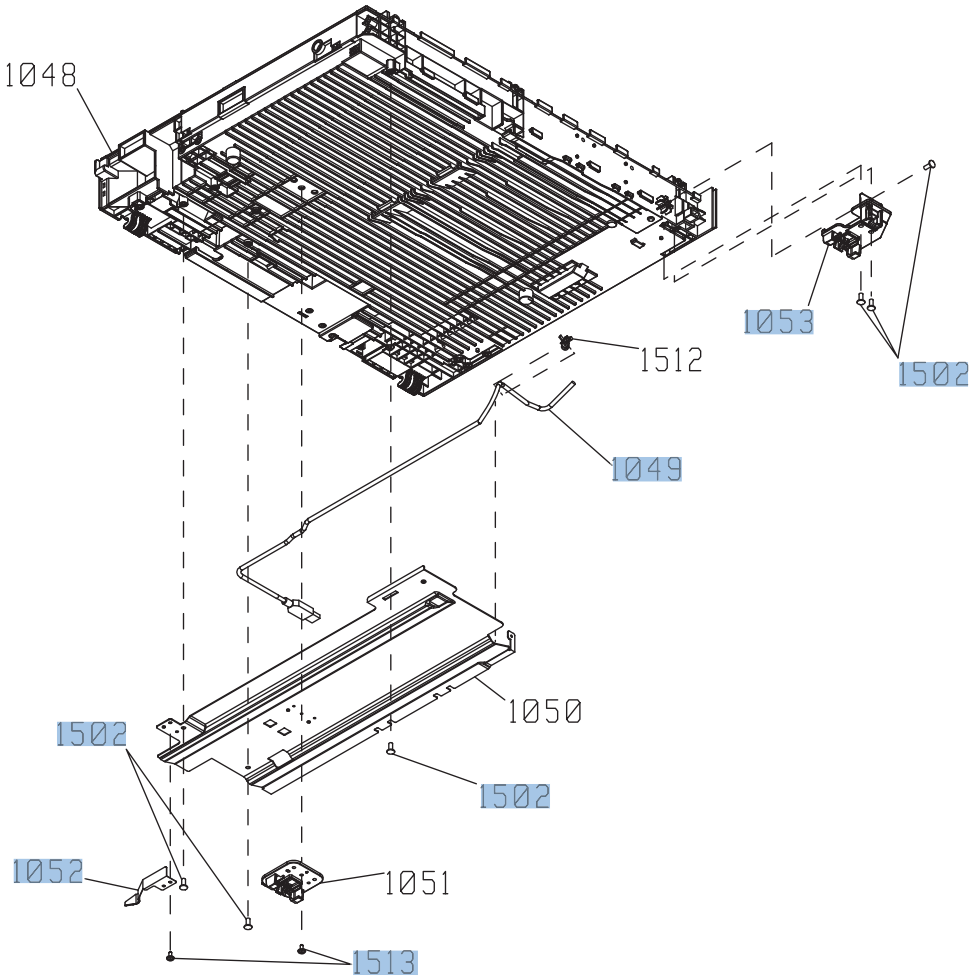


**Table 4-36 Scanner assembly (1 of 6)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1049 | S-ASM-USB (control panel USB cable) | IR4068K301NI | 1 |
| 1502 | ASY-040100FNBB | IR4068K342NI | 16 |
| 1513 | ASY-030080FNTP | IR4068K334NI | 2 |
| 1052 | ASSY-SP-GUIDE-HINGE | IR4068K126NI | 4 |
| 1053 | S-HNG-LIFT-R | IR4068K302NI | 1 |

## Scanner assembly (2 of 6)

**Figure 4-36** Scanner assembly (2 of 6)

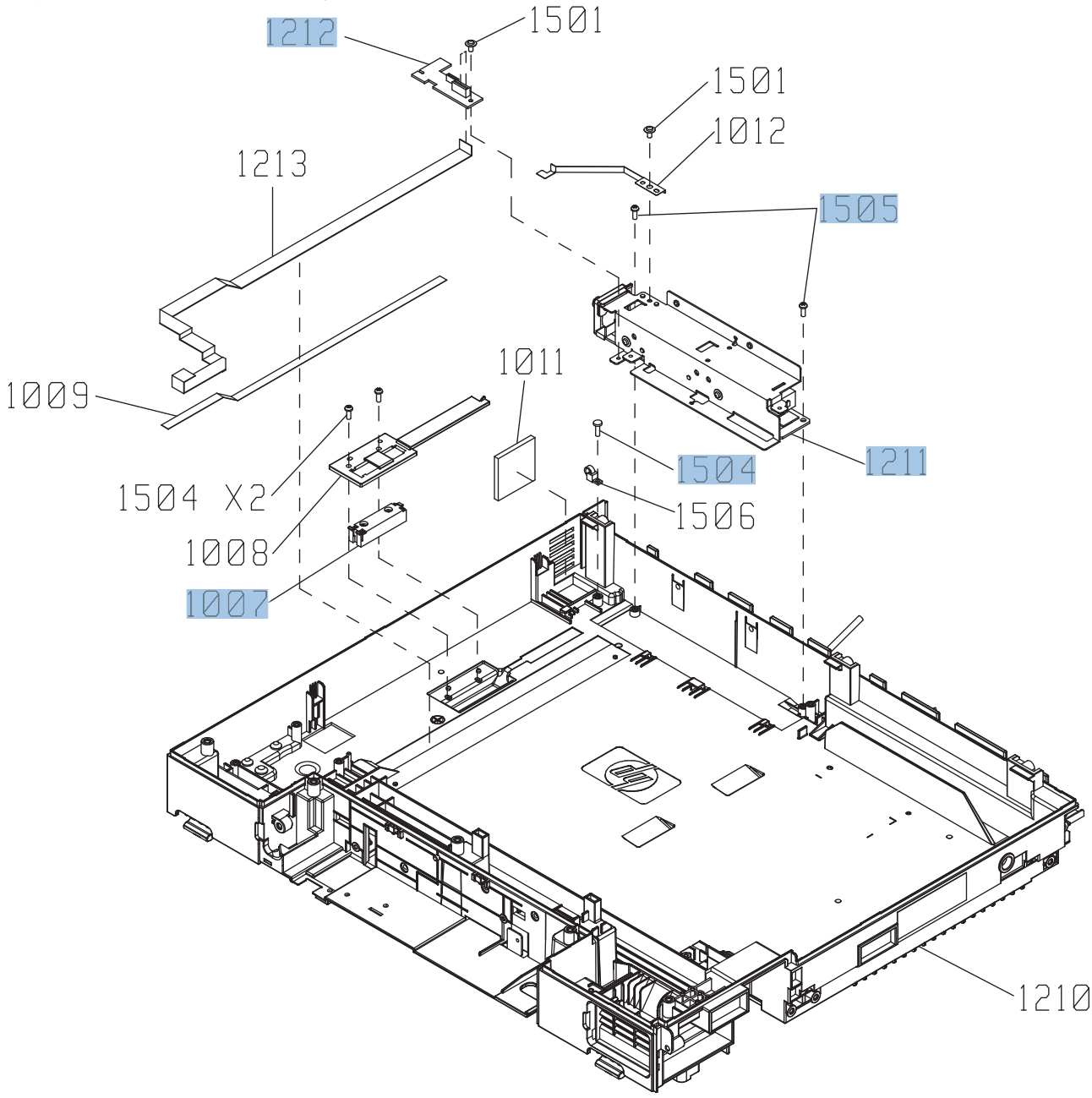


**Table 4-37 Scanner assembly (2 of 6)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1007 | S-SNS-EY3A-1061-2 | IR4068K305NI | 1 |
| 1504 | ASY-NS-SCR00027 | IR4068K344NI | 22 |
| 1211 | S-ASSY-INV | IR4068K306NI | 1 |
| 1212 | S-PBA-TYUKEI | IR4068K307NI | 1 |
| 1505 | ASY-NS-SCR00023B | IR4068K338NI | 2 |

# Scanner assembly (3 of 6)

**Figure 4-37** Scanner assembly (3 of 6)

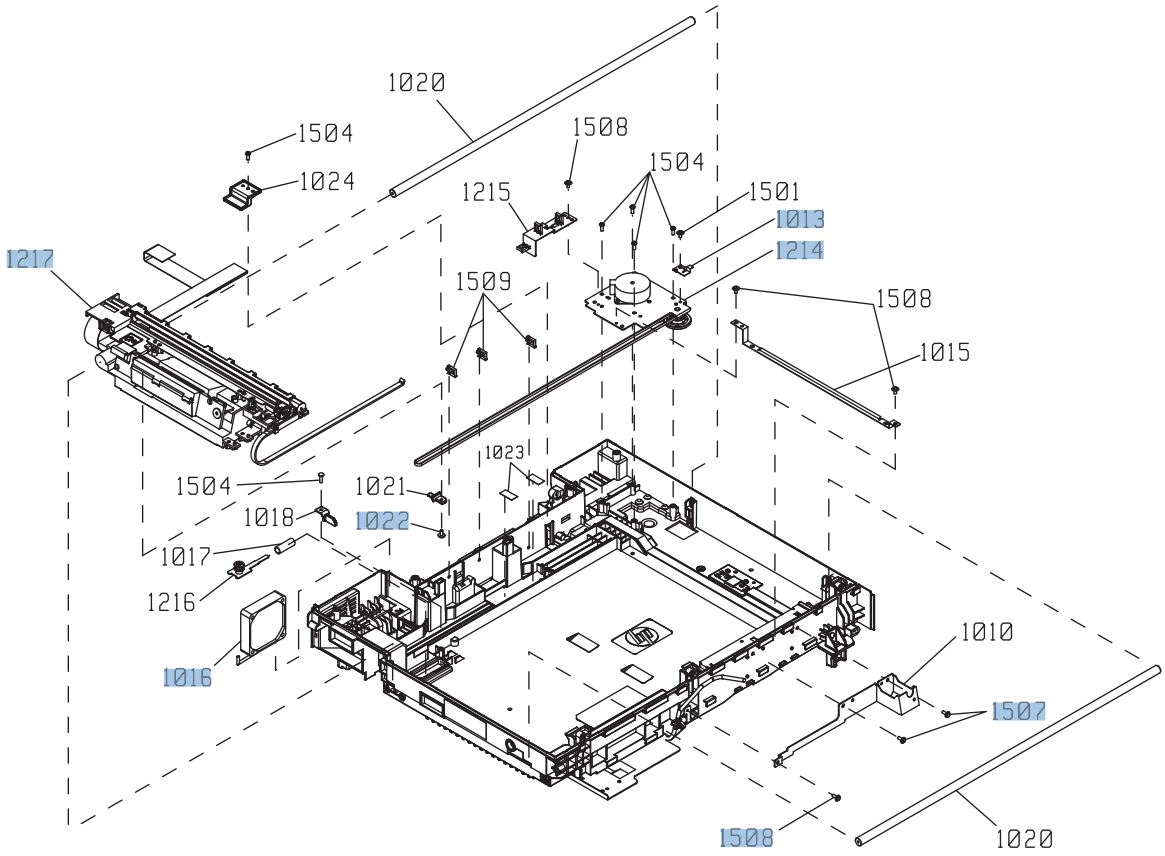


**Table 4-38 Scanner assembly (3 of 6)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1507 | ASY-030080FNTW | IR4068K335NI | 2 |
| 1508 | ASY-030060FNTW | IR4068K333NI | 9 |
| 1214 | S-ASSY-MOTOR-UNIT | IR4068K309NI | 1 |
| 1013 | S-SP-GND-SFT-R | IR4068K310NI | 1 |
| 1016 | S-FAN-D06037600G-01 | IR4068K311NI | 1 |
| 1217 | ASSY-CRG-UNIT-IR4068 | IR4068K200NI | 1 |
| 1022 | ASY-IR4041P021 | IR4068K343NI | 1 |

# Scanner assembly (4 of 6)

**Figure 4-38** Scanner assembly (4 of 6)

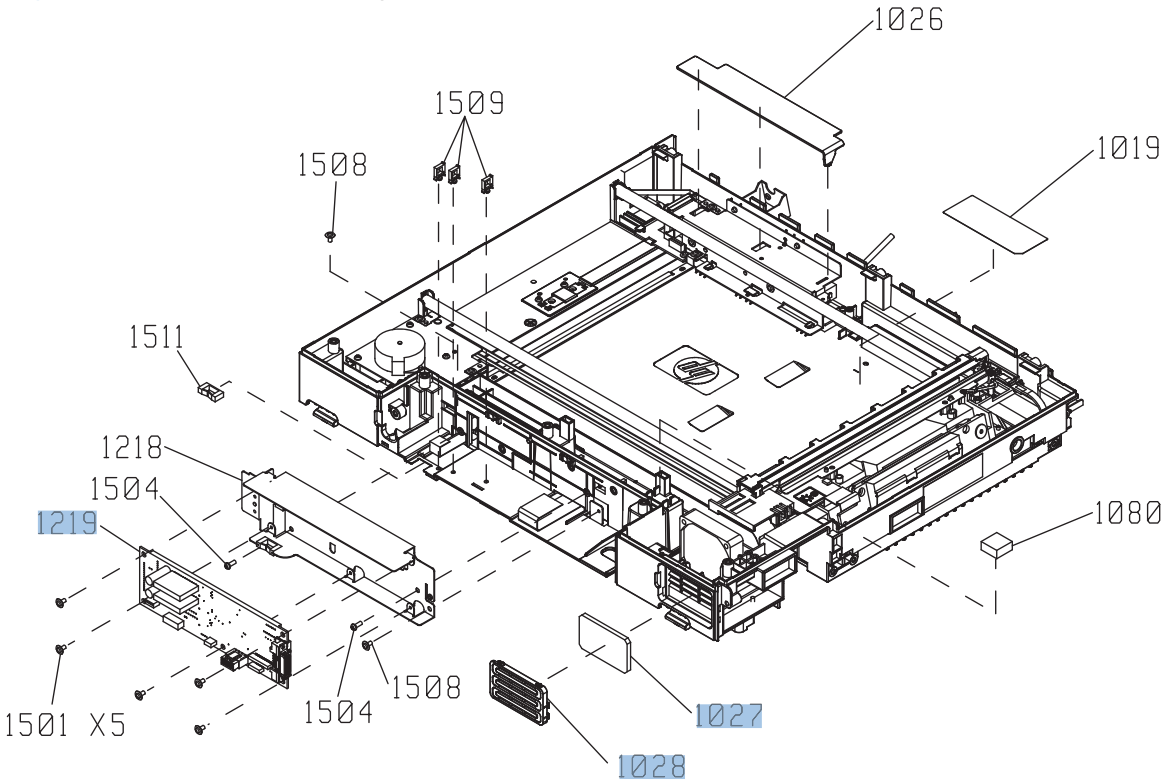


**Table 4-39 Scanner assembly (4 of 6)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1219 | Scan control board (SCB), S-PBA-SCB | IR4068K312NI | 1 |
| 1027 | S-FLTR-IN | IR4068K313NI | 1 |
| 1028 | S-CVR-FAN | IR4068K314NI | 1 |

