# LaserJet Pro M203
# LaserJet Pro MFP M227
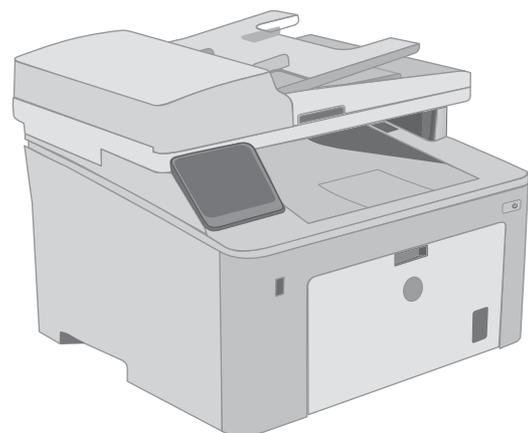
## Troubleshooting Manual
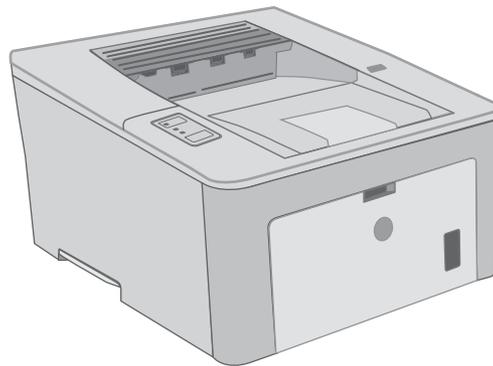
**M203d**
**M203dn**
**M203dw**
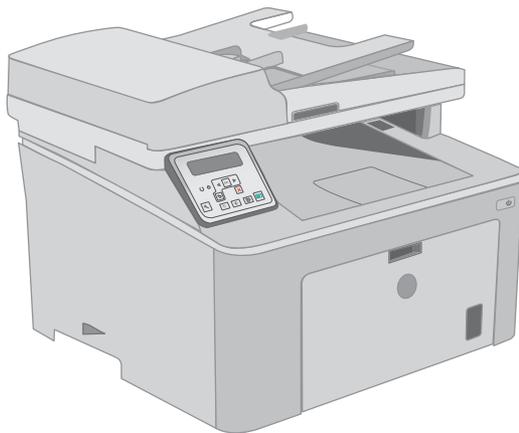
**M227d**
**M227sdn**
**M227fdn**

**M227fdw**

www.hp.com/support/ljM203
www.hp.com/support/ljmfpM227
For printer part removal and part number
information, see the Repair Manual.

# HP LaserJet Pro M203 and HP LaserJet Pro MFP M227

Troubleshooting Manual

## Conventions used in this guide

☼ **TIP:**  Helpful hints or shortcuts.

**Reinstallation tip:**  Reinstallation helpful hints, shortcuts, or considerations.

📝 **NOTE:**  Information that explains a concept or how to complete a task.

📝 **IMPORTANT:**  Information that help the user to avoid potential printer error conditions.

⚠ **CAUTION:**  Procedures that the user must follow to avoid losing data or damaging the printer.

⚠ **WARNING!**  Procedures that the user must follow to avoid personal injury, catastrophic loss of data, or extensive damage to the printer.

# For additional service and support information

HP service personnel, go to the Service Access Work Bench (SAW) at http://sawpro.glb.itcs.hp.com.

Channel partners, go to HP Channel Services Network (CSN) at www.hp.com/partners/csn .

At these locations, find information on the following topics:

- Install and configure

- Printer specifications

- Up-to-date control panel message (CPMD) troubleshooting

- Solutions for printer issues and emerging issues

- Remove and replace part instructions and videos

- Service advisories

- Warranty and regulatory information

Channel partners, access training materials in the HP University and Partner Learning Center at https://content.ext.hp.com/sites/LMS/HPU.page.

To access HP PartSurfer information from any mobile device, go to http://partsurfermobile.hp.com/ or scan the Quick Response (QR) code below.

# Table of contents

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# 1 Theory of operation

# Related documentation and software

HP service personnel, go to the Services Access Workbench (SAW) at http://sawpro.glb.itcs.hp.com.

Channel partners, go to HP Channel Services Network (CSN) at www.hp.com/partners/csn .

Channel partners, access training materials in the HP University and Partner Learning Center at https://content.ext.hp.com/sites/LMS/HPU.page.

# Basic operation

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

The basic printer operation comprises the following systems:

- Engine-control system
- Laser scanner system
- Image-formation system
- Pickup, feed, and delivery system
- Scanning and image capture system (M227)

**Figure 1-1**  Relationship between the main printer systems
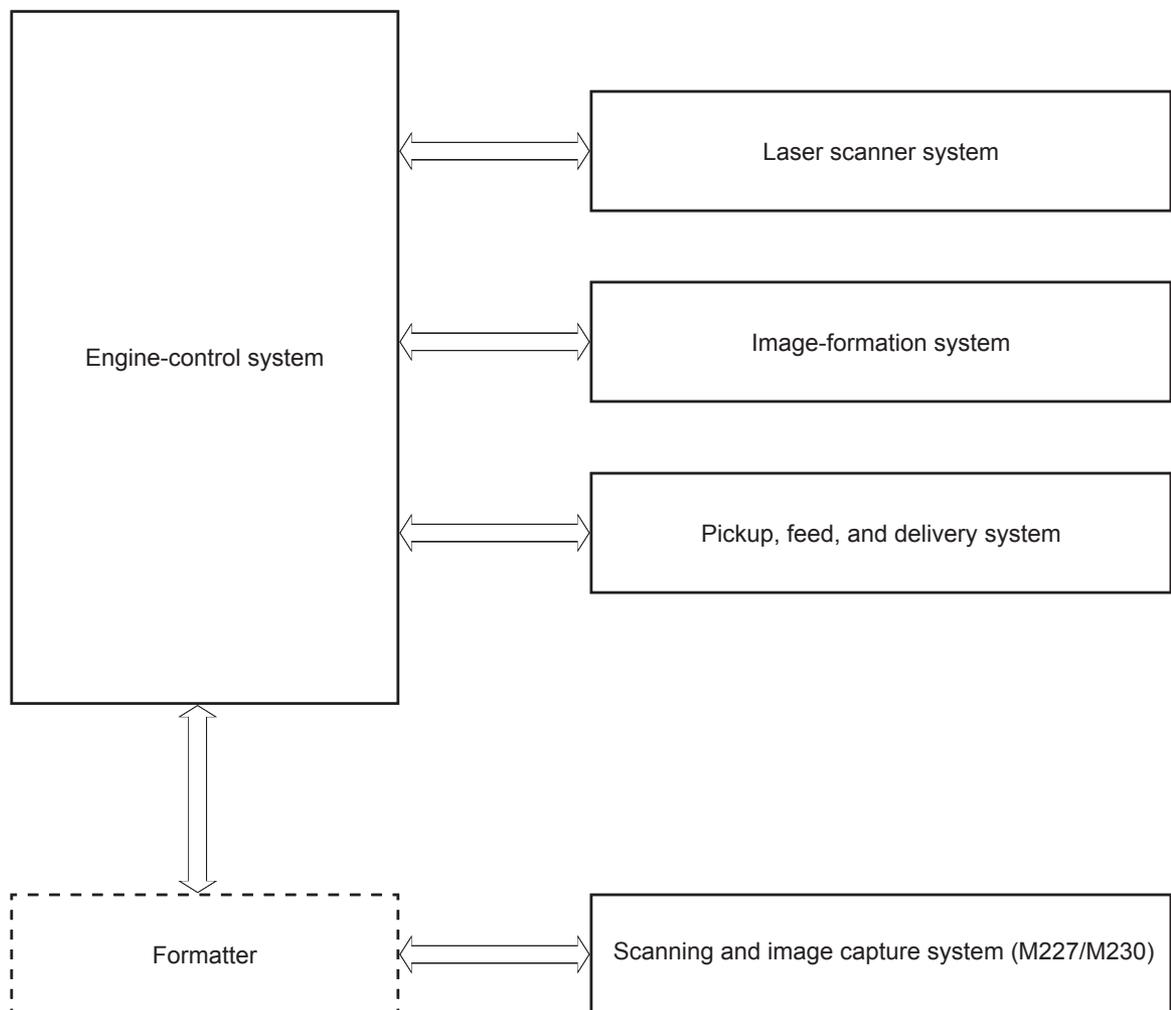
# Sequence of operation

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 printer exits sleep mode until the printer is ready for printing. | • Heats the fuser film in the fuser<br>• Detects the presence of the toner cartridge<br>• Rotates and stops the main motor<br>• Rotates and stops the main fan<br>• Cleans the transfer roller<br>• Separates the developer roller |
| Standby | From the end of the waiting sequence or the last rotation until the formatter receives a print command, or until the printer is turned off. | • Remains in the Ready state<br>• Enters Active OFF mode if a power control mode designation command is sent<br>• Rotates and stops the main fan |
| Initial rotation | From the time the formatter receives a print command until the paper enters the paper path. | • Rotates the main motor<br>• Rotates the main fan<br>• Activates the high-voltage power supply (high-voltage bias)<br>• Prepares the laser scanner unit<br>• Warms the fuser to the correct temperature<br>• Engages the developer roller |
| Printing | From the time the first sheet of paper enters the paper path until the last sheet passes through the fuser. | • Forms the image on the photosensitive drum<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. | • Stops the main motor<br>• Stops the main fan<br>• Stops the high-voltage power supply (high-voltage bias)<br>• Stops the laser scanner unit<br>• Turns the fuser heater off<br>• Separates the developer roller<br>• If another print command is received, the printer enters the initial rotation period when the last rotation is complete. |

# Formatter-control system

The formatter performs the following functions:

- Controls the sleep delay function

- Receives and processes print data from the various printer inputs

- Monitors control-panel functions and relays printer status information (through the control panel and the bidirectional input/output)

- Develops and coordinates data placement and timing with the DC controller

- Communicates with the host computer through the network or the bidirectional interface

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

## Sleep delay

When the printer is in sleep delay mode, the control-panel backlight is turned off, but the printer retains all printer settings, downloaded fonts, and macros. The default setting is a 1-minute idle time. The setting can be changed or turned off from the control panel menus.

The printer exits sleep delay mode and enters the warm-up cycle when any of the following occurs.

- A print job, valid data, or a PML or PJL command is received at the serial port.

- The control panel is touched (button press or touchscreen touch depending on model).

- A document is loaded in the document feeder or the scanner lid is opened (M227).

- A tray is opened.

☼ TIP:   Error messages override the sleep delay message. The printer enters sleep mode at the appropriate time, but the error message continues to appear.

## Printer job language (PJL)

PJL is an integral part of printer configuration, in addition to the printer control language (PCL) and PostScript (PS). With standard cabling, the printer can use PJL to perform a variety of functions.

- **Dynamic I/O switching:** The printer can be configured with a host on each I/O by using dynamic I/O switching. Even when the printer is offline, it can receive data from more than one I/O simultaneously, until the I/O buffer is full.

- **Context-sensitive switching:** The printer can automatically recognize the personality (PS or PCL) of each job and configure itself to serve that personality.

- **Isolation of print environment settings from one print job to the next:** For example, if a print job is sent to the printer in landscape mode, the subsequent print jobs print in landscape only if they are formatted for landscape printing.

# Printer management language (PML)

PML allows remote configuration of the printer and status monitoring through the input/output (I/O) ports.

# Control panel

The formatter sends and receives printer status and command data to and from the control panel.

# Wireless

**NOTE:** Wireless models only.

Wireless products contain a wireless card to enable 802.11b/g/n wireless communication.

# Low end data model (LEDM) overview

The low-end data model (LEDM) provides one consistent data representation method and defines the dynamic and capabilities tickets shared between clients and devices, as well as the access protocol, event, security, and discovery methods.

# Advanced control language (ACL) overview

The advanced control language (ACL) is a language that supports printer control and firmware downloads in printers that support both PJL/PCL and host-based printing. Each sequence of ACL commands must be preceded by a unified exit command (UEL) and an @PJL ENTER LANGUAGE=ACL command. The ACL sequence is always followed by a UEL. Any number of commands can be placed between the UELs. The only exception to these rules is the download command. If a firmware download is done, the download command must be the last command in the sequence. It will not be followed by a UEL.

The firmware searches for the UEL sequence when parsing commands. However, while downloading binary data such as host-based code or NVRAM data, the firmware suspends UEL parsing. To handle hosts that "disappear" during binary sequences, the firmware times out all ACL command sessions. If a timeout occurs during a non-download command sequence, it is treated as the receipt of a UEL. If a timeout occurs during firmware download, the printer resets.

# CPU

The formatter incorporates an 800 MHz processor.

# Input/output (I/O)

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

# USB

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

# USB hosts

The printer includes USB hosts for USB flash drive and wireless communication control.

# 10/100 networking

All printer models except the M203d include a 10/100 network (Ethernet) connection.

## Fax

The printer includes a fax phone line connection.

## Memory

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

### Firmware

The formatter stores the printer firmware. A remote firmware update process is used to overwrite and update the firmware.

### Nonvolatile random access memory (NVRAM)

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

### Flash memory

**DRR**: Stores software applications. When the printer power is turned off, the data stored in DRR is erased.

**NAND**: Stores fax memory (M227fdn/fdw and M230fdw models only). When the printer power is turned off, the data stored in NAND is preserved.

### Random access memory

### DDR memory

- 533 Mhz, 256 MB (M203, M206)
- 800 Mhz, 256 MB (M227, M230)

### Flash memory

- 128 MB NAND flash

### HP Memory Enhancement technology (MEt)

The HP Memory Enhancement technology (MEt) effectively doubles the standard memory through a variety of font- and data-compression methods.

NOTE: The MEt is available only in PCL mode; it is not functional when printing in PS mode.

# Engine-control system

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

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

Figure 1-2  Engine-control system
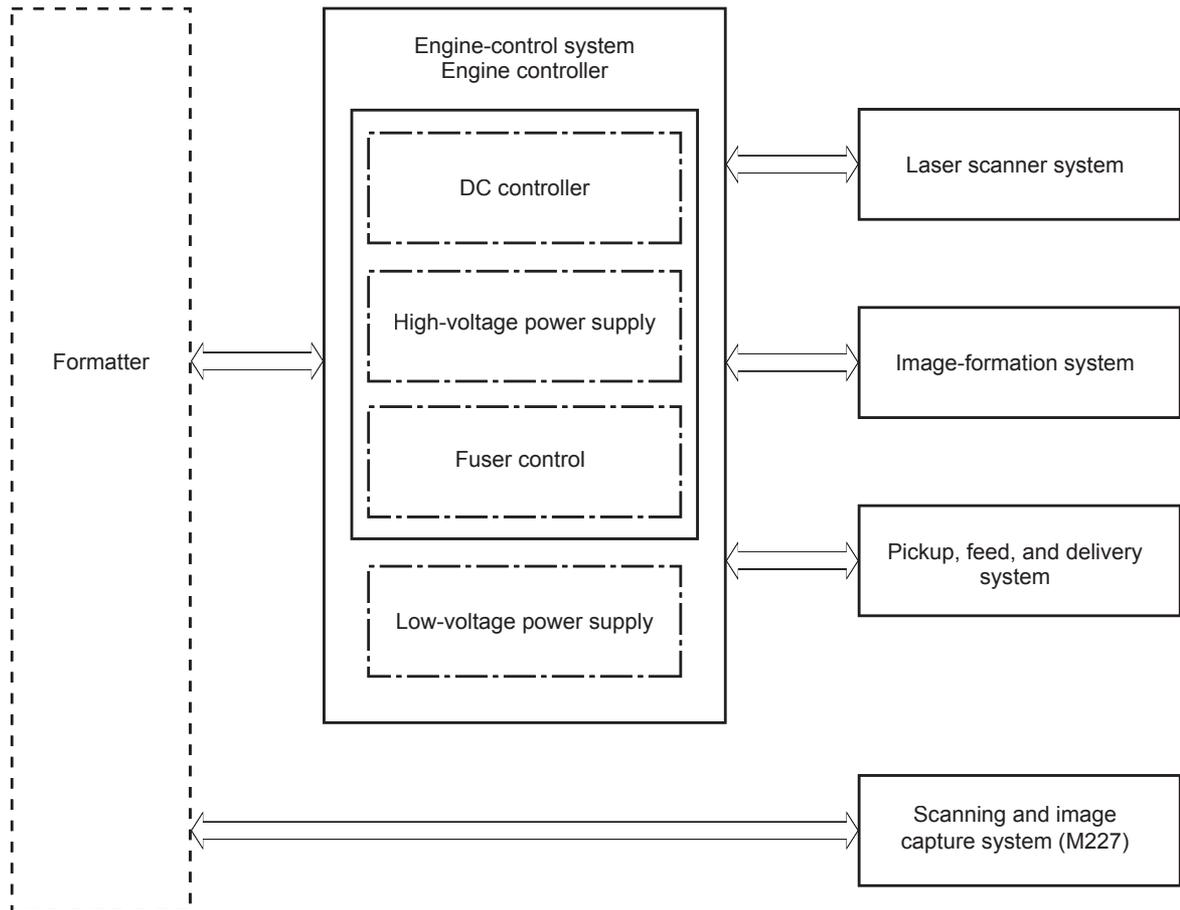
# DC controller

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

Figure 1-3  DC controller block diagram
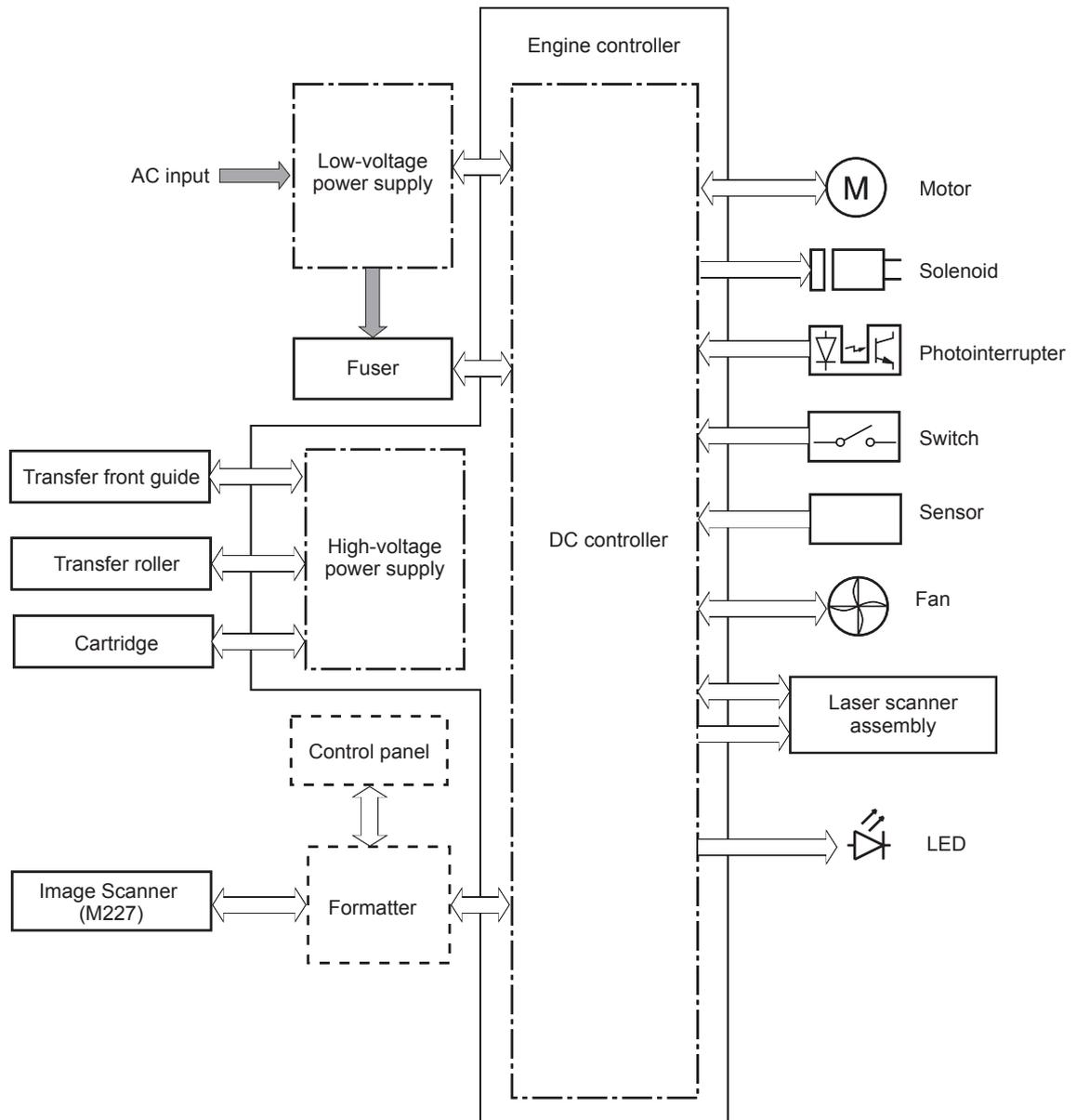


| Component type | Abbreviation | Description |
|---|---|---|
| Motor | M1 | Main motor |
| | M6 | Scanner motor |
| Fan | FM1 | Main fan |

| Component type | Abbreviation | Description |
|---|---|---|
| Solenoid | SL1 | Pickup solenoid |
| | SL2 | Developer alienation solenoid |
| | SL3 | Duplex switchback solenoid |
| Switch | SW1 | Developer alienation switch |
| | SW501 | Cartridge door switch |
| | SW740 | Power switch |
| Photointerrupter | PS601 | Main motor rotation number sensor |
| | SR760 | Top of page (TOP) sensor |
| | SR770 | Media out sensor |
| | SR771 | Pickup media width sensor |
| | SR780 | Fuser output sensor |
| | SR781 | Fuser media width sensor |
| Sensor | – | Environment sensor |
| LED | LED391 | Pre-exposure LED |
| | LED740 | Power supply LED |

## Motor control

The engine control system has two motors.

The DC controller monitors the motors to determine if they have failed. It notifies the formatter when it encounters the following conditions:

- Startup failure: the motors do not reach a specified speed within a specified time from when the motors start.

- Rotational failure: the rotational speed of the motors is not in the specified range for a specified time after the motors reach a specified speed.

Table 1-2 Motors

| Abbreviation | Name | Purpose | Failure detection |
|---|---|---|---|
| M1 | Main motor | Pickup roller, photosensitive drum, feed roller, pressure roller, output roller, duplex registration roller | Yes |
| M6 | Scanner motor | Drives the scanner mirror | Yes |

## Fan control

The printer has one fan. The fan prevents the temperature from rising in the printer.

Table 1-3 Fans

| Abbreviation | Name | Cooling area | Type | Speed | Failure detection |
|---|---|---|---|---|---|
| FM1 | Main fan | Inside the printer | Intake | Full | Yes |

# Low-voltage power supply

The low-voltage power-supply (LVPS) circuit converts the AC power from the wall receptacle into the DC voltage used by the printer components.

The following two printer states relate to the low-voltage power supply:

- **Inactive OFF**: In this state, the printer power is turned off.

- **Active OFF**: In this state, the printer is in sleep mode. The low-voltage power supply only sends power to the formatter and DC controller.

Figure 1-4 Low-voltage power-supply circuit
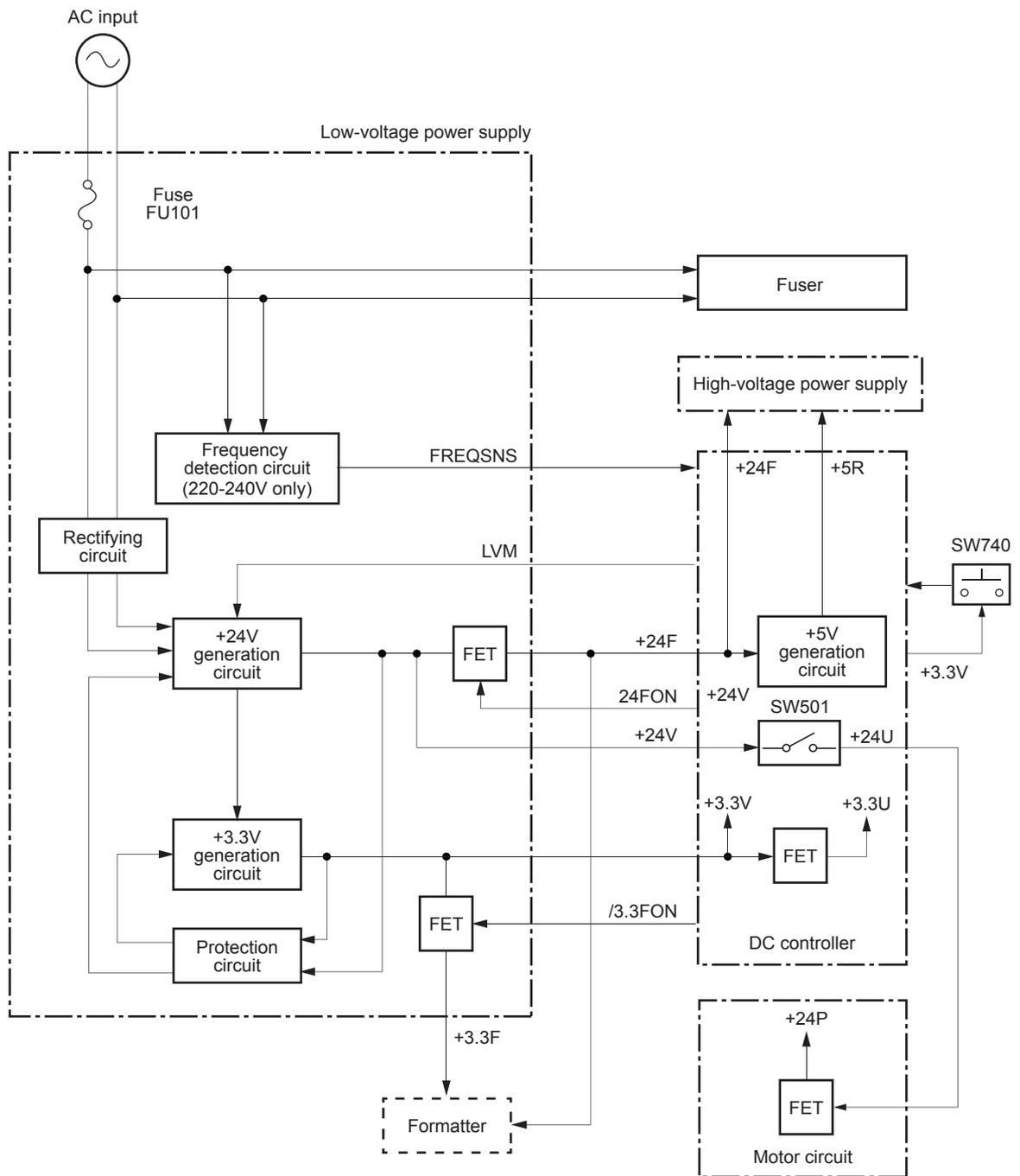


Table 1-4 List of DC voltages

| DC power supply | | Description |
| --- | --- | --- |
| +24V | +24V | Constantly supplied |
| | +24U | Stopped when cartridge door is opened. (SW501) |
| | | Stopped during active OFF or inactive OFF |

Table 1-4  List of DC voltages (continued)

| DC power supply | | Description |
| --- | --- | --- |
| | +24P | Stopped when cartridge door is opened. (SW501) |
| | | Stopped during active OFF or inactive OFF |
| | +24F | Constantly supplied |
| | | Stopped during active OFF or inactive OFF |
| +3.3V | +3.3V | Constantly supplied |
| | +3.3U | Supplied only during printing and stopped during standby |
| | | Stopped during active OFF or inactive OFF |
| | +3.3F | Constantly supplied |
| | | Stopped during inactive OFF |
| +5V | +5R | Constantly supplied |
| | | Stopped during active OFF or inactive OFF |

## Overcurrent/overvoltage protection

The overcurrent/overvoltage protection function automatically stops supplying DC voltage to the printer components whenever it detects excessive current or abnormal voltage. The low-voltage power supply has a protective function against overcurrent and overvoltage to prevent failures in the power supply circuit. In addition, two fuses in the low-voltage power supply protect against an overcurrent event. If an overcurrent event occurs in the AC line, the fuse blows and stops the flow of AC power.

⚠ CAUTION:   If the low-voltage power supply is not supplying DC voltage, the protective circuit might be running. In this case, turn the printer off, and then disconnect the power cable. Do not connect the power cable or turn the printer on again until the root cause is found and corrected.

⚠ WARNING!   For personal safety, the printer interrupts +24U and +24P power when the cartridge door detection switch is turned off. This stops DC power supply to the motor and solenoids. The remote switch control circuit turns the printer power on or off so that AC power flows even when the power switch is turned off. Disconnect the printer power cable before disassembling the printer.

### Low-voltage power supply failure detection

The only time the DC controller detects a failure of the low-voltage power supply is when the printer power cable is connected to a power source. If the low-voltage power supply outputs 24F when the 24FON signal is ON, the DC controller reports a low-voltage power supply failure.

## High-voltage power supply

The DC controller controls the high-voltage power supply (HVPS) to generate biases. The HVPS delivers high-voltage biases to the following components used to transfer toner during the image-formation process:

- Primary charging roller (in the toner cartridge)

- Developing roller (in the toner cartridge)

- Developer blade (in the toner cartridge)

- Transfer front guide

- Transfer roller

## High-voltage power supply circuits

The high-voltage power supply contains the following separate circuits.

Figure 1-5  High-voltage power supply circuits
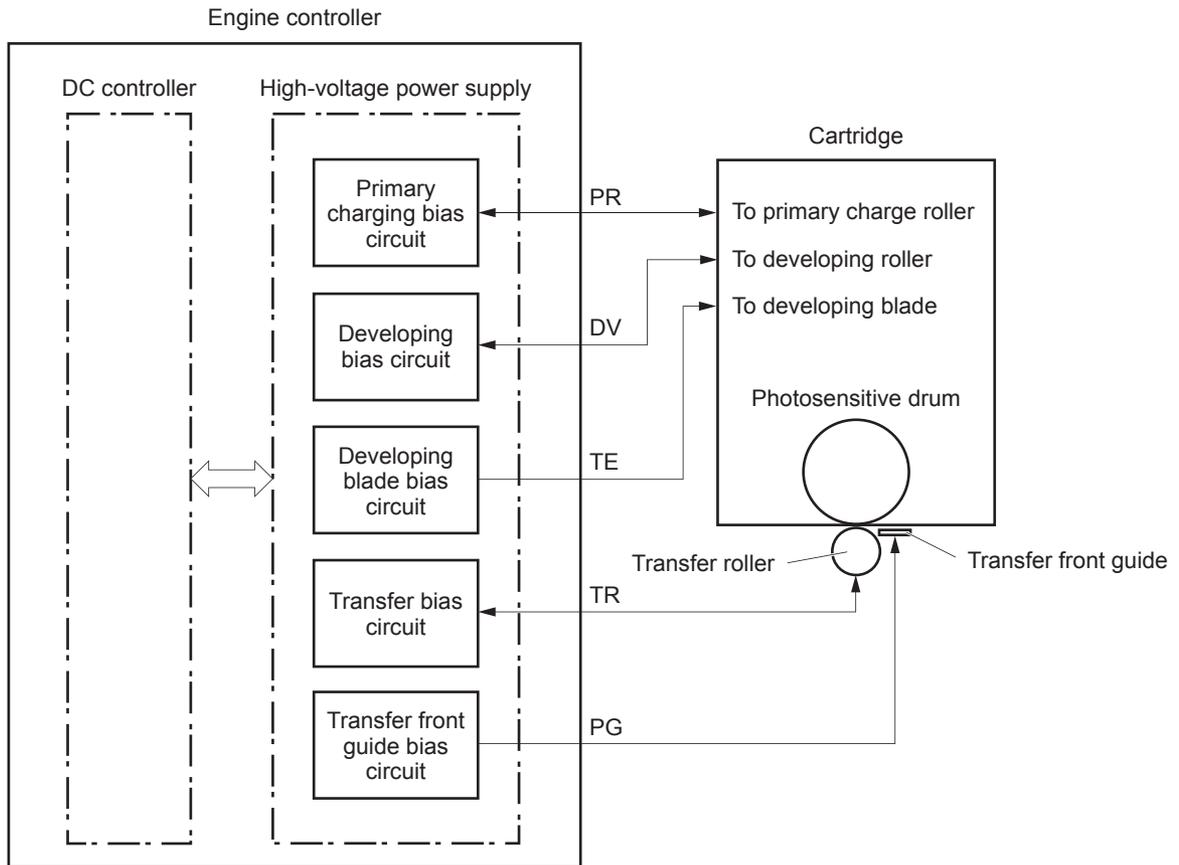


## Fuser control

The printer uses an on-demand fusing method. The fuser heater control circuit and the fuser heater safety circuit control the fuser temperature according to commands from the DC controller. The fuser consists of the following major components:

**Figure 1-6** Fuser components
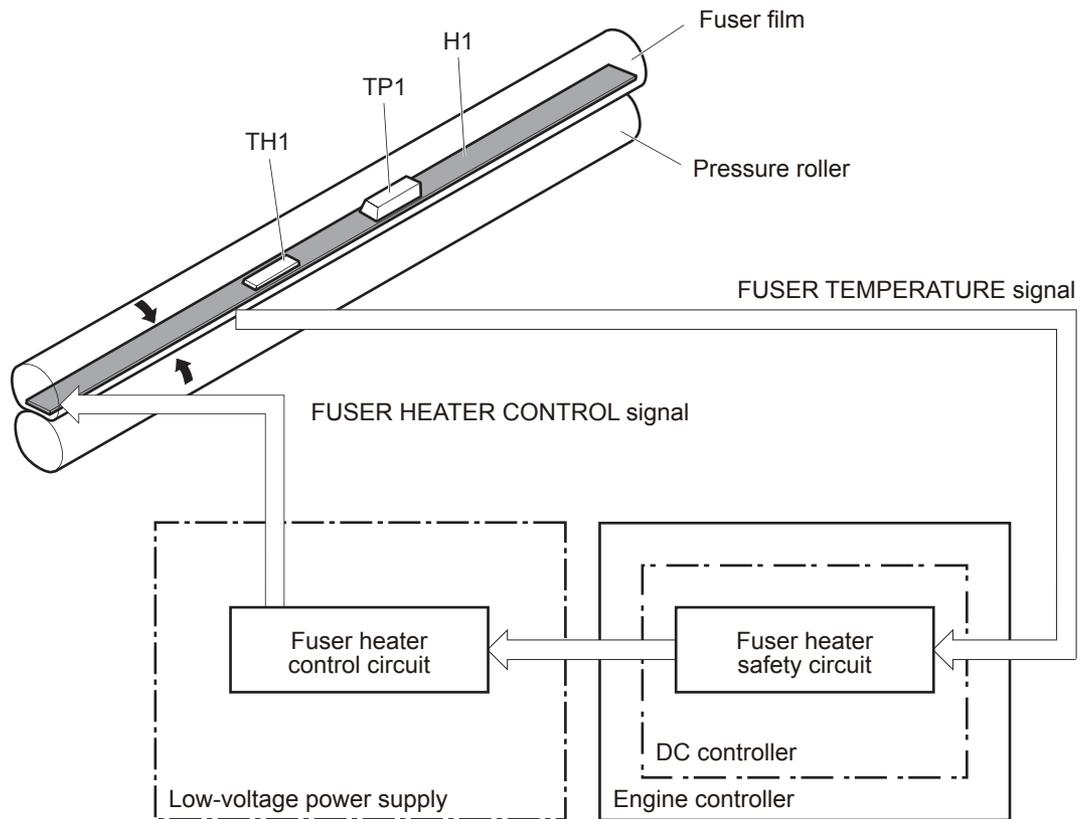


Table 1-5 Fuser components

| Component Name | Abbreviation | Function |
| --- | --- | --- |
| Fuser heater | H1 | Heats the fuser film assembly |
| Thermistor (contact type) | TH1 | Detects the temperature of the fuser heater |
| Thermoswitch (contact type) | TP1 | Prevents an abnormal temperature rise in the fuser heater |

# Fuser control functions

Figure 1-7  Fuser control
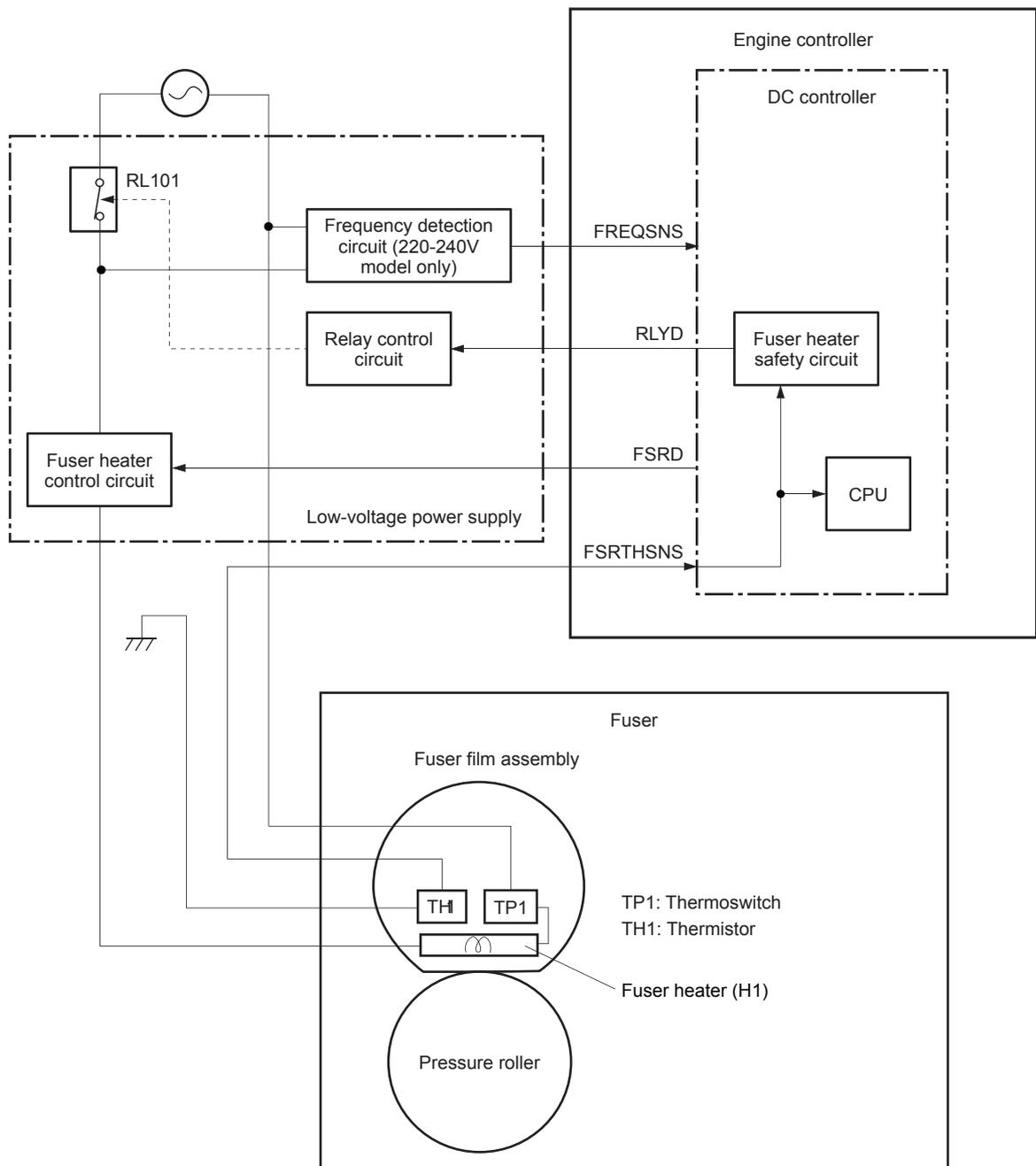


The printer has the following fuser control functions.

Table 1-6  Fuser control functions

| Failure detection function | Supported feature |
| --- | --- |
| Fuser temperature control | Yes |
| Heat–up error detection | Yes |

Table 1-6 Fuser control functions (continued)

| Failure detection function | Supported feature |
|---|---|
| Low temperature error detection | Yes |
| High temperature error detection | Yes |
| Breaking of a heater wire detection | No |
| Driving-circuit failure detection (frequency detection circuit failure detection) | Yes |
| Low-voltage power supply failure detection | No |
| Fuser pressure-release mechanism failure detection | No |
| Fuser type discrepancy detection | No |
| Fuser type identification detection | No |
| Fuser presence detection | No |
| Fuser life detection | No |
| Fuser roller cleaning | Yes |

## Fuser heater protection

Fuser heater protection is a feature that detects excessive temperatures in the fuser and interrupts the power supply to the fuser heater.

The following three protective components prevent the fuser heater from excessive rising temperature:

- **DC controller**: The DC controller constantly monitors the temperature of the thermistor. When the DC controller detects an excessive temperature, it deactivates the FUSER HEATER CONTROL signal and turns off the relays (RL101) to interrupt power supply to the fuser heater.

- **Fuser heater safety circuit**: The fuser heater safety circuit constantly monitors the detected temperature of the thermistors. When the fuser heater safety circuit detects an excessive temperature, it turns off the relays (RL101) to interrupt power supply to the fuser heater.

- **Thermoswitch**: When the thermal fuse detects an abnormally high temperature in the fuser heater, the contact of the thermoswitch opens and interrupts the power supply to the fuser heater.

# Engine laser scanner system

The DC controller receives instructions from the formatter in order to control the laser scanner system.

The DC controller signals the lasers to emit light, and the laser beams pass through lenses and onto the scanner mirror, which rotates at a constant speed. The mirror reflects the beam onto the photosensitive drum inside of the toner cartridge in the pattern required for the image, exposing the surface of the drum so that it can receive toner.

The main components of the laser scanner system, which are controlled by the VIDEO signals sent from the DC controller, are:

- Laser assembly

- Scanner motor assembly

- Beam detect (BD) sensor

- Scanner mirror

Figure 1-8  Laser scanner system
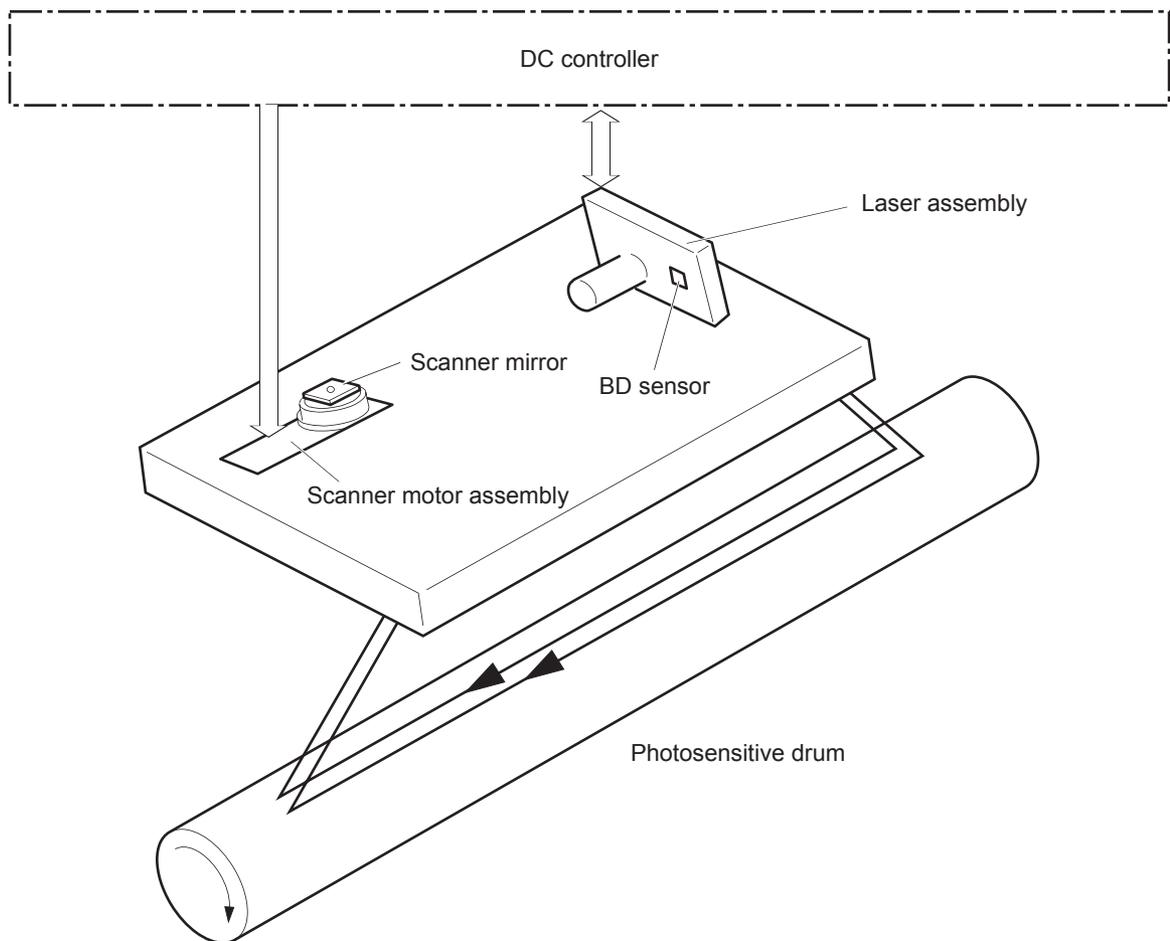
# Laser scanner failure detection

The DC controller detects the following laser scanner failures:

| Failure detection function | Supported feature |
| --- | --- |
| **Beam detect (BD) failure detection**: A specified BD interval is not detected within a specified period of time during the scanner motor rotation. | Yes |
| **Laser scanner motor startup failure**: The scanner motor does not reach a specified rotation frequency within a specified period of time from when the laser scanner starts up. | Yes |
| **Laser scanner motor rotational failure**: The laser scanner motor does not reach a specified rotational frequency within a specified period of time during a print operation. | Yes |
| **Laser scanner failure detection**: A specified laser intensity is not detected. | No |

# Safety

The laser scanner assembly has a mechanical laser shutter. For the safety of users and service technicians, the laser shutter interrupts the optical path of the laser scanner assembly when the cartridge door is opened.

# Image-formation process

The DC Controller controls the internal components of the image formation system (according to commands received from the formatter) to form the toner image on the photosensitive drum surface. The toner image is then transferred to the print media and fused.

The image-formation system consists of the following components:

- Toner cartridge

- Transfer roller

- Fuser

- Laser scanner

- High-voltage power supply

Figure 1-9 Image-formation system
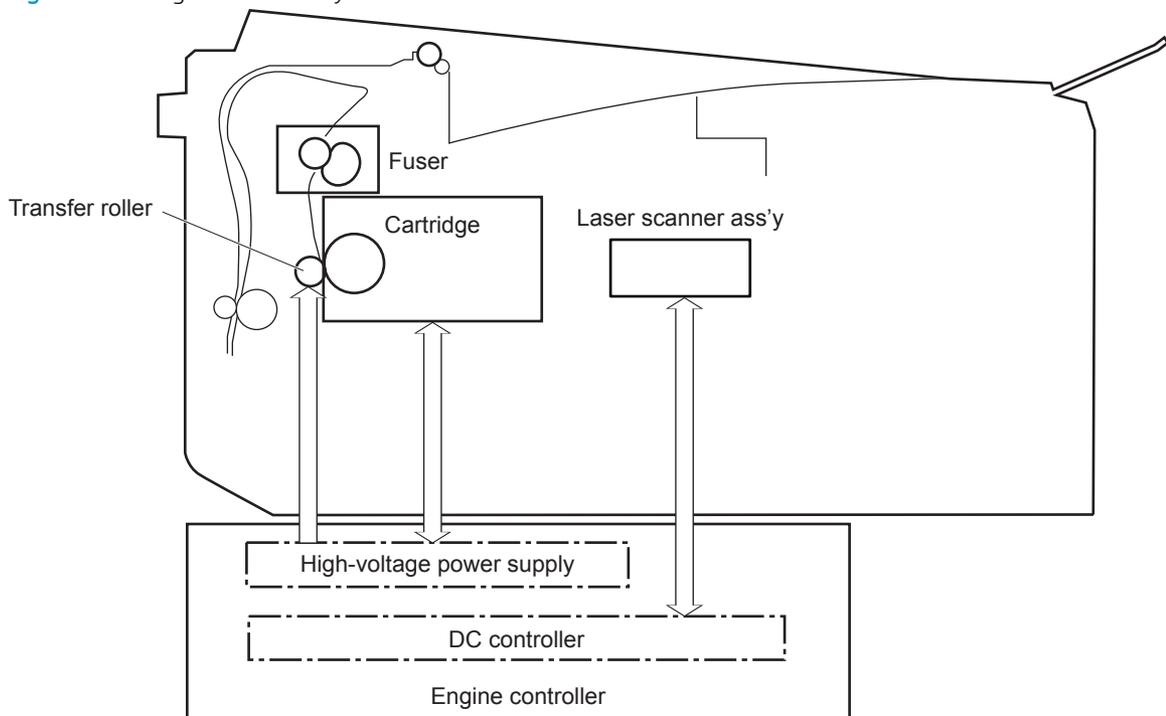


The main motor (M1) drives the following image formation components:

- Photosensitive drum

- Developing roller

- Primary charging roller (follows the photosensitive drum)

- Transfer roller (follows the photosensitive drum)

- Pressure roller

- Fuser film (follows the pressure roller)

NOTE: The primary charging roller and developer roller are located in the toner cartridge.

**Figure 1-10** Main motor (M1) and image formation components
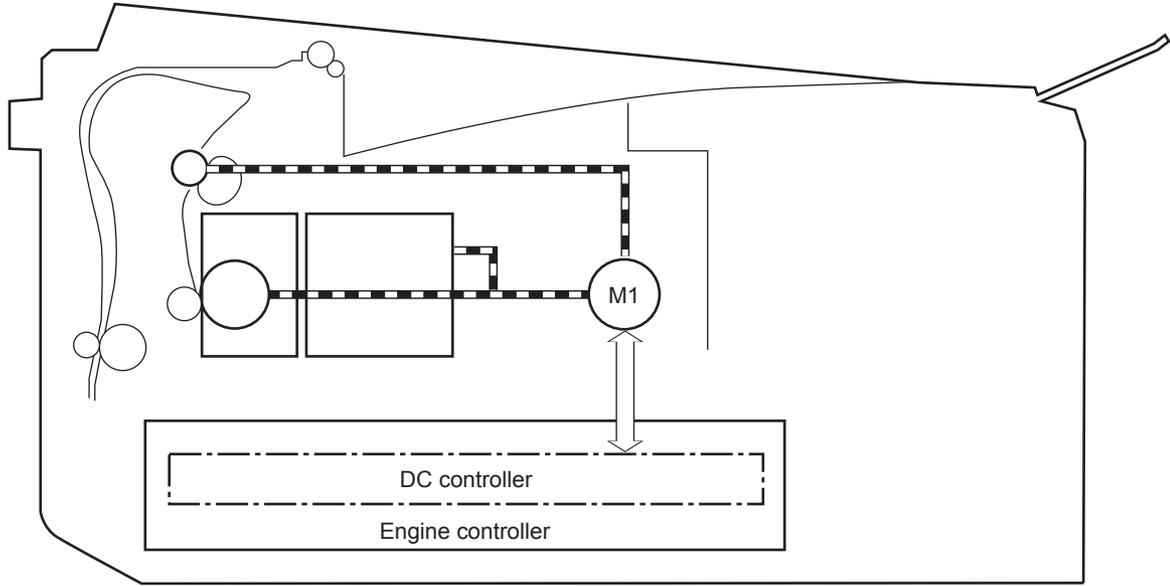


| Abbreviation | Component |
|---|---|
| M1 | Main motor |

The following figure shows the sensors in the image-formation system.

**Figure 1-11** Sensors
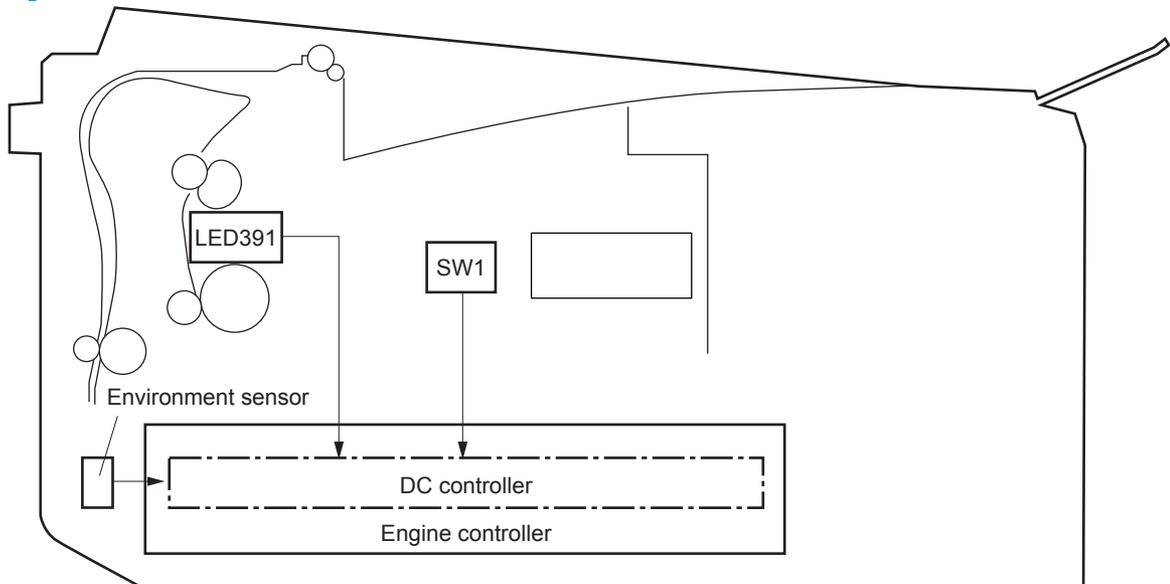


**Table 1-7** Sensors

| Abbreviation | Component |
|---|---|
| LED391 | Pre-exposure LED |
| – | Environment sensor |
| SW1 | Developer alienation switch |

The image-formation process consists of ten steps divided into five functional blocks.

Figure 1-12 Image-formation process
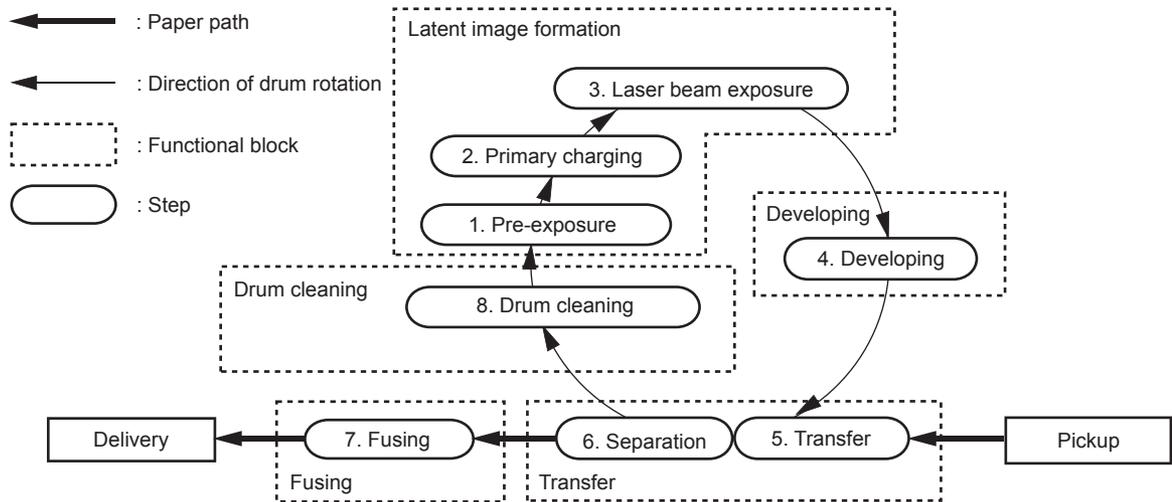


Table 1-8 Image formation process

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

## Step 1: Pre-exposure

To prepare for primary charging, light from the pre-exposure LED strikes the surface of the photosensitive drum to remove any residual electrical charges from the drum surface.

Figure 1-13  Pre-exposure
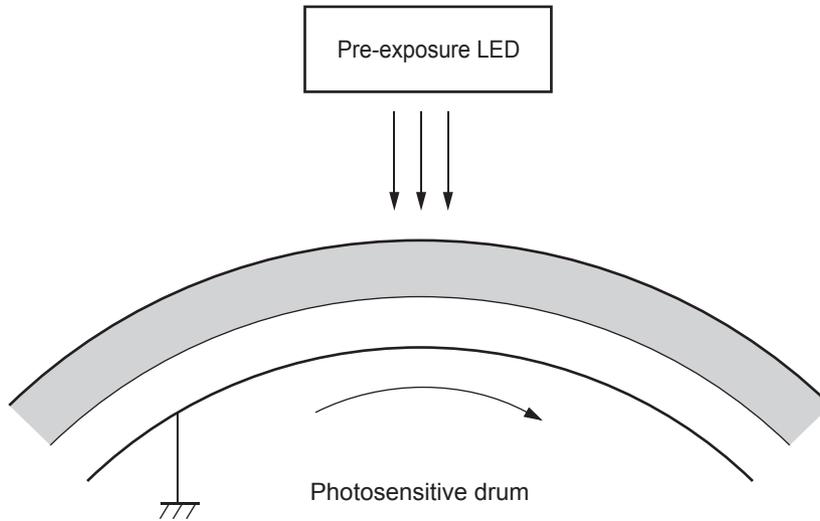


## Step 2: Primary charging

To prepare for latent image formation, the surface of the photosensitive drum is charged with a uniform negative charge. The primary charging roller receives the primary charging bias, and then the roller charges the drum directly.

Figure 1-14  Primary charging
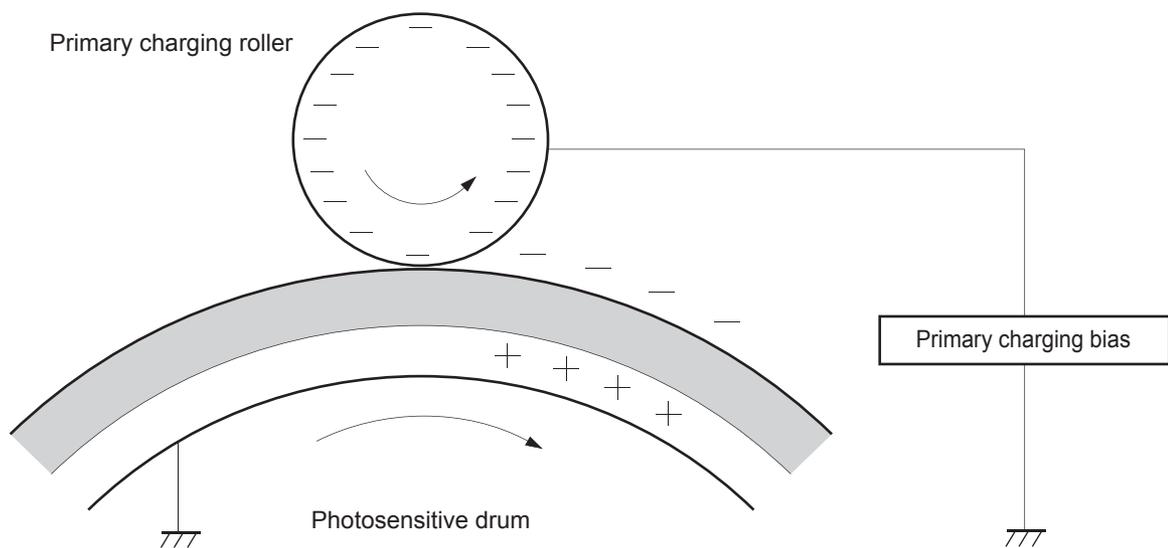
## Step 3: Laser-beam exposure

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

Figure 1-15  Laser-beam exposure



Laser beam

Photosensitive drum
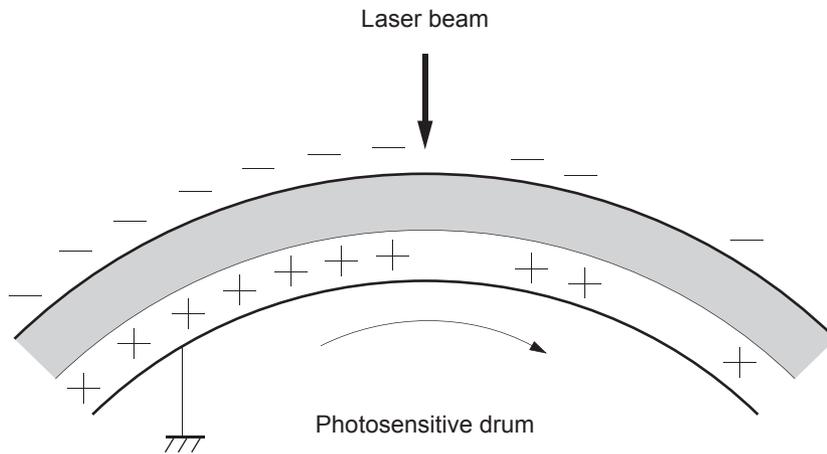
## Step 4: Development

Toner acquires a negative charge as a result of the friction from the developing roller rotating against the developing blade. Developing bias is applied to the developing roller. When the negatively charged toner comes in contact with the drum, it adheres to the electrostatic latent image. When the toner is on the drum, the image becomes visible.