## Scanner assembly (5 of 6)

**Figure 4-39** Scanner assembly (5 of 6)

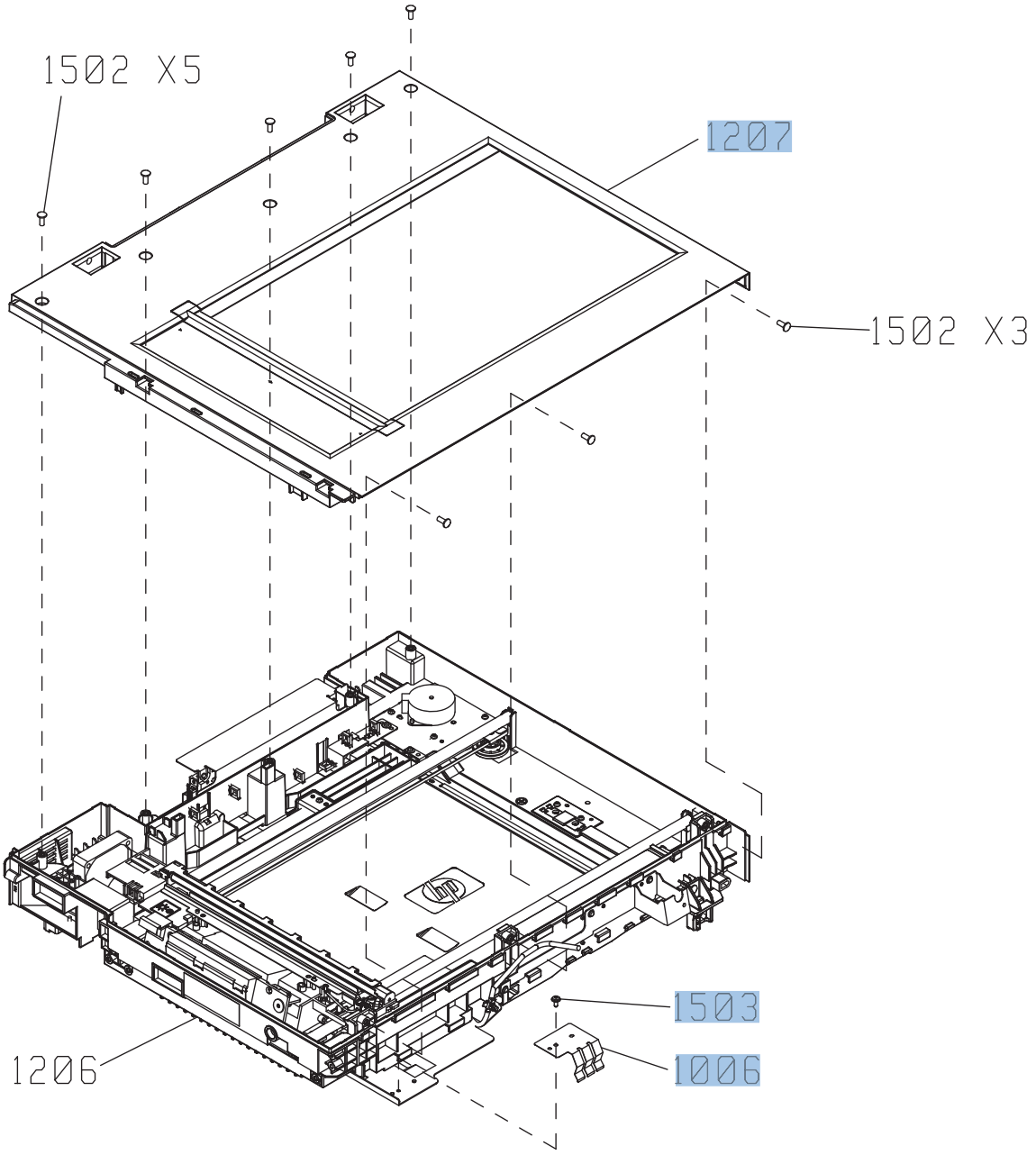


**Table 4-40 Scanner assembly (5 of 6)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1207 | S-ASSY-UPPER-UNIT (includes scanner glass) | IR4068K315NI | 1 |
| 1503 | ASY-NS-SCR00017 | IR4068K337NI | 1 |
| 1006 | S-SP-GND-PLT-LIFT-L | IR4068K345NI | 1 |

# Scanner assembly (6 of 6)

**Figure 4-40** Scanner assembly (6 of 6)

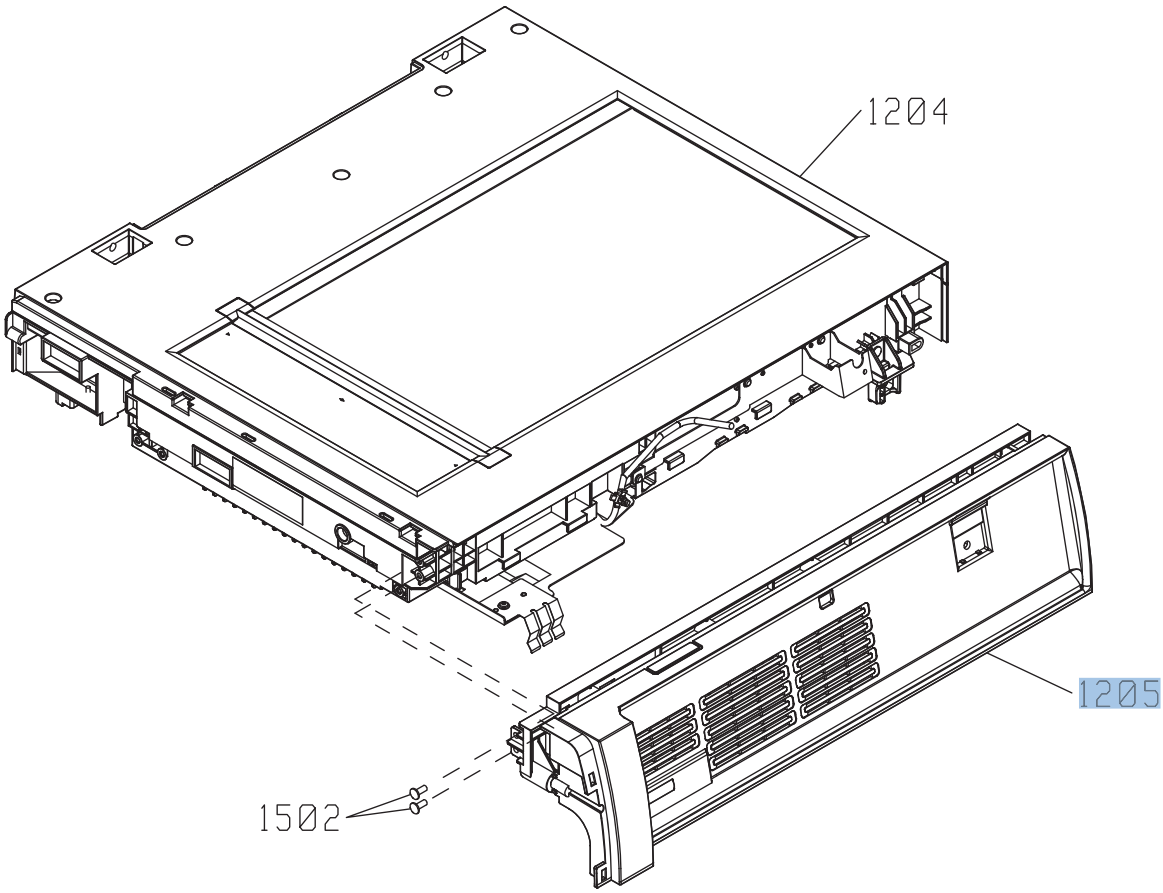


**Table 4-41 Scanner assembly (6 of 6)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 1205 | S-ASSY-CP-ADAPTER | IR4068K316NI | 1 |

# Document feeder assembly (1 of 5)

**Figure 4-41** Document feeder assembly (1 of 5)

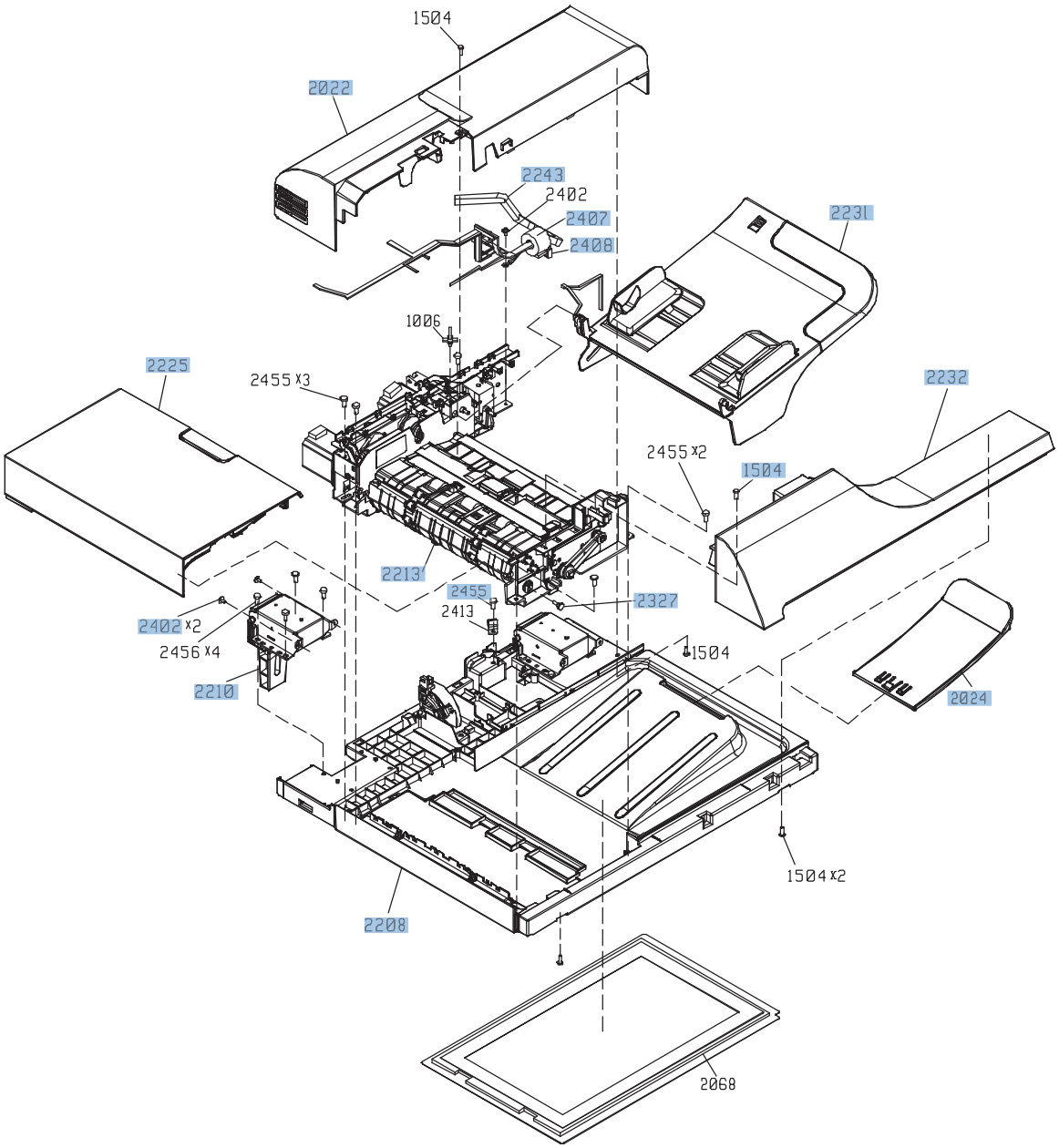


**Table 4-42 Document feeder assembly (1 of 5)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 2208 | ASY-BASE-SP | PF2309K102NI | 1 |
| 2210 | ASY-HNG-L-SP | PF2309K104NI | 1 |
| 2213 | ASY-FRM-RE-FEED-SP | PF2309K103NI | 1 |
| 2225 | ASY-CVR-FE-FEED-SP | PF2309K105NI | 1 |
| 2231 | ASY-TRY-SP | PF2309K106NI | 1 |
| 2232 | ASY-CVR-F-SP | PF2309K107NI | 1 |
| 2455 | ASY-SCR04T100PLA-SP | PF2309K108NI | 10 |
| 2402 | ASY-030060FNTP | IR4068K332NI | 3 |
| 2243 | ASM-IF-SP | PF2309K110NI | 1 |
| 2407 | ASY-TFT-152613N-SP | PF2309K111NI | 1 |
| 2408 | ASY-TFB-2024RS | PF2309K112NI | 1 |
| 2327 | ASY-SCR-5-4-DAN-SP | PF2309K113NI | 2 |
| 2022 | ASY-CVR-F-R-SP | PF2309K114NI | 1 |
| 1504 | ASY-SCR03T100PLA-SP | PF2309K115NI | 1 |
| 2024 | ASY-TRY-F-BASE-SP | CC419-67903 | 1 |

# Document feeder assembly (2 of 5)

**Figure 4-42** Document feeder assembly (2 of 5)

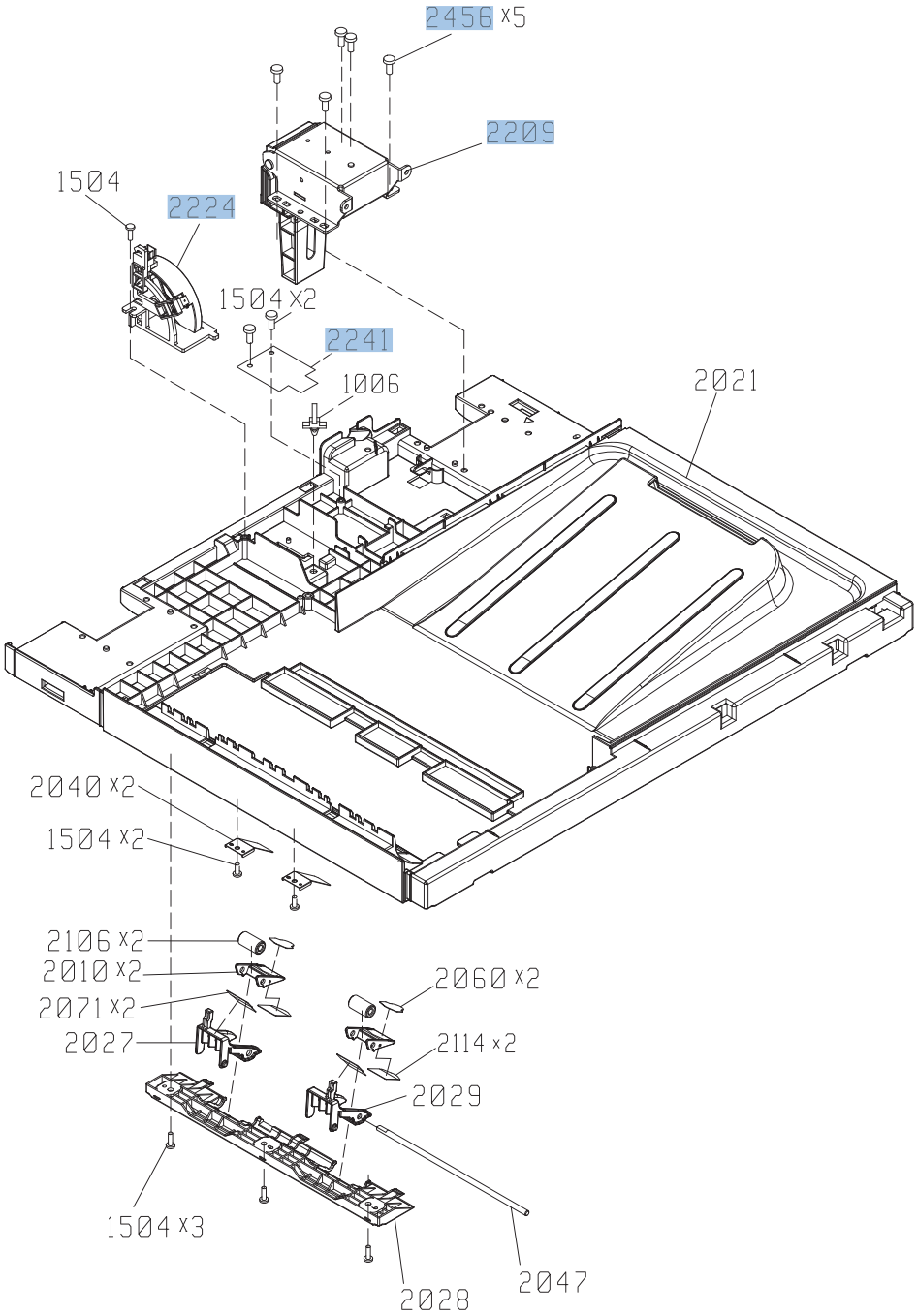


**Table 4-43 Document feeder assembly (2 of 5)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 2241 | ASY-PBA-RELAY-SP | PF2309K118NI | 1 |
| 2209 | ASY-HNG-R-SP | PF2309K119NI | 1 |
| 2456 | ASY-NS-SCR00063 | IR4068K339NI | 5 |
| 2224 | ASY-DFSENS-SP | PF2309K121NI | 1 |