Figure 1-16  Development



Developer roller

Developer blade

Developing bias

Photosensitive drum
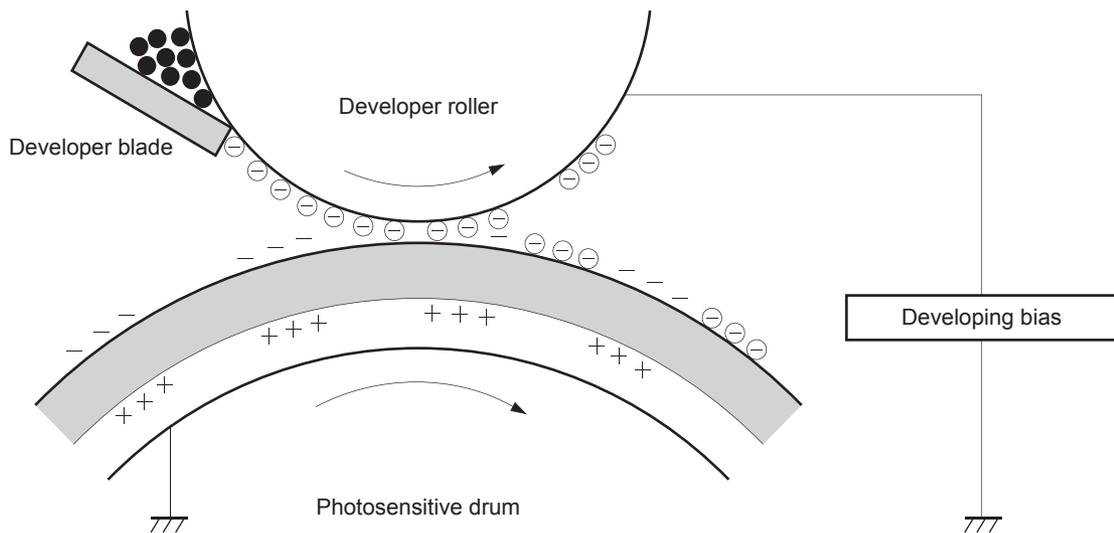
## Step 5: Transfer

Transfer bias is applied to the transfer roller to give the paper a positive charge. The positively charged paper attracts the negatively charged toner from the photosensitive drum surface and the image transfers to the paper.

Figure 1-17 Primary transfer
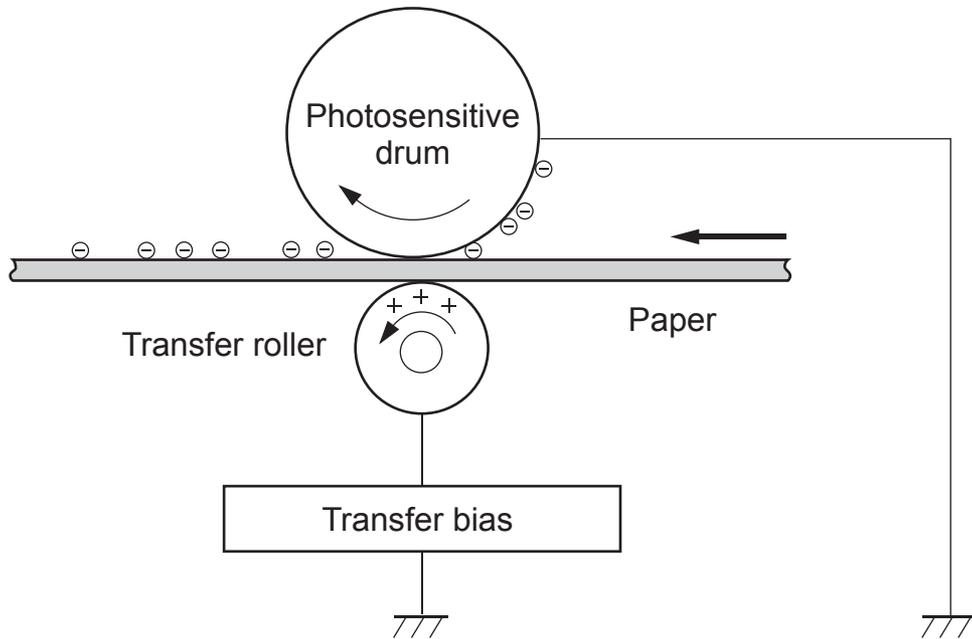
## Step 6: Separation

The elasticity of the paper and the curvature of the photosensitive drum cause the paper to separate from the drum surface. The static charge eliminator reduces the electrical charge on the back side of the paper for stable paper feeding and image quality.

Figure 1-18  Separation
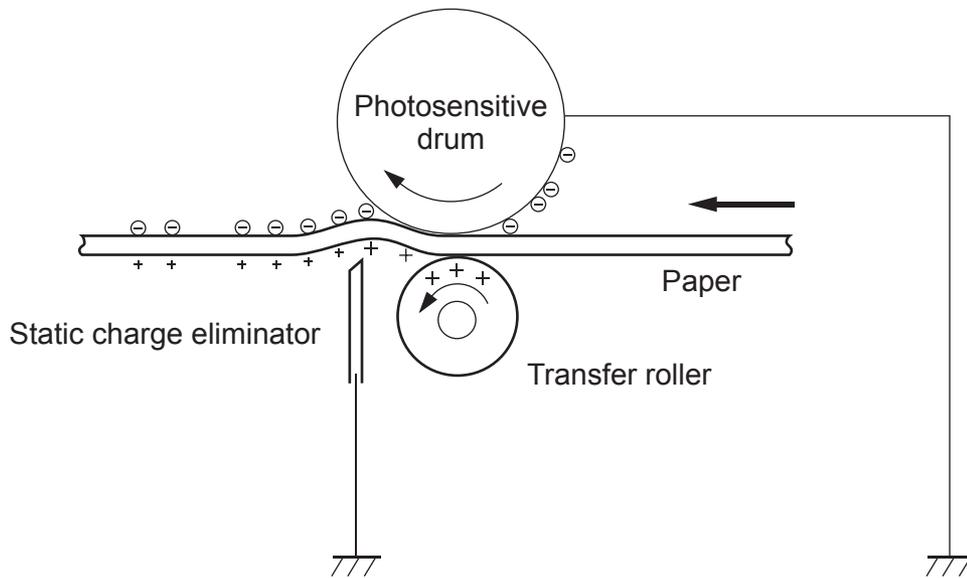


## Step 7: Fusing

The toner image is fused onto the paper by heat and pressure.

Figure 1-19  Fusing
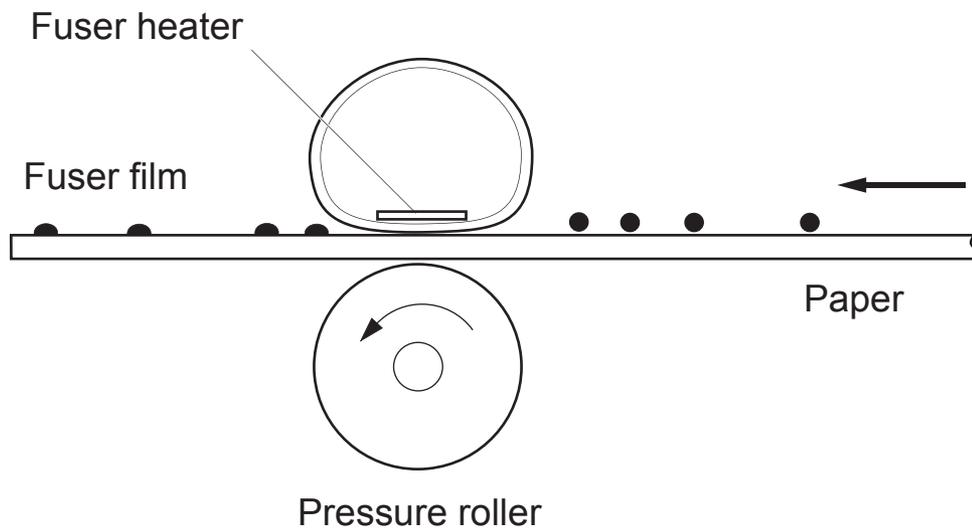
## Step 8: Drum cleaning

A reverse charge is applied to the transfer roller and the primary charging roller to transfer any residual toner on each roller back to the photosensitive drum. This toner is then removed from the drum surface by the developing roller and deposited in the developer.

Figure 1-20  Drum cleaning
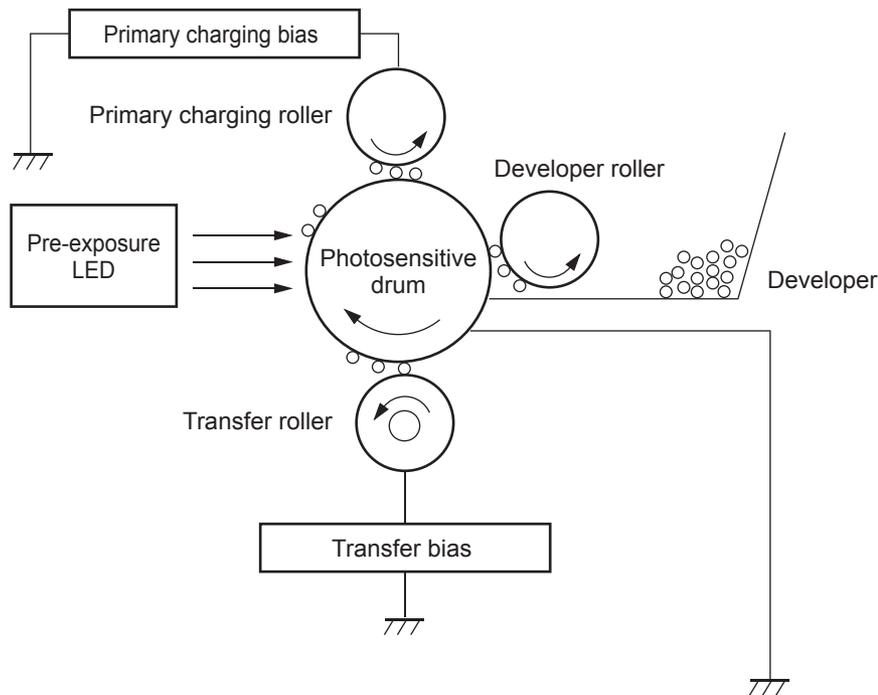


## Toner cartridges

The printers support separate toner cartridges and imaging drum cartridges.

## Design

The toner cartridge system consists of the following components:

- Photosensitive drum

- Developer roller

- Primary-charging roller

- Memory chip

**Figure 1-21** Cartridge block diagram
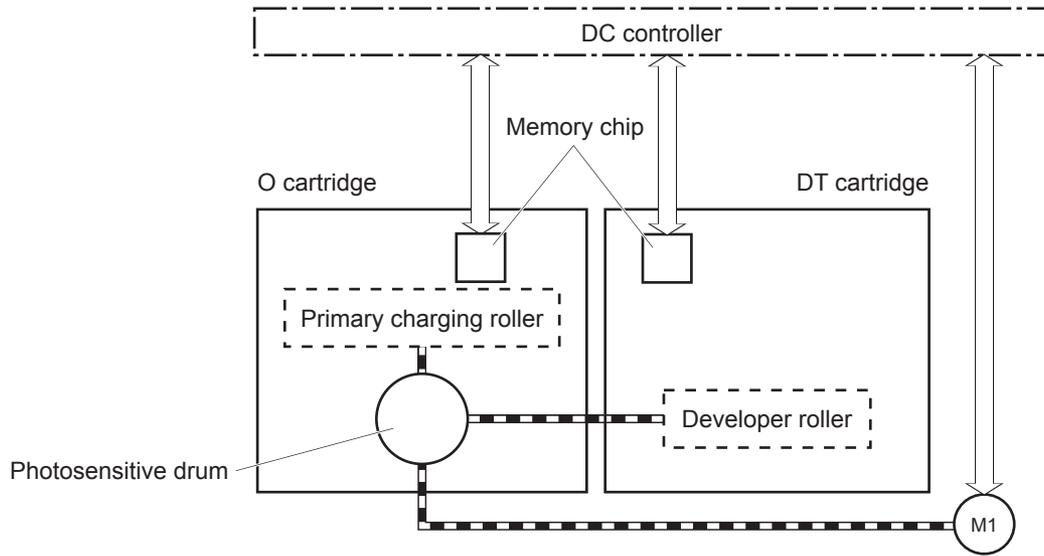


**Table 1-9** Toner cartridge functions

| Function | Supported feature |
| --- | --- |
| Cartridge presence detection | Yes |
| Cartridge life detection | Yes |
| Cartridge mis-installation detection | No |
| Drum discharge | No |
| Developer alienation control | Yes |
| Transfer roller cleaning | Yes |
| Primary charging roller cleaning | Yes |

# Engine pickup, feed, and delivery system

The pickup, feed, and delivery system uses a series of rollers to move the paper through the printer and consists of the following three functional blocks. The DC controller controls each block to pick up, feed and deliver the paper (according to commands received from the formatter).

- **Pickup-and-feed block**: Controls the movement of the paper from each pickup source to the fuser inlet

- **Fuser-and-delivery block**: Controls the movement of the paper from the fuser to the delivery destination

- **Duplex block**: Controls the movement of the paper from the delivery destination to the Top of page (TOP) sensor

**Figure 1-22**  Pickup, feed, and delivery system

Simplex paper path

Duplex paper path

Duplex block

Fuser-and-delivery block

Pickup-and-feed block
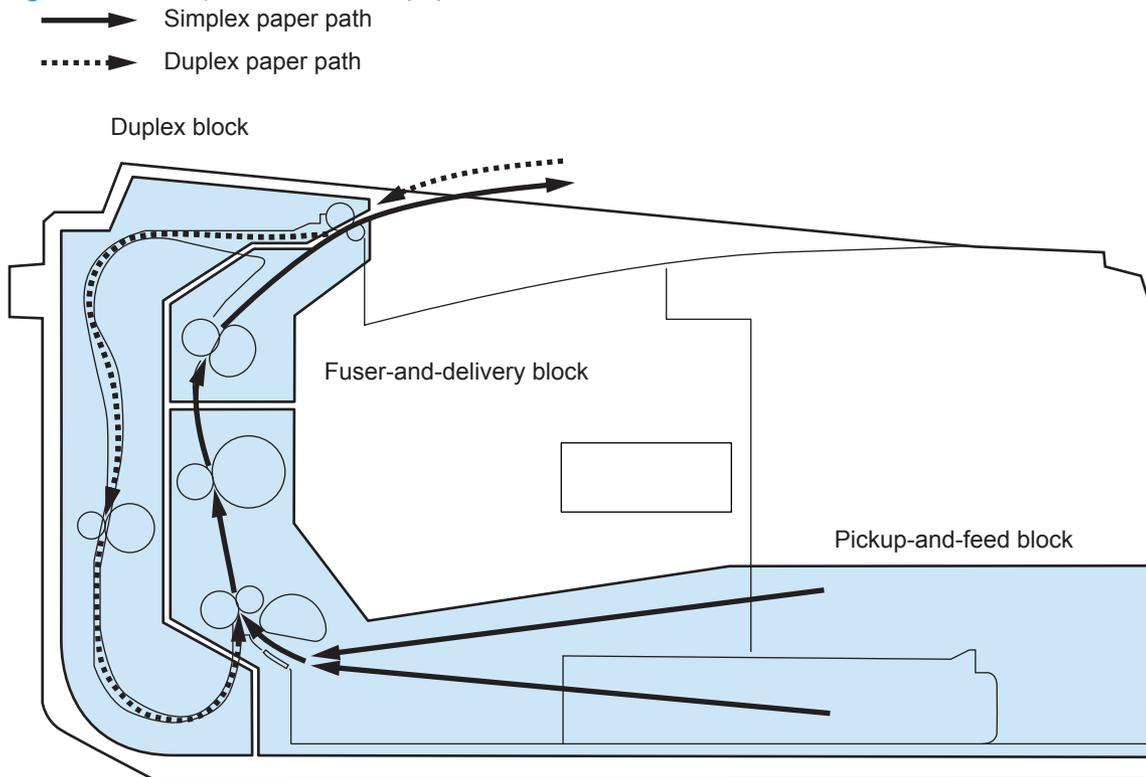
**Table 1-10**  Pickup, feed, and delivery system functions

| Function | Supported feature |
| --- | --- |
| Tray media size detection | No |
| Tray presence detection | No |
| Tray media surface detection | No |
| Tray media presence detection | No |
| Tray media level detection | No |
| Tray lift-up control | No |
| Tray lift-down control | No |
| Tray multiple-feed prevention mechanism | No |
| Multipurpose tray media presence detection | Yes |

Table 1-10 Pickup, feed, and delivery system functions (continued)

| Function | Supported feature |
|---|---|
| Multipurpose tray media width detection | Yes |
| Multipurpose tray last-media detection | No |
| Skew-feed prevention mechanism | No |
| Feed speed control | Yes |
| Loop control | No |
| Media detection | No |
| OHT detection | No |
| Image leading edge positioning | Yes |
| Media length detection | Yes |
| Media width detection | Yes |
| Pressure roller pressure release control | No |
| Output bin media-full detection | No |
| Automatic delivery | Yes |
| Duplex switchback control | No |
| Duplex feed control | Yes |

# Sensors and switches

The following figure shows the sensors and switches for the pickup, feed, and delivery system.

Figure 1-23 Sensors and switches for the pickup, feed, and delivery system
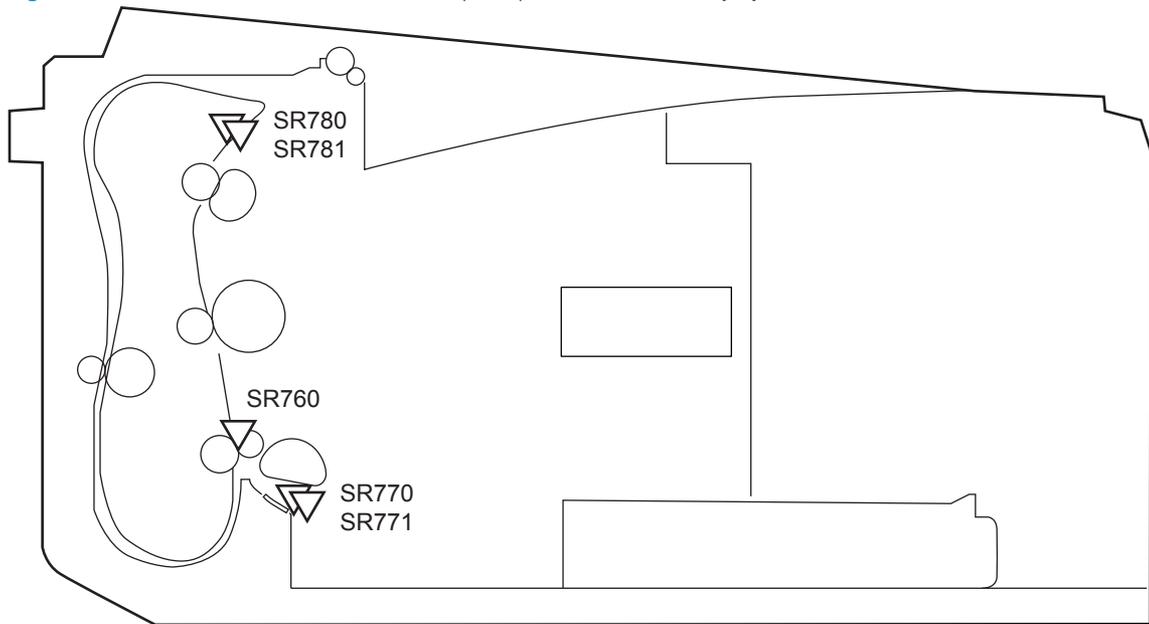


Table 1-11 Photo sensors and switches

| Abbreviation | Component |
| --- | --- |
| SR760 | Top of page (TOP) sensor |
| SR770 | Media out sensor |
| SR771 | Pickup media width sensor |
| SR780 | Fuser output sensor |
| SR781 | Fuser media width sensor |

## Motors and solenoids

The following figure shows the motors and solenoids for the pickup, feed, and delivery system.

Figure 1-24  Motors and solenoids
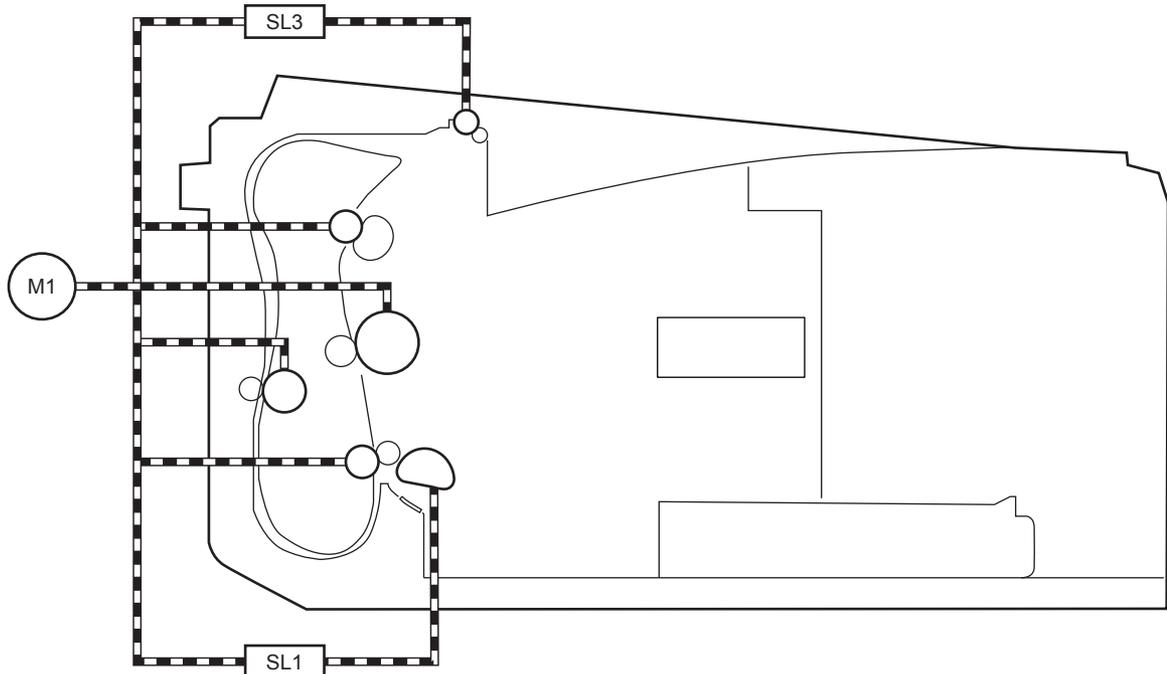


Table 1-12  Motors and solenoids

| Abbreviation | Component |
|---|---|
| M1 | Main motor |
| SL1 | Pickup solenoid |
| SL3 | Duplex switchback solenoid |

## Jam detection/prevention

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

- Top of page (TOP) sensor (SR760)

- Fuser output sensor (SR780)

- Fuser media width sensor (SR781)

**Figure 1-25** Jam detection sensors
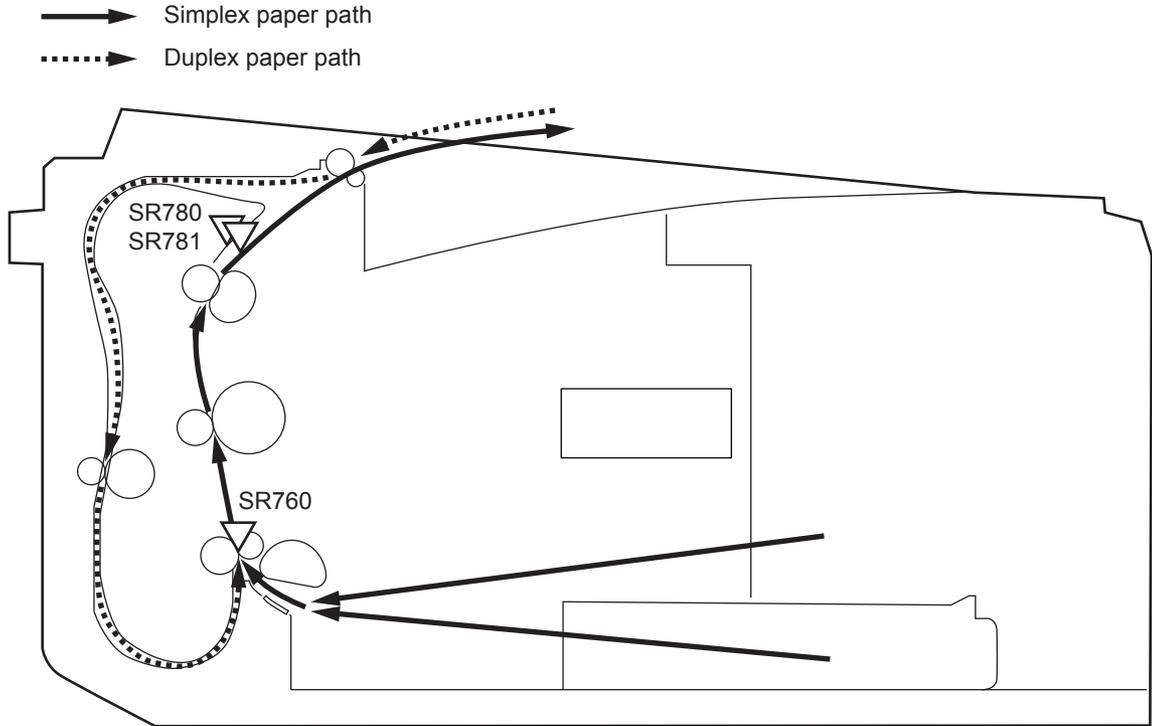


The printer determines that a jam has occurred if one of these sensors detects paper at an inappropriate time. The DC controller stops the print operation and notifies the formatter.

**Table 1-13** Jams that the printer detects

| Jam | Supported feature |
| --- | --- |
| No pick jam 1 | Yes |
| No pick jam 2 | No |
| No pick jam 3 | No |
| No pick jam 4 | No |
| Pickup stay jam 1 | Yes |
| Pickup stay jam 2 | No |
| Pickup stay jam 3 | No |
| Pickup stay jam 4 | No |
| Fuser delivery delay jam 1 | Yes |
| Fuser delivery delay jam 2 | No |
| Fuser delivery delay jam 3 | No |
| Fuser delivery delay jam 4 | No |
| Fuser delivery stay jam 1 | Yes |
| Fuser delivery stay jam 2 | No |
| Fuser delivery stay jam 3 | No |
| Fuser delivery stay jam 4 | No |

Table 1-13 Jams that the printer detects (continued)

| Jam | Supported feature |
|---|---|
| Residual paper jam 1 | Yes |
| Residual paper jam 2 | No |
| Residual paper jam 3 | No |
| Residual paper jam 4 | No |
| Door open jam 1 | Yes |
| Door open jam 2 | No |
| Door open jam 3 | No |
| Door open jam 4 | No |
| Fuser wrap jam 1 | Yes |
| Fuser wrap jam 2 | No |
| Fuser wrap jam 3 | No |
| Fuser wrap jam 4 | No |
| Duplex switchback jam 1 | Yes |
| Duplex switchback jam 2 | No |
| Duplex switchback jam 3 | No |
| Duplex switchback jam 4 | No |
| Duplex re-pickup jam 1 | Yes |
| Duplex re-pickup jam 2 | No |
| Duplex re-pickup jam 3 | No |
| Duplex re-pickup jam 4 | No |
| Delivery delay jam 1 | No |
| Delivery delay jam 2 | No |
| Delivery delay jam 3 | No |
| Delivery delay jam 4 | No |
| Delivery stay jam 1 | No |
| Delivery stay jam 2 | No |
| Delivery stay jam 3 | No |
| Delivery stay jam 4 | No |
| Multiple feed jam 1 | No |
| Multiple feed jam 2 | No |
| Multiple feed jam 3 | No |
| Multiple feed jam 4 | No |

# Scanning and image capture system (MFP printers)

📝 **NOTE:** This section is for the (MFP printers) only.

The image scanner is located on the top of the printer. The contact image sensor component of the image scanner captures an electronic image of the document on the glass. The formatter controls the operation of the image capture system. The image scanner is available in two configurations:

- **Image scanner model**: This model consists of only the flatbed image scanner. The document to be scanned is placed face-down on the scanner glass.

- **Integrated scanner assembly model**: This model consists of a document feeder and image scanner. The document feeder feeds a document to be scanned from the document feeder input tray to the scanner glass.

**Figure 1-26** Image scanner model block diagram
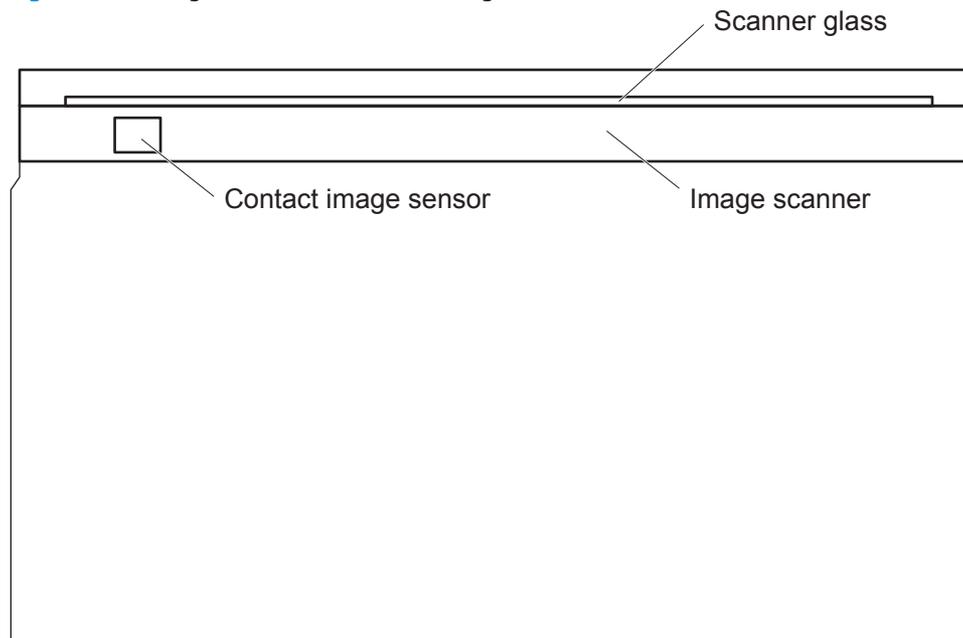
**Figure 1-27** Integrated scanner assembly model block diagram

Document Feeder

Contact image sensor          Image scanner
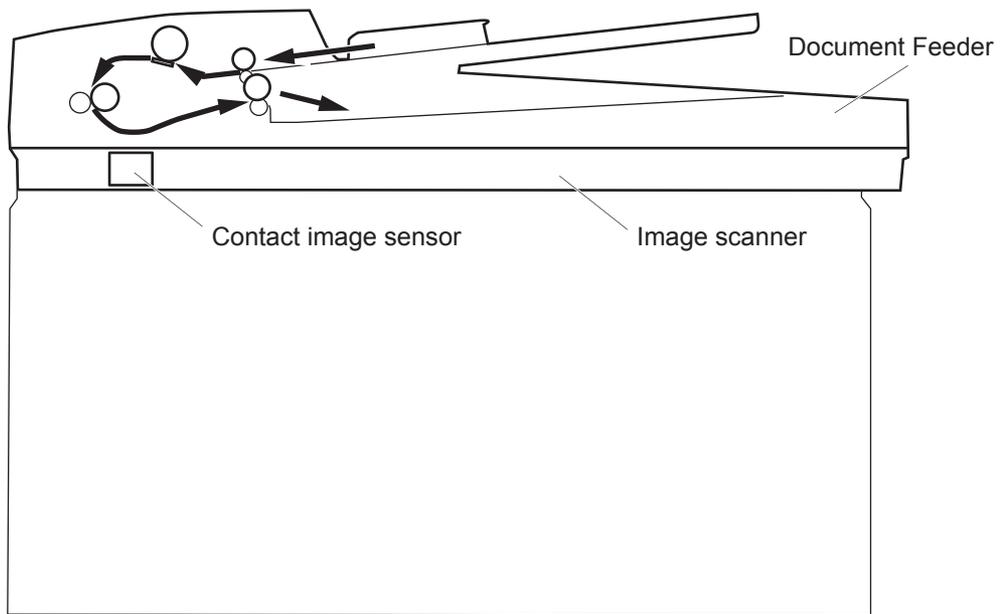
## Motor and sensors

The following figure shows the motors and sensors in the scanning and image capture system.

Figure 1-28  Motor and sensors
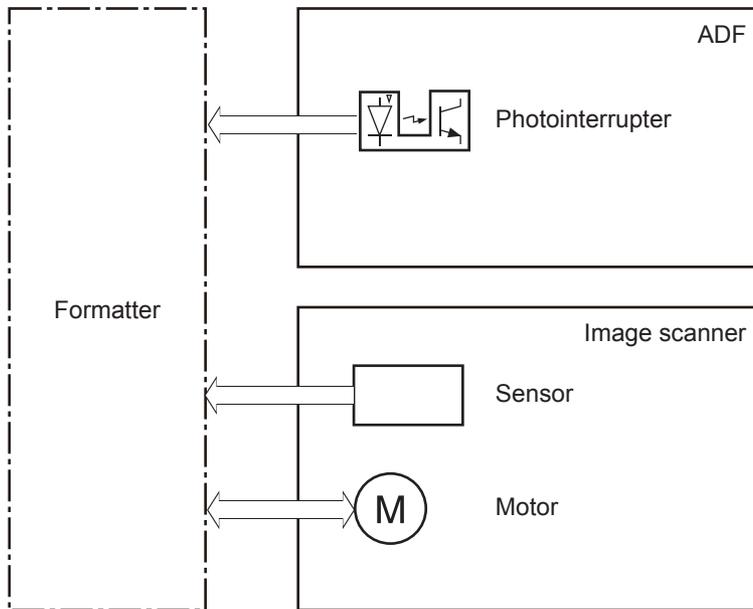


Table 1-14  Motor and sensors

| Component type | Abbreviation | Component name |
| --- | --- | --- |
| Motor | M2 | Scan motor (drives document feeder rollers and contact image sensor) |
| Sensor | CIS | Contact image sensor |
| Photointerrupter | PS791 | Document feeder document out sensor |
| | PF792 | Document feeder TOF sensor |

# Document feeder system (MFP printers)

📝 **NOTE:** This section is for the MFP printers only.

## Document feeder simplex operation

The document feeder will not function when the document feeder cover is open. The paper path is incomplete if the document feeder cover is lifted from the glass.

The standard operation of the document feeder consists of the standby (paper loading) mode, pick, feed, and lift steps:

- Standby (paper-loading) mode

  In standby mode, the lift plate is in the down position. When a document is loaded into the input tray, the paper-present sensor detects its presence.

  When a copy/scan is initiated, the document feeder motor engages the gear train and raises the lift plate until the document makes contact with the pick roller. The document feeder then begins the pick, feed, and lower sequence.

- Pick

  The pick roller rotates and moves one or more sheets forward into the document feeder where the sheets engage with the separation roller. The separation roller contacts the document feeder separation pad, which separates multiple sheets into a single sheet.

- Feed

  The single sheet continues through the document feeder paper path (aided by the pre-scan rollers) until the leading edge of the page activates the top-of-form sensor. Activation of this sensor initiates the scan process, and the scanner acquires the image as the document moves over the document feeder glass. The post-scan rollers then eject the sheet into the output area. The pick and feed steps are repeated as long as paper is detected by the paper-present sensor.

- Home

  When the form sensor detects the trailing edge of the last page, the last sheet is ejected and the motor turns on a sequence that rests the separation floor back down in standby mode, which allows it to detect when more media is loaded.

# Fax functions and operation (fax models only)

The following sections describe the printer fax capabilities.

## Computer and network security features

The printer can send and receive fax data over telephone lines that conform to public switch telephone network (PSTN) standards. The secure fax protocols make it impossible for computer viruses to be transferred from the telephone line to a computer or network.

The following printer features prevent virus transmission:

- No direct connection exists between the fax line and any devices that are connected to the USB or Ethernet ports.

- The internal firmware cannot be modified through the fax connection.

- All fax communications go through the fax subsystem, which does not use Internet data-exchange protocols.

## PSTN operation

The PSTN operates through a central office (CO) that generates a constant voltage on the TIP and RING wires (48 V, usually). A device goes on-hook by connecting impedance (such as 600 ohms for the U.S.) across the TIP and RING so that a line current can flow. The CO can detect this current and can send impulses like dial tones. The printer generates more signaling tones, such as dialing digits, to tell the CO how to connect the call. The printer can also detect tones, such as a busy tone from the CO, that tell it how to behave.

When the call is finally connected, the CO behaves like a piece of wire connecting the sender and receiver. This is the period during which all of the fax signaling and data transfer occurs. When a call is completed, the circuit opens again and the line-current flow ceases, removing the CO connection from both the sender and the receiver.

On most phone systems, the TIP and RING signals appear on pins 3 and 4 of the RJ-11 modular jack (the one on the fax card, as defined in the common 6 wire RJ standard). These two signals do not have to be polarized because all of the equipment works with either TIP or RING on one pin and the other signal on the other pin. This means that cables of either polarity can interconnect and still work.

These basic functions of PSTN operation are assumed in the design of the fax subsystem. The printer generates and detects the signaling tones, currents, and data signals that are required to transmit and receive faxes using the PSTN.

## Receive faxes when you hear fax tones

In general, incoming faxes to the printer are automatically received. However, if other devices are connected to the same phone line, the printer might not be set to answer automatically.

If the printer is connected to a phone line that receives both fax and phone calls, and you hear fax tones when you answer the extension phone, receive the fax in one of two ways:

- If you are near the printer, press Start Fax on the control panel.

- Press 1-2-3 in sequence on the extension phone keypad, listen for fax transmission sounds, and then hang up.

NOTE: In order for the 1-2-3 sequence to work, the extension phone setting must be set to On in the Fax Setup menu.

## Distinctive ring function

Distinctive ring is a service that a telephone company provides. The distinctive ring service allows three phone numbers to be assigned to one phone line. Each phone number has a distinctive ring. The first phone number has a single ring, the second phone number has a double ring, and the third phone number has a triple ring.

NOTE: The printer has not been tested with all of the distinctive-ring services that telephone companies provide in all countries/regions. HP does not guarantee that the distinctive-ring function will operate correctly in all countries/regions. Contact the local phone service provider for assistance.

### Set up the distinctive ring function

1. Open the Setup menu.

2. Open the Fax menu.

3. Select the Basic Setup menu.

4. Select the Distinctive Ring setting.

5. Use the arrow buttons to select one of the following options:

   ● All Rings (default setting)

   ● Single

   ● Double

   ● Triple

   ● Double and Triple

## Fax by using voice over IP (VOIP) services

Voice over IP (VoIP) services provide normal telephone service, including long distance service through a broadband Internet connection. These services use packets to break up the voice signal on a telephone line and transmit it digitally to the receiver, where the packets are reassembled. The VoIP services are often not compatible with fax machines. The VoIP provider must state that the service supports fax over IP services.

Because the installation process varies, the VoIP service provider will have to assist in installing the printer fax component.

Although a fax might work on a VoIP network, it can fail when the following events occur:

● Internet traffic becomes heavy and packets are lost.

● Latency (the time it takes for a packet to travel from its point of origin to its point of destination) becomes excessive.

If you experience problems using the fax feature on a VoIP network, make sure that all of the printer cables and settings are correct. Configuring the Fax Speed setting to Medium(V.17) or Slow(V.29) can also improve your ability to send a fax over a VoIP network.

If you continue to have problems faxing, contact your VoIP provider.

# The fax subsystem

The formatter, fax card, firmware, and software all contribute to the fax functionality. The designs of the formatter and fax card, along with parameters in the firmware, determine the majority of the regulatory requirements for telephony on the printer.

The fax subsystem is designed to support V.34 fax transmission, low speeds (such as V.17 fax), and older fax machines.

# Fax card in the fax subsystem

Two versions of the fax card are used in the printer. One is used in the North American, South American, and Asian countries/regions. The other is used primarily in European countries/regions.

The fax card contains the modem chipset (DSP and CODEC) that controls the basic fax functions of tone generation and detection, along with channel control for fax transmissions. The CODEC and its associated circuitry act as the third-generation silicon data access arrangement (DAA) to comply with worldwide regulatory requirements.

The only difference between the two versions is that each version is compliant with the 2/4-wire phone jack system from the respective country/region.

## Safety isolation

The most important function of the fax card is the safety isolation between the high-voltage, transient-prone environment of the telephone network (TNV [telephone network voltage]) and the low-voltage analog and digital circuitry of the formatter (SELV [secondary extra-low voltage]). This safety isolation provides both customer safety and printer reliability in the telecom environment.

Any signals that cross the isolation barrier do so magnetically. The breakdown voltage rating of barrier-critical components is greater than 5 kV.

## Safety-protection circuitry

In addition to the safety barrier, the fax card protects against over-voltage and over-current events.

Telephone over-voltage events can be either differential mode or common mode. The event can be transient in nature (a lightning-induced surge or ESD) or continuous (a power line crossed with a phone line). The fax card protection circuitry provides margin against combinations of over-voltage and overcurrent events.

Common mode protection is provided by the selection of high-voltage-barrier critical components (transformer and relay). The safety barrier of the fax card PCB traces and the clearance between the fax card and surrounding components also contribute to common mode protection.

A voltage suppressor (a crowbar-type thyristor) provides differential protection. This device becomes low impedance at approximately 300 V differential, and crowbars to a low voltage. A series thermal switch works in conjunction with the crowbar for continuous telephone line events, such as crossed power lines.

All communications cross the isolation barrier magnetically. The breakdown voltage rating of barrier-critical components is greater than 5 kV.

## Data path

TIP and RING are the two-wire paths for all signals from the telephone network. All signaling and data information comes across them, including fax tones and fax data.

The telephone network uses DC current to determine the hook state of the telephone, so line current must be present during a call. The silicon DAA provides a DC holding circuit to keep the line current constant during a fax call.

The silicon DAA converts the analog signal to a digital signal for DSP processing, and also converts the digital signal to an analog signal for transmitting data through a telephone line.

The magnetically coupled signals that cross the isolation barrier go through either a transformer or a relay.

The DSP in the fax card communicates with the ASIC in the formatter using the high-speed serial interface.

## Hook state

Another magnetically coupled signal is the control signal that disconnects the downstream telephone devices (such as a phone or answering machine). A control signal originating on the DSP can change the relay state, causing the auxiliary jack (downstream jack) to be disconnected from the telephone circuit.

The printer takes control of calls that it recognizes as fax calls. If the printer does not directly pick up the call, it monitors incoming calls for the fax tone or for the user to direct it to receive a fax. This idle mode is also called eavesdropping. This mode is active when the printer is on-hook but current exists in the downstream phone line because another device is off-hook. During eavesdropping, the receive circuit is enabled but has a different gain from the current that is generated during normal fax transmissions.

The printer does not take control of the line unless it detects a fax tone or the user causes it to connect manually. This feature allows the user to make voice calls from a phone that is connected to the printer without being cut off if a fax is not being received.

## Downstream device detection

The line voltage monitoring module of the silicon DAA can detect the line state as well as the downstream device. It tells DSP via DIB that an active device (telephone, modem, or answering machine) is connected to the auxiliary port on the printer (the right side of the dual RJ-11 jack). The DSP uses the signal to make sure that the printer does not go off-hook (and disconnects a downstream call) until it has been authorized to do so (by a manual fax start or the detection of the appropriate tones).

## Hook switch control

In the silicon DAA the CODEC controls the hook switch directly. The CODEC is activated when it receives commands from the DSP. When the circuit is drawing DC current from the central office it is considered off-hook. When no DC current flows the state is considered on-hook.

## Ring detect

Ring detect is performed by the line voltage monitoring module of the silicon DAA, and is a combination of voltage levels and cadence (time on and time off). Both must be present to detect a valid ring. The CODEC works with DSP as well as the firmware to determine if an incoming signal is an answerable ring.

## Line current control

The DC current from the CO needs to have a path to flow from TIP to RING. The DC impedance emulation line modulator and DC terminations modules in the silicon DAA act as a DC holding circuit, and work with the firmware to achieve the voltage-current characteristic between TIP and RING. The impedance (the current-voltage characteristic) changes corresponding to certain special events, such as pulse dialing or when the printer goes on-hook.

### Billing or metering tone filters

Switzerland and Germany provide high-frequency AC signals on the phone line in order to bill customers.

A filter in a special fax cable (for certain countries/regions), can filter these signals. Because these billing signals are not used in the U.S., these filters are not present in the U.S. fax cable.

To obtain a special fax cable, contact your local telephone service provider.

## Fax page storage in flash memory

Fax pages are the electronic images of the document page. They can be created in any of three ways: scanned to be sent to another fax machine, generated to be sent by the computer, or received from a fax machine to be printed.

The printer stores all fax pages in flash memory automatically. After these pages are written into flash memory, they are stored until the pages are sent to another fax machine, printed on the printer, transmitted to the computer, or erased by the user.

These pages are stored in flash memory, which is the nonvolatile memory that can be repeatedly read from, written to, and erased. The printer has 8 MB of flash memory, of which 7.5 MB is available for fax storage. The remaining 0.5 MB is used for the file system and reclamation. Adding RAM does not affect the fax page storage because the printer does not use RAM for storing fax pages.

### Stored fax pages

The user can reprint stored fax receive pages in case of errors. For a fax send, the printer will resend the fax in case of errors. The printer will resend stored fax pages after a busy signal, communication error, no answer, or power failure. Other fax devices store fax pages in either normal RAM or short-term RAM. Normal RAM immediately loses its data when power is lost, while short-term RAM loses its data about 60 minutes after power failure. Flash memory maintains its data for years without any applied power.

### Advantages of flash memory storage

Fax pages that are stored in flash memory are persistent. They are not lost as a result of a power failure, no matter how long the power is off. Users can reprint faxes in case the toner cartridge runs out of toner or the printer experiences other errors while printing faxes.

The printer also has scan-ahead functionality that makes use of flash memory. Scan-ahead automatically scans pages into flash memory before a fax job is sent. This allows the sender to pick up the original document immediately after it is scanned, eliminating the need to wait until the fax transmission is complete.

Because fax pages are stored in flash memory rather than RAM, more RAM is available to handle larger and more complicated copy and print jobs.

# 2 Solve problems

# For additional service and support

HP service personnel, go to the Service Access Workbench (SAW) at http://sawpro.glb.itcs.hp.com.

Channel partners, go to HP Channel Services Network (CSN) at www.hp.com/partners/csn .

At these locations, find information on the following topics:

- Install and configure

- Printer specifications

- Up-to-date control panel message (CPMD) troubleshooting

- Solutions for printer issues and emerging issues

- Remove and replace part instructions and videos

- Service advisories

- Warranty and regulatory information

Channel partners, access training materials in the HP University and Partner Learning Center at https://content.ext.hp.com/sites/LMS/HPU.page.

To access HP PartSurfer information from any mobile device, go to http://partsurfermobile.hp.com/ or scan the Quick Response (QR) code below.

# Troubleshooting process

## Determine the problem source

When the printer malfunctions or encounters an unexpected situation, the printer control panel alerts the user to the situation. This section contains a pre-troubleshooting checklist and a troubleshooting flow chart to filter out many possible causes of the problem. Use the pre-troubleshooting checklist to gather information about the problem from the customer. Use the troubleshooting flowchart to help diagnose the root cause of the problem. The remainder of this chapter provides steps for correcting problems.

- Use the pre-troubleshooting check list to gather information about the problem from the customer. See Pre-troubleshooting checklist on page 47.

- Use the troubleshooting flowchart to pinpoint the root cause of hardware malfunctions. The flowchart provides guides to the section of this chapter that contain steps to correct the malfunction. See Troubleshooting flowchart on page 48.

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 following table includes basic questions to ask the customer to quickly help define the problem(s).

| General topic | Questions |
|---|---|
| Environment | • Is the printer installed on a solid, level surface (+/- 1°)? |
| | • Is the power-supply voltage within ± 10 volts of the specified power source? |
| | • Is the power-supply plug inserted in the printer and the outlet? |
| | • Is the operating environment within the specified parameters? |
| | • Is the printer exposed to ammonia gas, such as that produced by diazo copiers or office cleaning materials? |
| | **NOTE:** Diazo copiers produce ammonia gas as part of the copying processes. Ammonia gas (from cleaning supplies or a diazo copier) can have an adverse effect on some printer components (for example, the toner cartridge or image drum). |
| | • Is the printer exposed to direct sunlight? |
| Media | • Does the customer use only supported media? |
| | • Is the media in good condition (no curls, folds, or distortion)? |
| | • Is the media stored correctly and within environmental limits? |
| Input tray | • Is the amount of media in the tray within specifications? |
| | • Is the media correctly placed in the tray? |
| | • Are the paper guides aligned with the stack? |
| Toner cartridge | • Are the toner cartridge and imaging drum installed correctly? |

| General topic | Questions |
|---|---|
| Transfer roller and fuser | • Are the transfer roller and fuser installed correctly? |
| Covers | • Is the toner cartridge door closed? |
| Condensation | • Does condensation occur following a temperature change (particularly in winter following cold storage)? If so, wipe affected parts dry or leave the printer on for 10 to 20 minutes. |
| | • Were a toner cartridge or imaging drum opened soon after being moved from a cold to a warm room? If so, allow the toner cartridge or imaging drum to sit at room temperature for 1 to 2 hours. |
| Miscellaneous | • Check for and remove any non-HP components (toner cartridge or imaging drum) from the printer. |
| | • Remove the printer from the network (network models) and ensure that the failure is associated with the printer before beginning troubleshooting. |

## Troubleshooting flowchart

This flowchart highlights the general processes to follow to quickly isolate and solve printer hardware problems.

Each row depicts a major troubleshooting step. Follow a "yes" answer to a question to proceed to the next major step. A "no" answer indicates that more testing is needed. Go to the appropriate section in this chapter, and follow the instructions there. After completing the instructions, go to the next major step in this troubleshooting flowchart.

Table 2-1  Troubleshooting flowchart

| 1<br><br>Power on | Is the printer on and does a readable message display or is the Ready LED illuminated (depends on printer model)? | Follow the power-on troubleshooting checks. See Power-on checks on page 49.<br><br>After the control panel display is functional, see step 2. |
|---|---|---|
| | Yes ↓ \| No → | |
| 2<br><br>Control panel messages/Alerts | Does the message **Ready** display on the control panel or is the Ready LED illuminated? | After the errors have been corrected, go to step 3. |
| | Yes ↓ \| No → | |
| 3<br><br>Event log | Open the Troubleshooting menu (depends on printer model) and print an event log to see the history of errors with this printer.<br><br>Does the event log print? | If the event log does not print, check for error messages.<br><br>If paper jams inside the printer, see the jams section of the printer service manual.<br><br>If error messages display on the control panel when trying to print an event log, see the control panel message section of the printer troubleshooting service manual.<br><br>After successfully printing and evaluating the event log, see step 4. |
| | Yes ↓ \| No → | |
| 4<br><br>Information pages | Print the configuration pages to verify all printer settings. | After evaluating the configuration pages, see step 5. |
| | Yes ↓ \| No → | |
| 5<br><br>Print quality | Does the print quality meet the customer's requirements? | Compare the images with the sample defects in the image defect tables. See the images defects table in the printer troubleshooting service manual.<br><br>After the print quality is acceptable, see step 6. |
| | Yes ↓ \| No → | |

Table 2-1  Troubleshooting flowchart (continued)

| 6 Interface | Can the customer print successfully from the host computer? | | Verify that all I/O cables are connected correctly and that a valid IP address is listed on the network configuration page (depends on printer model). |
|---|---|---|---|
| | Yes. This is the end of the troubleshooting process. | No → | If error messages display on the control panel,(or the Attention LED is illuminated), see the control-panel message section (or the interpret control-panel light patterns section) of the printer troubleshooting service manual. |
| | | | When the customer can print from the host computer, this is the end of the troubleshooting process. |

# Power subsystem

Turn on the power. If the control panel does not illuminate, perform the power-on checks to find the cause of the problem.

## Power-on checks

1. Verify that the printer is plugged into an active electrical outlet that delivers the correct voltage.

2. Verify that the power switch is in the on position.

3. Make sure that the printer makes the expected start up sounds.

📝 **NOTE:** If the printer does not power on, the overcurrent/overvoltage protection circuit in the low-voltage power supply might be functioning. This circuit automatically stops supplying DC voltage to the printer components whenever it detects excessive current or abnormal voltage. In this case, turn the printer off and unplug the power cord. Do not turn the printer on until the cause of the excessive current or voltage from the power source is found and corrected.

# Control panel checks

The printer includes diagnostic tests for the LED, LCD, and touchscreen control panels.

1. Open the secondary service menu.

### LED control panels

📝 **NOTE:** HP Device Toolbox is software used to connect to the HP Embedded Web Server when the printer is connected to a computer via USB. It is available only if a full installation was performed when the printer was installed on a computer. Depending on how the printer is connected, some features might not be available.

The HP Embedded Web Server is not accessible beyond the network firewall.

a. Open the HP Printer Assistant.

- **Windows 8.1**: Click the down arrow in lower left corner of the **Start** screen, and then select the printer name.

- **Windows 8**: Right-click an empty area on the **Start** screen, click **All Apps** on the app bar, and then select the printer name.

- **Windows** 7, **Windows Vista**, and **Windows XP**: From the computer desktop, click **Start**, select **All Programs**, click **HP**, click the folder for the printer, select the icon with the printer's name, and then open **HP Printer Assistant**.

b.   In the **HP Printer Assistant**, select **Print**, and then select **HP Device Toolbox**.

### 2-line control panels

a.   From the printer control panel, press the Setup  button.

b.   Simultaneously press the Cancel  button and the left arrow  button. The 2ndary Service menu item should be at the top of the list.

c.   Use the left and right arrow buttons to navigate through the menu. When finished, press the Cancel  button to close the menu.

### Touchscreen control panel

a.   From the Home screen on the printer control panel, touch the Setup  button.

b.   Touch the space between the Home  and the Help  button.

c.   Touch the Back  button.

d.   Touch the Setup  button.

e.   Touch 2ndary Service (at the top of the list) to access the menu.

2.   Select one of the following tests:

**NOTE:**   Not all tests are available for all control panels.

- LED test: Test the LED lights. The touchscreen control panels do not have any LEDs.

- Display Test: Test the control panel display.

- Button Test: Test the control panel buttons.

# Tools for troubleshooting

The section describes the tools that can help solve problems with the printer.

## Individual component diagnostics

### Tools for troubleshooting: LED diagnostics

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

#### Network LEDs (network models)

The formatter has two network LEDs. When the printer is connected to a properly working network through a network cable, the amber LED indicates network activity, and the green LED indicates the link status.

A blinking amber LED indicates network traffic. If the green LED is off, a link has failed. For link failures, check all of the network cable connections. In addition, you can try to manually configure the network card link speed setting by using the printer control-panel.
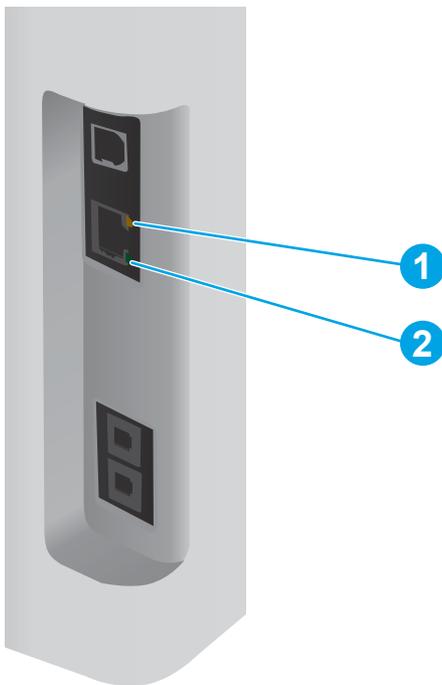
| | |
|---|---|
| 1 | Link status LED (green) |
| 2 | Network activity LED (amber) |

#### Control-panel LEDs

📝 NOTE:   The following section describes control-panel LEDs for LED control panels (not touchscreen models).

The state of the Ready light and Attention light on the printer signal the printer status. The following table outlines the possible control-panel light states.

| Printer state | Ready light state | Attention light state |
|---|---|---|
| Initializing | Blinking | Blinking |
| Ready | On | Off |
| Receiving data/processing job or cancelling job | Blinking | Off |
| Error message | Off | Blinking |
| Fatal error[1] | On | On |

[1]    The printer restarts after one of these errors occurs.

## Change the link speed setting (network models)

### Change the link speed setting from a 2-line control panel

1.  Press the Setup �’ button on the printer control panel.

2.  Open the **Network Setup** menu.

3.  Open the **Link Speed** menu.

4.  Use the Left arrow ◀ button or the Right arrow ▶ button to scroll to the desired item, and then press the OK button.

    📝 **NOTE:**   **Automatic** is the default selection.

### Change the link speed setting from a touchscreen control panel

1.  From the Home screen on the printer control panel, touch the Setup ⚙ button.

2.  Open the following menus:

    - **Network Setup**

    - **Link Speed**

3.  Select the desired item.

    📝 **NOTE:**   **Automatic** is the default selection.

## Tools for troubleshooting: Engine diagnostics

Printing test pages helps determine whether the printer engine and the formatter are functioning. If the formatter is damaged, it might interfere with the engine test. If the engine-test page does not print, try removing power from the formatter and then performing the engine test again. If the engine test is then successful, the problem is almost certainly with the formatter

### Engine test

📝 **NOTE:**    The printer has an engine-test page in the firmware that is printed by opening and closing the toner-cartridge door in a specific pattern. Use A4 or letter-size paper to print the engine-test page.

1.  Make sure that paper is correctly loaded in the tray.

2.  Turn the printer power on. Wait for the printer to reach the Ready state.

3. Open, and then close the toner-cartridge door four times at an interval of about two seconds to start the internal engine-test.

4. If the engine test is successful, an engine-test page prints. The test page should have a series of lines that are parallel to the short end of the page.

Figure 2-1 Engine test page
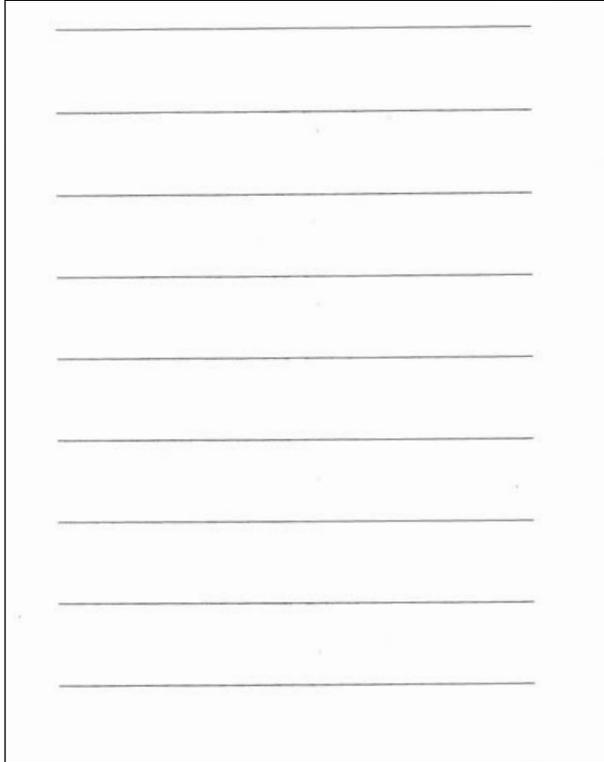
# Diagrams

Use the diagrams in this section to identify printer components.