# Document feeder assembly (3 of 5)

**Figure 4-43** Document feeder assembly (3 of 5)

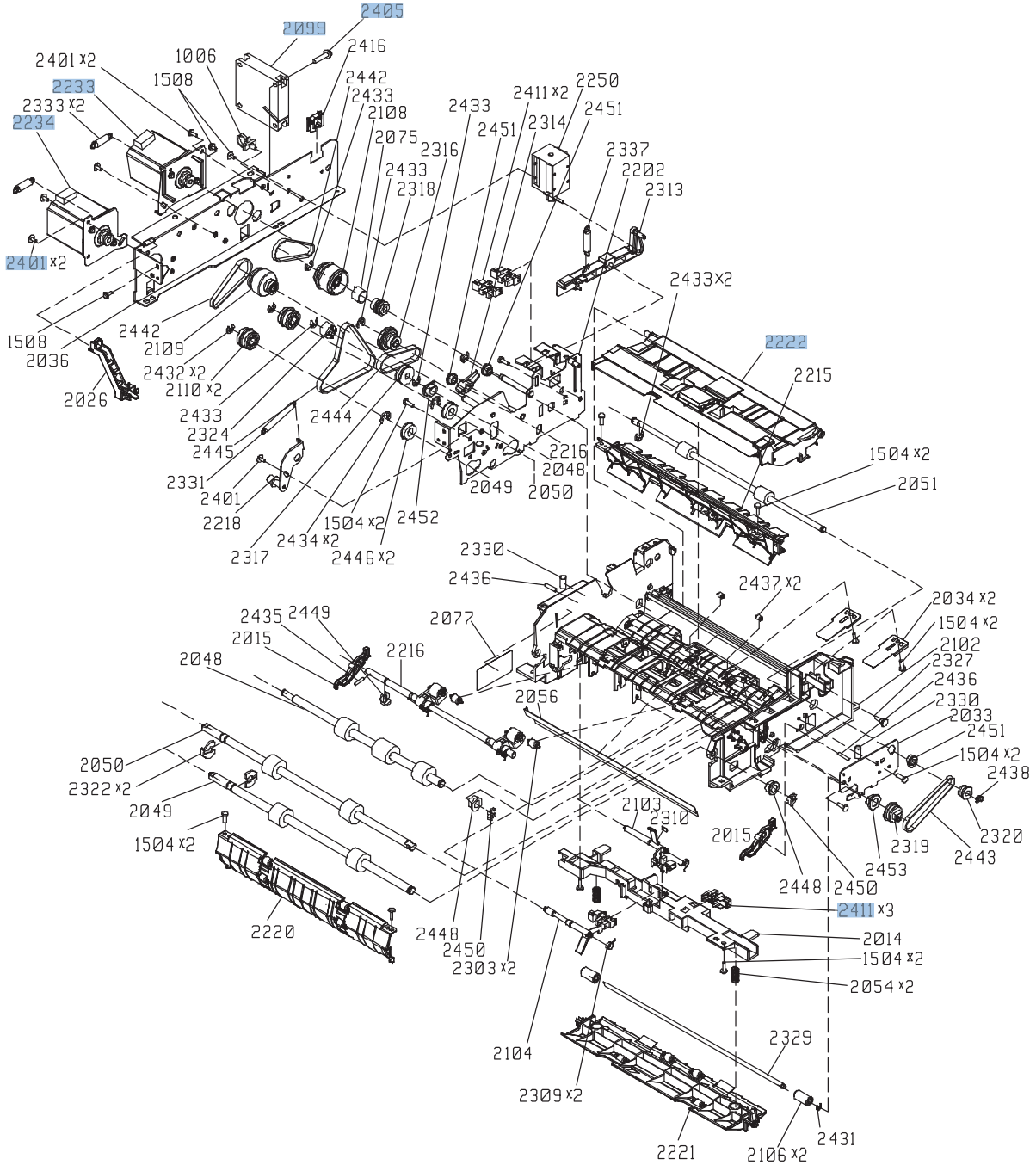


**Table 4-44 Document feeder assembly (3 of 5)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 2411 | ASY-SG2481-NY-SP | PF2309K122NI | 5 |
| 2401 | ASY-030060FDIT | IR4068K331NI | 5 |
| 2233 | ASY-MOT-FE-SP | PF2309K125NI | 1 |
| 2234 | ASY-MOT-RE-SP | PF2309K126NI | 1 |
| 2099 | ASY-FAN-SP | PF2309K127NI | 1 |
| 2405 | ASY-040200FNWS | IR4068K336NI | 1 |
| 2222 | ASY-GIDREV-SPR-SP | PF2309K129NI | 1 |

# Document feeder assembly (4 of 5)

**Figure 4-44** Document feeder assembly (4 of 5)

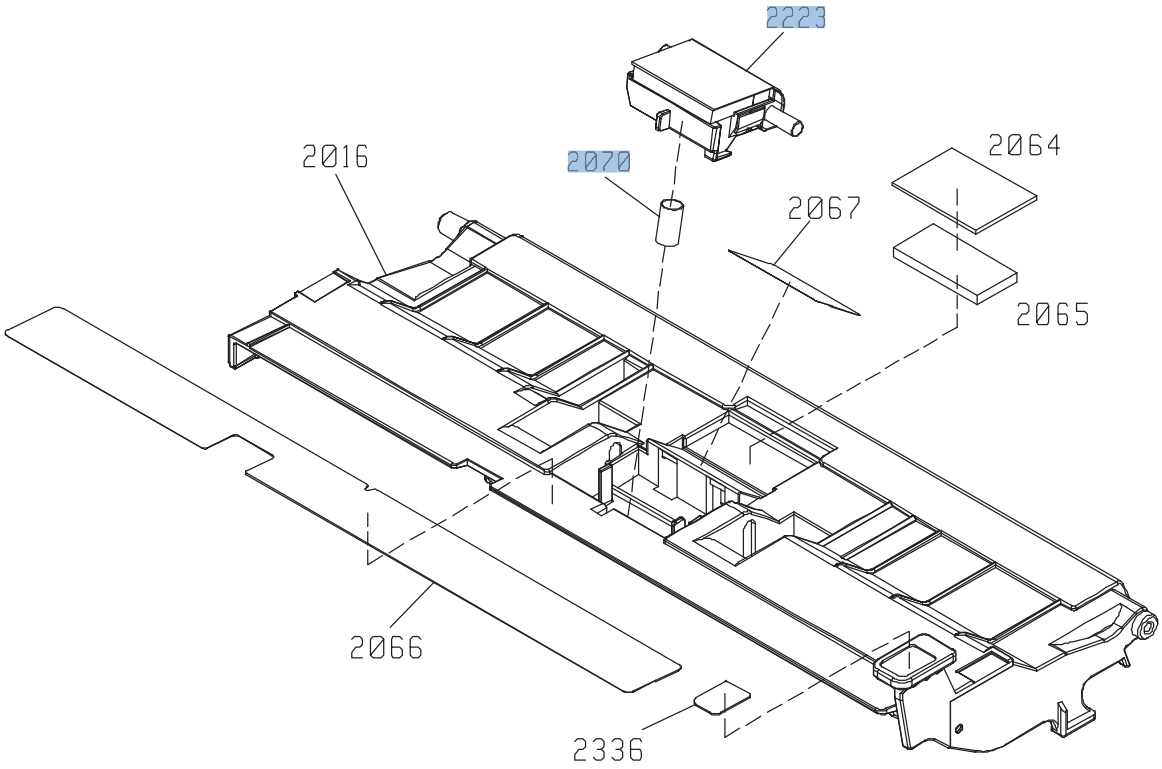


**Table 4-45 Document feeder assembly (4 of 5)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 2223 | ASY-HLD-REV-PAD-SP | PF2309K133NI | 1 |
| 2070 | ASY-SP-REV-SPR (spring) | PF2309K135NI | 1 |

**NOTE:** Kit CE248-67901 includes a separation pad, roller assembly, and instructions.

# Document feeder assembly (5 of 5)

**Figure 4-45** Document feeder assembly (5 of 5)

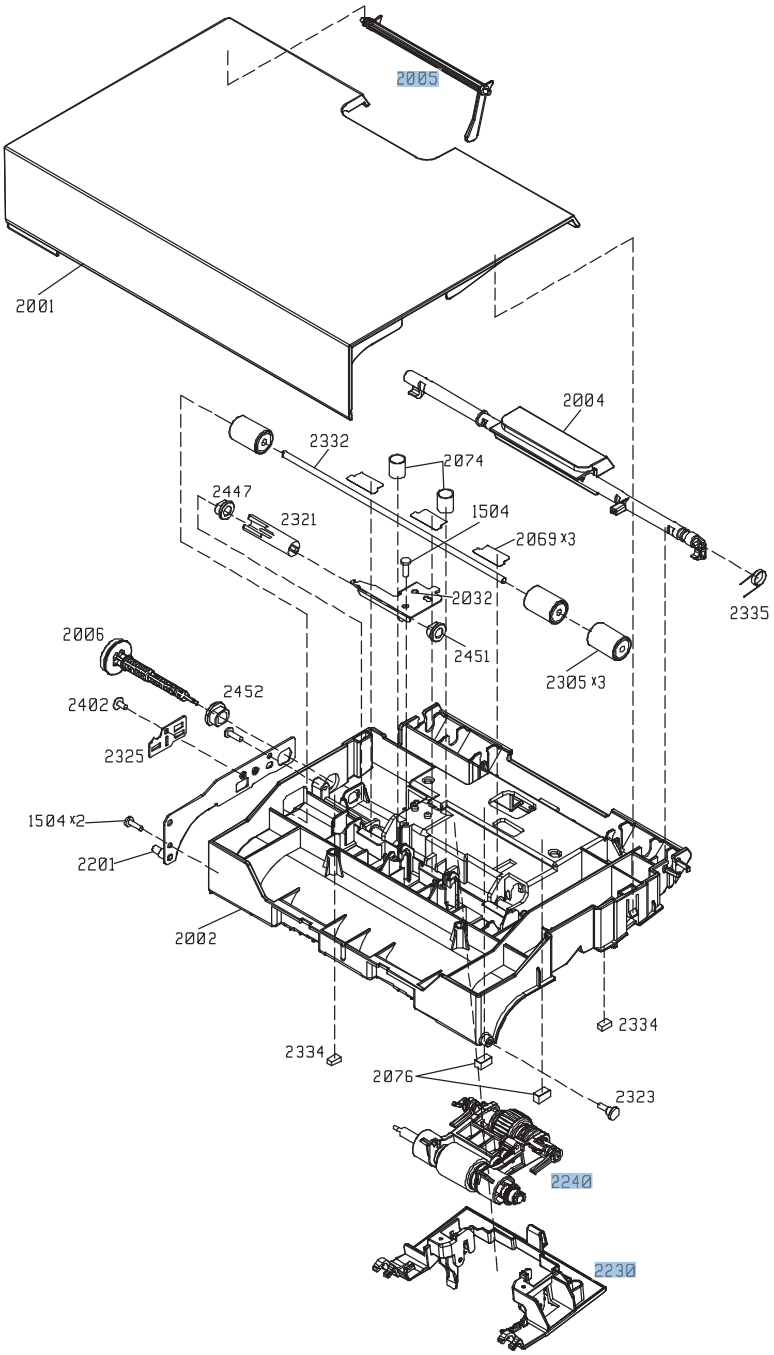


**Table 4-46 Document feeder assembly (5 of 5)**

| Ref | Description | Part number | Qty |
|---|---|---|---|
| 2005 | ASY-LVR-FE-EMP-SP | PF2309K130NI | 1 |
| 2240 | ASY-ROL-FE-FEED-SP | PF2309K131NI | 1 |
| 2230 | ASY-CVR-FE-PICK-SP | PF2309K132NI | 1 |

**NOTE:** Kit CE248-67901 includes a separation pad, roller assembly, and instructions.

# Alphabetical parts list

**Table 4-47 Alphabetical parts list**

| Description | Part number | Table and page |
|---|---|---|
| Arm, door link supporting, right | RC2-4055-000CN | Internal components (5 of 7) on page 681 |
| ASM-IF-SP | PF2309K110NI | Document feeder assembly (1 of 5) on page 747 |
| ASSY-CRG-UNIT-IR4068 | IR4068K200NI | Scanner assembly (3 of 6) on page 739 |
| ASSY-SP-GUIDE-HINGE | IR4068K126NI | Scanner assembly (1 of 6) on page 735 |
| ASY-030060FDIT | IR4068K331NI | Document feeder assembly (3 of 5) on page 751 |
| ASY-030060FNTP | IR4068K332NI | Document feeder assembly (1 of 5) on page 747 |
| ASY-030060FNTW | IR4068K333NI | Scanner assembly (3 of 6) on page 739 |
| ASY-030060NIT | IR4068K341NI | Scanner inverter assembly on page 733 |
| ASY-030080FNTP | IR4068K334NI | Scanner assembly (1 of 6) on page 735 |
| ASY-030080FNTW | IR4068K335NI | Scanner assembly (3 of 6) on page 739 |
| ASY-030120FWWS | IR4068K340NI | Scanner inverter assembly on page 733 |
| ASY-040100FNBB | IR4068K342NI | Scanner assembly (1 of 6) on page 735 |
| ASY-040200FNWS | IR4068K336NI | Document feeder assembly (3 of 5) on page 751 |
| ASY-BASE-SP | PF2309K102NI | Document feeder assembly (1 of 5) on page 747 |
| ASY-CVR-F-R-SP | PF2309K114NI | Document feeder assembly (1 of 5) on page 747 |
| ASY-CVR-F-SP | PF2309K107NI | Document feeder assembly (1 of 5) on page 747 |
| ASY-CVR-FE-FEED-SP | PF2309K105NI | Document feeder assembly (1 of 5) on page 747 |
| ASY-CVR-FE-PICK-SP | PF2309K132NI | Document feeder assembly (5 of 5) on page 755 |
| ASY-DFSENS-SP | PF2309K121NI | Document feeder assembly (2 of 5) on page 749 |

**Table 4-47 Alphabetical parts list (continued)**

| Description | Part number | Table and page |
|---|---|---|
| ASY-FAN-SP | PF2309K127NI | Document feeder assembly (3 of 5) on page 751 |
| ASY-FRM-RE-FEED-SP | PF2309K103NI | Document feeder assembly (1 of 5) on page 747 |
| ASY-GIDREV-SPR-SP | PF2309K129NI | Document feeder assembly (3 of 5) on page 751 |
| ASY-HLD-REV-PAD-SP | PF2309K133NI | Document feeder assembly (4 of 5) on page 753 |
| ASY-HNG-L-SP | PF2309K104NI | Document feeder assembly (1 of 5) on page 747 |
| ASY-HNG-R-SP | PF2309K119NI | Document feeder assembly (2 of 5) on page 749 |
| ASY-IR4041P021 | IR4068K343NI | Scanner assembly (3 of 6) on page 739 |
| ASY-LVR-FE-EMP-SP | PF2309K130NI | Document feeder assembly (5 of 5) on page 755 |
| ASY-MOT-FE-SP | PF2309K125NI | Document feeder assembly (3 of 5) on page 751 |
| ASY-MOT-RE-SP | PF2309K126NI | Document feeder assembly (3 of 5) on page 751 |
| ASY-NS-SCR00017 | IR4068K337NI | Scanner assembly (5 of 6) on page 743 |
| ASY-NS-SCR00023B | IR4068K338NI | Scanner assembly (2 of 6) on page 737 |
| ASY-NS-SCR00027 | IR4068K344NI | Scanner assembly (2 of 6) on page 737 |
| ASY-NS-SCR00063 | IR4068K339NI | Document feeder assembly (2 of 5) on page 749 |
| ASY-PBA-RELAY-SP | PF2309K118NI | Document feeder assembly (2 of 5) on page 749 |
| ASY-ROL-FE-FEED-SP | PF2309K131NI | Document feeder assembly (5 of 5) on page 755 |
| ASY-SCR-5-4-DAN-SP | PF2309K113NI | Document feeder assembly (1 of 5) on page 747 |
| ASY-SCR03T100PLA-SP | PF2309K115NI | Document feeder assembly (1 of 5) on page 747 |
| ASY-SCR04T100PLA-SP | PF2309K108NI | Document feeder assembly (1 of 5) on page 747 |
| ASY-SG2481-NY-SP | PF2309K122NI | Document feeder assembly (3 of 5) on page 751 |

**Table 4-47 Alphabetical parts list (continued)**

| Description | Part number | Table and page |
|---|---|---|
| ASY-SP-REV-SPR (spring) | PF2309K135NI | Document feeder assembly (4 of 5) on page 753 |
| ASY-TFB-2024RS | PF2309K112NI | Document feeder assembly (1 of 5) on page 747 |
| ASY-TFT-152613N-SP | PF2309K111NI | Document feeder assembly (1 of 5) on page 747 |
| ASY-TRY-F-BASE-SP | CC419-67903 | Document feeder assembly (1 of 5) on page 747 |
| ASY-TRY-SP | PF2309K106NI | Document feeder assembly (1 of 5) on page 747 |
| Bin sensor PCA (SSMBM) | RM1-5894-000CN | PCAs (SSMBM) on page 714 |
| Bin solenoid assembly (SSMBM) | RM1-5896-000CN | Main body (SSMBM; 2 of 2) on page 712 |
| Bushing | RC2-9719-000CN | Internal components (2 of 7) on page 675 |
| Bushing | RC2-4470-000CN | Internal components (2 of 7) on page 675 |
| Cable cover assembly | RM1-6695-000CN | Internal components (5 of 7) on page 681 |
| Cable, fan | RM1-5821-000CN | Internal components 6 of 7 on page 683 |
| Cable, flat flexable (FFC) | RK2-2604-000CN | Internal components 7 of 7 on page 685 |
| Cable, flexible flat, H.V.T. | RK2-2603-000CN | Internal components 7 of 7 on page 685 |
| Cartridge fan | RK2-2418-000CN | Internal components 6 of 7 on page 683 |
| Cartridge fan assembly | RM1-5589-000CN | Internal components (4 of 7) on page 679 |
| Cassette | RM1-5928-000CN | Cassette on page 687 |
| Cassette (1x500-SPF) | RM1-5928-000CN | Main body (1x500-SPF) on page 720 |
| Cassette (1x500PF and 3x500PF) | RM1-5928-000CN | Paper feeders on page 723 |
| Cassette guide assembly (jam access) | RM1-5504-000CN | Internal components (5 of 7) on page 681 |
| Cassette rail left assembly | RM1-6196-000CN | Internal components (3 of 7) on page 677 |
| Cassette rail right assembly | RM1-6195-000CN | Internal components (3 of 7) on page 677 |

**Table 4-47 Alphabetical parts list (continued)**

| Description | Part number | Table and page |
|---|---|---|
| Connecting cable assembly | RM1-5799-000CN | Internal components 7 of 7 on page 685 |
| Contact assembly | RM1-5502-000CN | Internal components 7 of 7 on page 685 |
| Cover | RC2-4403-000CN | Internal components (2 of 7) on page 675 |
| Cover | RC2-5962-000CN | Internal components (2 of 7) on page 675 |
| Cover | RC2-4467-000CN | Internal components (3 of 7) on page 677 |
| Cover, duplexing gear | RC2-4664-000CN | Internal components (1 of 7) on page 673 |
| Cover, fan | RC2-4288-000CN | External covers, panels, and doors; on page 667 |
| Cover, front (SSMBM) | RC2-5571-000CN | External covers, panels, and doors (SSMBM) on page 706 |
| Cover, front upper (1x500-SPF) | RC2-5395-000CN | Paper feeders on page 718 |
| Cover, handle, left (1x500-SPF) | RC3-1315-000CN | Paper feeders on page 718 |
| Cover, handle, right (1x500-SPF) | RC3-1317-000CN | Paper feeders on page 718 |
| Cover, high voltage | RC2-4662-000CN | Internal components (1 of 7) on page 673 |
| Cover, inner | RM1-5520-000CN | External covers, panels, and doors; on page 667 |
| Cover, inner | RC2-3981-000CN | Internal components (5 of 7) on page 681 |
| Cover, intermediate assembly | RM1-5645-000CN | External covers, panels, and doors; on page 667 |
| Cover, left (1x500-SPF) | RC3-1314-000CN | Paper feeders on page 718 |
| Cover, left (1x500PF and 3x500PF) | RC2-5393-000CN | External covers, panels, and doors (1x500PF and 3x500PF) on page 725 |
| Cover, left lower | RC2-4300-000CN | External covers, panels, and doors; on page 667 |
| Cover, left rear | RC2-8213-000CN | External covers, panels, and doors; on page 667 |
| Cover, M.P. crossmember F | RC2-9189-000CN | Internal components (5 of 7) on page 681 |
| Cover, M.P. crossmember R | RC2-4747-000CN | Right door assembly on page 669 |

**Table 4-47 Alphabetical parts list (continued)**

| Description | Part number | Table and page |
|---|---|---|
| Cover, rear (1x500-SPF) | RC3-1319-000CN | Paper feeders on page 718 |
| Cover, rear (1x500PF and 3x500PF) | RC2-5379-000CN | External covers, panels, and doors (1x500PF and 3x500PF) on page 725 |
| Cover, rear (SSMBM) | RC2-5572-000CN | External covers, panels, and doors (SSMBM) on page 706 |
| Cover, rear lower (1x500PF and 3x500PF) | RC2-5378-000CN | External covers, panels, and doors (1x500PF and 3x500PF) on page 725 |
| Cover, right (1x500-SPF) | RC3-1316-000CN | Paper feeders on page 718 |
| Cover, right center (1x500PF and 3x500PF) | RC2-5394-000CN | External covers, panels, and doors (1x500PF and 3x500PF) on page 725 |
| Cover, right front | RC2-4287-000CN | External covers, panels, and doors; on page 667 |
| Cover, right front (1x500-SPF) | RC3-1318-000CN | Paper feeders on page 718 |
| Cover, right front, (1x500PF) | RC2-5356-000CN | External covers, panels, and doors (1x500PF and 3x500PF) on page 725 |
| Cover, right front, (3x500PF) | RC2-5357-000CN | External covers, panels, and doors (1x500PF and 3x500PF) on page 725 |
| Cover, right rear | RC2-4273-000CN | External covers, panels, and doors; on page 667 |
| Cover, right rear (1x500PF and 3x500PF) | RC2-5380-000CN | External covers, panels, and doors (1x500PF and 3x500PF) on page 725 |
| Cover, roller | RC2-4483-000CN | Internal components (5 of 7) on page 681 |
| Crg. Guide lower assembly | RM1-5486-000CN | Internal components (2 of 7) on page 675 |
| DC cable assembly | RM1-5827-000CN | Internal components (1 of 7) on page 673 |
| DC controller PCA assembly | RM1-5758-000CN | PCAs on page 703 |
| Delivery assembly | RM1-5615-000CN | Delivery assembly on page 699 |
| Density detect assembly | RM1-5641-000CN | Internal components (5 of 7) on page 681 |
| Developing disengaging motor | RK2-2415-000CN | Internal components 6 of 7 on page 683 |

**Table 4-47 Alphabetical parts list (continued)**

| Description | Part number | Table and page |
|---|---|---|
| Document feeder complete assembly | PF2309-SVPNI | Document feeder/scanner assemblies on page 731 |
| Door, stock, (1x500PF) | RC2-5377-000CN | External covers, panels, and doors (1x500PF and 3x500PF) on page 725 |
| Duplex registration assembly kit (includes instructions) | CC493-67917 | Registration assembly on page 693 |
| Duplexing cable assembly, duplex | RM1-5803-000CN | Internal components 7 of 7 on page 685 |
| Duplexing drive assembly | RM1-4973-000CN | Internal components 6 of 7 on page 683 |
| Fan | RK2-2575-000CN | Internal components (1 of 7) on page 673 |
| Fan | RK2-2577-000CN | Internal components 7 of 7 on page 685 |
| Feed cable assembly | RM1-5804-000CN | Internal components 7 of 7 on page 685 |
| Feeder PCA (1x500-SPF) | RM1-5854-000CN | Main body (1x500-SPF) on page 720 |
| Feeder PCA assembly (1x500PF) | RM1-5854-000CN | Main body (1x500PF) on page 727 |
| Feeder PCA assembly (3x500PF) | RM1-5958-000CN | Main body (3x500PF) on page 729 |
| Flapper guide assembly (SSMBM) | RM1-5153-000CN | Main body (SSMBM; 2 of 2) on page 712 |
| Flexible flat cable assembly (includes two FFCs; DCC to laser/scanner) | RM1-5498-000CN | Internal components 6 of 7 on page 683 |
| Formatter assembly kit (exchange; includes instructions) | CE871-69001 | PCAs on page 703 |
| Front door assembly | RM1-5612-000CN | Front door assembly on page 671 |
| Front inner cover lower assembly | RM1-5598-000CN | Internal components (3 of 7) on page 677 |
| Front inner cover upper assembly | RM1-5495-000CN | Internal components (3 of 7) on page 677 |
| Front light guide assembly | RM1-5492-000CN | Internal components (4 of 7) on page 679 |
| Fuser 110 V assembly kit (includes instructions) | CC493-67911 | Fuser assembly on page 701 |
| Fuser 220 V assembly kit (includes instructions) | CC493-67912 | Fuser assembly on page 701 |
| Fuser drive assembly, duplex | RM1-5656-000CN | Internal components 6 of 7 on page 683 |

**Table 4-47 Alphabetical parts list (continued)**

| Description | Part number | Table and page |
|---|---|---|
| Fuser motor assembly | RM1-4983-000CN | Internal components 6 of 7 on page 683 |
| Grip, left front | RC2-4268-000CN | External covers, panels, and doors; on page 667 |
| Grip, left rear | RC2-4269-000CN | External covers, panels, and doors; on page 667 |
| Guide | RC2-4527-000CN | Internal components (5 of 7) on page 681 |
| Guide, cassette option | RC2-4741-000CN | Internal components (5 of 7) on page 681 |
| Guide, crossmember cable, upper | RC2-8206-000CN | Internal components (1 of 7) on page 673 |
| Guide, interlock cable | RC2-4632-000CN | Internal components (1 of 7) on page 673 |
| H.V. power supply cable assembly | RM1-5724-000CN | Internal components 7 of 7 on page 685 |
| High voltage holder assembly | RM1-6694-000CN | Internal components (3 of 7) on page 677 |
| High voltage power supply PCA, lower (includes FFC; DCC to HVPS lower) | RM1-5779-000CN | PCAs on page 703 |
| High voltage power supply, upper | RM1-5781-000CN | PCAs on page 703 |
| Hinge, front door | RC2-4291-000CN | Internal components (3 of 7) on page 677 |
| Hinge, front door | RC2-4292-000CN | Internal components (3 of 7) on page 677 |
| Holder, connector (SSMBM) | RC2-5625-000CN | External covers, panels, and doors (SSMBM) on page 706 |
| Holder, door handle, right | RC2-4661-000CN | Internal components (1 of 7) on page 673 |
| Holder, duct cable | RM1-5601-000CN | Internal components (5 of 7) on page 681 |
| Holder, exhaust fan | RC2-4665-000CN | Internal components (1 of 7) on page 673 |
| Holder, paper pickup connector | RC2-4044-000CN | Internal components 6 of 7 on page 683 |
| Holder, sensor | RC2-4369-000CN | Internal components (3 of 7) on page 677 |
| Image scanner CN cover assembly | RM1-5646-000CN | Internal components (1 of 7) on page 673 |
| Image scanner power supply assembly | RM1-5619-000CN | PCAs on page 703 |