## Diagrams: Block diagrams

### Sensors and switches (image formation system; printer base)

Figure 2-2  Sensors and switches (image formation system; printer base)
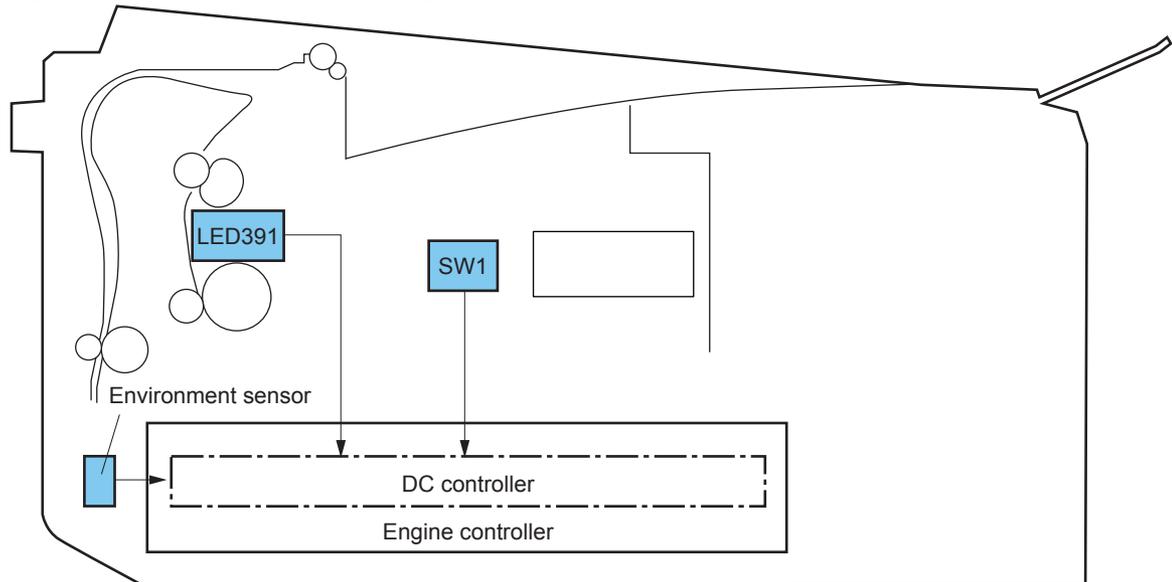


Table 2-2  Sensors and switches (image formation system; printer base)

| Item | Description |
|------|-------------|
| LED391 | Pre-exposure LED |
| -- | Environment sensor |
| SW1 | Developer alienation switch |

### Sensors (pickup, feed, and delivery system; printer base)

Figure 2-3  Sensors (pickup, feed, and delivery system; printer base)
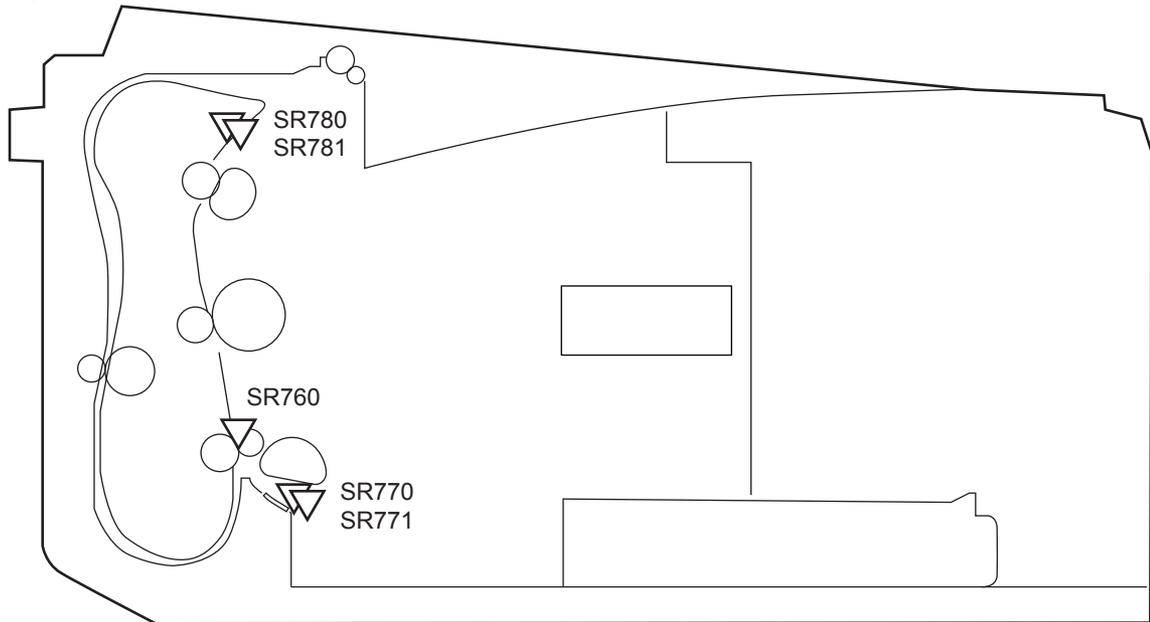


Table 2-3  Sensors (pickup, feed, and delivery system; printer base)

| Item | Description |
| --- | --- |
| SR760 | Top-of-page (TOP) sensor |
| SR770 | Media out sensor |
| SR771 | Pickup media width sensor |
| SR780 | Fuser output sensor |
| SR781 | Fuser media width sensor |

## Cross section diagrams

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## Service parts (printer base)

Figure 2-4  Service parts (cross section; printer base)
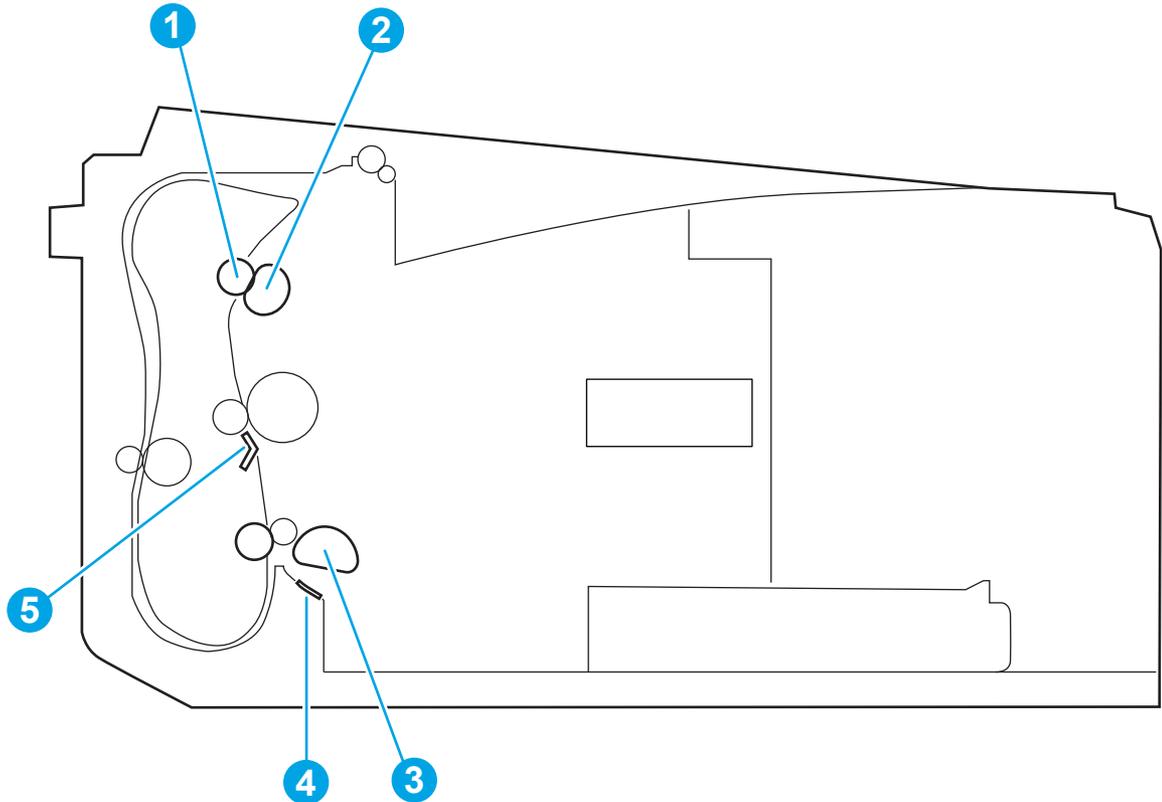


Table 2-4  Service parts (cross section; printer base)

| Item | Description | Item | Description |
|------|-------------|------|-------------|
| 1 | Pressure roller | 4 | Separation pad |
| 2 | Fuser film | 5 | Transfer front guide |
| 3 | Pickup roller | | |

## Image formation (printer base)

Figure 2-5 Image formation (cross section; printer base)
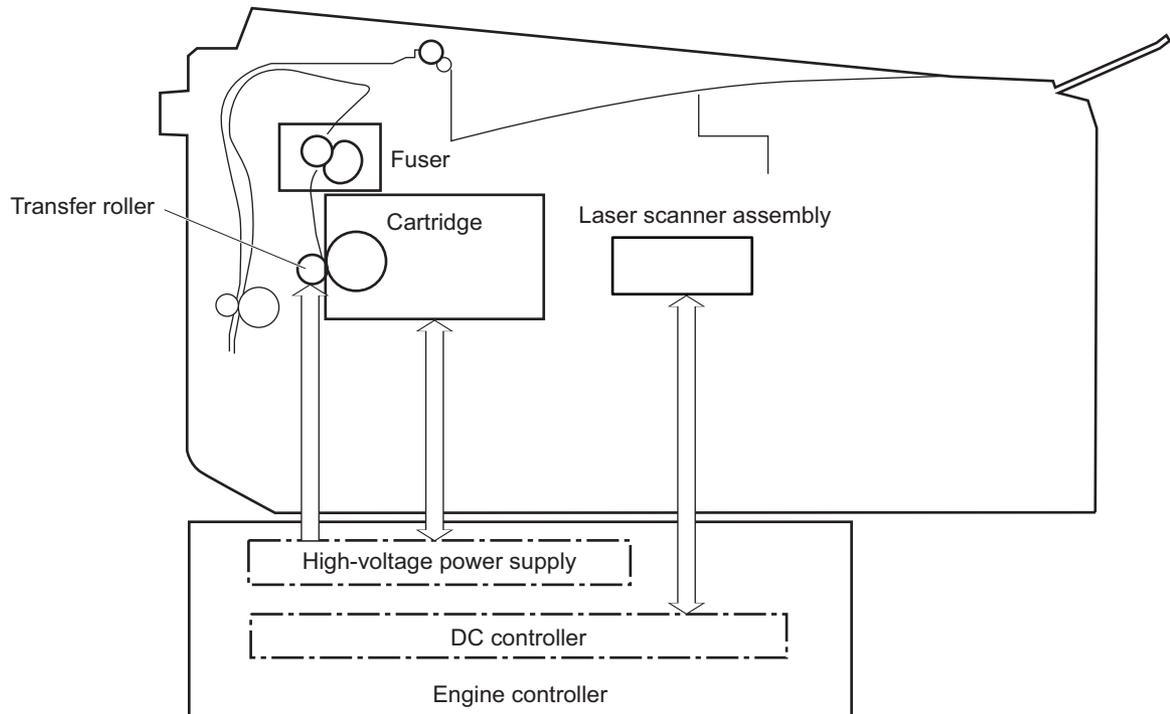
## Motor (printer base)

**Figure 2-6** Motor (cross section; printer base)
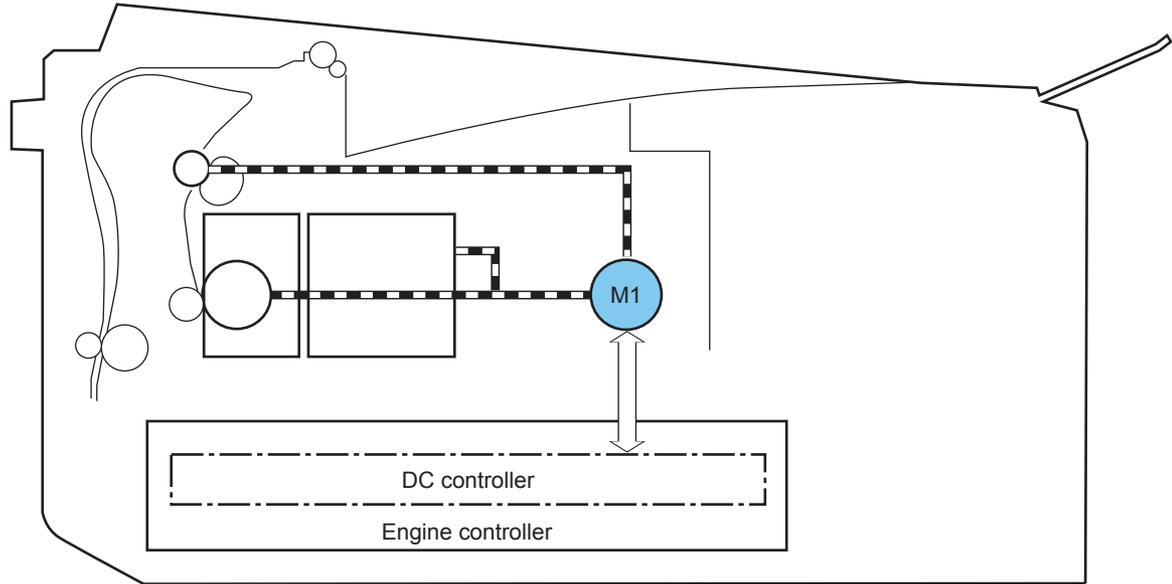


**Table 2-5** Motor (cross section; printer base)

| Item | Description |
| --- | --- |
| M1 | Main motor |

# Diagrams: Printed circuit assembly (PCA) connector locations

- Engine controller PCA

- Formatter PCA

## Engine controller PCA

Figure 2-7 Engine controller PCA connectors
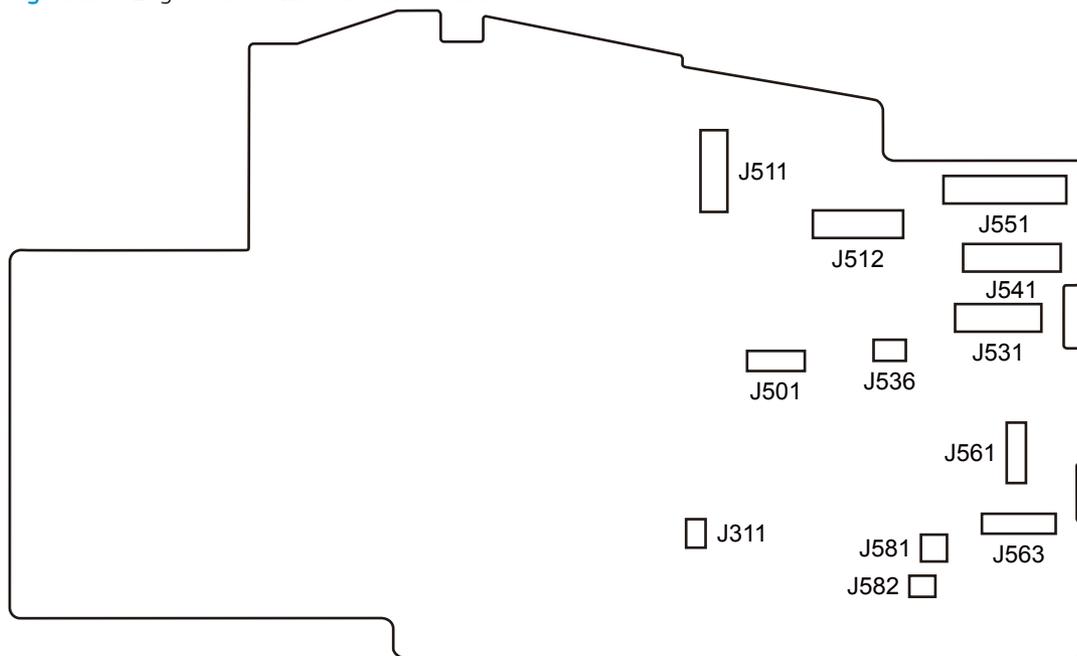


Table 2-6 Engine controller PCA connectors

| Item | Description | Item | Description |
|------|-------------|------|-------------|
| J311 | Pre-exposure LED PCA | J541 | Laser PCA |
| J501 | Not used | J551 | Motor PCA |
| J511 | Low-voltage power supply (LVPS) | J561 | Top-of-page (TOP) sensor |
| J512 | Low-voltage power supply (LVPS) | J563 | Media sensor PCA |
| J531 | Formatter PCA | J581 | E-label (cartridge memory) |
| J536 | Power switch PCA | J582 | E-label (cartridge memory) |

### Formatter PCA

**Figure 2-8** Formatter PCA (M203)
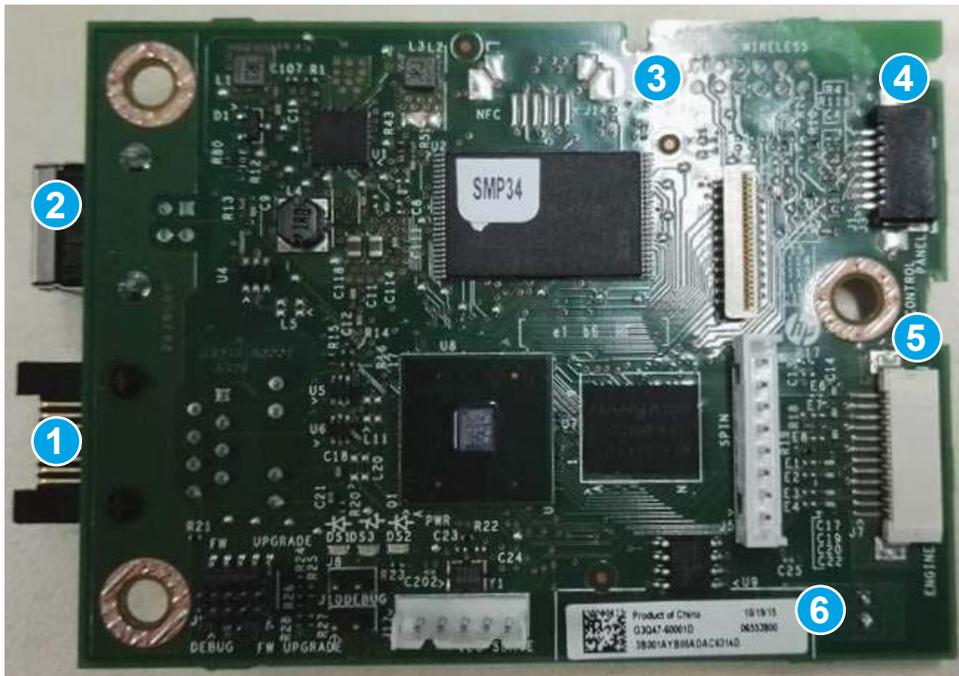


**Table 2-7**  **Formatter PCA (M203)**

| Item | Description | Item | Description |
|------|-------------|------|-------------|
| 1 | LAN port | 4 | Control-panel interface, J1/J3 |
| 2 | USB port, J13 | 5 | Engine interface, J7 |
| 3 | Wireless interface, J12 | 6 | Power, J16 |

Figure 2-9 Formatter PCA (M227)
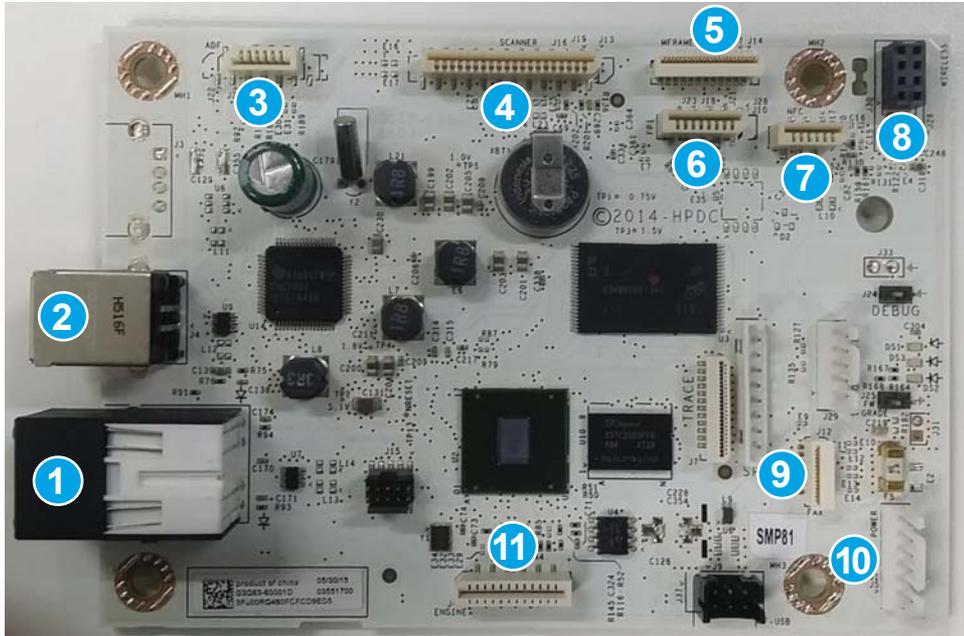


Table 2-8 Formatter PCA (M227)

| Item | Description | Item | Description |
|------|-------------|------|-------------|
| 1 | LAN port, J2 | 7 | NFC interface, J17 |
| 2 | USB port, J4 | 8 | Wireless interface, J30 |
| 3 | Document feeder interface, J11 | 9 | Fax interface, J12 |
| 4 | Scanner interface, J19 | 10 | Power, J1 |
| 5 | Touchscreen control-panel interface, J14 | 11 | Engine interface, J42 |
| 6 | LCD control-panel interface, J28 | | |

## Diagrams: External plug and port locations

Figure 2-10 External plug and port locations (M203)
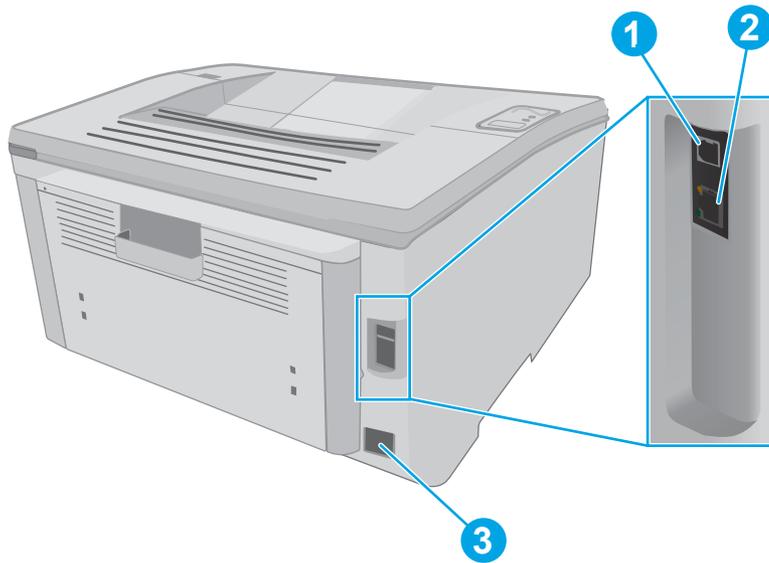


Table 2-9 External plug and port locations (M203)

| Item | Description |
| --- | --- |
| 1 | USB connector |
| 2 | Ethernet port (network models only) |
| 3 | Power cord receptacle |

Figure 2-11 External plug and port locations (M227)
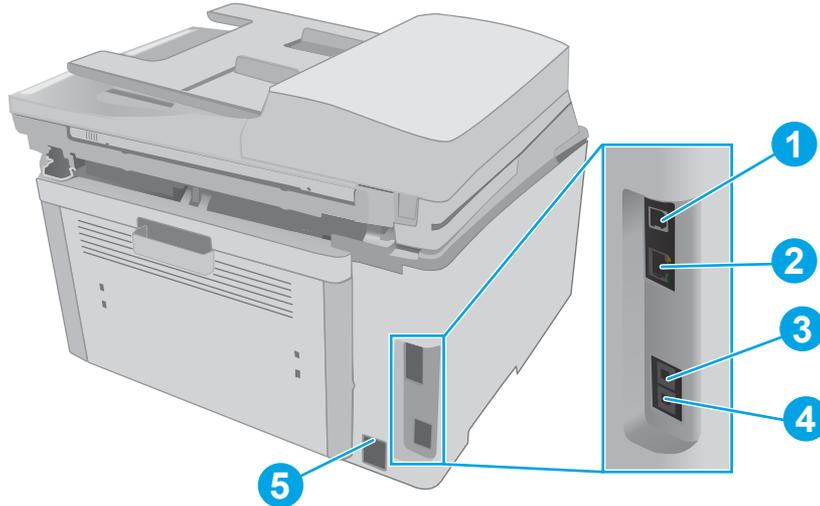


Table 2-10 External plug and port locations (M227)

| Item | Description | Item | Description |
| --- | --- | --- | --- |
| 1 | USB connector | 4 | Telephone "line out" port for attaching an extension phone, answering machine, or other device (fax models only) |

Table 2-10  External plug and port locations (M227) (continued)

| Item | Description | Item | Description |
|---|---|---|---|
| 2 | Ethernet port (network models only) | 5 | Power cord receptacle |
| 3 | Fax "line in" port for attaching the fax phone line to the printer (fax models only) | | |

# Diagrams: Locations of major components

## Major components (printer base)

Figure 2-12 Main assemblies
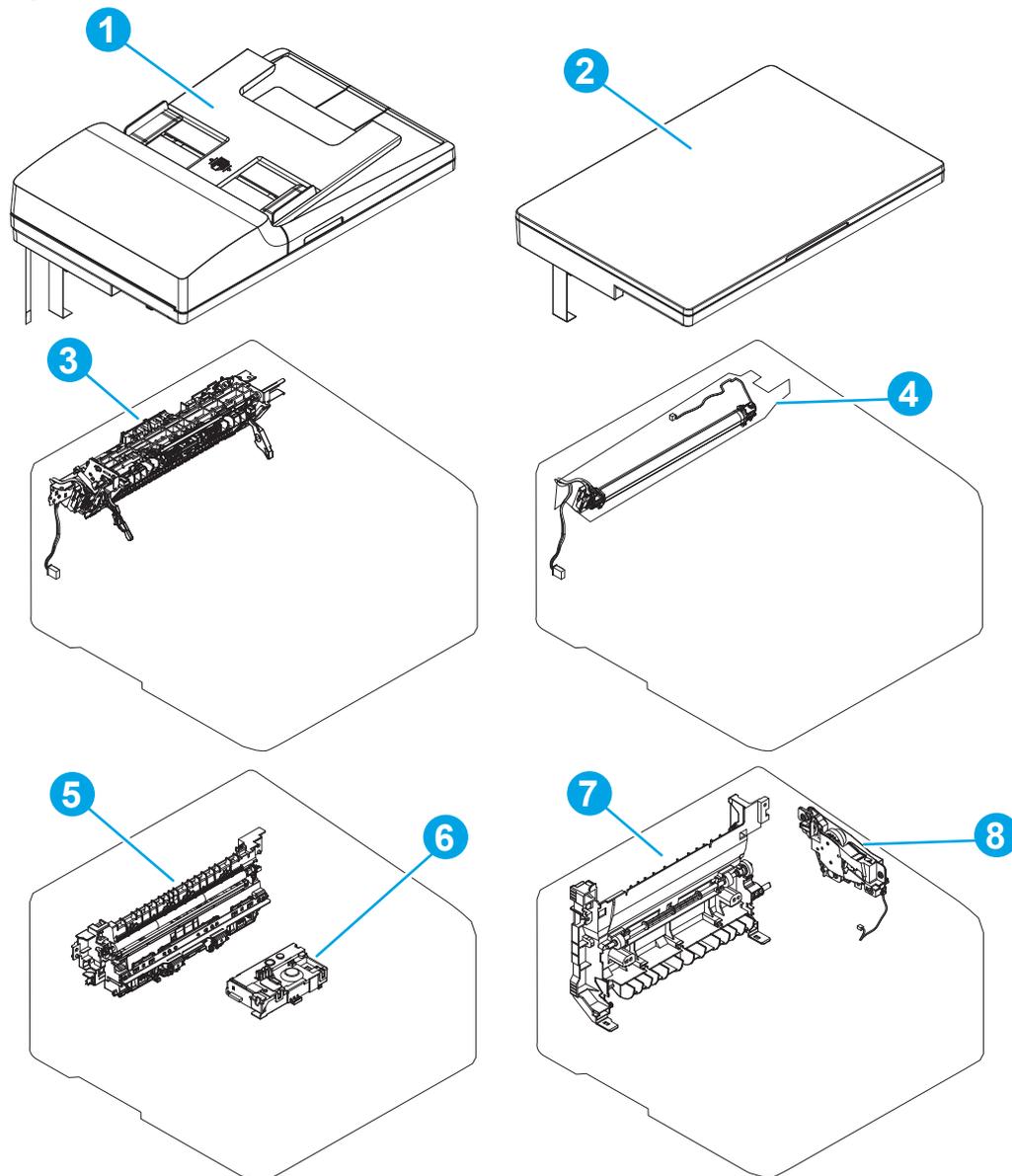


Table 2-11 Main assemblies

| Item | Description | Item | Description |
|------|-------------|------|-------------|
| 1 | Automatic document feeder (M227) | 5 | Transfer assembly |
| 2 | Image scanner (M227) | 6 | Laser/scanner assembly |
| 3 | Fuser | 7 | Duplex frame assembly |
| 4 | Fuser film assembly | 8 | Duplex switchback assembly |

Figure 2-13 Main parts (printer base)
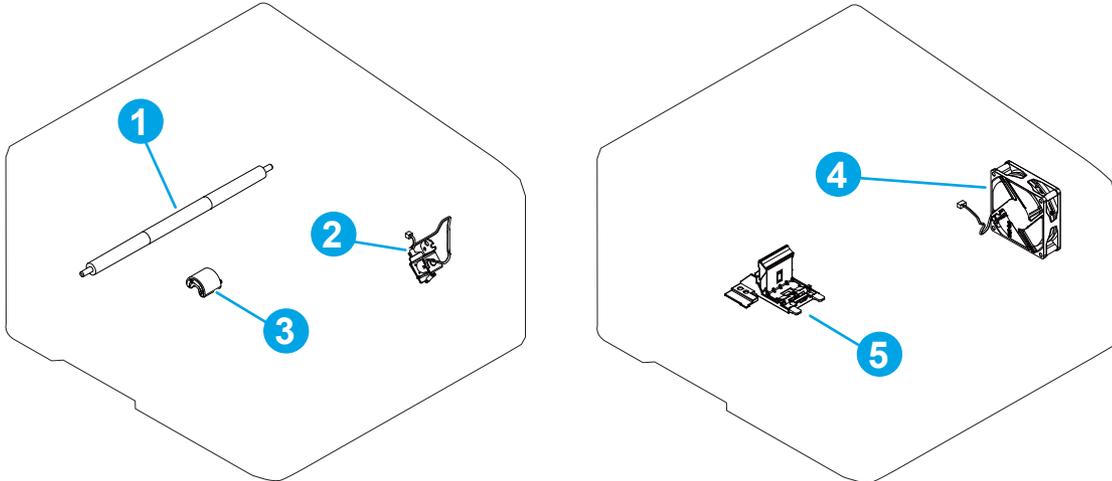
Table 2-12 Main parts (printer base)

| Item | Description | Item | Description |
|---|---|---|---|
| 1 | Transfer roller | 4 | Main fan |
| 2 | Developer alienation solenoid | 5 | Separation pad assembly |
| 3 | Pickup roller | | |

Figure 2-14 PCAs (printer base)
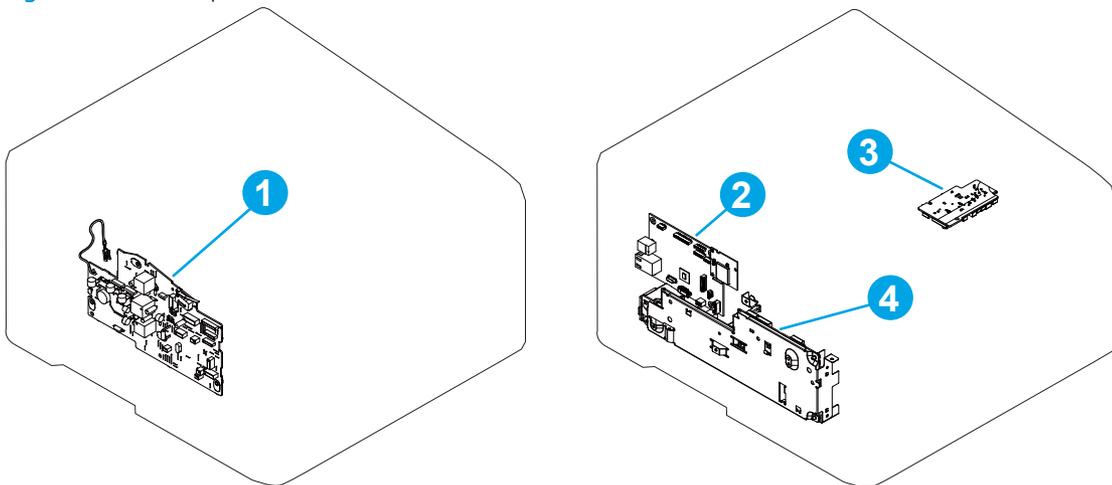
Table 2-13 PCAs (printer base)

| Item | Description | Item | Description |
|---|---|---|---|
| 1 | Engine controller PCA | 3 | Motor PCA |
| 2 | Formatter PCA | 4 | Low-voltage power supply (LVPS) PCA |

## Diagrams: Timing chart

📝 NOTE:   The timing chart is based on two consecutive prints on letter-size paper.

Figure 2-15 General timing chart



Figure 2-15 General timing chart

# Diagrams: Circuit diagrams

**Figure 2-16** General circuit diagram



| 1 | M203 | 2 | M227 | 3 | M203/M227 |
|---|---|---|---|---|---|
| 4 | M227fdw/M230fdw | 5 | M227d/sdn/fdn/fdw, M230sdn | 6 | Not used in these printers |
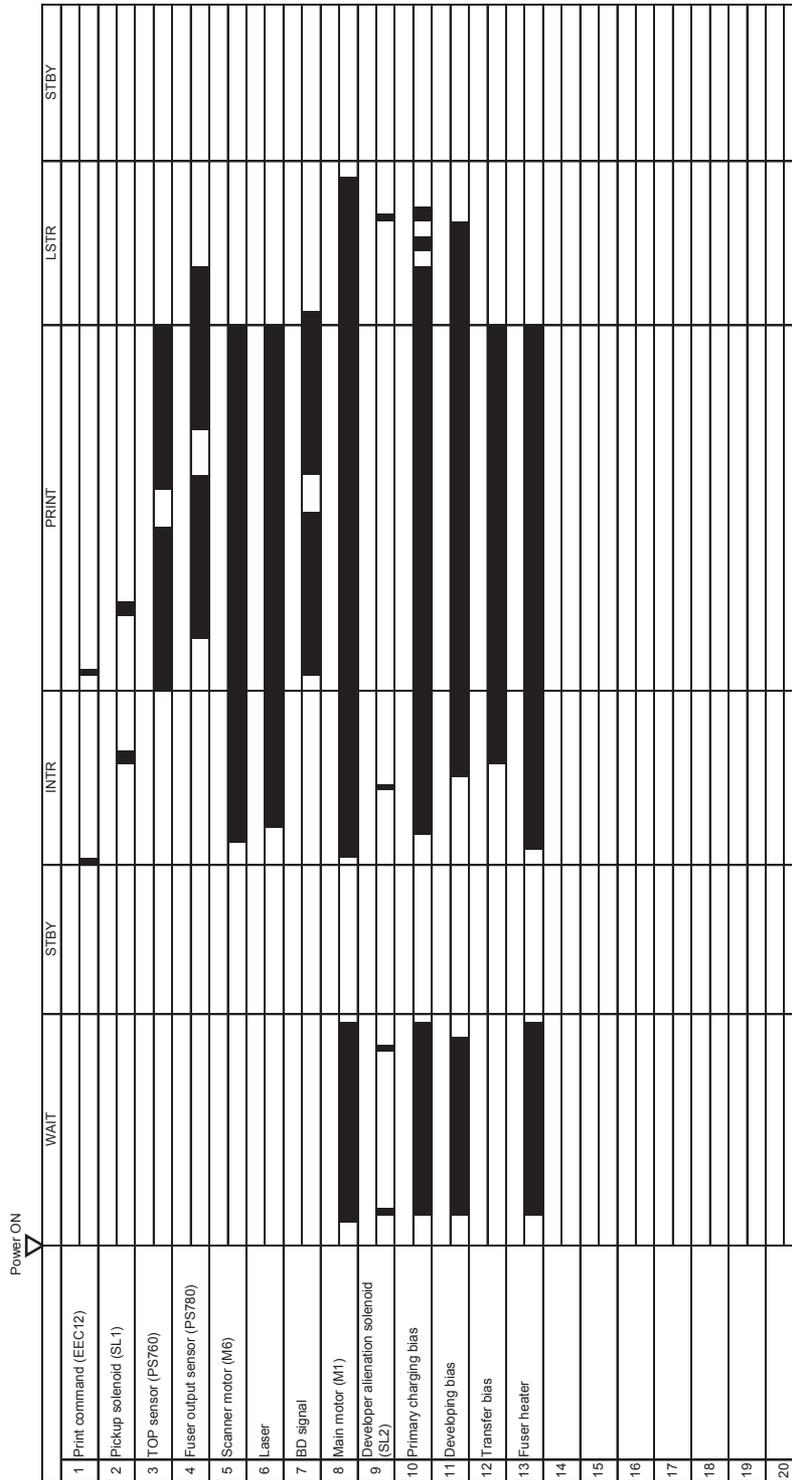
# Use advanced configuration with HP Embedded Web Server (EWS) and HP Device Toolbox (Windows)

Use the HP Embedded Web Server to manage printing functions from a computer instead of the printer control panel.

- View printer status information

- Determine the remaining life for all supplies and order new ones

- View and change tray configurations

- View and change the printer control-panel menu configuration

- View and print internal pages

- Receive notification of printer and supplies events

- View and change network configuration

The HP Embedded Web Server works when the printer is connected to an IP-based network. The HP Embedded Web Server does not support IPX-based printer connections. Internet access is not needed to open and use the HP Embedded Web Server.

When the printer is connected to the network, the HP Embedded Web Server is automatically available.

**NOTE:** HP Device Toolbox is software used to connect to the HP Embedded Web Server when the printer is connected to a computer via USB. It is available only if a full installation was performed when the printer was installed on a computer. Depending on how the printer is connected, some features might not be available.

**NOTE:** The HP Embedded Web Server is not accessible beyond the network firewall.

### Method one: Open the HP Embedded Web Server (EWS) from the Start menu

1. Open the HP Printer Assistant.

   - **Windows 8.1**: Click the down arrow in lower left corner of the **Start** screen, and then select the printer name.

   - **Windows 8**: Right-click an empty area on the **Start** screen, click **All Apps** on the app bar, and then select the printer name.

   - **Windows 7, Windows Vista, and Windows XP**: From the computer desktop, click **Start**, select **All Programs**, click **HP**, click the folder for the printer, select the icon with the printer's name, and then open **HP Printer Assistant**.

2. In the HP Printer Assistant, select **Print**, and then select **HP Device Toolbox**.

### Method two: Open the HP Embedded Web Server (EWS) from a web browser (M203)

1. Print a configuration page to determine the IP address or host name.

   a. Press and hold the Resume [▤] button until the Ready ⟳ light begins blinking.

   b. Release the Resume [▤] button.

2. Open a web browser, and in the address line, type the IP address or host name exactly as it displays on the printer configuration page. Press the Enter key on the computer keyboard. The EWS opens.



**NOTE:** If the web browser displays a message indicating that accessing the website might not be safe, select the option to continue to the website. Accessing this website will not harm the computer.

### Method two: Open the HP Embedded Web Server (EWS) from a browser (M227)

**NOTE:** The steps vary according to the type of control panel.



| 1 | 2-line control panel |
|---|---|
| 2 | Touchscreen control panel |

1. **2-line control panels:** On the printer control panel, press the 🔧 button. Open the **Network Setup** menu, and then select **Show IP Address** to display the IP address or host name.

   **Touchscreen control panels:** From the Home screen on the printer control panel, touch the Connection Information 🖧 / 📶 button, and then touch the Network Connected 🖧 button or the Network Wi-Fi ON 📶 button to display the IP address or host name.

2. Open a web browser, and in the address line, type the IP address or host name exactly as it displays on the printer control panel. Press the Enter key on the computer keyboard. The EWS opens.



**NOTE:** If the web browser displays a message indicating that accessing the website might not be safe, select the option to continue to the website. Accessing this website will not harm the computer.

| Tab or section | Description |
|---|---|
| **Home** tab<br><br>Provides printer, status, and configuration information. | • **Device Status**: Shows the printer status and shows the approximate percent life remaining of HP supplies.<br><br>• **Supplies Status**: Shows the approximate percent life remaining of HP supplies. Actual supply life remaining can vary. Consider having a replacement supply available to install when print quality is no longer acceptable. The supply does not need to be replaced unless the print quality is no longer acceptable.<br><br>• **Device Configuration**: Shows the information found on the printer configuration page.<br><br>• **Network Summary**: Shows the information found on the printer network configuration page.<br><br>• **Reports**: Print the configuration and supplies status pages that the printer generates.<br><br>• **Job Storage Log**: Shows a summary of all jobs stored in the printer memory.<br><br>(Job storage printers only)<br><br>• **Color Usage Log**: Shows a summary of color jobs that the printer has produced.<br><br>(Color printers only)<br><br>• **Event Log**: Shows a list of all printer events and errors.<br><br>• **Open Source Licenses**: Shows a summary of the licenses for open source software programs that can be used with the printer. |
| **System** tab<br><br>Provides the ability to configure the printer from your computer. | • **Device Information**: Provides basic printer and company information.<br><br>• **Paper Setup**: Change the default paper-handling settings for the printer.<br><br>• **Print Quality**: Change the default print-quality settings for the printer.<br><br>• **Energy Settings**: Change the default times for entering Sleep/Auto Off mode or automatic shutdown.<br><br>• **Job Storage Setup**: Configure the job storage settings for the printer.<br><br>(Job storage printers only)<br><br>• **Paper Types**: Configure print modes that correspond to the paper types that the printer accepts.<br><br>• **System Setup**: Change the system defaults for the printer.<br><br>• **Supply Settings**: Change the settings for **Cartridge is low** alerts and other supplies information.<br><br>• **Service**: Perform the cleaning procedure on the printer.<br><br>• **Save and Restore**: Save the current settings for the printer to a file on the computer. Use this file to load the same settings onto another printer or to restore these settings to this printer at a later time.<br><br>• **Administration**: Set or change the printer password. Enable or disable printer features.<br><br>NOTE: The **System** tab can be password-protected. If this printer is on a network, always consult with the administrator before changing settings on this tab. |
| **Print** tab<br><br>Provides the ability to change default print settings from your computer. | • **Printing**: Change the default print settings, such as number of copies and paper orientation. These are the same options that are available on the control panel.<br><br>• **PostScript**: Turn off or on the **Print PS Errors** feature. |

| Tab or section | Description |
|---|---|
| **Fax** tab<br><br>(Fax printers only) | • **Receive Options**: Configure how the printer handles incoming faxes.<br><br>• **Phone Book**: Add or delete entries in the fax phone book.<br><br>• **Junk Fax List**: Set fax numbers to block from sending faxes to the printer.<br><br>• **Fax Activity Log**: Review recent fax activity for the printer. |
| **Scan** tab<br><br>(MFP printers only) | Configure the Scan to Network Folder and Scan to E-mail features.<br><br>• **Network Folder Setup**: Configure folders on the network to which the printer can save a scanned file.<br><br>• **Scan to E-mail Setup**: Begin the process to set up the Scan to E-mail feature.<br><br>• **Outgoing E-mail Profiles**: Set an email address that will appear as the "from" address for all emails sent from the printer.<br><br>• **E-mail Address Book**: Add or delete entries in the email address book.<br><br>• **E-mail Options**: Configure a default subject line and body text. Configure default scan settings for emails. |
| **Copy** tab<br><br>(MFP printers only) | Use this tab to set up the default copy settings. |
| **Networking** tab<br><br>(Network-connected printers only)<br><br>Provides the ability to change network settings from your computer. | Network administrators can use this tab to control network-related settings for the printer when it is connected to an IP-based network. It also allows the network administrator to set up Wi-Fi Direct functionality. This tab does not appear if the printer is directly connected to a computer. |
| **HP Web Services** tab | Use this tab to set up and use various Web tools with the printer. |

# Internal test and information pages

The following internal test and information pages are available from the **Setup** menu (depending on the printer model):

- Demo Page

- Configuration Page

- Menu Structure

- Supplies Status Page

- Network Summary

- Usage Page

- Service Page

- Default Info Page

- Fax Reports (fax models only)

Tools for troubleshooting

## Print the configuration report

The configuration report lists current printer settings and properties. This page also contains a status log report. To print a configuration report, complete one of the following procedures.

**IMPORTANT:** Depending on the printer model, other pages might print with the configuration report. Also, the information found on a configuration report can vary depending on the printer model.

### Print a configuration report from an LED control panel (M203)

1. Press and hold the Resume ⬇ button until the Ready ⟳ light begins blinking.

2. Release the Resume ⬇ button.

### Print the configuration report from a 2-line control panel (M227)

1. On the printer control panel, press the Setup 🔧 button to open the menus.

2. Use the arrow buttons to select the Reports menu, and then press the OK button.

3. Use the arrow buttons to select the Configuration Report item, and then press the OK button to print the report.

### Print the configuration report from a touchscreen control panel (M227)

1. From the Home screen on the printer control panel, touch the Setup ⚙ button.

2. Touch the Reports menu.

3. Touch the Configuration Report button to print the report.

### Finding important information on the configuration report

The figure below shows an example of a configuration report from the HP LaserJet MFP M203dw.

M203 sample configuration report



Table 2-14  M203 sample configuration report

| Item | Description | Item | Description |
| --- | --- | --- | --- |
| 1 | Printer name and model information | 4 | Wi-Fi direct setup |
| 2 | Product information | 5 | Product settings information |
| 3 | Paper settings information | 6 | Supplies summary |

The figure below shows an example of the first page of a configuration report from the HP LaserJet MFP M227fdw.

Figure 2-18 M227 sample configuration report (first page)
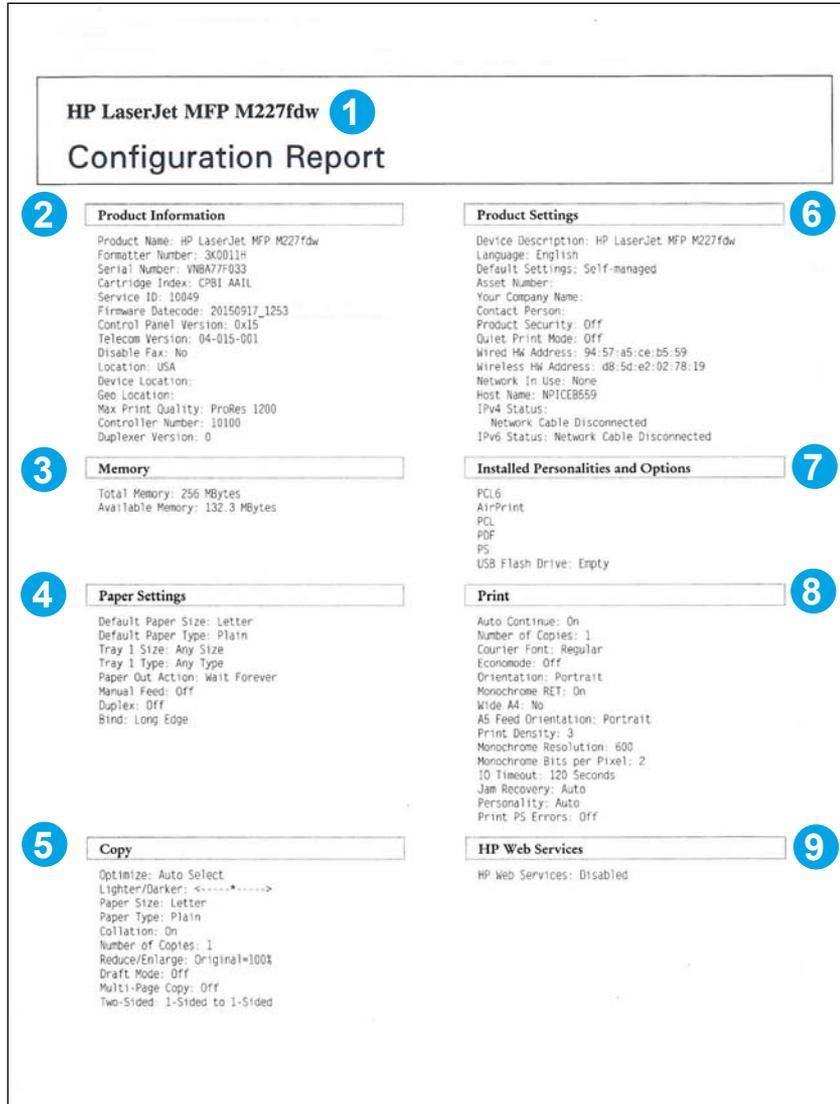


**Table 2-15** M227 sample configuration report (first page)

| Item | Description | Item | Description |
|------|-------------|------|-------------|
| 1 | Printer name and model information | 6 | Product settings information |
| 2 | Product information | 7 | Installed personalities and options information |
| 3 | Memory information | 8 | Print information |
| 4 | Paper settings information | 9 | HP Web Services information |
| 5 | Copy information | | |

The figure below shows an example of the second page of a configuration report from the HP LaserJet MFP M227fdw.

**Figure 2-19** M227 sample configuration report (second page)
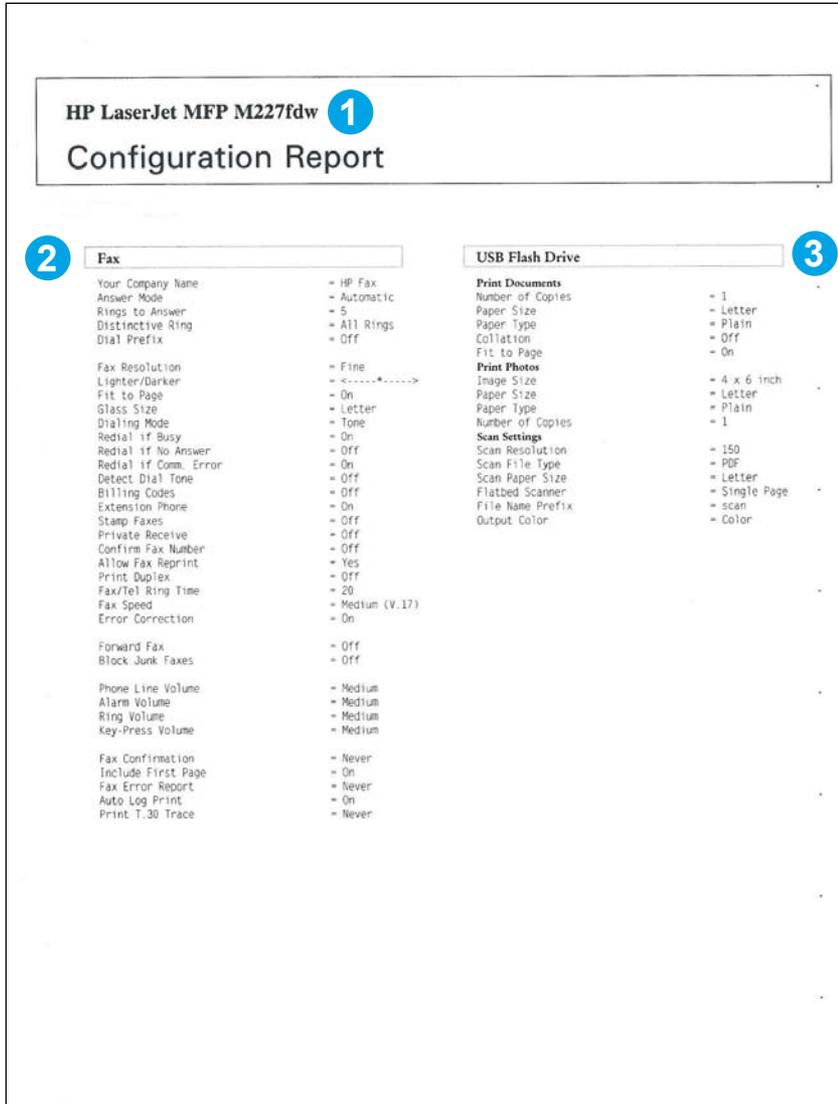


**Table 2-16** M227 sample configuration report (second page)

| Item | Description | Item | Description |
|------|-------------|------|-------------|
| 1 | Printer name and model information | 3 | USB flash drive information (NFC models) |
| 2 | Fax information (fax models) | | |

# Control panel menus

## Setup menu

To open this menu, either press the Setup 🔧 button (2-line control panels) or touch the Setup ⚙ button (touchscreen control panels). The following sub-menus are available:

- HP Web Services

  📝 **NOTE:** **For 2-line control panels**: Attempting to access this menu for the first time causes a **Print Information Sheet** message to appear on the control-panel display. Follow the instruction on this sheet.

- Reports

- Self Diagnostics

- Fax Setup (fax models only)

- System Setup

- Service

- Network Setup

- Quick Forms

## HP Web Services menu

Table 2-17  HP Web Services menu

| Menu item | Description |
|---|---|
| Enable Web Services | Use Enable Web Services to set up Web Services on the printer. |
| | **NOTE:** You must be connected to a network to enable HP Web Services. |
| Proxy Settings | The Proxy Settings sub-menu includes the following: |
| | • Proxy Server |
| | • Proxy Port |
| | • Username |
| | • Password |

## Reports menu

**Table 2-18 Reports menu**

| Menu item | Description |
|---|---|
| Demo Page | Prints a page that demonstrates print quality. |
| Fax Reports (fax models only) | • Fax Confirmation: Sets whether the printer prints a confirmation report after a successful fax job. |
| | • Include First Page: Sets whether the printer includes a thumbnail image of the first page of the fax on the report. |
| | • Fax Error Report: Sets whether the printer prints a report after a failed fax job. |
| | • Print Last Call Report: Prints a detailed report of the last fax operation, either sent or received. |
| | • Fax Activity Log: |
| |   — Print Log Now: Prints a list of the faxes that have been sent from or received by this printer. |
| |   — Auto Log Print: Automatically prints a report after every fax job. |
| | • Print Phone Book: Prints a list of the speed dials that have been set up for this printer. |
| | • Print Junk Fax List: Prints a list of phone numbers that are blocked from sending faxes to this printer. |
| | • Print All Fax Reports: Prints all fax-related reports. |
| Menu Structure | Prints a control-panel menu layout map. |
| Configuration Report | Prints a list of the printer settings. |
| Supplies Status | Prints the supplies status page, which shows the following information for the toner cartridge and imaging drum: |
| | • Supply level |
| | • Approximate pages remaining |
| | • Pages printed with this supply |
| | • Serial number |
| | • First install date |
| | • Last used date |

Table 2-18  Reports menu (continued)

| Menu item | Description |
|---|---|
| Network Summary | Prints the network summary pages, which show the following information:<br><br>● TCP/IP and SNMP information<br><br>● Network identification and statistics<br><br>● Wireless network configuration (wireless models only)<br><br>● Syslog information<br><br>● Wired network configuration<br><br>● Wi-Fi Direct setup<br><br>● Google Cloud Print information<br><br>● Enabled features<br><br>● Security |
| Usage Page | Displays the number of pages printed, faxed, copied, and scanned by the printer. (Specific items reported are model-dependent.) |
| PCL Font List | Prints a list of all installed PCL 5 fonts. |
| PS Font List | Prints a list of all installed PS fonts. |
| PCL6 Font List | Prints a list of all installed PCL 6 fonts. |
| Service Page | Prints the service page.<br><br>The service page includes information about supported paper types along with settings values for copy, supply, energy, and LaserJet updates. In addition, it includes the event log and miscellaneous settings that are not included on the configuration page. |
| Default Info Page | Prints a page that shows the default settings for the LaserJet Update feature, along with instructions for changing these settings. |

## Self Diagnostics menu

**NOTE:** Not available for the 2-line control panel.

**Table 2-19** Self Diagnostics menu

| Menu item | Description |
|---|---|
| Run Wireless Test (if connected to a wireless network — wireless models only) | The network test provides information on the following:<br><br>● Diagnostics summary<br><br>● Troubleshooting<br><br>● Configuration summary |
| Run Fax Test (fax models only) | Test the printer fax capabilities. |

## Fax Setup menu (fax models)

In the following table, items that have an asterisk (*) indicate the factory default setting.

**Table 2-20** Fax Setup menu

| Menu item | Sub-menu item | Sub-menu item | Description |
|---|---|---|---|
| Fax Setup Utility | | | This is a tool for configuring the fax settings. Follow the on-screen prompts and select the appropriate response for each question. |
| Basic Setup | Time/Date | (Settings for time format, current time, date format, and current date.) | Sets the time and date setting for the printer. |
| | Fax Header | Enter Your Fax Number | Sets the identifying information that is sent to the receiving printer. |
| | | Enter Company Name | Identifies the fax sender (optional) |
| | Answer Mode | Automatic*<br><br>Manual<br><br>TAM<br><br>Fax/Tel | Sets the type of answer mode. The following options are available:<br><br>● Automatic: The printer automatically answers an incoming call on the configured number of rings.<br><br>● Manual: The user must touch the Start Fax button or use an extension phone number to make the printer answer the incoming call.<br><br>● TAM: A telephone answering machine (TAM) is attached to the auxiliary phone port of the printer. The printer will not pick up any incoming call, but will listen for fax tones after the answering machine has picked up the call.<br><br>● Fax/Tel: The printer must automatically pick up the call and determine if the call is a voice or fax call. If the call is a fax call, the printer handles the call as usual. If the call is a voice call, an audible synthesized ring is generated to alert the user of an incoming voice call. |
| | Rings to Answer | (1–9) | Sets the number of rings that must occur before the fax modem answers. The default setting is 5. |

Table 2-20 Fax Setup menu (continued)

| Menu item | Sub-menu item | Sub-menu item | Description |
|---|---|---|---|
| Basic Setup<br><br>(continued) | Distinctive Ring | All Rings*<br><br>Single<br><br>Double<br><br>Triple<br><br>Double and Triple | If you have distinctive ring phone service, use this item to configure how the printer responds to incoming calls.<br><br>• All Rings: The printer answers any calls that come through the telephone line.<br><br>• Single: The printer answers any calls that produce a single-ring pattern.<br><br>• Double: The printer answers any calls that produce a double-ring pattern.<br><br>• Triple: The printer answers any calls that produce a triple-ring pattern.<br><br>• Double and Triple: The printer answers any calls that produce a double-ring or triple-ring pattern. |
| | Dial Prefix | On<br><br>Off* | Specifies a prefix number that must be dialed when sending faxes from the printer. If this feature is turned on, the printer prompts you for the number and then it automatically includes that number every time a fax is sent. |
| Advanced Setup | Fax Resolution | Standard<br><br>Fine*<br><br>Superfine<br><br>Photo | Sets the resolution for sent documents. Higher resolution images have more dots per inch (dpi), so they show more detail. Lower resolution images have fewer dots per inch and show less detail, but the file size is smaller and the fax takes less time to transmit. |
| | Lighter/Darker | | Sets the darkness for outgoing faxes. |
| | Fit to Page | On*<br><br>Off | Shrinks incoming faxes that are larger than the paper size set for the tray. |
| | Glass Size | Letter<br><br>A4 | Sets the default paper size for documents being scanned from the flatbed scanner.<br><br>NOTE: The default setting is determined by the choice of location during the initial printer setup. |
| | Dialing Mode | Tone*<br><br>Pulse | Sets whether the printer should use tone or pulse dialing. |
| | Redial if Busy | On*<br><br>Off | Sets whether the printer should attempt to redial if the line is busy. |
| | Redial if No Answer | On<br><br>Off* | Sets whether the printer should attempt to redial if the recipient fax number does not answer. |
| | Redial if Comm. Error | On*<br><br>Off | Sets whether the printer should attempt to redial the recipient fax number if a communication error occurs. |
| | Detect Dial Tone | On<br><br>Off* | Sets whether the printer should check for a dial tone before sending a fax. |

Table 2-20 Fax Setup menu (continued)

| Menu item | Sub-menu item | Sub-menu item | Description |
|---|---|---|---|
| Advanced Setup (continued) | Billing Codes | On / Off* | Enables the use of billing codes when set to On. A prompt appears for the billing code for an outgoing fax. |
| | Extension Phone | On* / Off | When this feature is enabled, the **1-2-3** buttons on the extension phone can be pressed to cause the printer to answer an incoming fax call. |
| | Stamp Faxes | On / Off* | Sets the printer to print the date, time, sender's phone number, and page number on each page of incoming faxes. |
| | Private Receive | On / Off* | Setting Private Receive to On requires you to set a printer password. After setting the password, the following options are set:<br><br>● Private Receive is turned on.<br><br>● All old faxes are deleted from memory.<br><br>● Fax Forwarding is set to Off and is not allowed to be changed.<br><br>● All incoming faxes are stored in memory. |
| | Confirm Fax Number | On / Off* | Confirm a fax number by entering it a second time. |
| | Allow Fax Reprint | Yes* / No | Sets whether incoming faxes are stored in memory for reprinting later. |
| | Fax/Tel Ring Time | 20 / 30 / 40 / 55 | Sets the time, in seconds, after which the printer should stop sounding the Fax/Tel audible ring to notify the user of an incoming voice call. |
| | Print Duplex | On / Off* | Enables or disables the two-sided printing feature for multiple-page faxes. |
| | Fax Speed | Fast(V.34) / Medium(V.17)* / Slow(V.29) | Sets the allowed fax communication speed. |

## System Setup menu

In the following table, items that have an asterisk (*) indicate the factory default setting.

**Table 2-21  System Setup menu**

| Menu item | Sub-menu item | Sub-menu item | Description |
|---|---|---|---|
| Language | (List of available control-panel display languages.) | | Sets the language in which the control panel displays messages and printer reports. |
| Paper Setup | Default Paper Size | Letter<br><br>A4<br><br>Legal | Sets the size for printing internal reports, faxes, or any print job that does not specify a size.<br><br>**NOTE:** The default setting is determined by the choice of location during the initial printer setup. |
| | Default Paper Type | Lists available paper types. | Sets the type for printing internal reports, faxes, or any print job that does not specify a type. |
| | Tray 1 | Paper Type<br><br>Paper Size | Configures the size and type for the tray. |
| | Paper Out Action | Wait forever*<br><br>Cancel<br><br>Override | Determines how the printer reacts when a print job requires a paper size or type that is unavailable or when the tray is empty.<br><br>● Wait forever: The printer waits until you load the correct paper.<br><br>● Override: Print on a different size paper after a specified delay.<br><br>● Cancel: Automatically cancel the print job after a specified delay.<br><br>● If you select either the Override or Cancel item, the control panel prompts you for the number of seconds to delay. |
| Print Quality | Adjust Alignment | Print Test Page | Shifts the margin alignment to center the image on the page from top to bottom, and left to right. You can also align the image that is printed on the front with the image that is printed on the back. Allows for one-sided and two-sided printing alignment.<br><br>Print Test Page: Prints a test page that shows the current registration settings. |
| | | Adjust Tray 1 | ● X1 Shift: Registration of the image on the paper from side to side, as the paper lies in the tray, for the second side (back) of a duplexed page.<br><br>● X2 Shift: Registration of the image on the paper from side to side, as the paper lies in the tray, for the first side (front) of a duplexed page.<br><br>**NOTE:** Set X1 Shift first.<br><br>● Y Shift: Registration of the image on the paper from top to bottom as the paper lies in the tray. |

Table 2-21 System Setup menu (continued)

| Menu item | Sub-menu item | Sub-menu item | Description |
|---|---|---|---|
| Energy Settings | Sleep/Auto Off After | 1 Minute* | Specifies the amount of idle time before the printer enters sleep mode. |
| | | 5 Minutes | |
| | | 15 Minutes | |
| | | 30 Minutes | |
| | | 1 Hour | |
| | Shut Down After | 2 Hours | Set the amount of elapsed time before the printer turns itself off. |
| | | 4 Hours* | |
| | | 8 Hours | |
| | Delay Shut Down | No Delay | Select whether or not the printer delays shutting down after the user presses the power button. |
| | | When Ports Are Active* | No Delay: The printer shuts down immediately. |
| | | | When Ports Are Active: The printer waits until there is no I/O port activity before shutting down. |
| Print Density | (1–5) | | Use this item to set the page print density. The default setting is 3. |
| Supply Settings | Black Cartridge | Very Low Setting | Stop: The printer stops printing until you replace the print cartridge. |
| | | | Prompt*: The printer stops printing and prompts you to replace the print cartridge. You can acknowledge the prompt and continue printing. |
| | | | Continue: The printer alerts you that the print cartridge is very low, but it continues printing. |
| | | Low Threshold | Enter a percentage for the low threshold setting. The default setting is 7. |
| | Imaging Drum | Very Low Setting | Stop: The printer stops printing until you replace the print cartridge. |
| | | | Prompt*: The printer stops printing and prompts you to replace the print cartridge. You can acknowledge the prompt and continue printing. |
| | | | Continue: The printer alerts you that the print cartridge is very low, but it continues printing. |
| | | Low Threshold | Enter a percentage for the low threshold setting. The default setting is 1. |
| | Store Usage Data | On Supplies* | Select where to store the printer's usage data, either on the supplies or not on the supplies. |
| | | Not on Supplies | |
| Supply Settings (continued) | Cartridge Policy | Off | Use the Cartridge Policy feature to allow only genuine HP cartridges to be used with this printer. |
| | | Authorized HP | Authorized HP: When someone attempts to install a cartridge that is not a genuine HP cartridge, the printer control panel displays a message informing that the cartridge is unauthorized, and it displays information explaining how to proceed. |

Table 2-21 System Setup menu (continued)

| Menu item | Sub-menu item | Sub-menu item | Description |
|---|---|---|---|
| | Cartridge Protection | Off* | Use the Cartridge Protection feature to permanently associate toner cartridges with a specific printer so they cannot be used in other printers. When someone attempts to transfer a protected cartridge from the original printer into another printer, that printer will not print. The printer control panel displays a message informing that the cartridge is protected, and it displays information explaining how to proceed. |
| | | Protect Cartridges | |
| | | | After selecting Protect Cartridges, when the printer prompts to confirm, select Continue to enable the feature. |
| | | | NOTE: After enabling cartridge protection for the printer, all subsequent toner cartridges installed in the printer are automatically and *permanently* protected. To avoid protecting a new cartridge, disable the feature before installing the new cartridge. To disable the feature, select Cancel rather than Continue in this step. |
| Volume Settings | Alarm Volume | Off | Set the volume levels for the printer. |
| | Ring Volume | Soft | |
| | Key-Press Volume | Medium* | |
| | Phone Line Volume | Loud | |
| Time/Date | 12 Hour* | | Set the time and date format for the printer. |
| | 24 Hour | | |
| Administration | Product Security | On | Set the printer-security feature. If you select the On setting, you must set a password. |
| | | Off* | |
| | USB Flash Drive | On* | Enable, or disable, the USB flash drive. |
| | | Off | |
| | Disable Fax (fax models only) | Yes | Enable, or disable, faxing to and from the printer. |
| | | No* | |
| | Scan to Network Folder (MFP models only) | On* | Enable, or disable, the printer's scan to folder capability. |
| | | Off | |
| | Scan to E-mail (MFP models only) | On* | Enable, or disable, the printer's scan to email feature. |
| | | Off | |
| Inactivity Timer | | | Set the amount of time that passes before a given menu or item will close due to printer inactivity. The default setting is 60 seconds. |
| Courier Font | Regular* | | Set Courier font values. |
| | Dark | | |
| Quiet Print Mode | On | | Enable or disable quiet mode, which reduces noise during printing. When quiet mode is turned on, the printer prints at a slower speed. |
| | Off* | | |

## Network Setup menu

In the following table, items that have an asterisk (*) indicate the factory default setting.

Table 2-22  Network Setup menu

| Menu item | Sub-menu item | Description |
|---|---|---|
| Wireless Menu (wireless models only) | Wireless Setup Wizard | Guides you through the steps to set up the printer on a wireless network. |
| | Wi-Fi Protected Setup | If your wireless router supports this feature, use this method to set up the printer on a wireless network. This is the simplest method. |
| | Run Wireless Test | Tests the wireless network and prints a report with the results. |
| | Turn Wireless On/Off | Enables or disables the wireless network feature. |
| | Wireless Band Frequency | Select one of the following:<br><br>● 2.4 GHz<br><br>● 5 GHz<br><br>● 2.4 GHz and 5 GHz |
| Google Cloud Print | Print Claim Sheet | Press OK to send printer capabilities and model number to Google and print a sheet of registration instructions from Google. |
| | Proxy Settings | Enter proxy information.<br><br>Proxy Server<br><br>Proxy Port<br><br>Username<br><br>Password |
| Wi-Fi Direct | On/Off | Enable or disable Wi-Fi Direct.<br><br>On<br><br>Off* |
| | Wi-Fi Direct Name | Set the printer name for a Wi-Fi Direct setup. |
| | Print Wi-Fi Direct Guide | Print the Wi-Fi Direct guide. |
| IPv4 Config Method | DHCP<br><br>BootP<br><br>Auto IP<br><br>Manual | The printer automatically configures all the TCP/IP settings via DHCP, BootP or AutoIP.<br><br>Manual: You can manually configure the IP address, subnet mask, and default gateway. The control panel prompts you to specify values for each address section. As each address is completed, the printer prompts for address confirmation before moving to the next one. After all three addresses are set, the network port reinitializes. |
| Network Services | IPv4<br><br>IPv6 | Enable or disable the IPv4 and IPv6 protocols. By default, each protocol is enabled.<br><br>On*<br><br>Off |
| Show IP Address (2-line control panels) | Yes<br><br>No* | This item determines if the printer IP address is appears on the control-panel display. |

**Table 2-22  Network Setup menu (continued)**

| Menu item | Sub-menu item | Description |
|---|---|---|
| Link Speed | Automatic* | Sets the link speed manually if needed. |
| | 10T Full | After setting the link speed, the printer automatically restarts. |
| | 10T Half | |
| | 100TX Full | |
| | 100TX Half | |
| Security | Product Security | Enable printer security. If turned on, the printer prompts you to set a password. After it is set, the password will be needed to change printer settings. |
| | On | |
| | Off* | |
| | HTTPS Enforcement | An encrypted communication and secure identification of a network web server. Only enabled if the printer is password protected. |
| | Yes | |
| | No* | |
| | Firewall | Enable, disable, or reset the printer firewall. |
| | Access Control List | Enable, disable, or reset the network access control list. |
| | 802.1x (wireless models only) | Press OK to reset the 802.1x wireless authentication protocol. |
| | Reset All Security | Reset the security settings to the factory-set default values. |
| Wi-Fi Direct | On | Manage the printer's Wi-Fi Direct settings. |
| | Off | |
| | Wi-Fi Direct Name | Set the printer name for a Wi-Fi Direct setup. |
| | Connection Method | Specify the Wi-Fi Direct connection method. |
| | Automatic | |
| | Manual | |
| | Wi-Fi Direct Password | Set the password for a Wi-Fi Direct setup. |
| Restore Defaults | | Resets all network configurations to their factory defaults. |

## Quick Forms menu

**Table 2-23  Quick Forms menu**

| Menu item | Sub-menu item | Description |
|---|---|---|
| Notebook Paper | Narrow Rule | Prints pages that have preprinted lines. |
| | Wide Rule | |
| | Child Rule | |

Table 2-23  Quick Forms menu (continued)

| Menu item | Sub-menu item | Description |
| --- | --- | --- |
| Graph Paper | 1/8 inch | Prints pages that have preprinted graph lines. |
|  | 5 mm |  |
| Checklist | 1-Column | Prints pages that have preprinted lines with check boxes. |
|  | 2-Column |  |
| Music Paper | Portrait | Prints pages that have preprinted lines for writing music. |
|  | Landscape |  |

# Function specific menus

The printer features function-specific menus for copying, faxing, scanning, and using a USB flash drive. To open these menus, touch the button for that function on the control panel.

## Fax Menu (fax models)

To open this menu, touch the Fax button, and then touch the Fax Menu button.

Table 2-24  Fax Menu

| Menu item | Sub-menu item | Sub-menu item | Description |
|---|---|---|---|
| Fax Reports | Fax Confirmation | On Every Fax | Sets whether the printer prints a confirmation report after a successful fax job. |
| | | On Send Fax Only | |
| | | On Receive Fax Only | |
| | | Never* | |
| | Include First Page | On* | Sets whether the printer includes a thumbnail image of the first page of the fax on the report. |
| | | Off | |
| | Fax Error Report | On Every Error | Sets whether the printer prints a report after a failed fax job. |
| | | On Send Error | |
| | | On Receive Error | |
| | | Never* | |
| | Print Last Call Report | | Prints a detailed report of the last fax operation, either sent or received. |
| | Fax Activity Log | Print Log Now | Print Log Now: Prints a list of the faxes that have been sent from or received by this printer. |
| | | Auto Log Print | |
| | | | Auto Log Print: Automatically prints a report after every fax job. |
| | Print Phone Book | | Prints a list of the speed dials that have been set up for this printer. |
| | Print Junk Fax list | | Prints a list of phone numbers that are blocked from sending faxes to this printer. |
| | Print All Fax Reports | | Prints all fax-related reports. |
| Send Options | Send Fax Later | | Allows a fax to be sent at a later time and date. |
| | Broadcast Fax | | Sends a fax to multiple recipients. |
| | Fax Job Status | | Displays pending fax jobs, and allows you to cancel pending fax jobs. |

**Table 2-24** Fax Menu (continued)

| Menu item | Sub-menu item | Sub-menu item | Description |
|---|---|---|---|
| Send Options<br><br>(continued) | Fax Resolution | Standard<br><br>Fine*<br><br>Superfine<br><br>Photo | Sets the resolution for sent documents. Higher resolution images have more dots per inch (dpi), so they show more detail. Lower resolution images have fewer dots per inch and show less detail, but the file size is smaller. |
| Receive Options | Block Junk Faxes | Add Number<br><br>Delete Number<br><br>Delete All Numbers<br><br>Print Junk Fax list | Modifies the junk fax list. The junk fax list can contain up to 30 numbers. When the printer receives a call from one of the junk fax numbers, it deletes the incoming fax. It also logs the junk fax in the activity log along with job-accounting information. |
| | Reprint Faxes | | Prints the received faxes stored in available memory. This item is available only if you have turned on the Allow Fax Reprint feature in the Fax Setup menu. |
| | Forward Fax | On<br><br>Off* | Sets the printer to send all received faxes to another fax machine. |
| | Polling Receive | | Allows the printer to call another fax machine that has polling send enabled. |
| Phone Book Setup | Individual Setup<br><br>Group Setup | | Edits the fax phone book speed dials and group-dial entries. The printer supports up to 120 phone book entries, which can be either individual or group entries. |
| | Delete Entry | Deletes a specific phone book entry. | |
| | Delete All Entries | Deletes all entries in the phone book. | |
| | Print Report Now | Prints a list of all the individual and group dial entries in the phone book. | |
| Change Defaults | | | Opens the Fax Setup menu. |

## Copy menu (MFP models)

To open this menu, touch the Copy button, and then touch the Settings button.

📝 **NOTE:** Settings that have been changed with this menu expire 2 minutes after the last copy completes.

**Table 2-25  Copy menu**

| Menu item | Sub-menu item | Sub-menu item | Description |
|---|---|---|---|
| ID Copy<br><br>NOTE:  This item is available from the main Copy screen. You do not need to touch the Settings button to access it. | | | Copies both sides of identification cards, or other small-size documents, onto the same side of one sheet of paper. |
| Number of Copies | (1–99) | | Specifies the number of copies. |
| Reduce/Enlarge | Original=100%*<br><br>Legal to Letter=77%<br><br>Legal to A4=82%<br><br>A4 to Letter=92%<br><br>Letter to A4=95%<br><br>Full Page=91%<br><br>Fit to Page<br><br>2 Pages per Sheet<br><br>4 Pages per Sheet<br><br>Custom: 25 to 400% | | Specifies the size of the copy. |
| Lighter/Darker | | | Specifies the contrast of the copy. |
| Optimize | Describe Original | Auto Select*<br><br>Mixed<br><br>Text<br><br>Picture | Specifies the type of content in the original document, so the copy is the best match for the original. |
| Paper | Letter<br><br>Legal<br><br>A4 | | Specifies the paper size.<br><br>NOTE:  The default paper size setting is determined by the choice of location during the initial printer setup. |
| Multi-Page Copy | Off*<br><br>On | | When this feature is on, the printer prompts you to load another page onto the scanner glass or to indicate that the job is complete. |
| Collation | Off<br><br>On* | | Specifies whether to collate copy jobs. |
| Two-Sided | 1-Sided to 1-Sided<br><br>1-Sided to 2-Sided<br><br>2-Sided to 2-Sided<br><br>2-Sided to 1-Sided | | Specifies whether originals are one-sided or two-sided and whether copies should be one-sided or two-sided. |

**Table 2-25  Copy menu (continued)**

| Menu item | Sub-menu item | Sub-menu item | Description |
|-----------|---------------|---------------|-------------|
| Draft Mode | Off* | | Specifies whether to use draft-quality printing for copies. |
| | On | | |
| Set as New Defaults | | | Saves any changes you have made to this menu as the new defaults. |
| Restore Defaults | | | Restores the factory defaults for this menu. |

## Scan menu (MFP models)

**Table 2-26  Scan menu**

| Menu item | Description |
|-----------|-------------|
| Scan to USB Drive | Scans a document to a USB drive. |
| Scan to Network Folder | Scans a document to a network folder. |
| Scan to E-mail | Scans a document and sends as an email attachment. |

## USB menu (MFP models)

**Table 2-27  USB Menu**

| Menu item | Description |
|-----------|-------------|
| Print Documents | Prints documents on a USB drive. |
| View and Print Photos | Allows viewing and printing photos on a USB drive. |
| Scan to USB | Scans a document to a USB drive. |

## Apps

Use the Apps menu to install HP Web Services applications.

## Supplies

Use the Supplies menu to print a supplies status page. Press Report.

# Control panel message document (CPMD)

## Control-panel message types

The control-panel messages and event code entries indicate the current printer status or situations that might require action.

📝 **NOTE:** Event log errors do not appear on the control-panel display. Open the event log to view or print the event log errors.

A control-panel message displays temporarily and might require the user to acknowledge the message by touching the OK button to resume printing or by touching the Cancel ✕ button to cancel the job. With certain messages, the job might not finish printing or the print quality might be affected. If the message is related to printing and the auto-continue feature is on, the printer will attempt to resume printing after the message has appeared for 10 seconds without acknowledgement.

For some messages, restarting the printer might fix the problem. If a critical error persists, the printer might require service.

## Control-panel messages and event log entries

📝 **NOTE:** Some of the messages in the following sections only appear in the event log.

💡 **TIP:** Some control-panel messages and event log entries refer to a specific printer sensor or switch in the recommended action to solve the problem. See the diagrams in the clear jams section of this manual for sensor and switch locations.

### Control Panel Error Messages (M203d/dn/dw, M206dn models)

If the printer requires attention, an error code appears on the control-panel display.

**Table 2-28  Status-light legend**

| | |
|---|---|
| ⬤ | Symbol for "light off" |
| ◯ | Symbol for "light on" |
| ☀ | Symbol for "light blinking" |

**Table 2-29  Primary control-panel light patterns**

| Light status | State of the printer | Action |
|---|---|---|
| The Ready and Attention lights are blinking.<br> | The printer is starting (initializing). | No action required. |

Table 2-29 Primary control-panel light patterns (continued)

| Light status | State of the printer | Action |
|---|---|---|
| The Ready light is on and the Attention light is off. | The printer is idle. | No action required. |
| The Ready and Attention lights are off. | The printer is in Auto Off mode. | No action required.<br><br>**TIP:** Use the **System** tab in the HP Embedded Web Server (EWS) to change default times for entering Sleep/Auto Off mode or automatic shutdown. |
| The Ready light is blinking and the Attention light is off. | The printer is processing a print job or the printer is canceling a print job. | No action required. |
| The Ready light is off and the Attention light is blinking. | The printer is processing a confirmation prompt, warning, or error. | No action required. |
| The Ready and Attention lights are on. | The printer has experienced a fatal error. | **Check for secondary control-panel light patterns**<br><br>1. Press and hold down the Resume 🔽 button.<br><br>2. If the state of the lights changes (for example, if the LEDs start blinking) a fatal error is indicated. Go to Table 2-30 Secondary control-panel light patterns on page 94 to find the fatal error description.<br><br>**NOTE:** If the state of the lights does not change, there is no secondary LED state. |

**Table 2-30** Secondary control-panel light patterns

| Light status | State of the printer | Action |
|---|---|---|
| The Ready light is off and the Attention light is on. | Engine error<br><br>• Communication error<br><br>• DCC memory error<br><br>• Unknown engine firmware error | 1. Turn the printer off, and then on.<br><br>2. If the error persists, reset the printer:<br>   a. Turn off the power by using the power switch, and then wait at least 30 seconds.<br>   b. Turn on the power and wait for the product to initialize.<br><br>3. If a surge protector is used:<br>   a. Turn the printer off.<br>   b. Remove the surge protector.<br>   c. Plug the printer directly into the wall socket and turn the printer on.<br><br>4. If the error persists, the printer will require service. |
| The Ready light is blinking and the Attention light is on. | Power error<br><br>• Low-voltage power supply (LVPS)<br><br>• Power outage detected | 1. Recovering from power failure. Please wait.<br><br>2. If the error persists, reset the printer:<br>   a. Turn off the power by using the power switch, and then wait at least 30 seconds.<br>   b. Turn on the power and wait for the product to initialize.<br><br>3. If a surge protector is used:<br>   a. Turn the printer off.<br>   b. Remove the surge protector.<br>   c. Plug the printer directly into the wall socket and turn the printer on.<br><br>4. If the error persists, the printer will require service. |

Table 2-30 Secondary control-panel light patterns (continued)

| Light status | State of the printer | Action |
|---|---|---|
| The Ready light is on and the Attention light is blinking. | Fuser error<br><br>• Bad fuser<br><br>• Low fuser<br><br>• Slow fuser<br><br>• High fuser<br><br>• Fuser drive<br><br>• Fuser release lever<br><br>• Low fuser temp 2<br><br>• High fuser temp 2<br><br>• Low fuser temp 3<br><br>• High fuser temp 3 | 1. Check the power source. Make sure the power source meets printer requirements.<br><br>2. Turn the printer off, and then on.<br><br>3. If the error persists, reset the printer:<br>  a. Turn off the power by using the power switch, and then wait at least 30 seconds.<br>  b. Turn on the power and wait for the product to initialize.<br><br>4. If a surge protector is used:<br>  a. Turn the printer off.<br>  b. Remove the surge protector.<br>  c. Plug the printer directly into the wall socket and turn the printer on.<br><br>5. If the error persists, the printer will require service. |
| The Ready and Attention lights are blinking. | General engine error | 1. Turn the printer off, and then on.<br><br>2. If the error persists, reset the printer:<br>  a. Turn off the power by using the power switch, and then wait at least 30 seconds.<br>  b. Turn on the power and wait for the product to initialize.<br><br>3. If a surge protector is used:<br>  a. Turn the printer off.<br>  b. Remove the surge protector.<br>  c. Plug the printer directly into the wall socket and turn the printer on.<br><br>4. If the error persists, the printer will require service. |

Table 2-30 Secondary control-panel light patterns (continued)

| Light status | State of the printer | Action |
|---|---|---|
| The Ready and Attention lights are cycling on and off. | Sensor error<br><br>• Sensor dirty<br><br>• Level sensor error<br><br>• Bad TOP sensor | 1. Turn the printer off, and then on.<br><br>2. If the error persists, reset the printer:<br>   a. Turn off the power by using the power switch, and then wait at least 30 seconds.<br>   b. Turn on the power and wait for the product to initialize.<br><br>3. If a surge protector is used:<br>   a. Turn the printer off.<br>   b. Remove the surge protector.<br>   c. Plug the printer directly into the wall socket and turn the printer on.<br><br>4. If the error persists, the printer will require service. |
| The Ready light is blinking and the Attention light is off. | Motor rotation error<br><br>• Bad fuser motor start<br><br>• Bad fuser motor<br><br>• Bad drum motor start<br><br>• Bad drum motor rotation<br><br>• Bad developer motor start<br><br>• Bad developer motor rotation<br><br>• Bad main motor start<br><br>• T2 clutch error<br><br>• Bad main motor<br><br>• Bad developer motor<br><br>• T1 alienation | 1. Turn the printer off, and then on.<br><br>2. If the error persists, reset the printer:<br>   a. Turn off the power by using the power switch, and then wait at least 30 seconds.<br>   b. Turn on the power and wait for the product to initialize.<br><br>3. If a surge protector is used:<br>   a. Turn the printer off.<br>   b. Remove the surge protector.<br>   c. Plug the printer directly into the wall socket and turn the printer on.<br><br>4. If the error persists, the printer will require service. |
| The Ready and Attention lights are off. | Laser failure | 1. Turn the printer off, and then on.<br><br>2. If the error persists, reset the printer:<br>   a. Turn off the power by using the power switch, and then wait at least 30 seconds.<br>   b. Turn on the power and wait for the product to initialize.<br><br>3. If a surge protector is used: |

Table 2-30 Secondary control-panel light patterns (continued)

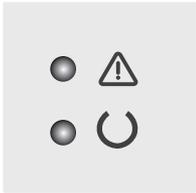| Light status | State of the printer | Action |
|---|---|---|
| | | **a.** Turn the printer off. |
| | | **b.** Remove the surge protector. |
| | | **c.** Plug the printer directly into the wall socket and turn the printer on. |
| | | **4.** If the error persists, the printer will require service. |

## Control Panel Error Messages (M227d/sdn/fdn/fdw, M230sdn/fdw models)

Messages appear on the control panel display to indicate the printer's status or errors.

### 30.XXXX Scanner Error

**Description**

The flatbed or ADF scanner is failing to initialize for the following reasons:

— **30.0013** = Scanner failed to find home

— **30.0016** = Scan sensor communication error

— **30.0017** = Scan motor exceeded max position error

— **30.0023** = ADF scanner calibration error

**Recommended action**

1. Verify that the product has the most recent firmware from hp.com.

2. Verify that the (flat flexible cables (FFC's) are seated correctly on the formatter board.

3. If the error persists, replace the Integrated Scanner Assembly:

| | |
|---|---|
| Integrated Scanner Assembly (3:1) | G3Q57–60113 |
| Integrated Scanner Assembly (4:1) | G3Q59–60101 |

4. If the error persists, escalate to Level 3 so that Technical Marketing has visibility to the problem.

### 49 Error, Turn off then on

**Description**

The product has experienced an internal embedded software error. Under most conditions, the product automatically restarts.

**Recommended action**

1. Reset the printer:

   a. Turn off the power by using the power switch, and then wait at least 30 seconds.

   b. Turn on the power and wait for the product to initialize.

2. If you are using a surge protector:

   a. Power off the printer.

   b. Remove the surge protector.

   c. Plug the product directly into the wall socket and turn the product power on.

3. If the error persists, disconnect any network or USB cables and power cycle. If the product returns to Ready, check the FW version and update if a newer version is available.

4. If the error persists, print a Service Page from the Reports menu. Also, print an Error Report from the 2ndary Service Menu. On the Service Page, look at the xxxx portion of the 49.xxxx errors listed:

- ○ If the numbers are all or mostly different, then power quality is a possible problem; try a different wall socket.

- ○ If the xxxx portion of 49.xxxx contain repeats of the same numbers or groups of numbers, then check the 2ndary Service Error Report printed earlier for indications of a failure in a particular area. The report may indicate whether the error is caused by a network problem or a problem with the job.

5. If the error persists, replace the product.

📝 **NOTE:** If the 49 Error is caused by the network or a specific file, do not replace the product; it will not resolve the issue. Instead, attempt to isolate the issue in a way that demonstrates the error is caused by something in the environment.

6. If the error persists after product replacement, escalate to Level 3 so that Technical Marketing has visibility to the problem.

### 50.XX Fuser Error, Turn off then on

**Description**

The product has experienced an internal fuser hardware error:

— **50.00** = Generic Fuser error

— **50.10** = Low Fuser temperature error

— **50.11** = High sub thermistor area 3 fuser error

— **50.12** = Low sub thermistor area 3 fuser error

— **50.20** = Slow fuser error

— **50.30** = High fuser temperature error

— **50.40** = Fuser drive circuit error

— **50.70** = Fuser open error

— **50.80** = Low sub thermistor fuser error

— **50.90** = High sub thermistor fuser error

**Recommended action**

1. Reset the product:

    a. Turn off the power by using the power switch, and then wait at least 30 seconds.

    b. Turn on the power and wait for the product to initialize.

2. If you are using a surge protector:

    a. Power off the product.

    b. Remove the surge protector.

    c. Plug the product directly into the wall socket and turn the product power on.

3. If the error persists, replace the Fusing Assembly:

| Fixing (fuser) assembly (110-127V)) | RM2-0805-000CN |
|---|---|
| Fixing (fuser) assembly (220-240V) | RM2–0806–000CN |

4. If the error persists, replace the product.

## 51.XX Laser Error, Turn off then on

### Description

An error with the laser/scanner assembly has occurred in the product.

— **51.00** = Laser error

— **51.20** = Black laser scanner error

— **51.30** = Laser error

### Recommended action

1. Reset the printer:

   a. Turn off the power by using the power switch, and then wait at least 30 seconds.

   b. Turn on the power and wait for the product to initialize.

2. If you are using a surge protector:

   a. Power off the printer.

   b. Remove the surge protector.

   c. Plug the product directly into the wall socket and turn the product power on.

3. If the error persists, replace the product.

## 55.XXXX Error, Turn off then on

### Description

The product has experienced an error with one of the internal sensors.

— **55.0** = DC controller communication error

— **55.0601** = DC controller NVRAM data error

— **55.0602** = DC controller NVRAM access error

— **55.1** = DC controller memory error

— **55.3** = Engine communication error

### Recommended action

1. Reset the printer:

   a. Turn off the power by using the power switch, and then wait at least 30 seconds.

   b. Turn on the power and wait for the product to initialize.

2. If you are using a surge protector:

      **a.**    Power off the printer.

      **b.**    Remove the surge protector.

      **c.**    Plug the product directly into the wall socket and turn the product power on.

**3.**    If the error persists, replace the Engine Control PCB Assembly (HP Part #: RM2–8334–000CN).

**4.**    If the error persists, replace the product.

## 57 Fan Error, Turn off then on

### Description

The product has experienced an error with its internal fan.

—    **57.01** = Fan 1 error

### Recommended action

**1.**    Reset the printer:

      **a.**    Turn off the power by using the power switch, and then wait at least 30 seconds.

      **b.**    Turn on the power and wait for the product to initialize.

**2.**    If you are using a surge protector:

      **a.**    Power off the printer.

      **b.**    Remove the surge protector.

      **c.**    Plug the product directly into the wall socket and turn the product power on.

**3.**    If the error persists, replace the internal cooling fan (HP Part #: RK2–1378–000CN).

**4.**    If the error persists, replace the product.

## 58.XX Error, Turn off then on

### Description

The product has experienced an error with the low voltage power supply.

—    **58.04** = Low voltage power supply malfunction

### Recommended action

**1.**    Reset the printer:

      **a.**    Turn off the power by using the power switch, and then wait at least 30 seconds.

      **b.**    Turn on the power and wait for the product to initialize.

**2.**    If you are using a surge protector:

      **a.**    Power off the printer.

      **b.**    Remove the surge protector.

      **c.**    Plug the product directly into the wall socket and turn the product power on.

3. Check the voltage label on the back of the product. If the product is rated 220V and is plugged into a 110V outlet, this error might occur. In most cases, no damage is caused to the product. If a power transformer is used to convert 220V power to 110V, verify that the transformer power rating is sufficient to operate the product.

4. If the error persists, replace the Low Voltage Power Supply PCB Assembly:

| L.V.POWER SUPPLY PCB ASS'Y (110–127V) | RM2–0840–000CN |
|---|---|
| L.V.POWER SUPPLY PCB ASS'Y (220–240V) CHINA ONLY | RM2-0842–000CN |
| L.V.POWER SUPPLY PCB ASS'Y (220–240V) EXCEPT CHINA | RM2-0841–000CN |

5. If the error persists, replace the product.

## 59.XX Error, Turn off then on

### Description

The product has experienced an error with the internal motor.

### Recommended action

1. Reset the printer:

    a. Turn off the power by using the power switch, and then wait at least 30 seconds.

    b. Turn on the power and wait for the product to initialize.

2. If you are using a surge protector:

    a. Power off the printer.

    b. Remove the surge protector.

    c. Plug the product directly into the wall socket and turn the product power on.

3. If the error persists, replace the Motor PCB Assembly (HP Part #: RM2–8351–000CN).

## 79 Error, Turn off then on

### Description

The product has experienced an internal firmware error. Under most conditions, the product automatically restarts.

### Recommended action

1. Reset the printer:

    a. Turn off the power by using the power switch, and then wait at least 30 seconds.

    b. Turn on the power and wait for the product to initialize.

2. If you are using a surge protector:

    a. Power off the printer.

    b. Remove the surge protector.

    c. Plug the product directly into the wall socket and turn the product power on.

3. If the error is intermittent, attempt to isolate the issue to something specific in the customers environment.

📝 **NOTE:** If the 79 Error is caused by the network or a specific file, do not replace the product; it will not resolve the issue. Instead, attempt to isolate the issue in a way that demonstrates the error is caused by something in the environment.

4. If the error is persistent, replace the Formatter PCA:

| | |
|---|---|
| Formatter PCB Assembly (3:1) | G3Q74–60001 |
| Formatter PCB Assembly (4:1) | G3Q75–60001 |

5. If the error persists, replace the product.

6. If the error persists after product replacement, escalate to Level 3 so that Technical Marketing has visibility to the problem.

## <COLOR> cartridge is low.

### Description

The indicated toner cartridge is nearing the end of its useful life.

### Recommended action

Printing can continue, but consider having a replacement supply on hand.

## <COLOR> cartridge is very low.

### Description

The indicated toner cartridge is at the end of its useful life. A customer configurable option on this product is "Prompt to Remind Me in 100 pages, 200 pages, 300 pages, 400 pages, or never." This option is provided as a customer convenience and is not an indication these pages will have acceptable print quality.

### Recommended action

To ensure optimal print quality, HP recommends replacing the toner cartridge at this point. You can continue printing until you notice a decrease in print quality. Actual cartridge life might vary. Once an HP supply has reached Very Low, HP's Premium Protection Warranty on that supply has ended. All print defects or cartridge failures incurred when an HP supply is used in Continue at very low mode will not be considered to be defects in materials or workmanship in the supply under the HP Print Cartridge Warranty Statement.

## Cleaning.

### Description

The product periodically performs a cleaning procedure to maintain the best print quality.

### Recommended action

Wait for the cleaning process to finish.

## Device error. Press [OK] to continue.

### Description

Paper has been delayed as it moves through the product.

### Recommended action

Press the OK button to clear the message.

To avoid this problem, try the following solutions:

1.    Adjust the paper guides in the tray. Ensure the front paper guide is pushing the paper against the back edge of the tray.

2.    Use paper that meets HP specifications. Store paper unopened in its original packaging.

3.    Use the product in an area that meets the environmental specifications for this product.

## Device is busy. Try again later.

### Description

The product is currently in use.

### Recommended action

1.    Wait for the product to finish the current job, or to finish initializing.

2.    Turn the product off, then on, to see whether it comes to a **Ready** state.

3.    Restore the device to the factory default settings. (Setup Menu -> Service Menu -> Restore Defaults)

4.    If the issue persists, upgrade to the latest firmware version.

## Document feeder jam. Clear and reload.

### Description

Paper is jammed in the document feeder tray or a sensor has incorrectly detected media in the document feeder paper path.

### Recommended action

1.    Remove the paper from the document feeder. If the paper rips, use a thick piece of paper (such as a business card) to clean the paper path.

2.    Reset the printer:

    a.    Turn off the power by using the power switch, and then wait at least 30 seconds.

    b.    Turn on the power and wait for the product to initialize.

3.    If the error persists, replace the Auto Document Feeder Assembly:

| | | |
|---|---|---|
| M227sdn/fdn/fdw | Auto Document Feeder Assembly | G3Q59–60113 |
| M230sdn/fdw | Auto Document Feeder Assembly | P6N90–60101 |

## Document feeder mispick. Reload.

### Description

The product did not pick up the paper in the document feeder.

**Recommended action**

1. Remove the paper from the document feeder tray, and then reload it.

2. Verify there are no staples or paper clips on the stack of originals. Verify the originals are straightened out from previous folds or curl.

3. If the control panel displays **Document Feeder Loaded** when the originals are not in the input tray of the document feeder, the sensor on the document feeder might be malfunctioning. Replace the Auto Document Feeder Assembly:

| | | |
|---|---|---|
| M227sdn/fdn/fdw | Auto Document Feeder Assembly | G3Q59–60113 |
| M230sdn/fdw | Auto Document Feeder Assembly | P6N90–60101 |

## Door is open.

**Description**

The products front door is open.

**Recommended action**

Close the door.

## Engine cable connection issue. Contact HP service. Press [OK] to continue.

**Description**

The print engine cable diagnostics did not pass due to a cable issue.

**Recommended action**

Press OK to continue to use the device for scanning and faxing, but printing will not be functional. Either replace the product or send to HP service.

## Fax is busy. Canceled send.

**Description**

The fax line to which you were sending a fax was busy. The product has canceled sending the fax.

**Recommended action**

1. Call the recipient to ensure that the fax machine is on and ready.

2. Verify that the fax number is correct.

3. Verify that the Redial if Busy option is enabled.

4. Open the Service menu, and then touch the Fax Service button. Touch the Run Fax Test button. This test verifies that the phone cord is connected to the correct port and that the phone line has a signal. The product prints a report with the results.

5. Additional fax sending/receiving troubleshooting can be found in this document: HP LaserJet Pro MFP – Solve problems sending or receiving faxes (includes fax error messages)(c03491494) (in English) available in Service Access Workbench (SAW) or Channel Service Network (CSN).

**Description**

An error occurred while trying to receive a fax.

**Recommended action**

1.  Ask the sender to resend the fax.

2.  To verify that the telephone cord is securely connected, disconnect and reconnect the telephone cord.

3.  Verify that you are using the telephone cord that came with the product.

4.  Open the Service menu, and touch the Fax Service button. Touch the Run Fax Test button. This test verifies that the phone cord is connected to the correct port and that the phone line has a signal. The product prints a report with the results.

5.  Decrease the fax speed. Ask the sender to resend the fax.

6.  Turn off error-correction mode. Ask the sender to resend the fax.

    📝 **NOTE:** Turning off error-correction mode might reduce the quality of the fax image.

7.  Connect the product to a different phone line.

8.  Additional fax sending/receiving troubleshooting can be found in this document: HP LaserJet Pro MFP - Solve problems sending or receiving faxes (includes fax error messages)(c03491494) (in English) available in Service Access Workbench (SAW) or Channel Service Network (CSN).

## Fax Send error.

**Description**

An error occurred while trying to send a fax.

**Recommended action**

1.  Resend the fax.

2.  Try faxing to another fax number.

3.  To verify that the telephone cord is securely connected, disconnect and reconnect the telephone cord. Check that the telephone cord is securely connected by unplugging and replugging the cord.

4.  Verify that you are using the telephone cord that came with the product.

5.  Open the Service menu, and touch the Fax Service button. Touch the Run Fax Test button. This test verifies that the phone cord is connected to the correct port and that the phone line has a signal. The product prints a report with the results.

6.  Connect the product to a different phone line.

7.  Set the fax resolution to Standard instead of the default of Fine .

8.  Additional fax sending/receiving troubleshooting can be found in this document: HP LaserJet Pro MFP - Solve problems sending or receiving faxes (includes fax error messages)(c03491494) (in English) available in Service Access Workbench (SAW) or Channel Service Network (CSN).

### Fax storage is full. Canceling the fax send/receive.

**Description**

The amount of available memory for storing faxes is insufficient to store an incoming fax.

**Recommended action**

1. If you are using the Private Receive feature, print all received faxes to regain some memory.

2. If the issue persists, clear faxes from memory:

   a. Open the Service menu.

   b. Touch the Fax Service button.

   c. Touch the Clear Saved Faxes menu item.

### Genuine HP supply installed.

**Description**

A genuine HP supply was just installed.

**Recommended action**

No action necessary.

### Install <COLOR> cartridge.

**Description**

The indicated toner cartridge is missing or not seated correctly.

**Recommended action**

Remove and reinstall the indicated supply.

### Jam in output bin. Open rear door and clear jam.

**Description**

A paper jam occurred in the output bin area of the printer.

**Recommended action**

1. Follow the instructions on the control panel to clear the jammed media.

2. If the issue persists:

   a. Use paper that meets HP specifications. Store paper unopened in its original packaging.

   b. Use the product in an area that meets the environmental specifications for this product.

### Jam in Tray 1. Clear jam and then press [OK].

**Description**

A paper jam occurred while printing from the Tray 1 slot.

**Recommended action**

1. Follow the instructions on the control panel to clear the jammed media.

2. If the issue persists:

   a. Adjust the side paper guides in the tray 1 slot. Allow the printer to pull the media in when inserted in the Tray 1 slot.

   b. Use paper that meets HP specifications. Store paper unopened in its original packaging.

   c. Use the product in an area that meets the environmental specifications for this product.

3. If the issue persists, check the pick-up rollers for wear or damage and replace if necessary.

## Load paper.

**Description**

The tray is empty.

**Recommended action**

Load paper in the tray.

## Load tray 1 <TYPE>, <SIZE>. Press [OK] to continue.

**Description**

The tray is not configured for the paper type and size that the print job is requesting.

**Recommended action**

Load the correct paper into Tray 1 and press OK to continue printing.

## Load tray 1. Plain, <SIZE> / Cleaning mode. Press [OK] to start.

**Description**

The product is ready to process the cleaning operation.

**Recommended action**

Load Tray 1 with plain paper in the size indicated, and then press the OK button.

## Load tray 1. Press [OK] to continue.

**Description**

The tray is empty.

**Recommended action**

Load paper into the tray and press OK to continue printing.

## Load tray <X> Press [OK] for available media.

**Description**

The tray is empty.

**Recommended action**

Load paper into the tray to continue printing. Press the OK button to select a different tray.

## Manual Duplex. Load Tray <#>. Press [OK] to continue.

**Description**

The first side of a manual duplex job has printed, and the page needs to be loaded to process the second side.

**Recommended action**

Load the page in the indicated tray with the side to be printed face up, and the top of the page away from you, and then press the OK button.

## Memory is low. Press [OK] to continue.

**Description**

The product memory is almost full.

**Recommended action**

Press the OK button to finish the job, or touch the Cancel button to cancel the job. Break the job into smaller jobs that contain fewer pages.

## NFC cable connection issue. Contact HP service. Press [OK] to continue.

**Description**

The Near Field Communication (NFC) cable diagnostics did not pass due to a cable issue.

**Recommended action**

Press OK to continue to use the device, but NFC will not be functional. Either replace the product or send to HP service.

## No dial tone.

**Description**

The product could not detect a dial tone.

**Recommended action**

1. Check for a dial tone on the phone line by touching the Start Fax button.

2. Unplug the telephone cord from both the product and the wall and replug the cord.

3. Verify that you are using the telephone cord that came with the product.

4. Open the Service menu, and touch the Fax Service button. Touch the Run Fax Test button. This test verifies that the phone cord is connected to the correct port and that the phone line has a signal. The product prints a report with the results.

5. Additional fax sending/receiving troubleshooting can be found in this document: HP LaserJet Pro MFP – Solve problems sending or receiving faxes (includes fax error messages)(c03491494) (in English) available in Service Access Workbench (SAW) or Channel Service Network (CSN).

## No fax detected.

### Description

The product answered the incoming call but did not detect that a fax machine was calling.

### Recommended action

1.  Open the Service menu, and touch the Fax Service button. Touch the Run Fax Test button. This test verifies that the phone cord is connected to the correct port and that the phone line has a signal. The product prints a report with the results.

2.  Additional fax sending/receiving troubleshooting can be found in this document: HP LaserJet Pro MFP - Solve problems sending or receiving faxes (includes fax error messages)(c03491494) (in English) available in Service Access Workbench (SAW) or Channel Service Network (CSN).

## Non-HP supply installed.

### Description

A non-HP supply has been installed.

### Recommended action

No action necessary.

**NOTE:** If customer believes they purchased a new genuine HP supply, direct them to www.hp.com/go/anticounterfeit to verify

**NOTE:** Service or repairs that are required as a result of using unsupported supplies is not covered under HP warranty.

## Print failure, press [OK]. If error repeats, turn off then on.

### Description

The product cannot process the page.

### Recommended action

Press the OK button to continue printing the job, but output might be affected.

If the error persists, turn the power off and then on. Resend the print job.

## Protected <COLOR> cartridge.

### Description

A previously protected cartridge was installed in a printer other than the one that initiated the cartridge protection.

### Recommended action

The cartridge can only be used in the product or fleet of products that initially protected it using Cartridge Protection.

Install a new or unprotected supply.

### Rear door open.

**Description**

The products rear door is open.

**Recommended action**

Close the door.

### Replace <COLOR>.

**Description**

The indicated toner cartridge is at the end of its useful life, and the product is customer-configured to stop printing when it reaches the very low state.

**Recommended action**

Replace the indicated cartridge or change the Very Low Setting for the supply to something other than Stop.

📝 **NOTE:** To ensure optimal print quality, HP recommends replacing the toner cartridge at this point. You can continue printing (if Very Low Setting is set to something other than Stop) until you notice a decrease in print quality. Actual cartridge life might vary. Once an HP supply has reached **Very Low**, HP's Premium Protection Warranty on that supply has ended. All print defects or cartridge failures incurred when an HP supply is used in Continue at very low mode will not be considered to be defects in materials or workmanship in the supply under the HP Print Cartridge Warranty Statement.

### Supply memory error.

**Description**

There is an error with one of the installed cartridges. 'X' indicates the color of the cartridge.

(X=0: Black, X=1: Cyan, X=2: Magenta, X=3: Yellow)

— **10.000X** (Event Code) — cartridge memory error

— **10.010X** (Event Code) — cartridge memory error

— **10.020X** (Event Code) — cartridge memory error

— **10.030X** (Event Code) — cartridge memory error

— **10.100X** (Event Code) — cartridge memory chip is missing

**Recommended action**

1.  Reset the product:

    a.  Turn off the power by using the power switch, and then wait at least 30 seconds.

    b.  Turn on the power and wait for the product to initialize.

2.  If the error persists, check the event-log messages to identify the specific cartridge at fault.

3.  Verify the indicated cartridge is HP genuine.

4.  If the error persists, replace the cartridge.

5.  If the error persists, replace the product.

### The product is unable to calibrate. Close the lid and remove paper from the document feeder.

**Description**

The scanner is unable to calibrate because either the lid is open or there is paper blocking the scan head.

**Recommended action**

1. Remove any paper from the scanner glass or the ADF and close the lid.

2. If the error persists, replace the Integrated Scanner Assembly:

| | |
|---|---|
| Integrated Scanner Assembly (3:1) | G3Q57–60113 |
| Integrated Scanner Assembly (4:1) | G3Q59–60101 |

### Unauthorized <COLOR> cartridge.

**Description**

The administrator has configured this product to use only genuine HP supplies. The product has determined there is a supply not meeting this criteria

**Recommended action**

Change the Cartridge Policy to Off or replace the cartridge to continue printing.

📝 **NOTE:** If customer believes they purchased a new genuine HP supply, direct them to www.hp.com/go/anticounterfeit to verify

📝 **NOTE:** Service or repairs that are required as a result of using unsupported supplies is not covered under HP warranty.

### Unexpected size in Tray <#>. Load <SIZE>. Press [OK] to continue.

**Description**

The product has detected paper in the indicated tray that does not match the configuration for the tray.

**Recommended action**

Load the correct paper into the tray, or configure the tray for the size that you have loaded and press OK to continue printing.

### Used or counterfeit <COLOR> cartridge in use.

**Description**

The indicated cartridge is used or counterfeit.

**Recommended action**

No action necessary.

📝 **NOTE:** If customer believes they purchased a new genuine HP supply, direct them to www.hp.com/go/anticounterfeit to verify

📝 **NOTE:** Service or repairs that are required as a result of using unsupported supplies is not covered under HP warranty.

## Used or counterfeit <COLOR> cartridge is installed. Press [OK] to continue.

**Description**

The indicated cartridge is used or counterfeit.

**Recommended action**

Replace the indicated cartridge with a new genuine HP supply or press OK to continue using the installed cartridge.

## Wireless cable connection issue. Contact HP service. Press [OK] to continue.

**Description**

The wireless cable diagnostics did not pass due to a cable issue.

**Recommended action**

Press OK to continue to use the device, but wireless printing will not be functional. Either replace the product or send to HP service.

# Tools for troubleshooting: Event log messages

See the control-panel message and event-log entries section of this manual for event-log entry descriptions and solutions. The event log shows the last 50 events in descending order.

## Print an event log

### Print the event log from the secondary service menu

1.  Open the secondary service menu.

    #### LED control panels

    📝 **NOTE:**   HP Device Toolbox is software used to connect to the HP Embedded Web Server when the printer is connected to a computer via USB. It is available only if a full installation was performed when the printer was installed on a computer. Depending on how the printer is connected, some features might not be available.
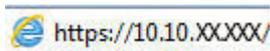
    The HP Embedded Web Server is not accessible beyond the network firewall.

    a.  Open the HP Printer Assistant.

    - **Windows 8.1**: Click the down arrow in lower left corner of the **Start** screen, and then select the printer name.

    - **Windows 8**: Right-click an empty area on the **Start** screen, click **All Apps** on the app bar, and then select the printer name.

    - **Windows 7**, **Windows Vista**, and **Windows XP**: From the computer desktop, click **Start**, select **All Programs**, click **HP**, click the folder for the printer, select the icon with the printer's name, and then open **HP Printer Assistant**.

    b.  In the **HP Printer Assistant**, select **Print**, and then select **HP Device Toolbox**.

    #### 2-line control panels

    a.  From the printer control panel, press the Setup 🔧 button.

    b.  Simultaneously press the Cancel ✕ button and the left arrow ◀ button. The 2ndary Service menu item should be at the top of the list.

    c.  Use the left and right arrow buttons to navigate through the menu. When finished, press the Cancel ✕ button to close the menu.

    #### Touchscreen control panel

    a.  From the Home screen on the printer control panel, touch the Setup ⚙ button.

    b.  Touch the space between the Home 🏠 and the Help ❓ button.

    c.  Touch the Back ↩ button.

**d.** Touch the Setup ⚙ button.

**e.** Touch 2ndary Service (at the top of the list) to access the menu.

**2.** Open the Service Reports menu.

**3.** Select the Error Report item.

### View the event log

You can use HP Device Toolbox and the HP Embedded Web Server (EWS) to view the event log from a computer. When the printer is connected to the network, the HP Embedded Web Server is automatically available.

📝 **NOTE:** HP Device Toolbox is software used to connect to the HP Embedded Web Server when the printer is connected to a computer via USB. It is available only if a full installation was performed when the printer was installed on a computer. Depending on how the printer is connected, some features might not be available.

The HP Embedded Web Server is not accessible beyond the network firewall.

### Method one: Open the HP Embedded Web Server (EWS) from the Start menu

**1.** Open the HP Printer Assistant.

- **Windows 8.1**: Click the down arrow in lower left corner of the **Start** screen, and then select the printer name.

- **Windows 8**: Right-click an empty area on the **Start** screen, click **All Apps** on the app bar, and then select the printer name.

- **Windows 7, Windows Vista, and Windows XP**: From the computer desktop, click **Start**, select **All Programs**, click **HP**, click the folder for the printer, select the icon with the printer's name, and then open **HP Printer Assistant**.

**2.** In the HP Printer Assistant, select **Print**, and then select **HP Device Toolbox**.

**3.** Click the **Home** tab, and then click the **Event Log** item. The event log shows a list of all printer events and errors.

### Method two: Open the HP Embedded Web Server (EWS) from a web browser (M203)

**1.** Print a configuration page to determine the IP address or host name.

**a.** Press and hold the Resume ⬇ button until the Ready ↻ light begins blinking.

**b.** Release the Resume ⬇ button.

**2.** Open a web browser, and in the address line, type the IP address or host name exactly as it displays on the printer configuration page. Press the Enter key on the computer keyboard. The EWS opens.

> 🌐 https://10.10.XXXXX/

📝 **NOTE:** If the web browser displays a message indicating that accessing the website might not be safe, select the option to continue to the website. Accessing this website will not harm the computer.

**3.** Click the **Home** tab, and then click the **Event Log** item. The event log shows a list of all printer events and errors.

**Method two: Open the HP Embedded Web Server (EWS) from a browser (M227)**

📝 **NOTE:** The steps vary according to the type of control panel.



| 1 | 2-line control panel |
| 2 | Touchscreen control panel |

1. **2-line control panels:** On the printer control panel, press the 🔧 button. Open the **Network Setup** menu, and then select **Show IP Address** to display the IP address or host name.

   **Touchscreen control panels:** From the Home screen on the printer control panel, touch the Connection Information ⛛/🔔 button, and then touch the Network Connected ⛛ button or the Network Wi-Fi ON 🔔 button to display the IP address or host name.

2. Open a web browser, and in the address line, type the IP address or host name exactly as it displays on the printer control panel. Press the Enter key on the computer keyboard. The EWS opens.

   🌐 https://10.10.XXXXX/

   📝 **NOTE:** If the web browser displays a message indicating that accessing the website might not be safe, select the option to continue to the website. Accessing this website will not harm the computer.

3. Click the **Home** tab, and then click the **Event Log** item. The event log shows a list of all printer events and errors.

# Improve print quality

If the printer is having print-quality problems, try the following solutions in the order presented to resolve the issue.

- Print from a different software program
- Check the paper-type setting for the print job
  - Check the paper type setting (Windows)
  - Check the paper type setting (OS X)
- Check toner-cartridge status (M203)
- Check toner-cartridge status (M227)
- Print a cleaning page (M203)
- Print a cleaning page (M227)
- Check the scanner glass for dirt and smudges (M227)
- Visually inspect the toner cartridge or cartridges
- Check paper and the printing environment
  - Step one: Use paper that meets HP specifications
  - Step two: Check the environment
  - Step three: Set the individual tray alignment (M203)
  - Step three: Set the individual tray alignment (M227)
- Try a different print driver
- Check the EconoMode settings
- Adjust print density (M203)
- Adjust print density (M227)

## Print from a different software program

Try printing from a different software program. If the page prints correctly, the problem is with the software program from which you were printing.

## Check the paper-type setting for the print job

Check the paper type setting when printing from a software program and the printed pages have smears, fuzzy or dark print, curled paper, scattered dots of toner, loose toner, or small areas of missing toner.

### Check the paper type setting (Windows)

1. From the software program, select the **Print** option.

2. Select the printer, and then click the **Properties** or **Preferences** button.

3. Click the **Paper/Quality** tab.

4. From the **Paper Type** drop-down list, click the **More…** option.

5. Expand the list of **Type is:** options.

6. Expand the category of paper types that best describes your paper.

7. Select the option for the type of paper you are using, and click the **OK** button.

8. Click the **OK** button to close the **Document Properties** dialog box. In the **Print** dialog box, click the **OK** button to print the job.

## Check the paper type setting (OS X)

1. Click the **File** menu, and then click the **Print** option.

2. In the **Printer** menu, select the printer.

3. By default, the print driver displays the **Copies & Pages** menu. Open the menus drop-down list, and then click the **Finishing** menu.

4. Select a type from the **Media Type** drop-down list.

5. Click the **Print** button.

# Check toner-cartridge status (M203)

Check the supplies status page for the following information:

- Estimated percentage of cartridge life remaining

- Approximate pages remaining

- Part numbers for HP toner cartridges

- Number of pages printed

The printer prints the supplies status page when it prints the configuration page.

1. Press and hold the Resume [ ] button until the Ready ↻ light begins blinking.

2. Release the Resume [ ] button.

# Check toner-cartridge status (M227)

Follow these steps to check the estimated life remaining in the toner cartridges and if applicable, the status of other replaceable maintenance parts.

📝 **NOTE:** The steps vary according to the type of control panel.
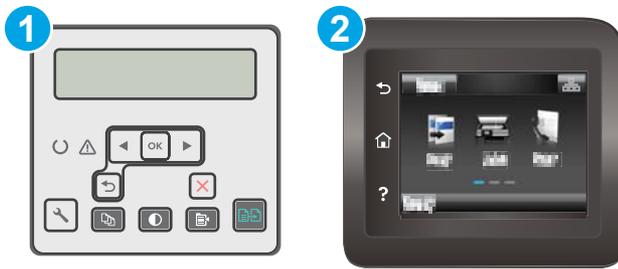
| 1 | 2-line control panel |
|---|---|
| 2 | Touchscreen control panel |

### Step one: Print the supplies status page

1.  **2-line control panels:** On the printer control panel, press the Setup 🔧 button.

    **Touchscreen control panels:** From the Home screen on the printer control panel, swipe until the Setup menu displays. Touch the Setup 🔘 icon to open the menu.

2.  Open the following menus:

    - Reports

    - Supplies Status

3.  **2-line control panels:** Scroll to **Print Supplies status page**, and then press the OK button.

    **Touchscreen control panels:** Touch Manage Supplies, and then touch Print Supplies Status.

### Step two: Check supplies status

1.  Look at the supplies status report to check the percent of life remaining for the toner cartridges and if applicable, the status of other replaceable maintenance parts.

    Print quality problems can occur when using a toner cartridge that is at its estimated end of life. The supplies status page indicates when a supply level is very low. After an HP supply has reached the very low threshold, HP's premium protection warranty on that supply has ended.

    The toner cartridge does not need to be replaced now unless the print quality is no longer acceptable. Consider having a replacement available to install when print quality is no longer acceptable.

    If you determine that you need to replace a toner cartridge or other replaceable maintenance parts, the supplies status page lists the genuine HP part numbers.

2.  Check to see if you are using a genuine HP cartridge.

    A genuine HP toner cartridge has "HP" on it, or has the HP logo on it. For more information on identifying HP cartridges go to www.hp.com/go/learnaboutsupplies.

## Print a cleaning page (M203)

1.  Open the HP Printer Assistant.

- **Windows 8.1**: Click the down arrow in lower left corner of the **Start** screen, and then select the printer name.

- **Windows 8**: Right-click an empty area on the **Start** screen, click **All Apps** on the app bar, and then select the printer name.

- **Windows 7, Windows Vista, and Windows XP**: From the computer desktop, click **Start**, select **All Programs**, click **HP**, click the folder for the printer, select the icon with the printer's name, and then open **HP Printer Assistant**.

2. In the HP Printer Assistant, select **Print**, and then select **HP Device Toolbox**.

3. On the **Systems** tab, click **Service**.

4. In the **Cleaning Mode** area, click **Start** to begin the cleaning process.

## Print a cleaning page (M227)

During the printing process paper, toner, and dust particles can accumulate inside the printer and can cause print-quality issues such as toner specks or spatter, smears, streaks, lines, or repeating marks.

Use the following procedure to print a cleaning page.

📝 **NOTE:** The steps vary according to the type of control panel.



| 1 | 2-line control panel |
|---|---|
| 2 | Touchscreen control panel |

1. **2-line control panels:** On the printer control panel, press the Setup 🔧 button.

   **Touchscreen control panels:** From the Home screen on the printer control panel, swipe until the Setup menu displays. Touch the Setup ⚙ icon to open the menu.

2. Open the following menus:

   - Service

   - Cleaning Page

3. Load plain letter or A4 paper when you are prompted, and then press the OK button.

   A **Cleaning** message displays on the printer control panel. Wait until the process is complete. Discard the page that prints.

# Check the scanner glass for dirt and smudges (M227)

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.

1. Press the power button to turn the printer off, and then disconnect the power cable from the electrical outlet.

2. Open the scanner lid.

3. Clean the scanner glass and the white plastic backing underneath the scanner lid with a soft cloth or sponge that has been moistened with nonabrasive glass cleaner.

   **⚠ CAUTION:** Do not use abrasives, acetone, benzene, ammonia, ethyl alcohol, or carbon tetrachloride on any part of the printer; these can damage the printer. Do not place liquids directly on the glass or platen. They might seep and damage the printer.

4. Dry the glass and white plastic parts with a chamois or a cellulose sponge to prevent spotting.

5. Connect the power cable to an outlet, and then press the power button to turn the printer on.

# Visually inspect the toner cartridge or cartridges

Follow these steps to inspect each toner cartridge and imaging drum.

1. Remove the toner cartridge and imaging drum from the printer.

2. Check the memory chip for damage.

3. Examine the surface of the green imaging drum.

   **⚠ CAUTION:** Do not touch the imaging drum. Fingerprints on the imaging drum can cause print-quality problems.

4. If you see any scratches, fingerprints, or other damage on the imaging drum, replace the toner cartridge and imaging drum.

5. Reinstall the toner cartridge and imaging drum, and print a few pages to see if the problem has resolved.

# Check paper and the printing environment

## Step one: Use paper that meets HP specifications

Some print-quality problems arise from using paper that does not meet HP specifications.

- Always use a paper type and weight that this printer supports.

- Use paper that is of good quality and free of cuts, nicks, tears, spots, loose particles, dust, wrinkles, voids, staples, and curled or bent edges.

- Use paper that has not been previously printed on.

- Use paper that does not contain metallic material, such as glitter.

- Use paper that is designed for use in laser printers. Do not use paper that is designed only for use in Inkjet printers.

- Use paper that is not too rough. Using smoother paper generally results in better print quality.

## Step two: Check the environment

The environment can directly affect print quality and is a common cause for print-quality or paper-feeding issues. Try the following solutions:

- Move the printer away from drafty locations, such as open windows or doors, or air-conditioning vents.

- Make sure the printer is not exposed to temperatures or humidity outside of printer specifications.

- Do not place the printer in a confined space, such as a cabinet.

- Place the printer on a sturdy, level surface.

- Remove anything that is blocking the vents on the printer. The printer requires good air flow on all sides, including the top.

- Protect the printer from airborne debris, dust, steam, grease, or other elements that can leave residue inside the printer.

## Step three: Set the individual tray alignment (M203)

Follow these steps when text or images are not centered or aligned correctly on the printed page when printing from specific trays.

1.  Open the HP Embedded Web Server (EWS):

    ### Direct-connected printers

    a.  Open the HP Printer Assistant.

        - **Windows 8.1**: Click the down arrow in lower left corner of the **Start** screen, and then select the printer name.

        - **Windows 8**: Right-click an empty area on the **Start** screen, click **All Apps** on the app bar, and then select the printer name.

        - **Windows 7, Windows Vista, and Windows XP**: From the computer desktop, click **Start**, select **All Programs**, click **HP**, click the folder for the printer, select the icon with the printer's name, and then open **HP Printer Assistant**.

    b.  In the HP Printer Assistant, select **Print**, and then select **HP Device Toolbox**.

    ### Network-connected printers

    a.  Print a configuration page to determine the IP address or host name.

        i.  Press and hold the Resume [⊡] button until the Ready ↻ light begins blinking.

        ii.  Release the Resume [⊡] button.

**b.** Open a web browser, and in the address line, type the IP address or host name exactly as it displays on the printer configuration page. Press the Enter key on the computer keyboard. The EWS opens.



> **NOTE:** if the web browser displays a message indicating that accessing the website might not be safe, select the option to continue to the website. Accessing this website will not harm the computer.

**2.** Click the **System** tab, and then select the **Service** page.

**3.** In the **Adjust Alignment** area, select the tray to adjust.

**4.** Select one of the following options:

- **X1 shift**

- **X2 shift**

- **Y shift**

**5.** Adjust the alignment settings, and then click **Apply**

**6.** Click **Print Test Page** to print a test page in order to confirm the new alignment settings.

## Step three: Set the individual tray alignment (M227)

Follow these steps when text or images are not centered or aligned correctly on the printed page when printing from specific trays.

> **NOTE:** The steps vary according to the type of control panel.
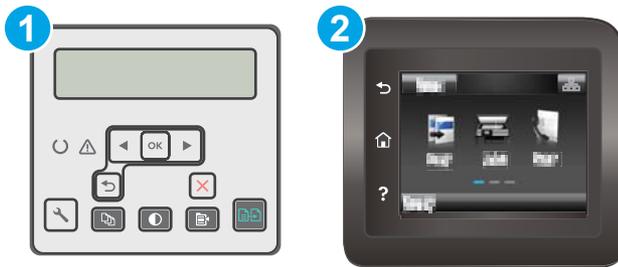


| 1 | 2-line control panel |
| --- | --- |
| 2 | Touchscreen control panel |

**1.** **2-line control panels:** On the printer control panel, press the Setup 🔧 button.

**Touchscreen control panels:** From the Home screen on the printer control panel, swipe until the Setup menu displays. Touch the Setup icon to open the menu.

**2.** Open the following menus:

- System Setup

- Print Quality

- Adjust Alignment

- Print Test Page

3. Select the tray to adjust, and then follow the instructions on the printed pages.

4. Print the test page again to verify the results. Make further adjustments if necessary.

5. Touch or press the OK button to save the new settings.

# Try a different print driver

Try a different print driver when printing from a software program and the printed pages have unexpected lines in graphics, missing text, missing graphics, incorrect formatting, or substituted fonts.

Download any of the following drivers from the HP Web site: www.hp.com/support/ljM203 and/or www.hp.com/support/ljM227MFP.

| HP PCL.6 driver<br><br>HP PCL 6 driver<br><br>HP PCL-6 driver | • Provided as the default driver on the printer CD. This driver is automatically installed unless you select a different one.<br><br>• Recommended for all Windows environments<br><br>• Provides the overall best speed, print quality, and printer-feature support for most users<br><br>• Developed to align with the Windows Graphic Device Interface (GDI) for the best speed in Windows environments<br><br>• Might not be fully compatible with third-party and custom software programs that are based on PCL 5 |
|---|---|
| HP UPD PS driver | • Recommended for printing with Adobe® software programs or with other highly graphics-intensive software programs<br><br>• Provides support for printing from postscript emulation needs, or for postscript flash font support |
| HP UPD PCL 5 | • Recommended for general office printing in Windows environments<br><br>• Compatible with previous PCL versions and older HP LaserJet printers<br><br>• The best choice for printing from third-party or custom software programs<br><br>• The best choice when operating with mixed environments, which require the printer to be set to PCL 5 (UNIX, Linux, mainframe)<br><br>• Designed for use in corporate Windows environments to provide a single driver for use with multiple printer models<br><br>• Preferred when printing to multiple printer models from a mobile Windows computer |
| HP UPD PCL 6 | • Recommended for printing in all Windows environments<br><br>• Provides the overall best speed, print quality, and printer feature support for most users<br><br>• Developed to align with Windows Graphic Device Interface (GDI) for best speed in Windows environments<br><br>• Might not be fully compatible with third-party and custom software programs that are based on PCL 5 |

# Check the EconoMode settings

HP does not recommend the full-time use of EconoMode. If EconoMode is used full-time, the toner supply might outlast the mechanical parts in the toner cartridge. If print quality begins to degrade and is no longer acceptable, consider replacing the toner cartridge.

**NOTE:** This feature is available with the PCL 6 print driver for Windows. If you are not using that driver, you can enable the feature by using the HP Embedded Web Server.

Follow these steps if the entire page is too dark or too light.

1. From the software program, select the **Print** option.

2. Select the printer, and then click the **Properties** or **Preferences** button.

3. Click the **Paper/Quality** tab, and locate the **Print Quality** area.

4. If the entire page is too dark, use these settings:

   - Select the **600 dpi** option.

   - Select the **EconoMode** check box to enable it.

   If the entire page is too light, use these settings:

   - Select the **FastRes 1200** option.

   - Clear the **EconoMode** check box to disable it.

5. Click the **OK** button to close the **Document Properties** dialog box. In the **Print** dialog, click the **OK** button to print the job.

# Adjust print density (M203)

Complete the following steps to adjust the print density.