**Table 4-47 Alphabetical parts list (continued)**

| Description | Part number | Table and page |
|---|---|---|
| Inner connecting board (ICB) assembly | RM1-5544-020CN | PCAs on page 703 |
| Interlock assembly | RM1-5496-000CN | Internal components (3 of 7) on page 677 |
| Interlock switch cable assembly | RM1-5832-000CN | Internal components 7 of 7 on page 685 |
| Intermediate paper transfer unit (IPTU) | RM1-5621-000CN | Intermediate paper transfer unit (IPTU) on page 697 |
| IPTU inner cover assembly | RL1-2181-000CN | Internal components (1 of 7) on page 673 |
| ITB motor assembly | RM1-5777-000CN | Internal components 6 of 7 on page 683 |
| Jog assembly (SSMBM) | RM1-5155-000CN | Main body (SSMBM; 2 of 2) on page 712 |
| Laser scanner kit (includes instructions and one scanner assembly) | CC493-67914 | Internal components (4 of 7) on page 679 |
| Lever, CRG. lock | RC2-3986-000CN | Internal components (2 of 7) on page 675 |
| Lever, crg. pressure, front | RC2-3983-020CN | Internal components (3 of 7) on page 677 |
| Lever, release | RC2-4644-000CN | Internal components (1 of 7) on page 673 |
| Lever, shutter | RC2-4415-000CN | Internal components (3 of 7) on page 677 |
| Lift tray assembly (SSMBM) | RM1-5156-000CN | Main body (SSMBM; 2 of 2) on page 712 |
| Lifter assembly | RM1-5914-000CN | Internal components 6 of 7 on page 683 |
| Lifter assembly (1x500-SPF) | RM1-5914-000CN | Main body (1x500-SPF) on page 720 |
| Lifter assembly (1x500PF) | RM1-5914-000CN | Main body (1x500PF) on page 727 |
| Lifter assembly (3x500PF) | RM1-5914-000CN | Main body (3x500PF) on page 729 |
| Lifter base assembly | RM1-5913-000CN | Internal components (2 of 7) on page 675 |
| Lifter base assembly (1x500-SPF) | RM1-5913-000CN | Main body (1x500-SPF) on page 720 |
| Lifter base assembly (1x500PF) | RM1-5913-000CN | Main body (1x500PF) on page 727 |

**Table 4-47 Alphabetical parts list (continued)**

| Description | Part number | Table and page |
|---|---|---|
| Lifter base assembly (3x500PF) | RM1-5913-000CN | Main body (3x500PF) on page 729 |
| Link, right door | RC2-4726-000CN | Internal components (5 of 7) on page 681 |
| Low voltage power supply PCA assembly, 110V | RM1-5763-000CN | PCAs on page 703 |
| Low voltage power supply PCA assembly, 220V | RM1-5764-000CN | PCAs on page 703 |
| Lower main cable assembly | RM1-5801-000CN | Internal components 7 of 7 on page 685 |
| Main DC motor assembly | RM1-5521-000CN | Internal components 6 of 7 on page 683 |
| Main drive kit (includes instructions) | CC493-67915 | Internal components 6 of 7 on page 683 |
| MBM bin assembly (SSMBM) | RM1-6670-000CN | Main body (SSMBM; 2 of 2) on page 712 |
| MBM driver PCA (SSMBM) | RM1-5168-000CN | PCAs (SSMBM) on page 714 |
| MBM flapper assembly (SSMBM) | RM1-5157-000CN | Main body (SSMBM; 2 of 2) on page 712 |
| Output bezel kit | CC419-67904 | External covers, panels, and doors; on page 667 |
| Output bin, left paper delivery assembly | RM1-5632-000CN | External covers, panels, and doors; on page 667 |
| Panel, stacking (SSMBM) | RL1-1984-000CN | External covers, panels, and doors (SSMBM) on page 706 |
| Paper feed roller | RM1-0037-020CN | Paper pickup assembly on page 689 |
| Paper feed roller assembly | RM1-5525-000CN | Internal components (5 of 7) on page 681 |
| Paper pickup assembly | RM1-5919-000CN | Paper pickup assembly on page 689 |
| Paper pickup assembly (1x500-SPF) | RM1-5929-000CN | Main body (1x500-SPF) on page 720 |
| Paper pickup assembly (1x500PF) | RM1-5929-000CN | Main body (1x500PF) on page 727 |
| Paper pickup assembly (3x500PF) | RM1-5929-000CN | Main body (3x500PF) on page 729 |
| Paper pickup drive assembly | RM1-5549-000CN | Internal components 6 of 7 on page 683 |
| Paper pickup drive assembly (1x500-SPF) | RM1-5934-000CN | Main body (1x500-SPF) on page 720 |

**Table 4-47 Alphabetical parts list (continued)**

| Description | Part number | Table and page |
|---|---|---|
| Paper pickup drive assembly (1x500PF) | RM1-5934-000CN | Main body (1x500PF) on page 727 |
| Paper pickup drive assembly (3x500PF) | RM1-5935-000CN | Main body (3x500PF) on page 729 |
| Photo interrupter | WG8-5696-000CN | Internal components (3 of 7) on page 677 |
| Pickup roller (Tray 1) kit (includes instructions | CC493-67906 | Tray 1 paper pickup assembly on page 691 |
| Position detect assembly | RM1-5604-000CN | Internal components (4 of 7) on page 679 |
| Power switch assembly | RM1-5582-000CN | Internal components (3 of 7) on page 677 |
| Rear cover assembly | RM1-5613-000CN | External covers, panels, and doors; on page 667 |
| Repair transfer kit (includes instructions, ITB, and secondary transfer roller) | CC493-67909 | Internal components (4 of 7) on page 679 |
| Right door assembly | RM1-5509-000CN | Right door assembly on page 669 |
| Right door assembly (1x500PF) | RM1-5936-000CN | External covers, panels, and doors (1x500PF and 3x500PF) on page 725 |
| Right door assembly (3x500PF) | RM1-5937-000CN | External covers, panels, and doors (1x500PF and 3x500PF) on page 725 |
| Right handle cover assembly | RM1-5507-000CN | External covers, panels, and doors; on page 667 |
| Roller, paper pickup | RL1-2099-000CN | Paper pickup assembly on page 689 |
| S-ASM-ICB-COR (scanner cable) | IR4068K320NI | Document feeder/scanner assemblies on page 731 |
| S-ASM-USB (control panel USB cable) | IR4068K301NI | Scanner assembly (1 of 6) on page 735 |
| S-ASSY-CP-ADAPTER | IR4068K316NI | Scanner assembly (6 of 6) on page 745 |
| S-ASSY-INV | IR4068K306NI | Scanner assembly (2 of 6) on page 737 |
| S-ASSY-MOTOR-UNIT | IR4068K309NI | Scanner assembly (3 of 6) on page 739 |
| S-ASSY-UPPER-UNIT (includes scanner glass) | IR4068K315NI | Scanner assembly (5 of 6) on page 743 |

**Table 4-47 Alphabetical parts list (continued)**

| Description | Part number | Table and page |
|---|---|---|
| S-CVR-FAN | IR4068K314NI | Scanner assembly (4 of 6) on page 741 |
| S-CVR-LEFT | IR4068K322NI | Document feeder/scanner assemblies on page 731 |
| S-CVR-REAR | IR4068K321NI | Document feeder/scanner assemblies on page 731 |
| S-FAN-D06037600G-01 | IR4068K311NI | Scanner assembly (3 of 6) on page 739 |
| S-FAN-MFB30E-05A-006 | IR4068K304NI | Scanner inverter assembly on page 733 |
| S-FLTR-IN | IR4068K313NI | Scanner assembly (4 of 6) on page 741 |
| S-HNG-LIFT-R | IR4068K302NI | Scanner assembly (1 of 6) on page 735 |
| S-K-CBP-INV-FFC | IR4068K303NI | Scanner inverter assembly on page 733 |
| S-PBA-TYUKEI | IR4068K307NI | Scanner assembly (2 of 6) on page 737 |
| S-SFT-STP-HNG (hinge screw) | IR4068K319NI | Document feeder/scanner assemblies on page 731 |
| S-SNS-EY3A-1061-2 | IR4068K305NI | Scanner assembly (2 of 6) on page 737 |
| S-SP-GND-PLT-LIFT-L | IR4068K345NI | Scanner assembly (5 of 6) on page 743 |
| S-SP-GND-SFT-R | IR4068K310NI | Scanner assembly (3 of 6) on page 739 |
| Scan control board (SCB), S-PBA-SCB | IR4068K312NI | Scanner assembly (4 of 6) on page 741 |
| Scanner assembly (includes SCB and control panel adapter) | IR4068-SVPNI | Document feeder/scanner assemblies on page 731 |
| Scanner inverter assembly | IR4068K306NI | Scanner inverter assembly on page 733 |
| Scissors hinge assembly, left | RM1-5616-000CN | Internal components (1 of 7) on page 673 |
| Scissors hinge assembly, right | RM1-5614-000CN | Internal components (1 of 7) on page 673 |
| Secondary transfer assembly, duplex kit (includes instructions, and shaft-support clip; RC2-4162-000CN) | CC492-67901 | Secondary transfer assembly on page 695 |
| Secondary transfer roller assembly kit (includes instructions) | CC493-67908 | Secondary transfer assembly on page 695 |

**Table 4-47 Alphabetical parts list (continued)**

| Description | Part number | Table and page |
|---|---|---|
| Sensor cable assembly | RM1-5815-000CN | Internal components 7 of 7 on page 685 |
| Separation pad (Tray 1) | RL1-1937-000CN | Tray 1 paper pickup assembly on page 691 |
| Shaft support (included in secondary transfer kit; see Figure 4–15) | RC2-4162-000CN | Internal components (5 of 7) on page 681 |
| Shutter arm assembly | RM1-5585-000CN | Internal components (2 of 7) on page 675 |
| Shutter arm assembly | RM1-5586-000CN | Internal components (2 of 7) on page 675 |
| Shutter assembly | RM1-5488-000CN | Internal components (2 of 7) on page 675 |
| Shutter assembly | RM1-5489-000CN | Internal components (2 of 7) on page 675 |
| Spacer | RC2-4514-000CN | Internal components (5 of 7) on page 681 |
| Spring, compression | RU6-2316-000CN | Internal components (3 of 7) on page 677 |
| Spring, grounding | RC2-4469-000CN | Internal components (2 of 7) on page 675 |
| Spring, grounding | RU6-2237-000CN | Internal components (3 of 7) on page 677 |
| Spring, tension | RU6-2236-000CN | Internal components (3 of 7) on page 677 |
| Spring, tension | RU6-2235-000CN | Internal components (4 of 7) on page 679 |
| Spring, tension | RU6-2468-000CN | Internal components 6 of 7 on page 683 |
| Spring, torsion | RC2-4645-000CN | Internal components (1 of 7) on page 673 |
| Spring, torsion | RU6-2247-000CN | Internal components (2 of 7) on page 675 |
| Stamp solenoid assembly (SSMBM) | RM1-6664-000CN | Main body (SSMBM; 1 of 2) on page 710 |
| Stand, scissors hinge, left | RC2-4642-000CN | Internal components (1 of 7) on page 673 |
| Stand, scissors hinge, right | RC2-4646-000CN | Internal components (1 of 7) on page 673 |
| Stapler assembly (SSMBM) | RM1-5166-000CN | Main body (SSMBM; 2 of 2) on page 712 |

**Table 4-47 Alphabetical parts list (continued)**

| Description | Part number | Table and page |
|---|---|---|
| Stopper, tray (SSMBM) | RC2-5576-000CN | External covers, panels, and doors (SSMBM) on page 706 |
| Sub controller cable assembly | RM1-5826-000CN | Internal components 7 of 7 on page 685 |
| Sub PS AD cable assembly | RM1-5825-000CN | Internal components 7 of 7 on page 685 |
| Switch | WC4-5303-000CN | Internal components (3 of 7) on page 677 |
| Switch cable assembly | RM1-5807-000CN | Internal components 7 of 7 on page 685 |
| Switch, push | WC2-5637-000CN | Internal components (3 of 7) on page 677 |
| Switch, push | WC2-5637-000CN | Internal components 7 of 7 on page 685 |
| Toner collection unit (TCU) kit (includes instructions and wipe) | CC493-67913 | Internal components (3 of 7) on page 677 |
| Toner remain PCA assembly | RM1-5771-020CN | PCAs on page 703 |
| Top cover assembly (SSMBM) | RM1-6669-000CN | External covers, panels, and doors (SSMBM) on page 706 |
| Top door assembly (SSMBM) | RM1-5160-000CN | Top door assembly (SSMBM) on page 708 |
| Tray assembly (SSMBM) | RM1-5161-000CN | External covers, panels, and doors (SSMBM) on page 706 |
| Tray, waste toner catch | RC2-4218-000CN | Internal components (2 of 7) on page 675 |
| Waste toner detect assembly | RM1-5545-000CN | Internal components (3 of 7) on page 677 |
| Waste toner duct assembly | RM1-5519-000CN | Internal components (3 of 7) on page 677 |
| Waste toner motor assembly | RM1-5605-000CN | Internal components (4 of 7) on page 679 |
| Waste toner paper feed assembly | RM1-5584-000CN | Internal components (3 of 7) on page 677 |

# Numerical parts list

**Table 4-48 Numerical parts list**

| Part number | Description | Table and page |
|---|---|---|
| CC419-67903 | ASY-TRY-F-BASE-SP | Document feeder assembly (1 of 5) on page 747 |
| CC419-67904 | Output bezel kit | External covers, panels, and doors; on page 667 |
| CC492-67901 | Secondary transfer assembly, duplex kit (includes instructions, and shaft-support clip; RC2-4162-000CN) | Secondary transfer assembly on page 695 |
| CC493-67906 | Pickup roller (Tray 1) kit (includes instructions | Tray 1 paper pickup assembly on page 691 |
| CC493-67908 | Secondary transfer roller assembly kit (includes instructions) | Secondary transfer assembly on page 695 |
| CC493-67909 | Repair transfer kit (includes instructions, ITB, and secondary transfer roller) | Internal components (4 of 7) on page 679 |
| CC493-67911 | Fuser 110 V assembly kit (includes instructions) | Fuser assembly on page 701 |
| CC493-67912 | Fuser 220 V assembly kit (includes instructions) | Fuser assembly on page 701 |
| CC493-67913 | Toner collection unit (TCU) kit (includes instructions and wipe) | Internal components (3 of 7) on page 677 |
| CC493-67914 | Laser scanner kit (includes instructions and one scanner assembly) | Internal components (4 of 7) on page 679 |
| CC493-67915 | Main drive kit (includes instructions) | Internal components 6 of 7 on page 683 |
| CC493-67917 | Duplex registration assembly kit (includes instructions) | Registration assembly on page 693 |
| CE871-69001 | Formatter assembly kit (exchange; includes instructions) | PCAs on page 703 |
| IR4068-SVPNI | Scanner assembly (includes SCB and control panel adapter) | Document feeder/scanner assemblies on page 731 |
| IR4068K126NI | ASSY-SP-GUIDE-HINGE | Scanner assembly (1 of 6) on page 735 |
| IR4068K200NI | ASSY-CRG-UNIT-IR4068 | Scanner assembly (3 of 6) on page 739 |
| IR4068K301NI | S-ASM-USB (control panel USB cable) | Scanner assembly (1 of 6) on page 735 |
| IR4068K302NI | S-HNG-LIFT-R | Scanner assembly (1 of 6) on page 735 |
| IR4068K303NI | S-K-CBP-INV-FFC | Scanner inverter assembly on page 733 |
| IR4068K304NI | S-FAN-MFB30E-05A-006 | Scanner inverter assembly on page 733 |