1. Open the HP Embedded Web Server (EWS):

   a. Print a configuration page to determine the IP address or host name.

      i. Press and hold the Resume [ ] button until the Ready ◯ light begins blinking.

      ii. Release the Resume [ ] button.

   b. Open a web browser, and in the address line, type the IP address or host name exactly as it displays on the printer configuration page. Press the Enter key on the computer keyboard. The EWS opens.

       https://10.10.XXXXX/

      **NOTE:** if the web browser displays a message indicating that accessing the website might not be safe, select the option to continue to the website. Accessing this website will not harm the computer.

2. Click the **System** tab, and then click the **Print Quality** page.

3. From the **Print Density:** drop-down, select the correct density setting.

   **NOTE:** The default print density setting is **3**.

- **1 (Light)**: lightest

- **2**: lighter

- **3**: default

- **4**: darker

- **5**: darkest

4. Click **Apply**.

## Adjust print density (M227)

Complete the following steps to adjust the print density.

**NOTE:** The steps vary according to the type of control panel.
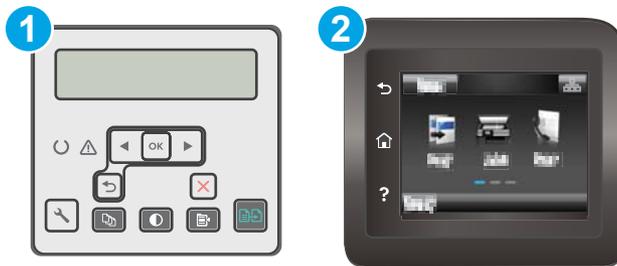


| 1 | 2-line control panel |
| 2 | Touchscreen control panel |

1. **2-line control panels:** On the printer control panel, press the Setup 🔧 button.

   **Touchscreen control panels:** From the Home screen on the printer control panel, swipe until the Setup menu displays. Touch the Setup ⚙ icon to open the menu.

2. Open the following menus:

   - System Setup

   - Print Density

3. Select the correct print density setting.

   - **1**: lightest

   - **2**: lighter

   - **3**: default

   - **4**: darker

   - **5**: darkest

# Print quality troubleshooting guide

- Image defects table

- Printer-specific image defects

  — Repetitive image defect ruler

  — Print quality troubleshooting guide

## Image defects table

**Table 2-31  Image defects table quick reference**
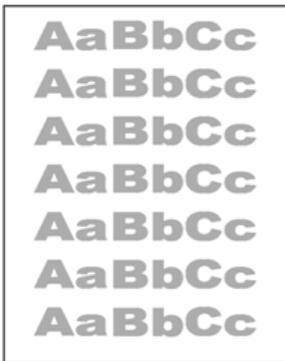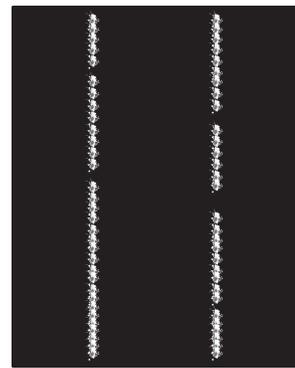
Table 2-31 Image defects table quick reference (continued)

| Table 2-38 Fixing/fuser defects on page 132 | Table 2-39 Image placement defects on page 132 | Table 2-40 Color plane registrations defects (color models only) on page 133 |
|---|---|---|
|  |  |  |
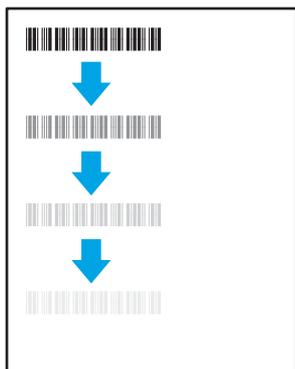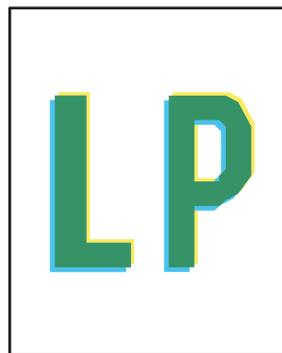
Table 2-41 Output defects on page 133
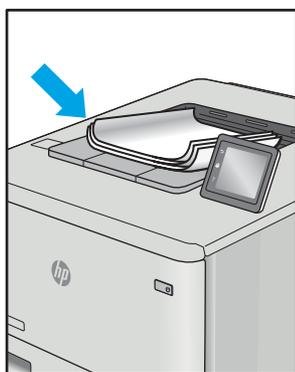


Image defects, no matter the cause, can often be resolved using the same steps. Use the following steps as a starting point for solving image defect issues.

1. Reprint the document. Print quality defects can be intermittent in nature or can go away completely with continued printing.

2. Check the condition of the cartridge or cartridges. If a cartridge is in a **Very Low** state (it has passed the rated life), replace the cartridge.

3. Make sure that the driver and tray print mode settings match the media that is loaded in the tray. Try using a different ream of media or a different tray. Try using a different print mode.

4. Make sure that the printer is within the supported operating temperature/humidity range.

5. Make sure that the paper type, size, and weight are supported by the printer. See the printer support page at support.hp.com for a list of the supported paper sizes and types for the printer.

📝 NOTE: The term "fusing" refers to the part of the printing process where toner is affixed to paper.

The following examples depict letter-size paper that has passed through the printer short-edge first.

**Table 2-32** Light print

| Description | Sample | Possible solutions |
|---|---|---|
| **Light print:**<br><br>The printed content on the entire page is light or faded. | AaBbCc<br>AaBbCc<br>AaBbCc<br>AaBbCc<br>AaBbCc<br>AaBbCc<br>AaBbCc | 1. Reprint the document.<br><br>2. Remove the cartridge, and then shake it to redistribute the toner.<br><br>3. **Mono models only:** Make sure that the Economode setting is disabled both at the printer control panel and in the print driver.<br><br>4. Make sure that the cartridge is installed correctly.<br><br>5. Print a Supply status page and check for life and usage of the cartridge.<br><br>6. Replace the cartridge.<br><br>7. If the problem persists, go to support.hp.com. |

**Table 2-33** Gray background or dark print

| Description | Sample | Possible solutions |
|---|---|---|
| **Gray background or dark print:**<br><br>The image or text is darker than expected. | AaBbCc<br>AaBbCc<br>AaBbCc<br>AaBbCc<br>AaBbCc<br>AaBbCc | 1. Make sure that the paper in the trays has not already been run through the printer.<br><br>2. Use a different paper type.<br><br>3. Reprint the document.<br><br>4. **Mono models only:** From the Home screen on the printer control panel, go to the Adjust Toner Density menu, and then adjust the toner density to a lower level.<br><br>5. Make sure that the printer is in within the supported operating temperature and humidity range.<br><br>6. Replace the cartridge.<br><br>7. If the problem persists, go to support.hp.com. |

**Table 2-34 Blank page — No print**

| Description | Sample | Possible solutions |
|---|---|---|
| **Blank page — No print:**<br><br>The page is completely blank and contains no printed content. | | 1. Make sure that the cartridge is genuine HP cartridges.<br><br>2. Make sure that the cartridge is installed correctly.<br><br>3. Print with a different cartridge.<br><br>4. Check the paper type in the paper tray and adjust the printer settings to match. If necessary, select a lighter paper type.<br><br>5. If the problem persists, go to support.hp.com. |
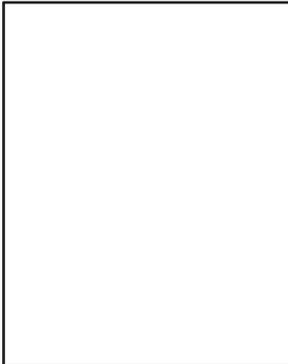
**Table 2-35 Black page**

| Description | Sample | Possible solutions |
|---|---|---|
| **Black page:**<br><br>The entire printed page is black. | | 1. Visually inspect the cartridge to check for damage.<br><br>2. Make sure that the cartridge is installed correctly.<br><br>3. Replace the cartridge<br><br>4. If the problem persists, go to support.hp.com. |

**Table 2-36** Banding defects

| Description | Sample | Possible solutions |
|---|---|---|
| **Repetitive wide-pitch banding and Impulse bands:**<br><br>Dark or light lines which repeat down the length of the page. They might be sharp or soft in nature. The defect displays only in areas of fill, not in text or sections with no printed content. | | 1. Reprint the document.<br><br>2. Try printing from another tray.<br><br>3. Replace the cartridge.<br><br>4. Use a different paper type.<br><br>5. **Enterprise models only:** From the Home screen on the printer control panel, go to the Adjust Paper Types menu, and then choose a print mode that is designed for a slightly heavier media than what you are using. This slows the print speed and might improve the print quality.<br><br>6. If the problem persists, go to support.hp.com. |
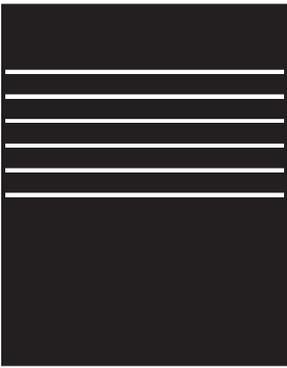
**Table 2-37** Streak defects

| Description | Sample | Possible solutions |
|---|---|---|
| **Light vertical streaks:**<br><br>Light streaks that usually span the length of the page. The defect displays only in areas of fill, not in text or sections with no printed content. | | 1. Reprint the document.<br><br>2. Remove the cartridge, and then shake it to redistribute the toner.<br><br>3. If the problem persists, go to support.hp.com.<br><br>NOTE: Both light and dark vertical streaks can occur when the printing environment is outside the specified range for temperature or humidity. Refer to your printer's environmental specifications for allowable temperature and humidity levels. |
| **Dark vertical streaks and ITB cleaning streaks (color models only):**<br><br>Dark lines which occur down the length of the page. The defect might occur anywhere on the page, in areas of fill or in sections with no printed content. | | 1. Reprint the document.<br><br>2. Remove the cartridge, and then shake it to redistribute the toner.<br><br>3. Print a cleaning page.<br><br>4. Check the toner level in the cartridge.<br><br>5. If the problem persists, go to support.hp.com. |
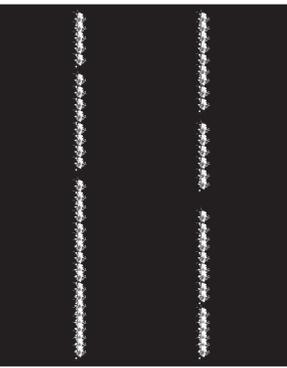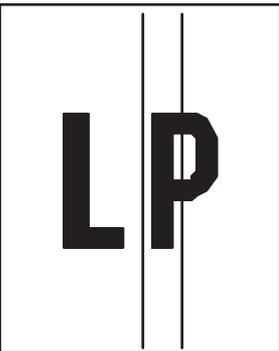
**Table 2-38**  Fixing/fuser defects

| Description | Fixing/fuser | Possible solutions |
|---|---|---|
| **Hot fuser offset (shadow):**<br><br>Slight shadows, or offsets, of the image repeated down the page. The repeated image might fade with each recurrence. | | 1. Reprint the document.<br><br>2. Check the paper type in the paper tray and adjust the printer settings to match. If necessary, select a lighter paper type.<br><br>3. If the problem persists, go to support.hp.com. |
| **Poor fusing:**<br><br>Toner rubs off along either edge of page. This defect is more common at the edges of high-coverage jobs and on light media types but can occur anywhere on the page. | | 1. Reprint the document.<br><br>2. Check the paper type in the paper tray and adjust the printer settings to match. If necessary, select a heavier paper type.<br><br>3. **Enterprise models only:** From the printer control panel, go to the Edge-to-Edge menu and then select Normal. Reprint the document.<br><br>4. **Enterprise models only:** From the printer control panel, select Auto Include Margins and then reprint the document.<br><br>5. If the problem persists, go to support.hp.com. |
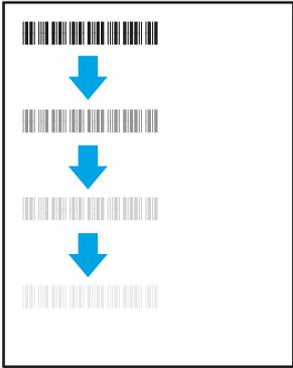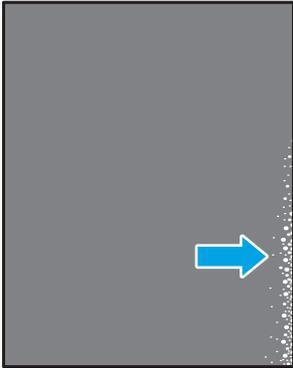
**Table 2-39**  Image placement defects

| Description | Sample | Possible solutions |
|---|---|---|
| **Margins and skew:**<br><br>The image is not centered, or is skewed on the page. The defect occurs when the paper is not positioned properly as it is pulled from the tray and moves through the paper path. | | 1. Reprint the document.<br><br>2. Remove the paper and then reload the tray. Make sure that all the paper edges are even on all sides.<br><br>3. Make sure that the top of the paper stack is below the tray full indicator. Do not overfill the tray.<br><br>4. Make sure that the paper guides are adjusted to the correct size for the paper. Do not adjust the paper guides tightly against the paper stack. Adjust them to the indentations or markings in the tray.<br><br>5. If the problem persists, go to support.hp.com. |

**Table 2-40  Color plane registrations defects (color models only)**

| Description | Sample | Possible solutions |
|---|---|---|
| **Color plane registrations:**<br><br>One or more color of the planes is not aligned with the other color planes. The primary error will typically occur with yellow. |  | 1. Reprint the document.<br><br>2. From the printer control panel, calibrate the printer.<br><br>3. If a cartridge has reached a **Very Low** state or the printed output is severely faded, replace the cartridge.<br><br>4. From the printer control panel use the Restore Calibration feature to reset the printer's calibration settings to the factory defaults.<br><br>5. If the problem persists, go to support.hp.com. |

**Table 2-41  Output defects**

| Description | Sample | Possible solutions |
|---|---|---|
| **Output curl:**<br><br>Printed paper has curled edges. The curled edge can be along the short or long side of the paper. Two types of curl are possible:<br><br>● **Positive curl:** The paper curls toward the printed side. The defect occurs in dry environments or when printing high coverage pages.<br><br>● **Negative curl:** The paper curls away from the printed side. The defect occurs in high-humidity environments or when printing low coverage pages. |  | 1. Reprint the document.<br><br>2. **Positive curl:** From the printer control panel, select a heavier paper type. The heavier paper type creates a higher temperature for printing.<br><br>**Negative curl:** From the printer control panel, select a lighter paper type. The lighter paper type creates a lower temperature for printing. Try storing the paper in a dry environment prior or use freshly opened paper.<br><br>3. Print in duplex mode.<br><br>4. If the problem persists, go to support.hp.com. |
| **Output stacking:**<br><br>The paper does not stack well in the output tray. The stack might be uneven, skewed, or the pages might be pushed out of the tray and onto the floor. Any of the following conditions can cause this defect:<br><br>● Extreme paper curl<br><br>● The paper in the tray is wrinkled or deformed<br><br>● The paper is a non-standard paper type, such as envelopes<br><br>● The output tray is too full |  | 1. Reprint the document.<br><br>2. Extend the output bin extension.<br><br>3. If the defect is caused by extreme paper curl, complete the troubleshooting steps for Output curl.<br><br>4. Use a different paper type.<br><br>5. Use freshly opened paper.<br><br>6. Remove the paper from the output tray before the tray gets too full.<br><br>7. If the problem persists, go to support.hp.com. |
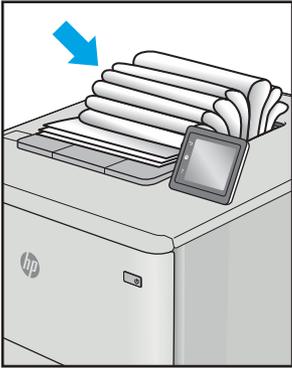
# Printer-specific image defects

- Repetitive image defect ruler
- Print quality troubleshooting guide

## Repetitive image defect ruler

Defects on printer rollers can cause image defects to appear at regular intervals on the page, corresponding to the circumference of the roller that is causing the defect. Measure the distance between defects that recur on a page (see ). Use the following table or the repetitive-defect ruler to determine which roller is causing the defect. To resolve the problem, try cleaning the roller first. If the roller remains dirty after cleaning or if it is damaged, replace the part that is indicated in the following table.

⚠ **CAUTION:** Do not use solvents or oils to clean rollers. Instead, rub the roller with a lint-free cloth. If dirt is difficult to remove, rub the roller with a lint-free cloth that has been dampened with water.

📝 **NOTE:** The following table replaces the graphical repetitive defect ruler. You can make your own ruler by using these measurements. For the most accurate results, use a metric ruler.

**Figure 2-20** Repetitive image defect ruler
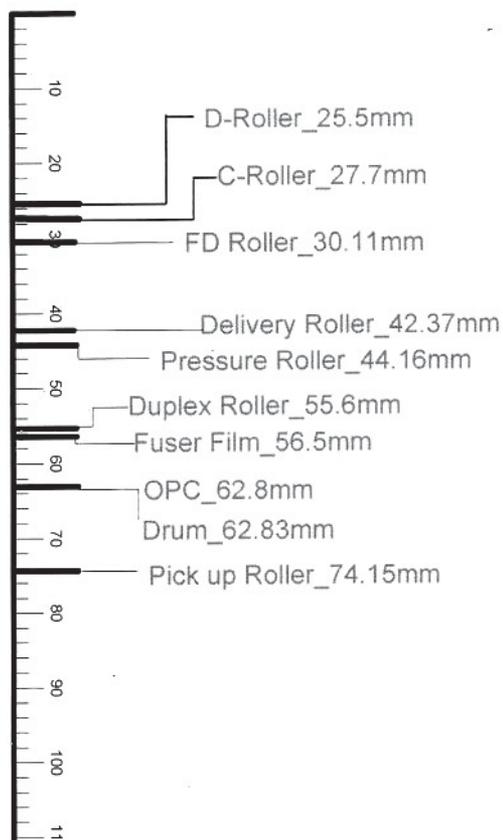


**Table 2-42** Repetitive defects

| Component[1] | Distance between defects |
| --- | --- |
| D roller | 25.5 mm (1.00 in) |
| C roller | 27.7 mm (1.09 in) |

| Component[1] | Distance between defects |
|---|---|
| FD roller | 30.11 mm (1.85 in) |
| Delivery roller | 42.37 mm (1.67 in) |
| Pressure roller[1] | 44.16 mm (1.74 in) |
| Duplex roller[1] | 55.6 mm (2.19 in) |
| Fuser film | 56.5 mm (2.22 in) |
| OPC | 62.8 to 62.83 mm (2.47 in) |
| Pickup roller | 74.15 mm (2.91 in) |

[1] The primary charging roller, photosensitive drum and developer roller cannot be cleaned as these rollers are located inside the toner cartridge. If any of these rollers are indicated, replace the toner cartridge.

## Use a ruler to measure between repetitive defects

The figures in this section show color repetitive defect pages. However, the process for measuring repetitive defects is valid for mono pages.

1. Identify a repetitive defect on the page.

☼ **TIP:** Print a cleaning page to see if that resolves the defect.

The example pages below show the following types of repetitive defects.

📝 **NOTE:** These are examples only, other types of repetitive defects might appear on a page.

- Lines (callout 1)
- Smudges (callout 2)
- Dots or spots (callout 3)

Figure 2-21 Examples of repetitive defects
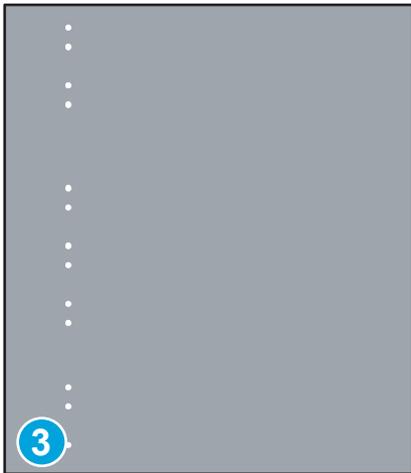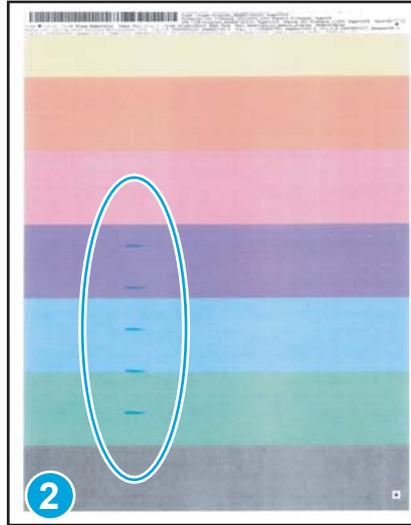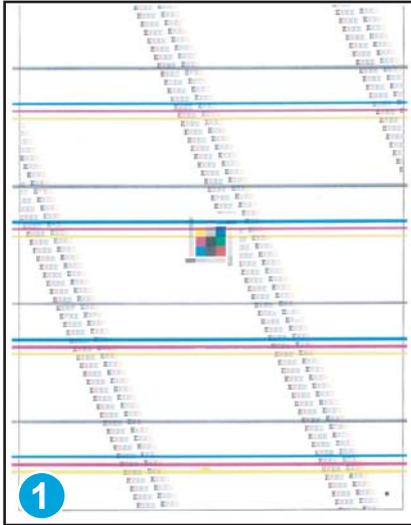
2. Position a metric ruler on the page with the "zero" ruler mark at one occurrence of the defect (callout 1).

Figure 2-22  Place the ruler on the page
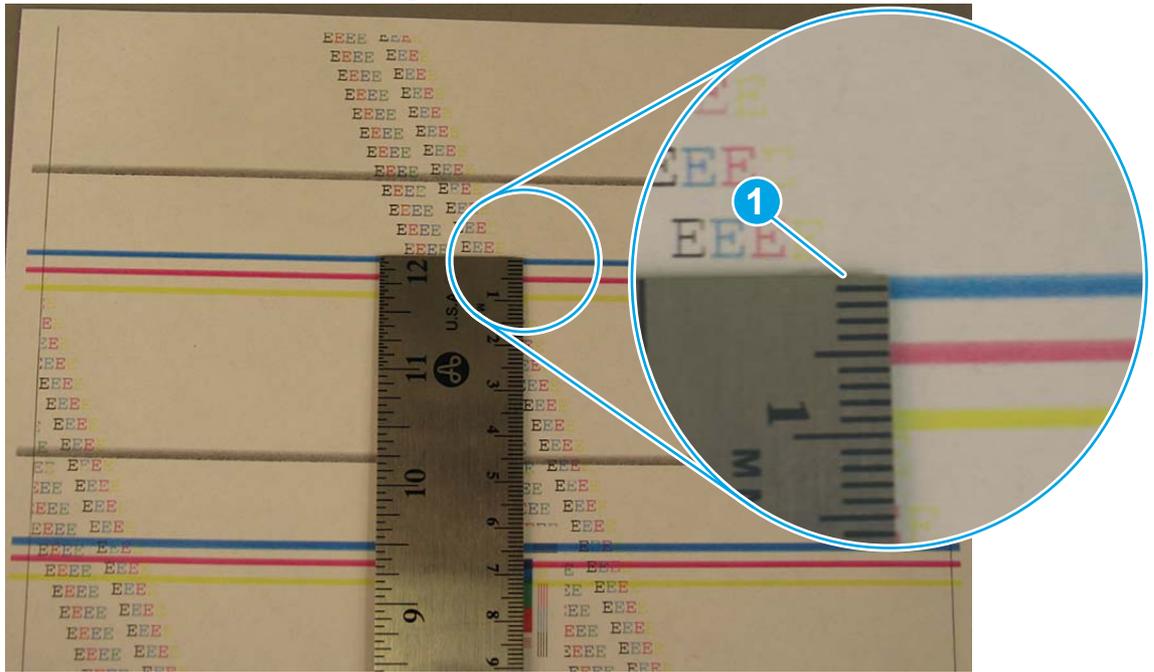


3. Locate the next occurrence of the defect (callout 1).

Figure 2-23  Locate the next repetitive defect
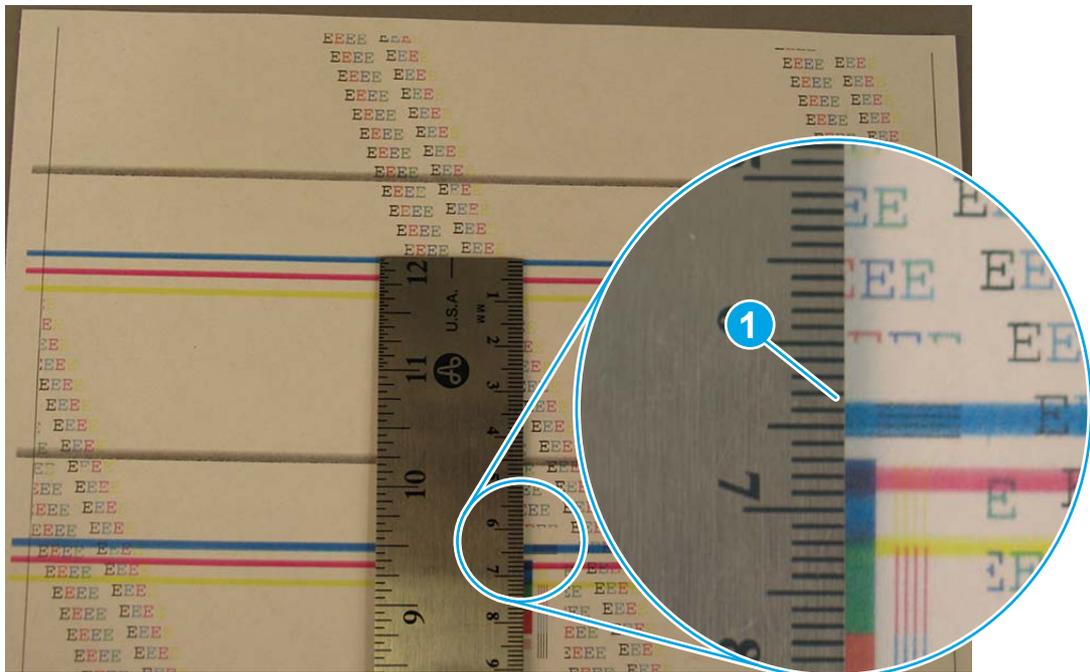
4.  Measure the distance (in millimeters) between the two occurrences (callout 1), and then use Table 2-42 Repetitive defects on page 134 to determine the defective assembly.

☀ **TIP:** Always measure from and to the same point on the defects. For example, if the ruler is "zeroed" at the top edge of a defect, measure to the top edge of the next occurrence of that defect.

Figure 2-24  Determine the defective assembly
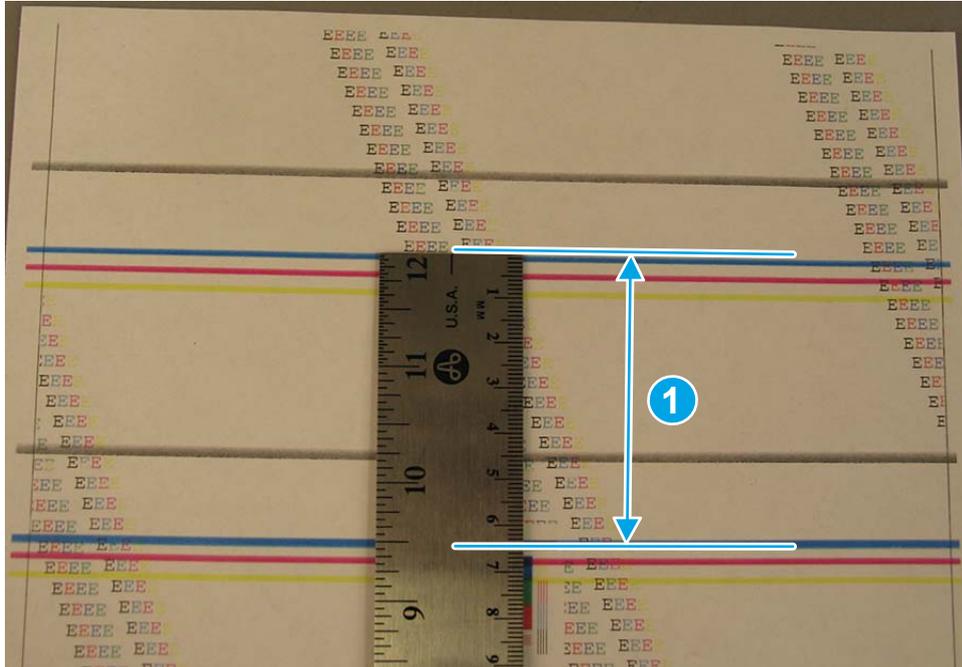


## Print quality troubleshooting guide

- OPC short

- White blotches at low temperature

- OPC drum ghost

- Toner block contamination on the exit roller

- Cartridge coupling defect (1 of 2)

- Cartridge coupling defect (2 of 2)

- Toner contamination

- Sharp vertical streaks

## OPC short

**Figure 2-25** OPC short
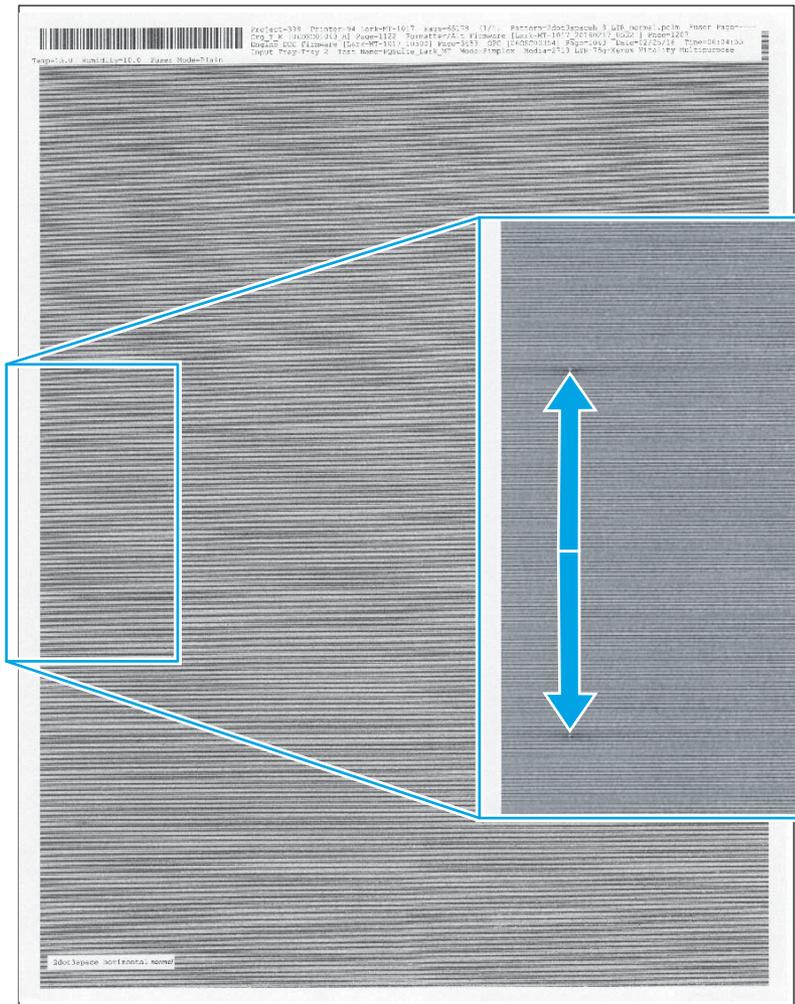


### Description

Repeating white point defect with 63 mm (2.48 in) spacing, with darker surrounding area.

### Solution

Replace the imaging drum.

## White blotches at low temperature

Figure 2-26  White blotches
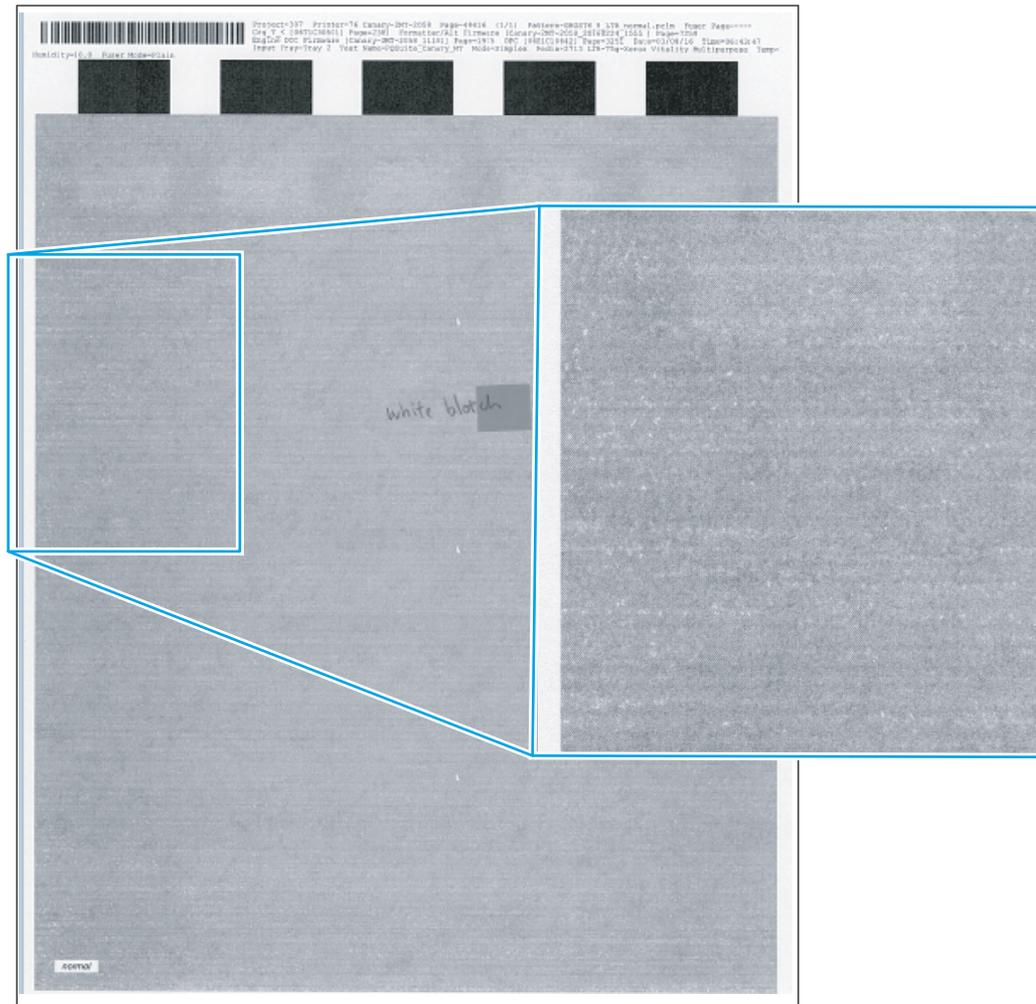


### Description

Blotchy white defects, particularly occurring in a low temperature/humidity environment.

### Solution

- Make sure the environment where the printer is installed meets HP specifications.

- Open the HP Embedded Web Server (EWS) and change the print mode to **Print Quality Optimize Mode 2**.

## OPC drum ghost

Figure 2-27  OPC drum ghost
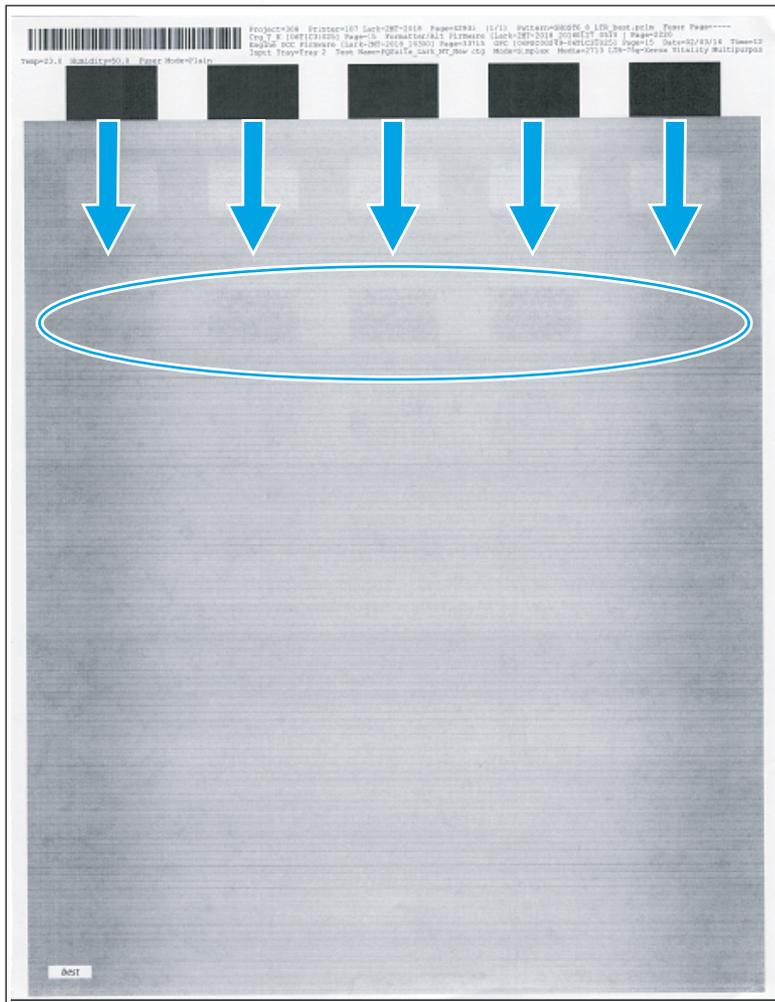


### Description

Dark, ghost-like defect with 63 mm (2.48 in) spacing from a black feature on the page.

### Solution

Open the HP Embedded Web Server (EWS) and change the print mode to **Print Quality Optimize Mode 1**.

## Toner block contamination on the exit roller

Figure 2-28  Toner block contamination
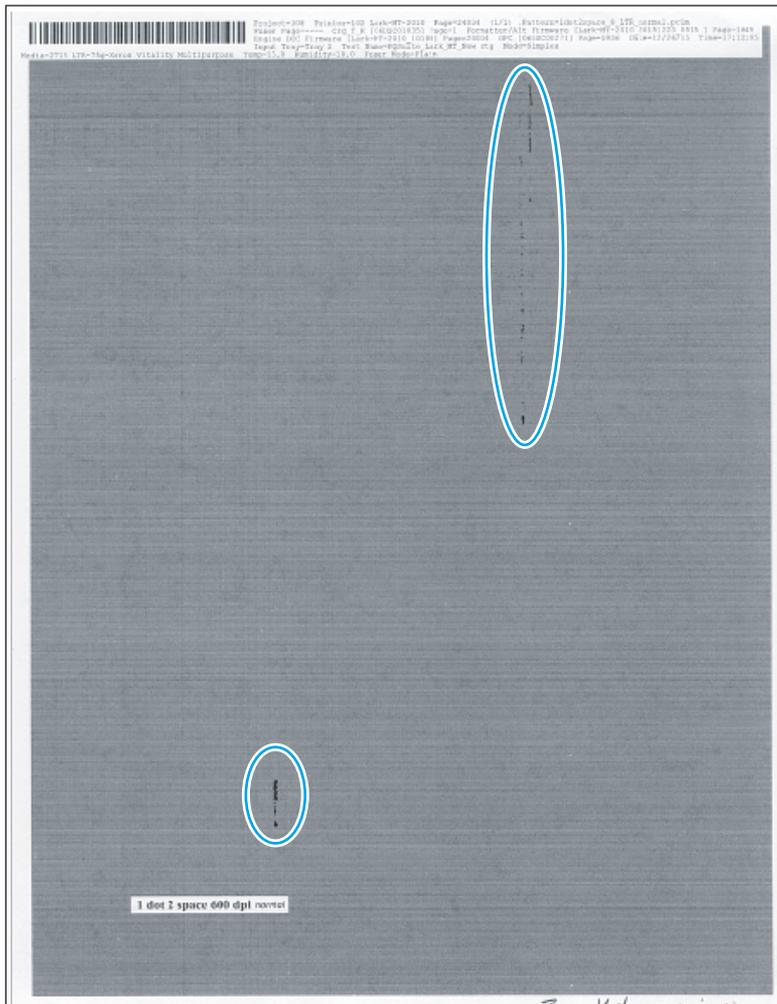


### Description

Residue toner on the page with parallel vertical distribution spaced about 60 mm (2.36 in) apart.

### Solution

Clean any residual toner off of the exit roller.

## Cartridge coupling defect (1 of 2)

Figure 2-29  Cartridge coupling (1 of 2)
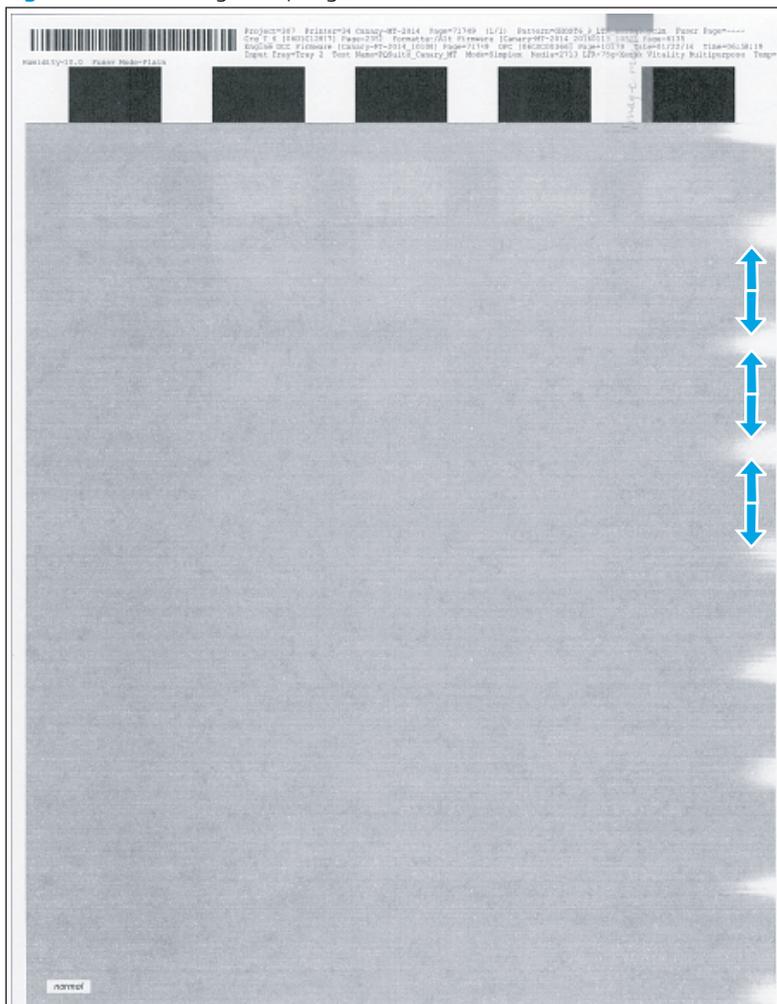


### Description

Repeating white defect with 26 mm (1.02 in) spacing along the right edge of the page.

### Solution

Remove, and then reinstall the toner cartridge and imaging drum.

## Cartridge coupling defect (2 of 2)

Figure 2-30 Cartridge coupling (2 of 2)
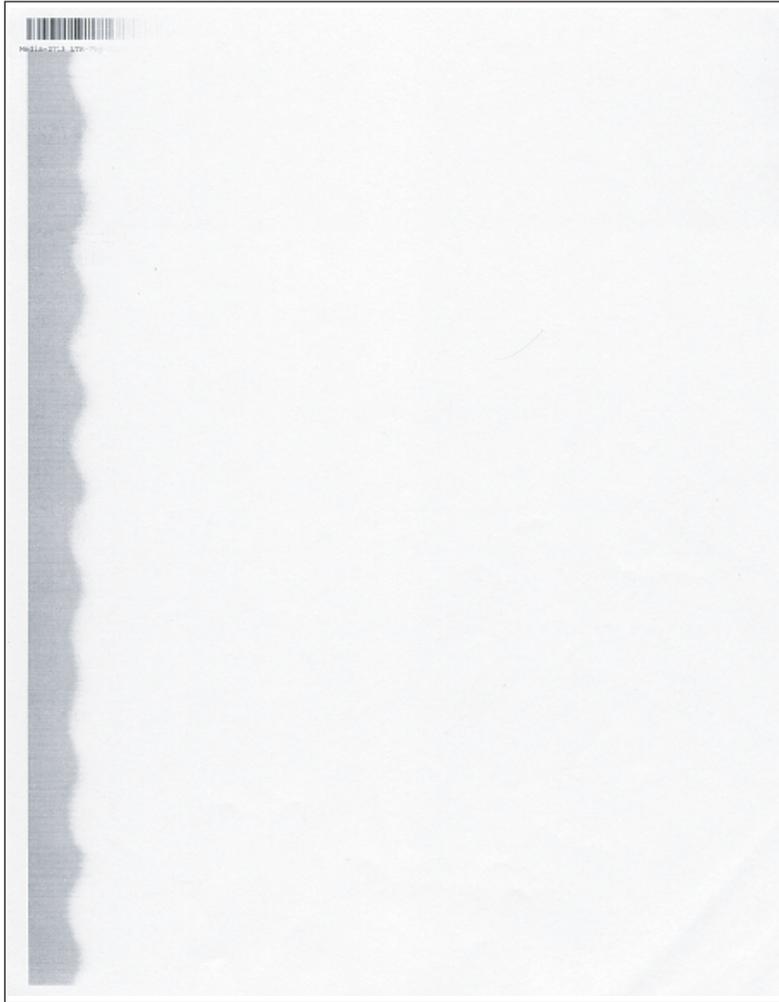


### Description

Missing image from the center to right side of the page (might have a wavy boundary).

### Solution

Remove, and then reinstall the toner cartridge and imaging drum.

## Toner contamination

Figure 2-31  Toner contamination



## Description

This defect appears as repeating dots down the page.

## Solution

Open the HP Embedded Web Server (EWS) and select **Clean Mode**.

If the error persists after printing a few more pages, replace the imaging drum.

## Sharp vertical streaks

Figure 2-32 Vertical streaks
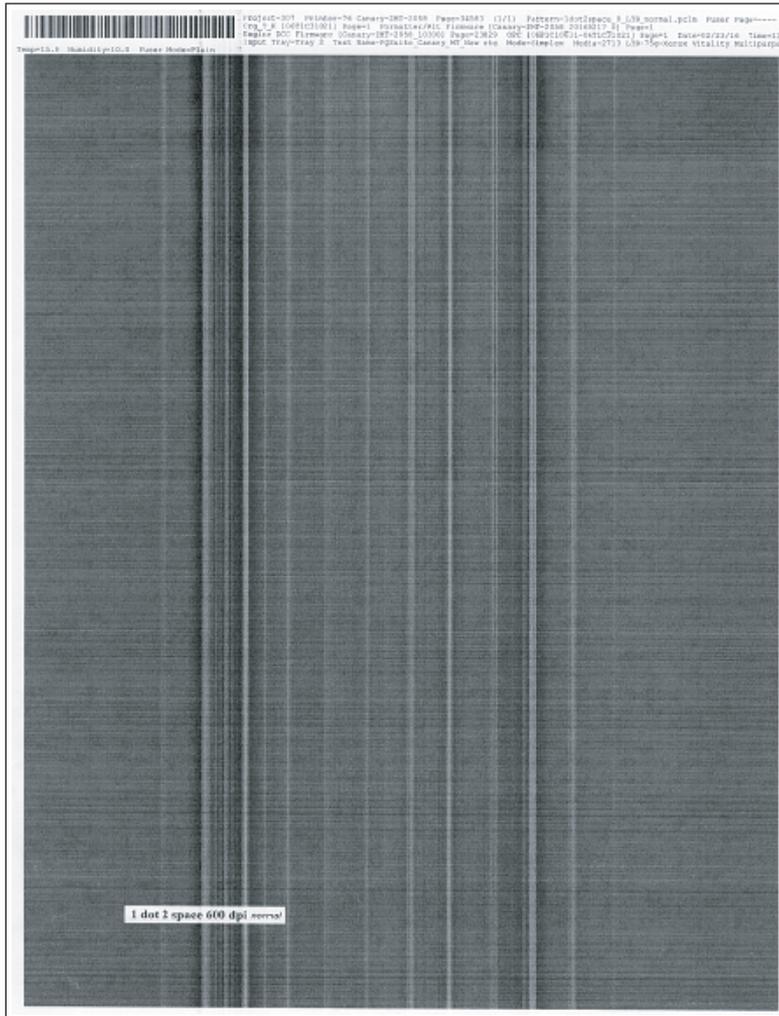


## Description

This defect appears as distinct vertical streak (not thin lines).

## Solution

Replace the toner and cartridge imaging drum.

If the error persists after printing a few more pages, check the laser scanner assembly.

# Improve copy and scan image quality (M227)

## Introduction

If the printer is having image quality problems, try the following solutions in the order presented to resolve the issue.

- Check the scanner glass for dirt and smudges
- Check the paper settings
- Optimize for text or pictures
- Edge-to-edge copying
- Clean the pickup rollers and separation pad in the document feeder

Try these few simple steps first:

- Use the flatbed scanner rather than the document feeder.
- Use high-quality originals.
- When using the document feeder, load the original document into the feeder correctly, using the paper guides, to avoid unclear or skewed images.

If the problem still exists, try these additional solutions. If they do not fix the problem, see "Improve print quality" for further solutions.

## Check the scanner glass for dirt and smudges

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.

1. Press the power button to turn the printer off, and then disconnect the power cable from the electrical outlet.

2. Open the scanner lid.

3. Clean the scanner glass and the white plastic backing underneath the scanner lid with a soft cloth or sponge that has been moistened with nonabrasive glass cleaner.

   ⚠ **CAUTION:** Do not use abrasives, acetone, benzene, ammonia, ethyl alcohol, or carbon tetrachloride on any part of the printer; these can damage the printer. Do not place liquids directly on the glass or platen. They might seep and damage the printer.

4. Dry the glass and white plastic parts with a chamois or a cellulose sponge to prevent spotting.

5. Connect the power cable to an outlet, and then press the power button to turn the printer on.

# Check the paper settings

🗒 **NOTE:** The steps vary according to the type of control panel.
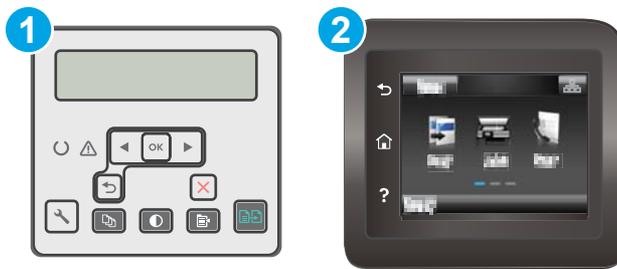


| 1 | 2-line control panel |
|---|---|
| 2 | Touchscreen control panel |

## 2-line control panels

1. Press the Copy Menu 🗒 button.

2. Open the **Paper** menu.

3. Select the paper size that is in the tray, and then press OK.

4. Select the paper type that is in the tray, and then press OK.

## Touchscreen control panels

1. From the Home screen on the printer control panel, touch the Copy 🗔 icon.

2. Touch the Settings button, and then scroll to and touch the Paper button.

3. From the list of paper sizes, touch the name of the paper size that is in the tray.

4. From the list of paper types, touch the name of the paper type that is in the tray.

# Optimize for text or pictures

**NOTE:** The steps vary according to the type of control panel.
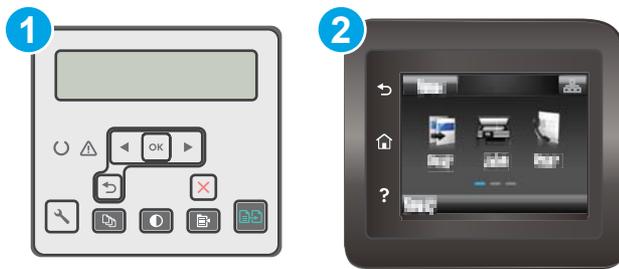
| | |
|---|---|
| 1 | 2-line control panel |
| 2 | Touchscreen control panel |

## 2-line control panels

1. On the printer control panel, press the Copy Menu button.

2. To optimize copy quality for different types of documents, use the arrow keys to select the **Optimize** menu, and then press the OK button. The following copy-quality settings are available:

   - **Auto Select**: Use this setting when you are not concerned about the quality of the copy. This is the default setting.

   - **Mixed**: Use this setting for documents that contain a mixture of text and graphics.

   - **Text**: Use this setting for documents that contain mostly text.

   - **Picture**: Use this setting for documents that contain mostly graphics.

## Touchscreen control panels

1. From the Home screen on the printer control panel, touch the Copy icon.

2. Touch the Settings button, and then scroll to and touch the Optimize button.

3. Touch the name of the setting you want to adjust.

   - Auto Select: Use this setting when you are not concerned about the quality of the copy. This is the default setting.

   - Mixed: Use this setting for documents that contain a mixture of text and graphics.

   - Text: Use this setting for documents that contain mostly text.

   - Picture: Use this setting for documents that contain mostly graphics.

## Edge-to-edge copying

The printer cannot print fully edge-to-edge. There is a 4 mm (1/6 inch) unprintable border around the page.

### Considerations for printing or scanning documents with cropped edges:

- When the original is smaller than the output size, move the original 4 mm (1/6 inch) away from the corner indicated by the icon on the scanner. Recopy or scan in this position.

- When the original is the size of the printed output that you want, use the Reduce/Enlarge feature to reduce the image so the copy is not cropped.

## Clean the pickup rollers and separation pad in the document feeder

If the document feeder experiences paper-handling problems, such as jams or multiple-page feeds, clean the document-feeder rollers and separation pad.

1. Open the document-feeder cover.

2. Use a moist, lint-free cloth to wipe both pickup rollers and the separation pad to remove dirt.

   CAUTION: Do not use abrasives, acetone, benzene, ammonia, ethyl alcohol, or carbon tetrachloride on any part of the printer; these can damage the printer. Do not place liquids directly on the glass or platen. They might seep and damage the printer.
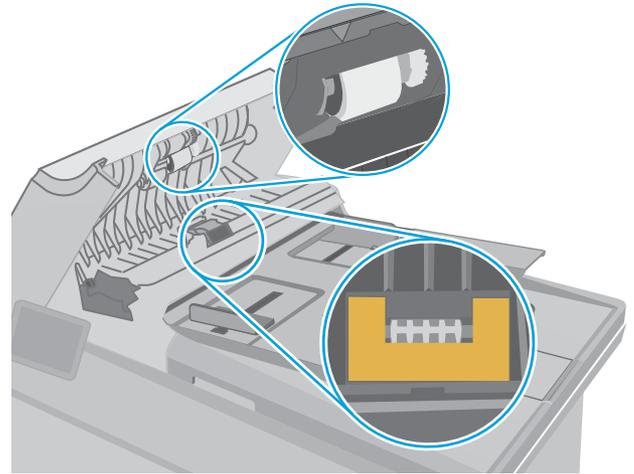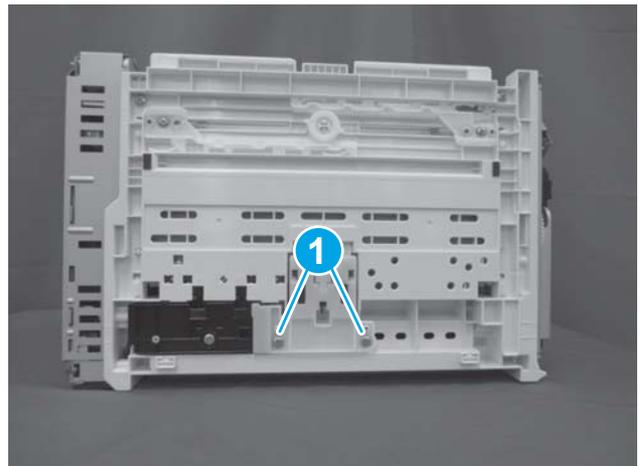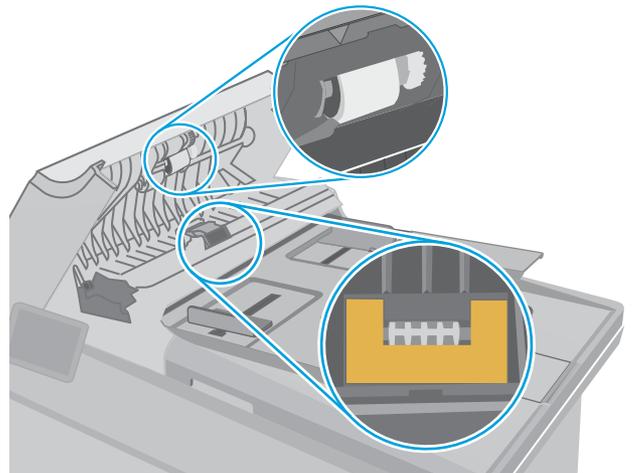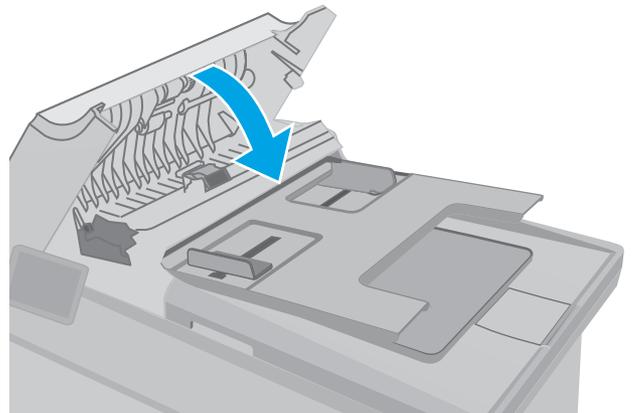
3. Close the document-feeder cover. Make sure it is completely closed.
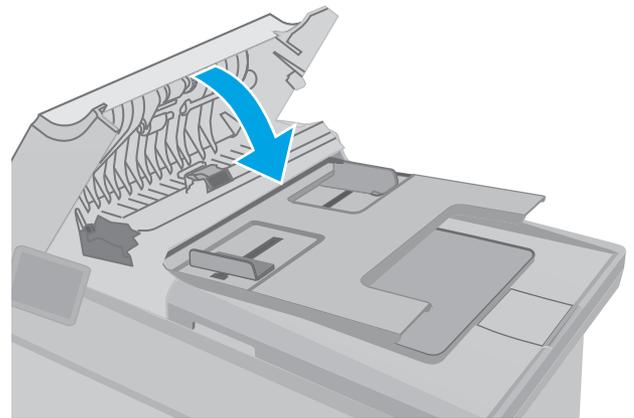
# Clean the printer

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

Clean the paper path and toner-cartridge areas every time that the toner cartridge and image drum cartridge is changed or whenever print-quality problems occur. As much as possible, keep the printer free from dust and debris.

To clean the printer exterior, use a soft, water-moistened cloth.

## Print a cleaning page (M203)

1. Open the HP Printer Assistant.

   - **Windows 8.1**: Click the down arrow in lower left corner of the **Start** screen, and then select the printer name.

   - **Windows 8**: Right-click an empty area on the **Start** screen, click **All Apps** on the app bar, and then select the printer name.

   - **Windows 7, Windows Vista, and Windows XP**: From the computer desktop, click **Start**, select **All Programs**, click **HP**, click the folder for the printer, select the icon with the printer's name, and then open **HP Printer Assistant**.

2. In the HP Printer Assistant, select **Print**, and then select **HP Device Toolbox**.

3. On the **Systems** tab, click **Service**.

4. In the **Cleaning Mode** area, click **Start** to begin the cleaning process.

## Print a cleaning page (M227)

During the printing process paper, toner, and dust particles can accumulate inside the printer and can cause print-quality issues such as toner specks or spatter, smears, streaks, lines, or repeating marks.

Use the following procedure to print a cleaning page.

**NOTE:** The steps vary according to the type of control panel.



| 1 | 2-line control panel |
| --- | --- |
| 2 | Touchscreen control panel |

1.  **2-line control panels:** On the printer control panel, press the Setup ⚲ button.

    **Touchscreen control panels:** From the Home screen on the printer control panel, swipe until the Setup menu displays. Touch the Setup ⚙ icon to open the menu.

2.  Open the following menus:

    - Service

    - Cleaning Page

3.  Load plain letter or A4 paper when you are prompted, and then press the OK button.

    A **Cleaning** message displays on the printer control panel. Wait until the process is complete. Discard the page that prints.

## Clean the pickup roller and separation pad

1.  Turn off the printer, unplug the power cable from the printer, remove the toner cartridge, and then locate the pickup roller inside the printer. Use a moist, lint-free cloth to wipe the pickup roller to remove dirt.

    **CAUTION:** Do not use abrasives, acetone, benzene, ammonia, ethyl alcohol, or carbon tetrachloride on any part of the printer; these can damage the printer. Do not place liquids directly on the glass or platen. They might seep and damage the printer.
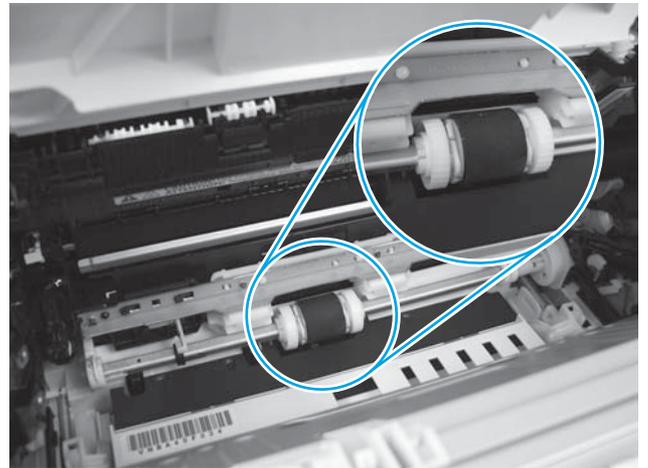


2.  Turn the printer over to rest on the duplex door with the front of the printer facing up. Remove two screws (callout 1).