**Table 4-48 Numerical parts list (continued)**

| Part number | Description | Table and page |
|---|---|---|
| IR4068K305NI | S-SNS-EY3A-1061-2 | Scanner assembly (2 of 6) on page 737 |
| IR4068K306NI | Scanner inverter assembly | Scanner inverter assembly on page 733 |
| IR4068K306NI | S-ASSY-INV | Scanner assembly (2 of 6) on page 737 |
| IR4068K307NI | S-PBA-TYUKEI | Scanner assembly (2 of 6) on page 737 |
| IR4068K309NI | S-ASSY-MOTOR-UNIT | Scanner assembly (3 of 6) on page 739 |
| IR4068K310NI | S-SP-GND-SFT-R | Scanner assembly (3 of 6) on page 739 |
| IR4068K311NI | S-FAN-D06037600G-01 | Scanner assembly (3 of 6) on page 739 |
| IR4068K312NI | Scan control board (SCB), S-PBA-SCB | Scanner assembly (4 of 6) on page 741 |
| IR4068K313NI | S-FLTR-IN | Scanner assembly (4 of 6) on page 741 |
| IR4068K314NI | S-CVR-FAN | Scanner assembly (4 of 6) on page 741 |
| IR4068K315NI | S-ASSY-UPPER-UNIT (includes scanner glass) | Scanner assembly (5 of 6) on page 743 |
| IR4068K316NI | S-ASSY-CP-ADAPTER | Scanner assembly (6 of 6) on page 745 |
| IR4068K319NI | S-SFT-STP-HNG (hinge screw) | Document feeder/scanner assemblies on page 731 |
| IR4068K320NI | S-ASM-ICB-COR (scanner cable) | Document feeder/scanner assemblies on page 731 |
| IR4068K321NI | S-CVR-REAR | Document feeder/scanner assemblies on page 731 |
| IR4068K322NI | S-CVR-LEFT | Document feeder/scanner assemblies on page 731 |
| IR4068K331NI | ASY-030060FDIT | Document feeder assembly (3 of 5) on page 751 |
| IR4068K332NI | ASY-030060FNTP | Document feeder assembly (1 of 5) on page 747 |
| IR4068K333NI | ASY-030060FNTW | Scanner assembly (3 of 6) on page 739 |
| IR4068K334NI | ASY-030080FNTP | Scanner assembly (1 of 6) on page 735 |

**Table 4-48 Numerical parts list (continued)**

| Part number | Description | Table and page |
|---|---|---|
| IR4068K335NI | ASY-030080FNTW | Scanner assembly (3 of 6) on page 739 |
| IR4068K336NI | ASY-040200FNWS | Document feeder assembly (3 of 5) on page 751 |
| IR4068K337NI | ASY-NS-SCR00017 | Scanner assembly (5 of 6) on page 743 |
| IR4068K338NI | ASY-NS-SCR00023B | Scanner assembly (2 of 6) on page 737 |
| IR4068K339NI | ASY-NS-SCR00063 | Document feeder assembly (2 of 5) on page 749 |
| IR4068K340NI | ASY-030120FWWS | Scanner inverter assembly on page 733 |
| IR4068K341NI | ASY-030060NIT | Scanner inverter assembly on page 733 |
| IR4068K342NI | ASY-040100FNBB | Scanner assembly (1 of 6) on page 735 |
| IR4068K343NI | ASY-IR4041P021 | Scanner assembly (3 of 6) on page 739 |
| IR4068K344NI | ASY-NS-SCR00027 | Scanner assembly (2 of 6) on page 737 |
| IR4068K345NI | S-SP-GND-PLT-LIFT-L | Scanner assembly (5 of 6) on page 743 |
| PF2309-SVPNI | Document feeder complete assembly | Document feeder/scanner assemblies on page 731 |
| PF2309K102NI | ASY-BASE-SP | Document feeder assembly (1 of 5) on page 747 |
| PF2309K103NI | ASY-FRM-RE-FEED-SP | Document feeder assembly (1 of 5) on page 747 |
| PF2309K104NI | ASY-HNG-L-SP | Document feeder assembly (1 of 5) on page 747 |
| PF2309K105NI | ASY-CVR-FE-FEED-SP | Document feeder assembly (1 of 5) on page 747 |
| PF2309K106NI | ASY-TRY-SP | Document feeder assembly (1 of 5) on page 747 |
| PF2309K107NI | ASY-CVR-F-SP | Document feeder assembly (1 of 5) on page 747 |
| PF2309K108NI | ASY-SCR04T100PLA-SP | Document feeder assembly (1 of 5) on page 747 |
| PF2309K110NI | ASM-IF-SP | Document feeder assembly (1 of 5) on page 747 |

**Table 4-48 Numerical parts list (continued)**

| Part number | Description | Table and page |
|---|---|---|
| PF2309K111NI | ASY-TFT-152613N-SP | Document feeder assembly (1 of 5) on page 747 |
| PF2309K112NI | ASY-TFB-2024RS | Document feeder assembly (1 of 5) on page 747 |
| PF2309K113NI | ASY-SCR-5-4-DAN-SP | Document feeder assembly (1 of 5) on page 747 |
| PF2309K114NI | ASY-CVR-F-R-SP | Document feeder assembly (1 of 5) on page 747 |
| PF2309K115NI | ASY-SCR03T100PLA-SP | Document feeder assembly (1 of 5) on page 747 |
| PF2309K118NI | ASY-PBA-RELAY-SP | Document feeder assembly (2 of 5) on page 749 |
| PF2309K119NI | ASY-HNG-R-SP | Document feeder assembly (2 of 5) on page 749 |
| PF2309K121NI | ASY-DFSENS-SP | Document feeder assembly (2 of 5) on page 749 |
| PF2309K122NI | ASY-SG2481-NY-SP | Document feeder assembly (3 of 5) on page 751 |
| PF2309K125NI | ASY-MOT-FE-SP | Document feeder assembly (3 of 5) on page 751 |
| PF2309K126NI | ASY-MOT-RE-SP | Document feeder assembly (3 of 5) on page 751 |
| PF2309K127NI | ASY-FAN-SP | Document feeder assembly (3 of 5) on page 751 |
| PF2309K129NI | ASY-GIDREV-SPR-SP | Document feeder assembly (3 of 5) on page 751 |
| PF2309K130NI | ASY-LVR-FE-EMP-SP | Document feeder assembly (5 of 5) on page 755 |
| PF2309K131NI | ASY-ROL-FE-FEED-SP | Document feeder assembly (5 of 5) on page 755 |
| PF2309K132NI | ASY-CVR-FE-PICK-SP | Document feeder assembly (5 of 5) on page 755 |
| PF2309K133NI | ASY-HLD-REV-PAD-SP | Document feeder assembly (4 of 5) on page 753 |
| PF2309K135NI | ASY-SP-REV-SPR (spring) | Document feeder assembly (4 of 5) on page 753 |
| RC2-3981-000CN | Cover, inner | Internal components (5 of 7) on page 681 |
| RC2-3983-020CN | Lever, crg. pressure, front | Internal components (3 of 7) on page 677 |

**Table 4-48 Numerical parts list (continued)**

| Part number | Description | Table and page |
|---|---|---|
| RC2-3986-000CN | Lever, CRG. lock | Internal components (2 of 7) on page 675 |
| RC2-4044-000CN | Holder, paper pickup connector | Internal components 6 of 7 on page 683 |
| RC2-4055-000CN | Arm, door link supporting, right | Internal components (5 of 7) on page 681 |
| RC2-4162-000CN | Shaft support (included in secondary transfer kit; see Figure 4–15) | Internal components (5 of 7) on page 681 |
| RC2-4218-000CN | Tray, waste toner catch | Internal components (2 of 7) on page 675 |
| RC2-4268-000CN | Grip, left front | External covers, panels, and doors; on page 667 |
| RC2-4269-000CN | Grip, left rear | External covers, panels, and doors; on page 667 |
| RC2-4273-000CN | Cover, right rear | External covers, panels, and doors; on page 667 |
| RC2-4287-000CN | Cover, right front | External covers, panels, and doors; on page 667 |
| RC2-4288-000CN | Cover, fan | External covers, panels, and doors; on page 667 |
| RC2-4291-000CN | Hinge, front door | Internal components (3 of 7) on page 677 |
| RC2-4292-000CN | Hinge, front door | Internal components (3 of 7) on page 677 |
| RC2-4300-000CN | Cover, left lower | External covers, panels, and doors; on page 667 |
| RC2-4369-000CN | Holder, sensor | Internal components (3 of 7) on page 677 |
| RC2-4403-000CN | Cover | Internal components (2 of 7) on page 675 |
| RC2-4415-000CN | Lever, shutter | Internal components (3 of 7) on page 677 |
| RC2-4467-000CN | Cover | Internal components (3 of 7) on page 677 |
| RC2-4469-000CN | Spring, grounding | Internal components (2 of 7) on page 675 |
| RC2-4470-000CN | Bushing | Internal components (2 of 7) on page 675 |
| RC2-4483-000CN | Cover, roller | Internal components (5 of 7) on page 681 |

**Table 4-48 Numerical parts list (continued)**

| Part number | Description | Table and page |
|---|---|---|
| RC2-4514-000CN | Spacer | Internal components (5 of 7) on page 681 |
| RC2-4527-000CN | Guide | Internal components (5 of 7) on page 681 |
| RC2-4632-000CN | Guide, interlock cable | Internal components (1 of 7) on page 673 |
| RC2-4642-000CN | Stand, scissors hinge, left | Internal components (1 of 7) on page 673 |
| RC2-4644-000CN | Lever, release | Internal components (1 of 7) on page 673 |
| RC2-4645-000CN | Spring, torsion | Internal components (1 of 7) on page 673 |
| RC2-4646-000CN | Stand, scissors hinge, right | Internal components (1 of 7) on page 673 |
| RC2-4661-000CN | Holder, door handle, right | Internal components (1 of 7) on page 673 |
| RC2-4662-000CN | Cover, high voltage | Internal components (1 of 7) on page 673 |
| RC2-4664-000CN | Cover, duplexing gear | Internal components (1 of 7) on page 673 |
| RC2-4665-000CN | Holder, exhaust fan | Internal components (1 of 7) on page 673 |
| RC2-4726-000CN | Link, right door | Internal components (5 of 7) on page 681 |
| RC2-4741-000CN | Guide, cassette option | Internal components (5 of 7) on page 681 |
| RC2-4747-000CN | Cover, M.P. crossmember R | Right door assembly on page 669 |
| RC2-5356-000CN | Cover, right front, (1x500PF) | External covers, panels, and doors (1x500PF and 3x500PF) on page 725 |
| RC2-5357-000CN | Cover, right front, (3x500PF) | External covers, panels, and doors (1x500PF and 3x500PF) on page 725 |
| RC2-5377-000CN | Door, stock, (1x500PF) | External covers, panels, and doors (1x500PF and 3x500PF) on page 725 |
| RC2-5378-000CN | Cover, rear lower (1x500PF and 3x500PF) | External covers, panels, and doors (1x500PF and 3x500PF) on page 725 |

**Table 4-48 Numerical parts list (continued)**

| Part number | Description | Table and page |
|---|---|---|
| RC2-5379-000CN | Cover, rear (1x500PF and 3x500PF) | External covers, panels, and doors (1x500PF and 3x500PF) on page 725 |
| RC2-5380-000CN | Cover, right rear (1x500PF and 3x500PF) | External covers, panels, and doors (1x500PF and 3x500PF) on page 725 |
| RC2-5393-000CN | Cover, left (1x500PF and 3x500PF) | External covers, panels, and doors (1x500PF and 3x500PF) on page 725 |
| RC2-5394-000CN | Cover, right center (1x500PF and 3x500PF) | External covers, panels, and doors (1x500PF and 3x500PF) on page 725 |
| RC2-5395-000CN | Cover, front upper (1x500-SPF) | Paper feeders on page 718 |
| RC2-5571-000CN | Cover, front (SSMBM) | External covers, panels, and doors (SSMBM) on page 706 |
| RC2-5572-000CN | Cover, rear (SSMBM) | External covers, panels, and doors (SSMBM) on page 706 |
| RC2-5576-000CN | Stopper, tray (SSMBM) | External covers, panels, and doors (SSMBM) on page 706 |
| RC2-5625-000CN | Holder, connector (SSMBM) | External covers, panels, and doors (SSMBM) on page 706 |
| RC2-5962-000CN | Cover | Internal components (2 of 7) on page 675 |
| RC2-8206-000CN | Guide, crossmember cable, upper | Internal components (1 of 7) on page 673 |
| RC2-8213-000CN | Cover, left rear | External covers, panels, and doors; on page 667 |
| RC2-9189-000CN | Cover, M.P. crossmember F | Internal components (5 of 7) on page 681 |
| RC2-9719-000CN | Bushing | Internal components (2 of 7) on page 675 |
| RC3-1314-000CN | Cover, left (1x500-SPF) | Paper feeders on page 718 |
| RC3-1315-000CN | Cover, handle, left (1x500-SPF) | Paper feeders on page 718 |
| RC3-1316-000CN | Cover, right (1x500-SPF) | Paper feeders on page 718 |
| RC3-1317-000CN | Cover, handle, right (1x500-SPF) | Paper feeders on page 718 |
| RC3-1318-000CN | Cover, right front (1x500-SPF) | Paper feeders on page 718 |
| RC3-1319-000CN | Cover, rear (1x500-SPF) | Paper feeders on page 718 |
| RK2-2415-000CN | Developing disengaging motor | Internal components 6 of 7 on page 683 |

**Table 4-48 Numerical parts list (continued)**

| Part number | Description | Table and page |
|---|---|---|
| RK2-2418-000CN | Cartridge fan | Internal components 6 of 7 on page 683 |
| RK2-2575-000CN | Fan | Internal components (1 of 7) on page 673 |
| RK2-2577-000CN | Fan | Internal components 7 of 7 on page 685 |
| RK2-2603-000CN | Cable, flexible flat, H.V.T. | Internal components 7 of 7 on page 685 |
| RK2-2604-000CN | Cable, flat flexable (FFC) | Internal components 7 of 7 on page 685 |
| RL1-1937-000CN | Separation pad (Tray 1) | Tray 1 paper pickup assembly on page 691 |
| RL1-1984-000CN | Panel, stacking (SSMBM) | External covers, panels, and doors (SSMBM) on page 706 |
| RL1-2099-000CN | Roller, paper pickup | Paper pickup assembly on page 689 |
| RL1-2181-000CN | IPTU inner cover assembly | Internal components (1 of 7) on page 673 |
| RM1-0037-020CN | Paper feed roller | Paper pickup assembly on page 689 |
| RM1-4973-000CN | Duplexing drive assembly | Internal components 6 of 7 on page 683 |
| RM1-4983-000CN | Fuser motor assembly | Internal components 6 of 7 on page 683 |
| RM1-5153-000CN | Flapper guide assembly (SSMBM) | Main body (SSMBM; 2 of 2) on page 712 |
| RM1-5155-000CN | Jog assembly (SSMBM) | Main body (SSMBM; 2 of 2) on page 712 |
| RM1-5156-000CN | Lift tray assembly (SSMBM) | Main body (SSMBM; 2 of 2) on page 712 |
| RM1-5157-000CN | MBM flapper assembly (SSMBM) | Main body (SSMBM; 2 of 2) on page 712 |
| RM1-5160-000CN | Top door assembly (SSMBM) | Top door assembly (SSMBM) on page 708 |
| RM1-5161-000CN | Tray assembly (SSMBM) | External covers, panels, and doors (SSMBM) on page 706 |
| RM1-5166-000CN | Stapler assembly (SSMBM) | Main body (SSMBM; 2 of 2) on page 712 |
| RM1-5168-000CN | MBM driver PCA (SSMBM) | PCAs (SSMBM) on page 714 |