    **CAUTION:** **MFP only**: The integrated scanner assembly (ISA) and the image scanner (IS) are not captive and can suddenly open when the printer is turned over.
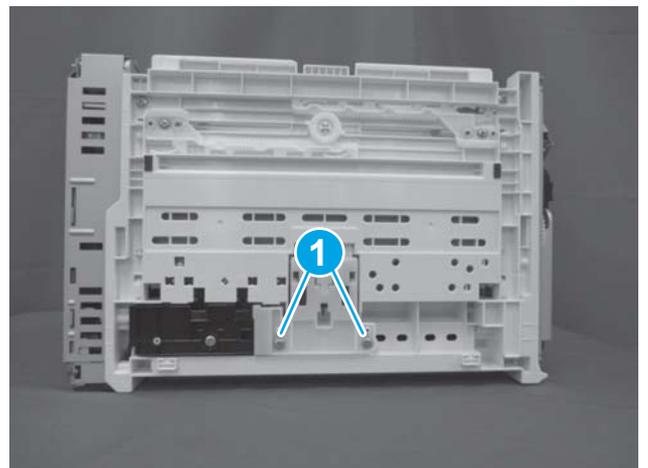
3. Remove the separation pad assembly. Use a moist, lint-free cloth to wipe the separation pad to remove dirt.

   **CAUTION:** Do not use abrasives, acetone, benzene, ammonia, ethyl alcohol, or carbon tetrachloride on any part of the printer; these can damage the printer. Do not place liquids directly on the glass or platen. They might seep and damage the printer.
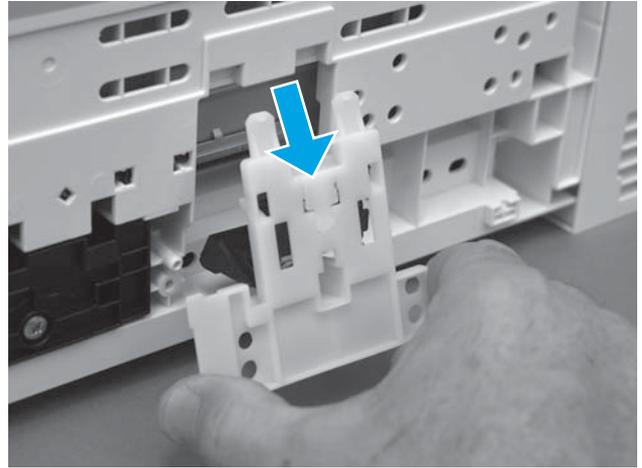
4. Position the separation pad assembly on the printer.
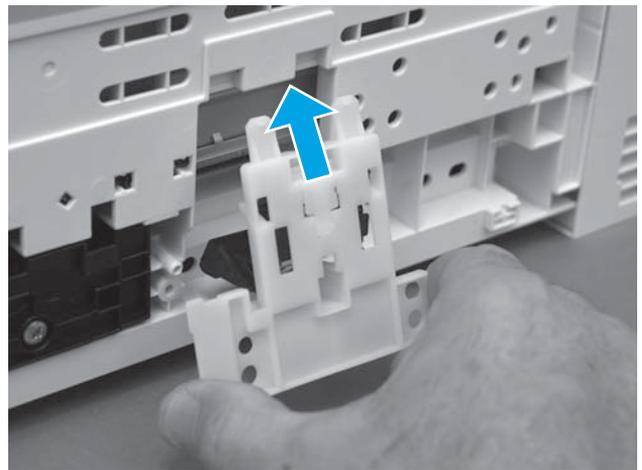
5. Install two screws (callout 1). Return the printer to the normal position. Reinstall the toner cartridge, plug the power cable into the printer, and then turn the printer on.

   **CAUTION:** **MFP only**: The ISA and the IS are not captive and can suddenly open when the printer is turned over.

# Clean the pickup rollers and separation pad in the document feeder

If the document feeder experiences paper-handling problems, such as jams or multiple-page feeds, clean the document-feeder rollers and separation pad.

1. Open the document-feeder cover.

2. Use a moist, lint-free cloth to wipe both pickup rollers and the separation pad to remove dirt.

   CAUTION: Do not use abrasives, acetone, benzene, ammonia, ethyl alcohol, or carbon tetrachloride on any part of the printer; these can damage the printer. Do not place liquids directly on the glass or platen. They might seep and damage the printer.

3. Close the document-feeder cover. Make sure it is completely closed.

# Check the scanner glass and white backing for dirt or smudges (M227)

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 if the printed pages have streaks, unwanted lines, black dots, poor print quality, or unclear text.

1. Press the power button to turn the printer off, and then disconnect the power cable from the electrical outlet.

2. Open the scanner lid.

   Clean the white plastic backing (callout 1) and the scanner glass (callout 2) with a soft cloth or sponge that has been moistened with nonabrasive glass cleaner.

   **CAUTION:** Do not use abrasives, acetone, benzene, ammonia, ethyl alcohol, or carbon tetrachloride on any part of the printer; these can damage the printer. Do not place liquids directly on the glass or platen. They might seep and damage the printer.

   **NOTE:** If you are having trouble with streaks on copies when you are using the document feeder model printer, be sure to clean the ADF replaceable film assembly on the left side of the scanner. See Clean the ADF replaceable film assembly (M227) on page 157.

3. Dry the glass and white plastic parts with a chamois or a cellulose sponge to prevent spotting.

   Close the scanner lid.

**Figure 2-33** Clean the white plastic backing and the scanner glass
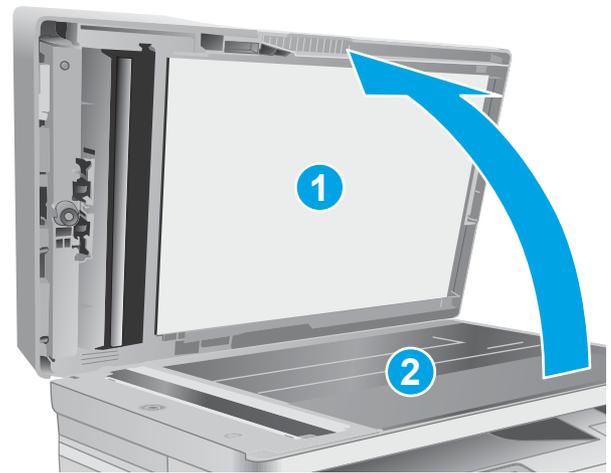


**Figure 2-34** Dry the white plastic backing and the scanner glass

# Clean the ADF replaceable film assembly (M227)

Over time, specks of debris might collect on the automatic document feeder (ADF) glass strip and replaceable film assembly, which can affect performance. Use the following procedure to clean the glass and film assembly.

1. Open the scanner lid, and then locate the ADF replaceable film assembly.
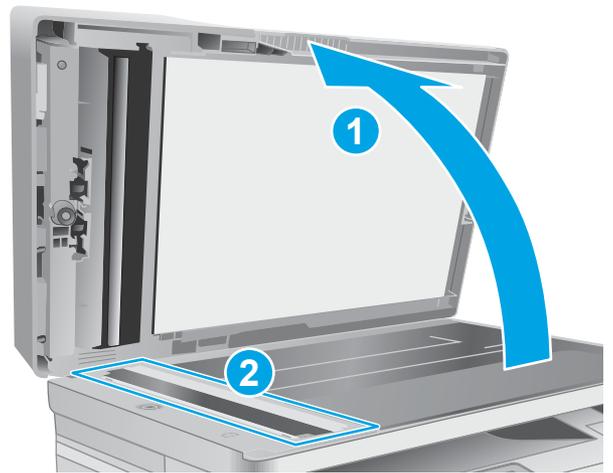
2. Use two slots to pry the film assembly away from the scanner body.
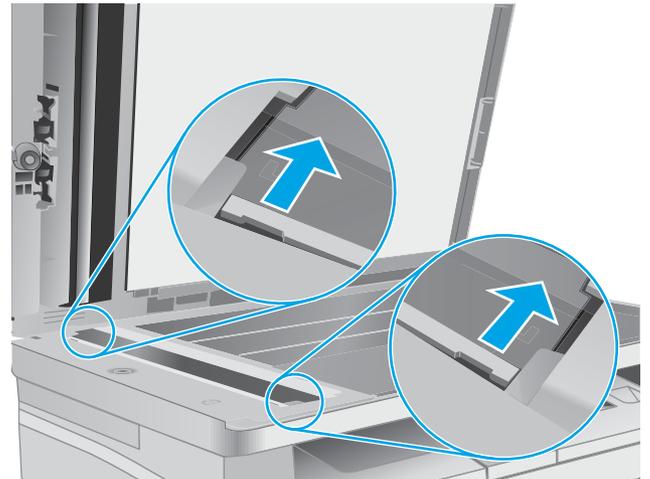
3. Slide the assembly in the direction indicated to remove it.
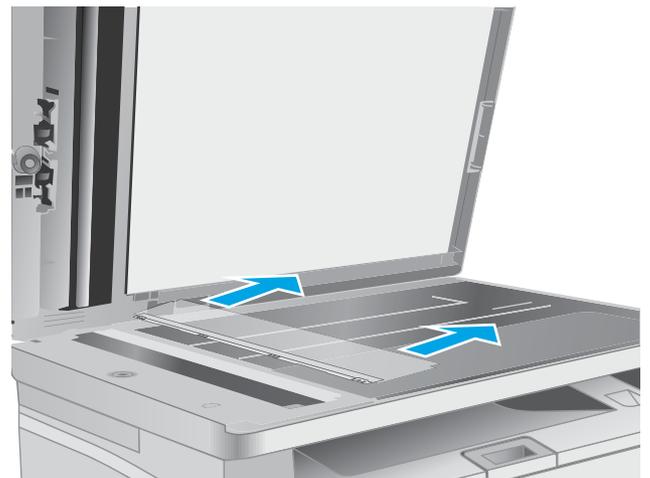
4.  Clean the glass strip and the film assembly with a lint-free cloth.

    CAUTION:  Do not use abrasives, acetone, benzene, ammonia, ethyl alcohol, or carbon tetrachloride on any part of the printer; these can damage the printer. Do not place liquids directly on the glass or platen. They might seep and damage the printer.
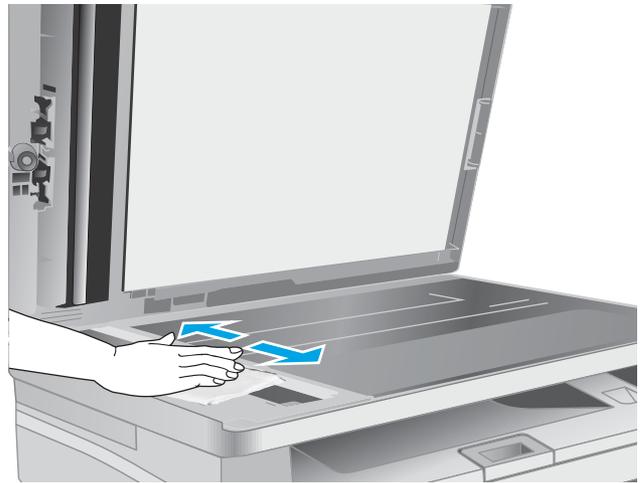
5.  Reinstall the film assembly. Make sure that the film slides underneath the tabs on each end of the scanner body.
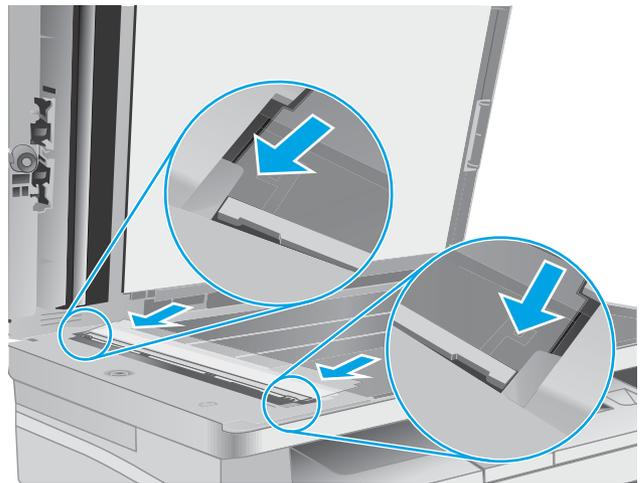
6.  Close the scanner lid.

# Clean the touchscreen (M227)

Clean the touchscreen whenever it is necessary to remove fingerprints or dust. Wipe the touchscreen gently with a clean, water-dampened, lint-free cloth.

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

# Solve paper-handling problems

## Printer feeds incorrect page size

**Printer feeds incorrect page size**

| Cause | Solution |
|---|---|
| The correct size paper is not loaded in the tray. | Load the correct size paper in the tray. |
| The correct size paper is not selected in the software program or printer driver. | Confirm that the settings in the software program and printer driver are correct, because the software program settings override the printer driver and control panel settings, and the printer driver settings override the control panel settings. |
| The correct size paper for the tray is not selected in the printer control panel. | From the control panel, select the correct size paper for the tray. |
| The paper size is not configured correctly for the 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, but not so tightly that the paper is buckled. |

## Printer pulls from incorrect tray

**Printer pulls from incorrect tray**

| Cause | Solution |
|---|---|
| You are using a driver for a different printer. | Use a driver for this printer. |
| The input tray is empty. | Load paper in the input tray. |
| The guides in the tray are not against the paper. | Verify that the guides are touching the paper. |

## Printer will not duplex or duplexes incorrectly

**Printer will not duplex (print 2-sided jobs) or duplexes incorrectly**

| Cause | Solution |
|---|---|
| You are trying to duplex on unsupported paper. | Verify that the paper is supported for duplex printing. |
| The printer driver is not set up for duplex printing. | Set up the printer driver to enable duplex printing. |
| The printer model does not support automatic 2-sided printing. | Us the **Print on Both Sides Manually** item in the printer driver. |

## Paper does not feed from the input tray

**Paper does not feed from the input tray**

| Cause | Solution |
|---|---|
| The correct size paper is not loaded. | Load the correct size paper. |

**Paper does not feed from the input tray**

| Cause | Solution |
|---|---|
| The input tray is empty. | Load paper in the input tray. |
| The correct paper type for the input tray is not selected in the printer driver. | Open the printer driver, select the correct paper size and type for the input tray. |
| Paper from a previous jam has not been completely removed. | Open the printer and remove any paper in the paper path. |
| The guides in the tray are not against the paper. | Verify that the guides are touching the paper. |

# Output is curled or wrinkled

**Output is curled or wrinkled**

| Cause | Solution |
|---|---|
| Paper does not meet the specifications for this printer. | Use only paper that meets the HP paper specifications for this printer. |
| Paper is damaged or in poor condition. | Remove paper from the input tray and load paper that is in good condition. |
| Printer is operating in an excessively humid environment. | Verify that the printing environment is within humidity specifications. |
| You are printing large, solid-filled areas. | Large, solid-filled areas can cause excessive curl. Try using a different pattern. |
| Paper used was not stored correctly and might have absorbed moisture. | Remove paper and replace it with paper from a fresh, unopened package. |
| Paper has poorly cut edges. | Remove paper, flex it, rotate it 180 degrees or turn it over, and then reload it into the input tray. Do not fan paper. If the problem persists, replace the paper. |
| The paper has previously been used for a print job. | Do not re-use paper. |

# Printer does not pick up paper or misfeeds

## The printer does not pick up paper

If the printer does not pick up paper from the tray, try these solutions.

1.  Open the printer and remove any jammed sheets of paper.

2.  Load the tray with the correct size of paper for the job.

3.  Make sure the paper size and type are set correctly on the printer control panel or in the printer driver.

4.  Make sure the paper guides in the tray are adjusted correctly for the size of paper. Adjust the guides to the appropriate indentation in the tray.

5.  The pickup and feed rollers, or the separation pad might be contaminated. Clean the rollers and pad with a lint-free cloth dampened with warm water.

## The printer picks up multiple sheets of paper

If the printer picks up multiple sheets of paper from the tray, try these solutions.

1. Remove the stack of paper from the tray and flex it, rotate it 180 degrees, and flip it over. *Do not fan the paper.* Return the stack of paper to the tray.

2. Use only paper that meets HP specifications for this printer.

3. Use paper that is not wrinkled, folded, or damaged. If necessary, use paper from a different package.

4. Make sure the tray is not overfilled. If it is, remove the entire stack of paper from the tray, straighten the stack, and then return some of the paper to the tray.

5. Make sure the paper guides in the tray are adjusted correctly for the size of paper. Adjust the guides to the appropriate indentation in the tray.

6. Make sure the printing environment is within recommended specifications.

## The document feeder jams, skews, or picks up multiple sheets of paper (MFP models)

- The original might have something on it, such as staples or self-adhesive notes, that must be removed.

- Make sure that the rollers and separation pad are installed correctly and that the document feeder access cover is fully closed.

- Make sure that the top document-feeder cover is closed.

- The pages might not be placed correctly. Straighten the pages and adjust the paper guides to center the stack.

- The paper guides must be touching the sides of the paper stack to work correctly. Make sure that the paper stack is straight and the guides are against the paper stack.

- The document feeder input tray or output bin might contain more than the maximum number of pages. Make sure the paper stack fits below the guides in the input tray, and remove pages from the output bin.

- Verify that there are no pieces of paper, staples, paper clips, or other debris in the paper path.

- Clean the document-feeder rollers and the separation pad. Use compressed air or a clean, lint-free cloth moistened with warm water. If misfeeds still occur, replace the rollers.

## Paper does not feed automatically

**Paper does not feed automatically**

| Cause | Solution |
|---|---|
| Manual feed is selected in the software program. | Load Tray 2 with paper, or, if the paper is loaded, press the OK button. |
| The correct size paper is not loaded. | Load the correct size paper. |
| The input tray is empty. | Load paper into the input tray. |
| Paper from a previous jam has not been completely removed. | Open the printer and remove any paper in the paper path. |
| The paper size is not configured correctly for the input tray. | Print a configuration page or use the control panel to determine the paper size for which the tray is configured. |
| The guides in the tray are not against the paper. | Verify that the rear and width paper guides are touching the paper. |

# Clear paper jams (M203, M206)

## Introduction

The following information includes instructions for clearing paper jams from the printer.

- Paper path jam sensor locations (M203)

- Jam locations

- Experiencing frequent or recurring paper jams?

- Clear jams in the Main input tray

- Clear jams in the toner-cartridge area

- Clear jams in the output bin

- Clear jams in the duplexer

## Paper path jam sensor locations (M203)

**NOTE:** Use the figures below to identify the locations of sensors where reoccurring jams are found.

**Figure 2-35** Printer base jam sensors
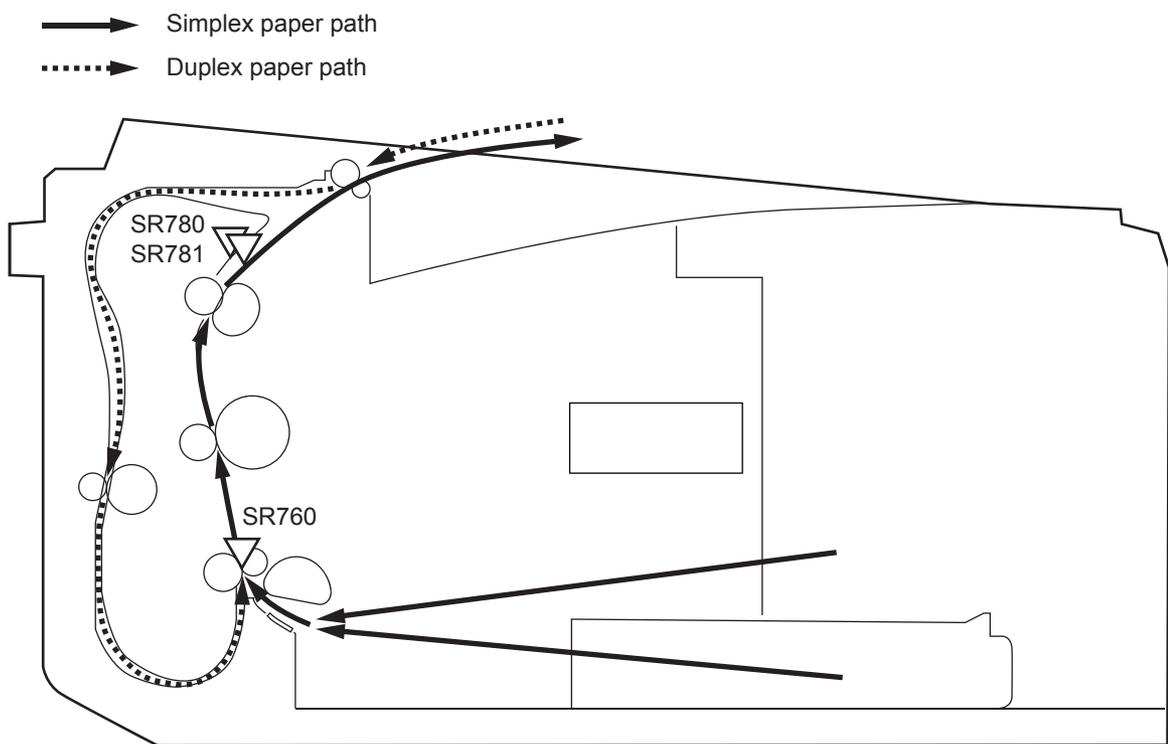


**Table 2-43** Printer base jam sensors

| Sensor | Description |
| --- | --- |
| SR760 | Top-of-Page (TOP) sensor |

**Table 2-43** Printer base jam sensors (continued)

| Sensor | Description |
|--------|-------------|
| SR780 | Fuser output sensor |
| SR781 | Fuser media width sensor |

## Jam locations
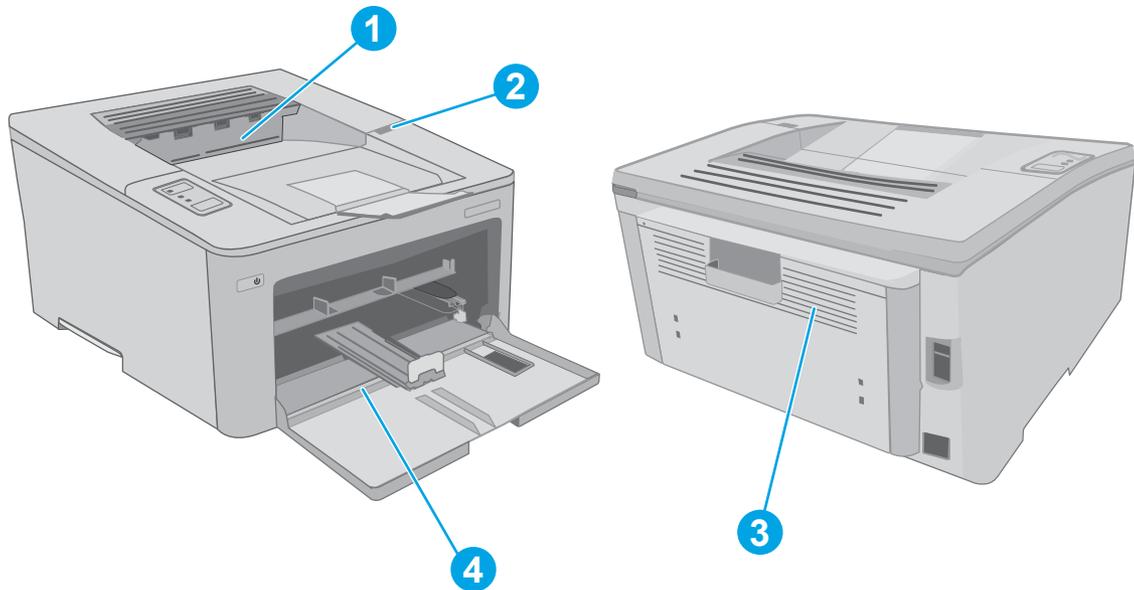


| 1 | Output bin |
|---|------------|
| 2 | Cartridge area |
| 3 | Duplexer |
| 4 | Main input tray |

## Experiencing frequent or recurring paper jams?

Follow these steps to solve problems with frequent paper jams. If the first step does not resolve the problem continue with the next step until you have resolved the problem.

1. If paper has jammed in the printer, clear the jam and then print a configuration page to test the printer.

2. Check that the tray is configured for the correct paper size and type. Adjust paper settings if necessary.

   a. Print a configuration page to determine the IP address or host name.

      i. Press and hold the Resume [⬇] button until the Ready ↻ light begins blinking.

      ii. Release the Resume [⬇] button.

   b. Open a web browser, and in the address line, type the IP address or host name exactly as it displays on the printer configuration page. Press the Enter key on the computer keyboard. The EWS opens.

      🗎 https://10.10.XXXXX/

      📝 NOTE: if the web browser displays a message indicating that accessing the website might not be safe, select the option to continue to the website. Accessing this website will not harm the computer.

   c. Click the **System** tab, and then click the **Paper Setup** page.

   d. Select the type of paper that is in the tray.

   e. Select the size of paper that is in the tray.

3. Turn the printer off, wait 30 seconds, and then turn it on again.

4. Print a cleaning page to remove excess toner from inside the printer.

   a. Open the HP Printer Assistant.

      - **Windows 8.1**: Click the down arrow in lower left corner of the **Start** screen, and then select the printer name.

      - **Windows 8**: Right-click an empty area on the **Start** screen, click **All Apps** on the app bar, and then select the printer name.

      - **Windows 7, Windows Vista, and Windows XP**: From the computer desktop, click **Start**, select **All Programs**, click **HP**, click the folder for the printer, select the icon with the printer's name, and then open **HP Printer Assistant**.

   b. In the HP Printer Assistant, select **Print**, and then select **HP Device Toolbox**.

   c. On the **Systems** tab, click **Service**.

   d. In the **Cleaning Mode** area, click **Start** to begin the cleaning process.

5. Print a configuration page to test the printer.

   a. Press and hold the Resume [⬇] button until the Ready ↻ light begins blinking.

   b. Release the Resume [⬇] button.

If none of these steps resolves the problem, the printer might need service. Contact HP customer support.

## Clear jams in the Main input tray

Use the following procedure to check for paper in all possible jam locations in the Main input tray. When a jam occurs, the Attention ⚠ LED flashes.

1. Slowly pull the jammed paper out of the printer.

2. Open the cartridge door.
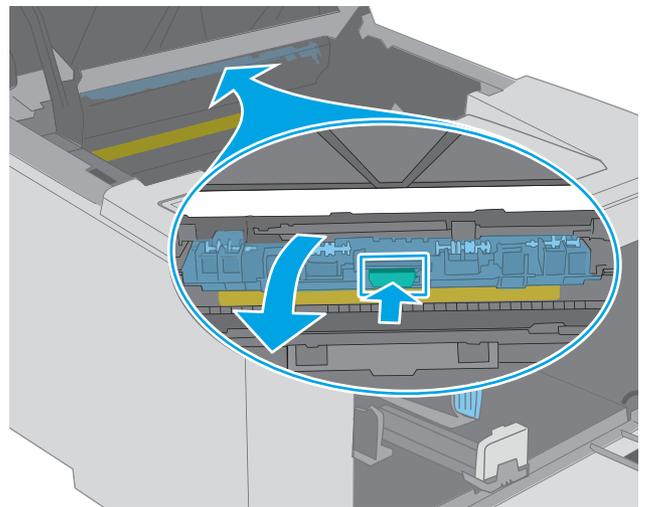
3. Remove the toner cartridge from the printer.

4. Remove the imaging drum from the printer.

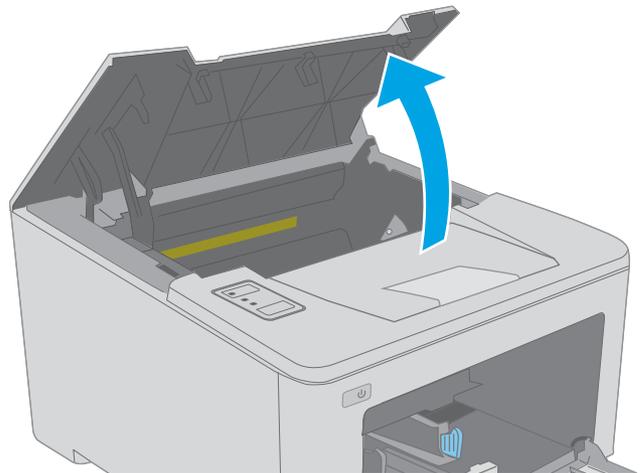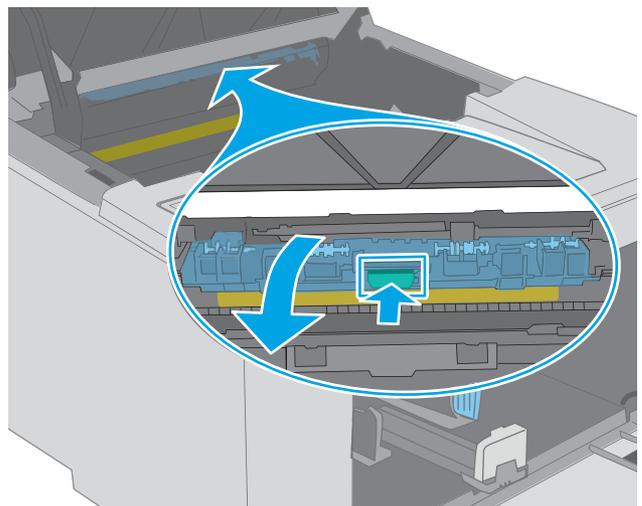5. Remove any jammed paper from the toner-cartridge area. Use both hands to remove jammed paper to avoid tearing the paper.
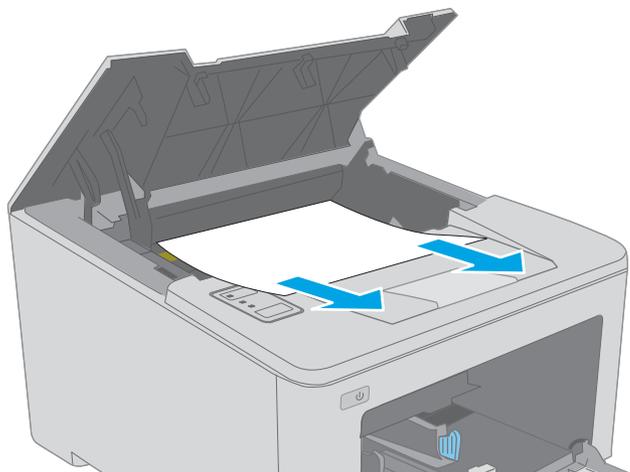
6. Lower the jam-access cover.
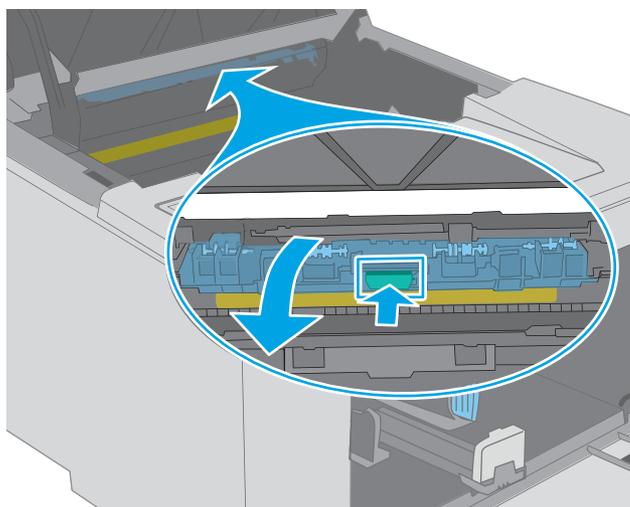
7. Remove any jammed paper.
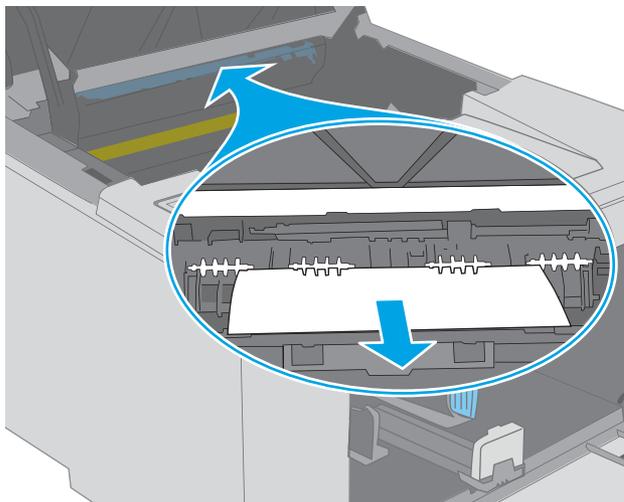
8. Close the jam-access cover.
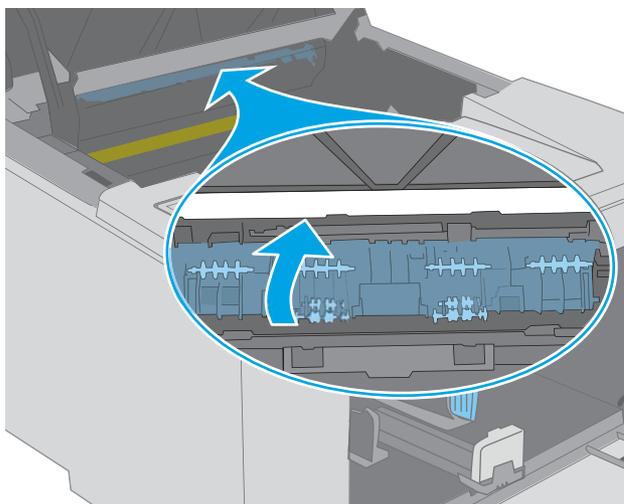
9. Align the imaging drum with the tracks inside the printer, and install the imaging drum until it is firmly seated.

10. Align the toner cartridge with the tracks inside the printer, and install the toner cartridge until it is firmly seated.
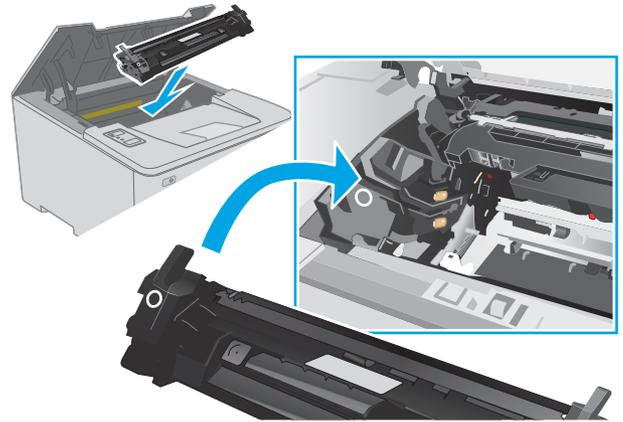
11. Close the cartridge door.

# Clear jams in the toner-cartridge area

The following information describes how to clear paper jams in the toner-cartridge area. When a jam occurs, the Attention ⚠ LED flashes.

1. Open the cartridge door.
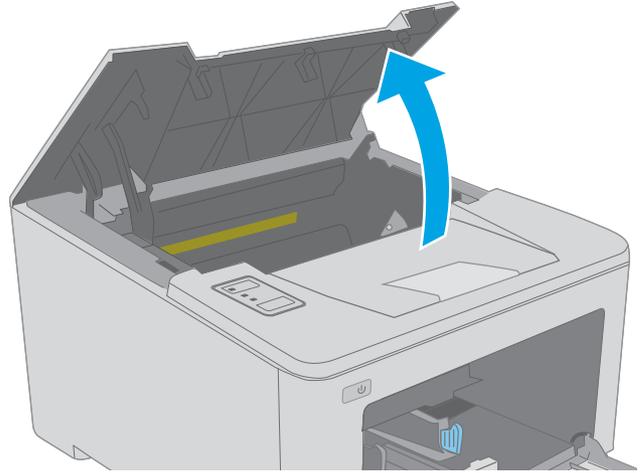


2. Remove the toner cartridge from the printer.
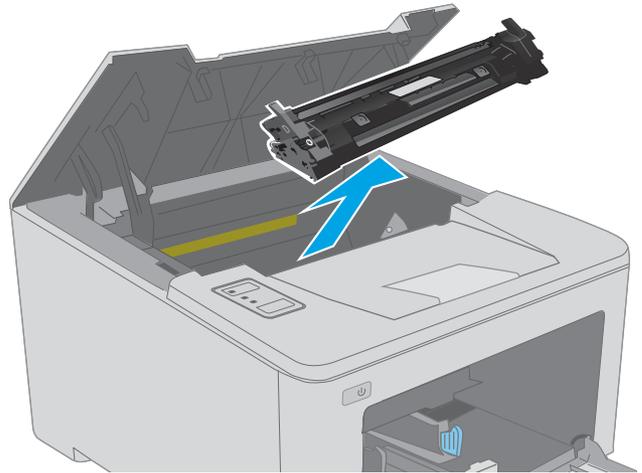


3. Remove the imaging drum from the printer.
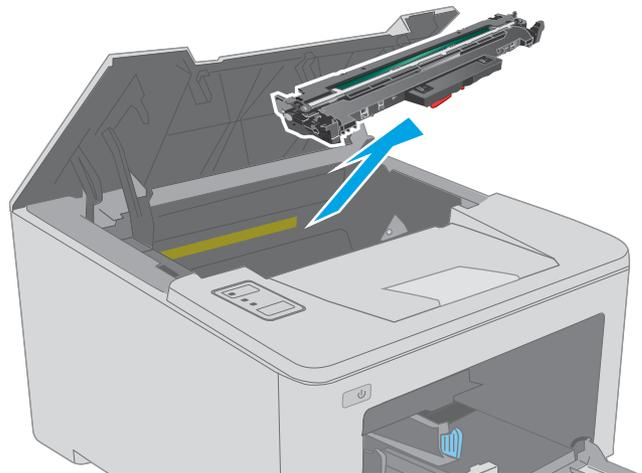
4.  Remove any jammed paper from the toner-cartridge area. Use both hands to remove jammed paper to avoid tearing the paper.
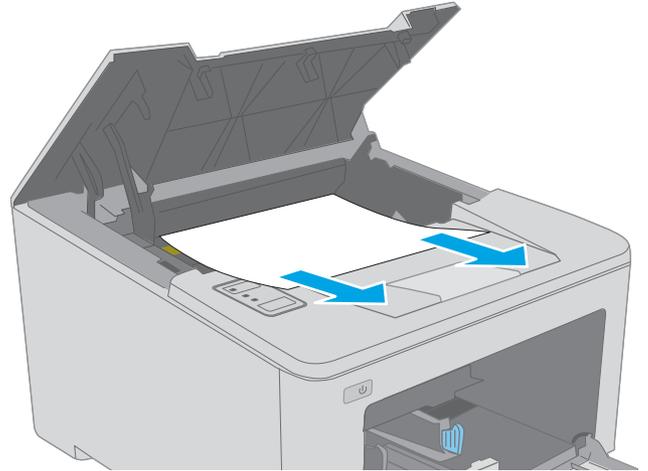
5.  Lower the jam-access cover.

6.  Remove any jammed paper.
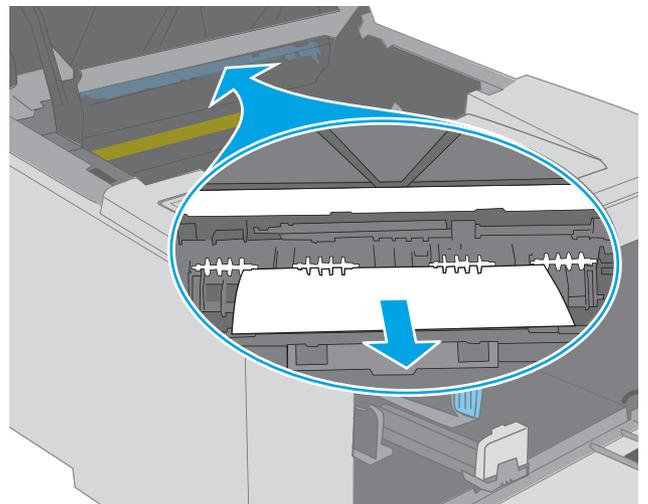
7. Close the jam-access cover.
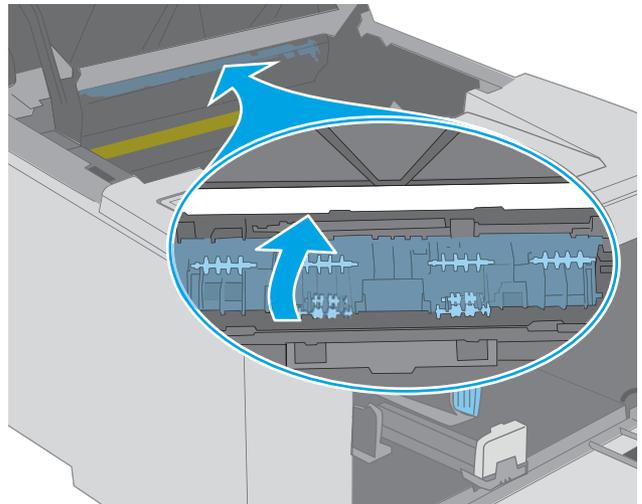
8. Align the imaging drum with the tracks inside the printer, and install the imaging drum until it is firmly seated.
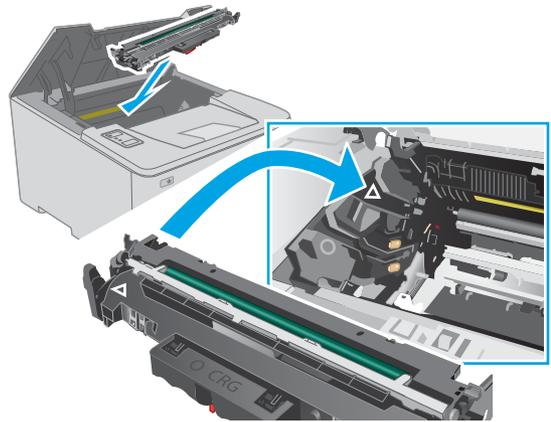
9.  Align the toner cartridge with the tracks inside the printer, and install the toner cartridge until it is firmly seated.
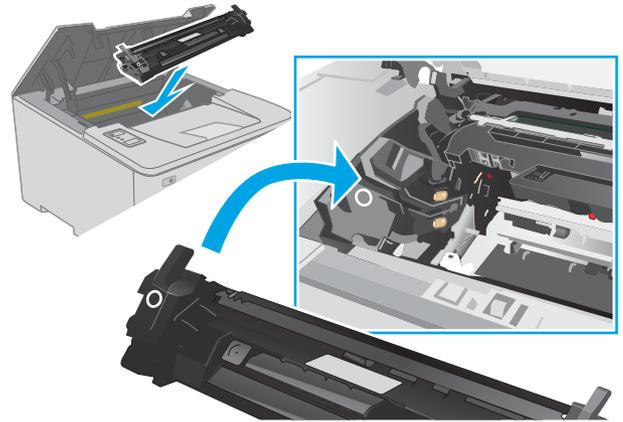
10. Close the cartridge door.
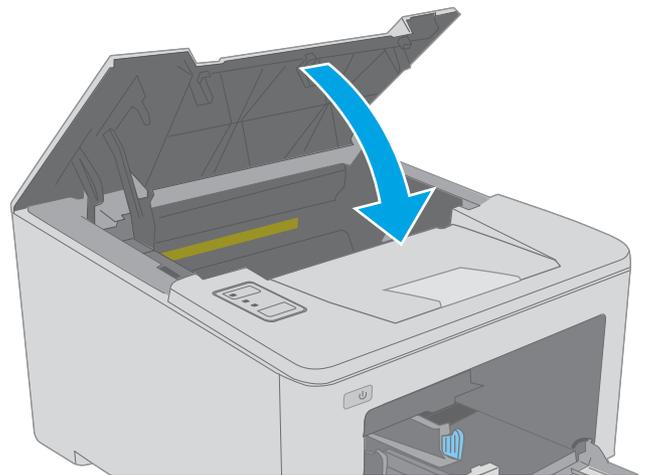
## Clear jams in the output bin

Use the following procedure to check for paper in all possible jam locations in the output bin. When a jam occurs, the Attention ⚠ LED flashes.

1. If paper is visible in the output bin, grasp the leading edge and remove it.
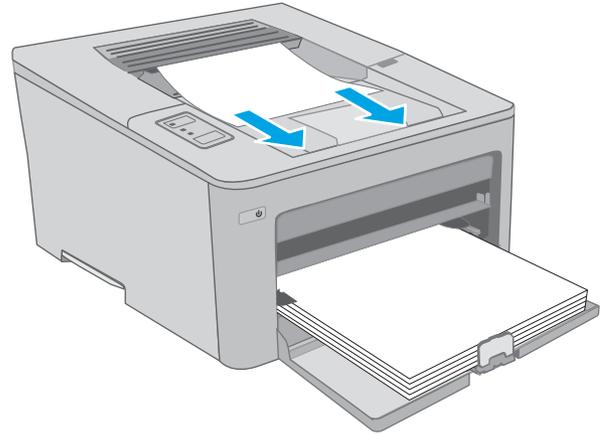
2. Open the cartridge door.

3. Pull out the green tab to release the jam-access cover.

4. Remove any jammed paper.
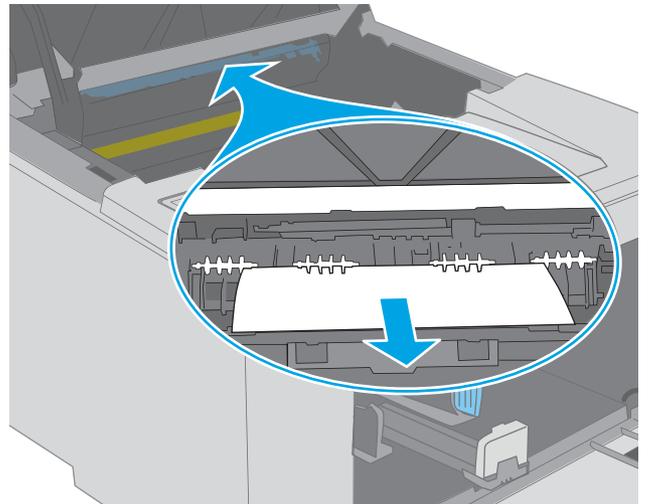
5. Close the jam-access cover.
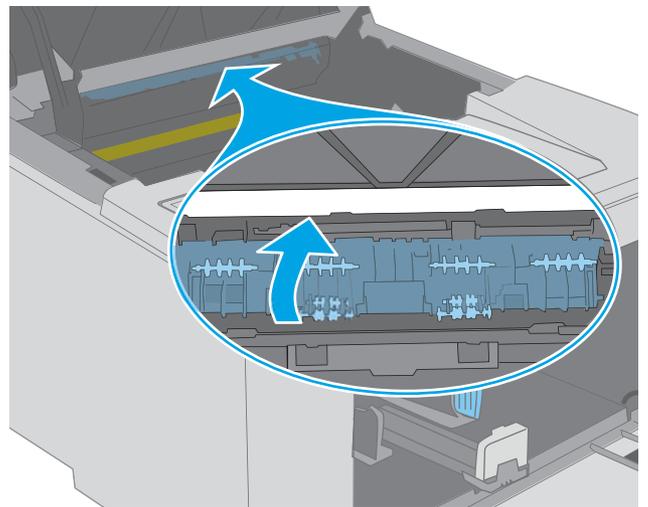
6. Close the cartridge door.
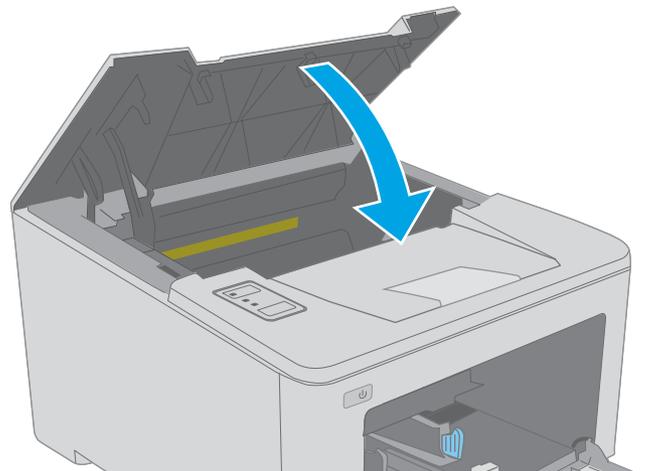
## Clear jams in the duplexer

Use the following procedure to check for paper in all possible jam locations in the duplexer. When a jam occurs, the Attention ⚠ LED flashes.

1.  Open the rear door.
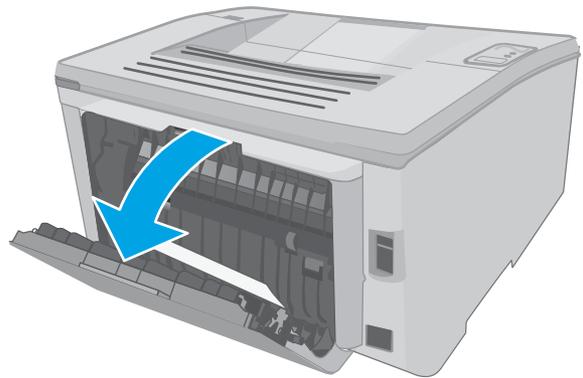
2.  Remove any jammed paper from the duplex area. Use both hands to remove jammed paper to avoid tearing the paper.
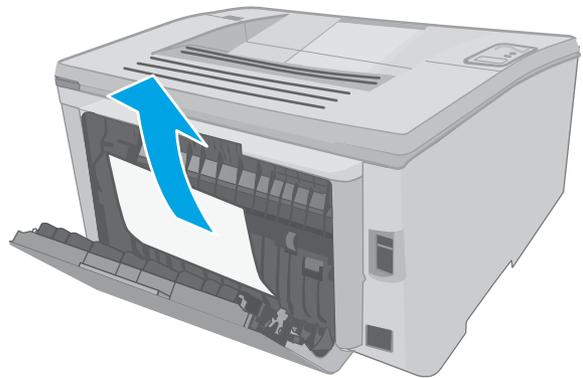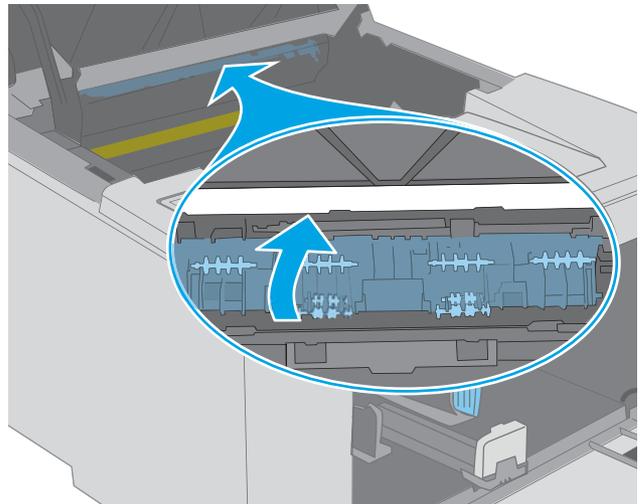
3.  Close the rear door.
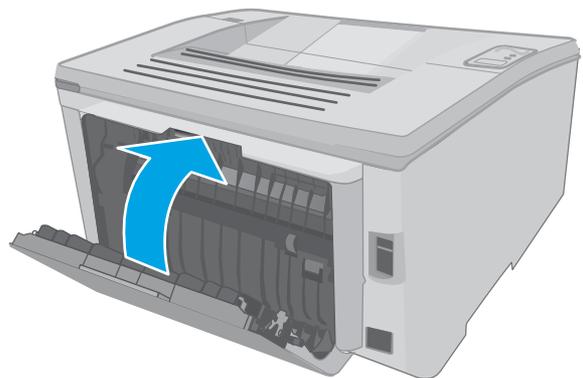
4. Open the cartridge door.
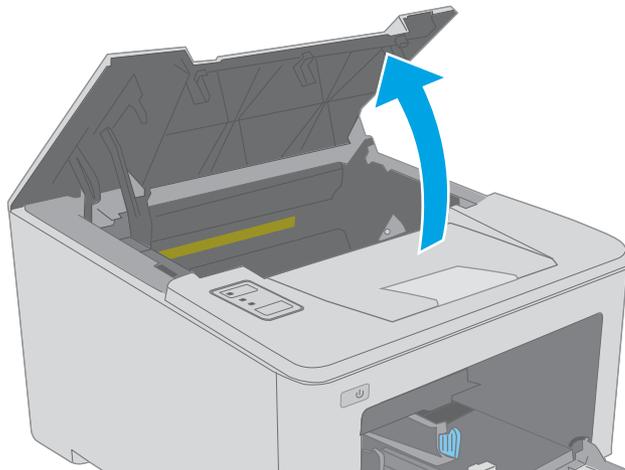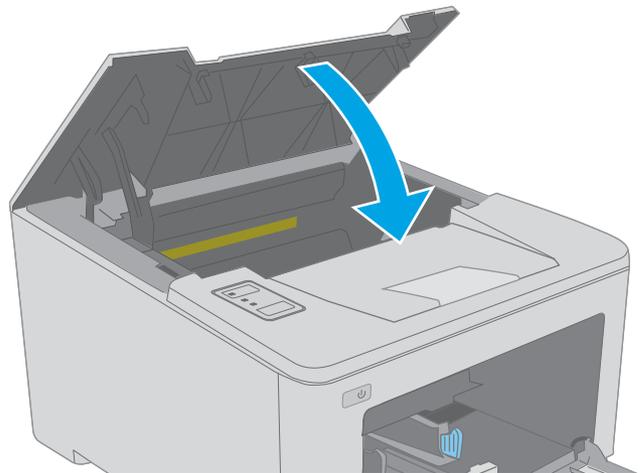
5. Pull out the green tab to release the jam-access cover.
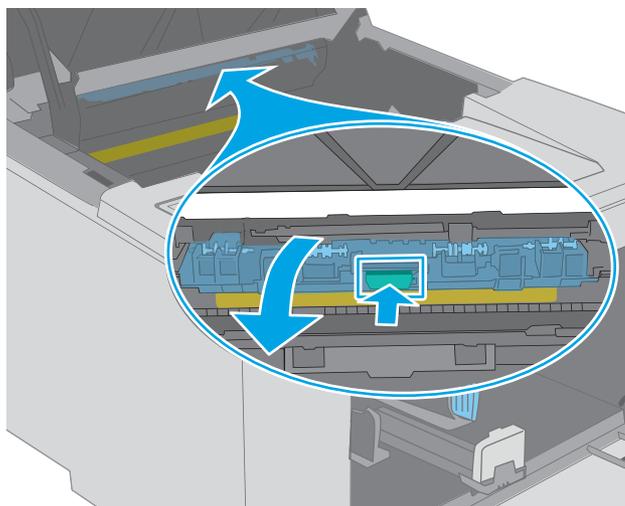
6. Remove any jammed paper.
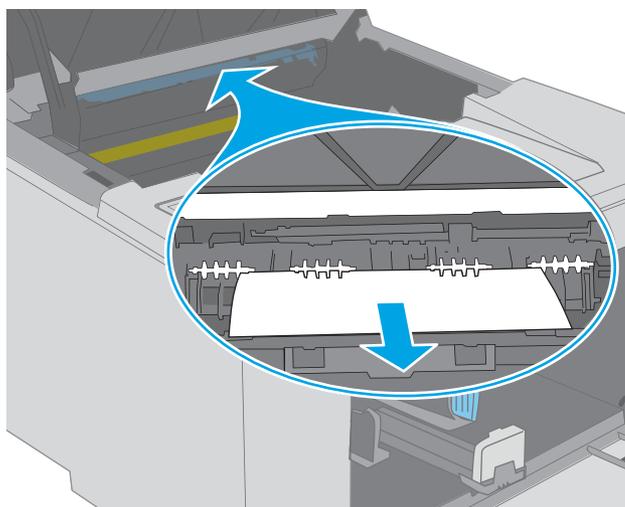
7. Close the jam-access cover.

8. Close the cartridge door.

# Clear paper jams (M227, M230)

## Introduction

The following information includes instructions for clearing paper jams from the product.

-
-
-
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## Paper path jam sensor locations (M227)

**NOTE:** Use the figures below to identify the locations of sensors where reoccurring jams are found.
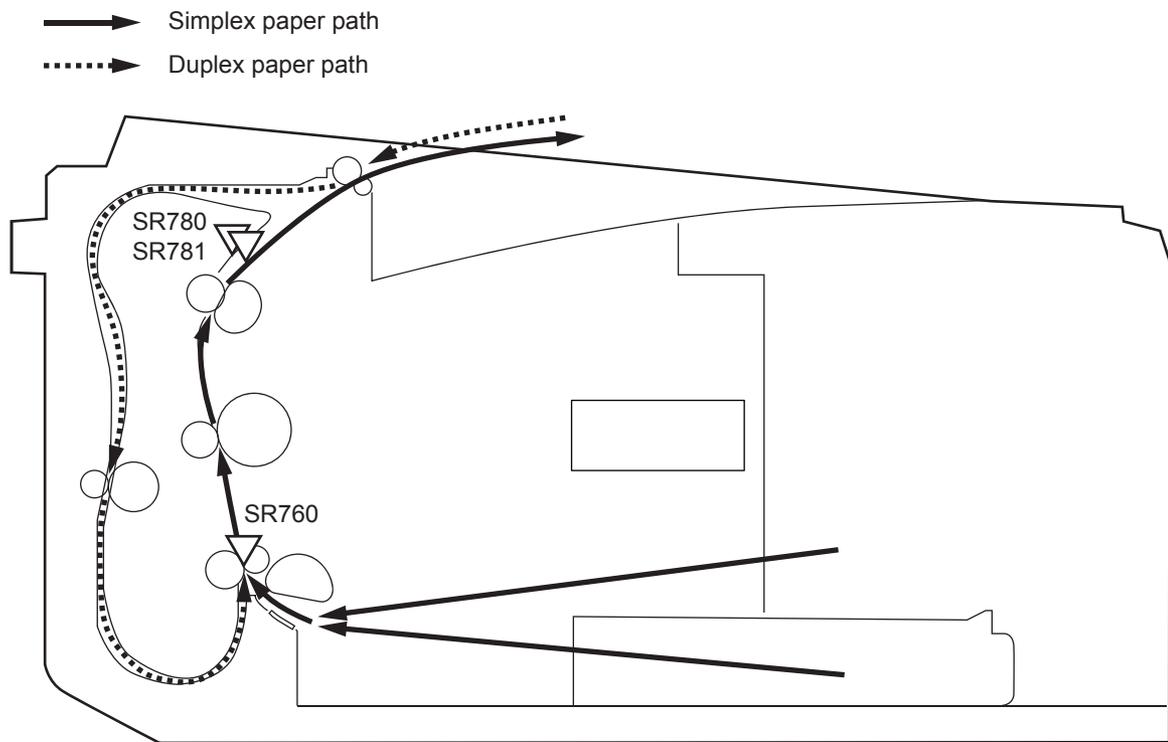
**Figure 2-36** Printer base jam sensors



**Table 2-44** Printer base jam sensors

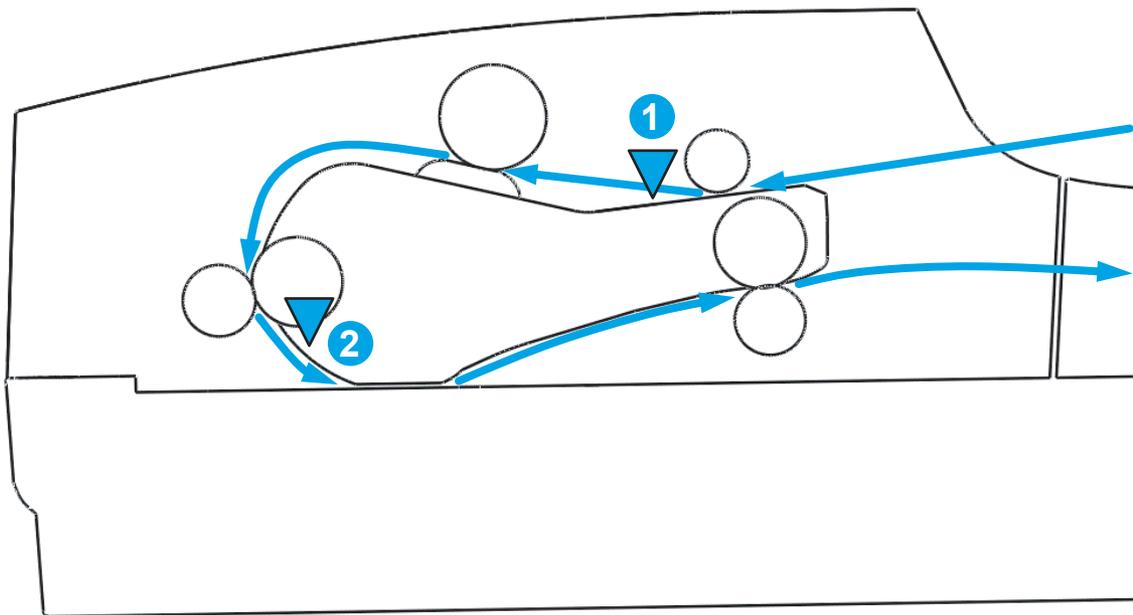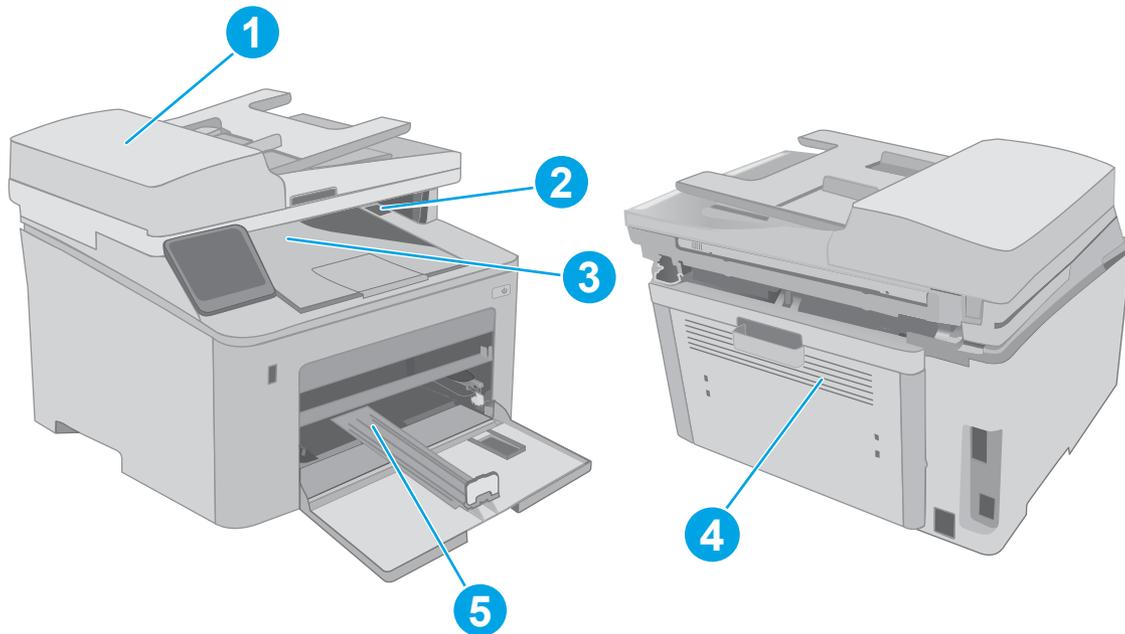| Sensor | Description |
| --- | --- |
| SR760 | Top-of-Page (TOP) sensor |
| SR780 | Fuser output sensor |
| SR781 | Fuser media width sensor |

Figure 2-37 Document feeder jam sensors



Table 2-45 Document feeder jam sensors

| Item | Description |
| --- | --- |
| 1 | Document load sensor |
| 2 | Top-of-paper sensor |

## Jam locations
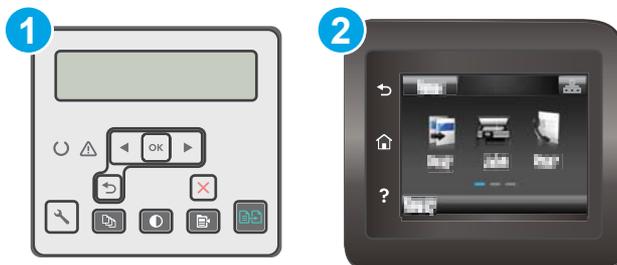


| | |
|---|---|
| 1 | Document feeder |
| 2 | Cartridge area |
| 3 | Output bin |
| 4 | Duplexer |
| 5 | Main input tray |

## Experiencing frequent or recurring paper jams?

Follow these steps to solve problems with frequent paper jams. If the first step does not resolve the problem continue with the next step until you have resolved the problem.

**NOTE:** The steps vary according to the type of control panel.



| | |
|---|---|
| 1 | 2-line control panel |
| 2 | Touchscreen control panel |

1. If paper has jammed in the printer, clear the jam and then print a configuration page to test the printer.

2. Check that the tray is configured for the correct paper size and type on the printer control panel. Adjust paper settings if necessary.

   a. **2-line control panels:** On the printer control panel, press the ⚙ button.

      **Touchscreen control panels:** From the Home screen on the printer control panel, swipe until the Setup menu displays. Touch the Setup ⚙ icon to open the menu.

   b. Open the following menus:

      - System Setup

      - Paper setup

   c. Select the tray from the list.

   d. Select Paper Type and then select the type of paper that is in the tray.

   e. Select Paper Size and then select the size of paper that is in the tray.

3. Turn the printer off, wait 30 seconds, and then turn it on again.

4. Print a cleaning page to remove excess toner from inside the printer.

   a. **2-line control panels**: On the printer control panel, press the ⚙ button.

      **Touchscreen control panels**: From the Home screen on the printer control panel, swipe until the Setup menu displays. Touch the Setup ⚙ icon to open the menu.

   b. Open the Service menu.

   c. Select the Cleaning Page option.

   d. Load plain letter or A4 paper when you are prompted.

      Wait until the process is complete. Discard the page that prints.

5. Print a configuration page to test the printer.

   a. **2-line control panels**: On the printer control panel, press the ⚙ button.

      **Touchscreen control panels**: From the Home screen on the printer control panel, swipe until the Setup menu displays. Touch the Setup ⚙ icon to open the menu.

   b. Open the Reports menu.

   c. Select Configuration Report.

If none of these steps resolves the problem, the printer might need service. Contact HP customer support.
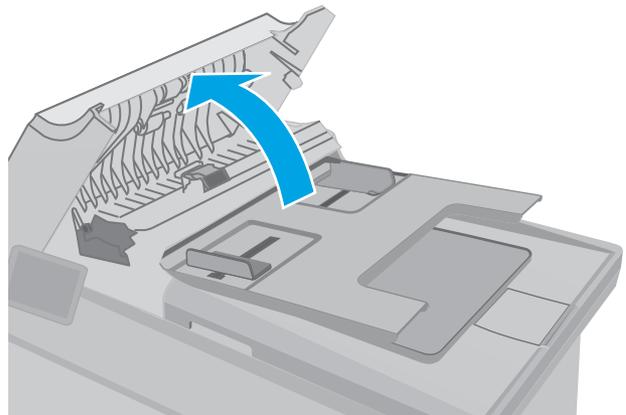
## Clear jams in the document feeder

The following information describes how to clear paper jams in the document feeder. When a jam occurs, 2-line control panel displays an error message and the touchscreen control panel displays an animation that assists in clearing the jam.
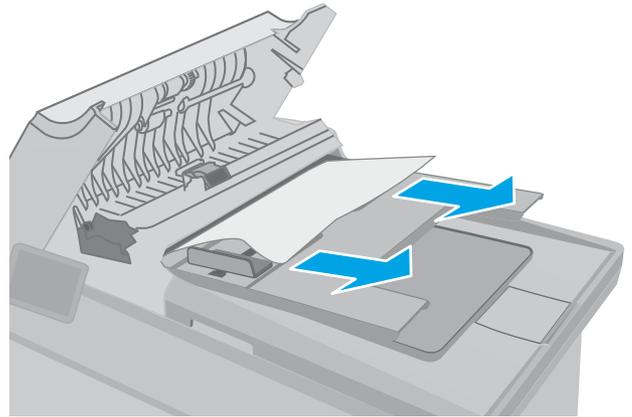
1. Remove any paper from the document feeder input tray.

2. Remove any jammed paper visible in the input tray area. Use both hands to slowly pull out the jammed paper to avoid tearing the paper.
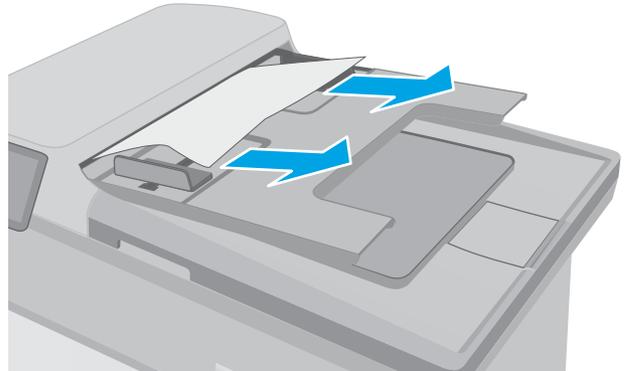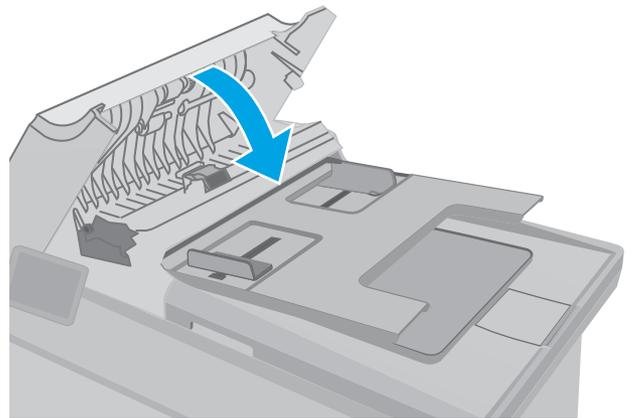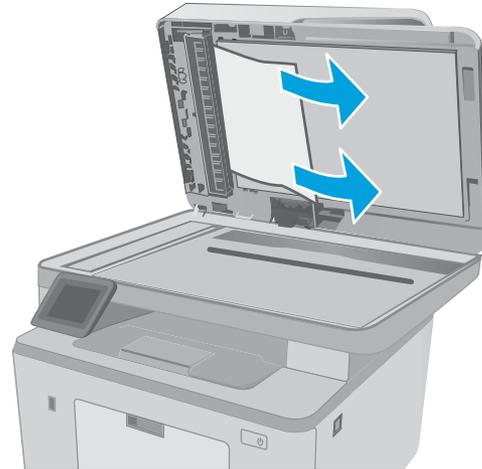
3. Open the document-feeder cover.

4. Remove any jammed paper.

5. Close the document-feeder cover. Make sure it is completely closed.

6. Open the scanner lid. If paper is jammed behind the white plastic backing, gently pull it out.

7. Lower the scanner lid.

📝 **NOTE:** To avoid jams, make sure the guides in the document-feeder input tray are adjusted tightly against the document. Remove all staples and paper clips from original documents.

📝 **NOTE:** Original documents that are printed on heavy, glossy paper can jam more frequently than originals that are printed on plain paper.

## Clear jams in the Main input tray

Use the following procedure to check for paper in all possible jam locations in the Main input tray. When a jam occurs, 2-line control panel displays an error message and the touchscreen control panel displays an animation that assists in clearing the jam.

1. Slowly pull the jammed paper out of the printer.
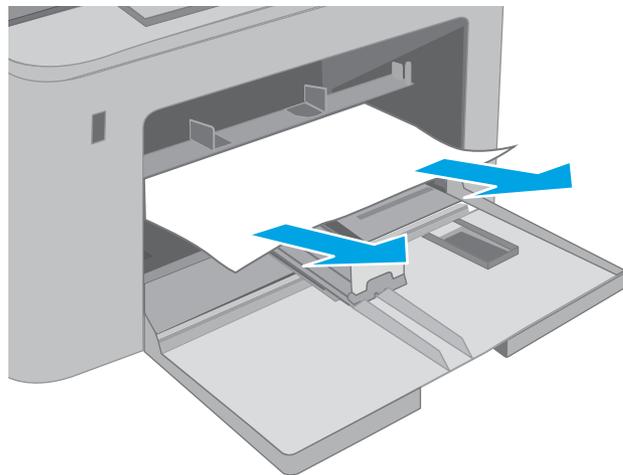
2. Lift the scanner assembly.
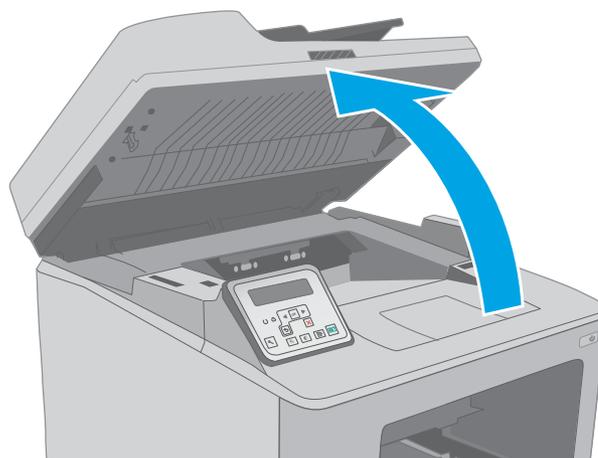
3. Open the cartridge door.

4. Remove the toner cartridge from the printer.

5. Remove the imaging drum from the printer.
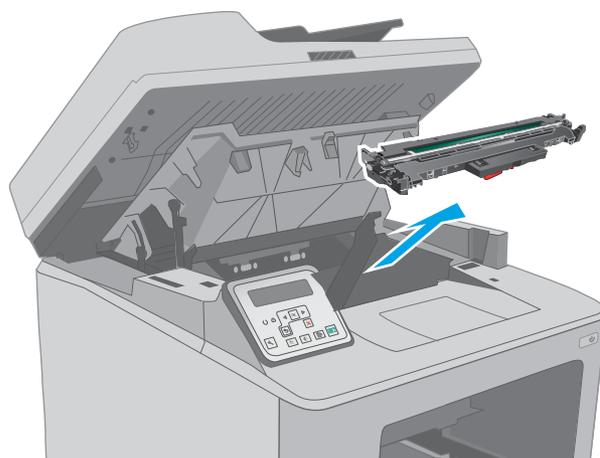
6. Remove any jammed paper from the toner-cartridge area. Use both hands to remove jammed paper to avoid tearing the paper.

7. Lower the jam-access cover.

8. Remove any jammed paper.
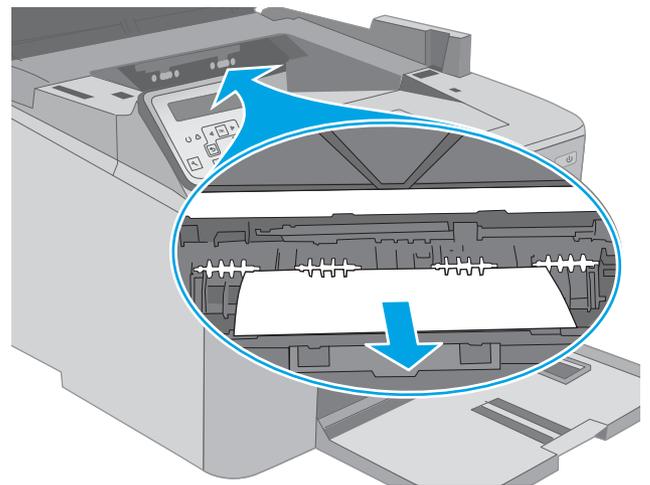
9. Close the jam-access cover.
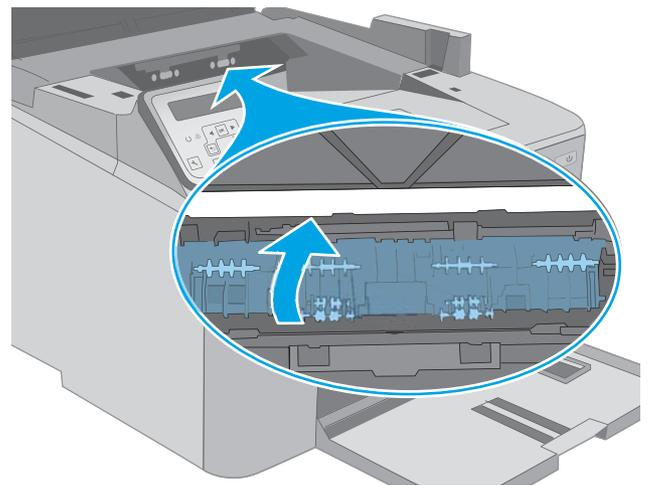
10. Align the imaging drum with the tracks inside the printer, and install the imaging drum until it is firmly seated.

11. Align the toner cartridge with the tracks inside the printer, and install the toner cartridge until it is firmly seated.

12. Close the cartridge door.
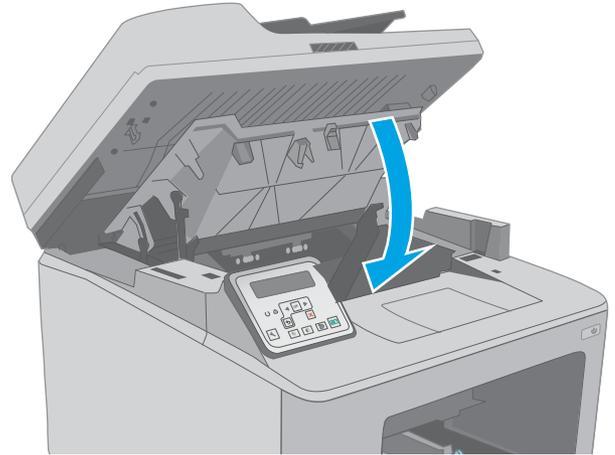
13. Lower the scanner assembly.
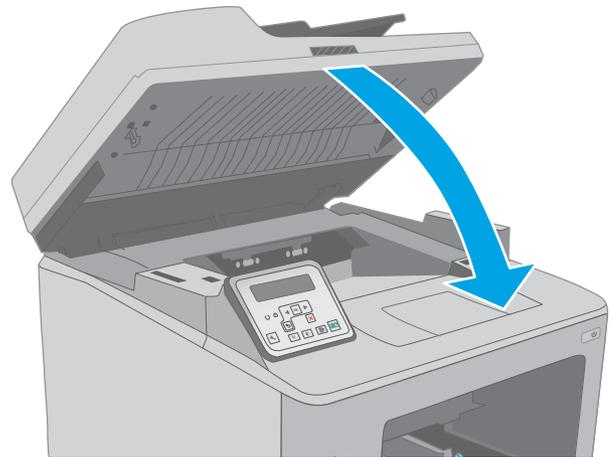
## Clear jams in the toner-cartridge area

The following information describes how to clear paper jams in the toner-cartridge area. When a jam occurs, 2-line control panel displays an error message and the touchscreen control panel displays an animation that assists in clearing the jam.
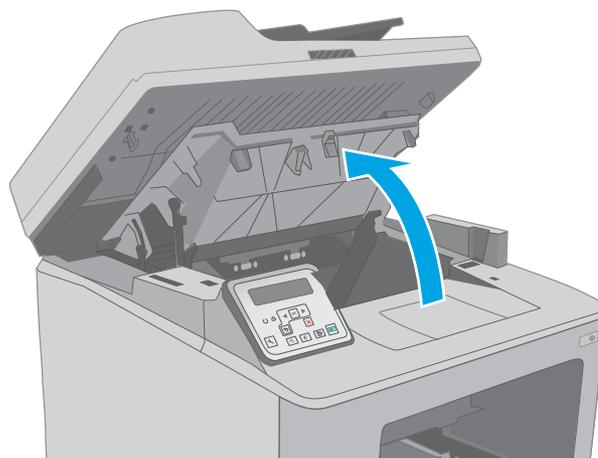
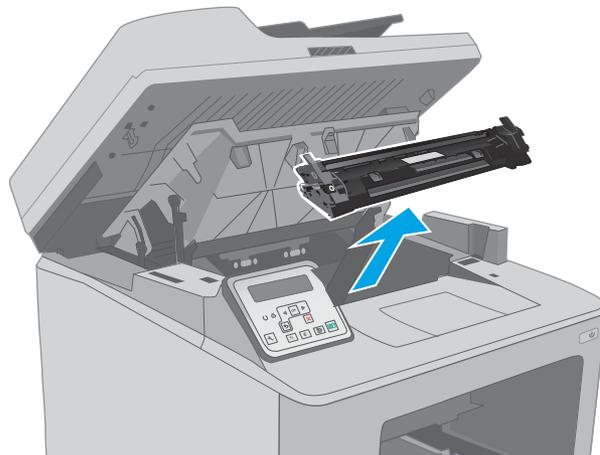1. Lift the scanner assembly.



2. Open the cartridge door.
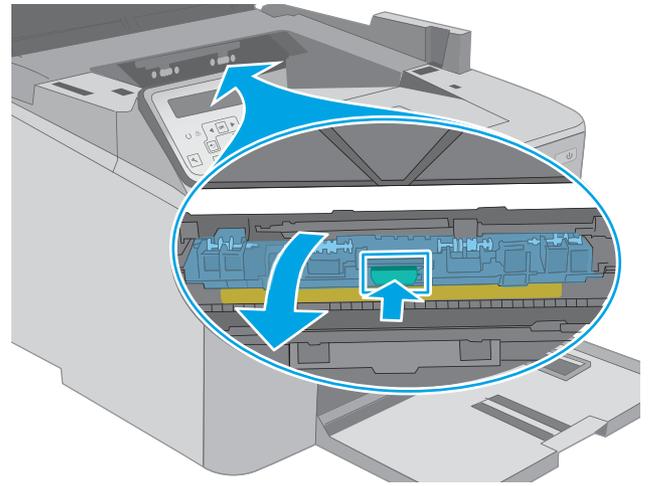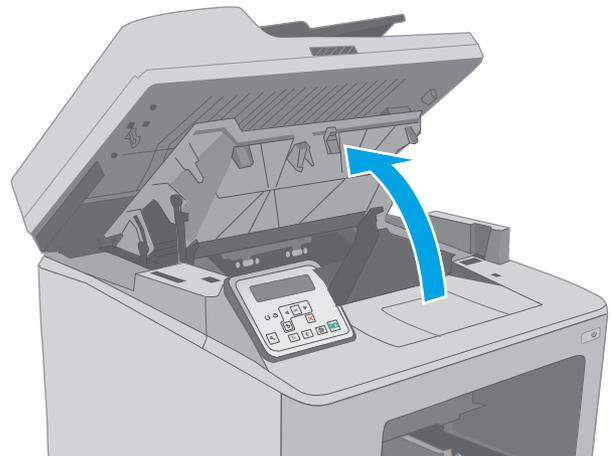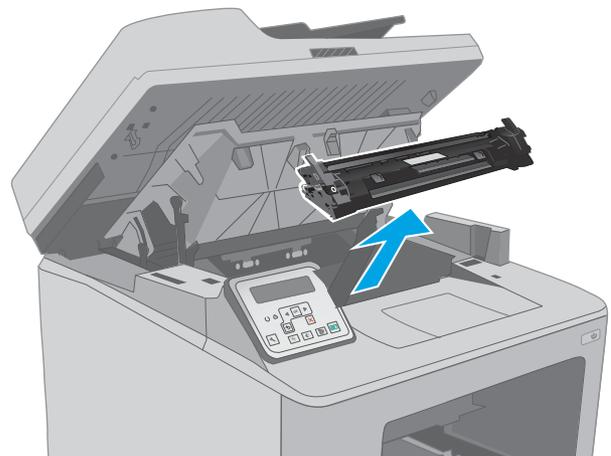


3. Remove the toner cartridge from the printer.

4. Remove the imaging drum from the printer.

5. Remove any jammed paper from the toner-cartridge area. Use both hands to remove jammed paper to avoid tearing the paper.

6. Lower the jam-access cover.
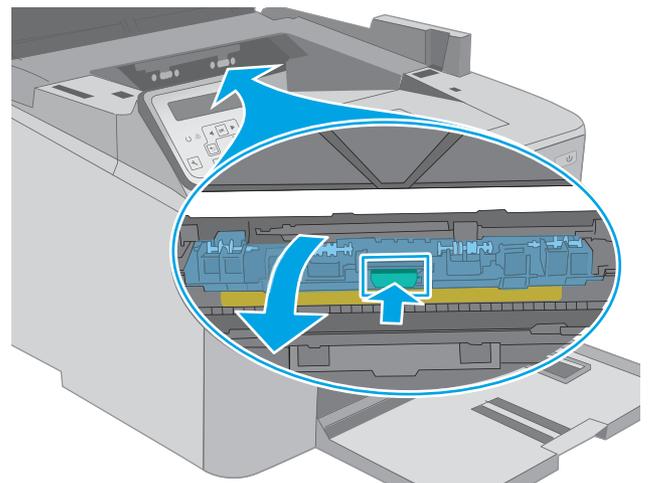
7.   Remove any jammed paper.
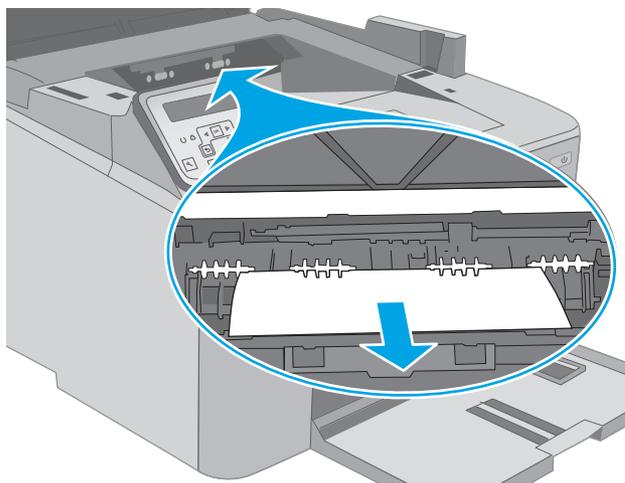
8.   Close the jam-access cover.
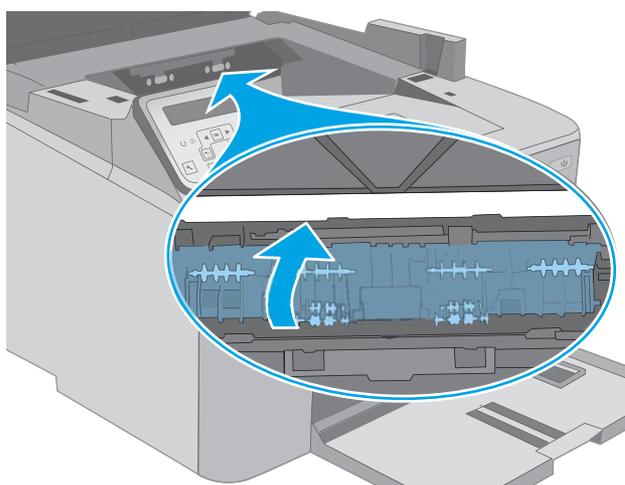
9.   Align the imaging drum with the tracks inside the
     printer, and install the imaging drum until it is
     firmly seated.

10. Align the toner cartridge with the tracks inside the printer, and install the toner cartridge until it is firmly seated.
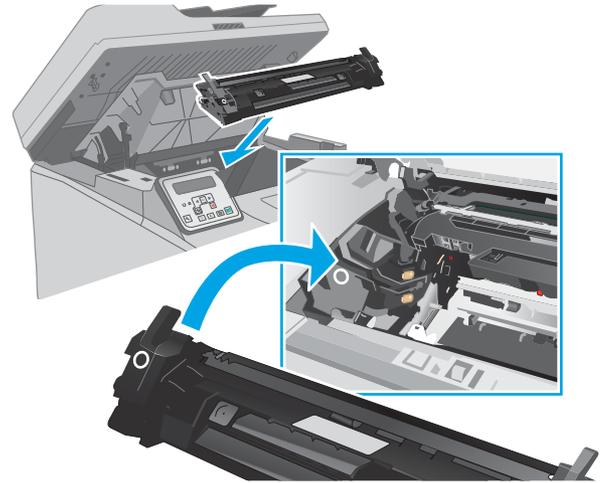
11. Close the cartridge door.
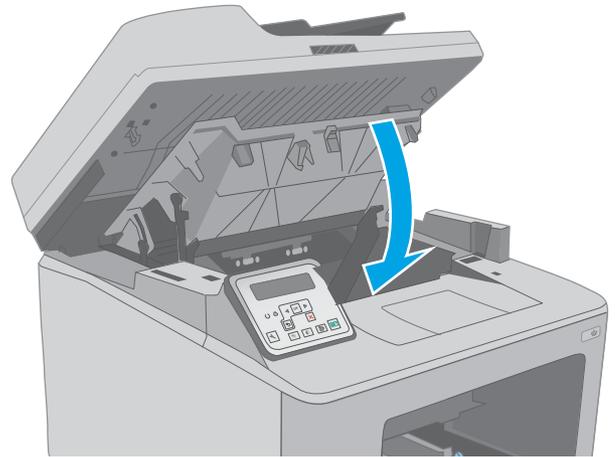
12. Lower the scanner assembly.
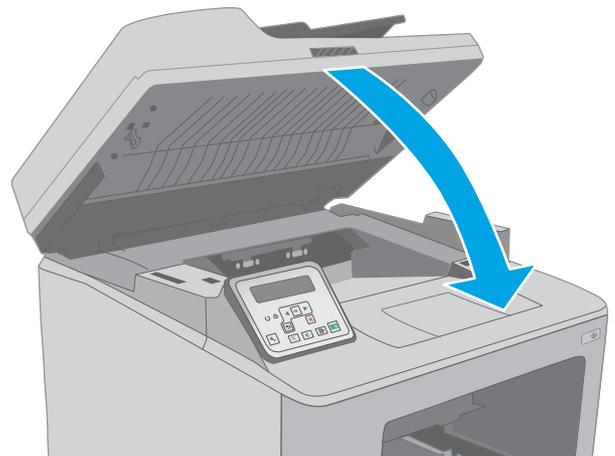
## Clear jams in the output bin

Use the following procedure to check for paper in all possible jam locations in the output bin. When a jam occurs, 2-line control panel displays an error message and the touchscreen control panel displays an animation that assists in clearing the jam.

1. If paper is visible in the output bin, grasp the leading edge and remove it.
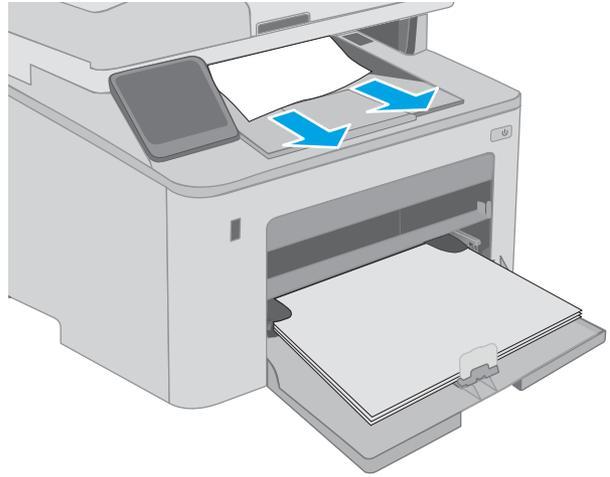
2. Lift the scanner assembly.

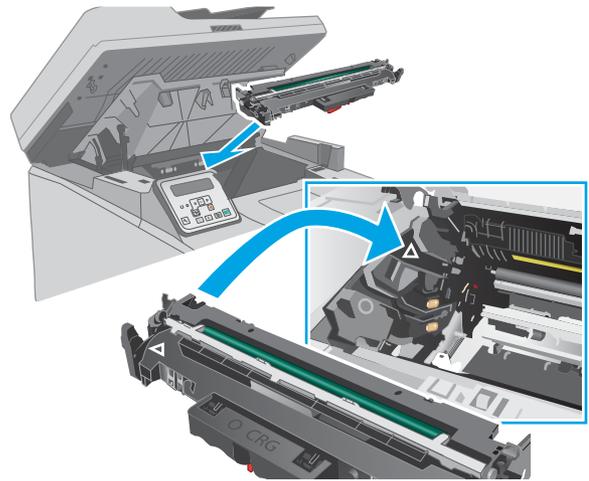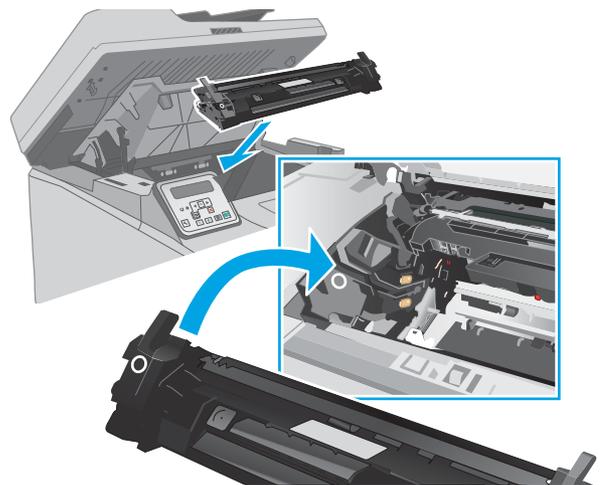3. Open the cartridge door.

4. Pull out the green tab to release the jam-access cover.
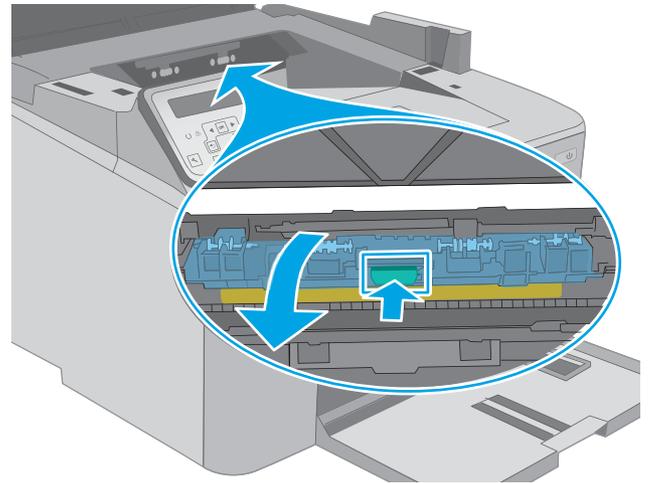
5. Remove any jammed paper.
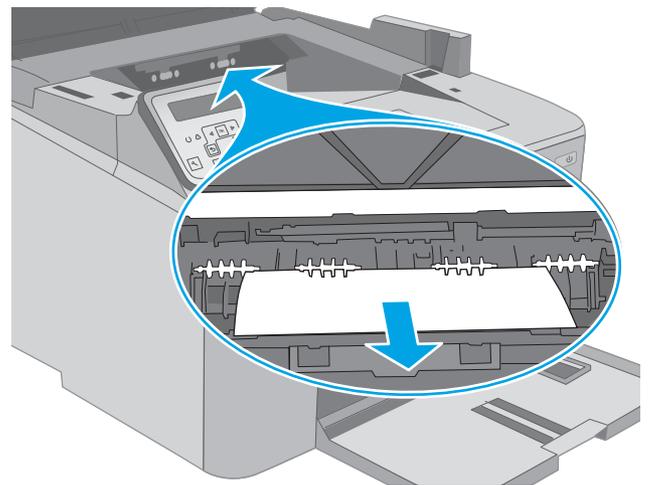
6. Close the jam-access cover.
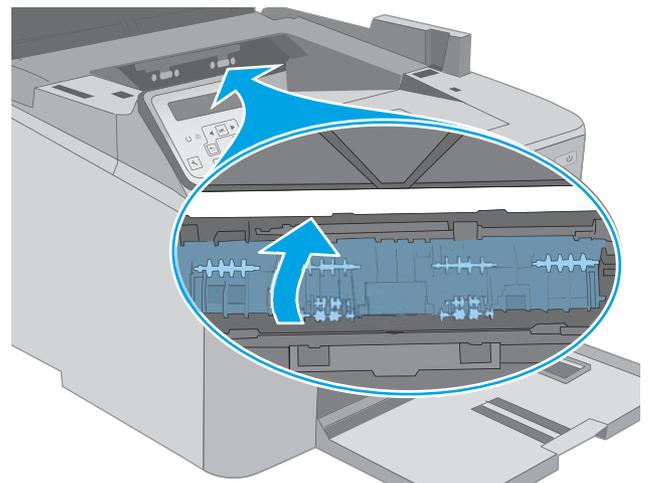
7. Close the cartridge door.
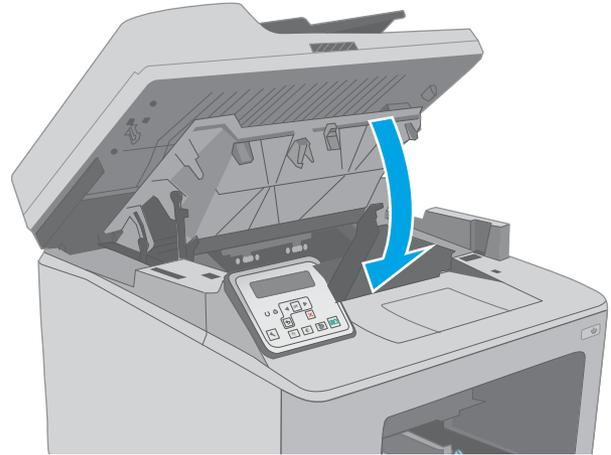
8. Lower the scanner assembly.
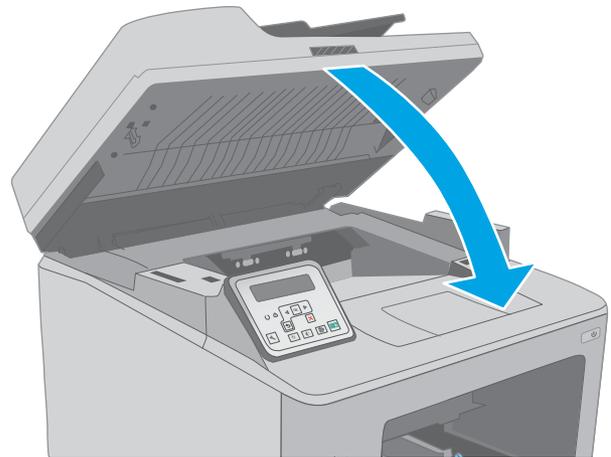
## Clear jams in the duplexer

Use the following procedure to check for paper in all possible jam locations in the duplexer. For touchscreen models, the control panel displays an animation that assists in clearing the jam.

1.  Open the rear door.
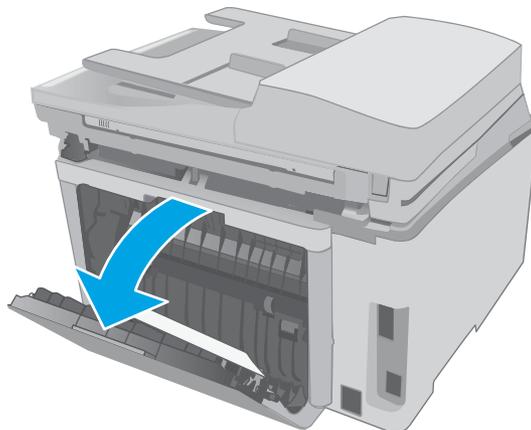
2.  Remove any jammed paper from the duplex area. Use both hands to remove jammed paper to avoid tearing the paper.
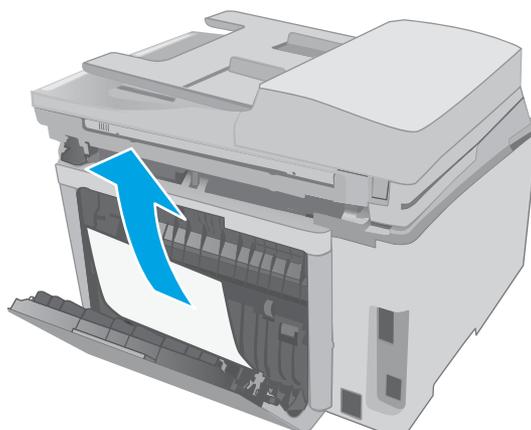
3.  Close the rear door.
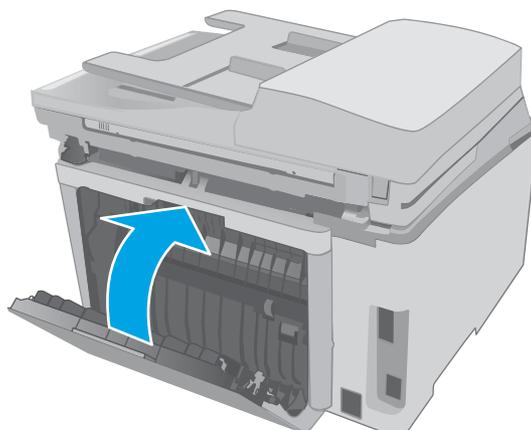
4.  Lift the scanner assembly.

5.  Open the cartridge door.
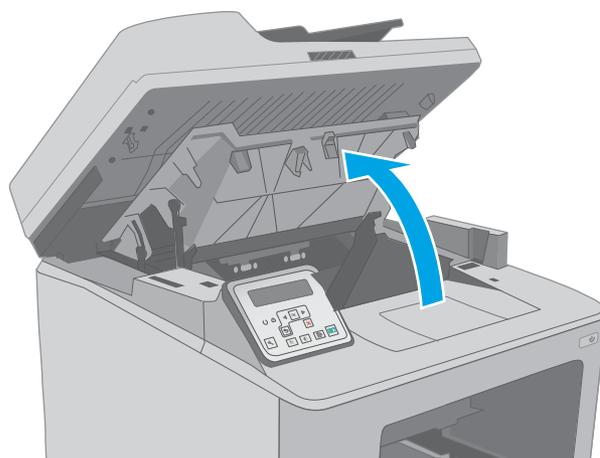
6.  Pull out the green tab to release the jam-access cover.
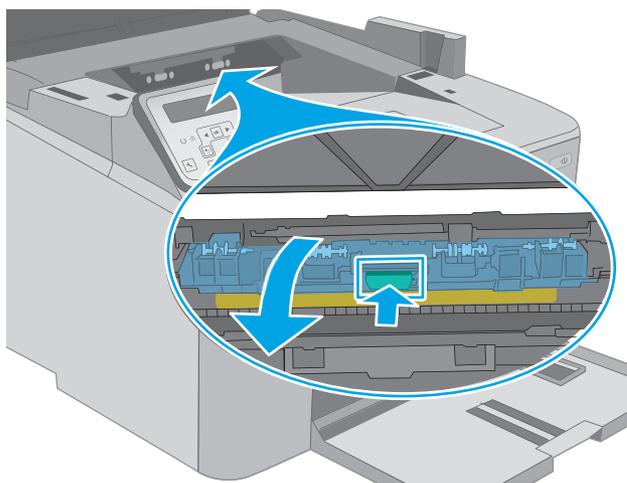
7. Remove any jammed paper.
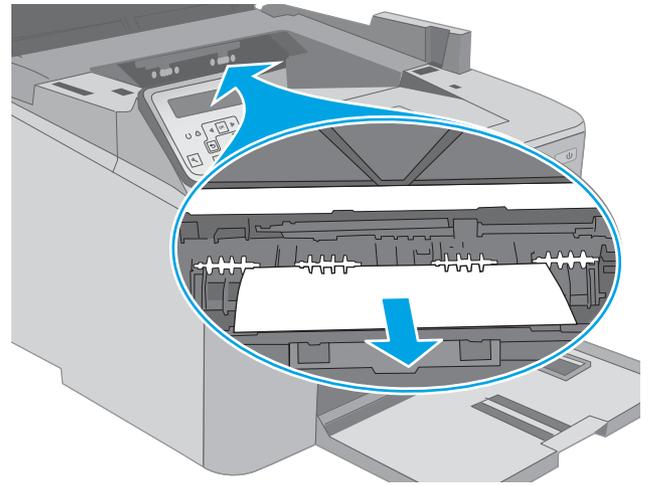
8. Close the jam-access cover.
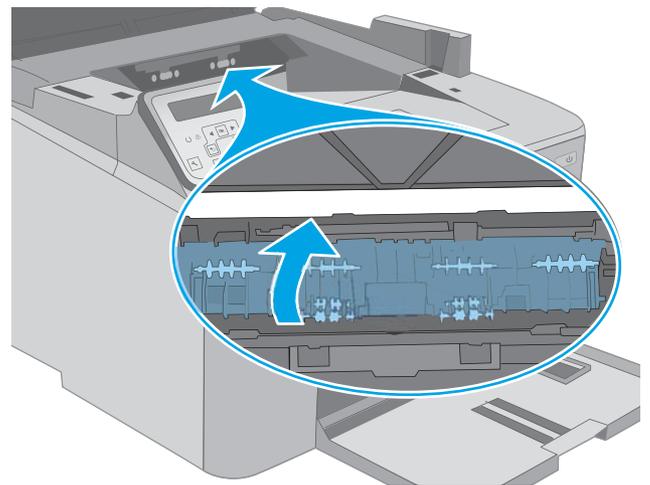
9. Close the cartridge door.
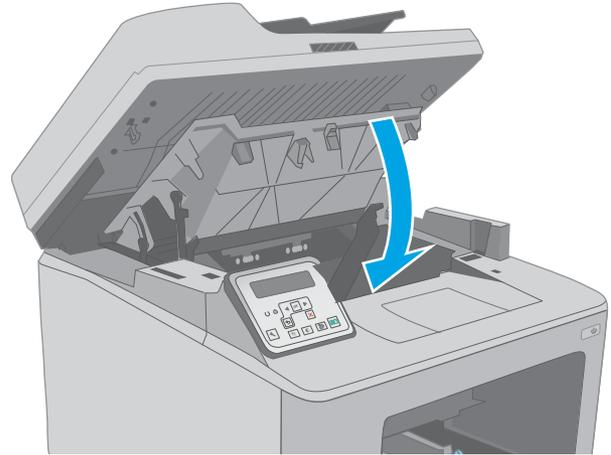
10. Lower the scanner assembly.
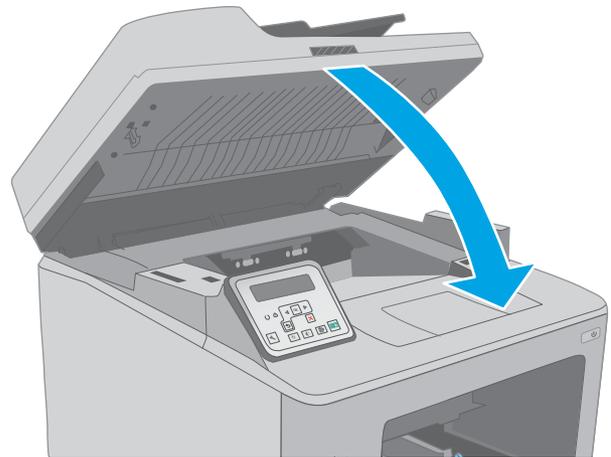
# Solve performance problems

Table 2-46  Solve performance problems

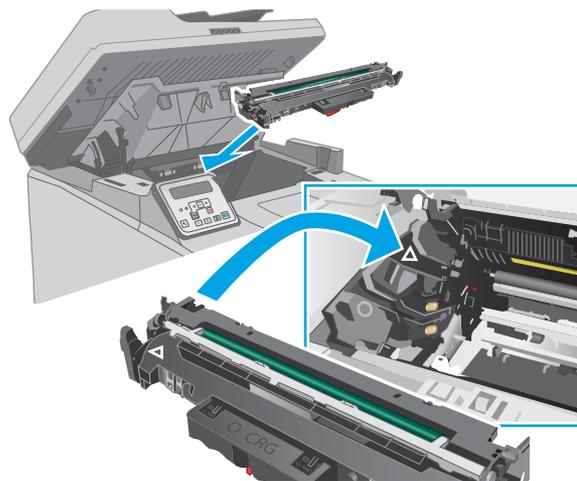| Problem | Cause | Solution |
|---|---|---|
| Pages print but are totally blank. | The document might contain blank pages. | Check the original document to see if content is present on all of the pages. |
| | The printer might be malfunctioning. | To check the printer, print a configuration page. |
| Pages print very slowly. | Heavier paper types can slow the print job. | Print on a different type of paper. |
| | Complex pages can print slowly. | Proper fusing might require a slower print speed to ensure the best print quality. |
| | Large batches, narrow paper, and special paper such as gloss, transparency, cardstock, and HP Tough Paper can slow the print job. | Print in smaller batches, on a different type of paper, or on a different size of paper. |
| Pages did not print. | The printer might not be pulling paper correctly. | Make sure paper is loaded in the tray correctly. |
| | The paper is jamming in the printer. | Clear the jam. |
| | The USB cable might be defective or incorrectly connected. | <ul><li>Disconnect the USB cable at both ends and reconnect it.</li><li>Try printing a job that has printed in the past.</li><li>Try using a different USB cable.</li></ul> |
| | Other devices are running on the host computer. | The printer might not share a USB port. If an external hard drive or network switchbox is connected to the same port as the printer, the other device might be interfering with the printer. To connect and use the printer, disconnect the other device or use two USB ports on the host computer. |

# Solve connectivity problems

## Solve USB connection problems

If you have connected the printer directly to a computer, check the cable.

- Verify that the cable is connected to the computer and to the printer.

- Verify that the cable is not longer than 5 m (16.4 ft). Try using a shorter cable.

- Verify that the cable is working correctly by connecting it to another printer. Replace the cable if necessary.

## Solve wired network problems

### Introduction

Check the following items to verify that the printer is communicating with the network. Before beginning, print a configuration page from the printer control panel and locate the printer IP address that is listed on this page.

- Poor physical connection

- The computer is using the incorrect IP address for the printer

- The computer is unable to communicate with the printer

- The printer is using incorrect link speed and duplex settings for the network

- New software programs might be causing compatibility problems

- The computer or workstation might be set up incorrectly

- The printer is disabled, or other network settings are incorrect

📝 NOTE:    HP does not support peer-to-peer networking, as the feature is a function of Microsoft operating systems and not of the HP print drivers. For more information, go to Microsoft at www.microsoft.com.

### Poor physical connection

1. Verify that the printer is attached to the correct network port using a cable of the correct length.

2. Verify that cable connections are secure.

3. Look at the network port connection on the back of the printer, and verify that the amber activity light and the green link-status light are lit.

4. If the problem continues, try a different cable or port on the hub.

### The computer is using the incorrect IP address for the printer

1. Open the printer properties and click the **Ports** tab. Verify that the current IP address for the printer is selected. The printer IP address is listed on the printer configuration page.

2. If you installed the printer using the HP standard TCP/IP port, select the box labeled **Always print to this printer, even if its IP address changes**.

3. If you installed the printer using a Microsoft standard TCP/IP port, use the hostname instead of the IP address.

4. If the IP address is correct, delete the printer and then add it again.

### The computer is unable to communicate with the printer

1. Test network communication by pinging the network.

    a. Open a command-line prompt on your computer.

        ● For Windows, click **Start**, click **Run**, type cmd, and then press Enter.

        ● For OS X, go to **Applications**, then **Utilities**, and open **Terminal**.

    b. Type ping followed by the IP address for your printer.

    c. If the window displays round-trip times, the network is working.

2. If the ping command failed, verify that the network hubs are on, and then verify that the network settings, the printer, and the computer are all configured for the same network.

### The printer is using incorrect link speed and duplex settings for the network

HP recommends leaving these settings in automatic mode (the default setting). If you change these settings, you must also change them for your network.

### New software programs might be causing compatibility problems

Verify that any new software programs are correctly installed and that they use the correct print driver.

### The computer or workstation might be set up incorrectly

1. Check the network drivers, print drivers, and the network redirection settings.

2. Verify that the operating system is configured correctly.

### The printer is disabled, or other network settings are incorrect

1. Review the configuration page to check the status of the network protocol. Enable it if necessary.

2. Reconfigure the network settings if necessary.

## Solve wireless network problems (M203, M206))

● Introduction

● Wireless connectivity checklist

● The printer does not print after the wireless configuration completes

● The printer does not print, and the computer has a third-party firewall installed

● The wireless connection does not work after moving the wireless router or printer

● Cannot connect more computers to the wireless printer

● The wireless printer loses communication when connected to a VPN

- [The network does not appear in the wireless networks list](#)

- [The wireless network is not functioning](#)

- [Perform a wireless network diagnostic test](#)

- [Reduce interference on a wireless network](#)

## Introduction

Use the troubleshooting information to help resolve issues.

📝 **NOTE:** To determine whether HP NFC and Wi-Fi Direct printing are enabled on your printer, print a configuration page from the printer control panel.

## Wireless connectivity checklist

- Verify that the network cable is not connected.

- Verify that the printer and the wireless router are turned on and have power. Also make sure that the wireless radio in the printer is turned on.

- Verify that the service set identifier (SSID) is correct. Print a configuration page to determine the SSID. If you are not sure the SSID is correct, run the wireless setup again.

- With secured networks, verify that the security information is correct. If the security information is incorrect, run the wireless setup again.

- If the wireless network is working correctly, try accessing other computers on the wireless network. If the network has Internet access, try connecting to the Internet over a wireless connection.

- Verify that the encryption method (AES or TKIP) is the same for the printer as it is for the wireless access point (on networks using WPA security).

- Verify that the printer is within the range of the wireless network. For most networks, the printer must be within 30 m (100 ft) of the wireless access point (wireless router).

- Verify that obstacles do not block the wireless signal. Remove any large metal objects between the access point and the printer. Make sure poles, walls, or support columns containing metal or concrete do not separate the printer and wireless access point.

- Verify that the printer is located away from electronic devices that might interfere with the wireless signal. Many devices can interfere with the wireless signal including motors, cordless phones, security system cameras, other wireless networks, and some Bluetooth devices.

- Verify that the print driver is installed on the computer.

- Verify that you have selected the correct printer port.

- Verify that the computer and printer connect to the same wireless network.

- For OS X, verify that the wireless router supports Bonjour.

## The printer does not print after the wireless configuration completes

1. Make sure that the printer is turned on and in the ready state.

2. Turn off any third-party firewalls on your computer.

3. Make sure that the wireless network is working correctly.

4. Make sure that your computer is working correctly. If necessary, restart the computer.

5. Verify that you can open the printer HP Embedded Web Server from a computer on the network.

## The printer does not print, and the computer has a third-party firewall installed

1. Update the firewall with the most recent update available from the manufacturer.

2. If programs request firewall access when you install the printer or try to print, make sure you allow the programs to run.

3. Temporarily turn off the firewall, and then install the wireless printer on the computer. Enable the firewall when you have completed the wireless installation.

## The wireless connection does not work after moving the wireless router or printer

1. Make sure that the router or printer connects to the same network that your computer connects to.

2. Print a configuration page.

3. Compare the service set identifier (SSID) on the configuration page to the SSID in the printer configuration for the computer.

4. If the numbers are not the same, the devices are not connecting to the same network. Reconfigure the wireless setup for the printer.

## Cannot connect more computers to the wireless printer

1. Make sure that the other computers are within the wireless range and that no obstacles block the signal. For most networks, the wireless range is within 30 m (100 ft) of the wireless access point.

2. Make sure that the printer is turned on and in the ready state.

3. Make sure there are not more than 5 concurrent Wi-Fi Direct users.

4. Turn off any third-party firewalls on your computer.

5. Make sure that the wireless network is working correctly.

6. Make sure that your computer is working correctly. If necessary, restart the computer.

## The wireless printer loses communication when connected to a VPN

● Typically, you cannot connect to a VPN and other networks at the same time.

## The network does not appear in the wireless networks list

● Make sure the wireless router is turned on and has power.

● The network might be hidden. However, you can still connect to a hidden network.

## The wireless network is not functioning

1. Make sure that the network cable is not connected.

2. To verify if the network has lost communication, try connecting other devices to the network.

3. Test network communication by pinging the network.

   a. Open a command-line prompt on your computer.

      - For Windows, click **Start**, click **Run**, type `cmd`, and then press Enter.

      - For OS X, go to **Applications**, then **Utilities**, and open **Terminal**.

   b. Type `ping` followed by the router IP address.

   c. If the window displays round-trip times, the network is working.

4. Make sure that the router or printer connects to the same network that the computer connects to.

   a. Print a configuration page.

   b. Compare the service set identifier (SSID) on the configuration report to the SSID in the printer configuration for the computer.

   c. If the numbers are not the same, the devices are not connecting to the same network. Reconfigure the wireless setup for the printer.

## Perform a wireless network diagnostic test

From the printer control panel, you can run a diagnostic test that provides information about the wireless network settings.

1. Open the HP Embedded Web Server (EWS):

   a. Print a configuration page to determine the IP address or host name.

      i. Press and hold the Resume [ 🗎 ] button until the Ready ↻ light begins blinking.

      ii. Release the Resume [ 🗎 ] button.

   b. Open a web browser, and in the address line, type the IP address or host name exactly as it displays on the printer configuration page. Press the Enter key on the computer keyboard. The EWS opens.

      https://10.10.XXXXX/

      📝 NOTE:  if the web browser displays a message indicating that accessing the website might not be safe, select the option to continue to the website. Accessing this website will not harm the computer.

2. Select the **Networking** tab.

3. On the **Wireless Configuration** page, verify that the On option is selected.

4. Click the **Print Test Report** button to print a test page that shows test results.

## Reduce interference on a wireless network

The following tips can reduce interference in a wireless network:

- Keep the wireless devices away from large metal objects, such as filing cabinets, and other electromagnetic devices, such as microwaves and cordless telephones. These objects can disrupt radio signals.

- Keep the wireless devices away from large masonry structures and other building structures. These objects can absorb radio waves and lower signal strength.

- Position the wireless router in a central location in line of sight with the wireless printers on the network.

# Solve wireless network problems (M227, M230)

- Introduction
- Wireless connectivity checklist
- The printer does not print after the wireless configuration completes
- The printer does not print, and the computer has a third-party firewall installed
- The wireless connection does not work after moving the wireless router or printer
- Cannot connect more computers to the wireless printer
- The wireless printer loses communication when connected to a VPN
- The network does not appear in the wireless networks list
- The wireless network is not functioning
- Perform a wireless network diagnostic test
- Reduce interference on a wireless network

## Introduction

Use the troubleshooting information to help resolve issues.

**NOTE:** To determine whether HP NFC and Wi-Fi Direct printing are enabled on your printer, print a configuration page from the printer control panel.

## Wireless connectivity checklist

- Verify that the network cable is not connected.

- Verify that the printer and the wireless router are turned on and have power. Also make sure that the wireless radio in the printer is turned on.

- Verify that the service set identifier (SSID) is correct. Print a configuration page to determine the SSID. If you are not sure the SSID is correct, run the wireless setup again.

- With secured networks, verify that the security information is correct. If the security information is incorrect, run the wireless setup again.

- If the wireless network is working correctly, try accessing other computers on the wireless network. If the network has Internet access, try connecting to the Internet over a wireless connection.

- Verify that the encryption method (AES or TKIP) is the same for the printer as it is for the wireless access point (on networks using WPA security).

- Verify that the printer is within the range of the wireless network. For most networks, the printer must be within 30 m (100 ft) of the wireless access point (wireless router).

- Verify that obstacles do not block the wireless signal. Remove any large metal objects between the access point and the printer. Make sure poles, walls, or support columns containing metal or concrete do not separate the printer and wireless access point.

- Verify that the printer is located away from electronic devices that might interfere with the wireless signal. Many devices can interfere with the wireless signal including motors, cordless phones, security system cameras, other wireless networks, and some Bluetooth devices.

- Verify that the print driver is installed on the computer.

- Verify that you have selected the correct printer port.

- Verify that the computer and printer connect to the same wireless network.

- For OS X, verify that the wireless router supports Bonjour.

## The printer does not print after the wireless configuration completes

1. Make sure that the printer is turned on and in the ready state.

2. Turn off any third-party firewalls on your computer.

3. Make sure that the wireless network is working correctly.

4. Make sure that your computer is working correctly. If necessary, restart the computer.

5. Verify that you can open the printer HP Embedded Web Server from a computer on the network.

## The printer does not print, and the computer has a third-party firewall installed

1. Update the firewall with the most recent update available from the manufacturer.

2. If programs request firewall access when you install the printer or try to print, make sure you allow the programs to run.

3. Temporarily turn off the firewall, and then install the wireless printer on the computer. Enable the firewall when you have completed the wireless installation.

## The wireless connection does not work after moving the wireless router or printer

1. Make sure that the router or printer connects to the same network that your computer connects to.

2. Print a configuration page.

3. Compare the service set identifier (SSID) on the configuration page to the SSID in the printer configuration for the computer.

4. If the numbers are not the same, the devices are not connecting to the same network. Reconfigure the wireless setup for the printer.

## Cannot connect more computers to the wireless printer

1. Make sure that the other computers are within the wireless range and that no obstacles block the signal. For most networks, the wireless range is within 30 m (100 ft) of the wireless access point.

2. Make sure that the printer is turned on and in the ready state.

3. Make sure there are not more than 5 concurrent Wi-Fi Direct users.

4. Turn off any third-party firewalls on your computer.

5. Make sure that the wireless network is working correctly.

6. Make sure that your computer is working correctly. If necessary, restart the computer.

## The wireless printer loses communication when connected to a VPN

- Typically, you cannot connect to a VPN and other networks at the same time.

## The network does not appear in the wireless networks list

- Make sure the wireless router is turned on and has power.

- The network might be hidden. However, you can still connect to a hidden network.

## The wireless network is not functioning

1. Make sure that the network cable is not connected.

2. To verify if the network has lost communication, try connecting other devices to the network.

3. Test network communication by pinging the network.

    a. Open a command-line prompt on your computer.

    - For Windows, click **Start**, click **Run**, type `cmd`, and then press Enter.

    - For OS X, go to **Applications**, then **Utilities**, and open **Terminal**.

    b. Type `ping` followed by the router IP address.

    c. If the window displays round-trip times, the network is working.

4. Make sure that the router or printer connects to the same network that the computer connects to.

    a. Print a configuration page.

    b. Compare the service set identifier (SSID) on the configuration report to the SSID in the printer configuration for the computer.

    c. If the numbers are not the same, the devices are not connecting to the same network. Reconfigure the wireless setup for the printer.

## Perform a wireless network diagnostic test

From the printer control panel, you can run a diagnostic test that provides information about the wireless network settings.

📝 **NOTE:** The steps vary according to the type of control panel.
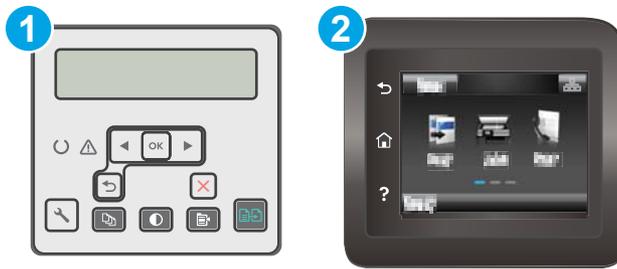
| 1 | 2-line control panel |
|---|---|
| 2 | Touchscreen control panel |

### 2-line control panels

1. On the printer control panel, press the Setup 🔧 button.

2. Open the following menus:

   - **Self Diagnostics**

   - **Run Wireless Test**

3. Press the OK button to start the test. The printer prints a test page that shows test results.

### Touchscreen control panels

1. From the Home screen on the printer control panel, swipe until the Setup menu displays. Touch the Setup ⚙ icon to open the menu.

2. Scroll to and select Self Diagnostics.

3. Select Run Wireless Test to start the test. The printer prints a test page that shows test results.

## Reduce interference on a wireless network

The following tips can reduce interference in a wireless network:

- Keep the wireless devices away from large metal objects, such as filing cabinets, and other electromagnetic devices, such as microwaves and cordless telephones. These objects can disrupt radio signals.

- Keep the wireless devices away from large masonry structures and other building structures. These objects can absorb radio waves and lower signal strength.

- Position the wireless router in a central location in line of sight with the wireless printers on the network.

# Service mode functions

## Service menu (M227)

The Service menu is used to adjust print settings, restore factory default settings, and clean the print paper path.

### 2-line control panels

1. From the printer control panel, press the OK button, and then press the right ▶ button until the **Service** menu item displays.

2. Press the OK button to open the **Service** menu.

### Touchscreen control panels

1. From the Home screen on the printer control panel, touch the Setup ⚙ button.

2. Touch the Service button.

The following menu items appear in the Service menu. Items that have an asterisk (*) indicate the factory default setting.