**Table 4-48 Numerical parts list (continued)**

| Part number | Description | Table and page |
|---|---|---|
| RM1-5486-000CN | Crg. Guide lower assembly | Internal components (2 of 7) on page 675 |
| RM1-5488-000CN | Shutter assembly | Internal components (2 of 7) on page 675 |
| RM1-5489-000CN | Shutter assembly | Internal components (2 of 7) on page 675 |
| RM1-5492-000CN | Front light guide assembly | Internal components (4 of 7) on page 679 |
| RM1-5495-000CN | Front inner cover upper assembly | Internal components (3 of 7) on page 677 |
| RM1-5496-000CN | Interlock assembly | Internal components (3 of 7) on page 677 |
| RM1-5498-000CN | Flexible flat cable assembly (includes two FFCs; DCC to laser/scanner) | Internal components 6 of 7 on page 683 |
| RM1-5502-000CN | Contact assembly | Internal components 7 of 7 on page 685 |
| RM1-5504-000CN | Cassette guide assembly (jam access) | Internal components (5 of 7) on page 681 |
| RM1-5507-000CN | Right handle cover assembly | External covers, panels, and doors; on page 667 |
| RM1-5509-000CN | Right door assembly | Right door assembly on page 669 |
| RM1-5519-000CN | Waste toner duct assembly | Internal components (3 of 7) on page 677 |
| RM1-5520-000CN | Cover, inner | External covers, panels, and doors; on page 667 |
| RM1-5521-000CN | Main DC motor assembly | Internal components 6 of 7 on page 683 |
| RM1-5525-000CN | Paper feed roller assembly | Internal components (5 of 7) on page 681 |
| RM1-5544-020CN | Inner connecting board (ICB) assembly | PCAs on page 703 |
| RM1-5545-000CN | Waste toner detect assembly | Internal components (3 of 7) on page 677 |
| RM1-5549-000CN | Paper pickup drive assembly | Internal components 6 of 7 on page 683 |
| RM1-5582-000CN | Power switch assembly | Internal components (3 of 7) on page 677 |
| RM1-5584-000CN | Waste toner paper feed assembly | Internal components (3 of 7) on page 677 |

**Table 4-48 Numerical parts list (continued)**

| Part number | Description | Table and page |
|---|---|---|
| RM1-5585-000CN | Shutter arm assembly | Internal components (2 of 7) on page 675 |
| RM1-5586-000CN | Shutter arm assembly | Internal components (2 of 7) on page 675 |
| RM1-5589-000CN | Cartridge fan assembly | Internal components (4 of 7) on page 679 |
| RM1-5598-000CN | Front inner cover lower assembly | Internal components (3 of 7) on page 677 |
| RM1-5601-000CN | Holder, duct cable | Internal components (5 of 7) on page 681 |
| RM1-5604-000CN | Position detect assembly | Internal components (4 of 7) on page 679 |
| RM1-5605-000CN | Waste toner motor assembly | Internal components (4 of 7) on page 679 |
| RM1-5612-000CN | Front door assembly | Front door assembly on page 671 |
| RM1-5613-000CN | Rear cover assembly | External covers, panels, and doors; on page 667 |
| RM1-5614-000CN | Scissors hinge assembly, right | Internal components (1 of 7) on page 673 |
| RM1-5615-000CN | Delivery assembly | Delivery assembly on page 699 |
| RM1-5616-000CN | Scissors hinge assembly, left | Internal components (1 of 7) on page 673 |
| RM1-5619-000CN | Image scanner power supply assembly | PCAs on page 703 |
| RM1-5621-000CN | Intermediate paper transfer unit (IPTU) | Intermediate paper transfer unit (IPTU) on page 697 |
| RM1-5632-000CN | Output bin, left paper delivery assembly | External covers, panels, and doors; on page 667 |
| RM1-5641-000CN | Density detect assembly | Internal components (5 of 7) on page 681 |
| RM1-5645-000CN | Cover, intermediate assembly | External covers, panels, and doors; on page 667 |
| RM1-5646-000CN | Image scanner CN cover assembly | Internal components (1 of 7) on page 673 |
| RM1-5656-000CN | Fuser drive assembly, duplex | Internal components 6 of 7 on page 683 |
| RM1-5724-000CN | H.V. power supply cable assembly | Internal components 7 of 7 on page 685 |
| RM1-5758-000CN | DC controller PCA assembly | PCAs on page 703 |

**Table 4-48 Numerical parts list (continued)**

| Part number | Description | Table and page |
|---|---|---|
| RM1-5763-000CN | Low voltage power supply PCA assembly, 110V | PCAs on page 703 |
| RM1-5764-000CN | Low voltage power supply PCA assembly, 220V | PCAs on page 703 |
| RM1-5771-020CN | Toner remain PCA assembly | PCAs on page 703 |
| RM1-5777-000CN | ITB motor assembly | Internal components 6 of 7 on page 683 |
| RM1-5779-000CN | High voltage power supply PCA, lower (includes FFC; DCC to HVPS lower) | PCAs on page 703 |
| RM1-5781-000CN | High voltage power supply, upper | PCAs on page 703 |
| RM1-5799-000CN | Connecting cable assembly | Internal components 7 of 7 on page 685 |
| RM1-5801-000CN | Lower main cable assembly | Internal components 7 of 7 on page 685 |
| RM1-5803-000CN | Duplexing cable assembly, duplex | Internal components 7 of 7 on page 685 |
| RM1-5804-000CN | Feed cable assembly | Internal components 7 of 7 on page 685 |
| RM1-5807-000CN | Switch cable assembly | Internal components 7 of 7 on page 685 |
| RM1-5815-000CN | Sensor cable assembly | Internal components 7 of 7 on page 685 |
| RM1-5821-000CN | Cable, fan | Internal components 6 of 7 on page 683 |
| RM1-5825-000CN | Sub PS AD cable assembly | Internal components 7 of 7 on page 685 |
| RM1-5826-000CN | Sub controller cable assembly | Internal components 7 of 7 on page 685 |
| RM1-5827-000CN | DC cable assembly | Internal components (1 of 7) on page 673 |
| RM1-5832-000CN | Interlock switch cable assembly | Internal components 7 of 7 on page 685 |
| RM1-5854-000CN | Feeder PCA (1x500-SPF) | Main body (1x500-SPF) on page 720 |
| RM1-5854-000CN | Feeder PCA assembly (1x500PF) | Main body (1x500PF) on page 727 |
| RM1-5894-000CN | Bin sensor PCA (SSMBM) | PCAs (SSMBM) on page 714 |
| RM1-5896-000CN | Bin solenoid assembly (SSMBM) | Main body (SSMBM; 2 of 2) on page 712 |
| RM1-5913-000CN | Lifter base assembly | Internal components (2 of 7) on page 675 |

**Table 4-48 Numerical parts list (continued)**

| Part number | Description | Table and page |
|---|---|---|
| RM1-5913-000CN | Lifter base assembly (1x500-SPF) | Main body (1x500-SPF) on page 720 |
| RM1-5913-000CN | Lifter base assembly (1x500PF) | Main body (1x500PF) on page 727 |
| RM1-5913-000CN | Lifter base assembly (3x500PF) | Main body (3x500PF) on page 729 |
| RM1-5914-000CN | Lifter assembly | Internal components 6 of 7 on page 683 |
| RM1-5914-000CN | Lifter assembly (1x500-SPF) | Main body (1x500-SPF) on page 720 |
| RM1-5914-000CN | Lifter assembly (1x500PF) | Main body (1x500PF) on page 727 |
| RM1-5914-000CN | Lifter assembly (3x500PF) | Main body (3x500PF) on page 729 |
| RM1-5919-000CN | Paper pickup assembly | Paper pickup assembly on page 689 |
| RM1-5928-000CN | Cassette | Cassette on page 687 |
| RM1-5928-000CN | Cassette (1x500-SPF) | Main body (1x500-SPF) on page 720 |
| RM1-5928-000CN | Cassette (1x500PF and 3x500PF) | Paper feeders on page 723 |
| RM1-5929-000CN | Paper pickup assembly (1x500-SPF) | Main body (1x500-SPF) on page 720 |
| RM1-5929-000CN | Paper pickup assembly (1x500PF) | Main body (1x500PF) on page 727 |
| RM1-5929-000CN | Paper pickup assembly (3x500PF) | Main body (3x500PF) on page 729 |
| RM1-5934-000CN | Paper pickup drive assembly (1x500-SPF) | Main body (1x500-SPF) on page 720 |
| RM1-5934-000CN | Paper pickup drive assembly (1x500PF) | Main body (1x500PF) on page 727 |
| RM1-5935-000CN | Paper pickup drive assembly (3x500PF) | Main body (3x500PF) on page 729 |
| RM1-5936-000CN | Right door assembly (1x500PF) | External covers, panels, and doors (1x500PF and 3x500PF) on page 725 |
| RM1-5937-000CN | Right door assembly (3x500PF) | External covers, panels, and doors (1x500PF and 3x500PF) on page 725 |
| RM1-5958-000CN | Feeder PCA assembly (3x500PF) | Main body (3x500PF) on page 729 |

**Table 4-48 Numerical parts list (continued)**

| Part number | Description | Table and page |
|---|---|---|
| RM1-6195-000CN | Cassette rail right assembly | Internal components (3 of 7) on page 677 |
| RM1-6196-000CN | Cassette rail left assembly | Internal components (3 of 7) on page 677 |
| RM1-6664-000CN | Stamp solenoid assembly (SSMBM) | Main body (SSMBM; 1 of 2) on page 710 |
| RM1-6669-000CN | Top cover assembly (SSMBM) | External covers, panels, and doors (SSMBM) on page 706 |
| RM1-6670-000CN | MBM bin assembly (SSMBM) | Main body (SSMBM; 2 of 2) on page 712 |
| RM1-6694-000CN | High voltage holder assembly | Internal components (3 of 7) on page 677 |
| RM1-6695-000CN | Cable cover assembly | Internal components (5 of 7) on page 681 |
| RU6-2235-000CN | Spring, tension | Internal components (4 of 7) on page 679 |
| RU6-2236-000CN | Spring, tension | Internal components (3 of 7) on page 677 |
| RU6-2237-000CN | Spring, grounding | Internal components (3 of 7) on page 677 |
| RU6-2247-000CN | Spring, torsion | Internal components (2 of 7) on page 675 |
| RU6-2316-000CN | Spring, compression | Internal components (3 of 7) on page 677 |
| RU6-2468-000CN | Spring, tension | Internal components 6 of 7 on page 683 |
| WC2-5637-000CN | Switch, push | Internal components (3 of 7) on page 677 |
| WC2-5637-000CN | Switch, push | Internal components 7 of 7 on page 685 |
| WC4-5303-000CN | Switch | Internal components (3 of 7) on page 677 |
| WG8-5696-000CN | Photo interrupter | Internal components (3 of 7) on page 677 |

# A Service and support


- Hewlett-Packard limited warranty statement
- HP's Premium Protection Warranty: LaserJet print cartridge limited warranty statement
- Color LaserJet Fuser Kit, Transfer Kit, and Roller 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 Color LaserJet CM4540, CM4540f, CM4540fskm | One-year on-site warranty |

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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, Transfer Kit, and Roller 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<br><br>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/cljcm4540mfp |
| 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/cljcm4540mfp_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
- Electrical specifications
- Acoustic specifications
- Environmental specifications
- Skew specifications

# Physical specifications

**Table B-1 Product dimensions**

| Product | Height | Depth | Width | Weight |
|---|---|---|---|---|
| CM4540 MFP | 575 mm (22.6 in) | 623 mm (24.5 in) | 905 mm (35.6 in) | 54.8 kg (120.5 lb) |
| CM4540f MFP | 1119 mm (44.1 in) | 668 mm (26.3 in) | 909 mm (35.8 in) | 75.7 kg (166.5 lb) |
| CM4540fskm MFP | 1119 mm (44.1 in) | 668 mm (26.3 in) | 1072 mm (42.2 in) | 88.6 kg (195.0 lb) |

# Electrical specifications

**WARNING!** Power requirements are based on the country/region where the product is sold. Do not convert operating voltages. This can damage the product and void the product warranty.

**NOTE:** This product has an Energy Star Typical Electricity Consumption (TEC) rating of 8.062 kw-hr/week.

**Table B-2 Power requirements**

| Specification | 110-volt models | 220-volt models |
|---|---|---|
| Power requirements | 100 to 127 volts (± 10%) | 220 to 240 volts (± 10%) |
| | 50/60 Hz (± 2 Hz) | 50/60 Hz (± 2 Hz) |
| Rated current | 8.5 Amps | 4.5 Amps |

**Table B-3 Power consumption (average, in watts)[1246]**

| Product model | Printing | Ready | Sleep | Off |
|---|---|---|---|---|
| CM4540 MFP model | 780 W | 91 W | 21.5 W | 0.3 W |
| CM4540f MFP model | | | | |

1 Values subject to change. See www.hp.com/go/cljcm4540mfp_regulatory for current information.
2 Power numbers are the highest values measured using all standard voltages.
3 Default time from Ready mode to Sleep = 30 minutes.
4 Heat dissipation in Ready mode = 204.8 BTU/hour.
6 CM4540 MFP speed is 30 ppm Letter size.

# Acoustic specifications

**Table B-4 HP Color LaserJet Enterprise CM4540 MFP Series[13]**

| Sound power level | Declared per ISO 9296 |
|---|---|
| Printing | $L_{WAd}$= 7.2 Bels (A) [69 dB(A)] |
| Ready | $L_{WAd}$= 5.4 Bels (A) [50 dB(A)] |

**Table B-4 HP Color LaserJet Enterprise CM4540 MFP Series[13] (continued)**

| **Sound power level** | **Declared per ISO 9296** |
|---|---|
| **Sound pressure level - bystander position** | **Declared per ISO 9296** |
| Printing | $L_{pAm}$=54 dB (A) |
| Ready | $L_{pAm}$=39 dB (A) |

[1] Values are based on preliminary data. See www.hp.com/go/cljcm4540mfp_regulatory for current information.

[3] Configuration tested: CM4540 MFP printer printing on A4-size paper in simplex mode

# Environmental specifications

| **Environmental condition** | **Recommended** | **Allowed** |
|---|---|---|
| Temperature (product and print cartridge) | 15° to 27°C (59° to 80.6°F) | 10° to 30°C (50° to 86°F) |
| Relative humidity | 30% to 70% relative humidity (RH) | 10% to 80% RH |
| Altitude | N/A | 0 m (0 ft) to 3000 m (9842 ft) |

# Skew specifications

**Table B-5 Media registration and image placement accuracy**

| | Cut sheet simplex and automatic duplex[1] | Envelopes |
|---|---|---|
| Skew - vertical | ≤ 1.5 mm / 260 mm | ≤ 3.3 mm / 220 mm |
| First line / leading edge position | 5.0 mm ± 2.0 mm | 10.0 mm ± 3.0 mm |
| Left margin accuracy | 5.0 mm ± 2.0 mm | 10 mm ± 2.5 mm |
| Parallelism | ≤ 0.75% | N/A |
| Image or text stretching - vertical | ≤ 1.0 % | N/A |
| Image or text stretching - horizontal | ≤ 1.0 % | N/A |
| Duplex registration - vertical, horizontal | ≤ 2.0 mm | N/A |

[1] Xerox 4200 (#20) should be used for measurement.

# C Regulatory information


- FCC regulations
- Environmental product stewardship program
- Declaration of Conformity
- Declaration of Conformity (fax models)
- Certificate of volatility
- Safety statements
- Additional statements for telecom (fax) products

# FCC regulations

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**NOTE:** Any changes or modifications to the printer that are not expressly approved by HP could void the user's authority to operate this equipment.

Use of a shielded interface cable is required to comply with the Class A limits of Part 15 of FCC rules.

# 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 and Sleep mode, which saves natural resources and saves money without affecting the high performance of this product. To determine the ENERGY STAR® qualification status for this product, see the Product Data Sheet or Specifications Sheet. Qualified products are also listed at:

www.hp.com/go/energystar

## Paper use

This product's optional automatic duplex feature (two-sided printing) and N-up printing (multiple pages printed on one page) capability can reduce paper usage and the resulting demands on natural resources.

## Plastics

Plastic parts over 25 grams are marked according to international standards that enhance the ability to identify plastics for recycling purposes at the end of the product's life.

## HP LaserJet print supplies

It's easy to return and recycle your HP LaserJet print cartridges after use—free of charge—with HP Planet Partners. Multilingual program information and instructions are included in every new HP LaserJet print cartridge and supplies package. You help reduce the toll on the environment further when you return multiple cartridges together rather than separately.

HP is committed to providing inventive, high-quality products and services that are environmentally sound, from product design and manufacturing to distribution, customer use and recycling. When you participate in the HP Planet Partners program, we ensure your HP LaserJet print cartridges are recycled properly, processing them to recover plastics and metals for new products and diverting millions of tons of waste from landfills. Since this cartridge is being recycled and used in new materials, it will not be returned to you. Thank you for being environmentally responsible!

**NOTE:** Use the return label to return original HP LaserJet print cartridges only. Please do not use this label for HP inkjet cartridges, non-HP cartridges, refilled or remanufactured cartridges or warranty returns. For information about recycling your HP inkjet cartridges please go to http://www.hp.com/recycle.

# Return and recycling instructions

## United States and Puerto Rico

The enclosed label in the HP LaserJet toner cartridge box is for the return and recycling of one or more HP LaserJet print cartridges after use. Please follow the applicable instructions below.

### Multiple returns (more than one cartridge)

1. Package each HP LaserJet print cartridge in its original box and bag.
2. Tape the boxes together using strapping or packaging tape. The package can weigh up to 31 kg (70 lb).
3. Use a single pre-paid shipping label.

**OR**

1. Use your own suitable box, or request a free bulk collection box from www.hp.com/recycle 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:

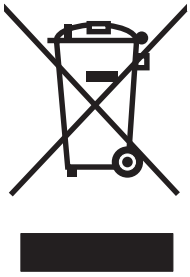
| **HP Color LaserJet Enterprise CM4540 MFP Series** | |
|---|---|
| Type | Carbon monofluoride lithium |
| Weight | 0.8 g |
| Location | On formatter board |
| User-removable | No |



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-0806-01-rel.1.0 |
| **Manufacturer's Address:** | 11311 Chinden Boulevard | |
| | Boise, Idaho 83714-1021, USA | |
| **declares, that the product** | | |
| **Product Name:** | HP Color LaserJet Enterprise CM4540 MFP | |
| **Regulatory Model Number**[2)] | BOISB-0806-01 | |
| | Including: | |
| | CC422A – 500-sheet paper feeder and cabinet | |
| | CC423A – 3x500-sheet paper feeder and stand | |
| | CC424A – 900-sheet 3-bin Stapling Mailbox | |
| **Product Options:** | ALL | |
| **Print Cartridges:** | CE260A, CE264X, CF031A, CF032A, CF033A | |
| **conforms to the following Product Specifications:** | | |
| **SAFETY:** | IEC 60950-1:2001 / EN60950-1: 2001 +A11 | |
| | IEC 60825-1:1993 +A1 +A2 / EN 60825-1:1994 +A1 +A2 (Class 1 Laser/LED Product) | |
| | GB4943-2001 | |
| **EMC:** | CISPR22:2005 +A1/ EN55022:2006 +A1 - Class A[1),3)] | |
| | EN 61000-3-2:2006 | |
| | EN 61000-3-3:1995 +A1 +A2 | |
| | EN 55024:1998 +A1 +A2 | |
| | FCC Title 47 CFR, Part 15 Class A[1),3)] / ICES-003, Issue 4 | |
| | GB9254-1998, GB17625.1-2003 | |
| **ENERGY USE:** | Regulation (EC) No. 1275/2008: | |
| | 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 and the Low Voltage Directive 2006/95/EC, the EuP Directive 2005/32/EC and 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).
3. The product meets the requirements of EN55022 & CNS13438 Class A in which case the following applies: "Warning – This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures."

**Boise, Idaho USA**

**July 6, 2010**

**For regulatory topics only:**

| | |
|---|---|
| European Contact: | Your Local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department HQ-TRE / Standards Europe, Herrenberger Strasse 140, D-71034, Böblingen (FAX: +49-7031-14-3143) www.hp.com/go/certificates |
| USA Contact: | Product Regulations Manager, Hewlett-Packard Company, PO Box 15, Mail Stop 160, Boise, Idaho 83707-0015 (Phone: 208-396-6000) |

# Declaration of Conformity (fax models)

**Declaration of Conformity**

according to ISO/IEC 17050-1 and EN 17050-1

| | | |
|---|---|---|
| **Manufacturer's Name:** | Hewlett-Packard Company | DoC#: BOISB-0806-02-rel.1.0 |
| **Manufacturer's Address:** | 11311 Chinden Boulevard | |
| | Boise, Idaho 83714-1021, USA | |
| **declares, that the product** | | |
| **Product Name:** | HP Color LaserJet Enterprise CM4540f MFP | |
| | HP Color LaserJet Enterprise CM4540fskm MFP | |
| **Regulatory Model Number**[2)] | BOISB-0806-02 | |
| | Including: | |
| | CC422A – 500-sheet paper feeder and cabinet | |
| | CC423A – 3x500-sheet paper feeder and stand | |
| | CC424A – 900-sheet 3-bin Stapling Mailbox | |
| | BOISB-0703-00 – Fax Module | |
| **Product Options:** | ALL | |
| **Print Cartridges:** | CE260A, CE264X, CF031A, CF032A, CF033A | |
| **conforms to the following Product Specifications:** | | |
| **SAFETY:** | IEC 60950-1:2001 / EN60950-1: 2001 +A11 | |
| | IEC 60825-1:1993 +A1 +A2 / EN 60825-1:1994 +A1 +A2 (Class 1 Laser/LED Product) | |
| | GB4943-2001 | |
| **EMC:** | CISPR22:2005 +A1/ EN55022:2006 +A1 - Class A[1),3)] | |
| | EN 61000-3-2:2006 | |
| | EN 61000-3-3:1995 +A1 +A2 | |
| | EN 55024:1998 +A1 +A2 | |
| | FCC Title 47 CFR, Part 15 Class A[1),3)] / ICES-003, Issue 4 | |
| | GB9254-1998, GB17625.1-2003 | |
| **TELECOM:** | ES 203 021; FCC Title 47 CFR, Part 68[4)] | |
| **ENERGY USE:** | Regulation (EC) No. 1275/2008: | |
| | 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 and the Low Voltage Directive 2006/95/EC, the R&TTE; Directive 1999/5/EC (Annex II), the EuP Directive 2005/32/EC and 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).
3. The product meets the requirements of EN55022 & CNS13438 Class A in which case the following applies: "Warning – This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures."
4. Telecom approvals and standards appropriate for the target countries/regions have been applied to this product, in addition to those listed above.
5. This product uses an analog fax accessory module which Regulatory Model numbers are: BOISB-0903-00 (US-LIU) or BOISB-0903-01 (EURO LIU), as needed to meet technical regulatory requirements for the countries/regions this product will be sold.
6. 5. This product uses an analog fax accessory module which Regulatory Model number is: BOISB-0703-00 as needed to meet technical regulatory requirements for the countries/regions this product will be sold.

**Boise, Idaho USA**

**July 6, 2010**

**For regulatory topics only:**

| | |
|---|---|
| European Contact: | Your Local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department HQ-TRE / Standards Europe, Herrenberger Strasse 140, D-71034, Böblingen (FAX: +49-7031-14-3143) www.hp.com/go/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 volatile memory (a total of 1280 MB) to support the embedded OS and to store customer data during the printing and copying process. When the product is powered off, this volatile memory is erased.

### Non-volatile memory

The product utilizes non-volatile memory (EEPROM) to store system control data and user preference settings. No customer print or copy data is stored in non-volatile memory. This non-volatile memory can be cleared and restored to factory defaults by performing a cold reset or restore factory settings operation from the control panel.

### Hard-disk-drive memory

The product contains an internal hard disk drive that may retain data after the product is powered off. The product also may contain additional optional compact flash storage, or an external EIO hard disk. Data stored in these devices may be from incoming/outgoing fax or e-mail files, stored copy or print jobs, fax or e-mail address books, or third-party solutions. Some of this data can be erased from the product control panel, but most must be erased using the Secure Disk Erase feature available from the product BIOS Menu, the Embedded Web Server (EWS) for the product, and from HP Web Jetadmin. Secure Storage Erase features comply with U.S. NIST Special Publication 800-88 “Guidelines for Media Sanitization”.

# Safety statements

## Laser safety

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration has implemented regulations for laser products manufactured since August 1, 1976. Compliance is mandatory for products marketed in the United States. The device is certified as a “Class 1” laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. Since radiation emitted inside the device is completely confined within protective housings and external covers, the laser beam cannot escape during any phase of normal user operation.

⚠ **WARNING!** Using controls, making adjustments, or performing procedures other than those specified in this user guide may result in exposure to hazardous radiation.

## Canadian DOC regulations

Complies with Canadian EMC Class A requirements.

« Conforme à la classe A des normes canadiennes de compatibilité électromagnétiques. « CEM ». »

## VCCI statement (Japan)

この装置は、クラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者は適切な対策を講ずるよう要求されることがあります。

VCCI-A

## Power cord instructions

Make sure your power source is adequate for the product voltage rating. The voltage rating is on the product label. The product uses either 100-127 Vac or 220-240 Vac and 50/60 Hz.

Connect the power cord between the product and a grounded AC outlet.

⚠ **CAUTION:** To prevent damage to the product, use only the power cord that is provided with the product.

## Power cord statement (Japan)

製品には、同梱された電源コードをお使い下さい。
同梱された電源コードは、他の製品では使用出来ません。

## EMC statement (China)

| |
|---|
| 此为A级产品，在生活环境中，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对其干扰采取切实可行的措施。 |

## EMC statement (Korea)

| | |
|---|---|
| A급 기기<br>(업무용 방송통신기기) | 이 기기는 업무용(A급)으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이점을 주의하시기 바라며, 가정 외의 지역에서 사용하는 것을 목적으로 합니다. |

## EMI statement (Taiwan)

| |
|---|
| 警告使用者：<br>這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。 |

## Laser statement for Finland

**Luokan 1 laserlaite**

Klass 1 Laser Apparat

HP Color LaserJet CM4540, CM4540f, CM4540fskm, 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 Color LaserJet CM4540, CM4540f, CM4540fskm - 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 werden.

## Substances Table (China)

### 有毒有害物质表

根据中国电子信息产品污染控制管理办法的要求而出台

| 部件名称 | 有毒有害物质和元素 | | | | | |
|---|---|---|---|---|---|---|
| | 铅 (Pb) | 汞 (Hg) | 镉 (Cd) | 六价铬 (Cr(VI)) | 多溴联苯 (PBB) | 多溴二苯醚 (PBDE) |
| 打印引擎 | X | 0 | 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

# Additional statements for telecom (fax) products

## EU Statement for Telecom Operation

This product is intended to be connected to the analog Public Switched Telecommunication Networks (PSTN) of European Economic Area (EEA) countries/regions.

It meets requirements of EU R&TTE Directive 1999/5/EC (Annex II) and carries appropriate CE conformity marking.

For more details see Declaration of Conformity issued by the manufacturer in another section of this manual.

However due to differences between individual national PSTNs the product may not guarantee unconditional assurance of successful operation on every PSTN termination point. Network compatibility depends on the correct setting being selected by the customer in preparation of its connection to the PSTN. Please follow the instructions provided in the user manual.

If you experience network compatibility issues, please contact your equipment supplier or Hewlett-Packard help desk in the country/region of operation.

Connecting to a PSTN termination point may be the subject of additional requirements set out by the local PSTN operator.

## New Zealand Telecom Statements

The grant of a Telepermit for any item of terminal equipment indicates only that Telecom has accepted that the item complies with minimum conditions for connection to its network. It indicates no endorsement of the product by Telecom, nor does it provide any sort of warranty. Above all, it provides no assurance that any item will work correctly in all respects with another item of Telepermitted equipment of a different make or model, nor does it imply that any product is compatible with all of Telecom's network services.

This equipment may not provide for the effective hand-over of a call to another device connected to the same line.

This equipment shall not be set up to make automatic calls to the Telecom "111" Emergency Service.

This product has not been tested to ensure compatibility with the FaxAbility distinctive ring service for New Zealand.

## Additional FCC statement for telecom products (US)

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the back of this equipment is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

The REN is used to determine the quantity of devices, which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all, areas, the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

This equipment uses the following USOC jacks: RJ11C.

An FCC-compliant telephone cord and modular plug is provided with this equipment. This equipment is designed to be connected to the telephone network or premises wiring using a compatible modular jack, which is Part 68 compliant. This equipment cannot be used on telephone company-provided coin service. Connection to Party Line Service is subject to state tariffs.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

If trouble is experienced with this equipment, please see the numbers in this manual for repair and (or) warranty information. If the trouble is causing harm to the telephone network, the telephone company may request you remove the equipment from the network until the problem is resolved.

The customer can do the following repairs: Replace any original equipment that came with the device. This includes the print cartridge, the supports for trays and bins, the power cord, and the telephone cord. It is recommended that the customer install an AC surge arrestor in the AC outlet to which this device is connected. This is to avoid damage to the equipment caused by local lightning strikes and other electrical surges.

## Telephone Consumer Protection Act (US)

The Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device, including fax machines, to send any message unless such message clearly contains, in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business, other entity, or individual sending the message and the telephone number of the sending machine or such business, or other entity, or individual. (The telephone number provided cannot be a 900 number or any other number for which charges exceed local or long distance transmission charges).

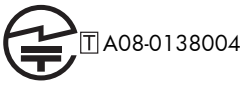
## Industry Canada CS-03 requirements

**Notice**: The Industry Canada label identifies certified equipment. This certification means the equipment meets certain telecommunications network protective, operational, and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirement document(s). The Department does not guarantee the equipment will operate to the user's satisfaction. Before installing this equipment, users should ensure that it is permissible for the equipment to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations. Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment. Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution can be particularly important in rural areas.

⚠ **CAUTION:** Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate. The Ringer Equivalence Number (REN) of this device is 0.0.

Notice: The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Number of all the devices does not exceed five (5.0). The standard connecting arrangement code (telephone jack type) for equipment with direct connections to the telephone network is CA11A.

## Japan Telecom Mark



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