Table 2-47  Service menu

| Menu item | Sub-menu item | Sub-menu item | Description |
|---|---|---|---|
| Fax Service | Clear Saved Faxes | | Clears all faxes in memory. |
| | Run Fax Test (fax models only) | | Performs a fax test to verify that the phone cord is connected to the correct outlet and that there is a signal on the phone line. A fax test report is printed indicating the results. |
| | Print T.30 Trace | Now | Prints or schedules a report that is used to troubleshoot fax transmission issues. |
| | | Never* | |
| | | If Error | |
| | | At End of Call | |
| | Error Correction | On* | The error correction mode allows the sending device to re-transmit data if it detects an error signal. |
| | | Off | |
| | Fax Service Log (fax models only) | | The fax service log prints out the last 40 entries in the fax log. |
| Cleaning Page | | | Cleans the printer when specks or other marks appear on printed output. The cleaning process removes dust and excess toner from the paper path.<br><br>When selected, the printer prompts you to load plain Letter or A4 paper in Tray 1. Touch the OK button to begin the cleaning process. Wait until the process completes. Discard the page that prints. |

**Table 2-47** Service menu (continued)

| Menu item | Sub-menu item | Sub-menu item | Description |
|---|---|---|---|
| USB Speed | High*<br><br>Full | | Sets the USB speed for the USB connection to the computer. For the printer to actually operate at high speed, it must have high speed enabled and be connected to an EHCI host controller that is also operating at high speed. This menu item does not reflect the current operating speed of the printer. |
| Less Paper Curl | On<br><br>Off* | | When printed pages are consistently curled, this option sets the printer to a mode that reduces curl. |
| Archive Print | On<br><br>Off* | | When printing pages that will be stored for a long time, this option sets the printer to a mode that reduces toner smearing and dusting. |
| Firmware Datecode | | | Displays the current firmware datecode. |
| Restore Defaults | | | Sets all settings to the factory default values. |
| Signature Check | Cancel if Invalid*<br><br>Prompt if Invalid | | Validates HP firmware downloads. |
| LaserJet Update | Check for Updates Now | Install Now<br><br>Remind Me Later<br><br>Skip this Update | Check for printer firmware updates. |
| | Manage Updates | Allow Downgrade<br><br>Check Automatically<br><br>Prompt Before Install<br><br>Allow Updates | Manage how the printer handles firmware updates. |
| SMTP Comm. Report | | | Prints the SMTP Communication Report, which contains the SMTP communication to and from the printer from the last Scan to E-mail job. |

# Secondary service menu

Use the secondary service menu to print service-related reports and to run special tests. Customers do not have access to this menu.

▲ Open the secondary service menu.

### LED control panels

📝 **NOTE:** HP Device Toolbox is software used to connect to the HP Embedded Web Server when the printer is connected to a computer via USB. It is available only if a full installation was performed when the printer was installed on a computer. Depending on how the printer is connected, some features might not be available.

The HP Embedded Web Server is not accessible beyond the network firewall.

a. Open the HP Printer Assistant.

- **Windows 8.1**: Click the down arrow in lower left corner of the **Start** screen, and then select the printer name.

- **Windows 8**: Right-click an empty area on the **Start** screen, click **All Apps** on the app bar, and then select the printer name.

- **Windows** 7, **Windows Vista**, and **Windows XP**: From the computer desktop, click **Start**, select **All Programs**, click **HP**, click the folder for the printer, select the icon with the printer's name, and then open **HP Printer Assistant**.

b. In the **HP Printer Assistant**, select **Print**, and then select **HP Device Toolbox**.

### 2-line control panels

a. From the printer control panel, press the Setup 🔧 button.

b. Simultaneously press the OK button and the Cancel ✖ button. The 2ndary Service menu item should be at the top of the list.

c. Use the left and right arrow buttons to navigate through the menu. When finished, press the Cancel ✖ button to close the menu.

### Touchscreen control panel

a. From the Home screen on the printer control panel, touch the Setup ⚙ button.

b. Touch the space between the Home 🏠 and the Help ❓ button.

c. Touch the Back ↩ button.

d. Touch the Setup ⚙ button.

e. Touch 2ndary Service (at the top of the list) to access the menu.

The following menu items appear in the secondary service menu:

**Table 2-48**  Secondary service menu

| Menu item | Sub-menu item | Description |
|---|---|---|
| Default Settings | Self-managed | This item optimizes open security settings with a proactive configuration for a self-managed environment. |
| | IT-managed | This item optimizes centralized administration of a group of printers with enhanced security settings in an information technology (IT) administrator managed environment. |
| Location | A list of available locations displays | This item sets certain printer parameters that are dependent on the location, such as the default paper size and the symbol set. |
| | | Scroll to the appropriate location and select Yes to set the location. The printer automatically restarts after you change the location. |
| Line Frequency | 50 hz | This item allows the refresh rate of the touchscreen control panel to be changed. |
| | 60 hz | |
| LED test<br><br>(2-line control panels only) | | **2-line control panels**: This test verifies that the LEDs on the control-panel display function correctly.<br><br>At the beginning of the test, each of the LEDs turns on one-at-a-time. Press the OK button to continue to the next LED. |
| Display test | | **2-line control panels**: This test begins by testing the pixels on each line. Then, each of the 255 characters is displayed in groups of 16. Press the OK button to continue to the next group of 16 characters. You can cancel the test at any time by touching the Cancel button.<br><br>**Touchscreen control panels**: The test sets the display colors. Touch the OK button to confirm each setting. |
| Button test | | This test verifies that the control-panel buttons function correctly. The display prompts you to touch each button. |
| CP FW Version | | This item displays the current control panel firmware version. |
| NAND Reset | | This item resets the NAND memory. |
| Permanent Config.<br><br>**IMPORTANT:**  This item affects the printer NVRAM memory and should only be used by authorized HP service personnel. | Allow<br><br>Prevent* | This item is used only by authorized third-party vendors for custom printer setup. When Allow is selected, the printer is set as a non-HP printer.<br><br>**CAUTION:**  Do not select the Allow option unless requested to do so by an authorized third-party vendor. |
| Auto-On / Auto-Off | Enabled*<br><br>Disabled | Use this item to enable or disable the auto-on / auto-off function. |
| Service Reports | Cont. Self-Test | This item prints a continuous configuration page. |
| | Error report | This item prints an error report that contains the last 5 instances of **49.xx.yy** or **79.xx.yy** errors. |
| | DS Fax | Prints the Fax Data Store report. |
| Scan Calibration | | This item calibrates the scanner assembly. |
| Speed | High*<br><br>Low | Use this item to toggle between high and low speed. |

Table 2-48 Secondary service menu (continued)

| Menu item | Sub-menu item | Description |
|---|---|---|
| Fax Settings | | Use this item to access the fax settings menu and choose from the following test and troubleshooting options: |
| | | REINIT FFS |
| | | PBX Ring Detect |
| | | Monitor Test |
| | | Transmit Test |
| | | Extend T30 Trace |
| | | LineMonitor AlwaysON |
| | | R/W Parameter |
| 802.11n | On* | This item enables or disables the wireless 802.11n functionality. |
| (Wireless models only) | Off | |

# Printer resets

## Restore the factory-set defaults (M203)

Restoring the factory-set defaults returns all of the printer and network settings to the factory defaults. It will not reset the page count, tray size, or language. To restore the printer to the factory-default settings, follow these steps.

⚠ **CAUTION:** Restoring the factory-set defaults returns all of the settings to the factory defaults, and it also deletes any pages that are stored in the memory.

1. Open the HP Embedded Web Server (EWS):

   ### Direct-connected printers

   a. Open the HP Printer Assistant.

   - **Windows 8.1**: Click the down arrow in lower left corner of the **Start** screen, and then select the printer name.

   - **Windows 8**: Right-click an empty area on the **Start** screen, click **All Apps** on the app bar, and then select the printer name.

   - **Windows 7, Windows Vista, and Windows XP**: From the computer desktop, click **Start**, select **All Programs**, click **HP**, click the folder for the printer, select the icon with the printer's name, and then open **HP Printer Assistant**.

   b. In the HP Printer Assistant, select **Print**, and then select **HP Device Toolbox**.

   ### Network-connected printers

   a. Print a configuration page to determine the IP address or host name.

i. Press and hold the Resume [ 🖹 ] button until the Ready ⟳ light begins blinking.

ii. Release the Resume [ 🖹 ] button.

**b.** Open a web browser, and in the address line, type the IP address or host name exactly as it displays on the printer configuration page. Press the Enter key on the computer keyboard. The EWS opens.

    🌐 https://10.10.XX.XXX/

> **NOTE:** if the web browser displays a message indicating that accessing the website might not be safe, select the option to continue to the website. Accessing this website will not harm the computer.

On the **System** tab, click **Save and Restore** in the left navigation pane.

**2.** On the **System** tab, click **Save and Restore** in the left navigation pane.

**3.** In the **Restore Defaults** area, click the **Restore defaults** button.

The printer automatically restarts.

## Restore the factory-set defaults (M227)

Restoring the factory-set defaults returns all of the printer and network settings to the factory defaults. It will not reset the page count, or tray size. To restore the printer to the factory-default settings, follow these steps.

> **⚠ CAUTION:** Restoring the factory-set defaults returns all of the settings to the factory defaults, and it also deletes any pages that are stored in the memory.

> **NOTE:** The steps vary according to the type of control panel.
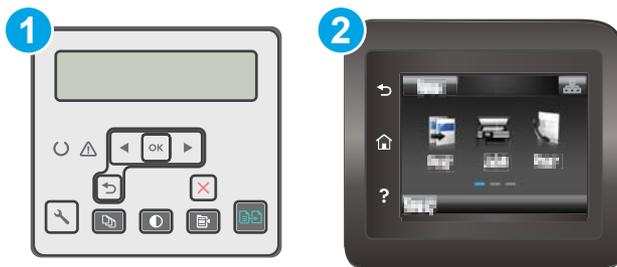


| 1 | 2-line control panel |
| 2 | Touchscreen control panel |

**1.** **2-line control panels:** On the printer control panel, press the 🔧 button.

    **Touchscreen control panels:** From the Home screen on the printer control panel, swipe until the Setup menu displays. Touch the Setup 🔧 icon to open the menu.

**2.** Open the following menus:

- Service

- Restore Defaults

3. Touch or press the OK button.

   The printer automatically restarts.

## NVRAM initialization

Performing an NVRAM initialization resets the following settings and information:

- All menu settings are reset to factory default values.

- All localization settings, including language and country/region, are reset.

⚠ CAUTION:   All onboard network settings are also reset. Be sure to print a configuration page before restoring defaults. Make note of the IP address that is listed on the configuration page. You might need to restore the IP address after an NVRAM initialization.

After performing an NVRAM initialization, reconfigure any computers that print to this printer. Uninstall and then reinstall the printer software on the computers.

### LED control panels

1. Press and hold down the Cancel ✕ button for about 50 seconds.

2. When the green LED illuminates, the NVRAM initialization is complete.

### 2-line control panels

1. Turn the printer off.

2. Press and hold down the right-arrow ▶ button, and then turn the printer on.

3. When the **Permanent Storage Init.** message appears on the display, release the right-arrow ▶ button.

   The NVRAM initialization starts. When the printer has finished the NVRAM initialization, it returns to the Ready state.

### Touchscreen control panels

1. Turn the printer off.

2. Touch and hold the lower-right quadrant of the touchscreen, and then turn the printer on.

3. When the **Permanent Storage Init.** message appears on the display, release the touchscreen.

   The NVRAM initialization starts. When the printer has finished the NVRAM initialization, it returns to the Ready state.

## Super NVRAM initialization

⚠ WARNING!   A super NVRAM initialization resets the printer page count and removes the formatter association to the printer serial number. The lack of formatter association to the printer serial number might affect the printer's warranty entitlement. Also, the printer will not be allowed to connect to the HP cloud.

A super NVRAM initialization restores the printer to the "generic printer mode" in which it arrived from the factory. This means that you will have to reset the language and country/region settings when the printer starts after the initialization. A super NVRAM initialization erases all data stored in the protected and unprotected NVRAM sections.

1.  Turn the printer off.

2.  **LED control panels**: Press and hold down the Cancel ✕ button for about 60 seconds until the green LED illuminates.

    **2-line control panels**: Press and hold the left-arrow button ◀ and the Cancel ✕ button simultaneously. Keep the buttons depressed as you turn the printer on.

    **Touchscreen control panels**: Turn the printer on, and then, as soon as the HP logo appears, press the lower left quadrant of the control panel.

3.  When the **Permanent Storage Init.** message appears on the display, release the buttons (2-line control panels) or touchscreen.

    The super NVRAM initialization starts.

4.  When the super NVRAM initialization has been completed, the printer enters the generic printer mode.

# Solve fax problems (fax models only)

## Checklist for solving fax problems

- Several possible fixes are available. After each recommended action, retry faxing to see if the problem is resolved.

- For best results during fax problem solving, make sure the line from the printer is connected directly to the wall phone port. Disconnect all other devices that are connected to the printer.

1. Verify that the telephone cord is connected to the correct port on the back of the printer.

2. Check the phone line by using the fax test:

   ### 2-line control panels

   a. On the printer control panel, press the Setup ⚒ button.

   b. Select Service, and then select Run Fax Test. The printer prints a fax test report.

   ### Touchscreen control panels

   a. From the Home screen on the printer control panel, touch the Setup ⚙ button.

   b. Open the following menus:

      - Service

      - Fax Service

   c. Select the Run Fax Test option. The printer prints a fax test report.

   The report contains the following possible results:

   - **Pass**: The report contains all of the current fax settings for review.

   - **Fail**: The report indicates the nature of the error and contains suggestions for how to resolve the issue.

3. Verify that the printer firmware is current:

   a. Print a configuration page from the control panel Reports menu to obtain the current firmware date code.

   b. Go to www.hp.com/support, select your country/region language, click **Get software and drivers** link, type the printer name in the search field, press the ENTER button, and then select the printer from the list of search results.

   c. Select the operating system.

   d. Under the **Firmware** section, locate the **Firmware Update Utility**.

   > 📝 NOTE: Make sure to use the firmware update utility that is specific to the printer model.

   e. Click **Download**, click **Run**, and then click **Run** again.

   f. When the utility launches, select the printer from the drop-down list, and then click **Send Firmware**.

> 📝 **NOTE:** To print a configuration page to verify the installed firmware version before or after the update process, click **Print Config**.

g. Follow the on-screen instructions to complete the installation, and then click the **Exit** button to close the utility.

4. Verify that the fax was set up when the printer software was installed.

From the computer, in the HP program folder, run the Fax Setup Utility.

5. Verify that the telephone service supports analog fax.

- If using ISDN or digital PBX, contact your service provider for information about configuring to an analog fax line.

- If using a VoIP service, change the Fax Speed setting to Slow (V.29) from the control panel. Ask if your service provider supports fax and for the recommended fax modem speed. Some companies might require an adapter.

- If you are using a DSL service, make sure that a filter is included on the phone-line connection to the printer. Contact the DSL service provider, or purchase a DSL filter if you do not have one. If a DSL filter is installed, try another filter because filters can be defective.

## Solve general fax problems

- Faxes are sending slowly

- Print quality of a photo is poor or prints as a gray box.

- Fax quality is poor

- Fax cuts off or prints on two pages

- You touched the Cancel ✕ button to cancel a fax, but the fax was still sent

- No fax address book button displays

- Not able to locate the fax settings in HP Web Jetadmin

- The header is appended to the top of the page when the overlay option is enabled

- A mix of names and numbers is in the recipients box

- A one-page fax prints as two pages

- A document stops in the document feeder in the middle of faxing

- The volume for sounds coming from the fax accessory is too high or too low

- Use fax over VoIP networks

### Faxes are sending slowly

The printer is experiencing poor phone line quality.

- Retry sending the fax when the line conditions have improved.

- Check with the phone service provider that the line supports fax.

- Turn off the Error Correction setting.

    a. Open the Setup menu.

    b. Open the Service menu.

    c. Open the Fax Service menu.

    d. Open the Error Correction menu.

    e. Select the Off setting.

**NOTE:** This can reduce image quality.

- Use white paper for the original. Do not use colors such as gray, yellow, or pink.

- Increase the Fax Speed setting.

    a. Open the Setup menu.

    b. Open the Fax Setup menu.

    c. Open the Advanced Setup menu.

    d. Open the Fax Speed menu.

    e. Select the correct setting.

- Divide large fax jobs into smaller sections, and then fax them individually.

- Change the fax settings on the control panel to a lower resolution.

    a. Open the Setup menu.

    b. Open the Fax Setup menu.

    c. Open the Advanced Setup menu.

    d. Open the Fax Resolution menu.

    e. Select the correct setting.

## Print quality of a photo is poor or prints as a gray box.

You are using the wrong page-content setting or the wrong resolution setting.

Try setting the Optimize Text/Picture option to the Photo setting.

## Fax quality is poor

Fax is blurry or light.

- Increase fax resolution when sending faxes. Resolution does not affect received faxes.

    a. Open the Setup menu.

    b. Open the Fax Setup menu.

    c. Open the Advanced Setup menu.

    d. Open the Fax Resolution menu.

    e. Select the correct setting.

**NOTE:** Increasing resolution slows transmission speed.

- Turn on the Error Correction setting from the control panel.

  a. Open the Setup menu.

  b. Open the Service menu.

  c. Open the Fax Service menu.

  d. Open the Error Correction menu.

  e. Select the On setting.

- Check the toner cartridges and replace if necessary.

- Ask the sender to darken the contrast setting on the sending fax machine, and then resend the fax.

## Fax cuts off or prints on two pages

- Set the Default Paper Size setting. Faxes print on a single size of paper based on the Default Paper Size settings.

  a. Open the Setup menu.

  b. Open the System Setup menu.

  c. Open the Paper Setup menu.

  d. Open the Default Paper Size menu.

  e. Select the correct setting.

- Set the paper type and size for the tray used for faxes.

- Turn on the Fit to Page setting to print longer length faxes on letter or A4 size paper.

  a. Open the Setup menu.

  b. Open the Fax Setup menu.

  c. Open the Advanced Setup menu.

  d. Open the Fit to Page menu.

  e. Select the On setting.

**NOTE:** If the Fit to Page setting is off and the Default Paper Size setting is set to letter, a legal size original prints on two pages.

## You touched the Cancel ✕ button to cancel a fax, but the fax was still sent

If the job is too far along in the sending process, you cannot cancel the job.

This is normal operation.

## No fax address book button displays

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.

## Not able to locate the fax settings in HP Web Jetadmin

Fax settings in HP Web Jetadmin are located under the status page drop-down menu.

Select **Digital Sending and Fax** from the drop-down menu.

## The header is appended to the top of the page when the overlay option is enabled

For all forwarded faxes, the printer appends the overlay header to the top of a page.

This is normal operation.

## A mix of names and numbers is in the recipients box

Names and numbers can both display, depending on where they are from. The fax address book lists names, and all other databases list numbers.

This is normal operation.

## A 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.

To print a one page fax on one page, set the overlay header to overlay mode, or adjust the fit-to-page setting.

## A document stops in the document feeder in the middle of faxing

A jam is in the document feeder.

Clear the jam, and send the fax again.

## The volume for sounds coming from the fax accessory is too high or too low

The volume setting needs to be adjusted.

Adjust the volume in the Fax Send Settings menu and the Fax Receive Settings menu.

## Use fax over VoIP networks

VoIP technology converts the analog phone signal into digital bits. These are then assembled into packets which travel on the Internet. The packets are converted and transmitted back to analog signals at or near the destination.

Transmission of information on the Internet is digital instead of analog. Therefore, there are different constraints on the fax transmission that might require different fax settings than the analog Public Switched Telephone Network (PSTN). Fax is very dependent upon timing and signal quality, so a fax transmission is more sensitive to a VoIP environment.

### The following are suggested changes in settings for the printer when it is connected to a VoIP service:

- Begin with the fax speed set to Medium (V.17). This might be helpful in environments where a new VoIP network is in use.

- If numerous errors or retries occur with the fax speed set to Fast, set it to Medium (V.17).

- If errors and retries persist, set the fax speed to Slow (V.29) because some VoIP systems cannot handle the higher signal rates associated with fax.

- In rare cases, if errors persist, turn off ECM on the printer. The image quality might decrease. Ensure that the image quality is acceptable with ECM off before using this setting.

- If the preceding setting changes have not improved the VoIP fax reliability, contact your VoIP provider for help.

# Solve problems receiving faxes

**Table 2-49** Solve problems receiving faxes

| Problem | Cause | Solution |
|---|---|---|
| The fax does not respond. | The fax has a dedicated phone line. | • Set the Answer Mode option to the Automatic setting from the control panel.<br><br>   **a.** Open the Setup menu.<br><br>   **b.** Open the Fax Setup menu.<br><br>   **c.** Open the Basic Setup menu.<br><br>   **d.** Open the Answer Mode menu.<br><br>   **e.** Select the Automatic setting. |
| | An answering machine is connected to the printer. | • Set the Answer Mode option to the TAM setting and connect the answering machine to the "telephone" port.<br><br>   **a.** Open the Setup menu.<br><br>   **b.** Open the Fax Setup menu.<br><br>   **c.** Open the Basic Setup menu.<br><br>   **d.** Open the Answer Mode menu.<br><br>   **e.** Select the TAM setting.<br><br>   If the TAM setting is unavailable, set the Answer Mode option to the Automatic setting.<br><br>• Set the Rings to Answer setting to at least one ring more than the number of rings for which the answering machine is set.<br><br>   **a.** Open the Setup menu.<br><br>   **b.** Open the Fax Setup menu.<br><br>   **c.** Open the Basic Setup menu.<br><br>   **d.** Open the Rings to Answer menu.<br><br>   **e.** Select the correct setting.<br><br>• Connect the answering machine to the "telephone" port.<br><br>• If the printer has a telephone handset connected, set the Answer Mode option to the Fax/Tel setting to route calls to the correct device. When detecting a |

Table 2-49 Solve problems receiving faxes (continued)

| Problem | Cause | Solution |
|---|---|---|
| | | voice call, the printer generates a ring tone that alerts you to pick up the telephone handset. |
| | | **a.** Open the Setup menu. |
| | | **b.** Open the Fax Setup menu. |
| | | **c.** Open the Basic Setup menu. |
| | | **d.** Open the Answer Mode menu. |
| | | **e.** Select the Fax/Tel setting. |
| | A handset is connected to the printer. | • Make sure the phone is hung up. |
| | | • Change the Answer Mode option to match the printer setup. |
| | | **a.** Open the Setup menu. |
| | | **b.** Open the Fax Setup menu. |
| | | **c.** Open the Basic Setup menu. |
| | | **d.** Open the Answer Mode menu. |
| | | **e.** Select the setting that matches the printer setup. |
| | | Set the Answer Mode option to the Fax/Tel setting to automatically receive faxes. The Fax/Tel setting automatically detects whether the incoming transmission is a fax or a voice call and routes the call to the appropriate device. |
| | The Answer Mode setting is set to the Manual setting. | • Touch the Start Fax button on the printer control panel. |
| | Voice mail is available on the fax line. | • Add a distinctive ring service to your telephone line and change the Distinctive Ring setting on the printer to match the ring pattern supplied by the telephone company. Contact your telephone company for information. |
| | | **a.** Open the Setup menu. |
| | | **b.** Open the Fax Setup menu. |
| | | **c.** Open the Basic Setup menu. |
| | | **d.** Open the Distinctive Ring menu. |
| | | **e.** Select the correct setting. |
| | | • Buy a dedicated line for faxing. |
| | | • Set the Answer Mode option to the Manual setting. |
| | | **a.** Open the Setup menu. |
| | | **b.** Open the Fax Setup menu. |
| | | **c.** Open the Basic Setup menu. |

Table 2-49 Solve problems receiving faxes (continued)

| Problem | Cause | Solution |
|---------|-------|----------|
| | | **d.** Open the Answer Mode menu. |
| | | **e.** Select the Manual setting. |
| | | **NOTE:** You must be present to receive faxes. |
| | The printer is connected to a DSL phone service. | • Check the installation and features. A DSL modem requires a high-pass filter on the phone line connection to the printer. Contact your DSL service provider for a filter or buy a filter. |
| | | • Verify that the filter is connected. |
| | | • Replace the existing filter to make sure that it is not defective. |
| | The printer uses a fax over IP or VoIP phone service. | • Set the Fax Speed option to the Slow(V.29) or Medium(V.17) setting. |
| | |     **a.** Open the Setup menu. |
| | |     **b.** Open the Fax Setup menu. |
| | |     **c.** Open the Advanced Setup menu. |
| | |     **d.** Open the Fax Speed menu. |
| | |     **e.** Select the correct setting. |
| | | • Contact your service provider to make sure that fax is supported and for a recommended fax speed setting. Some companies might require an adapter. |
| Sender receives a busy signal | A handset is connected to the printer. | • Make sure the phone is hung up. |
| | | • Change the Answer Mode option to match the printer setup. |
| | |     **a.** Open the Setup menu. |
| | |     **b.** Open the Fax Setup menu. |
| | |     **c.** Open the Basic Setup menu. |
| | |     **d.** Open the Answer Mode menu. |
| | |     **e.** Select the setting that matches the printer setup. |
| | |         Set the Answer Mode option to the Fax/Tel setting to automatically receive faxes. The Fax/Tel setting automatically detects whether the incoming transmission is a fax or a voice call and routes the call to the appropriate device. |
| | A phone line splitter is being used. | • If you are using a phone line splitter, remove the splitter and set up the phone as a downstream phone. |
| | | • Make sure the phone is hung up. |
| | | • Make sure the phone is not being used for a voice call when faxing. |

Table 2-49  Solve problems receiving faxes (continued)

| Problem | Cause | Solution |
|---|---|---|
| No dial tone | A phone line splitter is being used. | • If using a phone line splitter, remove the phone line splitter and set up the phone as a downstream phone. |
| | The phone cable is not connected correctly to the printer. | Verify that the telephone cord is plugged into the correct port on the back of the printer. |
| Printer rings once, but does not answer | An answering machine or voice messaging service is sharing the phone line with the printer. | • **Answering machine**: Set the Answer Mode option to the TAM setting and connect the answering machine to the "telephone" port.<br><br>• **Voice mail**: Add a distinctive ring service to your telephone line and change the Distinctive Ring setting on the printer to match the ring pattern supplied by the telephone company. Contact your telephone company for information. |
| | The Distinctive Ring setting is incorrectly set. | 1. Open the Setup menu.<br>2. Open the Fax Setup menu.<br>3. Open the Basic Setup menu.<br>4. Open the Distinctive Ring menu.<br>5. Select the correct setting. |
| | The sender number is blocked, and the printer is ringing once before blocking the fax job. | This is normal printer behavior. |
| Printer continues to ring, but does not answer | The Answer Mode setting is set to the Manual setting. | Touch the Start Fax button on the printer control panel. |
| | The Rings to Answer setting is incorrectly set. | 1. Open the Setup menu.<br>2. Open the Fax Setup menu.<br>3. Open the Basic Setup menu.<br>4. Open the Rings to Answer menu.<br>5. Select the correct setting. |
| | The Distinctive Ring setting is incorrectly set. | 1. Open the Setup menu.<br>2. Open the Fax Setup menu.<br>3. Open the Basic Setup menu.<br>4. Open the Distinctive Ring menu.<br>5. Select the correct setting. |
| Printer does not ring, no fax received | The phone cable is not connected correctly to the printer. | Verify that the telephone cord is plugged into the correct port on the back of the printer. |

Table 2-49  Solve problems receiving faxes (continued)

| Problem | Cause | Solution |
|---|---|---|
| Printer answers, but fax does not print | The Private Receive feature is on | • When the Private Receive feature is activated, received faxes are stored in memory. A password is required to print the stored faxes.<br><br>• Enter the password to print the fax. If you do not know the password, contact the printer administrator.<br><br>NOTE:  Memory errors might occur if the faxes are not printed. The printer will not answer if the memory is full. |
|  | The Private Receive option is enabled. | When the Private Receive feature is activated, received faxes are stored in memory. A password is required to print the stored faxes.<br><br>Enter the password to print the fax. If you do not know the password, contact the printer administrator. |
|  | The printer is out of paper. | Verify that paper is loaded. |
| Header information prints on top of the fax information | For all forwarded faxes, the printer appends the overlay header to the top of a page. | This is normal printer behavior. |

# Solve problems sending faxes

Table 2-50  Solve problems sending faxes

| Problem | Cause | Solution |
|---|---|---|
| Fax does not send | The Send Fax Later option is enabled and scheduled to send the fax at a later time. | This is normal printer behavior. |
|  | The redial settings are all inactive, causing the printer to try dialing once and then stop if it encounters a busy signal, no answer, or an error. | Change the redial settings to prompt the printer to try to resend the fax automatically.<br><br>1. Open the Setup menu.<br><br>2. Open the Fax Setup menu.<br><br>3. Open the Advanced Setup menu.<br><br>4. Open the following items:<br><br>— Redial if Busy<br><br>— Redial if No Answer<br><br>— Redial if Comm. Error<br><br>5. Select the correct setting for each option. |
|  | Outgoing fax calls keep dialing. The printer automatically redials a fax number if the redial options are on. | This is normal printer behavior. To prevent the fax from resending, set the Redial if Busy option to 0, set the Redial if No Answer option to 0, and set the Redial if Comm. Error option to 0. |
|  | The fax number is too long. | Enter a phone number that is the proper length. |
| Fax stops while sending | The receiving fax machine might be malfunctioning. | Try sending to another fax machine. |

Table 2-50  Solve problems sending faxes (continued)

| Problem | Cause | Solution |
|---------|-------|----------|
| | The phone line might not be working. | Disconnect the printer from the phone jack, and connect a phone. Try to make a phone call to verify that the phone line is working. |
| | The phone line might be noisy or poor quality. | Try using a slower fax speed to improve the reliability of transmission. |
| | 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. |
| Sent faxes are not arriving at the receiving fax machine | The receiving fax machine is turned off or has an error condition, such as being out of paper. | Ask the recipient to make sure that the fax machine is turned on and ready to receive faxes. |
| | The receiving machine is blocking the sending machine number. | Ask the recipient to make sure that the receiving fax machine is not blocking the sending machine fax number. |

## Fax error messages on the control panel

### The No Fax Detected message displays

📝 NOTE:   This error does not always refer to a missed fax. If a voice call is made to a fax number by mistake and the caller hangs up, the **No Fax Detected** message displays on the control panel.

- Ask the sender to resend the fax.

- Make sure that the telephone cord from the printer is connected to the wall telephone jack.

- Try a different phone cord.

- Connect the printer phone cord to a jack for another phone line.

- Make sure the telephone line and phone wall jack are active by connecting a telephone and checking for a dial tone.

- Make sure that the telephone cord is connected to the "line" port on the printer.

- Check the phone line by running a fax test from the control panel.

- If the error persists, contact HP. See www.hp.com/support/ljM203 and/or www.hp.com/support/ljM227MFP or the support flyer that came in the printer box.

### The Communication error message appears

- Ask the sender to send the fax again or send at a later time when line conditions have improved.

- Disconnect the printer telephone cord from the wall, connect a telephone to the phone jack on the wall, and try making a call. Plug the printer phone cord into a jack for another phone line.

- Try a different phone cord.

- Set the Fax Speed option to the Slow(V.29) or Medium(V.17) setting.

a. Open the Setup menu.

b. Open the Fax Setup menu.

c. Open the Advanced Setup menu.

d. Open the Fax Speed menu.

e. Select the correct setting.

- Turn off the Error Correction feature to prevent automatic error correction.

📝 **NOTE:** Turning off the Error Correction feature can reduce image quality.

a. Open the Setup menu.

b. Open the Service menu.

c. Open the Fax Service menu.

d. Open the Error Correction Mode menu.

e. Select the Off setting.

- Print the Fax Activity Log report from the control panel to determine if the error occurs with a specific fax number.

a. Touch the Fax button, and then touch the Fax Menu button.

b. Open the Fax Reports menu.

c. Open the Fax Activity Log menu.

d. Select the Print Log Now option.

- If the error persists, contact HP. See www.hp.com/support/ljM203 and/or www.hp.com/support/ ljM227MFP or the support flyer that came in the printer box.

## No Dial Tone

- Make sure that the telephone cord is connected to the correct port on the printer.

- Make sure that the telephone cord from the printer is connected directly to the wall telephone jack.

- Check for a dial tone on the phone line by using the Start Fax button.

- Disconnect the printer telephone cord from the wall, connect a telephone to the phone jack on the wall, and try making a voice call.

- Disconnect the telephone cord from both the printer and the wall and reconnect the cord.

- Make sure that you are using the telephone cord that came with the printer.

- Connect the printer phone cord to a jack for another phone line.

- Check the phone line by using the Run Fax Test option from the Service menu on the control panel.

a. Open the Setup menu.

b. Open the Service menu.

**c.** Open the Fax Service menu.

**d.** Select the Run Fax Test item.

## The Fax is busy message appears

- Try sending the fax again.

- Call the recipient to ensure that the fax machine is on and ready.

- Check that you are dialing the correct fax number.

- Check for a dial tone on the phone line by using the Start Fax button.

- Make sure that the phone line is working by disconnecting the printer, connecting a telephone to the phone line, and making a voice call.

- Connect the printer phone cord to a jack for another phone line, and try sending the fax again.

- Try a different phone cord.

- Send the fax at a later time.

- If the error persists, contact HP. See www.hp.com/support/ljM203 and/or www.hp.com/support/ljM227MFP or the support flyer that came in the printer box.

## The No fax answer message appears

- Try to resend the fax.

- Call the recipient to ensure that the fax machine is on and ready.

- Check that you are dialing the correct fax number.

- Disconnect the printer telephone cord from the wall, connect a telephone to the phone jack on the wall, and try making a voice call.

- Connect the printer phone cord to a jack for another phone line.

- Try a different phone cord.

- Make sure that the phone cord from the wall telephone jack is connected to the line port.

- Check the phone line by using the Run Fax Test option from the Service menu on the control panel.

  **a.** Open the Setup menu.

  **b.** Open the Service menu.

  **c.** Open the Fax Service menu.

  **d.** Select the Run Fax Test item.

- If the error persists, contact HP. See www.hp.com/support/ljM203 and/or www.hp.com/support/ljM227MFP or the support flyer that came in the printer box.

## Document feeder paper jam

- Verify that the paper meets printer size requirements. The printer does not support pages longer than 381 mm (15 in) for faxing.

- Copy or print the original to letter, A4, or legal size paper, and then resend the fax.

## The Fax storage is full message appears

- Turn the printer off then on.

- Delete stored faxes from memory.

    a. Open the Setup menu.

    b. Open the Service menu.

    c. Open the Fax Service menu.

    d. Select the Clear Saved Faxes item.

- Divide the large fax job into smaller sections, and then fax them individually.

## Scanner error

- Verify that the paper meets printer size requirements. The printer does not support pages longer than 381 mm (15 in) for faxing.

- Copy or print the original onto letter, A4, or legal size paper and then resend the fax.

## The control panel displays a Ready message with no attempt to send the fax

- Check the fax activity log for errors.

    a. Touch the Fax button, and then touch the Fax Menu button.

    b. Open the Fax Reports menu.

    c. Open the Fax Activity Log menu.

    d. Select the Print Log Now option.

- If a phone is connected to the printer, make sure that the phone is hung up.

- Disconnect all other lines between the fax and the printer.

- Connect the printer directly into the wall telephone jack and resend the fax.

## The control panel displays the message "Storing page 1" and does not progress beyond that message

- Delete stored faxes from memory.

    a. Open the Setup menu.

    b. Open the Service menu.

    c. Open the Fax Service menu.

    d. Select the Clear Saved Faxes item.

## Faxes can be received, but not sent

Send fax and nothing happens.

1. Check for a dial tone on the phone line by using the Start Fax button.

2. Turn the printer off then on.

3. Use the control panel or the HP Fax Setup Wizard to configure the fax time, date, and fax header information.

   a. Open the Setup menu.

   b. Open the Fax Setup menu.

   c. Open the Basic Setup menu.

   d. Open the Fax Header menu.

   e. Enter the correct settings.

4. Verify that any extension phones on the line are hung up.

5. If using a DSL service, make sure that the phone line connection to the printer includes a high-pass filter.

## Printer is password protected

If a network administrator has set a printer password, then you must obtain the password in order to use the printer fax features.

## Unable to use fax functions from the control panel

- The printer might be password protected. Use the HP Embedded Web Server, HP Toolbox software, or the control panel to set a password.

- If you do not know the password for the printer, contact your system administrator.

- Verify with the system administrator that the fax functionality has not been disabled.

## Unable to use speed dials

- Make sure that the fax number is valid.

- If an outside line requires a prefix, turn on the Dial Prefix option or include the prefix in the speed dial number.

   a. Open the Setup menu.

   b. Open the Fax Setup menu.

   c. Open the Basic Setup menu.

   d. Open the Dial Prefix menu.

   e. Select the On setting.

## Unable to use group dials

- Make sure that the fax number is valid.

- If an outside line requires a prefix, turn on the Dial Prefix option or include the prefix in the speed dial number.

    **a.** Open the Setup menu.

    **b.** Open the Fax Setup menu.

    **c.** Open the Basic Setup menu.

    **d.** Open the Dial Prefix menu.

    **e.** Select the On setting.

- Set up all entries in the group with speed dial entries.

    **a.** Open an unused speed dial entry.

    **b.** Enter the fax number for the speed dial.

    **c.** Touch the OK button to save the speed dial.

## Receive a recorded error message from the phone company when trying to send a fax

- Make sure you dial the fax number correctly, and make sure that the phone service is not blocked. For example, some phone services might prevent long distance calling.

- If an outside line requires a prefix, turn on the Dial Prefix option or include the prefix in the speed dial number.

    **a.** Open the Setup menu.

    **b.** Open the Fax Setup menu.

    **c.** Open the Basic Setup menu.

    **d.** Open the Dial Prefix menu.

    **e.** Select the On setting.

📝 **NOTE:** To send a fax without a prefix, when the Dial Prefix option is turned on, send the fax manually.

- Send a fax to an international number

    **a.** If a prefix is required, manually dial the telephone number with the prefix.

    **b.** Enter the country/region code before dialing the phone number.

    **c.** Wait for pauses as you hear the tones on the phone.

    **d.** Send the fax manually from the control panel.

## Unable to send a fax when a phone is connected to the printer

- Make sure that the telephone is hung up.

- Make sure that the telephone is not being used for a voice call when faxing.

- Disconnect the phone from the line, and then try sending the fax.

# Troubleshoot fax codes and trace reports

## View and interpret fax error codes

Use fax error codes from the fax activity log to solve problems with the printer fax features.

| Error code | Description | Solution |
|---|---|---|
| 232 | Possible causes include the following:<br><br>• A communication failure has occurred between the two machines.<br><br>• The user at the remote machine might have pressed the Stop or Cancel button.<br><br>• The power at the remote machine has been interrupted, or deliberately turned off causing the fax session to be interrupted. | 1. Resend the fax at a different time when telephone line conditions have improved.<br><br>2. If the error persists, and error correction is in use for the fax session, disable the Error Correction setting. |
| 282 | Possible causes include the following:<br><br>• The printer has not received any data at the start of a page during reception in error correction mode, but the modem has not detected a remote disconnect.<br><br>• The remote machine is probably transmitting sync frames instead of data and has either jammed or broken. | Have the sender verify that the sending machine is working correctly, and then request that the sender resend the fax. |
| 321 | There was a communication error with the receiving fax machine due to poor telephone line conditions. | Resend the fax at a different time when telephone line conditions have improved. |
| 344-348 | Possible causes include the following:<br><br>• The remote machine has failed to respond to a fax command from the local machine due to the connection being interrupted.<br><br>• The user at the remote machine might have pressed the Stop or Cancel button.<br><br>• In rare instances, incompatibility between the two machines can cause the remote machine to simply terminate the call. | 1. Resend the fax at a different time when telephone line conditions have improved.<br><br>2. If the error persists, and error correction is in use for the fax session, disable the Error Correction setting. |
| 381 | Possible causes include the following:<br><br>• The remote machine has failed to respond to a fax command from the local machine due to the connection being interrupted.<br><br>• The user at the remote machine might have pressed the Stop button. | 1. Resend the fax at a different time when telephone line conditions have improved.<br><br>2. If the error persists, and error correction is in use for the fax session, disable the Error Correction setting. |

## Fax trace report

A fax T.30 trace report has information that can help resolve fax transmission problems. If you call HP for help in resolving these problems, print a T.30 trace report before you call.

1. Open the Setup menu.

2. Open the Service menu.

3. Open the Fax Service menu.

4. Touch the Print T.30 Trace button, and then touch the Now button.

📝 NOTE:   This procedure prints a report for the last fax job, successful or not. To generate a report for each unsuccessful fax job, select the If Error setting. To generate a report for each fax job, select the At End of Call setting.

# Fax logs and reports

Use the following instructions to print fax logs and reports:

## Print all fax reports

Use this procedure to print all of the following reports at one time:

- Last Call Report
- Fax Activity Log
- Phone Book Report
- Junk Fax List
- Billing Report (when Billing Codes are turned on)
- Configuration Report
- Usage Page


1. From the Home screen on the printer control panel, touch the Fax button.

2. Touch the Fax Menu button.

3. Touch the Fax Reports button.

4. Touch the Print All Fax Reports button.

## Print individual fax reports

1. From the Home screen on the printer control panel, touch the Fax button.

2. Touch the Fax Menu button.

3. Touch the Fax Reports button.

4. Touch the name of the report that you want to print.

## Set the fax error report

A fax error report is a brief report that indicates the printer experienced a fax job error. You can set it to print after the following events:

- Every fax error (the factory-set default)

- Send fax error

- Receive fax error

- Never

    **NOTE:** With this option, you will have no indication that a fax failed to be transmitted unless you print a fax activity log.

1. From the Home screen on the printer control panel, touch the Fax button.

2. Touch the Fax Menu button.

3. Touch the Fax Reports button.

4. Touch the Fax Error Report button, and then touch the printing option that you want to use.

## Set the fax-error-correction mode

Usually, the printer monitors the signals on the telephone line while it is sending or receiving a fax. If the printer detects an error during the transmission and the error-correction setting is On, the printer can request that the portion of the fax be resent. The factory-set default for error correction is On.

You should turn off error correction only if you are having trouble sending or receiving a fax, and you are willing to accept the errors in the transmission. Turning off the setting might be useful when you are trying to send a fax overseas or receive one from overseas, or if you are using a satellite telephone connection.

1. Open the Setup menu.

2. Open the Service menu.

3. Open the Fax Service menu.

4. Open the Error Correction button, and then touch the On button.

## Change the fax speed

The fax-speed setting is the modem protocol that the printer uses to send faxes. It is the worldwide standard for full-duplex modems that send and receive data across telephone lines at up to 33,600 bits per second (bps). The factory-set default for the fax-speed setting is Fast V.34.

You should change the setting only if you are having trouble sending a fax to or receiving a fax from a particular device. Decreasing the fax speed might be useful when you are trying to send a fax overseas, or receive one from overseas, or if you are using a satellite telephone connection.

1. Open the Setup menu.

2. Open the Fax Setup menu.

3. Open the Advanced Setup menu.

4. Scroll to and touch the Fax Speed button, and then touch the speed setting that you want to use.

# Use fax on a DSL, PBX, or ISDN system

HP printers are designed specifically for use with traditional analog phone services. They are not designed to work on DSL, PBX, ISDN lines, or VoIP services, but they work with the proper setup and equipment.

**NOTE:** HP recommends discussing DSL, PBX, ISDN, and VoIP setup options with the service provider.

The HP LaserJet printer is an analog device that is not compatible with all digital phone environments (unless a digital-to-analog converter is used). HP does not guarantee that the printer will be compatible with digital environments or digital-to-analog converters.

## DSL

A digital subscriber line (DSL) uses digital technology over standard copper telephone wires. This printer is not directly compatible with those digital signals. However, if the configuration is specified during DSL setup, the signal can be separated so that some of the bandwidth is used to transmit an analog signal (for voice and fax) while the remaining bandwidth is used to transmit digital data.

**NOTE:** Not all faxes are compatible with DSL services. HP does not guarantee that the printer will be compatible with all DSL service lines or providers.

A typical DSL modem employs a filter to separate the higher frequency DSL modem communication from lower frequency analog phone and fax modem communication. It is often necessary to use a filter with analog phones and analog fax products that are connected to a telephone line used by a DSL modem. The DSL service provider usually provides this filter. Contact the DSL provider for more information or for assistance.

## PBX

The printer is an analog device that is not compatible in all digital phone environments. Digital-to-analog filters or converters might be needed for faxing functionality. If faxing issues occur in a PBX environment, it might be necessary to contact the PBX provider for assistance. HP does not guarantee that the printer will be compatible with digital environments or digital-to-analog converters.

Contact the PBX provider for more information and for assistance.

## ISDN

The printer is an analog device that is not compatible in all digital phone environments. Digital-to-analog filters or converters might be needed for faxing functionality. If faxing issues occur in an ISDN environment, it might be necessary to contact the ISDN provider for assistance. HP does not guarantee that the printer will be compatible with ISDN digital environments or digital-to-analog converters.

# Solve email problems (M129/M134)

If Scan to E-mail problems occur, try these solutions:

- Make sure this feature has been set up. If this feature has not been set up, use the setup wizard in the HP Device Toolbox (Windows) or HP Utility for Mac OS X software to set it up.

- Make sure the Scan to Email feature is enabled. If it has been disabled, enable the feature through the HP Device Toolbox (Windows) or HP Utility for Mac OS X software.

- Make sure that the printer is connected to a computer or to a network.

## Cannot connect to the email server

- Make sure the SMTP or LDAP server name is correct. Check this setting with your system administrator or Internet Service Provider.

- If the printer cannot establish a secure connection to the SMTP or LDAP server, try without the secure connection or try a different server or port. Check this setting with your system administrator or Internet Service Provider.

- If the SMTP or LDAP server requires authentication, make sure a valid user name and password are used.

- If the SMTP or LDAP server uses an authentication method that is not supported, try a different server. Check this setting with your system administrator or Internet Service Provider.

## Validate the SMTP gateway (Windows)

1. Open an MS-DOS command prompt: click **Start**, click **Run**, type `cmd`, and then press the Enter key.

2. In the command prompt window, type `telnet` followed by the SMTP gateway address and then the number 25, which is the port over which the printer is communicating. For example, type `telnet 123.123.123.123 25` where "123.123.123.123" represents the SMTP gateway address.

3. Press the Enter key. If the SMTP gateway address is not valid, the response contains the message **Could not open connection to the host on port 25: Connect Failed**.

4. If the SMTP gateway address is not valid, contact the network administrator.

## Validate the LDAP gateway (Windows)

1. Open Windows Explorer. In the address bar, type `LDAP://` immediately followed by the LDAP gateway address. For example, type `LDAP://12.12.12.12` where "12.12.12.12" represents the LDAP gateway address.

2. Press the Enter key. If the LDAP gateway address is valid, the **Find People** dialog box opens.

3. If the LDAP gateway address is not valid, contact the network administrator.

# Update the firmware

HP offers periodic printer updates, new Web Services apps, and new features to existing Web Services apps. Follow these steps to update the printer firmware for a single printer. When you update the firmware, Web Service apps will update automatically.

There are two supported methods to perform a firmware update on this printer. Use only one of the following methods to update the printer firmware.

## Method one: Update the firmware using the control panel (M227)

Use these steps to load the firmware from the control panel (for network-connected printers only), and/or set the printer to automatically load future firmware updates. For USB-connected printers, skip to method two.

**NOTE:** The steps vary according to the type of control panel.
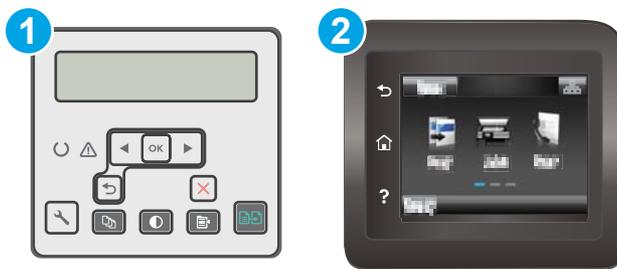


| 1 | 2-line control panel |
|---|----------------------|
| 2 | Touchscreen control panel |

**2-line control panels:**

1. Make sure the printer is connected to a wired (Ethernet) or wireless network with an active Internet connection.

   **NOTE:** The printer must be connected to the internet to update the firmware via a network connection.

2. On the printer control panel, press the Setup ⚒ button.

3. Open the **Service** menu, and then open the **LaserJet Update** menu.

   **NOTE:** If the **LaserJet Update** option is not listed, use method two.

4. Select **Check for Update** to check for updates.

   **NOTE:** The printer automatically checks for an update, and if a newer version is detected, the update process automatically starts.

5. Set the printer to automatically update the firmware when updates become available.

   On the printer control panel, press the Setup ⚒ button.

   Open the **Service** menu, open the **LaserJet Update** menu, and then select the **Manage Updates** menu.

   Set the **Allow Updates** option to **YES**, and then set the **Automatic Check** option to **ON**.

Touchscreen control panels:

1. Make sure the printer is connected to a wired (Ethernet) or wireless network with an active Internet connection.

   **NOTE:** The printer must be connected to the internet to update the firmware via a network connection.

2. From the Home screen on the printer control panel, touch the Setup 🔘 button.

3. Scroll to and open the Service menu, and then open the LaserJet Update menu.

   **NOTE:** If the LaserJet Update option is not listed, use method two.

4. Touch Check for Updates Now to check for updates.

   **NOTE:** The printer automatically checks for an update, and if a newer version is detected, the update process automatically starts.

5. Set the printer to automatically update the firmware when updates become available.

   From the Home screen on the printer control panel, touch the Setup 🔘 button.

   Open the Service menu, open the LaserJet Update menu, and then select the Manage Updates menu.

   Set the Allow Updates option to YES, and then set the Check automatically option to ON.

## Method two: Update the firmware using the Firmware Update Utility (M203 and M227)

Use these steps to manually download and install the Firmware Update Utility from hp.com.

**NOTE:** This method is the only firmware update option available for printers connected to the computer via a USB cable. It also works for printers connected to a network.

**NOTE:** You must have a print driver installed in order to use this method.

1. Go to www.hp.com/support, select your country/region language, click **Get software and drivers** link, type the printer name in the search field, press the Enter button, and then select the printer from the list of search results.

2. Select the operating system.

3. Under the **Firmware** section, locate the **Firmware Update Utility**.

4. Click **Download**, click **Run**, and then click **Run** again.

5. When the utility launches, select the printer from the drop-down list, and then click **Send Firmware**.

   **NOTE:** To print a configuration page to verify the installed firmware version before or after the update process, click **Print Config**.

6. Follow the on-screen instructions to complete the installation, and then click the **Exit** button to close the utility.

# A Printer specifications

# Printer dimensions (M203)

Dimensions for the printer



|  | Printer fully closed | Printer fully open |
| --- | --- | --- |
| 1. Height | 223.9 mm (8.8 in) | 359.5 mm (14.1 in) |
| 2. Width | 370.5 mm (14.5 in) | 370.5 mm (14.5 in) |
| 3. Depth | 407.4 mm (16 in) | 504.1 mm (19.8 in) |
| Weight (with cartridges) | 6.9 kg (15.2 lb) | |

# Printer dimensions (M227)

Figure A-2  Dimensions for the printer
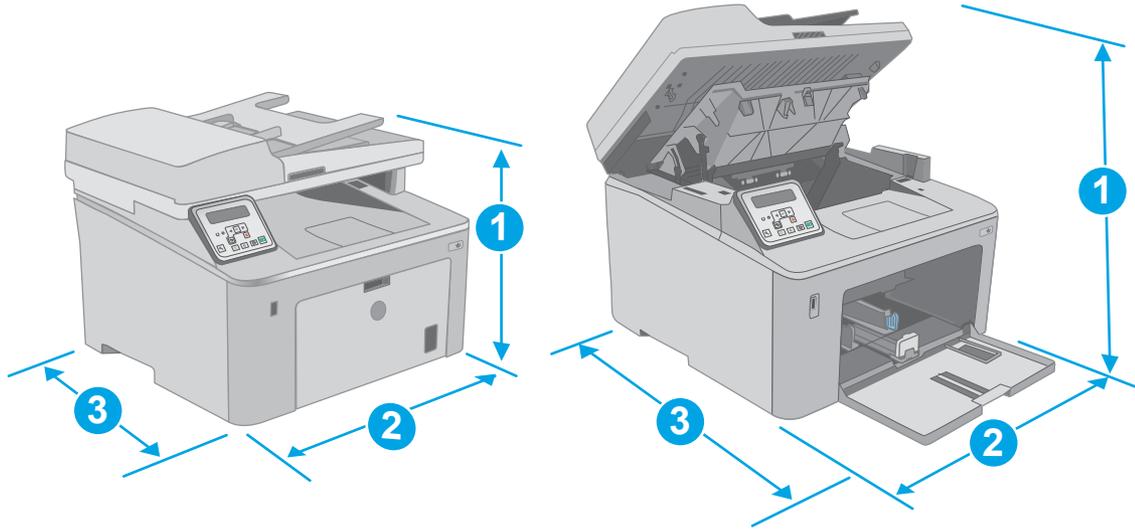


| | Printer fully closed | Printer fully open |
|---|---|---|
| 1. Height | 311.5 mm (12.2 in) | 419.9 mm (16.5 in) |
| 2. Width | 403 mm (15.8 in) | 403 mm (15.8 in) |
| 3. Depth | 407.4 mm (16 in) | 504.1 mm (19.8 in) |
| Weight (with cartridges) | 9.9 kg (21.8 lb) | |

# Printer space requirements

HP recommends that 30 mm (1.81 in) be added to the printer dimensions provided in this chapter to make sure there is sufficient space to open doors and covers, and to provide proper ventilation. See Printer dimensions (M203) on page 246 and/or Printer dimensions (M227) on page 247.

# Power consumption, electrical specifications, and acoustic emissions

See www.hp.com/support/ljM203 and/or www.hp.com/support/ljM227 for current information.

⚠ CAUTION:    Power requirements are based on the country/region where the printer is sold. Do not convert operating voltages. This will damage the printer and void the printer warranty.

# Operating environmental range

Table A-1 Operating environmental range

| Environment | Recommended | Allowed |
|---|---|---|
| Temperature | 17° to 25°C (62.6° to 77°F) | 15° to 30°C (59° to 86°F) |
| Relative humidity | 30% to 70% relative humidity (RH) | 10% to 80% (RH) |
| Altitude | Not applicable | 0 to 3048 m (0 to 10,000 ft) |

# Certificates of volatility

Figure A-3  Certificate of volatility M203–M206 (1 of 2)

| Hewlett-Packard Certificate of Volatility | | | |
|---|---|---|---|
| Model:<br>HP LaserJet Pro M203dn<br>HP LaserJet Pro M203dw<br>HP LaserJet Pro M203d<br>HP LaserJet Ultra M206dn | Part Number:<br>G3Q46A<br>G3Q47A<br>G3Q50A<br>G3Q48A | | Address:<br>Hewlett Packard Company<br>11311 Chinden Blvd<br>Boise, ID 83714 |

| Volatile Memory | | | | |
|---|---|---|---|---|
| Does the device contain volatile memory (Memory whose contents are lost when power is removed)?<br>☒ Yes  ☐ No  If Yes please describe the type, size, function, and steps to clear the memory below | | | | |
| Type (SRAM, DRAM, etc):<br><br>DDR3-DRAM | Size:<br><br>256MB | User Modifiable:<br><br><br>☐ Yes ☒ No | Function:<br>Used for temporary storage during the processing of jobs and for applications running on the OS. | Steps to clear memory:<br>When the printer is powered OFF , the memory is erased. |
| Type (SRAM, DRAM, etc): | Size: | User Modifiable:<br>☐ Yes ☐ No | Function: | Steps to clear memory:<br>. |
| Type (SRAM, DRAM, etc): | Size: | User Modifiable:<br>☐ Yes ☐ No | Function: | Steps to clear memory: |

| Non-Volatile Memory | | | | |
|---|---|---|---|---|
| Does the device contain non-volatile memory (Memory whose contents are retained when power is removed)?<br>☒ Yes  ☐ No  If Yes please describe the type, size, function, and steps to clear the memory below | | | | |
| Type (Flash, EEPROM, etc):<br><br>EEPROM<br><br><br><br><br>16 KB | Size: | User Modifiable:<br><br><br><br><br><br>☐ Yes ☒ No | Function:<br>Store customer settings data for backup/restore. | Steps to clear memory:<br>Perform an NVRAM initialization according to steps in the service manual to return most system parameters in NVRAM to their default factory setting. |
| Type (Flash, EEPROM, etc):<br><br>Nand-Flash | Size:<br><br>128MB | User Modifiable:<br><br><br><br>☐ Yes ☒ No | Function: Store firmware code, file system, and customer setting data for backup/restore. | Steps to clear memory:<br>Permanent storage requires a special code to clear or update firmware. Typically not done by the end user. |
| Type (Flash, EEPROM, etc): | Size: | User Modifiable:<br>☐ Yes ☐ No | Function: | Steps to clear memory: |

| Mass Storage | | | | |
|---|---|---|---|---|
| Does the device contain mass storage memory (Hard Disk Drive, Tape Backup)?<br>☐ Yes  ☒ No  If Yes please describe the type, size, function, and steps to clear the memory below | | | | |
| Type (HDD, Tape, etc): | Size: | User Modifiable:<br>☐ Yes ☐ No | Function: | Steps to clear memory: |
| Type (HDD, Tape, etc): | Size: | User Modifiable:<br>☐ Yes ☐ No | Function: | Steps to clear memory: |

| USB | 
|---|
| Does the item accept USB input and if so, for what purpose (i.e Print Jobs, device firmware updates, scan upload)?<br>☐ Yes  ☒ No  If Yes please describe below |
| |
| Can any data other than scan upload be sent to the USB device)?<br>☐ Yes  ☒ No  If Yes please describe below |
| |

| RF/RFID |
|---|
| Does the item use RF or RFID for receive or transmit of any data including remote diagnostics. (e.g. Cellular phone, Bluetooth) ☐ Yes ☒ No  If Yes please describe below |
| Purpose: |

| Frequency: | Bandwidth: |
|---|---|
| Modulation: | Effective Radiate Power (ERP): |

| Specifications: |
|---|

| Other Transmission Capabilities |
|---|
| Does the device employ any other methods of non-wired access to transmit or receive any data whatsoever (e.g. anything other than standard hard wired TCP/IP, direct USB, or parallel connections)? ☒ Yes ☐ No If Yes please describe below: |
| Purpose:  Wireless Connection |

| Frequency:  2.4GHz/5GHz | Bandwidth: |
|---|---|
| Modulation: | Effective Radiate Power (ERP): |

| Specifications:  802.11 b/g/n/ac |
|---|

| Other Capabilities |
|---|
| Does the device employ any other method of communications such as a Modem to transmit or receive any data whatsoever? ☐ Yes ☒ No  If Yes please describe below: |
| Purpose: |
| Specifications |

| Hewlett-Packard Certificate of Volatility | | |
|---|---|---|
| Model:<br>HP LaserJet Pro MFP M227sdn<br>HP LaserJet Pro MFP M227fdw<br>HP LaserJet Ultra MFP M230sdn<br>HP LaserJet Pro MFP M227d<br>HP LaserJet Pro MFP M227fdn<br>HP LaserJet Ultra MFP M230fdw | Part Number:<br>G3Q74A<br>G3Q75A<br>G3Q76A<br>G3Q78A<br>G3Q79A<br>G3Q77A | Address:<br>Hewlett Packard Company<br>11311 Chinden Blvd<br>Boise, ID 83714 |

| Volatile Memory | | | | |
|---|---|---|---|---|
| Does the device contain volatile memory (Memory whose contents are lost when power is removed)?<br>☒ Yes ☐ No  If Yes please describe the type, size, function, and steps to clear the memory below | | | | |
| Type (SRAM, DRAM, etc):<br><br>DDR3-DRAM | Size:<br><br>256MB | User Modifiable:<br><br><br>☐ Yes ☒ No | Function:<br>Used for temporary storage during the processing of jobs and for applications running on the OS. | Steps to clear memory:<br>When the printer is powered OFF , the memory is erased. |
| Type (SRAM, DRAM, etc): | Size: | User Modifiable:<br>☐ Yes ☐ No | Function: | Steps to clear memory:<br>. |
| Type (SRAM, DRAM, etc): | Size: | User Modifiable:<br>☐ Yes ☐ No | Function: | Steps to clear memory: |

| Non-Volatile Memory | | | | |
|---|---|---|---|---|
| Does the device contain non-volatile memory (Memory whose contents are retained when power is removed)?<br>☒ Yes ☐ No  If Yes please describe the type, size, function, and steps to clear the memory below | | | | |
| Type (Flash, EEPROM, etc):<br><br>EEPROM | Size:<br><br><br><br><br><br>16 KB | User Modifiable:<br><br><br><br><br><br>☐ Yes ☒ No | Function:<br>Store customer settings data for backup/restore. | Steps to clear memory:<br>Perform an NVRAM initialization according to steps in the service manual to return most system parameters in NVRAM to their default factory setting. |
| Type (Flash, EEPROM, etc):<br><br>Nand-Flash | Size:<br><br>128MB | User Modifiable:<br><br><br><br>☐ Yes ☒ No | Function: Store firmware code, file system, and customer setting data for backup/restore. | Steps to clear memory:<br>Permanent storage requires a special code to clear or update firmware. Typically not done by the end user. |
| Type (Flash, EEPROM, etc): | Size: | User Modifiable:<br>☐ Yes ☐ No | Function: | Steps to clear memory: |

| Mass Storage | | | | |
|---|---|---|---|---|
| Does the device contain mass storage memory (Hard Disk Drive, Tape Backup)?<br>☐ Yes ☒ No  If Yes please describe the type, size, function, and steps to clear the memory below | | | | |
| Type (HDD, Tape, etc): | Size: | User Modifiable:<br>☐ Yes ☐ No | Function: | Steps to clear memory: |
| Type (HDD, Tape, etc): | Size: | User Modifiable:<br>☐ Yes ☐ No | Function: | Steps to clear memory: |

| USB |
|---|
| Does the item accept USB input and if so, for what purpose (i.e Print Jobs, device firmware updates, scan upload)?<br>☒ Yes ☐ No If Yes please describe below |
| For touch panel models, print files can be printed via a USB thumb drive. Scan files can be uploaded to a USB thumb drive. |
| Can any data other than scan upload be sent to the USB device)?<br>☐ Yes ☒ No  If Yes please describe below |
| |

| RF/RFID | |
|---|---|
| Does the item use RF or RFID for receive or transmit of any data including remote diagnostics. (e.g. Cellular phone, Bluetooth) ☐ Yes ☒ No  If Yes please describe below | |
| Purpose: | |
| Frequency: | Bandwidth: |
| Modulation: | Effective Radiate Power (ERP): |
| Specifications: | |

| Other Transmission Capabilities | |
|---|---|
| Does the device employ any other methods of non-wired access to transmit or receive any data whatsoever (e.g. anything other than standard hard wired TCP/IP, direct USB, or parallel connections)? ☒ Yes ☐ No If Yes please describe below: | |
| Purpose:  Wireless Connection | |
| Frequency:  2.4GHz/5GHz | Bandwidth: |
| Modulation: | Effective Radiate Power (ERP): |
| Specifications:  802.11 b/g/n/ac | |

| Other Capabilities | |
|---|---|
| Does the device employ any other method of communications such as a Modem to transmit or receive any data whatsoever?  ☒ Yes ☐ No  If Yes please describe below: | |
| Purpose:   Touch panel models support NFC. | |
| Specifications | |

# Index